

ANTONIO B. WON PAT INTERNATIONAL AIRPORT AUTHORITY, GUAM (GIAA)

SECTION A BID DOCUMENTS

INVITATION FOR BID IFB NO: GIAA-C03-FY15

AIRPORT RESTROOM RENOVATIONS GIAA PROJECT NO. GIAA-FY15-02-1

A.B. WON PAT INTERNATIONAL AIRPORT AUTHORITY, GUAM

DEMOLITION AND REMEDIATION OF VARIOUS AIRPORT FACILITIES – PHASE 3 PROJECT NO. GIAA-FY12-01-5; AIP NO. 3-66-0001-81 & 82 IFB NO. GIAA-C01-FY15

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INVITATION FOR BID

The Antonio B. Won Pat International Airport Authority, Guam ("GIAA"), a public corporation and autonomous instrumentality of the Government of Guam, will receive sealed bids for the "AIRPORT RESTROOM RENOVATIONS" Project at the Antonio B. Won Pat International Airport Authority, Guam.

Bids will be received as described in the IFB package until 2:00 p.m., March 26, 2015 (Chamorro Standard Time (ChST)), at the office of the Executive Manager, GIAA Main Terminal, 3rd Floor, 355 Chalan Pasaheru, Tamuning, Guam, 96913. At 2:15 P.M. the same day, all bids will be publicly opened and read aloud at the GIAA Terminal Conference Room, located at the GIAA Main Terminal, Ground Floor, 355 Chalan Pasaheru, Tamuning, Guam 96913. Bids received after the bid submission deadline will not be considered. All bids must be accompanied by a bid guarantee in the amount of 15% of the total bid price. The bid guarantee may be a bid bond, certified check or cashier's check made payable to A.B. Won Pat International Airport Authority, Guam.

The complete IFB packet is available for public inspection at the office of the Executive Manager and for download from GIAA's website at www.guamairport.com. A non-refundable payment of Three Hundred Dollars (\$300.00) in cash, or certified check, or cashier's check is required for a printed copy of the complete IFB packet or One Hundred Dollars (\$100.00) for an electronic file (.pdf format) on compact disc, which can be obtained at the GIAA Executive office. GIAA recommends that any and all prospective bidders register by submitting to GIAA the Acknowledgment of Receipt Form included as part of this IFB. GIAA shall not be liable for failure to provide notice(s) or addenda to any bidders who did not submit an Acknowledgement of Receipt Form.

GIAA hereby notifies all bidders that it will affirmatively insure that Small Business Concerns and Small Disadvantaged Business Concerns will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated on the grounds of race, color and national origin in its consideration for an award of contract.

A pre-bid meeting will be held in the GIAA Conference Room, located at the GIAA Main Terminal, Ground Floor, 355 Chalan Pasaheru, Tamuning, Guam 96913 at 10:00 a.m., Wednesday, March 11, 2015 (ChST).

GIAA reserves the right to reject any and all bids and to waive any and all informalities, and to disregard all nonconforming or conditional bids or counter proposals when in GIAA's opinion, such rejection or waiver will be in GIAA's best interest. For additional information, contact Mr. Franklin P. Taitano at (671) 646-0300 thru 0302.

Charles H. Ada II
Executive Manager

INVITATION TO FOR BID

SIAA-C03-FY15

SCHEDULE OF EVENTS

EVENT	DATE (all times are ChST)	LOCATION
IFB Issue Date	February 25, 2015	Executive Manager's Office, GIAA Main Terminal, 3 rd Floor and Website
Deadline for Receipt of Written	March 13, 2015	Executive Manager's
Questions	12:00 p.m.	Office
Pre-bid Conference	March 11, 2015 10:00 a.m.	GIAA Terminal Conference Room, GIAA Main Terminal, Ground Floor
Bid Submission Deadline	March 26, 2015 2:00 p.m.	Executive Manager's Office
Bid Opening	2:15 p.m. on the Bid Submission Deadline	GIAA Terminal Conference Room, GIAA Main Terminal, Ground Floor

ACKNOWLEDGEMENT OF RECEIPT FORM

Please acknowledge receipt of

AIRPORT RESTROOM RENOVATIONS GIAA PROJECT NO. GIAA-FY15-02-1 IFB NO: GIAA-C03-FY15

Upon obtaining this IFB, prospective bidders must complete this Acknowledgement of Receipt Form and return the completed form to GIAA in order to receive any addenda or other notices related to this IFB. Failure of prospective bidders to submit the Acknowledgement of Receipt Form to GIAA and to acknowledge receipt of all amendments/addenda in their bids may result in the prospective bidder not receiving notices from GIAA regarding this IFB, including addenda, or bids may be deemed non-responsive.

Name of Prospective Offeror	
Name of person receiving IFB	
Signature	
Date	
Time	
Contact Person regarding IFB	
Company/Firm	
Title	
E-mail Address	
Contact Number	
Fax Number	
Address	

INSTRUCTIONS TO BIDDERS

1. RECEIPT AND OPENING OF BIDS

Sealed bids in duplicate for the "Demolition and Remediation of Various Airport Facilities – Phase 3", at the Antonio B. Won Pat International Airport Authority, Guam ("GIAA"), Project No. GIAA-FY12-01-5, AIP No. 3-66-0001-81 & 82, will be received at the office of the Executive Manager, located at the GIAA Main Terminal Building, 3rd Floor, 355 Chalan Pasaheru, Tamuning, Guam 96913, until **2:00 p.m.** (Chamorro Standard Time (ChST)), on the Bid Submission Deadline indicated in the SCHEDULE OF EVENTS. At 2:15 p.m. on the Bid Submission Deadline, all bids will be publicly opened and read aloud at the GIAA Terminal Conference Room, located at the GIAA Main Terminal, 2nd Floor, 355 Chalan Pasaheru, Tamuning, Guam 96913.

Bids in duplicate shall be submitted on the forms furnished by GIAA and shall be enclosed in a sealed envelope addressed to the GIAA Executive Manager and endorsed on the outside with the name and address of the bidder and the IFB title "IFB No. GIAA-C03-FY15, GIAA PROJECT NO. GIAA-FY15-02-1. AIRPORT RESTROOM RENOVATIONS".

Attention is called to the fact that bidders not only offer to assume the obligations and liabilities imposed upon the Contractor in the Contract Documents, but bidders shall expressly make certain of the representations and warranties made therein. No effort is made to emphasize any particular provision of the Contract Documents, but bidders must familiarize themselves with every provision and its effect.

2. SINGLE POINT OF CONTACT

From the date this IFB is issued until final award, **bidders shall not communicate with any GIAA staff, Board Members or officials regarding this procurement,** except for Franklin P. Taitano, the Single Point of Contact for this procurement. Any unauthorized contact may disqualify the offeror from further consideration. Contact information for the single point of contact is as follows:

Franklin P. Taitano A.B. Won Pat International Airport Authority, Guam P.O. Box 8770 Tamuning, Guam 96931

Phone Number: (671) 646-0300 thru 02 Fax Number: (671) 646-2048 or 646-8823

Email: frankpt@guamairport.net

3. MODIFICATION OF IFB PRIOR TO DATE SET FOR OPENING BIDS

The right is reserved for GIAA to revise or amend this IFB, including but not limited to the specifications or drawings, or both, prior to the date set for opening bids. Such revisions or amendments, if any, will be announced by an amendment or addendum to this IFB and shall be identified as such. All bidders must acknowledge receipt of all amendments/addenda issued. If the revisions and amendments are of a nature which require material changes in quantities or prices to be bid or both, the date set for opening bids may be postponed by such number of days as in the opinion of GIAA will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids.

4. EXPLANATION TO BIDDERS

No oral explanation in regard to the meaning of the drawings and specifications will be made and no oral instructions will be given before the award of the contract. Discrepancies, omissions, or doubts as to the meaning of drawings and specifications shall be communicated in writing to the Single Point of Contact for interpretation. All written inquiries shall be submitted to GIAA **no later than** the deadline set forth in the SCHEDULE OF EVENTS. Bidders should act promptly and allow sufficient time for a reply to reach them. Every interpretation made to a bidder will be in the form of an amendment or addendum to the IFB which, if issued, will be sent as promptly as practicable to all persons who have submitted an acknowledgement of receipt of the IFB. All such amendments/addenda shall become part of Contract Documents.

5. DELIVERY OF BID

No bid will be considered unless received at the GIAA Executive Manager's Office, GIAA Main Terminal, 3rd Floor, 355 Chalan Pasaheru, Tamuning, Guam 96913, before the time specified in the SCHEDULE OF EVENTS for submission of bids. When sent by mail, preferably registered, the sealed bid, marked as indicated above, should be enclosed in an additional envelope. Bids received after the bid submission deadline shall be returned to the bidder unopened.

6. WITHDRAWAL OR REVISION OF BID

A bidder may withdraw or revise a bid by written notice received by GIAA at the office of the Executive Manager before the time specified for opening bids. A facsimile, email or similar request for withdrawal will not be accepted. Revised bids must be received at the GIAA's Executive Manager's office before the time specified for opening all bids. Negligence on the part of the bidder in preparing the bid confers no right to withdrawal of the bid after it has been opened.

7. PUBLICITY OF BIDS

At the time fixed for the opening of bids, the contents of the bids will be made public for the information of bidders and others properly interested who may be present, either in person or by representation.

8. RIGHT TO ACCEPT AND REJECT BIDS

GIAA reserves the unqualified right, in its sole and absolute discretion, to reject any and all bids, or to accept a bid or combination of bids, if any, which in its sole and absolute judgment will under all circumstances best serve GIAA's best interests, or to reject the bid of a bidder who is not in a position to perform the Contract.

9. AWARD OF CONTRACT

9.1. The Contract will be awarded, if it is to be awarded, as soon as possible to the responsible bidder with the lowest responsive bid based on the Total Bid, provided the bid is reasonable and is to the interest of GIAA to accept it. Whether a bidder is responsible shall be determined in accordance with the Guam Procurement Regulations and applicable federal law and shall be based upon the information submitted by a bidder under this IFB, including, but not limited to, required affidavits and Bidder's Statement of Experience, and other available information.

- 9.2. GIAA reserves the right to waive any informality in bids received when such waiver is in the interest of GIAA. GIAA also reserves the right to accept any item in the bid and to reject any item in the bid unless otherwise specified by GIAA or the bidder.
- 9.3 The successful bidder shall sign (execute) the Contract (in the form included as part of this IFB) and return such signed Contract to GIAA, along with the fully executed surety bond or bonds as security for faithful performance of this Contract and the fully executed surety bond or bonds as security for the payment of all persons performing labor and furnishing materials in conjunction with this Contract, as specified in the Contract Documents, within **ten (10) calendar days** after receipt of written notice of GIAA's acceptance of the bid.
- 9.4 Upon receipt of the Contract and contract bond or bonds that have been executed by the successful bidder, GIAA shall complete the execution of the Contract in accordance with Guam law, and return the fully executed contract to the Contractor. Delivery of the fully executed Contract to the Contractor shall constitute GIAA's approval to be bound by the successful bidder's bid and the terms of the Contract.
- 9.5 Failure of the successful bidder to execute the Contract and furnish an acceptable surety bond or bonds within the **ten (10) calendar day period** specified shall be just cause for cancellation of the award and forfeiture of the proposal guarantee, not as a penalty, but as liquidation of damages to GIAA for the delay and additional work and costs caused thereby in obtaining another bidder, said amount being beforehand determined as reasonable and containing no penalties.
- 9.6 GIAA intends to award a firm fixed price contract in substantially the form of the contract included as part of this IFB packet. Reference is made to the form contract for Guam Procurement Regulation Standard Contract Clauses that have been replaced with provisions from the General Provisions, which is also included as part of the IFB packet.

10. PERFORMANCE AND PAYMENT BOND

The successful bidder must deliver to GIAA an executed performance bond (form attached) and an executed payment bond (form attached) in an amount equal to one hundred percent (100%) of the accepted bid as security for the faithful performance of the contract and for security payment of all persons performing labor and furnishing materials in connection with this contract. The sureties of all bonds shall be such surety company or companies as are approved by GIAA, and as are authorized to transact business in Guam. The bonds must be approved by GIAA prior to execution of the formal contract. A notarized true copy of Certificate of Authority is also required.

11. CANCELLATION

GIAA reserves the right to cancel this solicitation as provided in the Guam Procurement Regulations.

12. TIME OF COMPLETION

The Contractor shall commence work on the date specified in the Notice to Proceed ("NTP") and shall complete the work under this contract within <u>168</u> calendar days of the NTP. This schedule shall require special handling and airfreight costs. The Contractor shall include such costs in its bid price, and no extra payment shall be made for any such costs. In the event that the Contractor does not complete the work

within the time specified, liquidated damages for delay will be assessed as stated in the General Provisions.

13. BID DOCUMENTS

The IFB package is available for download from GIAA's website www.guamairport.com and for public inspection at the GIAA Executive Manager's Office located in the Main Terminal Building, 3rd Floor, 355 Chalan Pasaheru, Tamuning, Guam 96913. Hard copies of the IFB package may be obtained upon payment of the non-refundable fee of \$300.00 and electronic files (.pdf format) of the IFB package on compact disc may be obtained upon payment of the non-refundable fee of \$100.00. Payment must be made by cash or certified/cashier check made payable to A.B. Won Pat International Airport Authority, Guam.

Upon obtaining this IFB, prospective bidders are encouraged to register with GIAA by submitting the Acknowledgement of Receipt Form set forth as an Attachment to this IFB to GIAA in order to receive any addenda or other notices related to this IFB. Failure by prospective bidders to submit the Acknowledgement of Receipt Form to GIAA and to acknowledge receipt of all amendments/addenda in their bids may result in the prospective bidder not receiving notices from GIAA regarding this IFB, including addenda, or bids may be deemed non-responsive.

This IFB consists of the following documents:

13.1 Bid Invitation Documents

- a. Invitation for Bid
- b. Schedule of Events
- c. Instructions to Bidders
- d. Notice to Bidders
- e. Acknowledgement of Receipt Form

13.2 Bid Submittal Documents

- a. Special Reminder to Prospective Bidders
- b. Bid Form Proposal Form and Bid Schedule
- c. Affidavit Disclosing Ownership and Commissions
- d. Affidavit Regarding No-Gratuities or Kickbacks
- e. Affidavit Regarding Non-Collusion
- f. Affidavit Regarding Contingent Fees
- g. Affidavit Regarding Ethical Standards
- h. Declaration Re Compliance with U.S. DOL Wage and Benefits Determination and the most recent wage determination applicable to Guam issued by the U.S. Department of Labor
- i. Designation of Subcontractors
- j. Notice of Requirement for Affirmative Action
- k. Notice Regarding Nonsegregated Facilities Requirement
- 1. Certification of Nonsegregated Facilities (Contractors/Subcontractors)
- m. Bidder's Qualification Statement with RESUMES of Personnel
- n. Bidder's Financial Statement
- o. Certificate Concerning Foreign Trade Restriction Interest
- p. Certification Regarding Debarment and Suspension
- q. Certification Regarding Lobbying and Influencing Employees

- r. Certification of Buy American Compliance for Total Facility
- s. Grant Assurance Form Title IV Compliance with Nondiscrimination Requirements
- t. Title IV Solicitation Notice
- u. Title IV List on Pertinent Nondiscrimination Authorities

13.3 Contract Documents

- a. Formal Contract
- b. Notice of Award
- c. Notice to Proceed
- d. Affidavit Disclosing Ownership and Commissions
- e. Affidavit Regarding No Gratuities or Kickbacks
- f. Affidavit Regarding Non-Collusion
- g. Affidavit Regarding Contingent Fees
- h. Affidavit Regarding Ethical Standards
- i. Declaration Re Compliance with U.S. DOL Wage and Benefits Determination and the most recent wage determination applicable to Guam issued by the U.S. Department of Labor
- j. Performance Bond
- k. Labor and Material Payment Bond
- 1. General Provisions
- m. Wage Rates for Employment of Temporary Alien Workers (H-2) on Guam
- n. Labor Standards Pursuant of Section 10307, Public Law 10-143
- o. Employees' Benefits, Temporary Employment of Aliens on Guam
- p. U.S. Department of Labor, General Wage Decision (GU140001)
- q. Technical Specifications
- r. Drawings

14. PREPARATION AND SUBMISSION OF BIDS

- 14.1 The bidder must submit its bid on the forms furnished by GIAA. All blank spaces on the bid form must be correctly filled in, and the bidder must state the total lump sum cost for each bid item based on the unit price and corresponding estimated quantities, (written in ink, both in words and numerals) which the bidder proposes for the work contemplated as well as all the materials required. In case of conflict between words and numerals, the words, unless obviously incorrect, will govern. Erasures or other changes in a bid must be explained or noted over the signature of the bidder. Bids containing any conditions, omissions, unexplained erasures or alterations or items not called for in the bid form or irregularities of any kind may be rejected by GIAA. The bidder must supply all the information required by the bid forms and specifications.
- 14.2 The bidder shall sign its bid in ink on the blank space provided therein. Each bid must give the full business address of the bidder and be signed by the bidder with the bidder's usual signature. If the bid is made by a partnership, it must be acknowledged by one of the partners, if made by a corporation, by one of the authorized officers thereof. Bids by partnerships must furnish the full names of all partners and must be signed in the name of the partnership by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing. Bids by a corporation or limited liability company must be signed with the legal name of the

corporation or company, followed by the name of the place of formation and by the signature and designation of an officer, or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. A bid by a person who affixes to his signature the word "president", "agent" or other designation without disclosing his principal, may be held to be the bid of the individual signing. When requested by GIAA, satisfactory evidence of the authority of the officer signing in behalf of the corporation or company shall be furnished.

14.3 Bids shall be enclosed in a sealed envelope which shall be marked and addressed as required herein in Section 1 titled "Receipt and Opening of Bids."

14. BID GUARANTEE

Each proposal must be accompanied by a bid guarantee in the amount of not less than fifteen percent (15%) of the amount of the bid. Failure to furnish a bid guarantee in the proper amount and form requires that the bid be rejected. Such guarantee shall be in the form of a bid bond provided by a surety company authorized to do business on Guam, cashier's check or certified check made payable to the A.B. Won Pat International Airport Authority, Guam. Such guarantee shall be submitted with the understanding and agreement that it shall guarantee that the bidder will not withdraw its bid for a period of ninety (90) days after the scheduled deadline for the submission of bids; that if the bid is accepted within the ninety (90) day period, the bidder will enter into a formal contract with GIAA and that the required performance and payment bonds will be given within ten (10) calendar days of receipt of notice of GIAA's acceptance of if its; and that in the event of the withdrawal of said bid within said ninety (90) day period, or the failure to execute said contract and give Performance and Payment Bonds within said ten (10) day period, the bidder shall be liable to GIAA for the full amount of the bid guarantee as liquidated damages for the delay and additional work and costs thereby in obtaining another bidder, said amount being beforehand determined as reasonable and containing no penalties.

A bid guarantee, if submitted in the form of a bid bond, shall be submitted on the form provided, signed by the bidder, two major officers of the Surety and the Resident General Agent, and shall be accompanied by a copy of a current Certificate of Authority for the Surety to do business in Guam issued by the Department of Revenue and Taxation, Power of Attorney issued by the Surety to the Resident General Agent and Power of Attorney issued by two major officers of the Surety to whoever is signing on their behalf.

Bid guarantees, other than bid bonds, will be returned to:

- a. unsuccessful bidders, as soon as practicable after the opening of bids, except for the second and third lowest bidders;
- b. the second and third lowest bidders, as soon as practicable after the successful bidder has executed the required contract documents;
- c. the successful bidder, upon satisfactory execution of such further contract documents, and satisfactory and timely submission of the required performance and payment bonds.

15. ADDITIONAL BIDDER RESPONSIBILITIES

16.1 Bidders shall visit the project site and shall be responsible for having thoroughly ascertained pertinent conditions such as location, accessibility, availability of utilities, and general character of the site, the character and extent of existing work within or

- adjacent to the site, and any other work being performed thereon at the time of the submission of this bid.
- 16.2 No extra compensation will be made by reason of any misunderstanding or error regarding the site, the conditions thereof, accessibility, availability of utilities, or the amount or kind of work to be performed.
- 16.3 If, in the performance of the contract, subsurface or latent conditions at the site are found to be materially different from those indicated by the drawings and specifications, or unknown conditions of an unusual nature are disclosed which differ materially from the conditions usually inherent in work of the character shown and specified, the attention of GIAA shall be called immediately to such conditions before they are disturbed. Upon such notice, or upon its observation of such conditions, GIAA shall promptly make such changes in the drawings and specifications as it finds necessary to conform to the different conditions.

16. PENALTY FOR FRAUD, BRIBERY AND OTHER VIOLATIONS

Bidder are cautioned to carefully observe local and federal statutes and regulations involving fraud, bribery and other violations with regard to procurement of contracts and construction of public works, and take special note of the criminal penalties in connection with said violations.

17. AFFIDAVITS AND ASSURANCES

Each bidder is required to submit the affidavits and assurances attached relating to the following matters. Failure to include said affidavits and assurances shall render a bid non-responsive.

- <u>Disclosure of major shareholders per 5 GCA § 5233</u>. As a condition of bidding, any partnership, sole proprietorship or corporation doing business with the government of Guam, shall submit an affidavit executed under oath that lists the name and address of any person who has held more than ten percent (10%) of the outstanding interest or shares in said partnership, sole proprietorship or corporation at any time during the twelve (12) month period immediately preceding submission of a bid. The affidavit shall contain the number of shares or the percentage of all assets of such partnership, sole proprietorship or corporation which have been held by each such person during the twelve (12) month period. In addition, the affidavit shall contain the name and address of any person who has received or is entitled to receive a commission, gratuity or other compensation for procuring or assisting in obtaining business related to this bid for the bidder and shall also contain the amount of any such commission, gratuity or other compensation. The affidavit shall be open and available to the public for inspection and copying.
- <u>Certification of Independent Price Determination per 2 GAR § 3126</u>. By submitting a bid, the bidder certifies that the price submitted was independently arrived at without collusion.
- Representation Regarding Gratuities and Kickbacks per 5 GCA § 5630 and 2 GAR § 11107(4)(e). The bidder, offeror, or contractor represents that it has not violated, is not violating, and promises that it will not violate the prohibition against gratuities and kickbacks set forth in § 11107 of the Guam Procurement Regulations.
- <u>Prohibition against Contingent Fees per 2 GAR § 11108</u>. It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a government contract upon

an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business.

- Representation regarding Ethical Standards per 2 GAR § 11103. The bidder, offeror, or contractor represents that it has not knowingly influenced and promises that it will not knowingly influence a government employee to breach any of the ethical standards set forth 5 GCA Chapter 5 Article 11, (Ethics in Public Contracting) of the Guam Procurement Act and in Chapter 11 of the Guam Procurement Regulations.
- Wage Determination per 5 GCA § 5801. In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation ('contractor') for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam. The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply.
- Benefits Determination per 5 GCA § 5802. In addition to the Wage Determination detailed in 5 GCA Chapter 5, Article 13, any contract to which 5 GCA Chapter 5, Article 13 applies shall also contain provisions mandating health and similar benefits for employees covered by 5 GCA Chapter 5, Article 13, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.

18. PROHIBITION AGAINST EMPLOYMENT OF SEX OFFENDERS

Pursuant to 5 GCA § 5253,

- (a) No person convicted of a sex offense under the provisions of Chapter 25 of Title 9 Guam Code Annotated, or an offense as defined in Article 2 of Chapter 28, Title 9 GCA in Guam, or an offense in any jurisdiction which includes, at a minimum, all of the elements of said offenses, or who is listed on the Sex Offender Registry, and who is employed by a business contracted to perform services for an agency or instrumentality of the government of Guam, shall work for his employer on the property of the government of Guam other than a public highway.
- (b) All contracts for services to agencies listed herein shall include the following provisions: (1) warranties that no person providing services on behalf of the contractor has been convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry; and (2) that if any person providing services on behalf of the contractor is convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry, that such

person will be immediately removed from working at said agency and that the administrator of said agency be informed of such within twenty-four (24) hours of such conviction.

19. PROHIBITION ON MULTIPLE OR ALTERNATE BIDS

Multiple or alternate bids will not be accepted and shall be rejected, provided that if a bidder clearly indicates a base bid, it shall be considered for award as though it were the only bid submitted by the bidder.

20. APPRENTICE TRAINING PROGRAM

Pursuant to Executive Order No. 2012-04, the contractor shall employ at least one (1) apprentice for every ten (10) workers for the duration of the project, and not less than one (1) apprentice for the project. This requirement may be waived only if GIAA certifies that no apprentice is available.

Apprentices employed by the contractor shall meet the eligibility requirements of Executive Order No. 2012-04.

In lieu of persons enrolled in a formal apprenticeship program, GIAA may authorize the contractor to employ individuals who will be supervised and engaged in on-the-job (OTJ) training. The number of OTJ apprentices employed in lieu of a single formal apprentice shall be determined by GIAA depending on the nature and size of the particular project.

21. BID SAMPLES AND DESCRIPTIVE LITERATURE

Bid samples or descriptive literature should not be submitted unless expressly requested herein. Regardless of any attempt by a bidder to condition the bid, unsolicited bid samples or descriptive literature that are submitted at the bidder's risk will not be examined or tested and will not be deemed to vary any of the provisions of this IFB.

22. MINIMUM WAGES

All persons employed on this project shall be paid not less than the minimum wage applicable to the corresponding skill or craft as determined by the Department of Labor, Government of Guam.

23. INSURANCE

The Contractor shall purchase or otherwise provide Builders All Risk Insurance for the entire project. See the paragraphs titled "Contractor's and Subcontractor's Insurance" in the General Provisions for insurance requirements.

24. BUY AMERICAN PREFERENCES

- (a) The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program. The following terms apply:
 - 1. Steel and manufactured products. As used in this clause, steel and manufactured products include (1) steel produced in the United States or (2) a manufactured product produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the

United States. Components of foreign origin of the same class or kind as the products referred to in subparagraphs b. (1) or (2) shall be treated as domestic.

- 2. Components. As used in this clause, components mean those articles, materials, and supplies incorporated directly into steel and manufactured products.
- 3. Cost of Components. This means the cost for production of the components, exclusive of final assembly labor costs.
- (b) The successful bidder will be required to assure that only domestic steel and manufactured products will be used by the Contractor, subcontractors, material men and suppliers in the performance of this contract, except those:
 - 1. that the US Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;
 - 2. that the US Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or
 - 3. that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.

*** END OF INSTRUCTIONS TO BIDDERS ***

NOTICE TO BIDDERS

1. **Intent of Contract**

The intent of the contract is to provide for the construction, complete in every detail, of the work described. The Contractor shall complete the work according to the plans, specifications, and terms of the contract.

2. **Solicitation Instruction and Conditions**

The submittal of a bid does not commit the A. B. Won Pat International Airport Authority, Guam (GIAA) to award a contract or to pay any cost incurred in the preparation of the bid. The Contracting Officer is the only individual who can act on behalf of GIAA to initiate the obligations of GIAA for the expenditure of associated funds for the project.

3. Adjustment of Items

Should extra work be required, should certain work be omitted, or should the quantities of certain items of work be increased or decreased be written order or approval be the Contracting Officer, adjustment in contract price will be made according to Section 16.2.3 of the General Provisions.

4. General

GIAA hereby notifies all bidders that it will affirmatively insure that Small Disadvantaged Business Enterprise will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated on the grounds of race, color, sex or national origin in consideration for an award.

GIAA reserves the right to reject any or all bids and to waive any imperfection/defects in the bids in the interest if GIAA.

Unless noted elsewhere in the contract documents, the Contractor shall provide and pay for all labor, materials, tools, equipment, water, power, transportation, superintendence, temporary construction of every nature and all other services and facilities necessary to execute, complete and deliver the work within the specified time frame.

5. **Contract Time**

The contract time for this project is 90 calendar days from the issuance of Notice to Proceed. The Contractor is reminded that the contract time is established for a variety of reasons, and GIAA expects delivery of the completed project by the completion date. Any extension in the contract time will be made according to Section 16.2.3 of the General Provisions.

Liquidated Damages 6.

It is understood and agreed that the liquidated damages will be assessed against the Contractor for each calendar day beyond the completion date of the construction contract. See Section 38 (Liquidated Damages for Delay) of the General Provisions.

NOTICE TO BIDDER IFB No. GIAA-C03-FY15 Page 1 of 2

7. **Progress Schedule**

- a. Progress Chart: In accordance with the requirements of the contract, the Contractor shall prepare and submit to the Contracting Officer for approval, a construction schedule. The Contractor shall update the progress chart at monthly intervals or at intervals as directed by the Contracting Officer. The revised chart shall reflect all changes occurring since the last updating and shall be submitted to the Contracting Officer for review and approval. In addition, if the project is behind schedule, the Contractor shall submit a narrative report describing the problem areas and an explanation of corrective measures taken or proposed to complete the project with contract time.
- b. Network System: The Contractor shall use the Critical Path Method (CPM) and/or the Program Evaluation and Reporting Technique (PERT) for the construction scheduling.

8. Maintenance

The Contractor is responsible of all maintenance including the traffic and roadway within the construction and or grading limits from the date of Notice to Proceed until final acceptance of the project.

9. Penalty for Fraud, Bribery and Other Violations

The Bidder is cautioned to carefully observe local and federal statutes and regulations involving fraud, bribery, and other violations regarding procurement of contracts and construction with the Government. The Bidder is advised to take special note of the criminal penalties concerning said violations.

END NOTICE TO BIDDER

NOTICE TO BIDDER IFB No. GIAA-C03-FY15 Page 2 of 2

SPECIAL REMINDER TO PROSPECTIVE BIDDERS

Bidders are reminded to read the Invitation for Bid and Bid Documents to ascertain that all the following requirements of the bid are submitted in the sealed bid envelope on or before the Bid Submission Deadline set forth in the Schedule of Events.

- 1. Bid Form
- 2. Bid Schedule.
- 3. *Bid Guarantee* in the form of cashier's check or certified check made payable to A.B. Won Pat International Airport Authority, Guam or Bid Bond. Bid bond, to be valid, must be accompanied by:
 - a. Current certificate of authority of the Surety issued by the Insurance Commissioner, Department of Revenue and Taxation, Government of Guam.
 - b. Power of Attorney issued by the Surety to the Resident General Agent.
 - c. Power of Attorney issued by two (2) major officers of the surety to whoever is signing on their behalf.
- 4. Affidavit Disclosing Ownership and Commissions.
 - a. As a condition of bidding, any partnership, sole proprietorship or corporation doing business with the Government of Guam, shall submit an affidavit executed under oath that lists the name and address of any person who has held more than ten percent (10%) of the outstanding interest or share in said partnership, sole proprietorship or corporation at any time during the twelve (12) month period immediately preceding submission of bid. The affidavit shall contain the number of shares or the percentage of all assets of such partnership, sole proprietorship or corporation held by each person at any time during the twelve (12) month period of such ownership. In addition, the affidavit shall contain the name and address of any person who has received or is entitled to receive a commission, gratuity or other compensation for the procuring or assisting in obtaining business related to the bid for the bidder and shall contain the amount of any such commission, gratuity or other compensation. This affidavit shall be open and available to the public for inspection and copying.
 - b. Failure by any bidder to submit the Affidavit Disclosing Ownership and Commissions on the form furnished by GIAA shall result in the disqualification of its bid.
- 5. Affidavit Regarding Non-Collusion Affidavit. The Affidavit Regarding Non-Collusion furnished by GIAA as part of the bid documents must be completed, signed and submitted in the bid envelope together with the bid.
- 6. Affidavit Regarding No Gratuities or Kickbacks. The Affidavit Regarding No Gratuities or Kickbacks Form furnished by GIAA as part of the bid documents must be completed, signed and submitted in the bid envelope together with the bid.
- 7. Affidavit Regarding Contingent Fees. The Affidavit Regarding Contingent Fees Form furnished by GIAA as part of the bid documents must be completed, signed and submitted in the bid envelope together with the bid.

- 8. Affidavit Regarding Ethical Standards Affidavit. The Affidavit Regarding Ethical Standards Affidavit Form furnished by GIAA as part of the bid documents must be completed, signed and submitted in the bid envelope together with the bid.
- 9. Declaration Regarding Compliance with U.S. DOL Wage and Benefits Determination and the most recent wage determination applicable to Guam issued by the U.S. Department of Labor. The Declaration Regarding Compliance with U.S. DOL Wage and Benefits Determination Form furnished by GIAA as part of the bid documents must be completed, signed and submitted in the bid envelope together with the bid. The most recent wage determination applicable to Guam issued by the U.S. Department of Labor must be attached to the Declaration.
- 10. *Notice of Nonsegregated Facilities*. This form must be completed, signed, and submitted in the bid envelope together with the bid.
- 11. *Certification of Non-Segregated Facilities (Contractors/Subcontractors)*. This certification must be completed, signed, and submitted in the bid envelope together with the bid.
- 12. *Designation of Subcontractors*. This designation must be completed, signed, and submitted in the bid envelope together with the bid.
- 13. *Bidder's Qualification Statement*. This statement along with Resumes of identified key personnel must be completed, signed, and submitted in the bid envelope together with the bid.
- 14. *Bidder's Financial Statement*. This statement must be completed, signed and submitted in the bid envelope together with the bid.
- 15. *Certificate Concerning Foreign Trade Restriction*. This certification must be completed, signed, and submitted in the bid envelope together with the bid.
- 16. *Certification Regarding Debarment and Suspension*. This certification must be completed, signed, and submitted in the bid envelope together with the bid.
- 17. *Certification Regarding Lobbying and Influencing Employees*. This certification must be completed, signed, and submitted in the bid envelope together with the bid.
- 18. *Certificate of Buy American Compliance for Total Facility*. This certification must be completed, signed, and submitted in the bid envelope together with the bid.
- 19. *Grant Assurance Form Compliance with Nondiscrimination Requirements.* This form must be completed, signed and submitted in the bid envelope together with the bid.
- 20. *Notice of Requirement for Affirmative Action*. This form must be completed, signed, and submitted in the bid envelope together with the bid.
- 21. *Title IV Solicitation Notice*. This form must be completed, signed and submitted in the bid envelope together with the bid.
- 22. *Title IV List of Pertinent Nondiscrimination Authorities*. This form must be completed, signed and submitted in the bid envelope together with the bid.

23.	Others: Copy of valid Contractor's license, including GCL Classification C11 (Demolition) and C68 (Lead and Asbestos Abatement). If scope of work for demolition and lead/asbestos abatement is to be sub-contracted, submit copy of sub-contractor's license for C11 and C68.
	s Special Reminder to Prospective Bidders must be signed and returned in the envelope containing the Failure to comply with the above requirements will mean disqualification and rejection of the
RE	(print name), authorized representative of (name of bidder) acknowledge receipt of this special inder to prospective bidders, together with Bid Documents for DEMOLITION AND MEDIATION OF VARIOUS AIRPORT FACILITIES – PHASE 3, GIAA Project No. GIAA-
FY:	12-01-5, AIP No. 3-66-0001-81 & 82, IFB No. GIAA-C01-FY14, thisday of
BID	DER REPRESENTATIVE'S SIGNATURE
Nan	ne:
Titl	2:

THIS DOCUMENT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID

BID FORM

	Date:
То:	Executive Manager A.B. Won Pat International Airport Authority, Guam ("GIAA") Tamuning, Guam 96931
Gentle	men:
(CORI under	PORATION, LLC, PARTNERSHIP, JV, INDIVIDUAL) organized and/or licensed to do business the laws of Guam, hereby proposes and agrees to furnish all necessary labor materials, equipment, and services required for the construction of the:
	AIRPORT RESTROOM RENOVATIONS IFB NO. GIAA-C03-FY15 GIAA PROJECT NO. GIAA-FY15-02-1
	accordance with the drawings, specifications prepared for GIAA by Tanaguichi Ruth Makio ects, and other Contract Documents prepared for and/or by GIAA for the:
Total 1	Bid Price of:

The amounts stated above are the sum of the net prices as set forth in the attached Bid Schedule. These prices are to cover all costs and expenses incurred in performing the work required under the Contract Documents of which this Bid is a part.

The Bidder declares that it has carefully and thoroughly examined the location of and conditions at the site of the proposed work, the drawings, specifications and other contract documents and is familiar with the nature and extent of the work that is to be performed.

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within ninety (90) days after the opening thereof, the Bidder agrees to execute the form of agreement (Formal contract) included as one of the contract documents, and to furnish a performance bond and a payment bond each in an amount equal to one hundred percent (100%) of the contract amount within ten (10) calendar days after.

The Bid Guaranty enclosed herewith, without endorsement, in the sum of not less than fifteen percent (15%) of the amount of the bid, is furnished to GIAA as a guarantee that the contract will be executed and a performance and a payment bond will be furnished within ten (10) calendar days after Bidder's receipt of notice from GIAA of acceptance of its bid. In the event that this bid is accepted, and the Bidder shall fail to execute the contract and furnish a satisfactory performance and payment bond under the conditions and within the time specified in the IFB, the Bid Guaranty shall be forfeited as liquidated damages for the delay and additional work and costs caused thereby in obtaining another bidder, said amount being beforehand determined as reasonable and containing no penalties.

BID FORM
430953_2 (Bid Form)

IFB No. GIAA-C03-FY15
Page 1 of 3

The undersigned hereby acknowledges receipt of the following addenda (attach additional sheets if necessary):

ADDENDUM NO.	DATE

If awarded the contract, the undersigned agrees to complete specific items of work at earlier dates as stated and the entire work within the specified calendar days of the commencement of the contract time as defined in the Contract Documents.

The undersigned understands that GIAA reserves the right to reject any or all bids or to waive any informality or technicality in any proposal in the interest of GIAA.

Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion: The Bidder certifies, by submission of this bid or acceptance of the Contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any government of Guam or federal department or agency. Bidder further agrees by submitting this bid that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the Bidder or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this bid.

RESPECTFULLY SUBMITTED,

Type of Organization (corporation, partnership, sole proprietorship, other):	
Name of Individual Firm Members:	
Date:	
Bidder Name:	
Authorized Representative Signature:	
Print Name of Authorized Representative:	
Title of Authorized Representative:	

BID FORM

430953_2 (Bid Form)

Page 2 of 3

Mailing Address:	
Physical Address:	
Telephone:	
Guam Contractor's License	
No. and Expiration Date	
(attach copy):	

If Bidder is a CORPORATION, the legal name of the corporation shall be set forth above, together with the signature(s) of the Officer(s) authorized to sign contracts on behalf of the corporation. Please attach to this page evidence of the authority of the Officer(s) to sign on behalf of the corporation.

If bidder is a PARTNERSHIP, the true name of the firm shall be set forth above, together with the signature(s) of the partner(s) authorized to sign on behalf of the partnership.

If bidder is an INDIVIDUAL, his signature shall be placed above.

If signature is by an agent, other than an officer of a corporation or member of a partnership, a POWER OF ATTORNEY must be on file with the Authority GIAA prior to the opening of the bid or submitted with the bids; otherwise, the bid may be rejected as irregular and unauthorized.

BID FORM IFB No. GIAA-C03-FY15 430953_2 (Bid Form) Page 3 of 3

BID SCHEDULE

Pay Item Number	Description	Est. Qty	Unit	Unit Cost	Total Cost
	Renovation of Restrooms shown in Construction Documents.	1	LS		
Total Bid Amount					
Total Bid An	nount in Words:				

- a. The successful contractor shall submit a schedule of values for all lump sum cost shown in the bid schedule to be used for progress of payment.
- b. The quantities shown in the Bid Schedules are estimated quantities. The contractor shall be paid for the actual work completed and accepted by the Contracting Officer.

INSTRUCTIONS FOR BID BOND

Notice to all bidders:

- 1. If bidder elects to provide its bid security in the form of a bid bond, the form on the following page must be executed and returned in the sealed envelope containing the bid.
- 2. A bid bond, submitted as bid security, without signatures and supporting documents is invalid and the accompanying price bid will be rejected.

Notice to all Insurance and Bonding Institutions:

This Bond requires the signatures of the Bidder, two (2) major Officers of the Surety and Resident General Agent, if the Surety is a foreign or alien surety.

When the form is submitted to the A.B. Won Pat International Airport Authority, Guam, it should be accompanied with copies of all of the following:

- 1. Surety's current Certificate of Authority to do business on Guam issued by the Department of Revenue and Taxation.
- 2. Power of Attorney issued by the Surety to the Resident General Agent.
- 3. Power of Attorney issued by two (2) major officers of the Surety to whomever is signing on their behalf.

A Bond, submitted as Bid Guarantee, without signatures and supporting documents is invalid and bids will be rejected.

BID BOND IFB No. GIAA-C03-FY15 Page 1 of 3

BID BOND

KNOW ALL MEN BY	THESE PRESENTS that
as Principal (bidder) (h	ereinafter called the "Principal"), and
as Surety (Bonding Co	empany), duly authorized to transact business under the laws of Guam, as Surety
(hereinafter called "Su	rety"), are held and firmly bound unto the A.B. Won Pat International Airpor
Authority Guam (here	nafter called the "Authority"), in the penal sum of
Aumonty, Quam (note	manter canculate. Authority), in the penal sum of
Authority, Guain (here	mater caned the Authority), in the penal sum of
Dollars (\$	
Dollars (\$truly be made, we, the), lawful money of the United States, for the payment of which sum will and

WHEREAS, the Principal has submitted the accompanying bid for:

AIRPORT RESTROOM RENOVATIONS IFB NO. GIAA-C03-FY15 GIAA PROJECT NO. GIAA-FY15-02-1 (the "IFB")

NOW THEREFORE, if the Authority shall accept the bid of the Principal, and Principal shall not withdraw said bid within ninety (90) calendar days after the scheduled deadline for the submission of bids, and shall within ten (10) calendar days of receipt of notice of acceptance of said bid, or such further time as may be allowed in writing by the Authority, enter into a written contract with the Authority in accordance with the terms of such bid and the form contract included as part of the abovereferenced IFB, and give such bond or bonds as may be specified in the IFB or Contract Documents with good and sufficient surety for the faithful performance and proper fulfillment of such Contract and for prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter into such Contract and give such bond or bonds within the time specified, if the Principal shall pay the Authority the difference not to exceed the penalty hereof between the amounts specified in said bid and such larger amount for which the Authority may in good faith contract with another party to perform work covered by said bid or an appropriate liquidated amount as specified in the bid documents, then this obligation shall be null and void, otherwise to remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

BID BOND IFB No. GIAA-C03-FY15 Page 2 of 3

Signe	ed and sealed this day of	, 201
(WITNESS)	(SEAL)	(PRINCIPAL)
(TITLE)	<u> </u>	
(MAJOR OFFICER OF SURETY)	(MAJOR OFFICER OF SURETY)	(RESIDENT GENERAL AGENT)
(TITLE)	(TITLE)	

IF CONTRACTOR ELECTS TO PROVIDE A BID BOND AS BID GUARANTEE, THIS FORM MUST BE EXECUTED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

BID BOND IFB No. GIAA-C03-FY15 430955_2 (Bid Bond) Page 3 of 3

:	AFFIDAVIT DI	SCLOSING OWNERS	SHIP and COMM	<u>IISSIONS</u>
CITY OF		SS.		
A. representative	_	ed, being first duly sword that [please check onl	-	that I am an authorized
interest in the	[] The offe offering business		ole proprietor and	owns the entire (100%)
	known a compani the shar immedia	as [please state name es, partners, or joint ve es or interest in the	of offeror componenturers who have offering business	venture, or association <i>any</i>], and the persons, held more than 10% of during the 365 days proposal are as follows
<u>Name</u>		<u>Address</u>		% of Interest
	gratuity or other	compensation for pro-	curing or assisting	re entitled to receive a g in obtaining business follows [if none, please
<u>Name</u>		Address		% of Interest
	ade and the time	an award is made or	a contract is enter	e between the time this red into, then I promise ring another affidavit to
the governmen	-	1	5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	

[SIGNATURE PAGE FOLLOWS]

	Signature of one of the following: Offeror, if the offeror is an individual; Partner, if the offeror is a partnership; Officer, if the offeror is a corporation.			
Subscribed and sworn to before me thisday of, 20				
NOTARY PUBLIC My commission expires:				
[SIGNATURE PAGE FOR AFFIDAVIT D	ISCLOSING OWNERSHIP AND COMMISSIONS]			
THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID				

AFFIDAVIT REGARDING NON-COLLUSION CITY OF [state name of affiant signing below], being first duly sworn, deposes and says that: 1. The name of the offering company or individual is [state name of company] 2. The proposal for the solicitation identified above is genuine and not collusive or a sham. The offeror has not colluded, conspired, connived or agreed, directly or indirectly, with any other offeror or person, to put in a sham proposal or to refrain from making an offer. The offeror has not in any manner, directly or indirectly, sought by an agreement or collusion, or communication or conference, with any person to fix the proposal price of offeror or of any other offeror, or to fix any overhead, profit or cost element of said proposal price, or of that of any other offeror, or to secure any advantage against the government of Guam or any other offeror, or to secure any advantage against the government of Guam or any person interested in the proposed contract. All statements in this affidavit and in the proposal are true to the best of the knowledge of the undersigned. This statement is made pursuant to 2 GAR Division 4 § 3126(b). 3. I make this statement on behalf of myself as a representative of the offeror, and on behalf of the offeror's officers, representatives, agents, subcontractors, and employees. Signature of one of the following: Offeror, if the offeror is an individual Partner, if the offeror is a partnership: Officer, if the offeror is a corporation. Subscribed and sworn to before me this day of , 20 . NOTARY PUBLIC

THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID

My commission expires:

AFFIDAVIT REGARDING NO GRATUITIES OR KICKBACKS

CITY OF)	
)ss.	
)	
1.		r individual is [state name of offeror]
partner of the	offeror, an officer of the offeror] r	[state one of the following: the offeror, a making the foregoing identified bid or proposal.
gratuities and	s, agents, subcontractors, or empl kickbacks set forth in 2 GAR Div	ledge, neither affiant, nor any of the offeror's officers, oyees have violated, are violating the prohibition against rision 4 § 11107(e). Further, affiant promises, on behalf of atuities and kickbacks as set forth in 2 GAR Division 4 §
government o	es, agents, subcontractors, or en	ledge, neither affiant, nor any of the offeror's officers, imployees have offered, given or agreed to give, any rimment employee, any payment, gift, kickback, gratuity or eror's proposal.
4. behalf of the o		half of myself as a representative of the offeror, and on agents, subcontractors, and employees.
		Signature of one of the following:
		Offeror, if the offeror is an individual: Partner, if the offeror is a partnership; Officer, if the offeror is a corporation.
	nd sworn to before me this of, 20	
NOTARY PU My commission		

THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE **CONTAINING THE BID**

AFFIDAVIT REGARDING CONTINGENT FEES				
CITY OF) ss)				
[state name of affiant signing below], being first duly sworn, deposes and says that:				
1. The name of the offering company or individual is [state name of company]				
2. As a part of the offering company's bid, to the best of my knowledge, the offering company has not retained any person or agency on a percentage, commission, or other contingent arrangement to secure this contract. This statement is made pursuant to 2 GAR Division 4 11108(f).				
3. As a part of the offering company's bid, to the best of my knowledge, the offering company has not retained a person to solicit or secure a contract with the government of Guam upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business. This statement is made pursuant to 2 GAR Division 4 11108(h).				
4. I make these statements on behalf of myself as a representative of the offeror, and on behalf of the offeror's officers, representatives, agents, subcontractors, and employees.				
Signature of one of the following: Offeror, if the offeror is an individual; Partner, if the offeror is a partnership; Officer, if the offeror is a corporation.				
Subscribed and sworn to before me thisday of, 20				
NOTARY PUBLIC My commission expires:				

THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID

AFFIDAVIT REGARDING ETHICAL STANDARDS

CITY OF)	
)ss.	
)	
	_[state name of affiant signing below], being first
duly sworn, deposes and says that:	
The affiant is	[state one of the following: the of the offeror] making the foregoing identified bid. To
_	affiant nor any officers, representatives, agents,
- ·	we knowingly influenced any government of Guam
	andards set forth in 5 GCA Chapter 5, Article 11.
<u>-</u>	e or she, nor any officer, representative, agent,
	ill knowingly influence any government of Guam
	s set forth in 5 GCA Chapter, Article 11. These
statements are made pursuant to 2 GAR Div	vision 4 § 11103(b).
	Signature of one of the following:
	Offeror, if the offeror is an individual;
	Partner, if the offeror is a partnership;
	Officer, if the offeror is a corporation.
Subscribed and sworn to before me this	
day of, 20	_
NOTA DIV DUDI IC	
NOTARY PUBLIC	
My commission expires:	

THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID

DECLARATION RE COMPLIANCE WITH U.S. DOL WAGE DETERMINATION

Procurement No.:
Name of Offeror Company:
I, hereby certify under penalty of perjury:
(1) That I am [please select one: the offeror, a partner of the offeror, an officer of the offeror] making the bid or proposal in the foregoing identified procurement;
(2) That I have read and understand the provisions of 5 GCA § 5801 and § 5802 which read:
§ 5801. Wage Determination Established.
In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation ("contractor") for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam.
The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply.
§ 5802. Benefits.
In addition to the Wage Determination detailed in this Article, any contract to which this Article applies shall also contain provisions mandating health and similar benefits for employees covered by this Article, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.
(3) That the offeror is in full compliance with 5 GCA § 5801 and § 5802, as may be applicable to the procurement referenced herein;
(4) That I have attached the most recent wage determination applicable to Guam issued by the U.S. Department of Labor. [INSTRUCTIONS - Please attach!]
AG 12-0198 AG Procurement Form 006 (Feb. 16, 2010) April 10, 2012

THIS DECLARATION MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

General Decision Number: GU140001 01/03/2014 GU1

Superseded General Decision Number: GU20130001

State: Guam

Construction Types: Building, Heavy, Highway and Residential

(Excludes any projects funded under the National Defense Authorization Act 2010 - Guam Realignment Fund - Defense Policy Review Initiative)

County: Guam Statewide.

BUILDING, HEAVY, HIGHWAY AND RESIDENTIAL

Modification Number Publication Date 0 01/03/2014

SUGU2010-001 09/20/2010

	Rates	Fringes
BRICKLAYER\$	14.02	
CARPENTER\$	13.56	
Cement mason\$	12.87	
Electrician\$	15.45	
Heavy Equipment Mechanic\$	14.14	
Heavy Equipment Operator\$	13.77	
IRONWORKER Reinforcing\$ Structural\$		
PAINTER\$	14.60	
Pipefitters\$	16.80	
PLASTERER\$	10.98	
PLUMBER\$	14.96	
REFRIGERATION MECHANIC including Heating, Air Conditioning (HVAC) Mechanic work\$	15.73	
SHEETMETAL WORKER\$	15.17	
WELDER\$	16.09	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates,

LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an

interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

CERTIFICATE CONCERNING FOREIGN TRADE RESTRICTION

The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
- c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY

(Buildings such as Terminal, SRE, ARFF, etc.)

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC \S 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (\checkmark) or the letter "X".

☐Bidder or offeror hereby certifies that it will comply with 49 USC. 50101 by:

- a) Only installing steel and manufactured products produced in the United States; or
- b) Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
- c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- 1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
- 2. To faithfully comply with providing US domestic products
- 3. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:
 - 1. To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
 - 2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may results in rejection of the proposal.
 - 3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
 - 4. To furnish US domestic product for any waiver request that the FAA rejects.
 - 5. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 3 Waiver - The cost of components and subcomponents produced in the United States is more that 60% of the cost of all components and subcomponents of the "facility". The required documentation for a type 3 waiver is:

- a) Listing of all manufactured products that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety)
- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at project location.
- c) Percentage of non-domestic component and subcomponent cost as compared to total "facility" component and subcomponent costs, excluding labor costs associated with final assembly and installation at project location.

Type 4 Waiver – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

- a) Detailed cost information for total project using US domestic product
- b) Detailed cost information for total project using non-domestic product

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Bidder Name: _		
By:	 	
Name:		
Title:		
Date:		

THIS CERTIFICATION MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

NOTICE OF NONSEGREGATED FACILITIES REQUIREMENT

Notice to Prospective Federally Assisted Construction Contractors

- 1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
- 2. Contractors receiving federally-assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause.
- 3. The penalty for making false statements in offers is prescribed in 18 USC § 1001.

Notice to Prospective Subcontractors of Requirements for Certification of Non-Segregated Facilities

- 1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a subcontract exceeding \$10,000, which is not exempt from the provisions of the Equal Opportunity Clause.
- 2. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause.
- 3. The penalty for making false statements in offers is prescribed in 18 USC § 1001.

Bidder Name:	 	 	
By:			
Name:			
Title:			
Dotor			

THIS NOTICE MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION

- 1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
- 2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:
 - A. Timetables
 - B. Goals for minority participation for each trade (Vol. 45 Federal Register pg. 65984 10/3/80)
 - C. Goals for female participation in each trade (6.9%)

These goals are applicable to all of the contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor is also subject to the goals for both federally funded and non-federally funded construction regardless of the percentage of federal participation in funding.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training shall be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project, for the sole purpose of meeting the contractor's goals, shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

- 3. The contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs (OFCCP), within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of subcontract; and the geographical area in which the subcontract is to be performed.
- 4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is [insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any].

AFFIRMATIVE ACTION PLAN.

The Department of Labor is responsible for administering the Executive Order 11246, which contains requirements for an Affirmative Action Plan. This Plan is similar in content and requirements to the

affirmative action plan required in 49 CFR Part 152 subpart e. 49 C under the Airport Development Aid Program, which was replaced by	
Bidder Name:	
By: Name:	
Title:	
Date:	

DESIGNATION OF SUBCONTRACTORS

The undersigned Bidder has set forth below, the name and location of the place of business of each Subcontractor who will perform work or labor or render service to the Undersigned in or about the construction of the work, and each Subcontractor who, under subcontract, will specially fabricate and install a portion of the work or improvement according to detailed drawings contained in the plans and specifications for such work to be performed under the project documents to which the attached Bid is responsible, and the portion of the work which will be done by each Subcontractor and for each subcontract in excess of one-half of one percent of the Undersigned's total aggregate bid.

Name	Address	Telephone No.	Division of Work
Bidder Name:	:		
By:			
Name:			
Title:			
Date:			

THIS STATEMENT MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

BIDDER'S FINANCIAL STATEMENT

Bidders must submit this Financial Statement covering their most recently completed full fiscal year with their sealed bids. Failure to do so may result in the bidder being determined non-responsive whereby the bidder may be disqualified. Bidders may designate this statement as confidential.

Name of Bidder:				
Current Assets	\$			
Fixed Assets (Depreciated)	\$			
Other Assets	\$			
TOTAL ASSETS	\$			
Current Liabilities	\$			
Long Term Liabilities	\$			
TOTAL LIABILITIES	\$			
NET WORTH	\$			
Prepared by (Name and Title):				
I declare under penalty of perjury my knowledge and belief.	that the foregoing	information	is true and co	orrect to the best of
Bidder Name:				
By:				
Name:				
Title:				
Doto				

Bidder Information

1.

BIDDER'S QUALIFICATION STATEMENT

Bidders must submit this Bidder Qualification Statement with their sealed bids. Failure to do so may result in the bidder being determined non-responsive whereby the bidder may be disqualified.

Name	e of Bidder:	
Addr	ress:	
Point	t of Contact:	
	Name:	
	Address:	
	Email:	
	Phone No.:	
	Fax No.:	
2.	Company Overview	
	e of firm. State whether offeror is a corporation, partnership, sole proprietorship, are, etc.	joint
	de a certificate of good standing from the state or territory of formation.	
	firm established . Indicate the number of years bidder has been in business under nt business name:	er its
	r firm names. Indicate all other names by which offeror has been known and the leng known by each name:	th of

Participating branch offices . If applicable, state the branch offices that will participate in conduct of any services provided (office name and address). If not applicable, please so indicate the branch offices are serviced to the branch offices are the branch offices.	
Number of Employees . Indicate the number of full-time personnel employed by the bidde the last twelve (12) months:	er in

3. **Experience of Offeror**

Client list and work. Provide the following information for current projects in progress and typical projects within the last five years:

Year	Name of Project	Owner	Location and Project Scope. State whether prime contractor or subcontractor	

Project Manager. The Project Manager will be the primary point of contact for the services provided under the contract. The Project Manager shall possess the following qualifications: hands-on management skills, strong leadership skills, great interpersonal skills, demonstrated full-time experience as a project manager on similar projects or on projects; demonstrated technical competency; superb aptitude for teamwork; ability to manage and work with multi-disciplinary teams; outstanding communication skills, oral and written; excellent organization skills; excellent record keeping ability; demonstrated ability to adhere to project budget; demonstrated ability to adhere to project schedule.

a.	Identify the proposed Project Manager:

- i. Provide his/her resume with the sealed bid
- ii. Explain why this person has been selected as Project Manager. Information provided should substantiate the required qualifications delineated above.

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Key Personnel. Provide the name(s), resumes, and the role of each key personnel assigned to perform the services under this IFB. Present an organizational chart identifying the relationships and duties of both the corporate staff and all proposed management and staff to be assigned to assist with the services under this IFB.

Name	Role

4. **References**

Bidder shall provide a minimum of three (3) references, to include references to which offeror has provided services similar to those solicited in this IFB. The references may include government agencies to whom the offeror, preferably within the last five (5) years, has provided services. These references may be contacted to verify offeror's ability to perform the contract. GIAA reserves the right to use any information or additional references deemed necessary to establish the ability of the offeror to perform the conditions of the contract. Negative references may result in the bidder being determined non-responsible whereby the bidder will be disqualified.

Reference Name	Contact Person Name,	Description of services provided/date services	
	phone number, email	provide/statement whether project was	
	address	completed within budget and on schedule	

5. Qualification to	do Business	
		m at the time of submission of the priced bids. d a copy of the required contractor's license(s).
6. Other matters.		
Affirmative Action. I	•	lished and implemented an Affirmative Action
[] Yes	[] No	
public or private party	•	or historical engagement or relationships with any create a conflict of interest with GIAA, the rumentalities?
[] Yes	[] No	
If yes, pl	ease provide further expl	anation on a separate sheet.
Contracts. Have you a	t any time failed to comp	lete a contract?
[] Yes	[] No	
If yes, pl	ease provide further expl	anation on a separate sheet.
Lawsuits. Are there an	y judgments, claims, or s	uits pending or outstanding against you?
[] Yes	[] No	

Bidder is submitting the information requested with the understanding that it is for GIAA's use only to assist in determining whether the bidder is a responsible bidder and qualified to perform the type and magnitude of the work solicited. All references named herein, or any other person, firm, or corporation with whom bidder has done business, or who has extended credit to bidder,

If yes, please provide further explanation on a separate sheet.

is hereby authorized to furnish to GIAA any information GIAA may request concerning bidder, including, but not limited to, information concerning performance on previous work or credit standing. Bidder hereby releases any and all such parties from any legal responsibility of having furnished such information to GIAA.

I declare under penalty of perjury that the foregoing information is true and correct to the best of my knowledge and belief.

THIS CERTIFICATION MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

CERTIFICATE REGARDING DEBARMENT AND SUSPENSION (BIDDER OR OFFEROR)

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

CERTIFICATION REGARDING DEBARMENT AND SUSPENSION (SUCCESSFUL BIDDER REGARDING LOWER TIER PARTICIPANTS)

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

- 1. Checking the System for Award Management at website: http://www.sam.gov
- 2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
- 3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the FAA later determines that a lower tier participant failed to tell a higher tier that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedy, including suspension and debarment.

Bidder 1	Name:	 	
By:			
Name: _			
Title:			
Date:			

THIS CERTIFICATE MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

<u>CERTIFICATION REGARDING LOBBYING</u> AND INFLUENCING FEDERAL EMPLOYEES

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the bidder or offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Bidder N	ame:	 	
By:			
Name:			
Title:			
Date:			

THIS CERTIFICATE MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

GRANT ASSURANCE FORM STANDARD DOT TITLE VI ASSURANCES

CONTRACTOR CONTRACTUAL REQUIREMENTS

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

- A. <u>Compliance with Regulations</u>. The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- B. <u>Nondiscrimination</u>. The contractor, with regard to the work performed by its during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurement of subcontractors, including procurement of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract cover a program set forth in Appendix B of the Regulations.
- C. <u>Solicitations for Subcontracts. Including Procurement of Materials and Equipment</u>. In all notifications either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurement of materials and leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- D. <u>Information and Reports.</u> The contractor shall provide all information and reports required by the Regulations or directive issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall certify to the sponsor or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.
- E. <u>Sanctions for Noncompliance</u>. In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:
 - 1. Withholding of payments to the contractor under the contract until the contractor complies, and/or
 - 2. Cancellation, termination, or suspension of the contract, in whole or in part.

F. <u>Incorporation of Provisions</u>. The contractor shall include the provisions of paragraph 1 through 5 in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contract becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Bidder Name: _	 	
By:		
Name:		
Title:		
Date:		

THIS ASSURANCE FORM MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

TITLE VI SOLICITATION NOTICE

A.B. Won Pat International Airport Authority, Guam, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Bidder	Name:	 	
By:			
Name:			
Title: _			
Date:			

THIS ASSURANCE FORM MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

TITLE IV LIST OF PERTINENT NONDISCRIMINATION AUTHORITIES

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

• Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Bidder Name:		
By:	 	
Name:		
Title:		
Date:		

THIS ASSURANCE FORM MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.

<u>CERTIFICATION OF NONSEGREGATED FACILITIES</u> <u>(CONTRACTORS/SUBCONTRACTORS)</u>

(A Certification of Non-Segregated Facilities must be submitted prior to the award of a contract or subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause).

The federally assisted construction contractor certifies that she or he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives, or are, in fact, segregated on the basis of race, color, religion, sex or national origin, because of habit, local custom, or any other reason. The federally assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that she or he will retain such certifications in his files.

Certification: The information above is true and complete to the best of my knowledge and belief.

Bidder Name:	 	
By:	 	
Name:		
Title:		
L)ate.		
Title: Date:		

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

THIS CERTIFICATION MUST BE COMPLETED AND RETURNED IN THE ENVELOPE CONTAINING THE BID.



ANTONIO B. WON PAT INTERNATIONAL AIRPORT AUTHORITY, GUAM (GIAA)

SECTION B CONTRACT REQUIREMENTS

INVITATION FOR BID IFB NO: GIAA-C03-FY15

AIRPORT RESTROOM RENOVATIONS GIAA PROJECT NO. GIAA-FY15-02-1

PERFORMANCE BOND

BOND NO
KNOW ALL MEN BY THESE PRESENTS that
(here insert full name and address or legal title of Contractor)
a (type of entity) formed under the laws of and
authorized to transact business on Guam, whose address is, herein after called "Contractor," as Principal, and
(Bonding Company)
a (type of entity) duly organized under the laws of and authorized to transact business on Guam, as Surety, hereinafter called
"Surety," are held and firmly bound unto the Antonio B. Won Pat International Airport Authority,
Guam as Obligee, hereinafter called the "Authority," in the amount of Dollars (\$), for the payment
whereof the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
WHEREAS, the Contractor has by written Agreement dated, 20, entered into a Contract with the Authority for the Project Titled:

<u>AIRPORT RESTROOM RENOVATIONS</u> IFB NO. GIAA-C03-FY15, GIAA PROJECT NO. GIAA-FY15-02-1

in accordance with drawings and specifications prepared for the Authority, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly and faithfully perform said Contract then this obligation shall be null and void, otherwise it shall remain in full force and effect. Surety hereby waives notice of any alteration or extension provided the same is within the scope of the Contract. Whenever Contractor shall be and is declared by the Authority to be in default under the Contract, the Authority having performed its obligations thereunder, Surety may promptly remedy the default or shall promptly:

- 1. Complete the Contract in accordance with its terms and conditions; or
- 2. Obtain a bid or bids for submission to the Authority for completing the Contract in accordance with its terms and conditions, and upon determination by the Authority and the Surety jointly of the lowest responsive, responsible bidder, arrange for a contract between such bidder and the Authority, and make available

PERFORMANCE BOND IFB No. GIAA-C03-FY15

SIGNED AND SEALED this

as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph shall mean the total amount payable by the Authority to Contractor under the Contract and any amendments thereto, less the amount properly paid by the Authority to Contractor. No right of action shall accrue on this bond to or for the use of any person or corporation other than the Authority or successors of the Authority.

20

CONTRACTOR:	Witness:
By:	
Name:	Name:
Title:	
	Witness:
By:	_
Name:	Name:
Title:	
SURETY	SURETY
By:	By:
Name:	
Title:	Title:
RESIDENT GENERAL AGENT	
By:	_
Name:	
Title:	_

day of

PERFORMANCE BOND
431059 (Performance Bond)

LABOR AND MATERIAL PAYMENT BOND

BOND NO	
KNOW ALL MEN BY THESE PRESENTS that	
(Name of Contractor) a (type of entity) formed under the laws of	
business on Guam, whose address ishereinafter called "Principal" and	, as Principal,
(BONDING COMPANY)	
a (type of entity) formed under the laws of authorized to transact business on Guam, as Surety, hereinafter called "Surety," unto the Antonio B. Won Pat International Airport Authority, Guam as "Authority," for use and benefit of claimants as herein below defined to Dollars.	' are held and firmly bound Obligee, hereinafter called ned, in the amount of
payment whereof the Principal and Surety bind themselves, their heirs, successors and assigns, jointly and severally, firmly by these presents.	executors, administrators,
WHEREAS, Principal has by written Agreement dated Contract with the Authority for the Project Titled:	, 20, entered into a

AIRPORT RESTROOM RENOVATIONS, IFB NO. GIAA-C03-FY15, GIAA PROJECT NO. GIAA-FY15-02-1

in accordance with drawings and specifications prepared for the Authority, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

- 1. A claimant is defined as one having a direct contract with Principal or with a subcontractor of Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
- 2. Principal and Surety hereby jointly and severally agree with the Authority that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this Bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due

claimant, and have execution thereon. The Authority shall not be liable for the payment of any costs or expenses of any such suit.

- 3. No suit or action shall be commenced hereunder by any claimants:
 - A. Unless claimant, other than one having a direct contract with Principal, shall have given written notice to any two of the following: Principal, the Authority, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, starting with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be personally served or served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Authority or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in Guam in which the aforesaid project is located, save such service need not be made by public officer.
 - B. After the expiration of one (1) year following the date on which the last of the labor was performed or material was supplied by the party bringing suit.
 - C. Other than in a court of competent jurisdiction for the county or district in which the construction contract was to be performed.
 - D. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

, 20
s a partnership, each partner must execute the Bond)
Witness:
Name:Title:
Witness:
Name:Title:

SURETY	SURETY	
By:	By: Name: Title:	
RESIDENT GENERAL AGENT		
By:		
Name:		
Title:		

GENERAL PROVISIONS

1. **DEFINITIONS AND ABBREVIATIONS**

The definitions and abbreviations contained herein are intended to be supplemented and modified by additional and supplemental definitions and abbreviations contained in the Contract Documents. Whenever the following terms are used in these specifications, in the contract, in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows:

- 1.1. **AASHTO.** The American Association of State Highway and Transportation Officials, the successor association to AASHO.
- 1.2. ACCESS ROAD. The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.
- 1.3. ADDENDA. Written or graphic instruments issued prior to the opening of Bids, which clarify, correct or change the bidding documents or the Contract Documents.
- 1.4. ADDITIVE BID ITEM. A Contract item or group of Contract items which are identified separately for pricing and summed together as a total identified as "Additive Bid Item Number 1," "Additive Bid Item Number 2," etc. The evaluation of these items and their relationship to contract award is described in the contract documents. See also the definition of Contract Item.
- 1.5. **ADVERTISEMENT**. A public announcement, as required by local law, inviting bids for work to be performed and material to be furnished.
- AIP. The Airport Improvement Program, a grant-in-aid program, administered by the 1.6. Federal Aviation Administration.
- 1.7. AIRCRAFT PARKING AREA. An area of the airport specifically designated for the parking of aircraft.
- **AIR OPERATIONS AREA.** For the purpose of these specifications, the term air opera-1.8. tions area shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
- 1.9. AIRPORT. Airport means an area of land or water, which is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any.
- 1.10. AIRPORT MANAGER. The Airport Manager of the A.B. Won Pat International Airport Authority, Guam is the Executive Manager, or his authorized representative.
- 1.11. **APPLICATION FOR PAYMENT.** The form accepted by Contracting Officer which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

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- 1.12. APRON. See AIRCRAFT PARKING AREA definition herein.
- **ARCHITECT.** The individual, partnership, firm, or corporation duly authorized by the 1.13. owner (sponsor) to be responsible for architectural supervision of the contract work and acting directly or through an authorized representative.
- 1.14. **ASTM**. The American Society for Testing and Materials.
- 1.15. AUTHORITY. The A.B. Won Pat International Airport Authority, Guam which is the Owner.
- 1.16. **AWARD**. The acceptance, by the owner, of the successful bidder's proposal.
- 1.17. **BID**. The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the work to be performed.
- 1.18. **BIDDER**. Any individual, partnership, firm or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
- 1.19. **BONDS**. Bid, performance and payment bonds and other instruments of security.
- 1.20. **BUILDING AREA**. An area on the airport to be used, considered or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
- 1.21. BY OR TO THE CONTRACTING OFFICER. To avoid cumbersome and confusing repetition of expressions in these specifications, it is provided that whenever anything is or is to be, done, if, as, at, when or where "contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected, or condemned," it shall be understood as if the expression were followed by the words "by the Contracting Officer" or "to the Contracting Officer" unless the context clearly indicates another meaning.
- 1.22. **CALENDAR DAY**. Every day shown on the calendar. Any day shown on the calendar beginning at midnight and ending at midnight the following day. If no designation of calendar or working day is made, "Day" shall mean calendar day.
- 1.23. **CHANGE ORDER.** A written order to the Contractor issued on or after the effective date of the contract covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for the work affected by such changes. The work, covered by a change order, shall be within the scope of the contract.
- 1.24. **CONSTRUCTION MANAGER.** The Construction Manager (CM) is the person or entity identified as such in the Contract Documents and is referred to throughout the Contract Documents as if singular in number. The term "Construction Manager" means the Construction Manager or the Construction Manager's authorized representative.

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- 1.25. CONSTRUCTION REPRESENTATIVE. The Construction Representative duly authorized or appointed by the Contracting Officer with responsibilities limited to the particular duties entrusted to him or them.
- 1.26. **CONTRACT**. The written agreement executed between the Guam International Airport Authority and the successful Bidder covering the work to be performed. The Contract Documents form the Contract for Construction. This Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral, including but not limited to all requests for proposals, bid invitations, bid proposals and bid documents. The Contract may be amended or modified only by a written modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Architect and Contractor, (2) between the Construction Manager and Contractor, (3) between the Architect and Construction Manager, (4) between the Owner and a Subcontractor or Sub-subcontractor or (5) between any persons or entities other than the Owner and Contractor. The Construction Manager shall, however, be entitled to the Contractor's performance and enforcement of the Contractor's obligations under the Contract intended to facilitate performance of their duties.
- 1.27. **CONTRACT ITEM (PAY ITEM).** A specific unit of work for which a price is provided in the contract.
- **CONTRACT NOTICE TO PROCEED.** The specific notice to proceed with the items 1.28. of work upon which the Contractor is expected to start work immediately at the initiation of work on this contract. See also the definitions of NOTICE TO PROCEED and SUPPLEMENTAL NOTICE TO PROCEED.
- 1.29. **CONTRACT TIME.** The number of calendar days stated or implied in the proposal, allowed for completion of the contract, including authorized time extensions. Calendar dates and times for partial completion also stated or implied in the proposal shall be completed within the number of days stated.
- 1.30. **CONTRACTING OFFICER.** The term "Contracting Officer" as used herein means the Executive Manager of the Guam International Airport Authority and shall include his authorized representatives.
- CONTRACTOR. The individual, partnership, firm or corporation primarily liable for 1.31. the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
- **DATES**. Where a date is specified, it shall be the date at Guam. 1.32.
- 1.33. **DAY**. See CALENDAR DAY definition herein.
- 1.34. **DEDUCTIVE BID ITEM.** A contract item or group contract items which are identified separately for pricing and summed together as a total identified as "Deductive Bid Item Number 1," "Deductive Bid Item 2," etc. The evaluation of these items and their relationship to contract award is described in the contract documents. See also the definition of Contract Item.

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- 1.35. **DRAINAGE SYSTEM.** The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
- 1.36. **DRAWINGS**. See PLANS definition herein.
- 1.37. **EFFECTIVE DATE OF THE AGREEMENT.** The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the parties to sign and deliver.
- 1.38. **ENGINEER.** The individual, partnership, firm, or corporation duly authorized by the owner (sponsor) to be responsible for engineering supervision of the contract work and acting directly or through an authorized representative.
- 1.39. **EQUIPMENT.** All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.
- 1.40. **EXTRA WORK.** An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Contracting Officer to be necessary to complete the work within the intended scope of the contract as previously modified.
- FAA. The Federal Aviation Administration of the U.S. Department of Transportation. 1.41. When used to designate a person, FAA shall mean the Administrator or his/her duly authorized representative.
- 1.42. FORMS ENCLOSED. The copies of the form of agreement (Formal Contract), form of bid bond, form of performance bond and form of payment bond enclosed herewith are incorporated in these General Conditions by reference and are made a part hereof to the same extent as though fully set forth herein.
- (FSS) FEDERAL SPECIFICATIONS AND STANDARDS, AND GENERAL 1.43. **SERVICES ADMINISTRATION.** The Federal Specifications and Standards, and supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.
- 1.44. FIELD ORDER. A written order issued by the Contracting Officer which orders minor changes in the work but which does not involve a change in the Contract Price or the Contract Time.
- 1.45. GIAA. The term/abbreviation GIAA shall mean the A.B. Won Pat International Airport Authority, Guam and shall be synonymous with "Owner."
- 1.46. **GOVERNMENT.** The A.B. Won Pat International Airport Authority, Guam which is the Owner, except that the word shall mean Government of Guam or United States Federal Government when such meaning is clear from the usage of the word.
- 1.47. **INSPECTOR.** An authorized representative of the Contracting Officer assigned to make all necessary inspections and/or tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

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- 1.48. **INTENTION OF TERMS.** Whenever, if in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," designated," "prescribed," or words of the like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Contracting Officer is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Contracting Officer, subject in each case to the final determination of the owner.
- 1.49. **LABORATORY**. The Contracting Officer may approve the official testing laboratories of the Contractor or such other laboratories as.
- **LIGHTING.** A system of fixtures providing or controlling the light sources used on or 1.50. near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
- 1.51. MAJOR AND MINOR CONTRACT ITEMS. A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 25 percent of the total amount of the contract award. All other items shall be considered minor contract items.
- 1.52. **MATERIALS**. Any substance specified for use in the construction of the contract work.
- 1.53. MIL SPECIFICATIONS. The Military Specifications and Standards, and indices thereto, are prepared and issued by the Department of Defense.
- 1.54. **NAVAL AIR STATION**. The Naval Air Station, Agana, Guam, also known as Brewer
- 1.55. NOTICE. The term "Notice" as used herein shall mean and include all written notice demands, instructions, claims, approvals and disapprovals required to obtain compliance with contract requirements. Any written notice by either party to the contract shall be sufficiently given if delivered to or at the last known business address of the person, firm, or corporation constituting the other party to the contract, or to his, their, or its duly authorized agent, representative, or officers or when enclosed in a postage prepaid envelope addressed to such last known business address and deposited in a United States mail box. The Contractor must provide and maintain a post office address within the Territory of Guam and file the same with the Contracting Officer.
- **NOTICE OF AWARD.** The written notice by OWNER to the apparent successful bid-1.56. der stating that this bid has been accepted and that, in accordance with the terms of the Bid Proposal and the Contract Documents, the Bidder is required to execute the Contract and furnish satisfactory Performance and Payment Bonds.
- 1.57. **NOTICE TO BIDDERS.** The published advertisement inviting sealed proposals for construction of the work.
- 1.58. **NOTICE TO PROCEED.** A written notice to the Contractor to begin the actual contract work or supplemental work on a previously agreed to date. The Notice to Proceed shall

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- state the date on which the contract or supplemental time begins. See also CONTRACT NOTICE TO PROCEED and SUPPLEMENTAL NOTICE TO PROCEED.
- 1.59. **OFCCP**. The Office of Federal Compliance Programs, Employment Standards Administration. The mailing address is: Box 50149, Honolulu, Hawaii 96850. Telephone: (808) 541 2933.
- 1.60. OFFICER IN CHARGE OF CONSTRUCTION (OICC) (ROICC). Where any of these persons are referred in the specifications they shall mean the Contracting Officer as defined herein.
- OPERATIONS OFFICER. The Operations Officer, Naval Air Station, or the Opera-1.61. tions Officer, Guam International Air Terminal, as appropriate. The entire airfield is under the authority of the Operations Officer, Naval Air Station. The Guam International Air Terminal aprons and Taxiway/Taxilane J is also under the authority of the Operations Officer, Guam International Air Terminal.
- OWNER. The term "Owner" as used herein means the A.B. Won Pat International 1.62. Airport Authority, Guam, and shall include the Governor of Guam, and/or his authorized representatives.
- 1.63. **PAVEMENT.** The combined surface course, base course, and subbase course, if any, considered as a single unit.
- 1.64. **PAYMENT BOND.** The approved form of security furnished by the Contractor and his/her surety as a guaranty that he will pay in full all bills and accounts for materials and labor used in the construction of the work.
- 1.65. **PERFORMANCE BOND.** The approved form of security furnished by the Contractor and his/her surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
- **PLANS.** The official drawings or exact reproductions which show the location, character, 1.66. dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications.
- 1.67. **PROJECT**. The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
- 1.68. **PROPOSAL.** The written offer of the bidder (when submitted on the approved bid form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
- 1.69. **PROPOSAL GUARANTY**. The security furnished with a proposal to guarantee that the bidder will enter into a contract if the owner accepts his/her proposal.
- 1.70. **PROVIDE.** This term specifically means "furnish and install."
- 1.71. QUESTIONNAIRE. The specified forms on which the bidder shall furnish required information as to his ability to perform and finance the work.

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- 1.72. **RESTRICTED WORK AREA**. The area within a designated distance of a runway, taxiway, taxilane or apron. No work may be performed within this area unless the area is closed to aircraft traffic or the contractor meets specific conditions. Additional specific information may be included in the Technical Provisions of the Specifications and on the Plans.
- 1.73. **RUNWAY**. The area on the airport prepared for the landing and takeoff of aircraft.
- 1.74. **SECTION AND SUBSECTION.** Unless otherwise indicated, whenever "Section" or "Subsection" is referred to herein, it shall be understood that reference is being made to these specifications.
- 1.75. SPECIAL PROVISIONS. Specific clauses setting forth conditions or requirements peculiar to the work which modify or supplement the General Conditions, Technical Specifications or other portions of the Contract Documents.
- 1.76. **SPECIFICATIONS.** A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing, which are cited in the contract specifications by reference, shall have same force and effect as if included in the contract physically.
- 1.77. **SPONSOR**. The Guam International Airport Authority.
- 1.78. **STATION**. See NAVAL AIR STATION definition herein.
- 1.79. STRUCTURES. All facilities such as bridges, culverts, catch basins, inlets, retaining walls, cribbing, storm and sanitary sewer lines, water lines, underdrains, electrical ducts, manholes, headwalls, handholes, lighting fixtures and bases, transformers, flexible and rigid pavements, navigational aids, buildings, vaults, and other manmade features that may be encountered in the work and not otherwise classified herein.
- 1.80. **SUBGRADE**. The soil, which forms the pavement foundation.
- SUPERINTENDENT. The Contractor's executive representative who is present on the 1.81. work during progress, authorized to receive and fulfill instructions from the Contracting Officer or his authorized representative, and who shall supervise and direct the construction.
- SUPPLEMENTAL AGREEMENT. A written agreement between the Contractor and the Owner, with the consent of the Contractor's surety, covering: (1) work that would increase or decrease the total amount of the awarded contract, or any major contract item, by more than the percent specified in the Contract Documents, such increased or decreased work being within the scope of the originally awarded contract; or (2) work that is not within the scope of the originally awarded contract.
- 1.83. SUPPLEMENTAL NOTICE TO PROCEED. The specific notice to proceed with the items of work identified in the contract documents as beginning at a later time after the Contract Notice To Proceed. The Contractor is expected to start work immediately on this work and complete it within the time period specified in this contract. See also the definitions of NOTICE TO PROCEED and CONTRACT NOTICE TO PROCEED.

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- 1.84. **SUPPLIER**. A manufacturer, fabricator, supplier, distributor, or vendor.
- SURETY. The corporation, partnership, or individual, other than the Contractor, execut-1.85. ing payment or performance bonds, which are furnished to the owner by the Contractor.
- 1.86. **TAXILANE.** The definition of Taxilane shall be the same as the definition of Taxiway herein.
- 1.87. **TAXIWAY.** For the purpose of this document, the term taxiway means the portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways or between any of the above areas and another taxiway or taxilane or aircraft parking areas.
- 1.88. **TIME**. Where a time is specified, it shall be the time at Guam.
- 1.89. **UNIT PRICE WORK**. Work to be paid for on the basis of unit prices.
- 1.90. **WORK**. The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
- 1.91. **WORKING DAY**. A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the contractor may proceed with regular work for at least 6 hours toward completion of the contract. Unless work is suspended for causes beyond the Contractor's control, Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work, requiring the presence of an inspector, will be considered working days.

2. **COMPLETE AGREEMENT**

This contract, together with all documents, specifications and drawings incorporated herein by reference, constitutes the entire agreement between the Owner and the Contractor, and there are no terms, conditions or provisions, either oral or written, between the parties other than those herein contained, and this contract supersedes any and all oral or written representations, inducement, or understandings of any kind or nature between the parties relating to the work.

3. CONFIDENTIALITY

All drawings, specifications and all other information furnished to the Contractor by Owner or obtained by the Contractor pursuant to its performance of the work under this contract shall be held in confidence by the Contractor and shall not be used by the Contractor for any purpose other than for the performance of the work or as authorized in writing by the Owner. The Contractor acknowledges that all such drawings, specifications and all information gathered by the Contractor in the performance of its work under this subcontract are the property of the Owner. At the completion of the work all such items along with all copies made shall be returned to the owner.

APPROVAL OF CONTRACT 4.

Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the owner shall complete the execution of the contract in accordance with local laws or ordinances, and

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return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the owner's approval to be bound by the successful bidder's proposal and the terms of the contract. The contract documents shall be signed by the Owner and Contractor in as many original counterparts as may be mutually agreed.

5. FEDERAL AID PARTICIPATION

5.1. **U.S. Government Reimbursement**

For AIP contracts, the United States Government has agreed to reimburse the owner for some portion of the contract costs. Such reimbursement is made from time to time upon the owner's (sponsor's) request to the FAA. In consideration of the United States Government's (FAA's) agreement with the owner, if FAA reimbursement is involved the owner has included provisions in this contract pursuant to the requirements of the Airport Improvement Act of 1982, as amended by the Airport and Airway Safety and Capacity Expansion Act of 1987, and the Rules and Regulations of the FAA that pertain to the work, These provisions, if included, are in the section titled "SPECIAL PROVISIONS FOR FAA REIMBURSEMENT PROJECTS."

5.2. Inspection by FAA

As required by the Airport Improvement Act, the contract work is subject to the inspection and approval of duly authorized representatives of the Administrator, FAA, and is further subject to those provisions of the rules and regulations that are cited in the contract, plans, or specifications.

Federal Government Not a Party to the Contract 5.3.

The United States is not a party to this Contract and no reference in this Contract to the Federal Aviation Administration or any representative thereof, or to any rights granted to the Federal Aviation Administration or any representative thereof, or the United States, by this Contract, makes the United States a party to this Contract. No requirement of the Airport Improvement Act, the rules and regulations implementing the Act, or this contract shall be construed as making the Federal Government a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

6. COMMUNICATION

All notices, demands, requests, instructions, approvals, proposals and claims must be in writing. The parties recognize that certain exigent circumstances require that oral instructions be given; under such limited circumstances, the parties shall confirm such oral direction in writing within a reasonable time.

6.1. **Copies of All Forms of Communications**

Contractor shall provide copies of all forms of communications to the Contracting Officer or any of designated representatives either by mail, fax or e-mail.

Delivery of Notice or Demand Upon Contractor 6.2.

Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the job site to the Superintendent or if delivered at the office of the Contractor stated on the signature page of the Formal Contract (or at such other office as the Contractor may from time to time designate in writing to the Contracting Officer), or if deposited in the

IFB No. GIAA-C03-FY15 **General Provisions** Page 9 of 65 United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office.

6.3. Delivery of Papers to Owner or Contracting Officer

All papers required to be delivered to the Owner or to the Contracting Officer shall, unless otherwise specified in writing to the Contractor, be delivered to the A.B. Won Pat International Airport Authority, Guam, P. O. Box 8770, Tamuning, Guam 96931; and any notice to or demand upon the Owner shall be sufficiently given if so delivered, or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said Owner at such address, or to such other representatives of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purpose.

6.4. Time of Delivery of Notice

Any such notice shall be deemed to have been given as of the time of actual delivery or, in the case of mailing, when the same should have been received in due course of post, or in the case of telegrams or facsimiles, at the time of actual receipt, as the case may be.

6.5. **Conditions When This Section is Not Applicable**

This section does not apply to decisions given pursuant to the paragraph herein titled "Disputes."

7. LIST OF SUBCONTRACTORS AND PERSONNEL

Promptly after award of the Contract, the Contractor shall submit to the Contracting Office, in triplicate, a list of his subcontractors and the work each is to perform. The list shall include the names of the key personnel of the Contractor and subcontractors, together with their home addresses and telephone numbers, for use in event of any emergency. From time to time as changes occur and additional information becomes available, the Contractor shall amplify, correct, and change the information contained in previous lists.

8. PRECONSTRUCTION CONFERENCE

After award of the Contract, but prior to commencement of any work at the jobsite, the Contractor shall meet in conference with the Contracting Officer and other duly authorized representatives and officials to discuss and develop mutual understanding relative to the administration of the safety program, labor requirements, the preparation and submission of the schedule of prices, and the scheduling, programming and prosecution of the work, Major subcontractors, who will be engaged in the work, shall also be represented at the preconstruction conference. The preconstruction conference will be held at least 15 days before the effective date of commencement of work set forth in the written "Notice to Proceed."

9. METHODS AND SCHEDULES OF PROCEDURES

The work shall be executed in a manner and at such times that will cause the least practicable disturbance to the occupants of the buildings, the public, and normal activities of the airport. Before starting any work, the sequence of operations and the methods of conducting the work shall have been approved by the Contracting Officer.

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10. PROTECTION OF PROPERTY AND PEOPLE

The Contractor shall be aware of the potential property damage, personal injury or general nuisance, which can be caused by this work, his activities and by operations. Accordingly, the Contractor shall take whatever measures, procedures, and/or precautions which are required to protect facilities and property from damage and people from injury, or from creating a nuisance, and shall accommodate them within or as part of the work under this Contract. The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property (as provided by law and the contract documents) from damage. All passageways, guard fences, lights and other facilities required for protection and safety by Federal or Territorial laws and regulations and local conditions shall be provided and maintained.

11. **BURIED MUNITIONS (ORDINANCE & BOMBS)**

The work site is located in an area where World War II and other munitions (ordinance and bombs) may be unexpectedly unearthed. In the even any such munitions are uncovered, the Contractor shall leave the munitions undisturbed, and shall immediately notify the Contracting Officer through the Engineer of the location of the discovered munitions. The Contractor shall await removal of the munitions by the Owner or notification that the site is safe before resuming normal operations. The Contractor shall not be entitled to an adjustment in the contract price or time extension for any delays resulting from the discovery of munitions that do not exceed 24 hours in duration from the time of the notification of the Contracting Officer until the time the Owner removes the munitions, or otherwise determines the site to be safe.

12. PROGRESS CHARTS, MATERIAL DELIVERY SCHEDULES, AND STANDARD ACCOMPLISHMENT FORM

12.1. **Progress Charts**

The Contractor shall, within 15 days after receipt of Notice to Proceed, prepare and submit to the Contracting Officer for approval, a Critical Path Method (CPM) or Program Evaluation & Reporting Technique (PERT) construction schedule, and Equipment and Manpower Allocation Chart. Charts shall be in AutoCAD 2004 format indicating activities covering the whole project duration. The schedule shall be established and maintained as a weekly progress chart acceptable to the Contracting Officer. Activities shall be identified in sufficient detail to indicate weekly requirements for manpower and critical materials. Sequence of procurement, preparation, installation and completion of all items shall be clearly identified. Work of all subcontractors shall be incorporated in the schedule at a similar level of detail.

12.2. **Material Delivery Schedules**

The Contractor shall, within 21 days after date of Notice to Proceed, submit to the Contracting Officer for approval, a schedule showing the procurement plans for materials, plant and equipment required for the project. The data shall be submitted in the format prescribed by the Contracting Officer and shall include, but not be limited to, the following information:

- Description a.
- Date of purchase order b.
- Promised shipping date c.
- Name of manufacturer and supplier d.
- Date delivery is expected e.

General Provisions IFB No. GIAA-C03-FY15 Page 11 of 65 f. Date material or equipment is required according to current progress schedule or network

12.3. **Updating of Charts**

The Contractor shall update the progress chart and material delivery schedule at monthly intervals or at intervals directed by the Contracting Officer. Updated progress charts and material delivery schedules shall be submitted with each invoice for progress payment. In addition, the Contractor shall submit, if the project is behind schedule, a narrative report describing the problem areas, current and anticipated, delaying factors and their impact, and an explanation of corrective actions taken or proposed to complete the project within the Contract time frame. The progress schedule shall be revised to show a reasonable work schedule, which culminates in the completion of the project within the latest approved Contract time frame.

Work Accomplished Update 12.4.

Contractor shall timely provide a Standard Accomplishment Form (see attached) covering work accomplished for every week. This shall be forwarded to the A/E every Tuesday of each week which should cover the work accomplished for the previous week.

13. **SCHEDULE OF PRICES**

The Contractor shall, within 21 days following notice to commence work, furnish to the Contracting officer a detailed estimate and breakdown of his bid for any lump sum items involving more than one item of construction. This breakdown shall be subject to the approval of the Contracting Officer and shall be used as the basis of making partial payments to the Contractor, and for changes in work as authorized by the Contract. The format to be used shall be subject to approval by the Contracting Officer.

14. STORM PROTECTION

Should warnings of wind of gale force or stronger be issued, the Contractor shall take every practicable precaution to minimize danger to persons, to the work, and to adjacent property. These precautions shall include closing all openings, removing all loose materials, tools and equipment from exposed locations, and removing or securing scaffolding and other temporary work.

15. FIRE PREVENTION DURING CONSTRUCTION

15.1. General

The Contractor shall comply with all pertinent fire prevention requirements of the Department of Fire Protection.

15.2. Coordination

Coordination shall be made by the Contractor on the application of welding permit from ARFF prior to any welding job at the site. Placement of welding equipment and gadget should be coordinated by the Contractor with the tenant supervisor to cause the least interference of their daily operations. Same steps shall govern with any cutting equipment like acetylene tanks and torches.

15.3. **Daily Removal of Combustible Material**

All accumulations of combustible material shall be removed from any building on a daily basis and stored a safe distance from new or existing construction.

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15.4. Storage of Flammable Materials

Gasoline shall be stored in UL or F.M. approved safety containers. Adequate ventilation shall be provided to safely dispose of flammable vapors where flammable liquids are utilized. Gasoline powered equipment shall be refueled outside of buildings.

15.5. Notification of Fire

The Contractor shall be familiar with methods for notifying the fire department and the telephone number for reporting fires shall be posted in conspicuous locations and at telephones in construction shacks.

16. CONSTRUCTION OF CONTRACT

16.1. Contract Documents

- 16.1.1. Contract documents consist of the documents listed in the Formal Contract, including all addenda and alterations made to the documents prior to their execution as defined in the Formal Contract. Coordination of contract, plans, and specifications by the Contractor is required. The contract, plans, specification, and all referenced standards cited are essential parts of the contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work.
- 16.1.2. Anything called for by one of the contract documents and not called for by the others shall be of like effect as if required or called for by all. In case of discrepancies between the contract documents, calculated dimensions will govern over scaled dimensions. The Special Provisions shall take precedence over the General Provisions, specifications and drawings. Contract technical specifications shall govern over contract General and Special Provisions, drawings, cited standards for materials or testing, and cited FAA Advisory Circulars.
- 16.1.3. Any discrepancies between the contract documents shall be called to the attention of the Contracting Officer before proceeding with work affected thereby. The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, he shall immediately call upon the Contracting Officer for his/her interpretation and decision, and such decision shall be final.
- 16.1.4. Where special requirements, special provisions, special specifications or detailed drawings or sketches are attached hereto or are included in the contract they shall be considered a part of these general provisions or the specifications or drawings as fully as if contained herein. Should any special requirements, provisions, specifications or detailed drawings or sketches be in conflict with these general provisions or the specifications or the drawings, said special requirements, provisions, specifications or detailed drawings or sketches shall govern.
- 16.1.5. It will be conclusively presumed that the Contractor has read, examined and agreed to each and every term, condition, provision, covenant or

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agreement in the drawings, specifications, proposals, contract, and bond, related to the work to be carried out, said documents being on file in the office of the Authority, Tamuning, Guam.

16.2. **Changes in the Work**

- 16.2.1. Changes in the Work: The Contracting Officer, at any time, without notice to the sureties by written order designated or indicated to be a change order, make any change in the work within the general scope of the contract, including but not limited to changes:
 - 16.2.1.1. In the specifications (including drawings and designs);
 - 16.2.1.2. In the method or manner of performance of the work;
 - 16.2.1.3. In the Owner-furnished facilities, equipment, materials, services for site:
 - 16.2.1.4. Directing acceleration in the performance of the work.
 - Written or Oral Order: Any other order from the 16.2.1.5. Contracting Officer which causes any change, shall be treated as a change order, provided that the Contractor gives the Contracting Officer written notice stating the date, circumstances and source of the order and that the Contractor regards the order as a change.
 - The Contractor shall notify the Construction Manager. 16.2.1.6. within 20 days of the occurrence, when he receives direction, instruction, interpretation or determination from any sources, which may cause any change in the work.
 - 16.2.1.7. Such written notification shall be given to the Construction Manager before the Contractor acts on said direction, instruction, interpretation or determination, with exigent circumstances concerning health or safety being the exception.
- 16.2.2. Limit on Adjustment: Except as herein provided, no order, statement, or conduct of the Contracting Officer shall be treated as a change order under this clause or entitle the Contractor to any adjustment hereunder.
- 16.2.3. Adjustment for Increase in Cost or Time: If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the contract modified in writing accordingly. Provided, however, that except for claims based on defective specifications no claim for any change under paragraph titled "Change In The Work" above shall be allowed for any costs incurred more than 20 days before the Contractor gives written notice as therein required; and provided further, that in the case of defective specifications for which the Owner is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with such defective specifications. Contractor shall commence work on the change order and shall not

General Provisions IFB No. GIAA-C03-FY15 Page 14 of 65 stop or delay any work due to any non-determination of an equitable adjustment to the Contract price.

- 16.2.4. Contractor Intention to Assert a Claim: If the Contractor intends to assert a claim for an equitable adjustment under this clause, he must, within 30 days after receipt of written instructions and drawings under paragraph herein titled "Additional Instructions and Drawings" or the furnishing of a written notice under paragraph herein titled "Changes in the Work" or paragraph herein titled "Written or Oral Order," submit to the Contracting Officer a written statement setting forth the general nature, monetary and time extent of such claim, unless this period is extended by the Owner. The statement of claim hereunder may be included in the notice under paragraph herein titled "Changes in the Work." Any claims submitted 30 calendar days after occurrence will not be considered.
- 16.2.5. No Claim After Final Payment: No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

16.3. **Shop Drawings**

- 16.3.1. Submittal for Approval: The Contractor shall submit for the approval of the Contracting Officer, shop and setting drawings and schedules required by the specifications or that may be requested by the Contracting Officer and no work shall be fabricated by the Contractor, except at his own risk, until such approval has been given. Drawings and schedules shall be submitted in quadruplicate (unless otherwise specified) accompanied by letter of transmittal, which shall give a list of the numbers and dates of the drawings submitted. Drawings shall be complete in every respect and bound in sets.
- 16.3.2. Time of Submittal: The Contractor shall submit all drawings and schedules at least thirty (30) working days in advance of construction requirements to allow ample time for checking, correcting, resubmitting and rechecking. Contractor shall provide a Standard Submittal Status Log Form for approval of the A/E or the Contracting Officer. The approved format shall be updated in a timely manner
- 16.3.3. Marking and Contractor Approval: The drawings submitted shall be marked with the name of the project, numbered consecutively and bear the stamp of approval of the Contractor as evidence that the Contractor has checked the drawings. Any drawings submitted without this stamp of approval will not be considered and will be returned to the Contractor for resubmission. If the shop drawings show variations from the requirements of the contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variation in his letter of transmittal so that if any variations are acceptable, suitable action may be taken for proper adjustment; otherwise, the Contractor will not be relieved of the responsibility for executing the work in accordance with the contract even though such shop drawings have been approved.

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- 16.3.4. Departure from Contract Requirements: If a drawing as submitted indicates a departure from the contract requirements, which the Contracting Officer finds to be in the interest of the Owner and to be so minor as not to involve a change in the contract price or time for performance, he may approve the drawing.
- 16.3.5. Conditions of Contracting Officer Approval: The approval of shop and setting drawings will be general and, except as otherwise provided in paragraph herein titled "Departure from Contract Requirements," shall not be construed (1) as permitting any departure from the contract requirements; (2) as error in details, dimensions or otherwise that may exist; (3) as approving departures from additional details or instructions previously furnished by the Contracting Officer.

16.4. **Special Requirements for Electrical Supervision**

The supervisor or person in charge of electrical wiring and installations 16.4.1. shall be a Licensed Master Electrician and/or Registered Electrical Engineer in Guam.

17. **FURNISHING RIGHTS-OF-WAY**

The owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

18. AUTHORITY OF THE OWNER

18.1. **Authority of Contracting Officer**

- 18.1.1. The Contracting Officer shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The Contracting Officer shall determine the amount, quality, acceptability, and fitness of the work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to work and the construction thereof. The Contracting Officer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided.
- 18.1.2. In case any question shall arise between the parties hereto relative to said contract or the work there under, the determination or decision of the Contracting Officer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question. The Contracting Officer shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or be in dispute.
- 18.1.3. Any difference or conflicts in regard to the work which may arise between the Contractor under this contract and other Contractors performing work for or under the authorization of the Guam International Airport Authority shall be adjusted, determined or otherwise resolved by the Contracting Officer.

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18.2. **Authority of the Construction Manager**

The contracting Officer has delegated certain powers and duties in connection with the Contract to the Construction Manager. The Construction Manager's powers are limited to the following Subparagraphs.

- 18.2.1. The Construction Manager shall have general authority over the work and the Contractor, and the authority to enforce compliance with the Contract. The exercise of or failure to exercise such authority shall not relieve the Contractor of any of his obligations under the Contract.
- 18.2.2. The Construction Manager shall have the power to suspend the work or any part thereof by giving notice to the Contractor in writing. Such written notice shall set forth the period of time for which the work or any part thereof shall be suspended and the basis for such suspension. Notwithstanding the foregoing, the Construction Manager shall suspend the work or any part thereof only when he has reasonable cause to believe that such suspension is necessitated by the failure of the Contractor to perform his work in accordance with the Contract or that failure to suspend would have an adverse impact on the Project.
- 18.2.3. The Construction Manager, subject to the review and approval of the Contracting Officer, shall negotiate with the Contractor all adjustments of Contract price and/or time.
- 18.2.4. The Construction Manager shall review and comment upon estimates for Contract change orders prepared and initiated by the Contractor. Subject to the express limitations with respect to price set forth by the Authority, the Construction Manager shall have authority to initiate changes in accordance with the "Changes" provision of these General Conditions.
- 18.2.5. The Construction Manager shall review payment applications for work performed by the Contractor and the Construction Manager shall recommend the same for approval and payment and submit the applications for the approval of the Contracting Officers.
- 18.2.6. The Construction Manager shall review and recommend approval of the Contractor's progress and submittal schedule.
- 18.2.7. The Construction Manager shall perform inspection and testing of the work; and
- 18.2.8. The Construction Manager shall have the authority to enforce the requirements of any safety requirements relating to the work.
- 18.2.9. The Construction Manager may, for such periods as he may deem necessary, suspend the work in part (1) for failure of the Contractor to correct unsafe conditions for the workmen or the general public, carry out provisions of the contract, or carry out orders; and (2) for unsuitable weather, for conditions considered unsuitable for the prosecution of the work, or for any other condition or reason deemed to be in the public interest.

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- 18.2.10. Inspectors employed by the Construction Manager shall be authorized to inspect all work done and material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication or manufacture of materials to be used. Inspectors are not authorized to revoke, alter or waive any contractual requirements.
- 18.2.11. The Construction Manager shall decide any and all questions which arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of said work. The Construction Manager shall determine the quality of the work performed and materials furnished under the Contract.
- 18.2.12. The Construction Manager may enforce in any suitable manner, within the limits of the contract, the decisions and orders which the Contractor fails to carry out promptly and diligently.

DUTIES OF THE CONTRACTOR 19.

19.1. **Contractor's Obligations**

Except as herein otherwise expressly specified, the Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery equipment, facilities and means necessary or proper to perform and complete all the work required by this contract within the time herein specified in accordance with the drawings and specifications of the work covered by this contract, including any and all supplemental plans and drawings, and in accordance with the directions of the Contracting Officer as given from time to time during the progress of the work. The Contractor alone shall be responsible for safety, efficiency and adequacy, which may result from their failure or their improper construction, maintenance or operations. The Contractor shall observe, comply with and be subject to all terms, conditions, requirements and limitations of the contract and specifications and shall so carry on and complete the entire work to the satisfaction of the Contracting Officer and the Guam International Airport Authority.

19.2. **Responsibilities of the Contractor**

Except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, heat, power, telephone, transportation, superintendence, temporary construction of every nature, charges, levies, fees or other expenses and all other services and facilities of every nature whatsoever necessary for the performance of the Contract for the Contract Price, complete in every respect within the specified time.

19.3. **Notice of Third Party Claims Against the Contractor**

The Contractor shall give the Owner, through the Contracting Officer, immediate notice of any suit or action filed, or any claims made against the Contractor arising out of the performance of this contract or any lower-tier subcontracts. The Contractor shall furnish immediately to the Owner through the Contracting Officer copies of all documents received by the Contractor pertinent to such actions, suit or claim.

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19.4. **Superintendence by Contractor**

The Contractor shall give constant attention to the work to facilitate the progress thereof, and he shall cooperate with the Contracting Officer and his/her inspectors and with other contractors. The Contracting Officer shall allocate the work and designate the sequence of construction in case of controversy between contractors. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as his/her agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Contracting Officer or his/her authorized representative.

- 19.4.1. Before starting work, the Contractor shall designate in writing the name, qualifications and experience of his proposed representative who, on approval of the Construction Manager, shall have full authority to represent and to act for the Contractor. A specimen of the authorized representative's signature shall be submitted to the Construction Manager. The authorized representative or his designated substitute, acceptable to the Construction Manager, shall be present at the work site at all times that any work is in progress and at any time that any employee or Subcontractor of Contractor is present at the work site. Arrangements for responsible supervision, acceptable to the Construction Manager, shall be made for emergency work, which may be required during periods when the work is suspended.
- 19.4.2. The Contractor shall notify the Construction Manager, in writing, when the Contractor desires to change his representative, and shall provide the information specified above for the Construction Manager's approval of the new representative.
- 19.4.3. The Owner shall have the right to dismiss the Contractor's Superintendent or the key staff if their performance does not meet the General Conditions Qualifications.

19.5. **Subcontracts**

- 19.5.1. Contractor Responsibility for Subcontractors: The owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Contracting Officer.
- 19.5.2. Nothing contained in the specifications or drawings shall be construed as creating any contractual relationship between any subcontractor and the Owner. The divisions or sections of the specifications are not intended to control the Contractor in dividing the work among subcontractors, or to limit the work performed by any trade.
- 19.5.3. The Contractor shall be as fully responsible to the Owner for the acts and omissions of subcontractors, and of persons employed by them, as he is for the acts and omissions of persons directly employed by him.

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- 19.5.4. The Contractor shall be responsible for the coordination of the trades, subcontractors, and material men engaged in his work.
- 19.5.5. The Contractor shall, without additional expense to the Owner, utilize the services of specialty subcontractors on those parts of the work, which are specified to be performed, by specialty subcontractors.
- 19.5.6. The Authority or the Contracting Officer will not undertake to settle any differences between the Contractor and his subcontractors or between subcontractors.
- 19.5.7. The Contractor shall cause appropriate provisions, including waiver of mechanic's liens, to be inserted in all subcontractor contracts, agreements and understandings relative to the work to bind each subcontractor to the terms of the General Conditions and other contract documents insofar as applicable to the work of that subcontractor.

19.6. Assignments of Contract

The Contractor shall not assign any interest in the whole or any part of this contract or any monies due or to become due hereunder without the prior written consent of the Owner and of all the sureties executing any bonds on behalf of the Contractor, in connection with said contract. In case the Contractor assigns the whole or any part of said contract, or assigns all of any part of any monies due or to become due under said contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due the Contractor shall be subject to all of the terms and conditions of said contract or otherwise supplemental thereto the rights and remedies of the Owner thereunder or arising by operation of the law and to the liens of all persons, firms, and corporations for services rendered or materials supplied in connection with the performance of said contract. In case of approval, the Contract shall file certified copies of all assignments, contracts and subcontracts with the Contracting Officer.

19.7. Notice of Labor Disputes

- 19.7.1. *Notice to Contracting Officer*: Whenever the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice to the Contracting Officer, and provide all relevant information as requested by the Contracting Officer.
- 19.7.2. *Inclusion in Subcontracts:* The Contractor shall insert the substance of this clause, including this paragraph, in all subcontracts; except that each subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the Contractor shall immediately notify its next higher-tier Contractor of all relevant information respecting such dispute.

19.8. Employment of American Citizens

No Contractor or subcontractor engaged in the construction of Public works for the government of Guam shall knowingly employ or permit to be employed, any alien in such construction except in cases of extraordinary emergency which endangers life or

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property or upon certification by the Employment Service of the Department of Labor and Personnel, that United States Citizens are not available in Guam having the craft of skill required. The term "alien" shall not include permanent residents of the United States or immigrant aliens eligible for United States Citizenship.

19.9. **Hiring of Apprentices**

The Contractor shall hire for performance of work under this contract, apprentices in accordance with Government of Guam Executive Order No. 2012-04. Refer to Section 11 of the Government of Guam Labor Standards attached herein.

19.10. Minimum Wage Rate

All persons employed on this project shall be paid not less than minimum wage applicable to the corresponding skill or craft as determined by the Department of Labor, Government of Guam or as determined by the Secretary of Labor, U.S. Department of Labor. The higher rate to govern. Prevailing wage rates of the U.S. Department of Labor, are attached herewith and shall be deemed a part of the contract documents.

19.11. Taxes

The Contractor shall, without additional expenses to the Owner, pay all applicable federal and territorial taxes. The successful bidder will be required to comply with Section 16200 and 19541.05 of the Government Code of the Territory of Guam, as regards licenses and taxes. In addition to the Contractor's liability, subcontractors are also subject to these provisions. Subcontractors are also required to possess Guam Service Licenses. The Contractor will be required to submit a list of his subcontractors and the monetary amount of each subcontract to be used for gross receipt tax purposes.

19.12. Laws, Permits and Regulations

- The Contractor shall procure all permits and licenses, pay all charges, fees, 19.12.1. and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work and shall pay all fees and charges for connections to outside sources and use of property other than the site of work for storage of materials or other purposes.
- 19.12.2. The Contractor shall keep fully informed of all building and other construction code requirements, Federal and State laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the owner and all his/her officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by himself or his/her employees.
- 19.12.3. If the Contractor ascertains at any time that any requirement of this contract is at variance with applicable laws, ordinances, regulations, or building and other construction code requirements, he shall promptly notify the Contracting Officer and any necessary adjustment of the

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contract shall be made as specified herein in the paragraph titled "Changes in Work."

19.13. Contractor's and Subcontractor's Insurance

The Contractor shall not commence work under this contract until he has obtained all the insurance required hereunder and the Owner has approved such insurance, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

Automobile Liability insurance for all owned, non-owned and hired vehicles used off-site in connection with the project in an amount not less than Two Million Dollars\$2,000,000.00 combined single limit of liability for bodily injury and property damage.

Workman's Compensation and Employer's Liability Insurance - The Contractor shall take out and maintain during the life of this contract the statutory Workman's Compensation and Employer's Liability Insurance for all of his employees to be engaged in work on the project under this contract and, in case any such work is sublet, the Contractor shall require the subcontractor similarly to provide Workman's Compensation and Employer's Liability Insurance for all of the latter's employees to be engaged in such work.

Bodily Injury Liability and Property Damage Liability Insurance - The Contractor shall take out and maintain during the life of this contract such Bodily Injury and Liability and Property Damage Liability Insurance as shall protect him and any subcontractor performing work covered by this contract from claims for damages for personal injury, including accidental death, as well as from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall not be less than:

Bodily Injury Liability Insurance, in an amount not less than Four Million Dollars (\$4,000,000.00) per person for injuries, including wrongful death and in an amount not less than Four Million Dollars (\$4,000,000.00) for injuries including wrongful death, resulting from one accident.

Property Damage Insurance, in an amount not less than Four Million Dollars (\$4,000,000.00) for damages resulting from any one accident and in an amount not less than Four Million Dollars (\$4,000,000.00) for damages resulting from all accidents.

The Commercial General Liability (CGL) policy shall be endorsed to include the following parties as Additional Named Insureds:

The Government of Guam The A.B. Won Pat International Airport Authority, Guam

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Any Project Manager, Construction Management, Architect or Consultant approved by the Authority and their Directors, Officers, Elected Officials, Agents and Employees while acting within the scope of their duties for the Project.

Owner's Protective Liability Insurance - The Contractor shall take out and furnish to the Owner and maintain during the life of this contract complete Owner's protective liability insurance in amounts as specified herein, for bodily injury liability insurance and for property damage liability insurance.

Builder's All Risk Insurance (BAR)

The Owner requires the contractor to purchase Builders All Risk Insurance upon the entire project. The Contractor shall be responsible to pay the entire deductible amount. This insurance shall include as named insured the Government of Guam, the A.B. Won Pat International Airport Authority, Guam, Any Project Manager, Construction Management, Architect or Consultant approved by the Authority and their Directors, Officers, Elected Officials, Agents and Employees while acting within the scope of their duties for the Project, Construction Contractors and their trade subcontractors and shall insure against physical loss or damage to machinery, apparatus, materials, equipment, temporary forms, temporary structures including contents thereof, and supplies used in the work being performed.

Construction Contractors' and Subcontractors' of all tiers owned or rented construction tools and equipment are excluded unless the purchase cost thereof is charged to the Owner and reported hereunder for premium purposes.

19.14. Indemnification

19.14.1.

Contractor shall protect, defend and hold Owner, Construction Manager and Architect completely harmless from and against any and all liabilities, losses, suits, claims, judgments, fines or demands arising by reason of injury or death of any person or damage to any property, including all reasonable costs for investigation and defense thereof (including but not limited to attorney fees, court costs, and expert fees), of any nature whatsoever arising out of or incident to this agreement and/or the use or occupancy of the leased premises or the acts or omissions of Contractor's officers, agents, employees, contractors, subcontractors, licensees, or invitees, regardless of where the injury, death or damage may occur, unless such injury, death or damage is caused by the sole negligence of the Owner. The Owner shall give to Contractor notice of any such claims or actions. The Contractor shall also use counsel reasonably acceptable to Owner in carrying out its obligations hereunder. The provisions of this section shall survive the expiration or early termination of this agreement. The obligations of the Contractor under Section 19.13 and all sub-sections

19.14.2.

The obligations of the Contractor under Section 19.13 and all sub-sections shall not extend to the liability of the Architect, the Construction Manager, the Engineer, their agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the Architect, the Engineer, or the Construction

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Manager, their agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.

19.15. Accident Prevention

- 19.15.1. Precaution shall be exercised at all times for the protection of persons (including employees) and property.
- 19.15.2. The safety provisions of applicable laws, building and other construction codes shall be observed. Machinery, equipment, and all hazards shall be guarded or eliminated in accordance with the safety provisions of the latest edition of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America and Federal OSHA, to the extent that such provisions are not in contravention of applicable laws.
- 19.15.3. Should typhoon warnings be issued, the Contractor shall take every practicable precaution to minimize damage and/or danger to persons, to the work, and to the adjacent property. These precautions shall include closing all openings, removing all loose materials, tools and/or equipment from exposed locations, and removing or securing scaffolding and all other temporary work.

19.16. Responsibility of Contractor to Act in Emergency

In case of an emergency, which threatens loss or damage to property, injury to persons, or safety of life, the Contractor shall act, without previous instructions from the Owner or Contracting Officer, as the situation may warrant. The Contractor shall notify the Contracting Officer or his representative thereof immediately thereafter of any compensation claimed by him. Substantiating documents regarding expenses shall be submitted to the Owner through the Contracting Officer and the amount of compensation shall be determined by agreement or arbitration.

19.17. Cooperation Between Contractors

The owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract. When separate contracts are let within the limits of any one project, each Contractor shall conduct his/her work so as not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed. The Contractor shall arrange his/her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other Contractors within the limits of the same project. He/she shall join his/her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

19.18. Mutual Responsibility of Contractors

Each Contractor involved shall assume all liability, financial or otherwise, in connection with his/her contract and shall protect and save harmless the owner and the Owners representatives, employees, invitees, officers, directors and agents from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced by owner, and the Owners representatives, employees, invitees, officers, directors and agents because of the presence and operations of other Contractors working within the limits of the same project. If the Contractor or any of his subcontractors or employees

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causes loss or damage to any separate contractor on the work, the Contractor agrees to settle with such separate contractor by agreement, if he will so settle. If such separate Contractor sues the Owner, on account of any loss so sustained, the Owner or any of his agents shall notify the Contractor who shall indemnify and save and hold harmless the Owner and the Owners representatives, employees, invitees, officers, directors and agents against any expenses or judgment arising therefrom. The Contractor shall be responsible for carrying out clearing, leveling, temporary drainage, temporary utilities and all other work necessary for the preparation and maintenance of his work area. All of Contractor's material, equipment, supplies, inventory, and personal property shall be stored on-site at Contractor's risk and without any liability on the part of Owner.

19.19. Use of Premises and Removal of Debris

The Contractor expressly undertakes at his own expense:

- 19.19.1. To take every precaution against injuries to persons or damages to property;
- 19.19.2. To comply with the regulations governing the operation of premises which are occupied and to perform his contract in such a manner as not to interrupt or interfere with the operation of other facilities;
- 19.19.3. To perform any work necessary to be performed after regular working hours or on Sundays or legal holidays without additional expense to the Owner;
- 19.19.4. To store his apparatus, materials, supplies, and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other contractors;
- 19.19.5. To place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work.
- 19.19.6. To frequently and, as a minimum, daily clean up all refuse, rubbish, scrap materials and debris caused by his operation, so that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
- 19.19.7. To effect all cutting, fitting, or patching of his work required to make the same conform to the plans and specifications, and except with the consent of the Contracting Officer, not to cut or otherwise alter the work of any contractor;
- 19.19.8. Before final payment, to remove all surplus material, false work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations and to put the site in a neat and orderly condition, and to thoroughly clean and leave reasonably dust-free all finished surfaces. Provide at no extra cost to the Government two (2) units of trash bins (1 general trash, the second for metal debris) at the work site-the location of positioning these bins to be coordinated with the tenant supervisor. Pick-up of bins shall be arranged in a timely manner and so arranged with the trash company.

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19.19.9. Shall be responsible for coordination of staging areas of deliveries of materials and equipment with the tenant supervisor to cause the least interference of their daily operations.

19.20. Obstructions

The Contractor shall at his own expense remove all obstructions, the removal of which shall be necessary for the proper reception, performance, construction, installation and completion of all work under this contract.

19.21. Badges

Contractor is responsible for obtaining GIAA badges. Identification badges can be obtained from the Airport Police. Corresponding charges shall be imposed on issuance and loss of e-badges and ramp passes. The contractor shall be responsible for the ebadges and ramp passes issued to them.

Upon completion of the project, the Contractor shall be responsible for returning all SIDA Badges to Airport Police in accordance to the Airport Security Program. Contractor shall be responsible for obtaining a Badge Clearance Form from Airport Police and it shall be part of the turn-over/close-out requirements and final payment request of the project.

20. SITE OF CONTRACTOR'S OPERATIONS

The Contractor shall provide suitable and safe on-site storage facilities for his materials, the location for which shall be coordinated with and subject to the approval of the Contracting Officer. The Contractor shall confine all construction operations within the vicinity of the site and shall arrange his work so that all construction materials and equipment are placed in such manner and location that there may be a minimum of interference or inconvenience inflicted upon the public as well as tenants, other contractors, and employees of the Authority.

21. BARRICADES

The Contractor shall erect, install and maintain all temporary public roads and walks, warning signs, barricades or other protective means in and around the site as deemed necessary or as may be ordered by the Contracting Officer for the effective protection of the public from injury and shall be held strictly liable for their safety.

22. **ELECTRICAL ENERGY**

The Contractor shall obtain, provide, and pay for all power for his use. No time extensions will be allowed for any power outages.

23. **TELEPHONE**

The Contractor shall obtain, provide, and pay for all telephone facilities for his use.

24. WATER

The Contractor shall obtain, provide, and pay for all water for his use.

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25. **SANITARY FACILITIES**

The Contractor shall provide adequate toilet facilities for all workmen and representatives of the Owner employed on the work. Each facility shall be subject to the approval of the Contracting Officer as to location and type. The Contractor shall maintain them in sanitary conditions from the beginning of the work until completion and shall then remove the facilities and disinfect the premises. All portions of the work shall be maintained at all times in a sanitary condition. Waste disposal shall be in accordance with Guam laws and regulations.

26. SIGNS

[No sign is required for this project]

OUALITY OF WORK 27.

Conformity With Plans and Specifications

All work and all materials furnished shall be in strict conformance with the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans or specifications and with any federal and Guam laws and codes. If there is any conflict between the requirements of the Contract, plans or specifications versus the federal and Guam laws and codes, then the stricter or higher requirement or standard shall apply.

If the Contracting Officer finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications but that the portion of the work affected will, in his/her opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the owner, he will advise the owner of his/her determination that the affected work be accepted and remain in place. In this even, the Contracting Officer will document his/her determination and recommend to the owner a basis of acceptance which will provide for an adjustment in the contract price for the affected portion of the work. The Contracting Officer's determination and recommended contract price adjustments will be based on good engineering judgment and such tests or retests of the affected work as are, in his/her opinion, needed. Changes in the contract price shall be covered by contract modifications (change order or supplemental agreement) as applicable.

If the Contracting Officer finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Contracting Officer's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the Contracting Officer's right to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's prosecution of the work, when, in the Contracting Officer's opinion, such compliance is essential to provide an acceptable finished portion of the work.

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For the purpose of this subsection, the term "reasonably close conformity" is also intended to provide the Contracting Officer with the authority to use good engineering judgment in his/her determinations as to acceptance of work that is not in strict conformity but will provide a finished product equal to or better than that intended by the requirements of the contract, plans and specifications.

27.2. **Engineering and Layout**

- 27.2.1. The Contractor shall provide competent engineering service to execute the work in accordance with the contract requirements. He shall verify the figures shown on the construction drawings before undertaking any construction work and shall be responsible for the accuracy of the finished work.
- 27.2.2. The Owner has established, or will establish such general reference points as will, in his judgment, enable the Contractor to proceed with the work. If the Contractor finds that any previously established reference points have been destroyed or displaced, he shall promptly notify the Owner.
- 27.2.3. The Contractor shall protect and preserve established bench marks and monuments and shall make no changes in their location without the written approval of the Contracting Officer. Any of them, which may be lost or destroyed, or which require relocation or shifting because of necessary changes in grades or conduct of the work shall be accurately relocated or replaced by the Contractor at his expense upon the approval of the Contracting Officer.

Materials and Workmanship 27.3.

- Unless otherwise specified, all materials and equipment incorporated in the 27.3.1. work under the contract shall be new. All workmanship shall be first class and by persons qualified in the respective trades.
- 27.3.2. The Owner may require the Contractor to dismiss from the work such an employee or employees, as the Authority may deem incompetent, or careless, or insubordinate.

27.4. **Standards**

- 27.4.1. Any materials specified by reference to the number, symbol, or title of a specific standard, such as a commercial standard, a Federal Specification, a trade association standard, or other similar standard, shall comply with the requirements in the latest revision thereto in effect on the date of Invitation for Bids, except as limited to type, class, or grade or modified in such reference.
- 27.4.2. The standard referred to, except as modified in the specifications, shall have full force and effect as though printed in the specifications. These standards are not furnished to bidders for the reason that the manufacturers and trades involved are assumed to be familiar with their requirements. The Contracting Officer will furnish upon request, information as to how copies of such standards may be obtained.

General Provisions IFB No. GIAA-C03-FY15 Page 28 of 65 27.4.3. Reference in the specifications to any article, device, product, material, fixture, form, or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; and the Contractor, in such cases, may at his option use any article, device, product, material, fixture, form or type of construction which in the judgment of the Contracting Officer expressed in writing is equal to that specified.

27.5. Samples

- 27.5.1. The Contractor shall furnish any samples required by the specifications or that may be required by the Contracting Officer of any and all materials or equipment he proposes to use and shall prepay all shipping charges on the samples.
- 27.5.2. No samples are to be submitted with bids.
- 27.5.3. No materials or equipment of which samples are required to be submitted for approval shall be used on the work until the Contracting Officer has given such approval, except only at the Contractor's risk and expense.
- 27.5.4. Each sample shall have a label indicating the material represented, its place of origin and the names of the producer, the Contractor and the building or work for which the material is intended. Samples of finished materials shall be so marked as to indicate where the materials represented are required by the drawings or specifications.
- 27.5.5. A letter in duplicate submitting each shipment of samples shall be mailed under separate cover by the Contractor and contain a list of the samples, the name of the work for which the materials are intended, the specifications sections, the paragraph numbers, and the brands of the materials and names of the manufacturers.
- 27.5.6. The approval of any sample shall be only for characteristics or for the uses named in such approval and no other. No approval of a sample shall be taken in itself to change or modify any contract requirements. When a material has been approved, no additional sample of that material will be considered and no change in brand or make will be permitted. Approved samples of hardware in good condition may be suitably marked for identification and be used in the work.
- 27.5.7. Failure of any material to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make of that material.
- 27.5.8. Test samples of submittals as the Contracting Officer may deem necessary, will be procured from the various materials or equipment delivered by the Contractor for use in the work. If any of these test samples of submittals fail to meet the specifications requirement, any previous approvals will be withdrawn and such materials or equipment shall be subject to removal and replacement by the Contractor with materials or equipment meeting

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the specification requirements, or at the discretion of the Owner, the defective materials and equipment may be permitted to remain in place subject to a proper adjustment of the contract price. The cost of the tests will be borne by the Contractor. Where laboratory tests hereinafter specified are required by the specifications, testing and costs thereof of whatever category are specifically designated to be the responsibility of the Contractor.

27.6. **Laboratory Tests**

Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Contracting Officer, and the reports of such tests shall be submitted to the Contracting Officer. The Contractor shall pay for the cost of the testing of submittals. Submittals to the Contracting Officer shall be made within two working days of the completion of the test.

27.7. **Methods**

The Contractor shall use proper and efficient methods and appliances for the performance of all the operations connected with work embraced under these specifications, drawings and contract to ensure a rate of progress which will secure completion of the work within the time(s) specified. If, at any time before commencement of work, or during the progress thereof, such methods, equipment or appliances are inefficient or inappropriate for securing said quality of work or said rate of progress, the Contracting Officer may order the Contractor to increase their efficiency or to improve their character, and the Contractor shall conform to such order. The failure of the Contracting Officer to demand such increases of efficiency or improvement shall not relieve the Contractor or his sureties from the obligations to secure such quality of work and said rate of progress and the completion of the work as required herein.

27.8. **Labor and Materials**

The Contractor shall furnish all labor, material, and equipment for the execution of the work according to the drawings, specifications and contract, and where no specifications are contained therein for whatever may be necessary, shall do all that may be termed ordinary, customary, or essential to a job to be well and reliably completed. This includes concealment of all pipes and other rough items of installation if not clearly so shown on the drawings in a manner acceptable to the Contracting Officer. Structural safety shall not be impaired by such concealment. Work not particularly detailed, marked or specified shall be of equal quality as similar parts that are detailed, marked or specified. All material furnished for and used in the job shall be of kind and grade specified, and where not specifically called for, shall at least be of customary standard grade. All work shall be executed in accordance with their trades. Full structural safety is essential and the Contractor guarantees to accomplish it for the entire work.

27.8.1. All special guarantees applicable to definite parts of the work which are stipulated in the specifications or other papers forming a part of the contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

27.9. **Defective Work**

The Contracting Officer will consider all work, which does not conform to 27.9.1. the requirements of the contract, plans, and specifications, unacceptable, unless otherwise determined acceptable. Unacceptable work, whether the

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result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work shall be repaired to the satisfaction of the Contracting officer or his authorized representative at the Contractor's expense, or if it cannot be satisfactorily repaired, shall be removed and replaced at the Contractor's expense. Work done without required references having been given, except as herein provided, work done without proper inspection, or any extra or unclassified work done without written authorization and at the option of the Government may not be paid for and may be ordered removed and replaced at the Contractor's expense.

- 27.9.2. Work done contrary to the instructions of the Contracting Officer, work done beyond the lines shown on the plans or as given, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.
- 27.9.3. No work or material which may be defective in construction or quality or deficient in any of the requirements of the drawings and specifications will be considered accepted as a consequence of the failure of the Contracting Officer or his representatives to discover or to point out said defects or deficiencies during the construction; nor will the presence of inspector on the work or documentation of inspections of the work relieve the Contractor from the responsibility of securing the quality and progress of work as are required by these specifications.
- 27.9.4. Any defective work that may be discovered before the completion of the work, or within such time as required by the bond, shall be replaced by work and materials that shall conform to the spirit and intent of the drawings, specifications, contract and bid proposal. The fact that the Contracting Officer or his representative may have overlooked defective work shall not constitute the acceptance of work. No payment, whether partial or final, shall be construed to be an acceptance of defective work or improper materials. The only time defective work shall be deemed to be accepted shall be when such defective work is specifically acknowledged by the Construction Manager to be defective and specifically accepts it in writing with the written approval of the Owner; otherwise, defective work shall never be deemed as accepted.
- 27.9.5. The Contracting Officer may at any time by order given in writing, stop any work not being done according to drawings and specifications; and any order so given shall not in any way relieve the Contractor from completing his contract and shall not in any way terminate, cancel, or abrogate the contract or any part thereof, and the Authority shall not in any way be responsible for the delay due to stopping the work as aforesaid.
- 27.9.6. Removal and repair or replacement of defective or unauthorized work shall be formally scheduled with and accomplished in the presence of the Contracting Officer or his authorized representative. The Construction

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Manager shall establish a reasonable period or deadline for the repair or replacement of the defective or unauthorized work.

27.9.7. Upon the failure of the Contractor to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized, or condemned work immediately after receiving formal notice from the Contracting Officer, the Contracting Officer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the owner) from any monies due or to become due the Contractor. The Owner may recover for such defective work on the Contractor's bond or by action in a court having proper jurisdiction over such matters.

27.10. Guarantee of Work

- 27.10.1. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment, or workmanship for a period of one (1) year from the date of final completion of the contract.
- 27.10.2. If, within any guarantee period, repairs or changes are required in connection with guaranteed work which, in the opinion of the Contracting Officer, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the contract, the Contractor shall promptly upon receipt of notice from the Owner, and without expense to the Owner;
 - 27.10.2.1. Repair, replace or fix or place in satisfactory condition in every particular all of such guaranteed work, correct all defects therein; and
 - 27.10.2.2. Make good all damages to the site or equipment or contents thereof which, in the opinion of the Contracting Officer, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the contract.
 - 27.10.2.3. The Owner and/or the Construction Manager shall have the right to demand whether the defective work or unauthorized work be replaced or repaired. Contractor shall comply, at Contractor's expense, with such directive or demand by Owner and/or the Construction Manager to replace or to repair.
- 27.10.3. In any case wherein fulfilling the requirements of the contract or of any guarantee embraced in or required thereby, the Contractor disturbs any work guaranteed under another contract, he shall restore such disturbed work to a condition satisfactory to the Contracting Officer and guarantee such restored work to the same extent as it was guaranteed under such other contract.
- 27.10.4. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Owner may have the defects corrected and the

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Contractor and his surety shall be liable for all expenses incurred, which shall include attorney's fees, court costs, architectural and engineering fees, etc.

28. INSPECTION OF WORK

28.1. Access to the Work

The Contracting Officer, the FAA, Territorial regulatory agencies and their representatives shall have access at all times to the work for inspection whenever it is in preparation or progress and the Contractor shall provide proper facilities for such access and inspection. The Contractor shall furnish the Contracting Officer every reasonable facility for ascertaining whether or not the work performed and materials used are in accordance with the requirements and intent of the Specifications and Contract. If requested by the Contracting Officer, the Contractor shall, at any time before acceptance of the work, remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work according to the standards required by the Specifications. Should the work thus exposed or examined prove acceptable, the Contractor shall be paid in accordance with the General Provisions. However, if the work so exposed or examined proves unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts, item or work removed, shall be at the contractor's expense. Any work done or materials used without suitable supervision or inspection by the Contracting Officer or his authorized representative may be ordered removed and replaced at the Contractor's expense.

28.2. **Inspectors**

- 28.2.1. Inspectors may be placed by the Construction Manager and/or Contracting Officer, to observe and inspect each and every subdivision of the work or any parts or process thereof.
- 28.2.2. The Construction Manager, the Contracting Officer and the inspectors shall have free access to all parts of the work at all times and shall be given or provided every facility, information and means for thoroughly inspecting the work done and the materials used or to be used. The Contractor shall provide copies, at Contractor's expense, of any and all documents, plans, drawings, calculations, work sheets, etc., requested by the Construction Manager, Architect, and Contracting Officer.
- 28.2.3. The inspectors shall at all times be free to perform their duties and any intimidation, refusal, or delay of any inspector by the Contractor or the employees thereof, shall be strictly prohibited. The Construction Manager and Contracting Officer reserves the right to direct the Contractor to immediately remove such offending parties from the project and the Contractor shall immediately comply.
- 28.2.4. Refer to paragraph herein titled "AUTHORITY OF THE ENGINEER."

28.3. **Inspection**

28.3.1. All material and workmanship (if not otherwise designated by the specifications) shall be subject to inspection, examination and testing by the Contracting Officer at any and all times during manufacture and/or

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construction and at any and all places where such manufacture and/or construction are carried on. The Contracting Officer shall have the right to reject defective material and workmanship or require its correction. Rejected workmanship shall be satisfactorily corrected, and rejected material shall be satisfactorily replaced with proper material and the contractor shall promptly segregate and remove the rejected material from the premises. If the Contractor fails to proceed at once with the replacement of rejected materials and/or the correction of defective workmanship, the Owner may do so and charge the cost to the Contractor, or the Owner may terminate the right of the Contractor to proceed; the Contractor and surety being liable for any damage to the same extent as provided for terminations. Such damages as may be incurred by the Owner shall include, but shall not be limited to, attorney's fees, court costs, architectural fees and engineering fees.

- 28.3.2. The Contractor shall furnish promptly, without additional charge, all reasonable facilities, labor and materials necessary for the safe and convenient inspection and tests of submittals that may be required by the Contracting Officer or other government agencies. All inspections and tests shall be performed in such manner as to not unnecessarily delay the work. Special, full-size and performance tests shall be as described in the specifications. The Contractor shall be charged with any cost of reinspection when material and workmanship is not ready at the time inspection is requested by the Contractor.
- 28.3.3. Should it be considered necessary or advisable by the Contracting Officer at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities. labor, and material required for such examination. After examination, the Contractor shall restore said portions of the work according to the standards required by the plans and specifications. If such work is found to be defective in any material respect due to the fault of the Contractor or his subcontractor, the Contractor shall defray or otherwise pay for all the expenses of such examination and of satisfactory reconstruction. If, however, such work involved in the examination is found to meet contract requirements, the cost of conducting the test and reconstruction in accordance with the 'CHANGES" provisions shall be allowed the Contractor and he shall, in addition, if completion of the work has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.
- 28.3.4. Any work done or materials used without supervision or inspection by an authorized representative of the owner may be ordered removed and replaced at the contractor's expense unless the owner's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.
- 28.3.5. Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) owner,

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authorized representatives of the owners of such facilities shall have the right to inspect such work after coordination with the Construction Manager. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

28.4. **Final Inspection**

When the work is substantially completed, the Contractor shall notify the Contracting Officer, in writing, that the work will be ready for final inspection and testing on a definite date, which shall be stated in such notice. The notice shall be given at least ten (10) days in advance of said date and shall be forwarded through the Contacting Officer who will attach his endorsement as to whether or not he concurs in the Contractor's statement that the work will be ready for final inspection or tests on the date given but such endorsement shall not relieve the Contractor of his responsibility in the matter.

29. AS-BUILT DRAWINGS

The Contractor shall continuously maintain at the jobsite one set of full size Contract drawings, marking them in red to show all variations between the construction actually provided and that indicated or specified in the original drawings, including buried or concealed construction. Where a choice of materials or methods is permitted herein, or where variations in scope or character of work from that of the original Contract are authorized, the drawings shall be marked to define the construction actually provided. The representations of such changes shall conform to standard drafting practice and shall include such supplementary notes, legends, and details necessary to clearly portray the as-built construction. Record drawings shall tie the ends of stubouts, laterals, and cleanouts to permanent structures. Such tie-ins shall be dimensioned and shall show the inverts of items. Drawings shall be updated daily. Monthly payments to the Contractor shall be subject to approval of the drawings by the Contracting Officer. This shall be a separate set of drawings not used for construction purposes, which shall be kept up to date as the job progresses and shall be made available for inspection by the Construction Manager, the Contracting Officer or his representatives at all times during the work. On completion of the work, as-built drawings shall be prepared in electronic format using AutoCAD 2002 or the latest version. Computer disks shall be delivered along with the marked-up drawings and a plot on mylar of the As-Built drawings to the Contracting Officer, and shall be subject to his approval before acceptance.

30. TIME FOR PERFORMANCE

30.1. **Prosecution of Work**

The Contractor agrees that the work under this contract shall be prosecuted regularly, diligently and without interruption at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the A.B. Won Pat International Airport Authority, Guam, that the time for completion of the same, takes into consideration the average climatic range, usual environmental conditions prevailing in the locality, and time to procure, ship, and install the material and equipment required by the work.

30.2. **Suspension of Work**

The Contracting Officer or the Construction Manager may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as either of them may determine to be appropriate for the convenience of the Authority.

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- 30.2.1. If the performance of all or any part of the work is suspended, delayed or interrupted by the Contracting Officer or the Construction Manager pursuant to a written order as provided above, an adjustment shall be made in accordance with the adjustment provisions of General Provisions, "Changes In Work", for any increase in Contractor's cost of performance of the Contract actually and necessarily caused by such delay, suspension or interruption to the extent that the same was not reasonable, and the Contract modified in writing accordingly. However, no adjustment shall be made under this Provision for any suspension, delay or interruption to the extent: (1) that performance would have been so suspended, delayed or interrupted by any other cause, including but not limited to the fault or negligence of the Contractor; or (2) for which any adjustment is expressly provided for or excluded by any other provision of the Contract.
- 30.2.2. In case the Contractor is actually and necessarily delayed by any act or omission on the part of the Authority, as determined by the Contracting Officer in writing, the time for completion of the work shall be extended by the amount of the time of such delay as determined by the Contracting Officer in his sole discretion.
- 30.2.3. Only the actual delay necessarily resulting from the causes specified in this sub-subsection shall be grounds for extension of time. In case the Contractor is delayed at any time or for any period by two or more of the causes specified in this Provision, the Contractor shall not be entitled to a separate extension for each one of the causes but only one period of extension will be granted for the delay.
- 30.2.4. In case the Contractor is actually and necessarily delayed in the performance of the work from one or more of the causes specified in this sub-subsection, the extension of time to be granted to the Contractor shall be only for such portion of the work so delayed. The Contractor shall not be entitled by reason of such delay to an extension of time for the completion of the remainder of the work. If the Contractor shall be so delayed as to a portion of the work he shall nevertheless proceed continuously and diligently with the prosecution of the remainder of the work. No demand by the Contractor that the Contracting Officer determine and certify any matter of extension of time for the completion of the work which has been delayed or any part thereof will be of any effect whatsoever unless the demand be made in writing at least 30 days before the completion date of: (1) such work; or (2) any part thereof for which liquidated damages are established when meeting those dates is claimed to have been delayed by a suspension under this sub-subsection.
- 30.2.5. The Contracting Officer's determination as to any matter of extension of time for completion of the work or any part thereof shall be binding and conclusive upon the Contractor.
- 30.2.6. Permitting the Contractor to finish the work or any part thereof after the time fixed for completion or after the date to which the time for completion may have been extended or the making of payments to the

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Contractor after any such periods shall not constitute a waiver on the part of the Authority of any rights under this Contract.

30.2.7. Contractor shall insert in each subcontract a provision that the subcontractor shall comply immediately with all written orders of the Contracting Officer or the Construction Manager to the Contractor to suspend the work, and that they shall further insert the same provision in each subcontract of any tier.

30.3. **Climatic Conditions**

- 30.3.1. When so ordered by the Contracting Officer, the Contractor shall suspend any work that may be subject to damage by climatic conditions.
- 30.3.2. **Contract Completion Time.** The allowable contract time for the work as set forth includes non-working days due to unfavorable climatic conditions as determined by a rainfall study conducted by the Department of Public Works, Government of Guam and endorsed by the Authority. (See Table at the end of this paragraph.) A time extension on account of inclement weather will be allowed only if the daily report of the Government inspector indicated lost days beyond the limits shown below. Time extension on account of inclement weather on Saturday and Sunday shall be granted only if the Contractor confirms in writing at least seven (7) days in advance of his intention to work on weekends. If the non-working days as set forth below are not used, then the unused non-working days shall be applied to the next period or month until such are used.

Month	Non-Working Days Due to Inclement Weather
January	7
February	5
March	5
April	4
May	5
June	6
July	10
August	11
September	12
October	10
November	7
December	7

31. **DIFFERING SITE CONDITIONS**

31.1. **Notice Required**

The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of:

31.1.1. Subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

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- 31.1.2. Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.
- 31.1.3. Any existing duct, cable, manhole, or other facility, which is not otherwise shown on the drawings and would be obliterated or covered up by the work.

Investigation By The Contracting Officer 31.2.

The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment may, upon approval of the Contracting Officer, be made under this provision and the contract modified in writing accordingly.

31.3. **Timely Notice By Contractor Required**

No request by the Contractor for an equitable adjustment to the contract under this provision shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed for giving written notice may be extended in writing by the Contracting Officer.

No Adjustment After Final Payment 31.4.

No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

32. OWNER'S RIGHT TO STOP WORK AND SUSPEND OR TERMINATE CONTRACT. **DELAYS AND DAMAGES**

32.1. **Violations by Contractor**

Any violation or breach of the terms of this contract on the part of the contractor/ subcontractor may result in the suspension or termination of this contract, or such other action, which may be necessary to enforce the rights of the parties of this agreement.

32.2. Termination by the A.B. Won Pat International Airport Authority, Guam

The A.B. Won Pat International Airport Authority, Guam for default or any other conditions or circumstances beyond the control of the contractor may terminate this contract. Termination conditions, the manner by which it will be affected and the basis for settlement is as follows:

- 32.2.1. The Owner shall have the right to terminate the contract if:
 - 32.2.1.1. The Contractor is adjudged bankrupt or makes an assignment for the benefit of creditors; or
 - A receiver or liquidator is appointed for the Contractor or 32.2.1.2. for any of his property and is not dismissed within 20 days after such appointment, or the proceedings in connection therewith are not stayed on appeal within the said 20 days;

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- 32.2.1.3. The Contractor refuses or fails, after Notice of Warning from the Contracting Officer, to supply enough properly skilled workmen or proper materials; or
- 32.2.1.4. The Contractor refuses or fails to prosecute the work or any part thereof with such diligence as will insure its completion within the period herein specified (or any duly authorized extension thereof) or fails to complete the work within said period; or
- 32.2.1.5. The Contractor fails to make payments as specified to persons supplying labor or materials for the work; or
- 32.2.1.6. The Contractor fails or refuses to regard laws, ordinances, or the instructions of the Contracting officer or otherwise is guilty of a substantial violation of any provisions of this contract.
- 32.2.1.7. The Contractor fails to comply with any demands or requests by the Construction Manager or Contracting officer, or fails to cure any breach or default of this Contract after receiving notice to do so.
- 32.2.2. The Owner, upon the certification of the Contracting Officer that sufficient cause exists to justify such action, and without prejudice to any other rights or remedy the Owner may have, after 10 days notice to the Contractor, may terminate the employment of the Contractor and his right to proceed, either as to the entire work or (at the option of the Owner) as to any portion thereof as to which delay shall have occurred, and may take possession of the work and complete the work by contract or otherwise, as the Owner may deem expedient. In such case the Contractor shall not be entitled to receive any further payment on that work until the work is finished. If the unpaid balance of the compensation to be paid the contractor hereunder exceeds the expense of so completing the work (including compensation for additional managerial, administrative, and inspection services and any liquidated damages for delay), such excess shall be paid to the Contractor. If such expense exceeds such unpaid balance, the Contractor and his sureties shall be liable to the Owner for such excess. If the right of the Contractor to proceed with the work is so terminated, the Owner may take possession of and utilize in completing the work such materials, supplies, plant, and equipment as may be on the site of the work and necessary thereof. The Contracting Officer shall certify the expenses incurred through the Contractor's default.
- 32.2.3. If the Owner does not terminate the right of the Contractor to proceed, the Contractor shall continue the work, in which event the Contractor shall pay to the Owner as fixed, agreed, and liquidated damages for each calendar day of the delay until work is completed or accepted. The Contractor and his sureties shall be liable for the amount thereof.
- 32.2.4. The right of the Contractor to proceed shall not be terminated, or the Contractor charged with liquidated damages because of any delays in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor including, but not

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restricted to, acts of God or of the public enemy, acts of the Authority, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, or delays of subcontractors due to such cases, if the Contractor shall, within ten (10) days from the beginning of any such delay (unless the Owner shall grant a further period of time prior to the date of final settlement of the contract) notify the Owner in writing through the Contracting Officer of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay and extend the time for completing the work when in his judgment the findings of fact justify such extension. The Contracting Officer's decision thereon shall be final and conclusive on the parties hereto, subject only to appeal under the Section titled, "DISPUTES," as found in these General Provisions.

32.3. Owner's Remedies for Contractor's Default:

If Contractor is in default of the Contract, then Owner shall have all or any combination of the following rights and remedies:

- 32.3.1. Terminate the Contract and take possession of all equipment, materials, supplies and inventory held by Contractor for the work. Owner shall then have the right to employ or use another or different contractor to complete the work: and/or
- 32.3.2. Call upon or demand that the bonding company complete the work; and/or
- 32.3.3. Stop all further payments to Contractor under this Contract; and/or
- 32.3.4. Bring suit against the Contractor for damages; and/or
- 32.3.5. Require arbitration; and/or
- 32.3.6. Recover all damages and expenses incurred as a result of any default and/or breach of the Contract by Contractor, including but not limited to the increased cost of construction, attorney's fees, other professional fees, traveling expenses, liquidated damages, and interest at 18% per annum on the declining balance.
- 32.3.7. All and any other remedies at law, equity or under this Contract shall be available to Owner.

32.4. **Termination for Convenience of the Authority**

32.4.1. The performance of work under the Contract may be terminated by the Authority in accordance with this Provision in whole, or from time to time in part, whenever such termination is in the best interest of the Authority. Such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

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- 32.4.2. After receipt of a Notice of Termination, and except as otherwise directed by the Contracting Officer, the Contractor shall:
 - 32.4.2.1. Stop work under the Contract on the date and to the extent specified in the Notice of Termination;
 - 32.4.2.2. Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the Contract as is not terminated:
 - 32.4.2.3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination.
 - 32.4.2.4. Assign to the Authority in the manner, at the times, and to the extent directed by the Contracting Officer, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Authority will have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontract;
 - 32.4.2.5. Settle outstanding liabilities and claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Authority, to the extent it may require, which approval or ratification shall be final for the purposes of this Provision;
 - 32.4.2.6. Transfer title and deliver to the Authority in the manner, at the times, and to the extent, if any, directed by the Authority, (a) the fabricated or unfabricated parts, work in process, completed work, supplies and other material procured as a part of, or acquired in connection with the performance of, the work terminated by the Notice of Termination, and (b) the completed or partially completed plans, drawings, information, and other property, which if the Contract had been completed, would have been required to be furnished to the Authority.
 - 32.4.2.7. Use Contractor's best efforts to sell, in the manner, at the times, to the extent and at the price or prices directed or authorized by the Authority, property of the types referred to in the sub-subsection f. immediately above; provided, however, that the Contractor (a) shall not be required to extend credit to any purchaser, and (b) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Contracting Officer; provided, further, that the proceeds of any such transfer or disposition will be applied in reduction of any payments to be made by the Authority to the Contractor under the Contract or will otherwise be credited to the price or cost of the work covered by the Contract or paid in such other manner as the Authority may direct;

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- 32.4.2.8. Complete performance of each part of the work that have not been terminated by the Notice of Termination; in accordance with the Contract, and
- 32.4.2.9. Take such action as may be necessary, or as the Construction Manager may direct, for the protection and preservation of the property related to this Contract, which is in the possession of the Contractor, and in which the Authority has or may acquire an interest.
- 32.4.3. After receipt of a Notice of Termination, the Contractor shall submit to the Construction Manager his termination claim, in the form and with certification prescribed by the Authority. Such claim shall be submitted promptly but in no event later than sixty (60) days from the effective date of termination, unless one or more extensions in writing are granted by the Authority, upon request of the Contractor made in writing within such sixty (60) day period or authorized extension thereof. However, if the Authority determined that the facts justify such action, it may receive and act upon any such termination claim at any time after such sixty (60) day period or any extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Authority may determine, on the basis of information available, the amount, if any, due the Contractor by reason of the termination and will thereupon pay the Contractor the amount so determined.
- 32.4.4. The Contractor and the Authority may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of work pursuant to this sub-subsection, which amount or amounts may include an allowance for profit solely on work done; provided that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total Contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of work terminated. The Contract will be amended accordingly, and the Contractor will be paid the agreed amount. Nothing in this sub-subsection shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts, which may be agreed upon to be paid to the Contractor.
- 32.4.5. In the event of failure of the Contractor and the Authority to agree, as provided, upon the amount to be paid the Contractor by reason of the termination of work for the convenience of the Authority, the Authority will pay the Contractor the amounts determined by the Authority as follows, but without duplication of any amounts agreed upon in accordance with sub-subsection 31.3.4.
 - 32.4.5.1. With respect to Contract work performed prior to the effective date of the Notice of Termination, the total (without duplication of any items) of: 32.4.5.1.1. The cost of such work;

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- 32.4.5.1.2. The cost of settling and paying claims arising out of the termination of work under subcontracts or orders:
- 32.4.5.1.3. A sum, as profit, determined by the Authority to be fair and reasonable; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed and an appropriate adjustment shall be made by reducing the amount of the settlement to reflect the indicated rate of loss; and
- 32.4.5.1.4. The reasonable cost of the preservation and protection of property and any other reasonable cost incidental to termination of work under this Contract, including expense incidental to the determination of the amount due to the Contractor as the result of the terminating of work under this Contract.
- 32.4.6. The total sum to be paid to the Contractor for termination for the Owner's convenience shall not exceed the total Contract price as reduced by the amount of payments otherwise made and as further reduced by (a) the Contract price or value of work terminated as determined by the Owner and the Construction Manager. Except for normal spoilage, and except to the extent that the Authority will have otherwise expressly assumed the risk of loss, there will be excluded from the amounts payable to the Contractor, the fair value, as determined by the Authority, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Authority, or to a buyer.
- 32.4.7. Further, in arriving at the amount due the Contractor for termination for Owner's convenience there shall be deducted, (1) any claim which the Authority may have against the Contractor in connection with the Contract; (2) Accounts payable for any materials, supplies or services provided to Contractor for the project; and (3) accounts receivables for the sale of any materials and supplies belonging to or for the project but sold by Contractor, and such accounts payable being deemed uncollectible by Owner.
- 32.4.8. If the termination hereunder be partial, prior to the settlement of the terminated portion of this Contract, the Contractor may file with the Authority a request in writing for an adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract (the portion not terminated by the Notice of Termination), and such adjustment as may be agreed upon will be made in such price or prices.

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- 32.4.9. The Authority may from time to time, under such terms and conditions as it may prescribe and in its sole discretion, make partial payments on accounts against cost incurred by the Contractor in connection with the terminated portion of this Contract whenever in the opinion of the Authority the aggregate of such payments shall be within the amount to which the Contractor will be entitled hereunder. If the total of such payments is in excess of the amount finally agreed or determined to be due under this sub-subsection, such excess shall be payable by the Contractor to the Authority upon demand together with interest at a rate equal to 18% per annum on the declining balance.
- 32.4.10. Unless otherwise provided for in this Contract, or by applicable statute, the Contractor, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the Authority at all reasonable times at the office of the Contractor but without direct charge to the Authority, all his books, records, documents, and other evidence bearing on the costs and expenses of the Contractor under this Contract and relating to the work terminated hereunder, or to the extent approved by the Authority, photographs, microphotographs, or other authentic reproductions thereof.
- 32.4.11. The Contractor shall insert in all subcontracts that the Subcontractor shall stop work on the date of and to the extent specified in a Notice of Termination from the Authority and shall require that subcontractors insert the same provision in any tier subcontracts.
- 32.4.12. The Contractor shall communicate immediately upon receipt thereof, any Notice of Termination issued by the Authority to the affected subcontractors of any tier.
- 32.4.13. When work the Contractor has subcontracted to a particular subcontractor has been terminated for Owner's convenience which would entitle the particular Subcontractor (hereinafter designated as "Large Subcontractor") to gross proceeds of \$100,000 or more had not such subcontract been terminated, or when the orders the Contractor has with any particular supplier have been terminated for Owner's convenience which would entitle the particular supplier (hereinafter designated "Large Supplier") to sales proceeds of \$100,000 or more had the orders not been terminated, then the Contractor will not be entitled to reimbursement for that part of a termination settlement with a Large Subcontractor or Large Supplier as heretofore designated, which is an anticipatory or unearned profit on work or orders terminated or partly terminated, or which are consequential damages on account of the termination or partial termination. The terms "Subcontractor" and "supplier" refer to Subcontractors and suppliers at all tiers.
- 32.4.14. Under no circumstances is the Contractor entitled to anticipatory, unearned profits or consequential or other damages as a result of a termination or partial termination under this sub-subsection. The payment to the

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Contractor determined in accordance with this sub-subsection constitutes exclusive remedy for termination hereunder.

32.4.15. Termination for Owner's convenience shall not waive any right or claim to damages, which the Authority may have, and the Authority may pursue any cause of action, which it may have under the Contract against the Contractor.

33. MEASUREMENT OF QUANTITIES

All work completed under the contract will be measured by the Contracting Officer, or his/her authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the Contracting Officer.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

In computing volumes of excavation or embankment the average end area method or other acceptable methods will be used.

The volumes and/or areas of portland cement concrete payement will be computed based on the design dimensions shown on the drawings adjusted for actual thickness measured in place by cores.

The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. Competent, qualified personnel at locations designed by the Contracting Officer shall weigh all materials, which are measured or proportioned by weights, on accurate, approved scales. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Contracting Officer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Contracting Officer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

When requested by the Contractor and approved by the Contracting Officer in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be

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determined by the Contracting Officer and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60 F or will be corrected to the volume at 60 F using Table IV-3 of the Asphalt Institute's Manual MS-6 for emulsified Asphalt.

Lump sum. No direct measurement will be made. The bid amount is complete payment for all work described in the contract and necessary to complete the work for that item. The quantity is designated as "ALL". The estimated quantities of lump sum work shown in the contract are approximate.

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered by the Contracting Officer in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account work as provided in the paragraph titled Payment For Extra and Force Account Work.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.

Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the Contracting Officer before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1 percent of the nominal rated capacity of the scale, but not less than 1 pound. The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the Contracting Officer can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales "overweighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.

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In the event inspection reveals the scales have been "underweighing" (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this provision, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.

When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the Contracting Officer revises the dimensions of said portions of the work shown on the plans. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

34. **COMPENSATION FOR ALTERED QUANTITIES**

When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in the paragraph titled, "Alteration of Work and Quantities" will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alternations or indirectly from his/her unbalanced allocation of overhead and profit among the contract items, or from any other cause.

35. **CLAIMS, PAYMENTS**

35.1. **Contractor's Title to Materials**

No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all material and supplies for which he accepts partial payments.

35.2. Claims

35.2.1.

The Contractor agrees, whenever required to do so by the A.B. Won Pat International Airport Authority, Guam, to furnish satisfactory evidence that all persons, firms or corporations who have done work or supplied materials under these specifications have been paid or have been duly notified of the completion of the work and have been secured to their satisfaction before the said Contractor shall be entitled to final payment.

35.2.2. The Authority shall have the priority over any creditors of the Contractor, to keep, hold, and to retain all monies due under the contract until the work is fully completed. Therefore, in case such evidence is not furnished or in case a claim is filed with the Authority or any suit or action is instituted against the Authority as defendant or garnishee or against the Contractor in connection with the work performed or to be performed under the drawings, specifications or contract, the Authority may retain from the moneys due or to become due to the Contractor such sum or sums as in the

General Provisions IFB No. GIAA-C03-FY15 Page 47 of 65 judgment of the Authority will fully protect the A.B. Won Pat International Airport Authority, Guam from loss, charge or expense by reason of such claim, suit or action. The Authority without prejudice to any other and further rights, may make any and all deductions for any loss, charge or expense sustained by it or for any anticipated expense, to which it would be entitled under the contract specifications or bond, or otherwise before paying over the balance of the sum or sums retained as aforesaid, if any, to the Contractor, his creditor, or any successful claimant against the Contractor. Included in such expenses shall be attorney's fees, other professional fees, and expenses.

35.2.3. No payment made or retained under this contract shall be held to relieve the Contractor and/or his sureties from his and/or their obligations under this bond to hold harmless and indemnify the Authority or its agents from any and all loss, charge or expenses including attorney's fees and professional fees by reason of any unpaid claim whatsoever.

35.3. **Waiver of Mechanics Liens**

Contractor waives any right that he now has or in the future may have to claim a mechanic's lien against the real property or improvements thereon, which are the subject of this contract, to secure payment for labor and materials furnished or to be furnished by him under this contract. The Contractor shall include this provision in all Subcontracts or Purchase Orders under which materials, supplies, or services are procured for use in the works.

35.4. Materials, Services and Facilities

It is understood that except as otherwise specifically stated in the contract documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, telephone, communication, transportation, superintendence, temporary construction of every nature whatsoever necessary to execute, complete and deliver the work within the specified time.

35.5. **Patents**

The Contractor shall hold and save the Owner and his officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for attorney's fees and court costs, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract including its use by the Owner, unless otherwise specifically stipulated in the contract documents.

35.6. Payments by Contractor

The Contractor shall pay:

- 35.6.1. For all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered;
- 35.6.2. For all materials, tools, and other expendable equipment to the extent of 90 percent of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools and equipment are delivered at the site of the project, and the balance of the cost thereof not

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35.6.3. To each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors, to the extent of each subcontractor's interest therein.

35.7. **Extras**

Except as otherwise herein provided, no charge for any extra work or materials will be allowed unless the same has been ordered in writing by the Owner and either the price is stated in such order or a definite acknowledgement is made that a change in price is involved subject to later determination.

35.8. **Changes in Work**

- 35.8.1. Omitted Items. The Contracting officer may, in the Owner's best interest, omit from the work any contract item, except major contract items. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.
- 35.8.2. Should a contract item be omitted or otherwise ordered to be not performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item.
- 35.8.3. Alteration of Work and Quantities. The owner reserves and shall have the right to make such alterations in the work as may be necessary or desirable to complete the work originally intended in an acceptable manner. The Contracting Officer shall be and is hereby authorized to make such alterations in the work as may increase or decrease the originally awarded contract quantities, provided that the aggregate of such alterations does not change the total contract cost or the total cost of any major contract item by more than 25 percent (total cost being added on the unit prices and estimated quantities in the awarded contract). Alterations, which do not exceed the 25 percent limitation, shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations as if the altered work had been a part of the original contract. "Change Orders" issued by the Contracting Officer shall cover these alterations, which are for work within the general scope of the contract. Change orders for altered work shall include extensions of contract time where, in the Contracting Officer's opinion, such extensions are commensurate with the amount and difficulty of added work.
- 35.8.4. Should the aggregate amount of altered work exceed the 25 percent limitation hereinbefore specified, such excess altered work shall be covered by supplemental agreement. If the owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

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- 35.8.5. All supplemental agreements shall require consent of the Contractor's surety and separate performance and payments bonds.
- 35.8.6. *Extra Work*. Should acceptable completion of the contract require the Contractor to perform an item of work which no basis of payment has been provided in the original contract or previously issued change orders or supplemental agreements, the same shall be called Extra Work. Extra work that is within the general scope of the contract shall be covered by written change order. Change orders for such extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the Contracting Officer's opinion, is necessary for completion of such extra work.
 - 35.8.6.1. When determined by the Contracting Officer to be in the Owner's best interest, he may order the Contractor to proceed with extra work.
 - 35.8.6.2. A Supplemental Agreement as hereinbefore defined shall cover extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract.
 - 35.8.6.3. If this contract includes FAA reimbursement, all supplemental agreements shall be approved by the FAA and shall include valid wage determinations of the U.S. Secretary of Labor when the amount of the supplemental agreement exceeds \$2,000. However, if the Contractor elects to waive the limitations on work that increases or decreases the originally awarded contract or any major contract item by more than 25 percent, the supplemental agreement shall be subject to the same U.S. Secretary of Labor wage determination as was included in the originally awarded contract.
 - 35.8.6.4. Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the owner.
- 35.8.7. The Owner may at any time, by a written order, and without notice to the sureties, make changes in the drawings and specifications of this contract and within the general scope thereof. However, no change will be made which increases the total contract price without notice to sureties. Where the charge or credit is not specified in the Schedule of Prices, the charge or credit due to the change shall be determined by the actual cost of the following items:
 - (i) Labor, including foreman;
 - (ii) Materials entering permanently into the work;
 - (iii) Equipment rental cost during time used on extra work;
 - (iv) Power and consumable supplies;
 - (v) Insurance, as required by Owner and supplied by the Contractor

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- (vi) To the above cost there shall be added a fixed fee to be agreed upon, but not to exceed 15% of the net cost. This fee shall be compensation to cover the cost of supervision, overhead, bond, profit, and other general expenses.
- 35.8.8. The Contractor shall furnish an itemized breakdown of the quantities and prices used in computing the value of any change that might be ordered.
- 35.8.9. In figuring changes, instructions for measurement of quantities set forth in the specifications shall be followed.
- If any part of the work as installed is at variance with the contract require-35.8.10. ments, the Owner may, if he finds it to be in his interest, allow all or any part of such work to remain in place subject to a proper adjustment in the contract price.
- 35.8.11. Upon completion of the Change Order or Supplemental Agreement incorporating changes in work, the Contractor shall submit to the Authority, within 30 calendar days of the signing of the Change Order, a new Performance and Payment Bond for the revised Contract Total Price and for the period of Contract performance as amended by the Change Order.
- 35.8.12. All claims against the Authority, which are incidental to or as a consequence of any changes, will be fully satisfied upon execution of the change by both parties.

35.9. **Payment to Contractor**

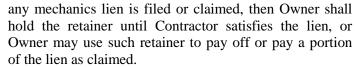
- 35.9.1. Scope of Payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the prosecution thereof, subject to the provisions of the paragraph herein titled "NO WAIVER OF LEGAL RIGHTS."
 - 35.9.1.1. When the "basis of payment" subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.
- 35.9.2. Unless otherwise provided in the specifications, the Owner will make partial payments to the Contractor after receipt and approval of the request for partial payment covering the work performed during the preceding calendar month. No payments for installed materials on the site will be made unless such request is accompanied by a receipt for certification showing that the Contractor has made payment in full for such materials. In preparing such estimates, preparatory work done shall not be considered

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for payment. Material delivered to site shall be considered for payment subject to the following conditions:

- 35.9.2.1. Material shall be kept in a safe and enclosed warehouse or area located on site with restricted access.
- A stock card kept in the warehouse must control receipt and issue of materials.
- 35.9.2.3. Request for payment must be accompanied with certification and receipts indicating the cost of material and showing that Contractor has made full payment for such material.
- 35.9.2.4. The Contractor has furnished the owner legal title (free of liens or encumbrances of any kind) to the material so stored or stockpiled.
- 35.9.2.5. The Contractor has furnished the owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.
- 35.9.2.6. It is understood and agreed that the transfer of title and the owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of his/her responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.
- 35.9.2.7. In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.
- 35.9.2.8. No partial payment will be made for stored or stockpiled living or perishable plant materials.
- 35.9.2.9. The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this subsection.
- 35.9.3. In making any partial payment, there shall be retained ten percent (10%), hereafter referred to as the "retainer" on the estimated amount until final completion and acceptance of all work covered by the Contract. This retainer shall be held as security, without any interest accruing thereon, for the full and proper performance of the Contract by Contractor and shall be returned to Contractor only on the following conditions:
 - 35.9.3.1. After 60 days after the date of substantial completion has passed to satisfy Owner that Contractor's rights to file a mechanics lien has passed. The 60 day period shall be subject to extension by Owner if it is determined by Owner that other subcontractor's or other parties have claims or rights to file a mechanics lien as a result of working under Contractor or supplying materials and/or services to Contractor. Owner shall have the right to wait until the statutory period has run to file mechanics liens. If

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- 35.9.3.2. Contractor has delivered a certification to Owner that all employees of Contractor and subcontractors under the Contractor have been paid; that all suppliers of materials, supplies, equipment and services have been paid; that no companies, parties or persons shall have any right to claim a lien on Owner's property as a result of Contractor's work; and that Contractor shall indemnify and hold harmless the Owner from and against all claims, damages and expenses as a result of a claim or lien filed.
- 35.9.3.3. After Contractor has completed all punch list items. Owner shall also have the right to deduct the cost of completion of any punch list item from the retainer if Contractor fails to correct or complete the item in a proper, satisfactory and timely manner.
- 35.9.3.4. Provided that Contractor is not in default in his performance of the Contract. Owner shall have the right to deduct any liquidated damages due to Owner, and to deduct any other amounts, damages, expenses, attorney's fees, etc. owed by Contractor to Owner pursuant to the terms and conditions of the Contract.
- 35.9.3.5. Provided that Contractor shall execute and deliver a release of all claims against the Owner for any monies owed due under the Contract or as a result of any act of the Owner.
- 35.9.4. If payment is made by the Authority within fifteen (15) days after approval of said payment request by the Contracting Officer, the sum of zero (0.0%) shall be deducted from the next preceding pay request.
- 35.9.5. All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payment has been made, or the restoration of any damaged work or as a waiver of the right of Owner to require the fulfillment of all of the terms of the contract.
- 35.9.6. No partial payment will be made when the amount due the Contractor since the last estimate amounts to less than five hundred dollars.
- 35.9.7. No partial payment shall bind the owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the Paragraph herein titled, "Final Payment."
- 35.9.8. *Payment for Omitted Items*. As specified in the Paragraph herein titled "Omitted Items" the Contracting Officer shall have the right to omit from

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the work (order nonperformance) any contract item, except major contract items, in the best interest of the owner.

- 35.9.8.1. Should the Contracting Officer omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the Contracting Officer's order to omit or not perform such contract item.
- 35.9.8.2. Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the Contracting Officer's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the owner.
- 35.9.8.3. In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the Contracting Officer's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature of the amount of such costs.
- 35.9.9. **Payment for Extra and Force Account Work**. Extra work, performed in accordance with the Paragraph herein titled "Extra Work," will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work. When the change order or supplemental agreement authorizing the extra work requires that it be done by force account, such force account shall be measured and paid for based on expended labor, equipment, and material plus the agreed upon allowance for overhead and profit.
 - 35.9.9.1. *Miscellaneous*. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
 - 35.9.9.2. *Comparison of Record.* The Contractor and the Contracting Officer shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor and the Contracting Officer or their duly authorized representatives.
 - 35.9.9.3. Statement. No payment will be made for work performed on a force account basis until the Contractor has furnished the Contracting Officer with duplicate itemized statements of the cost of such force account work detailed as follows:
 - 35.9.9.3.1. Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman.

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35.9.9.3.2.	Designation, dates, daily hours, total
	hours, rental rate, and extension for each
	unit of machinery and equipment.
35.9.9.3.3.	Quantities of materials, prices, and
	extensions.
35.9.9.3.4.	Transportation of materials.
35.9.9.3.5.	Cost of property damage, liability and
	workman's compensation insurance pre-
	miums, unemployment insurance contri-
	butions, and social security tax.

35.9.9.4. Statements shall be accompanied and supported by a receipted invoice for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

- 35.9.10. **Release of Claims**. Neither the final payment or any part of the retained percentage shall become due until the Contractor shall deliver to the Owner through the Contracting Officer a complete release of all claims against the Owner arising under and by virtue of this contract, including claims of all subcontractors and suppliers of either materials or labor, other than such claims, if any, as may be specifically excepted by the Contracting Officer.
- 35.9.11. *Certificate of Completion*. Upon completion and acceptance of all work whatsoever required and the execution of a release of all claims against the Owner as specified, the Contracting Officer shall file a written certificate with the Owner and with the Contractor as to the entire amount of work performed and compensation earned by the Contractor, including extra work and compensation therefor.
- 35.9.12. *Final Payment*. Within thirty (30) days after the filing of such certificate of completion, the Owner shall pay to the Contractor the amount therein stated, less all prior payments for the amount of the contract. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment, which is throughout this contract called Final Payment.
- 35.9.13. Acceptance of Final Payment Constitutes Release. The acceptance by the Contractor of the final payment shall be and shall operate as a release to the Owner of all claims and of all liability to the Contractor for all things done or furnished in connection with this work, and for every act and neglect of the Owner and others relating to or arising out of this work, excepting the Contractor's claims for interest upon the final payments, if

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this payment be improperly delayed. No payments, however, final or otherwise shall operate to release the Contractor or his sureties from any obligations under this contract or the performance and payment bond.

36. MISCELLANEOUS

36.1. Prohibited Interests

36.1.1. No member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

36.1.2. No official of the Government of Guam who is authorized in such capacity and on behalf of the Government of Guam to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architects, attorneys, engineer, or inspector of or for the Government of Guam authorized to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

36.2. Disputes

36.2.1.

Final Decision and Appeal. Except as otherwise provided in this contract, any disputes arising under this contract shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the GIAA Board of Directors. The decision of the GIAA Board of Directors or their duly authorized representative for the determination of such appeals shall be final and conclusive. The provision shall not be pleaded in any suit involving a question of fact arising under this contract as limiting judicial review of any such decision to cases where fraud by such official or his representative is alleged. Provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

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- 36.2.2. **Questions of Law.** This "Disputes" clause does not preclude consideration of questions of law in connection with decisions by arbitration. Nothing in this Contract, however, shall be construed as making final the decision of any administrative official representative or board on a question of law.
- 36.2.3. If the Contractor is not satisfied with the decision by the GIAA Board of Directors, Contractor may file for arbitration on Guam. The rules and procedures for arbitration shall be according to the American Arbitration Association. Contractor's sole source of appeal shall be for arbitration. Findings by arbitration shall be final and binding on the Contractor, and Contractor shall have no further source of appeal. Owner, however, shall have the right to chose arbitration or a lawsuit on Guam, and may appeal to a court on Guam any decision or findings as a result of arbitration.

37. DEADLINES TO CURE DEFAULT

If Contractor fails to perform any term or condition of the Contract in the manner set forth in the Contract, then Contractor shall be in breach of such term or condition. Owner shall then give Contractor 24 hours to cure such default, or if such can not be cured within said 24 hours then Contractor must commence to cure or correct such breach and continue to cure or correct such breach with due diligence and within a reasonable period as set forth in writing as determined solely by Owner and/or the Construction Manager. If Contractor fails to cure or correct such breach within the time period or deadline as set forth in this subsection, then contractor shall be in default of the Contract.

38. LIQUIDATED DAMAGES FOR DELAY

If Contractor fails to complete the work within the deadline or completion date as set forth in the Contract, subject to extensions as allowed in the Contract, then Owner shall be entitled to keep, or receive and collect, the daily sum as set forth in the Contract for each day of delay until the date of substantial completion. The Construction Manager shall determine the date of substantial completion. This daily sum shall be as liquidated damages incurred by the Owner as a result of Contractor's delay as tabulated below:

Charge for Liquidated Damages for Each Calendar Day Work is Not Substantially Completed

Original Contract Price:				Daily		
From More Than		To and Including		Charge		
\$	0	\$	250,000	\$	500	
	250,000	1	,000,000		700	
	1,000,000	2	2,000,000		1,000	
	2,000,000	5	5,000,000		1,200	

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5,000,000	10,000,000	1,600
10,000,000	and more	2,500

Liquidated damages in the amount specified in the above table will be assessed each calendar day beyond the time allowed to complete the contract until substantial completion of work. Liquidated damages in an amount equal to 20% of the amount specified in the table will be assessed for each calendar day beyond the time allowed to complete the contract beginning with the day after substantial completion and ending with the date of final completion and acceptance.

Liquidated damages will not be assessed for the following:

- (a) The day of the final inspection.
- (b) Days required to perform work added to the contract after substantial completion including items identified during the final inspection that were not required before that time.
- (c) Delays by the GIAA after all work is complete and before a formal acceptance is executed.
- (d) Periods of time when all work is complete but acceptance is delayed pending the plant establishment period or similar warranty period.

39. CLEAN AIR AND WATER POLLUTION CONTROL REQUIREMENTS

39.1 **Contractors and Subcontractors Agree**

- 39.1.1 That any facility to be used in the performance of the contract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities.
- 39.1.2 To comply with all the requirements of Section 114 of the Clean Air Act, and Section 308 of the Federal Water Pollution Control Act, and all regulations issued thereunder.
- 39.1.3 That as a condition for award of a contract they will notify the Contracting Officer of the receipt of any communication from the EPA indicating that a facility to be utilized for performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities.
- 39.1.4 To include or cause to be included in any contract or subcontract which exceeds \$100,000 the aforementioned criteria and requirements.

39.2 **Environmental Protection Agency Permits**

The Contractor shall obtain the required Environmental Protection Agency (EPA) permits from the National Pollutant Discharge Elimination System for all construction activities. This includes the filing of the Notice of Intent (NOI) and the preparation of a storm water pollution prevention plan for the site in accordance with the permit and any state or territorial requirements, if required.

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40. MAINTENANCE OF AIRCRAFT AND VEHICULAR TRAFFIC

40.1. Safety of Aircraft, Contractor's Equipment and Personnel

It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas of the airport with respect to his/her own operations and the operations of all his/her subcontractors. Where, in the opinion of the Contracting Officer, construction activities will have a severe effect on Airport activities, the Contracting Officer reserves the right to reschedule the work hours to non-standard work hours or to reschedule work time to a time period more convenient to airport operations. It is further under-stood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from and upon the airport. With respect to his/her own operations and the operations of all his/her subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel; equipment; vehicles; storage areas; and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport.

40.2. Develop Traffic Control Plan and Maintenance of Vehicular Traffic

If required, the Contractor shall submit a traffic control plan to the owner for all construction sites that will affect the normal flow of vehicle traffic and/or parking area closures. Prior to beginning work, the Contractor shall submit to the Contracting Officer for approval the methods and schedule for traffic control indicating the number of lanes and detours within and along the public use thoroughfares. The Contractor shall also include a schedule listing the types and number of traffic control and safety devices proposed for use.

Each road subject to construction activity shall be open to minimum of one-lane traffic during working hours except as approved or authorized by the owner. Two-way, two lane traffic shall be maintained during all non-working hours except at select construction points where self-regulating one lane traffic shall be permitted as approved or directed by the Contracting Officer. Unless otherwise approved or directed by the Contracting Officer, the minimum widths for one-lane and two-lane traffic shall be 8 feet and 14 feet, respectively.

When the contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance or work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish erect, and maintain barricades, warning signs, flagmen, and other traffic control devices in conformity with the manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), unless otherwise specified herein or modified by the Contracting Officer. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways.

40.3. Load Restrictions

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The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage, which may result from the moving of material or equipment. The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at his/her own expense.

40.4. **Designated Haul Routes**

The Contractor shall be responsible for disposal of waste materials and for obtaining approval from the Contracting Officer regarding haul routes for transport of waste materials from the airport. Hauling of all materials shall be done on roadways around present operating areas and under no circumstances shall cross the airside pavement except as indicated.

The Contracting Officer shall have the right to regulate Contractors hauling over existing roads, if necessary, to keep the roads in a condition satisfactory for public traffic. The Contractor shall maintain roads used for hauling and shall so conduct his operations as to offer the least possible obstruction and inconvenience to traffic. Spillage resulting from hauling operations along or across traveled ways shall be removed immediately. Where ordered by the Contracting Officer, the Contractor shall install signs, lights, flares, barricades and other facilities for the sole convenience and direction of public traffic. Also, if directed by the Contracting Officer, the Contractor shall provide and station competent flagmen whose sole duties shall consist of directing the movement of public traffic.

40.5. **Costs Not Measured or Paid for Directly**

The Contractor shall make his/her own estimate of all labor, materials, equipment, and incidentals necessary for providing the maintenance of aircraft and vehicular traffic as specified in this subsection. The cost of maintaining the aircraft and vehicular traffic specified in this provision shall not be measured or paid for directly, but shall be included in various contract items.

41. AUTOMATICALLY CONTROLLED EQUIPMENT

Whenever batching or mixing plant equipment is required to be operated automatically under the contract and a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually or by other methods for a period of 48 hours following the breakdown or malfunction, provided this method of operations will produce results which conform to all other requirements of the contract.

42. MATERIALS AND EQUIPMENT TO BE REINSTALLED OR REPLACED

All existing materials and equipment, which are required to be removed or disconnected to perform the work, shall be properly stored and protected from damage during performance of the work. Such removed or disconnected materials or equipment shall be reinstalled and/or reconnected to proper order, equal to or better than the condition of installation before removal or disconnection. Existing materials and equipment, which are found to be in non-functioning or dilapidated condition before removal or disconnection, shall be removed, disconnected, and shall be delivered to a location designated by the

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Contracting Officer for examination. The Owner, at its discretion, may replace such items with similar materials or equipment, which the Contractor shall install at no additional cost.

43. REMOVAL OF EXISTING STRUCTURES

Existing Structures Not Indicated

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Contracting Officer shall be notified prior to disturbing such structure. The Contracting Officer in accordance with the provisions of the Contract shall immediately determine the disposition of existing structures so encountered.

43.2. **Ownership of Existing Materials and Structures**

Except as provided in the paragraph herein titled "RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK," it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall remain the property of the owner.

44. RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK

All material removed from the work remain the property of the Owner. If suitable, materials may be reused in the work. The contractor shall not excavate, remove or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work except where such excavation or removal is provided for in the contract, plans, or specifications.

45. FINAL CLEANING UP

Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, and temporary structures. He shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property owner.

46. PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the contract provisions or in exercising any power or authority granted to him/her by this contract, there shall be no liability upon the Contracting Officer, his/her authorized representatives, or any officials of the owner either personally or as an official of the owner. It is understood that in such matters they act solely as agents and representatives of the owner.

47. NO WAIVER OF LEGAL RIGHTS

47.1 **Final Acceptance by Owner**

Upon completion of the work, the owner will expeditiously make final inspection and notify the contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the owner be precluded or stopped from recovering from the Contractor or his/her surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his/her obligations under the

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contract. A waiver on the part of the owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

47.2 **Contractor Liability**

The Contractor, without prejudice to the terms of the contract, shall be liable to the owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the owner's rights under any warranty of guaranty.

48. **GOVERNING LAW**

This contract shall be interpreted and enforced in accordance with the laws of the Territory of Guam including statutes of limitations. The Contractor shall comply with all Federal and Guam law, codes, rules, and regulations, and the Contractor shall see and cause all subcontractors to do.

49. RELEASE OF NEWS INFORMATION

No news release, including photographs and films, public announcement, denial or confirmation shall be made by Contractor concerning the subject matter of this contract, or any phase of any program hereunder, without the prior written approval of the Contracting Officer.

INDEPENDENT CONTRACTOR 50.

Contractor shall be an independent contractor in all its operations and activities hereunder, and all employees furnished by Contractor to perform the work shall be deemed to be contractor's employees exclusively, and shall be paid by Contractor for all services in this connection. Contractor shall be responsible for all obligations and reports covering Social Security, Unemployment Insurance, Workmen's compensation, Income Tax and other reports and deductions required by any applicable U.S. Government, Territory of Guam, or third country law. Contractor is not authorized to represent Owner or otherwise bind Owner in any dealings between Contractor and any third parties.

51. **LIMITATION PERIOD**

As between the Owner and Contractor:

- (1) **Before Substantial Completion**: As to acts or failures to act occurring prior to the relevant date of substantial completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of substantial completion.
- (2) Between Substantial Completion and Final Payment: As to acts or failures to act occurring subsequent to the relevant data of Substantial Completion and prior to final payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of the final payment; and
- (3) After Final Payment: As to acts or failures to act occurring after the relevant date of the final payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any warranty provided, the date of any correction of the work or failure to correct the work by the

General Provisions IFB No. GIAA-C03-FY15 Page 62 of 65 Contractor, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs first.

52. **WAIVERS**

The waiver by Owner or any of its authorized representatives, of any breach or any term, covenant, condition or agreement contained in this contract shall not be deemed to be a waiver of any subsequent breach of the same, or of a breach of any other term, covenant, condition or agreement.

53. MAINTENANCE DURING CONSTRUCTION

The Contractor shall maintain the work during construction and until the work is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times. In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations. All costs of maintenance work during construction and before the project is accepted shall be included in the price bid and the contractor will not be paid an additional amount for such work.

54. FAILURE TO MAINTAIN THE WORK

Should the contractor at any time fail to maintain the work as provided in the paragraph herein titled "MAINTENANCE DURING CONSTRUCTION," the Contracting Officer shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. However, the time specified by the Contracting Officer shall be an indication to the Contractor as to the exigency that exists.

Should the Contractor fail to respond to the Contracting Officer's notification, the Contracting Officer may suspend any work necessary for the owner to correct such unsatisfactory maintenance conditions, depending on the exigency that exists. Any maintenance cost incurred by the owner, shall be deducted from the monies due or to become due the Contractor.

55. AIRPORT OPERATIONAL AREA IDENTIFICATION BADGE

Airport Operational Area Identification Badge

Contractor's employees requiring entrance to the Airport Operational Area (AOA) shall apply and obtain an identification badge from the Airport Police Office.

All persons employed under this Contract who require unescorted access to the AOA shall have background checks (to the extent permitted by law) including as a minimum, references and prior employment histories for the preceding 10 years. All persons requiring unescorted badges shall be required to attend a two-hour security training session conducted by Airport Police.

As a condition in the issuance of AOA Identification Badges, Certification of Compliance shall be submitted with the application. The Certification shall affirm that a background check has been performed, and is correct, and complete for each person requiring access to the AOA. Background check records shall be maintained by the Contractor during the course of the work and shall contain the name, address, social security number, and his previous employment and the person(s) contacted to verify such

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employment. The Contracting Officer shall make the records available for inspection. All expenses for obtaining AOA badges shall be paid by the Contractor at no additional cost to the Owner.

56. HEIGHT RESTRICTIONS

Cranes or other devices shall be no higher at their highest point than 40 feet above ground surface unless special permission is granted for larger equipment. All equipment shall be lowered when not in use and moved as far from the operational areas as practical. During daylight hours all equipment over 20 feet in height shall display an orange and white checked flag on the highest portion. During nighttime hours all equipment exceeding 20 feet shall have a red obstruction light on the highest portion. This light shall be visible for at least 3000 feet in all directions during clear weather conditions.

57. ARCHAEOLOGICAL AND HISTORICAL FINDINGS

Unless otherwise specified in this provision, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during his/her operations, any building, part of a building, structure, or object, which is incongruous with its surroundings, he shall immediately cease operations in that location and notify the Contracting Officer. The Contracting Officer will immediately investigate the Contractor's finding and will direct the Contractor to either resume his/her operations or to suspend operations as directed.

Should the Contracting Officer order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract modification (change order or supplemental agreement). If appropriate, the contract modification shall include an extension of contract time and a change in contract price.

58. INDEMNIFICATION

- 58.1. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, the Architect, the Engineer, the Construction Manager, and their agents and employees from and against all claims, damages, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributed to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right or obligation of indemnity, which would otherwise exist as to any party or person, described in this paragraph.
- 58.2. In any and all claims against the Owner, the Architect, the Construction Manager or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of

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them may be liable, the indemnification obligation under this Paragraph shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

*** END OF GENERAL PROVISIONS ***

General Provisions

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431062_2 (General Provisions)

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Contract No.	GIAA-
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CONTRACT

BETWEEN

COMPANY NAME HERE

and

ANTONIO B. WON PAT INTERNATIONAL AIRPORT AUTHORITY, GUAM

CONTRACT FOR:

AIRPORT RESTROOM RENOVATIONS GIAA PROJECT NO. GIAA-FY15-02-1 IFB NO. GIAA-C03-FY15

AMOUNT: \$_____

PLACE: TAMUNING, GUAM

THIS CONTRACT is made and entered into by and between the Antonio B. Won Pat
International Airport Authority, Guam (hereinafter referred to as the "Authority"), a public
corporation and autonomous instrumentality of the government of Guam, whose address is Post
Office Box 8770, Tamuning, Guam 96931, and,
(hereinafter referred to as "Contractor"), a [type of entity] duly licensed to do business in Guam,
whose mailing address is .

RECITALS

WHEREAS, the Authority desires to engage the construction services of Contractor to carry out Phase II of the Demolition and Remediation of Various Airport Facilities (hereinafter called the "Project") in accordance with the Drawings, Specifications, Blue Prints, this Contract and other Contract Documents which comprise the Invitation for Bid No. GIAA-C03-FY15; GIAA Project No. GIAA-FY15-02-1;

WHEREAS, this undertaking is financed through a grant from the United States of America, acting through the Federal Aviation Administration (hereinafter referred as the "FAA"), under the provisions of the Airport Improvement Program ("AIP");

WHEREAS, regardless of the source of funding, it is the policy of the Authority to conform with the spirit and intent of all FAA and applicable federal regulations, including, but not limited to the Airport Improvement Act of 1982, as amended by the Airport and Airway Safety and Capacity Expansion Act of 1987, and 49 C.F.R. part 18.36; and,

WHEREAS, the Authority, after engaging in a competitive selection procurement process in accordance with the Guam Procurement Laws (Title 5, Guam Code Annotated, Chapter 5) and Regulations (Volume 2, Guam Administrative Rules and Regulations, Division 4), is prepared to award this Contract to Contractor as the responsible bidder with the lowest responsive bid.

NOW THEREFORE, in consideration of the foregoing recitals and of the mutual terms, covenants, conditions set forth below, the parties agree as follows:

I. SCOPE OF CONTRACT

The Contractor shall furnish all necessary labor, materials, equipment, tools and services necessary to perform and complete in a workmanlike manner all the work required for the construction of the Project, in strict compliance with the Contract Documents as defined in this Contract, which are hereby incorporated into and made a part of this Contract as though set forth verbatim herein.

Contract with ______ Invitation for Bid No. GIAA-C03-FY15 GIAA Project No. GIAA-FY15-02-1 Page 2 of 45

II. TIME OF PERFORMANCE

The parties agree that time is of the essence in the performance of the obligations under this Contract and, therefore, Contractor agrees to commence work under this Contract upon, and in accordance with the Written Notice to Proceed, and to complete the project, ready for use and operation, within <u>one-hundred sixty-eight (168) calendar days</u> from Contractor's receipt of the Notice to Proceed.

III. COMPENSATION

3.1.	As compensation	for services	rendered un	nder this Co	ontract, and in	full sat	isfaction
for all work,	labor, equipment,	materials ar	nd other re	quirements	and specifica	tions u	nder the
Contract,	Contractor	shall	be	paid	the	sum	of
					00/100)	Dollars
(\$) ("Contract Pr	rice"), in inc	crements as	applied for	or by the Cor	ıtractor	through
partial payme	nts as described in	the General	Provisions	, Section 3.	5.9 <i>et seq</i> ., wł	nich wa	is part of
the Invitation	for Bid and is in	ncorporated	herein as i	f fully set	out verbatim	(the '	"General
Provisions").							

Other sums may be added and/or deducted as a result of extra and/or omitted work, as the case may be, as approved by the Authority pursuant to Sections 34 and 35 of the General Provisions, the Guam Procurement Laws and Regulations (codified in Title 5, Guam Code Annotated, Chapter 5, and Title 2 Guam Administrative Rules and Regulations, Chapter 6) and this Contract. This amount shall be in full satisfaction of all work, labor, Contractor fees, gross receipt taxes, costs and expenses incurred by Contractor.

3.2. Contractor's Payment of Sub-contractors. The Contractor shall pay each subcontractor under this Contract for satisfactory performance of its contract as provided in Section 35.6 of the General Provisions. Any delay or postponement of payment by the Contractor to its subcontractor may occur only for good cause following written approval of the Authority. This clause applies to both Disadvantaged Business Enterprise ("DBE") non-DBE subcontractors.

All requests for payment (Partial Payment requests) that include compensation to subcontractor(s) shall be accompanied by a properly executed billing from the subcontractor(s). The Contractor shall also submit a Certificate of Payment to Subcontractor(s) to the Authority, properly acknowledged by the subcontractor(s), on the next month following the Authority's payment to Contractor which includes any compensation to the subcontractor(s). Failure to

Contract with ______ Invitation for Bid No. GIAA-C03-FY15 GIAA Project No. GIAA-FY15-02-1 Page 3 of 45

submit such a Certificate of Payment to Subcontractor(s) will result in the deduction of the amount due to subcontractor(s) in future payments to Contractor.

The Authority's review, approval and payment of fees for services by Contractor shall not constitute a waiver of any rights or cause of action arising out of Contractor's failure to fully and completely perform its duties under this Contract and Contractor shall be and remain liable to the Authority for all damages, costs and attorneys' fees which the Authority may suffer or incur as a result of Contractor's negligent performance of any of the services required herein.

IV. "CONTRACT DOCUMENTS" DEFINED

It is hereby mutually agreed that the following list of documents which are attached hereto, bound herewith or incorporated herein by reference shall constitute the Contract Documents, all of which are made part hereof, and collectively evidenced and constitute the Contract between the parties hereto, and they are as fully a part of this Contract, as if they were set out verbatim and in full herein:

- A. Invitation for Bid ("IFB")
- B. Instructions to Bidders
- C. [Insert Addenda, if any]
- D. Notice to Bidders
- E. Special Reminder to Prospective Bidders
- F. Bid Form
- G. Bid Schedule
- H. Bid Bond
- I. Affidavit Disclosing Ownership and Commissions
- J. Affidavit Regarding No Gratuities or Kickbacks
- K. Affidavit Regarding Non-Collusion
- L. Affidavit Regarding Contingent Fees
- M. Affidavit Regarding Ethical Standards
- N. Declaration Regarding Compliance with U.S. DOL Wage Determination and the most recent wage determination applicable to Guam issued by the U.S. Department of Labor
- O. Certification of Non-Segregated Facilities
- P. Designation of Subcontractors
- Q. Bidder's Qualification Statement
- R. Bidder's Financial Statement
- S. Certificate Concerning Foreign Trade Restriction
- T. Certification Regarding Debarment and Suspension
- U. Certification Regarding Lobbying and Influencing Employees

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- V. Certification of Buy American Compliance for Total Facility
- W. Performance Bond
- X. Labor and Materials Payment Bond
- Y. General Provisions
- Z. Wage Rates for Employment of Temporary Alien Workers (H-2) on Guam
- AA. Guam Labor Regulation Standards Pursuant to Section 10307, Public Law 10-143
- BB. Airport Restroom Renovations Technical Specifications
- CC. Airport Restroom Renovation Drawings
- DD. Title 20-Employees' Benefits, Temporary Employment of Aliens on Guam
- EE. U.S. Department of Labor, Davis-Bacon General Wage Decision (GU140001)
- FF. Notice of Award
- GG. Notice to Proceed

In the event of an ambiguity or actual conflict or inconsistency between the terms contained in this Contract and those enumerated in the General Provisions, the provisions in this Contract shall govern the parties' rights and obligations. However, to the extent that the provisions of these documents can be read together, that is the preferred interpretation of the parties' rights and obligations. An ambiguity, actual conflict or inconsistency shall occur when the rights or obligations contained in this Contract cannot be performed without violating a provision of the General Provisions or vice versa. An ambiguity may also occur where the General Provisions are confusing, unclear or make references to nonexistent provisions in the Contract or Contract Documents.

V. CHANGES IN SCOPE OF WORK AND SERVICES

Guam Procurement Regulation Clause No. 3, entitled Changes, is not a part of the general terms and conditions of this Contract, and has been replaced with the provisions of Section 16.2 of the General Provisions. Your attention is specifically directed to this clause.

VI. TERMINATION OF CONTRACT

The standard Termination Clauses found in the Guam Procurement Regulations has been replaced with the following provision required for AIP-funded contracts:

6.1. The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services must be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the Sponsor.

Contract with ______ Invitation for Bid No. GIAA-C03-FY15 GIAA Project No. GIAA-FY15-02-1 Page 5 of 45

- **6.2.** If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price will be made, but no amount will be allowed for anticipated profit on unperformed services.
- **6.3.** If the termination is due to failure to fulfill the contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the contractor is liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.
- **6.4.** If, after notice of termination for failure to fulfill contract obligations, it is determined that the contractor had not so failed, the termination will be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price will be made as provided in paragraph 2 of this clause.
- **6.5.** The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

VII. INDEMNIFICATION

Contractor shall indemnify and hold harmless the Authority, its Board of Directors, and all its respective officers, agents, and employees from any loss, damage, liability, expense, claims, suits, actions, costs of suit and attorneys' fees because of damage to property or injuries to persons (including death) arising from any negligent act, omission, or breach on the part of Contractor, its agents, employees and subcontractors, in connection with this Contract, or from any breach of any of its obligations under this Contract.

Contractor shall defend at its own expense any suits or other proceedings brought against the Authority, its Board of Directors, officers, agents, and employees, based on any alleged negligent act, omission, or breach by Contractor, its employees, agents or subcontractors, in connection with this Contract, or from any breach of any of its obligations under this Contract, and shall pay all expenses and satisfy all judgments which may be rendered against the Authority, its Board of Directors or its officers, agents or employees, based upon such negligent act, omission, or breach, including all costs, expenses of suit and attorneys' fees.

VIII. INSURANCE

Contractor shall place and maintain with responsible insurance carriers licensed in Guam, insurance as required under Section 19.13 of the General Provisions.

Contract with _____ Invitation for Bid No. GIAA-C03-FY15 GIAA Project No. GIAA-FY15-02-1 Page 6 of 45

IX. INDEPENDENT CONTRACTOR

In the performance of this Contract, it is expressly understood that Contractor's status is that of an Independent Contractor and not as an agent, partner, joint venturer or employee of the Authority or the government of Guam. Contractor's conduct shall be in accordance with that status. If Contractor is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

Contractor does not have, nor does it hold itself out has having, any right, power or authority to create any contract or obligation, either express or implied, on behalf of, in the name of, or binding upon the Authority, or to pledge the Authority's credit, or to extend credit in the Authority's name. In addition, nothing contained in this Contractor shall be deemed or construed by the parties hereto, or by any third party, to create the relationship of principal and agent, or a partnership or a joint venture, or of any association between the Authority and Contractor.

X. REPRESENTATIONS

The Contractor hereby makes the following representations:

- 5.1. Warranty Against Employment of Sex Offenders (Public Law 28-98:2). Contractor warrants that no person providing services on behalf of Contractor has been convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry. If any person providing services on behalf of Contractor is convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry, that such person will immediately be removed from working at said agency and that the administrator of said agency be informed of such within twenty-four (24) hours of such conviction.
- 5.2. Covenant Against Contingent Fees. The Contractor represents and warrants that it has not employed or retained any company or person, other than a bonafide employee working solely for the Contractor to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than a bonafide employee working solely for the Contractor, any fee, commission, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the award of making of this Contract. For breach or violation of this warranty, the Authority shall have the right to annul this Contract without liability, or in

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its discretion to deduct from the Contract Price of consideration or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

5.3. Wage Determination (5 GCA Article 13).

- **5.3.1.** The Contractor shall pay its employees whose purpose in whole or in part is the direct delivery of services in accordance with the Wage Determination applicable to this Contract.
- **5.3.2.** In addition to the subsection above, the Contractor shall pay said employees health and similar benefits having a minimum value as detailed in the Wage Determination, and shall pay them a minimum of ten (10) paid holidays per year.
- **5.3.3.** The Contractor is advised that the Guam Department of Labor, or its successor, shall monitor compliance with the provisions of 5 GCA Article 13, Wage and Benefit Determination. The Director of the Department of Labor, or that person's successor, shall investigate possible or reported violations of the provisions of the law, and shall forward such findings to the Authority. The Department of Labor, or its successor, shall promulgate rules and regulations, pursuant to the Administrative Adjudication law, as needed to ensure the equitable investigation of violations and the maintenance of due process, as well as the assessment of any monetary penalties in the event of a violation, providing that such monetary penalties shall be limited to assessment of no less than One Hundred Dollars (\$100.00) per day, and no more than One Thousand Dollars (\$1,000.00) per day, until such time as a violation has been corrected, as well as the payment of all back wages and benefits due.
- **5.3.4.** In the event there is a violation, the Contractor may be placed on probationary status by the Chief Procurement Officer of the General Services Agency, or its successor, for a period of one (1) year. During the probationary status, the Contractor shall not be awarded any contract by any instrumentality of the Government of Guam. In the event the Contractor is placed on probationary status, or has been assessed a monetary penalty pursuant to 5 GCA Article 13, the Contractor may appeal such penalty or probationary status to the Superior Court of Guam.
- **5.3.5.** The Contractor has submitted a Declaration of Compliance with Wage Determination laws with the most recent Wage Determination promulgated by the U.S. Department of Labor attached.
- **5.3.6.** Upon any renewal of this Contract, GIAA and the Contractor agree that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal shall apply to the Contract.

Contract with ______ Invitation for Bid No. GIAA-C03-FY15 GIAA Project No. GIAA-FY15-02-1 Page 8 of 45

- **5.4.** Prohibition Against Gratuities and Kickbacks per 5 GCA § 5630. Contractor represents that it has not violated, is not violating, and promises that it will not violate the prohibition against gratuities and kickbacks set forth in § 11107 of the Guam Procurement Regulations.
- 5.5 Representation Regarding Ethical Standards. The Contractor represents that it has not knowingly influenced and promises that it will not knowingly influence a government employee to breach any of the ethical standards set forth in 5 GCA Chapter 5 Article 11 (Ethics in Public Contracting) of the Guam Procurement Act and in Chapter 11 of the Guam Procurement Regulations.
- **5.6. Duly Licensed.** The Contractor is duly licensed and authorized to transact the business of construction under the applicable laws of Guam.

XI. LIQUIDATED DAMAGES

Guam Procurement Regulation Clause No. 10, entitled Liquidated Damages, is not a part of the general terms and conditions of this Contract, and has been replaced with the provisions of Section 38 of the General Provisions. Your attention is specifically directed to this clause.

Contractor agrees to pay the Authority, not as a penalty, but as reasonably estimated actual damages for breach of this Contract by the Contractor for failing, neglecting or refusing to complete the work within the times herein specified, liquidated damages in the amount specified in Section 38 of the General Provisions.

Contractor acknowledges that failure to complete the Project within the time provided hereunder will be detrimental to the Authority and the government of Guam and may result in the loss to the Authority of federal grant money for other projects. The exact monetary value of said losses and/or injuries caused by Contractor's failure to complete the Project within the time prescribed herein is extremely difficult and impractical to fix; therefore, the parties agree that the above described sums represent fair and reasonable estimates of such monetary value of such losses and/or damages. Nothing herein shall diminish the Authority's right to terminate this Contract or exercise any other remedy available to the Authority for Contractor's failure to comply with the provisions of this Contract.

XII. <u>MISCELLANEOUS PROVISIONS</u>

12.1. Venue and Governing Law. Contractor hereby specifically consents to the jurisdiction and forum of the Superior Court of Guam with respect to any and all claims which

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may arise hereunder and waives any and all rights it may otherwise have had to contest the same or to proceed in a different jurisdiction or forum. This Contract shall be governed by and construed in accordance with the laws of Guam.

- **12.2. Compliance with Laws.** Contractor shall comply with all applicable Federal, state and Guam laws, statutes and ordinances, and with all legal and applicable regulations or orders of any governmental department, board, bureau or agency having jurisdiction over the subject of this Contract.
- **12.3. Interest of Members of the Authority and Others.** No officer, member, or employee of the Authority who exercise any functions or responsibilities in the review or approval of the undertaking or carrying out of this Contract, shall participate in any decision relating to this Contract which affects his personal interest or have any personal or pecuniary interest, direct or indirect, in the Contract or the proceeds thereof.
- 12.4. Covenant Against Contingent Fees. The Contractor warrants that it has not employed any person to solicit or secure this Contract upon any agreement for a commission, percentage, brokerage, or contingent fee. Breach of this warranty shall give the Authority the right to terminate the Contract or, as consideration, deduct the amount of such commission, percentage brokerage or contingent fee from the Contract Price. This warranty shall not apply to commissions payable by Contractors upon contracts or sales secured or made through bonafide established commercial or selling agencies maintained by the Contractor for the purpose of securing business.
- **12.5. Other Contracts**. The Authority or other parties approved by the Authority may award other contracts for additional work, and the Contractor shall fully cooperate with such other Contractors and carefully fit the work to that provided under other contracts as may be directed by the Contracting Officer. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other Contractor.
- 12.6. Disputes. The Authority and the Contractor agree to attempt resolution of all controversies which arise under, or are by virtue of, this Contract through mutual agreement. If the controversy is not resolved by mutual agreement, then the controversy shall be decided by the Authority in writing within sixty (60) days after the Contractor shall request the Authority in writing to issue a final decision. The Authority does not issue a written decision within sixty days after written request for a final decision, or within such longer period as may be agreed upon by the parties, then Contractor may proceed as though the Authority had issued a decision adverse to the Contractor.

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The Authority shall immediately furnish a copy of the decision to the Contractor, by certified mail with a return receipt requested, or by any other method that provides evidence of receipt.

The Authority's decision shall be final and conclusive, unless fraudulent or unless the Contractor appeals the decision as follows:

- (A) For disputes involving money owed by or to the Authority under this Contract, the Contractor files appeal of the decision in accordance with the Government Claims Act by filing a government claim with the Authority no later than eighteen months after the decision is rendered by the Authority or from the date when a decision should have been rendered.
- (B) For all other disputes arising under this Contract, the Contractor files an appeal with the Office of the Public Accountability pursuant to 5 GCA §§ 5706(a) and 5427(e) within sixty days of the Authority's decision or from the date the decision should have been made.

The Contractor shall exhaust all administrative remedies before filing an action in the Superior Court of Guam in accordance with applicable laws.

The Contractor shall comply with the Authority's decision and proceed diligently with performance of this Contract pending final resolution by the Superior Court of Guam of any controversy arising under, or by virtue of, this Contract, except where the Contractor claims a material breach of this Contract by the Authority. However, if the Authority determines in writing that continuation of services under this Contract is essential to the public's health or safety, then the Contractor shall proceed diligently with performance of the Contract notwithstanding any claim of material breach by the Authority.

- 12.7. Contract Binding Upon Parties, Successors. It is agreed that this Contract and all of the Covenants hereof shall inure to the benefit of, and be binding upon, the Authority and the Contractor respectively and the Contractor's partners, successors, assigns and legal representatives. Neither the Authority, nor the Contractor, shall have the right to assign, transfer, or sublet the Contractor's interest or obligations hereunder without written consent of the other party.
- **12.8. Liens.** It is hereby mutually agreed by and between the parties hereto that no mechanic, contractor, subcontractor, material supplier or other person can or will contract for or in any other manner have or acquire any lien upon the works covered by this Contract.

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- **12.9. Non-Gratuity**. The Contractor further agrees to execute and file a Non-Gratuity Affidavit before final payment under the Contract is made by the Authority.
- **12.10. Notices, Correspondence and Payments**. All notices, correspondence, and payments required to be sent to either party hereunder shall be sent to the parties at the address stated below, either by mail or delivered personally or by facsimile and confirmed by letter. Service of any notice or demand by mail shall be by registered letter, receipt requested, and shall be deemed effective ten (10) days after mailing or on the date actually received, whichever is first.

For the AUTHORITY: Charles H. Ada II, Executive Manager

A.B. Won Pat International Airport Authority, Guam

Post Office Box 8770 Tamuning, Guam 96931 Tel: (671) 646-0300-2 Fax: (671) 646-8823

For the CONTRACTOR: [NAME]

[TITLE]

[NAME OF COMPANY]

[ADDRESS]
Tel: (__) ____
Fax: (_)

Each party may change its designated address by serving notice, in writing, on the other party as provided above.

- **12.11. Subcontractors.** Contractor shall not be permitted to subcontract any portion of the Contract without the prior written consent of the Authority. The Contractor shall file a copy of all subcontracts with the Authority. The Authority's approval of a subcontract shall not, in any event, relieve Contractor of its responsibility under the Contract. Any attempted assignment or subcontract without the prior written consent of the Authority shall be void. Where a subcontract is permitted, the Contractor agrees to bind every subcontractor by the terms of this Contract and all Contract Documents. Nothing in this Contract or the Contract Documents shall be construed as creating any contractual relation between any subcontractor and the Authority.
- **12.12. Severability**. If a provision of this Contract, or the application thereof to any person or circumstances is rendered or declared illegal for any reason or shall be invalid or unenforceable, the remainder of this Contract and the application of such provision to other persons or circumstances shall not be affected thereby but shall be enforced to the greatest extent

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permitted by applicable law. The parties agree to negotiate in good faith for a proper amendment to this Contract in the event any provision hereof is declared illegal, invalid, or unenforceable.

- **12.13. Entire Agreement**. This Contract and the Contract Documents listed in Article IV above, constitute the entire agreement between the parties, and no prior or contemporaneous written or oral promises, representations or assurances shall be deemed to alter the provisions hereof.
- 12.14. Attorneys' Fees. If GIAA retains an attorney or attorneys to enforce any of the provisions of this Agreement, or to protect its interest in any matter arising under this Contract, or to recover damages for the breach thereof, or GIAA commences an action for any of the foregoing reasons or to resolve any dispute relating to this Contract, and GIAA prevails, then GIAA shall be entitled to recover from Contractor GIAA's reasonable attorneys' fees, costs and expenses incurred in connection with any such action. If Contractor retains an attorney or attorneys regarding this Contract, any recovery of attorneys' fees, costs or expenses from the GIAA by Contractor is limited by and subject to the Government Claims Act and any other applicable law.

XIII. PROVISIONS REQUIRED FOR CONTRACTS AWARDED UNDER AIP GRANTS

- 13.1. Civil Rights Act of 1964, Title VI. During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:
- **13.1.1.** Compliance with Regulations. The contractor (hereinafter includes consultants) will comply with the Title IV List of Pertinent Nondiscrimination Statutes and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
- 13.1.2. Nondiscrimination. The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project or program set forth in Appendix B of 49 CFR part 21.
- 13.1.3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment. In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or

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leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

- 13.1.4. Information and Reports. The contractor will provide all information and reports required by the Acts, the Regulations and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the FAA, as appropriate, and will set forth what efforts it has made to obtain the information.
- **13.1.5. Sanctions for Noncompliance.** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, GIAA will impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:
- a. Withholding of payments to the contractor under the contract until the contractor complies, and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
- 13.1.6. Incorporation of Provisions. The contractor will include the provisions of paragraphs 13.1.1 through 13.1.5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the Contractor may request the United States to enter the litigation to protect the interests of the United States.
- 13.2. Buy American Preferences. The contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP-funded projects are produced in the United States, unless the FAA has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

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- 13.3 Access to Records and Reports. The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three (3) years after final payment is made and all pending matters are closed.
- Airport and Airway Improvement Act of 1982, Section 520 -- General Civil Rights Provisions. The contractor agrees that it will comply with pertinent statutes, Executive Orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision binds the contractors from the bid solicitation period through the completion of the Contract. This provision is in addition to that required of Title IV of the Civil Act of 1964. This provision obligates the tenant/concessionaire/lessee or its transferee for the period during which Federal assistance is extended to the airport through the Airport Improvement Program, except where Federal assistance is to provide, or is in the form of personal property; real property or interest therein; structures or improvements thereon. In these cases the provision obligates the party or any transferee for the longer of the following periods: (a) the period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits or (b) the period during which the airport sponsor or any transferee retains ownership or possession of the property.

13.5. Lobbying and Influencing Federal Employees.

- 13.5.1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.
- 13.5.2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal contract, grant, loan, or cooperative

agreement, the contractor shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

13.6. Disadvantaged Business Enterprises.

- 13.6.1. Contract Assurance (§26.13) The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.
- 13.6.2. Prompt Payment (§26.29) The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than the number of days as provided under the General Provisions from the receipt of each payment the prime contractor receives from GIAA. The prime contractor agrees further to return retainage payments to each subcontractor within the number of days as specified under the General Provisions after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of GIAA. This clause applies to both DBE and non-DBE subcontractors.
- **13.7.** Energy Conservation Requirements. The contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).
- 13.8. Breach of Contract. Any violation or breach of terms of this contract on the part of the contractor or their subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

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- 13.9. Rights to Inventions. All rights to inventions and materials generated under this contract are subject to requirements and regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed.
- **13.10. Trade Restriction Clause.** The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:
- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
- c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.
- 13.10.1. Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government. Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.
- **13.10.2.** The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.
- **13.10.3.** This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

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- **13.10.4.** Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- **13.10.5.** This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.
- **13.11. Veteran's Preference.** In the employment of labor (except in executive, administrative, and supervisory positions), preference must be given to Vietnam era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in Title 49 United States Code, Section 47112. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

13.12. Davis Bacon Requirements.

13.12.1. Minimum Wages.

13.12.1.1. All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set

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forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

- 13.12.1.2. (A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- **(B)** If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within thirty (30) days of receipt and so advise the contracting officer or will notify the contracting officer within the thirty (30) day period that additional time is necessary.

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(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs 13.12.1.2(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

13.12.1.3. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

13.12.1.4. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

13.12.2. Withholding. The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

13.12.3. Payrolls and basic records.

13.12.3.1. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual

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wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

13.12.3.2(A). The contractor shall submit weekly, for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH 347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

13.12.3.2(B). Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

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- (1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5(a)(3)(i) and that such information is correct and complete;
- (2) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- **13.12.3.2(C).** The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.
- **13.12.3.2(D).** The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.
- 13.12.3.3 The contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying or transcription by authorized representatives of the Sponsor, the Federal Aviation Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

13.12.4. Apprentices and Trainees.

13.12.4.1. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an

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apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

13.12.4.2. Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the

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Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- **13.12.4.3. Equal Employment Opportunity.** The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- 13.12.5. Compliance With Copeland Act Requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.
- 13.12.6 Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.
- **13.12.7. Contract Termination: Debarment.** A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- **13.12.8.** Compliance With Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- 13.12.9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

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13.12.10. Certification of Eligibility.

13.12.10.1. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

13.12.10.2. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

13.12.10.3. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

13.13. Equal Opportunity Clause - 41 CFR PART 60-1.4(b).

During the performance of this contract, the contractor agrees as follows:

- 13.13.1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- 13.13.2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- **13.13.3.** The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

- **13.13.4.** The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- **13.13.5.** The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 13.13.6. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 13.13.7. The contractor will include the portion of the sentence immediately preceding paragraph 13.13.1 and the provisions of paragraphs 13.13.1 through 13.13.7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however*, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

13.14. Certification of Nonsegregated Facilities - 41 CFR PART 60-1.8.

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The

federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

13.15. Notice of Requirement for Affirmative Action - 41 CFR PART 60-2. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

TIMETABLES	
Goals for minority participation for each trade	Vol. 45 Federal Register pg. 65984 10/3/80
Goals for female participation in each trade	6.9%

These goals are applicable to all the contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both federally funded and non-federally construction regardless of the percentage of federal participation in funding.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training shall be substantially uniform throughout the length of the contract, and in each trade, and the contractor

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shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project, for the sole purpose of meeting the contractor's goals, shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

- 13.15.1. The contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs ("OFCCP"), within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of subcontract; and the geographical area in which the subcontract is to be performed.
- **13.15.2.** As used in this notice and in the contract resulting from this solicitation, the "covered area" is the area of the Airport where the work shall be performed.

13.16. Standard Federal Equal Employment Opportunity Construction Contract Specifications - 41 CFR Part 60.4.3.

13.16.1. As used in these specifications:

- **13.16.1.1.** "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- **13.16.1.2.** "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- 13.16.1.3. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

13.16.1.4. "Minority" includes:

- (1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);
- (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

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- (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
- (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- 13.16.2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- 13.16.3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
- 13.16.4. The contractor shall implement the specific affirmative action standards provided in paragraphs 13.16.7a through 13.16.7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
- **13.16.5.** Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either

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minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

- 13.16.6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.
- **13.16.7.** The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has

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other information that the union referral process has impeded the contractor's efforts to meet its obligations.

- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such a superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable provide after school, summer, and vacation

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employment to minority and female youth both on the site and in other areas of a contractor's workforce.

- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.
- 13.16.8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (13.16.7a through 13.16.7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 13.16.7a through 13.16.7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

13.16.9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

- 13.16.10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- **13.16.11.** The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- **13.16.12.** The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
- **13.16.13.** The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 13.16.7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
- **13.16.14.** The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

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13.16.15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

13.17. Debarment and Suspension.

- 13.17.1. Certificate Regarding Debarment and Suspension. By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its bid that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.
- **13.17.2.** Certification Regarding Debarment And Suspension Regarding Lower Tier Participants. The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

13.17.2.1. Checking the System for Award Management at website: http://www.sam.gov.

13.17.2.2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension, above.

13.17.2.3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the FAA later determines that a lower tier participant failed to tell a higher tier that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedy, including suspension and debarment.

13.18. Contract Workhours and Safety Standards Act Requirements.

13.18.1. Overtime Requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than

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one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

13.18.2. Violation; Liability for Unpaid Wages; Liquidated Damages. In the event of any violation of the clause set forth in paragraph (1) above, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 above, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 above.

13.18.3. Withholding for Unpaid Wages and Liquidated Damages. The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 above.

13.18.4. Subcontractors. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section.

13.19. Clean Air and Water Pollution Control. Contractors and subcontractors agree:

- a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;
- b. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder;

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- c. That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
- d. To include or cause to be included in any construction contract or subcontract which exceeds \$ 100,000 the aforementioned criteria and requirements.
- **13.20. Title IV List of Pertinent Nondiscrimination Authorities.** During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:
- a. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- b. 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- c. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- d. Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- e. The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- f. Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- g. The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

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- h. Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- i. The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- j. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- k. Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- 1. Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).
- **13.21. Affirmative Action Plan.** The Department of Labor is responsible for administering the Executive Order 11246, which contains requirements for an Affirmative Action Plan. This Plan is similar in content and requirements to the affirmative action plan required in 49 CFR Part 152 subpart e. 49 CFR Part 152 applied to grants issued under the Airport Development Aid Program, which was replaced by the Airport Improvement Program.
- 13.22. Federal Fair Labor Standards Act (Federal Minimum Wage). All contracts and subcontracts that result from this solicitation incorporate the following provisions by reference, with the same force and effect as if given in full text. The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that pertain to a referenced requirement directly with the Federal Agency with enforcement responsibilities.

Requirement	Federal Agency with Enforcement Responsibilities
Federal Fair Labor Standards Act (29	U.S. Department of Labor – Wage and Hour Division

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13.23. Occupational Safety and Health Act of 1970. All contracts and subcontracts that result from this solicitation incorporate the following provisions by reference, with the same force and effect as if given in full text. The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that pertain to a referenced requirement directly with the Federal Agency with enforcement responsibilities.

Requirement	Federal Agency with Enforcement Responsibilities
Occupational Safety and Health Act of	U.S. Department of Labor – Occupational Safety and
1970 (20 CFR Part 1910)	Health Administration

13.24. Copeland "Anti-Kickback" Act. The United States Department of Labor Wage and Hours Division oversees the Copeland "Anti-Kickback" Act requirements. All contracts and subcontracts must meet comply with the Occupational Safety and Health Act of 1970.

United States Department of Labor Wage and Hours Division can provide information regarding any specific clauses or assurances pertaining to the Copeland "Anti-Kickback" Act requirements required to be inserted in solicitations, contracts or subcontracts.

13.25. Contractor Policy to Ban Text Messaging While Driving.

- 13.25.1 Definitions. The following definitions are intended to be consistent with the definitions in DOT Order 3902.10 and Executive Order 13513. For clarification purposes, they may expand upon the definitions in the E.O.
- 13.25.1.1 Driving (1) means operating a motor vehicle on a roadway, including while temporarily stationary because of traffic, a traffic light, stop sign, or otherwise; (2) It does not include being in your vehicle (with or without the motor running) in a location off the roadway where it is safe and legal to remain stationary.
- 13.25.1.2 Text messaging means reading from or entering data into any handheld or other electronic device, including for the purpose of short message service texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication. (See definition in DOT Order 3902.10).
- 13.25.2 In accordance with Executive Order 13513, Federal Leadership on Reducing Text Messaging While Driving, October 1, 2009, and DOT Order 3902.10, Text 431112_3 (Form Contract)

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Messaging While Driving, December 30, 2009, contractors and subcontractors are encouraged to:

13.25.2.1 Adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers including policies to ban text messaging while driving –

13.25.2.1.1 Company-owned or –rented vehicles or Government-owned, leased or rented vehicles; or

13.25.2.1.2 Privately-owned vehicles when on official Government business or when performing work for or on behalf of the Government.

13.25.2.2 Conduct workplace safety initiatives in a manner commensurate with the size of the business, such as –

13.25.2.2.1 Establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving; and

13.25.2.2.2 Education, awareness, and other outreach to employees about the safety risks associated with texting while driving.

13.25.3 Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph, in all subcontracts that exceed the micro-purchase threshold, other than subcontracts for the acquisition of commercially available off-the-shelf items.

XIV. EMPLOYMENT OF APPRENTICES

- **14.1.** Contractor shall employ at least one (1) apprentice for every ten (10) workers for the duration of the Project, and not less than one (1) apprentice for the Project. This requirement may only be waived if the Authority certifies in writing that no apprentice is available.
- **14.2.** To qualify as an apprentice ("Qualified Apprentice"), the individual(s) must be enrolled in an apprenticeship program approved or sponsored by the Department of Public Works, including but not limited to any apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or the Guam Community College, or the Guam Contractors Association. Apprentices employed by the contractor shall meet the eligibility requirements of Executive Order No. 2012-04.

In lieu of persons enrolled in a formal apprenticeship program, the Authority may authorize Contractor to employ individuals who will be supervised and engaged in on-the-job (OTJ)

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training. The number of OTJ apprentices employed in lieu of a single formal apprentice shall be determined by the Authority depending on the nature and size of the particular project.

Within seven (7) working days of Contractor's execution of this Contract, Contractor shall provide the Authority with the following information, certified as true and correct by an officer of Contractor. In the event of any change in the information provided, Contractor must provide the Authority with an updated certification within seven (7) working days of the change and an explanation for such change.

- **14.2.1.** The total number of workers employed for the Project;
- **14.2.2.** The name, position title, and name of approved or sponsored apprenticeship program for each Qualified Apprentice or name, title and supervisor for each.
- 14.3. If Contractor is seeking to hire OTJ Apprentices in lieu of Qualified Apprentices, Contractor must submit its request to the Authority within seven (7) working days of Contractor's execution of this Contract with an explanation supporting Contractor's request. If denied, Contractor shall employ Qualified Apprentices as required herein. If approved, the Authority shall advise Contractor of the number of OTJ Apprentices it shall employ in lieu of a single Qualified Apprentice and shall provide the Authority with the following information, certified as true and correct by an officer of Contractor, within seven (7) working days of Contractor's receipt of the Authority's approval. In the event of any change in the information provided, Contractor must provide the Authority with an updated certification within seven (7) working days of the change and an explanation for such change.
 - **14.3.1.** The total number of workers employed for the Project;
- **14.3.2.** The name, position title, and name of approved or sponsored apprenticeship program for each Qualified Apprentice, if any; and
 - **14.3.3.** The name, title and supervisor for each OTJ Apprentice.
- **14.4.** If Contractor is seeking a waiver of its obligation to hire Qualified Apprentices, Contractor must submit its request to the Authority within seven (7) working days of Contractor's execution of this Contract with an explanation supporting Contractor's request.

XV. PAYMENT AND PERFORMANCE BONDS

Contractor must deliver to the Authority an executed performance bond and an executed payment bond in such form as is acceptable to the Authority in an amount equal to one hundred

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percent (100%) of the Contract Price as security for the faithful performance of this Contract and as security for the payment of all persons performing labor and furnishing materials in connection with this Contract. The sureties of all bonds shall be such surety company or companies as are approved by the Authority, and as are authorized to transact business in Guam. The bonds must be approved by the Authority prior to execution of this Contract. A notarized true copy of Certificate of Authority of the surety or sureties must also be provided to the Authority.

XVI. SECURITY COMPLIANCE

Contractor shall comply with and conform its performance of the work and completion of the Project to the Authority's Airport Security Program, Security Directives and Emergency Amendments and FAA regulations (collectively, "Security Requirements"). Contractor shall require all persons, including without limitation its subcontractors, agents, employees, or invitees, entering the A.B. Won Pat International Airport, including without limitation, surrounding facilities, parking lots, and runways, (collectively the "Airport Premises") to comply with the Security Requirements and the Airport Rules and Regulations. Contractor agrees to pay, indemnify and save the Authority harmless from and against any and all fines and penalties imposed or assessed on the Authority and/or Contractor for any breach of the Security Requirements by Contractor, its subcontractors, agents, employees, or invitees, whether intentional, non-intentional, or through negligence occurring on the Airport Premises during the term, or any extended term, of this Contract.

XVII. SUSPENSION OF WORK

Guam Procurement Regulation Clause No. 5, entitled Suspension of Work, is not a part of the general terms and conditions of this Contract, and has been replaced with the provisions of Section 30.2 of the General Provisions. Your attention is specifically directed to this clause.

XVIII. <u>DIFFERING SITE CONDITIONS</u>

Guam Procurement Regulation Clause No. 6, entitled Differing Site Conditions, is not a part of the general terms and conditions of this Contract, and has been replaced with the provisions of Section 31 of the General Provisions. Your attention is specifically directed to this clause.

XIX. PRICE ADJUSTMENT

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Guam Procurement Regulation Clause No. 7, entitled Price Adjustment, is not a part of the general terms and conditions of this Contract, and has been replaced with the provisions of Section 16.2.3 of the General Provisions. Your attention is specifically directed to this clause.

XX. CLAIMS BASED ON GOVERNMENT'S ACTS OR OMISSIONS

- **20.1.** Notice of Claim. If any action or omission on the part of the Contracting Officer, or designee of such officer, requiring performance changes within the scope of the Contract constitutes the basis for a claim by the Contractor for additional compensation, damages, or an extension of time for completion, the Contractor shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so doing, the Contractor shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:
- (a) the Contractor shall have given written notice to the Contracting Officer, or designee of such officer:
- (i) prior to the commencement of the work involved, if at that time the Contractor knows of the occurrence of such action or omission:
- (ii) within 30 days after the Contractor knows of the occurrence of such action or omission, if the Contractor did not have such knowledge prior to the commencement of the work; or
- (iii) within such further time as may be allowed by the Procurement Officer in writing.

This notice shall state that the Contractor regards the act or omission as a reason which may entitle the Contractor to additional compensation, damages, or an extension of time. The Procurement Officer or designee of such officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Procurement Officer or designee of such officer.

- (b) the notice required by Subparagraph (a) of this Paragraph describes as clearly as practicable at the time the reasons why the Contractor believes that additional compensation, damages, or an extension of time may be remedies to which the Contractor is entitled; and
- (c) the Contractor maintains and, upon request, makes available to the Procurement Officer within a reasonable time, detailed records to the extent practicable, of the claimed additional costs or basis for an extension of time in connection with such changes.

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- **20.2.** Limitations of Clause. Nothing herein contained, however, shall excuse the Contractor from compliance with any rules of law precluding any territorial officers and any contractors from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.
- **20.3.** Adjustments of Price. Any adjustment in the Contract Price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this Contract.

XXI. VARIATIONS IN ESTIMATED QUANTITIES

- 21.1. Variations Requiring Adjustments. Where the quantity of a pay item in this Contract is an estimated quantity and where the actual quantity of such pay item varies more than 15% above or below the estimated quantity stated in this Contract, an adjustment in the contract price shall be made upon demand of either party. The adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115% or below 85% of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contracting Officer shall, upon receipt of a timely written request for an extension of time, prior to the date of final settlement of the contract, ascertain the facts and make such adjustment for extending the completion date as in the judgment of the Contracting Officer the findings justified.
- **21.2.** Adjustments of Price. Any adjustment in the Contract Price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this Contract.

XXII. REMEDIES

Any dispute arising under or out of this Contract is subject to the provisions of Chapter 9 (Legal and Contractual Remedies) of the Guam Procurement Regulations.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

[SIGNATURES ON FOLLOWING PAGE]

A.B. WON PAT INTERNATIONAL CONTRACTOR:
AIRPORT AUTHORITY, GUAM [NAME OF COMPANY]

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By:Charles H. Ada II	By:
	Name:
Executive Manager	Title:
Date:	Date:
CONCURRED:	ATTECTED.
	ATTESTED:
A.B. WON PAT INTERNATIONAL	
AIRPORT AUTHORITY, GUAM	
BOARD OF DIRECTORS	
D.	D
By:	By:
Edward G. Untalan	Name:
Chairman	Title:
Date:	Date:
Date.	Date:
CERTIFIED FUNDS AVAILABLE:	
By:	
Jean M. Arriola	
GIAA Certifying Officer	
Date:	
APPROVED AS TO FORM:	
CALVO FISHER & JACOB LLP	
By:	
Michael A. Pangelinan	
GIAA Legal Counsel	
Date:	
Date.	

ontract with vitation for Bid No. GIAA-C03-FY15 IAA Project No. GIAA-FY15-02-1 age 44 of 45
I,, certify that I am [title] of the [NAME OF COMPANY] amed as Contractor herein; that who signed this Contract on chalf of the Contractor was then President of said Corporation; that said Contract was duly gned for and on behalf of said Corporation by authority of its governing body, and is within the cope of his corporate powers.
CORPORATE SEAL)

General Decision Number: GU140001 01/03/2014 GU1

Superseded General Decision Number: GU20130001

State: Guam

Construction Types: Building, Heavy, Highway and Residential

(Excludes any projects funded under the National Defense Authorization Act 2010 - Guam Realignment Fund - Defense Policy Review Initiative)

County: Guam Statewide.

BUILDING, HEAVY, HIGHWAY AND RESIDENTIAL

Modification Number Publication Date 0 01/03/2014

SUGU2010-001 09/20/2010

:	Rates	Fringes
BRICKLAYER\$	14.02	
CARPENTER\$	13.56	
Cement mason\$	12.87	
Electrician\$	15.45	
Heavy Equipment Mechanic\$	14.14	
Heavy Equipment Operator\$	13.77	
IRONWORKER Reinforcing\$ Structural\$		
PAINTER\$	14.60	
Pipefitters\$	16.80	
PLASTERER\$	10.98	
PLUMBER\$	14.96	
REFRIGERATION MECHANIC including Heating, Air Conditioning (HVAC) Mechanic work\$	15.73	
SHEETMETAL WORKER\$	15.17	
WELDER\$	16.09	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates,

LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an

interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

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LABOR STANDARDS

1. PURPOSE AND SCOPE

These regulations are intended to aid in the enforcement of the minimum wage provisions of Public Law 10-143, Section 10307 dealing with Government of Guam assisted construction.

These regulations apply to any contract which is subject to Federal (or Local) Wage Standards and which is for the construction, prosecution, completion or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the Government of Guam.

These regulations detail the obligation of Contracts and Subcontractors relative to the weekly submission of Statement regarding the wages paid for work covered by Public Law 10-143, Section 10300, Subsection A, thereby, sets for the circumstances governing the making of payroll deductions from wages of those employed on such work.

2. **DEFINITIONS**

As used in these regulations:

- 2.1. The terms "building" or "work" generally include construction activity as distinguished from manufacturing, furnishing of materials or servicing and maintenance work. The terms include without limitations buildings, structures and improvements of all types, such as bridges, dams, highways, parkways, streets, tunnels, sewers, mains, powerlines, pumping stations, airports, terminals, docks, piers, wharves, ways lighthouse, buoys, jetties, breakwaters, levees and canals, dredging, shoring, scaffolding, drilling, blasting, excavating, clearing and landscaping. Unless conducted in connection with an at the site of such as building or work as described in the foregoing sentence, the manufacturer or furnisher of materials, articles, supplies or equipment (whether or not Government of Guam Agency acquired title to such materials, articles, supplies or equipment during the course of the manufacturer or furnishing, or owns the materials from which they are manufactured or furnished) is not a "building" or "work" within the meaning of the regulations in this part.
- 2.2. The terms "construction", "prosecution", "completion" or "repair" mean all types of work done on a particular building or work at the site thereof including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies or equipment at the site of the building or work, by persons employed at the site by the contractor or subcontractor.
- 2.3. The terms "public building" or "public works" include building or work for whose construction, prosecution, completion or repair as defined above. A Government agency is a contracting party, regardless of whether title thereof is in a Government agency.
- 2.4. The term "building" or work financed in whole or in part by loans or grants from the Government" includes building or work for whose construction, prosecution, completion or repair, as defined above, payment or part payment is made directly or indirectly from funds provided by loans or grants by a Government agency. The term does not include

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building or work for which Government assistance is limited solely to loan guarantees or insurance.

- 2.5. Every person paid by a Contractor or Subcontractor in any manner for his labor in the construction, prosecution, completion or repair of a public building or public work or building, or work financed in whole or in part by loans or grants from the Government is "employed" and receiving "wages", regardless of any contractual relationship alleged to exist between him and the real employer.
- 2.6. The term "any affiliated person" includes a spouse, child, parent or other close relative of the contractor or subcontractor' a partner or officer of the contractor or subcontractor; a corporation, closely connected with the contractor or subcontractor, as parent, subsidiary or otherwise and officer or agent of such corporation.
- 2.7. Every person paid by a Contractor or Subcontractor in any manner for his labor in the construction, prosecution, completion or repair of a public building or public work or building, or work financed in whole or in part by loans or grants from the Government is "employed" and receiving "wages", regardless of any contractual relationship alleged to exist between him and the real employer.
- 2.8. The term "any affiliated person" includes a spouse, child, parent or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation, closely connected with the contractor or subcontractor, as parent, subsidiary or otherwise, and officer or agent of such corporation.
- The term "Government Agency" means the Government of Guam and all executive 2.9. departments, independent establishments, administrative agencies and instrumentality of the Government of Guam, including corporation, all or substantially all of the stock of which is beneficially owned by the Government of Guam or any of the foregoing departments, establishments, agencies and instrumentalities.

3. WEEKLY STATEMENT WITH RESPECT TO PAYMENT OF WAGES

- 3.1. As used in this Section, the term "employee" shall not apply to persons in classification higher than that of laborer or mechanic and those who are the immediate supervisor of such employees.
- 3.2. Each contractor or subcontractor engaged in the construction, prosecution, completion or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the Government of Guam, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by these regulations during the preceding weekly payroll period. The statement shall be executed by the Contractor, subcontractor or by an authorized officer or employee of the contractor or subcontractor who supervises the payment of wages, and shall be in the following form: as attached on page B11-7.
- 3.3. The requirements of this section shall not apply to any contract of \$2,500.00 or less.
- 3.4. Upon written finding by the head of a Government agency, the Director of Labor may provide reasonable limitations, variations, tolerances and exemptions from the

Labor Standards IFB No. GIAA-C03-FY15 431333 2 (Labor Standards) Page 2 of 6 requirements of the section subject to such conditions as the Director of Labor may specify.

SUBMISSION OF WEEKLY STATEMENTS AND THE PRESERVATION AND 4. INSPECTIONS OF WEEKLY PAYROLL RECORDS

- 4.1. Each weekly statement as required under Part 3 shall be delivered by the contractor or subcontractor within seven (7) days after the regular payment date of the payroll period to a representative of a Government agency in charge at the site of the building or work. If there is no representative of the Government agency at the site of building or work, the statement shall be delivered by the contractor or subcontractor within such time, to the Government agency contracting for or financing the building or work. After such examination and check is made, such statement or a copy thereof, shall be kept available or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the Department of Labor, Guam.
- 4.2. Each contractor or subcontractor shall preserve his weekly payroll records for a period of three (3) years from the date of completion of the contract. The payroll records shall set out accurately and completely the name and address (local) or each laborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made and actual wages paid. Such payroll records shall be made available at all times for inspection by the Contracting Officer or his authorized representative of the Department of Labor, Guam.

5. PAYROLL DEDUCTIONS PERMISSIBLE WITHOUT APPLICATION TO OR APPROVAL OF THE SECRETARY OF LABOR

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Director of Labor.

- 5.1. Any deduction made in compliance with the requirements of Federal or local law, such as withholding income taxes and Federal Social Security Taxes.
- 5.2. Any deductions of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A "bona fide prepayment of wages" is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.
- 5.3. Any deduction or amount required by court process to be paid to another, unless the deduction is in favor of the Contractor, subcontractor or any affiliated person, or when collision or collaboration exists.
- 5.4. Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both; for the purpose of providing either from principal or income, or both; medical or hospital care; pensions, annuities or retirement; death benefits; compensation for injuries; illness; accidents; sickness or disability; or for insurance to provide any of the foregoing, vacation pay, savings accounts or similar payment for the benefit of employees, their families and dependents. This is provided, however, that:

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- 5.4.1. the deduction is not otherwise prohibited by law;
- 5.4.2. it is either:
 - 5.4.2.1. voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition for the obtaining of or for the continuation of employment, or
 - 5.4.2.2. provided for in a bona fide collective bargaining agreement between employees
- 5.4.3. No profit or other benefit is otherwise obtained, directly or indirectly, by the contractor, subcontractor or any affiliated person in the form of commission, dividend or otherwise
- 5.4.4. The deductions shall serve the interest of the employee.
- 5.5. Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.
- 5.6. Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal Credit Union Statutes.
- 5.7. Any deduction voluntarily authorized by the employee for the making of contributions to governmental or quasi-governmental agencies, such as the American Red Cross.
- 5.8. Any deduction voluntarily authorized by the employee for the making of contributions to charitable organizations.
- 5.9. Any deduction to pay regular union initiation fees and membership dues, not including fines or special assessments. This is provided, however, that a collective bargaining agreement between the contractor or subcontractor and representative of its employees provides for such deductions and the deductions are not otherwise prohibited by law.
- 5.10. Any deduction not more than for the "reasonable cot" of board/lodging. When such deductions are made, additional records shall be kept.

6. PAYROLL DEDUCTION PERMISSIBLE WITH THE APPROVAL OF THE DIRECTOR **OF LABOR**

Any application for the making of payroll deductions under Part 6 shall comply with the requirements prescribed in the following paragraphs of this section:

- The contractor, subcontractor or any affiliated person does not make a profit or benefit 6.1. directly or indirectly from the deduction either in the form of a commission, dividend or otherwise:
- 6.2. The deduction is not otherwise prohibited by law;
- 6.3. The deduction is either:

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- voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance, or
- 6.3.2. provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees.
- 6.4. The deduction serves the convenience and interest of the employee.

7. APPLICATION FOR THE APPROVAL OF DIRECT LABOR

An application for the making of payroll deductions under Part 6 shall comply with the requirements prescribed in the following paragraphs of this section:

- 7.1. The application shall be in writing and shall be addressed to the Department of Labor.
- 7.2. The application shall identify the contract or contracts under which the work in question is to be performed. Permission will only be given for deductions on specific, identified contracts, except upon a showing of exceptional circumstances.
- 7.3. The application shall state affirmatively that there is compliance with the standards set forth in the provisions of Part 6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.
- 7.4. The application shall include a description of the proposed deduction, the purpose to be served thereby and the classes of laborers or mechanics from whose wages the proposed deduction would be made.
- 7.5. The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant.

8. ACTION BY THE DIRECTOR OF LABOR UPON APPLICATIONS

The Director of Labor shall decide whether or not the requested deduction is permissible under provisions of Part 6 and shall notify the applicant in writing of his decision.

9. PROHIBITED PAYROLL DEDUCTIONS

Deductions not elsewhere provided for by this part and which are not found to be permissible under Part 6 are prohibited.

10. METHODS OF PAYMENT OF WAGES

The payment of wages shall be by cash, negotiable instruments payable on demand, or the additional forms of compensation for which deductions are permissible under his part. No other methods of payment shall be recognized on work subject to these regulations pursuant to Section 10307 of Public Law 10-143.

Labor Standards IFB No. GIAA-C03-FY15 Page 5 of 6 All contracts made with respect to the construction, prosecution, completion or repair of any public building or public work, or building or work financed in whole or in part by loan or grants from the Government of Guam covered by parts of these regulations shall expressly bind the contractor to comply with such of the regulations of these parts.

11. APPRENTICE TRAINING PROGRAM

Pursuant to Executive Order No. 2012-04, Contractor shall employ at least one (1) apprentice for every ten (10) workers for the duration of the Project, and not less than one (1) apprentice for the Project. This requirement may be waived only if the Authority certifies in writing that no apprentice is available.

Apprentices employed by the contractor shall meet the eligibility requirements of Executive Order No. 2012-04.

In lieu of persons enrolled in a formal apprenticeship program, the Authority may authorize Contractor to employ individuals who will be supervised and engaged in on-the-job (OTJ) training. The number of OTJ apprentices employed in lieu of a single formal apprentice shall be determined by the Authority depending on the nature and size of the particular project.

12. PENALTY FOR EMPLOYING ALIEN

The Contractor shall forfeit, as a penalty, to the Government of Guam, Ten Dollars (\$10.00) for each alien knowingly employed either by the Contractor or his Subcontractor, for each calendar day or portion thereof during which each such alien is permitted or required to labor in violation of Guam law as set forth in Title 5, Guam Code Annotated, Chapter 50.

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Title 20 -- Employees' Benefits

CHAPTER V -- EMPLOYMENT AND TRAINING ADMINISTRATION

Temporary Employment of Aliens on Guam

AGENCY: Employment and Training Administration, Labor

ACTION: Final rule

SUMMARY: The Employment and Training Administration is publishing rules for the labor certification process governing the temporary employment of aliens on Guam in occupations other than agriculture and logging. The purpose of the regulations is to implement the Department of Labor's new responsibilities under the regulations of the Immigration and Naturalization Service.

DATES: Effective date of rules: (Immediately upon publication).

FOR FURTHER INFORMATION CONTACT: Mr. Aaron Bodin, Chief, Division of Labor Certifications, United States Employment Service, Room 8410, 601 "D" Street, N.W., Washington D.C. 20212, Tel: (202) 376-6295.

SUPPLEMENTARY INFORMATION:

IMMIGRATION AND NATURALIZATION SERVICE REGULATIONS

Section 214.2(h)(2)(i) of the immigration and Naturalization Service Regulations [8 CFR 214.2 (h)(3)(1)], issued under the immigration and Nationality Act, requires, in support of a position for the admission of an alien into the United States to perform certain temporary labor:

Either a certification from the Secretary of Labor or his designated representative stating that qualified persons in the United States are not available and that the employment of the wages and working conditions of workers in the United States similarly employed, or a notice that such certification cannot be made shall be attached to every non-immigrant visa petition to accord an alien a classification under Section 101(a)(15)(h)(ii) of the Act.

Until July of this year, however, the above cited regulation contained an exception whereby the Guam Employment Service, rather than the U.S. Department of Labor, performed the labor certification function for temporary employment of aliens on Guam. On July 25, 1977, however, at 42 CFR 37795 the Immigration and Naturalization Service amended its regulations by deleting this exception.

NEED FOR REGULATIONS

The Employment and Training Administration currently has regulations for the temporary labor certification program at 20 CFR 602.10, 10a, 10b, and 10c (for employment other than logging and agriculture). The regulations at 20 CFR 602.10, 10a, 10b, and 10c are comprehensive regulations dealing with wages, housing, transportation, worker's compensation, allowable deductions from pay and other relevant matters. Consequently, the Employment and Training Administration will use those regulations for agricultural and any logging employment of aliens on Guam.

The regulations at 20 CFR, Part 621, however, consist only of principles and procedures of the most general kind. The Department has concluded, for the reasons set forth below relating to the uniqueness of the Guam alien employment situation, that the general principles and procedures in Part 621 should be elaborated in a set of regulations applicable only to Guam. This document contains the regulations for Guam.

UNIQUENESS OF GUAM AND ITS ALIEN

EMPLOYMENT SITUATION

The Territory of Guam is different from most of the United States. It is different in terms of history, culture, and economic and social structure. More specifically, the fact that a very large portion of its labor force is made up of non-immigrant aliens admitted for temporary employment in many different occupations is unique. Non-immigrant aliens comprise about one-fifth of the persons employed in wage and salary job on Guam.

Unemployment of Guam is a very serious problem. The unemployment rate of U.S. workers including immigrant aliens is significantly higher than the national average and has been a serious problem for many years. Unemployment is especially high among the native Chamorro population and among teenagers, causing many of the latter to immigrate to the Continental United States.

Guam is particularly subject to widespread natural disasters. Typhoons Karen (1962) and Oliver (1963) devastated the Island. Typhoon Pamela (1976) damaged up to 80 percent of all the buildings and facilities on the Island. Repair work necessitated by Typhoon Pamela is still going on. As a result of these typhoons, because of increased tourism, and because of national defense needs, the construction industry is enormously significant to the Guam economy. There are, however, comparatively few resident Guamanians who have been trained for construction occupations. In most cases, therefore, alien workers have been admitted to perform construction jobs. In March 1975, for example, about 82 percent of the construction jobs were held by non-immigrant aliens. The Department believes that the low wage rates paid aliens have adversely affected U.S. from entering these low wage construction jobs or entering training for such jobs.

The Department has evidence, moreover, that the presence on Guam of so many non-immigrant alien workers has had other adverse effects upon wages and working conditions of U.S. workers. Despite the high living cost on Guam, and continuing inflation, the wage rates in many occupations have not increased by appreciable amounts in recent years. This is in contrast, for example, with the situation on Hawaii where wage rates show appreciable increases. The Department believes that the presence of so many non-immigrant aliens on Guam on temporary visas, most of whom come from countries where they are accustomed to relatively low wages, contribute significantly to this situation.

It is not the Department's intention, in issuing these regulations, to stop the flow of non-immigrant alien workers into Guam. Such workers have contributed greatly to the growth of Guam's

economy. They form an important and vital element in the island's economic structure. The Department, however, under the Immigration and Naturalization Service regulations, must take immediate steps to see that the wages and working conditions of U.S. workers are not adversely affected by the use of such aliens and to see that qualified U.S. workers are not displaced by such aliens.

ADVERSE EFFECT RATES

The regulations contain adverse effect rates for occupations on Guam. The adverse effect rates are the rates which the Department requires employers to offer and pay so that the wages of similarly employed U.S. workers will not be adversely affected. The adverse effect rate is usually the prevailing wage rate. It may, however, be set at a higher level when the prevailing rates have been artificially depressed by the employment of non-immigrant alien workers.

The Department has concluded, in view of the circumstances stet forth above, that the employment of non-immigrant aliens in the Guam construction industry has adversely affected U.S. workers by keeping the wage rates artificially low to the point that nearly all such work is being done by non-immigrant aliens. The Department, therefore, is publishing adverse effect rates for the Guam construction industry which are higher than the rates which are currently being paid to non-immigrant aliens. These adverse effect rates are based on the rates which have been found by a U.S. Navy Wage Board as applicable to construction craft workers on Guam. These rates are those which are prevailing for U.S. workers employed by the U.S. Government in construction trades on Guam and give the best indication as to what the Guam construction wage rates would be if they were not depressed by the use of non-immigrant aliens. The Department believes that it is necessary to use the Navy Wage Board rates to provide the necessary protection for U.S. workers on Guam.

Outside construction, the adverse effect rates are the prevailing rates in Guam paid to U.S. workers. Generally, these will be the rate which are paid by the Guam Government or by the U.S.

Government in its non-appropriated fund activities. Although, on the basis of the situation in other occupations on Guam, the Department may in the future, set higher adverse effect rates for other occupations, the seriousness of the construction wage situation, and the necessity for immediate rule making, mitigated in favor of the Department's decision to publish adverse effect rates at this time only for the construction industry.

Because the adverse effect rates are substantially above the present prevailing construction wage rates on Guam, the Department, in order to avoid disruption of the island's construction economy, has provided for a phasing-in of the higher adverse effect rates over a period of two years. Thus, most construction on Guam is by the U.S. Government and the amount available annually is relatively fixed by the amount of appropriations by the Congress.

Under these circumstances the greater the cost of the construction which can be performed with a resultant reduction in jobs. The two-year phase-in period is intended to provide a degree of protection for the number of jobs available while increasing the wage rates to their proper level. Starting September 1979, and thereafter it is intended that the construction rates will be based upon the then current Wage Board rates.

In similar regard existing contracts on Guam were negotiated taking in consideration the present non-immigrant alien wage rates. In addition, approximately 300 construction home loans have been, approved by the Small Business Administration to repair damage caused by Typhoon Pamela for which construction contracts have not yet been executed. In order to prevent undue hardship to Contractors with existing contracts or to the recipients of Small Business Administration loans the rates set forth in these regulations are not applicable to certifications for alien workers issued for work under those contracts and loans. This is similar to the practice of the Department of Labor under contracts affected by the Davis-Bacon and related Acts where the wage determination applicable at the time of execution of the contract

remains applicable to that contract until the completion of the contract not-withstanding subsequent determinations made in the same area.

REASON FOR FINAL RULE MAKING

With the change in the Immigration and Naturalization Service regulation at 8 CFR 214.2 (h)(3)(i), the responsibility for administering the temporary labor certification process was placed upon the Department. The nature and scope and the seriousness of the temporary alien employment problem, as outlined above, make it clear to the Department that definitive interpretive and procedural guidelines in the form of regulations are an immediate necessity. The use of non-immigrant alien worker, moreover, in such large numbers and for such an extended period of time, has resulted in a cumulative adverse effect upon U.S. workers which make definitive action in the form of curative regulations an immediate necessity. It is also important not to disrupt the Department of Defense's procurement process or the Small Administration's loan process by adding the element of uncertainty which proposed rule make would entail. Therefore, the Department rules that it is in the public interest, especially in the public interest of U.S. workers on Guam, to publish final rules which are immediately effective. This finding is made pursuant to U.S.C. 553(b).

In keeping with the spirit of the Administration Procedure Act, and with the Department's general policy as set forth at 29 CFR 2.7, the Department invites comments on these rules until November 15, 1977. Comments should be in writing and should be addressed to: Mr. William B. Lewis, Administrator, United States Employment Service, Room 8000, 601 'D' Street, N.W. Washington D.C. 20213. Copies of all comments should also be sent to: Mr. William Haltigan, Regional Administrator, Employment and Training Administration, Federal Building, P.O. Box 36084, 450 Golden Gate Avenue, San Francisco, California 94102.

Accordingly, 20 CFR Chapter V is amended as follows:

PART 621 -- CERTIFICATION OF TEMPORARY FOREIGN

LABOR FOR INDUSTRIES OTHER THAN

AGRICULTURE OR LOGGING

621.1 (Amended)

1. In 621.1 Purpose., the following two sentences are added at the end:

The temporary labor certification regulations governing job opportunities (other than in agriculture and logging) on Guam are found at Part 655, Subpart B, of this Chapter. Those regulations supplement this part.

2. In 621.1 <u>Purpose</u>., the citation "[8 CFR 214.2 (h)(ii)]".

PART 651 -- GENERAL PROVISIONS GOVERNING THE FEDERAL

STATE EMPLOYMENT SERVICE SYSTEM

651.5 (Amended)

3. In 651.5 Format of the regulations for the employment service system., paragraph (e), the phrase "when published" is deleted.

651.6 (Amended)

- 4. In 651.5 <u>Consolidated table of contents for Parts 651-658</u>, the following table of contents for Part 655 is inserted in its proper place:
 - PART 655 -- LABOR CERTIFICATION PROCESS FOR THE TEMPORARY

 EMPLOYMENT OF ALIENS IN THEUNITED STATES
 - Subpart A -- TEMPORARY LABOR CERTIFICATION PROCESS FOR

 OCCUPATIONS OTHER THAN AGRICULTURE AND LOGGING

Section 655.1 Location of regulations

Subpart B -- TEMPORARY LABOR CERTIFICATION PROCESS FOR

OCCUPATIONS ON GUAM OTHER THAN AGRICULTURE

AND LOGGING

Section

- 655.100Scope of purpose of subpart.
- 655.101Definitions of terms used in subpart.
- 655.102Temporary labor certification applications (general).
- 655.103Contents of job offers.
- 655.104Assurances.
- Action on temporary labor certification applications by the Guam Employment Service Office.
- 655.106Temporary labor certification determinations.
- 655.107Adverse effect rates.
- 655.108 Temporary labor certification applications involving fraud or willful misrepresentation.
- 655.109Temporary labor certification related records.
- 655.110Nature of employment service job orders.
 - PART 655 -- LABOR CERTIFICATION PROCESS FOR TEMPORARY EMPLOYMENT OF ALIENS IN THE UNITED STATES
 - 5. Part 655 is added to read as follows:
 - PART 655 -- LABOR CERTIFICATION PROCESS FOR

 THETEMPORARY EMPLOYMENT OF ALIENS IN

 THEUNITED STATES
 - Subpart A -- TEMPORARY LABOR CERTIFICATION PROCESS FOR
 OCCUPATIONS OTHER THAN AGRICULTURE AND
 LOGGING

Section

- 655.1 Location of regulations
 - Subpart B -- TEMPORARY LABOR CERTIFICATION PROCESS FOR
 OCCUPATIONS ON GUAM OTHER THAN AGRICULTURE
 AND LOGGING

Section			
655.100	Scope and purpose of subpart.		
655.101	Definitions of terms used in subpart.		
655.102	Temporary labor certification application (general).		
655.103	Contents of job offer.		
655.104	Assurances.		
655.105	Action on temporary labor certifications applications by the Guam		
	Employment Service Office.		
655.106	Temporary labor certification determinations.		
655.107	Adverse effect rates.		
655.108	Temporary labor certification application involving fraud or willful		
	misrepresentation.		
655.109	Temporary labor certifications related records.		
655.110	Nature of employment service job orders.		

Subpart A -- TEMPORARY LABOR CERTIFICATION PROCESS FOR
OCCUPATIONS OTHER THAN AGRICULTURE AND
LOGGING

AUTHORITY: 8 CFR 214.1 (h)(3)(i); Wagner-Peyser Act of 1933 as amended, 29 U.S.C. 49 et seq.; 5 U.S.C. 301.

655.1 <u>Location of Regulations.</u>

- (a) The regulations governing the temporary labor certification process for occupations other than agriculture and logging are presently found at Part 621 of this Chapter. They will be codified in this subpart at a later date.
- (b) For Guam, the regulations at Part 621 of this Chapter are supplemented by regulations which are found in subpart B of this Part.
 - Subpart 8 -- TEMPORARY LABOR CERTIFICATION PROCESS FOR
 OCCUPATIONS ON GUAM OTHER THAN AGRICULTURE
 AND LOGGING

AUTHORITY: 8 CFR 214.1 (h)(3)(i); Wagner-Peyser Act of 1933, as amended, 29 U.S.C. 49 et

seq., 5 U.S.C. 301.

Scope and Purpose of Subpart.

- (a) This subpart supplements the regulations presently found at Part 621 of this Chapter and provides for the temporary labor certification process on Guam for all occupations except agriculture and logging.
- (b) The Immigration and Naturalization Regulations at 8 CFR 214.2 (h)(3)(i), issued under the Immigration and Nationality Act requires, in support of a petition for the admission of any alien into the United States to perform certain temporary labor:

Either a certifications from the Secretary of Labor or his designated representative stating that qualified persons in the United States are not available and that the employment of the beneficiary will not adversely affect the wages and working conditions of workers in the United States similarly employed, or a notice that such a certification cannot be made shall be attached to every non-immigrant visa petition to accord an alien a classification under Section 101 (a)(15)(h)(ii) of the act.

(c) The temporary labor certification procedure is designed to prevent the use of foreign labor at the expense of the wages and working conditions of United States workers similarly employed. Temporary foreign workers may only be used to perform temporary services to meet shortages which occur in a particular occupation or industry.

Definitions of terms used in subpart.

For purposes of this subpart:

"Administrator" means the chief official of the United States Employment Service or the Administrator's designee.

"Adverse effect rate" means the wage rate which the Administrator has determined must be offered and paid to foreign and U.S. workers for a particular occupation and/or area so that the wages of

similarly employed U.S. workers will not be adversely affected. The prevailing wage rate in the area and/or occupation is the adverse effect rate, unless the Administrator has determined that a higher wage rate is necessary to prevent an adverse effect.

"Certifying Officer" means a U.S. Department of Labor official authorized to grant or deny temporary labor certification applications.

"Employment and Training Administration (ETA)" means the agency within the Department of Labor (DOL) which includes the United States Employment Service (USES).

"Employer" means a person, firm, corporation or other organization which currently has a location within the Territory of Guam to which U.S. workers may be referred for employment, or the authorized representative of such a person, firm, or corporation.

"Guam Employment Service Office" means an office of the Guam Employment Service agency which serves the island of Guam.

"Job opportunity" means a job opening for employment on Guam to which U.S. workers can be referred.

"Offshore U.S. worker" means a United States worker whose domicile is in a State, Commonwealth, or Territory of the U.S. other than Guam.

"Notice of Findings" means a notice which sets forth the bases upon which a Regional Administrator intends to deny a temporary labor certification unless the bases are satisfactorily rebutted.

"Regional Administrator, Employment and Training Administration (RA)" means the chief official of the Employment and Training Administration (ETA) in the Department of Labor (DOL) San Francisco regional office.

"Secretary" means the Secretary of Labor, of the U.S. Department of Labor, or the Secretary's designee.

"Temporary labor certification" means the determination by the Secretary of Labor, pursuant to 8 CFR 214.2 (h)(3)(i), that (1) there are not sufficient U.S. workers who are qualified and available to perform the work and (2) the employment of the alien will not adversely affect the wages and working conditions of similarly employed U.S. workers.

"United States Employment Service (USES)" means an agency of the U.S. Department of Labor, established under the Wagner-Peyser Act of 1933, which is charged with administering the national system of public employment offices and carrying out the functions of the Secretary under the Immigration and Nationality Act.

"United States worker" means any worker who, whether U.S. citizen, national, or alien, is legally permitted to work permanently within the United States.

655.102 <u>Temporary Labor Certification Applications (General).</u>

- (a) An employer which anticipates a labor shortage may request a temporary labor certification for temporary foreign workers by filing, or by having an agent file, a temporary labor certification application, signed by the employer, with the Guam Employment Service Office. However, if the temporary labor certification application is filed by an agent, the agent may sign the application. If an agent is used, the application must be accompanied by a letter from the employer, signed by the employer which authorizes the agent to act on the employer's behalf, which states whether, and to what extent the agent is authorized to make change in the employer's job offer, and which states that the employer assumes full responsibility for the accuracy of the application, for all representations made by the agent on the employer's behalf, and for the fulfillment of all legal requirements arising from the temporary labor certification.
 - (b) Every temporary labor certification application shall include,
 - (1) A copy of the job offer used by the employer in the recruitment efforts for both

U.S. and foreign workers. The job offer shall state the number of workers needed by the employer, and shall be signed by the employer. The job offer shall comply with the requirements of 655.103 of this subpart:

- (2) The assurances required by 655.104 of this subpart;
- (3) Documentation showing in detail the employer's efforts to recruit U.S. workers; and
- (4) Documentation identifying the construction contract or contracts, if any, for which the temporary labor certification is being requested.
- (c) A temporary labor certification application shall be filed in sufficient time to allow the Guam Employment Service Office to attempt to recruit local U.S. workers. If local workers are not available the Guam Employment Service Office shall recruit through the interstate clearance system is current information from the RA indicates that offshore U.S. workers. A minimum of 60 calendar days should be allowed for the Guam employment service local and interstate recruitment process. This 60-day period shall be in addition to the time necessary for the employment to secure foreign workers by the date of need if the temporary labor certification is granted. The Department of Labor, however, may grant or deny the temporary labor certification prior to the end of the 60 calendar days if the Certifying Officer is able to make the necessary determination in a shorter period of time.

655.103 Contents of Job Offers.

- (a) The employer's job offer shall:
- (1) Offer to U.S. workers at least the same amount of wages and other benefits and working conditions which the employer is offering to non-immigrant aliens;
- (2) Set forth all the material terms and conditions of the job, including wage rates, working conditions, frequency of pay, hours and days of work, applicable worker's compensation

benefits, fringe benefits, proposed deductions from pay, etc.;

- (3) If housing is offered, contain a detailed description of such housing;
- (4) If transportation is offered, describe the transportation benefits in detail;
- (5) State that the employer will pay the worker the adverse effect rate pursuant to 6551.07 of this subpart; and
- (6) State that the job offer, including all benefits therein, is open to all qualified U.S. workers, including offshore U.S. workers, without regard to race, color, national origin, age, sex, and to U.S. workers with handicaps who are qualified to perform the job.

655.104 Assurances.

As part of the labor certification application the employer shall include assurances signed by the employer, that:

- (a) The employer has not within the past year found by a Court or by a Federal or State enforcement agency to have failed without good cause to comply with applicable Federal, State and local employment-related laws, including wage and hour, health and housing laws and temporary labor certification related requirements, or that, if the employer was so found, the employer has produced conclusive, documented evidence that the violation has been remedied, and assures that it will not violate the law or laws in the future;
 - (b) The job opportunity is not:
- (1) Vacant because the former occupant is on strike or is being locked out in the course of a labor dispute; or
 - (2) At issue in a labor dispute.
- (c) During the period in which foreign workers are scheduled to be employed under the terms of the temporary labor certification:

- (1) The wages and working conditions which will be offered and afforded by the employer to any foreign worker will be identical to those offered and afforded to U.S. workers; and
- (2) The employer will offer and provide employment to any U.S. worker who is qualified and willing to work in the job opportunity and will keep a standing job order on file with the Guam Employment Service Office.
- (d) The employer will provide each worker with a copy of the worker's employment contract, and, if the worker is not literate in English, the contract which is provided will be in a language in which the worker is literate:
- (e) Reasonable efforts have been and will continue to be made by the employer to obtain U.S. workers at adverse effect rates and working conditions no less favorable than those offered to aliens;
- (f) The employer will not reject any qualified U.S. worker on the grounds that the employer's supervisory personnel speak a language other than that of the U.S. worker, and will assure that it has supervisors who speak a language understood by potential U.S. workers;
- (g) If a U.S. worker cannot be recruited on Guam, the employer will consider referrals of offshore U.S. workers from Hawaii and the continental United States;
- (h) The employer will accept the assistance of the Employment Service System in finding workers and will cooperate with it fully.
- 655.105 <u>Action on Temporary Labor Certification Applications by the Guam Employment</u>
 Service Office.
- (a) When a temporary labor certification application is filed with the Guam Employment Service Office, the Guam Employment Service Office shall make sure that the application is complete. If the application is not complete, or if it is unlawfully discriminatory or otherwise unacceptable under Employment Service regulations for use in preparing a job order, the Guam Employment Service Office

shall return it to the employer and shall advise the employer to re-file it when it is completed.

- (b) If the application is complete, the Guam Employment Service Office, using the information on the application, shall prepare and process an employment service job order and, if it anticipates a shortage of local workers, an interstate job order.
- (c) (1) The Guam Employment Service Office shall then use the job order to recruit U.S. workers locally, and if local U.S. workers are not available, through the interstate clearance system. Special efforts shall then be made to recruit workers out of Job Corps, CETA, and other [X] funded programs.
- (2) As part of this recruitment effort the employer shall pay to an advertisement placed in the newspaper with the largest circulation on Guam for a 5-day period, and, instances in which the interstate clearance system is used, in the largest circulation newspaper in Hawaii for a 5-day period for specified occupations as determined by the Regional Administrator. The advertisement(s) shall direct interested applicants to apply at the appropriate employment service office. The Guam and Hawaii Employment Service offices and the employer shall maintain records on the persons who respond and the results of referrals.
- (d) The Guam employment service agency, after the recruitment period shall send the temporary labor certification application to the Certifying Officer of the Employment and Training Administration, together with:
- (1) A statement indicating whether the Guam Employment Service Agency believes the employer has met requirements of this subject;
 - (2) A report of U.S. workers availability in the area;
 - (3) A description of the recruitment efforts undertaken by the employer.
 - (4) Any information which indicates that, during the prior year, the employer did not

fulfill the wage or other representations made in connection with any prior temporary labor certifications and whether or not the Guam Employment Service Agency took action against the employer pursuant to Part 658, Subpart F, of this Chapter; and

(5) Any other information requested by the Department of Labor.

655.106 <u>Temporary Labor Certification Determinations.</u>

- (a) If the Certifying Officer has reason to believe that the employer's efforts to recruit U.S. workers has not been sufficient, that U.S. workers are available, that the employment of the non-immigrant aliens will adversely affect the wages and working conditions of U.S. workers, or that the temporary labor certification should not be granted for other reasons, the Certifying Officer shall issue a Notice of Findings, and shall afford the employer a reasonable time to submit evidence to rebut the basis of the Notice of Findings.
- (b) The Certifying Officer shall then make a determination to grant or deny the temporary labor certification. No temporary labor certification shall be granted, however, if the Certifying Officer determines that the employer, during the prior year, did not fulfill the wage or other representations made in connection with any prior temporary labor certification, or if the Certifying Officer determines that, with respect to the present temporary labor certification application, the employer has not complied with the requirements of 655.103 107 of this subpart.
- (c) After the temporary labor certification determination has been made the Certifying Officer shall notify the employer in writing of the decision. If the temporary labor certification is denied, the notice shall state the reasons therefore and appeal rights of the employer under the Immigration and Naturalization Service regulations.
- (d) The granting or denial of a temporary labor certification application by the Certifying Officer shall be the final decision of the Secretary of Labor. Therefore, the employer may not make use

of the complaint procedures set forth at Part 658, Subpart E of this Chapter.

655.107 Adverse Effect Rates.

- (a) Except as provided in paragraph (b) of this section, the adverse effect rates for Guam shall be the prevailing rates for the occupations on Guam or, if the occupation is new to Guam, the prevailing rates for the most nearly comparable occupation on Guam.
- (b) The following hourly adverse effect wage rates shall be paid to journeymen for jobs in the Guam construction industry. Trainees may be employed in Pay Levels III, IV and V. Such trainees shall be paid at 80 percent of the journeyman wage rate for the first year and 90 percent for the second year. The Pay Level adverse effect rates shall not be applicable to contract which were executed prior to the effective date of the regulation in this subpart. Nor shall the Pay Level adverse effect rates applicable to temporary labor certification applications involving job opportunities which are financed by loans granted by the Small Business Administration prior to the effective date of the regulations in this subpart. The rates applicable to such a contract or Small Business Administration loan shall be those which were applicable under the temporary labor certification process at the time of the execution of the contract or loan.

(1)	Pay Level I		
(i)	Effective date of regulations	\$ 3.00	
(ii)	March 1, 1978	3.65	
(iii)	September 1, 1978		4.30
(iv)	March 1, 1979	5.00	
(2)	Pay Level II		
(i)	Effective date of regulations	3.25	
(ii)	March 1, 1978	4.00	

(iii)	September 1, 1978		4.75
(iv)	March 1, 1979	5.50	
(3)	Pay Level III		
(i)	Effective date of regulations	3.75	
(ii)	March 1, 1978	4.50	
(iii)	September 1, 1978		5.25
(iv)	March 1, 1979	6.00	
(4)	Pay Level IV		
(i)	Effective date of regulations	4.00	
(ii)	March 1, 1978	4.90	
(iii)	September 1, 1978		5.80
(iv)	March 1, 1979	6.75	
(5)	Pay Level V		
(i)	Effective date of regulations	4.25	
(ii)	March 1, 1978	5.15	
(iii)	September 1, 1978		6.05
(iv)	March 1, 1979	7.00	

- (c) Starting September 1, 1979, and thereafter the construction rates will be based upon the then current Wage Board rates.
- (d) Pay Level I -- The principal occupations included here are <u>Laborers and Unskilled</u>

 <u>Workers:</u> Includes all other laborers and unskilled workers involved in the performance of simple duties that may be learned within a short period of time and that require the exercise of little or no independent judgement. Characteristically, such occupations do not require previous experience, although a

familiarity with the occupational environment may be necessary or very desirable. The occupations in this group vary from those involving a minimum of physical exertion to those characterized by heavy physical work. Pay Level I shall include occupations such as:

- (1) Rod carriers;
- (2) Pile drivers; and
- (3) All other laborer and unskilled worker occupations.
- (e) Pay Level II -- The principal occupations included here are <u>Helpers</u>, <u>Skilled Trades</u>: Includes all helpers who assist one or more workers in the skilled trades, by performing a variety of duties, such as furnishing another worker with materials, tool and supplies; cleaning work area, machines and equipment; feeding of offbearing machines; holding materials or tools; and performs other routine duties. Pay Level II shall include occupations such as:
 - (1) Oilers, such as greaser and oilers, lubricators, and machine hoistlers;
 - (2) Tile setter helpers;
 - (3) Cement mason helpers;
 - (4) Asphalt heater tenders;
 - (5) Asphalt mixing machine tenders;
 - (6) Asphalt rakers, including black top rakers;
 - (7) Finegraders, including slopers, etc.;
 - (8) Carpenter helpers;
- (9) Floor sanding machine operators, including floor sanders, floor scrapers, floor finishers, etc.;
 - (10) Electrical helpers;
 - (11) Painter helpers;

- (12) Paperhanger helpers;
- (13) Plasterer helpers;
- (14) Plumber and/or pipefitter helpers;
- (15) Roofer helpers;
- (16) Stone mason helpers;
- (17) Terrazo worker helpers; and
- (18) All other helpers in the skilled trades, such as driller helpers and stucco mason helpers.
- Workers: Includes all operative and semiskilled workers in occupations that are characterized by one, or a combination of the following requirements: The exercise of manipulative ability of a high order but limited to a fair well-defined work routine; major reliance, not so much upon the worker's judgment or dexterity, but upon vigilance and alertness, in situations in which lapses in performance would cause extensive damage to product or equipment, and the exercise of independent judgement to meet variables in the work situation, which is not based on wide knowledge of work field and with the nature and extent of the judgements limited either (1) by applications over a relatively narrow task situation; or (2) by having important decisions made by others. These occupations may require the performance of part of a craft or skilled occupations, but usually to a relatively limited extent. Occupations are considered semiskilled if the specific vocational preparation required to perform them involved training or other preparation of more than 30 days up to and including two years.

Pay Level III shall include occupations such as:

(1) Chain surveyor helpers, rod surveyor helpers, and/or triangulation lightkeepers, including surveyor assistants, surveyor helpers, etc.;

- (2) Automotive mechanics, including truck mechanics, industrial truck mechanics, etc., but excluding diesel mechanics and engineering equipment mechanics;
 - (3) Maintenance mechanics, but excluding millwrights;
 - (4) General utility maintenance workers;
- (5) Truck operators, including concrete mixing truck drivers, dump truck drivers, etc. (but excluding delivery and route drivers and industrial truck drivers, including fork lift operators, etc.).
- (6) Concrete mixer operators, including batching and mixing plant operators, mixing machine operators, etc.;
- (7) Concrete rubbers, including cement patches, cement rubbers, concrete polishers, etc;
 - (8) Concrete wall grinder operators, including concrete grinder operators, etc.;
 - (9) Dredge dipper tenders, including bucket operators, etc.;
 - (10) Dredge pipe installers;
 - (11) Dope pourers, masticers, etc., but excluding pipe paperhangers;
 - (12) Pipelaying fitters, including spacers, etc.;
 - (13) Pipecleaning and priming machine operators;
- (14) Air hammer operators, including airbreaker operators, air gun operators, air tool operators, etc.;
 - (15) Asphalt plant drier operators;
 - (16) Asphalt plant operators;
- (17) Construction blasters, including charges, firers, powder workers, shooters, shot firers, etc.;
 - (18) Hook and chainers;

- (19) Fence erectors, including ironworkers, wirefence erectors, wirefence builders, etc.;
- (20) Form tamper operators and/or tamping machine operators, including road form tamping machine operators, etc;
 - (21) Metal road form setters, including metal road form fitters, etc.;
- (22) Reinforcing iron workers, including iron workers, reinforcing bar setters, reinforcing steel erectors, reinforcing rod tiers, etc.;
- (23) Metal fabricators, including structural metal fabricators, etc., but excluding sheet metal workers;
- (24) Structural steel workers, including bridgers, iron erectors, steel erectors, structural steel erectors, etc.;
- (25) Millwrights, including machine erectors, etc., but excluding maintenance mechanics;
 - (26) Carpet cutter and/or carpet layers, but excluding floorlayers;
 - (27) Lathers, including metal lathers, rockbroad lathers, etc., but excluding carpenters;
- (28) Dry wall applicators, including dry wall nailers, sheetrockers, etc., but excluding carpenters;
- (29) Tapers, including dry wall finishers, wall board and plasterboard finishers, sheetrock tapers, tapers and bedders, tapers and floaters, etc.;
 - (30) Glaziers, including glass setter, plate glass glaziers, etc.;
- (31) Construction and maintenance painters, including structural steel painters, finish painters, etc.;
 - (32) Paperhangers, excluding pipe paperhangers;

- (33) Plasterers, including finish plasterers, spray plasterers, etc., but excluding drywall applicators, lather stucco masons and tapers;
- (34) Oil burner installers and servicers, including oil burner installers, oil burner services, etc., but excluding plumbers;
- (35) All other operatives and semi-skilled workers such as portable pump pumpers, pile driving jetters, steam cleaning machine operators, pipe paperhangers, etc.;
- (g) Pay Level IV -- The occupations included here, and in Pay Level V, are Skilled Craftsmen: Includes all skilled craftsman and kindred workers in occupations that predominately require thorough and comprehensive knowledge of processes involved in the work, the exercise of considerable independent judgment, usually high degree of manual dexterity, and in some instances, extensive responsibility for valuable product or equipment. Workers in these occupations usually become qualified by serving apprenticeships or completing extensive training periods. Occupations are considered skilled if the specific vocational preparation required to perform them involved training or other preparation of more than 2 years. Pay Level IV shall include skilled craft and kindred occupation such as:
- (1) All mechanics and repairers not listed on other pay levels such as dredge mechanics, etc.;
 - (2) Cement masons, including highway and street cement mason etc.;
 - (3) Metal conduit layers, including duct layers, etc.;
 - (4) Dredge operators, including dredge pumpers, etc.
 - (5) Pipelayers, including pipesetters, water pipelayers, cast iron pipelayers, etc.;
 - (6) Sewer tappers, but excluding plumbers and/or pipefitters;
 - (7) Fine trench trimmers, including trench trimmers, inverted fine trimmers, etc.;
 - (8) Structural steel layout workers, including template layout workers, etc.;

- (9) Asbestos and insulation workers, including blanket insulation workers, corkboard insulation workers, etc.;
 - (10) Bricklayers, including gypsum blocksetters, cinder block masons, etc.;
- (11) Carpenters, including hardwood floorlayers, framing carpenters, combination carpenters, window installers, etc., but excluding cabinetmakers, floorlayers other than hardwood floorlayers, lathers, and drywall applicators;
- (12) Ceiling tile installers and/or floor layers, including asphalt tile floor layers, cork tile floor layers, floor coverers, floor covering block layers, etc., but excluding carpenters, terrazzo workers, and carpet cutters or layers;
- (13) Line maintainers, including high tension line mainters, etc., but excluding electricians and wirers;
- (14) Plumbers and/or pipefitters, including steamfitters, sprinkler installers, etc., but excluding oil burner installers and servicers, hot air furnace installers and repairers, and pipeline construction workers;
- (15) Roofers, including aluminum shingle roofers, composition roofers, etc., but excluding metal roofers;
 - (16) Stone masons, including alberene stone setters, artificial stone setters, etc.;
 - (17) Terrazzo workers, including artificial marble workers, etc.,
 - (18) Tile setters, including tile fitters, tile masons, etc.;
- (19) Hot air furnace installers and repairers, including furnace workers, hot air furnace installers, hot air furnace repairers, heating workers, etc., but excluding plumbing;
- (20) Sheet metal workers, including coppersmiths, tinsmiths, special item fabricators, metal roofers, etc., but excluding metal fabricators;

- (21) Welders and flamecutters, including welders, gas welders, spot welders, leadburners, resistance welders, solderers, etc.; and
- (22) All other skilled craft and kindred occupations, such as instrument repairers, stucco masons, stationary engineering, etc.
- (h) Pay Level V -- The occupations included here, and in Pay Level IV, are <u>Skilled Craftsmen</u>: Includes all skilled craftsmen and kindred workers in occupations that predominately require a thorough and comprehensive knowledge of processes involved in the work, the exercise of considerable independent judgement, usually a high degree of manual dexterity, and in some instances, extensive responsibility for valuable product or equipment. Workers in these occupations usually become qualified by serving apprenticeships or completing extensive training periods. Occupations are considered skilled if the specific vocational preparation required to perform them involves training or other preparation of more than 2 years. Pay Level V shall include occupations such as:
- (1) Diesel mechanics, excluding automotive mechanics and engineering equipment mechanics;
- (2) Engineering equipment mechanics, including heavy equipment mechanics, etc., but excluding automotive mechanics and diesel mechanics;
- (3) Refrigeration mechanics, including air conditioning attendants, air conditioning mechanics, refrigeration equipment erectors, etc.
- (4) Crane operators, derrick operators, and hoist operators excluding heavy equipment operators and dredge operators;
 - (5) Boilermakers;
 - (6) Cabinetmakers, excluding carpenters;
 - (7) Electricians, including wirers, residential wirers, etc. and excluding line

maintainers;

- (8) Machinists, including maintenance machinists, etc.; and
- (9) Heavy equipment operators, excluding dredge operators, crane operators, derrick operators, and hoist operators, but including:
 - (i) Asphalt paving machine operators;
 - (ii) Blade grader operators;
 - (iii) Bulldozer operators;
 - (iv) Concrete paver operators and/or concrete-paving machine

operators;

- (v) Dragline operators;
- (vi) Drifters;
- (vii) Water well drillers;
- (viii) Earth boring machine operators;
- (ix) Elevating grade operators;
- (x) Form grader operators;
- (xi) Foundation drill operators;
- (xii) Heater planner operators;
- (xiii) Horizontal earth boring machine operators;
- (xiv) Motor grader operators;
- (xv) Mucking machine operators;
- (xvi) Pile driver operators;
- (xvii) Power shovel operators;
- (xviii) Road mixer operators;

	(xix)	Road roller operators;		
	(xx)	Rock drill operators;		
	(xxi)	Scraper operators;		
	(xxii)	Sheet-pile-hammer operators;		
	(xxiii)	Shield runners;		
	(xxiv)	Subgrader operators;		
	(xxv)	Sweeper operators;		
	(xxvi)	Tower-excavator operators;		
	(xxvii)	Trench-digging machine operators;		
	(xxviii)	Utility tractor operators;		
	(xxix)	Cable tool well-drill operators;		
	(xxx)	Rotary drill well-drill operators;		
	(xxxi)	Well-reactivator operators;		
655.108	Temporary Labor	Certification Applications Involving Fraud or Willful		
Misrepresentation.				

- (a) If possible fraud or willful misrepresentation involving a temporary labor certification application is discovered prior to a final temporary labor certification determination, or if it is learned that an application is the subject of a criminal indictment or information filed in a County, the Certifying Officer shall refer this matter to the INS for investigation and shall notify the applicant, in writing, of this referral. The Certifying Officer shall continue to process the application and may issue a qualified temporary labor certification.
- (b) If a Court finds an applicant innocent of fraud or willful misrepresentation, or if the Department of Justice decides not to prosecute an applicant, the Certifying Officer shall not deny the

temporary labor certification application on the grounds of fraud or willful misrepresentation. The application, of course, may be denied for other reasons pursuant to this subpart.

(c) If a Court or the INS determines that there was a fraud or willful misrepresentation involving a temporary labor certification application, the application shall be deemed invalidated, processing shall be terminated, and the application shall be returned to the applicant with the reason therefore stated in writing.

655.109 <u>Temporary Labor Certification Related Records.</u>

Employers who have been granted temporary labor certifications shall maintain for at least three years all records, including payroll and other employment records, which are related to the employment of the non-immigrant alien workers. These records shall be made available to the Secretary or the Secretary's representatives.

Nature of Employment Service Job Orders.

In view of the statutorily established basic function of the employment service as a no-fee labor exchange, that is, as a forum for bringing together employers and job seekers, neither the Department of Labor nor the Guam Employment Service are guarantors of the accuracy or truthfulness of information contained on job orders submitted by employers. Nor do such job orders represent an "offer to contract" to which the Employment Service is in any way a part.

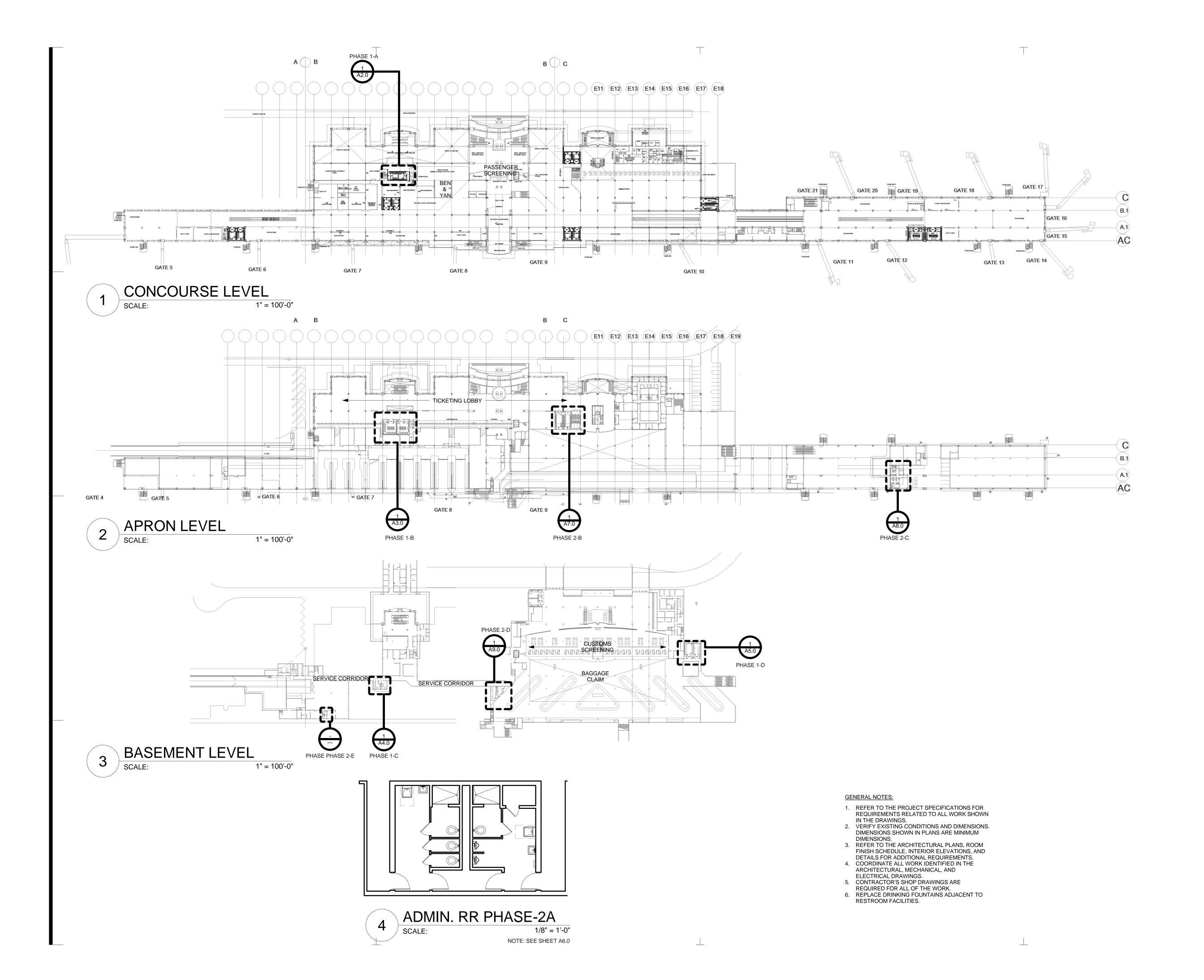
Signed at Washington, D.C. this ______ day of _______, 20_____.

ERNEST G. GREEN

Assistant Secretary for Employment and Training

Prevailing Wage Rates for Temporary Alien Employment Certification Government of Guam EFFECTIVE SEPTEMBER 29, 2008 TO PRESENT

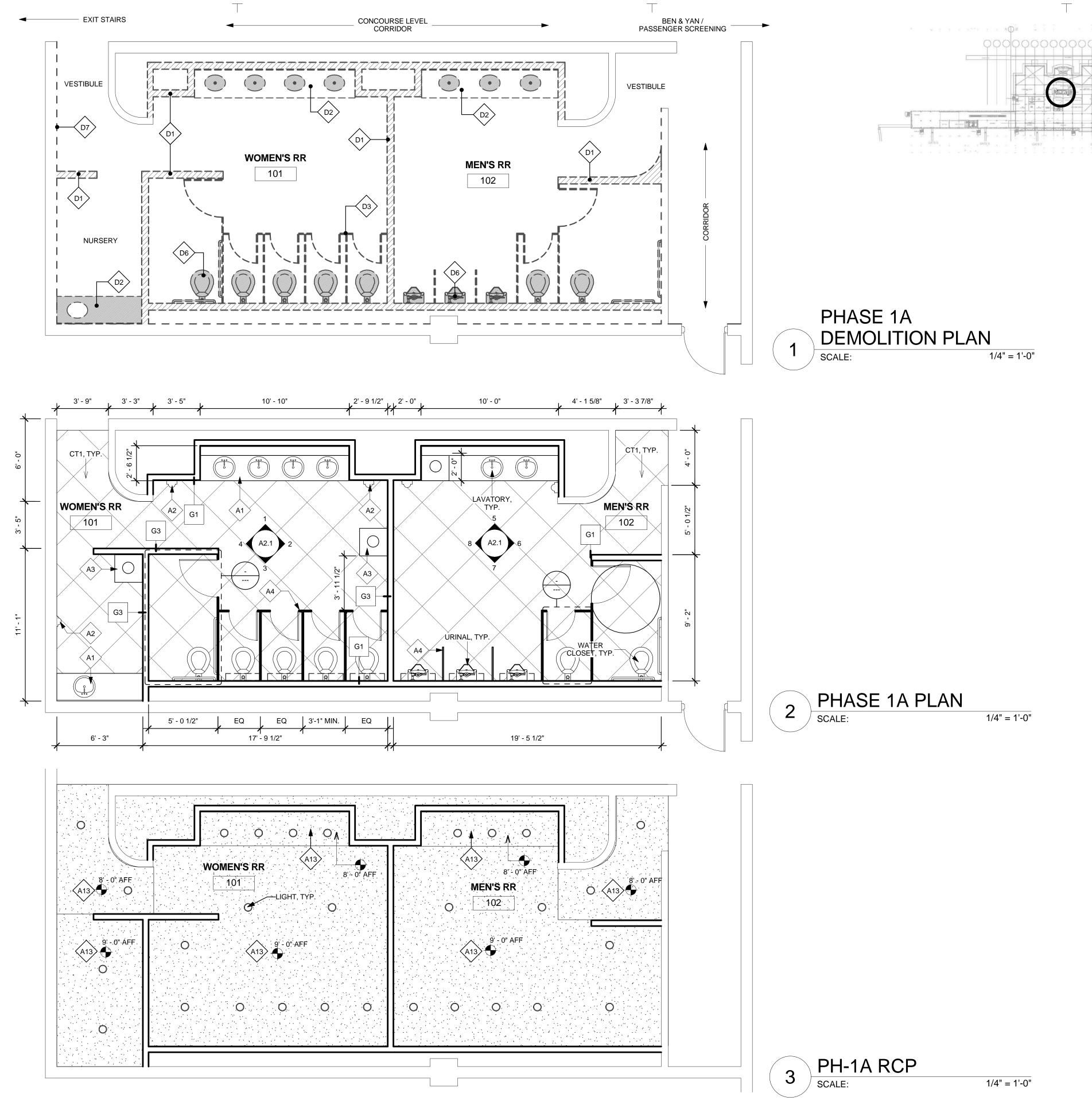
OCCUPATION	HOURLY RATE
Bricklayer	\$14.02
Carpenter	\$13.56
Cement Mason	\$12.87
Construction Equipment Mechanic	\$14.14
Cook, Camp	\$11.85
Electrician	\$15.45
Heating, Air Conditioning, & Refrigeration Mechanic	\$15.73
Operating Engineer (Heavy Equipment Operator)	\$13.77
Painter	\$14.60
Pipe Fitter	\$16.80
Plasterer	\$10.98
Plumber	\$14.96
Reinforcing Metal Worker	\$12.56
Sheet-metal Worker	\$15.17
Structural Steel Worker	\$13.22
Surveyor Helper	\$15.98
Welder	\$16.09



	TRMA
	100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381
	Architecture Planning Interior Design
	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
	BY ME OR UNDER MY DIRECT SUPERVISION DATE:
	Project:
	A.B. WON PAT INTERNATIONAL AIRPORT
	RESTROOM RENOVATIONS
	Title:
	DUACING DUANTS
	PHASING PLAN & GENERAL NOTES
	BID DOCUMENTS
	Designed: TRMA
	Drawn: TRMA
	Checked: CTC
	Supv: CTC
	Scale: As indicated Date: 00/00/45
	Date: 02/20/15 Project No. File
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	Drawing No.
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REVISIONS

Description



CONCOURSE LEVEL

	Keynote	Description
	D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.
	D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.
	D3	REPLACE EXISTING TOILET PARTITIONS, TYPICAL.
	D4	REPLACE EXISTING TOILET ACCESSORIES, TYPICAL.
	D5	REPLACE EXISTING WALL & FLOOR FINISHES, TYPICAL.
	D6	REPLACE EXISTING ELECTRICAL, MECHANICAL, AND FIRE PROTECTION WORK PER ELECTRICAL AND MECHANICAL DRAWINGS, TYPICAL.
A K I	D7	DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL.
. r. i		

	ARCHITECTURAL KEYNOTES			
Keynote	Description			
A1	LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.			
A2	HAND DRYER, TYPICAL.			
A3	TRASH RECEPTACLE, TYPICAL.			
A4	TOILET PARTITIONS, TYPICAL.			
A5	WALL TILE, TYPICAL.			
A7	FULL-HEIGHT MIRROR, TYPICAL.			
A11	SHELF, TYPICAL.			
A13	GYP. BD. CEILING / SOFFIT, TYPICAL			

DEMOLITION KEYNOTES

GENERAL NOTES:

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- IN THE DRAWINGS. 2. VERIFY EXISTING CONDITIONS AND DIMENSIONS. DIMENSIONS SHOWN IN PLANS ARE MINIMUM
- DIMENSIONS.

 3. REFER TO THE ARCHITECTURAL PLANS, ROOM FINISH SCHEDULE, INTERIOR ELEVATIONS, AND DETAILS FOR ADDITIONAL REQUIREMENTS.
- 4. COORDINATE ALL WORK IDENTIFIED IN THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

 5. CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK.

 6. REPLACE DRINKING FOUNTAINS ADJACENT TO
- RESTROOM FACILITIES.

REVISIONS Description

Taniguchi Ruth Makio Architects 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

I HEREBY CERTIFY THAT THIS PLAN WAS PREPAREI BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

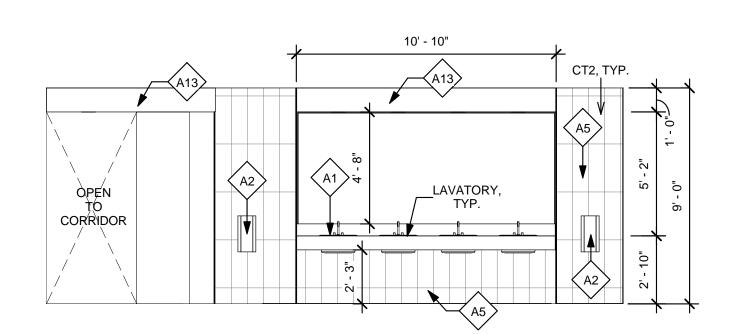
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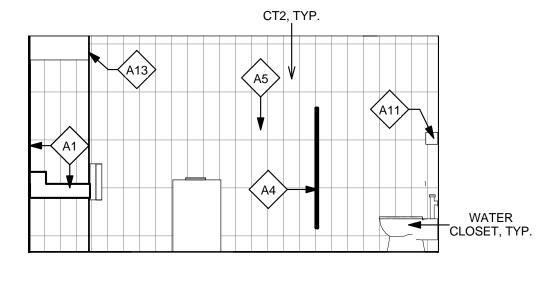
CONCOURSE LEVEL PHASE 1A PLANS

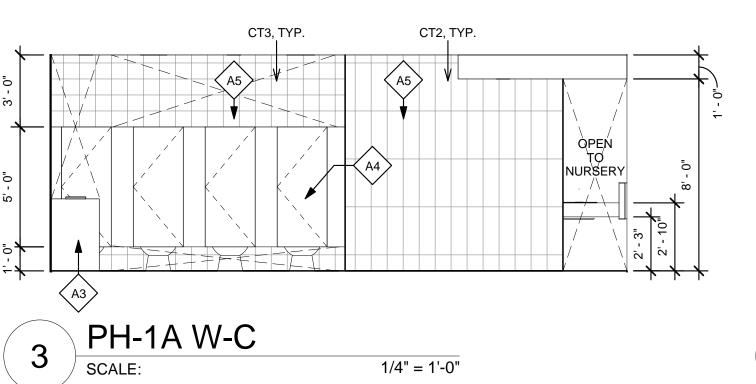
BID DOCUMENTS

TRMA TRMA Checked: CTC As indicated 02/20/15

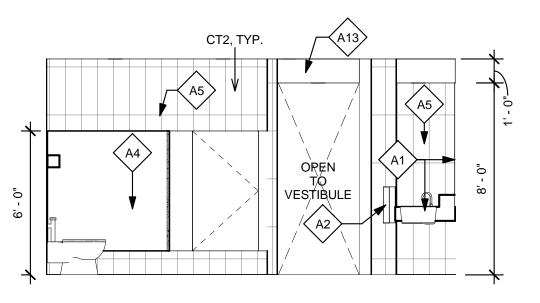








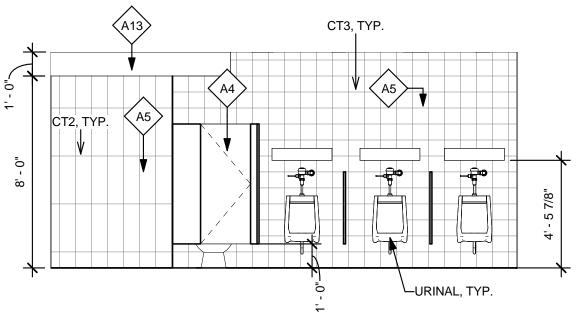
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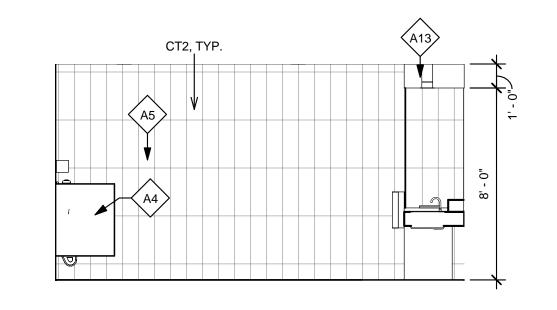


















0	PH-1A M-D	
0	SCALE:	1/4" = 1'-0"

	ARCHITECTURAL KEYNOTES		
Keynote	Description		
A1	LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.		
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A11	SHELF, TYPICAL.		
A13	GYP. BD. CEILING / SOFFIT, TYPICAL		

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- 3. REFER TO THE ARCHITECTURAL PLANS, ROOM FINISH SCHEDULE, INTERIOR ELEVATIONS, AND DETAILS FOR ADDITIONAL REQUIREMENTS.
- 4. COORDINATE ALL WORK IDENTIFIED IN THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
- 5. CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK. 6. REPLACE DRINKING FOUNTAINS ADJACENT TO RESTROOM FACILITIES.

AP DISPENSERS, AND	
	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARE BY ME OR UNDER MY DIRECT SUPERVISION
	DATE:
	Project:
	A.B. WON PAT

INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

REVISIONS

Description

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 Fax.: (671) 472-3381

Architecture Planning Interior Design

CONCOURSE LEVEL PHASE-1A INTERIOR

Title:

BID DOCUMENTS

ELEVATIONS

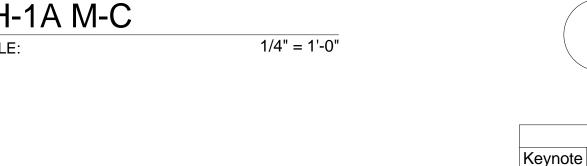
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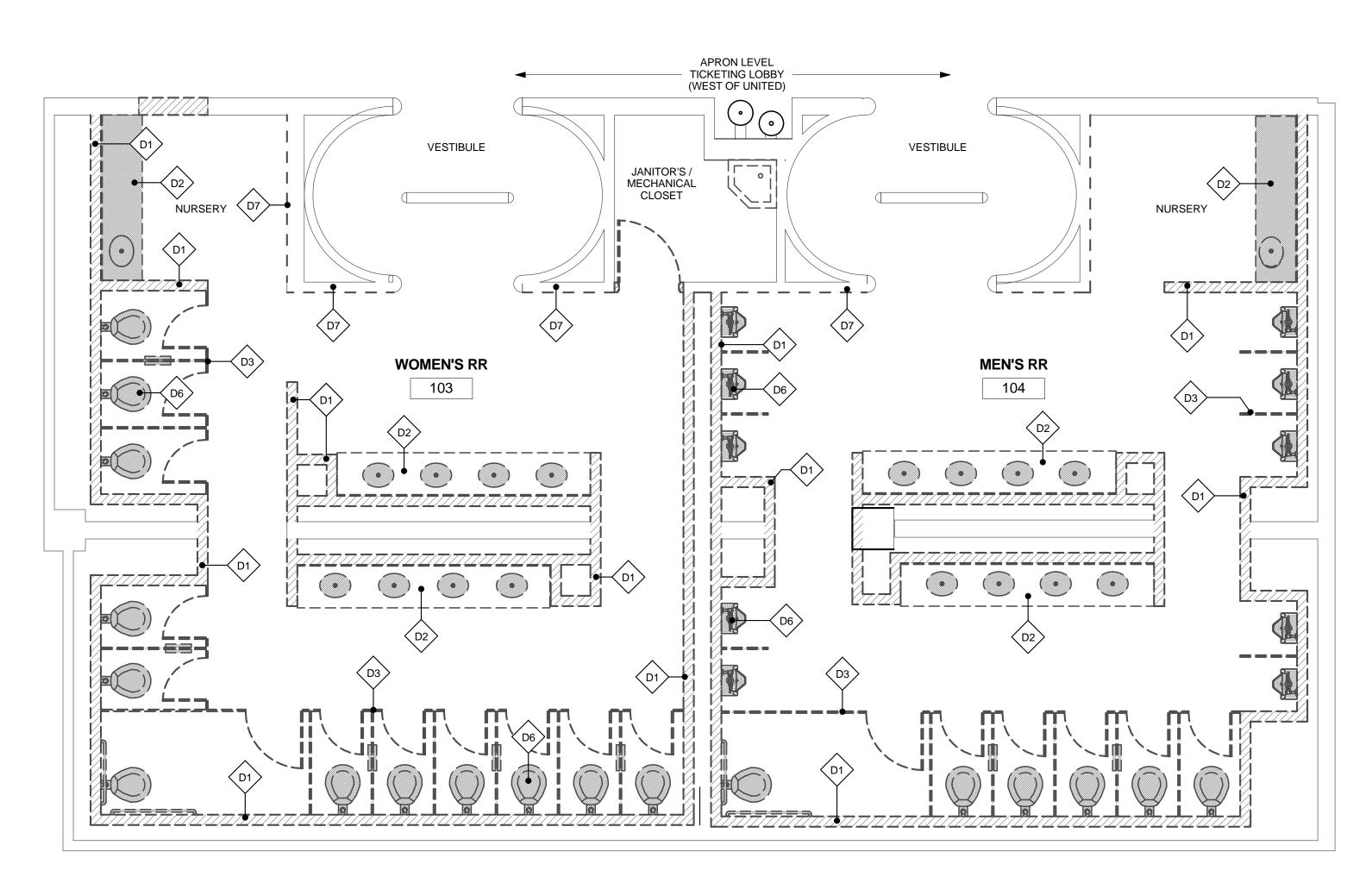
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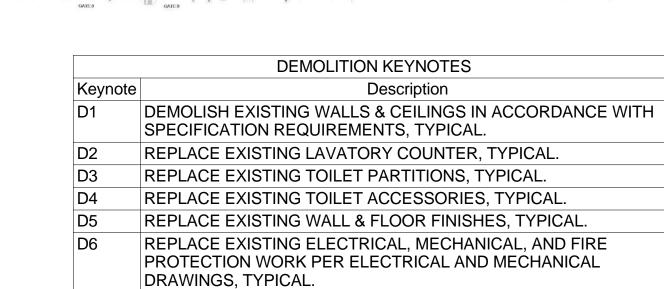




1 PH-1B EXISTING

SCALE: 1/4" = 1'-0"

APRON LEVEL



DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL.

Eff E12 E13 E14 E15 E16 E17 E18 E19

GENERAL NOTES:

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 DIMENSIONS SHOWN IN PLANS ARE MINIMUM
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 REPLACE DRINKING FOUNTAINS ADJACENT TO RESTROOM FACILITIES.

No. Description Date

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

I HEREBY CERTIFY THAT THIS PLAN WAS PREP. BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

* | |

APRON LEVEL PHASE-1B DEMOLITION PLAN

BID DOCUMENTS

Designed: TRMA

Drawn: TRMA

Checked: CTC

Supv: CTC

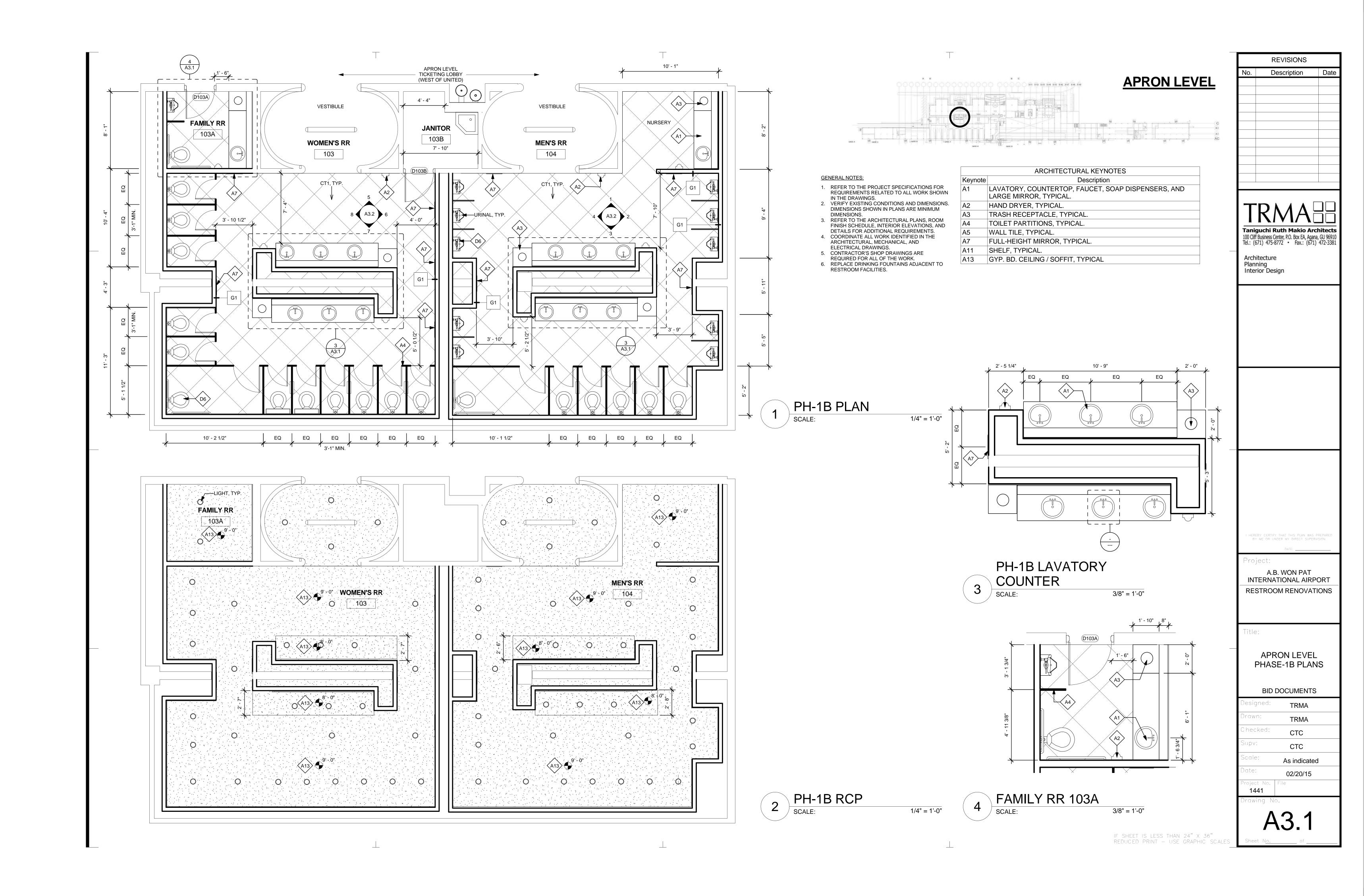
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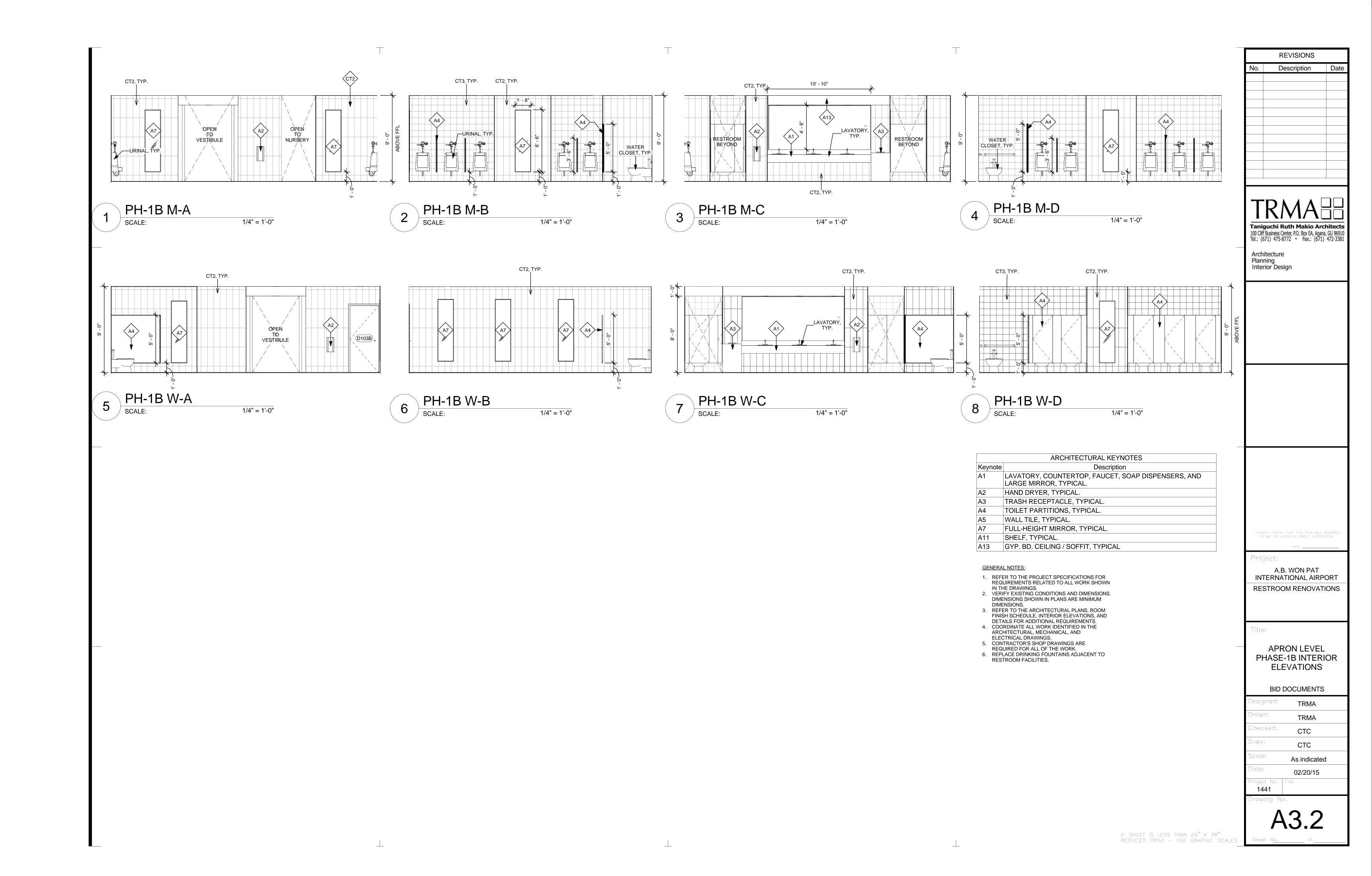
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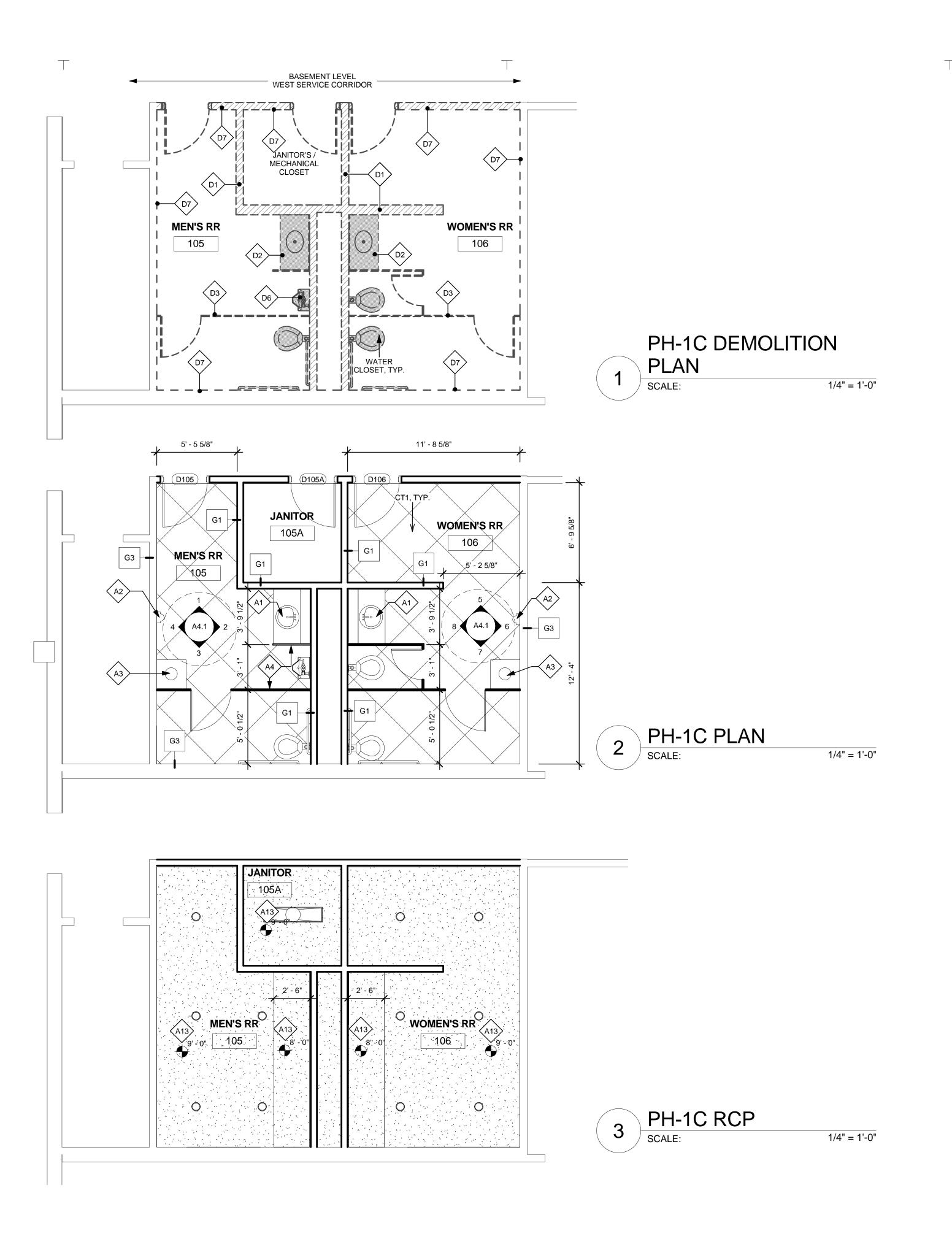
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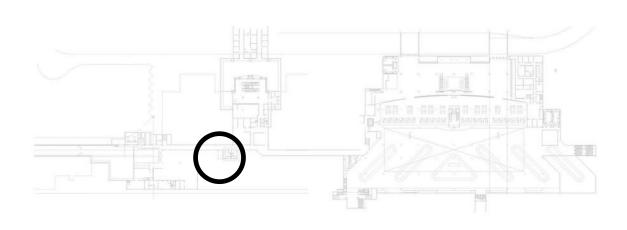
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BASEMENT LEVEL



DEMOLITION KEYNOTES				
Keynote	Description			
D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.			
D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.			
D3	REPLACE EXISTING TOILET PARTITIONS, TYPICAL.			
D4	REPLACE EXISTING TOILET ACCESSORIES, TYPICAL.			
D5	REPLACE EXISTING WALL & FLOOR FINISHES, TYPICAL.			
D6	REPLACE EXISTING ELECTRICAL, MECHANICAL, AND FIRE PROTECTION WORK PER ELECTRICAL AND MECHANICAL DRAWINGS, TYPICAL.			
D7	DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL.			

ARCHITECTURAL KEYNOTES			
Keynote	Description		
A1	LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.		
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- IN THE DRAWINGS.

 2. VERIFY EXISTING CONDITIONS AND DIMENSIONS.
 DIMENSIONS SHOWN IN PLANS ARE MINIMUM
- DIMENSIONS SHOWN IN PLANS ARE INITIALIZED DIMENSIONS.

 3. REFER TO THE ARCHITECTURAL PLANS, ROOM FINISH SCHEDULE, INTERIOR ELEVATIONS, AND DETAILS FOR ADDITIONAL REQUIREMENTS.

 4. COORDINATE ALL WORK IDENTIFIED IN THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS
- ELECTRICAL DRAWINGS.

 5. CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK.

 6. REPLACE DESIGNATION OF THE WORK ADJACENT TO
- RESTROOM FACILITIES.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPAREI BY ME OR UNDER MY DIRECT SUPERVISION

REVISIONS

Description

Taniguchi Ruth Makio Architects 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture

Planning Interior Design

Project:

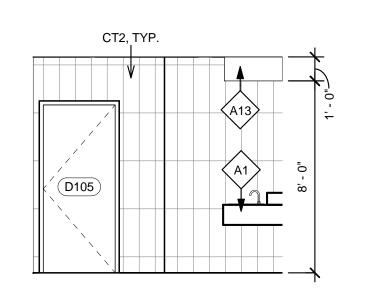
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE-1C PLANS

BID DOCUMENTS

Designed:	TRMA
Drawn:	TRMA
Checked:	СТС
Supv:	СТС
Scale:	As indicated
Date:	02/20/15

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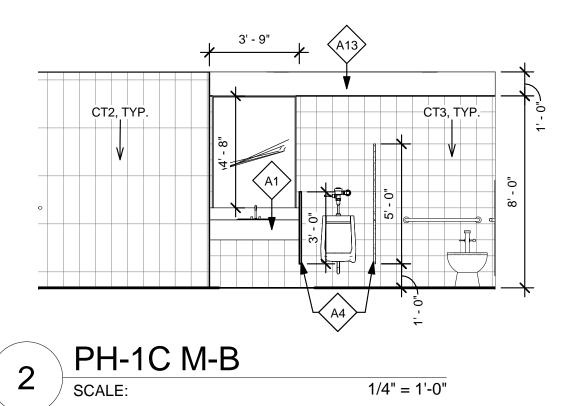


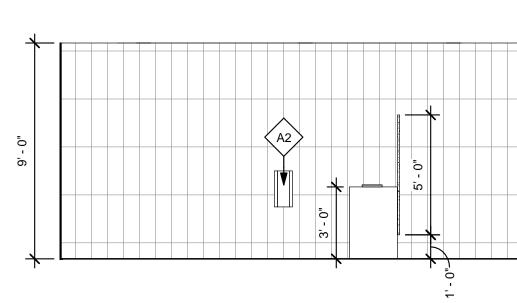
1 PH-1C M-A

SCALE: 1/4" = 1'-0"

5 PH-1C W-A SCALE:

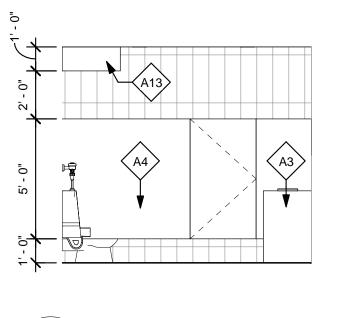
1/4" = 1'-0"



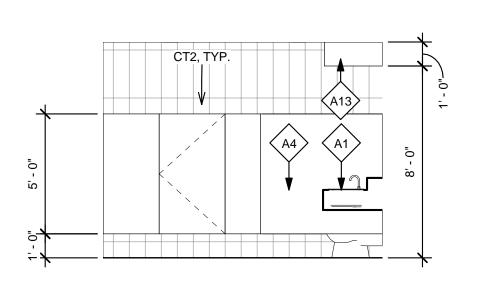


6 PH-1C W-B

SCALE: 1/4" = 1'-0"

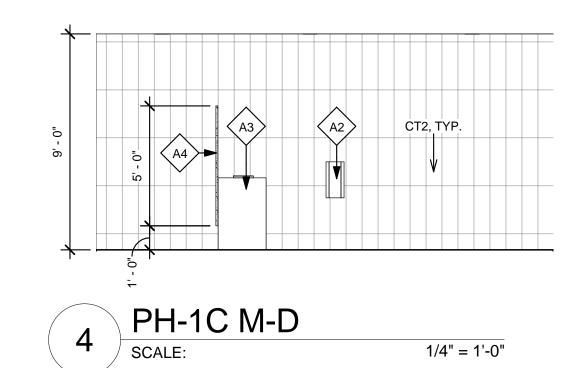


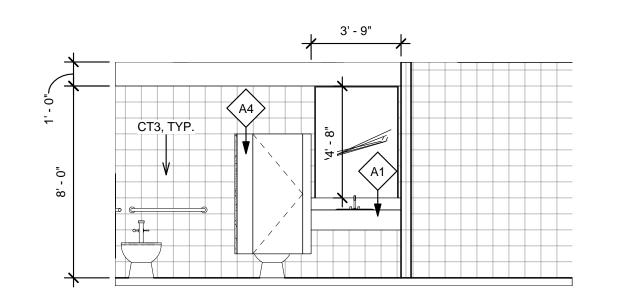
3 PH-1C M-C
SCALE: 1/4" = 1'-0"



7 PH-1C W-C

SCALE: 1/4" = 1'-0"





8 PH-1C W-D

SCALE: 1/4" = 1'-0"

	ARCHITECTURAL KEYNOTES
Keynote	Description
A1	LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.
A2	HAND DRYER, TYPICAL.
A3	TRASH RECEPTACLE, TYPICAL.
A4	TOILET PARTITIONS, TYPICAL.
A5	WALL TILE, TYPICAL.
A7	FULL-HEIGHT MIRROR, TYPICAL.
A11	SHELF, TYPICAL.
A13	GYP. BD. CEILING / SOFFIT, TYPICAL

GENERAL NOTES:

- REFER TO THE PROJECT SPECIFICATIONS FOR REQUIREMENTS RELATED TO ALL WORK SHOWN
- IN THE DRAWINGS.

 2. VERIFY EXISTING CONDITIONS AND DIMENSIONS.
 DIMENSIONS SHOWN IN PLANS ARE MINIMUM
- DIMENSIONS.

 3. REFER TO THE ARCHITECTURAL PLANS, ROOM FINISH SCHEDULE, INTERIOR ELEVATIONS, AND DETAILS FOR ADDITIONAL PROLUBEMENTS.
- FINISH SCHEDULE, INTERIOR ELEVATIONS, A DETAILS FOR ADDITIONAL REQUIREMENTS.

 4. COORDINATE ALL WORK IDENTIFIED IN THE ARCHITECTURAL, MECHANICAL, AND
- ELECTRICAL DRAWINGS.

 5. CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK.
- REQUIRED FOR ALL OF THE WORK.

 6. REPLACE DRINKING FOUNTAINS ADJACENT TO RESTROOM FACILITIES.

AND			
	-		
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	1		

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

REVISIONS

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 Fax.: (671) 472-3381

Architecture Planning Interior Design

Description

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE-1C INTERIOR ELEVATIONS

BID DOCUMENTS

Designed: TRMA

Drawn: TRMA

Checked: CTC

Supv: CTC

Scale: As indicated

Date: 02/20/15

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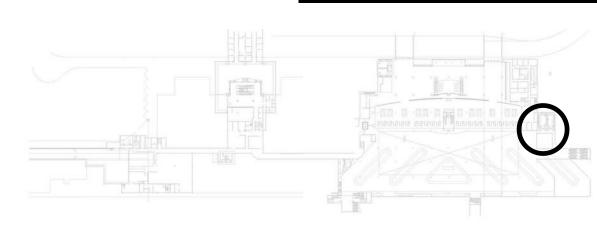
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BASEMENT L

MEN'S RR **WOMEN'S RR** 107 108 BASEMENT LEVEL BAGGAGE CLAIM

> PH-1D DEMOLITION PLAN SCALE: 1/4" = 1'-0"

BASEMENT LEVEL



	DEMOLITION KEYNOTES
Keynote	Description
D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.
D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.
D3	REPLACE EXISTING TOILET PARTITIONS, TYPICAL.
D4	REPLACE EXISTING TOILET ACCESSORIES, TYPICAL.
D5	REPLACE EXISTING WALL & FLOOR FINISHES, TYPICAL.
D6	REPLACE EXISTING ELECTRICAL, MECHANICAL, AND FIRE PROTECTION WORK PER ELECTRICAL AND MECHANICAL DRAWINGS, TYPICAL.
D7	DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL.

GENERAL NOTES:

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 REPLACE DRINKING FOUNTAINS ADJACENT TO RESTROOM FACILITIES.

REVISIONS		
No.	Description	Date

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

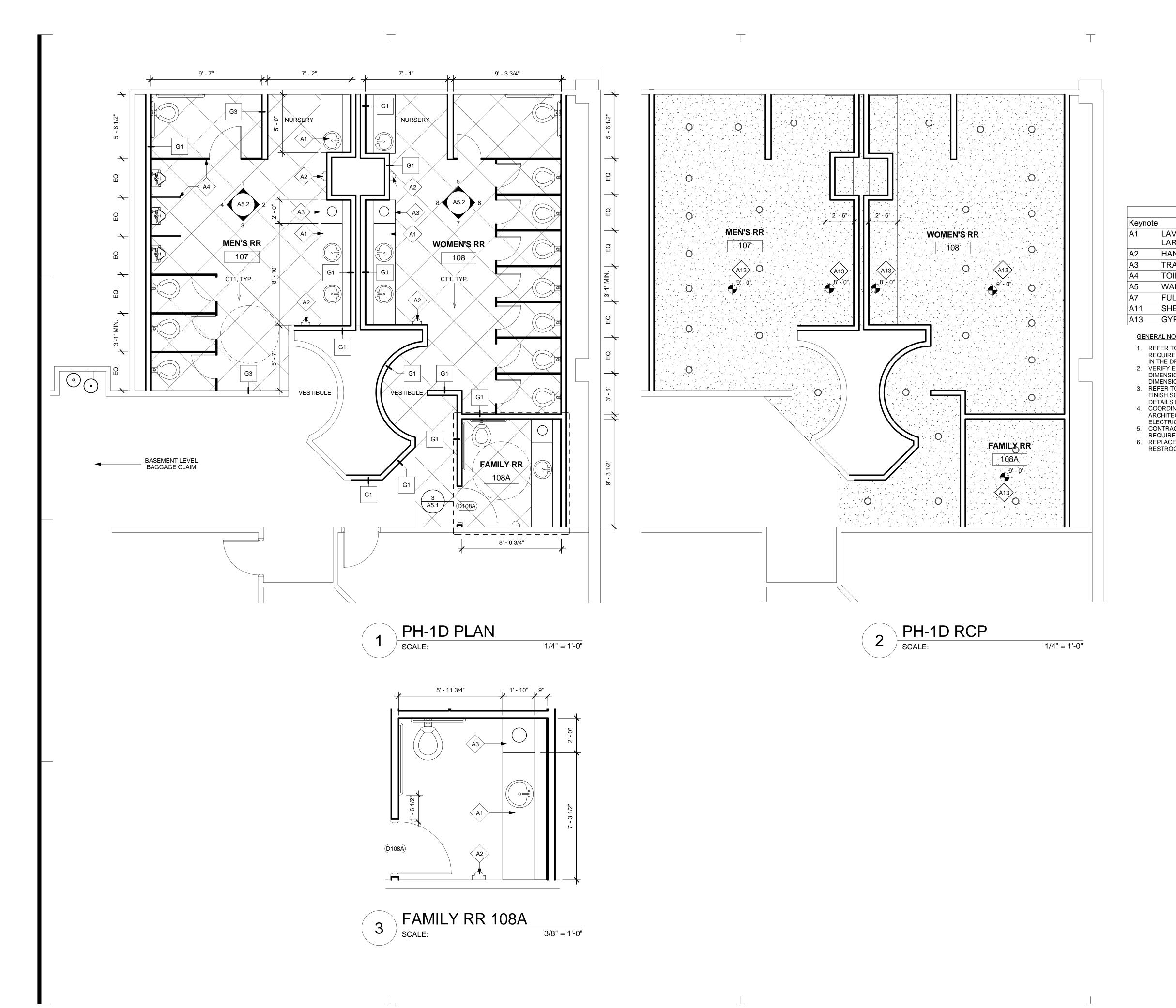
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE-1D PLANS

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ARCHITECTURAL KEYNOTES	
Description	TOLA
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VATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND RGE MIRROR, TYPICAL.	
·	Taniguchi Ruth M
ND DRYER, TYPICAL.	100 Cliff Business Center, P.O. Tel.: (671) 475-8772
ASH RECEPTACLE, TYPICAL.	Tel.: (671) 475-8772 •
ILET PARTITIONS, TYPICAL.	W W
ALL TILE, TYPICAL.	Architecture
LL-HEIGHT MIRROR, TYPICAL.	Planning Interior Design
ELF, TYPICAL.	meener besign
P. BD. CEILING / SOFFIT, TYPICAL	
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	BASEMEN [*]
	PHASE-1D

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: (671) 475-8772 • Fax.: (671)	472-3
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REVISIONS

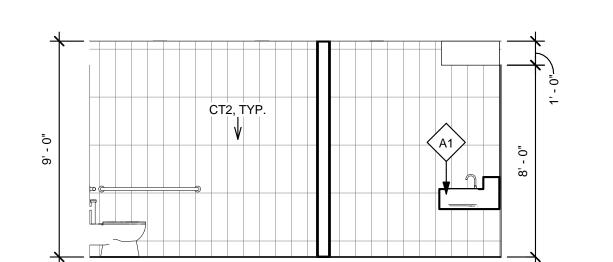
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NT LEVEL D PLANS

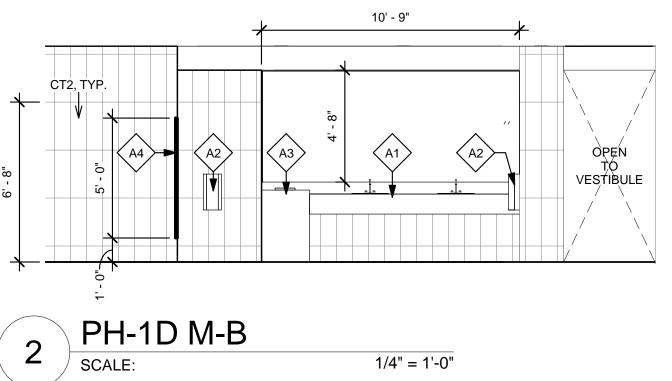
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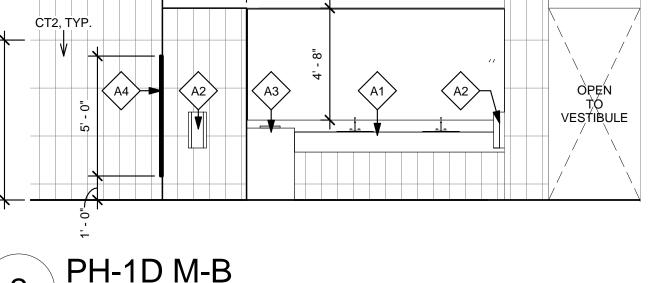
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Date:	02/20/15

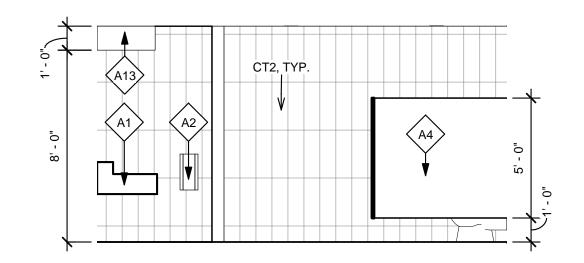
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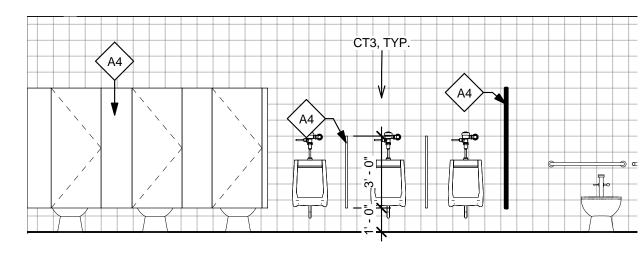
1 PH-1D M-A SCALE: 1/4" = 1'-0"



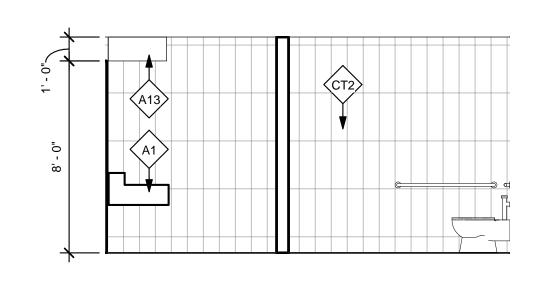




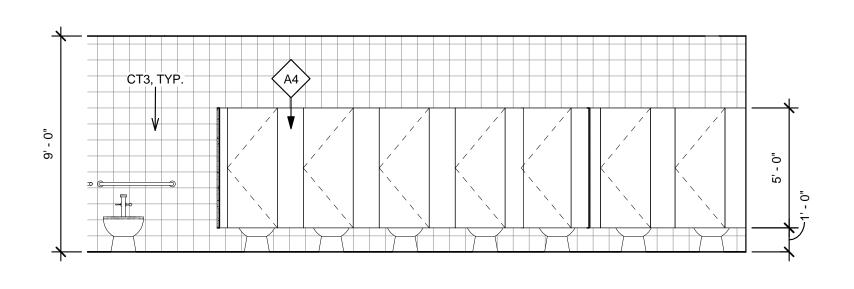






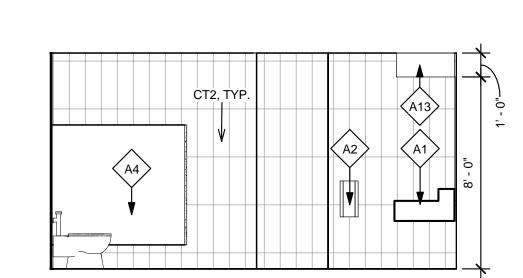


5 PH-1D W-A SCALE: 1/4" = 1'-0"

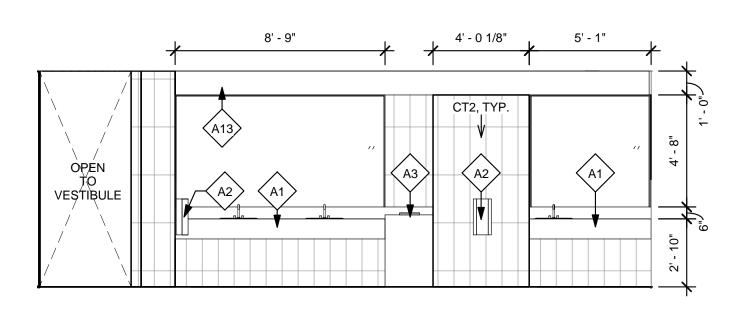


1/4" = 1'-0"

6 PH-1D W-B SCALE: 1/4" = 1'-0"



PH-1D W-C SCALE: 1/4" = 1'-0"



1/4" = 1'-0"

ARCHITECTURAL KEYNOTES Keynote Description LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL. HAND DRYER, TYPICAL. TRASH RECEPTACLE, TYPICAL.

TOILET PARTITIONS, TYPICAL. A5 WALL TILE, TYPICAL. A7 FULL-HEIGHT MIRROR, TYPICAL. A11 SHELF, TYPICAL. A13 GYP. BD. CEILING / SOFFIT, TYPICAL

GENERAL NOTES:

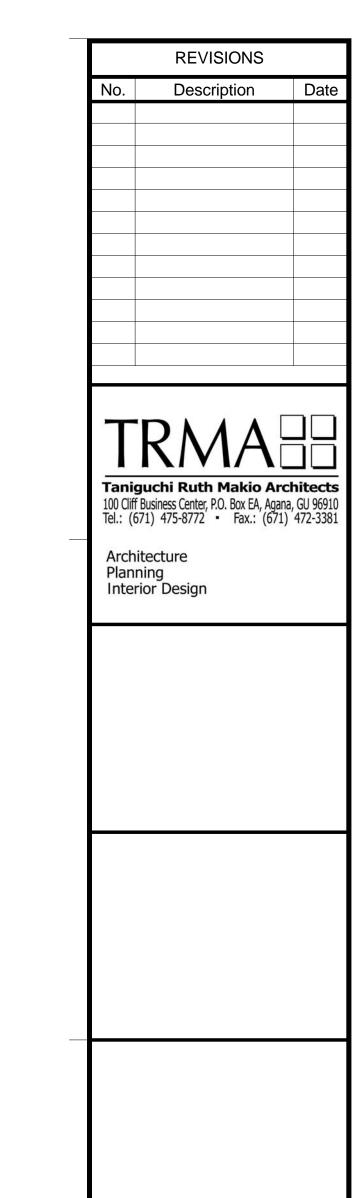
- 1. REFER TO THE PROJECT SPECIFICATIONS FOR REQUIREMENTS RELATED TO ALL WORK SHOWN IN THE DRAWINGS.
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- 4. COORDINATE ALL WORK IDENTIFIED IN THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

RESTROOM FACILITIES.

PH-1D W-D
SCALE:

5. CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK.

6. REPLACE DRINKING FOUNTAINS ADJACENT TO



Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

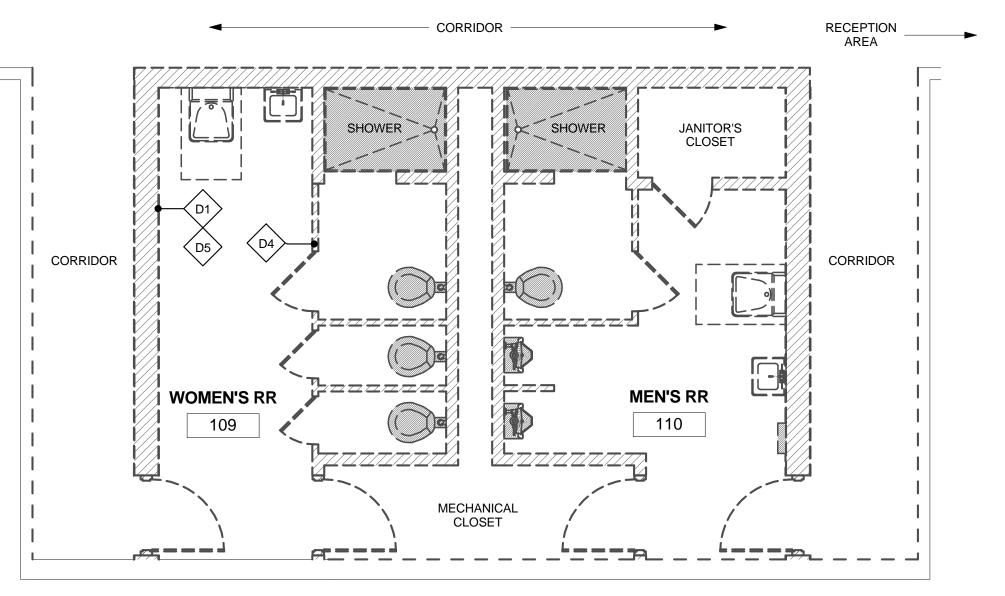
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BASEMENT LEVEL PHASE-1D INTERIOR **ELEVATIONS**

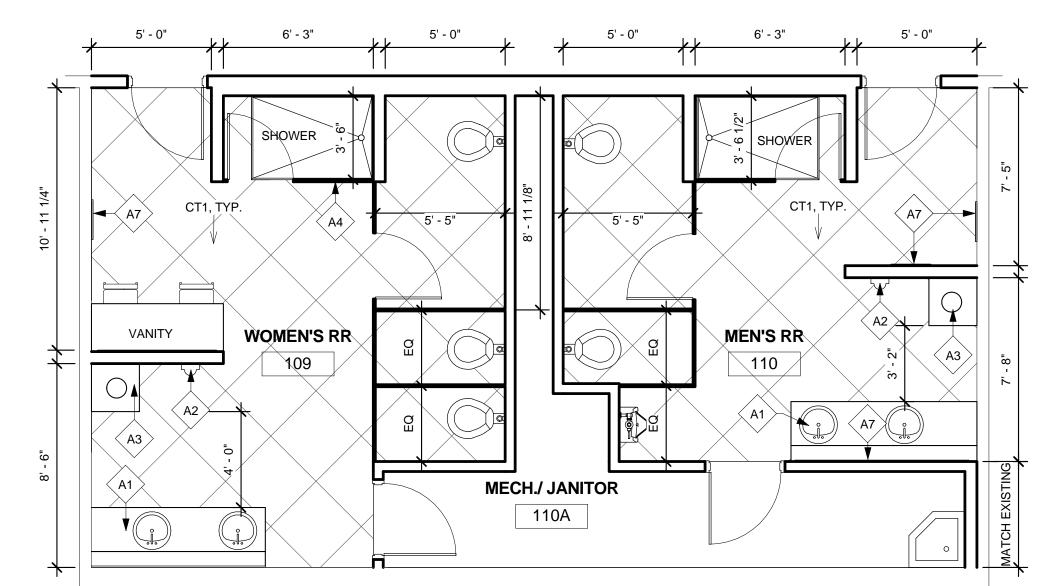
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TRMA TRMA Checked: CTC CTC As indicated 02/20/15

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2	PH-2A	
(3)	SCALE:	1/4" = 1'-0"

	DEMOLITION KEYNOTES
Keynote	Description
D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.
D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.
D3	REPLACE EXISTING TOILET PARTITIONS, TYPICAL.
D4	REPLACE EXISTING TOILET ACCESSORIES, TYPICAL.
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D7	DEMOLISH WALL ON PESTROOM SIDE ONLY TYPICAL

	ARCHITECTURAL KEYNOTES	
Keynote	Description	
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A3	TRASH RECEPTACLE, TYPICAL.	
A4	TOILET PARTITIONS, TYPICAL.	
A5	WALL TILE, TYPICAL.	
A7	FULL-HEIGHT MIRROR, TYPICAL.	
A11	SHELF, TYPICAL.	
A13	GYP BD CFILING/SOFFIT TYPICAL	

GENERAL NOTES:

- DETAILS FOR ADDITIONAL REQUIREMENTS. 4. COORDINATE ALL WORK IDENTIFIED IN THE

REVISIONS

Description

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture

Planning Interior Design

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

ADMIN. LEVEL PHASE-2A PLANS

BID DOCUMENTS

Designed:	TRMA
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Checked:	СТС
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Scale:	As indicated
Date:	02/20/15

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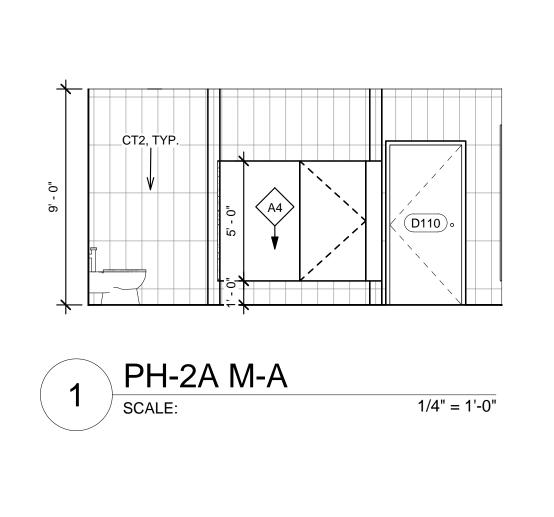
IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

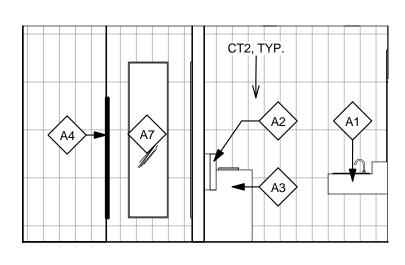
DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL. A13 GYP. BD. CEILING / SOFFIT, TYPICAL REFER TO THE PROJECT SPECIFICATIONS FOR REQUIREMENTS RELATED TO ALL WORK SHOWN IN THE DRAWINGS.

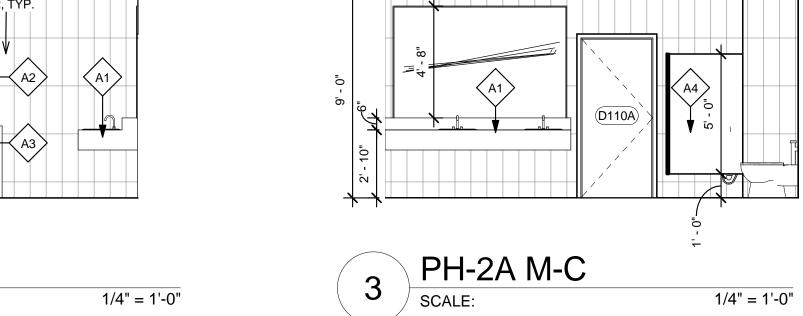
2. VERIFY EXISTING CONDITIONS AND DIMENSIONS.
DIMENSIONS SHOWN IN PLANS ARE MINIMUM DIMENSIONS. 3. REFER TO THE ARCHITECTURAL PLANS, ROOM FINISH SCHEDULE, INTERIOR ELEVATIONS, AND ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

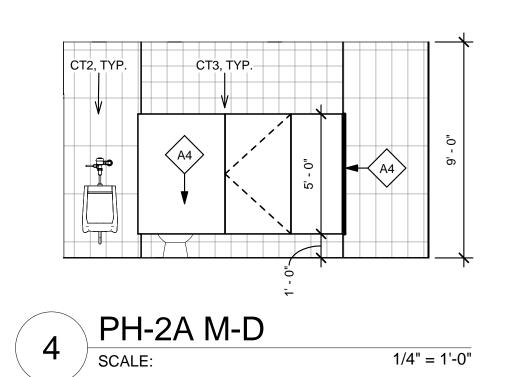
5. CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK.

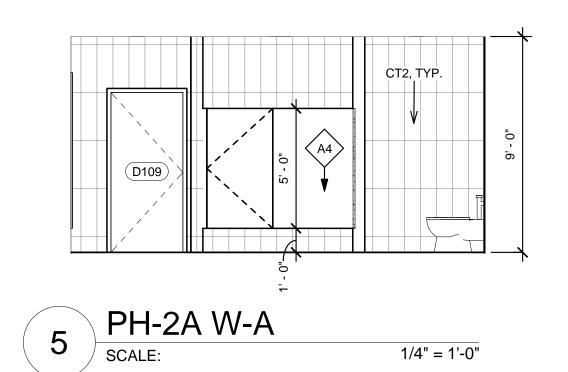
6. REPLACE DRINKING FOUNTAINS ADJACENT TO RESTROOM FACILITIES.

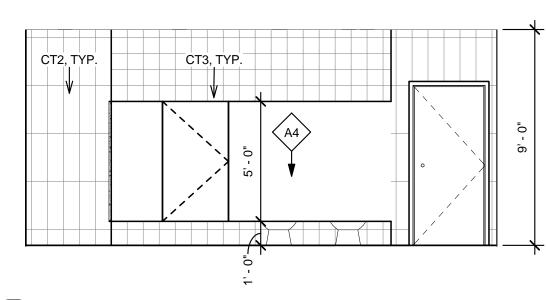


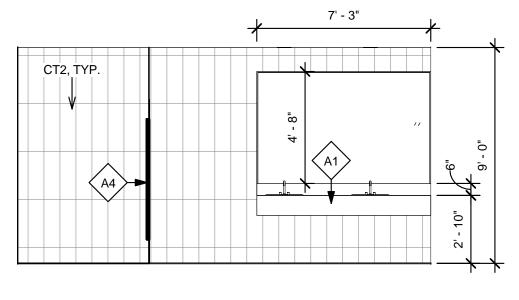


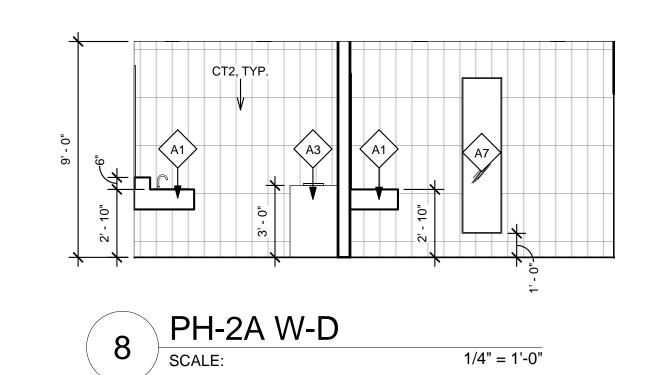












PH-2A W-B SCALE: 1/4" = 1'-0"

7	PH-2A W-C	
	SCALE:	1/4" = 1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

REVISIONS

Description

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

Project: A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

ADMIN. LEVEL PHASE-2A INTERIOR **ELEVATIONS**

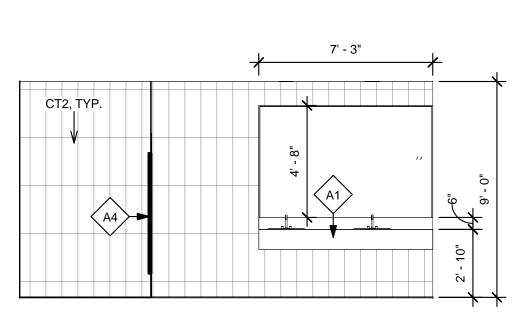
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TRMA TRMA Checked: CTC CTC 1/4" = 1'-0" 02/20/15

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IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

2 PH-2A M-B SCALE: 1/4" = 1'-0"



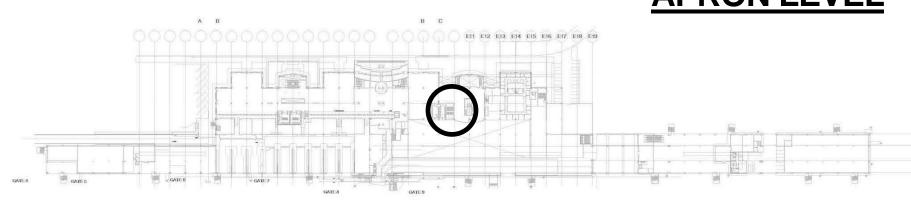
APRON LEVEL
TICKETING LOBBY
(EAST OF UNITED) VESTIBULE VESTIBULE JANITOR / MECHANICAL CLOSET WOMEN'S RR MEN'S RR 112 111 1/4,-,-

PH-2B DEMOLITION

1/4" = 1'-0"

1 PLAN SCALE:

APRON LEVEL



	DEMOLITION KEYNOTES
Keynote	Description
D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.
D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.
D3	REPLACE EXISTING TOILET PARTITIONS, TYPICAL.
D4	REPLACE EXISTING TOILET ACCESSORIES, TYPICAL.
D5	REPLACE EXISTING WALL & FLOOR FINISHES, TYPICAL.
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DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL

GENERAL NOTES:

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REVISIONS Description

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Architecture Planning Interior Design

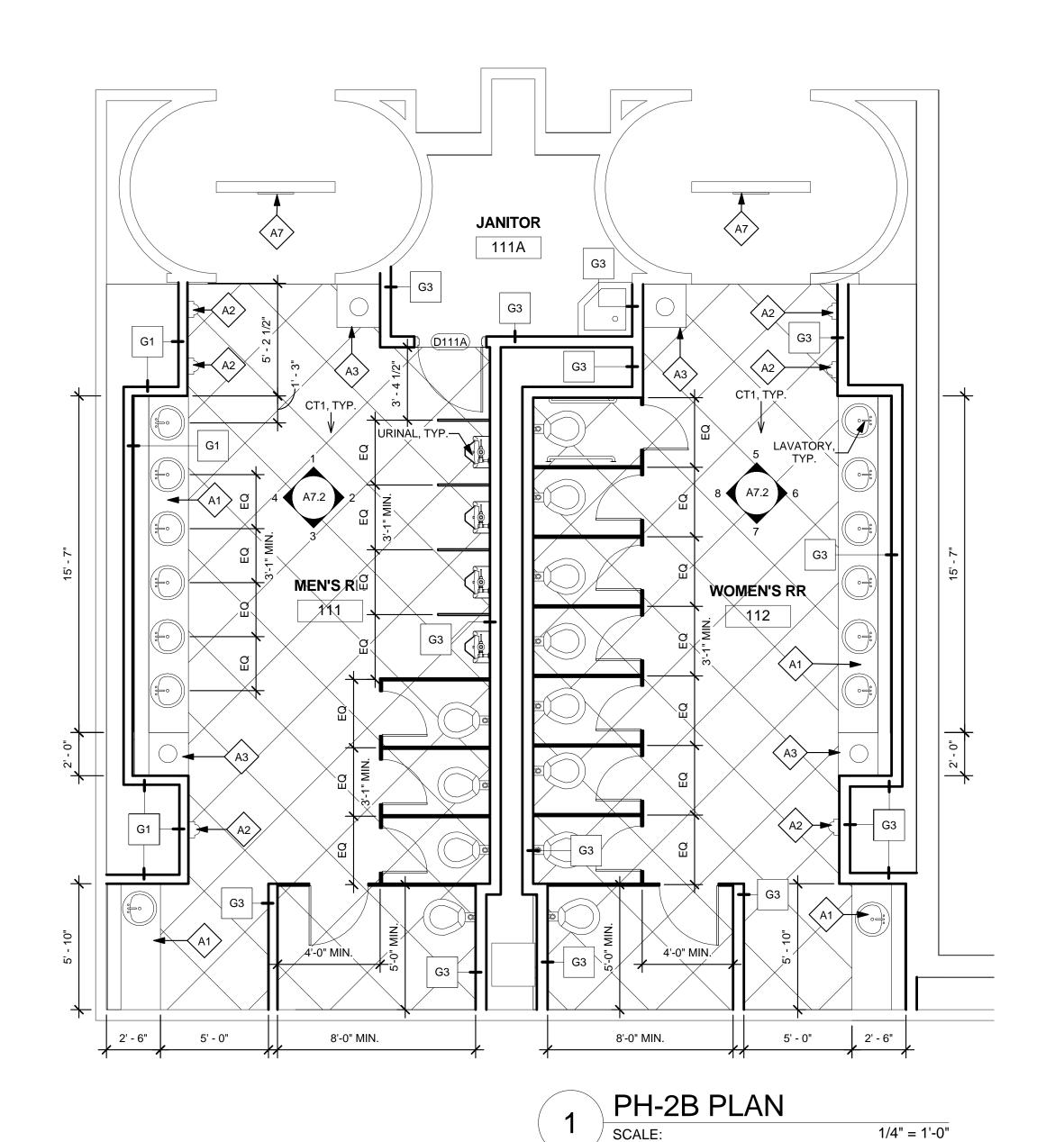
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

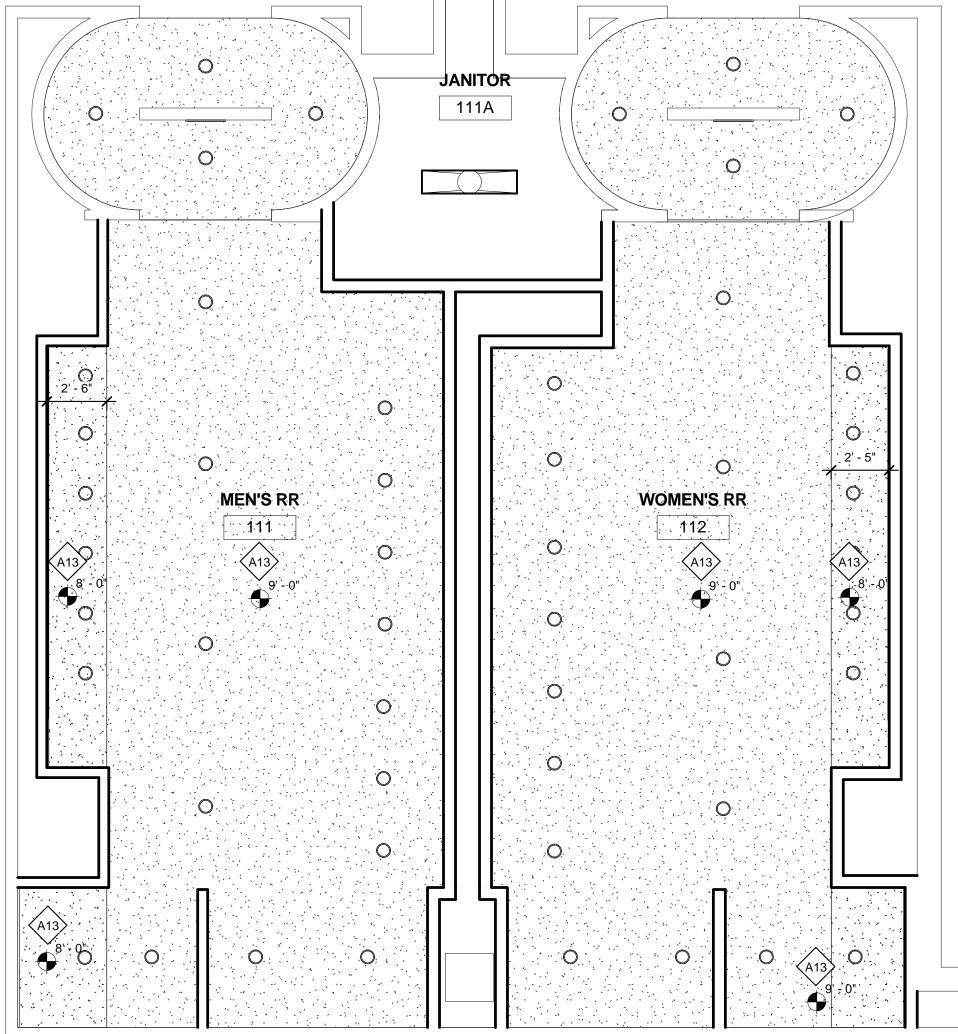
APRON LEVEL
PHASE-2B DEMOLITION
PLAN

BID DOCUMENTS

TRMA TRMA CTC As indicated

02/20/15 1441





Description LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL. HAND DRYER, TYPICAL. TRASH RECEPTACLE, TYPICAL. TOILET PARTITIONS, TYPICAL. WALL TILE, TYPICAL. FULL-HEIGHT MIRROR, TYPICAL. SHELF, TYPICAL. A13 GYP. BD. CEILING / SOFFIT, TYPICAL

ARCHITECTURAL KEYNOTES

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Architecture

Planning Interior Design

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE-2B PLANS

BID DOCUMENTS

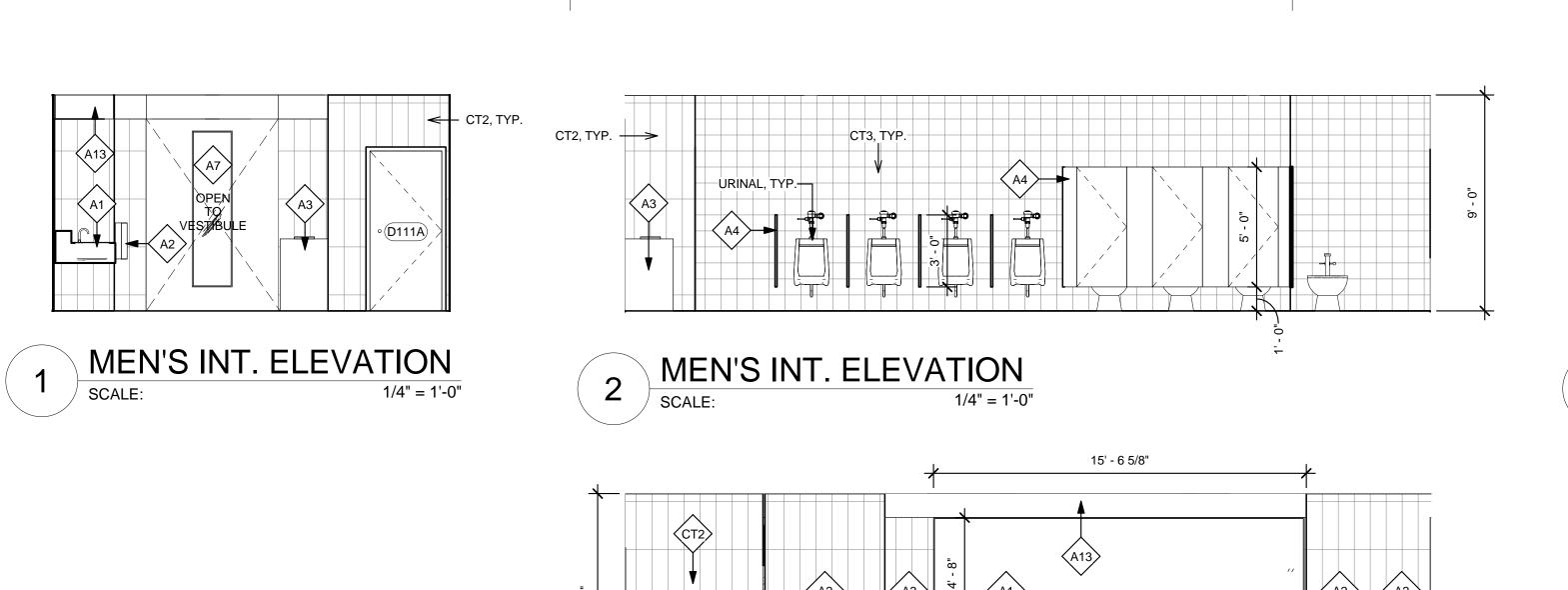
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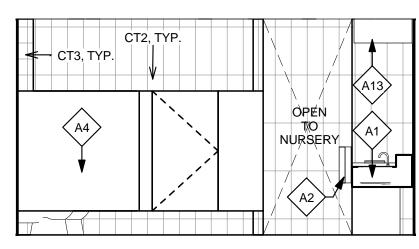
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2 PH-2B RCP SCALE: 1/4" = 1'-0"



MEN'S INT. ELEVATION



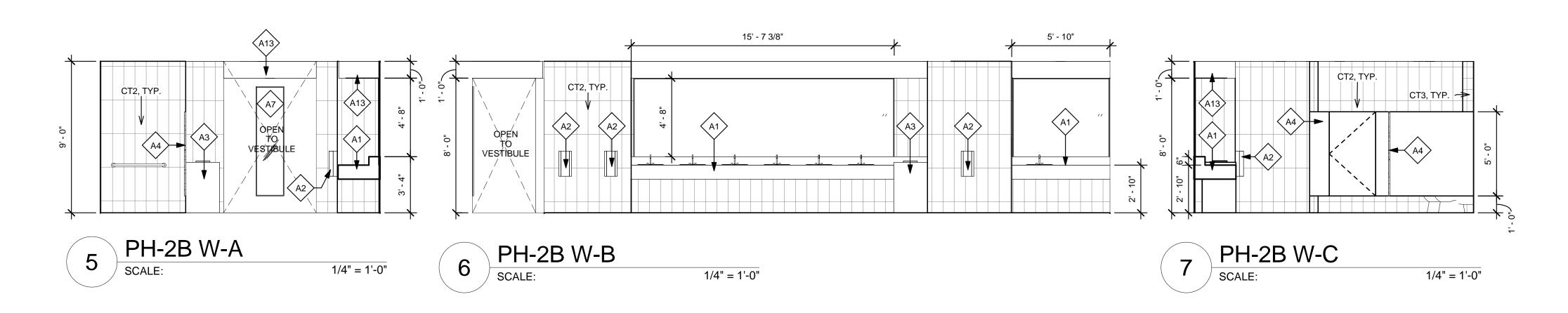
MEN'S INT. ELEVATION 3 1/4" = 1'-0"

ARCHITECTURAL KEYNOTES Description Keynote LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL. HAND DRYER, TYPICAL. TRASH RECEPTACLE, TYPICAL. TOILET PARTITIONS, TYPICAL. WALL TILE, TYPICAL. FULL-HEIGHT MIRROR, TYPICAL. SHELF, TYPICAL. GYP. BD. CEILING / SOFFIT, TYPICAL

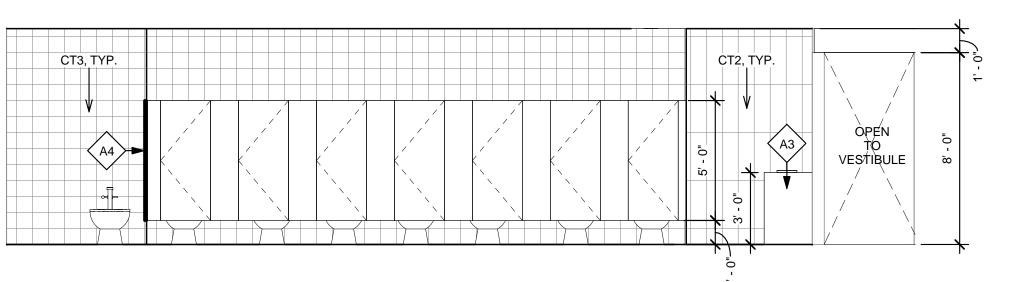
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 DIMENSIONS SHOWN IN PLANS ARE MINIMUM
- DIMENSIONS. 3. REFER TO THE ARCHITECTURAL PLANS, ROOM FINISH SCHEDULE, INTERIOR ELEVATIONS, AND
- DETAILS FOR ADDITIONAL REQUIREMENTS.

 4. COORDINATE ALL WORK IDENTIFIED IN THE
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 CONTRACTOR'S SHOP DRAWINGS ARE REQUIRED FOR ALL OF THE WORK.
 REPLACE DRINKING FOUNTAINS ADJACENT TO RESTROOM FACILITIES.



1/4" = 1'-0"



PH-2B W-D SCALE: 1/4" = 1'-0"

APRON LEVEL BID DOCUMENTS TRMA TRMA CTC 02/20/15 1441

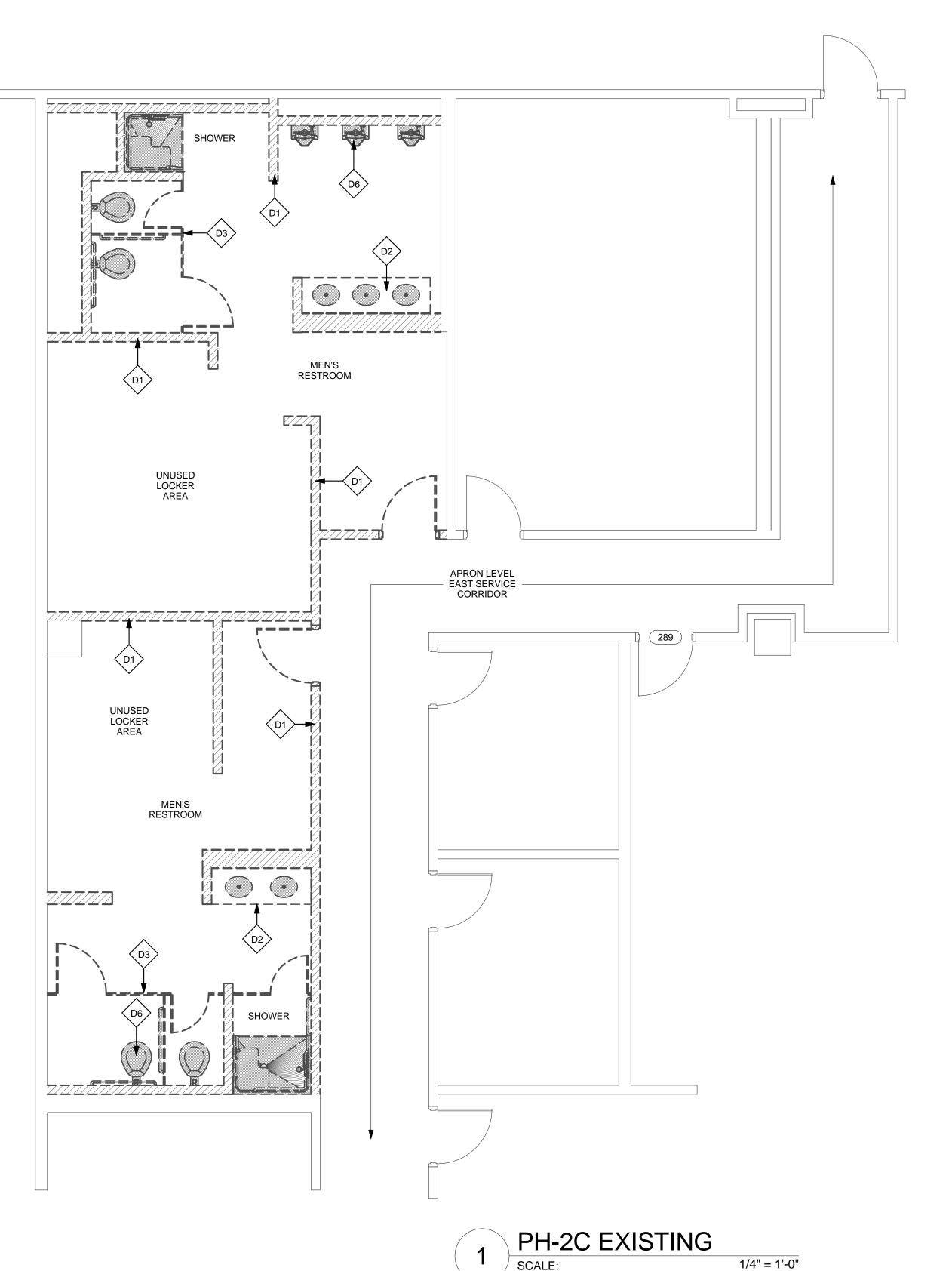
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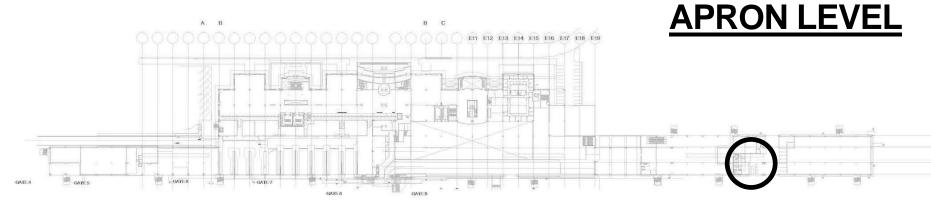
REVISIONS Description Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381 Architecture Planning Interior Design

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

PHASE-2B INTERIOR ELEVATIONS

As indicated





	DEMOLITION KEYNOTES
Keynote	Description
D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.
D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.
D3	REPLACE EXISTING TOILET PARTITIONS, TYPICAL.
D4	REPLACE EXISTING TOILET ACCESSORIES, TYPICAL.
D5	REPLACE EXISTING WALL & FLOOR FINISHES, TYPICAL.
D6	REPLACE EXISTING ELECTRICAL, MECHANICAL, AND FIRE PROTECTION WORK PER ELECTRICAL AND MECHANICAL DRAWINGS, TYPICAL.
D7	DEMOLISH WALL ON RESTROOM SIDE ONLY, TYPICAL.

GENERAL NOTES:

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Architecture Planning Interior Design

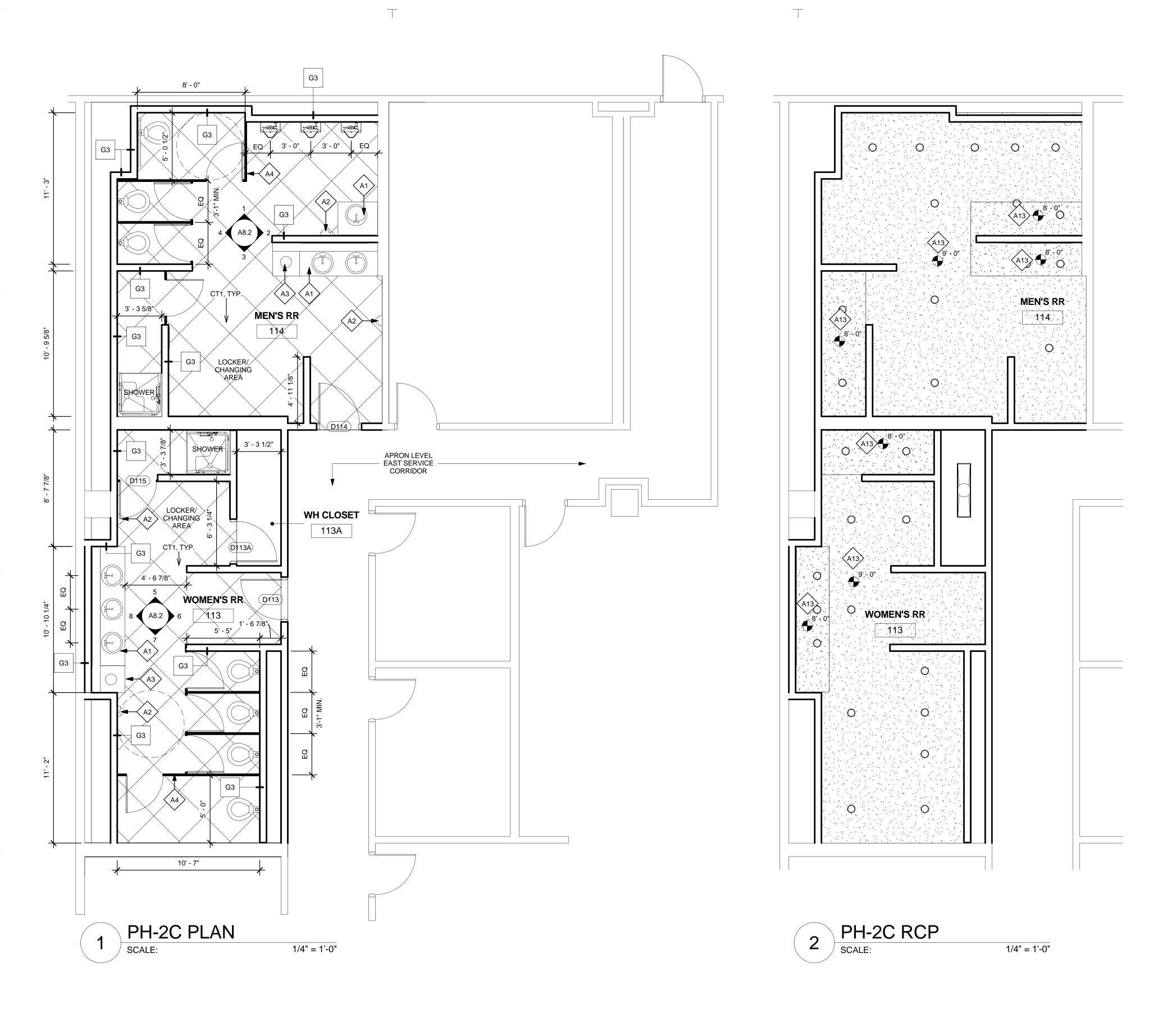
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE-2C **DEMOLITION PLAN**

BID DOCUMENTS

TRMA TRMA Checked: As indicated 02/20/15

1441



ARCHITECTURAL KEYNOTES Description Keynote LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL. HAND DRYER, TYPICAL. TRASH RECEPTACLE, TYPICAL. TOILET PARTITIONS, TYPICAL. WALL TILE, TYPICAL. FULL-HEIGHT MIRROR, TYPICAL. SHELF, TYPICAL. A13 GYP. BD. CEILING / SOFFIT, TYPICAL

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Architecture Planning Interior Design

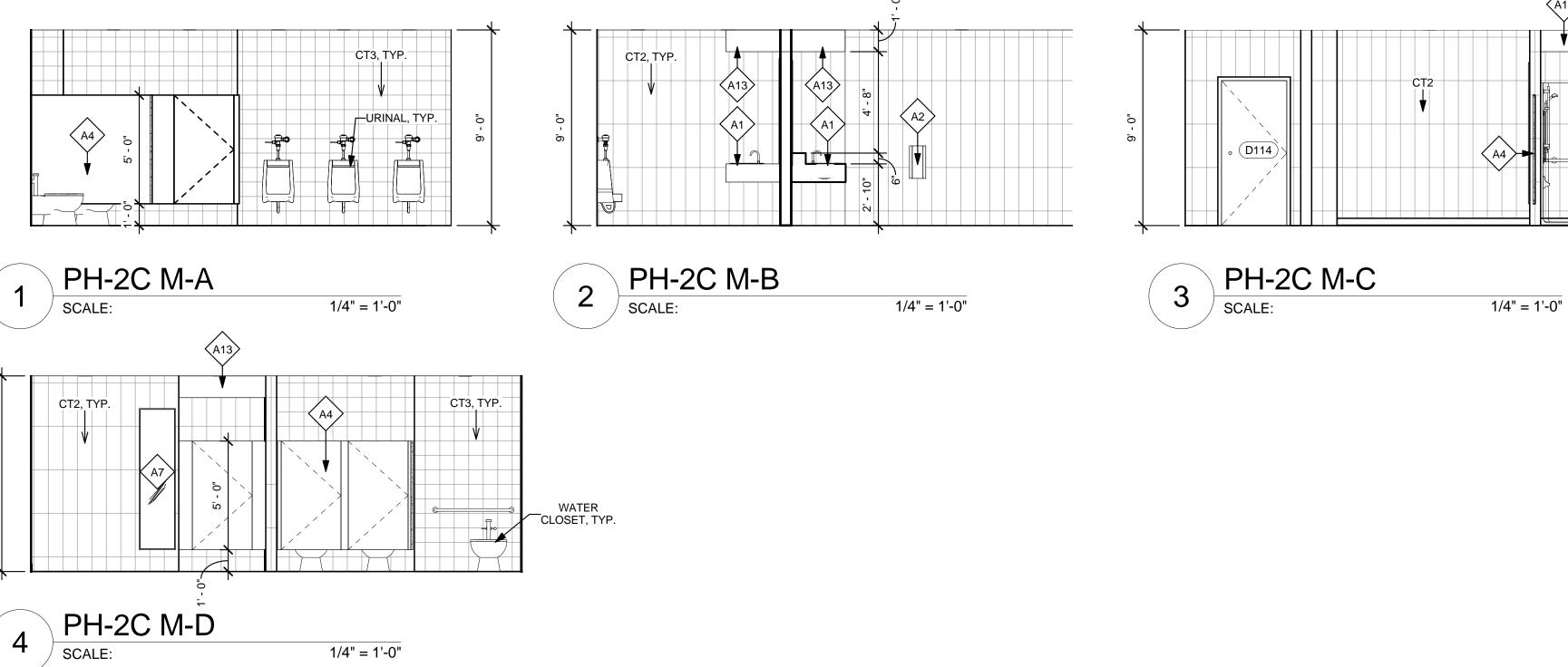
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

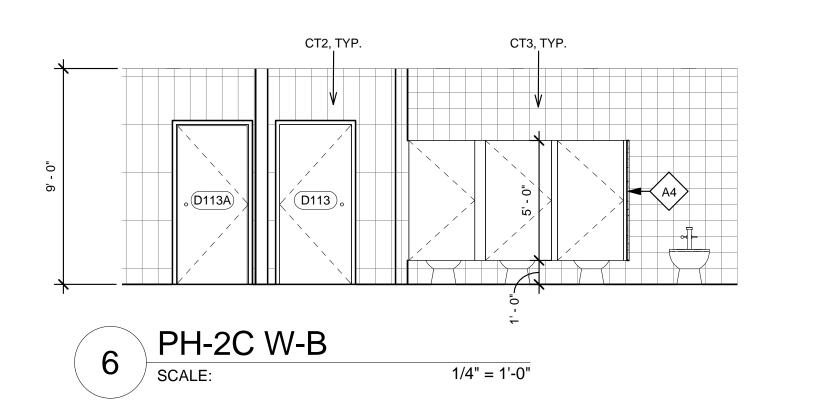
APRON LEVEL PHASE-2C PLANS

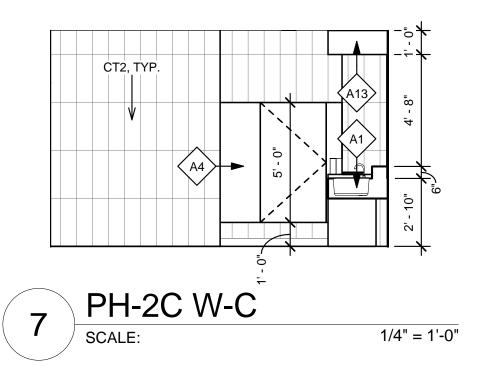
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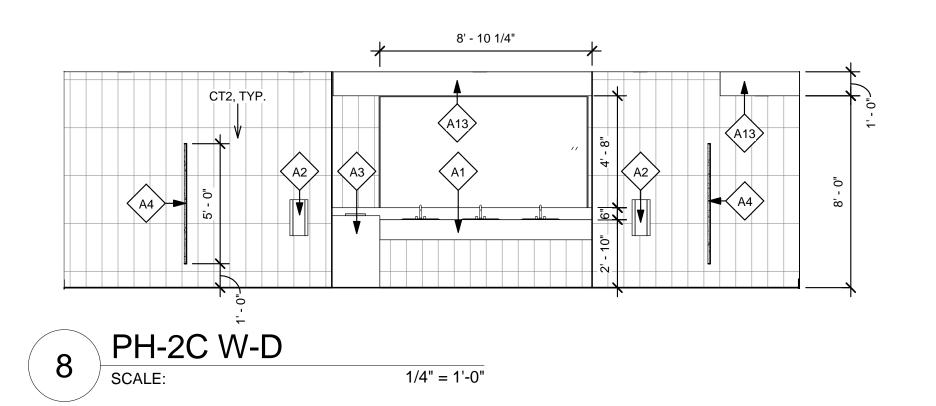
TRMA TRMA CTC As indicated 02/20/15

1441









1/4" = 1'-0"

CT2, TYP.

5 PH-2C W-A SCALE:

A13	
	ARCHITECTURAL KEYNOTES
	Keynote Description
CT2 SHOWER,	A1 LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.
	A2 HAND DRYER, TYPICAL.
	A3 TRASH RECEPTACLE, TYPICAL.
∘ (D114)	A4 TOILET PARTITIONS, TYPICAL.
	A5 WALL TILE, TYPICAL.
	A7 FULL-HEIGHT MIRROR, TYPICAL.
	A11 SHELF, TYPICAL.
*************************************	A13 GYP. BD. CEILING / SOFFIT, TYPICAL

1.	TELET TO THE PRODUCT OF Earl 107 THORSE OF
	REQUIREMENTS RELATED TO ALL WORK SHOWN IN THE DRAWINGS.
2.	VERIFY EXISTING CONDITIONS AND DIMENSIONS
	DIMENSIONS SHOWN IN PLANS ARE MINIMUM
	DIMENSIONS.
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	FINISH SCHEDULE, INTERIOR ELEVATIONS, AND
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TRMA
 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381
Architecture Planning Interior Design

REVISIONS

Description

HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT
INTERNATIONAL AIRPORT
RESTROOM RENOVATIONS

Title:

APRON LEVEL PHASE-2C INTERIOR ELEVATIONS

BID DOCUMENTS

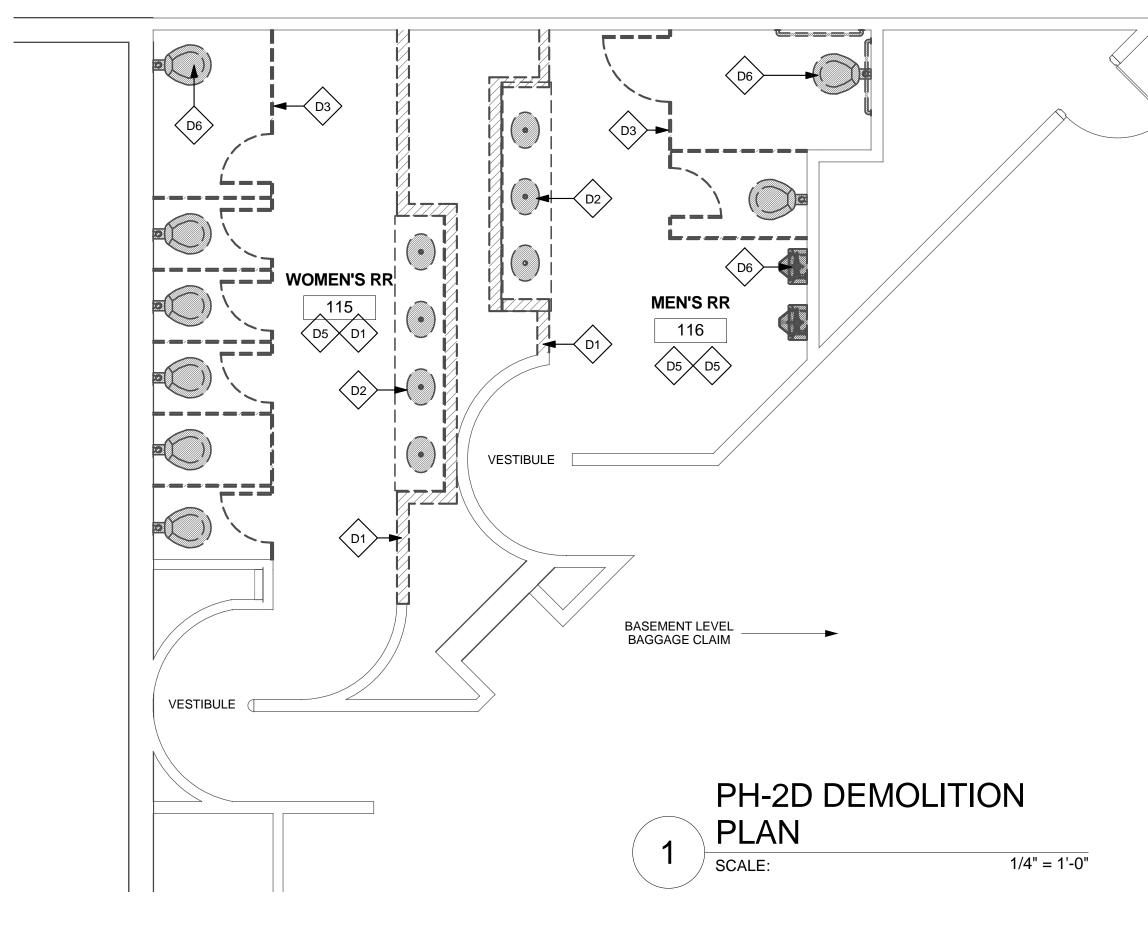
Designed:	TRMA
Drawn:	TRMA
Checked:	СТС
Supv:	СТС
Scale:	As indicated
Date:	02/20/15

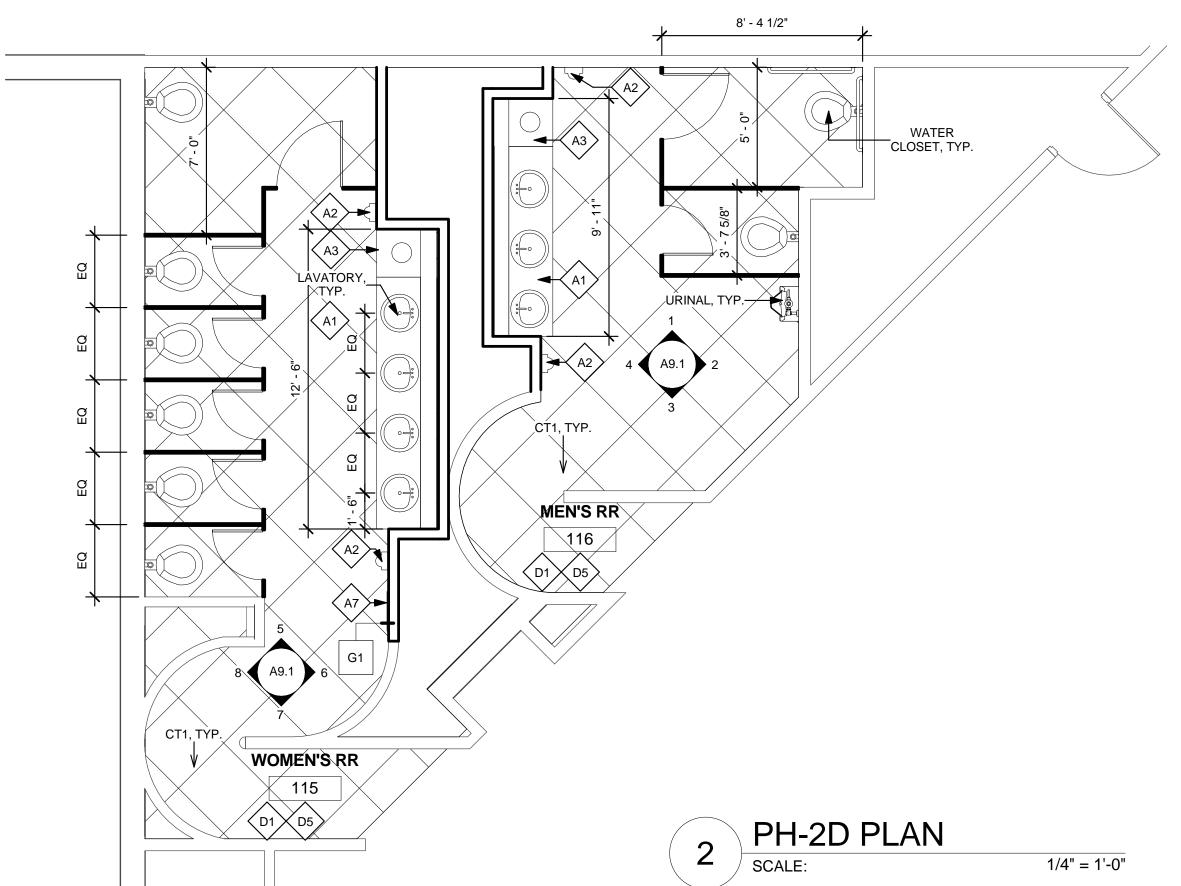
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Drawing No. A8.2

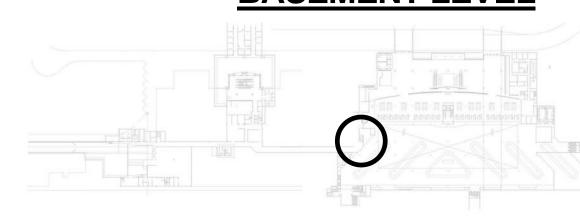
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BASEMENT LEVEL



	DEMOLITION KEYNOTES
Keynote	Description
D1	DEMOLISH EXISTING WALLS & CEILINGS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS, TYPICAL.
D2	REPLACE EXISTING LAVATORY COUNTER, TYPICAL.
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ARCHITECTURAL KEYNOTES									
Keynote	Description								
A1	LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.								
A2	HAND DRYER, TYPICAL.								
A3	TRASH RECEPTACLE, TYPICAL.								
A4	TOILET PARTITIONS, TYPICAL.								
A5	WALL TILE, TYPICAL.								
A7	FULL-HEIGHT MIRROR, TYPICAL.								
A11	SHELF, TYPICAL.								
A13	GYP. BD. CEILING / SOFFIT, TYPICAL								

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Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

A.B. WON PAT INTERNATIONAL AIRPORT

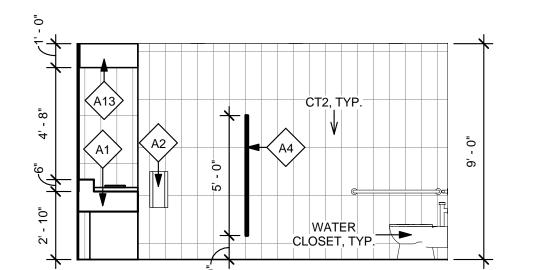
RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE-2D DEMOLITION PLAN

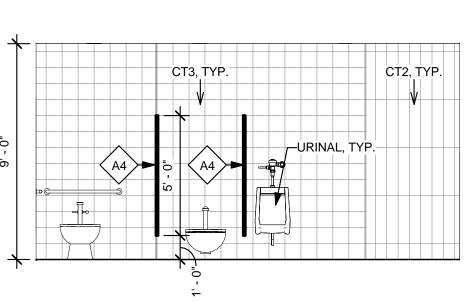
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TRMA TRMA As indicated

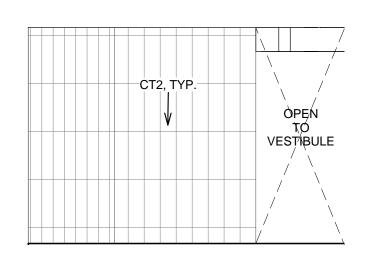
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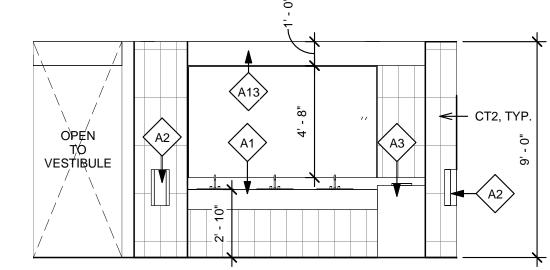




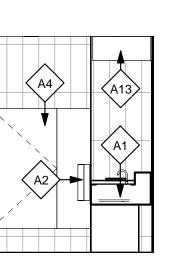








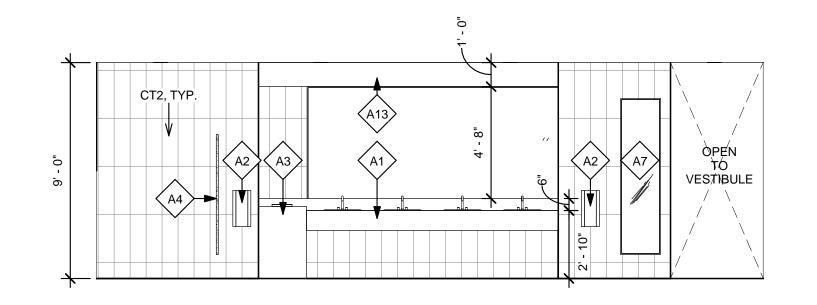




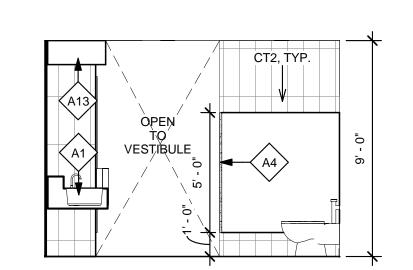


CT2, TYP.

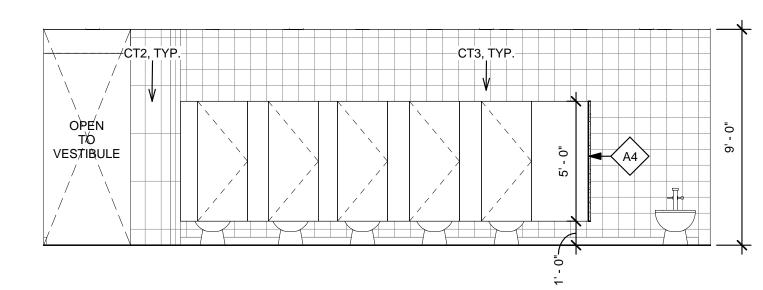
A4













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		ARCHITECTURAL KEYNOTES
	Keynote	Description
/	A1	LAVATORY, COUNTERTOP, FAUCET, SOAP DISPENSERS, AND LARGE MIRROR, TYPICAL.
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	A2	HAND DRYER, TYPICAL.
RULE	A3	TRASH RECEPTACLE, TYPICAL.
A2	A4	TOILET PARTITIONS, TYPICAL.
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	A5	WALL TILE, TYPICAL.
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Architecture Planning Interior Design

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE-2D INTERIOR **ELEVATIONS**

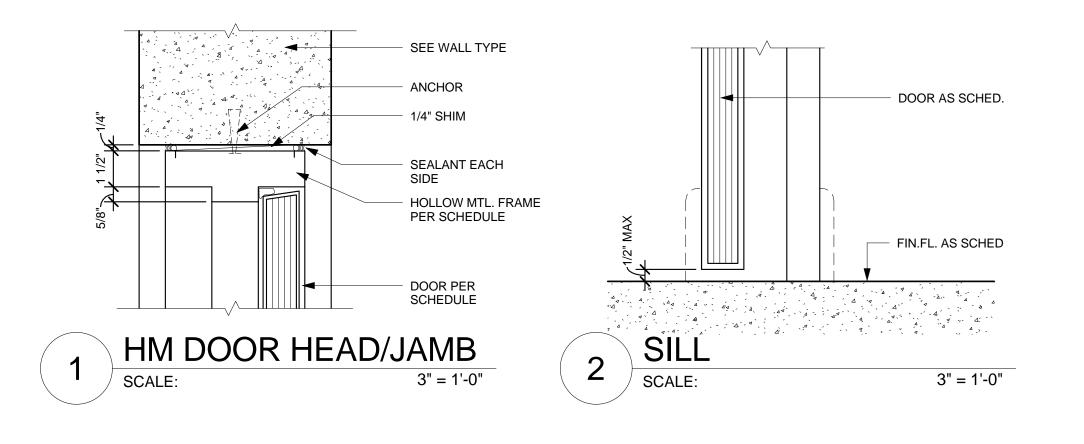
BID DOCUMENTS

TRMA TRMA Checked: CTC As indicated

02/20/15 1441

										RO	OM FI	INISH S	SCHE	DULE	
		FLOOR	WAINS	SCOT				WALLS			CE	EILING	CASE	WORK	
						A	В	С		D					
RMNO	ROOM NAME	FIN BASE	FIN	HT	MAT'L	FIN	MAT'L	FIN MAT'L	FIN MAT'L	FIN	FIN	HT	BASE	TOP	REMARKS
101	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
102	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
103	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
103A	FAMILY RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
103B	JANITOR	CT1 CT1			GB	PT	GB	PT GB	PT GB	PT	GB	9' - 0"			
104	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
105	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
105A	JANITOR	CT1 CT1	-	_	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	_	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
106	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
107	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
108	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
108A	FAMILY RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
109	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
110	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
110A	MECH./ JANITOR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
111	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
111A	JANITOR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
112	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
113	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	_	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
113A	WH CLOSET	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
114	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
115	WOMEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.
116	MEN'S RR	CT1 CT1	-	-	СВ	CT2	СВ	CT2 CB	CT2 CB	CT2	GB	9' - 0"	-	SP1	REFER TO PLANS & INTERIOR ELEVATIONS.

							DOOR	SCHE	DULE						
		DO	OR				DETAILS		GLASS	FIRE	DETAILS				
DOOR NO. LOCATION	SIZE	THK	TYPE	MAT'L	FIN	TYPE	MAT'L	FIN	TYPE	RATED	HEAD	JAMB	SILL	HW SET	REMARKS
D103A FAMILY RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D103B JANITOR	3'-0" x 7'-0" HM	1"	В						-				0"		PROVIDE TOP & BOTTOM LOUVERS
D103D JANITOR	3'-0" x 7'-0" HM	1"	В						-				0"		PROVIDE TOP & BOTTOM LOUVERS
D105 MEN'S RR	3'-0" x 7'-0" HM	1"	В						-				0"		
D105A JANITOR	3'-0" x 7'-0" HM	1"	В						-				0"		PROVIDE TOP & BOTTOM LOUVERS
D106 WOMEN'S RR	3'-0" x 7'-0" HM	1"	В						-				0"		
D108A FAMILY RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D109 WOMEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D110 MEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D110A MEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D111A MEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D113 WOMEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D113A WOMEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		
D114 MEN'S RR	3'-0" x 6'-8" SCWD	1"	А						-				0"		



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	RESTROOM FACILITIES.

Description Date

REVISIONS

TRMA ==
Taniguchi Ruth Makio Architects 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

HEREBY	CERT	TIFY TH	HAT T	HIS	PLAN	WAS	PREPARED
BY ME	OR	UNDER	R MY	DIR	ECT	SUPER	VISION

Project:

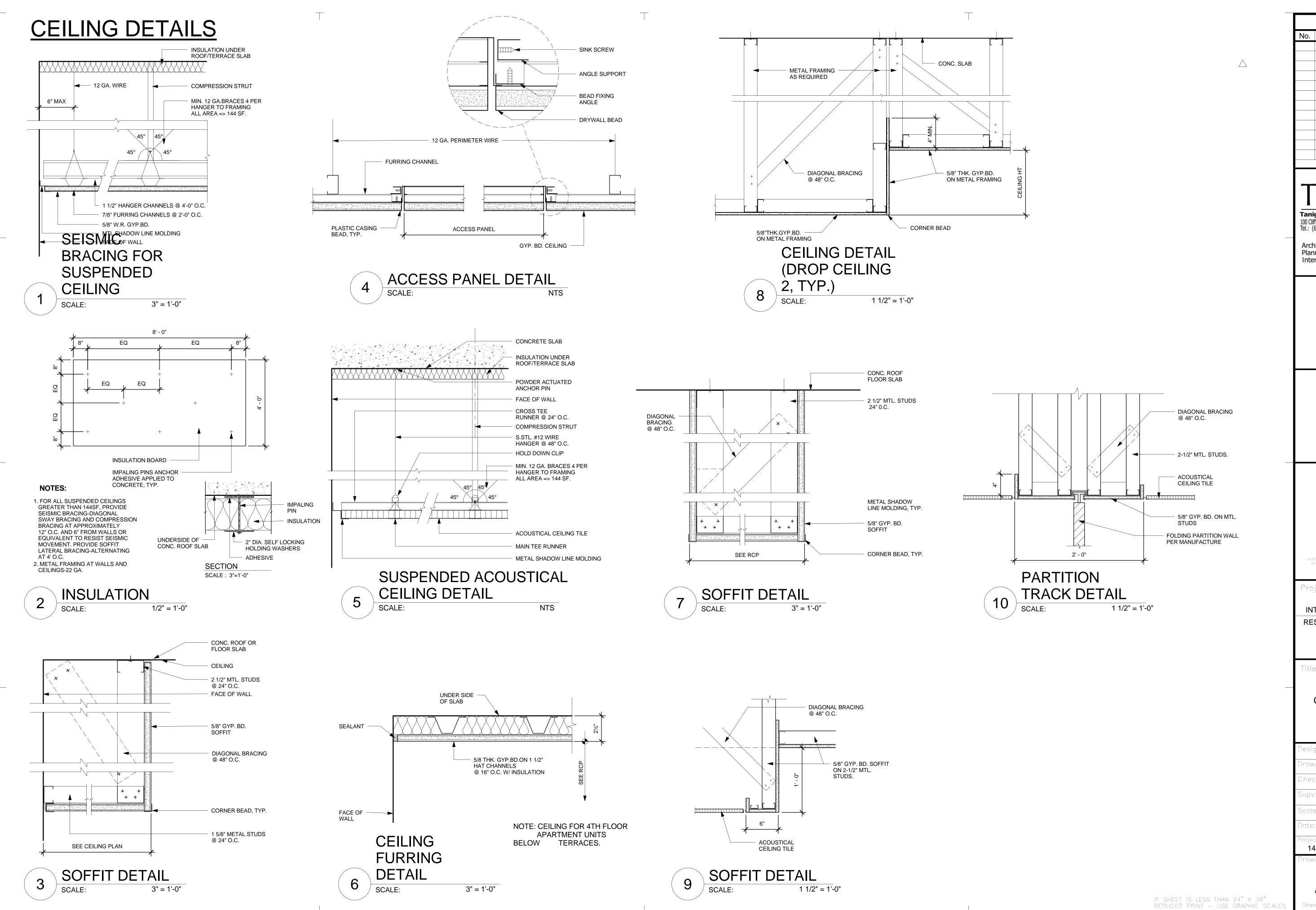
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

ROOM FINISH SCHEDULE, DOOR SCHEDULE & DETAILS

BID DOCUMENTS

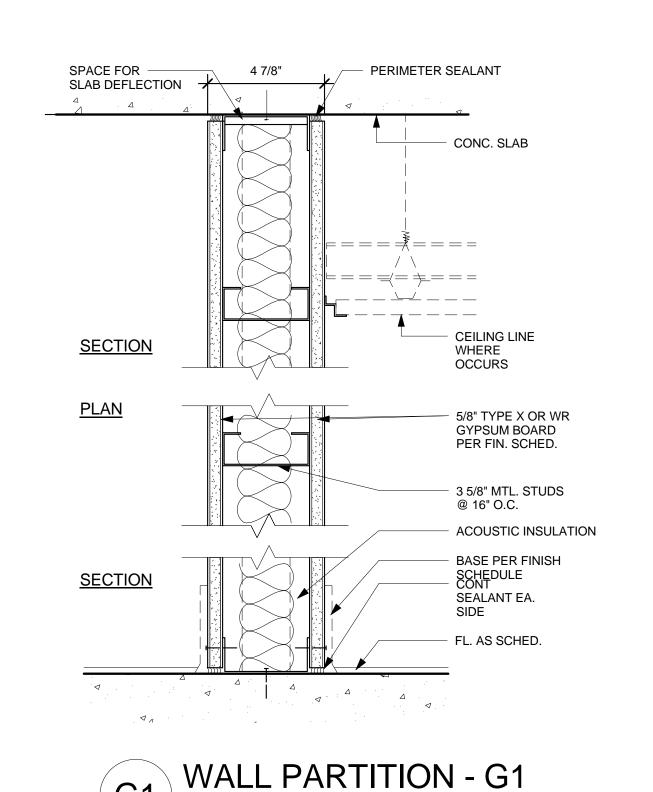
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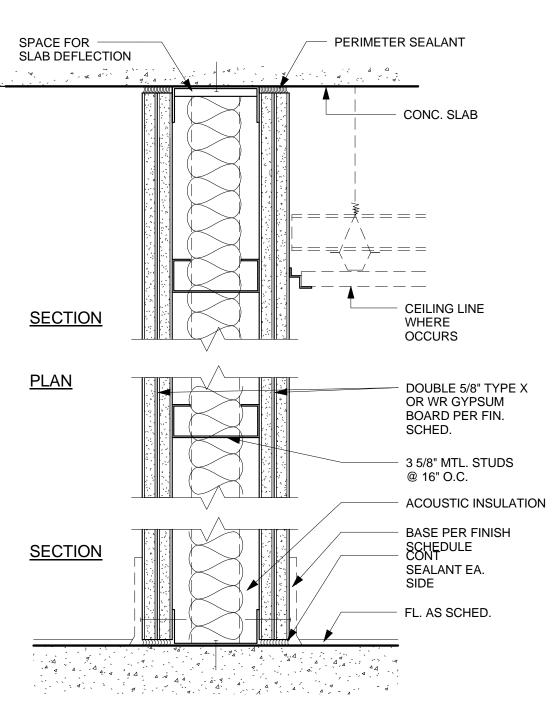
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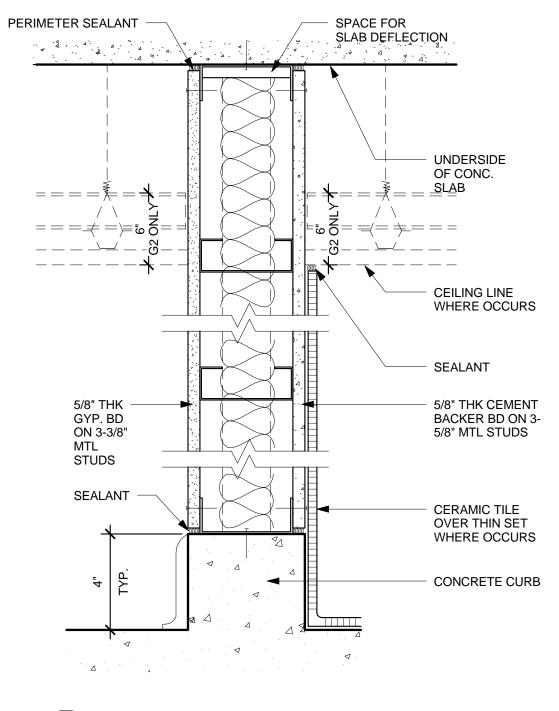


Description **Taniguchi Ruth Makio Architects** 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381 Architecture Planning Interior Design Project: A.B. WON PAT INTERNATIONAL AIRPORT **RESTROOM RENOVATIONS CEILING DETAILS BID DOCUMENTS** TRMA TRMA Checked: CTC As indicated 02/20/15 1441

REVISIONS

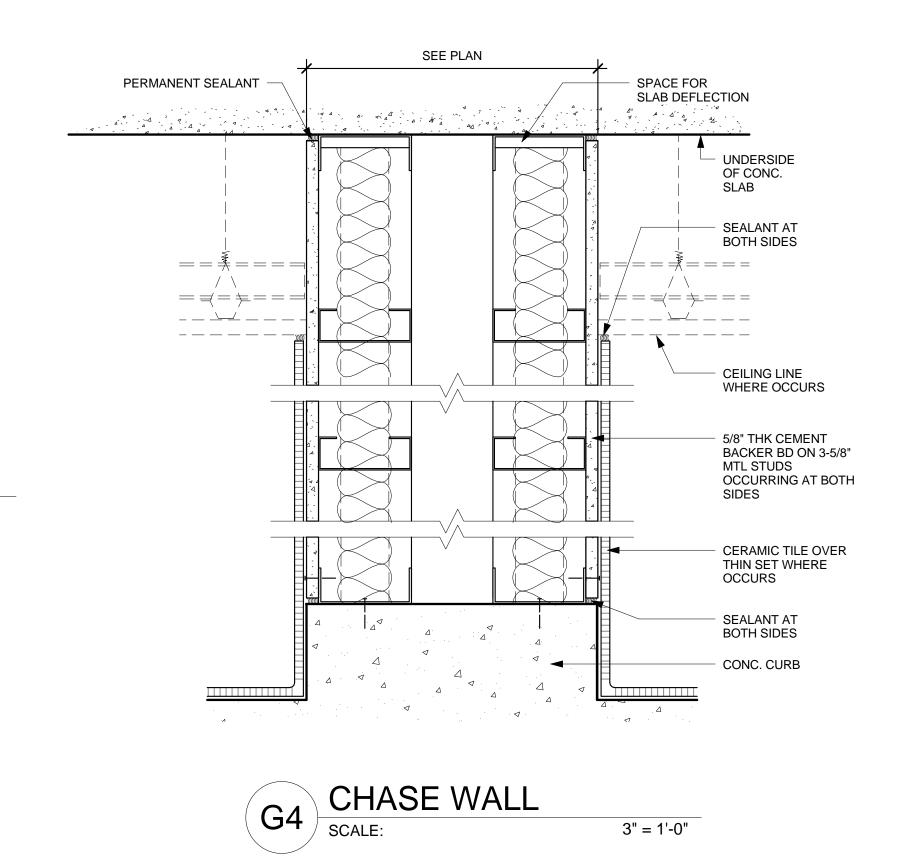


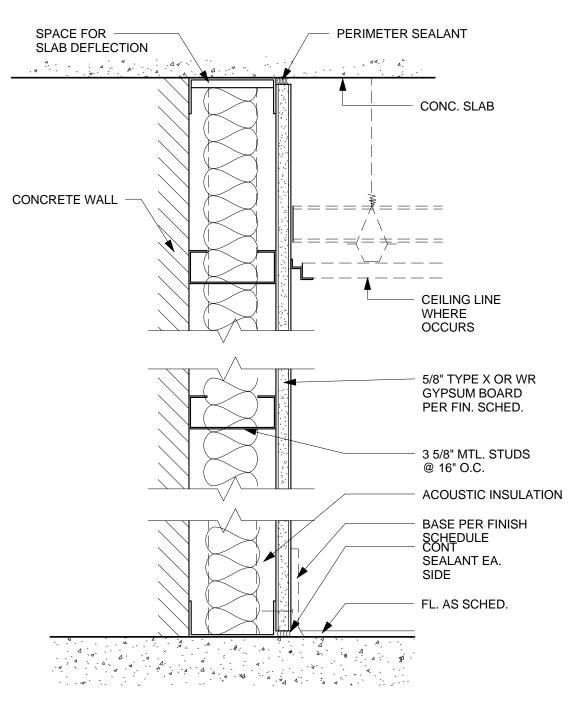




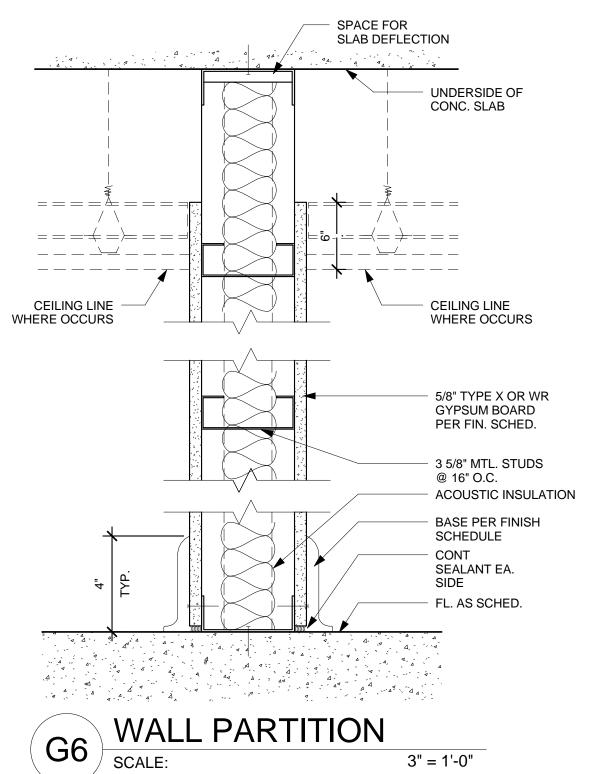


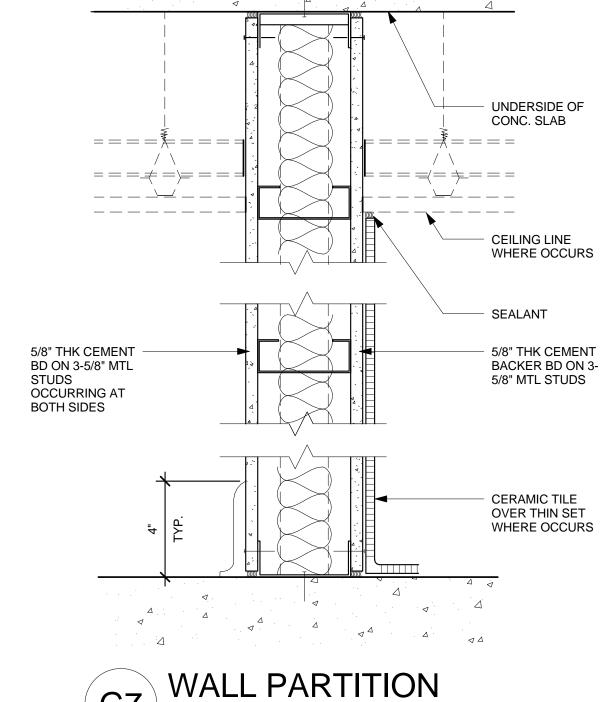












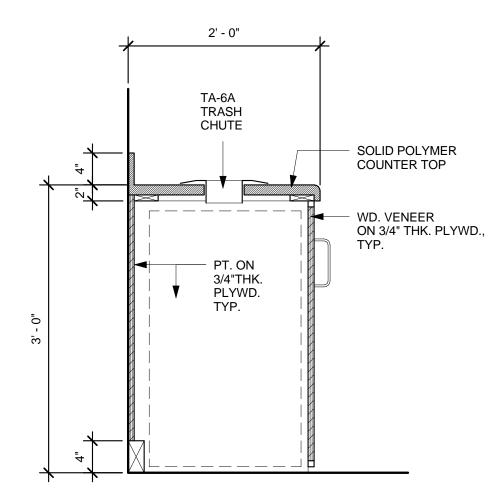
Taniguchi Ruth Makio Architects 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381 Architecture Planning Interior Design I HEREBY CERTIFY THAT THIS PLAN WAS PREPARE BY ME OR UNDER MY DIRECT SUPERVISION Project: A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS Title: WALL DETAILS BID DOCUMENTS TRMA TRMA Checked: CTC CTC 3" = 1'-0" 02/20/15 1441

REVISIONS

Description

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

3" = 1'-0"



TYPICAL
3/4" SOLID POLYMER
COUNTER TOP

SINK

2 x 2 WD. BLOCKING
2 x 4 WD. BLOCKING
EXPANSION BOLT AS
SPECIFIED, TYP.
INSULATE HW PIPES,
DRAINAGE, TYP.
INSULATE HW PIPES,
DRAINAGE, TYP.
PLASTIC PIPE COVER
PER ADAAG REQTS.

FINISH WALL AND
FLOOR AS SCHEDULED,
TYPICAL

2' - 0"

SEALANT

MIRROR

CONT. SEALANT,

TRASH RECEPTACLE

CASEWORK DETAIL

1 SCALE: 1" = 1'-0"



BRAILLE

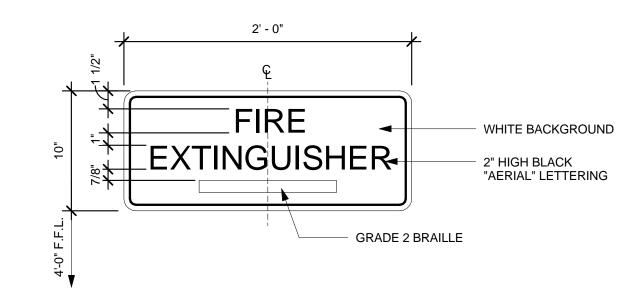
NOTE:

- 1. INSTALL SIGNAGE ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE TO THE LATCH SIDE OF THE DOOR, INCLUDING AT DOUBLE DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL.
- 2. MOUNTING LOCATION FOR SUCH SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3 INCHES OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR.

"AERIAL" LETTERING

ROOM IDENTIFICATION

1 1/2" = 1'-0"



FIRE EQUIPMENT IDENTIFICATION

SCALE:

1 1/2" = 1'-0"

WHITE BACKGROUND

SPRINKLERS

1" HIGH BLACK "AERIAL"

LETTERING

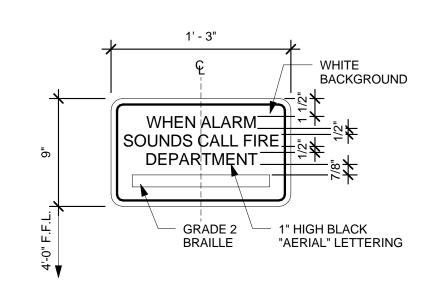
MAY ALSO READ "STANDPIPES"

OR "TEST CONNECTION"

FIRE DEPARTMENT
CONNECTION

SCALE: 1 1/2" = 1'-0"





MANUAL FIRE ALARM BOXES To the second of th

REVISIONS

Description

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Architecture Planning Interior Design

i hereby Certify that this plan was prepar

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title:

CASEWORK & SIGNAGE DETAILS

BID DOCUMENTS

Designed: TRMA

Drawn: TRMA

Checked: CTC

Supv: CTC

Scale: As indicated

 Date:
 02/20/15

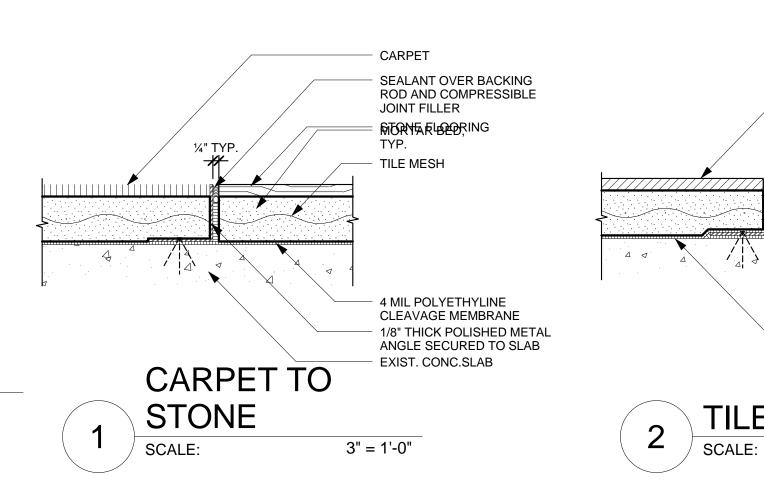
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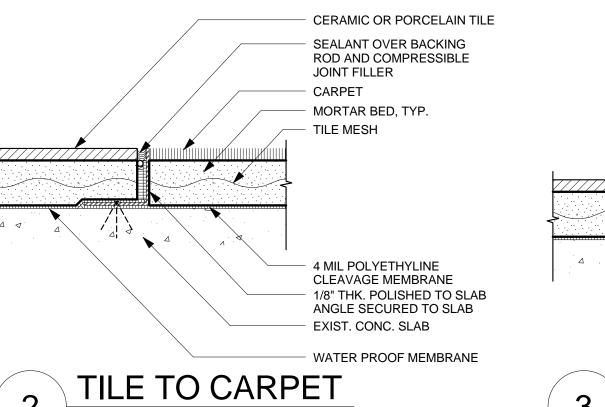
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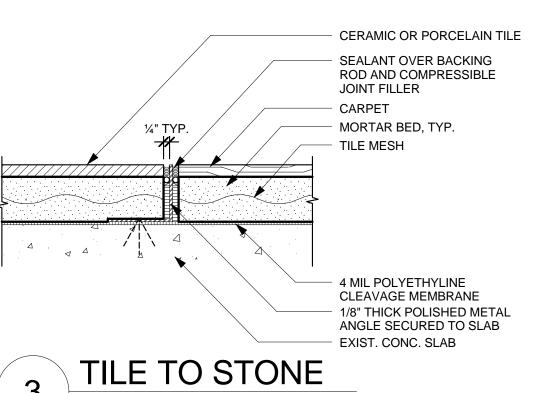
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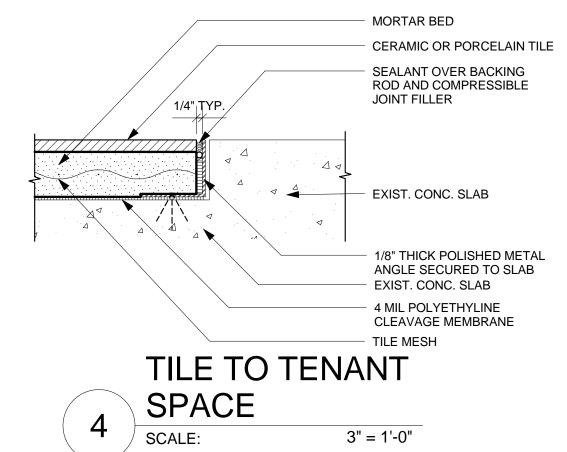
SIGNAGE NOTES:

- 1. LETTERS AND NUMBERS SHALL BE RAISED " UPPER CASE TEXT AND ACCOMPANIED WITH GRADE 2 BRAILLE STYLE OF TEXT TO BE SELECTED RAISED CHARACTERS SHALL BE AT LEAST " HIGH, BUT NO HIGHER THAN 2" PICTOGRAMS SHALL BE 6" MIN IN
- 2. ROOM SIGNAGE SHALL BE MOUNTED TO THE LATCH SIDE AT 5'-0" ABOVE FINISH FLOOR TO THE CENTERLINE OF ITS EQUIVALENT VERBIAGE/BRAILLE PERMANENT ROOM AND SPACE DESIGNATION. AT DOUBLE DOORS THAT SWING OUT, MOUNT SIGNAGE BEYOND THE SWING OF THE DOOR.
- 3. THE CHARACTERS & BACKGROUND OF SIGNS SHALL BE EGGSHELL, MATTE, OR NON-GLARE FINISH AND SHALL CONTRAST WITH THEIR BACKGROUND AS SELECTED.
- 4. SIGNAGE SHALL BE PROVIDED IN CONFORMANCE TO ROOM NAME INDICATED ON ROOM FINISH SCHEDULE

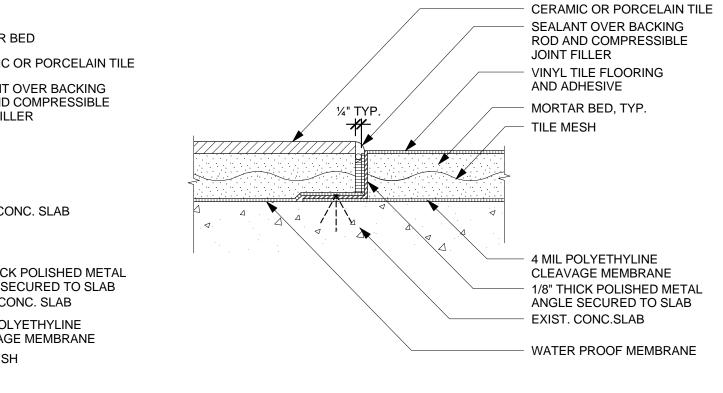






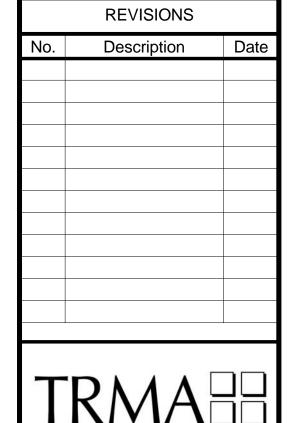


3" = 1'-0"



TILE TO VINYL
SCALE: 3" = 1

3" = 1'-0"



Taniguchi Ruth Makio Architects
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Architecture Planning Interior Design

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Project:

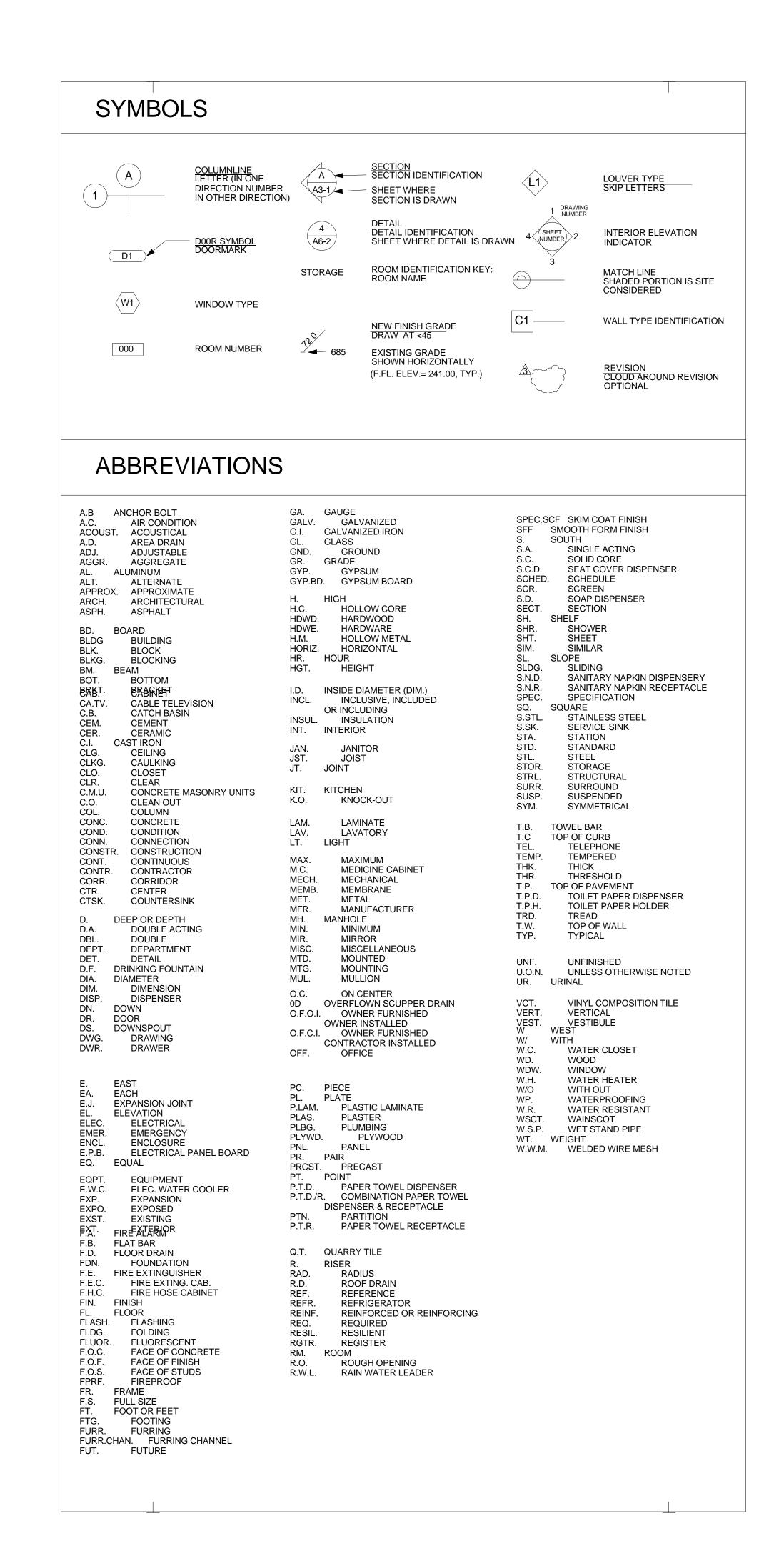
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

FLOOR DETAILS

BID DOCUMENTS

TRMA Checked: CTC 3" = 1'-0" 02/20/15

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A.B. WON PAT INTERNATIONAL AIRPORT

RESTROOM RENOVATIONS

TIYAN

ARCHITECT

Taniguchi Ruth Makio Architects

GUAM

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REVISIONS

Description

Architecture Planning Interior Design LOCATION MAP INDEX OF DRAWINGS ARCHITECTURAL **MECHANICAL** PHASING PLAN & GENERAL NOTES LEGENDS & ABBREVIATIONS, GENERAL MECHANICAL NOTES & F.P. SYMBOLS, L/A, F.P. NOTES & SPECS, AND **INSTALLATION WORK NOTES** INSTALLATION WORK NOTES **CONCOURSE LEVEL PHASE 1A PLANS** CONCOURSE LEVEL PHASE 1A MECHANICAL DEMO/REMOVAL CONCOURSE LEVEL PHASE 1A PLANS F.P. A2.1 CONCOURSE LEVEL PHASE-1A INTERIOR ELEVATIONS PLAN & NEW MECHANICAL PLAN DEMO/REMOVAL AND NEW F.P. PLAN A3.0 APRON LEVEL PHASE-1B DEMOLITION PLAN APRON LEVEL PHASE 1B MECHANICAL DEMO/REMOVAL PLAN APRON LEVEL PHASE 1B DEMOLITION PLAN A3.1 APRON LEVEL PHASE-1B PLANS APRON LEVEL PHASE 1B NEW MECHANICAL PLAN APRON LEVEL PHASE 1B PLANS NEW F.P. PLAN A3.2 APRON LEVEL PHASE-1B INTERIOR ELEVATIONS BASEMENT LEVEL PHASE 1C MECHANICAL DEMO/REMOVAL TYPICAL FIRE PROTECTION WORKS & INSTALLATION BASEMENT LEVEL PHASE-1C PLANS DETAILS PLAN AND NEW MECHANICAL PLAN BASEMENT LEVEL PHASE-1C INTERIOR ELEVATIONS A4.1 BASEMENT LEVEL PHASE 1C MECHANICAL DEMO/REMOVAL BASEMENT LEVEL PHASE-1D PLANS **ELECTRICAL** A5.1 BASEMENT LEVEL PHASE-1D PLANS BASEMENT LEVEL PHASE 1D NEW MECHANICAL PLAN ELECTRICAL GENERAL NOTES, SYMBOL LIST, AND LIGHT BASEMENT LEVEL PHASE-1D INTERIOR ELEVATIONS FIXTURE SCHEDULE ADMIN. LEVEL PHASE 2A MECHANICAL DEMO/REMOVAL PLAN ADMIN. LEVEL PHASE-2A PLANS AND NEW MECHANICAL PLAN **ELECTRICAL ROOM** ADMIN. LEVEL PHASE-2A INTERIOR ELEVATIONS APRON LEVEL PHASE 2B MECHANICAL DEMO/REMOVAL PLAN **ELECTRICAL ROOM** PROJECT APRON LEVEL PHASE-2B DEMOLITION PLAN APRON LEVEL PHASE 2B NEW MECHANICAL PLAN **ELECTRICAL REMOVAL PLAN - PHASE 1A** A7.1 APRON LEVEL PHASE-2B PLANS LOCATION APRON LEVEL PHASE 2C MECHANICAL DEMO/REMOVAL PLAN NEW LIGHTING, POWER, AND COMMUNICATION PLAN - PHASE APRON LEVEL PHASE-2B INTERIOR ELEVATIONS APRON LEVEL PHASE 2C NEW MECHANICAL PLAN A8.0 APRON LEVEL PHASE-2C DEMOLITION PLAN PHILIPPINE M9.0 BASEMENT LEVEL PHASE 2D MECHANICAL DEMO/REMOVAL **ELECTRICAL REMOVAL PLAN - PHASE 1B** APRON LEVEL PHASE-2C PLANS PLAN AND NEW MECHANICAL PLAN NEW LIGHTING, POWER, AND COMMUNICATION PLAN - PHASE A8.2 APRON LEVEL PHASE-2C INTERIOR ELEVATIONS LEGEND & ABBREVIATIONS, PLUMBING EQUIPMENT AND FIXTURE SCHEDULE, PLUMBING NOTES & SPECIFICATIONS, BASEMENT LEVEL PHASE-2D DEMOLITION PLAN ELECTRICAL REMOVAL & NEW LIGHTING, POWER, AND **INSTALLATION WORK NOTES** COMMUNICATION PLAN - PHASE 1C (BASEMENT LEVEL) APRON LEVEL PHASE-2D INTERIOR ELEVATIONS A9.1 CONCOURSE LEVEL PHASE 1A PLUMBING DEMO/REMOVAL ELECTRICAL REMOVAL PLAN - PHASE 1D ROOM FINISH SCHEDULE, DOOR SCHEDULE & DETAILS A10.1 PLAN, NEW PLUMBING PLAN & PIPING ISOMETRIC DIAGRAM NEW LIGHTING, POWER, AND COMMUNICATION PLAN - PHASE A10.2 CEILING DETAILS APRON LEVEL PHASE 1B PLUMBING DEMO/REMOVAL PLAN A11.1 WALL DETAILS PACIFIC APRON LEVEL PHASE 1B NEW PLUMBING PLAN AND PIPING ELECTRICAL REMOVAL& NEW LIGHTING, POWER, AND **CASEWORK & SIGNAGE DETAILS** OCEAN ISOMETRIC DIAGRAM COMMUNICATION PLAN - PHASE 2A (ADMIN) A14.1 FLOOR DETAILS BASEMENT LEVEL PHASE 1C PLUMBING DEMO/REMOVAL PLAN, **ELECTRICAL REMOVAL PLAN - PHASE 2B** NEW PLUMBING PLAN & PIPING ISOMETRIC DIAGRAM NEW LIGHTING, POWER, AND COMMUNICATION PLAN - PHASE BASEMENT LEVEL PHASE 1D PLUMBING DEMO/REMOVAL PLAN A.B. WON PAT BASEMENT LEVEL PHASE 1D NEW PLUMBING PLAN & PIPING ELECTRICAL REMOVAL PLAN - PHASE 2C INTERNATIONAL AIRPORT ISOMETRIC DIAGRAM NEW LIGHTING, POWER, AND COMMUNICATION PLAN - PHASE ADMIN. LEVEL PHASE 2A PLUMBING DEMO/REMOVAL PLAN, **RESTROOM RENOVATIONS** NEW PLUMBING PLAN & PIPING ISOMETRIC DIAGRAM ELECTRICAL REMOVAL PLAN - PHASE 2D APRON LEVEL PHASE 2B PLUMBING DEMO/REMOVAL PLAN E9.1 NEW LIGHTING, POWER, AND COMMUNICATION PLAN - PHASE APRON LEVEL PHASE 2B NEW PLUMBING PLAN & PIPING ISOMETRIC DIAGRAM VICINITY PLAN APRON LEVEL PHASE 2C PLUMBING DEMO/REMOVAL PLAN APRON LEVEL PHASE 2C NEW PLUMBING PLAN & PIPING TITLE SHEET, ISOMETRIC DIAGRAM LOCATION PLAN, BASEMENT LEVEL PHASE 2D PLUMBING DEMO/REMOVAL PLAN, **VICINITY MAP & INDEX** NEW PLUMBING PLAN & PIPING ISOMETRIC DIAGRAM OF DRAWINGS TYPICAL PLUMBING DETAILS **BID DOCUMENTS** TRMA **ELECTRICAL** MECHANICAL / FIRE PROTECTION **TRMA** ENGINEERIÑ Œ´S´E'RVICES, L CTC MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVCS. 02/20/15 **EMCE** Consulting Engineers SUITE 201, 133 ANTONIA COURT 1441 P.O. BOX 8888 TAMUNING, GUAM 96931 671. 649-0166/7 WM ENGINEERING SERVICES, LLC 671. 646-EMCE (3623) Email: guam@emceconsulting.com P.D. Box 392 Hagatna, GUAM 96932 Website: www.emceconsulting.com 646-0704 E – Mail engoff@guam.net IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALE

- 1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE NATIONAL ELECTRICAL CODE (NEC), 2014 EDITION; RULES AND REGULATIONS OF THE DEPARTMENT OF PUBLIC WORKS, AND GOVERNMENT OF GUAM.
- 2. ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED WHERE LISTING IS AVAILABLE FOR THAT TYPE OF EQUIPMENT OR CONFORM TO ANSI OR NEMA STANDARDS. SUBMIT SHOP DRAWINGS AND PRODUCT INFORMATION CATALOG FOR APPROVAL.
- 3. WORKMANSHIP SHALL CONFORM TO CONSTRUCTION PRACTICES RECOMMENDED BY THE AMERICAN ELECTRICIANS HANDBOOK BY CROFT (LATEST EDITION) AND SHALL BE SUBJECT TO THE APPROVAL OF THE AGENCY WHO HAS JURISDICTION AND THE ENGINEER.
- 4. ANY DEVICES MAY BE RELOCATED FROM THE LOCATION SHOWN ON DRAWINGS PRIOR TO INSTALLATION AT THE DIRECTION OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.
- 5. METALLIC ENCLOSURES, RACEWAYS, AND ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH REQUIREMENTS OF NEC ARTICLE 250. PROVIDE GROUND WIRE IN EVERY RACEWAY. SIZE IN ACCORDANCE WITH NEC TABLE.
- 6. OBTAIN AND PAY FOR PERMITS.
- 7. CONDUIT SHALL BE ALUMINUM (EXPOSED INSTALLATION), EMT (DRY LOCATIONS, CONCEALED ABOVE GRADE). 34" MINIMUM DIAMETER UNLESS OTHERWISE NOTED.
- 8. WIRING SHALL BE NEC TYPE THW, THWN OR XHHW, 600V. CONDUCTORS SHALL BE COPPER.
- 9. TEST: TESTING IN PRESENCE OF ENGINEER. RESULTS SUBMITTED FOR APPROVAL TO ENGINEER.

 A. OPERATION TEST
 - B. INSULATION RESISTANCE
- 10. ELECTRICAL WORK SHALL BE UNDER FULL SUPERVISION OF A PROFESSIONAL ELECTRICAL ENGINEER OR A MASTER ELECTRICIAN REGISTERED TO PRACTICE IN GUAM.
- 11. SUBSTITUTE MATERIALS TO BE EQUAL QUALITY TO SPECIFIED ITEM. IF SUBSTITUTE MATERIALS ARE PROPOSED, SUBMIT SIX (6) COPIES OF SHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING. PROVIDE SAMPLES OF SUBSTITUTE MATERIALS, IF REQUESTED TO EVALUATE EQUALITY OF PROPOSED SUBSTITUTION.
- 12. GUARANTEE THE ENTIRE INSTALLATION SHALL BE GUARANTEED FOR ONE YEAR AFTER ACCEPTANCE BY THE OWNER AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP, WHEN NOTIFIED BY THE OWNER OF FAILURE OF ANY PART OF THE INSTALLATION DURING THE GUARANTEE PERIOD. CONTRACTOR SHALL REPAIR OR REPLACE THE DEFECTIVE PART AT HIS OWN EXPENSE TO THE SATISFACTION OF THE OWNER.
- 13. INSTALLATION AND WORKMANSHIP:
 - A. ALL WORK SHALL BE NEATLY EXECUTED, WORKMANLIKE IN APPEARANCE, SYMMETRICAL, PLUMB, UNIFORM, PROPERLY ALIGNED AND SECURED IN PLACE.
 - B. WIRING METHODS:
 - (1) USE SEALTITE FLEX FOR CONNECTION TO EQUIPMENT.
 (2) ATTACH TO CONCRETE AND MASONRY WITH EXPANSION ANCHORS AND TO WOOD WITH WOOD SCREWS.
 (3) SUPPORT RACEWAYS PER NEC.
 - (4) DO NOT SUPPORT RACEWAYS AND BOXES FROM AND
 - ON MECHANICAL SYSTEMS.

 (5) CABLES WILL NOT BE PERMITTED.
 - C. CONDUCTORS:
 - (1) MAKE SPLICES IN ACCESSIBLE LOCATIONS. MAKE SPLICES IN CONDUCTORS No. 10 AWG AND SMALLER DIAMETER WITH INSULATED, PRESSURE—TYPE CONNECTOR. MAKE SPLICES IN CONDUCTORS No.8 AWG AND LARGER DIAMETER WITH SOLDERLESS CONNECTOR, AND COVER WITH INSULATION MATERIAL EQUIVALENT TO CONDUCTOR INSULATION.
 - (2) FORM WIRE NEATLY IN ENCLOSURES.
 - (3) IDENTIFY CONDUCTORS BY COLOR CODE NEUTRAL WIRE TO BE WHITE AND GROUND WIRE TO BE GREEN.
 - D. CUT, DRILL AND PATCH AS REQUIRED. REPAIR ANY SURFACES DAMAGED OR MARRED. CUTTING, REPAIRS AND REFINISHING SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.
 - E. CLEAN ALL SURFACES TO RECEIVE PAINT. PAINT ANY SURFACE DAMAGED DURING INSTALLATION.
 - F. REPAIR ALL SURFACES DAMAGED DURING THE INSTALLATION OF THE WORK SUBJECT TO THE APPROVAL OF THE ARCHITECT.
 - G. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE SEALED WITH APPROVED FIRESTOPPING MATERIAL.

- H. PROVIDE EXPANSION/DEFLECTION FITTING FOR CONDUITS PASSING THROUGH SEISMIC JOINTS.
- I. PROVIDE CONDUIT SEAL FOR CONDUITS PASSING THROUGH AIR CONDITIONED AND NON-AIR CONDITIONED AREAS.
- J. SUPPORTING STRUCTURES SHALL BE IN ACCORDANCE WITH SEISMIC ZONE 4 REQUIREMENTS.
- 14. FIXTURES INSTALL FIXTURES INDICATED IN LUMINAIRE SCHEDULE COMPLETE WITH LAMPS, HANGERS, SUPPORTS, BALLAST AND ACCESSORIES. ALL FLUORESCENT BALLAST SHALL BE ELECTRONIC TYPE.
- 15. SUBMIT SHOP DRAWING AND CATALOG DATA FOR ALL MATERIALS FOR APPROVAL.
- 16. AT THE CONCLUSION OF THE WORK, THE CONTRACTOR WILL BE FURNISHED BY THE ARCHITECT, AT THE CONTRACTOR EXPENSE, A SET OF REPRODUCIBLES MADE FROM ORIGINAL CONTRACT PLANS. THE CONTRACTOR SHALL THEN INCORPORATE ALL CHANGES MADE, AND RECORDED, INTO THE SET OF REPRODUCIBLES IN A CLEAR, LEGIBLE AND REPRODUCIBLE MANNER. ALL STUB—OUTS SHALL BE DIMENSIONALLY LOCATED WITHIN THE BUILDING STRUCTURE. AS A CONDITION FOR ACCEPTANCE OF WORK, "AS—BUILT" REPRODUCIBLE SHALL BE SIGNED BY CONTRACTOR ATTESTING THAT ALL CHANGES HAVE BEEN INCORPORATED, DATED AND DELIVERED TO THE ARCHITECT.
- 17. EXISTING GPA SERVICE AND METERING IS SUFFICIENT AND NO CHANGES OR ADDITION IS REQUIRED.

GENERAL NOTES:

- 1 CONTRACTOR SHALL VISIT SITE TO BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO SUBMITTING BID.
- (2) CONTRACTOR SHALL NOTIFY CONTRACTING OFFICER IMMEDIATELY IN WRITING OF DISCREPANCIES BETWEEN PLAN AND ACTUAL CONDITIONS PRIOR TO SUBMITTAL OF BID.
- (3) CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CONTRACTING OFFICER AND THE USING AGENCY PRIOR TO STARTING WORK.
- 4 DETAILS ARE INTENDED TO SHOW METHOD AND MANNER OF ACCOMPLISHING WORK. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITION AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- 5 BUILDING EXITS MUST BE KEPT OPEN AND CLEAR THROUGHOUT THE ENTIRE CONSTRUCTION.
- 6 PATCH AND RESTORE TO GOOD CONDITION ALL DAMAGED AREAS AFFECTED BY REMOVAL WORK TO MATCH NEW CONSTRUCTION.
- ANY OUTAGE OF ELECTRICAL SERVICE, FIRE ALARM OR ANY OTHER SYSTEM IN ANY PART OF THE FACILITY SHALL BE REQUESTED IN WRITING AT LEAST SEVEN WORKING DAYS PRIOR TO THE DESIRED DATE OF OUTAGE, SCHEDULE AND LENGTH OF OUTTAGES SHALL BE AS INDICATED IN THE GENERAL REQUIREMENTS SECTION OF THE SPECIFICATIONS.

LIGHT FIXTURE SCHEDULE							
FIXTURE LAMP DATA MOUNTING TYPE NO. WATTS CEILING WALL			DESCRIPTION	MANUFACTURER'S CAT. NO. OR APPROVED EQUAL			
(A1)	1	13 DTT	REC.		COMPACT FLUORESCENT DOWNLIGHT, 6" APERTURE, PROGRAMMED START ELECTRONIC BALLAST.	GOTHAM AF-1/13-6AR *-GEB10PS	
(A2)	1	26 DTT	REC.		COMPACT FLUORESCENT DOWNLIGHT, 6" APERTURE, PROGRAMMED START ELECTRONIC BALLAST.	GOTHAM AF-1/26-6AR *-GEB10PS	
(A2E)	1	26 DTT	REC.		SIMILAR TO TYPE "A2" EXCEPT WITH INTEGRAL EMERGENCY BALLAST.	GOTHAM AF-1/26-6AR *-GEB10PS-EL	
\bigcirc B	1	18 TRT	REC.		COMPACT FLUORESCENT DOWNLIGHT, RATED FOR USE IN SHOWER (WET LOCATION), ELECRONIC BALLAST.	GOTHAM LGFLP-1/18TRT-6DFD -*	
$\langle c \rangle$	2	32 T8	REC.		1'x4' FLUORESCENT FIXTURE, FIBERGLASS HOUSING, DAMP/WET LOCATION RATED, ELECTRONIC BALLAST.	LITHONIA DMW-2-32-* -GEB10PS	

* - PROVIDE VOLTAGE MATCHING EXISTING LIGHTING CIRCUIT.

	ELECTRICAL INDEX OF DRAWINGS
DRAWING NO.	DESCRIPTION
E1.0	ELECTRICAL GENERAL NOTES, SYMBOL LIST AND LIGHT FIXTURE SCHEDULE
E1.1	ELECTRICAL ROOM VICINITY PLANS (1 OF 2)
E1.2	ELECTRICAL ROOM VICINITY PLANS (2 OF 2)
E2.0	ELECTRICAL REMOVAL PLAN-PHASE 1A
E2.1	NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 1A
E3.0	ELECTRICAL REMOVAL PLAN-PHASE 1B
E3.1	NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 1B
E4.0	ELECTRICAL REMOVAL, NEW LIGHTING, NEW POWER PLAN-PHASE 1C
E5.0	ELECTRICAL REMOVAL PLAN-PHASE 1D
E5.1	NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 1D
E6.0	ELECTRICAL REMOVAL, NEW LIGHTING, NEW POWER PLAN-PHASE 2A
E7.0	ELECTRICAL REMOVAL PLAN-PHASE 2B
E7.1	NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 2B
E8.0	ELECTRICAL REMOVAL PLAN-PHASE 2C
E8.1	NEW LIGHTING, NEW POWER PLAN-PHASE 2C
E9.0	ELECTRICAL REMOVAL PLAN-PHASE 2D
E9.1	NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 2D

		ELECTRICAL SYMBOL LIST
EXISTING	NEW	DESCRIPTION
		CEILING RECESS MOUNTED DOWNLIGHT; SHADE INDICATES WITH EMERGENCY BATTERY PACK
		CEILING SURFACE MOUNTED FIXTURE
	0	RECEPTACLE, DUPLEX, WALL MOUNTED, 15A, 125 VOLTS, NEMA 5-15R
=	e	GFI RECEPTACLE, DUPLEX, WALL MOUNTED, 15A, 125 VOLTS, NEMA 5-15R
\ominus	0	SINGLE RECEPTACLE, 20A, 125 VOLTS, WALL MOUNTED, NEMA 5-20R
Ē	E	EQUIPMENT CONNECTION
S	S	PUBLIC ADDRESS SPEAKER, CEILING MOUNTED
	\$	SINGLE POLE TOGGLE SWITCH
	\$ _{WP}	SWITCH, WEATHERPROOF
	○ / H○	JUNCTION BOX, CEILING/WALL MOUNTED
		EQUIPMENT DISCONNECT SWITCH
		PANELBOARD
		RACEWAY, CONCEALED IN CEILING OR WALL. NUMBER OF WIRES WITHIN AS REQUIRED INCLUDING GROUND
	—P—	PUBLIC ADDRESS RACEWAY
	→	ARROW, HOMERUN TO CABINET OR PANEL AS INDICATED. NUMBER OF WIRES WITHIN AS REQUIRED INCLUDING GROUND
	1 E-5	INDICATOR, DETAIL : TOP HALF—DETAIL NUMBER BOTTOM HALF—SHEET NUMBER (DETAIL LOCATION)
	A	INDICATOR, LIGHT FIXTURE TYPE
	$\boxed{ \textcircled{1} \longrightarrow } $	NOTE INDICATOR
	©3/ H ©3	OCCUPANCY SENSOR, DUAL TECHNOLOGY (INFRARED & ULTRASONIC), CEILING/WALL MOUNTED
	AF/AT	AMPERE FRAME/AMPERE TRIP
	AFF/AFG	ABOVE FINISH FLOOR/ABOVE FINISH GRADE
	HWH	HYBRID ELECTRIC WATER HEATER TANK TYPE
	TWH	ELECTRIC WATER HEATER TANK TYPE
	GFI	GROUND FAULT INTERRUPTER

No. Description Date

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. 649-0166/7 Phone
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@Mail: guam@emceconsulting.com



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

ELECTRICAL GENERAL NOTES, SYMBOL LIST AND LIGHT FIXTURE SCHEDULE

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

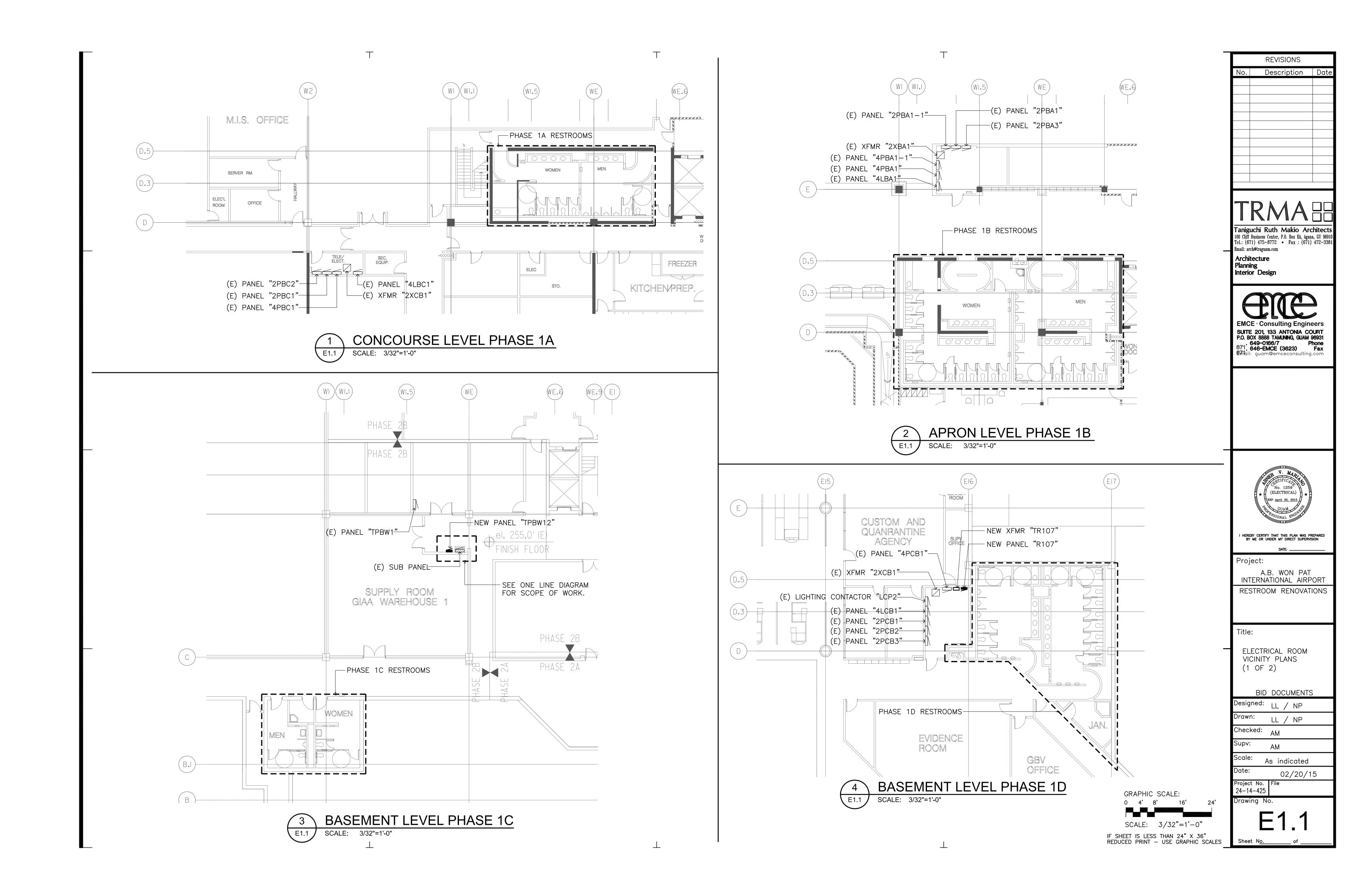
Supv: AM

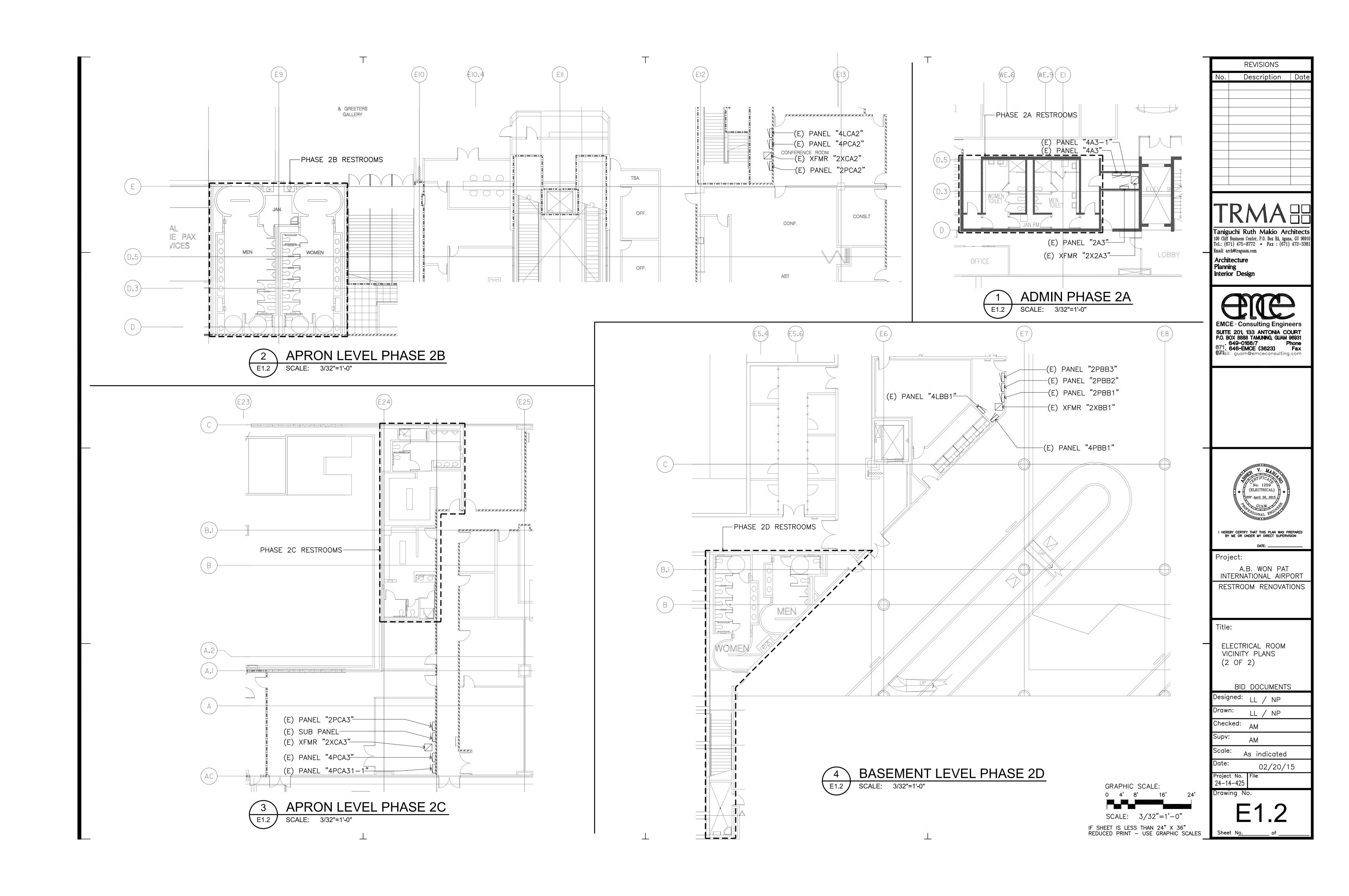
Scale: As indicated

Date: 02/20/15

Project No. Fil 24-14-425 Drawing No.

24" X 36"
GRAPHIC SCALES Sheet No.





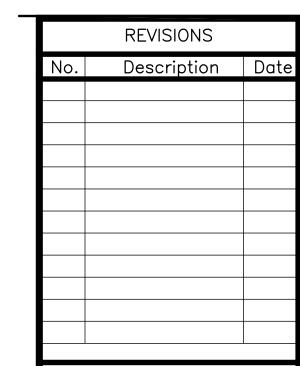
-HAND DRYER SPEAKER, WOMEN'S RR TYPICAL MEN'S RR 102

> ELECTRICAL REMOVAL PLAN-PHASE 1A E2.0 1/4"=1'-0"

GENERAL NOTE:

1 ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

NOT ALL DEVICES MAY BE SHOWN ON PLAN. REMOVE ALL ELECTRICAL INCLUDING BUT NOT LIMITED TO LIGHTING, POWER, AND SPEAKERS. EXISTING CIRCUITS TO BE REUSED. REFER TO NEW PLANS.

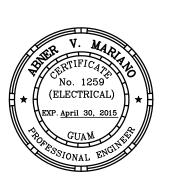


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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

ELECTRICAL REMOVAL PLAN-PHASE 1A

BID DOCUMENTS

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Project No. File

24-14-425 Drawing No.

GRAPHIC SCALE: SCALE: 1/4"=1'-0"

<u>A1</u> TYPICAL UNLESS OTHERWISE NOTED MEN'S RR INSTALL INSIDE THE-102 CEILING SPACE, TYPICAL (A2) TYPICAL UNLESS OTHERWISE NOTED 4LBC1−8 (1) VIA LCP -PROVIDE SEPARATE LIGHTING (A1)-ZONE/CONTROL FROM THE MAIN RESTROOM AREA.

SCALE:

NEW LIGHTING AND COMMUNICATION PLAN-PHASE 1A

1/4"=1'-0"

REVISIONS

Description

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3 NEW PUBLIC ANNOUNCEMENT SPEAKER, SIMILAR TO EXISTING AND COMPATIBLE TO EXISTING PUBLIC ANNOUNCEMENT SYSTEM. CONNECT TO EXISTING PUBLIC ANNOUNCEMENT SYSTEM. PROVIDE NEW CONDUIT AND WIRING.

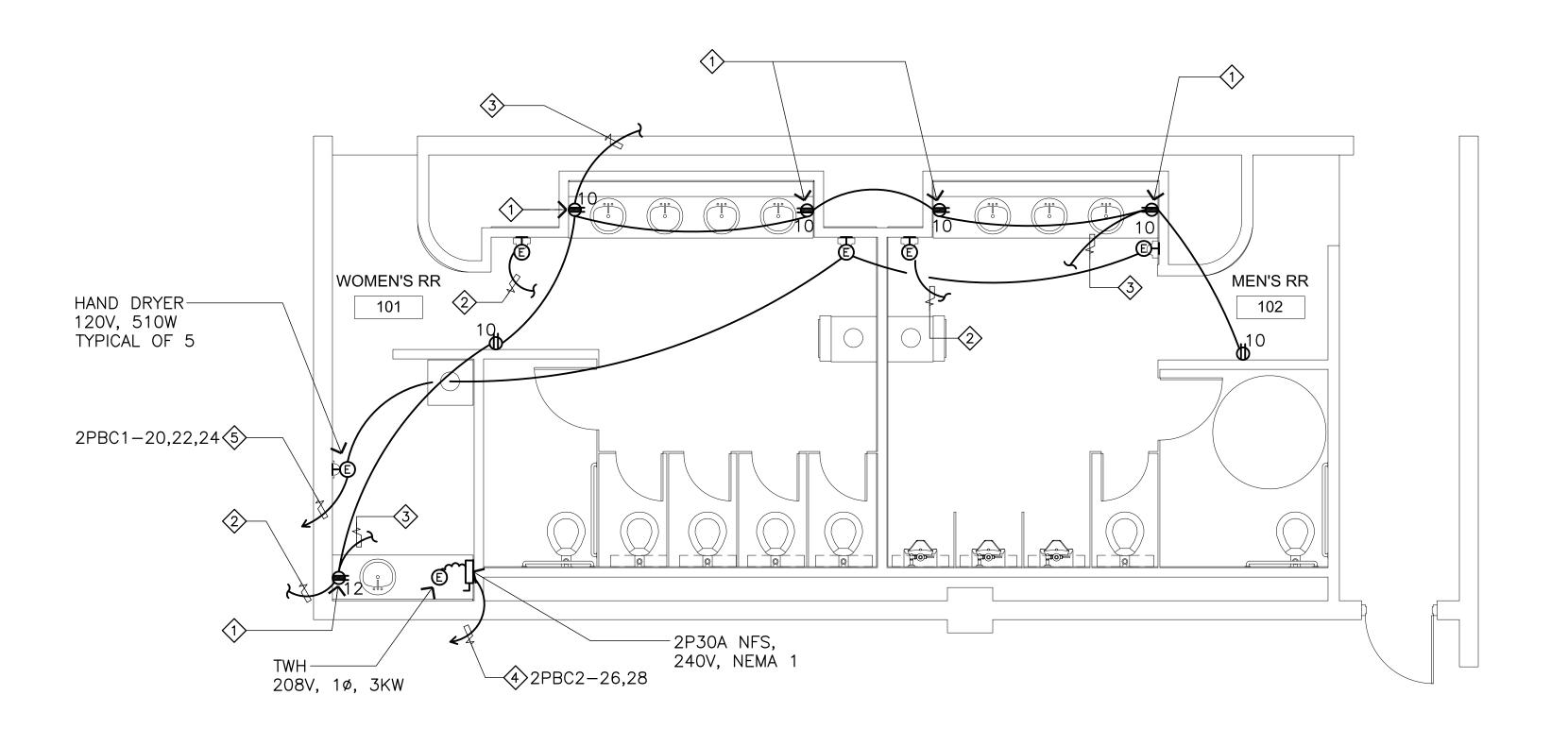
EQUIPMENT/DEVICES/LIGHTING THAT ARE NOT

PART OF THE RENOVATION WORK. CONTRACTOR

RECONNECT TO EXISTING LIGHTING CIRCUIT.

RECONNECT EXISTING CIRCUITING FOR

TO FIELD VERIFY.

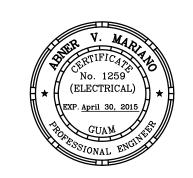


NEW POWER PLAN-PHASE 1A SCALE: 1/4"=1'-0"

NOTES:

NOTES:

- (1) MOUNT AT 8" ABOVE COUNTER/SINK.
- RECONNECT TO EXISTING CIRCUIT OF PREVIOUSLY REMOVED RECEPTACLE/HAND DRYER.
- 3 RECONNECT EXISTING CIRCUITING FOR EQUIPMENT/DEVICES/LIGHTING THAT ARE NOT PART OF THE RENOVATION WORK. CONTRACTOR TO FIELD VERIFY.
- 4 PROVIDE 3/4"C, 2#12, 1#12 GND TO EXISTING PANEL. PROVIDE NEW 2P20AT CIRCUIT BREAKER. NEW BREAKER SHALL BE FULLY COMPATIBLE TO EXISTING PANEL.
- \$\frac{5}{\text{PROVIDE } 3/4\column{2}, 4\pi12, 1\pi12 GND TO EXISTING PANEL. CONNECT TO EXISTING SPARE CIRCUIT BREAKER.



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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 1A

BID DOCUMENTS

Designed: LL / NP LL / NP Checked: AM Supv: Scale: As indicated Date: 02/20/15

24-14-425 Orawing No.

Project No. File

SCALE: 1/4"=1'-0"IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

GRAPHIC SCALE:

GENERAL NOTE:

1 ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

NOTE:

NOT ALL DEVICES MAY BE SHOWN ON PLAN. REMOVE ALL ELECTRICAL INCLUDING BUT NOT LIMITED TO LIGHTING, POWER, AND SPEAKERS. EXISTING CIRCUITS TO BE REUSED. REFER TO NEW PLANS.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

No. 1259 (ELECTRICAL) EXP. April 30, 2015

REVISIONS

Description

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Email: arch@traguam.com Architecture Planning

Interior Design

ELECTRICAL REMOVAL PLAN-PHASE 1B

BID DOCUMENTS

Designed: LL / NP Drawn: LL / NP Checked: AM Supv: Scale: As indicated

Date: 02/20/15 Project No. File

24-14-425 Drawing No.

E3.0

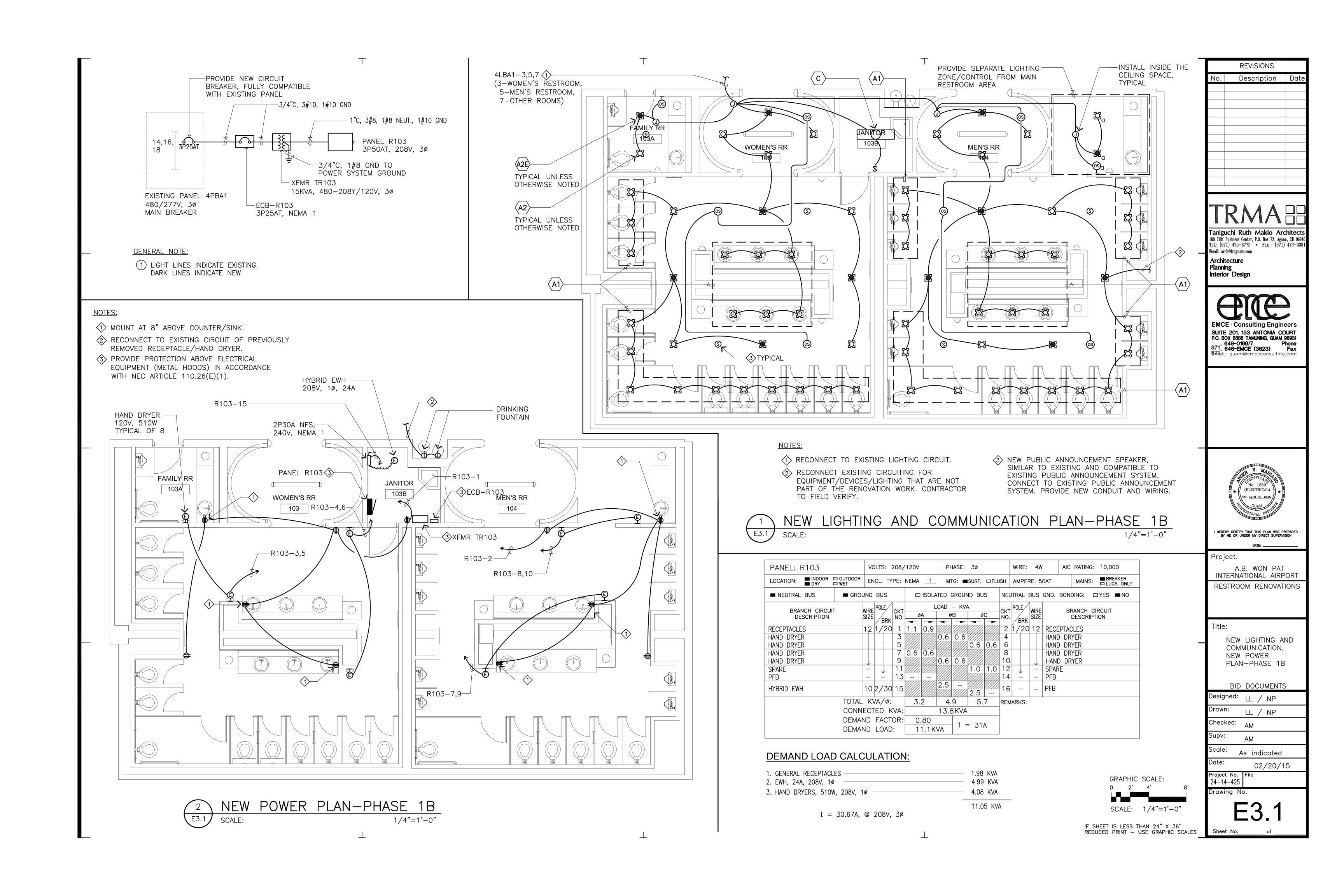
GRAPHIC SCALE: SCALE: 1/4"=1'-0"IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

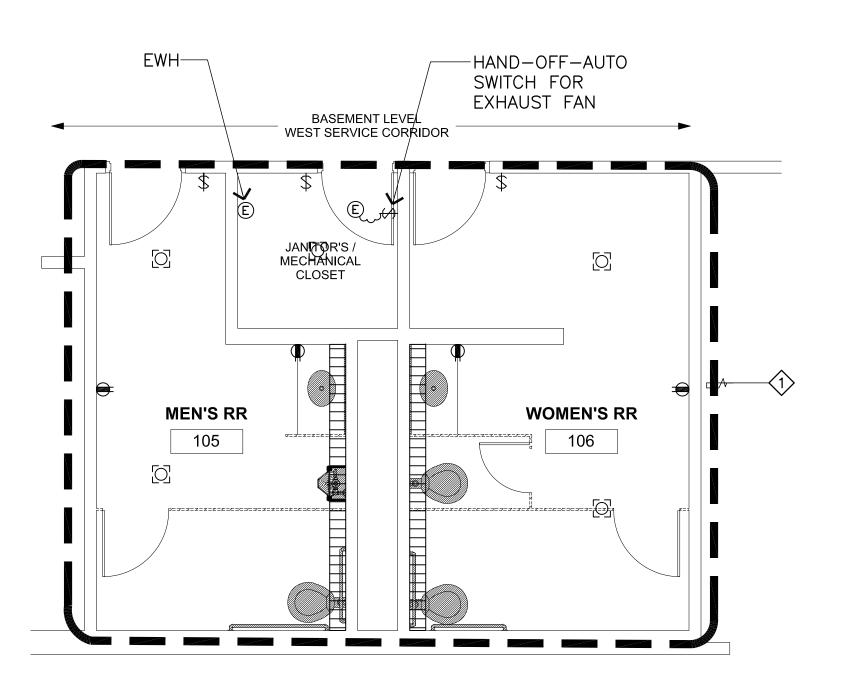
	DRINKING FOUNTAIN	
	APRON LEVEL TICKETING LOBBY (WEST OF UNITED)	
	VESTIBULE VESTIBULE JANITOR'S / MECHANICAL CLOSET O NURSERY	
	HAND DRYER— HAND	
SPEAKER, TYPICAL	WOMEN'S RR 103 S D D	

ELECTRICAL REMOVAL PLAN-PHASE 1B

1/4"=1'-0"

E3.0 SCALE:





GENERAL NOTE:

1) ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

REMOVED RECEPTACLE/HAND DRYER.

SCALE:

(E4.0 /

(1) NOT ALL DEVICES MAY BE SHOWN ON PLAN. REMOVE ALL ELECTRICAL INCLUDING BUT NOT LIMITED TO LIGHTING, POWER, AND SPEAKERS. EXISTING CIRCUITS TO BE REUSED. REFER TO NEW PLANS.

E4.0

ELECTRICAL REMOVAL PLAN-PHASE 1C (BASEMENT SCALE: 1/4"=1'-0"

INSTALL INSIDE THE-CEILING SPACE, TYPICAL TYPICAL UNLESS OTHERWISE NOTED 106 TYPICAL UNLESS OTHERWISE NOTED (1) RECONNECT TO EXISTING LIGHTING CIRCUIT.

REVISIONS

Description

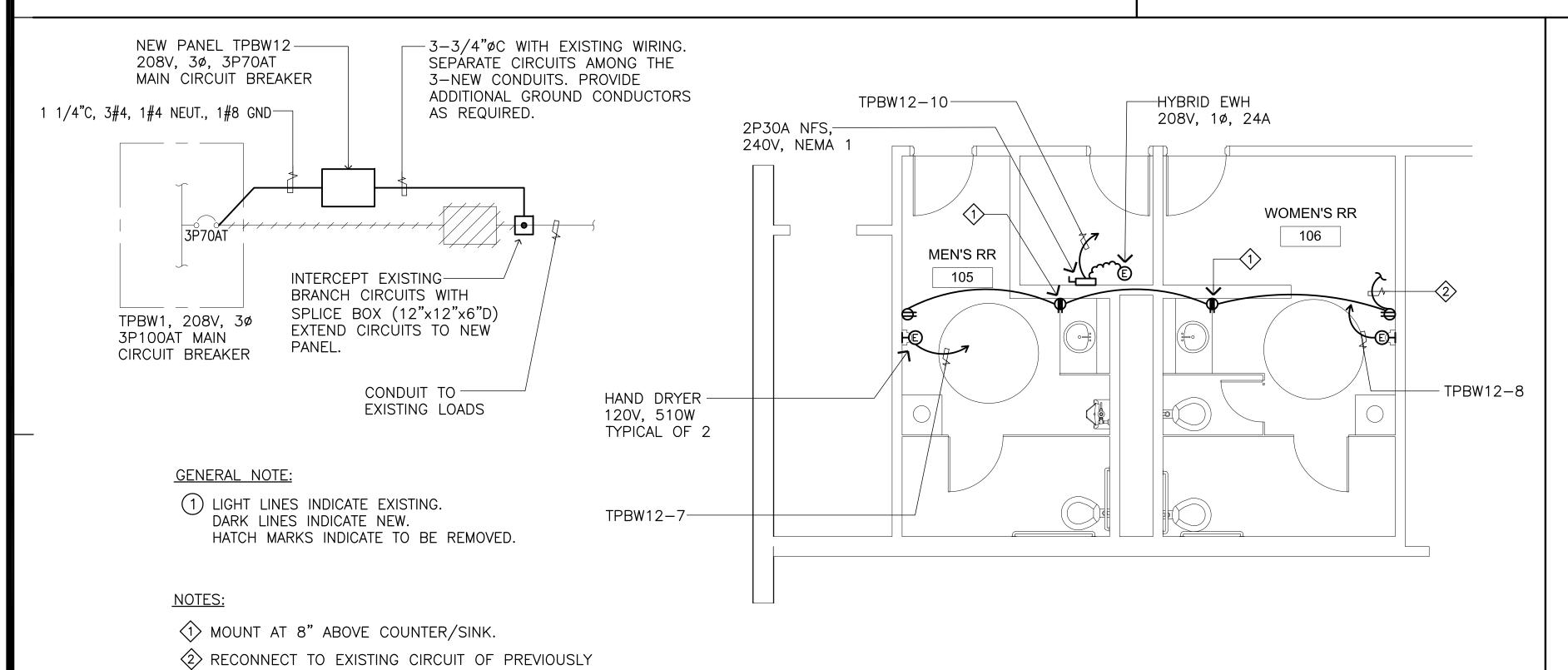
Taniguchi Ruth Makio Architects
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Tel.: (671) 475-8772 - Fax: (671) 472-3381 Email: arch@traguam.com

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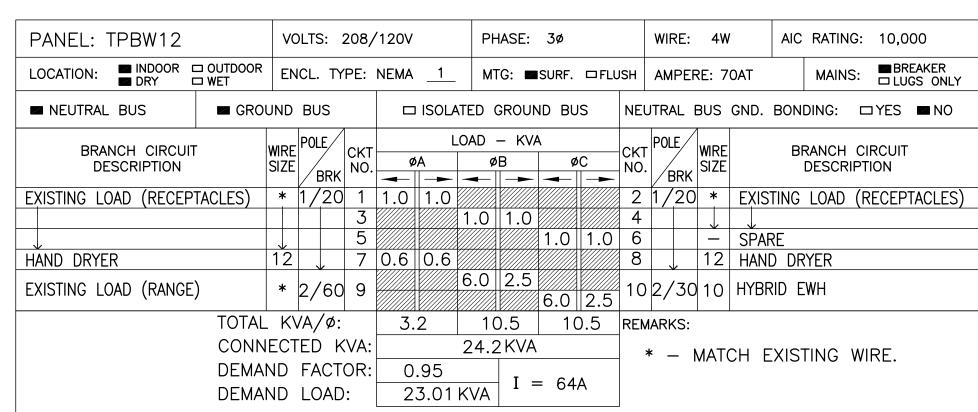
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NEW LIGHTING PLAN-PHASE 1C (BASEMENT LEVEL) E4.0 1/4"=1'-0"

-(A1)-



NEW POWER PLAN-PHASE 1C (BASEMENT LEVEL)



DEMAND LOAD CALCULATION:

1. EXISTING LOAD (GENERAL RECEPTACLES) ————————————————————————————————————	— 5.00 KVA — 4.99 KVA
3. HAND DRYERS, 510W, 208V, 1Ø ———————————————————————————————————	
	23.01 KVA

I = 63.87A, @ 208V, 3ø

GRAPHIC SCALE: SCALE: 1/4"=1'-0"

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

V. MARIANA No. 1259
(ELECTRICAL) EXP. April 30, 2015 HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

Project: A.B. WON PAT

INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

ELECTRICAL REMOVAL,

NEW LIGHTING, NEW POWER PLAN PHASE 1C (BASEMENT LEVEL)

BID DOCUMENTS Designed: LL / NP

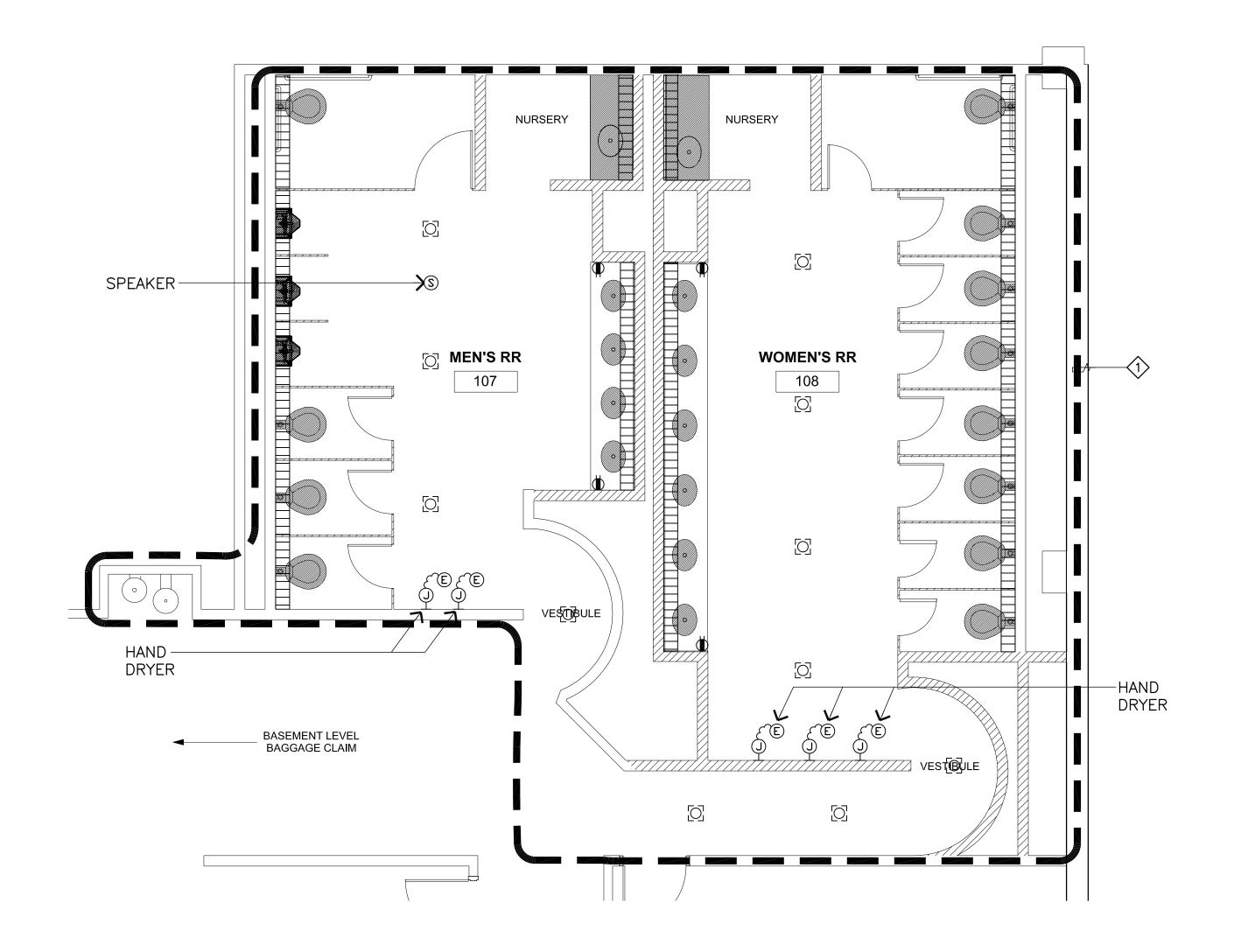
LL / NP Checked: AM Scale: As indicated Date: 02/20/15 Project No. File

24-14-425 Orawing No.

E4.0

1/4"=1'-0"

T



1	ELECTRICAL	REMOVAL	PLAN-PHASE	1D
E5.0	SCALE:		1/4"	=1'-0"

GENERAL NOTE:

1 ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

NOTE:

NOT ALL DEVICES MAY BE SHOWN ON PLAN. REMOVE ALL ELECTRICAL INCLUDING BUT NOT LIMITED TO LIGHTING, POWER, AND SPEAKERS. EXISTING CIRCUITS TO BE REUSED. REFER TO NEW PLANS.

No. Description Date

REVISIONS

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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

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ELECTRICAL REMOVAL PLAN-PHASE 1D

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

Supv: AM

Scale: As indicated

Date: 02/20/15

Project No. File 24–14–425 Drawing No.

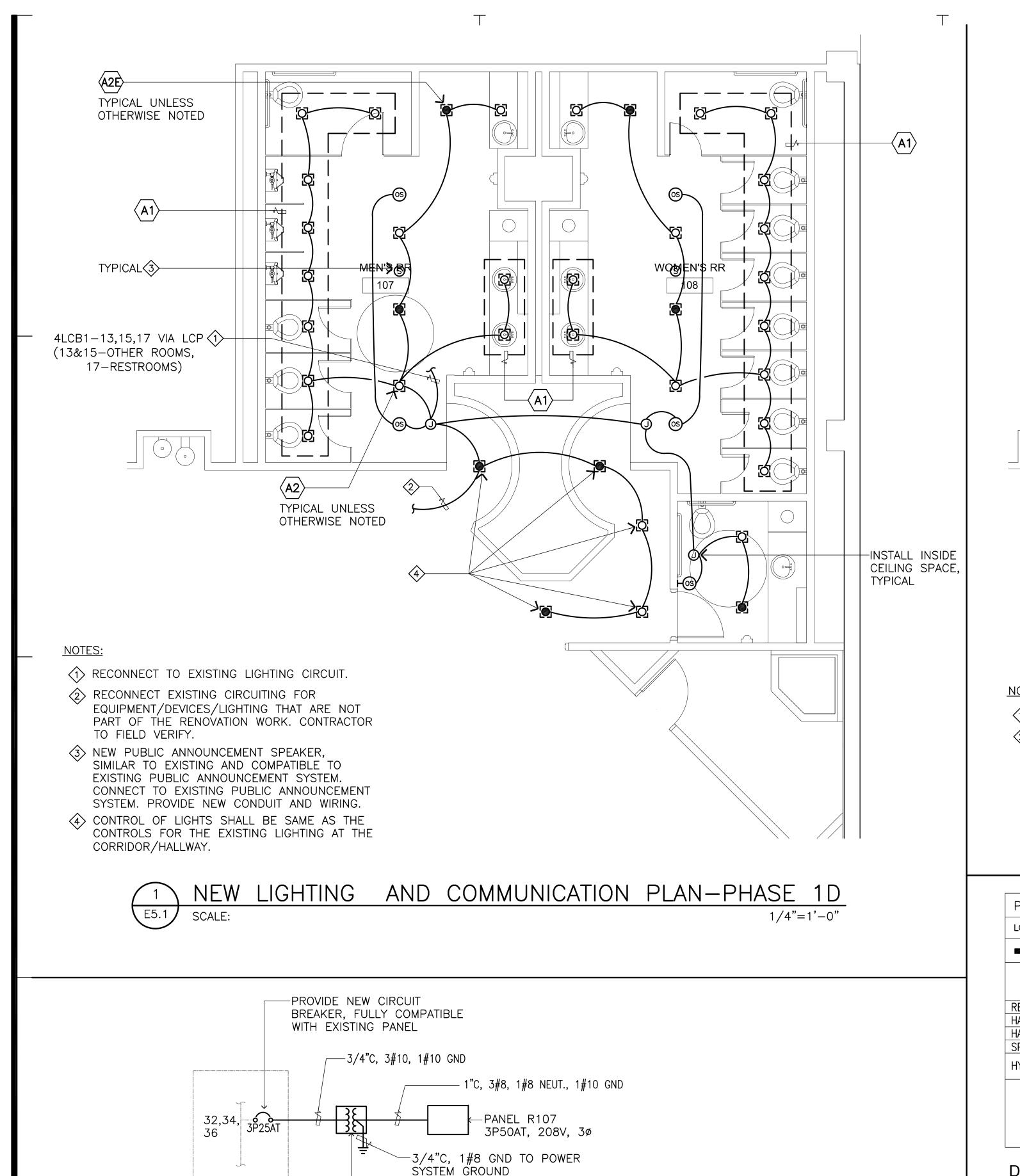
E5.0

GRAPHIC SCALE:

0 2' 4' 8'

SCALE: 1/4"=1'-0"

IF SHEET IS LESS THAN 24" X 36"
REDUCED PRINT - USE GRAPHIC SCALES



-XFMR TR107

EXISTING PANEL 4PCB1

480/277V, 3ø

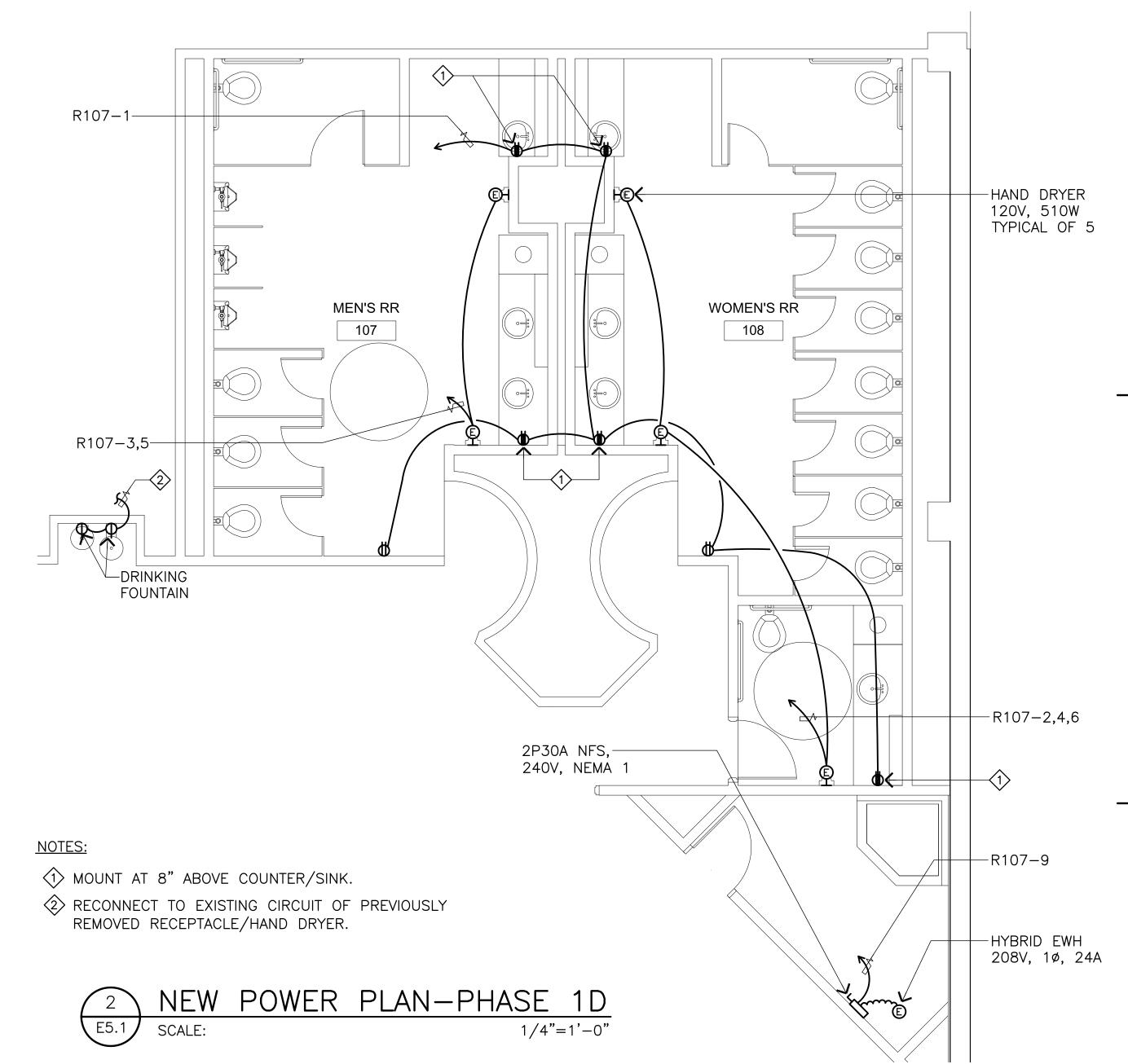
MAIN BREAKER

15KVA, 480-208Y/120V, 3ø

GENERAL NOTE:

(1) LIGHT LINES INDICATE EXISTING.

DARK LINES INDICATE NEW.



PANEL: R107	VOLTS: 208/	′120V	PHASE: 3ø	WIRE: 4W	AIC RATING: 10,000		
LOCATION: ■ INDOOR □ OUTDOOR □ DRY □ WET	ENCL. TYPE:	NEMA 1	MTG: ■SURF. □FLU	SH AMPERE: 50AT	MAINS: ■BREAKER □ LUGS ONLY		
	JND BUS	□ ISOLATE	ED GROUND BUS	NEUTRAL BUS GND.	BONDING: □YES ■ NO		
BRANCH CIRCUIT DESCRIPTION	WIRE POLE CKT NO.	LO, ØA	AD – KVA ØB ØC	CKT POLE WIRE SIZE	BRANCH CIRCUIT DESCRIPTION		
RECEPTACLES HAND DRYER	12 1/20 1	1.3 0.6	0.6 0.6	2 1/20 12 HAN	D DRYER D DRYER		
HAND DRYER	5 7		0.6 0.6	6 HAN	D DRYER		
SPARE HYBRID EWH	10 2/30 9	1.0 1.0 2	2.5 –	8 ↓ - SPA 10 PFB	KL		
	KVA/ø:	3.9		REMARKS:			
	ECTED KVA:		I1.3KVA				
	ND FACTOR: ND LOAD:	0.77 8.80KV/	${A}$ I = 25A				

DEMAND LOAD CALCULATION:

- 1.26 KVA 1. GENERAL RECEPTACLES -— 4.99 KVA 2. EWH, 24A, 208V, 1ø - 2.55 KVA 3. HAND DRYERS, 510W, 208V, 10 — 8.80 KVA I = 24.43A, @ 208V, 3ϕ

GRAPHIC SCALE: 0 2' 4' SCALE: 1/4"=1'-0"

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Orawing No. E5.1

REVISIONS

Description

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No. 1259
(ELECTRICAL)

EXP. April 30, 2015

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A.B. WON PAT INTERNATIONAL AIRPORT

RESTROOM RENOVATIONS

NEW LIGHTING AND COMMUNICATION,

PLAN-PHASE 1D

Designed: LL / NP

AM

Drawn:

Supv:

Scale:

Date:

Checked: AM

Project No. File

24-14-425

BID DOCUMENTS

LL / NP

As indicated

02/20/15

NEW POWER

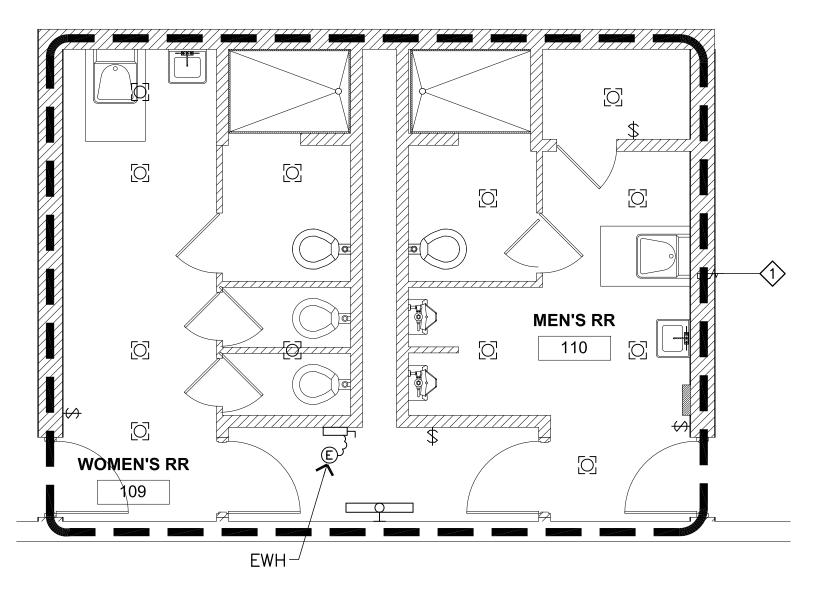
Project:

Email: arch@traguam.com

Architecture

Interior Design

Planning



GENERAL NOTE:

1 ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

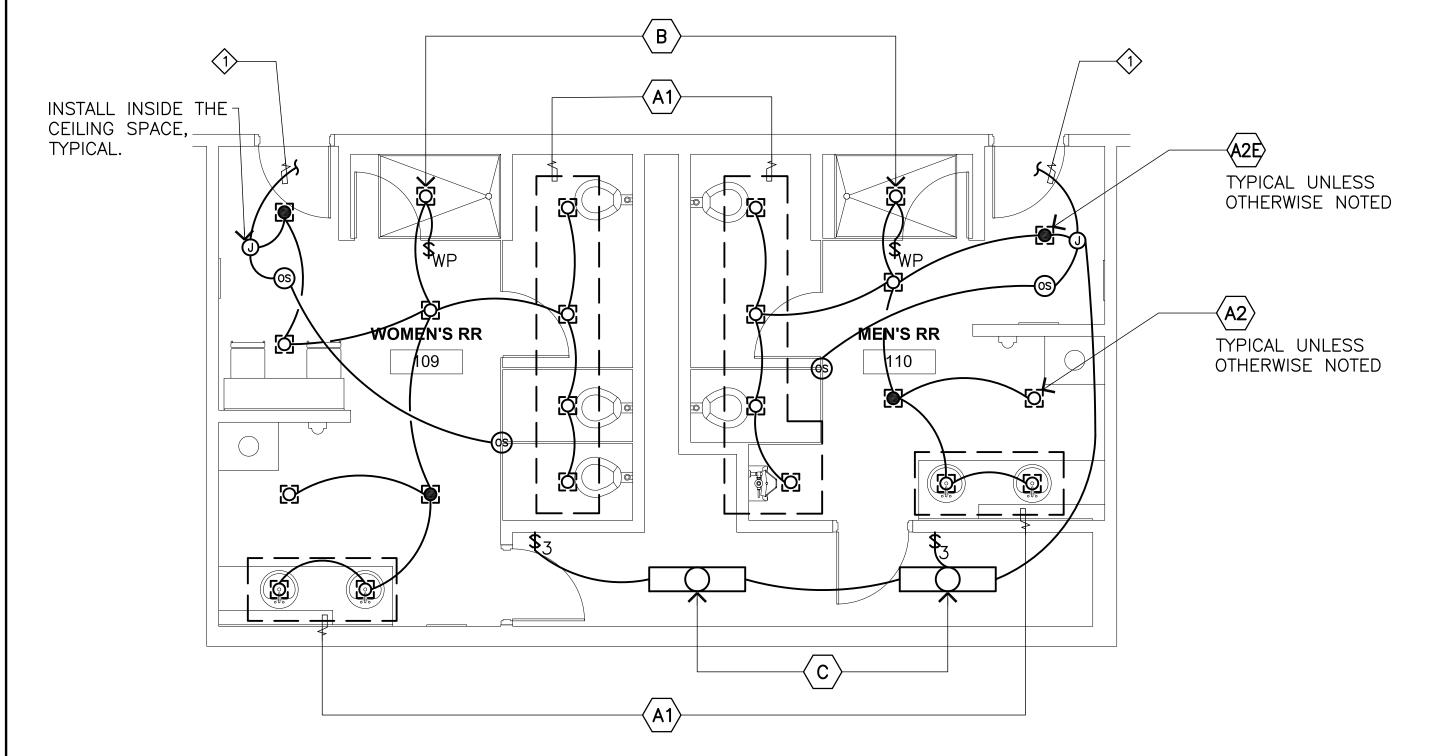
NOTE:

NOT ALL DEVICES MAY BE SHOWN ON PLAN.
REMOVE ALL ELECTRICAL INCLUDING BUT NOT
LIMITED TO LIGHTING, POWER, AND SPEAKERS.
EXISTING CIRCUITS TO BE REUSED. REFER TO
NEW PLANS.

ELECTRICAL REMOVAL PLAN-PHASE 2A (ADMIN)

SCALE:

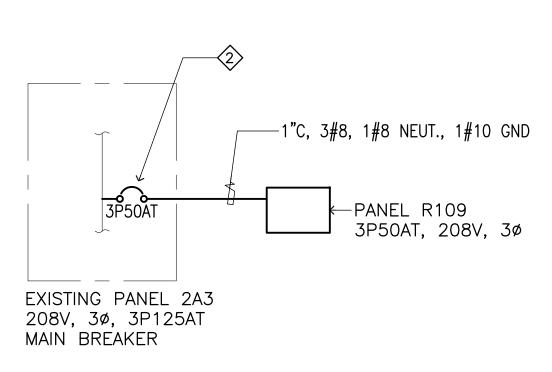
1/4"=1'-0"



NOTES:

RECONNECT TO EXISTING LIGHTING CIRCUIT.





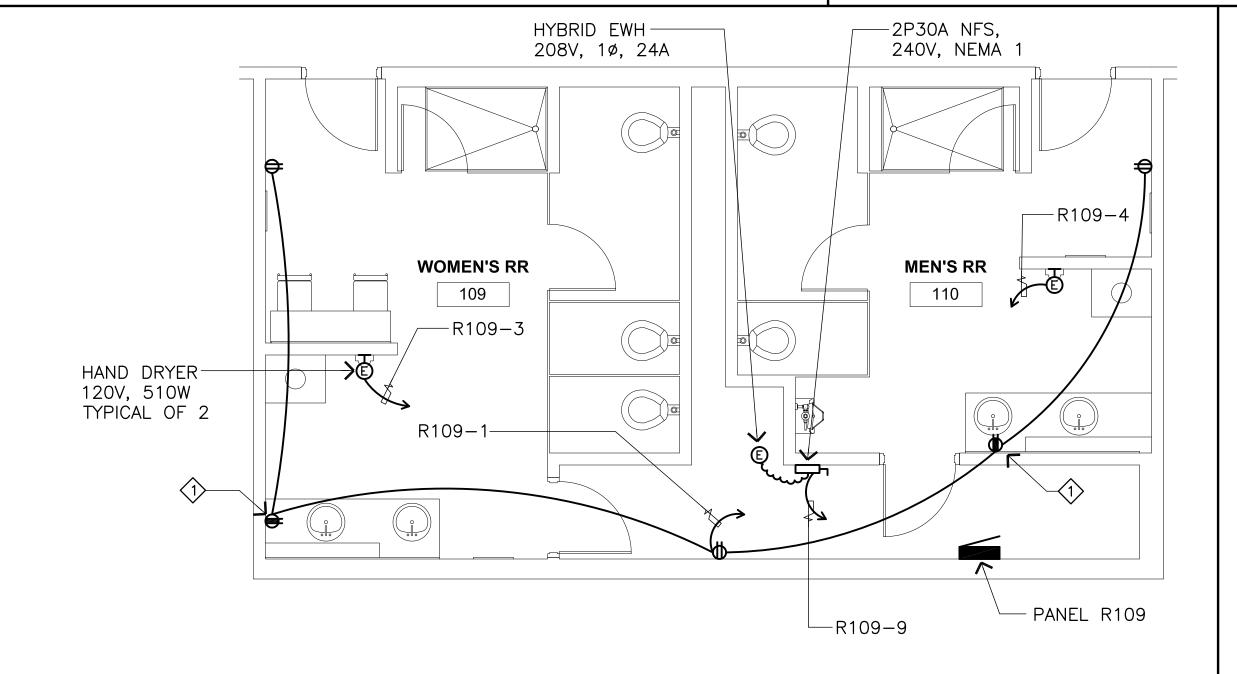
GENERAL NOTE:

1) LIGHT LINES INDICATE EXISTING. DARK LINES INDICATE NEW.

NOTES:

1 MOUNT AT 8" ABOVE COUNTER/SINK.

RELOCATE EXISTING WIRING IN CIRCUIT 34 AND TRANSFER TO EXISTING SPARE CIRCUIT BREAKER ON CIRCUIT 26. EXISTING ELECTRIC WATER HEATER FOR THE RESTROOM IS ON CIRCUIT 36 AND 38. REMOVE THIS WIRING AND ASSOCIATED CONDUIT IN ITS ENTIRETY. THIS WILL FREE UP CIRCUIT 34,36 AND 38 FOR NEW PANEL R109.



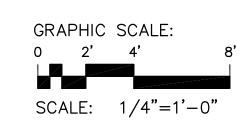
3	NEW	POWER	PLAN-PHASE	2A	(ADMIN)
E6.0	SCALE:				1/4"=1'-0"

PANEL: R109	VC	DLTS: 2	208/	′120V		PI	HASE:	3ø			WIRE:	4W	'	AIC	RATIN	G:	10,000)
LOCATION: INDOOR □ OUTDOOR □ WET	R EN	ICL. TY	PE:	NEMA	_1_	М	TG: ■	ISURF.	□FLU	JSH	AMPER	RE: 5	OAT		MAINS	S: [■ BREA	KER ONLY
■ NEUTRAL BUS ■ GR	DUND	BUS			ISOLA	TED	GROUN	ND BU	S	NEU	TRAL I	BUS	GND. B	BOND	ING:	□Y	ŒS ■	■ NO
BRANCH CIRCUIT DESCRIPTION	WIRE SIZE	POLE BRK	I NIA	ø			– KV/ øB - - -		C	CKT NO.	POLE BRK	WIRE SIZE			ANCH DESCRI			
RECEPTACLES	12	1/20	1	0.9						2	1/20	12	SPARE					
HAND DRYER			3			0.6	0.6			4			HAND	DR۱	/ER			
SPARE	_		5					1.0	1.0	6		_	SPARE	<u> </u>				
SPARE	_		7	1.0	1.0					8	\	_	SPARE	<u> </u>				
HYBRID EWH	10	2/30	9			2.5		2.5	//////////////////////////////////////	10	2/-	_	PFB					
TOTA	L K\	/A/ø:		3.	9	3	.7	4.	5	REM.	ARKS:							
CON	NECT	ED K	XVA:			12.	1 KVA	,										
DEM	AND	FACT	OR:	0.	.57		_			1								
DEM	AND	LOAD	:	6.	.91K	VA	I =	= 20	A									

DEMAND LOAD CALCULATION:

1. GENERAL RECEPTACLES ————————————————————————————————————	- 0.90 KVA
2. EWH, 24A, 208V, 1ø ———————————————————————————————————	- 4.99 KVA
3. HAND DRYERS, 510W, 208V, 1Ø	- 1.02 KVA
	6.91 KVA

I = 19.18A, @ 208V, 3ø



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No. 1259

(ELECTRICAL)

EXP. April 30, 2015

Figure 3810NAL ENGINEER

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Description

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Email: arch@traguam.com

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Project:

A.B. WON PAT

RESTROOM RENOVATIONS

Title:

ELECTRICAL REMOVAL, NEW LIGHTING, NEW POWER PLAN PHASE 2A (ADMIN)

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

Supv: AM

Scale: As indicated

Date: 02/20/15

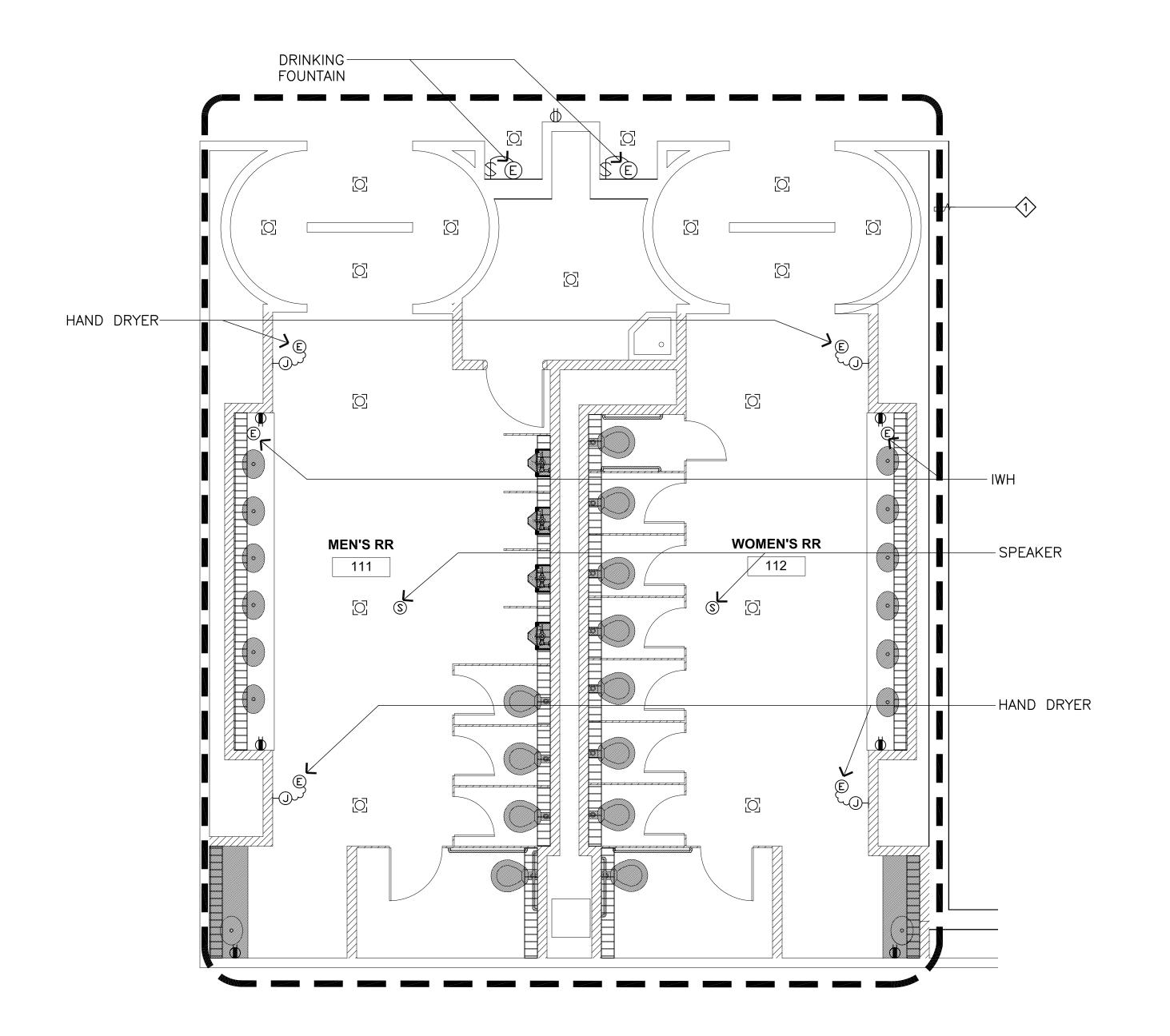
Project No. File
24-14-425

24–14–425 Drawing No.

E6.0

1

T



ELECTRICAL REMOVAL PLAN-PHASE 2B

SCALE: 1/4"=1'-0"

GENERAL NOTE:

1 ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

NOTE:

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No. Description Date

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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

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ELECTRICAL REMOVAL PLAN-PHASE 2B

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

Supv: AM

Scale: As indicated

Date: 02/20/15

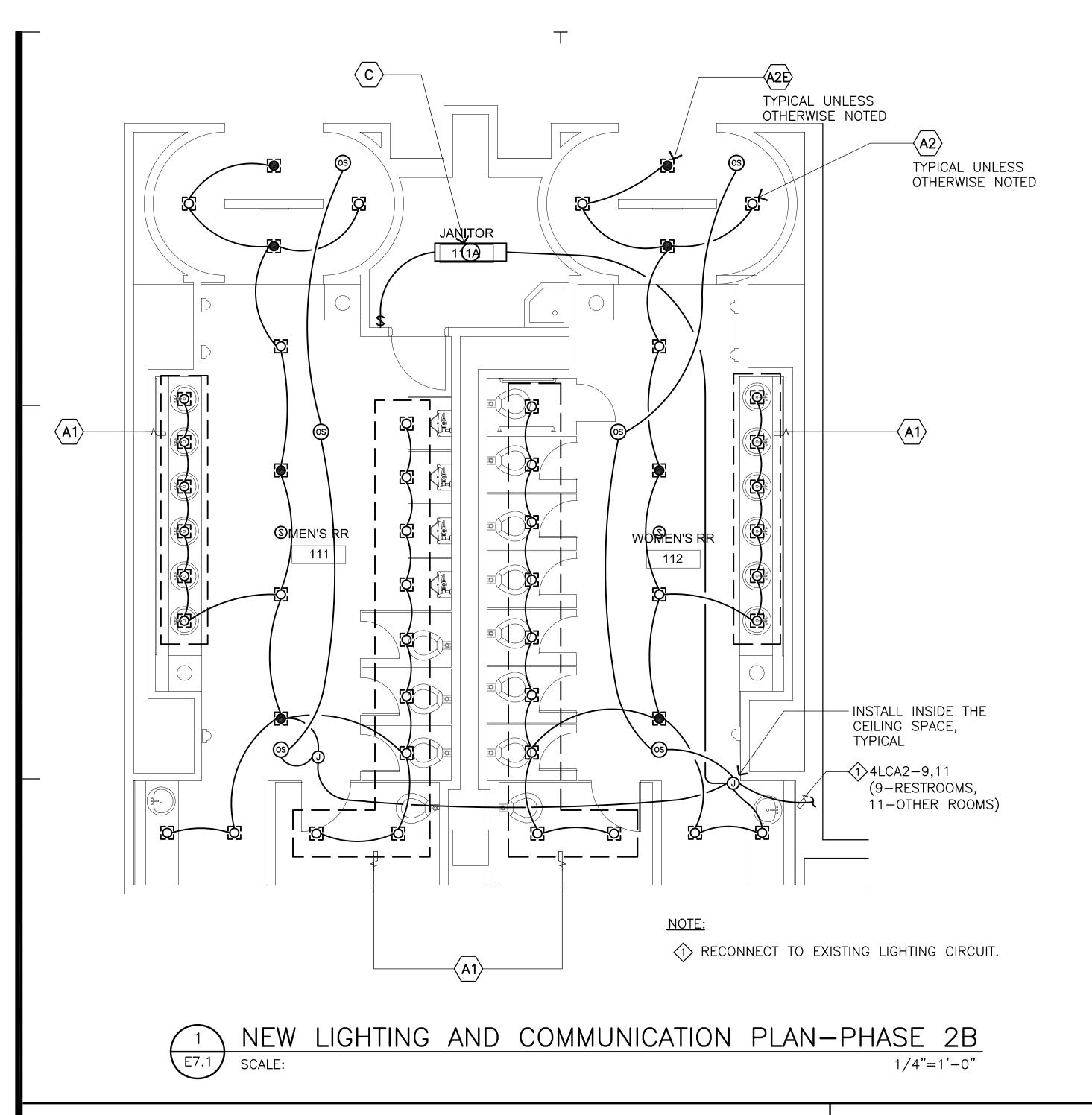
Project No. File 24-14-425 Drawing No.

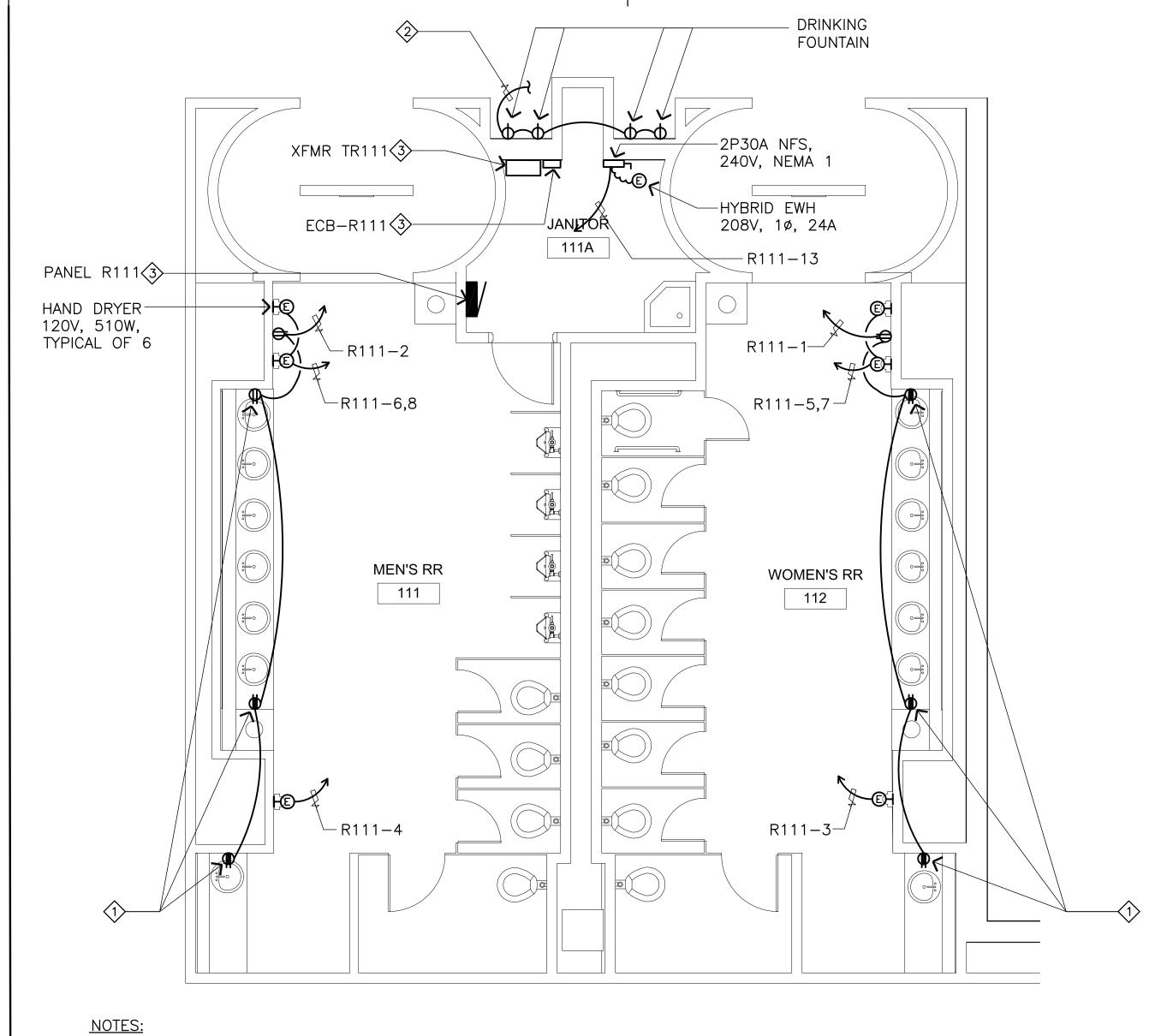
E7.0

SCALE: 1/4"=1'-0"

IF SHEET IS LESS THAN 24" X 36"
REDUCED PRINT - USE GRAPHIC SCALES

GRAPHIC SCALE:





V. MARIAN INC. STORY OF THE STO

REVISIONS

Description

Taniguchi Ruth Makio Architects
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Email: arch@traguam.com

Architecture

Planning Interior Design

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

2 NEW POWER PLAN-PHASE 2B 1/4"=1'-0"

3 PROVIDE PROTECTION ABOVE ELECTRICAL

WITH NEC ARTICLE 110.26(E)(1).

EQUIPMENT (METAL HOODS) IN ACCORDANCE

	EW CIRCUIT BREAKER IPATIBLE WITH ANEL
26,28, 3P25AT	3/4"C, 3#10, 1#10 GND 1"C, 3#8, 1#8 NEUT., 1#10 GND PANEL R111 3P50AT, 208V, 3ø 3/4"C, 1#8 GND TO POWER SYSTEM GROUND
EXISTING PANEL 4PCA2 480/277V, 3ø MAIN BREAKER GENERAL NOTE:	

1 LIGHT LINES INDICATE EXISTING. DARK LINES INDICATE NEW.

PANEL: R111	VOLTS: 208/120V			PH	PHASE: 3ø					WIRE: 4W			NG:	10,000		
LOCATION: INDOOR OUTDOOR DRY WET	ENCL.	ENCL. TYPE: NEMA 1			ТМ	MTG: ■SURF. □FLUSH			JSH	H AMPERE: 50AT			MAIN	NS:	■ BREAK □ LUGS	(ER ONLY
		ND BUS ☐ ISOLATED			TED (ROUN	ID BU	S	NEL	JTRAL E	BUS	GND. BO	NDING:	□,	YES	NO
BRANCH CIRCUIT	WIRE POL	E CKT				- KVA			CKT		WIRE		BRANCH	l CIR	CUIT	
DESCRIPTION		BRK NO.	Ø 	A	ø —	-≻ 	ø	C - ►	NO.	BRK	SIZE		DESCI	RIPTIC	N	
RECEPTACLES	12 1/	20 1	0.8	0.8					2	1/20	12	RECEPTA	ACLES			
HAND DRYER		3			0.6	0.6			4			HAND D	RYER			
HAND DRYER		5					0.6	0.6	6			HAND D	RYER			
HAND DRYER	\downarrow	7	0.6	0.6					8		\	HAND D	RYER			
SPARE	_	9			1.0	1.0			10		_	SPARE				
SPARE	\downarrow	11					1.0	1.0	12	$oxed{igstar}$		SPARE				
PFB	_ -	<u> </u>		_					14	_		PFB				
HYBRID EWH	102/	′30 15			2.5	<u> </u>	2.5	//////////////////////////////////////	16	_	_	PFB				
TOTAL	KVA/	/ø:	2.	8	5.	7	5.	7	REM	IARKS:	•					
CONN	ECTED	KVA:			14.2	KVA										
DEMAI	ND FA	CTOR:	0	.70												
DEMAI	ND LC	DAD:	9	.5 K\	/A	1 =	= 27/	4 								

1 MOUNT AT 8" ABOVE COUNTER/SINK.

REMOVED RECEPTACLE/HAND DRYER.

RECONNECT TO EXISTING CIRCUIT OF PREVIOUSLY

DEMAND LOAD CALCULATION:

I = 26.34A, @ 208V, 3ø

GRAPHIC SCALE:
0 2' 4'
SCALE: 1/4"=1'-0"

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT – USE GRAPHIC SCALES NEW LIGHTING AND COMMUNICATION, NEW POWER PLAN-PHASE 2B

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

Supv: AM

Scale: As indicated

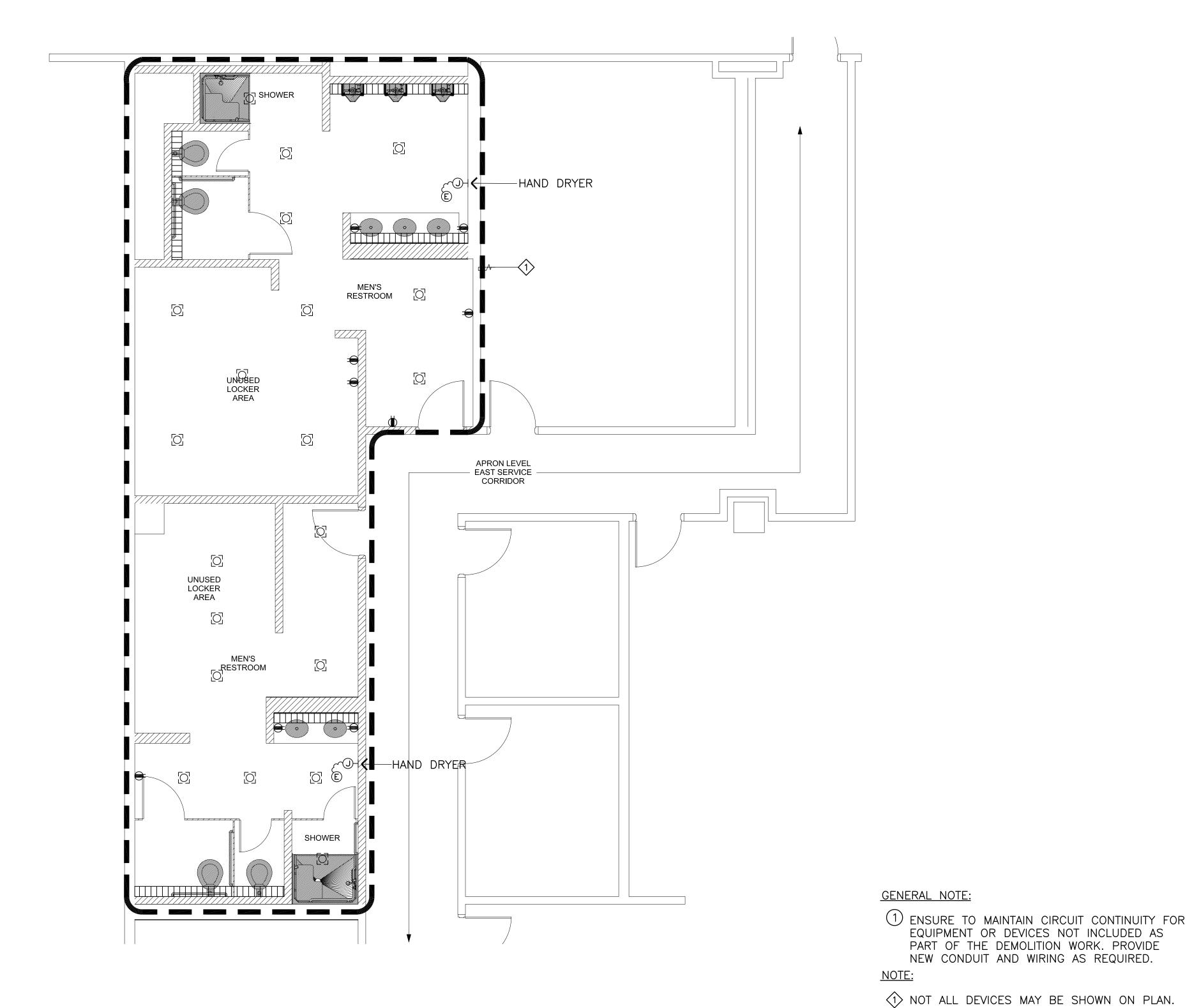
Date: 02/20/15

Project No. | File

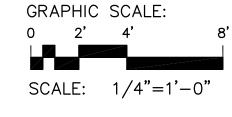
24–14–425 Drawing No.

E7.1

T



1 ELECTRICAL REMOVAL PLAN-PHASE 2C SCALE: 1/4"=1'-0"



REMOVE ALL ELECTRICAL INCLUDING BUT NOT

LIMITED TO LIGHTING, POWER, AND SPEAKERS.

EXISTING CIRCUITS TO BE REUSED. REFER TO

NEW PLANS.

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

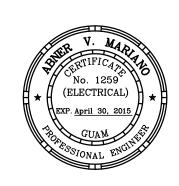
	REVISIONS	
No.	Description	Date

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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title:

ELECTRICAL REMOVAL PLAN-PHASE 2C

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

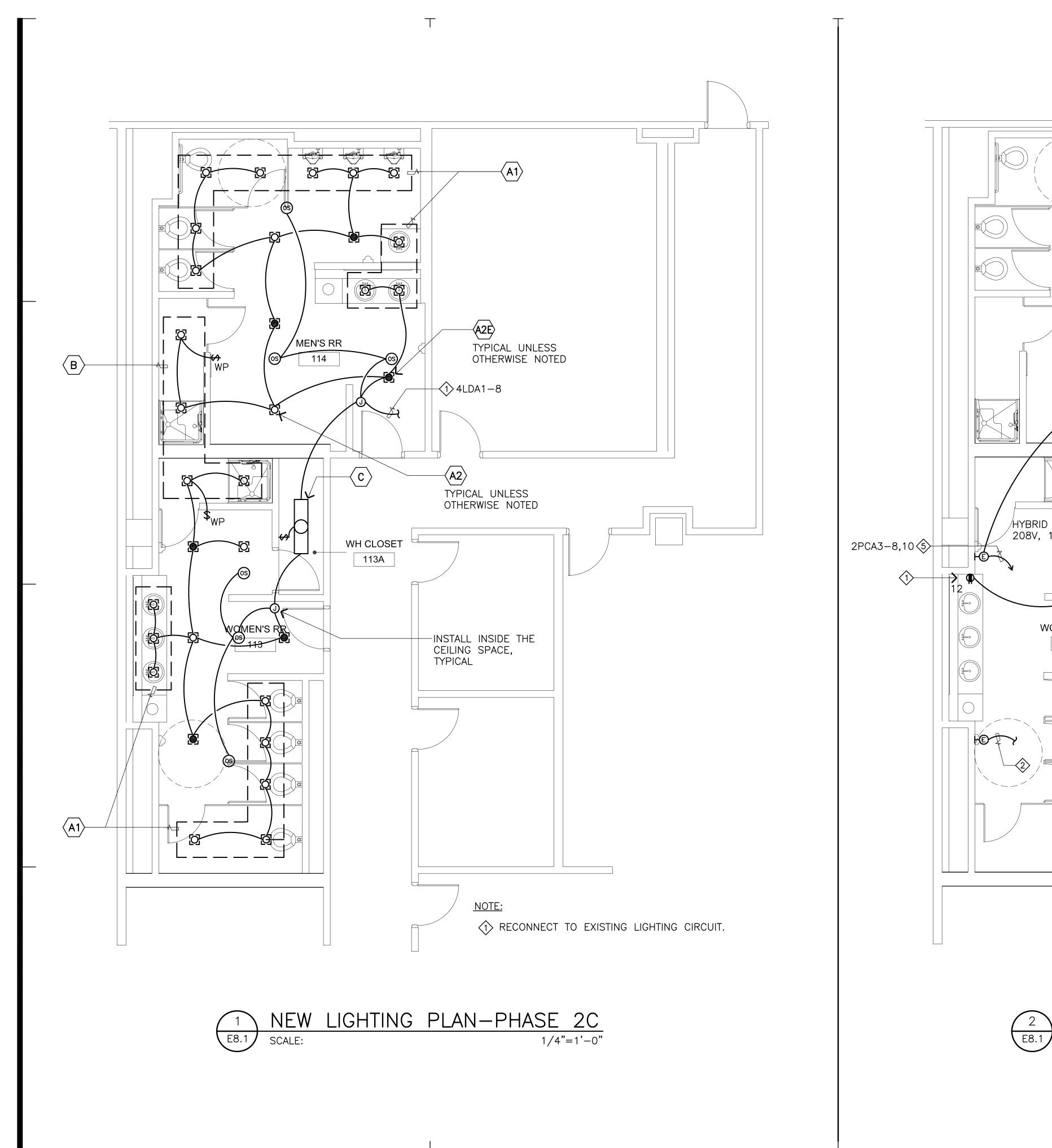
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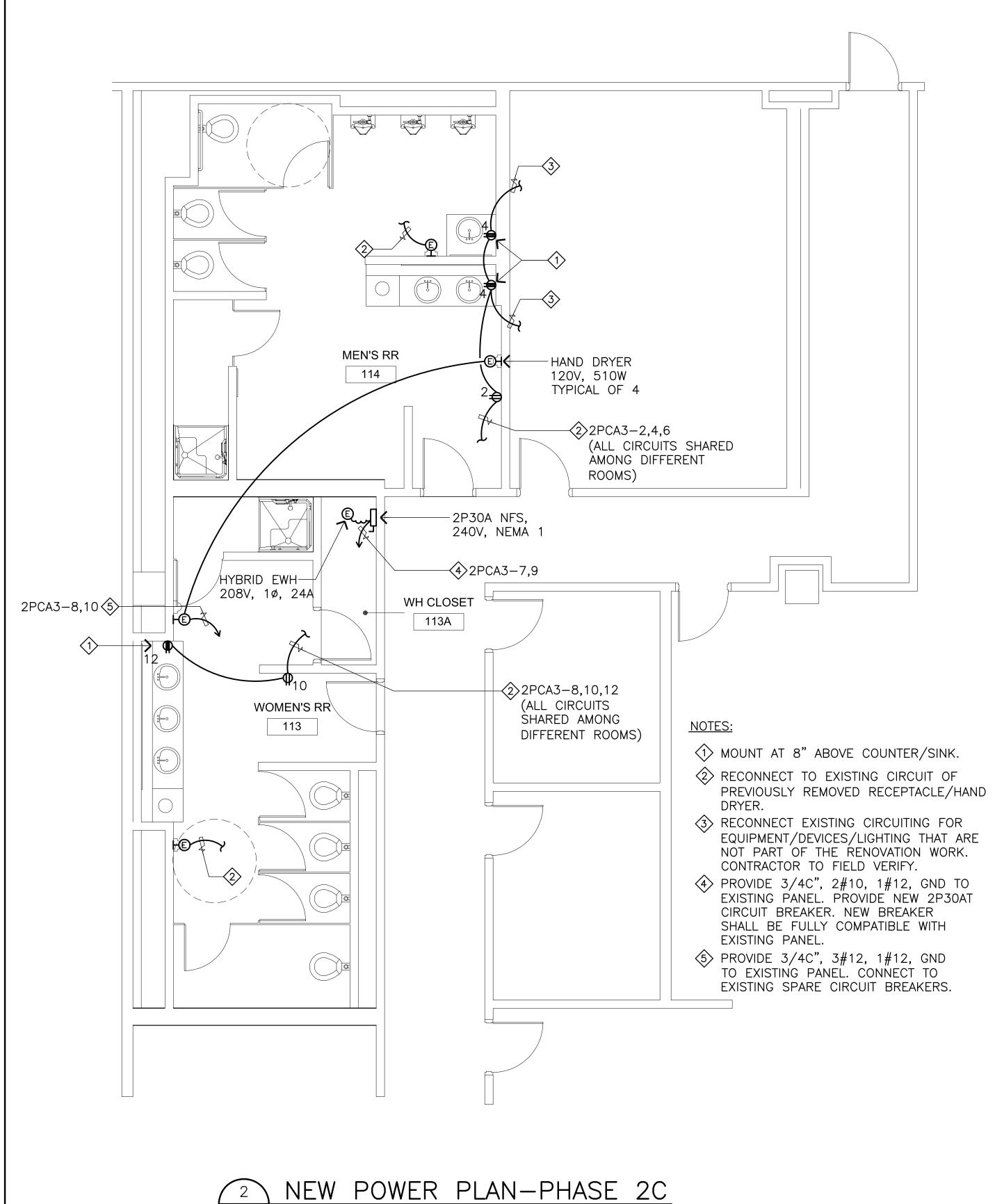
Scale: As indicated

Date: As indicated 02/20/15

Project No. File 24–14–425 Drawing No.

E8.0





REVISIONS Description Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 - Fax: (671) 472-3381 Email: arch@traguam.com Architecture Planning Interior Design **EMCE** · Consulting Engineers SUITE 201, 133 ANTONIA COURT P.O. BOX 8888 TAMUNING, GUAM 96931 . 649-0166/7 Phone 671, 646-EMCE (3623) Fax @7/hail: guam@emceconsulting.com V. MARIANA No. 1259
(ELECTRICAL) EXP. April 30, 2015 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION Project: A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS Title: NEW LIGHTING, NEW POWER BID DOCUMENTS Designed: LL / NP Checked: AM

PLAN-PHASE 2C

LL / NP Scale: As indicated Date:

02/20/15 Project No. File

24-14-425 Drawing No.

GRAPHIC SCALE:

SCALE: 1/4"=1'-0"

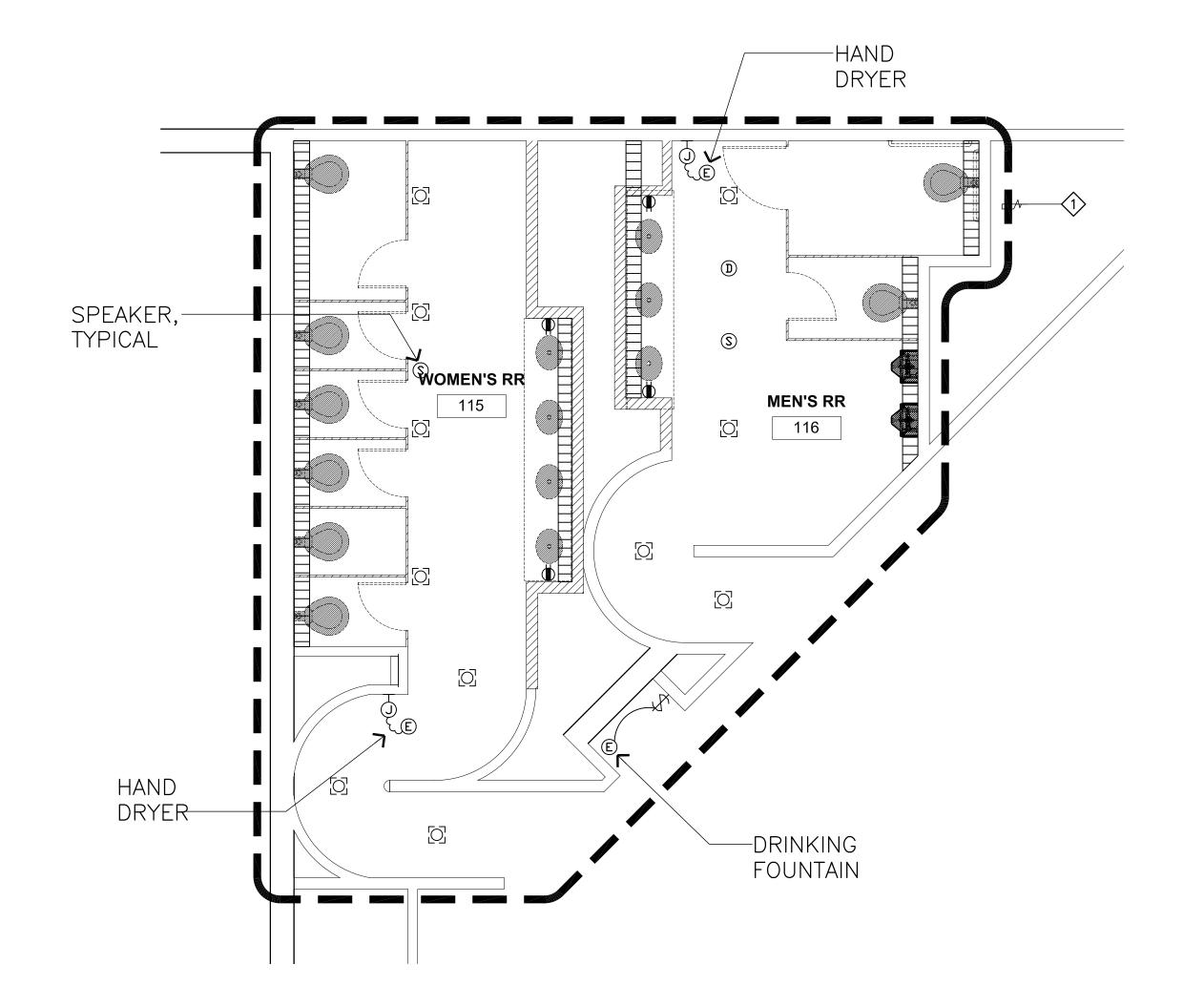
IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

E8.1

SCALE:

1/4"=1'-0"

T



ELECTRICAL REMOVAL PLAN-PHASE 2D

SCALE: 1/4"=1'-0"

GRA	APHIC	SCALE:	
0	2'	4'	

SCALE: 1/4"=1'-0"

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

GENERAL NOTE:

NEW PLANS.

1 ENSURE TO MAINTAIN CIRCUIT CONTINUITY FOR

EQUIPMENT OR DEVICES NOT INCLUDED AS PART OF THE DEMOLITION WORK. PROVIDE NEW CONDUIT AND WIRING AS REQUIRED.

NOT ALL DEVICES MAY BE SHOWN ON PLAN.

REMOVE ALL ELECTRICAL INCLUDING BUT NOT

LIMITED TO LIGHTING, POWER, AND SPEAKERS. EXISTING CIRCUITS TO BE REUSED. REFER TO

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

No. 1259 (ELECTRICAL) EXP. April 30, 2015

REVISIONS

Description

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Architecture

Planning Interior Design

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

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ELECTRICAL REMOVAL PLAN-PHASE 2D

BID DOCUMENTS

Designed: LL / NP

Drawn: LL / NP

Checked: AM

Supv: AM

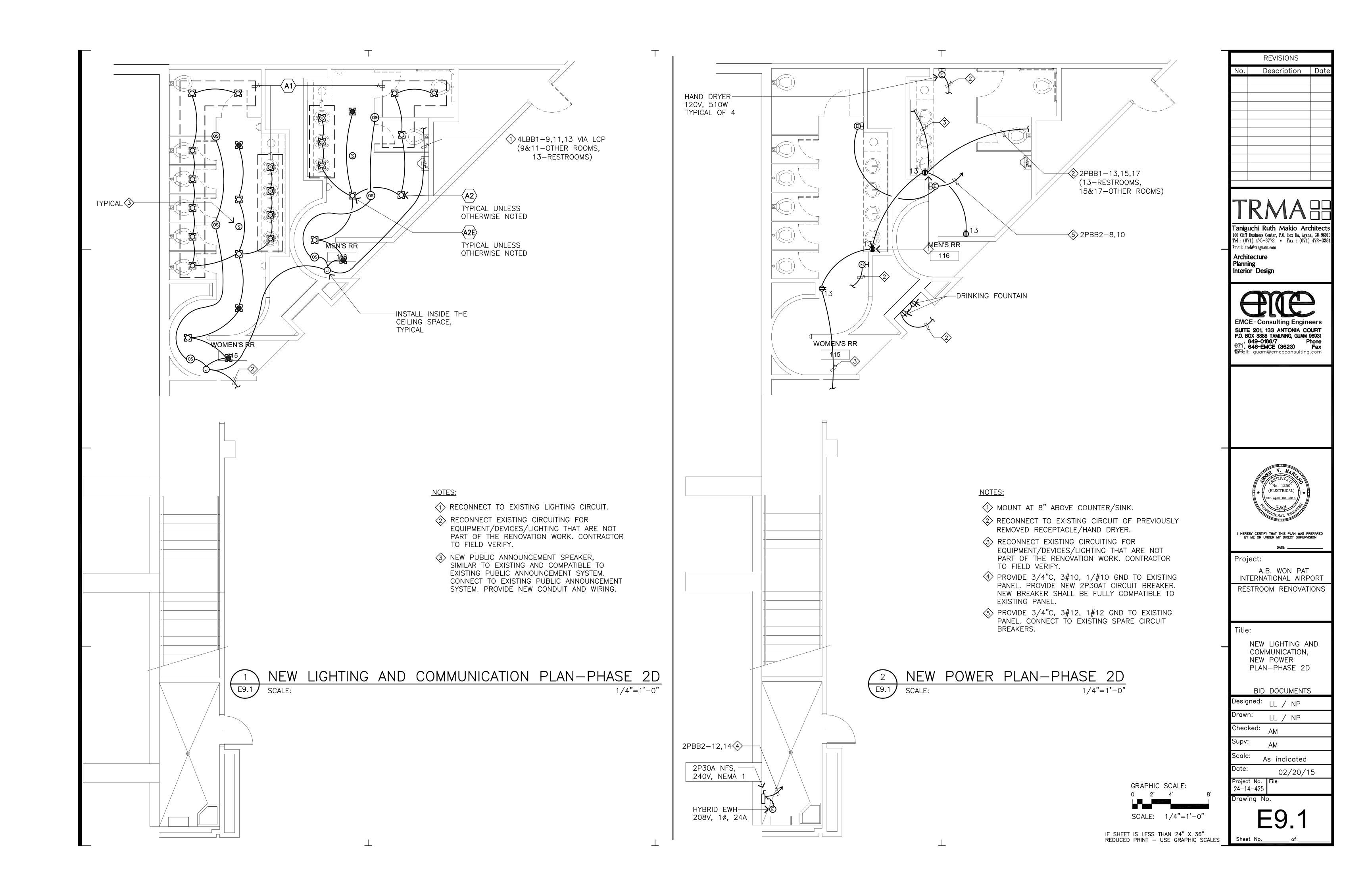
Scale: As indicated

Date: 02/20/15

O2/20 Project No. | File 24-14-425

Drawing No.

E9.0



		F.P. SYMBOLS, LEGENDS AND A	BBRE	EVIATIONS
SYMBOL	ABBR	DESCRIPTION	ABBR	DESCRIPTION
\longrightarrow	GV	GATE VALVE	F.S.	FIRE SPRINKLER PIPE
FS	FS	FLOW SWITCH	FT.	FEET
├ \		EXISTING FIRE SPRINKLER PIPE	GPM	GALLONS PER MINUTE
```		NEW FIRE SPRINKLER PIPE	GFD	GUAM FIRE DEPARTMENT
•		PENDENT TYPE SPRINKLER HEAD	IN	INCHES
0		UPRIGHT TYPE SPRINKLER HEAD	L/A	LEGENDS AND ABBREVIATIONS
•		CUT-OFF POINT	LBS	POUNDS
+		POINT OF CONNECTION	MAX	MAXIMUM
<u> </u>		WALL-MTD HORN STROBE INDOOR, 0.25W/15C	MECH.	MECHANICAL
		DEMOLITION HATCH	MFR'S	MANUFACTURER/MANUFACTURER'S
<u>\{5\)</u>		AREA SMOKE DETECTOR	MIN	MINIMUM
	(E)	DENOTE EXISTING CONDITION	MISC	MISCELLANEOUS
	(N)	DENOTES NEW CONDITION	N.E.C	NATIONAL ELECTRICAL CODE
	ø	DIAMETER	N.I.C.	NOT IN CONTRACT
	۴	DEGREES FAHRENHEIT	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
	AHJ	AUTHORITY HAVING JURISDICTIONS	0.C.	ON CENTER
	AMP	AMPERE	POC	POINT OFF CONNECTION
	ARCH	ARCHITECT	P.G.	PRESSURE GAUGE
	ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	PSI	POUNDS PER SQUARE INCH
	AWG	AMERICAN WIRE GAUGE	QTY	QUANTITY
	С	CANDELA RATING — HORN STROBE	REV	REVISION
	CONC	CONCRETE	RPM	REVOLUTIONS PER MINUTE
	CON'T.	CONTINUATION/CONTINUED	S.Q.	SQUARE
	COP	CUT-OFF POINT	STD	STANDARD
	CTRL	CONTROL	SPECS	SPECIFICATION
	DWGS.	DRAWINGS	STL	STEEL
	EMT	ELECTRICAL METALLIC TUBING	SSTL	STAINLESS STEEL
	EXIST.	EXISTING	TYP	TYPICAL
	FA	FIRE ALARM	UL	UNDERWRITER'S LABORATORIES, INC.
	FACP	FIRE ALARM CONTROL PANEL	V	VOLTAGE
	FDC	FIRE DEPARTMENT CONNECTION	VERT	VERTICAL
	FE	FIRE EXTINGUISHER	VOL	VOLUME
	FLA	FULL LOAD AMPERES	W/	WITH
	FLEX	FLEXIBLE	WT	WEIGHT
	FM	FACTORY MUTUAL		
	FP	FIRE PIPE		
	F.P.	FIRE PROTECTION		
	F.P.E.	FIRE PROTECTION ENGINEER		

FIRE ALARM/DETECTION NOTES:

- 1. THE INSTALLATION OF THE SYSTEM SHALL BE IN STRICT CONFORMANCE WITH THESE DRAWINGS, NFPA 70 & 72 (2013 EDITION), AND THE PROJECT SPECIFICATIONS.
- 2. DEVICES ARE SHOWN IN SUGGESTED LOCATIONS, FINAL QUANTITY AND LAYOUT SHALL BE IN ACCORDANCE WITH APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS, AND EQUIPMENT LISTINGS. COORDINATE LOCATIONS AND LIGHTING AND AIR CONDITIONING SYSTEMS.
- 3. ALL SMOKE DETECTOR AND NOTIFICATION DEVICES WITHIN THE AREA SHALL BE CONNECTED PER EXISTING FIELD CONDITIONS. THE OPERATION OF ANY AREA SMOKE DETECTOR SHALL CAUSE AN ALARM SIGNAL WITHIN THE AREA TO SOUND THAT HAS INITIATED FROM THE BUILDING FIRE ALARM SYSTEM.
- 4. SMOKE DETECTOR AND NOTIFICATION DEVICES MUST OBTAIN POWER THAT USES THE COMMERCIAL LIGHT AND POWER SOURCE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 5. ALL PORTIONS OF SMOKE DETECTORS SHALL BE LOCATED WITH THE FOLLOWING MINIMUM CLEARANCES.

BATHROOM DOOR 0.914 M (3 FT) HVAC SA REGISTERS 0.914 M (3 FT)

- 6. ALL CONDUCTOR TERMINATION SHALL BE AT A TERMINAL STRIP AND PULL ALL CONDUCTORS SPLICE FREE, "T" TAPPING, USE OF WIRE NUTS, CRIMPED CONNECTORS OR TWISTING OF CONDUCTORS IS PROHIBITED ON ALL CIRCUITRY.
- 7. FIRE ALARM SYSTEM CONDUCTORS AND SIGNALING LINE CIRCUITS SHALL HAVE A MINIMUM SIZE OF AWG #14 WIRE AND 3/4" EMT CONDUIT FOR 120 VAC POWER UNLESS NOTED ON PLANS OR AS SPECIFIES HEREIN.
- 8. PROVIDE GROUNDING SYSTEM AND IDENTIFICATION FOR FIRE ALARM SYSTEM COMPONENTS AS NECESSARY IN ACCORDANCE WITH NFPA 70 (NEC) AND APPLICABLE STANDARD/CODE REQUIREMENTS.
- 9. DEVICES SHOWN ARE SUGGESTED LOCATIONS, FINAL LOCATIONS AND LAYOUT SHALL BE FIELD CONNECTED IN ACCORDANCE WITH APPLICABLE CODES, STANDARDS AND PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH LIGHTING NO CLOSER THAN 12 INCHES OR FROM A/C SYSTEM AIR TERMINAL DEVICES LOCATED NO LESS THAN 3 FT OR 36 INCHES.
- 10. ALL CABLES, CONDUITS, OR WIRE MOLD SHALL BE SECURELY FASTENED TO THE STRUCTURE AND IN ACCORDANCE WITH NFPA 72 AND 70 NEC REQUIREMENTS.
- 11. ALL NOTIFICATION DEVICES SHALL HAVE A NOMINATE WHITE COLOR LIGHTS TO INDICATE COMPLETE EVACUATION INITIATED BY F.A. SYSTEM.

FIRE PROTECTION NOTES:

DESIGN AREA:

- 1. THESE FIRE PROTECTION PLANS ARE SUBMITTED FOR CONDITIONAL APPROVAL OF THE GUAM FIRE DEPARTMENT, DEPARTMENT OF PUBLIC WORKS AND OWNER'S INSURANCE UNDERWRITERS. PREPARE FIVE (5) SETS OF COMPLETE WORKING PLANS, REVIEWED AND STAMPED BY A REGISTERED FIRE PROTECTION ENGINEER AND SHALL BE SUBMITTED TO THE GUAM FIRE DEPARTMENT, DEPARTMENT OF PUBLIC WORKS AND THE OWNER'S INSURANCE UNDERWRITERS AND/OR AHJ FOR APPROVAL BEFORE INSTALLATION.
- 2. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED USING AREA/DENSITY METHOD IN ACCORDANCE WITH NFPA 13:

RESTROOM AREAS:

OCCUPANCY CLASSIFICATION:

DESIGN DENSITY:

MAX. SPACING:

MAX. SPRINKLER PROTECTION AREA:

LIGHT HAZARD

0.10 GPM/SQ FT

15'-0"

225 SQ. FT.

- 3. THE ENTIRE SYSTEMS SHALL BE DESIGNED, CALCULATED, AND INSTALLED IN ACCORDANCE WITH NFPA 13, 70, 72, INTERNATIONAL FIRE CODE,
- FACTORY MUTUAL, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE GUAM FIRE DEPARTMENT AND DEPARTMENT OF PUBLIC WORKS.

1500 SQ. FT.

4. ALL DEVICES AND EQUIPMENT SHALL BE UL LISTED OR FM APPROVED.

5. WATER SUPPLY INFORMATION: "EXISTING FIRE PUMP"

LOCATION — REFERENCE POINT (EXISTING GIAA F.P. "VERIFY")

STATIC PRESSURE"GAUGE READING": 175 PSI
RESIDUAL PRESSURE: VERIFY EXISTING
FLOW AT RESIDUAL PRESSURE: 1000 GPM

- 6. PIPE AND FITTINGS SHALL COMPLY WITH NFPA 13, EXCEPT AS MODIFIED HEREIN. ALL PIPE SHALL BE BLACK STEEL SCHEDULE 40 OR TO MATCH EXISTING WITH MECHANICAL JOINTS. COPPER TUBING AND PLASTIC PIPE WILL NOT BE PERMITTED.
- 7. PIPING SHALL BE PROVIDED WITH EARTHQUAKE PROTECTION ("SEISMIC BRACING") IN ACCORDANCE WITH IBC, NFPA 13 AND AHJ.
- 8. PIPING THAT PENETRATES CONCRETE AND/OR MASONRY WALLS SHALL HAVE AN ANNULAR SPACING IN ACCORDANCE WITH NFPA 13-2010 9.3.4.2. HOLES SHALL BE SIZED THAT THE DIAMETER OF THE HOLE IS NOMINALLY 2" LARGER FOR PIPING UP TO 3"-SIZE AND 4" LARGER THAN THE PIPE FOR PIPE SIZES 4" AND LARGER.
- 9. ANY ADDITIONAL PIPING DUE TO LIMITATION OF SPACE BECAUSE OF DUCTWORKS AND MECHANICAL EQUIPMENT WILL BE PART OF CONTRACT.
- 10. DURING CONSTRUCTION OF THE BUILDING AND UNTIL THE PERMANENT FIRE EXTINGUISHER SYSTEM HAS BEEN INSTALLED AND IS IN SERVICE. FIRE PROTECTION SYSTEM SHALL BE IN ACCORDANCE WITH CHAPTER 14 OF THE INTERNATIONAL FIRE CODE.

FIRE PROTECTION SPECIFICATIONS:

SCOPE OF WORK: FURNISH AND INSTALL ALL LABOR AND MATERIALS REQUIRED FOR A COMPLETE FIRE PROTECTION SYSTEM AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN, EXISTING AND NEW PIPING SYSTEM SHALL BE TESTED FOR LEAKS AND SHALL BE REPAIR &/OR MODIFIED AS NECESSARY AND TO BE APPROVED BY OWNER'S ENGINEER AND GFD/AHJ.

MATERIALS: 1. PIPING: SHALL BE SCHEDULE 40 BLACK STEEL PIPE (ASTM A-53) WITH MECHANICAL COUPLING JOINTS EQUAL TO VICTAULIC COUPLING &/OR AS PER

WRITTEN SPECIFICATIONS.

2. SPRINKLER HEADS: STANDARD UPRIGHT F.S. HEADS TYPE FOR AREA WITHOUT CEILING AND STANDARD PENDANT CONCEALED TYPE F.S. HEADS FOR

AREAS WITH CEILING WITH STANDARD BRASS/CHROME FINISH, OR TO MATCH COLOR AND/OR PER ARCHITECT/OWNER'S APPROVAL.

INSTALLATION WORK NOTES:

1. INSTALLATION SHALL BE IN ACCORDANCE WITH FACTORY MUTUAL, NFPA 13, 70, 72 AND OTHER APPLICABLE PUBLICATIONS AS REQUIRED BY THE BUILDING MGT. AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL BUILDING AND FIRE DEPARTMENTS WHICHEVER IS MORE STRINGENT.

2. WHERE APPLICABLE CONTRACTOR SHALL LOCATE ALL F.S. HEADS O.C. IN CEILING TILES AND/OR CEILING AREAS, IF POSSIBLE. EXISTING CEILINGS SHALL BE REPAIRED/RETOUCH TO MATCH EXISTING &/OR NEW AS NECESSARY FOR NEW AND EXISTING F.S. HEADS INSTALLATION AND/OR REPLACEMENT.

3. SPRINKLER PIPING SHALL BE INSTALLED AT MAXIMUM HEIGHT, IN JOIST SPACE, IN ALL LOCATIONS, THROUGHOUT ENTIRE BUILDING AND AVOID OBSTRUCTIONS AS POSSIBLE. CONTRACTOR SHALL MODIFY AS NECESSARY TO SUIT NEW ACTUAL FIELD CONDITIONS.

4. ALL EXISTING F.S. PIPES SHOWN ARE BASED ON AS-BUILT DRWGS. & PRELIMINARY FIELD INSPECTION ARE FOR REFERENCE ONLY, CONTRACTOR SHALL VERIFY ON FIELD ACTUAL EXISTING CONDITIONS FOR EXACT LOCATION OF ALL COP'S & POC'S.

5. CONTRACTOR SHALL PREPARE COMPLETE SET OF SHOP/WORKING DRAWINGS SHOWING ACTUAL FIELD INSTALLATION WITH ADEQUATE SUPPORTS, HANGERS & BRACING AS NECESSARY FOR NEW AND EXISTING F.S. PIPES TO BE INSTALLED CERTIFIED BY A REGISTERED F.P.E. TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE ANY CONSTRUCTION WORKS ARE TO BE DONE.

MOUNTING HEIGHT SCHEDULE (UNLESS OTHERWISE INDICATED)						
SYMBOL	MOL HE	JNTING IGHT	FROM		ТО	
STINIDOL	ENGLISH UNITS	METRIC UNITS	GRADE	FINISH FLOOR	TOP	CENTER
H X <	+6'-8"MIN	+2032mm		*	*	
	+8'-0"MAX	+2440mm		*	*	

	REVISIONS	
No.	Description	Date

TRMA==

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Architecture Planning Interior Design

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Project:

A.B. WON PAT INTERNATIONAL AIRPORT

RESTROOM RENOVATIONS

itle

FIRE PROTECTION SYMBOLS, LEGENDS & ABBREVIATIONS, FIRE PROTECTION NOTES & SPECIFICATIONS AND INSTALLATION WORK NOTES

BID DOCUMENTS

Designed: JC
Drawn: EN/GDPC
Checked: WM

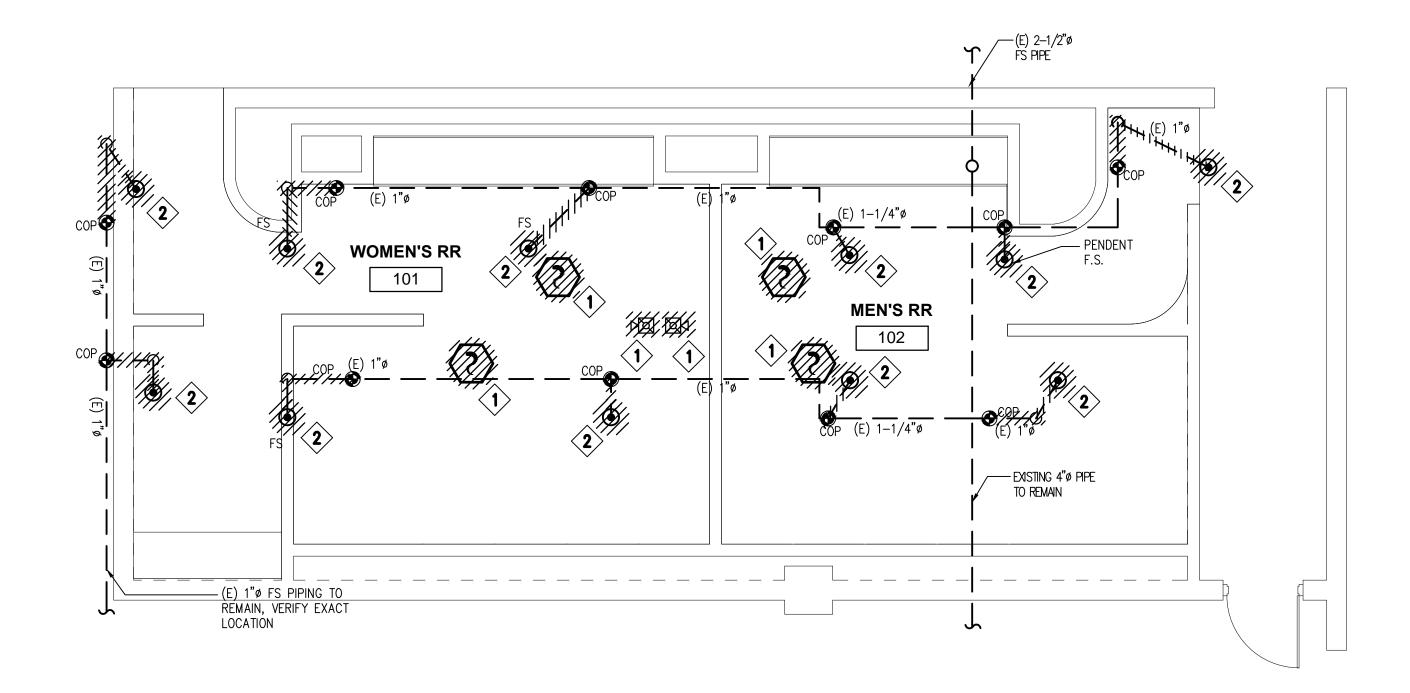
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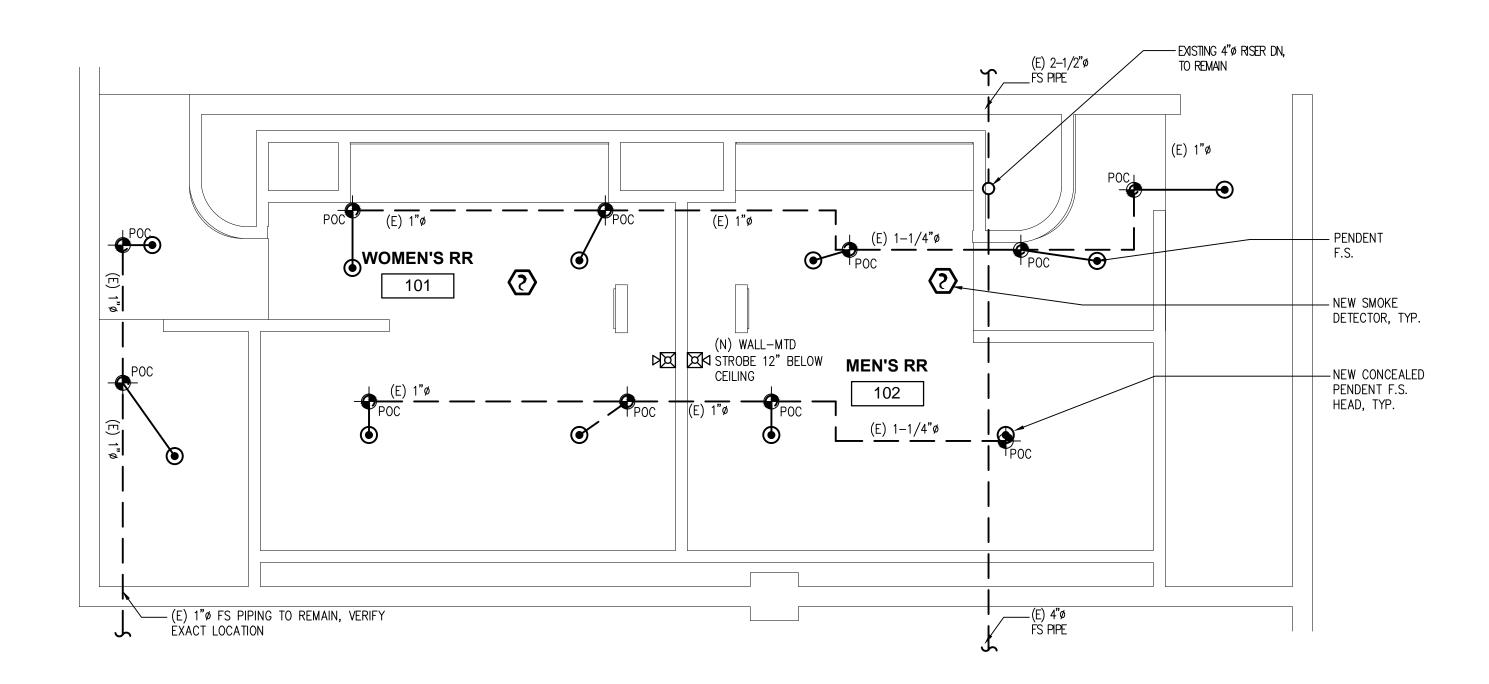
Date: 02/20/15

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Drawing

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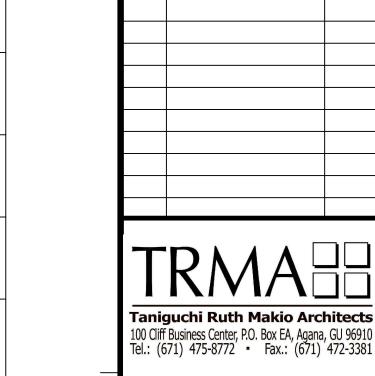


PH-1A FIRE PROTECTION EXIST/ DEMO PLAN SCALE: 1/4" = 1'-0"



PH-1A NEW FIRE PROTECTION PLAN 1/4" = 1'-0"

М	ARK	FIRE PROTECTION DEMO/REMOVAL NOTES:
	1>	REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.)
	2>	REMOVE AND DISPOSE EXISTING F.S. HEADS/PIPING'S & ALL ASSOCIATED HANGERS/SUPPORTS, CAP/PLUG EXIST. LINES THAT WILL NOT BE REUSE AS NECESSARY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS)
	3>	ALL EXISTING DEVICES LOCATION AND F.S. PIPING SHOWN IS BASED ON AS-BUILTS AVAILABLE AND SITE INSPECTIONS ONLY, REPAIR &/OR REPLACE EXIST. CORRODED ITEMS AND EXIST. OPENING SHALL REPAIRED &/OR PATCH-UP TO MATCH FINISHES AS NECESARY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID TO INCLUDE IN HIS/HER SCOPE OF WORK.
	4	ADEQUATE PROTECTION SHALL BE PROVIDED TO EXISTING BUILDING AND/OR EQUIPMENTS WITHIN THE WORK AREA TO AVOID AND/OR MINIMIZE DAMAGE. ANY DAMAGES THAT IS DUE TO THE NEGLIGENCE OF CONTRACTOR SHALL BE REPAIRED AND RESTORED TO MATCH EXISTING FINISHES AT NO ADDITIONAL COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND TURN—OVER USABLE PIPING TO THE OWNER AS REQUIRED.



Architecture

Planning Interior Design

MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVC

REVISIONS

Description

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BY ME OR UNDER MY DIRECT SUPERVISION

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

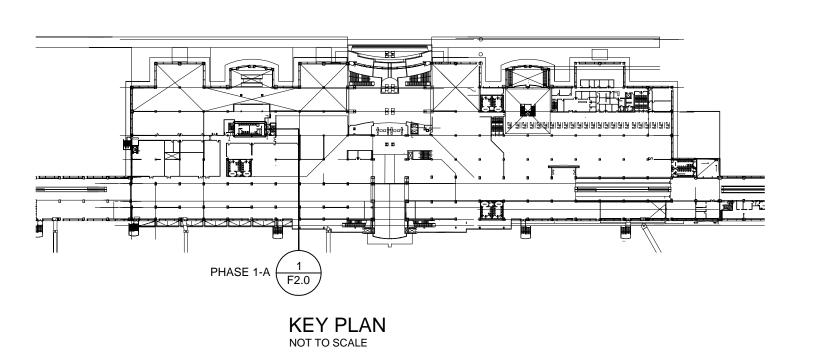
CONCOURSE LEVEL PHASE 1A FIRE PROTECTION DEMO/REMOVAL PLAN AND NEW FIRE PROTECTION PLAN

BID DOCUMENTS

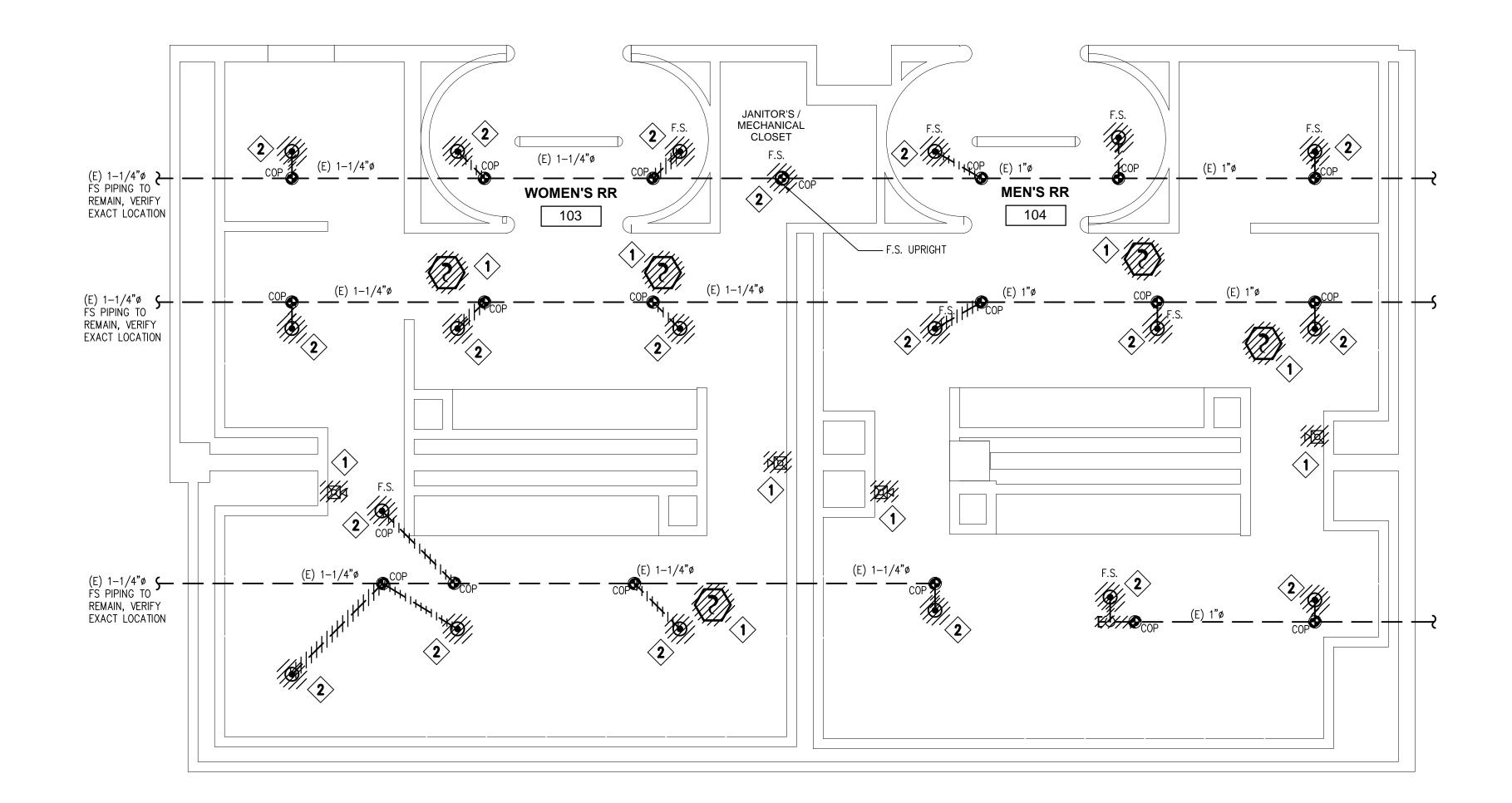
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Drawn:	EN/GDPC
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Supv:	WM
Scale:	As indicated

02/20/15 1441

CONCOURSE LEVEL

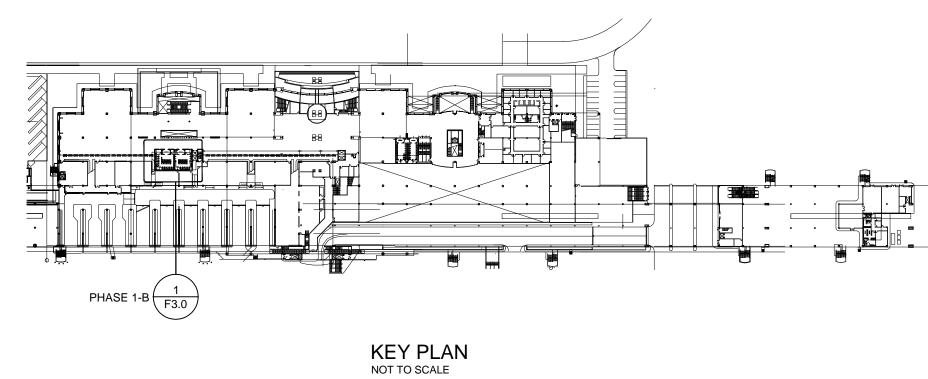


MARK	FIRE PROTECTION DEMO/REMOVAL NOTES:
$\langle 1 \rangle$	REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.)
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PH-1B FIRE PROTECTION EXIST/ DEMO PLAN SCALE: 1/4" = 1'-0"

APRON LEVEL



IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

No. Description Date

TRMA

Taniguchi Ruth Makio Architects100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

ENGINEERING SERVICES, LLC
MECHANICAL & FIRE PROTECTION CONSULTING
ENGINEERS & CONSTRUCTION MANAGEMENT SVC

WM ENGINEERING SERVICES, LLC
P.O. Box 392 Hagatna, GUAM 96932



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Project

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

APRON LEVEL PHASE 1B FIRE PROTECTION DEMO/REMOVAL PLAN

BID DOCUMENTS

Designed: JC

Drawn: EN/GDPC

Checked: WM

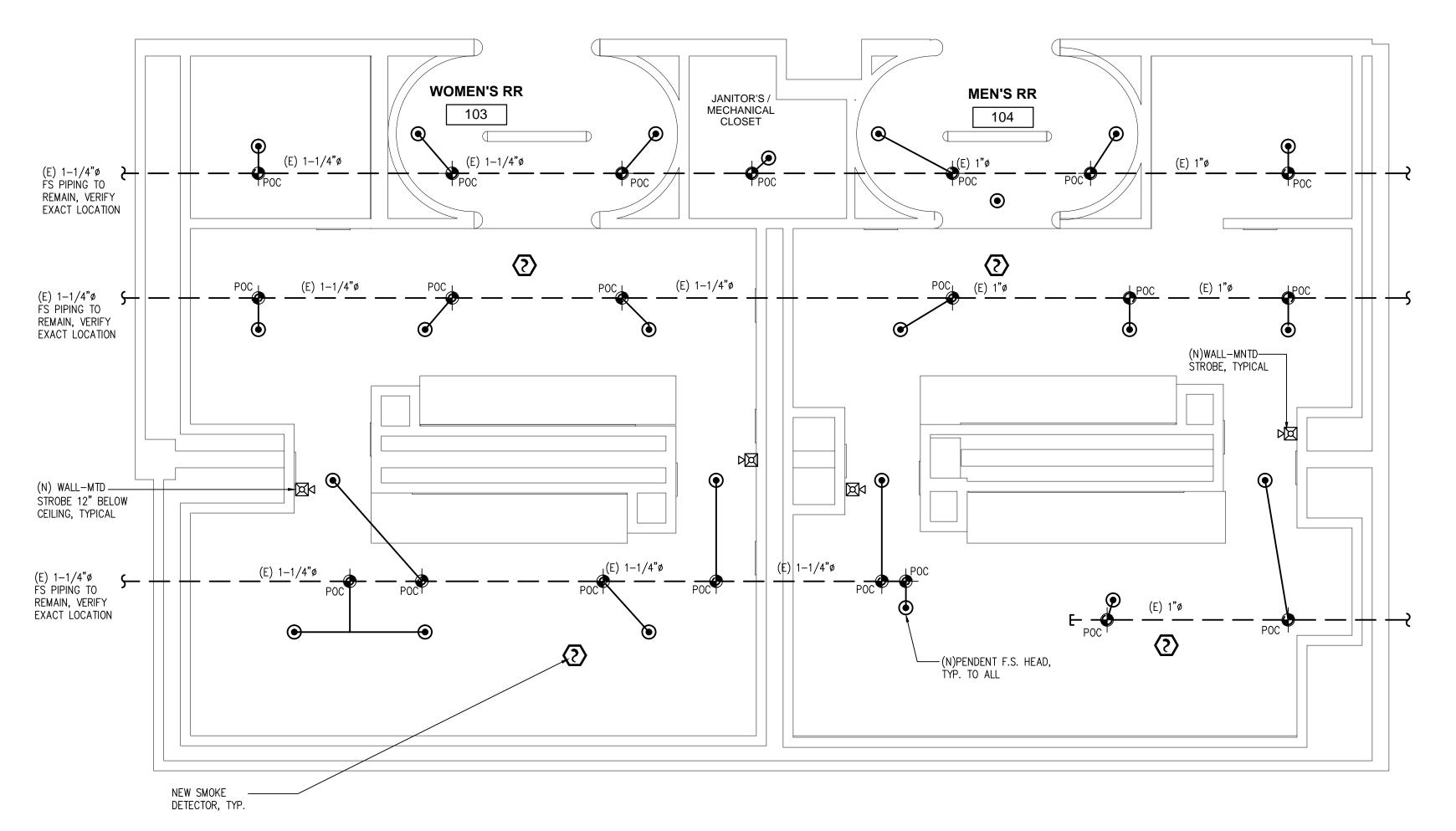
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Date: 02/20/15

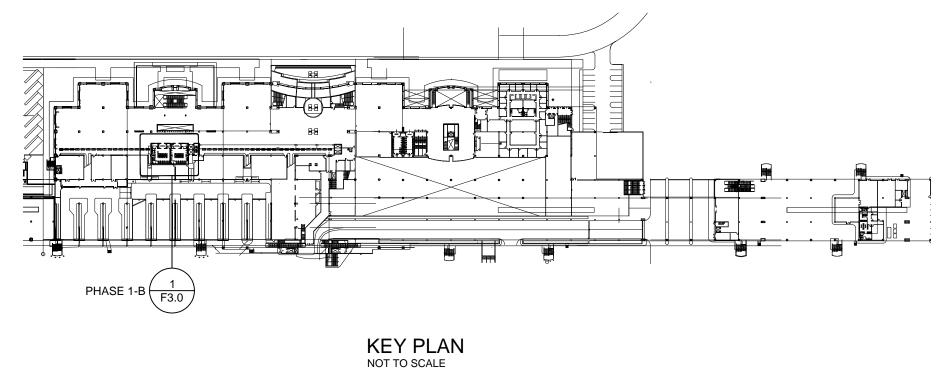
1441 Drawing No.

F3.0



PH-1B NEW FIRE PROTECTION PLAN 1/4" = 1'-0"

APRON LEVEL



IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

REVISIONS Description

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ENGINEERING SERVICES, MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVC

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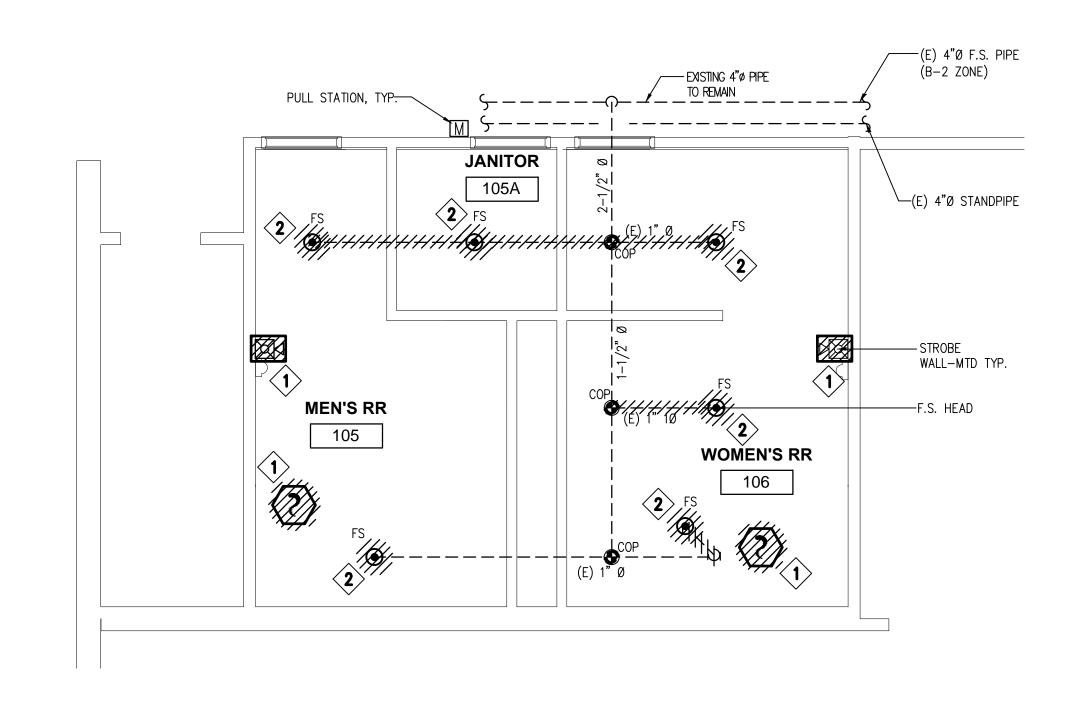
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 1B NEW FIRE PROTECTION PLAN

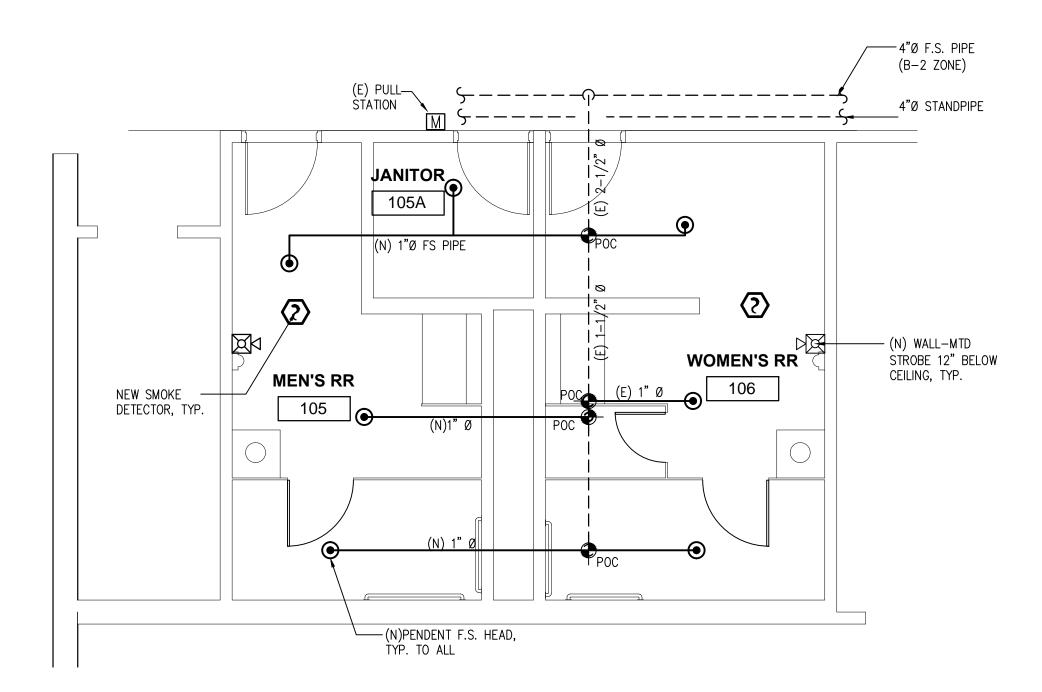
BID DOCUMENTS

JC EN/GDPC As indicated 02/20/15

1441



PH-1C FIRE PROTECTION EXIST/ DEMO PLAN SCALE: 1/4" = 1'-0"



2 PH-1C NEW FIRE PROTECTION PLAN
SCALE: 1/4" = 1'-0"

PIRE PROTECTION DEMO/REMOVAL NOTES:

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Architecture Planning Interior Design

ENGINEERING SERVICI

ENGINEERS & CONSTRUCTION MANAGEMENT SVO WM ENGINEERING SERVICES, LLC
P.O. Box 392 Hagatna, GUAM 96932
646-81

MECHANICAL & FIRE PROTECTION CONSULTIN



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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

BASEMENT LEVEL PHASE 1C FIRE PROTECTION DEMO/REMOVAL PLAN AND NEW FIRE PROTECTION PLAN

BID DOCUMENTS

Designed: JC

Drawn: EN/GDPC

Checked: WM

Supv: WM

Scale: As indicated

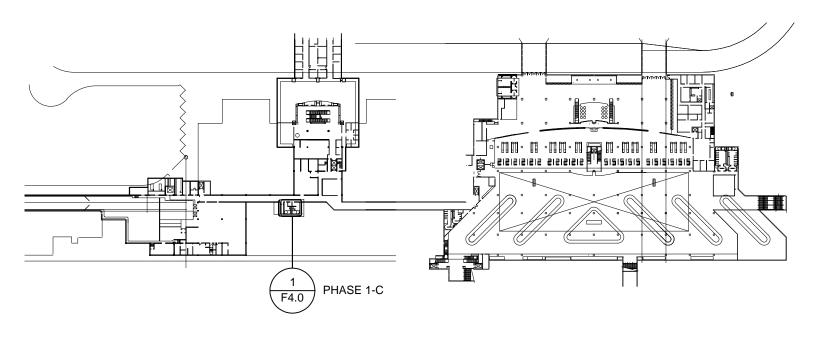
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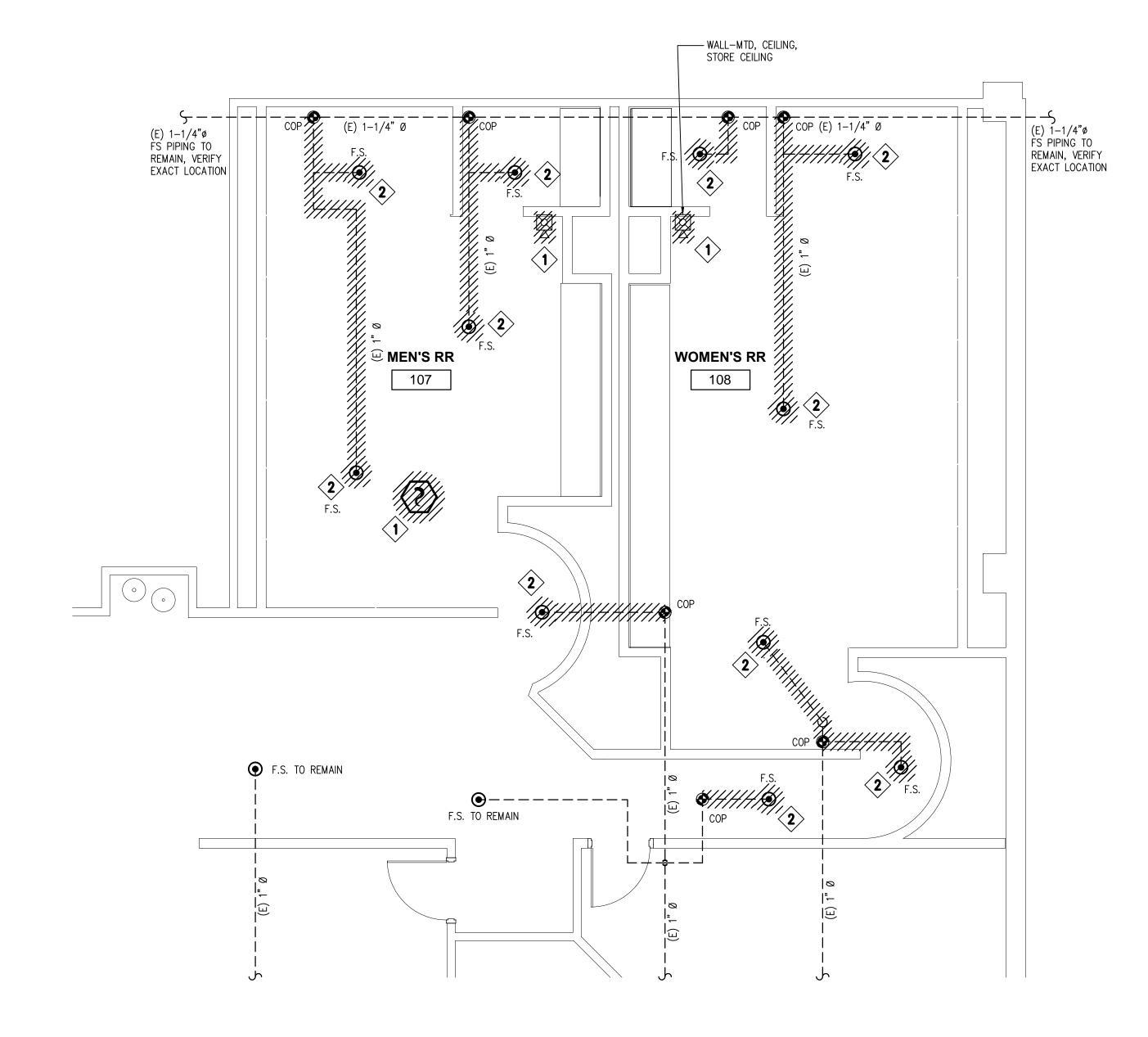
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F4.0

BASEMENT LEVEL



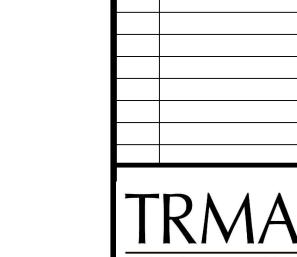
KEY PLAN NOT TO SCALE



PH-1D FIRE PROTECTION EXIST/ DEMO PLAN

FIRE PROTECTION DEMO/REMOVAL NOTES: REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.) REMOVE AND DISPOSE EXISTING F.S. HEADS/PIPING'S & ALL ASSOCIATED HANGERS/SUPPORTS, CAP/PLUG EXIST. LINES THAT WILL NOT BE REUSE AS NECESSARY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS) ALL EXISTING DEVICES LOCATION AND F.S. PIPING SHOWN IS BASED ON AS-BUILTS AVAILABLE AND SITE INSPECTIONS ONLY, REPAIR &/OR REPLACE EXIST. CORRODED ITEMS AND EXIST. OPENING SHALL REPAIRED &/OR PATCH-UP TO MATCH FINISHES AS NECESARY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID TO INCLUDE IN HIS/HER SCOPE OF WORK. ADEQUATE PROTECTION SHALL BE PROVIDED TO EXISTING BUILDING AND/OR EQUIPMENTS WITHIN THE WORK AREA TO AVOID AND/OR MINIMIZE DAMAGE. ANY DAMAGES THAT IS DUE TO THE NEGLIGENCE OF CONTRACTOR SHALL BE REPAIRED AND RESTORED TO MATCH EXISTING FINISHES AT NO ADDITIONAL COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND TURN-OVER USABLE PIPING TO THE OWNER AS REQUIRED.

MARK



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REVISIONS

Description

Architecture Planning Interior Design

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WM ENGINEERING SERVICES, LLC .O. Box 392 Hagatna, GUAM 96932

. engoff@guam.ne



A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE 1D FIRE PROTECTION DEMO/REMOVAL PLAN

BID DOCUMENTS

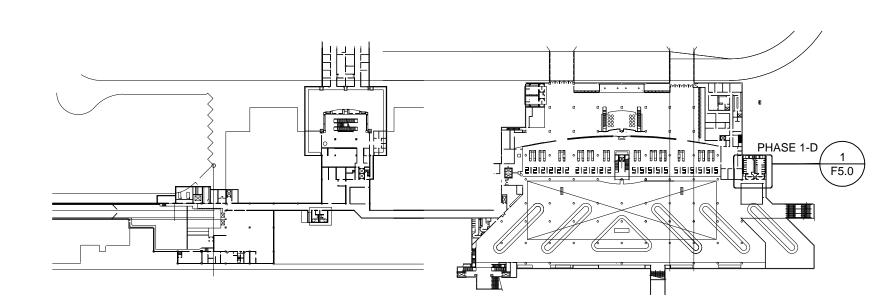
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02/20/15

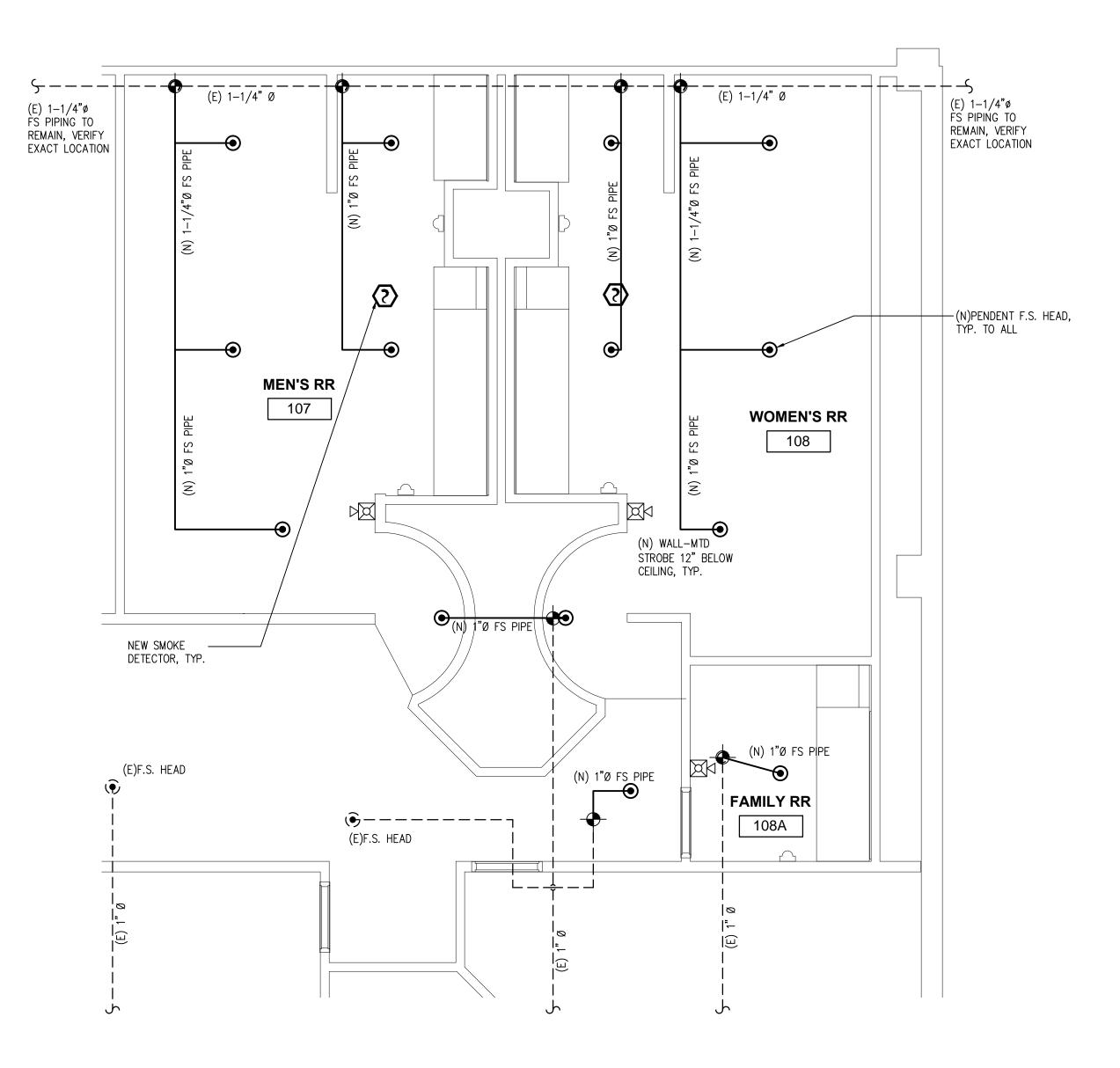
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BASEMENT LEVEL

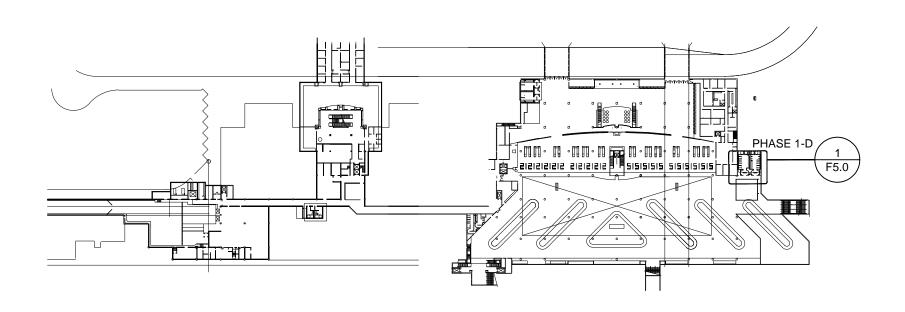


KEY PLAN NOT TO SCALE



PH-1D NEW FIRE PROTECTION PLAN 1/4" = 1'-0"

BASEMENT LEVEL



KEY PLAN NOT TO SCALE

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

REVISIONS Description

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Architecture Planning Interior Design

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WM ENGINEERING SERVICES, LLC .O. Box 392 Hagatna, GUAM 96932



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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE 1D NEW FIRE PROTECTION PLAN

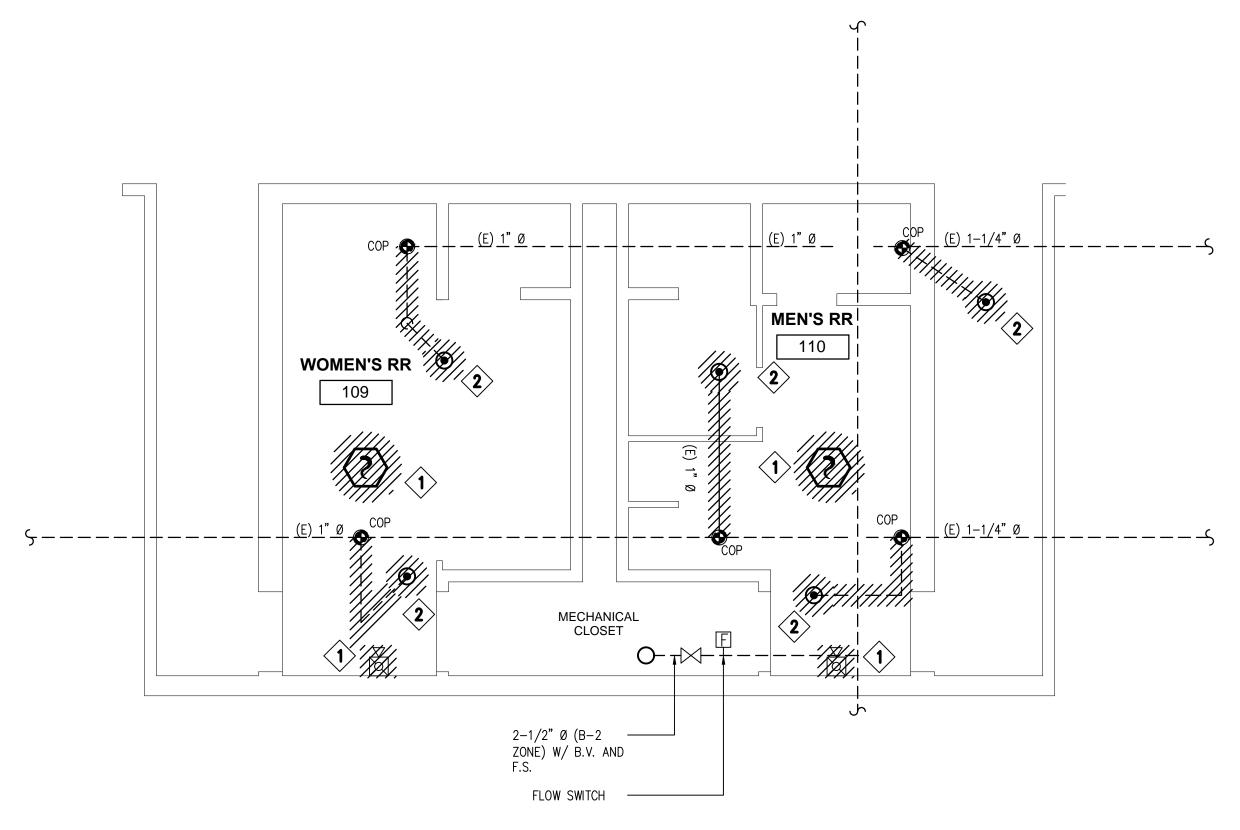
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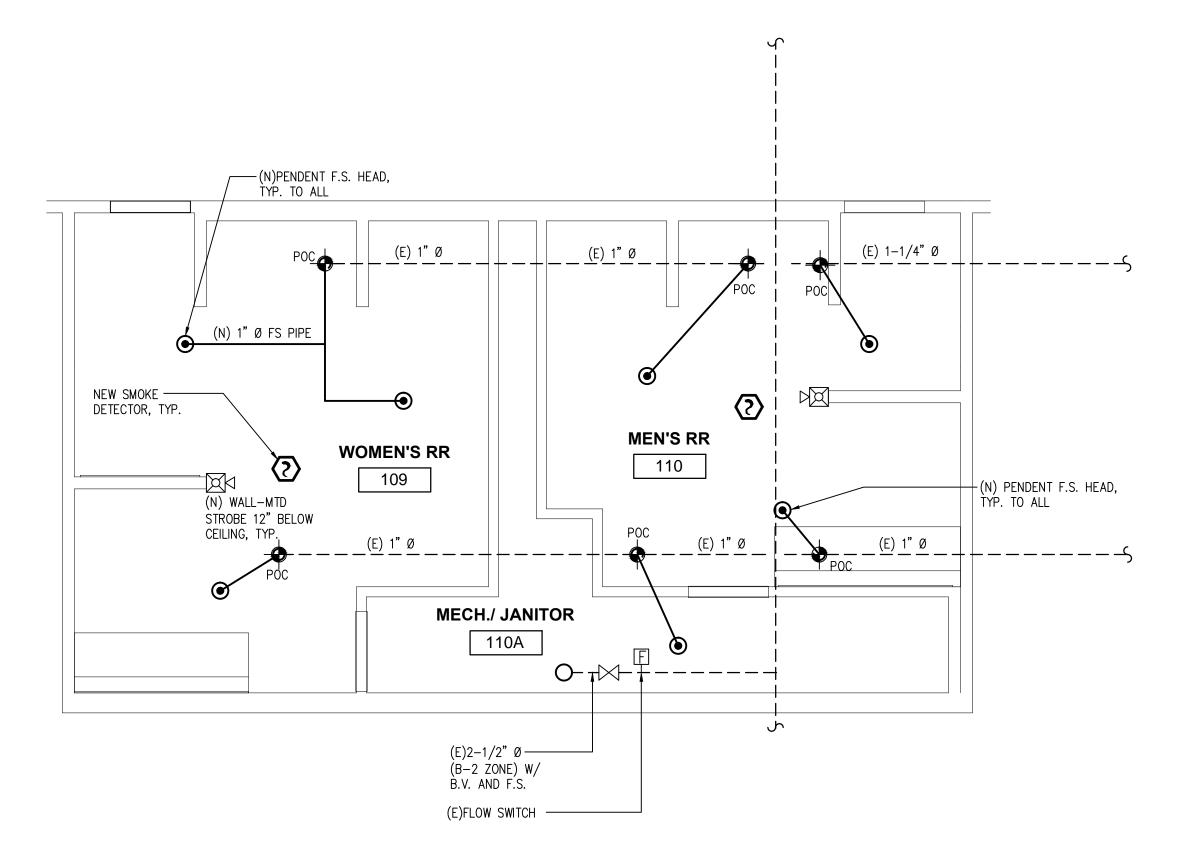
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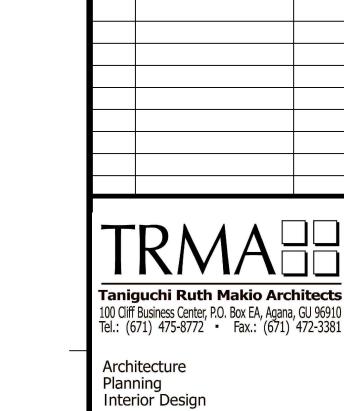


PH-2A FIRE PROTECTION EXIST/ DEMO PLAN SCALE: 1/4" = 1'-0"



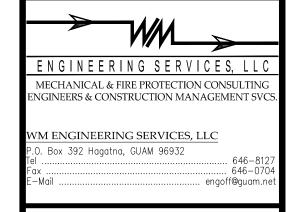
PH-2A NEW FIRE PROTECTION PLAN
SCALE: 1/4" = 1'-0"

МА	NRK	FIRE PROTECTION DEMO/REMOVAL NOTES:
	1>	REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.)
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REVISIONS

Description





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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

ADMIN LEVEL PHASE 2A FIRE PROTECTION DEMO/REMOVAL PLAN AND NEW FIRE PROTECTION PLAN

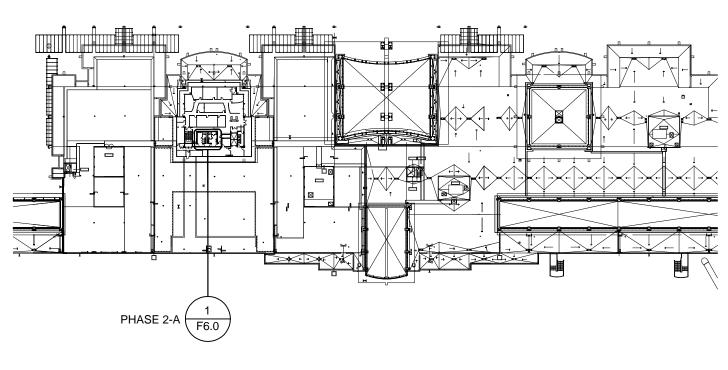
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Drawn:	EN/GDPC
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Date:	02/20/15

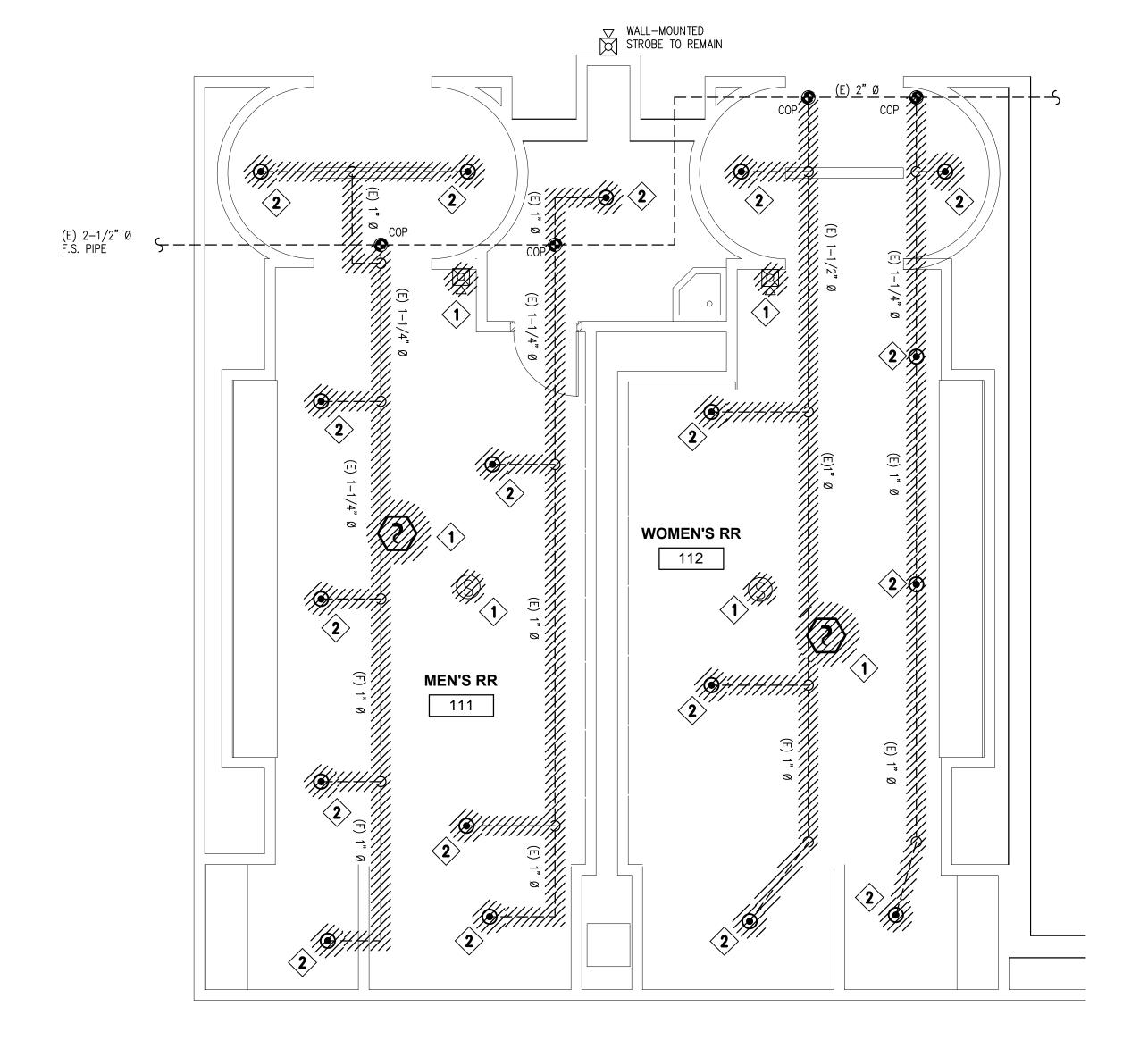
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ADMIN LEVEL

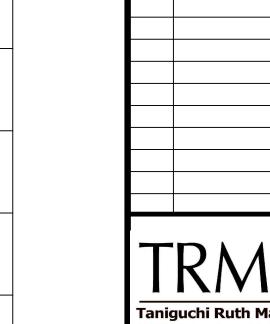


KEY PLAN NOT TO SCALE



PH-2B FIRE PROTECTION EXIST/ DEMO PLAN
SCALE: 1/4" = 1'-0"

MARK	FIRE PROTECTION DEMO/REMOVAL NOTES:
	REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.)
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REVISIONS

Description

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MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVCS

WM ENGINEERING SERVICES, LLC
P.O. Box 392 Hagatna, GUAM 96932



A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 2B FIRE PROTECTION DEMO/REMOVAL PLAN

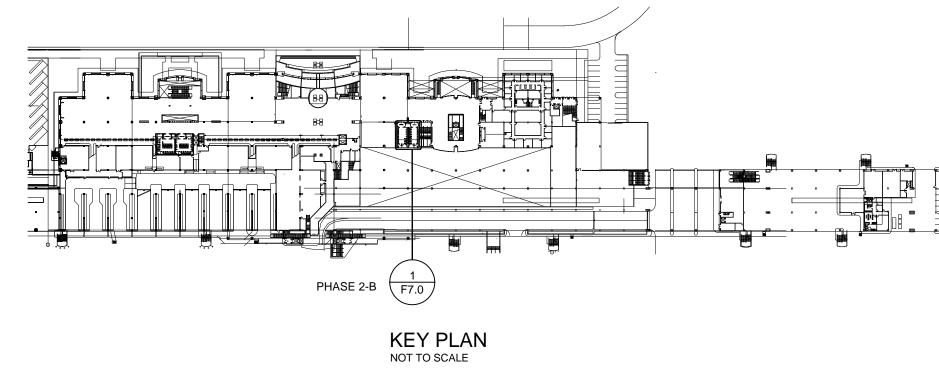
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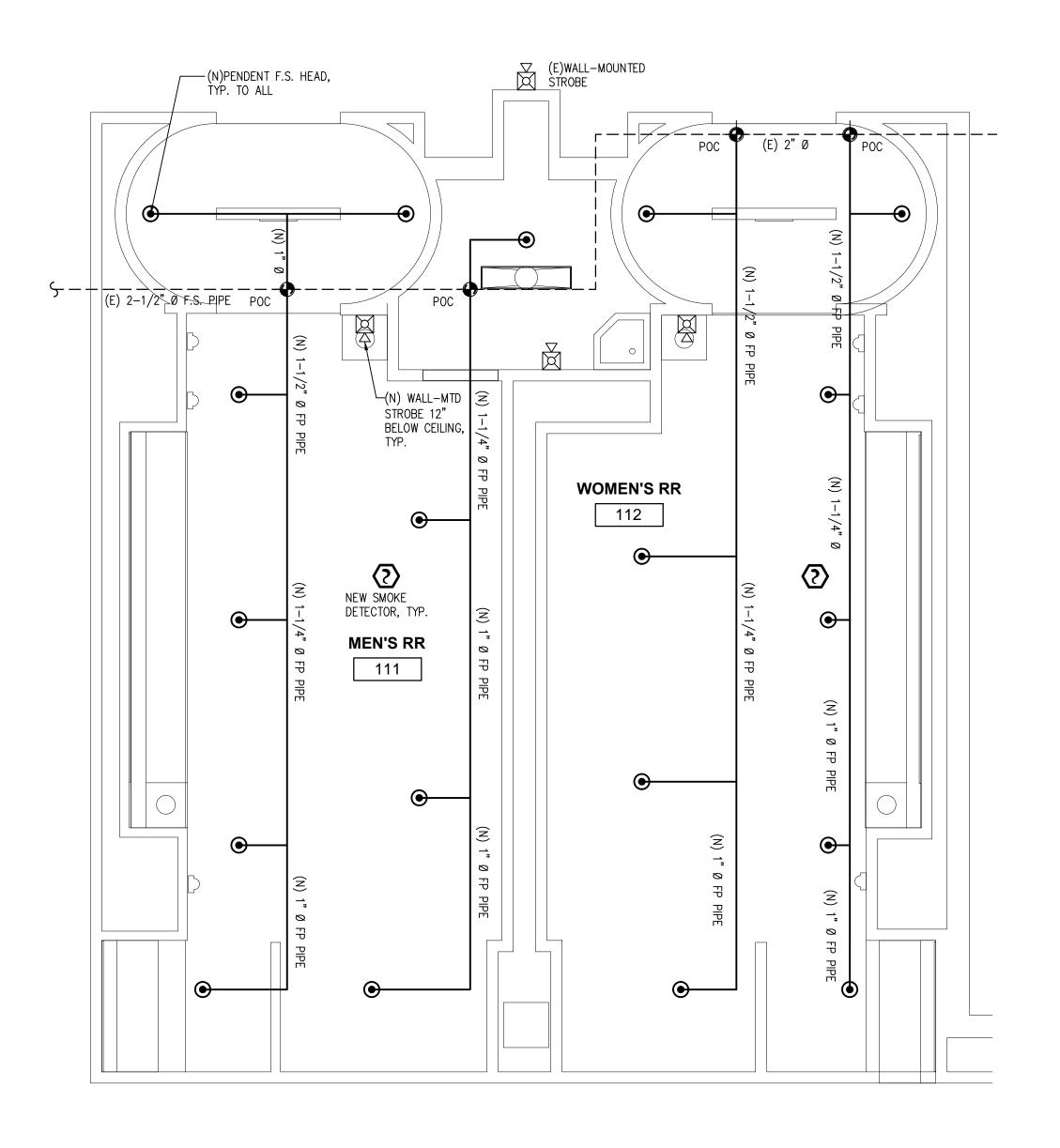
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02/20/15

1441

APRON LEVEL

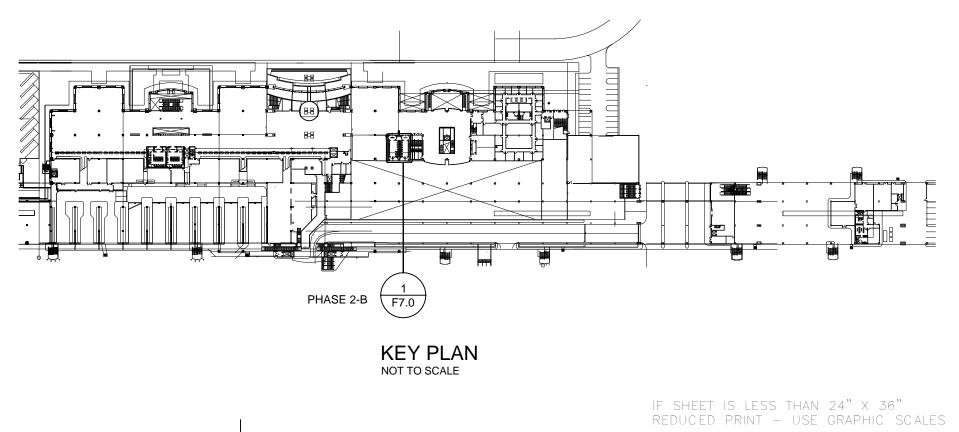




PH-2B NEW FIRE PROTECTION PLAN

SCALE: 1/4" = 1'-0"

APRON LEVEL



No. Description Date

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Architecture Planning Interior Design

ENGINEERING SERVICES, LLC

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ENGINEERS & CONSTRUCTION MANAGEMENT SVCS.

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Tel

P.O. Box 392 Hagatna, GUAM 96932
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E-Mail engoff@guam



BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

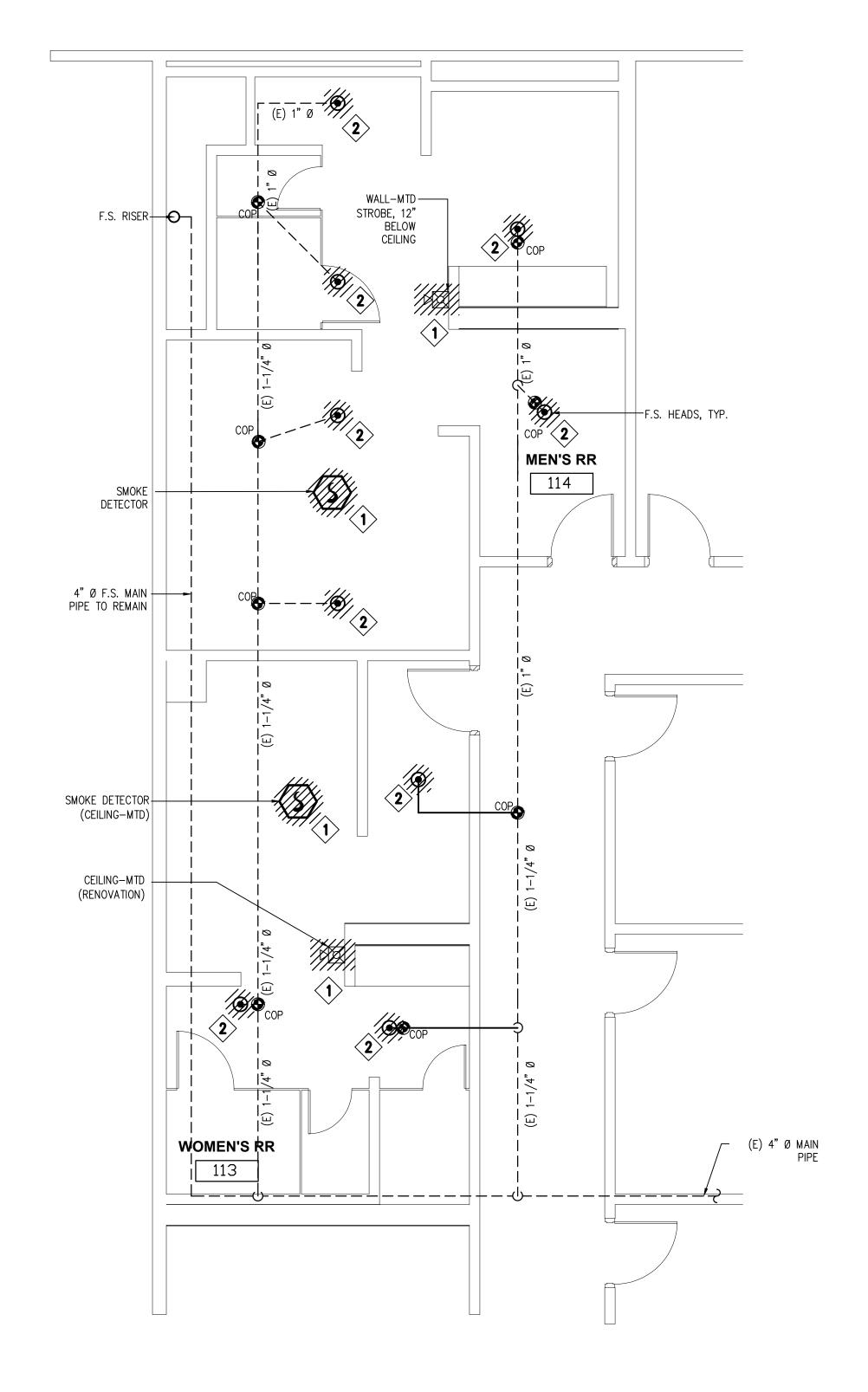
APRON LEVEL PHASE 2B NEW FIRE PROTECTION PLAN

BID DOCUMENTS

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Drawn:	EN/GDPC	
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Scale:	As indicated	
Date:	02/20/15	

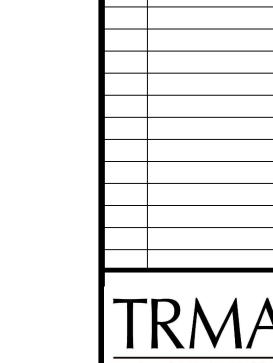
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F7.1



PH-2C FIRE PROTECTION EXIST/ DEMO PLAN 1/4" = 1'-0"

MARK	FIRE PROTECTION DEMO/REMOVAL NOTES:
1>	REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.)
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REVISIONS

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WM ENGINEERING SERVICES, LLC P.O. Box 392 Hagatna, GUAM 96932



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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 2C FIRE PROTECTION DEMO/REMOVAL PLAN

BID DOCUMENTS

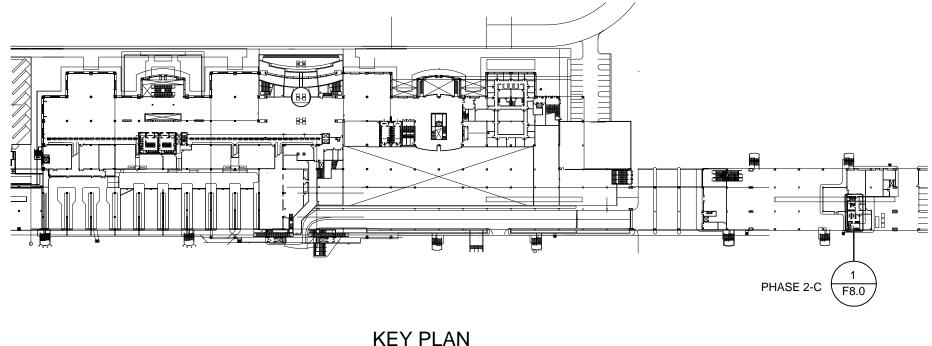
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Drawn:	EN/GDPC
Checked:	WM
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Scale:	As indicated

02/20/15

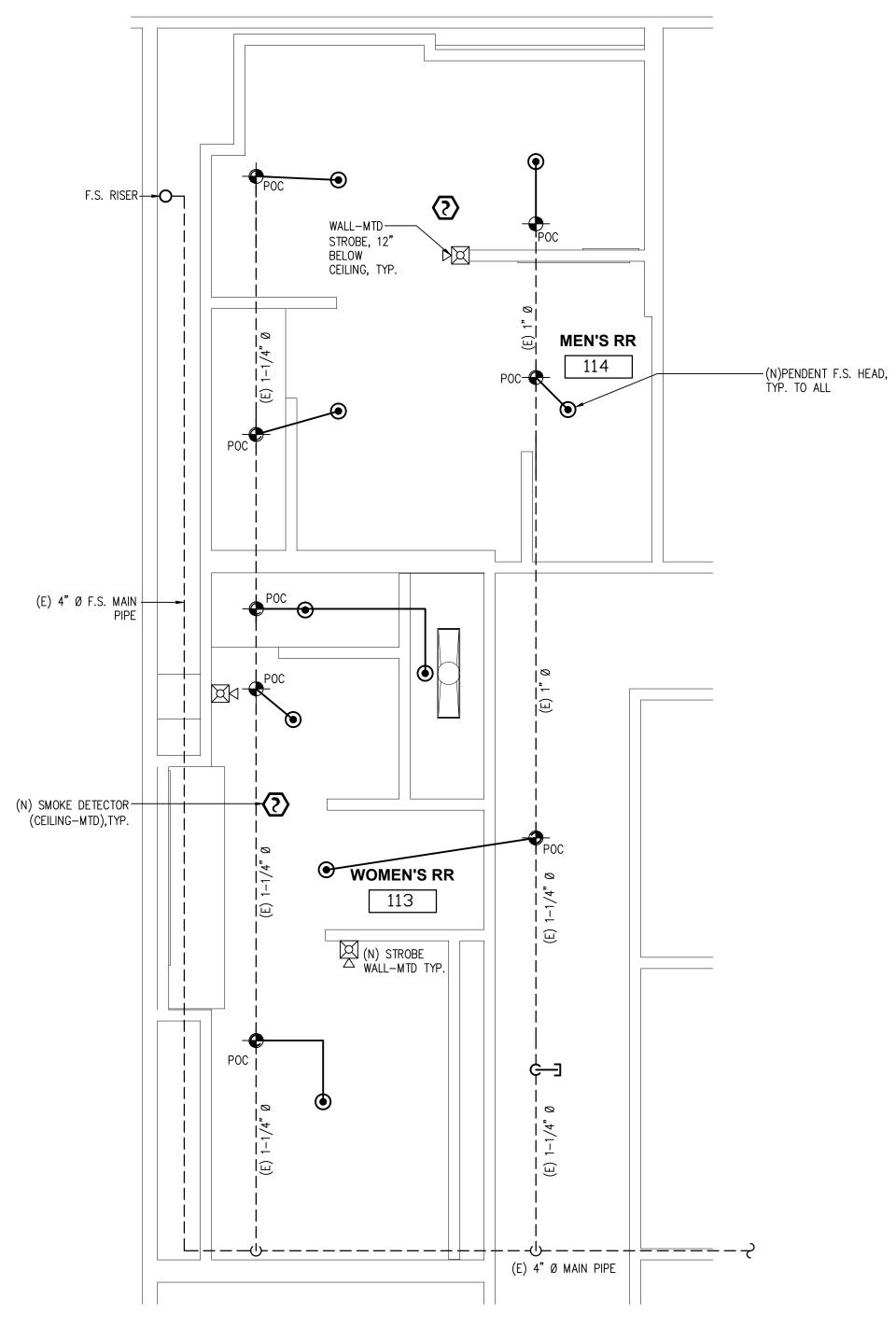
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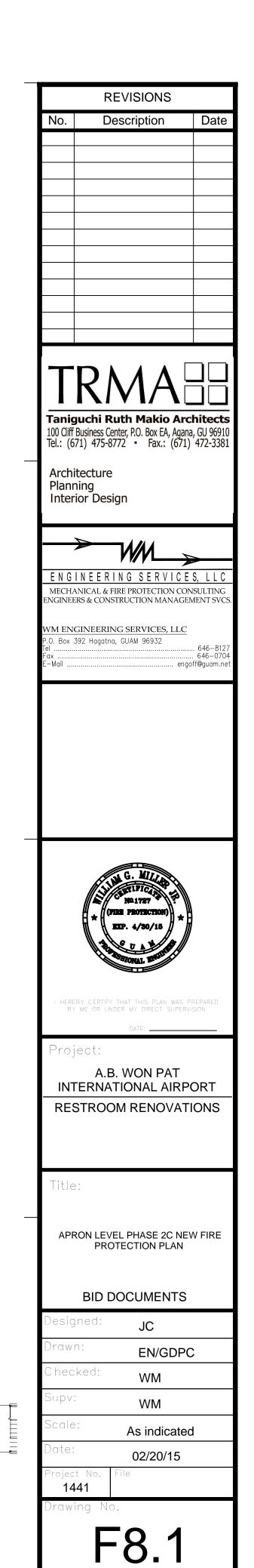
APRON LEVEL



KEY PLAN NOT TO SCALE



1 PH-2C NEW FIRE PROTECTION PLAN
SCALE: 1/4" = 1'-0"



APRON LEVEL

KEY PLAN NOT TO SCALE PHASE 2-C 1 F8.0

FIRE PROTECTION DEMO/REMOVAL NOTES: MARK REMOVE AND DISPOSE EXISTING AREA /DUCT SMOKE DETECTOR, STROBE LIGHT & ALL RELATED WIRING, CONDUITS AND ACCESSORIES. EXIST. WIRING ABOVE EXISTING RESTROOM AREAS SHALL NOT BE REUSE AND SHOULD BE REPLACE. CONTRACTOR SHALL VERIFY ON FIELD AND CONSIDER ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS.) REMOVE AND DISPOSE EXISTING F.S. HEADS/PIPING'S & ALL ASSOCIATED HANGERS/SUPPORTS, CAP/PLUG EXIST. LINES THAT WILL NOT BE REUSE AS NECESSARY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID &/OR START OF ANY CONSTRUCTION WORKS. (HATCH MARKS INDICATES REMOVAL/DEMO WORKS, EXACT COP SHALL BE PER FIELD CONDITIONS) ALL EXISTING DEVICES LOCATION AND F.S. PIPING SHOWN IS BASED ON AS-BUILTS AVAILABLE AND SITE INSPECTIONS ONLY, REPAIR &/OR REPLACE EXIST. CORRODED ITEMS AND EXIST. OPENING SHALL REPAIRED &/OR PATCH-UP TO MATCH FINISHES AS NECESARY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WOMEN'S RR ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID TO INCLUDE IN HIS/HER SCOPE OF WORK. 115 ADEQUATE PROTECTION SHALL BE PROVIDED TO EXISTING BUILDING AND/OR EQUIPMENTS WITHIN THE WORK AREA TO AVOID AND/OR MINIMIZE DAMAGE. ANY DAMAGES THAT IS DUE TO THE NEGLIGENCE OF CONTRACTOR SHALL BE REPAIRED AND RESTORED TO MATCH EXISTING FINISHES AT NO ADDITIONAL COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND TURN-OVER USABLE PIPING TO THE OWNER AS REQUIRED. MEN'S RR 116 WALL-MTD STROBE 12" BELOW CEILING CONTRACT (N) SMOKE DETECTOR (CEILING-MTD), ÌΥΡ. WOMEN'S RR — (N)PENDENT F.S. HEAD, TYP. TO ALL 115 MEN'S RR — (N) WALL—MTD 116 STROBE 12" BELOW PH-2D FIRE PROTECTION EXIST/ DEMO PLAN 1/4" = 1'-0" **BASEMENT LEVEL** PH-2D NEW FIRE PROTECTION PLAN **KEY PLAN** NOT TO SCALE

REVISIONS Description

Taniguchi Ruth Makio Architects 100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

MECHANICAL & FIRE PROTECTION CONSULTIN ENGINEERS & CONSTRUCTION MANAGEMENT SV

WM ENGINEERING SERVICES, LLC O. Box 392 Hagatna, GUAM 96932

A.B. WON PAT INTERNATIONAL AIRPORT **RESTROOM RENOVATIONS**

BASEMENT LEVEL PHASE 2D FIRE PROTECTION DEMO/REMOVAL PLAN AND NEW FIRE PROTECTION PLAN

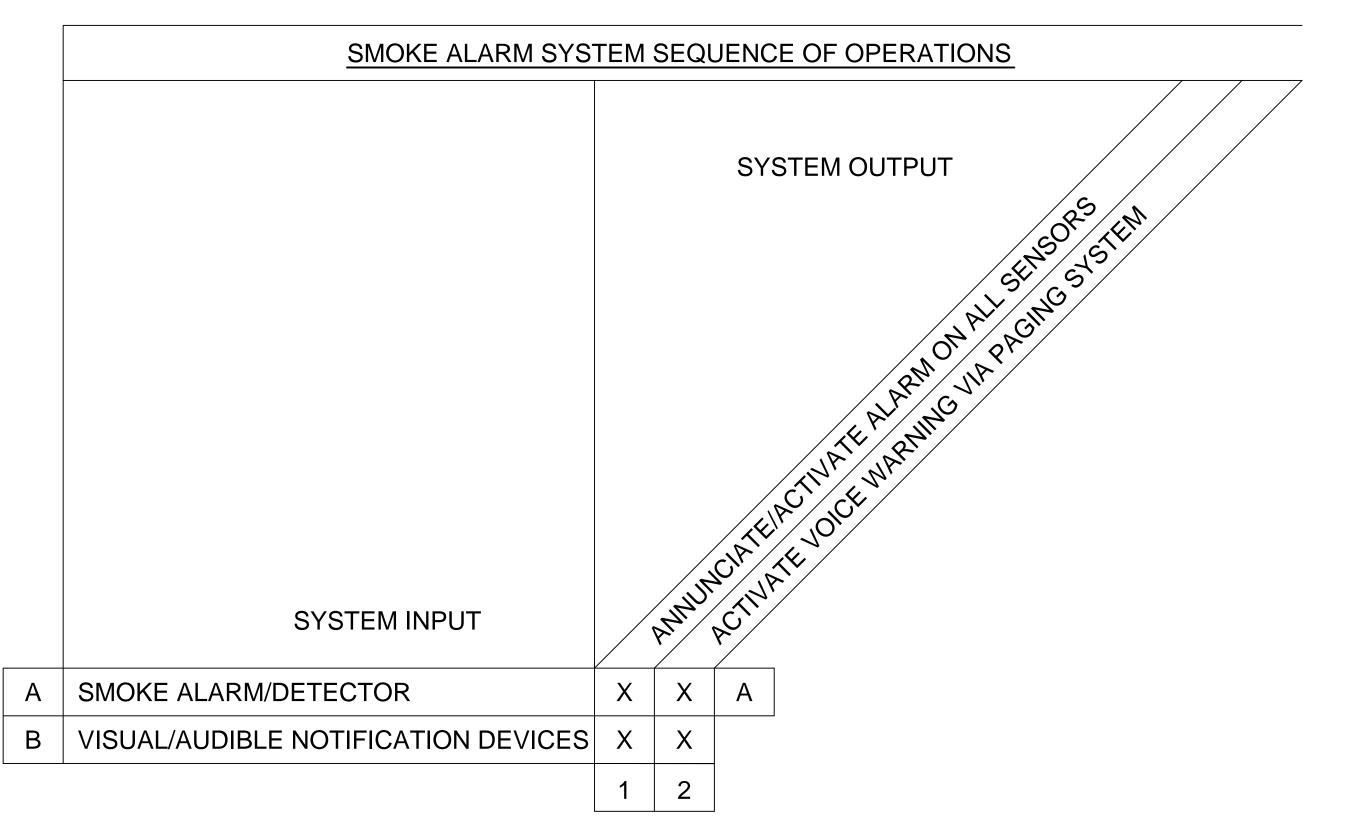
BID DOCUMENTS

JC EN/GDPC

As indicated 02/20/15

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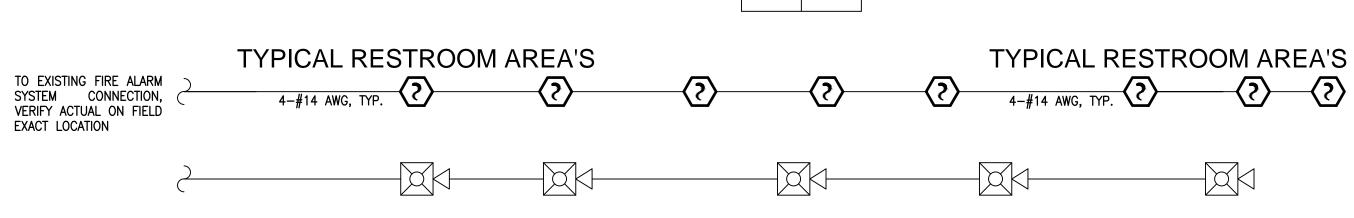
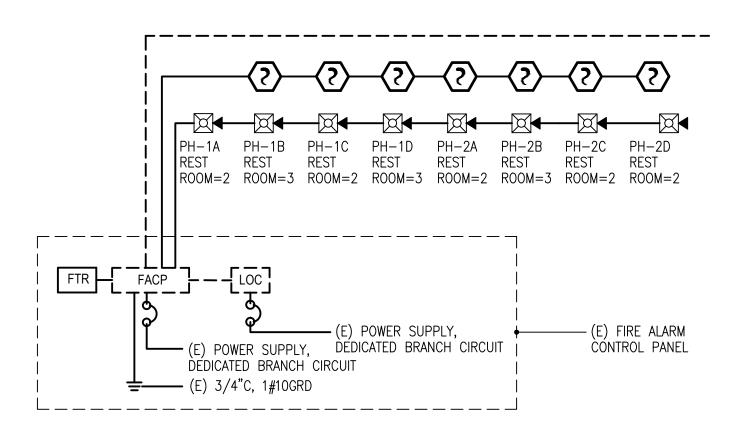
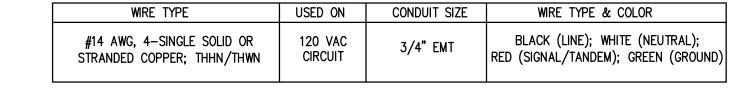


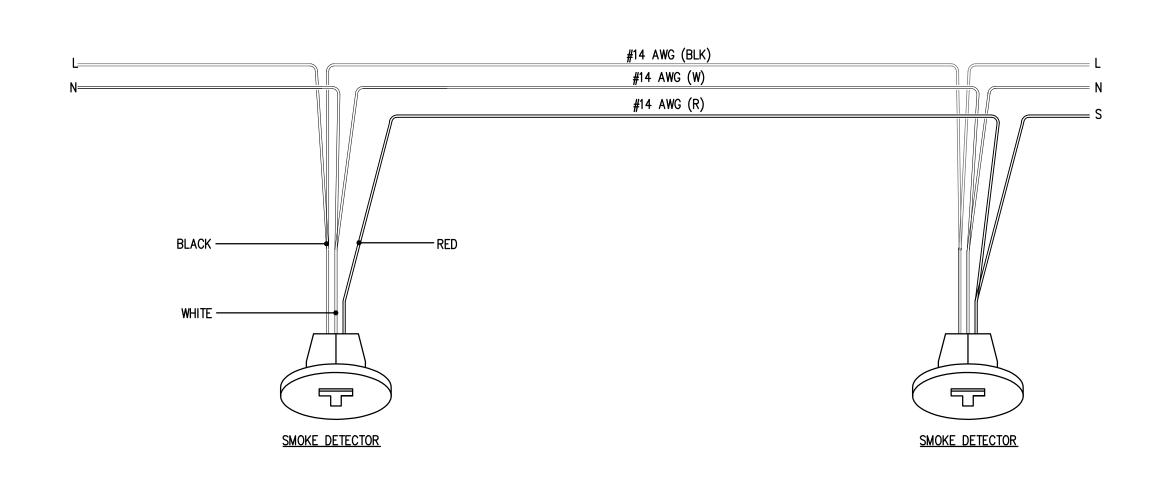
DIAGRAM FOR STROBE LIGHTS

EXACT LOCATION

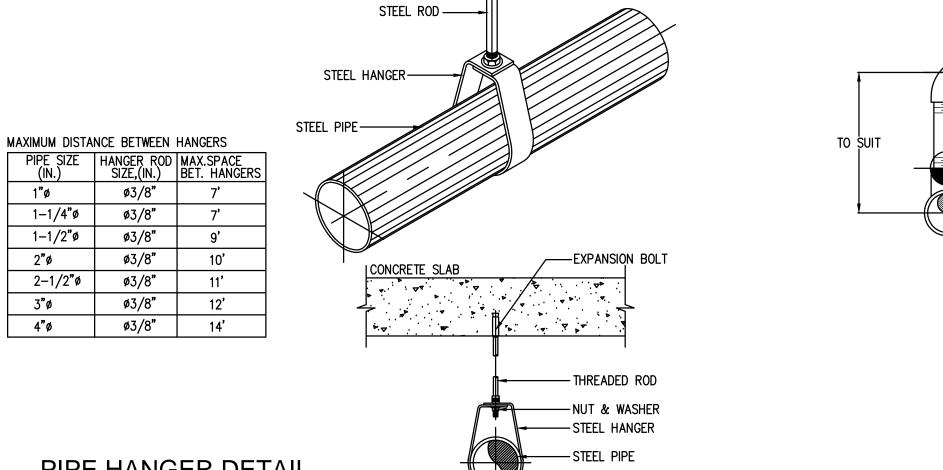








SMOKE ALARM WIRING INSTALLATION DETAILS





1**"**ø

2**"**ø

3**"**ø

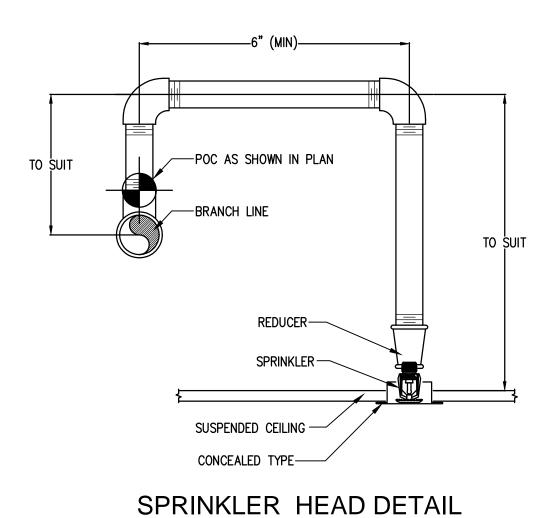
4"ø

1-1/2"ø

2-1/2**"**ø

ø3/8"

ø3/8"



MISCELLANEOUS DETAILS

REVISIONS Description

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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

TYPICAL FIRE PROTECTION WORKS INSTALLATION DETAILS AND MISCELLANEOUS DETAILS

BID DOCUMENTS

JC EN/GDPC WM WM As indicated

02/20/15 1441

SYMBOL	ABBR	DESCRIPTION	ABBR	DESCRIPTION
jj 		EXISTING DUCT (SAD, OAD, EAD)	FT	FEET
		NEW DUCT (SAD, OAD, EAD)	GA	GAGE OR GAUGE
\boxtimes		SUPPLY OUTLET (SIZE-TYPE-CFM)	GALV.	GALVANIZED
		RETURN OR EXHAUST INLET (SIZE-TYPE-CFM)	IN	INCHES
<u>-\$\\2\</u>		DUCT / AREA SMOKE DETECTOR	LBS	POUNDS
		FIRE DAMPER	MECH	MECHANICAL
VD _		MANUAL VOLUME DAMPER	MISC	MISCELLANEOUS
1		ZONE/ROOM CONTROL, THERMOSTAT (48" AFF)	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
		DEMOLITION HATCH	NIC	NOT IN CONTRACT
	۴	DEGREES FAHRENHEIT	NTS	NOT TO SCALE
	(E)	EXISTING	0.C.	ON CENTER
	(N)	NEW	PLUMB	PLUMBING
	A/P	ACCESS PANEL	RAD	RETURN AIR DUCT
	ACD	AIR CONDITIONING DRAIN	RR	RETURN AIR REGISTER
	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	SA	SUPPLY AIR
	ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIRCONDITIONING ENGINEERS	SAD	SUPPLY AIR DUCT
	ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	SHMTL	SHEET METAL
	BDD	BACK DRAFT DAMPER	SPECS	SPECIFICATIONS
	CAP	CAPACITY	SR	SUPPLY AIR REGISTER
	CD	CEILING DIFFUSER	SSTL	STAINLESS STEEL
	CFM	CUBIC FEET PER MINUTE	SW	SWITCH
	CON'T.	CONTINUATION/CONTINUED	THK	THICK(NESS)
	CW	COLD WATER	TV	TURNING VANE
	DL	DOOR LOUVER	TYP	TYPICAL
	DU	DOOR UNDER-CUT	UL	UNDERWRITER'S LABORATORIES, INC.
	DWG	DRAWING	VD	VOLUME DAMPER
	EAD	EXHAUST AIR DUCT		
	EAR	EXHAUST AIR REGISTER		
	FLEX	FLEXIBLE		

INSTALLATION/NEW WORK NOTES:

- 1. DUCTWORK INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS AND APPLICABLE INDUSTRY STANDARDS.
- 2. BALANCE AND COMMISSION ALL AIR CONDITIONING SYSTEM TO WITHIN 10 PERCENT OF DESIGN AIR QUANTITIES AND AS PER LEED CERTIFICATION RATING REQUIREMENTS & ASHARAE STANDARDS.
- 3. ALL MECHANICAL EQUIPMENTS SHALL HAVE AN ENERGY STAR RATING &/OR HIGH EFFICIENCY EQUIVALENT, AHU'S SHALL BE PROVIDE WITH DUAL AIR FILTER SYSTEM AND FINAL FILTER SHALL BE RATED MERV 13 AS A MINIMUM AND INSTALLATION METHODOLOGY SHALL BE IN COMPLIANCE WITH LEED RATING AND ASHARE 90.1-2007 REQUIREMENTS.
- 4. ALL MOTOR STARTERS &/OR VFD CONTROLLERS FURNISHED UNDER THIS SECTION AND INSTALLATION SHALL BE UNDER ELECTRICAL SECTION. ALL MOTOR STARTERS SHALL HAVE OVER—CURRENT PROTECTION, NEMA—1 ENCLOSURES, EXCEPT NEMA—3R FOR OUTDOOR LOCATIONS. PROVIDE 120 VOLT CONTROL CIRCUIT WITH INTEGRAL CONTROL TRANSFORMER AND AUXILIARY CONTACTS.
- 5. PROVIDE ALL CONTROLS, CONTROL WIRING AND CONDUIT UNDER THIS SECTION AS NECESSARY TO PROVIDE COMPLETE AND OPERABLE SYSTEM. MOUNT CONTROL SWITCHES AND THERMOSTATS 48 INCHES ABOVE FLOOR UNLESS NOTED OTHERWISE.
- 6. PROVIDE FINAL BALANCING OF SYSTEM AFTER FULL OCCUPANCY BY THE OWNER, AS DIRECTED BY THE ENGINEER. FINAL BALANCING SHALL BE IN ADDITION TO PRE—ACCEPTANCE BALANCING. PROVIDE BALANCING REPORT INCLUDING FAN RPM, SYSTEM PRESSURES, MOTOR BHP, AIR QUANTITITES, ETC. TO INDICATE EQUIPMENT PERFORMANCE.
- 7. CONTRACTOR SHALL ENSURE ALL DUCTWORKS ARE PROPERLY INSULATED ALL AROUND, WALL OPENINGS AND PIPE PENETRATIONS AIR TIGHT SEALED TO PREVENT MIGRATION OF HUMID AIR INSIDE CEILING PLENUM SPACE THAT CAUSE CONDENSATION BETWEEN CONDITIONED SPACE AND PLENUM.
- 8. PROVIDE DUCT SMOKE DETECTORS DOWNSTREAM OF THE AIR FILTERS AND AHEAD OF ANY BRANCH CONNECTIONS IN RETURN AIR SUPPLY SYSTEMS OF GREATER THAN 2,000 CFM CAPACITY IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE AND NFPA—90A. SMOKE DETECTORS SHALL AUTOMATICALLY STOP THEIR RESPECTIVE FAN UPON DETECTING THE PRESENCE OF SMOKE AND SHALL BE CONNECTED TO A SIGNALING SYSTEM IN ACCORDANCE WITH NFPA—90A.

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GENERAL NOTES:

- 1. ALL MECHANICAL WORKS SHALL CONFORM TO THE LATEST EDITION OF INTERNATIONAL BLDG. CODE, INTERNATIONAL MECHANICAL CODE, THE CONTRACT DOCUMENTS AND THE RULES AND REGULATIONS OF THE GOVERNMENT OF GUAM AND THE AUTHORITIES HAVING JURISDICTIONS.
- 2. INSTALLATION SHALL CONFORM TO THE LATEST APPLICABLE INDUSTRY STANDARDS UNLESS SPECIFICALLY NOTED OTHERWISE AND SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE PROJECT AS A WHOLE TO INCLUDE ONE YEAR FREE MAINTENANCE & FILTER REPLACEMENT AND ALL STANDARD MANUFACTURER'S SERVICE SCHEDULE RECOMMENDATIONS.
- 3. CONTRACTOR SHALL VERIFY ALL FIELD EXISTING CONDITIONS PRIOR TO BID & CONSTRUCTION AND SHALL PAY FOR ALL REQUIRED PERMIT FEES AND APPLICATIONS AS NECESSARY.
- 4. PREPARE SIX(6) SETS OF SHOP DRAWINGS, SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO START OF ANY CONSTRUCTION WORKS AND PREPARE ONE SET OF REPRODUCIBLE AS—BUILT DRAWINGS SHOWING THE ACTUAL INSTALLED CONDITIONS AND SUBMIT TO THE OWNER UPON COMPLETION OF WORK.
- 5. DUCT SIZES NOTED ARE NET INSIDE DIMENSIONS AND SHALL BE SECURELY ANCHORED TO BLDGS. AND INSTALLED AS TO BE COMPLETELY FREE FROM VIBRATION UNDER ALL CONDITION OF OPERATION. EXISTING DRAWINGS SHOWN ARE FOR REFERENCE ONLY, CONTRACTOR TO VERIFY ON FIELD ALL EXISTING ACTUAL CONDITIONS AND INSTALLATIONS TO MAKE NECESSARY ASJUSTMENTS TO INSTALLED ALL NEW EQUIPMENTS IN CONJUNCTION WITH EXISTING SYSTEMS.
- 6. THOUGH SOME OFFSETS AND TRANSITIONS ARE SHOWN IN PIPING AND SHEETMETAL TO HELP INDICATE THE PHYSICAL RELATIONSHIP BETWEEN THEM, IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL PIPING AND SHEETMETAL OFFSETS AND TRANSITIONS REQUIRED. THE CONTRACTOR SHALL COORDINATE THE MECHANICAL WORK WITHIN ITSELF AND THE WORK OF ALL TRADES TO PROVIDE COMPLETE & OPERABLE SYSTEM WITHOUT INTERFERENCES AND DELAYS.
- 7. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLAN ARE NECK SIZES. LOCATION OF AIR INLETS & OUTLETS ARE APPROXIMATE. REFER TO ARCH. REFLECTED CEILING PLANS FOR EXACT LOCATIONS. WHEN MECH. AND ARCH. DRAWINGS SHOW CONFLICTING LOCATIONS, CONSULT WITH ARCHITECT/ENGINEER TO RESOLVE DISCREPANCIES. PROVIDE MANUAL VD FOR EACH AIR DEVICES AND CEILING ACCESS PANELS NECESSARY FOR ADJUSTMENTS AND MAINTENANCE PURPOSES. DIFFUSER'S AND REGISTER'S NECK SHALL INSULATED ALL AROUND &/OR UP FLEXIBLE CONECTION/DUCTWORK TO PREVENT CONDENSATION.
- 8. EQUIPMENT AND MATERIAL SUBMITTAL: SUBMIT FOR APPROVAL SIX(6) SETS OF SUBMITTAL DATA SHOWING DIMENSIONS, CAPACITIES AND CONSTRUCTION. SUBSTITUTION MAY BE USED IF QUALIFIED BY WRITTEN PERMISSION FROM THE ENGINEER. SUBMIT SUBSTITUTION REQUEST PRIOR TO BIDDING FOR APPROVAL.
- 9. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITION REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- 10. ALL DUCTS SHALL BE SECURELY ANCHORED TO BUILDINGS AND SHALL BE INSTALLED AS TO BE COMPLETELY FREE FROM VIBRATION UNDER ALL CONDITION OF OPERATIONS, ADEQUATE SUPPORTS, BRACKETS &/OR BRACING SHALL BE PROVIDE AND COORDINATED WITH STRUCTURAL ENGINEER AND ALL DUCTWORKS (EAD, SAD RAD & OAD) SHALL BE INSULATED WELL WRAP/ALL AROUND AIR TIGHT TO ELIMINATE CONDENSATION IN THE CEILING PLENUM SPACE.
- 11. PROVIDE APPROPRIATE VIBRATION ISOLATION/ISOLATOR FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
- 12. NO COPPER PIPE SHALL CONTACT A PIPE SUPPORT OR HANGER OF DISSIMILAR METAL. HANGERS AND SUPPORTS FOR COPPER PIPE SHALL BE COPPER PLATED, PLASTIC COATED OR COPPER PIPE SHALL BE ISOLATED WITH INSULATING NEOPRENE STRIPS OR AS APPROVED.
- 13. PROVIDE ALL MATL'S, EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE SYSTEM AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE AT NO EXTRA COST TO THE OWNER.
- 14. CHANGES FROM THE CONTRACT DOCUMENTS REQUIRED TO MAKE THIS WORK CONFORM TO THE BLDG. CONSTRUCTION OR OTHER TRADES SHALL BE MADE BY THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER AND SHALL NOT IMPACT ON THE TIME SCHEDULE OF THE PROJECT.
- 15. PROVIDE FIRE DAMPERS ON ALL FIRE RATED WALL AND ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC. AND SHALL BE FIRE STOPPED AS REQUIRED BY NFPA STANDARDS.
- 16. ADDITIONAL WORK: THE DESIGN IS BASED ON EQUIPMENT AS DESCRIBED IN THE DRWGS. AND AVAILABLE AS—BUILTS DRWGS, ANY CHANGE IN ELECTRICAL WIRING, CONDUIT, CONNECTIONS, CONTROLS, PIPING AND OPENINGS REQ'D BY ALTERNATE EQUIPMENT SPECIFIED, SUBMITTED AND APPROVED SHALL BE PAID FOR BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- 17. PRODUCT DELIVERY, STORAGE AND HANDLING: FURNISH NEW FIXTURES, MATERIALS AND ACCESSORIES BEARING THE MANUFACTURER'S IDENTIFICATION. COORDINATE DELIVERIES TO AVOID INTERFERENCES OF CONSTRUCTION DELAYS. PROTECT PRODUCTS DURING DELIVERY, STORAGE, INSTALLATIONS AND THE REMAINDER OF THE CONSTRUCTION PERIOD AFTER INSTALLATION.

No. Description Date

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Architecture Planning Interior Design

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ENGINEERS & CONSTRUCTION MANAGEMENT SV

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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

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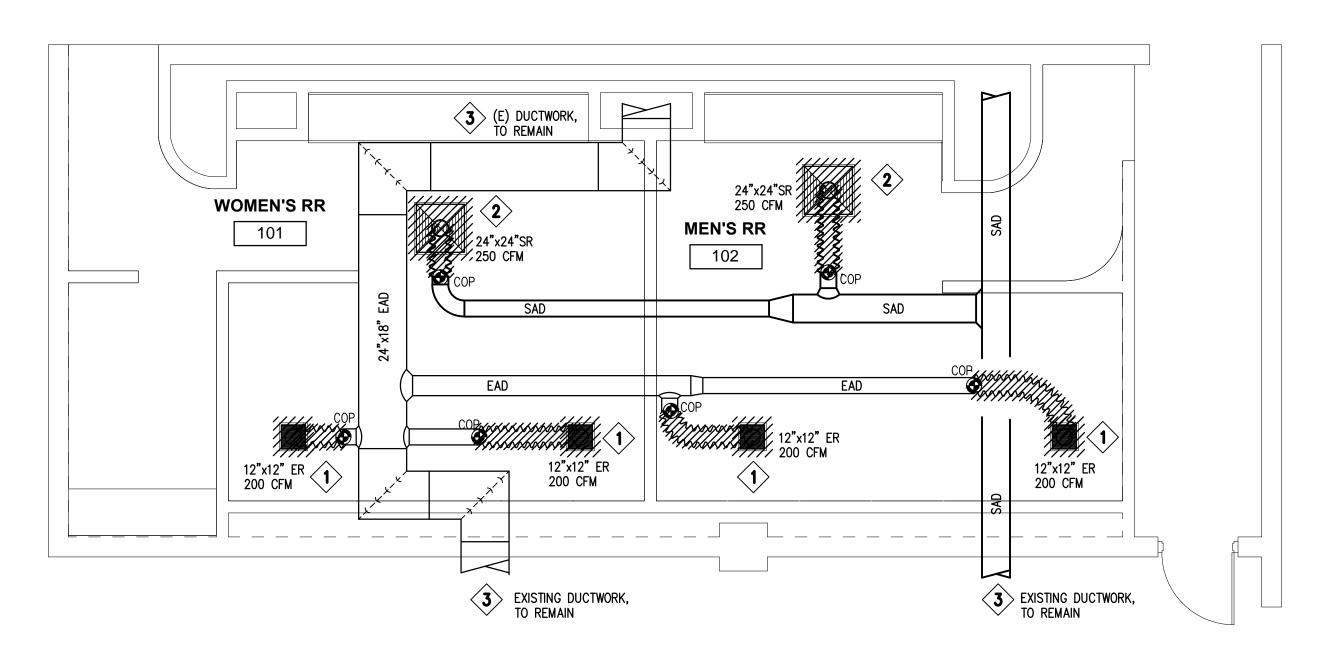
LEGENDS & ABBREVIATIONS, GENERAL MECHANICAL NOTES, INSTALLATION WORK NOTES AND TYPICAL DUCTWORKS INSTALLATION DETAILS

BID DOCUMENTS

Date: 02/20/15

Project No. **0440**

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MECHANICAL REMOVAL NOTES

- REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.
- REMOVE EXISTING SUPPLY DIFFUSER, RETURN REGISTER, FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW CONNECT TO EXISTING SUPPLY/RETURN AIR DUCT.
- REPAIR AND/OR REPLACE DAMAGED DUCT INSULATION, FIELD VERIFY.

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Architecture Planning Interior Design

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Title

CONCOURSE LEVEL PHASE 1A MECHANICAL DEMO/REMOVAL PLAN AND NEW MECHANICAL PLAN

BID DOCUMENTS

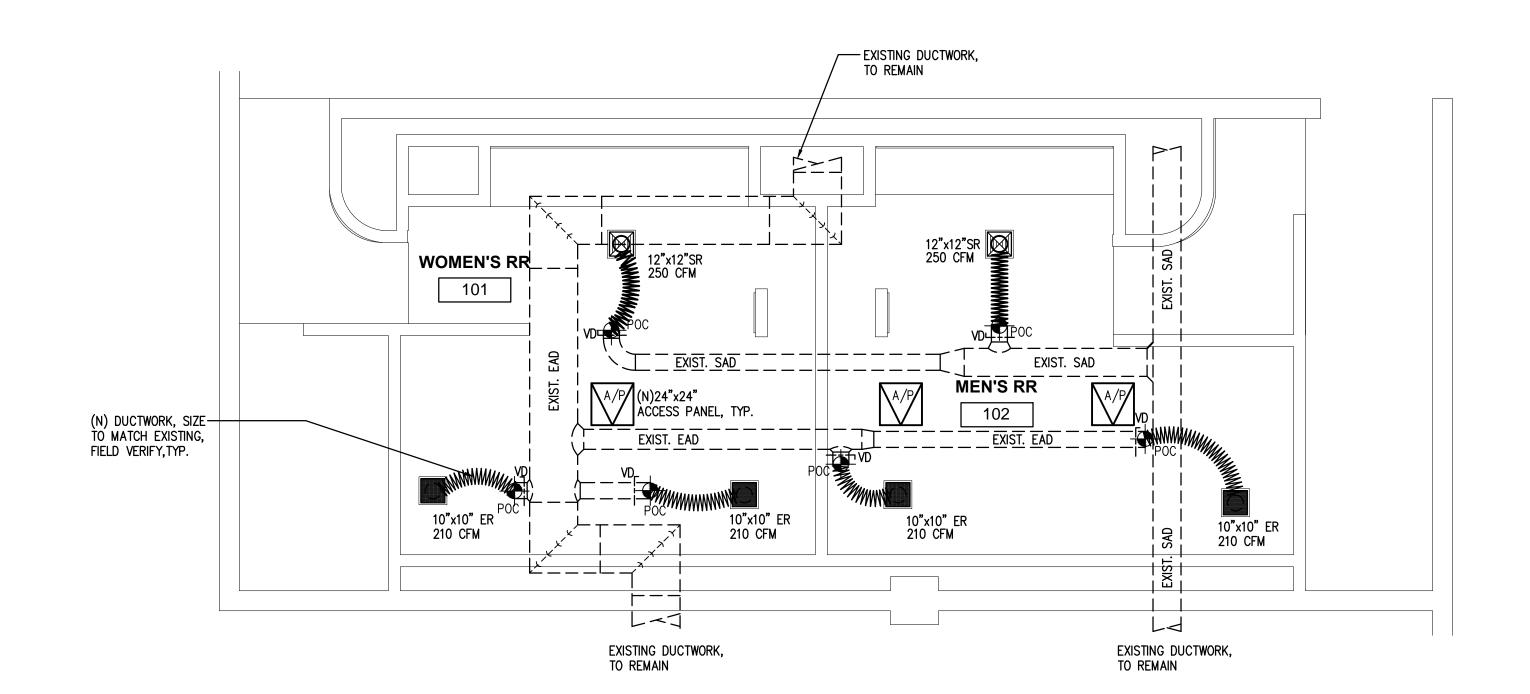
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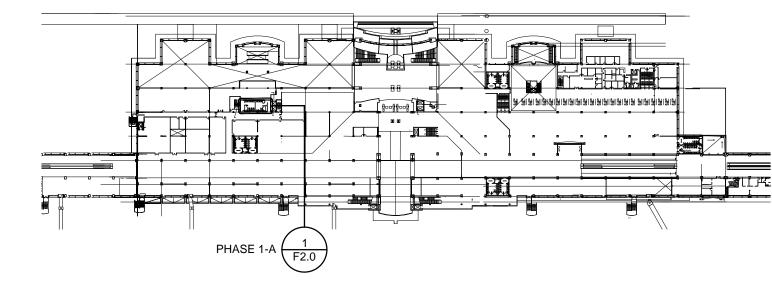
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PH-1A MECHANICAL DEMOLITION PLAN | SCALE: | 1/4" = 1'-0"



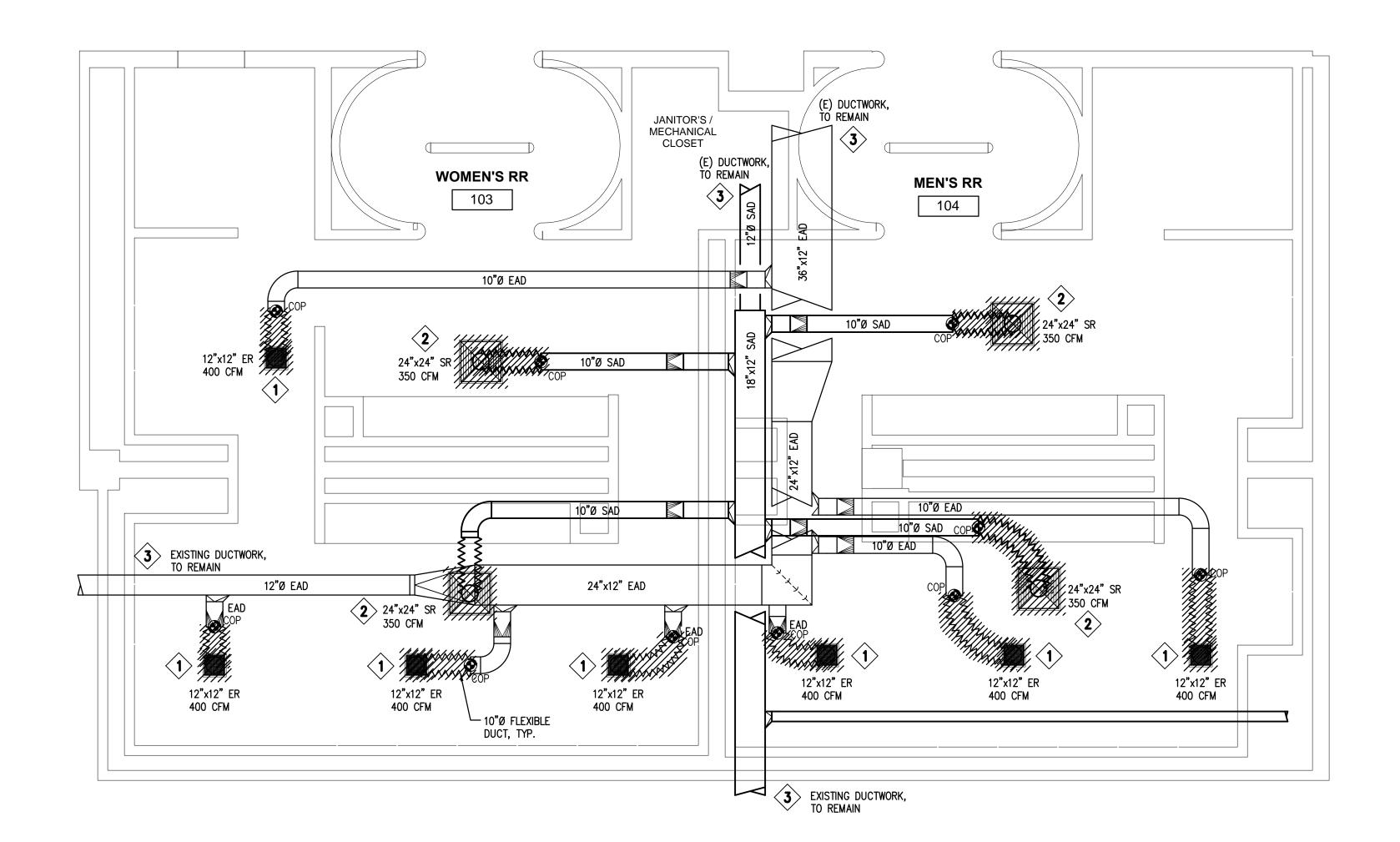
PH-1A NEW MECHANICAL PLAN

SCALE: 1/4" = 1'-0"



CONCOURSE LEVEL

KEY PLAN NOT TO SCALE



PH-1B MECHANICAL DEMOLITION PLAN | SCALE: | 1/4" = 1'-0"

MECHANICAL REMOVAL NOTES

- REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.
- REMOVE EXISTING SUPPLY DIFFUSER, RETURN REGISTER, FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW CONNECT TO EXISTING SUPPLY/RETURN AIR DUCT.
- REPAIR AND/OR REPLACE DAMAGED DUCT INSULATION, FIELD VERIFY.

No. Description Date

REVISIONS

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Architecture Planning Interior Design

ENGINEERING SERVICES,

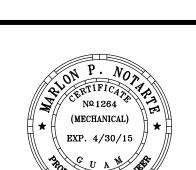
MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVC

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Project.

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

APRON LEVEL PHASE 1B
MECHANICAL DEMO/REMOVAL PLAN

BID DOCUMENTS

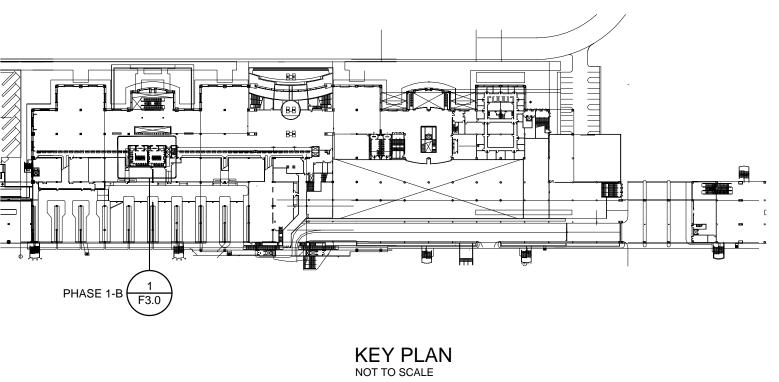
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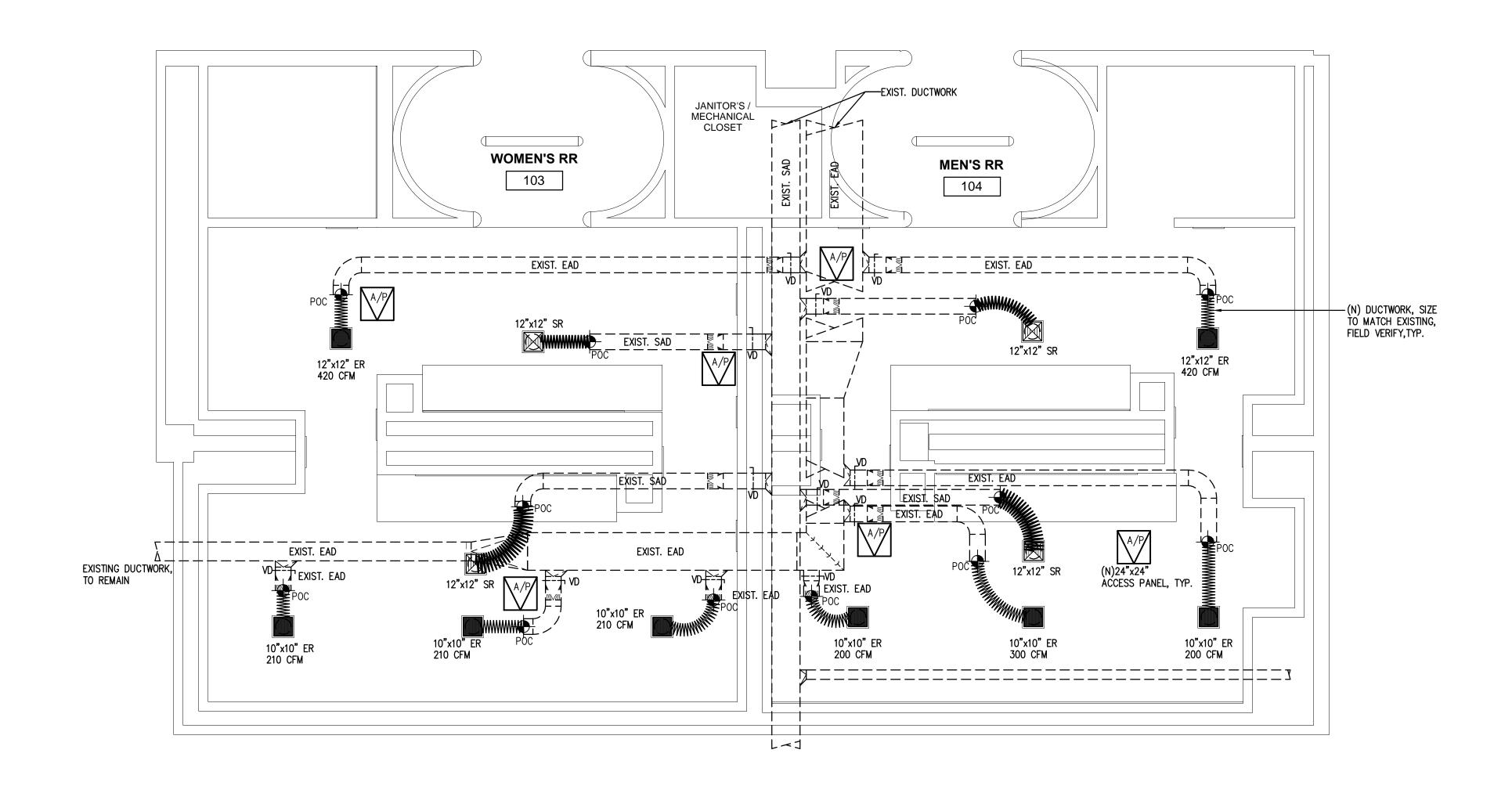
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APRON LEVEL

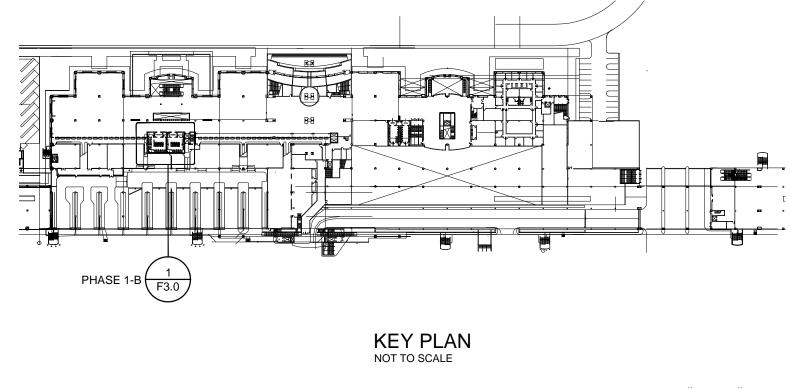


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1 PH-1B NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

APRON LEVEL



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APRON LEVEL PHASE 1B NEW MECHANICAL PLAN

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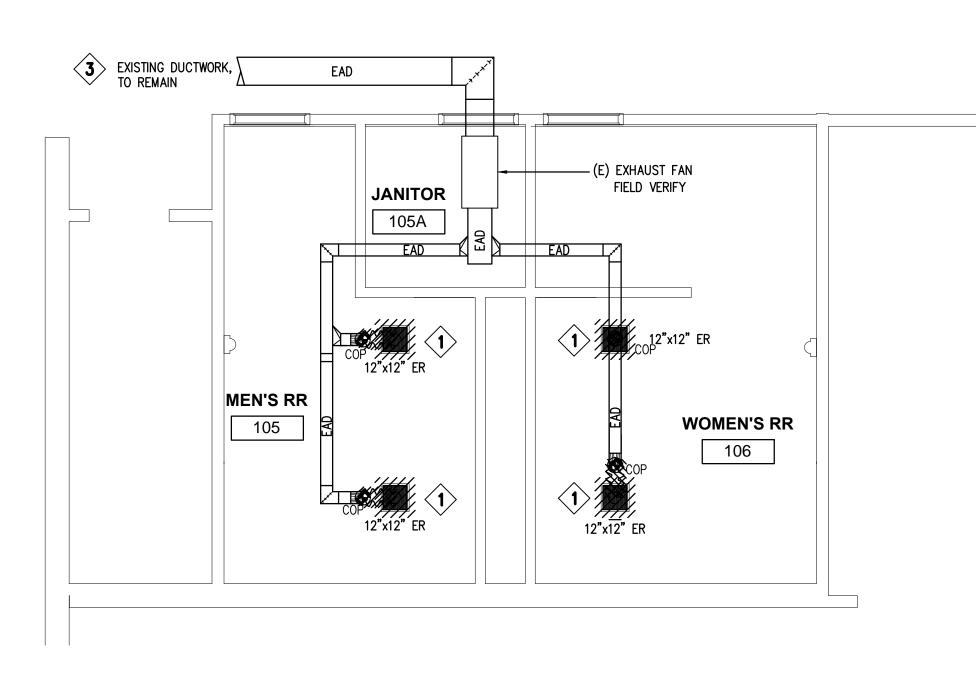
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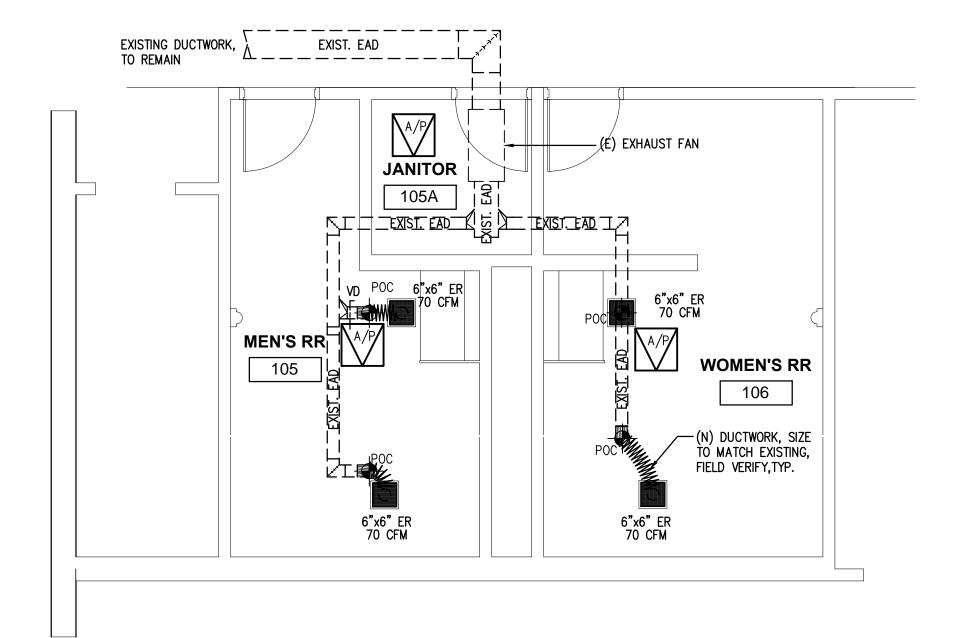


MECHANICAL REMOVAL NOTES

- REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.
- REMOVE EXISTING SUPPLY DIFFUSER, RETURN REGISTER, FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW CONNECT TO EXISTING SUPPLY/RETURN AIR DUCT.
- REPAIR AND/OR REPLACE DAMAGED DUCT INSULATION, FIELD VERIFY.

1 PHASE 1C MECHANICAL DEMOLITION PLAN

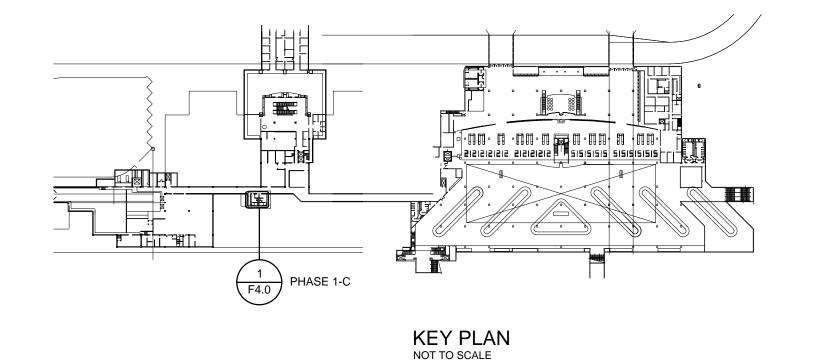
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PHASE 1C NEW MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

BASEMENT LEVEL



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Title

BASEMENT LEVEL PHASE 1C MECHANICAL DEMO/REMOVAL PLAN AND NEW MECHANICAL PLAN

BID DOCUMENTS

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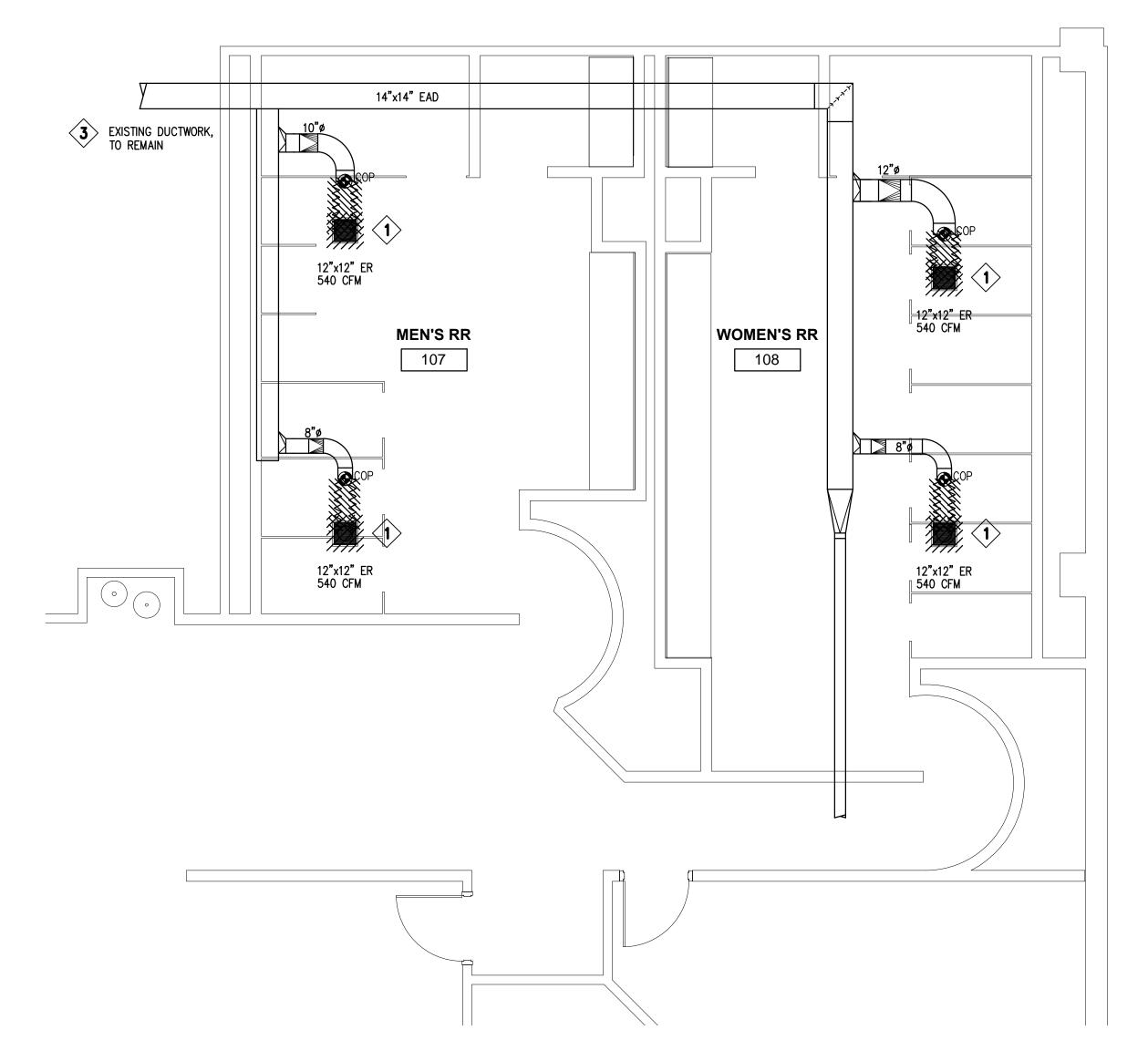
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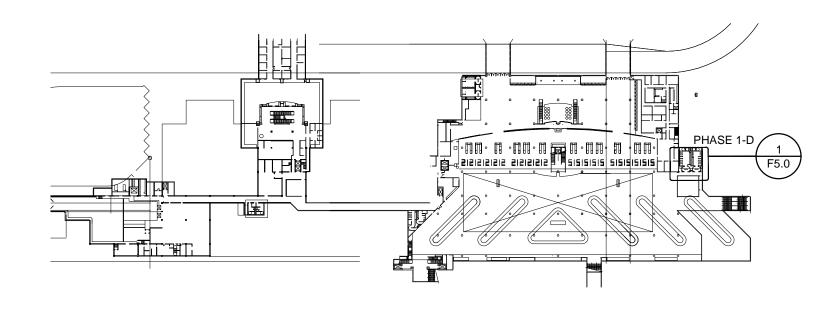


PH-1D MECHANICAL DEMOLITION PLAN

MECHANICAL REMOVAL NOTES

- REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.
- REMOVE EXISTING SUPPLY DIFFUSER, RETURN REGISTER, FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW CONNECT TO EXISTING SUPPLY/RETURN AIR DUCT.
- REPAIR AND/OR REPLACE DAMAGED DUCT INSULATION, FIELD VERIFY.

BASEMENT LEVEL



KEY PLAN NOT TO SCALE

> IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

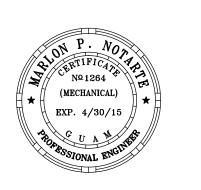
No. Description Date

REVISIONS

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Architecture Planning Interior Design

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MECHANICAL & FIRE PROTECTION CONSULTING
ENGINEERS & CONSTRUCTION MANAGEMENT SVCS



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Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

BASEMENT LEVEL PHASE 1D MECHANICAL DEMO/REMOVAL PLAN

BID DOCUMENTS

Designed: JC

Drawn: EN/GDPC

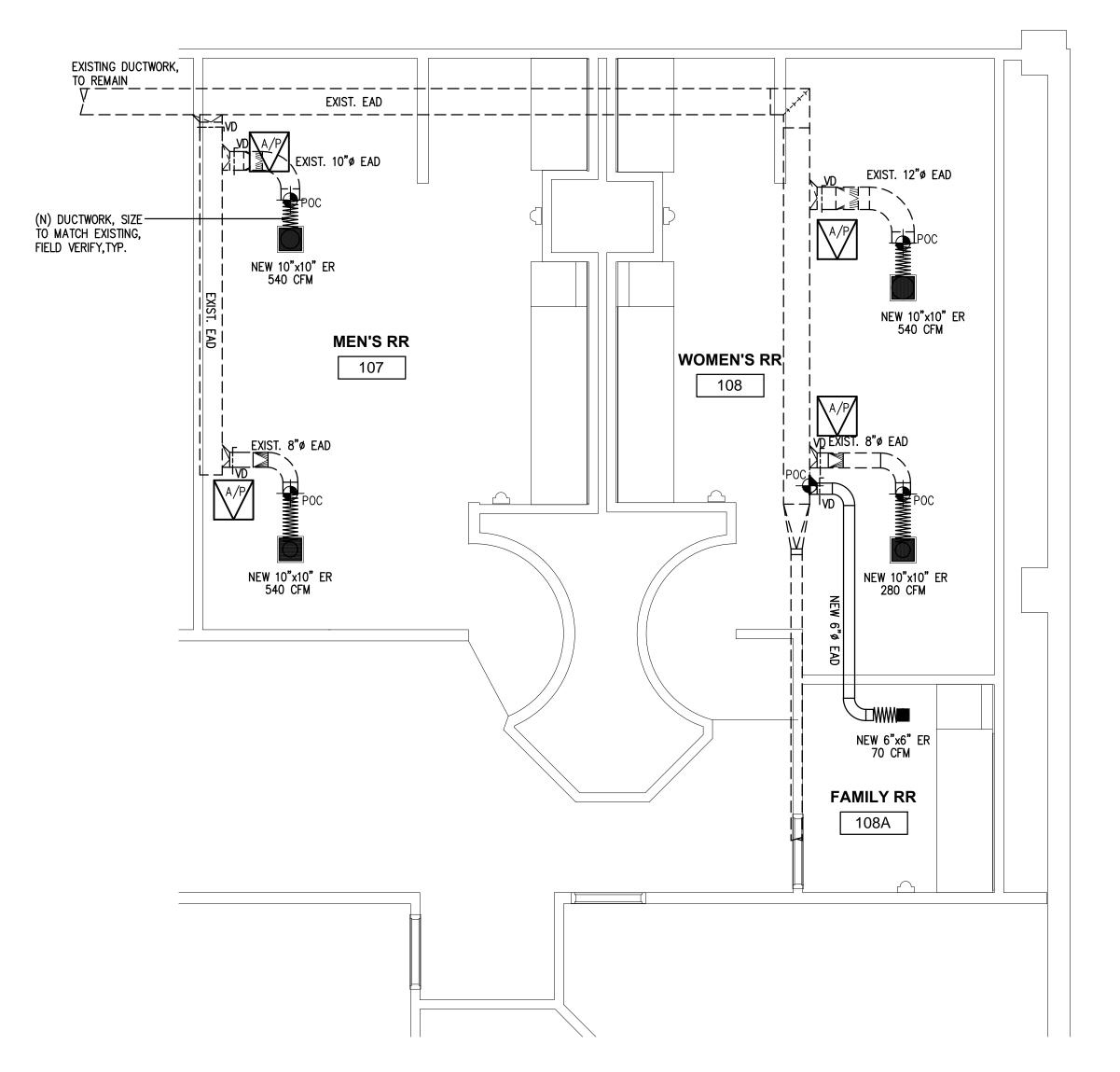
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Scale: As indicated

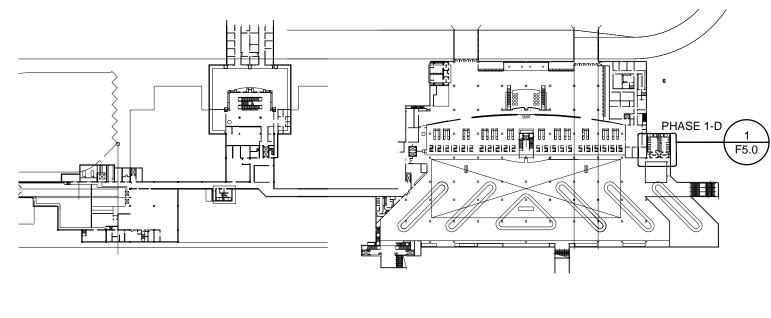
M5.0

1/4" = 1'-0"



PH-1D NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

BASEMENT LEVEL



KEY PLAN NOT TO SCALE

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

REVISIONS Description

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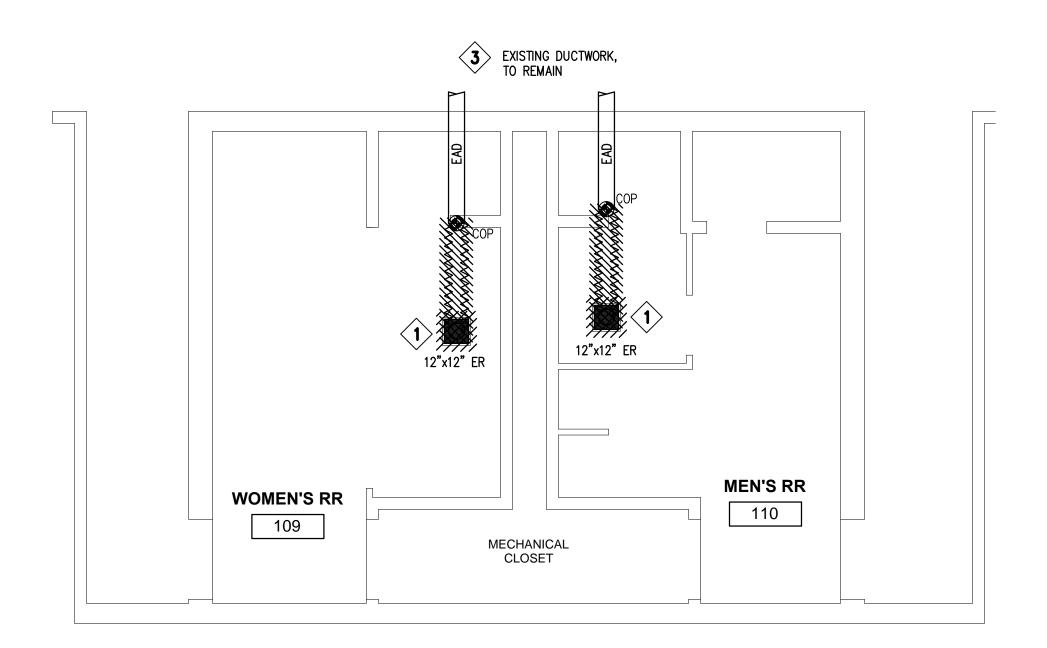
BASEMENT LEVEL PHASE 1D NEW MECHANICAL PLAN

BID DOCUMENTS

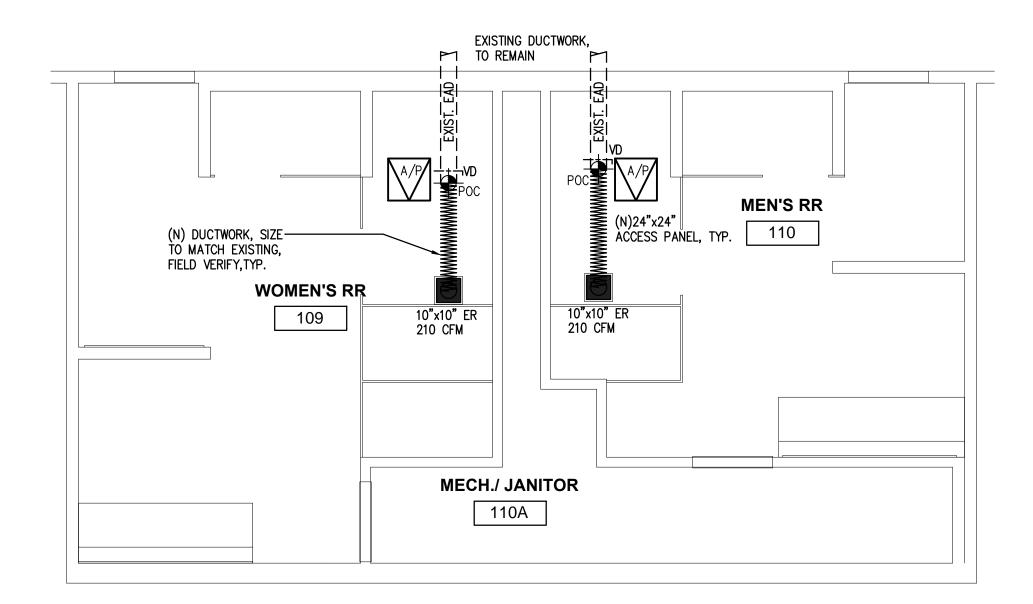
JC EN/GDPC MPN As indicated

02/20/15 1441

M5.1







PH-2A NEW MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

MECHANICAL REMOVAL NOTES

- REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.
- REMOVE EXISTING SUPPLY DIFFUSER, RETURN REGISTER, FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS.
 REPLACE WITH NEW CONNECT TO EXISTING SUPPLY/RETURN AIR DUCT.
- REPAIR AND/OR REPLACE DAMAGED DUCT INSULATION, FIELD VERIFY.

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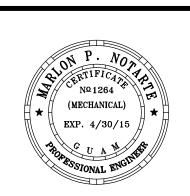
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HEREBY CERTIFY THAT THIS PLAN WAS PREPAR BY ME OR UNDER MY DIRECT SUPERVISION

roject:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title:

ADMIN LEVEL PHASE 2A

MECHANICAL DEMO/REMOVAL PLAN

AND NEW MECHANICAL PLAN

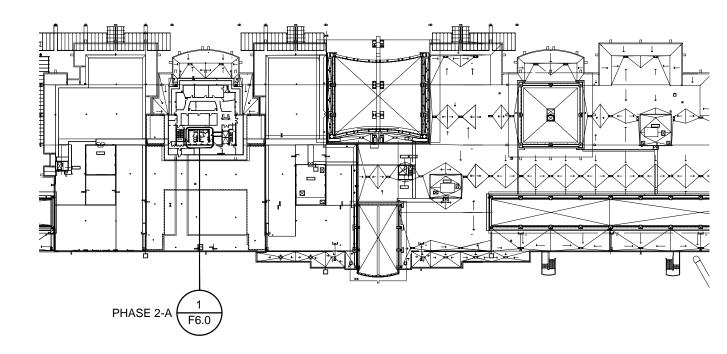
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Scale:	As indicated
Date:	02/20/15

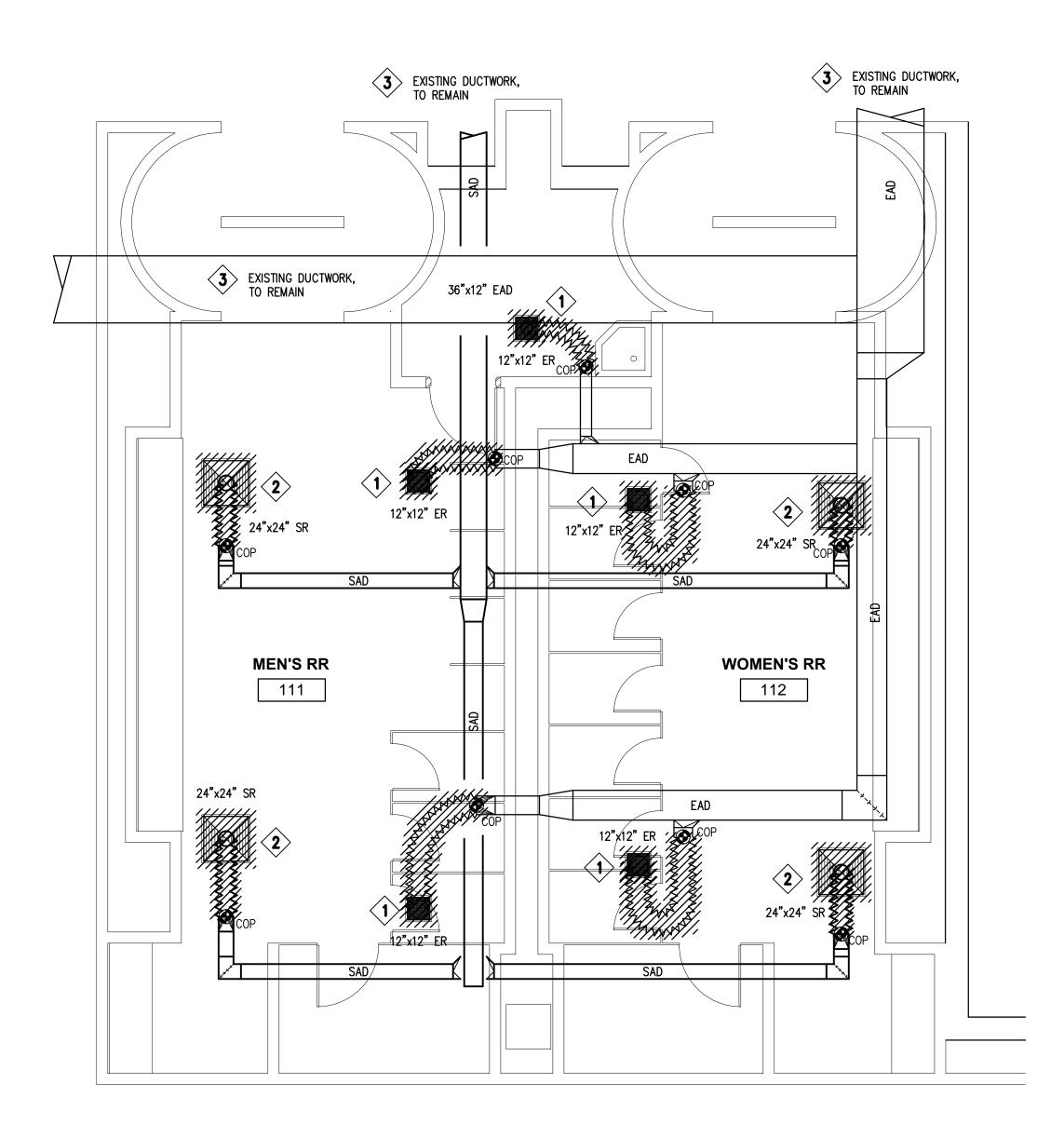
Project No. File 1441

M6.0

ADMIN LEVEL



KEY PLAN NOT TO SCALE



PH-2B MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL REMOVAL NOTES

- REMOVE EXISTING SUPPLY DIFFUSER, RETURN REGISTER, FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW CONNECT TO EXISTING SUPPLY/RETURN AIR DUCT.
- 3 REPAIR AND/OR REPLACE DAMAGED DUCT INSULATION, FIELD VERIFY.

REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.



REVISIONS

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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 2B MECHANICAL DEMO/REMOVAL PLAN

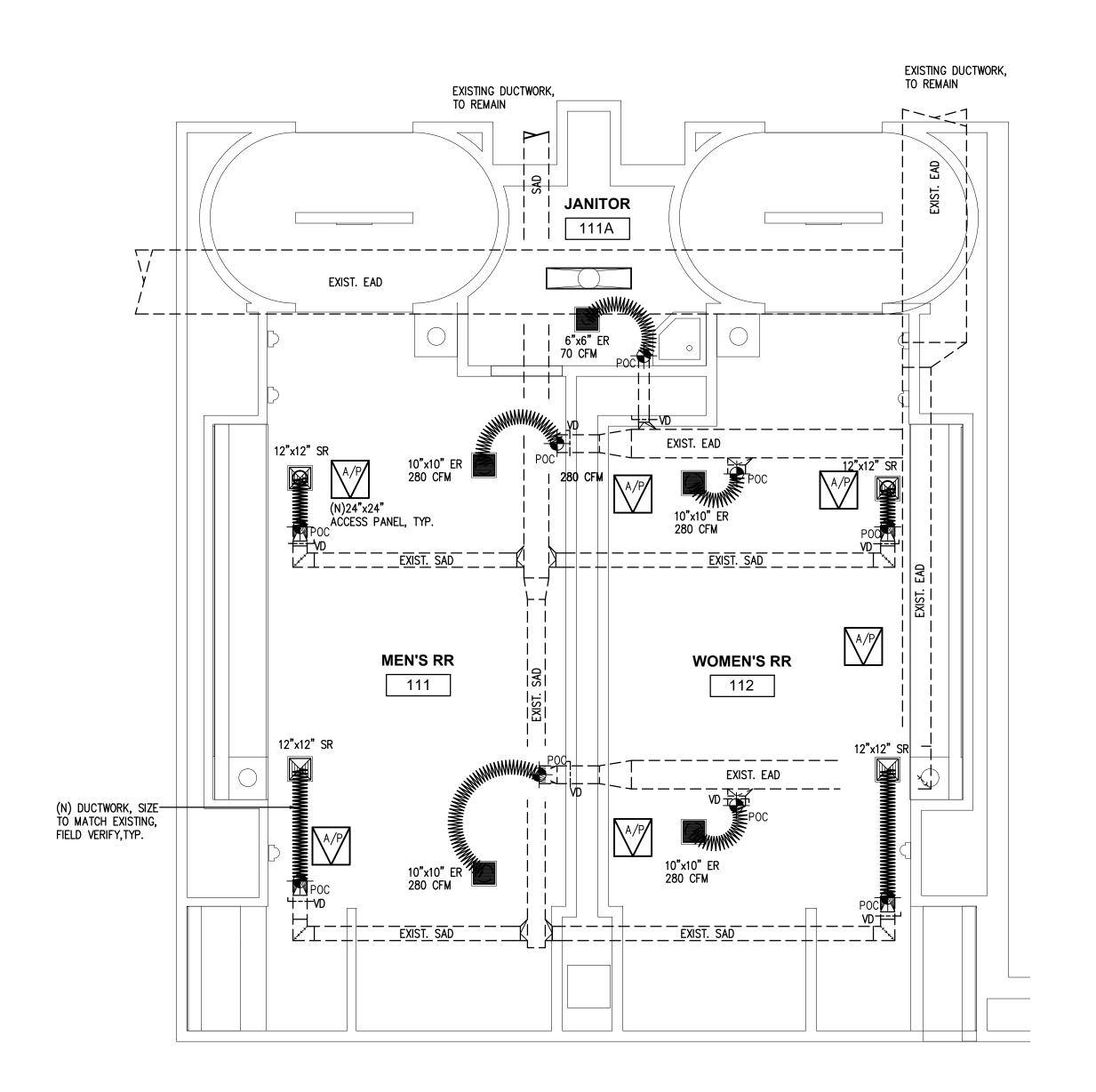
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	Date:	02/20/15	

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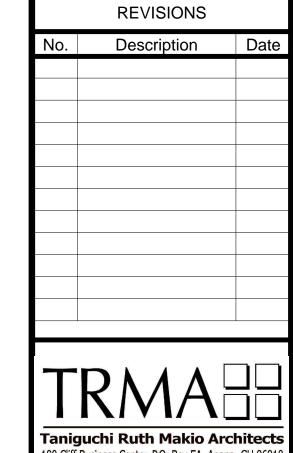
KEY PLAN NOT TO SCALE

APRON LEVEL



PH-2B NEW MECHANICAL PLAN

SCALE: 1/4" = 1'-0"



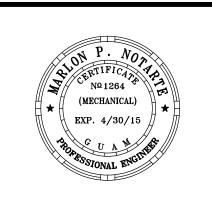
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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 2B NEW MECHANICAL PLAN

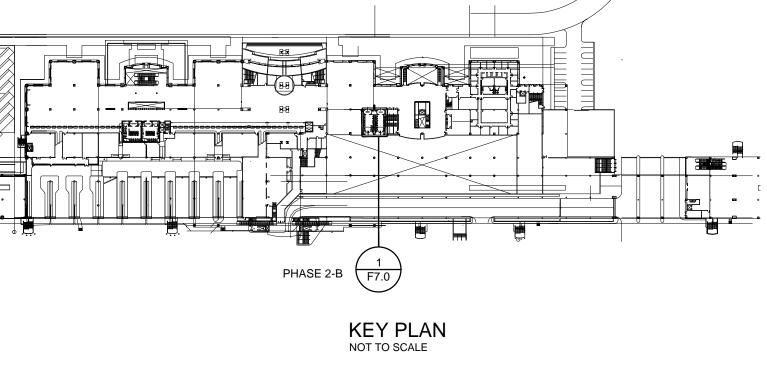
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Scale:	As indicated	
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Project No.	File	

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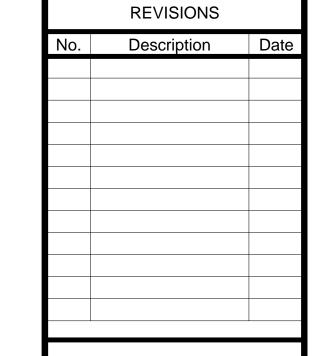
APRON LEVEL



PH-2C MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL REMOVAL NOTES

- REMOVE EXISTING EXHAUST REGISTER ,FLEXIBLE DUCT, HANGERS, SUPPORT AND RELATED ACCESSORIES TO SUIT NEW WORKS. REPLACE WITH NEW AND CONNECT TO EXISTING EXHAUST AIR DUCT.
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APRON LEVEL PHASE 2C MECHANICAL DEMO/REMOVAL PLAN

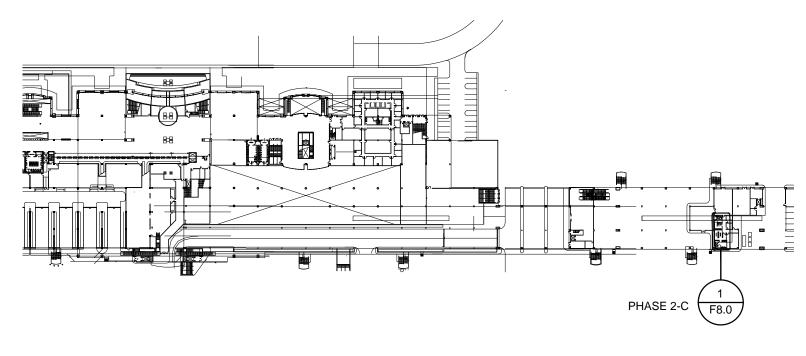
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02/20/15

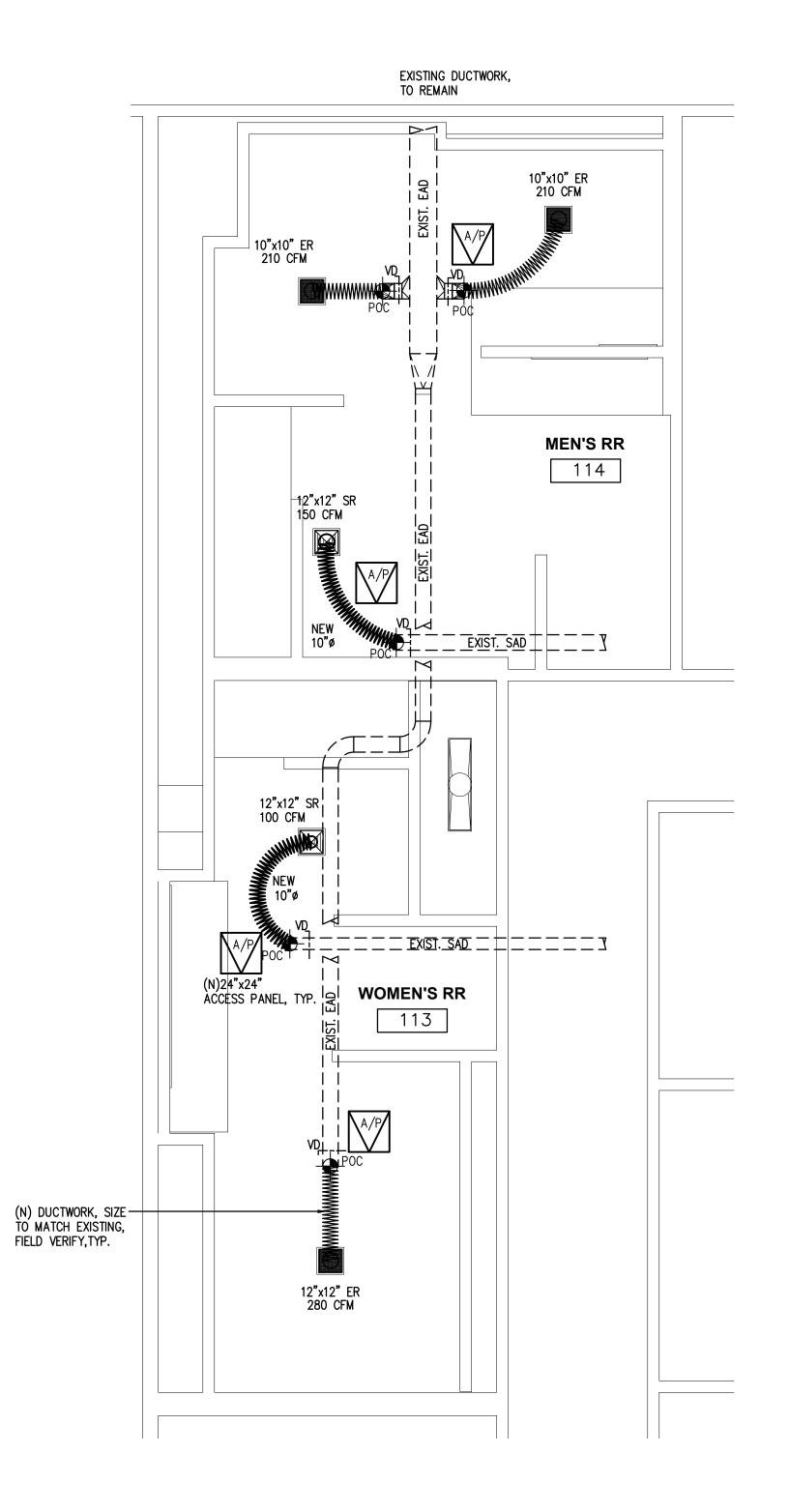
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KEY PLAN NOT TO SCALE

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PH-2C NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

No. Description Date

TRMA

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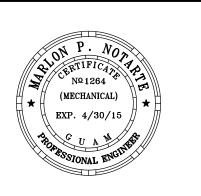
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BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title:

APRON LEVEL PHASE 2C NEW MECHANICAL PLAN

BID DOCUMENTS

Designed:	JC
Drawn:	EN/GDPC
Checked:	MPN
Supv:	MPN
Scale:	As indicated

Date: 02/20/15
Project No. File

1441 Prawing No.

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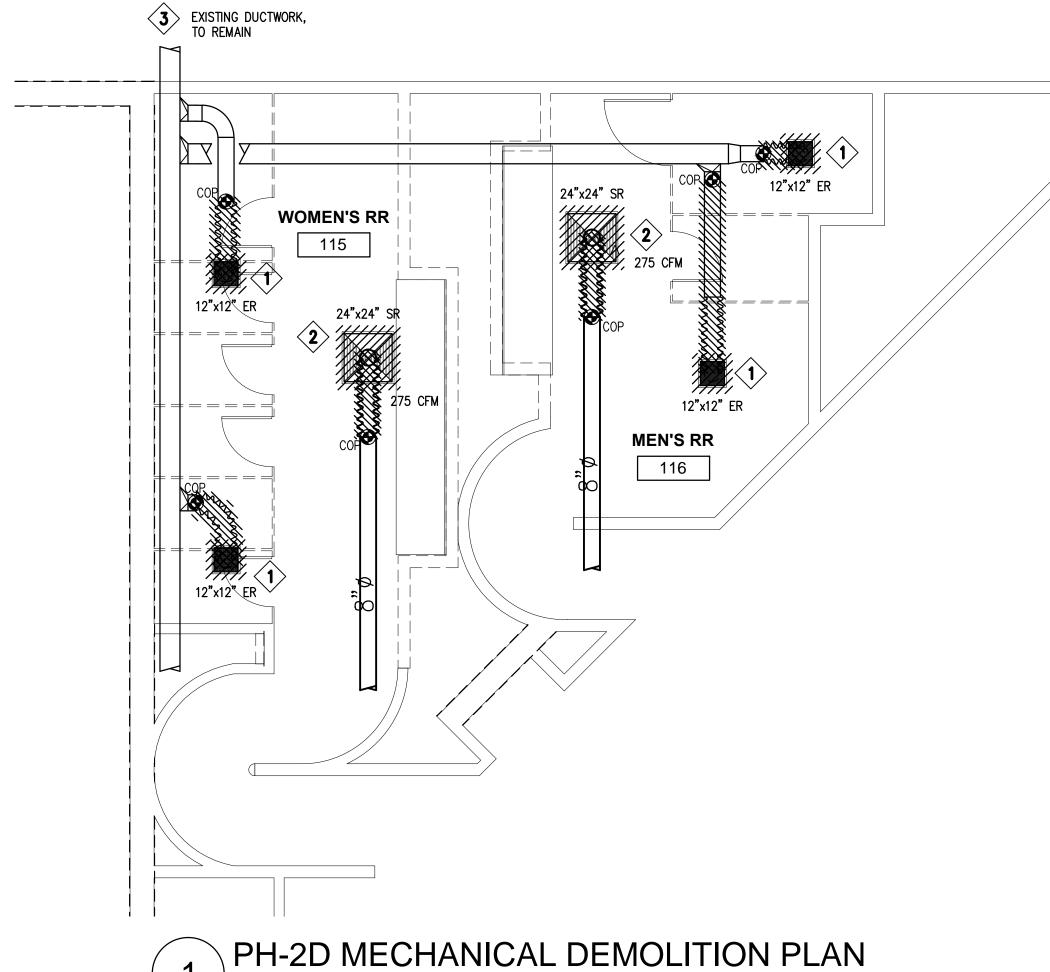
KEY PLAN NOT TO SCALE

APRON LEVEL

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

PHASE 2-C $\frac{1}{F8.0}$

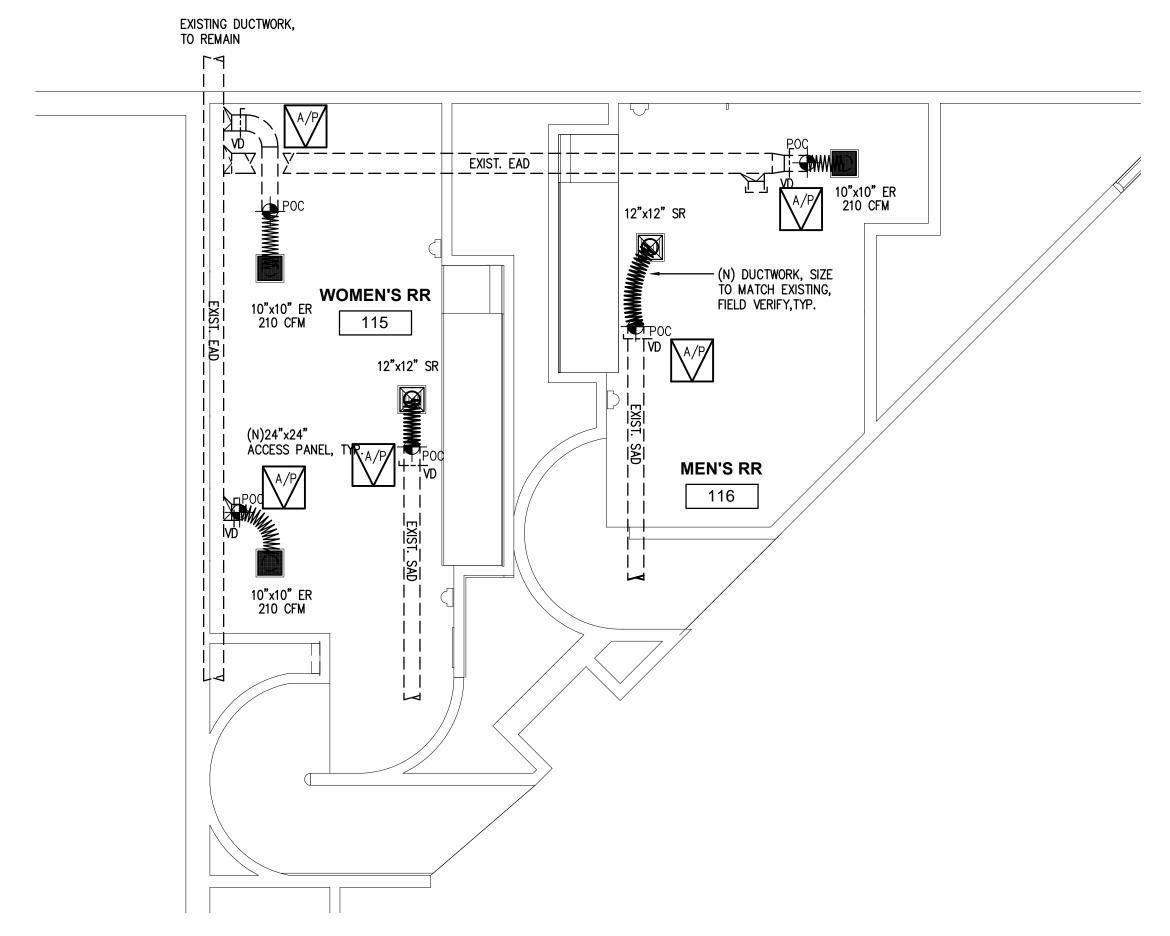
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1/4" = 1'-0"

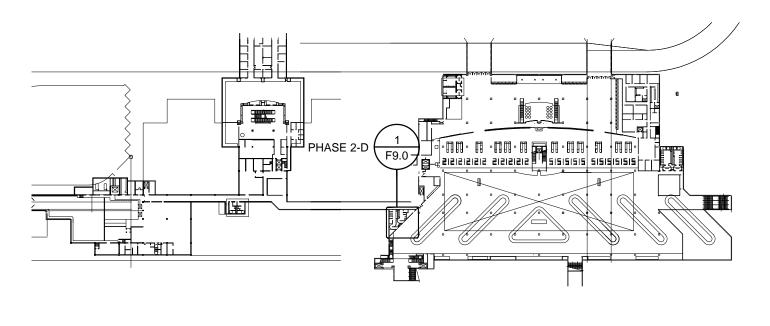
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PH-2D NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

BASEMENT LEVEL



KEY PLAN NOT TO SCALE

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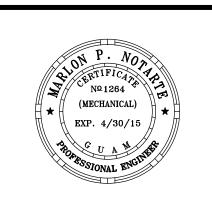
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Project

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title:

BASEMENT LEVEL PHASE 2D
MECHANICAL DEMO/REMOVAL PLAN
AND NEW MECHANICAL PLAN

BID DOCUMENTS

Designed: JC

Drawn: EN/GDPC

Checked: MPN

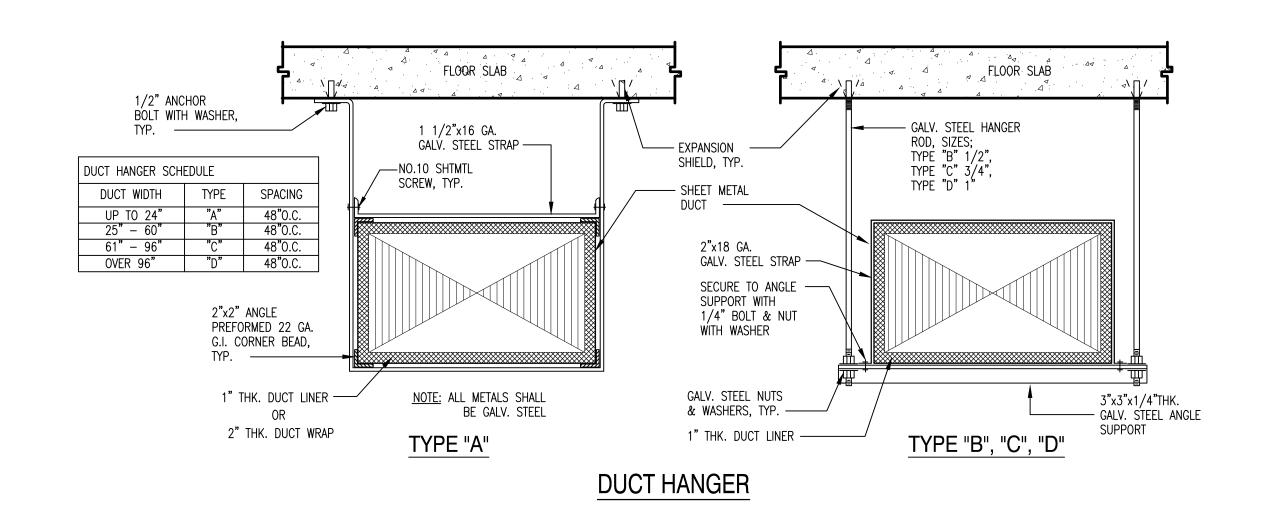
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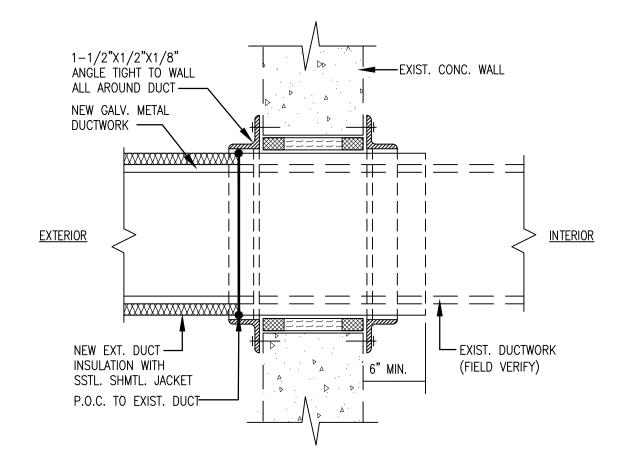
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02/20/15

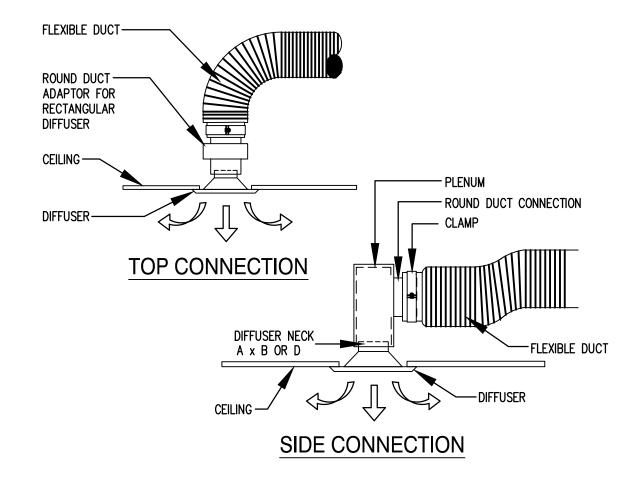
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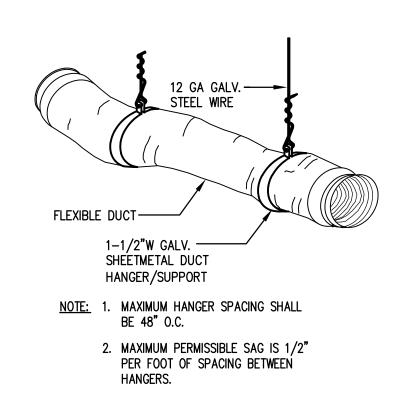




DUCT THRU WALL



FLEXIBLE DUCT CONNECTION DETAIL



FLEXIBLE DUCT HANGER



REVISIONS Description

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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

TYPICAL MECHANICAL DETAILS

BID DOCUMENTS

JC EN/GDPC As indicated 02/20/15

1441

		'
		LEGENDS AND ABBREVIATIONS
SYMBOL	ABBR	DESCRIPTION
5—	CW	COLD WATER LINE (NEW PIPES)
<u> </u>	HW	HOT WATER LINE (NEW PIPES)
5 5	S, W	SEWER OR WASTE (NEW PIPES)
5	V	VENTS (NEW PIPES)
55	CW,HW,S,W,V	CW, HW, SEWER, WASTE & VENT LINES (EXISTING PIPES)
<u></u>	GV/SOV	GATE/ISOLATION/SHUT-OFF VALVE
(EWH)		ELECTRIC WATER HEATER TANK TYPE
&	COP	CUT OFF POINT
-	POC	POINT OF CONNECTION
		DEMO HATCH
	Ø	PIPE DIAMETER
	AHJ	AUTHORITY HAVING JURISDICTION
	AMP	AMPERE/AMPERES
	ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
	AWWA	AMERICAN WATER WORKS ASSOCIATION
	BTUH	BRITISH THERMAL UNITS PER HOUR
	C.I.	COMMERCIAL INTERIORS
	CU. FT.	CUBIC FEET
	COTG	CLEAN OUT TO GROUND
	E.F.	ENERGY FACTOR
	EQPMT	EQUIPMENT
	EXH.	EXHAUST
	EXIST.	EXISTING CONDITION
	FCO	FLOOR CLEAN OUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	FT	FEET
	GEPA	GUAM ENVIRONMENTAL PROTECTION AGENCY
	GPF	GALLONS PER FLUSH
	GPF GPH	GALLONS PER FLUSH GALLONS PER HOUR
	GPF GPH GPM	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE
	GPF GPH	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY
	GPF GPH GPM LAV	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE
	GPF GPH GPM LAV HB	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB
	GPF GPM LAV HB	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ
	GPF GPH GPM LAV HB HZ KW	GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS
	GPF GPH GPM LAV HB HZ KW IAPMO	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS
	GPF GPH GPM LAV HB HZ KW IAPMO	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF	GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH
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	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE
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	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER DRAIN
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V.	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH CAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER SHOWER SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR	CALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH POLYWINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND URINAL
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH POLYVINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND URINAL VOLTS/VOLTAGE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND URINAL VOLTS/VOLTAGE VENT PIPE/LINE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V V VTR	GALLONS PER FLUSH GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND URNAL VOLTS/VOLTAGE VENT PIPE/LINE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V V VTR	GALLONS PER FLUSH GALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH GAUGE PHASE POLYVINYL CHLORIDE MOP SINK SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEFL UNDERGROUND URINAL YOLTS/YOLTAGE VENT THRU ROCF WASTE PIPE/LINE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V VTR W WC	GALLONS PER FLUSH CALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIRB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH POLYMINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND URINAL VOLTS/VOLTAGE VENT THRU ROOF WASTE PIPE/LINE WASTE PIPE/LINE WASTE PIPE/LINE WASTE PIPE/LINE
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V V VTR W WC WCO	CALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BBB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDATION POUNDS PER SUARE INCH GAUGE PHASE POLYYNYL CHICRIDE MOP SINK SHOWER DRAIN SHUT-OFF VALVE STAINLESS SIEEL UNDERGROUND URINAL VOLTS/WOLTAGE VENT PIPE/LINE VENT TIRRU ROCF WASTE PIPE/LINE WATER CLOSET WALL CLEAN OUT
	GPF GPH GPM LAV HB HZ KW IAPMO MAX NSF OFOI PSI PSIG PH PVC MS SH SHD S.O.V. SSTL U/G UR V VTR W WC	GALLONS PER FLUSH CALLONS PER HOUR GALLONS PER MINUTE LAVATORY HOSE BIRB HERTZ KILOWATT/KILOWATTS INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS MAXIMUM NATIONAL SANITATION FOUNDATION OWNER FURNISH OWNER INSTALLED POUNDS PER SUARE INCH POUNDS PER SUARE INCH POLYMINYL CHLORIDE MOP SINK SHOWER SHOWER DRAIN SHUT-OFF VALVE STAINLESS STEEL UNDERGROUND URINAL VOLTS/VOLTAGE VENT THRU ROOF WASTE PIPE/LINE WASTE PIPE/LINE WASTE PIPE/LINE WASTE PIPE/LINE

T

ELE	ELECTRIC WATER HEATER:									
MARK AREA GERVER	ADEA CEDVED	50 50705	TANK CAP.	TEMP. RISE	RECOVERY	POWER SUPPLY & ELECTRICAL DATA		UNIT SIZE &	DEMARKS	
NO.	AREA SERVED	FIXTURE	(GALS.)	(°F)	RATE (GPH)	KW/AMPS	V/PH/HZ	DIMENSION	REMARKS	
EWH 1-1	PHASE 1B, 1C, 1D, 2A, 2B, 2C & 2D RESTROOM AREA	LAVATORIES & MOP SINK (FOR PUBLIC RR AREA) AND SHOWER (FOR EMPLOYEE'S RESTROOM)		40.0	57.0 GPH	-/24.0	208-230/1/60	21"ø X 75.50" HT.	"RHEEM HYBRID HEAT PUMP" HB50RH MODEL TANK-TYPE ELECTRIC WATER HEATER OR APPROVED EQUIVALENT	
EWH 2-1	PHASE 1A (NEAR TSA) PUBLIC RESTROOM AREA	LAVATORIES ONLY (FOR PUBLIC REST ROOM AREA)	30	37.0	31.0 GPH	3.0/14.4	208/1/60	22"ø X 29.50" HT.	"AMERICAN WATER HEATER LOWBOY COMMERCIAL" LDCE32-30L MODEL TANK TYPE ELECTRIC WATER HEATER OR APPROVED EQUIVALENT	

	PLUMBING FIXTURE SCHEDULE								
SYMBOL	DESCRIPTION	GPM/GPF	CW	HW	WASTE	VENT	REMARKS		
DF	DRINKING FOUNTAIN/WATER COOLER	_	1/2"	_	2"	2"	WITH INTEGRAL WATER FILTER AND UV LIGHT		
FD	FLOOR DRAIN	-	_	_	2"	2"	WITH TRAP PRIMER		
LAV	LAVATORY/HAND SINK	0.5	1/2"	1/2"	2"	2"	WITH SENSOR BATTERY OPERATED VALVE		
LAV-1	LAVATORY ADA TYPE	0.5	1/2"	1/2"	2"	2"	WITH PIPE WRAP AND SENSOR BATTERY OPERATED VALVE		
MS	MOP/SERVICE SINK	0.5	1/2"	1/2"	2"	2"	LOW FLOW AND WATER EFFICIENT FAUCET/VALVE		
SH	SHOWER HEAD	1.5	1/2"	1/2"	2"	2"	LOW FLOW AND WATER EFFICIENT HEAD		
SHD	SHOWER DRAIN	-	_	_	2"	2"	WITH TRAP PRIMER		
UR	URINAL	0.5	3/4"	_	2"	2"	LOW FLOW WATER EFFICIENT FLUSH VALVE, WITH SENSOR BATTERY OPERATED AND MANUAL OVERRIDE SWITCH		
WC	WATER CLOSET	1.28	1"	_	2"	2"	LOW FLOW WATER EFFICIENT FLUSH VALVE, WITH SENSOR BATTERY OPERATED AND MANUAL OVERRIDE SWITCH		
WC-1	WATER CLOSET ADA TYPE	1.28	1"	_	2"	2"	LOW FLOW WATER EFFICIENT FLUSH VALVE, WITH SENSOR BATTERY OPERATED AND MANUAL OVERRIDE SWITCH		

PLUMBING NOTES:

- 1. ALL PLUMBING WORKS SHALL CONFORM TO THE INTERNATIONAL PLUMBING CODE 2009 EDITION, THE LATEST APPLICABLE INDUSTRY STANDARDS, THE CONTRACT DOCUMENTS AND REGULATIONS OF THE GOVERNMENT OF GUAM AND/OR AHJ.
- 2. ALL PIPING SHALL BE TESTED FOR LEAKAGE AND NO PIPING SYSTEM SHALL BE BURIED OR CONCEALED UNTIL INSPECTED, TESTED AND ACCEPTED BY THE OWNER'S ENGINEER. THE ENTIRE WATER SUPPLY PIPING SYSTEM SHALL BE TESTED AT 150% OF THE SYSTEM WORKING PRESSURE AND PROVIDE TIGHT UNDER A WATER PRESSURE NOT LESS THAN THE SYSTEM WORKING PRESSURE OR BY AN AIR TEST OF NOT LESS THAN 50 PSI THAT WILL BE HELD FOR AT LEAST 15 MINUTES BUT NOT TO EXCEED PRESSURE RATING OF THE PIPES, VALVES, RESTRAINTS AND OTHER APPURTENANCES.
- 3. WATER PIPING ABOVE GRADE: SHALL BE OF COPPER ASTM B88 TYPE L HARD-DRAWN, WITH 95/5 TIN/ANTIMONY SOLDERED JOINTS, LEAD-FREE FLUX OR PVC SCHEDULE 80 PLASTIC PIPE ASTM D 2846 AND ASTM F
- 4. LIQUID TRAP SEAL: PROVIDE ALL REQUIRED P-TRAPS AND TRAP PRIMER ON ALL PLUMBING FIXTURES AS SPECIFIED HEREIN AND PER CODE REQUIREMENTS.

 5. SITE INSPECTION: ALL EXISTING PIPING SHOWN IS BASED ON AS-BUILT DRAWINGS PROVIDED AND INSPECTIONS MADE AVAILABLE AT THE TIME OF DESIGN, ALL LINE SIZES AND LOCATIONS MUST BE VERIFIED ON THE FIELD. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITIONS AFFECTING HIS WORK BY SUBMITTING HIS PROPOSAL. THE SUBMISSION OF THE PROPOSAL SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED & INSPECTED THE SITE VERSUS ACTUAL CONDITIONS AND NO EXTRA WORK MADE NECESSARY BY HIS FAILURE TO VISIT THE SITE.
- 6. CONTRACTOR TO VERIFY ALL EXIST. POINT OF CONNECTION AND CUT OFF POINTS. PIPING SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY, EXISTING UNDERGROUND PIPINGS THAT ARE BURIED MAY VARY IN ACTUAL FIELD CONDITIONS AND SHALL BE INSPECTED.
- 7. PROVIDE PIPE SLEEVES FOR PIPES PASSING THRU WALLS AND FOUNDATIONS, AND ISOLATION OR SHUT-OFF VALVES IN PIPES FOR MAINTENANCE PURPOSES REQUIRING SERVICE AND ADJUSTMENT.

 8. PROVIDE AND SECURE DIELECTRIC UNION ON CONNECTIONS BETWEEN COPPER AND METALLIC OR FERROUS PIPES (DISSIMILAR METALS). USE LEAD-FREE MATERIAL AND/OR SOLDER FLUX FOR ALL POTABLE WATER AND
- 9. CONTRACTOR/OWNER MUST DISINFECT/CHLORINATE ALL POTABLE WATER PIPING SYSTEM PRIOR TO USE OF WATER FOR HUMAN CONSUMPTION OR TO OCCUPY THE BUILDING. CHLORINATION AND DISINFECTION METHOD
- MUST COMPLY WITH AWWA C651-86 STANDARD.

 10. DISINFECTION AND CHIORINATION MUST BE COORDINATED WITH GEPA STAFE AND SCHEDULE OF DISINFECTION MUST BE DONE 4-WORKING DAYS IN ADVANCE SUBMIT BACTERIOLOGICAL AND LEAD ANALYTICAL TES
- 10. DISINFECTION AND CHLORINATION MUST BE COORDINATED WITH GEPA STAFF AND SCHEDULE OF DISINFECTION MUST BE DONE 4-WORKING DAYS IN ADVANCE.SUBMIT BACTERIOLOGICAL AND LEAD ANALYTICAL TEST RESULTS TO GEPA FOR EVALUATION. FAUCETS, FIXTURES AND FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF ANSI/NSF 61, SECTION 9.

 12. CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMIT FEES AND APPLICATIONS AND PROVIDE ONE YEAR FREE MAINTENANCE CONTRACT FOR ALL SYSTEMS AND EQUIPMENT PROVIDED UNDER THIS SECTION FROM THE
- DATE OF ACCEPTANCE/TURN-OVER.

 13. CONTRACTOR SHALL COORDINATE REQUIRED WATER SYSTEM SHUTDOWN TO THE OWNER AND/OR PAC AIR FACILITIES DEPARTMENT PRIOR TO START OF ANY CONSTRUCTION WORKS TO MINIMIZE AND AVOID DOWN TIMES AND INTERRUPTIONS TO AVIATION OPERATIONS.

PLUMBING INSTALLATION NOTES:

WATER SAVING TYPE EXCEEDING LEED CI VERSION 3 MINIMUM REQUIREMENTS.

WORK: FURNISH AND INSTALL ALL COMPLETE LABOR, MATERIALS (LEED CERTIFIED PLUMBING FIXTURES) & EQUIPMENTS REQUIRED FOR A COMPLETE WORKING PLUMBING SYSTEM AS INDICATED ON THE PLANS AND AS

- 1. PREPARATION: VISIT THE WORKSITE AND BECOME FULLY AWARE OF ALL EXISTING CONDITIONS. INVESTIGATE THE CONTRACT DOCUMENTS AND MAKE PROPER PROVISIONS TO AVOID INTERFERENCES OR CONSTRUCTION DELAYS. FURNISH OTHER TRADES WITH INFORMATION TO PROPERLY LOCATE AND SIZE OPENINGS IN THE STRUCTURE REQUIRED FOR THIS WORK. FURNISH ANCHOR BOLTS, SLEEVES, INSERTS AND SUPPORT REQUIRED
- 2. INSTALLATION: PERFORM WORK USING PERSONNEL SKILLED IN THE TRADE INVOLVED. PROVIDE COMPETENT SUPERVISION. FURNISH NEW EQUIPMENT, MATERIALS, AND ACCESSORIES BEARING THE MANUFACTURER'S IDENTIFICATION, AND CONFORMING TO THE RECOGNIZED COMMERCIAL STANDARDS IN ACCORANDCE WITH IPC AND AHJ. PROVIDE EXTRA MATERIALS AND LABOR FOR A COMPLETE OPERABLE SYSTEM AT NO EXTRA COST TO THE OWNER.
- 3. FIELD QUALITY CONTROL: TEST SYSTEMS IN ACCORDANCE WITH APPLICABLE STANDARDS, CODES AND MANUFACTURER'S RECOMMENDATIONS. PERFORM TESTS IN THE PRESENCE OF, AND TO THE SATISFACTION OF INSPECTORS HAVING JURISDICTION OVER THE WORK. ASK FOR FINAL INSPECTION BY THE ENGINEER AFTER ALL TESTS, ADJUSTMENTS AND BALANCING HAS BEEN PERFORMED.
- 4. BALANCING, ADJUSTMENT AND CLEANING: CLEAN UP WORK AREAS AND FIXTURES. ADJUST SYSTEM FOR PROPER OPERATION, READY FOR USE. TOUCH UP WITH MATCHING PAINT ALL DAMAGED FACTORY FINISHES.

 5. CLEANING AND ADJUSTING: AT THE COMPLETION OF THE WORK, ALL PARTS OF THE INSTALLATION SHALL BE THOROUGHLY CLEANED. PIPE, VALVES, AND FITTINGS SHALL BE CLEANSED OF GREASE AND METAL CUTTINGS, AND SLUDGE THAT MAY HAVE ACCUMULATED BY OPERATION OF THE SYSTEM FOR TESTING. ANY STOPPAGE OR DISCOLORATION OR OTHER DAMAGE TO PARTS OF THE BUILDING, ITS FINISH, OR FURNISHING, DUE TO THE CONTRACTOR FAILURE TO PROPERLY CLEAN THE PIPING SYSTEM SHALL BE REPAIRED BY THE CONTRACTOR WITHOUT COST TO THE OWNER.
- 6. OMISSIONS: IT IS THE INTENT OF THE DRAWINGS/PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION. SHOULD THERE BE OMISSIONS/CONFLICTS, THE CONTRACTOR SHALL CALL THE ATTENTION OF THE
- ENGINEER TO SUCH OMISSIONS TEN (10) DAYS IN ADVANCE OF THE DATE OF THE BID OPENING SO THAT NECESSARY CORRECTIONS CAN BE MADE PRIOR TO CONSTRUCTIONS.

 7. PRODUCT DELIVERY, STORAGE AND HANDLING: FURNISH ALL MATERIALS, PIPING, EQUIPMENTS AND ACCESSORIES BEARING TE MANUFACTURER'S IDENTIFICATION. COORDINATE DELIVERIES TO AVOID INTERFERENCES OF
- CONSTRUCTION DELAYS. PROTECT MATERIALS AND EQUIPMENTS DURING DELIVERY, STORAGE, INSTALLATIONS AND THE REMAINDER OF THE CONSTRUCTION PERIOD AFTER INSTALLATION.

 8. DRAWINGS SUBMITTAL: PREPARE FIVE (5) SETS OF SHOP/WORKING DRAWINGS SHOWING ACTUAL CONDITIONS, SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO START OF CONSTRUCTION OR ANY WORKS TO BE
- DONE. AND PREPARE SET OF REPRODUCIBLE AS-BUILT DRAWINGS SHOWING THE ACTUAL INSTALLED CONDITIONS AND SUBMIT TO THE OWNER AND ENGINEER UPON COMPLETION OF ALL WORKS.

 9. EQUIPMENT AND MATERIAL: PREPARE AND SUBMIT FIVE (5) SETS OF SUBMITTAL DATA SHOWING ENGINEERING SPECIFICATIONS, DIMENSIONS, CAPACITIES AND INSTALLATION DETAILS FOR APPROVAL. SUBSTITUTION MAYBE USED IF QUALIFIED BY WRITTEN PERMISSION FROM THE ENGINEER AND SUBMIT SUBSTITUTION REQUEST PRIOR TO BIDDING FOR APPROVAL.. ALL PLUMBING FIXTURES SHALL BE LOW-FLOW HIGH EFFICIENCT

REVISIONS							
Description	Date						
	l						

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Architecture Planning Interior Design

ENGINEERING SERVICE

MECHANICAL & FIRE PROTECTION CONSULTIN

il engoff@gua



HEREBY CERTIFY THAT THIS PLAN WAS PREPAR BY ME OR UNDER MY DIRECT SUPERVISION

Projec

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

LEGEND & ABBREVIATIONS
PLUMBING EQUIPMENT AND FIXTURE
SCHEDULE, PLUMBING NOTES &
SPECIFICATIONS AND INSTALLATION
WORK NOTES

BID DOCUMENTS

Designed: JC

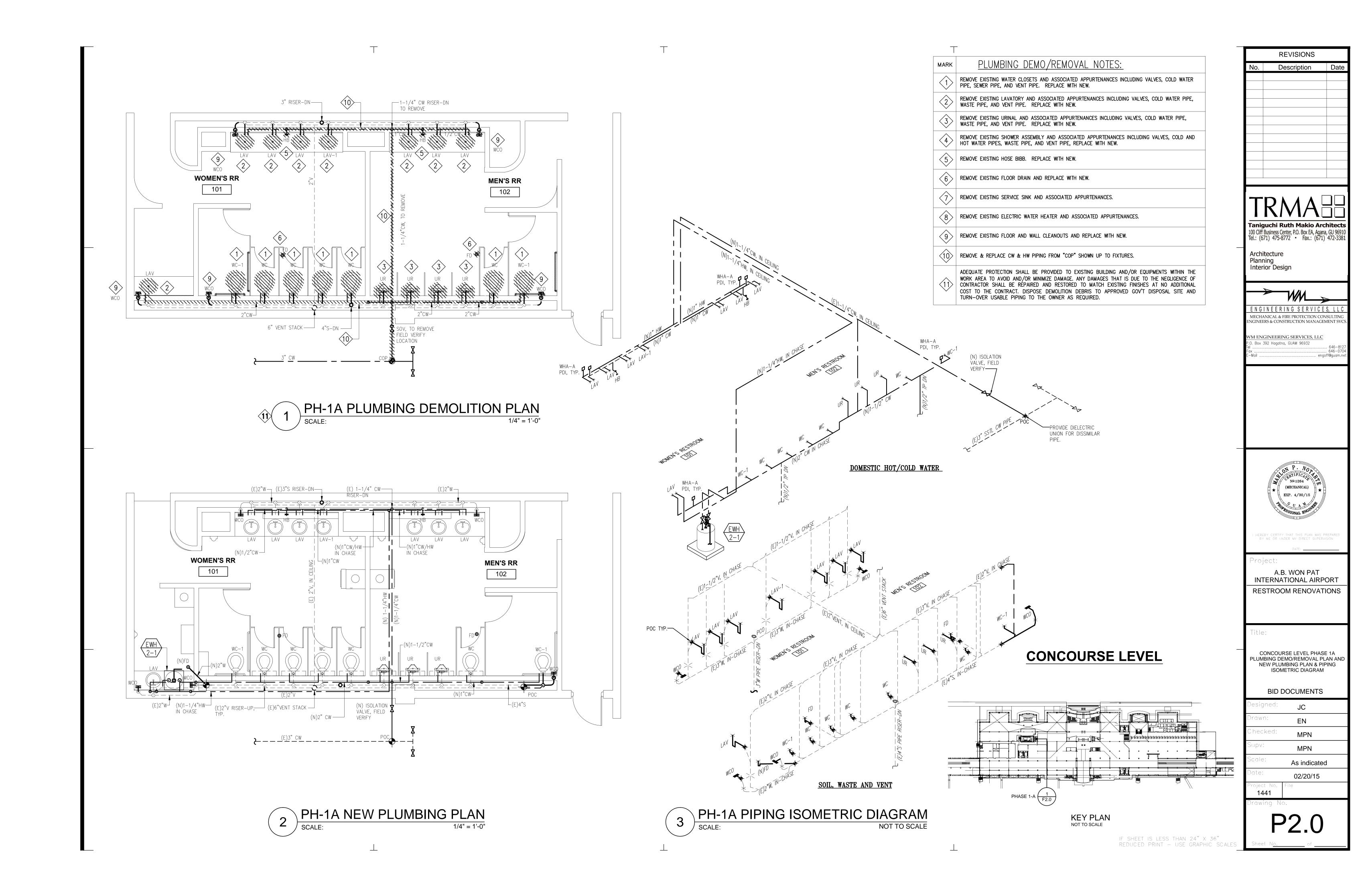
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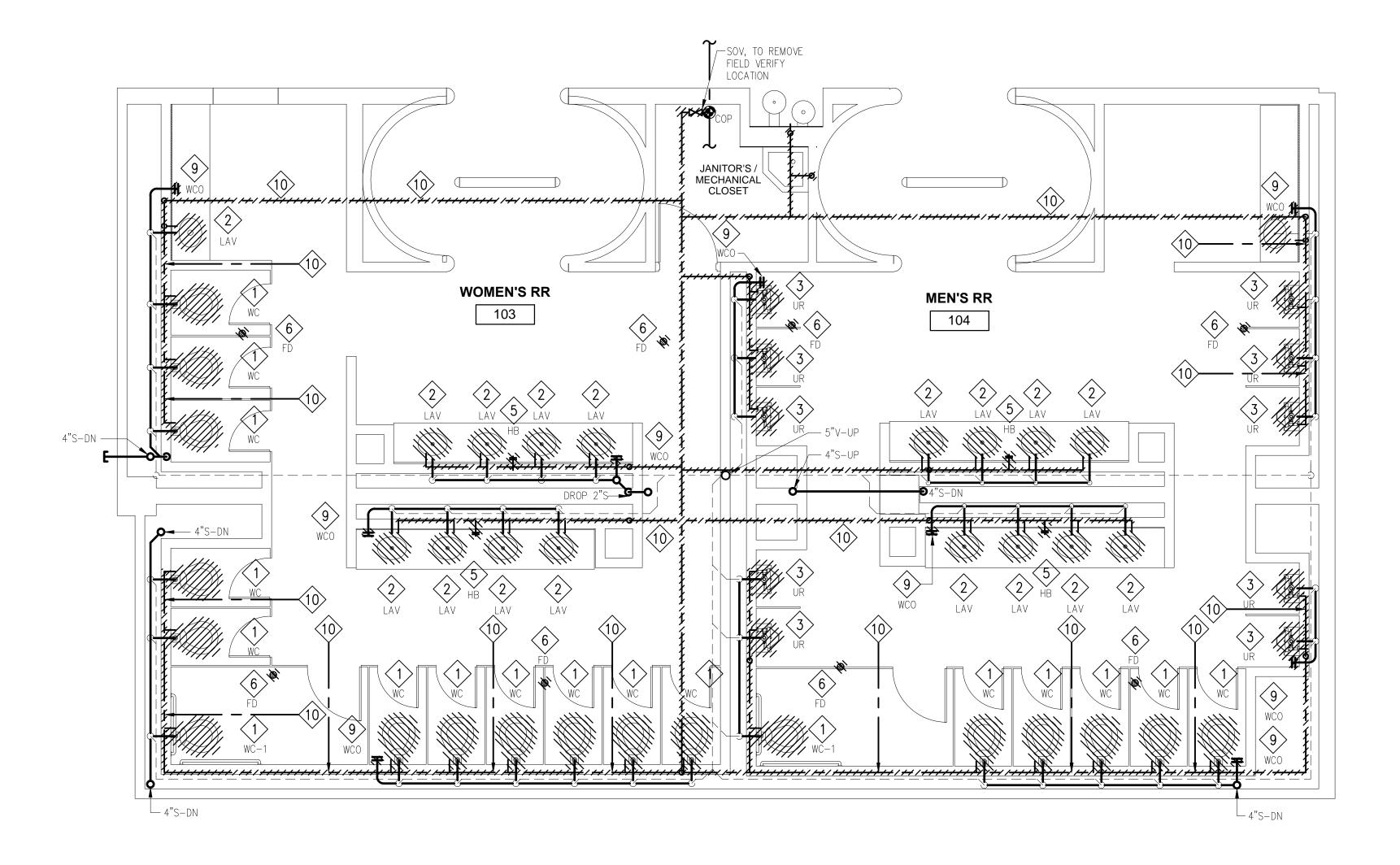
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Date: 02/20/15

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MARK

PLUMBING DEMO/REMOVAL NOTES:

REMOVE EXISTING WATER CLOSETS AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, SEWER PIPE, AND VENT PIPE. REPLACE WITH NEW.

REMOVE EXISTING LAVATORY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.

REMOVE EXISTING URINAL AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.

REMOVE EXISTING SHOWER ASSEMBLY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD AND HOT WATER PIPES, WASTE PIPE, AND VENT PIPE, REPLACE WITH NEW.

REMOVE EXISTING HOSE BIBB. REPLACE WITH NEW.

REMOVE EXISTING FLOOR DRAIN AND REPLACE WITH NEW.

REMOVE EXISTING SERVICE SINK AND ASSOCIATED APPURTENANCES.

REMOVE EXISTING ELECTRIC WATER HEATER AND ASSOCIATED APPURTENANCES.

REMOVE EXISTING FLOOR AND WALL CLEANOUTS AND REPLACE WITH NEW.

REMOVE & REPLACE CW & HW PIPING FROM "COP" SHOWN UP TO FIXTURES.

ADEQUATE PROTECTION SHALL BE PROVIDED TO EXISTING BUILDING AND/OR EQUIPMENTS WITHIN THE WORK AREA TO AVOID AND/OR MINIMIZE DAMAGE. ANY DAMAGES THAT IS DUE TO THE NEGLIGENCE OF CONTRACTOR SHALL BE REPAIRED AND RESTORED TO MATCH EXISTING FINISHES AT NO ADDITIONAL COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND TURN-OVER USABLE PIPING TO THE OWNER AS REQUIRED.

No. Description Date

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ENGINEERS & CONSTRUCTION MANAGEMENT SVC

WM ENGINEERING SERVICES, LLC

P. NO P.

NO 1264

(MECHANICAL)

EXP. 4/30/15

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Project[.]

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

APRON LEVEL PHASE 1B PLUMBING DEMO/REMOVAL PLAN

BID DOCUMENTS

Designed: JC

Drawn: EN

Checked: MPN

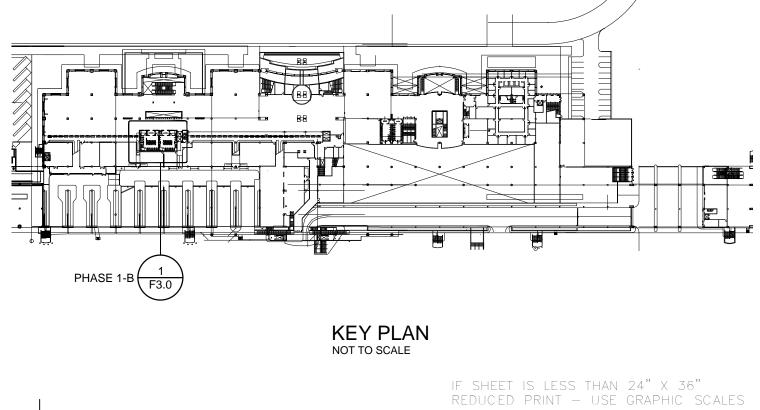
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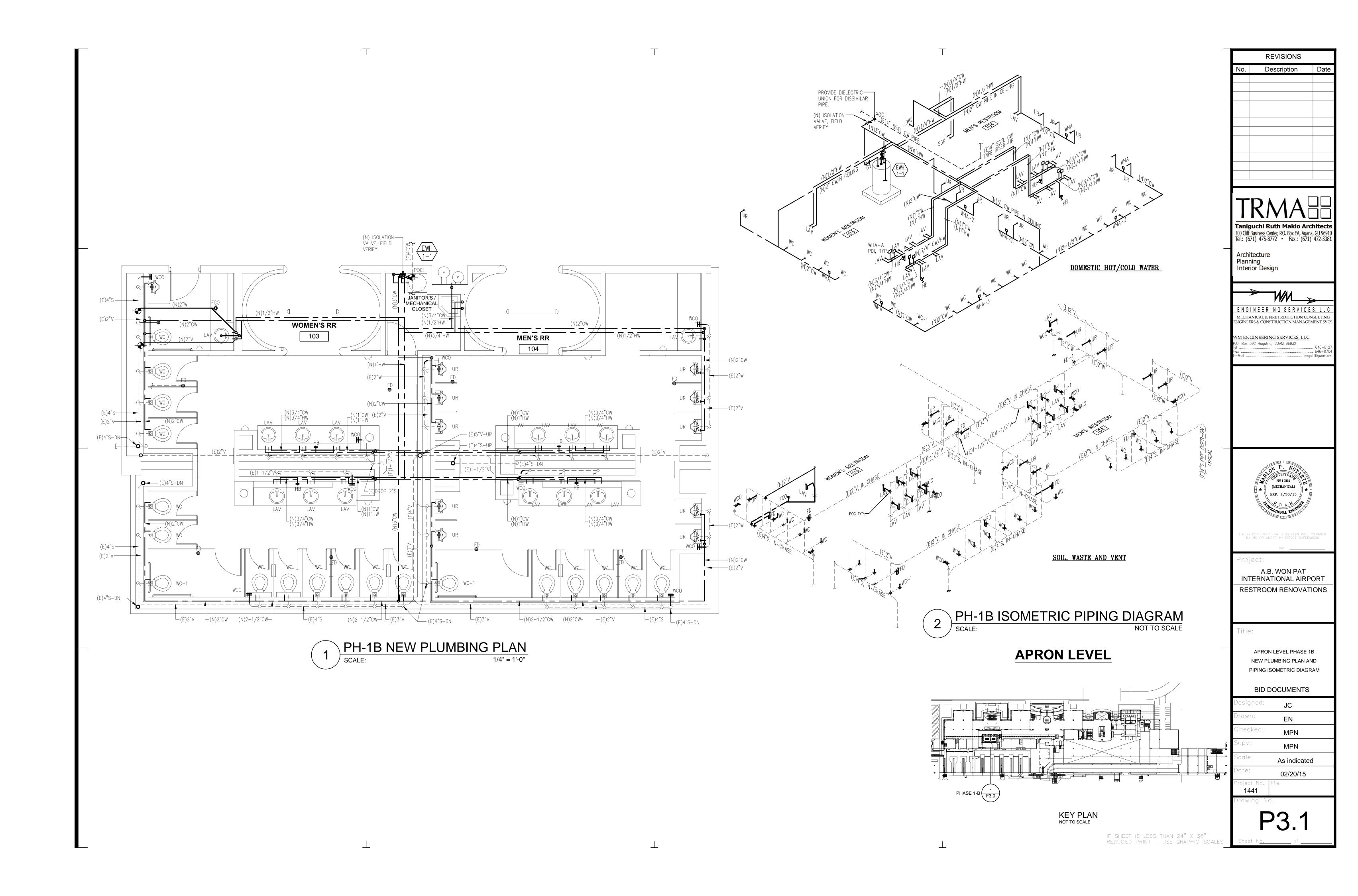
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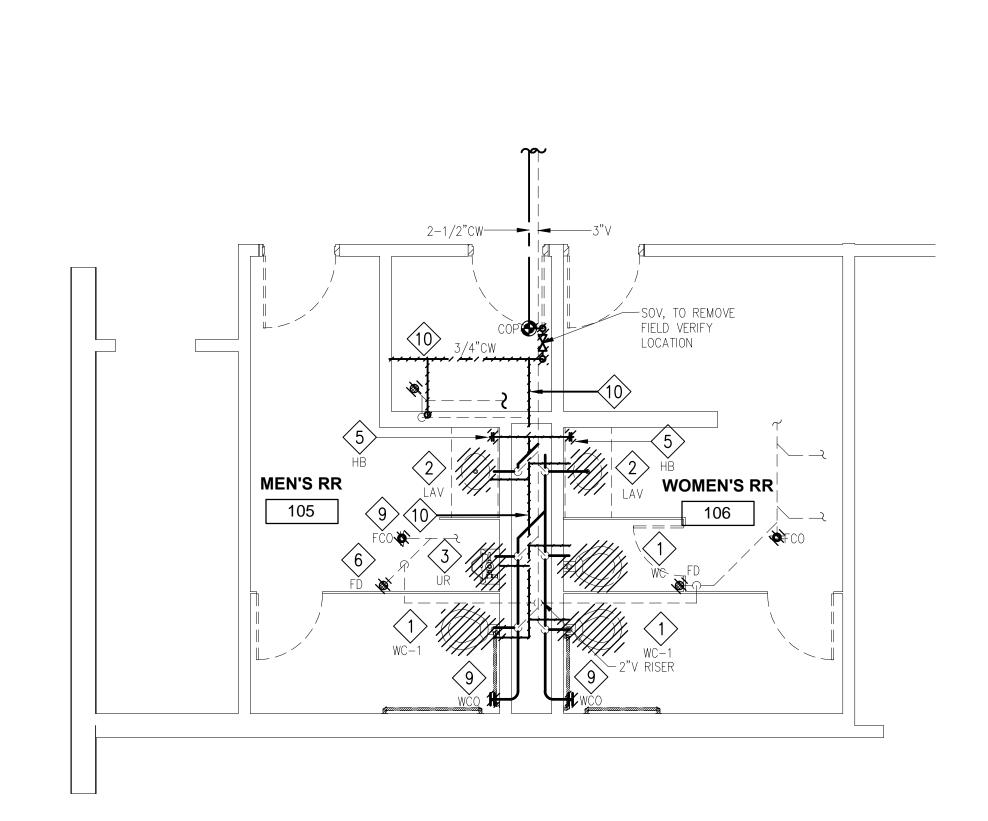
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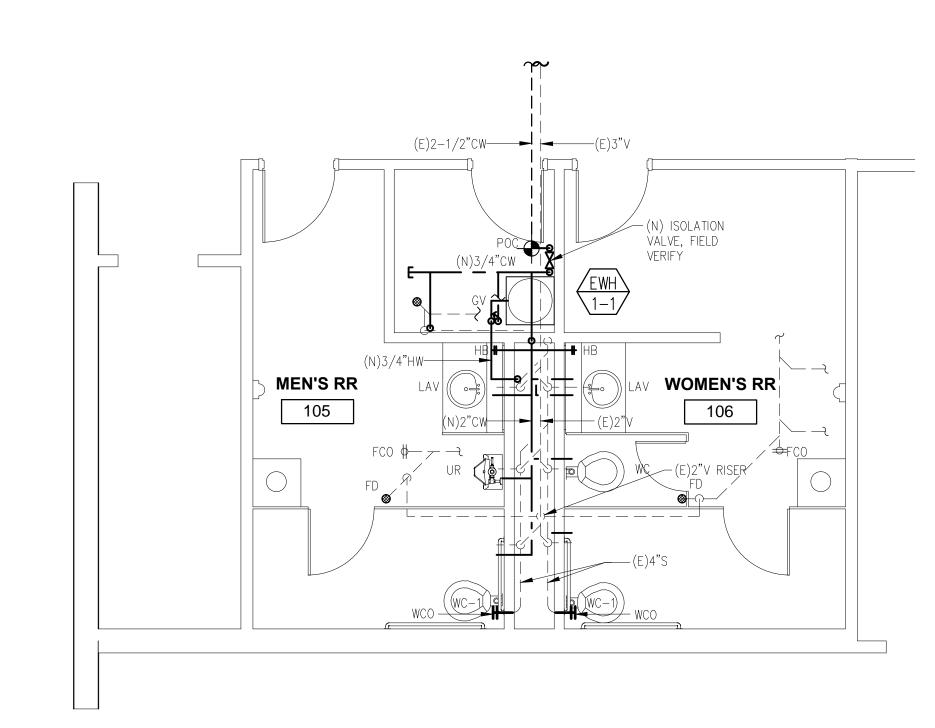
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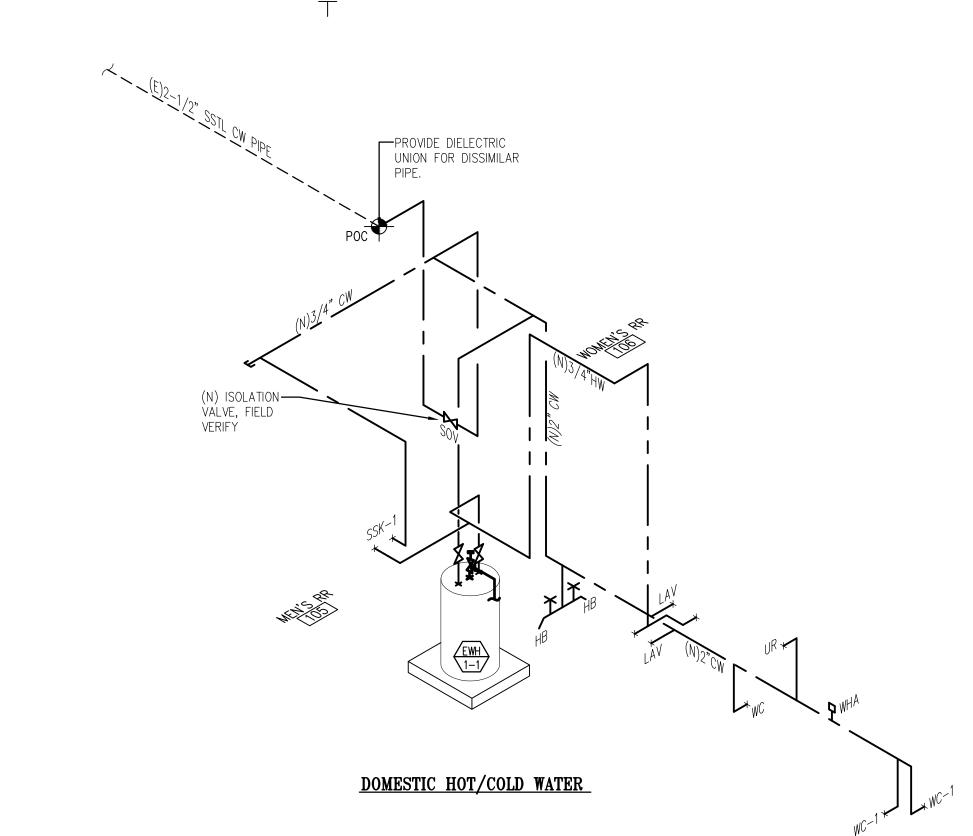




PH-1C PLUMBING DEMOLITION PLAN



PH-1C NEW PLUMBING PLAN



SOIL, WASTE AND VENT

PH-1C PIPING ISOMETRIC DIAGRAM
SCALE:

PLUMBING DEMO/REMOVAL NOTES:

- REMOVE EXISTING WATER CLOSETS AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, SEWER PIPE, AND VENT PIPE. REPLACE WITH NEW.
- REMOVE EXISTING URINAL AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE,

- REMOVE EXISTING FLOOR AND WALL CLEANOUTS AND REPLACE WITH NEW.
- REMOVE & REPLACE CW & HW PIPING FROM "COP" SHOWN UP TO FIXTURES.
- TURN-OVER USABLE PIPING TO THE OWNER AS REQUIRED.

REMOVE EXISTING LAVATORY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.

WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.

REMOVE EXISTING SHOWER ASSEMBLY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD AND HOT WATER PIPES, WASTE PIPE, AND VENT PIPE, REPLACE WITH NEW.

REMOVE EXISTING HOSE BIBB. REPLACE WITH NEW.

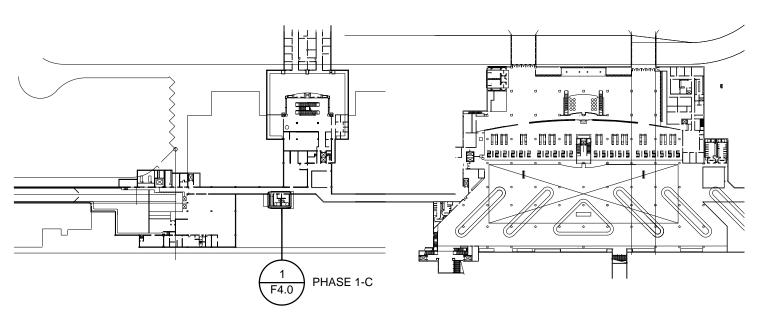
REMOVE EXISTING FLOOR DRAIN AND REPLACE WITH NEW.

REMOVE EXISTING SERVICE SINK AND ASSOCIATED APPURTENANCES.

REMOVE EXISTING ELECTRIC WATER HEATER AND ASSOCIATED APPURTENANCES.

ADEQUATE PROTECTION SHALL BE PROVIDED TO EXISTING BUILDING AND/OR EQUIPMENTS WITHIN THE WORK AREA TO AVOID AND/OR MINIMIZE DAMAGE. ANY DAMAGES THAT IS DUE TO THE NEGLIGENCE OF CONTRACTOR SHALL BE RÉPAIRED AND RESTORED TO MATCH EXISTING FINISHES AT NO ADDITIONAL COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND

BASEMENT LEVEL



KEY PLAN NOT TO SCALE

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

REVISIONS Description

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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE 1C LUMBING DEMO/REMOVAL PLAN AND NEW PLUMBING PLAN & PIPING ISOMETRIC DIAGRAM

BID DOCUMENTS

JC ΕN MPN As indicated

02/20/15 1441

NURSERY NURSERY 8 (E) WATER HEATER SOV, TO REMOVE FIELD VERIFY LOCATION

PH-1D PLUMBING DEMOLITION PLAN

PLUMBING DEMO/REMOVAL NOTES:

- REMOVE EXISTING WATER CLOSETS AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, SEWER PIPE, AND VENT PIPE. REPLACE WITH NEW.
- REMOVE EXISTING LAVATORY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.
- REMOVE EXISTING URINAL AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.
- REMOVE EXISTING SHOWER ASSEMBLY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD AND HOT WATER PIPES, WASTE PIPE, AND VENT PIPE, REPLACE WITH NEW.
- REMOVE EXISTING HOSE BIBB. REPLACE WITH NEW.
- REMOVE EXISTING FLOOR DRAIN AND REPLACE WITH NEW.
- REMOVE EXISTING SERVICE SINK AND ASSOCIATED APPURTENANCES.
- REMOVE EXISTING ELECTRIC WATER HEATER AND ASSOCIATED APPURTENANCES.
- REMOVE EXISTING FLOOR AND WALL CLEANOUTS AND REPLACE WITH NEW.
- REMOVE & REPLACE CW & HW PIPING FROM "COP" SHOWN UP TO FIXTURES.
- ADEQUATE PROTECTION SHALL BE PROVIDED TO EXISTING BUILDING AND/OR EQUIPMENTS WITHIN THE WORK AREA TO AVOID AND/OR MINIMIZE DAMAGE. ANY DAMAGES THAT IS DUE TO THE NEGLIGENCE OF CONTRACTOR SHALL BE RÉPAIRED AND RESTORED TO MATCH EXISTING FINISHES AT NO ADDITIONAL COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND TURN-OVER USABLE PIPING TO THE OWNER AS REQUIRED.

Description

REVISIONS



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A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE 1D PLUMBING DEMO/REMOVAL PLAN

BID DOCUMENTS

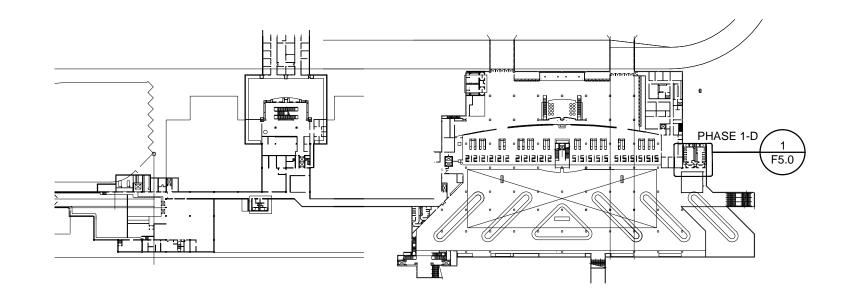
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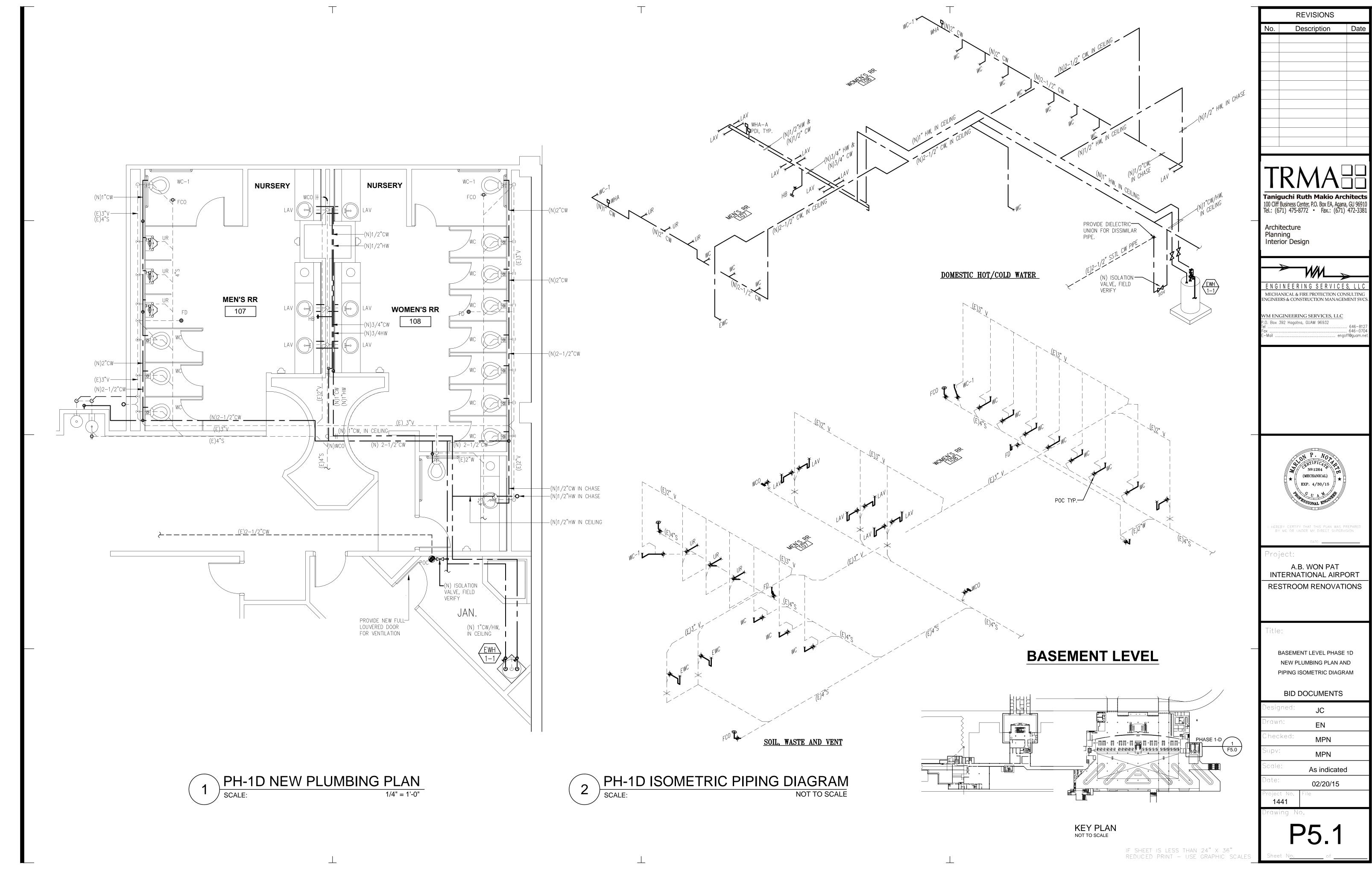
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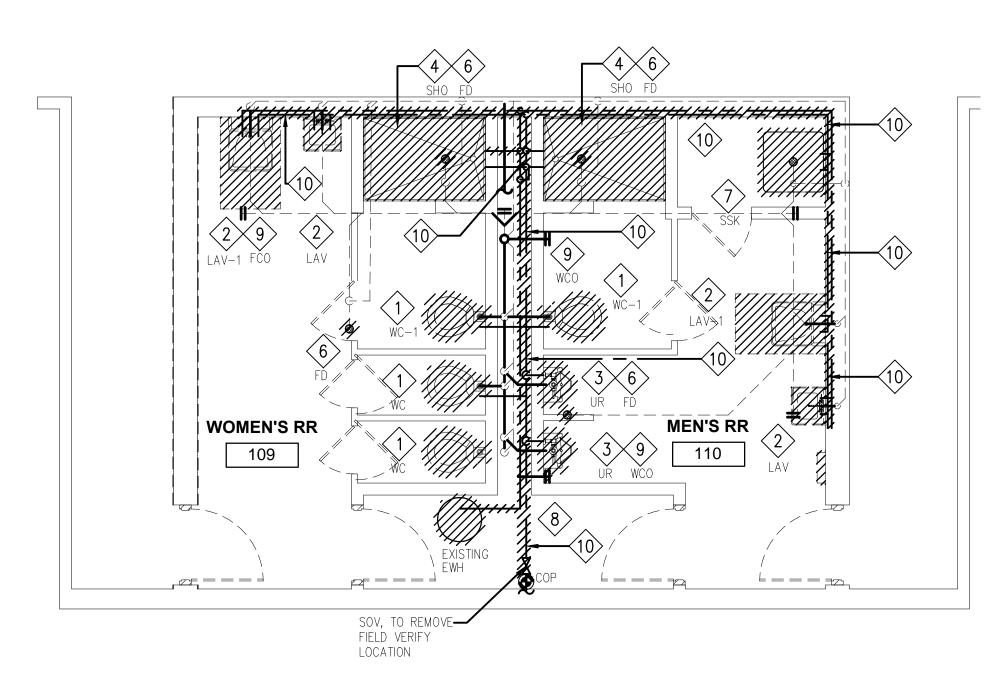
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BASEMENT LEVEL

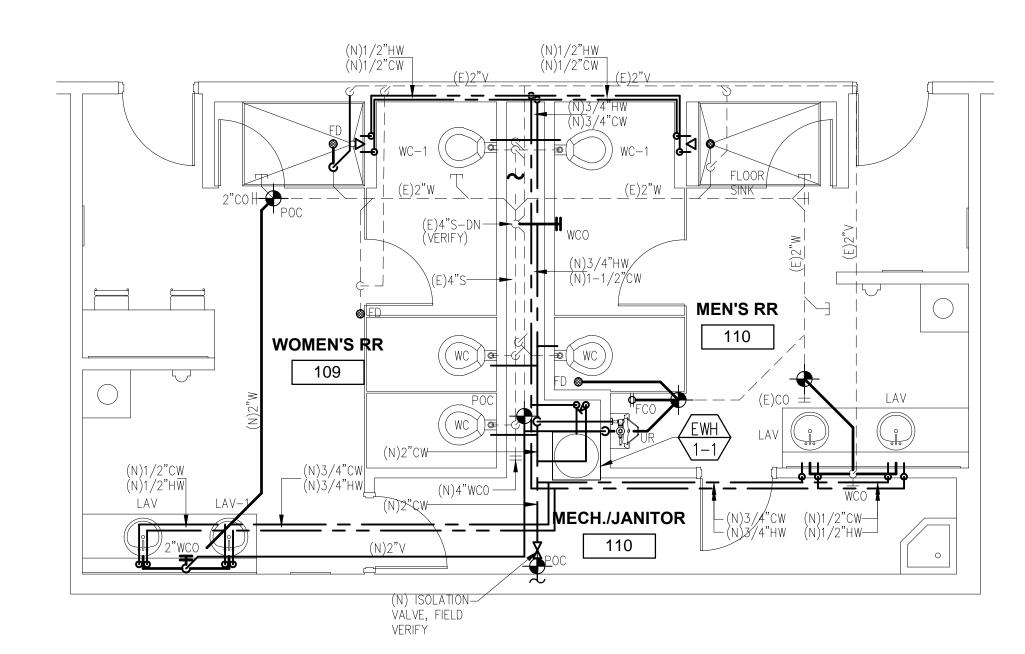


KEY PLAN NOT TO SCALE



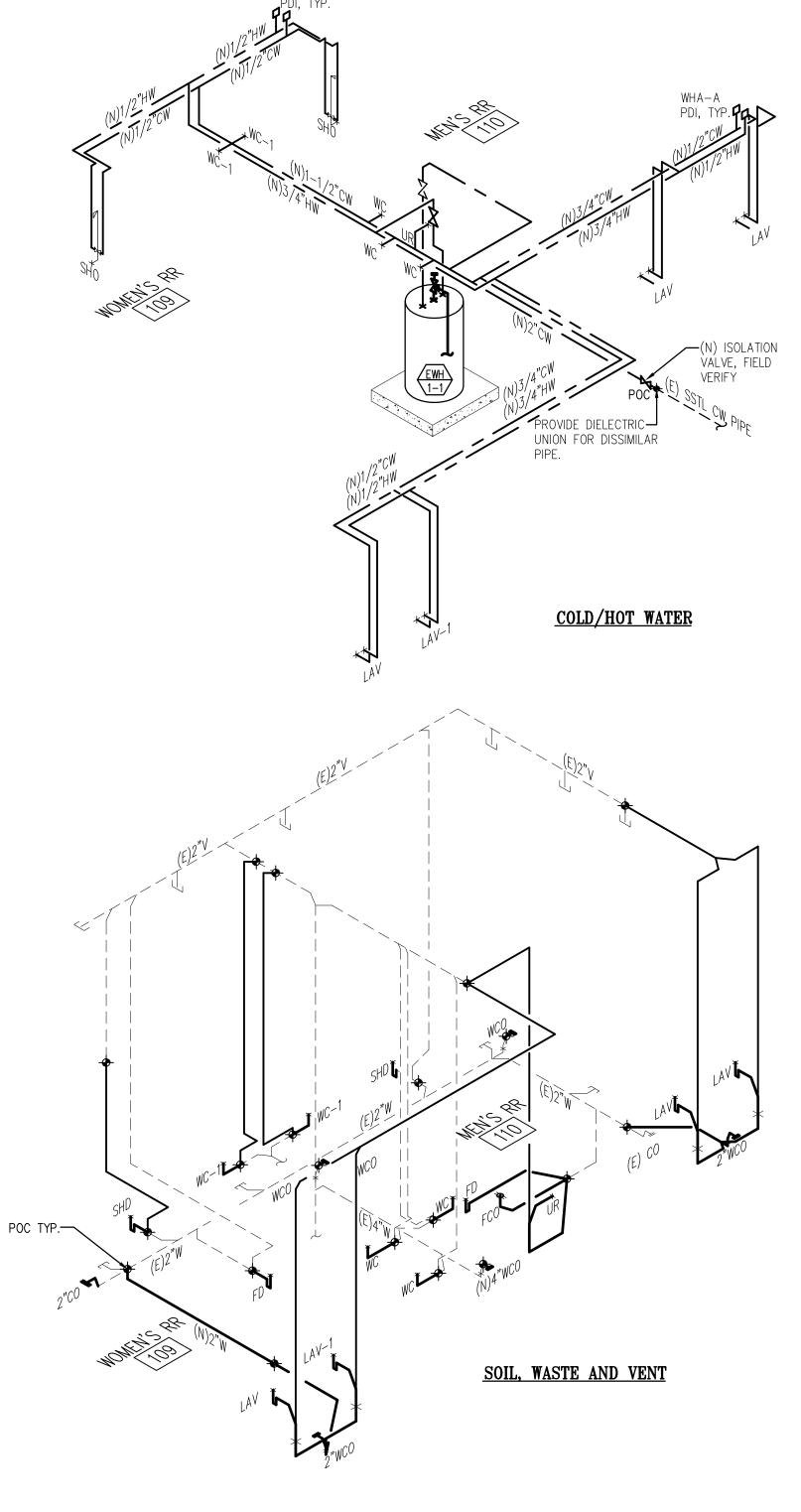






PH-2A NEW PLUMBING PLAN

SCALE: 1/4" = 1'-0"



3 PH-2A PIPING ISOMETRIC DIAGRAM

SCALE: NOT TO SCALE

PLUMBING DEMO/REMOVAL NOTES:

REMOVE EXISTING WATER CLOSETS AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, SEWER PIPE, AND VENT PIPE. REPLACE WITH NEW.

REMOVE EXISTING LAVATORY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW.

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REMOVE EXISTING HOSE BIBB. REPLACE WITH NEW.

REMOVE EXISTING FLOOR DRAIN AND REPLACE WITH NEW.

REMOVE EXISTING SERVICE SINK AND ASSOCIATED APPURTENANCES.

REMOVE EXISTING ELECTRIC WATER HEATER AND ASSOCIATED APPURTENANCES.

REMOVE EXISTING FLOOR AND WALL CLEANOUTS AND REPLACE WITH NEW.

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COST TO THE CONTRACT. DISPOSE DEMOLITION DEBRIS TO APPROVED GOV'T DISPOSAL SITE AND

TURN-OVER USABLE PIPING TO THE OWNER AS REQUIRED.

ENGINEERING SERVICES, LLC

MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVO

O. Box 392 Hagatna, GUAM 96932

Architecture

Planning Interior Design

100 Cliff Business Center, P.O. Box EA, Agana, GU 96910 Tel.: (671) 475-8772 - Fax.: (671) 472-3381

REVISIONS

Description

HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION

Projec

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

ADMIN LEVEL PHASE 2A
PLUMBING DEMO/REMOVAL PLAN AND
NEW PLUMBING PLAN &
PIPING ISOMETRIC DIAGRAM

BID DOCUMENTS

Designed: JC

Drawn: EN

Checked: MPN

Supv: MPN

Scale: As indicated

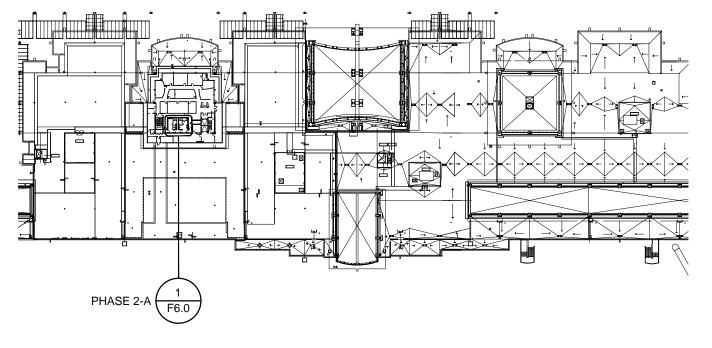
02/20/15

Project No. File
1441

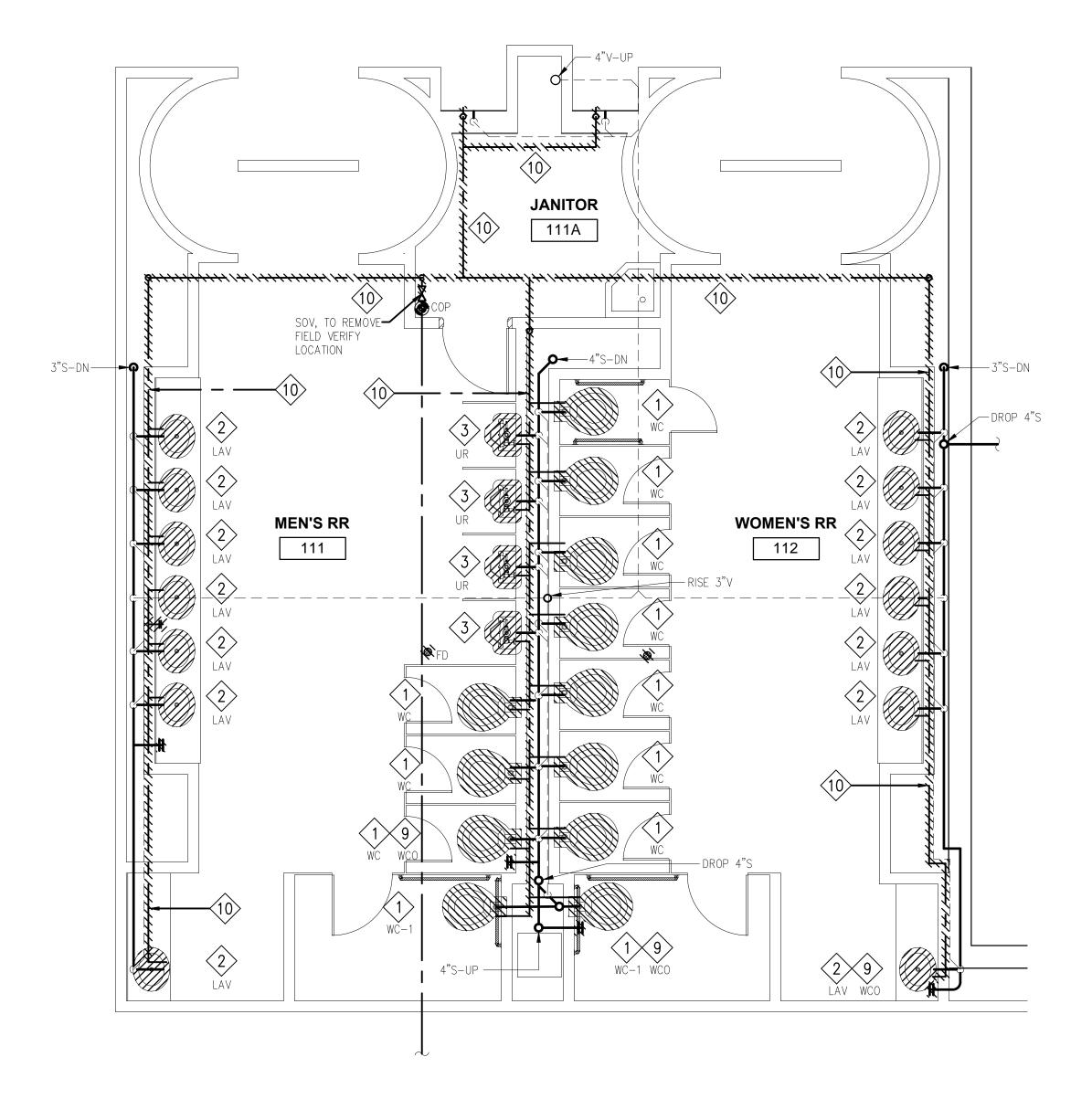
1441 Drawing No.

P6.0

ADMIN LEVEL



KEY PLAN NOT TO SCALE



PH-2B PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

MARK

PLUMBING DEMO/REMOVAL NOTES:

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No. Description Date

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

ENGINEERING SERVICES, LL
MECHANICAL & FIRE PROTECTION CONSULTIN

ENGINEERS & CONSTRUCTION MANAGEMENT SVC

WM ENGINEERING SERVICES, LLC

P.O. Box 392 Hagatna, GUAM 96932

Nº 1264

★ (MECHANICAL)

EXP. 4/30/15

HEREBY CERTIFY THAT THIS PLAN WAS PREPARE!

Project.

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title

APRON LEVEL PHASE 2B
PLUMBING DEMO/REMOVAL PLAN

BID DOCUMENTS

Designed: JC

Drawn: EN

Checked: MPN

Supv: MPN

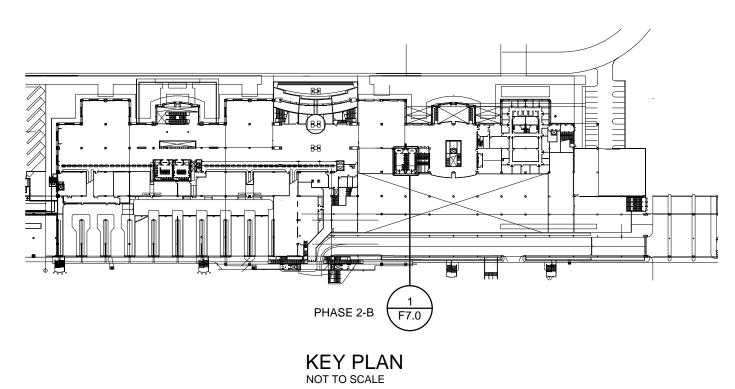
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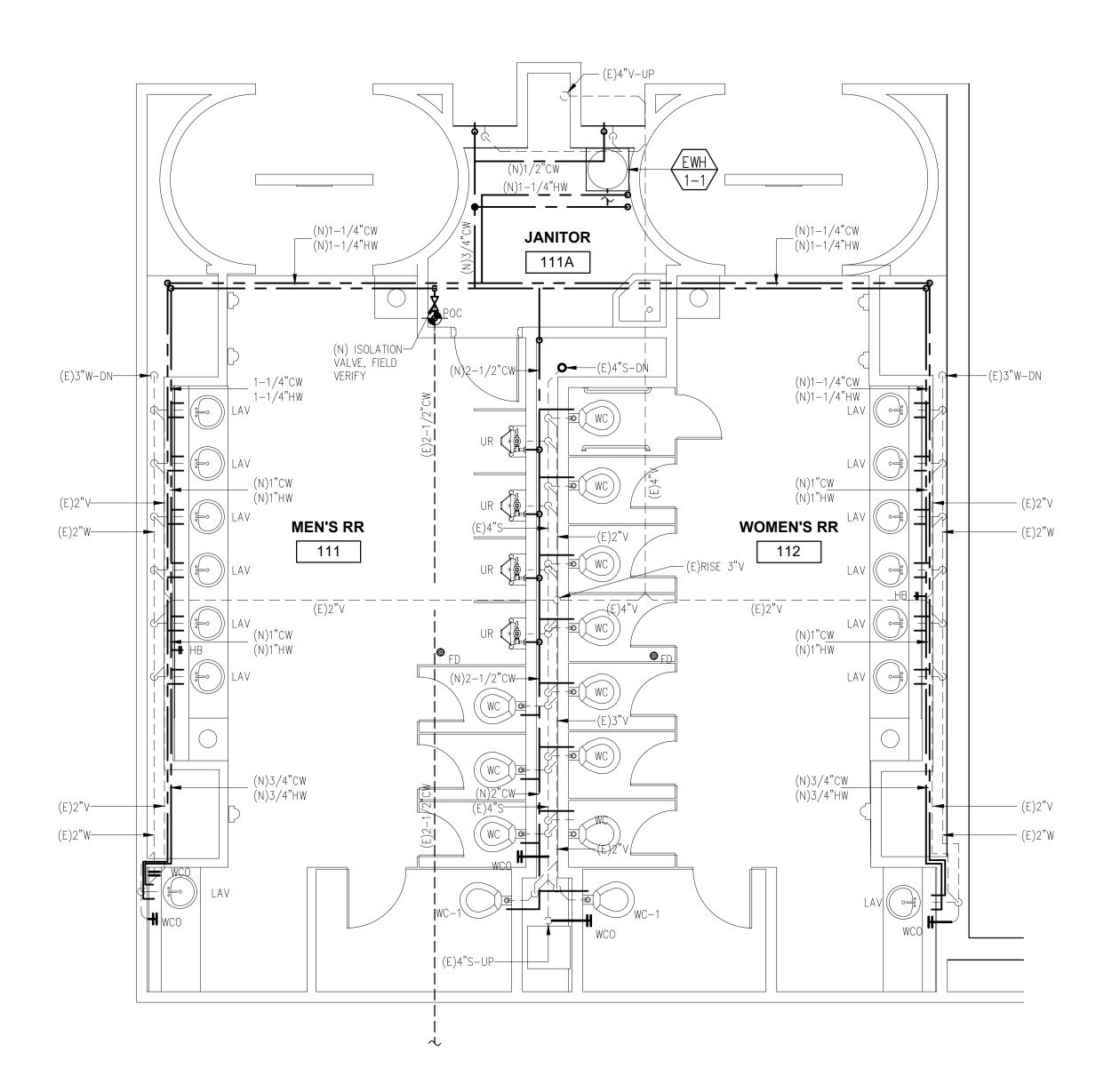
02/20/15

Project No. File 1441

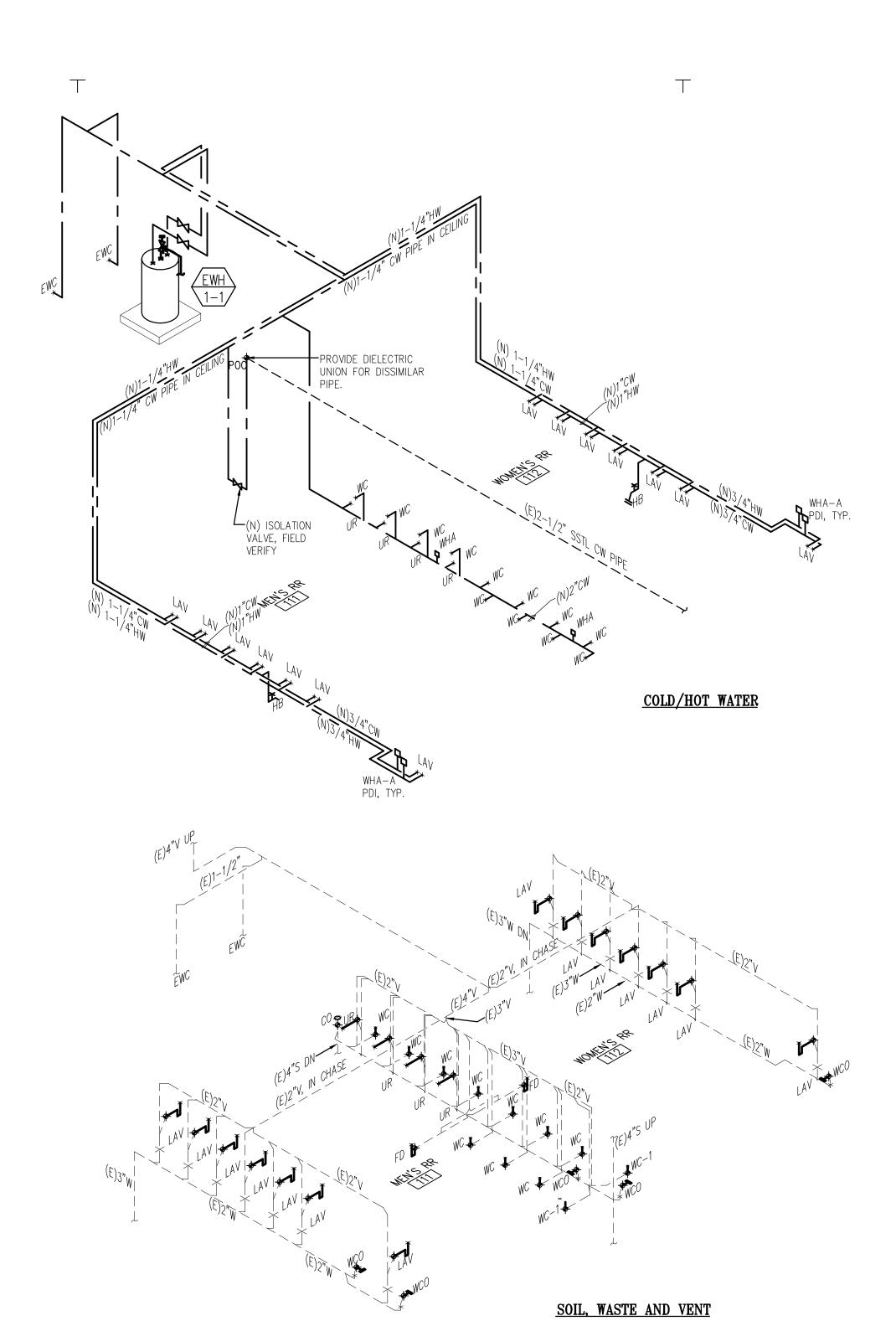
P7.0

APRON LEVEL





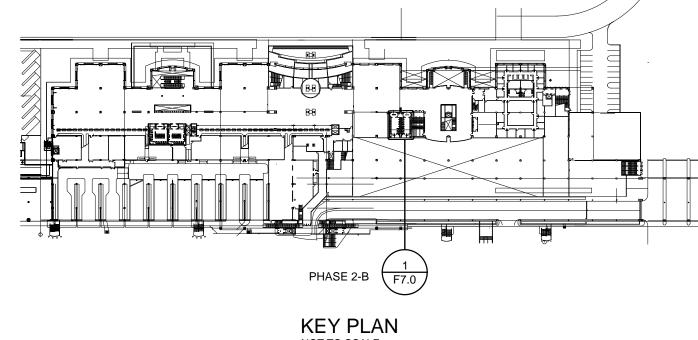
PH-2B NEW PLUMBING PLAN
SCALE: 1/4" = 1'-0"



2 PH-2B PIPING ISOMETRIC DIAGRAM

SCALE: NOT TO SCALE

APRON LEVEL



KEY PLAN NOT TO SCALE

IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

REVISIONS Description

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
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Architecture Planning Interior Design

MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVC

WM ENGINEERING SERVICES, LLC
P.O. Box 392 Hagatna, GUAM 96932



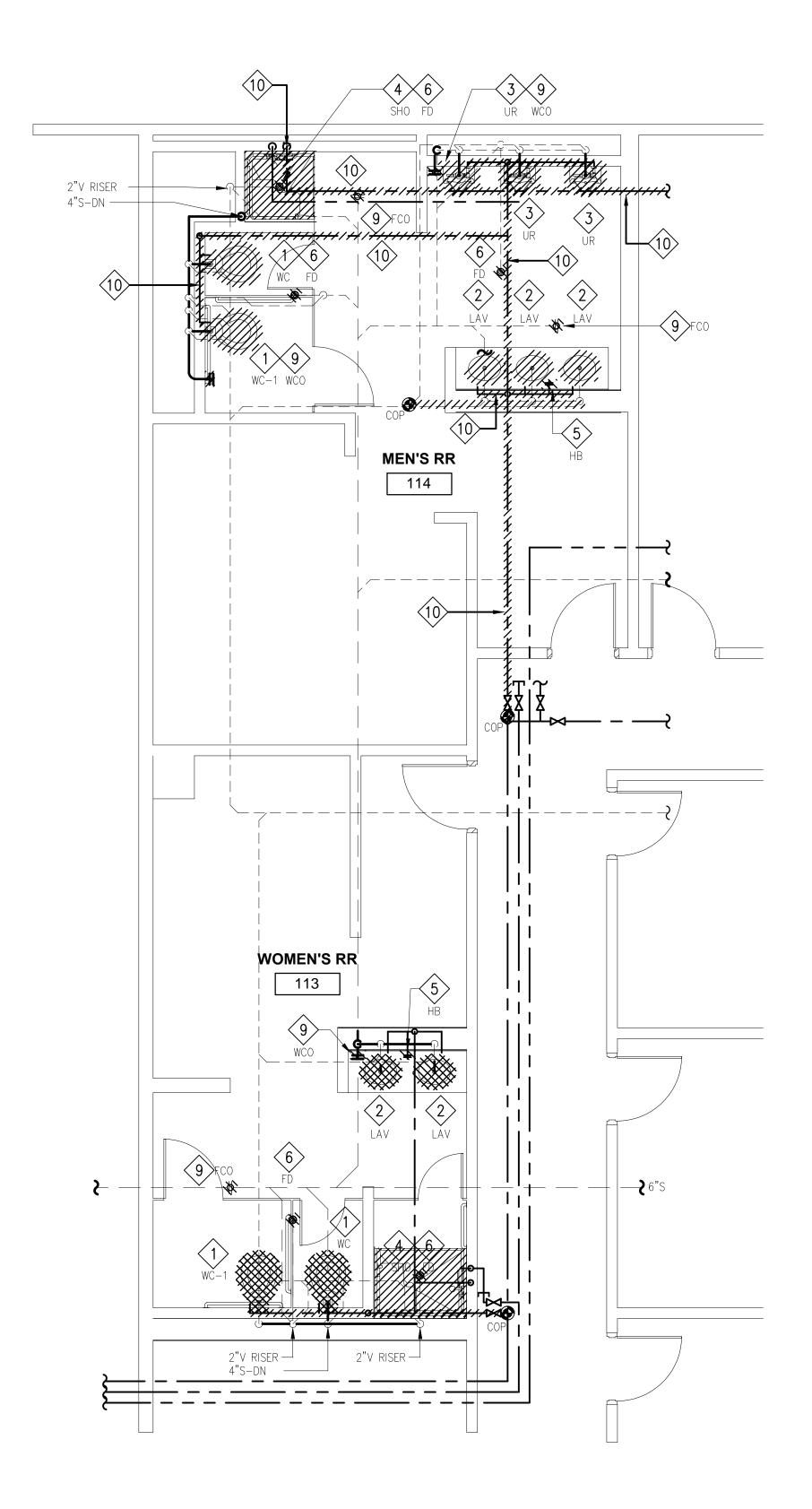
A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 2B NEW PLUMBING PLAN AND PIPING ISOMETRIC DIAGRAM

BID DOCUMENTS

Designed:	JC
Drawn:	EN
Checked:	MPN
Supv:	MPN
Scale:	As indicated
Date:	02/20/15

1441



PH-2C PLUMBING DEMOLITION PLAN

PLUMBING DEMO/REMOVAL NOTES:

- REMOVE EXISTING WATER CLOSETS AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, SEWER PIPE, AND VENT PIPE. REPLACE WITH NEW.
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- REMOVE EXISTING HOSE BIBB. REPLACE WITH NEW.
- REMOVE EXISTING FLOOR DRAIN AND REPLACE WITH NEW.
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- REMOVE EXISTING ELECTRIC WATER HEATER AND ASSOCIATED APPURTENANCES.
- 9 REMOVE EXISTING FLOOR AND WALL CLEANOUTS AND REPLACE WITH NEW.
- REMOVE & REPLACE CW & HW PIPING FROM "COP" SHOWN UP TO FIXTURES.
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REVISIONS

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Architecture Planning Interior Design

ENGINEERING SERVICES, MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVO

WM ENGINEERING SERVICES, LLC O. Box 392 Hagatna, GUAM 96932



A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

APRON LEVEL PHASE 2C PLUMBING DEMO/REMOVAL PLAN

BID DOCUMENTS

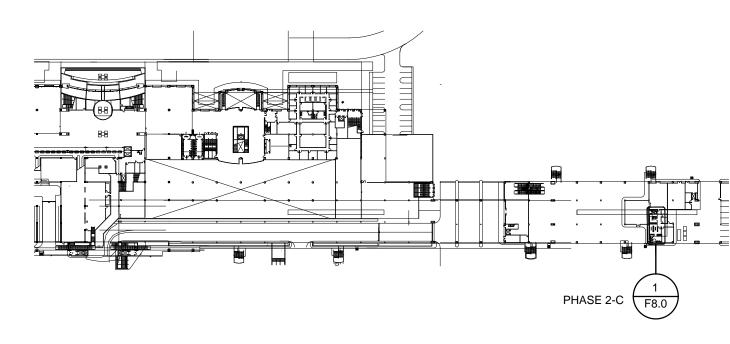
JC ΕN MPN As indicated

02/20/15

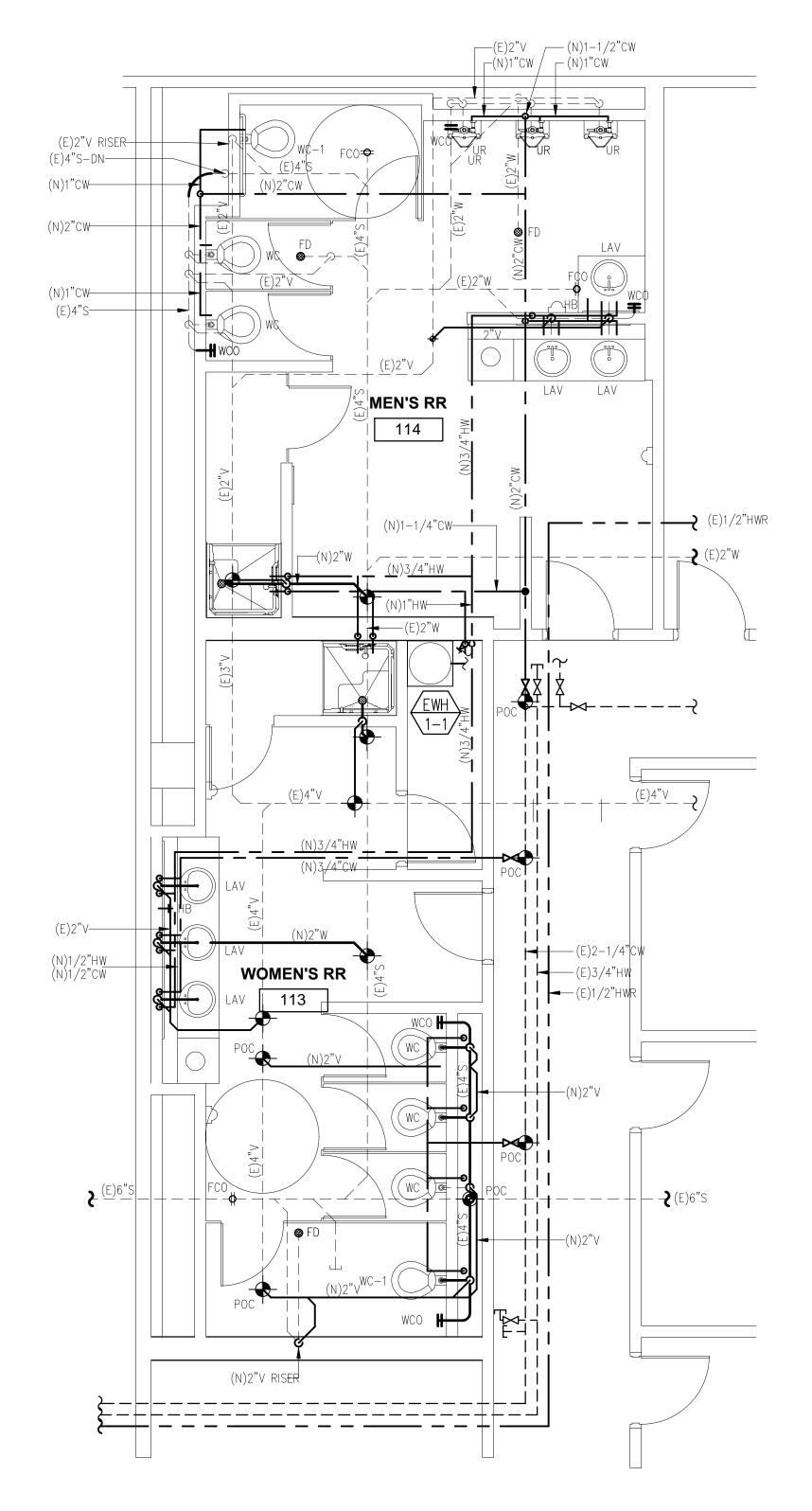
1441

P8.0

APRON LEVEL

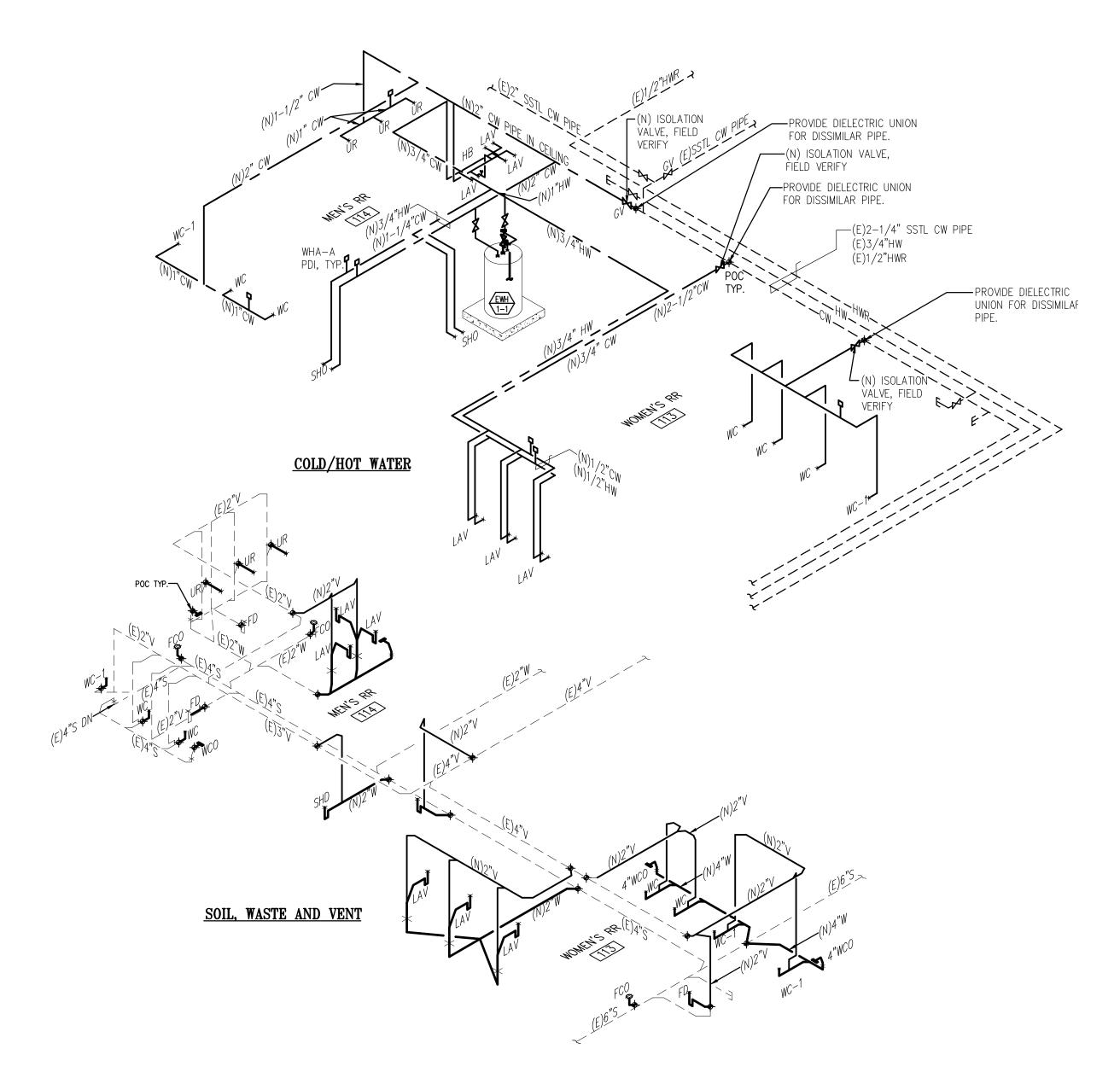


KEY PLAN NOT TO SCALE



PH-2C NEW PLUMBING PLAN

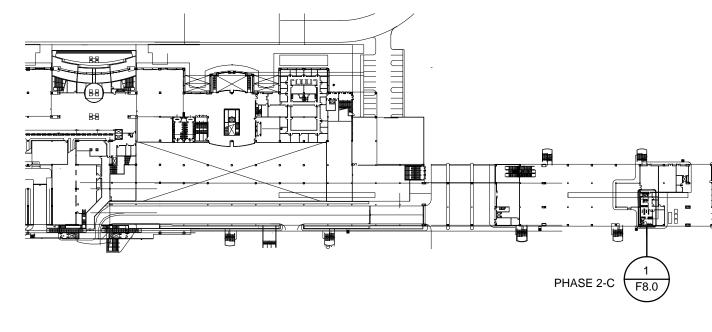
SCALE: 1/4" = 1'-0"



2 PH-2C PIPING ISOMETRIC DIAGRAM

SCALE: NOT TO SCALE

APRON LEVEL



KEY PLAN NOT TO SCALE

> IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

No. Description Date

Taniguchi Ruth Makio Architects
100 Cliff Business Center, P.O. Box EA, Agana, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture Planning Interior Design

ENGINEERING SERVICES,

MECHANICAL & FIRE PROTECTION CONSULTING ENGINEERS & CONSTRUCTION MANAGEMENT SVC

P.O. Box 392 Hagatna, GUAM 96932
Tel 64
Fax 64
E-Mail engoff@g



I HEREBY CERTIFY THAT THIS PLAN WAS PREPA BY ME OR UNDER MY DIRECT SUPERVISION

Project:

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

Title:

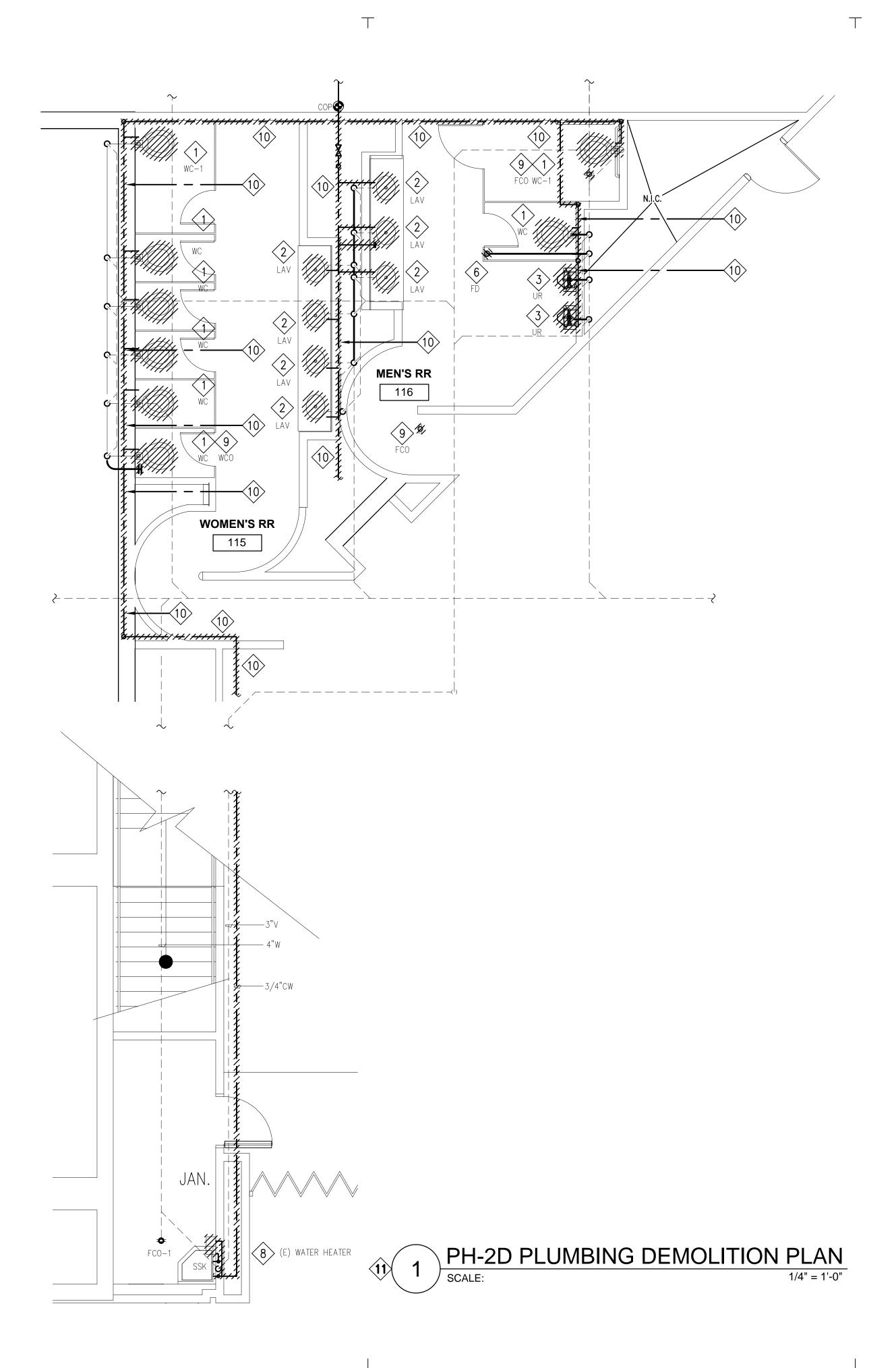
APRON LEVEL PHASE 2C NEW PLUMBING PLAN AND PIPING ISOMETRIC DIAGRAM

BID DOCUMENTS

Designed: JC
Drawn: EN
Checked: MPN
Supv: MPN
Scale: As indicated

P8.1

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PLUMBING DEMO/REMOVAL NOTES: REMOVE EXISTING WATER CLOSETS AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, SEWER PIPE, AND VENT PIPE. REPLACE WITH NEW. REMOVE EXISTING LAVATORY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW. REMOVE EXISTING URINAL AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD WATER PIPE, WASTE PIPE, AND VENT PIPE. REPLACE WITH NEW. REMOVE EXISTING SHOWER ASSEMBLY AND ASSOCIATED APPURTENANCES INCLUDING VALVES, COLD AND HOT WATER PIPES, WASTE PIPE, AND VENT PIPE, REPLACE WITH NEW. REMOVE EXISTING HOSE BIBB. REPLACE WITH NEW. REMOVE EXISTING FLOOR DRAIN AND REPLACE WITH NEW. REMOVE EXISTING SERVICE SINK AND ASSOCIATED APPURTENANCES. REMOVE EXISTING ELECTRIC WATER HEATER AND ASSOCIATED APPURTENANCES. 9 REMOVE EXISTING FLOOR AND WALL CLEANOUTS AND REPLACE WITH NEW. REMOVE & REPLACE CW & HW PIPING FROM "COP" SHOWN UP TO FIXTURES.

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WM ENGINEERING SERVICES, LLC O. Box 392 Hagatna, GUAM 96932

Architecture

Planning Interior Design

A.B. WON PAT INTERNATIONAL AIRPORT RESTROOM RENOVATIONS

BASEMENT LEVEL PHASE 2D PLUMBING DEMO/REMOVAL PLAN

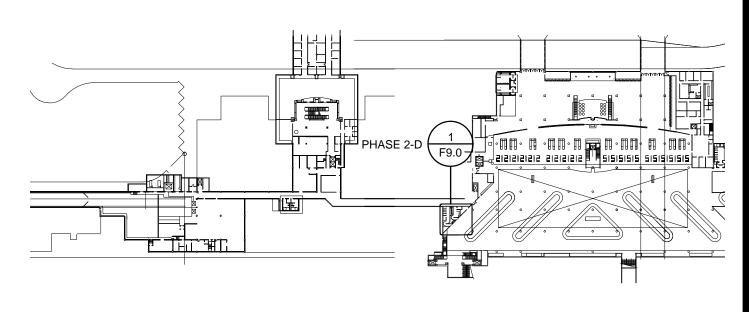
BID DOCUMENTS

JC ΕN MPN As indicated

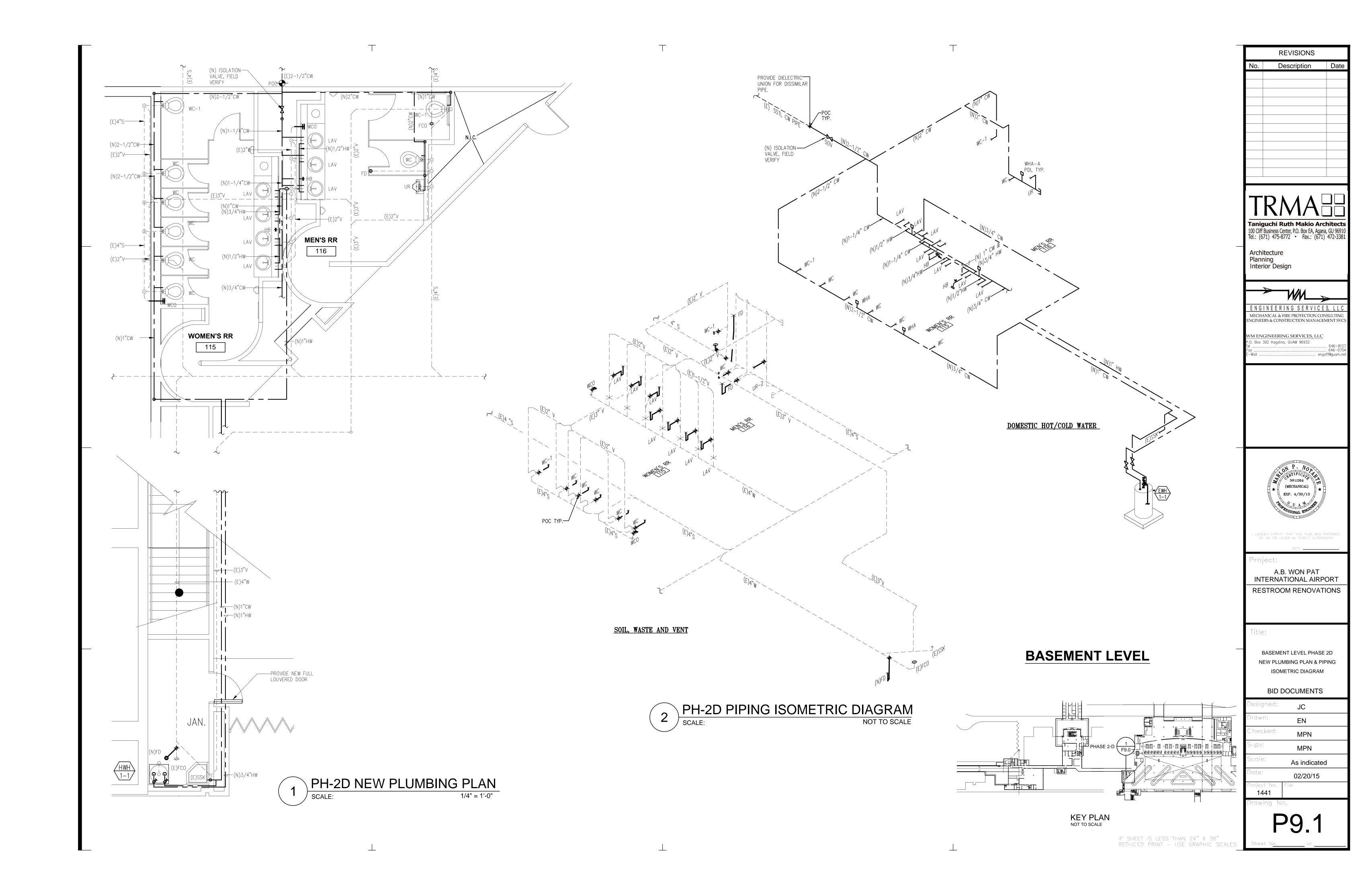
02/20/15 1441

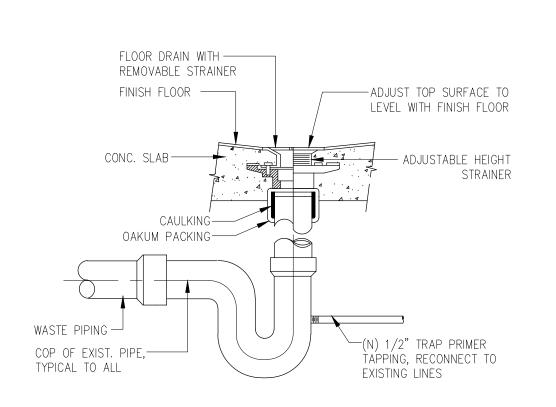
IF SHEET IS LESS THAN 24" X 36" REDUCED PRINT — USE GRAPHIC SCALES

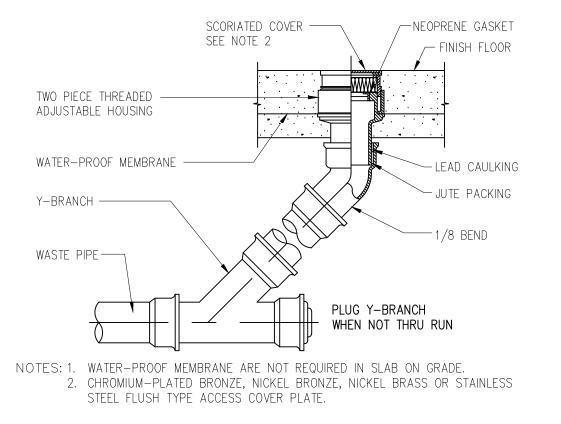
BASEMENT LEVEL

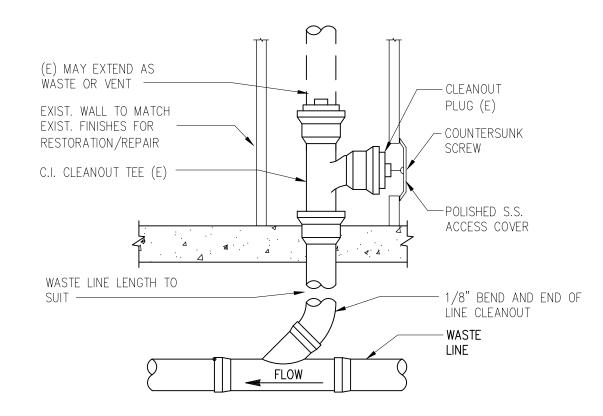


KEY PLAN NOT TO SCALE



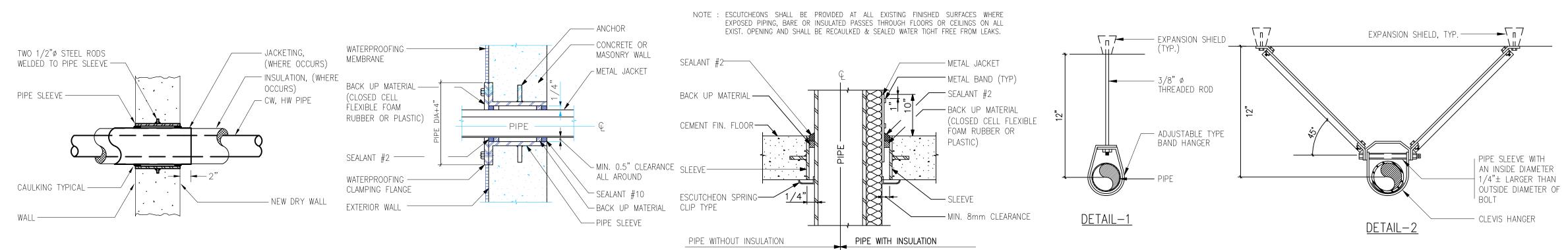






FLOOR CLEAN OUT PENETRATION (E) FLOOR DRAIN PENETRATION

WALL CLEANOUT PENETRATION



PIPE SLEEVE-THRU FLOOR

PIPE SLEEVE-THRU CMU AND DRY WALL

NEW DRY WALL

(WHERE OCCURS)

NEW ----

LAVATORY

PROVIDE OFFSET P-TRAF

1-1/4"ø 'P' TRAP ARM —

WITH INSULATION IN

ADA FIXTURES

NEW VENT PIPE

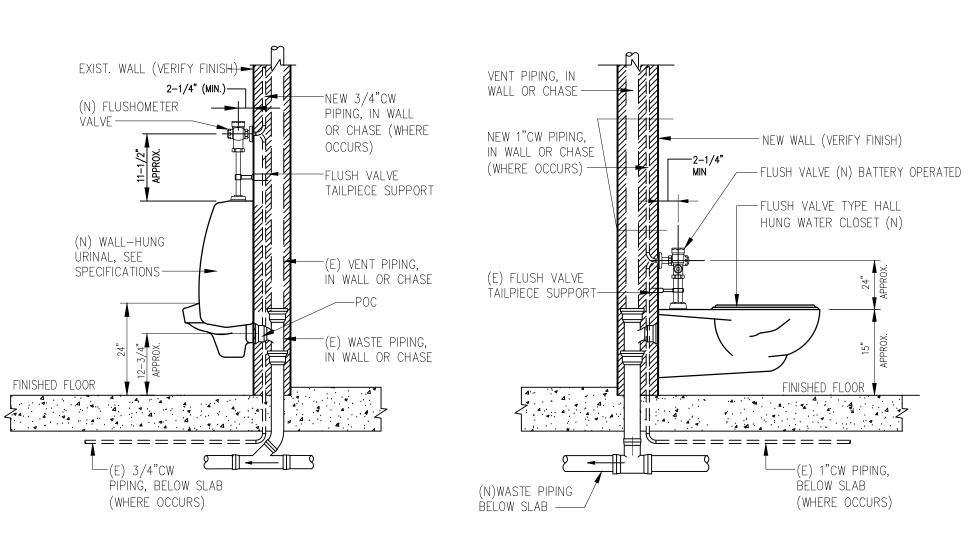
——POINT OF CONNECTION

EXIST WASTE PIPE (VERIFY)

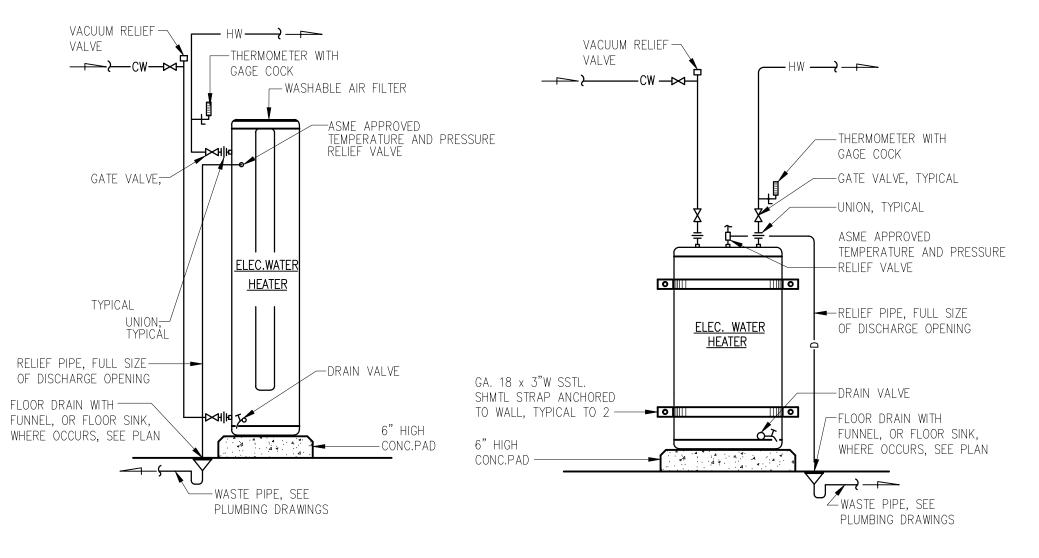
BEHIND CHASE AND BELOW FLOOR SLAB CONNECTING NEW

NOTE: EXISTING DETERIORATION/CORRODED PIPES (S, W & V)

FIXTURES SHALL BE REPLACED AND REPAIRED.



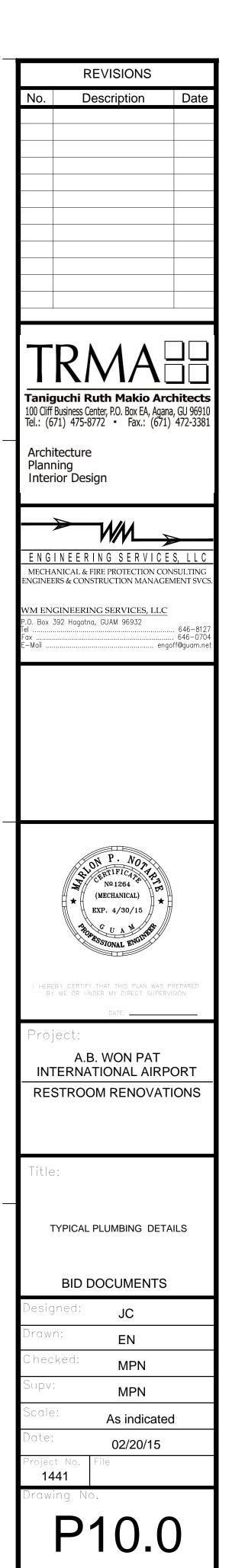
PIPE HANGER AND SUPPORT



NEW PLUMBING FIXTURE REPLACEMENT INSTALLATION DETAIL(LAV, UR, WC)



ELECTRIC WATER HEATER



SECTION 00310

BID FORM

Having carefully examined the Drawings and Specifications entitled <u>Airport Restroom Renovations</u> and Addenda numbered, similarly entitled, as well as the premises and conditions affecting the work, the undersigned proposes to furnish all labor and materials, and to perform all work required by and in strict accordance with the above named Documents for the following sums:

BASE BID	
The sum of	
	Dollars (\$)
BID BREAKDOWN FORM	
Contractor shall submit a bid breakdown on the form	attached herein.
ALTERNATES	ADDITIVE / DEDUCTIVE AMOUNT

TIME OF COMPLETION

The undersigned agrees that the contract time for the total project shall be 168 consecutive calendar days.

OVERHEAD AND PROFIT

The undersigned affirms that all the above bid prices include overhead and profit, including all fees, taxes, insurance, coordination costs, material and wage increases, and any other costs affecting the construction and completion of this project in accordance with the Contract Documents.

STATUS

The status of the bidder must be given whether individual, co-partnership or corporation. (If co-partnership, give the full names of all partners; if a corporation give the place in which incorporated and the full name of the president and secretary).

CONTRACT AND BOND

The undersigned agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) days after receiving the notice of award or the contract forms, an agreement, and if asked for, a satisfactory Performance and Labor and Materials Payment Bond each in an amount equal to one hundred percent (100%) of the Contract sum.

The surety to be requested to issue the Performance and Labor and Materials Payment Bonds will be:

The undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the undersigned's ability to supply a Performance and Payment Bonds in the amount of

the Contract.			
Type of Organization:			
State of Incorporation:			-
Names of Partners or Co	orporation Officials or Individuals:		_
			_
LICENSING			-
	s that he is properly licensed as a Contracto, and will remain so throughout the duration		ıch license
Date:	BIDDER:		
	Firm:		
	Ву:	Title	-
	Address		_
	Telephone	Fax	_
	Email		_
	Contractor's License Number:	License(s) Type:	

END OF SECTION

Airport Restroom Renovations - Bid Breakdown Description **Bidder** Div.# Division Labor Materials Sub Total SUBTOTAL OHP **OHP** 01 General Conditions Contractor mobilization OFCI b. **Building Permit review and** coordination d. Temporary facilities and controls e. Quality control f. Shop drawings / submittals engineering g | Close out submittals h Project closeout i Copy/Printer for building permit Construction waste disposal j SUB TOTAL: 02 Infrastructure a Access and bracing b Water system Sewer system С f Demolition SUB TOTAL: 05 Metals Decorative metal panels SUB TOTAL:

06	Wood & Plastic			
	Wood and Plastic			
	SUB TOTAL:			
08	Doors and Windows			
a.	Steel Doors			
b.	Wood Doors			
C.	Aluminum Doors, Frames and Storefront			
d.	Aluminum Windows			
e.	Hardware			
	SUB TOTAL:			
09	Finishes			
a.	Gypsum Drywall including Ceiling			
b.	Ceramic Tiles			
C.	Acoustical Ceiling			
d.	Vinyl Composition Tiles			
e.	Interior Paint			
	SUB TOTAL:			
10	Specialties			
a.	Louver and Vents			
b.	Signage			
C.	Fire Suppression / sprinkler system			
d.	Washroom Accessories			
e.	Toilet Compartments			
	SUB TOTAL:			
11	Equipment			
a.	Equipment			
	SUB TOTAL:			
4.5	Machania			
15	Mechanical			
a.	Plumbing Fixtures A/C System			
b.				
C.	Fire Sprinkler System			
d.	Plumbing Systems			
	SUB TOTAL:			

16	Electrical			
a.	Lighting			
b.				
C.				
d				
е				
	SUB TOTAL:			
	TOTAL:			
	TOTAL BASE BID			

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Work covered by the Contract Documents.
 - 2. Contractor's use of the premises.
 - 3. Occupancy requirements.
- B. Related Documents:
 - 1. The Contract Documents, as defined within this Section, apply to the work. Additional requirements and information necessary to complete the work may be found in other Documents.
 - 2. Owner's Bid and Contract documents per 01012.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Provide and pay for all labor, materials, services, equipment, permits, fees, licenses, taxes, and other items necessary for the execution, installation and completion of all work indicated in the Contract Documents.
- B. The work involves the construction of the <u>Airport Restroom Renovations</u>. Work includes, but is not limited to, demolition, earthwork, utilities and improvements. Work also includes concrete foundations, concrete, structural reinforcement ______ for to structural enhancements for aquarium support. Metal fabrications, thermal and sound insulation, non-structural metal framing, carpentry, gypsum board walls and ceilings, ceramic tile, vinyl composition tiles flooring, acoustical ceilings, aluminum storefronts and windows (removed for aquarium access), glazing, hollow metal doors and frames, wood doors, door hardware, cabinetry and fixtures, toilet partitions and accessories, signage, equipment, painting, fire detection system, electrical, ventilation and air conditioning, plumbing, [elevators], complete and ready for use.
- C. Coordination: The work of this Contract includes coordination of the entire work of the Project, from the beginning of activity through project close-out and the warranty periods.
- D. Drawings: Preparation of "As-Built" Drawings showing the location of all new work.
- E. The work and appurtenances shall be all in strict accordance with the Contract Documents, except only those items specifically shown, noted, or specified as not in the Contract (NIC), or OFCI, or those materials designated as OFCI.
- F. Summary of References: Work of the Contract can be summarized by reference to the Contract, General Conditions, Supplementary Conditions, Special Provisions, Labor Standards Provisions, Specifications Sections as listed in the Table of Contents bound herewith, Drawings, Addenda and Modifications to the Contract Documents issued

subsequent to the initial printing of these Specifications, and including, but not necessarily limited, to printed matter referenced by any of the above.

1.3 CONTRACTOR'S USE OF PREMISES

- A. During construction, the Contractor shall have full use of the Project Site and to the immediate area for construction operations. Contractor shall minimize disruption to the public and to activities in and around adjacent roads, streets, buildings and other facilities.
- B. The Contractor must limit use of the premises to construction activities only in the areas indicated:
 - Confine operations to areas within the Contract limits indicated. Portions of the Site beyond the areas in which construction operations are permitted are not to be disturbed or used.
 - Keep GIAA/Airport driveways and entrances serving the public and adjacent buildings and properties clear and useable at all times. Do not use these areas for parking or storage of materials unless approved, in writing, by the Owner's representative.
 - 3. Schedule deliveries to minimize time and space required for storage of materials and equipment on the Project Site.
 - 4. Provide temporary fencing, barricades, signage, traffic control and personnel necessary for public safety, and as required by GIAA Engineering.
 - 5. Comply with airport regulations regarding access to concourse and AOA locations.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01012

SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.1 PROJECT SITE

A. The Project Site is located as shown on Drawing T-1.

1.2 CONTRACT DOCUMENTS

- A. Contract form shall be:
 - AIA Standard Form Owner/Contractor Agreement A-201
 - 2. Owner prepared Agreement
 - 3. Government of Guam Agreement Form
- B. General Conditions should be:
 - AIA Standard Form General Conditions A-201
 - 2. Government of Guam General Conditions
- C. Owner-issued bid and contract documents shall take precedence should there be conflict between the Owner-issued documents and these Specifications.

1.3 TIME OF COMPLETION

A. The work shall commence upon Contract signing and shall be thereafter substantially completed within <u>168</u> consecutive calendar days. Prerequisites for substantial completion are indicated in Section 01705 - Project Closeout.

1.4 LIQUIDATED DAMAGES

A. In case of failure on the part of the Contractor to complete the work within the time fixed in the Contract or within any time extensions given thereof, the Contractor and his sureties shall be liable for and shall pay to the Owner for his real damages, the sum of \$500.00 liquidated damages, per calendar day of delay, until the work is completed and accepted.

1.5 CLIMATIC CONDITIONS AND INTERRUPTION OF WORK FOR GIAA OPERATIONAL PURPOSES

A. The contract time for this Contract allows for the following number of days lost due to adverse climatic conditions in each month. Time extension on account of inclement weather will be allowed only for lost days of work in excess of the limits shown below. Allowance for delays will not be given for interior work and other work which can proceed during periods of inclement weather. If the GIAA should cease operations on the concourse of AOA areas for reasons not associated with the work of the General Contractor-the general manager may request

1.6 FEES

A. The Contractor will be responsible for all processing and payment of fees and payments pursuant to the construction of this Project. Included are Building Permit and regulatory agencies fees. The Contractor will be responsible for submitting the required drawings and other required documents to the respective agencies and following up until permits have been issued.

1.7 DRAWINGS AND SPECIFICATIONS

A. Upon award of the Construction Contract, the Owner will furnish the Contractor, without charge, four (4) copies of the Drawings and Specifications. Additional copies requested by the Contractor will be furnished at cost.

1.8 ELECTRONIC DOCUMENTS

A. With concurrence of the Owner, the Architect and Consultants will release to the Contractor project drawings in electronic format. As a condition of release, the Contractor shall sign an Electronic Data Transfer Indemnity Agreement prepared by the Architect, and reimburse the Architect and Consultants for the cost of formatting and transferring the electronic files.

1.9 ADMINISTRATIVE SUBMATERIALS

- A. Contractor will submit for approval within ten (10) calendar days of award of the Contract, the following, which may also be referred to in other portions of these Specifications:
 - 1. Resume of the project superintendent indicating qualifications to provide project supervision.
 - 2. List of all subcontractors to be used on the project.
 - Schedule of Values.
 - 4. Progress Schedule.
 - 5. Performance and Payment Bonds.
 - 6. Insurance Certificates.

1.10 BONDS

A. The Contractor shall furnish to the Owner, in a form satisfactory to the Owner, at the Owner's request, a Performance Bond and a Labor and Materials Payment Bond, each in the sum of 100% of the Contract Sum, and with a Bond Rider naming the Contractor as principal, corporate surety satisfactory to the Owner, as surety and any construction lender and lessee (if the Project is leasehold) as additional or dual obligees. The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his Power of Attorney.

1.11 CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

A. The Contractor shall not commence work under this Contract until he has obtained all insurance required hereunder, and such insurance has been submitted to the Owner. The Contractor shall not allow any subcontractor to commence work under his subcontract until all similar insurance required of the subcontractor has been obtained. Approval of the

- insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.
- B. Workman's Compensation and Employer's Liability Insurance: The Contractor shall take out and maintain during the life of this Contract the statutory Workman's Compensation and Employer's Liability Insurance for all of his employees to be engaged in work on the Project under this Contract, and in case any such work is sublet, the Contractor shall require the subcontractor, similarly, to provide Workman's compensation and Employer's Liability Insurance for all of the subcontractor's employees to be engaged in the work.
- C. Bodily Injury Liability and Property Damage Liability Insurance: The Contractor shall take out and maintain during the life of this Contract such Bodily Injury Liability and Property Damage Liability Insurance as shall protect from claims for damages from personal injury, including accidental death, as well as from operations under this Contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them, and the amount of such insurance shall not be less than:
 - 1. Bodily Injury Liability Insurance in an amount not less than One Hundred Thousand Dollars (\$100,000) per person for injuries including wrongful death, and in an amount not less than One Million Dollars (\$1,000,000.00) for injuries including wrongful death resulting from one accident.
 - 2. Property Damage Insurance in an amount not less than Fifty Thousand Dollars (\$50,000) for damages resulting from any one accident, and in an amount not less than One Million Dollars (\$1,000,000.00) for damages resulting from all accidents.
- D. Owner's Protective Liability Insurance: The Contractor shall take out, furnish to the Owner and maintain during the life of this Contract, complete Owner's protective liability insurance in the amounts specified above for bodily injury liability insurance and for property damage liability insurance.
- E. Fire, Typhoon, Theft and Vandalism Insurance: The Contractor shall insure the building and other work included in this Contract against loss or damage by fire, typhoon, theft and vandalism, and against loss or damage covered by the standard extended coverage insurance endorsement, with an insurance company or companies acceptable to the Owner, the amount of the insurance at all times to be at least equal to the amount paid on account of work and materials plus the value of work and materials furnished or delivered but not yet paid for by the Owner. The policies shall be in the names of the Owner and the Contractor.
- F. Supplemental to Contractor's and Subcontractor's Insurance:
 - NOT USED
- G. A certificate of the insurance company as to the amount and type of coverage, terms of policies, etc., shall be delivered to the Owner before commencing work.

1.12 PROGRESS PAYMENTS

A. Applications for progress payments shall be made monthly on AIA Document G702 and G703 - "Application and Certification for Payment". Retainage of ten percent (10%) of the completed work and stored materials will be withheld until final completion of the work. After the work is 50% complete and should the work be proceeding acceptable to the Owner, the contractor may request the owner to allow the retainage to continue at five percent (5%) of the total contract value.

1.13 AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)

A. All persons and entities providing work for this Project are required to be knowledgeable of the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) as they affect their portion of the work. Do not install work which is not in compliance with ADAAG. Prior to fabrication or installation of any work not in compliance with ADAAG, the Contractor shall notify the Architect and secure design directions to resolve the noncomplying features.

1.14 WARRANTY

- A. All work shall be guaranteed, in writing, by the Contractor against defects resulting from the use of defective and inferior materials, equipment, and workmanship for a minimum of one (1) year from the date of substantial completion. Any maintenance service contracts and warranties for equipment in use shall begin the same date of the general warranty against defects described hereinabove.
- B. If, within the guaranty period, repairs or changes required in connection with the guaranteed work, which in the opinion of the Owner or Architect are rendered necessary as a result of the use of materials, equipment, or workmanship, which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall within five (5) consecutive working days of request by the Owner or Architect, and without expense to the Owner, commence to, in every instance, place in satisfactory condition all such guaranteed work and correct all defects therein, and make good all damages to the building or work or equipment or contents thereof.
- C. Whenever a manufacturer's guaranty on any product exceeds one year, that guaranty shall become part of the Contract. The Contractor shall complete the warranty forms in the name of the Owner, and submit such forms to the manufacturer within such time as required to validate the warranty. The Contractor shall submit to the Owner a copy of the completed warranty forms for the Owner's record as evidence that such warranty form was filed with the manufacturer.
- D. Any manufacturer's warranty concerning any items installed will run to the benefit of the Owner, and the Contractor agrees to not void or impair or to allow subcontractors to void or impair any original warranty or guaranty existent or running to the benefit of the Owner, as to products or items installed in the Project, provided, however, if the Architect shall designate installation in a method or manner which shall void or impair the aforereferenced warranty, the Owner and Architect shall be advised, in advance, in writing, by the Contractor of such violation of the manufacturers recommended installation and impairment of warranty, and the Architect and Owner may change such installation to conform with the recommended procedures or confirm the method of installation applicable thereto, in writing, to the Contractor.

1.15 BUILDING AND OCCUPANCY PERMITS

- A. The Contractor shall make application for, process, pay all charges and obtain Building Permit(s) for the Project and provide a copy to the Architect and Owner.
- B. Upon Substantial Completion, the Contractor shall record the Substantial Completion Certificate with the Department of Public Works and deliver an unrestricted Occupancy Permit to the Architect and Owner.
- C. Partial Occupancy: Because the work of this project is scheduled in phases the contractor shall anticipate multiple turnovers for partial occupancy. Contractor shall coordinate each turnover inspection and permitting process with the agencies designated by DPW for

inclusion in the permit approved process.

1.16 COMPLIANCE WITH MECHANIC'S LIEN LAW

A. The Contractor shall comply with provisions of the Government Code of Guam. Contractor shall make such submittals to the Owner, record the required documents, provide releases, publish such notices, post surety bonds, as required, and take other actions within the stipulated time frame, for full compliance with the law.

1.17 DEFAULT

- A. The Owner may declare the Contractor in default in accordance with, and in the manner described in the General Conditions of the Contract for Construction for:
 - 1. Failure to complete the work within the Contract period or any extension thereof.
 - 2. Failure or refusal to comply with an order of the Architect or Owner within a reasonable time.
 - 3. Failure or refusal to remove rejected materials from the Project Site.
 - 4. Failure or refusal to perform anew any defective or unacceptable work.
 - 5. Bankruptcy or insolvency, or the making of an assignment for the benefit of creditors.
 - 6. Failure to pay subcontractors and suppliers promptly.
 - 7. Repeated failure to provide a qualified superintendent, competent workmen or subcontractors to carry out the work in an acceptable manner.
 - 8. Failure to prosecute the work in accordance with the agreed schedule of completion.

END OF SECTION

SECTION 01068

REFERENCES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Specifications format and content.
 - 2. Quality assurance.
 - 3. Reference standards.
 - 4. Abbreviations.
 - Definitions.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 SPECIFICATIONS FORMAT AND CONTENT

- A. Specifications Format: The Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's (CSI) 16-Division format numbering system.
- B. The Bid and Contract Documents issued by the Owner are included with the Specifications. The Owner-issued documents will take precedence should there be any conflict between them and the Specifications.
- C. Specifications Content: The Specifications use certain conventions in language and intended meaning of certain terms, words and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated type. Words and meanings shall be interpreted as appropriate. Words that are implied, but not stated shall be interpolated as the sense required. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the context of the Contract Documents so indicates.
 - Imperative and streamlined language is used generally in the Specifications.
 Requirements expressed in imperative mood are to be performed by the
 Contractor. At certain locations in the text, for clarity, subjective language is used
 to describe the responsibilities that must be fulfilled indirectly by the Contractor or
 by others when so noted.
 - a. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.

1.3 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or other consensus standards, the Contractor shall comply with the requirements of the standard, except when

- more rigid requirements are specified or are required by applicable codes. Such standards are made a part of the Contract Documents by reference.
- B. Conform to the reference standards by the date of issue that was current on the original date of the Contract Documents.
- C. Obtain copies of the standards when required by the Contract Documents.
- D. Maintain a copy of the standards at the Project Site during submittals, planning and progress of the specific work until Final Acceptance.
- E. Should a specified reference standard conflict with the Contract Documents, request clarification from the Owner's representative before proceeding.
- F. Neither the contractual relationship, duties or responsibilities of the parties to the Contract nor those of the Owner's representative shall be altered from the Contract Documents by any mention or inference otherwise in any reference document.

1.4 INDUSTRY STANDARDS AND CODES:

- A. General Applicability of Standards: Applicable standards of the construction industry and Building Codes adopted by the governing agencies have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith.
- B. Referenced Standards (referenced directly in the Contract Documents or by governing regulations) have precedence over non-referenced standards which are recognized in the industry for applicability to the work. Except as otherwise indicated, where compliance with an industry standard is required, comply with the standard in effect as of the date of the Contract Documents.
- C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer the requirements that are different but apparently equal, and uncertainties to the Owner's representative for decision before proceeding.
 - Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified or it may exceed the minimum within reasonable limits. In complying with these requirements, the indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Owner's representative for a decision before proceeding.
- D. Copies of Standards: Each entity engaged in construction of the Project is required to be familiar with the industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound within the Contract Documents.
 - 1. Where copies of standards are needed for the performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

1.5 ABBREVIATIONS

A. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Company.

1.6 DEFINITIONS (People and Entities)

- A. Definitions specified herein are included in order to further clarify terms.
- B. Architect-Engineer (of Record): The Architect-Engineer is the person lawfully licensed to practice in professional disciplines such as architecture or civil, structural, mechanical, and electrical engineering.
- C. Installer: The Contractor or another entity engaged by the Contractor, either as employee, subcontractor or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, unpacking, assembly, placing, finishing, curing, adjusting, cleaning, protection or similar operation. Installers are required to be experienced in the operations they are engaged to perform.
 - 1. Experienced: The term "experienced," when used with the term "installer," means having a minimum number of years experience on projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authorities having jurisdiction.
 - 2. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that the requirements specified apply exclusively to tradespersons of the corresponding generic name.
- D. Manufacturer: A person, firm or corporation who makes products.
- E. Owner: The individual, firm, corporation or government entity that owns the Project.
- F. Owner's Representative: The individual, firm or company administering the Contract on behalf of the Owner. Owner's representative may be the Owner him / herself, the Architect of Record, project engineer, Project Manager or other, as designated by the Owner, and includes a duly appointed successor or authorized representative.
- G. Project Field Superintendent: The Contractor's representative at the Project Site who is responsible for continuous field supervision, coordination, quality control, completion of the Project, and for the prevention of accidents, unless another person is designated, in writing, by the Contractor.
- H. Subcontractor: An individual, firm or corporation having a direct contract with the Contractor or with any other subcontractor for performance of a part of the work at the Project Site.
- I. Supplier: A manufacturer, fabricator, supplier, distributor, materialman or vendor having a direct contract with the Contractor or with any subcontractor to furnish materials or equipment to be incorporated into the work by the Contractor or any subcontractor, but does not perform labor at the Project Site.

- J. Separate Contractor: An individual, firm or corporation having a direct contract with the Owner for performance of part of the work at the Project Site.
- K. Testing Laboratory: An independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret the results of those inspections or tests.
- L. Trade: See Installer.
- M. Utility: Local utility agency providing service to the Project..
- 1.7 DEFINITIONS (Things, Services, and Dispositions)
 - A. Acceptable: Satisfactory to and approved by the Owner's representative.
 - B. Approve: The term "approved," when used in conjunction with the Owner representative's action on the Contractor's submittals, applications and requests, is limited to the Owner representative's duties and responsibilities as stated in the Contract.
 - C. Change Order: A modification to the Contract.
 - D. Clarification Drawing: A graphic interpretation of a Drawing or other Contract Documents issued by the Architect through the Owner's representative.
 - E. Construction Operations: Activities of the Contractor at the Project Site.
 - F. Directed: Instructed by the Owner's representative.
 - G. Experienced (Qualified): When used to describe the "installer", "fabricator" or similar terms; a person, firm or corporation skilled through observation or of participation in the particular activities required to complete the work or a portion of the work to the degree of quality specified.
 - H. Final Connections: Complete plumbing, mechanical and electrical connections as required and recommended by the manufacturer for optimum operation of the equipment.
 - I. Indicated: The term "indicated" refers to graphic representations, notes or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled" and "specified" are used, it is to help the reader locate the reference. Location is not limited.
 - J. Install: Operations at the Project Site including actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.
 - 1. Final Connections: Complete plumbing, mechanical and electrical connections as required and recommended by the manufacturer for optimum operation of equipment.
 - K. Mobilization: To establish and commence work activity at the Project Site.
 - L. Partial Occupancy: Partial Occupancy occurs when the Owner begins to occupy part of the Project for its own purposes, such as early fixture set-up, merchandising, etc. Partial Occupancy shall not constitute acceptance of work not in accordance with the Contract Documents.

- M. Premises: Space or property made available to the Contractor for constructing the work.
- N. Project Site: The space available to the Contractor for performing construction operations, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- O. Receive: Accepting a delivery. (Entity responsible for accepting a delivery.)
- P. Regulations: The term "Regulations" includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the work.
- Q. Reviewed: Examined and found acceptable by the Owner's representative.
- R. Substantial Completion: The stage in progress of the work when the work or a designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the work for its intended use.
- S. Substitution: A product that is exchanged for another of the same function and is of equal or better quality.
- T. Supply: To supply, deliver, unload and inspect for damage (same as Furnish).
- U. Unacceptable: Determined not satisfactory by the Owner's representative.

1.8 DRAWING:

- A. Except as otherwise indicated, graphic symbols used on the Drawings are those symbols recognized in the construction industry for the purposes indicated.
- B. Discrepancies: In the event of a discrepancy, as between small scale Drawings and larger scale Details, or between Drawings and Specifications, or within the Specifications, immediately bring the discrepancy to the attention of the Owner's representative / Architect / Engineer for a decision before proceeding with the particular work involved. Work carried out disregarding these instructions is subject to removal and replacement at the Contractor's expense.

PART	2P	roi	DUC	TS
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Not Used.

PART 3EXECUTION

Not Used.

END OF SECTION

SECTION 01150

SCHEDULES, REPORTS, PAYMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Coordination
 - 2. Progress Schedule
 - Submittal Schedule
 - 4. Schedule of Values
 - 5. Payment Requests
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 COORDINATION

A. Coordinate both the procedural timing and listing (naming and sequencing) of reports / activities required by the provisions of this Section and other Sections, to afford consistency and logical coordination between submitted reports or lists. Maintain the coordination and correlation between the separate reports by updating on a regular basis. Make the appropriate distribution of each report and updated report to entities involved in the work including the Owner's representative / Architect / Engineer. In particular, provide close coordination of the progress schedule, schedule of values, listing of subcontracts, schedule of submittals, progress reports, and payment requests.

1.3 PROGRESS SCHEDULE

A. The Progress Schedule to comply with requirements set forth in the "General Conditions of the Contract for Construction". Update the Schedule on a regular basis, but no less than every two months.

1.4 SUBMITTAL SCHEDULE

- A. General: Immediately following development and acceptance of a fully developed Progress Schedule, prepare a complete schedule of work- related Submittals. Correlate the Submittal Schedule with the listing of principal subcontractors, as required by the General Conditions, and with the "listing of products" or "procurement schedule" as specified in "Products and Substitutions" Section 01605 and elsewhere in the Contract Documents.
- B. Form: Show the category of the Submittal, name of the subcontractor, generic description of work covered, related Section number, activity or event number on the Progress Schedule, scheduled date for first submission, and blank columns for the actual date of submittal, re-submittal, and final release or acceptance by the Owner's representative / Architect / Engineer.

1.5 SCHEDULE OF VALUES

A. General: Prepare a Schedule of Values acceptable to the Owner's representative, as

required by the General and Supplementary Conditions, in coordination with preparation of the Progress Schedule. Correlate line items with other administrative schedules and forms required for the work, including Progress Schedule, payment request form, listing of subcontractors, schedule of allowances, schedule of alternates, listing of products and principal suppliers and fabricators, and Schedule of Submittals. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports. Break down the principal subcontract amounts into several line items. Round off sums to the nearest whole dollar, but with the total equal to the Contract Sum. Submit three (3) copies of the Schedule of Values to the Owner's representative / Architect / Engineer for review and comment.

- B. Unit Cost Allowances: Where required, identify line item values as a product of unit cost x measured quantity, as estimated from best indications in the Contract Documents.
- C. Schedule Updating: Update the Schedule of Values when Change Orders affect the listing, and when actual performance of the work involves necessary changes of substance to values previously listed.

1.6 PAYMENT REQUESTS

- A. General: Except as otherwise indicated, the sequence of progress payments is to be regular, and each must be consistent with previous applications and payments. It is recognized that certain applications involve extra requirements, including the initial application, application at the time of substantial completion, and the final payment application.
- B. Waivers of Lien: For each payment application, waivers of lien from subcontractors who could lawfully and possibly file a lien arising out of the Contract and related to work covered by payment, may be requested. Submit partial waivers for the amount requested (prior to deduction or retainage) on each item; and when the application shows completion of an item, submit final or full waivers. The Owner reserves the right to designate which entities involved in the work must submit waivers.
- C. Payment Application Times: The "date" for each progress payment is as indicated in the Owner-Contractor Agreement, or if none, as indicated therein the 30th day of each month.
- D. Application for Payment Form: AIA Document G702 and G703 Continuation Sheets.
- E. Application for Payment Preparation: Except as otherwise indicated, complete every entry provided for on the form, including notarization and execution by an authorized person. Incomplete applications will be returned without action. Entries must match the current data of the Schedule of Values and Progress Schedule. Listings must include the amount of Change Orders approved prior to the last day of the "period of construction" covered by the Application.
- F. Application Transmittal: Submit four (4) signed copies of each Application for Payment, one copy which is to be completed with waivers of lien and similar attachments. Submit each copy with a transmittal form listing those attachments, and recording the appropriate information related to the Application in a manner acceptable to the Owner's representative / Architect / Engineer.
- G. Application Processing: Within seven (7) days of receipt of a properly documented Application, the Owner's representative / Architect / Engineer shall review and certify to the Owner the amount determined to be properly due, or if the form is incorrectly prepared, return to the Contractor for correction. Upon receipt of a certified Application from the Owner's representative / Architect / Engineer, the Owner will make payment within the time

allowed by the Contract Documents.

- H. Initial Payment Application: The principal administrative actions and submittals which must precede or coincide with submittal of the first Application for Payment can be summarized as follows, but not necessarily by way of limitation:
 - 1. Listing of subcontractors, testing laboratory, principal suppliers and fabricators.
 - 2. Listing of Contractor's staff assignments and principal consultants.
 - 3. Copies of Building Permit (if Contractor's responsibility) and similar authorizations and permits from governing authorities.
 - 4. Progress Schedule.
 - 5. Performance and Labor and Materials Payment Bonds.
 - Schedule of Values.
 - Certificates of Insurance.
 - 8. Submittal Schedule.
- I. Application at Time of Substantial Completion: Following issuance of Owner representative's / Architect's / Engineer's final "Certificate of Substantial Completion," and also, in part, as applicable to prior Certificates on portions of completed work as designated, a "special" payment application may be prepared and submitted by the Contractor. The principal administrative actions and submittals which must proceed or coincide with such special applications can be summarized as follows, but not necessarily by way of limitation:
 - Occupancy Permit(s) and similar approvals or certifications by governing authorities and franchised services, assuring the Owner's full access and use of completed work.
 - 2. Final cleaning of the work.
 - 3. Coordination with the Owner on the change over of insurance coverage, including proof of extended coverage, as required.
 - 4. Change of door locks and other Contractor's access provisions to the Owner's property.
 - 5. Listing of the Contractor's incomplete work, recognized as exceptions to the Certificate of Substantial Completion.
- J. Final Payment Application: The administrative actions and submittals which must precede or coincide with submittal of a final Application for Payment can be summarized as follows, but not necessarily by way of limitation:
 - 1. Warranties, (Guarantees), maintenance agreements, and similar provisions of the Contract Documents.
 - 2. Test / adjust / balance records, maintenance, instructions, meter readings, start-up performance reports, training, and similar change-over information germane to the Owner's occupancy, use, operation and maintenance of completed work.

- 3. Turn-over of spare materials, parts and tools to the Owner, as specified herein.
- 4. Completion of items specified for completion beyond the time of Substantial Completion (regardless of whether or not a special payment application was previously submitted).
- 5. Release of liens and other assurances, satisfactory to the Owner, that unsettled claims will be settled, and that work not actually completed and accepted will be completed without undue delay.
- 6. Transmittal of required project construction records to the Owner.
- 7. Proof, satisfactory to the Owner, that taxes, fees and similar obligations of the Contractor have been paid.
- 8. Satisfactory removal of temporary facilities, services, surplus materials, rubbish and similar elements.
- 9. Consent of surety for final payment, as required.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01205

PROCEDURES AND CONTROLS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The Contractor shall be responsible for the control and coordination of all work by his forces, subcontractors and suppliers. Procedures and performance required for this purpose include:
 - 1. Coordination and meetings including meeting minutes.
 - Pre-Installation Conferences.
 - 3. Adequate administrative and supervisory personnel.
 - 4. Maintenance of surveys and records.
 - 5. Enforcement of tradespeople and workmanship standards.
 - 6. Coordination of the various trades and subcontractors.
 - 7. Conducting of inspections, tests and reports.
 - 8. Coordination of general installation provisions.
 - 9. Proper cutting and patching procedures and techniques.
 - 10. Cleaning and protection of the work.

1.2 COORDINATION AND MEETINGS

- A. General: Prepare and distribute to each entity performing work at the Project Site, a written memorandum of instructions on required coordination of activities, including required notices, reports and attendance at meetings. Prepare similar memoranda for separate contractors where the interfacing of work is required.
- B. Coordination Drawings: Where work by separate entities requires off-site fabrication of products and materials which must be accurately interfaced and closely intermeshed to produce the required results, prepare coordination drawings to interface and sequence the work shown by separate Shop Drawings.

1.3 PRE-INSTALLATION CONFERENCES

- A. General: Schedule and conduct pre-fabrication and pre-installation meetings as required by the Contract Documents. Pre-fabrication and pre-installation meetings are intended to assist the Contractor in determining beforehand specific project requirements and to encourage coordination between the various trades. Schedule meetings at times appropriate to the type of work involved. Provide adequate notice to all parties to be involved.
- 1.4 ADMINISTRATIVE / SUPERVISORY PERSONNEL

- A. General: In addition to a general superintendent and other administrative and supervisory personnel required for performance of the work, provide specific coordination personnel as specified herein.
- B. Project Coordination: Provide a full-time Project Coordinator, who is experienced in the administration and supervision of building construction, including mechanical and electrical work, and who is hereby authorized to act as the general coordinator of interfaces between units of work. For purpose of this provisions, "interface" is defined to include the scheduling and sequencing of work, sharing of access to work spaces, installations, protection of each other's work, cutting and preparation of coordination drawings, inspections, tests, and temporary facilities and services.

1.5 SURVEYS AND RECORDS / REPORTS

- A. General: Working from lines and levels established by property survey, and as shown in relation to the work, establish and maintain bench marks and other dependable markers to set lines and levels for the work at each story of construction and elsewhere on-site as needed to properly locate each element of the entire project. Advise tradesmen performing the work, of the marked lines and levels provided for their use in the layout of work.
- B. Survey Procedures: Verify layout information shown on the Drawings, in relation to the property survey and existing bench marks before proceeding with layout of the actual work. As work proceeds, check every major element for line, level and plumb (where applicable), and maintain an accurate surveyor's log or record book of such checks, available for reference at reasonable times. Record deviations on the Record Drawings.

1.6 TRADESPEOPLE AND WORKMANSHIP STANDARDS

A. General: Instigate and maintain procedures to ensure that persons performing work at the site are skilled and knowledgeable in the methods and craftsmanship needed to produce the required quality levels for workmanship in the completed work. Coordinate the work of trades and subcontractors. Remove and replace work which does not comply with the workmanship standards as specified and as recognized in the construction industry for the applications indicated. Remove and replace work damaged or deteriorated by faulty workmanship and lack of protection of the work.

1.7 INSPECTIONS, TESTS AND REPORTS

A. General: Required inspection and testing services, as called for in the Specifications are intended to assist in the determination of probable compliance of the work with requirements, but do not relieve the Contractor of responsibility for compliance, or for general fulfillment of the requirements of the Contract Documents. The specified inspections and tests are not intended to limit the Contractor's quality control program. Afford reasonable access to agencies and companies performing tests and inspections. Provide adequate notification to the testing service of the schedule which impacts performance of the required tests.

B. Contract Conforming Work:

- Resulting from Contract and Code Required Testing / Inspection: The Contractor to obtain and pay the cost of Testing / Inspection Services. Contractor to provide for work required to patch any damaged work.
- 2. Resulting from Owner Required Testing / Inspection: The Owner to pay the cost for initial Testing / Inspection Services. Contractor to patch any damaged work as follows:

a. Non-conforming Work:

- The Contractor to pay the cost for initial testing / inspection and other fair costs, if any, incurred by the Owner and Architect which directly result from the testing / inspection requirements of non-conforming work.
- 2) The Contractor to correct defective work to meet the Contract requirements. Pay for all subsequent costs including, but not limited to, further testing, as may be required. Requests for additional time will generally not be considered when resulting from the installation of and/or correction of defective work.

C. Qualification of Testing Agencies:

- Except as otherwise indicated, and except where manufacturer's testing facilities are indicated as acceptable, engage independent testing laboratories specializing in the required services, and complying with "Recommended Requirements for Independent Laboratory Qualification" by American Council of Independent Laboratories (ACIL).
- D. Reports: Submit test / inspection reports, including agency's analysis of the results and recommendations, where applicable, in duplicate, except as otherwise indicated, and submit copies directly to the governing authorities where required or when requested.

1.8 DAMAGE CLAIMS

Α. The Contractor will be responsible for adequately securing materials stored at the Project Site, and the work in progress, and to conduct the work in such a way as to not create undue risk of injury or damage to persons or property. It is required that the Contractor adequately fence and sign the Project Site, as necessary, and / or arrange and provide for security personnel to adequately keep unauthorized persons from entering the construction area at any hour of the day or night. Notwithstanding anything to the contrary in the General Conditions, and without limiting the generality of anything contained in the General Conditions, Drawings or Specifications, the Contractor is responsible for all damages to persons and property, including damage to the work of other contractors, that occurs as a result of the Contractor's negligence or the negligence of its employees, agents, representatives, or subcontractors upon the Project, in connection with its operations, use of the Project, or prosecution of the work. The Contractor will indemnify and hold harmless the Owner and all of its officers, agents, employees and consultants from any liability, claims, demands or causes of action of any nature whatsoever for damages of any kind, as above set forth, and the Contractor agrees, at its expense, to defend any legal or other action brought against the Owner founded upon such liability, claim, demand or cause of action and to pay any attorneys' fees incurred by the Owner in connection therewith.

1.9 COORDINATION WITH OTHER CONTRACTORS

A. Schedule work activity in coordination with all on-site contractors; make adjustments in work activities to accommodate the requirements of other contractors.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Pre-Installation Conferences: Well in advance of the start of installation of every major unit of work which requires coordination and interfacing with other work, meet at the Project Site with installers and representatives of manufacturers and fabricators involved in or affected by the unit of work, and in its coordination or integration with other work which has preceded or will follow. At each meeting review the progress of other work and preparations for the particular work under consideration, including requirements of the Contract Documents, options, related Change Orders, purchases, deliveries, Shop Drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety inspection and testing requirements, required performance results, recording requirements, and protection. Record the significant discussions of each conference, record agreements and disagreements, along with a final plan of action. Distribute records of meetings promptly to everyone concerned, including the Owner's representative / Architect / Engineer.
- B. Installer's Inspection of Conditions: Require Installer of each major unit of work to inspect substrate to receive work, and conditions under which work will be performed, and to report (in writing to Contractor) unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- C. Manufacturer's Instructions: Where installations include manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation to the extent these are more explicit or more stringent than requirements indicated in the Contract Documents.
- D. Inspect each item of materials and equipment immediately prior to installation, and reject damaged and defective items.
- E. Provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansions and building movements, provide uniform joint widths in exposed work, organized for the best possible visual effect, as approved by the Architect.
- F. Re-check measurements and dimensions of the work as an integral step for starting each installation.
- G. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure the best possible results for each unit of work, and in coordination with the entire work. Isolate each unit of work from non-comparable work as necessary to prevent deterioration.
- H. Coordinate enclosure (closing-in) of the work with required inspections and tests to minimize the necessity of uncovering work for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, mount individual units of the work in compliance with ADAAG or industry-recognized standards for the applications indicated. Refer questionable mounting heights to the Owner's representative / Architect / Engineer for a final decision.

3.2 CUTTING AND PATCHING

A. General: Do not cut-and-patch structural work in a manner that will result in reduction of the load-carrying capacity or load / deflection ratio; submit proposed cutting and patching

of structural elements to the Owner's representative / Architect / Engineer for structural approval before proceeding. Do not cut-and-patch operational elements and safety related components in a manner that will result in decreased operational life, increased maintenance, or decreased safety. Do not cut-and-patch work which is exposed on the exterior or exposed in occupied spaces, in a manner that will result in the reduction of visual qualities or result in substantial evidence of cut-and-patch work, both as judged solely by the Architect. Remove and replace work judged to be cut-and-patched in a visually unsatisfactory or otherwise objectionable manner.

- B. Materials: Except as otherwise indicated or approved, provide materials for cutting-and-patching which will result in equal-or-better work than the work being cut-and-patched, in terms of performance characteristics, and including visual effect, where applicable. Use materials identical to the original materials where feasible, and where recognized that satisfactory results can be produced thereby.
- C. Temporary Support and Protection: Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work. Provide adequate protection of other work during cutting-and- patching, to prevent damage, and provide protection of the work from adverse weather exposure.
- D. Cut work by methods least likely to damage work to be retained and adjoining work.
 - 1. Where physical cutting action is required, cut the work with sawing and grinding tools, not with hammering and chipping tools. Core drill openings through concrete work.
 - 2. Comply with the requirements of applicable Division 2, Specifications Sections where cutting-and-patching requires excavating and backfilling.
- E. Restore exposed finishes of patched areas, and, where necessary, extend the finish restoration onto the adjoining retained work, in a manner which will eliminate evidence of patching.
 - 1. Where patching occurs in a smooth, painted surface, extend the final paint coat over the entire unbroken surface containing the patch after the patched areas have received prime and base coats.

3.3 CLEANING AND PROTECTION

- A. General: During handling and installation of work at the Project Site, clean and protect work in progress and the adjoining work on a basis of perpetual maintenance. Apply suitable protective covering over newly installed work where reasonably required to ensure freedom from damage and deterioration at the time of substantial completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessarily throughout the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- B. Limiting Exposures of Work: To the extent possible through reasonable control and protection methods, supervise performance of the work in a manner and by means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging, or otherwise deleterious exposures during the construction period.

END OF SECTION

SECTION 01310

PROJECT MANAGEMENT AND COORDINATION

PART 1 **GENERAL**

1.1 **SUMMARY**

- A. Section Includes:
 - Administrative and supervisory personnel.
 - 2. Submittals.
 - 3. Contractor's quality control.
 - 4. Coordination.
 - 5. Project coordination.
 - 6. Pre-Construction meeting.
 - 7. Progress meetings.
 - 8. Pre-Installation meetings.
 - 9. Schedule of Values.
- В. Related Documents: The Contract Documents, as defined in Section 01010 - Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Project Coordination Administrator: Contractor's Representative experienced in administration, supervision, and quality control of building construction similar to the work of this Project, including mechanical, plumbing and electrical work.
- B. Project Field Superintendent: Contractor's Representative experienced in general field supervision of building construction similar to the work of this Project including finish work, mechanical, plumbing and electrical work; to supervise, direct, inspect and coordinate work of the Contractor, subcontractors, suppliers and installers, and expedite the work to ensure compliance with the Construction Schedule.

SUBMITTALS 1.3

- Α. Submit a list of the Contractor's principal staff assignments including Project Coordination Administrator, Project Field Superintendent, Quality Control Representative, and other personnel assigned to the Project Site; identify their duties and responsibilities.
- B. Submit Shop Drawings, product data, and other required submittals in accordance with Section 01330 - Submittal Procedures, for review and compliance with the Contract Documents.

C. Submit Requests for Information (RFI) and interpretation of Contract Documents in a timely manner.

1.4 CONTRACTOR'S QUALITY CONTROL

- Perform project quality control in accordance with requirements in the Contract and as Α. specified in Section 01450 - Quality Control.
- В. Coordinate the scheduling of inspections and testing required by the individual Specification Sections and in accordance with Section 01450 - Quality Control.

COORDINATION DRAWINGS 1.5

A. Prepare and distribute coordination drawings where close coordination is required for the installation of products and materials fabricated off-site by separate entities, and where limited space availability requires maximum utilization of space for the efficient installation of different components. Show the interrelationship of components shown on separate Shop Drawings. Indicate the required installation sequences.

1.6 PROJECT COORDINATION

- A. Coordinate construction activities and the work of all trades under various Sections of these Specifications and work of the Contract to facilitate the orderly installation of each part of the work. Coordinate construction operations included under different Sections of the Specifications and the Contract that are dependent upon each other for proper installation, connection and operation.
- B. Coordinate the construction activities of this Contract with Contractors retained separately the Owner.
- C. Where installation of one part of the work is dependent upon installation of other components, either before or after that part of the work, schedule construction activities in a sequence to obtain an uninterrupted installation.
- D. Obtain drawings, manufacturer's product data, instructions, and other data to provide a proper and complete installation.
 - Check field dimensions prior to installing products. Verify necessary clearances 1. and means of access for equipment from storage to the final position.
 - 2. Make data and information available to all trades involved.
- E. Ensure that utility requirements of operating equipment are compatible with the building utilities. Coordinate the work of various Specification Sections for installation and final connection of the equipment.
 - Ensure that mechanical, plumbing and electrical rough-ins have been installed and are properly sized and located.
- F. Coordinate space requirements and the installation of mechanical, plumbing and electrical work indicated diagrammatically on the Drawings. Follow the routing shown for pipes, ducts, conduits and wiring as closely as possible; make runs parallel with the lines of the building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

- G. Where space is limited, coordinate the installation of different components to ensure maximum accessibility for required maintenance, service and repairs.
- Η. Provide for installation of items scheduled for future installation.
- I. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Prepare memoranda for the Owner's representative, separate contractors, where coordination of their work is required.
- J. In finished areas, conceal pipes, ducts, conduit and wiring within the construction. Coordinate the location of fixtures and outlets with finish elements.
- K. Coordinate completion and clean up of the work of the separate Sections in preparation for completion of the Project.
- L. After occupancy, coordinate access to the Site for correction of defective work and work not in accordance with the Contract Documents, to minimize disruption of the Owner's / Tenant's activities.

1.7 PRE-CONSTRUCTION MEETING

- A. The Owner's representative will schedule a Pre-Construction Meeting after issuance of a Notice to Proceed.
- B. Attendance: Owner's representative, Architect, Engineers, Contractor, Project Superintendent and Contractor's Quality Control Representative and other contractors retained by the Owner.

C. Agenda:

- 1. Submission of executed Bonds and Insurance Certificates.
- 2. Distribution of Contract Documents.
- 3. Submission of the Schedule of Values.
- 4. Designation of personnel representing the parties to the Contract.
- 5. Procedures and processing of Requests for Information (RFI), field decisions, submittals, substitutions, applications for payment, change proposals, Change Orders, and contract closeout procedures.
- 6. Scheduling.
- 7. Construction facilities and temporary controls.
- D. The Contractor will record minutes of the meeting and distribute copies to the participants and those affected by the decisions made.

PROGRESS MEETINGS 1.8

A. The Contractor will schedule and administer meetings throughout progress of the work at intervals to be determined.

- B. The Contractor will make arrangements for meetings, prepare an agenda, distribute copies to participants and preside over the meetings.
- C. Attendance: Job Superintendent, Contractor's Quality Control Representative, major subcontractors and suppliers. Architect and the Owner's representative, engineers and subcontractors as appropriate to the agenda for each meeting.

D. Agenda:

- 1. Minutes of previous meetings.
- 2. Work progress.
- 3. Status of payments.
- 4. Field observations, problems, and decisions.
- 5. Submittals Schedule and the status of submittals.
- 6. Status of off-site fabrications and delivery schedules.
- 7. Progress Schedule.
- 8. Corrective measures to regain projected schedules, if necessary.
- 9. Planned progress during the succeeding work period.
- 10. Quality and work standards and pre-installation meetings.
- 11. Pending change proposals and effect of proposed changes on the progress schedule, and coordination.
- 12. Other business relating to the work.
- D. The Owner's representative will record the minutes and distribute copies to the participants.

1.9 PRE-INSTALLATION MEETING

- A. When required by an individual Specifications Section, or as determined necessary by the Owner's representative, convene a Pre-Installation Meeting at the Project Site prior to commencing the work of that Section.
- B. Require attendance of the parties directly affecting, or affected by the work of the specific Specifications Section.
- C. Notify the Architect seven (7) days in advance of the meeting date.
- D. Prepare an agenda and preside at the meetings:
 - Review requirements of the Contract Documents, conditions of installation, 1. preparation, and installation procedures.
 - Review coordination with related work. 2.

E. The Contractor shall record minutes of the meetings and distribute copies to the participants and those affected by the decisions made.

1.10 SCHEDULE OF VALUES

A. Prior to submittal of the first payment application, submit a construction cost breakdown to the Architect in a form and format acceptable to the Architect.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal procedures.
 - 2. Product data, Shop Drawings, samples and miscellaneous work.
 - Assurance / Control submittals.
 - a. Certificates.
 - b. Manufacturer's installation instructions.
 - 4. Owner representative's action.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 DEFINITIONS

- A. Product Data: Includes manufacturer's standard printed information on materials, products and systems; not especially prepared for this Project, other than the designation of selections from among available choices printed therein.
- B. Shop Drawings: Include specially-prepared technical data for this Project, including drawings, details, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.
- C. Samples: Include both fabricated and unfabricated physical examination of materials, products and units of work; both as competed units and as smaller portions of units of work; either for limited visual inspection or, where indicated, for more detailed testing and analysis.
- D. Mock-Ups: A special form of samples, which are too large or otherwise inconvenient for handling in the specified manner for transmittal of sample submittals.
- E. Design Calculations: As required to show that component parts of a system meet the design criteria and performance requirements. Manufacturer's published calculations or as certified by a professional engineer. Subject to approval of the Owner's representative, manufacturer or fabricator certifications may be accepted in lieu of calculations.
- F. Miscellaneous Submittals: Includes warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, quality testing

and field measurement data, operating and maintenance materials, extra and overrun stock, devices and similar information; applicable to the work and not processed as product data, shop drawings or samples.

1.3 SUBMITTALS

- A. Submit two (2) copies of a proposed Schedule of Submittals to the Owner's representative within 10 days after receipt of a Notice to Proceed. List all items requiring submittal for review and approval by the Architect Engineer / Owner's representative.
- B. Schedule of Submittals. Include the following:
 - 1. Indicate the type of submittal: Product Data, Shop Drawing, sample, certificate, warranty, technical representative's report or other submittal.
 - 2. Identify the Specifications Section number, Section paragraph number where the item is specified and a description of the item being submitted.
 - 3. Indicate the scheduled date for initial submittal, date for approval and date for possible re-submittal for each required submittal.
- C. Coordinate the Schedule of Submittals with the Construction Schedule.

1.4 SUBMITTAL PROCEDURES

A. General:

- Coordination and Sequencing: Coordinate the preparation and processing of submittals with performance of the work so that the work will not be delayed by submittals. Coordinate and sequence different categories of submittals of the same work, and or interfacing units of work, so that one will not be delayed by coordination of the submittal review with another.
- 2. Transmit each submittal to the Owner's representative on an Owner-approved transmittal form.
- 3. On the Transmittal form, provide a place to indicate the Project name, date, "To:", "From:"; names of the Contractor, subcontractors, suppliers, manufacturers, pertinent drawings(s), detail number(s), Specifications Sections, category and type of submittal, purpose, description, distribution record (for both transmittal and submittals), and signature of the transmitter.
- 4. Identify variations from the Contract Documents and product or system limitations which may affect successful performance of the completed work.
- 5. Apply the Contractor's stamp, signed or initialed certifying that review, verification of the products required, field dimensions, adjacent construction work and the coordination of information, is in accordance with requirements of the work and the Contract Documents.
- 6. Provide space for the Owner representative's remarks and "Action" stamp.
- 7. Sequentially number each transmittal form. Provide the original number and a sequential alphabetic suffix on each re-submittal.

- 8. Package each submittal appropriately for transmittal handling.
- Schedule submittals to comply with the scheduling requirements of the Construction Schedule.
- 10. On each re-submittal, identify all changes made since the previous submission.
- 11. Distribute copies of reviewed submittals to the field, subcontractors and suppliers, as appropriate. Instruct the parties to promptly report any inability to comply with the provisions.
- 12. Submittals not required will not be processed.
- 13. Submittals received from sources other than through the Contractor's office will be returned "without action".
- 14. Except as otherwise indicated in individual Specifications Sections, comply with the requirements specified herein for each indicated category of submittal. Provide and process intermediate submittals, where required between the initial and final submittals, similar to initial submittals.

B. Product Data:

- 1. Collect required data into one submittal for each unit of work or system; mark each copy to show which choices or options are applicable to the Project.
- Include manufacturer's standard printed information such as catalog cuts, manufacturer's published instructions, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, performance curves and other similar items. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements.
- 3. Mark each copy to identify the applicable products, models, options, and other data. Supplement the manufacturers' standard data with information unique to this Project.
- 4. Indicate product utility and electrical characteristics, utility connection requirements, and the location of utility outlets for service to functional equipment and appliances.
- 5. Submit the number of copies the Contractor requires, plus four (4) copies to be retained by the Owner's representative. Submit six (6) sets of product data; three (3) sets will be returned. Maintain one (1) set of product data at the Project Site, available for reference.
- 6. Do not submit product data or permit its use on the Project until compliance with requirements of the Contract Documents has been confirmed by the Contractor.
- 7. Do not proceed with the installation of materials, products or systems until the final copy of applicable product data is in the possession of the installer.

C. Shop Drawings:

- 1. Provide newly prepared information on reproducible sheets, with graphic information at accurate scales, and with the name of the preparer indicated. Show dimensions and notes based on field measurements. Identify materials and products in the work shown. Provide key plans or cross reference to room numbers to identify the location of multiple elements. Indicate compliance with standards and special coordination requirements. Identify deviations from the Contract Documents, check dimensions; check that trades have been coordinated and that no conflict will develop in its installation.
- 2. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service to functional equipment and appliances.
- 3. Shop Drawings: Submit for review. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES above.
- 4. Submit in the form of one (1) translucent reproducible transparency and two (2) blueline or blackline prints. The transparency will be returned to the Contractor after review.
- 5. Do not allow copies of shop drawings without appropriate final "Action" markings by the Owner's representative to be used in connection with the work.

D. Samples:

- Submit samples to illustrate the functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- 2. Include full Project information on each sample submitted.
- 3. Provide units identical to the final condition of the proposed materials or products of the work. Include "range" samples of not less than three (3) units where unavoidable variations must be expected, and describe or identify variations between the units of each set. Provide a full set of optional samples where selection is required. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Submit samples for review and confirmation of color, pattern, texture, and "kind".
- 4. Submit samples of finishes in the available colors, textures and patterns.
- 5. Submit the number of samples specified in the individual Specifications Sections; a minimum of two (2), one of which will be retained by the Owner's representative. At Contractor's option, provide preliminary submittal of a single set of samples for review and "Action". Otherwise, initial submittals will be considered the final submittal unless returned with an "Action" mark that requires re-submittal. Submit three (3) sets of samples in the final submittal; two (2) sets will be returned.
- 6. Maintain one (1) final set of samples at the Project Site, in suitable condition and available for quality control comparisons.
- 7. The Owner's representative will not "test" samples, except as otherwise indicated, for compliance with other requirements, which are the responsibility of the Contractor.

8. Returned samples intended or permitted to be incorporated into the work are so indicated in the individual Specifications Sections Samples; must be in an undamaged condition at the time of acceptance.

E. Mock-Ups:

 Mock-ups and similar samples indicated in individual Specifications Sections are recognized as a special type of sample. Comply with the requirements for "samples", to the greatest extent possible, and process transmittal forms to provide a record of activity.

F. Certificates:

- When specified in individual Specifications Sections, submit certification by the manufacturer Owner's representative in the quantities specified in Product Data above.
- Indicate that the material or product conforms to or exceeds the specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.
- 3. Certificates may be recent or previous test results on materials or products, but must be acceptable to the Owner's representative.

G. Inspection and Test Reports:

1. Classify each as either "product data" or "shop drawing", depending upon whether the report is uniquely prepared for the Project or a standard publication or workmanship control testing at the point of production. Process accordingly.

H. Manufacturer's Installation Instructions:

- 1. When specified in individual Specification Sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing in the quantities specified in Product Data above.
- 2. Indicate special procedures, perimeter conditions requiring special attention and special environmental criteria required for the application or installation.

I. Warranties:

1. Refer to individual Specifications Sections for specific general requirements on warranties, product / workmanship bonds, and maintenance agreements. In addition to copies for the Contractor's use, furnish two (2) additional executed copies. Furnish two (2) additional copies when required for the maintenance manuals.

J. Standards:

 Where copy submittal is indicated, and except where specified integrally with "Product Data", submit two (2) copies for the Owner representative's use. Where workmanship at the Project Site and elsewhere is governed by standards, furnish additional copies to the fabricators, installers and others involved in performance of the work.

K. Closeout Submittals:

 Refer to individual Specifications Sections and to "closeout" paragraphs for specific requirements on submittal of closeout information, materials, tools and similar items.

L. Record Document Copies:

- 1. Submit one (1) set.
- M. Maintenance / Operating Manuals;
 - 1. Submit two (2) bound sets.
- N. Materials and Tools:
 - 1. Refer to individual Specifications Sections for the required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted.
- O. Administrative Submittals:
 - 1. Submit three (3) copies. No copies will be returned.
- P. General Distribution:
 - 1. Provide additional distribution of submittals to the subcontractor, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work. Include such additional copies in the transmittal when required to receive an "Action" marking before final distribution. Record distributions on the transmittal forms.

1.5 OWNER REPRESENTATIVE'S ACTION

- A. For submittals where action and return is required or requested, the Owner's representative will review each submittal, mark to indicate the action taken, if any, and return promptly, generally within 10 days, excluding delivery time to and from the Contractor. When a submittal is to be reviewed by an off-island consultant or when it must be held for coordination, 12 days will be required for review.
 - 1. Compliance with the specified characteristics is the Contractor's responsibility.
 - 2. No action will be taken on submittals for information, closeout documents, record documents and other submittals for similar purposes.
- B. Action Stamp: Owner's representative will stamp each submittal to be returned to the Contractor with a uniform, self-explanatory "Action" stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 - 1. "Accepted" or "Approved": Final Unrestricted Release. When a submittal is marked "Accepted" or "Approved", that part of the work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents; final acceptance will depend upon that compliance.

- 2. "Accepted" or "Approved as Noted": Final-But-Restricted Release. When a submittal is marked "Accepted' or "Approved as Noted", that part of the work covered by the submittal may proceed provided it complies with the notations and corrections marked on the submittal and meets requirements of the Contract Documents; final acceptance will depend on that compliance.
- 3. "Rejected or Disapproved: Submit Specified Item" or "Revise and Resubmit": Returned for Re-submittal. When a submittal is marked "Rejected or Disapproved: Submit Specified Item", or "Revise and Resubmit," do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity. Revise or prepare a new submittal in accordance with the notations; re-submit without delay. Repeat as necessary to obtain an acceptable action mark.
 - a. Do not permit submittals marked "Rejected or Disapproved: Submit Specified Item" or "Revise and Resubmit" to be used at the Project Site or elsewhere where work is in progress.
- 4. "Returned: Not Required": Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Returned: Not Required".
- C. Any review and approval by the Owner's representative of any Product Data, Shop Drawings, or Samples is only for conformance to the general design concept of the work and does not extend to consideration of structural integrity, safety, detailed compliance with the Contract Documents or any other obligation of the Contractor. Review and approval of any such data does not relieve the Contractor from its obligation to meet his requirements under the Contract Documents, not shall it give rise to any claim in favor of the Contractor or any third party against the Owner.

PART 2PRODUCTS

Not Used.

PART 3EXECUTION

Not Used.

END OF SECTION

SECTION 01440

REQUESTS FOR INFORMATION

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

A. Administrative requirements for "RFI's".

1.2 DEFINITIONS

A. Request for Information (RFI): Contractor's written request for information to confirm, re-verify, or clarify the intent required by the Contract Documents.

1.3 SUBMITTALS

A. Submit RFI's on the Contractor's standard form.

1.4 QUALITY ASSURANCE

A. Architect's Intent: It is a condition of the Contract for Construction, that prior to signing of the Contract, the Contractor be fully familiar with and clear as to the requirements (Architect's design intent) for this Project as presented in the Contract Documents. It is also a condition of the Contract, that prior to signing of the Contract, should there be any aspect of the Contract which is not clear or not complete enough, that the Contractor secure the necessary information from the Architect in order to attain the required understanding of the Project. The primary reasons for this is so the Owner can receive a fair and complete cost proposal for the Work, without hidden or additional costs and to minimize unnecessary costs to administer the Project during progress of the Work.

B. Architect's Drawings and Specifications

- 1. Design Intent: It is an accepted historical and understood practice in the industry that the Architect's Drawings and Specifications reasonably and professionally convey the design intent for the Project without necessarily indicating every single condition for the Work, but to the degree necessary for Contractor's to propose a fair and complete cost for the Work, including for Work not indicated, but implied by the Architect's design intent.
- 2. RFI's Basis of Communication: Due to the fact that all conditions are not indicated in the Contract Documents, it is understood that additional clarifications will be necessary during the course of the Work for the Contractor to fully achieve all aspects of the Architect's design intent, and that the RFI procedure becomes the administrative basis by which information is formally conveyed between the Architect and the Contractor.
- C. Misuse of the RFI Process: RFI's are not to be used frivolously, including as a method of enlisting the Architect's services for finding information already indicated in the Contract Documents.
- D. Contractor Initiation: All RFI's must be submitted by the General Contractor.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 CONTRACTOR'S RESPONSIBILITIES

- A. Examination: Upon discovering a potential aspect of the Work which may require further clarification from the Architect, the Contractor shall thoroughly examine the Contract Documents to ensure that the information is not indicated.
- B. Submittal: When a reasonable search for the needed information has been made without success, complete and submit an RFI.

3.2 ARCHITECT'S RESPONSIBILITIES

A. Review: Not later than ten (10) working days after an RFI is received, return a response to the Contractor on the submittal form.

END OF SECTION

SECTION 01450

QUALITY CONTROL

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Owner representative's quality assurance (QA).
 - 2. Contractor's quality control (QC).
 - 3. Quality control procedures.
 - 4. Testing and inspection laboratory services.
 - 5. Contractor's field inspection and testing.
 - 6. Contractor's reports.
 - 7. Contractor's testing and inspection reports.
 - 8. Non-compliance check-off list.
 - 9. Completion and inspection of work.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 802 Practice for Conducting an Interlaboratory Test Program to Determine the Precision of Test Methods for Construction Materials.
 - 2. ASTM C 1077 Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
 - 3. ASTM C 1093 Practice for Accreditation of Testing Agencies for Masonry.
 - 4. ASTM D 3740 Practice for Minimum Requirements for Agencies Engaged in Testing and / or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - 5. ASTM D 4561 Practice for Quality Control Systems for Organizations Producing and Applying Bituminous Paving Materials.
 - 6. ASTM E 329 Specification for Agencies Engaged in Construction Inspection and / or Testing.
 - 7. ASTM E 543 Specification for Agencies Performing Nondestructive Testing.

8. ASTM E 699 - Practice for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating of Building Components.

1.3 SUBMITTALS

- A. Submit four (4) copies of a proposed Contractor Quality Control Plan within fifteen (15) days after receipt of the Notice to Proceed.
- B. Contractor's Quality Control Plan. Indicate the following:
 - 1. Quality Control Organization: In chart form, showing relationship of the Quality Control organization to other elements of the Contractor's organization.
 - Names and qualifications of personnel in the Quality Control organization, including the Contractor's Quality Control Representative, inspectors, independent testing and inspection laboratory, independent fire alarm test and certification agency, independent fire sprinkler test and certification agency, independent HVAC test and balance agency, etc.
 - 3. Procedures for reviewing coordination drawings, Shop Drawings, certificates, certifications and other submittals.
 - 4. Testing and Inspection Schedule, keyed to the Construction Schedule, indicating tests and inspections to be performed, names of persons responsible for the inspection and testing for each segment of the work, including preparatory, initial and follow-up.
 - 5. Proposed forms to be used including Contractor's Daily Report, Contractor's Test and Inspection Report, and Non-Compliance Check-Off List.
- C. Independent Testing and Inspection Laboratory. Submit the following:
 - 1. Name.
 - Address.
 - 3. Telephone number.
 - 4. Name of full-time registered Engineer.

1.4 OWNER REPRESENTATIVE'S QUALITY ASSURANCE

- A. The Owner's representative will inspect the quality of work being installed, review and verify the accuracy of changes in the work, receive and distribute the Contractor's submittals, determine compliance with the Contract Documents and preside at progress and coordination meetings.
- B. The Owner's representative will arrange for factory tests when needed; at the Contractor's cost.
- C. Owner's Field Inspection: The Owner' representative will perform inspections of the work for quality assurance (QA).
- 1.5 CONTRACTOR'S QUALITY CONTROL REPRESENTATIVE

A. Qualifications for Contractor's Quality Control Representative: Minimum five (5) years construction quality control or construction management experience on work similar to the work of this Contract.

1.6 CONTRACTOR'S QUALITY CONTROL

- A. The Contractor is responsible for the overall quality of the work performed by the Contractor and subcontractors working under this Contract. The quality of any part of the work must not be less than that required by the Contract Documents. If the Owner's representative determines that the quality of the work does not conform to the Contract Documents, the Owner's representative will notify the Contractor, in writing. The Contractor must correct the identified deficiencies and advise the Owner's representative of the corrective action taken within 7 days of the date of notification.
- B. Monitor quality control over the Contractor's staff, subcontractors, suppliers, manufacturer's, products, services, site conditions and workmanship.
- C. Comply fully with the manufacturer's published instructions, including each step in the sequence of installation.
- D. Should the manufacturer's published instructions conflict with the Contract Documents, request clarification from the Owner's representative before proceeding.
- E. Comply with the specified standards as a minimum quality for the work, except where more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- F. Perform the work by persons who are thoroughly qualified and trained in their respective trade to produce workmanship of the specified quality.
- G. Secure products in place with positive anchorage devices, designed and sized to withstand wind and seismic loads, stress, vibration, physical distortion and disfigurement.
- H. Perform tests required by governing authorities and utility agencies having jurisdiction.
- I. Contractor's Field Inspection: The Contractor or his authorized representative(s) shall inspect all work under this Contract for quality control (QC).

1.7 QUALITY CONTROL TESTING:

- A. Field tests made at, or in the vicinity of the Project Site in connection with the actual construction, including but not limited to, concrete batch plants, asphalt batch plants and similar establishments directly involved in the construction process.
 - 1. Field Tests by the Contractor: The Contractor shall perform all field testing specifically required of him in the Contract Specifications and all field tests required by "Applicable Publications" referenced in the Contract Specifications. The cost of testing shall be borne by the Contractor. The Contractor shall furnish all equipment, instruments, qualified personnel and facilities necessary to perform all tests required by the Contract Documents. The required testing services shall be performed by the Contractor or acquired by the Contractor through a qualified commercial testing laboratory. If a commercial testing laboratory is retained to perform tests under this Contract, all test reports shall be certified by the laboratory. Test reports shall include the acceptable value for each specification item, actual test results obtained, methods used, and a statement that the product, equipment or system conforms or does not conform to the Specifications requirements.

- 2. Field Tests by Owner: Field tests conducted by the Owner will be made as necessary to assure quality or as otherwise provided herein.
- B. Factory tests made at the point of manufacture of various products shipped to the Project Site as a unit.
- C. Certified tests made by approved testing agencies on material and / or equipment to be incorporated into the Project under the Contract. These tests are those performed by Factory Mutual, Underwriters' Laboratories, Inc., and others.
 - Manufacturer's Certified Tests: Certified tests on materials to be incorporated into the work will be acceptable, provided they are performed by the manufacturer or by Owner's representative approved agencies or laboratories, show that the materials conform to the Specifications, and that tests and certifications meet the requirements of the paragraph entitled "Quality Assurance" below.

1.8 TESTING AND INSPECTION LABORATORY SERVICES

A. Selection and Payment:

- Employment and payment for services of an Independent Testing and Inspection Laboratory to perform specified testing and inspection shall be by the Contractor.
- 2. Owner Approval of Laboratories: All laboratory work performed under this Contract shall be done by a Laboratory approved by the Owner's representative, whether the laboratory is employed by the Contractor or by others, or is owned and operated by the Contractor. The basis of approval includes the following:
 - a. Laboratories performing work in connection with concrete, steel and bituminous material must conform to American Society for Testing and Materials (ASTM) E 329.
 - b. Laboratories performing work <u>not</u> in connection with concrete, steel and bituminous materials must conform to Sections 3 and 4 of ASTM E 329.
- 3. Employment of Independent Testing and Inspection Laboratory in no way relieves the Contractor of his obligation to perform work in accordance with the requirements of the Contract Documents.

B. Quality Assurance:

- 1. Comply with the requirements of ASTM C 802, ASTM C 1077, ASTM C 1093, ASTM D 3740, ASTM D 4561, ASTM E 329, ASTM E 543, ASTM E 699 and ASTM E 1691.
- 2. Laboratory Staff: Maintain a full-time registered Engineer on staff to review the services provided.
- Testing Equipment: Calibrated at reasonable intervals with devices of and accuracy traceable to either National Bureau of Standards or accepted values of natural physical constraints.

C. Laboratory Responsibilities:

1. Test samples of mixes submitted by the Contractor.

- 2. Provide qualified personnel at the Project Site. Cooperate with the Owner's representative and the Contractor in the performance of services.
- 3. Perform the specified sampling, testing and inspection of products in accordance with the specified standards.
- 4. Determine compliance of the materials and mixes with requirements of the Contract Documents.
- 5. Promptly notify the Contractor's Quality Control Representative and the Owner's representative of observed irregularities or non-conformance of work or products.
- 6. Perform additional tests as required by the Owner's representative.

1.9 CONTRACTOR'S FIELD INSPECTION AND TESTING

- A. Contractor: Test and inspect the work provided under this Contract to ensure that the work is in compliance with the Contract requirements. Required tests and inspections are indicated in the individual Specifications Sections.
- B. Preparatory Inspection: Performed prior to beginning the work and prior to beginning each segment of work and includes:
 - 1. Review of Contract requirements.
 - 2. Review of Shop Drawings and other submittal data after approval and return.
 - 3. Examination to assure that the materials and equipment conform to the Contract requirements.
 - 4. Examination to assure that the required preliminary or preparatory work is complete.
- C. Initial Inspection: Performed when a representative portion of each segment of the work has been completed, and includes:
 - 1. Performance of the required tests.
 - 2. Quality of the workmanship.
 - 3. Review for omissions and dimensional errors.
 - 4. Examination of products used, connections and supports.
 - 5. Approval or rejection of the inspected segment of work.
- D. Follow-Up Inspections: Performed daily and more frequently, as necessary, to ensure that non-complying work has been corrected.
- E. Testing and Inspection: Perform testing and inspection in accordance with requirements of the individual Specifications Sections.

1.10 CONTRACTOR'S WEEKLY REPORTS

- A. Submit weekly reports to the Owner's representative for days that work was performed. Include the following information:
 - Contractor's name and address.
 - 2. Job reference and information.
 - 3. Date, weather, minimum and maximum temperatures, rainfall and other pertinent weather conditions.
 - 4. Daily workforce of the Contractor and subcontractors, by trade.
 - Description of the work started, on-going work, and work completed by each subcontractor.
 - 6. Coordination implemented between the various trades.
 - 7. Approval of substrates received from various trades.
 - 8. Non-conforming and unsatisfactory items to be corrected.
 - 9. Remarks.

1.11 CONTRACTOR'S TESTING AND INSPECTION REPORTS

- A. Prepare and submit a written report of each test and inspection, signed by the Contractor's Quality Control Representative performing the inspection, within two (2) days after the day the inspection was made.
- B. Include the following on the written inspection reports:
 - 1. Cover sheet prominently identifying that the inspection "CONFORMS" or "DOES NOT CONFORM" to the Contract Documents.
 - 2. Date of the inspection and date of the report.
 - 3. Project name, location, solicitation number and Contractor.
 - 4. Names and titles of individuals making the inspection.
 - 5. Description of the Contract requirements for inspection by referencing the Specifications Section.
 - 6. Description of the inspection made, interpretation of the inspection results, and notification of significant conditions at the time of the inspection.
 - 7. Requirements for follow-up inspections.

1.12 NON-COMPLIANCE CHECK-OFF LIST

A. Maintain Check-Off List of work that does not comply with the Contract Documents, stating specifically what is non-complying, date the faulty work was originally discovered and the date the work was corrected. There is no requirement to report deficiencies corrected the same day the deficiency was discovered. Submit a copy of the

Non-Compliance Check-Off List of non-complying work items on a weekly basis for review at

the next Progress / Coordination Meeting.

1.13 COMPLETION AND INSPECTION OF WORK

- A. Prior to final acceptance by the Owner's representative, submit a certification signed by the Contractor stating that all work has been inspected and that all work, except as specifically noted, is complete and in compliance with the Contract Documents.
- B. Record Documents: By Contractor's Quality Control Representative. Ensure that "Record Documents" required by Section 01780 Closeout Submittals, are marked to show any deviations made during construction and are kept current on a daily basis. Upon completion of the work, certify the accuracy of the "Record Documents" and submit to the Owner's representative.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. Coordination and Approval.
- 2. Temporary Utilities: Electrical power, lighting, air conditioning and ventilation, water and sanitary facilities.
- 3. Fencing.
- 4. Barriers and Enclosures.
- 5. Access Roads and Parking Areas.
- 6. Project Signs.
- 7. Temporary buildings.
- 8. Construction Aids
- 9. Progress Cleaning and Waste Removal.
- 10. Ownership of Temporary Facilities and Controls.
- 11. Removal of Temporary Construction Facilities and Controls.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 COORDINATION AND APPROVAL

A. Coordinate with and obtain approval of the Owner's representative for each temporary facility and control, location, sequence and schedule before starting any temporary work.

1.3 ELECTRICAL POWER

- A. Contractor to provide and pay for electrical power from the local power authority; provide generator when island power is not available.
- B. Provide a temporary electric feeder from the electrical service at a location determined by the local power authority and approved by the Owner's representative.
- C. Provide temporary power panels, wiring and outlets for construction operations with branch wiring and distribution boxes located as required; provide properly sized flexible

power cords.

D. Provide temporary transformers, emergency generators, lines, etc., as necessary for continuous electrical supply to existing buildings affected by the construction of this Project.

1.4 LIGHTING

- A. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 footcandles.
- B. Permanent building lighting may be utilized during construction.

1.5 AIR CONDITIONING AND VENTILATION

- A. Provide and pay for cooling devices and cooling, as needed, to maintain the specified conditions for construction operations.
- B. Enclose the building prior to activating the temporary cooling equipment.
- C. Prior to the operation of permanent equipment for temporary purposes, verify that the installation is approved for operation, the equipment is lubricated, ductwork and equipment are clean, unfinished construction procedures will not be detrimental to use of the equipment, and filters are in place. Provide and pay for the operation, maintenance and regular replacement of filters and worn or consumed parts.
- D. Ventilate enclosed areas to assist the cure of materials, dissipate humidity, and prevent the accumulation of dust, fumes, vapors and gases.

1.6 WATER

- A. Provide, maintain and pay for suitable quality drinking water for site personnel.
- B. Provide temporary water lines, maintain and pay for water required for construction, including compaction, grading and dust abatement.

1.7 SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures.
- B. Comply with regulations of the governing authorities having jurisdiction.

1.8 BARRICADES (AT DELIVERY OF AQUARIUM ELEMENTS ON AOA SIDE)

A Provide 6' high temporary fence around the entire construction area meeting the requirements, if any, of the Department of Public Works; provide vehicular and pedestrian gates with locks.

1.9 BARRIERS AND ENCLOSURES

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from demolition and construction operations in accordance with regulations of OSHA and governing authorities having jurisdiction.

- B. Provide barricades and covered walkways as required by governing authorities having jurisdiction for public rights-of-way.
- C. Protect non-owned vehicular traffic from injury and damage.

1.10 ACCESS ROADS AND PARKING AREAS

- A. Construct and maintain temporary roads accessing a public thoroughfare to serve the construction area for the work related to delivery and installation of the aquarium products.
- B. Extend or relocate as work progress requires. Provide detours necessary for unimpeded traffic flow.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Parking: Arrange for temporary parking areas off site to accommodate site personnel's vehicles.

1.11 PROJECT SIGNS

- A. Provide a 4' x 8' temporary project signage. Use new materials; 3/4" exterior grade plywood with hardwood edge trim; mount on treated 4" x 4" hardwood posts or the fence, as appropriate. Sign design to be provided by the Architect. Graphics shall direct passengers to gates and services when obscured or redirected as a result of the work.
- B. Use primer and two coats of exterior paint on the sign background, rear and posts. Use exterior paint for lettering on the face. Have lettering done by a professional sign painter.
- Locate the sign(s) as indicated or as directed. C.
- D. Allow no other signs or advertising of any kind on the Project Site, except safety, directional and warning signs and signs required by law.

FIELD OFFICE AND SHEDS 1.12

- A. Provide a building and sheds adequate in size and accommodation for the Contractor's office and storage.
- В. Provide space for Project meetings with a table and chairs to accommodate 10 persons.
- C. Place the office and sheds at approved locations.

1.13 **CONSTRUCTION AIDS**

Furnish, install and maintain for the duration of the construction, all scaffolds, shoring, Α. tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary work necessary for proper completion of the Project and protection of the public and site personnel in compliance with relevant OSHA safety and other regulations.

1.14 PROGRESS CLEANING AND WASTE REMOVAL

- Maintain areas free of waste materials, debris and rubbish. Maintain the Project Site in a Α. clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces prior to enclosing the space.

- C. Broom and vacuum clean interior areas prior to the start of surface finishing and continue cleaning to prevent the accumulation of dust.
- D. Collect and remove waste materials, debris and rubbish from the Site weekly, daily if necessary, or as directed by the Owner's representative, and dispose off-Site.

1.15 OWNERSHIP OF TEMPORARY FACILITIES AND CONTROLS

A. Items provided by the Contractor under this Section shall remain the property of the Contractor and all shall be removed from the Project Site immediately upon completion of the work.

1.16 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

- A. Remove temporary utilities, equipment, facilities and materials prior to the Substantial Completion inspection.
- B. Remove temporary underground installations.
- C. Clean and repair damage caused by installations and temporary work.
- D. Restore existing and permanent facilities used during construction to their original condition, as specified.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 ACCESS PROVISION

A. Provide ramps, stairs, ladders and similar temporary access elements as reasonably required to perform the work and to facilitate its inspection. Comply with reasonable requests of governing authorities performing inspections. When permanent stairs are available for access during construction, cover finished surfaces with sufficient protection to ensure freedom from damage and deterioration at the time of Substantial Completion.

3.2 SECURITY / PROTECTION PROVISION

A. The types of temporary security and protection provisions required include, but is not limited to, fire, protection, barricades, warning signs / lights, site enclosure fence, building enclosure / lockup, watchman service, personnel security program (theft prevention), environmental protection, and similar provisions intended to minimize property losses, personal injuries and claims for damages at the Project Site.

3.3 EXTERIOR CLOSURES

A. Temporarily close exterior openings, weather-tight, to provide acceptable working conditions and for the protection of products, to allow for the maintenance of required

ambient temperatures identified in the individual Specifications Sections, and to prevent the entry of unauthorized persons. Provide access doors with self-closing hardware and padlocks.

3.4 PROTECTION OF INSTALLED WORK

- A. Protect installed work and provide special protection where specified in individual Specifications Sections.
- B. Provide temporary and removable protection for installed work. Control activity in the immediate area to prevent damage.
- C. Protect finished floors, and other surfaces from traffic, dirt, wear, damage and movement of heavy objects by covering with durable sheet materials.
- D. Prohibit traffic and storage of materials on waterproofed and finished roof surfaces. If traffic or activity is necessary, obtain recommendations for protection from the waterproofing or roofing material manufacturer.
- E. Prohibit traffic from landscape areas into interior work areas.

3.5 PERMANENT FIRE PROTECTION

A. Complete each fire protection facility at the earliest reasonable date, make ready for emergency use, and inform site personnel of its availability and proper use.

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Definitions.
 - Products.
 - Product options.
 - 4. Product substitution procedures.
 - 5. Product delivery requirements.
 - 6. Product handling and storage requirements.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 DEFINITIONS

- A. Products: Items for incorporation into the work, whether purchased specifically for the Project or taken from previously purchased stock. This term includes the terms material, equipment, systems, and other terms of similar intent.
- B. Named Products: Items identified by manufacturer's name, including make or model number or other designation, as shown or listed in the manufacturer's published product literature.
- C. Materials: Products substantially shaped, cut, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form a part of the work.
- D. Equipment: Products with operational parts, whether motorized or manually-operated, that require service connections, such as water piping, waste piping and / or electrical wiring.

1.3 PRODUCTS

- A. Provide products that comply with the Contract Documents, and are new and undamaged at the time of installation.
- B. Provide products complete with accessories, trim, finish, safety guards, and other devices and details required for a complete installation and for its intended use and effect.
- C. Provide products of a kind from a single source. When the products specified are available only from a source that does not, or cannot produce the quantity necessary to

meet the Project requirements, in compliance with the Project Schedule, contact the Architect, in writing, to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability and compatibility. When the Architect makes a determination, select products from a source that produces products that possess those qualities to the greatest extent possible.

1.4 PRODUCT OPTIONS

- A. Products: Throughout the Contract Documents products may be specified by a manufacturer's name and catalog number to establish standards of quality and performance, and not for the purpose of limiting competition. Substitute methods and products may be submitted to the Owner's representative for consideration in conformance with the article entitled "Product Substitution Procedures" below.
- B. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- C. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting the Specifications requirements. Substitutions may or may not be permitted, as stated in the particular Section specifying the product.
- D. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named, Submit in accordance with the article entitled "Product Substitution Procedures" below.
- E. Standards, Codes and Regulations: Where only compliance with an imposed standard, code or regulation is required, selection from among products which comply with the requirements, including those standards, codes and regulations, is the Contractor's option.
- F. Performance Requirements and Design Criteria: Provide products which have been produced in accordance with the prescriptive requirements for structural capability, anchorage, mixing, fabricating, curing, finishing, testing and similar operations in the manufacturing process.
- G. Prescriptive Requirements: Provide products which have been produced in accordance with the prescriptive requirements using the specified ingredients and components, and complying with the specified testing and similar operations in the manufacturing process.

H. Visual Matching:

- 1. Where matching with an established sample is required, final judgment of whether a product matches the specified cost category is available, which matches the sample satisfactorily, and complies with requirements, comply with the Contract Document provisions concerning, "substitutions".
- 2. Visual Selection: Except as otherwise indicated, where specified product requirements include "...as selected from the manufacturer's standard colors, patterns, textures..." or words of similar effect, the selection of manufacturer and basic product is the Contractor's option, and the subsequent selection of color, pattern and texture is by the Architect.

1.5 SUBSTITUTIONS

A. Conditions: Contractor's request for substitution will be received and considered when extensive revisions to the Contract Documents are not required, and changes are in

keeping with the general intent of the Contract Documents; when timely, fully documented and properly submitted; and when one or more of following conditions is satisfied, all as judged by the Owner's representative. Otherwise, requests will be returned without action except to record non-compliance with the requirements.

1.6 PRODUCT SUBSTITUTION PROCEDURES

- A. Submit each Request for Substitution on a "Contractor's Substitution Request" form with complete data substantiating compliance of the proposed substitution with the Contract Documents.
- B. A request constitutes a representation that the Contractor:
 - 1. Has investigated the proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate the installation and make changes to other work which may be required for the work to be completed at no additional cost to the Owner.
 - 4. Waives claims for additional cost and time extension which may subsequently become apparent.
- C Substitutions will not be considered when they are indicated or implied on the Shop Drawing or product data submittals, without a separate written request, or when acceptance will require revision of the Contract Documents.
- D. Substitution Submittal Procedure:
 - 1. Submit four (4) copies of the "Contractor's Substitution Request" form for substitution consideration. Limit each request to one (1) proposed substitution.
 - 2. Submit Shop Drawings, product data, and certified test results attesting to the proposed product's equivalence. The burden of proof lies with the proposer.
 - 3. The Architect will notify the Contractor, in writing, of the decision to accept or reject the substitution request.

E Requests for Substitutions:

1. Provide a written substitution request, fully documented to show compliance with the requirements for substitutions. Include product data / drawings, description of methods and samples where applicable. The Contractor shall submit a comparison of significant qualities between the specified item and the proposed substitution, including life expectancy, weatherability, durability, fire resistance, compatibility with other materials, susceptibility to defects due to characteristics unique to the product, and product limitations, including other characteristics such as slip resistance, acoustical properties, etc. The Contractor shall submit a statement of effect on construction time, coordination with other affected work, and the Contractor's statement to the effect that the proposed substitution is satisfactory for use in the Project and will result in overall work equal-to-or-better-than the work originally indicated.

2. When not equal-to-or-better, the Contractor shall submit a justification and deductive cost proposal resulting from the substitution.

1.7 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with the manufacturer's instructions, using means and methods to prevent damage, deterioration, and loss, including theft.
- B. Schedule product delivery to minimize long-term storage at the Project Site, and to prevent overcrowding of construction spaces.
- C. Coordinate product delivery with the installation schedule to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- D. Deliver products to the Project Site in undamaged condition, in the manufacturer's original, new, sealed container(s) or packaging system, complete with labels intact and instructions for handling, storing, unpacking, protecting, and installing.
- E. Promptly inspect shipments to ensure that the products comply with the Project requirements, that quantities are correct, products are undamaged, and are properly protected.

1.8 PRODUCT HANDLING AND STORAGE REQUIREMENTS

- A. Store and protect products in accordance with the manufacturers' published instructions, with seals and labels intact and legible.
- B. Store products subject to deterioration above ground, under cover, in a weathertight enclosure and with ventilation adequate to prevent condensation and potential degradation. Maintain temperature and humidity within the range required by the manufacturer's published instructions.
- C. For exterior storage of fabricated products, place on sloped supports, above ground.
- D. Provide off-site storage and protection when the Project Site does not permit on-site storage or proper protection.
- E. Store loose granular materials on solid flat surfaces in a well drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to handle and store products by methods to prevent soiling, disfigurement, and damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to verify that the products are undamaged and are maintained in an acceptable condition.

1.9 WARRANTIES

A. Comply with the Warranty provisions of Section 01012 - Supplementary Conditions.

- B. Categories of Specific Warranties: Warranties on the work are in several categories, including those of the General Conditions, and including, but not necessarily limited to, Sections of Divisions 2 through 16 of these Specifications.
- C. Special Project Warranty (Guarantee): A Warranty specifically written and signed by the Contractor for a defined portion of the work; and, where required, countersigned by the subcontractor, installer, manufacturer or other entity engaged by the Contractor.
- D. Specified Product Warranty: A Warranty which is required by the Contract Documents, to be provided for a manufactured product incorporated into the work.
- E. Coincidental Product Warranty: A Warranty which is not specifically required by the Contract Documents, other than as specified in this Section, but which is available on a product incorporated into the work, by virtue of the fact that the manufacturer has published a Warranty in connection with purchase and use of the product without regards to specific applications.
- F. General Limitations: It is recognized that specific Warranties are intended primarily to protect the Owner against failure of the work to perform as required, and against deficient, defective and faulty materials and workmanship, regardless of the source. Except as otherwise indicated, specific Warranties do not cover failures in the work which result from:
 - 1. Unusual and abnormal phenomena of the elements,
 - 2. The Owner's misuse, maltreatment or improper maintenance of the work,
 - 3. Vandalism after the date of Substantial Completion, or
 - 4. Insurrection or acts of aggression, including war.
- G. Start Date: Warranties will commence on the date of Substantial Completion of the Project unless otherwise agreed to by the Owner's representative.
- H. Reinstatement of Warranty Period: Except as otherwise indicated, when work covered by a special Project Warranty or product Warranty has failed and has been corrected by replacement or restoration, reinstate the Warranty by written endorsement for the original time period, starting on the date of acceptance of the replaced or restored work.
- Replacement Cost, Obligations: Except as otherwise indicated, the cost of replacing or restoring failing warranted units or products is the Contractor's obligation, without regard for whether or not the Owner has already benefitted from use through a portion of the anticipated useful service life.
- J. Related Damages and Losses: In connection with the Contractor's correction of warranted work which has failed, remove and replace other work of the Project which has been damaged as a result of the failure, or must be removed and replaced to provide access for correction of the warranted work.
- K. Rejection of Warranties: The Owner reserves the right, at the time of Substantial Completion or thereafter, to reject coincidental product Warranties submitted by the Contractor, which in the opinion of the Owner tend to detract from or confuse interpretation of the requirements of the Contract Documents.

- L. Contractor's Procurement Obligations: Do not purchase, subcontract for, or allow others to purchase or sub-subcontract for materials or units of work for the Project where a special Project Warranty, specified product Warranty, certification or similar commitment is required, until it has been determined that the entities required to countersign such commitment are willing to do so.
- M. Submittal of Warranty Forms: Where a special Project Warranty (Guarantee) or specified product Warranty is required, prepare a written document to contain terms and appropriate identification, ready for execution by the required parties. Submit a draft to the Owner via the Owner's representative for approval and final execution.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Examination.
 - 2. Preparation.
 - 3. Execution.
 - 4. Cleaning.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other documents.

1.2 EXAMINATION

- A. Visit the Project Site to determine the existing conditions.
 - 1. Take field measurements and verify field conditions, compare field measurements, conditions, locations of survey benchmarks, and other information known to the Contractor, with the Construction Documents before starting the work.
 - 2. Be responsible for determining conditions of the Project Site, including all existing improvements, paving, above and below ground utilities, and existing construction.
 - 3. Contact local utility companies and agencies and make arrangements to obtain utility locations and marking service before the start of work.
- B. Review Bidding and Contract Documents.
 - 1. Carefully study and compare the Contract Documents with each other.
 - 2. Be responsible for thorough knowledge of the Contract Documents and their relationship to each other.
 - 3. If the Contractor performs work knowing it involves a recognized error, inconsistency, or omission in the Contract Documents, without notice to the Owner's representative, the Contractor assumes responsibility for performance of the work, and is responsible for the cost of corrective work.
- C. Verify that existing conditions and substrate surfaces are acceptable and meet the manufacturer's requirements for the application or installation of work.
- D. Verify that the substrate is capable of structurally supporting attachment of the work being applied or installed.
- E. Examine and verify specific conditions described in the individual Specifications Sections.

F. Verify that utility services are available, of the correct characteristics, and in the correct location for the installation of work.

1.3 PREPARATION

A. Construction Layout:

- Be responsible for the accuracy of measurements, elevations, lines, and grades of the work.
- 2. Do not scale Drawings. Use the dimensions indicated on the Drawings for the laying out of work.
- 3. Errors in construction caused by the Contractor scaling Drawings to obtain measurements for laying out the work is the responsibility of the Contractor. By scaling Drawings, the Contractor assumes responsibility for the performance of such work, and is responsible for the cost of corrective work.
- 4. Perform field work necessary to lay out and maintain work to the dimensions indicated in the Contract Documents.

B. Field Engineering:

- Establish permanent benchmarks on the Project Site referenced to established control points indicated on the Drawings. Record locations, with horizontal and vertical data, on the Project Record Drawings.
- 2. Establish elevations, lines, and levels, for work using survey instrumentation for:
 - a. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - b. Grid or axis for structures.
 - c. Building foundations, column locations, and finish floor elevations.
 - d. Location of existing utilities necessary to adjust, move, or relocate existing structures, utility poles, lines, services, and other items located within the Project Site or affected by the work.
- 3. Periodically verify layouts by the same means.

C. Preparation for product Installation:

- 1. Conduct a Pre-Installation Meeting when specified in the individual Specifications Sections.
- 2. Obtain, read, and understand applicable reference standards and manufacturer's published instructions regarding erection, application, and installation of products.
- 3. Clean substrate surfaces before applying products.
- 4. Seal cracks and openings of substrates before applying products.
- 5. Apply manufacturer's required or recommended substrate primer, sealer, or conditioner before applying products in contact or bond.

1.4 **EXECUTION**

A. Cutting and Patching:

- Employ skilled and experienced tradesmen to perform cutting and patching work. 1.
- 2. Submit a written request, in advance of cutting or altering elements which affect:
 - Structural integrity of an element. a.
 - b. Integrity of weather-exposed or moisture-resistant elements.
 - Efficiency, maintenance, or safety of an element. C.
 - d. Visual quality of sight exposed elements.
- 3. Execute cutting, fitting, and patching to complete work, and to:
 - a. Fit several parts together, to integrate with other work.
 - b. Uncover work to install or correct ill-timed work.
 - Remove and replace defective and non-conforming work. C.
 - Remove samples of installed work for testing. d.
 - Provide openings in elements of the work for penetrations of mechanical e. and electrical work.
- 4. Execute work by methods that will avoid damage to other work, and will provide proper surfaces to receive patching and finishing.
- 5. Cut masonry and concrete materials using a masonry saw or core drill.
- Restore work with new products in accordance with requirements of the Contract 6. Documents.
- 7. Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations.
- 8. Maintain the integrity of wall, ceiling, and floor construction; completely seal voids.
- 9. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to the nearest intersection; for an assembly, refinish the entire unit.
- 10. Identify any hazardous substance or condition exposed during the work to the Owner's representative for a decision or remedy.

B. Installation:

- 1. Refer to the installation requirements in individual Specifications Sections.
- 2. For each product, inspect the substrate and conditions under which the work will be performed. Do not proceed with the work until the unsatisfactory conditions have been corrected.

- 3. Comply with manufacturer's published installation instructions and recommendations, to the extent that instructions and recommendations are more explicit or stringent than requirements in the Contract Documents.
- 4. Inspect products ready for installation immediately upon delivery to the Project Site.
 - Inspect products immediately before the start of application, installation, or erection.
 - b. Reject damaged and defective products.
- Verify and check dimensions and measurements before the start of application, installation or erection.
- 6. Coordinate the closing-in of work with required inspections and tests.
 - Do not cover work until inspected and approved by the appropriate person or entity.
 - b. Uncover work that has not been inspected as directed by the Owner's representative.
- 7. Provide fasteners, attachments, connection devices, and methods as indicated on the Drawings, or as specified.
 - a. Where not indicated or specified, provide appropriate methods necessary for securing the work.
 - b. Secure work plumb, level and true to line.
 - c. Provide for expansion and building movement.

1.5 CLEANING

A. Cleaning During Construction: Coordinate with Section 01500 - Temporary Facilities and Controls.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01705

PROJECT CLOSEOUT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Description of requirements.
 - 2. Prerequisites for Substantial Completion.
 - 3. Closeout procedures.
 - 4. Final cleaning.
 - 5. Starting and adjusting.
 - 6. Operation and maintenance instructions.
 - 7. Partial occupancy or use.
 - 8. Prerequisites for final acceptance.
 - Default.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 DESCRIPTION OF REQUIREMENTS

A. Definitions: Closeout is hereby defined to include the general requirements near the end of the Contract Time in preparation for substantial completion, beneficial occupancy, final acceptance, and final payment.

1.3 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: At the turnover of each phase of construction: prior to requesting an Owner representative's inspection for certification of substantial completion (for either the entire work or portions thereof), complete the following:
 - 1. Provide a list of incomplete items, reasons for being incomplete and a schedule for completion.
 - 2. Obtain and submit releases enabling the Owner's full and unrestricted use of the work and access to services and utilities, including recorded Occupancy Permit(s), operating certificates, and similar releases.
 - 3. Make final change-over of locks and transmit keys to the Owner. Advise the Owner's personnel of the change-over in security provisions.

- 4. Complete start-up and testing of equipment and systems including instruction of Owner's operations / maintenance personnel. Discontinue (or change-over) and remove from the Project Site all temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
- 5. Place in good working order all equipment and systems, including but not limited to, all fire, mechanical, electrical and life safety systems.
- 6. Submit manuals and other supporting documentation, as indicated in the Contract Documents.
- 7. Complete final cleaning.
- B. Inspection Procedures: Upon receipt of the Contractor's request, the Owner's representative will either proceed with the inspection or advise the Contractor of prerequisites not fulfilled. Following the initial inspection, the Owner's representative will either prepare a Certificate of Substantial Completion, or advise the Contractor of work which must be performed prior to the issuance of a certificate. Repeat the inspection when requested and assured that the work has been substantially completed. Results of completed inspection will form the initial "punch-list" for final acceptance.

1.4 CLOSEOUT PROCEDURES

- A. At completion of the work of each subcontract or designated division of the work, conduct an initial inspection to verify completion of the work; prepare a list of work to be completed or corrected, and conduct a follow-up inspection to verify that the corrections have been made.
- B. Beneficial Occupancy / Partial Occupancy:
 - When the Contractor considers the work, or a portion of the work which the Owner agrees to accept separately, is substantially complete, submit written certification to the Owner's representative stating that the Contract Documents have been reviewed, work has been inspected, the work is complete in accordance with the Contract Documents, and the work is ready for inspection.
 - a. Submit a list of items to be completed or corrected.
 - b. Complete and correct items on the list.
 - Failure to include an item on the list does not change the Contractor's responsibility to complete the work in accordance with the Contract Documents.
 - d. Submit Closeout Submittals to the Owner's representative.
 - 2. The Owner's representative will review the list and make an inspection to determine if the work, or designated portion of the work, is substantially complete.
 - The Contractor will be notified of items identified during inspection as not in accordance with the Contract Documents, whether they were included on the Contractor's list or not.
 - b. Contractor to complete and correct items on the list.
 - c. Notify the Owner's representative that the items have been corrected and

request re-inspection.

- 3. The Owner's representative will re-inspect to determine if the work, or designated portion of the work, is substantially complete.
- 4. When the work, or designated portion of the work, is substantially complete, the Owner's representative will notify the Contractor and document the Date of Beneficial Occupancy.

C. Final Acceptance:

- 1. The Contractor to submit written certification that the Contract Documents have been reviewed, work has been inspected, work is complete in accordance with the Contract Documents, and is ready for final inspection.
- 2. The Owner's representative will make an inspection to determine if the work of the Contract is complete.
 - a. The Contractor will be notified by the Owner's representative of items identified during inspection as not in accordance with the Contract Documents, and not ready for final acceptance.
 - b. Contractor to complete and correct items on the list.
 - c. Contractor to notify Owner's representative that items on the list have been corrected and request an inspection.
- 3. When the work is complete, as determined by the Owner's representative, the Owner's representative will notify the Contractor and document the Date of Final Acceptance.

1.5 FINAL CLEANING

- A. Complete cleaning operations before requesting inspection for Substantial Completion for Final Acceptance or a portion of the Project.
- B. Provide final cleaning of the work consisting of cleaning each surface or unit of work to a normal "clean" condition expected from a first class building cleaning and maintenance program. Comply with the manufacturer's instructions for cleaning operations.
- C. Use cleaning materials and agents recommended by the manufacturer or fabricator of surfaces to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.
 - 1. Remove tools, construction equipment, machinery and surplus materials from the Project Site.
 - 2. Remove temporary protection devices and facilities installed during construction.
 - 3. Clean the Project Site, yard and grounds, in areas disturbed by the construction activities, including landscape development areas. Remove rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even textured surface.
 - 4. Remove debris and surface dust from limited access spaces, including roofs,

- plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
- 5. Broom clean concrete floors in unoccupied spaces.
- 6. Clean exposed exterior and interior hard-surface finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing the natural weathering of exterior surfaces.
- 7. Remove labels that are not permanent.
- 8. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision obscuring materials. Replace chipped and broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch the surfaces.
- 9. Vacuum clean carpet and similar soft surfaces, remove debris and excess nap; shampoo if required.
- 10. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.
- Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure. Clean food service equipment to a condition of sanitation ready and acceptable for its intended service use.
- Clean light fixtures, lamps, globes and reflectors to function with full efficiency.
 Replace burned out lamps, and defective and noisy starters in fluorescent and mercury vapor fixtures.
- 13. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. Clean ducts, blowers, and coils if units were operated without filters during construction.
- 14. Wipe surfaces of mechanical and electrical equipment clean, including elevator and similar equipment. Remove excess lubricants, paint, mortar droppings and other foreign substances.
- 15. Leave the entire Project Site clean and ready for occupancy.
- D. Engage an experienced licensed exterminator to make a final inspection, and rid the Project Site of rodents, insects, and other pests. Comply with regulations of the local authorities having jurisdiction.
- E. Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the Project Site and dispose at a designated site, and in accordance with requirements of the local authorities having jurisdiction.

1.6 STARTING AND ADJUSTING

A. Inspect mechanical and electrical equipment start-up operations, observe testing and balancing, and record the start-up results, including the time and date of start-up.

B. Starting Systems:

- Coordinate the schedule for start-up of the various items of equipment and systems.
- 2. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for any conditions which may cause damage upon start-up.
- 3. Verify that tests, meter readings, and the specified electrical characteristics agree with those required by the equipment or system manufacturer.
- Verify that wiring and support components for equipment are complete and have been tested.
- 5. Execute start-up under the supervision of appropriate Contractor's personnel, and in accordance with the manufacturers' instructions.

1.7 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Arrange for each installer of work requiring continuing maintenance or operation to meet with the Owner's personnel at the Project Site to provide basic instructions for proper operation and maintenance of the entire work. Utilize the Operations and Maintenance Manuals as the basis for instructions. Review contents of the manuals, in detail, to explain all aspects of operation and maintenance. Include instructions by manufacturer's representatives where the installers are not expert in the required procedures.
- B. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, shutdown, hazards, trouble-shooting, cleaning, servicing, maintenance and similar procedures.
- C. For operational equipment, demonstrate start-up, shut-down, operation, control, emergency operations, noise and vibration adjustments, safety, economy / efficiency adjustments, energy effectiveness, and similar operations.
- D. Review operations and maintenance in relation to applicable warranties, agreements to maintain, bonds, and similar continuing commitments.
- E. Prepare and insert additional data in the Operations and Maintenance Manuals when need, for data that becomes apparent during the instructions.

1.8 PARTIAL OCCUPANCY OR USE

- A. The Owner shall have the right to occupy or permit its employees, agents, representatives, or subcontractors to occupy any part or parts of the Project (to the extent that such work is not covered hereunder) and to install special Items, fixtures, furniture, appliances and equipment, notwithstanding that all work hereunder shall not have been completed at the time of such occupancy, provided, however, that:
 - 1. The work completed in the part or parts to be occupied shall have been conditionally accepted by the Owner, in writing, specifying any claimed deficiencies in the work completed;
 - 2. The Owner assumes liability for utilities and the risk of loss with respect to the portion of the Project subject to such early occupancy; and

3. Any such early occupancy shall not reasonably interfere with the Contractor's sequence for completing its work in the areas occupied or in other areas. The Contractor agrees to fully cooperate and coordinate its effort with such early "occupancy" of the Project under this paragraph, and shall give to the Owner prompt notice of any inconvenience, damage, or delay likely to arise from such early occupancy. Such early occupancy shall have no bearing on the commencement of warranty periods.

1.9 PREREQUISITES FOR FINAL ACCEPTANCE

- A. Prior to requesting final inspection for certification of final acceptance and final payment, as required by the General Conditions, complete the following and list known exceptions in the request:
 - 1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted.
 - 2. Submit a dated final statement accounting for changes to the Contract Sum.
 - 3. Submit a certified copy of the final Punch List of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by the Owner's representative.
 - 4. Submit final meter readings for temporary utilities per Specifications Section 01500 Temporary Facilities, a measured record of stored fuel, and similar data as of the time of Substantial Completion or when the Owner took possession of and responsibility for corresponding elements of the work.
 - 5. Submit a consent of Surety to the release of final payment.
 - 6. Deliver tools, spare parts, extra stocks of materials, and similar physical items to the Owner.
 - Submit Record Drawings, Record Product Data and Miscellaneous Record Submittals.
 - 8. Submit Warranties, workmanship / maintenance bonds, maintenance agreements, final certifications and similar documents.
 - 9. Submit compliance with mechanics liens laws.
- B. Re-inspection Procedure: Upon receipt of the Contractor's notice that the work has been completed, including Punch List items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, the Owner's representative will re-inspect the work. Upon completion of the re-inspection, the Owner's representative will either process final closeout documents or advise the Contractor of work not completed or obligations not fulfilled, as required for final acceptance.
- C. Final Payment, Liens and Punch List of Work: If at the time of Final Payment, any application or applications for mechanic's or materialmen's liens have been filed against the Project, the Owner may withhold an amount equal to two hundred percent (200%) of the amount of the claimed lien or liens until the liens are removed or the Contractor posts a bond or cash deposit discharging such liens. The Owner may also withhold from the final payment such amount as the Owner reasonably deems necessary to cover: 1) minor

corrective work (Punch List items) until such corrective work has been completed by the Contractor, and 2) any remaining work the Contractor is required to perform under the Contract Documents. The amount withheld shall be two hundred percent (200%) of the value of the incomplete work as reasonably estimated by the Owner.

1.10 DEFAULT

- A. The Owner may declare the Contractor in default in accordance with and in the manner described in the General Conditions of the Contract for Construction for any of the following reasons:
 - 1. Failure to complete the work within the Contract period or any extension thereof.
 - 2. Failure or refusal to comply with an order of the Owner or Architect within a reasonable time.
 - 3. Failure or refusal to remove rejected materials.
 - 4. Failure or refusal to perform anew any defective or unacceptable work.
 - 5. Bankruptcy or insolvency, or the making of an assignment for the benefit of creditors.
 - 6. Failure to pay subcontractors and suppliers promptly.
 - 7. Repeated failure to provide a qualified superintendent, competent workmen or subcontractors to carry out the work in an acceptable manner, or failure to prosecute the work according to the agreed schedule for completion.

PART 2PRODUCTS

Not Used

PART 3EXECUTION

Not Used

END OF SECTION

SECTION 01780

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Maintenance contracts.
 - 2. Operation and maintenance data.
 - Product warranties.
 - 4. Project record documents.
 - Extra materials.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 MAINTENANCE CONTRACTS

A. Provide Plant Maintenance as part of the work of this Contract as specified in Section 02930 - Exterior Plants.

1.3 OPERATION AND MAINTENANCE DATA

A. Prepare instructions and data by personnel experienced in operation and maintenance of the described products and equipment.

B. Format:

- 1. Prepare data in the form of an instructional manual.
- 2. Binders: Commercial quality, 8-1/2" x 11", three D, side ring binders with durable plastic covers; 2" maximum ring size. When multiple binders are used, correlate the data into related, consistent groupings.
- Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify the title of the Project; identify the subject matter of the contents.
- 4. Provide tabbed dividers for each separate product and system, with a typed description of the product and major component parts of equipment.
- 5. Text: Manufacturer's published data, or typewritten data on 20 pound paper.
- 6. Drawings: Provide with reinforced punched binder tabs. Bind in with text; fold large drawings to the size of the text pages.

- 7. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
 - a. Part 1: Directory, listing the name, address, and telephone number of the Architect, Engineers, Contractor, subcontractor, and major equipment suppliers.
 - b. Part 2: Operations and maintenance instructions, arranged by system and subdivided by Specifications Section. For each category, identify the name, address, and telephone number of the subcontractor and suppliers. Identify the following:
 - 1) Significant design criteria.
 - List of equipment.
 - 3) Parts list for each component.
 - 4) Operating instructions.
 - 5) Maintenance instructions for equipment and systems.
 - 6) Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - c. Part 3: Project documents and certificates, including the following:
 - 1) Shop Drawings and product data.
 - 2) Air and water balance reports.
 - 3) Certificates.
 - Copies of Warranties.

C. Contents, Each Volume:

- 1. Table of Contents: Provide the title of the Project; name, address, and telephone number of the Architect, Engineer, subconsultant, and the Contractor with the name of the responsible party; schedule of products and systems, indexed to the content of the volume.
- 2. For Each Product or System: List the name, address and telephone number of subcontractor and suppliers, including the local source of supplies and replacement parts.
- 3. Product Data: Mark each sheet to clearly identify the specific products and component parts, and data applicable to the installation. Delete or do not include inapplicable information.
- 4. Drawings: Supplement product data to illustrate the relationship of component parts of equipment and systems, to show control and flow diagrams. Do not use the Project Record Documents as maintenance drawings.

- 5. Typed Text: As required to supplement product data. Provide a logical sequence of instructions for each procedure, incorporating the manufacturer's instructions.
- 6. Warranties: Bind in a copy of each.
- 7. Lien Release: Include a copy from each subcontractor and major supplier.

D. Manual for Materials and Finishes:

- Building Products, Applied Materials, and Finishes: Include product data, with catalog numbers, sizes, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- 2. Instructions for Care and Maintenance: Include the manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- 3. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- 4. Additional Requirements: As specified in the individual product Specifications Sections.
- 5. Provide a listing in the Table of Contents for design data, with a tabbed fly sheet and space for insertion of data.

E. Manual for Equipment and Systems:

- 1. Each Item of Equipment and Each System: Include description of the unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- 2. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- 3. Include color coded wiring diagrams, as installed.
- 4. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include any special operating instructions.
- 5. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- 6. Provide a servicing and lubrication schedule, and a list of lubricants required.
- 7. Include the manufacturer's published operation and maintenance instructions.
- 8. Include sequence of operation by the controls manufacturer.

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- 9. Provide the original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- 10. Provide control diagrams by the controls manufacturer, as installed.
- 11. Provide the Contractor's coordination drawings, with color coded piping diagrams, as installed.
- 12. Provide charts of valve tag numbers, with the location and function of each valve, keyed to flow and control diagrams.
- 13. Provide a list of the original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- 14. Include test and balancing reports, as specified.
- 15. Additional Requirements: As specified in the individual product Specifications Sections.
- 16. Provide a listing in the Table of Contents of design data, with tabbed dividers and space for insertion of additional data.

1.4 PRODUCT WARRANTIES

A. Submit Warranties required for specific products or work, as specified in the individual Specifications Sections.

B. Form of Submittals:

- 1. Bind in commercial quality 8-1/2" x 11" three D, side ring binders with durable plastic covers.
- 2. Cover: Identify each binder with the typed or printed title WARRANTIES with the title of the Project; name, address and telephone number of the Contractor and equipment supplier; and the name of the responsible company principal.
- 3. Table of Contents: Neatly typed, in the sequence of the Project Manual, Table of Contents, with each item identified with a number and title of the Specifications Section in which specified, and the name of the product or work item.
- 4. Separate each Warranty with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets, as necessary. List the subcontractor, supplier, and manufacturer, with the name, address, and telephone number of the responsible principal.

C. Preparation of Submittals:

- 1. Obtain Warranties executed in duplicate by the responsible subcontractor, supplier, and manufacturer, within ten (10) days after completion of the applicable item of work. Except for items put into use with the Owner representative's approval, leave the date of the beginning of the warranty time until the Date of Final Acceptance has been determined.
- 2. Verify that the documents are in the proper form, contain complete information, and are notarized.

- 3. Co-execute submittals when required.
- 4. Retain Warranties until the time specified for submittal.

D. Time of Submittals:

- 1. For equipment or component parts of equipment put into service during construction with the Owner representative's approval, submit documents within ten (10) days after acceptance.
- 2. Make other submittals within ten (10) days after the Date of Substantial Completion, and prior to the final Application for Payment.
- 3. For items of work for which acceptance is delayed beyond the Date of Substantial Completion, submit within ten (10) days after acceptance.

1.5 PROJECT RECORD DOCUMENTS

- A. Project Record Documents required include:
 - 1. As-Built copies of the Contract Drawings in CADD and PDF format.
 - 2. Marked-up copies of the Shop Drawings.
 - 3. Marked-up copies of the Specifications, addenda and Contract Modifications.
 - 4. Marked-up product data submittals.
 - 5. Field records for variable and concealed conditions.
 - 6. Record information on work that is recorded only schematically.
- B. Specific record copy requirements that expand the requirements of this Section are included in the individual Specifications Sections of Division 2 through Division 16.
- C. Maintenance of Documents: Store the Record Documents in a field office apart from the Contract Documents used for construction. Do not permit the Project Record Documents to be used for construction purposes. Maintain and protect the Record Documents from damage in a clean, dry, legible condition. Make Documents available at all times for inspection by the Owner's representative.
- D. Record (As-Built) Drawings CADD, PDF and hardcopy sets.
 - 1. During construction, maintain a set of blackline, white prints of the Contract Drawings and Shop Drawings for Project Record Document purposes.
 - a. Mark these Drawings to indicate actual installations where the installations vary from the installation originally shown. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
 - 1) Dimensional changes to the Drawings.

- 2) Revisions to Details shown on the Drawings.
- 3) Depth of foundations below the first floor.
- Locations and depths of underground utilities.
- 5) Revisions to the routing of piping and conduits.
- 6) Revisions to electrical circuitry.
- 7) Actual equipment locations.
- 8) Duct sizes and routing.
- 9) Locations of concealed internal utilities.
- 10) Changes made by Contract Modifications.
- 11) Details not on the original Contract Drawings.
- Mark completely and accurately record on prints of the Contract Drawings or Shop Drawings, whichever is most capable of showing the actual physical conditions. Where Shop Drawings are marked, show a cross-reference on the Contract Drawings.
- c. Mark important additional information which was either shown schematically or omitted from the original Drawings.
- d. Note construction change directive numbers, alternate numbers, Change Order numbers, clarification numbers and similar identification.
- e. Responsibility for Markup and Supervision: Contractor Quality Control Representative, as specified in Section 01450 Quality Control. Where feasible, the name of the individual or entity who obtained the record data, whether individual or entity is installer, subcontractor, or similar entity, is required to prepare mark-ups on the Record Drawings.
 - Accurately record information in an understandable Drawing technique in CADD.
 - Record data as soon as possible after it has been obtained. In case of concealed installations, record and check mark-ups prior to concealment.
 - 3) Contractor Quality Control Representative: Affix signature and certify accuracy of the Record Drawings.
- Preparation of As-Built CADD, PDF and hardcopy Drawings: Immediately prior to the inspection for Final Acceptance, review the completed marked-up CADD record Drawings with the Owner's representative. Prepare a full set of corrected Drawings of as-built conditions.
 - a. Incorporate changes and additional information previously marked on the print sets onto the CADD as-built drawings. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing;

- include the printed designation "PROJECT AS-BUILT DRAWINGS" in a prominent location on each Drawing.
- b. Refer instances of uncertainty to the Owner's representative for resolution.
- The Owner's representative will make the original Contract Drawings available to the Contractor in electronic format.
- d. The Contractor is responsible for printing the original Contract Drawings and other Drawings, and creating the CADD as-built drawings.
- e. Review of Drawings: Before copying and distributing, submit corrected Drawings and the original marked-up prints to the Owner's representative for review.
- 3. Copies and Distribution: After completing the preparation of CADD and hardcopy As-Built Drawings, submit two (2) complete sets of the Drawings on reproducible vellum sheets (24" x 36"), and two (2) complete zip disks (100 mb AutoCAD). Place each set of Drawings in durable tube-type containers with end caps. Mark the end cap of each container with suitable identification. Mark the zip disks similarly.
 - a. Organize and bind the original marked-up set of prints that were maintained during construction in the same manner.

E. Record Specifications:

- 1. During the construction period, maintain one copy of the Project Specifications, including addenda and any modifications issued, for Project Record Document purposes.
 - a. Mark the Specifications to indicate actual installations where the installation varies from that indicated in the Specifications and modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.
 - In each Specifications Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
 - Record the name of the manufacturer, supplier and installer, and other information necessary to provide a record of the selections made and to document coordination with the Record Product Data submittals and Maintenance Manuals.
 - 3) Note the related Record Product Data, where applicable. For each principal product specified, indicate whether the Record Product Data has been submitted in a Maintenance Manual instead of submitted as Record Product Data.
- 3. Upon completion of the mark-up, submit Record Specifications to the Owner's representative.

F. Record Product Data:

- During construction, maintain one (1) copy of each Product Data submittal for Project Record Document purposes.
 - Mark the Product Data to indicate the actual product installation where the
 installation varies from that indicated in the Product Data submitted.
 Include significant changes in the product delivered to the Project Site,
 and changes in the manufacturer's instructions and recommendations for
 installation.
 - b. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - c. Note related Contract Modifications and mark-up of Record Drawings, where applicable.
 - d. Upon completion of the mark-up, submit a complete set of the Record Product Data to the Owner's representative with an index of all product data cross-referenced wo submittal numbers.
 - e. Where the Record Product Data is required as part of the Maintenance Manuals, submit the marked-up Product Data as an insert in the Manual instead of submittal as Record Product Data.

G. Additional Record Submittals:

- Refer to other Specifications Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Final Acceptance, complete additional records and place in order, properly identified and bound or filed, ready for use and reference. Submit to the Owner's representative.
 - a. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:
 - 1) Field records of excavations and foundations.
 - 2) Field records of underground construction and similar work.
 - 3) Survey showing locations and elevations of underground lines.
 - 4) Authorized measurements utilizing unit prices or allowances.
 - 5) Ambient and substrate condition tests.
 - 6) Certifications received in lieu of labels on bulk products.
 - 7) Batch mixing and bulk delivery records.
 - 8) Testing and qualification of tradesmen.
 - 9) Documented qualifications of installation firms.
 - 10) Load and performance testing.

- 11) Inspections and certifications by governing authorities.
- 12) Leakage and water-penetration tests.
- 13) Fire resistance and flame spread test results.
- 14) Final inspection and correction procedures.

1.6 EXTRA MATERIALS

- A. Provide products, spare parts, maintenance, and extra materials in the quantities specified in the individual Specifications Sections.
- B. Deliver to the Project Site and place in a location directed by the Owner's representative; obtain a receipt prior to final payment.

PART 2PRODUCTS

Not Used.

PART 3EXECUTION

Not Used.

END OF SECTION

SECTION 01805

MATERIALS FURNISHED BY OWNER FOR INSTALLATION BY CONTRACTOR (OFCI)

PART 1		GENERAL		
1.1	SUMMA	MARY		
	A.	Section Includes:		
		1.	OFCI list.	
		2.	Owner's responsibility.	
		3.	Contractor's responsibility.	
		4.	Delivery and storage.	
		5.	Protection and care.	
		6.	Damage.	
		7.	Installation.	
	B.	The Contract Documents, as defined within Section 01010 - Summary of Work, at the work of this Section. Additional requirements and information necessary to continuously the work of this Section may be found in other Documents.		
PART 2		PRODUCTS		
2.1 GENE		RAL		
	Α.	Contract relevan with the dim Any dev Architect	ne following materials, fixtures and equipment are to be provided by the Owner. The contractor shall verify the type, manufacturer, rough-in requirements and other data elevant to proper installation. The Contractor shall construct his work in strict accordance in the dimensions shown on Shop Drawings provided to the Owner. Any deviation from e dimensions shall be immediately transmitted to the Owner's representative, in writing my deviations made which affect the installation of Owner-Furnished materials without the rehitect's approval shall be corrected by the Contractor at his expense and in the manner ipulated by the Owner's representative.	
2.2	OFCI LIST:			
	A.			
	B.			
	C.			

D.

- A. Arrange for and deliver Shop Drawings, product data, and samples to the Contractor.
- B. Arrange and pay for materials delivery to the port of entry.
- C. Submit claims for transportation damage.
- D. Arrange for replacement of damaged, defective, and missing items.
- E. Arrange for manufacturer's warranties, inspections and service.
- F. Maintain insurance coverage during shipment to the port.

2.4 CONTRACTOR'S RESPONSIBILITY

- A. Review Shop Drawings, product data and samples to ensure that the construction will accommodate the installation.
- B. Receive materials at the port, transport to and unload at the Project Site; inspect for completeness and for damage jointly with the Owner.
- C. Handle and Store. Cost to the Contractor for off-site storage for more than 60 days, if necessary, will be reimbursed by the Owner.
- D. Install and finish the materials.
- E. Repair or replace items damaged by the work of this Contract.
- F. Maintain insurance coverage during transportation from the port to the Project Site, and during storage and installation in accordance with the Special Conditions of the Contract.

PART 3 EXECUTION

3.1 DELIVERY AND STORAGE

A. The Contractor shall receive Owner-Furnished Materials from the Owner at the Port or other designated location. The Contractor shall inventory, determine rough-in requirements, completeness, conditions, need for repair / replacement and shall store such materials appropriately until incorporated into the work.

3.2 PROTECTION AND CARE

A. Contractor shall care for and protect Owner-Furnished Materials in storage, during installation, and until final acceptance of the work. Contractor shall provide the insurance coverage.

3.3 DAMAGE

A. Any damage to Owner-Furnished Materials occurring after receipt of the materials by the Contractor shall be repaired or replaced by the Contractor at no cost to the Owner.

3.4 INSTALLATION

A. Contractor shall install the Owner-Furnished Materials in accordance with the manufacturer's instructions. Provide all transition trim, connectors, anchors, trim and other work require to properly install and secure the Owner-Furnished Materials and equipment.

END OF SECTION

SECTION 02050

DEMOLITION AND REMOVAL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. Demolition and removal of existing finishes, systems, water and waste lines, and other items as indicated on the Drawings, and as required to accomplish the work.
- 2. Disconnection, capping and identification of utilities.
- 3. Removal and disposal of miscellaneous items that will be a hindrance or hazardous to the work to be done, as directed by the Owner's representative.
- 4. Removal of suspended ceilings and components; light fixtures, grills and diffusers.
- 5. Removal of designated partitions and components; frames, doors and windows.
- 6. Removal of designated building equipment, fixtures and cabinetry.
- 7. Removal of designated finishes and specialty items.
- 8. Disconnection, capping and identification of utilities.
- 9. Removal and augmentations Mechanical Sections for fire sprinkler, air conditioning and ventilation systems requirements.
- 10. See Electrical Sections for lighting, power and alarm systems requirements.
- 12. Protection of materials removed and stored for re-use.
- 13. Construction and maintenance of temporary partitions to allow continual occupancy of adjacent building areas.
- 14. Disposal of materials at approved off-site location(s).
- 15. Procedures for safe conduct of the work.
- 16. Protection of property to remain.
- 17. Coordination with other work.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 DESCRIPTION OF WORK

A. The extent of the demolition and removal work is indicated on the Drawings and as specified herein, and includes the demolition of designated existing construction, equipment, fixtures and cabinetry; protection of materials for re-use; construction of

temporary partitions; disconnection, capping and identification of utility services; removal and disposal of debris; and protection of property to remain.

1.3 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - Submit a demolition and removal plan for approval before work begins. Include
 procedures for careful removal and disposition of the materials specified to be
 salvaged, disconnection schedule for utility services, coordination with other work,
 and a detailed description of methods and equipment to be used for each, and the
 sequence of operation.

1.4 REQUIREMENTS

- A. Conform to Section 01560 Environmental Protection and applicable codes and regulations of authorities having jurisdiction for demolition, removal and disposal.
- B. Obtain written clearances from all public and private utility companies and agencies serving the Project Site prior to the start of any demolition work.
- C. Obtain all required government Permits.
- D. Conform to applicable regulatory procedures if hazardous, toxic or contaminated materials are encountered. Immediately notify the Owner's representative, in writing.
- E. Conduct demolition to minimize impact on existing and adjacent structures. Protect existing structures, utilities, and other items of properties to remain from damage during demolition and removal operations.
- F. Conduct wall and ceiling demolition in two phases:
 - Phase 1: Remove wall and ceiling finishes and sheathing material to expose hidden conditions. Coordinate a Designer of Record inspection of the hidden conditions to confirm that existing conditions are adequate for the completion of the work.
 - Phase 2: Demolish / remove all components as required for the project work. Demolish additional work determined necessary by the Designer of Record inspection.
- G. Minimize interference with adjacent building occupancies.
- H. Immediately cease operations if adjacent structures appear to be in danger, and take appropriate corrective measures to ensure safety of the structures and occupancies.

1.5 PROJECT CONDITIONS

- A. Provide, erect, and maintain temporary shoring, dust barriers, and security and protection barriers.
- B. Conduct demolition to minimize interference with adjacent building areas.
- C. Maintain protected access and egress at all times.
- D. The use of explosives will not be permitted.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that measurements, surfaces, materials, substrates and conditions are as indicated.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section, Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Construct and maintain weatherproof closures for unprotected existing openings.
- B. Construct and maintain temporary partitions or barriers to prevent the spread of dust, fumes, noise and smoke to adjacent occupied facilities.
- C. Protect existing work not indicated to be altered or removed.
- D. Provide bracing and shoring as required for work to remain.
- E. Disconnect, remove and cap designated utility services within the demolition area. Mark the location of disconnected utilities. Identify and indicate the capped locations on the Project Record Documents.

3.3 REMOVAL

- A. Do not begin demolition until authorization has been received from the Owner's representative.
- B. Notify the Owner's representative, in writing, ten (10) working days prior to commencement of the work.
- C. Construct demolition in an orderly and careful manner. Protect existing construction to
- Where indicated, remove foundation walls and footings to the dept below finished grade, as shown.
- E. Remove concrete curbs, walks and asphalt paving on grade. Backfill, rough grade and compact areas affected by the demolition.
- F. Dust and Noise Control:
 - 1. Dust resulting from the demolition shall be controlled to prevent the spread to occupied portions of the area, and to avoid creation of a nuisance in surrounding

- areas. The use of water will not be permitted when it will result in, or create hazardous, objectionable conditions, flooding or pollution.
- Noise associated with the demolition shall be minimized by the selection and use
 of the proper equipment, procedures implemented, time of day, or day of the week
 the work is to be accomplished, to minimize the adverse effects of noise from
 operations and activities of the Contractor.
- H. Existing Work: Protect existing work which is to remain in place, be reused, or remain the property of the Owner. Repair items, which are to remain but are damaged during performance of the work, to their original or better condition or replace with new. Provide new supports and reinforcements to existing construction weakened by the demolition and removal work. Repairs, reinforcements and structural replacements must be approved by the Owner's representative.
- I. Relocations: Perform removal and reinstallation of relocated items, as indicated, with workmen skilled in the trades involved. Coordinate with the agency that has jurisdiction over a utility to be relocated. Repair items to be relocated, which are damaged or replace damaged items with new undamaged items, as approved by the Owner's representative.
- J. Ownership of Materials: Except where specified in other Sections, all material and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from the Project Site. The ownership of materials resulting from demolition, and materials and equipment removed, is vested in the Contractor upon approval of the Contractor's demolition and removal plan and procedures, and authorization by the Owner's representative. The Owner will not be responsible for the condition or loss of, or damage to, such property after the Contract award. Prospective purchasers shall not be allowed on the Project Site to view materials and equipment to be sold by the Contractor.
- K. Salvage: The Contractor shall remove existing facilities, as necessary or as indicated; salvage usable materials as directed; store, transport, stockpile and / or protect materials at the location designated. All salvaged materials shall remain the property of the Owner.

L. Disposal:

- 1. Refuse resulting from demolition operations shall be hauled to an approved disposal site(s) or landfill and shall be disposed of in a manner to meet all applicable federal and local requirements, regulations and laws regarding environmental protection, health, safety and public welfare.
- 2. Remove rubbish and debris from the Project Site daily. Do not allow accumulation inside or outside the building. Store materials that cannot be removed daily in areas designated by the Owner=s representative.
- 3. Materials shall not be left on the Project Site, moved to adjoining properties or areas, or be buried on-site.
- 4. Refuse may not be burned on the Project Site.
- 5. Remove and promptly dispose of contaminated, vermin infested, and dangerous materials encountered.
- M. Restore damaged surfaces, equipment and fixtures to their condition prior to beginning the work, with the same type materials, size and finish as the existing. Damage to existing

facilities, structures, utilities or other work to remain shall be repaired by the Contractor using materials equal to or better than those existing, and at the Contractor's expense.

3.4 CLEANUP

- 1. Upon completion of demolition and removal operations, the entire area shall be cleaned of all debris and rubbish in a manner satisfactory to the Owner's representative.
- 2. Leave the areas of work in a broom clean condition.

END OF SECTION



ANTONIO B. WON PAT INTERNATIONAL AIRPORT AUTHORITY, GUAM (GIAA)

SECTION C TECHNICAL SPECIFICATIONS

INVITATION FOR BID IFB NO: GIAA-C03-FY15

AIRPORT RESTROOM RENOVATIONS GIAA PROJECT NO. GIAA-FY15-02-1

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SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Rough hardware.
 - 2. Miscellaneous framing and supports.
 - 3. Loose bearing and leveling plates.
 - 4. Counters and equipment supports.
 - 5. Miscellaneous steel trim.
 - 6. Shelf and relieving angles.
 - 7. Pipe bollards.
 - 8. Metal bar gratings.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 03300 Cast-In-Place Concrete: Substrate for attachments.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for attachments.
 - 3. Section 05520 Steel Handrails and Railings: Inserts and anchorage for.
 - 4. Section 05600 Ornamental Metal Work: Inserts and anchorage for.
 - 5. Section 07724 Roof Hatch: Safety ladder post.
 - 6. Section 09900 Painting: Metal finishes.
 - 7. Products Furnished But Not Installed Under this Section: Inserts and anchors preset in masonry and concrete for anchorage of metal work.

1.2 DESCRIPTION OF WORK

- A. The extent of metal fabrications is indicated on the Drawings, schedules and as specified herein, and includes providing, fabricating and installing items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not structural steel or other metal systems specified elsewhere herein.
- B. All light iron and miscellaneous metal work not specified under another Section, but

required for the work shall be provided under this Section whether or not specifically referred to herein.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Institute of Steel Construction (AISC):
 - 1. Specification for Structural Steel for Buildings.
- C. American National Standards Institute (ANSI):
 - 1. ANSI B18.5 Round Head Bolts (Inch Series).
 - 2. ANSI B18.6.1 Wood Screws (Inch Series).
- D American Society of Civil Engineers (ASCE):
 - 1. ASCE / SEI 7 Minimum Design Loads for Buildings and Other Structures.
- E. American Society for Testing and Materials (ASTM):
 - ASTM A 27 / A 27M Specification for Steel Castings, Carbon, for General Application.
 - 2. ASTM A 47 / A 47M Specification for Ferritic Malleable Iron Castings.
 - 3. ASTM A 48 / A 48M Specification for Gray Iron Castings.
 - 4. ASTM A 36 / A 36M Specification for Carbon Structural Steel.
 - 5. ASTM A 53 / A 53M Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 6. ASTM A 123 / A 123M Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 7. ASTM A 134 Specification for Pipe, Steel, Electric-Fusion (Arc)-Welded (Sizes NPS 16 and Over).
 - 8. ASTM A 153 / A 153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 9. ASTM A 167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - 10. ASTM A 176 Specification for Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip.
 - 11. ASTM A 276 Specification for Stainless Steel Bars and Shapes.
 - ASTM A 307 Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

- 13. ASTM A 500 / A 500M Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
- 14. ASTM A 501 Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- 15. ASTM A 568 / A 568M Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
- 16. ASTM A 653 / A 653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- 17. ASTM A 780 Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
- 18. ASTM C 1107 / C 1107M Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
- 19. ASTM E 330 Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- 20. ASTM E 935 Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.
- 21. ASTM E 936 Practice for Roof System Assemblies Employing Steel Deck, Preformed Roof Insulation, and Bituminous Built-Up Roofing.
- F. American Welding Society (AWS):
 - 1. AWS D1.1 / D1.1M Structural Welding Code Steel.
- G. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
- H. International Code Council:
 - International Building Code (IBC), 2009.
- I. National Association of Architectural Metal Manufacturers (NAAMM):
 - 1. Metal Finishes Manual for Architectural and Metal Products.
 - 2. MBG 531 Metal Bar Grating Manual.
 - 3. MBG 532 Heavy Duty Metal Bar Grating Manual.
 - 4. MBG 533 Welding Specification for Fabrication of Steel, Aluminum and Stainless Steel Bar Grating.
- J. SSPC: The Society for Protective Coatings (formerly Structural Steel Painting Council):
 - 1. SSPC Painting Manual.
 - SSPC PA 1 Specification Procedure for Shop, Field and Maintenance Painting of Steel.

- Paint 20 Specification of Zinc-Rich Coating Type 1 Inorganic and Type II -Organic.
- 4. SSPC SP 2 Requirements for Hand Tool Cleaning of Steel Surfaces.
- 5. SSPC SP 3 Requirements for Power Tool Cleaning of Steel Surfaces.
- 6. SSPC SP 6 Standard for Commercial Blast Cleaning of Steel Surfaces.
- 7. SSPC SP 7 Standard for Brush-Off Blast Cleaning of Steel Surfaces.
- 8. VIS 3 Guide and Reference Photographs for Steel Surfaces Prepared by Power and Hand-Tool Cleaning.

1.4 DEFINITIONS

- A. Custom Metal Fabrications: Metal fabrications custom built for a specific Project purpose.
- B. Pre-Manufactured Metal Fabrications: Metal fabrications which are factory-fabricated for a specific architectural purpose. These products may require modification to meet the Project requirements, but their primary manufactured purpose is not altered.
- C. Non-Structural Metal Fabrications: Metal work which has not been designed by the Project Structural Engineer, and which is not part of the Structural Engineer=s documents.

1.5 SYSTEM PERFORMANCE

A. Structural Performance: Provide assemblies which, when installed, comply with the following minimum requirements for structural performance, unless otherwise indicated.

1.6 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s specifications, anchor details and installation instructions for pre-manufactured products. Submit data indicting materials used in miscellaneous metal fabrications, including paint products and grout.

2. Shop Drawings:

- a. Drawings for fabrication and erection of miscellaneous metal fabrications; including plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installations by others.
- b. Where materials or fabrications are required to comply with requirements for design loadings, include structural computations, materials properties and other information for structural analysis. Prepare under the seal of a professional structural engineer for products requiring structural engineering to meet the Performance Requirements.
- c. Include profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners and accessories, erection drawings, elevations, welded connections using standard AWS welding symbols with net weld lengths.
- d. Take field measurements prior to the preparation of Shop Drawings and

prefabrication when possible. Allow for trimming and fitting where taking of field measurements before fabrication might delay construction.

3. Samples:

a. Submit representative samples of materials and finished products as requested by the Architect.

1.7 QUALITY ASSURANCE

A. Qualifications:

- 1. Fabricator: Company specializing in fabricating the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

B. Performance Requirements:

- 1. Provide the capacity to withstand the following loading requirements for exterior units such as bollards:
 - a. Design, fabricate and install to resist combined positive and negative windloading in accordance with IBC 2009, Section 1609 with a Vmph of 170, qs of 74.0 psf, exposure B and importance factor 1.0, as applicable per ASCE 7.
- 2. Provide assemblies which, when installed, comply with the following minimum requirements for structural performance, unless otherwise indicated.
- C. Take field measurements prior to the preparation of Shop Drawings and fabrication, where possible. Do not delay the construction. Allow for trimming and fitting when the taking of field measurements before fabrication might delay the work.
- D. Pre-assemble items in the shop to the greatest extent possible, to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and a coordinated installation.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Protect materials from corrosion, deformation and other damage during delivery, storage and handling.
- C. Deliver product to the Project Site in the fabricator=s original, unopened packages, containers or bundles.
- D. Store and protect the materials with a weatherproof covering; ventilate to avoid condensation.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness for fabrication of miscellaneous metal work which will be exposed to view.
- B. Steel Plates, Angles, and Other Structural Shapes: ASTM A 36 / A 36M.
- C. Steel Pipe: ASTM A 53 / A 53M. Type and grade (if applicable), as selected by the fabricator and as required for the design loading. Black finish, unless galvanizing is indicated. Standard weight (Schedule 40), unless otherwise indicated.
- D. Galvanized Steel Pipe and Tube: ASTM A 53 / A 53M.
- E. Steel Tubing: Cold-formed, ASTM A 500 / A 500M or hot-rolled, ASTM A 501.
- F. Sheet Steel, Galvanized: ASTM A 123 / A 123M.
- G. Sheet and Strip Steel, Hot-Rolled: ASTM A 568 / A 568M.
- H. Structural Steel Sheet: Hot-rolled, ASTM A 134 or cold-rolled ASTM E 936, Class 1; of grade required for the design loading.
- I. Galvanized Structural Steel Sheet: ASTM A 653 / A 653M, of grade required for the design loading. Coating designation as indicated, or if not indicated, G90.
- J. Stainless Steel: AISI Type 304 for fumed and welded products. ASTM A 276 for base shapes and forging; ASTM A 167 or A 176 as best suited for plates, sheets and strip. Satin finish typical.
- K. Gray Iron Castings: ASTM A 48, Class 30.
- L. Malleable Iron Castings: ASTM A 47, grade as selected by the fabricator.
- M. Steel Bar Grating: ASTM A 36 / A 36M or NAAMM MBG 531.
- N. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as the supported fabrications.
- O. Concrete Inserts. Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims, as required, hot-dip galvanized, ASTM A 153.
- P. Non-Shrink, Non-Metallic Grout: Premixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with ASTM C 1107 (formerly CE CRD-C621). POR-ROK Anchoring Cement by Minwax Co. division of Eastman Kodak Co., or approved equal. Comply with the manufacturer=s printed instructions.
- Q. Welding Materials: AWS D1.1 / D1.1M. Type required for the materials being welded.
- R. Anchors:
 - 1. Threaded Type, Concrete Inserts: Galvanized malleable iron or cast steel capable of receiving 3/4" diameter machine bolts.
 - 2. Slotted Type, Concrete Inserts: Welded box type, fabricated with a minimum 1/8" thick galvanized pressed steel plate with slots to receive 3/4" diameter square head bolts, and knockout cover.

- 3. Expansion Shield, Masonry Anchorage: FS FF-2-325.
- 4. Toggle Bolts: FS FF-B-588, type, class and style as required.

S. Fasteners:

- 1. Provide zinc-coated fasteners for exterior use or where built into exterior walls, Select fasteners for the type, grade and class required.
- 2. Bolts, Nuts and Washers at Interior Locations: ASTM A 307, Grade A, regular hexagon head.
- 3. Bolts, Nuts and Washers at Exterior Locations: ASTM A 307, galvanized per ASTM A 153.
- 4. Bolts, Round Head: ANSI B18.5.
- 5. Lag Bolts: Square head type, FS FF-B-561.
- 6. Plain Washers: Round, carbon steel, FS FF-W-92.
- 7. Lock Washers: Helical spring type, carbon steel, FS FF-W-84.
- 8. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.
- 9. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.
- 10. Machine Screws: Cadmium plated steel, FS FF-S-92.
- 11. Wood Screws: Flat head carbon steel, FS FF-S-111.

T. Primers:

- 1. Primer for Field Painting: Provide one of the following:
 - a. No. 99 Red Primer by Tnemec Co.
 - b. Ceco No. 15 Primox by Chessman-Elliot Company.
 - c. No. 7-C-19 by Rowe Products, Inc.
- Touch-Up Primer for Galvanized Surfaces: High zinc dust content paint for re-galvanizing welds in galvanized steel, complying with SSPC-Paint-20 and ASTM A 780.
- 3. Section 01600 Product Requirements: Product options and substitutions: Substitutions: Permitted.

U. Concrete Fill:

- 1. Concrete Materials and Properties: Comply with the requirements of Division 3 Sections for normal weight, ready-mix concrete with minimum 28-day compressive strength of 4,000 psi, 440 pounds cement per cubic yard, minimum, and a W/C ration of 0.65, maximum, unless higher strength is indicated.
- 2. Non-Slip Aggregate Finish: Factory-graded, packaged material containing fused aluminum oxide grits or crushed emery as abrasive aggregate; rust-proof and non-glazing; unaffected by moisture and cleaning materials.

2.2 ROUGH HARDWARE

- A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Sections of Division 6.
- B. Fabricate items to the sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.3 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports for the applications indicated, or which are not a part of the structural steel framework, as required to complete the work.
- B. Fabricate miscellaneous units to the sizes, shapes, and profiles indicated or, if not indicated, of the required dimensions to receive adjacent other construction retained by framing and supports. Except as otherwise indicated, fabricate from structural steel shapes, plates, and steel bars, of welded construction using mitered joints for field connections. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - 1. Equip units with integrally welded anchors for casting into concrete or building into masonry.
 - 2. Furnish inserts if units must be installed after concrete has been placed.
 - 3. Except as otherwise indicated, space anchors and inserts 16" o.c., and provide the minimum number of anchor units in the form of steel straps 1-1/4" wide x 8" long.

2.4 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on concrete or masonry construction, made flat, free from warp and twist, and of the required thickness and bearing area. Drill plats to receive anchor bolts and for grouting, as required. Galvanize after fabrication.

2.5 MISCELLANEOUS STEEL TRIM

- A. Provide shapes and sizes indicated for the profiles shown. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings, and anchorages as required for the coordination of assembly and installation with other work.
- Hot-dip galvanize miscellaneous framing and supports in exterior locations and where indicated.

2.6 FABRICATION

- A. Fabricate steel items according to the approved Shop Drawings and to the applicable portions of AISC Specifications.
- B. Pre-assemble products in the shop to the greatest extent possible. Disassemble units only

- as necessary for shipping and handling limitations. Clearly mark units for re-assemble and installation.
- C. For fabrications exposed to view, use materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, roller trade names and roughness. Remove blemishes by grinding or by welding and grinding prior to cleaning, treating and the application of surface finishes, including zinc coating.
- D. Workmanship: Use materials of the size and thickness indicated or, if not indicated, as required to produce the strength and durability in the finished products for the intended use. Work to the dimensions indicated or accepted on the Shop Drawings, using proven details of fabrication and support. Use the type of materials indicated or specified.
- E. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Fabricate items with joints tightly fitted and secured. Make exposed joints butt tight, flush and hairline. Ease exposed edges to a radius of approximately 1/32", unless otherwise indicated. Form bent-metal corners to the smallest radius possible, without causing grain separation or otherwise impairing the work.
- F. Conceal welds where possible. Weld corners and seams continuously, complying with AWS and the Building Code. At exposed connections, grind the exposed welds smooth and flush to match and blend with the adjoining surfaces.
- G. Form exposed connections with hairline joints, flush and smooth using concealed fasteners wherever possible. Use exposed fasteners of the type indicated or, if not indicated, Phillips flat-head (countersunk) screws, or bolts.
- H. Exposed Mechanical Fastenings: Flush countersunk screws and bolts, unobtrusively located, except where specifically noted otherwise; consistent with the design.
- I. Provide anchorage of the type indicated, coordinated with the supporting structure. Fabricate and space anchoring devices to provide adequate support for the intended use. Fabricate anchorage and related components of the same material and finish as the metal fabrication, unless indicated otherwise.
- J. Cut, reinforce, drill and tap miscellaneous metal work, as indicated, to receive the finish hardware and similar items.
- K. Fabricate joints which will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.
- L. Galvanizing: For items indicated to be galvanized, apply zinc-coating by the hot-dip process in compliance with the following requirements:
 - 1. ASTM A 153 / A 153M for galvanizing iron and steel hardware.
 - 2. ASTM A 123 / A 123M for galvanizing both fabricated and un-fabricated iron and steel products made of un-coated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299" thick and heavier.
 - 3. ASTM A 123 / A 123M for galvanizing assembled steel products.

2.7 FINISHES, GENERAL

A. Comply with NAAMM, Metal Finishes Manual for Architectural and Metal Products, for recommendations relative to the application and designation of finishes.

B. Finish metal fabrications after assembly.

2.8 SHOP PAINTING AND PROTECTIVE COATING

- A. Conform to SSPC-PA 1, including preparation for painting.
- B. Apply shop primer to un-coated surfaces of metal fabrications, except those with a galvanized finish or to be embedded in concrete, masonry, or sprayed-on fireproofing, unless otherwise indicated. Comply with the requirements of SSPC-PA 1, APaint Application Standards, Guides and Specifications No. 1", for shop painting.
- C. Preparation for Shop Priming: Prepare un-coated ferrous metal surfaces to comply with the minimum requirements indicated below for SSPC surface preparation specifications and the environmental exposure conditions of the installed metal fabrications:
 - 1. Interiors (SSPC Zone 1A): SSPC-VIS 3.
 - 2. Exteriors (SSPC Zone 1B): SSPC-SP 6.
- D. Shop primer for Ferrous Metal: Fast-curing, lead-free, abrasion-resistant, rust-inhibitive primer selected for compatibility with the substrates and with the types of alkyd-type paint systems indicated, and for compatibility to provide a sound foundation for field-applied topcoats, despite prolonged exposure; complying with the performance requirements of FS TT-P-86, Types I, II and III.
- E. Hot-Dip galvanizing and zinc coatings applied on products fabricated from rolled, pressed, and forged steel shapes, plates, bars and strips shall comply with ASTM A 123 / A 123M. Galvanized surfaces, for which a shop coat of paint is specified, shall be chemically treated to provide a bond for the paint. Except for bolts and nuts, all galvanizing shall be done after fabrication.
- F. Clean surfaces of rust, scale, grease and foreign matter in accordance with SSPC-SP 1 Solvent Cleaning, prior to finishing. Prepare surfaces for painting in accordance with SSPC-SP 2, SSPC-VIS 3 or SSPC-SP 7.
- G. Do not prime surfaces that will be in direct contact with concrete, or where field welding is required.
- H. Prime paint items scheduled, with one coat.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for the installation of anchorages, such as concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors to be embedded in concrete or masonry.
- B. Coordinate the delivery of such items to the Project Site.

3.3 INSTALLATION

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners, where necessary, for securing miscellaneous metal fabrications to in-place construction, including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors, as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for the installation of miscellaneous metal fabrications. Set fabrications accurately in location, alignment, and elevation with edges and surfaces level, plumb, true, and free of rack; measured from established lines and levels.
- C. Setting Loose Plates: Clean concrete or masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to the surfaces. Clean the bottom surface of bearing plates.
- D. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned an plumbed, tighten the anchor bolts. Do not remove the wedges or shims, but if protruding, cut-of flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic, non-shrink grout in exposed locations, unless otherwise indicated. Pack grout solidly between bearing surfaces and pates to ensure that no voids remain.
- E. Provide temporary bracing or anchors in the formwork for items to be built into concrete, masonry or similar construction.
- F. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joins smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- G. Field Welding: Comply with the AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of the welds made and methods used in correcting welding work, and the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion-resistance of the base metal.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and the contour of the welded surface

matches the adjacent surfaces.

- H. Touch-Up For Galvanized Surfaces: Clean the welds, bolted connections and abraded areas, and apply two (2) coats of galvanizing repair paint in compliance with SSPC Paint 20 and ASTM A 780.
- I. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting; comply with SSPC-PA 1 requirements for touch-up of field painted surfaces.
 - 1. Apply by brush or spray and provide a minimum dry film thickness of 2.0 mils.

3.4. ISOLATION REQUIREMENTS

A. Dissimilar Metals:

- Where metal surfaces are in contact with, or fastened to dissimilar metals except stainless steel, zinc or zinc coating, the metal shall be protected from the dissimilar metal.
- 2. Where drainage from a dissimilar metal passes over the metal, paint the dissimilar metal with a non-lead pigmented paint.
- B. Cementitious Materials: Paint metal where in contact with mortar, concrete, masonry or other cementitious material, with an alkali-resistant coating such as heavy-bodied bituminous paint or epoxy paint.
- C. Wood Contact: Isolate metal from cedar, redwood, oak and acid-treated lumber by means of unbroken 6-mil polyethylene construction sheet or a heavy coating of metal-protective paint.
- D. Surfaces in contact with sealants after installation need not be coated with any type of protective material.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect fabrications and installations for alignment, attachment to the structure, and secure and rigid installation.

3.6 ADJUSTING AND CLEANING

A. Section 01700 - Execution Requirements: Adjusting the installed work.

END OF SECTION

SECTION 05800

EXPANSION CONTROL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- Adjustments and augmentation of expansion joint sealing systems at junctures of buildings above grade.
- 2. Interior expansion joint cover assemblies.
- 3. Fire-rated joint sealing assemblies.
- 4. Pre-molded joint fillers.
- 5. Roof expansion joints.
- 6. Accessories.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 03300 Cast-In-Place Concrete: Substrate for attachment.
 - 2. Section 07120 Fluid-Applied Urethane Roofing: Adjacent roof finish material.
 - 3. Section 07620 Sheet Metal Flashing and Trim: Flashing and trim.
 - 4. Section 07900 Joint Sealers: Caulking and sealants.

1.2 DESCRIPTION OF WORK

A. The extent of the expansion control work is indicated on the Drawings and as specified herein, and includes providing and installing expansion and contraction joints and accessories required for complete systems installation.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 167 Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - 2. ASTM B 221 Standard Specification for Aluminum and Aluminum-Alloy Extruded

- Bars, Rods. Wire, Shapes and Tubes.
- 3. ASTM C 920 Standard Specifications for Elastomeric Joint Sealants.
- 4. ASTM E 1399 Standard Test Methods for Cyclic Movement and Measuring the Minimum Joint Widths of Architectural Systems.
- C. American Iron and Steel Institute (AISI).
- D. International Code Council:
 - 1. International Building Code (IBC), 2009.
- E. Copper Development Association (CDA).
- F. Federal Specifications (FS):
 - 1. FS TT-C-494 Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- G. National Association of Architectural Metal Manufacturers (NAAMM).

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer's product specifications, installation instructions and general recommendations for each specified material and fabricated product.
 - 2. Shop Drawings: Indicate layout, joining, profiles, and anchorages of expansion and contraction joint products.
 - 3. Samples: 8" long samples of the specified materials to be exposed as finished surfaces, when requested.
 - 4. Assurance / Control Submittals:
 - a. Manufacturer's certificate that the products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain all expansion joint cover assemblies from a single manufacturer.
- B. Coordinate compatibility with expansion joint cover assemblies specified in other Sections.
- C. Fire-Test-Response Characteristics: Where indicated, provide expansion joint cover assemblies whose fire resistance has been determined per ANSI / UL 263, NFPA 251, UBC 43-1 or ASTM E 119, including hose stream test of vertical wall assemblies, by a nationally recognized testing and inspecting agency acceptable to the government authorities having jurisdiction.
 - 1. Fire-Resistance Rating: Not less than the rating of the adjacent construction.

D. Qualifications:

- 1. Manufacturer: Company specializing in fabricating the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

E. Performance Requirements:

- 1. Design and install to withstand the following loading requirements, where applicable:
 - a. In no case shall the combined loading be less than 75 psf.
 - b. Comply with requirements of the applicable Building Code, if more stringent than the requirements stated above.
- F. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - Warranty: Submit a written Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened protective packaging.
- C. Stack the materials to prevent twisting, bending and abrasion. Slope metal sheets to ensure drainage. Provide ventilation.
- D. Prevent contact with materials which may cause corrosion or discoloration.

1.7 JOB CONDITIONS

A. Coordinate the work of this Section with interfacing and adjoining work for the proper sequencing of each installation. Ensure the best possible weather resistance, appearance and durability of the work, and protection of the materials and finishes.

1.8 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:
 - Provide a written Warranty jointly signed by the manufacturer and the installer certifying that the products and the installation is free of defective materials and workmanship and will replace or repair any defective component or the system, in whole or in part, as necessary to provide an installation meeting its intended purpose and integrity.

2. Warranty Period: One (1) year for labor, materials and installation; two (2) years against leaks from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Balco, Inc.
 - 2. C/S Group.
 - 3. Metalines, Inc.
 - 4. MM Systems Corp.
 - 5. Watson Bowman Acme Corp.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Aluminum: ASTM B 221, alloy 6063-T5 for extrusions; ASTM B 209, alloy 6061-T6 for sheet and plates.
 - 1. Protect aluminum surfaces to be placed in contact with cementitious materials with a protective coating.
- B. Bronze: ASTM B 455, alloy C38500 for extrusions; alloy C28000 Muntz Metal for plates.
- C. Brass: UNS alloy C26000 for half hard sheet and coil.
- D. Stainless Steel: ASTM A 167, Type 304 with non-slip finish, unless indicated otherwise, for plates, sheets, and strips. Finish as selected from the manufacturer=s standards..
- E. Extruded Preformed Seals: Single or multicellular elastomeric profiles as classified under ASTM D 2000, designed with or without continuous, longitudinal, internal baffles. Formed to fit compatible frames. Color as selected from the manufacturer=s standards.
- F. Preformed Sealant: Manufacturer's standard elastomeric sealant complying with ASTM C 920, Use AT@, factory-formed and bonded to metal frames or anchor members. Color as selected from the manufacturer's standards.
 - 1. Joints 2" Wide and Less: Withstand plus or minus 35% movement of the joint width without failure.
 - 2. Joints 2" to 4" Wide: Withstand plus or minus 50% movement of the joint width without failure.
- G. Seismic Seals: Typical for exterior applications; two single-layered elastomeric profiles, one interior and one exterior, as classified under ASTM D 2000; retained in a set of compatible frames. Color as selected from the manufacturer=s standards.

- H. Fire Barriers: Designed for the indicated or required dynamic structural movement without material degradation or fatigue when tested in accordance with ASTM E 1399. Tested in maximum joint width condition with a field splice as a component of an expansion joint cover per ANSI / UL 263, NFPA 251, UBC 43-1, or ASTM E 119, including hose stream test of vertical wall assemblies by a nationally recognized testing and inspection agency acceptable to the government authorities having jurisdiction.
- Accessories: Manufacturer's standard anchors, fasteners, set screws, spacers, flexible
 moisture barriers and filler materials, drain tubes, lubricants, adhesive, and other
 accessories compatible with the material in contact, as indicated or as required for a
 complete installation.

2.3 EXPANSION JOINT COVER ASSEMBLIES

- A. General: Provide expansion joint cover assemblies of the design, basic profile, materials, and operation indicated. Provide units comparable to those indicated or as required to accommodate the joint size, variations in adjacent surfaces, and dynamic structural movement without material degradation or fatigue when tested in accordance with ASTM E 1399. Furnish units in the longest practicable lengths to minimize the number of end joints. Provide hairline mitered corners where joints change directions or abuts other materials. Include closure materials and transition pieces, tee-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous joint cover assemblies.
- B. Moisture Barrier: Provide manufacturer's continuous, standard, flexible vinyl moisture barrier under covers at roofs, exterior walls and locations indicated.
- C. Fire-Rated Joint Covers: Proved expansion joint cover assemblies with manufacturer=s standard continuous flexible fire barrier seals under covers at locations indicated, to provide a fire-resistive rating not less than the rating of the adjacent construction.
- D. Coverless Fire Barrier: Provide manufacturer=s standard continuous flexible fire barrier seals at locations indicated, to provide a fire-resistive rating not less than the rating of the adjacent construction.
- E. Metal Floor-to-Floor Joint Cover Assemblies: Provide continuous extruded metal frames of the profile indicated with seating surface and raised floor rim or exposed trim strip to accommodate the flooring and concealed bolt and anchors embedded in concrete. Provide assemblies formed to receive cover plates of the design indicated and to receive filler materials, if any, between the raised rim of the frame and edge of the plate. Furnish depth and configuration to suit the type of construction and to produce a continuous non-slip wearing surface flush with the adjoining finish floor surface.
 - 1. Partially Concealed Cover: Provide one frame on each side of the joint, designed to accommodated the manufacturer=s floor cover plate and filler.
 - 2. Exposed Cover: Provide one frame on each side of the joint, designed to support the floor plate and filler.
 - 3. Flat Cover Plates: Provide cover plates of the profile and wearing surface indicated. Extend flat plates to lap each side of the joint.
 - Filler Insert: Furnish abrasive-resistant flexible gasket filler between the edge of the cover plate and the raised rim of the frame to accommodate the required movement.

- 4. Fixed Cover Plates: Attach one side of the cover plate to a frame or finished wearing surface with the other side resting on the other frame or finished wearing surface to allow free movement.
- 5. Self-Centering Cover Plates: Concealed centering device with the cover plate secured in or on top of the frames so as to have free movement on both sides.
- 6. Floor Cover Plate Wearing Surfaces: Provide cover plates with the following type of wearing surface:
 - a. Recessed to receive full thickness of the flooring material.
- 7. Ceiling infill, if required, as detailed.
- F. Floor-to-Wall Joints: Provide one frame on the floor side of the joint only. Provide wall side frame where required by the manufacturer=s design.
 - Angle Cover Plates: Attach angle cover plates for floor-to-wall joints to the wall with countersunk, flat-head exposed fasteners secured to drilled-in-place anchor shields, unless otherwise indicated, at the spacing recommended by the joint cover manufacturer.
- G. Metal Wall Joint Cover Assemblies: Provide continuous extruded metal frames of the profile indicated. Concealed anchors embedded in concrete. Provide assemblies formed to receive cover plates of the design indicated.
 - Cover plates: Provide cover plates of the profile indicated. Extend plate to lap each side of the joint. L000-82-11 and 000-92-11 by Architectural Art Manufacturing or approved equal.
- Wall, Ceiling and Soffit Joint Cover Assemblies: Provide interior wall and ceiling expansion joint cover assemblies of the same design and appearance. Provide exterior wall and soffit expansion joint cover assemblies of the same design and appearance. Provide wall expansion joint cover assemblies compatible with the floor expansion joint cover assemblies design and appearance.
 - 1. Fixed Metal Cover Plates: Provide a concealed, continuously anchored frame fastened to the wall, ceiling, or soffit only on one side of the joint. Extend the cover to lap each side of the joint to permit free movement on one side. Attach the cover to the frame with the cover in close contact with adjacent finish surfaces.
 - 2. Floating Metal Cover Plates: Cover plate secured in or on top of the frames to permit free movement on both sides.
 - 3. Self-Centering Cover Plates: Concealed centering device with the cover plate secured in or on top of the frame to permit free movement on both sides.
 - 4. Flexible Filler: Secure the approved flexible filler between the frames to compress and expand with movement.
- I. Joint Cover Assemblies with Preformed Seals: Provide joint cover assemblies consisting of continuously anchored aluminum extrusions and continuous extruded preformed seals of the profile indicated or as required to suit the types of installation conditions shown. Furnish extrusions designed to be embedded in or attached to concrete with lugs. Vulcanize or heat-weld splice, if any, to ensure hermetic joint conditions.
 - Cover Plate: Include extruded aluminum cover plate fastened to one side of the

joint and extend the plate to lap each side of the joint to permit free movement with the cover in close contact with the adjacent surfaces.

- Joint Cover Assemblies with Elastomeric Sealant: Provide continuous joint cover assemblies consisting of elastomeric sealant, factory-bonded to extruded aluminum frames of the profile indicated or required to suit the types of installation conditions shown. Provide frames for floor joints with means for embedding in or anchoring to concrete without using exposed fasteners and that will result in exposed surfaces of sealant and aluminum frames finishing flush with adjacent finished floor surfaces without exposing the anchors.
- K. Compression Seals: Preformed, elastomeric extrusions having an internal baffle system in sized and profiles shown or as recommended by the manufacturer. Provide lubricant and adhesive for installation as recommended by the manufacturer.
- L. Foam Seal: Non-extruded, low-density, cross-linked, nitrogen-blown ethylene vinyl acetate polyethylene copolymer foam; Evazote 380 E.S.P. by Royston or approved equal. Provide adhesive for the installation as recommended by the manufacturer.

2.4 METAL FINISHES

- A. General: Comply with NAAMM, AMetal Finishes Manual@ for finish designations and application recommendations, except as otherwise indicated. Apply finishes to products in the factory after fabrication. Protect finishes on exposed surfaces before shipment.
- B. Aluminum Finishes: Anodized.
- C. Stainless Steel Finishes: Comply with NAAMM, AMetal Finishes Manual@ for recommendations relative to application and designations of finishes.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - Verify that roofing terminations and base flashings are in place, sealed, and secure.
- C. Report in, writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- . Manufacturer's Instructions: In addition to the requirements herein, comply with the manufacturer's instructions and recommendations for the phases of work, including the preparation of substrates, application of materials, and protection of the installed work.
- B. Coordinate and furnish anchorages, setting drawings, templates, and instructions for the installation of expansion joint cover assemblies to be embedded in or anchored to concrete

- or to have recesses formed into the edges of concrete slabs for later placement and grouting-in of frames.
- C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary to secure expansion joint cover assemblies to in-place construction, including threaded fasteners with drilled-in expansion shields for masonry and concrete where anchoring members are not embedded in concrete. Provide fasteners of metal, type and size to suit the type of construction indicated and to provide for the secure attachment of expansion joint cover assemblies.

3.3 INSTALLATION

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting as required to install expansion joint covers. Install joint cover assemblies in true alignment and in proper relationship to the expansion joints and adjoining finished surfaces, measured from established lines and levels. Allow adequate free movement for thermal expansion and contraction of the metal to avoid buckling. Set floor covers at elevations to be flush with adjacent finished floor materials. Locate wall, ceiling and soffit covers in continuous contact with adjacent surfaces. Securely attach in place with the required accessories. Locate anchors at intervals recommended by the manufacturer, but not less than 3" from each end and at not more than 24" on center.
- B. Continuity: Maintain continuity of the expansion joint cover assemblies with a minimum number of end joints. Align metal members mechanically using splice joints. Cut and fit ends to produce joints that will accommodate thermal expansion and contraction of the metal to avoid buckling of the frames. Adhere flexible filler materials, if any, to the frames with adhesive or pressure-sensitive tape as recommended by the manufacturer.
- C. Extruded Preformed Seals: Install seals complying with the manufacturer=s instructions and with a minimum number of end joints. For straight sections, provide preformed seals in continuous lengths. Vulcanize or heat-weld field splice joints in preformed seal material to provide watertight joints using procedures recommended by the manufacturer. Apply adhesive, epoxy, or lubricant-adhesive approved by the manufacturer to both frame interfaces before installing the preformed seal. Seal transitions according to the manufacturer=s instructions.
- D. Elastomeric Sealant Joint Assemblies: Seal end joints within continuous runs and joints at transitions according to the manufacturer's directions, to provide a watertight installation.
- E. Seismic Seals: Install interior seals in continuous lengths; vulcanize or heat-weld field splice joints in interior seal material to provide watertight joints using the manufacturer=s recommended procedures. Install exterior seals in standard lengths. Seal transitions and end joints in accordance with the manufacturer=s instructions.
- F. Moisture Barriers: Install moisture gutters with a tight fit and sealed ends. Drain as required.
- G. Fire Barriers: Install fire barriers, including transitions and end joints, according to the manufacturer=s instructions so that the adjacent fire-rated construction is continuous.

3.4 ISOLATION REQUIREMENTS

- A. Wood Contact: Isolate from cedar, redwood, oak and acid-treated lumber with an unbroken 6-mil polyethylene construction sheet or a heavy coating of metal-protective paint.
- B. Aluminum Surfaces: Shall not directly contact other metals except stainless steel, zinc, or

zinc coated. Where aluminum contacts another metal, paint the dissimilar metal with a primer followed by two coats of aluminum paint. Where drainage from a dissimilar metal passes over aluminum, paint the dissimilar metal with a non-lead pigmented paint.

C. Metal Surfaces: Paint where in contact with mortar, concrete, or masonry materials with an alkali-resistant coating such as heavy-bodied bituminous paint.

3.5 REPAIRS TO FINISH

A. Scratches, Abrasions and Minor Surface Defects: May be repaired in accordance with the manufacturer=s printed instructions. Replace items which cannot be repaired to the satisfaction of the Owner=s representative.

3.6 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field testing and inspection.
- B. Inspect the floor slab, roof slab and wall construction, alignment and attachment to the structure.

3.7 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Do not remove protective coverings until the finish work in adjacent areas is complete. When the protective coverings are removed, clean the exposed metal surfaces in compliance with the manufacturer's instructions.
- C. Remove substances which might cause corrosion of metal or deterioration of finishes.

3.8 PROTECTION

A. The installer shall advise the Contractor of required procedures for surveillance and protection of the work during construction to ensure that all work will be without damage or deterioration at the time of Substantial Completion.

END OF SECTION

SECTION 06200

FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior wood paneling.
 - Wood door frames.
 - 3. Standing and running trim.
 - 4. Plastic laminate.
 - 5. Adjustable shelving.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 06400 Architectural Woodwork: Cabinetry.
 - 2. Section 08710 Door Hardware: Hardware for wood doors.
 - 3. Section 09110 Non-Load Bearing Steel Framing: Substrate framing.
 - 4. Section 09900 Painting: Finishes.

1.2 DESCRIPTION OF WORK

A. The extent of finish carpentry work is indicated on the Drawings and as specified herein, and includes providing and installing all finish woodwork, wood trim for bases, wall rails, crown moldings, ceiling battens, wood door and window frames, jambs and moldings and wood veneer paneling as required to complete the Project.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American National Standards Institute (ANSI):
 - 1. ANSI A135.4 Basic Hardboard.
 - 2. ANSI A208.1 Mat Formed Wood Particleboard.
- C. Architectural Woodwork Institute (AWI):

- 1. AWI AWQS Architectural Woodwork Quality Standards, 8th Edition, Version 2.0.
- D. American Society for Testing and Materials (ASTM):
 - ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
- E. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
 - 2. Accessibility Guidelines for Schools.
- F. National Electric Manufacturer=s Association (NEMA):
 - 1. NEMA LD3 High Pressure Decorative Laminates.
- G. United States Department of Commerce Product Standard (PS):
 - 1. PS 20 American Softwood Lumber Standard.
- H. Western Wood Products Association (WWPA):
 - 1. WWPA Quality Standards.

1.4 DESIGN INTENT

A. It is the design intent that similar woodwork throughout the Project match. Coordinate work between the separate installers providing similar woodwork to ensure that the design intent is achieved to the satisfaction of the Owner=s representative.

1.5 SUBMITTALS

- A Section 01330 Submittal Procedures: Procedures for submittals.
 - Product Data: Manufacturer=s specifications and installation instructions for each item of factory-fabricated paneling, wood veneer, finish hardware, anchorage devices and finish coating products.
 - 2. Shop Drawings: Show the location of each item, dimensioned plans and elevations, large scale details, attachment, anchorage and related components.
 - 3. Samples: For each species and cut or pattern of finish carpentry. Label each sample according to species, grade, grain cut and finish type.
 - Treated Wood: 12" long sample of termite, preservative and fire-retardant treated wood items.
 - b. Interior standing and running trim: 24" long x full board or molding width, unfinished.
 - c. Factory-Finished Plywood Veneer and Wood Paneling: 24" long x panel width.
 - d. Worked (Shaped) Pieces, Unfinished: Profile size x 12" lengths. For work requiring eased edges, submit samples of each size of eased edge

- required. Samples for each species, grade, and grain cut need not be submitted.
- e. Finished Samples: Representative board samples of 3/4" x 8-1/2" x 11" size with transparent finishes of each type, color and texture required; finished by the Paint applicator.
- f. Hardware: One (1) complete unit of each type and finish required.
- 4. Wood Treatment Data: Chemical treatment manufacturer=s instructions for handling, storage, installation and finishing treated materials.
 - a. Pressure Treatment and Termite Treatment: For each type specified, include certification by the treating plant stating the chemicals and process used, net amount of preservative retained and conformance with applicable standards.
 - b. Dip Treatment: For each type specified, include certification by the treating plant stating the chemical solutions used, submersion period and conformance with applicable standards.
 - c. Fire-Retardant Treatment: Include certification by the treating plant indicating the type of chemicals used and fire performance characteristics achieved.
- 5. Assurance / Control Submittals:
 - a. Manufacturer=s certification that the fabricated woodwork complies with the quality grades and other requirements indicated.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Submit a written Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.6 COORDINATION

- A. Pre-Installation Meeting: Convene a Pre-Installation Meeting at the Project Site prior to the delivery of finish carpentry materials to the Site.
 - 1. Require attendance of the Contractor, Architect, Owner=s representative and representatives of the installer of architectural woodwork, other finishes, painting and related mechanical and electrical work.
 - 2. Review coordination and environmental controls required for proper installation and ambient conditions in areas to receive the work.
 - 3. Review preparation and installation procedures, and the coordination and scheduling required with related work.
- B. Support Work:

- 1. For support work not indicated in the Contract Documents, coordinate requirements with other installers, in a timely manner.
- 2. Provide work as necessary to ensure that all work has proper framing and reinforcing supports to ensure secure and solid installations.

1.7 QUALITY ASSURANCE

- A. Perform the work in accordance with AWI, Premium quality where designated, Custom quality all others
- B. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- C. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Material and Equipment: Transport, handle, store and protect to prevent damage.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened packaging.
- C. Do not deliver products to the Project Site until wet work, grinding, painting and similar operations which could damage, soil or deteriorate the finish carpentry has been completed in the installation areas, and humidity has been stabilized.
- D. If, due to unforeseen circumstances, finish carpentry materials must be stored in other than installation areas, store only in areas meeting the requirements specified for the installation areas.
- E. Protect installed finish carpentry from damage and excessive relative humidity until final acceptance.

1.9 JOB CONDITIONS

- A. Fabricator of the finish carpentry shall determine the optimum moisture content and the required temperature and humidity conditions.
- B. The installer shall advise the Contractor of the temperature and humidity requirements for the finish carpentry installation areas. Do not store or install finish carpentry until the required temperature and relative humidity has been stabilized and will be maintained in the installation areas.
- C. Stabilize temperature and humidity in installation areas as necessary to maintain the moisture content of the installed finish carpentry within a 1.0% tolerance of optimum moisture content, from the date of installation throughout the remainder of the construction period.

PART 2 PRODUCTS

2.1 GENERAL

A. Finish Carpentry Standards:

- 1. Comply with AWI, Premium quality where designated, Custom quality grade for trim, jambs, frames and detailing.
- 2. Lumber shall be best grade for clear finishes.
- 3. Moisture content of lumber shall be no more than 13%.
- 4. Minimum lengths for trim and frames shall be:
 - a. One continuous piece for openings.
 - b. Joints no closer than 12 feet apart in running trim.
- 5. Sizes and profiles as called for on the Drawings.

B. Backpriming:

- 1. Back prime work immediately upon arrival of the units at the Project Site with a single coat of spar varnish or other acceptable sealer for fabricated units to be installed as an exterior component or where against portland cement plaster, gypsum plaster, or against exterior facing walls of concrete or masonry.
- 2. Ensure that the sealer does not contaminate surfaces requiring a transparent finish.

2.2 MATERIALS

A. Millwork:

- 1. Wood door and window frames, trim and plywood, and panels, and solid paneling shall be the species and cut designated in finish schedules, drawings and details; best clear Premium quality where designated, Custom quality grade, for transparent finish; sized and fabricated as detailed.
- B. Panels: Fiberboard or fiberboard core plywood, construction balanced.
- C. Plywood: For exterior use and interior use exposed to moisture shall be marine grade.
- D. Veneers: Species, cut and matching as indicated or selected, grade 1, factory-finished.

2.3 WOOD TREATMENT

- A. Preservative Treatment: For interior wood, comply with applicable requirements of AWPA, Standards C2 (Lumber), C9 (Plywood), and of AWPB, Quality Marks Requirements.
- B. Preservative Treatment Types:
 - 1. Ammoniacal Copper Zinc Arsenate (ACZA).
 - 2. Pentachlorophenol (Penta).
 - 3. Fluor Chrome Arsenate Phenol (FCAP).
- Pressure-treat above ground items with water-borne preservatives complying with AWPB LP-2.

- D. Dip-treat interior wood.
- E. Apply in accordance with OSHA and EPA requirements and regulations and in accordance with AWPA, P-9. Treatment shall not discolor finished wood exposed to view.

F. Fire-Retardant Treatment:

- Where fire-retardant wood is specified or required, provide materials which comply with AWPA standards for pressure impregnation with fire-retardant chemicals, and which have a flame spread rating of not more than 25 when tested in accordance with UL Test 723 or ASTM E 84, and shows no increase in flame spread and significant progressive combustion upon continuation of the test for an additional twenty (20) minutes.
- 2. Where treated items are exposed to the exterior or to high humidity or are to have a transparent stain or sealer finish, provide appearance grade materials which show no change in the fire-hazard classification when subjected to standard rain test in accordance with UL 790 or ASTM B 2898.
- 3. Use fire-retardant treatment which will not bleed through or adversely affect the type of finish indicated, and which does not require brush treatment of field made cuts to maintain the fire-hazard classification.
- G. Products Scheduled for Transparent Finish:
 - 1. Treatment color shall be compatible with products scheduled for a transparent finish. Provide samples of treatment with finish applied for review.
 - 2. Where a transparent finish is indicated, use the type of treatment and species which permits milling of the lumber after treatment without altering the indicated fire-hazard classification, as determined by fire testing.
- H. Incised Materials: Do not use incised materials where finished work will be exposed to view.

2.4 INTERIOR WOOD PANELING

- A. Veneer plywood for transparent finish, species as indicated on color and grain matched for consistency between panels and with the trim.
- B. Stain and transparent finish.

2.5 WOOD DOOR FRAMES

- A. Grade:
 - Opaque Painted: AWI, Custom.
 - 2. Transparent: AWI, Premium.
- B. Wood: Same species as the wood door face veneer. Ease edges.

2.6 STANDING AND RUNNING TRIM

A. Grade:

- Opaque Painted: AWI, Custom.
- 2. Transparent: AWI, Premium.
- B. Trim, boards and plywood for painted finish: Softwood suitable for the exposure and use.
- C. Trim and boards for transparent finish: Wood species as selected.
- D. Back Construction: Rout or groove the backs of flat trim members, kerf backs of other wide flat members, except for members with ends exposed in finish work.

2.7 PLASTIC LAMINATE

- A. Manufacturers: Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Formica Corp.
 - 2. Nevamar Corp.
 - 3. Wilsonart International.
- B. High-Pressure Laminate: NEMA LD3, Grade 50, General Purpose, fire-rated, 0.048" thick.
- C. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.8 ADJUSTABLE SHELVING

- A. Shelving: Softwood plywood; PS 1, graded in accordance with AWI; veneer cover core sides, edges and ends with plastic laminate; cover medium density particle board with factory-applied finish, as selected. 3/4" thick x depth shown on the Drawings x maximum possible length.
- B. Standards: Heavy-duty, 2" slot adjustments, length as required. Knape & Vogt # 87 or comparable product as approved. Color as selected.
- C. Brackets: Heavy-duty, for 2" slots, nylon cam lock lever, length as required. Knape & Vogt # 186 / 187 or comparable product as approved. Color as selected.

2.9 RELATED MATERIALS

A. Anchorage Devices, General: Nails, screws, toggle bolts, expansion shields, and other devices, of type, size and finish required for each use to ensure strong connections. Where products are subject to moisture, provide hot-dipped galvanized products, otherwise electroplated zinc or cadmium anchorage devices are acceptable.

2.10 FABRICATION, GENERAL

- A. Field Measurements:
 - 1. Before proceeding with the fabrication of finish carpentry products, obtain field measurements and verify dimensions.
- B. Wood Products:

- 1. Fabricate finish carpentry products to the dimensions, profiles and details indicated with the construction and materials complying with referenced standards of the specified AWI grades.
- 2. Where necessary for fitting at the Project Site, provide reasonable allowance for scribing, trimming and fitting. Pre-cut openings, where possible, to receive hardware, and mechanical and electrical work.
- 3. Ease edges of rectangular solid wood components to a 1/16" radius for members less than 1" in nominal thickness; 1/8" radius for edges of members over 1" in nominal thickness.
- 4. Conceal all anchorage devices except where decorative fasteners are approved.

2.11 OTHER

- A. General: Where the quality of workmanship may not be specifically indicated, comply with the applicable provisions of AWI as follows as applicable to the grade of material, construction and finish:
 - 1. Scheduled for Opaque Painting: AWI, Custom Grade.
 - 2. Scheduled for Transparent Finish: AWI, Premium Grade.
- B. Finish: Exposed wood surfaces (except resawn surfaces) shall be sanded and free of tool marks and similar blemishes. Hand sand inside the building after installation until all defects have been entirely removed. Any material showing machinery, tool, sandpaper or other defacing marks will be rejected.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 FABRICATION

- A. Fabricate trim, moldings, bases and frames to the dimensions and profiles shown. Route and groove the backside of members to be applied to flat surfaces, except for members with ends exposed in the finished work.
- B. Condition wood materials to the average prevailing humidity conditions in the installation areas prior to installing.
- C. Backprime wood with scheduled finish material exposed on the exterior or, to high the moisture and high relative humidities on the interior.

D. Comply with the requirements of Section 09900 for primers and their application.

3.3 INSTALLATION

- A. Discard items which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or are too small to fabricate work with a minimum number of joints or optimum jointing arrangements, or which are of defective manufacturer with respect to surfaces, sizes or patterns.
- B. Install work in accordance with AWI, AWQS, Section 1700 Installation of Woodwork.
- C. Install the work plumb, level and straight without distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level countertops; and with 1/64" maximum offset in flush adjoining surfaces; 1/32" maximum offsets in revealed adjoining surfaces.
- D. Scribe and cut the work to fit adjoining work. Refinish cut surfaces or repair damaged finish at cuts. Provide a neat, tight joint where work specified in this Section adjoins other work.
- E. Anchor work items to nailers or blocking or directly to the substrate using concealed fasteners, to the extent possible.
- F. Install standing and running trim with the minimum number of joints possible, using full-length pieces (from maximum length lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners to produce tight fitting joints with full surface contact throughout the length of joints. Use scarf joints for end-to-end jointing.
- G. Secure finish carpentry work to anchorage devices or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nail as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersink and fill flush with the finished surface. Match the final finish where a transparent finish is indicated.
- H. Apply sealant at all joints between finish carpentry work and adjacent walls and flooring to prevent intrusion by vermin and moisture into concealed spaces.
- I. Install hardware in accordance with the manufacturer's published instructions.
- J. Install shelving units, standards and brackets at locations indicated on the Drawings.
- K. Finish: AWI quality standard. Leave finish carpentry in a paint-ready condition for final finishing by the painting applicator.

3.4 ADJUSTING AND TESTING

- A. Section 01700 Execution Requirements: Adjusting and testing the installed work.
- Adjust installed work.
- C. Test the installed work for rigidity and ability to support loads.
- D. Adjust joinery for uniform appearance.

- E. Touch-up shop-applied finishes to restore damaged and soiled areas.
- F. Repair damaged and defective work wherever possible to eliminate defects functionally and visually; where repairs cannot be made to the satisfaction of the Owner=s representative, replace the finish cabinetry.
- G. Adjust moving or operating parts to function smoothly and correctly.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect finish carpentry work for plumb, level, alignment and secure attachment.

3.6 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean exposed and semi-exposed surfaces.

3.7 PROTECTION

- A. Installer shall advise the Contractor and painting applicator of procedures required to protect the finish carpentry during the remainder of the construction period to ensure that the work will be without damage and deterioration at the time of final acceptance, and will be comparable to the final finish scheduled for the work.
- B. Installer shall return to the Project prior to substantial completion, repair any damage to the work, and readjust the hardware.

END OF SECTION

SECTION 06400

ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wood faced casework and trim.
 - Plastic laminate faced casework and shelving.
 - 3. Plastic laminate countertops.
 - 4. Solid polymer fabrications.
 - 5. Wood shelving.
 - 6. Preparation for installation and connection of utilities.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 06100 Rough Carpentry: Blocking and backing plates in walls for anchorage.
 - 2. Section 06200 Finish Carpentry: Adjustable shelving.
 - 3. Section 06640 Solid Polymer Fabrications: Countertops.
 - 4. Section 09110 Non-Load Bearing Steel Framing: Blocking and backing plates.
 - 5. Section 09900 Painting: Woodwork finishes.
 - 6. DIVISIONS 15 and 16: Service fittings and connections.

1.2 DESCRIPTION OF WORK

A. The extent of architectural woodwork is indicated on the Drawings and as specified herein, and includes providing, fabricating and installing all wood faced and plastic laminate faced architectural woodwork, trim and countertops, wood shelving, installations and utility connections.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American National Standards Institute (ANSI):

- 1. ANSI A135.4 Basic Hardboard.
- 2. ANSI A208.1 Mat Formed Wood Particleboard.
- C. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Building and Facilities.
 - 2. Accessibility Guidelines for Schools.
- D. Architectural Woodwork Institute (AWI):
 - 1. AWI AWQS Architectural Woodwork Quality Standards, 6th Edition,

Premium Grade, except as otherwise indicated.

- E. National Electric Manufacturer's Association (NEMA):
 - 1. NEMA LD3 High Pressure Decorative Laminates.
- F. United States Department of Commerce Product Standard (PS):
 - 1. PS 1 Construction and Industrial Plywood.
 - 2. PS 20 American Softwood Lumber Standard.

1.4 DESIGN INTENT

A. It is the design intent that similar woodwork throughout the Project match. Coordinate work between the separate installers providing similar woodwork to ensure that the design intent is achieved to the satisfaction of the Owner=s representative.

1.5 DEFINITIONS

- A. Exposed Surfaces: The exposed portions of woodwork, including surfaces visible when doors and drawers are closed. Bottoms of woodwork more than 4'-0" above the floor shall be considered as exposed. Visible members in open cases or behind glass doors also shall be considered as exposed. The front and both sides of all storage cabinets shall be considered as exposed, even when one or both side panels are against a wall or an adjacent cabinet.
- B. Semi-exposed Surfaces: Semi-exposed portions of woodwork includes members behind opaque doors, such as shelves, dividers, interior face of ends, wood back, drawer sides, backs and bottoms, and the inside face of doors. Tops of woodwork 6'-6" or more above the floor shall be considered as semi-exposed.
- C. Unexposed Surfaces: Unexposed portions of woodwork includes sleepers, web frames, dust panels and other surfaces not usually visible after installation.

1.6 SUBMITTALS

A. Section 01330 - Submittal Procedures: Procedures for submittals.

- 1. Product Data: Fabricator=s specifications and installation instructions for each item of factory-fabricated woodwork, wood veneer counter tops, finish hardware and finish coating products.
 - a. Wood veneers and finishes.
 - b. Data for hardware and accessories indicating the material, type, function, attachment and finish.
- 2. Shop Drawings: Show the location of each item on dimensioned plans, sections, elevations, and large scale details. Indicate materials used, wood species, component profiles, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes. Submit for the following:
 - a. Cabinet work, base and overhead.
 - b. Counter work, base and overhead.
 - c. Shelving units.
 - d. Vanities.
 - e. Submit fabricators product information including Shop Drawings for fabricator=s standard units.
- 3. Samples: For each species and cut or pattern of architectural woodwork:
 - a. General:
 - Two 12" x 12" solid wood and plywood or hard board samples with factory-applied transparent or opaque finish for each finish system and color required.
 - 2). Two samples of each countertop material.
 - 3). One unit of each type and finish of cabinet hardware.
 - b. Initial Samples: Unless specific products are scheduled, submit 2" x 2", minimum, size samples of the complete range of colors, patterns, and finishes available for initial selection.
 - c. Final Samples:
 - 1). Color, Pattern and Finish Samples: Submit 6" x 6" final samples matching those initially selected.
 - 2). Fused Joint Sample: On project products that would least likely obscure joints, submit 6" x 10" samples showing fused joint work.
- 4. Assurance / Control Submittals:
 - a. Fabricator=s certificate that the products meet or exceed the specified requirements.

- b. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Submit a written Warranty with forms completed in the name of the Owner and registered with the fabricator.

1.7 COORDINATION

- A. Pre-Installation Meeting: Convene a Pre-Installation Meeting at the Project Site prior to the delivery of architectural woodwork materials to the Site.
 - 1. Require attendance of the Contractor, Architect, Owner=s representative, and representatives of the installer of finish carpentry, other finishes, painting and related mechanical and electrical work.
 - 2. Review coordination and environmental controls required for proper installation, and ambient conditions in areas to receive the work.
 - 3. Review preparation and installation procedures, and the coordination and scheduling required with related work.

B. Support Work:

- 1. For support work not indicated in the Contact Documents, coordinate the requirements with other installers, in a timely manner.
- 2. Provide work as necessary to ensure that all work has proper framing, backing and reinforcing supports to ensure secure and solid installations.

1.8 QUALITY ASSURANCE

A. Qualifications:

- 1. Fabricator: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

B. Quality Standards:

- 1. Woodwork shall comply with the requirements of AWI AArchitectural Woodwork Quality Standards Illustrated@, Eighth Edition, 200, except where more stringent requirements are specified herein.
- C. Style: Fabricate, as indicated, utilizing the following:
 - 2. [Conventional Flush Construction without face frame.]
 - 5. Wood faced casework Premium grade.
 - 6. Countertop, casework and shelving Premium grade.
 - 7. Wood shelving Premium grade.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Package architectural woodwork in water-tight containers for transport to the Project Site to prevent damage, water damage, soiling and deterioration and for storage in a location other than inside the building, if necessary.
- C. Do not store woodwork on the Project Site for a long period of time. If, due to unforseen circumstances, the woodwork must be stored in other than the installation areas, store only in areas meeting the requirements specified for the installation areas.
- D. Do not deliver woodwork until wet work, grinding, painting and similar operations which could damage, soil or deteriorate the woodwork has been completed in the installation areas, and humidity has been stabilized.
- E. Deliver products to the Project Site in the fabricator=s original, new, unopened packaging, crates or containers.

1.10 JOB CONDITIONS

- A. The fabricator of woodwork shall determine the optimum moisture content and required temperature and humidity conditions.
- B. The installer shall advise the Contractor of the temperature and humidity requirements for the architectural woodwork installation areas. Do not install woodwork until the required temperature and relative humidity has been stabilized and will be maintained in the installation areas.
- C. Stabilize temperature and humidity in installation areas, as necessary, to maintain the moisture content of the installed woodwork within a 1.0% tolerance of optimum, from the date of installation throughout the remainder of the construction period.
- D. Unless instructed otherwise by the Installer, maintain the spaces to receive woodwork between 65E F and 80E F, with a relative humidity of 50% or less for 72 hours prior to, during and after installation until the date of Substantial Completion.

1.11 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Fabricator=s Warranty: Provide fabricator=s standard Warranty against defects in product materials and workmanship.

PART 2 PRODUCTS

2.1 WOOD FACED CASEWORK AND TRIM

- A. AWI, premium grade, natural finish.
- B. Trim and Solid Stock: Solid, kiln dried, premium grade, wood species as selected.

- C. Core Stock: 3/4" plywood or medium density melamine particleboard, veneer finish at exposed faces, melamine or matching veneer finish at semi-exposed faces, outside and inside drawers, cabinet backs, shelves, etc.
- D. Species and Cut: Lumber and veneer for transparent and opaque finish shall be as indicated herein or in the Finish Schedule, interior drawings and details, or as selected.
- E. Factory Finished: Casework shall be factory finished per AWI 1500, System #5, catalyzed polyurethane, satin medium rubbed effect, filled finish.
- F. Backpriming: Back prime the work with a single coat of spar varnish or other acceptable sealer for fabricated units to be installed as an exterior component or where against portland cement plaster, gypsum plaster or against an exterior facing wall of concrete or masonry. Ensure that the sealer does not contaminate surfaces requiring a transparent finish.

2.2 PLASTIC LAMINATE FACED CASEWORK AND SHELVING

- A. Core Stock: Material shall be 45 pound density hard board, industrial grade.
 - 1. Minimum core thickness shall be 3/4" except:
 - a. Hidden cabinet backs may be 1/4" thick hardboard.
 - b. Exposed backs and drawer bottoms may be 1/4" thick.
 - c. Drawer sides may be 1/2" thick.
 - d. Backs of free standing cabinets may be 1/2", 5/8" or 3/4" thick, as indicated or required.
 - e. Cabinet bases (toe spaces) may be solid kiln-dried wood, unfinished for finish applications by others.
 - f. Shelf thickness shall be 1" for any shelf over 36" long.
 - 2. Laminated Plastic. Where Plam is indicated for exterior cabinet finish, all visible exposed faces and edges shall be covered with laminated plastic, unless otherwise specified herein. Provide backer as necessary to balance plastic laminate installation at concealed locations.
 - a. Fabricators: Subject to compliance with the Project requirements, fabricators offering products which may be incorporated into the work include the following:
 - 1). Formica Corporation.
 - 2). Nevamar Corporation.
 - 3). Wilsonart International.
 - b. High-Pressure Decorative Laminate: NEMA LD-3, GP-50, General Purpose:
 - 1). Nominal 0.050" thick for horizontal and high usage exposures.
 - 2). 0.028" thick for vertical and medium usage exposures.

- 3). 0.020" thick, liner grade, for all semi-exposed faces inside drawers, doors, backs, shelves, etc.
- 4). Color(s) as selected.
- Section 01600 Product Requirements: Product Options: Substitutions permitted.
- 3. Laminated Plastic Adhesive: Type recommended by the laminated plastic manufacturer; bonded by machine application and pressure of not less than 100 pounds per square inch.
- 4. Edge Treatment: Top edges of drawer sides and drawer backs; edge of doors, fixed panels, visible frame parts and drawer face tops and edges shall be matching laminate faced or shall be resilient polyvinylchloride 0.024" thick, machine bonded with hot melt glue, factory edges trimmed, superfinished, buffed and polished.

2.3 PLASTIC LAMINATE COUNTERTOPS

A. Plastic Laminate Tops:

- 1. Core thickness of countertop substrate shall be 3/4" or 1" as indicated. Backsplash core shall be 3/4" or 1/2" in two-piece countertop applications.
- 2. Finish wear surfaces, including all edges, shall be 0.050" plastic; velvet or satin finish, pattern or solid color, as selected from the manufacturer=s standards.
- 3. Underside of decks and back side of backsplashes shall have 0.02" balance sheet bonded to the substrate whether or not the countertop is in Awet@ or Adry@ usage.
- 4. Backsplash to deck joints shall be shoulder rabbited, glued, mechanically fastened, and sealed during assembly with a silicone compound; backsplash color shall be compatible with the deck color.
- 5. Transverse deck joints shall be spaced as far apart as material limitations allow, shall be job sealed during installation with silicone compound, and shall be securely drawn together with concealed mechanical joint fasteners.
- 6. Where noted on the Drawings, chemical-resistant countertop surfacing with solid-core edge banding shall be used when severe resistance to reagents is required.

2.4 SOLID POLYMER FABRICATIONS

- A. Provide fabrications of cast solid polymer material composed of acrylic polymer with mineral fillers and pigments where indicated. Material shall not be coated or laminate to substrates. Superficial damage to a depth of 1/64" shall be repairable by sanding or polishing. Products by:
 - 1. Avonite Surfaces.
 - DuPont Corian.
- B. Size:

1. Width / Height: Fabricator=s standards of size best meeting the project requirements. Backsplash to be 4" in height, unless otherwise indicated.

Thickness:

- a. Horizontal surfaces 3/4" minimum.
- b. Vertical surfaces 1/2" minimum; backsplashes 3/4".
- C. Finish: Polished, unless otherwise indicated. Top, backsplash and fascia shall be one-piece. Color, edge detail and pattern shall be as selected from the fabricator=s standards.
- D. Color / Pattern: The basis of design is products by Avonite or approved comparable color / pattern.

E. Related Materials:

- 1. Panel Adhesive: Fabricator=s standard specifically recommended for the Project application. Adhesives used at installations exposed to water or high humidity conditions to be water-resistant type.
- 2. Joint Adhesive: Fabricator=s standard capable of fusing each joint and creating inconspicuous and non-porous joints.
- Sealant: Fabricator=s recommended mildew resistant, FDA / UL recognized silicone sealant, in colors custom matched to each component where sealant is required.
- 4. Mounting Hardware: Provide mounting hardware including sink / bowl clips, inserts and fasteners for the attachment of undermount sinks and lavatories.
- 5. Anchorage Devices: Fabricator=s approved clips, inserts, and anchorage devices. Ferrous products to be hot-dipped galvanized. Do not use metal types not specifically approved by the fabricator for their products.

F. Fabrication:

- 1. Factory fabricate components to the greatest extent possible, to the sizes and shapes indicated, in accordance with the approved Shop Drawings. Where indicated, factory fabricate side and back splashes with 1/2" cove at intersections.
- 2. Form joints between components using the fabricator=s standard acrylic joint adhesive. Joints shall be inconspicuous, non-porous, and reinforced with strips of solid polymer material in accordance with the fabricator=s printed instructions.

Tolerances:

- a. Variation of component size: +/- 1/8".
- b. Location of openings: +/- 1/8" from the required location.
- 4. Provide factory cutouts for plumbing and accessories as indicated. Reinforce heated or cooled cutouts in accordance with the Approved Shop Drawings and the fabricator=s printed instructions.

- 5. Cut an finish components edges with clean returns. Round edges of cutouts to 1/8" radius. Round corners of cutouts with 1/2" minimum radius. Use router to form all cutouts. Provide thick edges where indicated using strips of solid polymer material and fabricator=s acrylic joint adhesive. All joints to be inconspicuous and non-porous. All exposed surfaces to have a uniform finish and gloss.
- Countertop Joint Layout: Provide a monolithic look to the greatest extent possible. 6. Where joints in the work is required due to fabrication limitations or required for proper performance of the product, work with the Owner=s representative to establish satisfactory joint locations.

2.5 WOOD SHELVING

- Α. Softwood plywood, PS 1, graded in accordance with AWI.
- В. Veneer cover core sides and ends with plastic laminate, color as selected.
- C. Cover medium density particleboard with factory-applied finish, as selected.
- D. Dimensions: 3/4" thick x depth shown on the Drawings x maximum possible length.

2.6 CABINET HARDWARE AND ACCESSORY MATERIALS

- Α. General: Provide complete cabinet hardware and accessory materials associated with the architectural woodwork, except for units specified as Adoor hardware@ in other Sections of these Specifications.
- B. Hardware References: Except as otherwise indicated, comply with ANSI A156.9 AAmerican National Standard for Cabinet Hardware@.
- C. Cabinet Door Hardware: Provide hinges and pulls of the types indicated, to accommodate each door size and style. Hinges concealed AEuropean@ style; Pulls - EPCO DP-418 x 3-1/2@ wire pull or as indicated or approved.
 - 1. Each cabinet door up to 36" in height shall have one pair of hinges: up to 48" in height, 1-1/2 pair hinges; over 48" in height, two pair of hinges. Each cabinet shall be equipped with sound dampening cushions to minimize noise.
- D. Drawer Hardware: Provide slides and pulls of the types indicated, to accommodate each drawer size and style.
 - 1. Equip each drawer with side-mounted, full-extension, ball-bearing, nylon roller drawer slides with a load capacity of 75 pounds per pair; provide Astay-closed@ feature for lift out removal.
- E. Locks: Provide standard pin-type or disc-type (five pins or discs) tumbler locks, keyed individually, except as otherwise indicated.
- F. Shelf Supports: Where shelving is indicated as Aadjustable@, provide pin-type or slotted-type standards and brackets of a type required to support shelves with a uniform load of 40 pounds per square foot; recessed for premium construction, surface-mounted for custom and economy construction.

2.7 **ACCESSORIES**

- A. Adhesive: Type recommended by AWI to suit the application.
- B. Fasteners: Size and type to suit the application.
- C. Bolts, Nuts, Washers, Lags, Pins and Screws: Of the size and type to suit the application.
- D. Concealed Joint Fasteners: Threaded, hot-dipped galvanized steel.
- E. Sealant: Manufacturer=s recommended mildew resistant, FDA / UL recognized silicone sealant in colors custom matched to each component where sealant is required.
- F. Anchorage Devices: Fabricator=s project approved clips, inserts, and anchorage devices. Ferrous products to be hot-dipped galvanized. Do not use metal types not specifically approved by the fabricator for their products.

2.8 FABRICATION

A. Field Measurements:

1. Before proceeding with the fabrication of architectural woodwork products, obtain field measurements and verify dimensions.

B. Wood Products:

- Fabricate architectural woodwork products to the dimensions, profiles and details indicated, with construction and materials complying with the referenced standards of the specified AWI grades. Where necessary for fitting at the Project Site, provide reasonable allowance for scribing, trimming and fitting. Pre-cut openings, where possible, to receive hardware and mechanical and electrical work.
- 2. Conceal all anchorage devices, except where decorative fasteners are approved.

C. Fire-Retardant Treatment:

- Where fire-retardant wood is specified or otherwise indicated, provide materials which comply with AWPA standards for pressure impregnation with fire-retardant chemicals, and which have a flame spread rating of not more than 25 when tested in accordance with UL 723 or ASTM E 84, and show no increase in flame spread and significant progressive combustion upon continuation of the test for an additional twenty (20) minutes.
- 2. Where treated items are exposed to the exterior or to high humidity or are to have a transparent stain or sealer finish, provide appearance grade materials which show no change in the fire hazard classification when subjected to standard rain test per UL 790 or ASTM B 2898.
- 3. Use fire-retardant treatment which will not bleed through or adversely affect the type of finish indicated, and which does not require brush treatment of field made end cuts to maintain the fire-hazard classification.

D. Products Scheduled for Transparent Finish:

1. Treatment color shall be compatible with products scheduled for a transparent finish. Provide samples of treatment with finish applied for review.

2. Where a transparent finish is indicated, use the type of treatment and species which permits milling of the lumber after treatment without altering the indicated fire-hazard classification, as determined by fire testing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Condition woodwork to the average prevailing humidity conditions in the installation areas before installing.
- B. Install concrete inserts and similar anchoring devices to be built into substrates well in advance of the time the substrates are to be built.
- C. Prior to the installation of architectural woodwork, examine shop fabricated units for completion, and complete work as required, including back priming and removal of packing.

3.3 INSTALLATION

- A. Set and secure fixtures in place at the locations indicated on the Drawings.
- B. Cabinets and countertops shall be installed by factory-trained personnel, or by personnel experienced in installing the type of countertops and splashes required.
- C. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims.
- D. Scribe and cut work to fit adjoining work; refinish cut surfaces or repair damaged finishes at cuts in strict accordance with the fabricator=s instructions.
- E. Secure woodwork to anchorage devices or blocking built-in or directly attach to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nail as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersink and fill flush with the woodwork surface. Match the final finish where transparent finish is indicated.
- F. Casework: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated. Maintain the indicated veneer sequence matching of casework with transparent finish.

- G. Secure fixtures to the floor using appropriate angles and anchorages.
- H. Countertops: Anchor securely to base units and other supports as indicated, in strict accordance with the fabricator=s instructions.
- I. Wood Storage Shelving: Complete the assembly of units and install in the locations indicated, including hardware and accessories, as indicated.
- J. Finish: AWI quality standard. Leave woodwork in paint ready condition for final finishing by the painting applicator.
- K. Apply sealant at all joints between architectural woodwork and adjacent floor and walls.

3.4 CONSTRUCTION

- A. Interface with Other Work:
 - Coordinate the installation sequence of fixtures with the trades providing utilities to the units.

B. Tolerances:

- 1. Fabrication: Variation of Components Size: + 1/8". Location of Openings: + 1/8" from the required location.
- 2. Installation: 1/8" in 8'-0" for plumb and level, including countertops, and with 1/64", maximum, offset in flush adjoining surfaces; 1/32" maximum offsets in revealed adjoining surfaces.

C. Finishing:

- 1. Repair damaged and defective woodwork wherever possible to eliminate defects functionally and visually. Where not possible to repair to the satisfaction of the Owner=s representative, replace the woodwork.
- 2. Touch-up shop applied finishes to restore damaged and soiled areas.
- 3. Adjust joiner for a uniform appearance.
- 4. Complete the finishing work specified as work of this Section, to whatever extent not completed in the shop or prior to installation of the woodwork.

3.5 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Lubricate and make final adjustment of moving and operating parts for smooth and correct operation.

3.6 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- Inspect woodwork installations for flush, plumb, level, alignment and secure attachment to substrates.

3.7 **CLEANING**

- A. Section 01700 - Execution Requirements: Cleaning and protection of installed work.
- В. Clean casework, counters, shelves, hardware, fittings and fixtures.
- C. Clean woodwork on exposed and semi-exposed surfaces.

3.8 **PROTECTION**

- A. Installer shall advise the Contractor and paint applicator of the procedures required to protect the woodwork during the remainder of the construction to ensure that the work will be without damage and deterioration at the time of final acceptance.
- B. Installer shall return to the Project prior to substantial completion, repair any damage to the work and readjust the hardware.

END OF SECTION

SECTION 06650

SOLID POLYMER FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Lavatory Countertops & Vanities
 - 2. Trash Receptacles
 - 3. Preparation for installation and connection of utilities.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 06400 Architectural Woodwork: Support for countertops, work surfaces and vanities.
 - 2. Section 07900 Joint Sealers: Sealants for joints.
 - 3. Section 09110 Non-Load Bearing Steel Framing: Blocking and backing plates in walls.
 - 4. Section 09250 Gypsum Board: Adjacent wall substrate.
 - 5. Section 10810 Toilet Accessories
 - 6. Division 15 Plumbing Fixtures.
 - 7. Division 16 Wiring Devices.

1.2 DESCRIPTION OF WORK

A. The extent of Solid polymer fabrications work is indicated on the Drawings and as specified herein, and includes providing, fabricating and installing cast synthetic polymer fabrications, splashes, inlays, adhesive, sealant, mounting accessories and preparation for installation of plumbing fixtures, and mechanical and electrical services by other trades.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only. Comply with the applicable standards of the following, as referenced herein.
- B. American National Standards Institute (ANSI):
 - ANSI Z124.3 Plastic Lavatories.

- 2. ANSI Z124.6 Plastic Sinks.
- C. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 501 Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser.
 - 2. ASTM D 256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
 - 3. ASTM D 570 Test Method for Water Absorption of Plastics.
 - 4. ASTM D 638 Test Method for Tensile Properties of Plastics.
 - 5. ASTM D 696 Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30E C and 30E C With a Vitreous Silica Dilatometer.
 - 6. ASTM D 785 Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials.
 - 7. ASTM D 790 Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - 8. ASTM D 2583 Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
 - ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
 - 10. ASTM G 21 Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
 - 11. ASTM G 155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
- D. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
 - 2. Accessibility Guidelines for Schools
- E. National Electrical Manufacturers Association (NEMA)@:
 - 1. NEMA LD3 High Pressure Decorative Laminates.
- F. National Fire Protection Association (NFPA):
 - NFPA 255 Method of Test for Surface Burning Characteristics of Building Materials.
- G. Underwriters Laboratories, Inc. (UL):
 - 1. UL 723 Test for Surface Burning Characteristics of Building Materials.
- H. U. S. Environmental Protection Agency (EPA):

1. Method 24 - Determination of Volatile Matter Content.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - Product Data: Manufacturer's current product literature for each product indicated.
 - 2. Shop Drawings: Show the location of each item, dimensioned plans, elevations, large scale details, construction joint locations, termination points, attachment devices and other components. Show locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in Section 09110. Show locations and sizes of cutouts and hole for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items to be installed in the solid surface.

3. Samples:

- a. Initial Samples: Unless specific products are scheduled, submit 2" x 2", minimum, size samples of the manufacturer's complete range of colors, patterns, and glosses for initial selection.
- a. Final Samples:
 - 1). Submit two (2) 6" x 6" final samples matching the color, pattern and gloss of those initially selected.
 - 2). Fused Joint Sample: Submit 6" x 10" samples showing fused joint work.
 - One sample or each will be retained at the Project Site as the standard for the work.

4. Assurance / Control Submittals:

- a. Manufacturer's certificate that the products meet or exceed the specified requirements.
- b. Manufacturer's Material Safety Data Sheets (MSDS).
- c. Manufacturer's / Fabricator's certification that the products supplied comply with applicable federal and local regulations controlling the use of volatile organic compounds (VOC).
- d. Manufacturer's Instructions indicating procedures and conditions requiring special attention, and cautionary procedures required during fabrication.
- e. Documentation of experience indicating compliance with the specified qualifications requirements.
- f. Signed copy of the Fabricator's certificate, acknowledging that he / she has been trained and approved by the manufacturer.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.

- 1. Warranty: Provide a written special Warranty with forms completed in the name of the Owner and registered with the fabricator.
- C. Maintenance Data: Submit Manufacturer's care and maintenance data, including repair and cleaning instructions.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Fabricator / Installer: Certified by the manufacturer, and has successfully completed fabrications of the type required for this Project, and has been continuously engaged in this type of work for not less than five (5) years.
- B. Field Measurements: When possible, take field measurements prior to the preparation of Shop Drawings and fabrication to ensure proper fitting of the work, otherwise, indicate field measurements on the final Shop Drawings.
- C. Installation to be by the Fabricator of the products, for single source responsibility.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Package products in packages, crates or containers for transport to the Project Site to prevent damage, water damage, soiling and deterioration.
- C. Deliver sheets, fabricated items, materials and components to the Project Site in the fabricator's original, new, unopened, undamaged packages, crates or containers with identification labels intact.
- D. Do not deliver products until wet work, grinding, painting and similar operations have been completed in the installation areas.
- E. If, due to unforeseen circumstances, the fabrications must be stored in other than the installation areas, store only in areas meeting the requirements specified for the installation areas.

1.7 JOB CONDITIONS

- A. The Installer shall advise the Contractor of the temperature requirements for the installation areas.
- B. Do not install the fabrications until the required temperature has been stabilized and will be maintained in the installation areas.

1.8 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:

- Submit a written Warranty jointly signed by the solid polymer manufacturer and the fabricator certifying that the products and the installation is free of defective materials and workmanship, and will repair or replace any defective component or the fabrication, in whole or in part, as necessary to restore the product to its original intended state and integrity.
- 2. Warranty Period: Ten (10) years from the date of Substantial Completion.

1.9 MAINTENANCE

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Provide manufacturer's maintenance kit for finishes.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Avonite Surfaces by Aristech Acrylics LLC..
 - 2. Corian by DuPont, Inc.
- B. Section 01600 Product Requirements: Product Options: Substitutions: Not permitted.

2.2 MATERIALS

- A. General:
 - 1. Studio Collection by Avonite.
 - 2. D Series Corian by DuPont.

B. Description:

- 1. Non-porous, homogeneous material maintaining the same composition throughout, with a composition of polyester or acrylic polymer, aluminum trihydrate filler and pigment.
- 2. Thickness: 3/4", unless shown otherwise specified.
- 3. Colors and patterns, as selected, from the manufacturer's full line of standard colors and patterns.
- 4. Adhesive: Water-based adhesive as recommended by the polymer manufacturer for the substrate and conditions.
- 5. Sealant: Mildew-resistant, FDA-compliant as recommended by the manufacturer; color to match the solid surface material.

2.3 FABRICATION

A. General:

- Factory fabricate by a solid polymer manufacturer's certified fabricator.
- 2. Comply with the details shown for profile and construction of fabrications. Where not otherwise shown, comply with the manufacturer's written instructions.
- 3. Provide separate countertops for installation on casework or other support systems, as indicated.
- 3. Measurements: Before proceeding with fabrications required to be fitted to other construction, obtain measurements and verify the dimensions and Shop Drawings details, as required for an accurate fit. Where measuring substrates before fabrication would delay the project, proceed with the fabrication and provide sufficient borders and edges to allow for subsequent scribing and trimming for an accurate fit.
- 4. Fabricate from single piece material, except where the required length exceeds the maximum length produced by the manufacturer. Locate joints at even intervals through the material, aligned with other adjacent joints, and as approved on the final Shop Drawings. Form joints using the manufacturer's recommended adhesives for a smooth even appearance with matching color for an inconspicuous appearance. Provide joints of an equal or greater strength than the material being joined.
- 5. Pre-Cut Openings: Pre-cut openings in fabrications, wherever possible, to receive plumbing fixtures, electrical work and similar items. Locate the openings accurately, and use templates or roughing-in diagrams for the proper size and shape. Smooth edges of cutouts and, where located in countertops and similar exposures, seal the edges of cutouts with a water-resistant material.
- 6. Cutouts for sinks and lavatories shall be smooth and uniform without saw marks. The top and bottom of openings shall be finished smooth. Where edges are exposed, fabricate with 1/16" radius; 1/4" radius at cutouts, or as indicated.
- 7. Fabricate to accommodate plumbing fixtures, trim and drains.

A. Countertops and Vanities:

1. Fabricate tops from 3/4" thick material with 1/2" thick x 6" high splashes and 4" skirts, unless otherwise indicated. Include 3/4" thick solid support braces with aluminum angle clips for interconnection of components. Match countertop finish with the Airport's Gate 9 restroom lavatory counters.

C. Trash Receptacles:

1. Fabricate tops from 3/4" thick material with 1/2" thick x 6" high splashes and 4" skirt, unless otherwise indicated. Provide toilet accessories TA-6 and TA-6A. Match countertop finish with the Airport's Gate 9 restroom lavatory counters.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General:

- 1. Comply with manufacturer's recommendations.
- 2. Cure fabrications for 24 hours, minimum, before exposure to moisture or pressure.
- 3. Install the work plumb, level, true and straight with no distortions. Shim as required, using concealed shims. Install to a tolerance of 1/64" in 8'-0" for plumb and level; and with 1/32" maximum offsets in revealed adjoining surfaces.
- 4. Scribe and cut work to fit adjoining work. Refinish cut surfaces and repair damaged finish at cuts.

B. Anchorage:

- 1. Anchor fabrications to anchors or blocking built-in or directly attached to substrates as detailed. Secure to grounds, stripping and blocking with concealed fasteners as required for a complete installation.
- Securely anchor countertops to base units and other support systems as indicated.

C. Countertops, Vanities, & Trash receptacles:

 Anchor units to supports using concealed fasteners. Do not use continuous adhesive application. Field cut as required for plumbing fixtures and fittings. Plumbing fixtures, trim, drains, and connections are specified in Division 15. At recesses, install loose splashes with adhesive. Seal joints and perimeter with matching acrylic sealant as specified in Section 07900 - Joint Sealers, except at Vanities, use matching mildew-resistant silicone sealant as specified in Section 07900.

3.3 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Repair soiled, damaged and defective fabrications wherever possible to eliminate defects functionally and visually; where not possible to repair properly, replace the fabrications.

3.4 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect installations for level, inconspicuous joints, tight fit to adjacent surfaces and secure attachment to substrates.

3.5 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean exposed and semi-exposed surfaces.
- C. Remove adhesives, sealants and other stains.

3.6 PROTECTION

A. The Fabricator / Installer shall advise the Contractor of the protection and maintained conditions necessary to ensure that the work will be without damage or deterioration at the time of final acceptance.

END OF SECTION

SECTION 07210

BUILDING INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- Batt insulation at exterior stud walls of air conditioned spaces and at interior stud walls for sound control.
- Semi-rigid board insulation at shafts and chases.
- 3. Exposed wall and ceiling insulation at Mechanical Rooms.
- 4. Spray-applied thermal and acoustical insulation for exposed ceilings.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

C. Related Sections:

- 1. Section 03300 Cast-In-Place Concrete: Substrate for installation of insulation.
- 2. Section 09110 Non-Load Bearing Steel Framing: Support for installation of insulation.

1.2 DESCRIPTION OF WORK

A. The extent of each type of building insulation is indicated on the Drawings and as specified herein, and includes providing and installing thermal, acoustical and spry-on insulation, and safing and smoke stops.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - **1.** ASTM C 518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 2. ASTM C 612 Specification for Mineral Fiber Block and Board Thermal Insulation.
 - 3. ASTM C 665 Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - 4. ASTM D 5113 Test Method for Determining Adhesion Attack of Rigid Cellular Foam.

- ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
- 6. ASTM E 119 Test Method for Fire Tests of Building Construction and Materials.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s product specifications and installation instructions for each type of insulation and vapor barrier material required. Indicate product characteristics, performance criteria and limitations.
 - Assurance / Control Submittals:
 - a. Manufacturer's certificate that the products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- 3. Use adequate number of skilled workmen, thoroughly trained and experienced in the necessary crafts and are completely familiar with the specified requirements and methods for proper performance of the work of this Section.
- B. Regulatory Requirements: Conform to the flame spread and smoke developed requirements of the local authority having jurisdiction.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened packages, containers or bundles, bearing brand name, identification of the manufacturer, and material identification.
- C. Store inside, under cover, and in a manner to keep dry.
- D. Protect from weather, direct sunlight, moisture, surface contamination, and damage from construction traffic and other causes.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - CertainTeed.
 - Owens-Corning.
 - Dow Chemical.
 - 4. Manville-Schuller International.
 - 5. International Cellulose Corporation.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 THERMAL INSULATION

- A. Concealed Glass Fiber Insulation Boards: Unfaced glass fiber thermal insulation, semi-rigid boards, friction-fit, 48" x 96" x 2-1/2" thick, R-13 or as indicated, ASTM C 612, Type 1A and 1B. Maximum flame spread rating 25, maximum smoke developed 50 when tested in accordance with ASTM E 84. AType 703" by Owens-Corning or approved equal.
- **B.** Polystyrene Insulation Boards: High density extruded polystyrene foam insulation, 48" x 96" x 1-1/2" thick, R-5.6, square edge, 1/2" x 1/4" drainage channels on bottom long edge, for installation over waterproofing membrane. Plaza Deck STYROFOAM Brand PLAZAMATE Insulation by Dow Chemical Co.
- C. Concealed Wall Batt Insulation: Unfaced glass fiber thermal insulation, friction-fit, 16" or 24" widths as required x 3-1/2" thick, ASTM C 665, Type I. R-11 when tested in accordance with ASTM C 518. Maximum flame spread 10, maximum smoke developed 10 when tested in accordance with ASTM E 84. AThermal Batt Insulation@ by Owens-Corning or approved equal.

2.3 ACOUSTICAL INSULATION

- A. Concealed Noise Barrier Batt Insulation: Unfaced glass fiber acoustical insulation, friction-fit, 16" or 24" widths as required x 3-1/2" thick, ASTM C 665, Type I. Maximum flame spread 10, maximum smoke developed 10 when tested in accordance with ASTM E 84.

 ASound Attenuation Batts@ by Owens-Corning or approved equal.
- B. Chase Wall Insulation: Unfaced glass fiber acoustical insulation, semi-rigid, friction-fit, 24" x 96" x 1-1/2", ASTM C 665, Type I. R-5.8 when tested in accordance with ASTM C 518. ASTM E 119 for 1-hour fire rated partitions. Maximum flame spread 20, maximum smoke developed 20 when tested in accordance with ASTM E 84 and UL 723. AShaftwall Insulation@ by Owens-Corning or approved equal.
- C. Exposed Generator Room Walls and Ceiling: FRK (foil) faced glass fiber thermal insulation, semi-rigid, 1-1/2" thick, ASTM C 612, Type 1A and 1B. Maximum flame spread 25, maximum smoke developed 50 when tested in accordance with ASTM E 84. AType 703@ by Owens-Corning or approved equal.

2.4 OTHER MATERIALS

A. Insulation Anchors: Impaling pin-type with 2" diameter flat anchor head and wire spindles, self- locking holding washers; designed for adhesive application to the underside of roof

decks. Adhesive as supplied or approved by the insulation manufacturer.

В. Provide other materials, not specifically described but required for a complete and proper installation, as recommended by the insulation manufacturer.

PART 3 **EXECUTION**

3.1 **EXAMINATION**

- A. Section 01700 - Execution Requirements: Verification of existing conditions before starting the work.
- В. Verification of Conditions: Verify that the areas, surfaces, substrates and conditions are as required, and ready to receive the work.
 - 1. **Board Insulation:**
 - a. Verify that the substrate and adjacent materials are dry and ready to receive the insulation and adhesive.
 - b. Verify that the insulation boards are dry, unbroken and free of damage.

2. Batt Insulation:

- Verify that the adjacent materials are dry and ready to receive the a. installation.
- b. Verify that mechanical and electrical services within the walls have been installed, are properly placed, and has been tested.
- 3. Spray-applied Insulation:
 - Verify that the substrate and adjacent surfaces are dry and ready to a. receive the insulation.
 - b. Verify that all equipment is operating properly.
- Α. Remove or protect against projections in the construction framing which might damage or prevent the proper installation or application of materials.
- B. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

Α. Install the work of this Section in strict accordance with the original design, requirements of government agencies having jurisdiction, and the manufacturer=s recommended installation procedures as approved. Anchor all components firmly into position.

3.3 INSTALLATION - ROOF INSULATION

A. Apply with stick pins, adhesively secured to the underside of the roof. Provide a minimum of 8 pins per 4' x 8' board and 6 pins per 4' x 4' board, spaced per the manufacturer=s instructions. Butt all edges and ends of insulation tightly.

3.4 INSTALLATION - SPLIT SLABS AND UNDER DECKS

A. Set in an approved waterproof roof coating in accordance with the manufacturer=s recommendations. Protect insulation from weathering, sunlight and traffic until the top deck has been placed.

3.5 INSTALLATION - WALL INSULATION

- A. Install batt insulation in accordance with the manufacturer=s instructions, without gaps or voids.
- B. Wall Insulation: Friction fit for installation within metal framing. Carry around water and and waste piping, electrical junction boxes, outlets, conduit and other elements to ensure a complete acoustical barrier.
- C. Trim insulation neatly to fit the spaces. Use batts free of damage. Fit insulation tight in the spaces and tight to the exterior side of mechanical and electrical services within the plane of the insulation.
- D. When faced, install the insulation with the factory-applied membrane facing the warm side of the building space. Lap ends and side flanges of the membrane. Attach insulation in place to the framing. Tape seal butt ends and lapped side flanges. Tape seal tears and cuts in the membrane.

3.6 INSTALLATION - MECHANICAL ROOM WALLS AND CEILINGS

A. Install with impaling pins; bend prongs of pins inward so they are not a hazard. Tape joints. Stop insulation 4" from light fixtures and heat producing equipment.

3.7 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect work for proper thickness, secure attachment to the substrate and in accordance with the manufacturer=s instructions.

END OF SECTION

SECTION 07250

FIREPROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Cleaning and preparation of structural steel to be fireproofed.
 - 2. Sprayed-on fireproofing.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections.
 - Division 5 METALS: Structural Steel Sections.

1.2 DESCRIPTION OF WORK

- A. The extent of fireproofing work is indicated on the Drawings and a specified herein and includes providing all labor, materials and equipment necessary for and incidental to complete and proper installation of sprayed-on fireproofing as required to comply with the Building Code.
- B. Work includes the cleaning and preparation of all structural steel and attachments to be fireproofed, fireproofing of all surfaces indicated, and as required to protect all assemblies required to be fireproofed.
- C. Structural steel and assemblies are specified in Division 5 METALS.
- D. It is the intent of this Section to outline requirements for fireproofing systems, but not to cover all details of the materials, design and installation. The manufacturer's approved specifications, details and instructions shall govern the materials and installation. The system provided and installed shall be as appropriate for the construction and conditions of this Project.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM E 119 Test Method for Fire Tests of Building Construction and Materials.
 - 3. ASTM E 136 Test Method for Behavior of Materials in a Vertical Tube Furnace at

759E C.

- ASTM E 605 Test Methods for Thickness and Density of Sprayed Fire-Resistive
 Material (SFRM) Applied to Structural Members.
- 5. ASTM E 736 Test Method for Cohesion / Adhesion of Sprayed Fire-Resistive materials Applied to Structural Members.
- 6. ASTM E 759 Test Method for Effect of Deflection on Sprayed Fire-Resistive Material Applied to Structural Members.
- 7. ASTM E 760 Test Method for Effect of Impact on Bonding of Sprayed Fire-Resistive Material Applied to Structural Members.
- 8. ASTM E 761 Test Method for Compressive Strength of Sprayed Fire-Resistive Materials Applied to Structural Members.
- 9. ASTM E 859 Test Method for Air Erosion of Sprayed Fire-Resistive Materials (SFRMs) Applied to Structural Members.
- ASTM E 937 Test Method for Corrosion of Steel by Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members.
- 11. ASTM E 1513 Practice for Application of Sprayed Fire-Resistive Materials (SFRMs).

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer's specifications, test reports and certifications to show material compliance with the Contract Documents.
 - 2. Shop Drawings:
 - a. In the form of structural framing plans indicating where and what kind of surface preparations are required before the application of fireproofing.
 - b. The extent of the sprayed-on fireproofing for each different type of construction and fire-resistance rating include the following:
 - Applicable fire-resistive design designations of the inspection and testing agency acceptable to the governing authorities having jurisdiction.
 - 2) Minimum thicknesses needed to achieve the required fire-resistance ratings of structural components and assemblies.
 - 3. Assurance / Control Submittals:
 - a. Data on fireproofing requirements recommended by the fireproofing manufacturer, including detailed description of the applicable fire tested assemblies and fireproofing requirements. Reference data to the specific Project applications. Indicate which substrates require primers and which do not. Include reasons why primers are not necessary.

- b. Independent laboratory test results shall be submitted for the performance criteria specified.
- Manufacturer=s certification that the materials are free of asbestos and asbestos contamination.
- d. Fireproofing Manufacturer's Licensed Applicator: Submit evidence that the Applicator is a licensed applicator of the fireproofing materials.
- e. Documentation of experience indicating compliance with the specified qualifications requirements.
- F. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Provide a written standard Warranty with forms completed in the name of the Owner and filed with the manufacturer.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- Applicator: Fireproofing Applicator shall be a company licensed by the fireproofing materials manufacturer.
- B. Codes and Standards: The work, materials and application shall conform to regulations of the local Fire Department, Building Official, Environmental Agency and OSHA.. The most stringent requirements and authorities shall have jurisdiction.
- C. Before proceeding with the fireproofing work, acceptance of the proposed materials, thickness and densities shall be obtained from the Owner=s representative and other applicable authorities.
- D. The sprayed-on fireproofing materials shall be free of all forms of asbestos and asbestos contamination, including actinolite, amosite, anthophylite, chrysotile, crocidolite and tremolite. The materials manufacturer shall provide certification of such.
- E. Manufacturer's Technical Representative: The manufacturer is to make a technical representative available to monitor on-going operations to assure proper installation of the fireproofing materials. Maintain the same Technical Representative for the duration of the Project.
- F. Technical Representative=s Pre-Application Review: Prior to start of the work, and the purchase of any materials, the Manufacturer's Technical Representative, who is to certify each installation, shall visit the site, review the existing conditions, and review the Contract Documents for appropriateness of the requirements with the specified manufacturer's system, including but necessarily limited to, substrate preparation and application conditions.
- G. Certification: After the Manufacturer's Technical Representative's review, submit written certification of the appropriateness of the requirements, or submit other or additional specific recommendations, if any, to assure that the intended system is appropriate for the intended use, and is complete in scope to assure its intended performance. This may be coordinated with the Shop Drawing submittal.

- H. Manufacturer's Technical Representative=s Field Review of Work:
 - Number of Site Visits: Submit the manufacturer's recommended minimum number of times the Technical Representative is to field review the work to ensure success of the installation. Indicate the stages of work when such visits are to be made.
 - 2. Field Reports: For each visit, the Technical Representative shall submit a detailed Field Report assessing each installation. Field Reports to indicate the date, time of day, length of each visit, weather condition during the visit, condition of the substrate at the time of application, application procedures, and other important aspects that affect success of the installation. Submit Reports within seven (7) days after each Site visit.
- I. Pre-Application Conference: Prior to beginning the application of materials, meet at the Project Site with the Owner=s representative, Architect, Contractor and subcontractors whose work penetrates surfaces to be fire proofed. Review conditions, methods and procedures necessary for proper installation of the work, including inspections of areas of work, requirements of the Specifications, and the manufacturer's literature; review submittals and the installation schedule.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver materials to the Project Site in the manufacturer's original, unopened packages, fully identified with trade name, type and other identifying data, and bearing UL labels for the fire hazard and fire-resistance classifications.
- C. Store materials above the ground, in a dry location, and protected from the weather. Damaged packages found unsuitable for use will be rejected, and shall be removed from the Project Site.
- D. Remove from the Project Site and discard materials whose shelf life has expired.

1.7 JOB CONDITIONS

- A. Do not apply fireproofing in the rain, fog or mist, or when the relative humidity exceeds 85% (percent), or to damp or wet surfaces, unless otherwise permitted by manufacturer's printed instructions.
- B. Fireproofing may be continued during inclement weather if areas and surfaces to be fireproofed are enclosed and within the humidity limits specified, and allowed by the manufacturer during the application and drying periods.
- C. The General Contractor shall provide ventilation to allow for proper drying of the fireproofing during and subsequent to its application.

1.8 SEQUENCING / SCHEDULING

A. The General Contractor shall cooperate in the coordination and scheduling of fireproofing work to avoid delays in the job progress.

1.9 WARRANTY

- A. Warranty: Submit a written Warranty, jointly signed by the manufacturer and the Applicator certifying that the products and the installation is free of defective materials and workmanship and will repair or replace any sprayed-on fireproofing that fails within the warranty period. Failures includes, but is not limited to cracking, flaking, eroding in excess of the specified requirements, peeling, and delamination from substrates due to defective materials and / or workmanship.
- B. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufactures offering products which may be incorporated into the work include the following:
 - CAFCO by Isolatek International.
 - 2. American Sprayed Fibers, Inc.
 - Southwest Vermiculite Co. Inc.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. CAFCO product designations are used within this Section to establish quality.
- B. Materials shall be asbestos-free BLAZE-SHIELD II; use CAFCO 800 for areas exposed to weather, applied to conform to the Drawings, specifications, and the following test criteria:
 - 1. Deflection: When tested in accordance with ASTM E 759, the material shall not crack or delaminate from the surface to which it was applied.
 - 2. Bond Impact: When tested in accordance with ASTM E 760, the material shall not crack or delaminate from the surface to which it was applied.
 - 3. Cohesion / Adhesion (bond strength): When tested in accordance with ASTM E 736, the material applied over uncoated or galvanized steel shall have an average bond strength of 100 psf.
 - 4. Air Erosion: When tested in accordance with ASTM E 859, the material shall not be subject to losses from the finished application greater than 0.025 lb / sq. ft.
 - 5. Compressive Strength: When tested in accordance with ASTM E 761, the material shall not deform more than 10% (percent) when subjected to a crushing force of 500 psf.
 - 6. Corrosion Resistance: Bare, shop-coated and galvanized sheets with applied fireproofing shall be tested in accordance with ASTM E 937.
 - 7. Indentation Hardness: When tested in accordance with ASTM C 569, the material shall not indent more than 0.50".
 - 8. Non-Combustibility: When tested in accordance with ASTM E 136, the material

shall be non-combustible.

9. Surface Burning Characteristics: When tested in accordance with ASTM E 84 (tunnel test), the material shall exhibit the following surface burning characteristics:

a) Flame Spread 10 maximum

b) Smoke Developed 0

- 10. Density: When tested in accordance with ASTM E 605, the material shall meet the minimum individual and average density values as listed in the appropriate UL design, and as required by the building.
- 11. The material shall have been tested and reported by Underwriters Laboratories, Inc. (UL) or Underwriters' Laboratory of Canada (ULC) in accordance with the procedures of ASTM E 119. (UL 263 or ULC S101).
- 12. Potable water shall be used for the application of sprayed fireproofing materials.

2.3 SCHEDULE

- A. Thickness: Provide the minimum average thickness required for the fire-resistive design indicated according to the following criteria, but not less than 0.375", as determined per ASTM E 605. Where the referenced fire-resistive design lists a thickness of 1" or greater, the minimum allowable individual sprayed-on fireproofing thickness is the design thickness minus 0.25". Where the referenced fire-resistive design lists a thickness of less than 1", but more than 0.375", the minimum allowable individual sprayed-on fireproofing thickness is the greater of 0.375" or 75% (percent) of the design thickness. No reduction in average thickness is permitted for those fire-resistive designs whose fire resistance ratings were established at densities of less than 15 pcf.
- B. Sprayed fireproofing materials shall be applied at the required thickness and density as required by the Building Code to achieve the following ratings:

1. Roof Assembly 1-1/2 hr.

2. Floor Assembly 2 hr.

3. Beams 3 hr.

4. Girders 3 hr.

5. Columns 3 hr.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of

the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. All surfaces to receive fireproofing shall be free of oil, grease, loose mill scale, dirt, paints / primers (other than those listed and tested), and other foreign materials which would impair satisfactory bonding to the substrate. Cleaning of surfaces to receive the sprayed fireproofing shall be the responsibility of the General Contractor or Steel Erector, as outlined in the structural steel and steel deck Sections of Division 5 METALS.
- B. Clips, hangers, supports, sleeves, penetrations, and other attachments to the substrate are to be placed by others, prior to application of the fireproofing.
- C. The installation of ducts, piping, conduit and other suspended equipment that will interfere with application of the sprayed fireproofing shall not take place until after the application of sprayed fireproofing has been complete in an area.

3.3 APPLICATION

- A. Equipment, mixing and application shall be in accordance with the manufacturer's written instructions.
- B. Sprayed fireproofing shall not be applied to steel floor decks prior to the completion of concrete work on the deck above.
- C. The application of sprayed fireproofing to the underside of roof deck assemblies shall not commence until the roofing is completely installed and weathertight, and after roof traffic has ceased.
- D. Provide masking, drop cloths or other suitable coverings to prevent overspray on surfaces not intended to be sprayed.
- E. Adhesive: Apply bond seal to the surface of the roof deck (without concrete) per the appropriate UL fire-resistance design, and the manufacturer's recommendations.
- F. The application of sprayed fireproofing shall not commence until certification has been received by the General Contractor indicating that the surfaces to receive the sprayed fireproofing has been inspected by the applicator and are acceptable to receive the fireproofing.
- G. Where indicated for use as roof insulation, apply fireproofing to the thickness necessary to achieve an insulation value equivalent to R-11.
- H. Where indicated, fireproofing may be applied for use as acoustic insulation.
- I. Finish: Sprayed finish for concealed applications; tamped finish where exposed to view.
- J. Sealer: Apply to installations above suspended ceilings with lay-in acoustical panels or tiles and the ceiling is used as an air conditioning plenum. Apply at all locations where the fireproofing is exposed to view, high humidity or weather.

3.4 REPAIRING AND CLEANING

A. All patching of and repair to sprayed fireproofing, due to damage by other trades, shall be performed under this Section, by the fireproofing applicator, and paid for by the trade

- responsible for the damage.
- B. After completion of the work of this Section in an area, all equipment shall be removed from the area and all surfaces not to be sprayed shall be cleaned of all deposits of sprayed fireproofing material.
- C. All walls, ceilings and floors shall be broom cleaned.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspection: Inspect applied fireproofing for thickness and coverage as specified.

3.6 CERTIFICATION

A. Upon completion of the work, the applicator shall submit certification to the Owner=s representative that the fireproofing has been applied to all structural steel elements and attachments, in accordance with the manufacturer's instructions, and to the thickness and density necessary to meet Building Code requirements.

3.7 PROTECTION

- A. Provide measures to prevent deterioration of the applied materials from exposure to unfavorable environmental conditions.
- B. Avoid exposures to abrasion and other damage from on-going construction operations.

END OF SECTION

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Metal base flashings and counter flashings.
 - 2. Penetration flashing.
 - Miscellaneous sheet metal accessories.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 03300 Cast-In-Place Concrete: Substrate for securing flashing.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for securing flashing.
 - 3. Section 07410 Preformed Metal Roofing: Substrate for securing flashing.

1.2 DESCRIPTION OF WORK

A. The extent of each type of flashing and sheet metal work is indicated on the Drawings and as specified herein, and includes providing and installing flashings, and miscellaneous accessories.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Iron and Sheet Institute (AISI):
 - 1. North American Specification for the Design of Cold-Formed Steel Structural Members.
- C. American Society of Civil Engineers (ASCE):
 - 1. ASCE / SEI 7 Minimum Design Loads for Buildings and Other Structures.
- D. American Society for Testing and Materials (ASTM):
 - 1. ASTM A.167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - 2. ASTM A 361 Steel Sheet, Zinc-Coated (galvanized) by the Hot-Dip Process for Roofing and Siding.

- 3. ASTM A 527 / A 527M - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Forming Quality.
- ASTM A 653 Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron 4. Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- 5. ASTM A 792 / A 792M - Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process.
- 6. ASTM B 32 - Specification for Solder Metal.
- 7. ASTM B 209 - Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- 8. ASTM B 221 - Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
- 9. ASTM B 370 - Specification for Copper Sheet and Strip for Building Construction.
- 10 ASTM B 486 - Specification for Paste Solder.
- ASTM C 920 Specification for Elastomeric Joint Sealants. 11.
- E. International Code Council:
 - International Building Code (IBC), 2009. 1.
- F. National Roofing Contractors Association (NRCA):
 - 1. The NRCA Roofing and Waterproofing Manual.
- G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
 - 1. Architectural Sheet Metal Manual.

1.4 **SUBMITTALS**

- A. Section 01330 - Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s product specifications, gauges and thickness, installation instructions and general recommendations for each specified sheet material and fabricated product.
 - 2. Shop Drawings: Show layout, joining, profiles, and anchorage of fabricated work, including valley flashings, major counter flashings, trim / fascia units, gutters, downspouts, scuppers and expansion joint systems; layouts at 1/4" scale, details at 3" scale.
 - Samples: Submit 8" square samples of the specified sheet materials that will be 3. exposed as finished surfaces.
 - 4. Assurance / Control Submittals:
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.

- b. Calculations indicating that the products and anchorage satisfies the performance requirements.
- c. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Submit a written limited Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Fabricator: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

1.6 DESIGN AND PERFORMANCE CRITERIA

A. Thermal Movement:

- The completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on the structure, anchors or fasteners, or reducing performance ability.
- 2. The interface between panels and clips shall provide for a minimum of 3" of thermal movement in each direction along the longitudinal direction.
- 3. The location of metal roofing rigid connectors shall be designed to meet the job conditions by the metal roof system manufacturer.

B. Wind Load Requirements:

- 1. Provide the capacity to withstand the following loading requirements:
 - a. Design, fabricate and install to resist combined positive and negative windloading in accordance with IBC 2009, Section 1609 with a Vmph or 170, qs of 74.0 psf, exposure B, and importance factor of 1.0, as applicable per ASCE 7.

1.7 FACTORY TESTS

- A. The manufacturer shall have conducted tests on previously manufactured sheets of the same type and finish as proposed for this project to assure conformance. Sheets shall have passed the following tests:
 - Salt Spray: Withstand a salt spray test for a minimum of 1,000 hours in accordance with ASTM B 117, including the scribe requirement in the test. Immediately upon removal of the panel from the test, the coating shall have receive a rating of 10 with no blistering, as determined by ASTM D 1654, Rating Schedule No. 1.
 - 2. Formability: When subjected to a 180 degree bend over a 1/8" diameter mandrel

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(3/8" diameter mandrel for coatings 4 mils or greater in thickness) in accordance with ASTM D 522, the exterior coating film shall show only slight microchecking of the exterior film, and no loss of adhesion.

- 3. Accelerated Weathering: Withstand a weathering test of 2,000 hours, minimum, in accordance with ASTM G 152 or ASTM D 2565 without cracking, peeling, blistering, loss of adhesion of the protective coating, or corrosion of the base metal. Protective coating that can be readily removed from the base metal with a penknife blade or similar instrument shall be considered as an indication of the loss of adhesion.
- 4, Chalking Resistance: After a 2,000 hours weatherometer test, the exterior coating shall not chalk greater than No. 8 rating when measured in accordance with ASTM D 4214.
- Color Change: After a 2,000 hours weatherometer test, the exterior color change shall not exceed 2 NBS units when measured in accordance with ASTM D 2244.
- 6. Abrasion Resistance for Color Coating: When subjected to the falling sand test in accordance with ASTM D 968, the coating system shall withstand a minimum of 100 liters of sand before appearance of the base metal.
- 7. Humidity: When subjected to a humidity cabinet test in accordance with ASTM D 2247 for 1,000 hours, a scored panel shall show no signs of blistering, cracking, creepage, or corrosion.
- 8. Fire Hazard: Factory-fabricated sheets shall be 30 to 70 at an angle of 60 degrees, when measured in accordance with ASTM D 523.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Protect components during fabrication, shipment, storage, handling, and erection from mechanical abuse, stains, discoloration and corrosion.
- C. Inspect materials upon delivery to the Project Site. Reject and remove physically damaged and marred materials.
- D. Store materials off the ground, providing for drainage; under cover providing for air circulation; protected from wind, foreign material contamination, mechanical damage, cement, lime and other corrosive substances.
- E. Prevent contact with materials which may cause discoloration or staining.
- F. Handle materials to prevent damage to surfaces, edges and ends of sheet metal items. Damaged materials shall be rejected and removed from the Project Site.

1.9 JOB CONDITIONS

- A. Coordinate the work of this Section with interfacing and adjoining work for the proper sequencing of each installation.
- B. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements.

C. Ensure the best possible weather resistance and durability of the work, and protection of materials and finishes.

1.10 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Limited Warranty:
 - Manufacturer's Warranty against checking, crazing, peeling, chalking, fading and adhesion.
 - 2. Warranty Period:
 - a. Manufacturer=s twenty (20) years Warranty covering refinishing of the finish coating from the date of Substantial Completion.
 - b. Installer=s two (2) years Warranty covering the installation and watertightness from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM MATERIALS

- A. Stainless Steel: AISI Type 302 / 304, #6 satin finish, 24 gauge, soft except where hard temper is required for forming or performance. ASTM 167.
- B. Aluminum Sheet: Prefinished aluminum alloy sheet, .032" thickness except as otherwise indicated, temper appropriate to the end use. ASTM B 209. Exposed aluminum shall have a baked-on, factory-applied color coating of polyvinylidene fluoride (PVF2) or other equivalent fluorocarbon coating per AMA 605.2, applied after the metal substrates have been cleaned and pretreated. Finish coating dry-film thickness shall be 1.0 1.3 mils. Color as selected.
- C. Zinc-Coated Steel: Commercial quality with 0.20% copper, ASTM A 653, except ASTM A 527 for lock-forming, G90 hot-dip galvanized, mill phosphatized where indicated for painting, 26 gauge except as otherwise indicated.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of the work, matching or compatible with the product material being installed, non-corrosive, size and gauge as required for performance.
- B. Reglets: Metal or plastic units of the type and profile indicated, compatible with the flashings indicated, non-corrosive.
- C. Fasteners: Same metal as the flashing / sheet metal or stainless steel, as recommended by the sheet manufacturer. Match finish or exposed heads with the material being fastened.
- D. Solder: For use with steel; provide 50 50 tin / lead solder with rosin flux. ASTM B 32.
- E. Adhesives: Type recommended by the flashing sheet manufacturer for waterproof / weather-resistant seaming and adhesive application of flashing sheet and substrate.

- F. Elastic Flashing Filler Rods: Closed-cell polyethylene or other soft closed-cell material recommended by the elastic flashing manufacturer as filler under flashing loops to ensure movement with minimum stress on the flashing sheet.
- G. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- H. Elastomeric Sealant: Generic type as recommended by the manufacturer of the metal or fabricator of the components being sealed.
- I. Unit Plumbing Vent: Integral stack pipe flashing with elastomeric base, for flat or pitched roof applications, size as required by the pipe size.
- J. Protective Backing Paint: Bituminous.

2.3 FABRICATED UNITS

- A. General Material Fabrication: Shop fabricate work to the greatest extent possible. Comply with the details shown, and with the applicable requirements of SMACNA AArchitectural Sheet Metal Manual@, and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work; sufficient to permanently prevent leakage, damage and deterioration of the work. Form work to fit the substrates. Comply with the material manufacturer=s instructions and recommendations. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels as indicated, with exposed edges folded back to form hems.
- B. Flashings, Counter Flashings, Expansion Joints: Fabricate from 20 oz. / sq. ft. unless otherwise indicated.
- C. Seams: Fabricate non-moving seams in sheet metal as flat-lock type. For metal other than aluminum, tin the edges to be seamed, form seams, and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
- D. Expansion Provisions: Where lapped or bayonet-type expansion provisions cannot be used, or would not be sufficiently water / weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant, concealed within the joints.
- E. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of the work, form the metal to provide for proper installation of elastomeric sealant in accordance with SMACNA standards.
- F. Separations: Provide for the separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with a bituminous coating or other permanent separation as recommended by the manufacturer / fabricator.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.

- 1. Verify that roof openings, curbs, pipes, sleeves, ducts, and vents through the roof are solidly set, reglets in place, and nailing strips located.
- 2. Verify that roofing termination and base flashings are in place, sealed, and secure.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting the installation.
- B. Install concrete inserts, reglets and similar anchoring devices to be built into substrates and walls prior to the time the flashing installation is to begin.
- C. Install surface-mounted reglets true to lines and levels. Apply sealant along the top of reglets.

3.3 INSTALLATION

- A. Comply with the manufacturer=s installation instructions and recommendations, and with SMACNA AArchitectural Sheet Metal Manual@.
- B. Fit flashings, gutters, and downspouts tight in place, make corners square, surfaces true and straight in planes, and lines accurate to the profiles.
- C. Anchor units securely in place by the methods indicated, providing for thermal expansion of metal units.
- D. Secure work in place using concealed fasteners where possible.
- E. Set units true to line and level as indicated.
- F. Install work with laps, joints and seams to be permanently watertight and weatherproof.
- G. Install reglets to receive counter flashings in a manner and by the methods indicated. Where shown in concrete, furnish reglets to the concrete trade for installation as the work of Sections of Division 3. Where shown in masonry, furnish reglets to the masonry trade for installation as the work of Division 4 Sections.
- H. Install counterflashings in reglets, either by shape-in seal arrangement, or by wedging in place and filling the reglet with mastic or elastomeric sealant, as indicated, depending on the degree of sealant exposure.
- I. Expansion and Contraction: Provide expansion and contraction joints at not more than 30 foot intervals. Space joints evenly and as approved.
- J. Install elastic flashings in accordance with the manufacturer=s recommendations. Where required, provide for movement at joints by forming loops or bellows the full width of the flashing. Locate cover or filler strips at joints to facilitate complete drainage of water from the flashings. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with the manufacturer=s recommendations.

3.4 ISOLATION REQUIREMENTS

- A. Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a course of paper slip sheet and a course of polyethylene underlayment.
- B. Concrete Contact: Coat the underside of sheet metal over horizontal concrete surfaces, with asphaltum cement.
- C. Dissimilar Metals: Insulate the juncture between dissimilar metals with a heavy coat of insulating film. Where drainage from a dissimilar metal passes over aluminum, paint the dissimilar metal with a non-lead pigmented paint.
- D. Wood Contact: Isolate sheet metal from cedar, redwood, oak and acid-treated lumber by means of an unbroken 6 mil polyethylene construction sheet, or a heavy coating of metal protective paint.

3.5 PROTECTION

A. The Installer shall advise the Contractor of required procedures for surveillance and protection of the flashings and sheet metal work during the remainder of the construction, to ensure that the work will be without damage or deterioration, other than natural weathering, at the time of Substantial Completion.

3.6 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Touch-up exposed fasteners using paint furnished by the metal manufacturer, and matching the exposed metal surface finish.
- C. Touch-up minor abrasions and scratches in surface finishes.
- D. Scratches, abrasions and minor surface defects to the finish may be repaired in accordance with the manufacturer=s printed instructions. Replace items which cannot be repaired.

3.7 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspection the installations for proper support, alignment, watertight and weatherproof.

3.8 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Remove excess sealants as approved by the metal manufacturer.
- C. Clean exposed metal surfaces to remove all substances which might cause corrosion or metal or deterioration of finishes.
- D. Leave the entire installation in a clean condition on the date of Substantial Completion.

SECTION 07840

FIRESTOPPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

- 1. Firestop sealant and safing insulation for the following locations:
 - a. All pipes, ductwork, conduit and other penetrations through a fire-rated walls, floor assemblies and roof assemblies.
 - b. Head of wall firestopping at full-height, fire-rated partitions.
 - c. Closure of penetrations for acoustic purposes.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

C. Related Sections:

- 1. Section 03300 Cast-In-Place Concrete: Substrate for firestopping.
- 2. Section 04230 Reinforced Unit Masonry: Substrate for firestopping.
- 3. Section 07210 Building Insulation: Wall and roof insulation.
- 4. Section 07900 Joint Sealers: Non-firestopping joint sealers.
- Section 09250 Gypsum Board: Substrate for firestopping.

1.2 DESCRIPTION OF WORK

A. The extent of each type of firestopping is indicated on the Drawings and as specified herein, and includes providing and installing fire safing at penetrations thru fire-rated assemblies, roofs and head of wall firestopping at full-height, fire-rated partitions.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 612 Specification for Mineral Fiber Block and Board Thermal Insulation.
 - ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
 - 3. ASTM E 119 Test Methods for Fire Tests of Building Construction and Materials.

- 4. ASTM E 136 Test Method for Behavior of Materials in a Vertical Tube Furnace at 750E.C.
- 5. ASTM E 814 Test Method for Fire Tests of Through-Penetration Fire Stops.
- 6. ASTM E 2307 Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate-Scale, Multi-story Test Apparatus.
- C. Underwriters' Laboratories, Inc. (UL):
 - 1. UL 1479 Tests of Through-Penetration Firestops.
 - 2. UL 2079 Tests for Fire Resistance of Building Joint Systems.

1.4 DEFINITIONS

A. Firestopping: Sealing materials and assemblies installed in spaces between building materials to prevent movement of smoke, heat, gasses, and fire through wall openings.

1.5 SYSTEM DESCRIPTION

A. Firestopping Materials: ASTM E 119, ASTM E 814, UL 1479 to achieve the fire rating indicated on the Drawings.

1.6 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures of submittals.
 - 1. Product Data: Manufacturer=s specifications for each joint firestop sealer, grout and safing insulation product required, including instructions for joint preparation and joint sealer application for insulation installation, product characteristics, performance, and limitations.
 - 2. Assurance / Control Submittals:
 - a. Manufacturer's certificate that the products meet or exceed the specified requirements and are suitable for the intended use.
 - Certified Test Reports showing compliance with the specified performance values, including r-values (aged values for plastic insulations), densities, compression strengths, fire performance characteristics, perm rating, water absorption ratings an similar properties.
 - c. Product Test Reports for each type of joint firestop sealer evidencing compliance with requirements.
 - d. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Provide a written special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.7 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company that has successfully completed at least three (3) sealer applications similar in type and size within the last three (3) years, and is approved by the manufacturer for this type of installation.
- B. Pre-Installation Meeting: Prior to beginning the installation of materials, meet at the Project Site with the Owner=s representative, Contractor, Installer and subcontractors of the affected trades. Review conditions, methods and procedures necessary for proper installation of the work, including inspections of areas of work, requirements of the Specifications, and the manufacturer=s literature; review submittals and the installation schedule.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer's original, unopened containers or packages with labels intact, identifying the manufacturer, product name and designation, expiration date for use, pot life, curing time, and mixing instructions for multi-component materials.
- C. Store and handle materials in compliance with the manufacturer=s recommendations to prevent deterioration and damage due to moisture, high or low temperatures, contaminants or other causes.
- Protect insulations from physical damage from becoming wet or soiled.

1.9 JOB CONDITIONS

- A. Environmental Requirements:
 - 1. Maintain the manufacturer=s recommended minimum temperature before, during, and for 3 days after installation of the materials.
 - 2. Keep products away from heat, open flame, sparks, and other sources of ignition until curing is complete.
 - 3. Install only when adequate ventilation is provided.
 - 4. Do not proceed with installation of firestop joint sealers when ambient and substrate conditions are outside the limits permitted by the manufacturer when substrates are wet due to rain, condensation, or other causes.
 - 5. Do not proceed with installation of firestop joint sealers until contaminants capable of interfering with adhesion has been removed from the joint substrates.

1.10 WARRANTY

- Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:

- Contractor to warrant that the firestopping systems will provide a permanent installation.
- Warranty Period: Life of the building.

PART 2 PRODUCTS

2.1 FIRE-RESISTANT JOINT SEALERS

- A. Firestop materials shall have been tested with and shall be in compliance with the minimum requirements of ASTM E 814, UL 1479, and UL 2079, as applicable. Products used shall be as listed below, as suitable for the intended application and as required to produce the fire rating shown on the Drawings and to conform to the Firestopping Schedule at the end of this Section.
- B. General: Provide manufacturer=s standard fire-stopping sealants, with the necessary accessory materials, having fire resistance ratings indicated, as established by testing identical assemblies per ASTM E 814 by Underwriters Laboratories Inc. or other testing and inspecting agency acceptable to the authorities having jurisdiction.

2.2 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering firestopping materials which may be incorporated into the work include the following:
 - Nelson Firestop Products.
 - 2. Hilti, Inc.
 - 3. The RectorSeal Corp.
 - 4. Specified Technologies, Inc. (STI).
 - 5. 3M Fire Protection Products.
 - 6. Tremco Firestop Systems.
- B. Section 01600 Product Requirements: Product Options: Substitutions not permitted.

2.3 MATERIALS

- A. Intumescent Latex or Acrylic Sealant: Single-component, intumescent, latex or acrylic formulation.
 - 1. LBS by Nelson Firestop.
 - FS ONE or CP 606 by Hilti.
 - 3. Metacaulk 950 or 1000 by RectorSeal.
 - 4. SpecSeal SSS100 by STI.
 - CP 25WB+ by 3M.

- 6. TREMstop WBM by Tremco.
- B. Intumescent Solvent-Release-Curing Sealant: Single component, intumescent, synthetic-polymer based, non-sag grade.
 - 1. CP 25 N/S by 3M.
 - 2. TREMstop WBM by Tremco.
- C. Intumescent Wrap / Strip: Single-component, elastomeric sheet with aluminum foil on one face.
 - 1. WRS by Nelson Firestop.
 - 2. CP 645 Wrap Strip by Hilti.
 - 3. Metacaulk Wrap Strip by RectorSeal.
 - 4. SpecSeal SSWRED Wrapstrip by STI.
 - 5. FS-195+ Wrap / Strip by 3M.
 - 6. TREMstop WS by Tremco.
- D. Intumescent Putty: Single-component, non-hardening, dielectric.
 - 1. FSP by Nelson Firestop.
 - 2. CP 618 Putty Stick or CP 617/617L Putty Pad by Hilti.
 - 3. CP 645 Wrap Strip by Hilti.
 - 4. CP 658 Firestop Plug by Hilti.
 - 5. Metacaulk Fire Rated Putty by RectorSeal.
 - 6. SpecSeal Putty by STI.
 - 7. Moldable Putty+ by 3M.
- E. Silicone Sealant: Single-component, moisture-curing, silicone-based elastomeric, non-sag grade.
 - CLK N/S by Nelson Firestop.
 - 2. CP 601S by Hilti.
 - 3. Metacaulk 835 by RectorSeal.
 - 4. SpecSeal PEN 300 by STI.
 - 5. 2000+ Silicone by 3M.
 - 6. FRYE SIL by Tremco.
- F. Silicone or Polyurethane Foam: Two-component, liquid elastomer that, when mixed,

expands and cures in place to produce a flexible, non-shrinking foam.

- SpecSeal PEN 200 by STI.
- 2. 2001 Silicone RTV Foam by 3M.
- 3. CP 620 Fire Foam by Hilti.
- G. Intumescent Collar: Factory-fabricated, intumescent collar.
 - PCS by Nelson Firestop.
 - 2. CP 642 or CP 643 by Hilti.
 - 3. Metacaulk Pipe Collar by RectorSeal.
 - 4. SpecSeal SSC Collars by STI.
 - 5. Plastic Pipe Device by 3M.
 - 6. TREMstop D by Tremco.
- H. Intumescent Composite Sheet, Pillows and Mortar or Blocks: Products used to firestop large openings.
 - 1. CPS by Nelson Firestop.
 - 2. FS 657 Fireblocks by Hilti.
 - 3. CP 637 Firestop Mortar by Hilti.
 - 4. CP 675T Firestop Board by Hilti.
 - 5. SpecSeal SSB Pillows and SpecSeal SSM Firestop Compound by STI.
 - 6. CS-195+ Composite Sheet by 3M.
 - 7. TREMstop PS by Tremco.
- I. Sprayable Fire-Rated Mastic: Products used to firestop construction joints.
 - 1. CP 672 Speed Spray by Hilti.
 - 2. SpecSeal Elastomeric Spray by STI.
 - 3. Firedam Spray by 3M.
- J. Packing Material: Manufacturer's standard mastic, putty, ceramic fiber blanket, or mineral wool to be used as fill or backing material for firestopping.
 - 1. FSB or Mineral Wool by Nelson Firestop.
 - 2. Mineral Wool by Hilti.
 - Fire Safing or Backer Rod by RectorSeal.

- 4. Mineral Wool by STI.
- 5. FireMaster Mastic, FireMaster Putty, or FireMaster Bulk by 3M.
- 6. Cerablanket by Tremco, Canada.
- 7. CP 777 Speed Plugs by Hilti (preformed mineral wool designed for top of wall fluted metal deck packing material).
- K. Safing and Smoke Stop: Thermafiber Safing Insulation, 4" thick, 4 pcf high melt point, mineral wool, unfaced and thermafiber Smoke Stop System with Smoke Seal compound as required for the use and location.
- L. Accessory Materials for Fire-Stopping Sealants: Provide forming, joint fillers, packing and other accessory materials required for installation of fire-stopping sealants as applicable to the installation conditions indicated.

2.4 FIRE INSULATING MATERIALS

- A. General: Provide insulating materials which comply with the requirements indicated for materials, compliance with the referenced standards, and other characteristics.
- B. Semi-Refractory Fiber Board Safing Insulation: Semi-rigid boards designed for use as a firestop at openings between edge of slab and exterior wall panels at the top of rated walls as shown; produced by combining semi-refractory mineral fiber manufactured from slag with thermosetting resin binders to comply with ASTM C 612, passing ASTM E 136 for combustion characteristics; R-value of 4.0 at 75E F, melting point exceeding 2000 degrees F. Supports to be 26 gage galvanized steel.
 - 1. Manufacturer=s of Semi-Refractory Fiber Insulation:
 - a. Johns Manville Corp.
 - b. 3M.
 - c. United States Gypsum Co.
- Section 01600 Product Requirements: Product Options: Substitutions permitted.

PART 3 EXECUTION

3.1 EXAMINATION

- Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, and conditions are as required, and ready to receive the work.
- C. With the Installer present, examine surfaces to receive joint sealers for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance.
- D. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of

the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean joints immediately before installing joint sealers to comply with recommendations of the joint sealer manufacturer and the following requirements:
 - Remove all foreign materials from joint substrates which could interfere with adhesion of the joint sealer, including dust; paint, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by the sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellents; water; and surface dirt.
- B. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with the joint sealer.
- C. Remove loose particles remaining from the cleaning operations by vacuuming or blowing out the joints with oil-free compressed air.
- D. Remove laitance and form release agents from concrete.
- E. Prime joint substrates where recommended by the joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer=s recommendations. Confine primers to areas of the joint sealer bond. Do not allow spillage or migration onto adjoining surfaces.
- **F.** Place hangers or damming devices in penetrations to hold firestopping materials in place, where necessary.

3.3 INSTALLATION

A. General:

- 1. Comply with the manufacturer=s printed installation instructions applicable to the product and application required, except where more stringent requirements apply.
- Comply with the manufacturer=s recommendations for protection during installation.
- B. Install firestopping at penetrations of fire-rated walls by sleeves, piping, ductwork, conduit and other items in accordance with the manufacturer's published instructions. Follow the manufacturer=s chart for the appropriate material for use to achieve the required fire rating in the various locations.
- C. Install sealant, including forming, packing, and other accessory materials to fill openings around mechanical and electrical services penetrating walls and floors to provide fire-stops with the fire-resistance ratings indicated for wall and floor assemblies in which the penetrations occur. Comply with the installation requirements established by testing and inspecting agency.
- D. At full-height fire-rated walls / partitions: Protect all fire safing insulation by installing a 22

gage galvanized sheet metal closure at the top and bottom, for protection of the fire safing insulation. Tool exposed surfaces of mortar or sealants. Where plastic pipes penetrate floors, provide a galvanized steel sleeve around the pipes and fire stop sealant within the sleeve.

E. At openings between exterior walls and floors / roofs, install fire safing insulation per the manufacturer=s instructions.

3.4 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. The Owner=s representative will inspect firestopping installations. Do not cover installations by other construction until the Owner=s representative has completed an inspection.

3.5 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean excessive fill material and sealants adjacent to openings and joints as the work progresses by methods and with cleaning materials approved by the manufacturers of the firestopping products and of products in which openings and joints occur.

3.6 PROTECTION

- A. Protect joint sealers and insulation from contact with contaminating substances and from damage resulting from construction operations or other causes so they are without damage at the time of Substantial Completion.
- B. If damage or deterioration does occur, cut out and remove the damaged or deteriorated joint sealers and make repairs indistinguishable from the original installations.

3.9 FIRESTOPPING SCHEDULE

A. Provide firestopping complying with the UL assemblies specified below:

Penetration	Assembly	Nelson	Hilti	RectorSeal	STI	3M	Tremco
Metal Pipe	CMU Wall 8"	CAJ1224	CAJ1149	CAJ1114	CAJ1079	CAJ1001	CAJ1179
	Thick or Less	or	or	or	or	or	or
		CAJ1203	CAJ1155	CAJ1115	CAJ1217	CAJ1009	CAJ1187
			or				
	Gypsum Board	WL1083	WL1054	WL1026	WL1049	WL1003	WL1020
	Partition	or	or	or	or	or	or
Non-Metalli	CMU Wall 8"	CAJ2086	CAJ2110	CAJ2021	CAJ2064	CAJ2005	CAJ2082
c Pipe	Thick or Less		or	or	or		or
	Gypsum Board	WL2071	WL2098	WL2015	WL2093	WL2002	WL2083
	Partition		or	or	or	or	or
Cable Tray	CMU Wall 8"	CAJ8049	CAJ4035	CAJ8043	CAJ4020	CAJ4003	CAJ4007
	Thick or Less	or	or		or	or	or
	Gypsum Board	WL4003	WL4011	N/A	WL4005	WL4004	WL3043
	Partition		or		or		or

Insulated Metal Pipe	CMU Wall 8" Thick or Less	CAJ5008 or	CAJ5090 or	WJ5016 or	CAJ5021 or	CAJ5001 or	CAJ5052 or
	Gypsum Board Partition	WL5036	WL5028 or	WL5057	WL5014 or	WL5001	WL5034
Constructio	CMU Wall to	N/A	HWD0098	TRC/PV12	N/A	HWD0013	N/A
	Gypsum Board Partition to Metal	N/A	HWD0042 or	HWD0014	N/A	HWS0003	WHPV60. 01
Constructio n Gaps - Wall to Wall	CMU Wall to CMU Wall	N/A	WWD1011 or WWD1012 or	N/A	N/A	WWS100 1	N/A
	Gypsum Board Partition to	N/A	N/A	N/A	N/A	WWS000 4	N/A

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Sealants.
 - 2. Backing.
 - 3. Substrate preparation.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 03300 Cast-In-Place Concrete: Sealant used in conjunction with concrete work.
 - 2. Section 05800 Expansion Control: Sealant for waterproofing expansion joints.
 - 3. Section 06400 Architectural Woodwork: Sealant to prevent vermin and moisture penetration into concealed spaces.
 - 4. Section 06650 Solid Polymer Fabrications: Sealant to prevent vermin and moisture penetration into concealed spaces.
 - 5. Section 07110 Waterproofing: Sealant for waterproofing concrete work.
 - 6. Section 07120 Fluid-Applied Urethane Roofing: Sealant for waterproofing roofing applications.
 - 7. Section 07190 Water Repellents (Sealer): Sealant for waterproofing concrete walks and floors.
 - 8. Section 07250 Fireproofing: Sealants used in fireproofing.
 - 9. Section 07415 Exterior Wall Panel System: Sealant for waterproofing metal wall systems.
 - 10. Section 07620 Sheet Metal Flashing and Trim: Sealant for weatherproofing metal roofing and flashings.
 - 11. Section 07840 Firestopping: Sealants for use in fire-rated assemblies.
 - 12. Section 08100 Hollow Metal Doors and Frames: Sealants for weatherproofing door and window frame perimeters and thresholds.

- 13. Section 08310 Access Doors and Panels: Sealant to close joint where metal edge trim meets adjacent surfaces.
- 14. Section 08400 Entrances, Storefronts and Windows: Sealants for weatherproofing frame perimeters and thresholds.
- 15. Section 08800 Glass and Glazing: Sealants and compound for glass and glazing installations.
- 16. Section 09250 Gypsum Board: Sealant for back of control joints and to close joint where edge trim meets adjacent surfaces; acoustical sealants.
- 17. Section 09300 Tile: Sealants for tile and threshold installations.
- 18. Section 09510 Gypsum Board: Sealant to close joint where edge trim meets vertical surfaces.
- 19. Section 10200 Louvers and Vents: Sealants to close joint where metal edge trim meets vertical surfaces.
- 20. Section 10810 Toilet Accessories: Sealants to prevent moisture penetration into concealed areas.
- 21. Section 14560 Chutes: Sealant to prevent moisture penetration into concealed spaces.

1.2 DESCRIPTION OF WORK

- A. The extent of joint sealers work is indicated on the Drawings and as specified herein, and includes providing and installing sealants, complete. The principal item of work is the sealing of openings and joints indicated, specified, and as required to make the entire building weatherproof and watertight.
- B. This Section contains general specifications for sealants throughout the Project. The specific use for joint sealants is indicated in the Sealant Schedule at the end of this Section.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 717 Terminology of Building Seals and Sealants.
 - 2. ASTM C 834 Specification for Latex Sealants.
 - 3. ASTM C 920 Specification for Elastomeric Joint Sealants.
 - 4. ASTM C 1193 Guide for Use of Joint Sealants.
 - 5. ASTM C 1299 Guide for Use in Selection of Liquid-Applied Sealants.
 - 6. ASTM D 1056 Specification for Flexible Cellular Materials Sponge or Expanded Rubber.

1.4 SUBMITTALS

- A. Section 01330 Submittals: Procedures for submittals.
 - 1. Product Data: Manufacturer=s specifications, recommendations, handling, installation and curing instructions for each type of sealant and associated miscellaneous material required. Include chemical characteristics, performance criteria, substrate preparation, limitations, color availability and VOC content.
 - 2. Samples: 2" long of each color required for each type of sealant exposed to view.
 - Assurance / Control Submittals:
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - b. Manufacturer's Material Safety Data Sheets (MSDS).
 - c. Manufacturer=s certification that the products supplied comply with applicable federal and local regulations controlling the use of volatile organic compounds (VOC).
 - d. Manufacturer's Instructions indicating procedures and conditions requiring special attention, and cautionary procedures required during application.
 - e. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Provide a written special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer's original, new, unopened packages or containers, dry and undamaged with seals and labels intact, identifying the product and manufacturer, product designation, date of manufacture, lot number, shelf life, curing time, and mixing instructions, if applicable.

- C. Handle and store materials to prevent deterioration and damage due to moisture, temperature changes, contaminants and other causes.
- D. Store materials not in actual use out of the weather until ready for use. Maintain packages and containers in a clean condition, free of foreign materials and residue.
- E. Store materials in a ventilated area, and in compliance with the manufacturer=s printed instructions.
- F. Keep storage areas neat and orderly.
- G. Protect against fire hazards and spontaneous combustion.
- H. Take all necessary precautions to ensure that workmen and the work areas are adequately protected from health hazards resulting from handling, mixing and installation of the materials.

1.7 JOB CONDITIONS

A. Environmental Requirements: Install sealants only during the manufacturer's recommended temperature ranges and weather conditions for proper application and cure. Consult the manufacturer if a sealant cannot be applied under the recommended conditions.

1.8 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:
 - 1. Submit a joint and severable written Warranty signed by the sealant manufacturer and the Installer certifying that the products and installation is free of defective materials and workmanship and agreeing to repair or replace sealants and accessories which fail because of loss of cohesion or adhesion, which do not cure properly or are improperly installed.
 - 2. Warranty Period: Three (3) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General Performance Requirements: Select materials for compatibility with the joint surfaces to be encountered and other indicated exposures, and except as otherwise indicated, select modulus of elasticity and hardness or grade recommended by the manufacturer for each application indicated.
- B. Where exposed to foot traffic, select materials of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of the sealant system.
- C. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Urethanes:

- a. Two-Part Urethane: Self-Leveling, ASTM C 920, Type M, Grade P, Class 25.
 - 1) Chem-Calk 550 by Bostik.
 - 2) Vulkem 245 by Tremco (formerly Mameco International, Inc.)
 - 3) Vulkem 255 FM by Tremco.
 - 4) Urexpan NR-200 by Pecora Corporation.
 - 5) Sikaflex 2c SL by Sika Group.
- b. Two-Part Urethane: Non-Sag, ASTM C 920, Type M, Grade NS, Class 25.
 - 1) Chem-Calk 500 by Bostik.
 - 2) Sonolastic NP 2 by Sonneborn Building Products
 - 3) Vulkem 227 by Tremco.
 - 4) Dynatrol II by Pecora.
 - 5) Sikaflex-2c NS EX Mix by Sika.
- c. One-Part Urethane: Self-Leveling, ASTM C 920, Type S, Grade P, Class 25.
 - 1) Vulkem 45 by Tremco.
 - 2) Sonolastic SL1 by Sonneborn.
 - 3) Urexpan NR-201 by Pecora.
- d. One-Part Urethane: Non-Sag, ASTM C 920, Type S, Grade NS, Class 25.
 - 1) Chem-Calk 900 by Bostik.
 - 2) Sonolastic NP 1 by Sonneborn.
 - 3) Vulkem 116 by Tremco.

2. Silicones:

- a. One-Part Silicones: ASTM C 920, Type S, Grade NS, Class 25. Vertical Surfaces Only.
 - 795 Silicone Building Sealant Structural Glazing, Glazing and Weatherproofing Sealant by Dow Corning. (colors only)
 - 2) Construction 1200 Sealant by General Electric Company.
 - 3) 999-A Silicone Building and Glazing Sealant by Dow Corning.

- 4) 864 Architectural Silicone by Pecora.
- b. One-Part Silicones: ASTM C 920, Type S, Grade NS, Class 25.
 - 1) 786 Mildew Resistant Silicone Sealant by Dow.
 - 2) Sanitary 1700 Silicone Sealant by General Electric.
 - 3) 898 Sanitary Mildew Resistant Silicone Sealant by Pecora.
- 3. Acrylics, Latex:
 - a. One-Part Acrylic Latex, Non-Sag, ASTM C 834.
 - 1) Chem-Calk 600 by Bostik.
 - 2) LC-130 Liquid Nails Caulk Window and Door Acrylic Latex by Macco Adhesives.
 - 3) AC-20 Acrylic Latex Caulking, Non-Sag by Pecora.
 - 4) Sonolac Acrylic Latex Caulk by Sonneborn.
- 4. Acoustical Sealants:
 - a. AC-20 FTR Fire and Temperature Rated Acoustical and Insulation Sealant by Pecora.
 - b. Sheetrock Acoustical Sealant by United States Gypsum Co.
- 5. Butyls:
 - a. One-Part Butyl, Non-Sag, FS TT-S-1657.
 - 1) Chem-Calk 300 Butyl Rubber Caulk by Bostik.
 - 2) BC-158 Butyl Rubber Caulk by Pecora.
- 6. Preformed Compressible & Non-Compressible Fillers:
 - a. Backer Rod Closed cell polyethylene foam:
 - 1) Chem-Rod / Closed by Bostik.
 - 2) Expand-O-Foam by Williams Products.
 - 3) HBR Backer Rod by Nomaco, Inc.
 - 4) Sonofoam Closed-Cell Backer Rod by Sonneborn.
 - b. Backer Rod Open cell polyurethane foam:
 - 1) Denver Foam by Backer Rod Manufacturing.
 - 2) Foam Pack II by Nomaco.

- c. Neoprene compression seals:
 - 1) WA and WE Series by Watson Bowman Acme.
- d. Butyl Rod: Kirkhill Rubber Co.

7. Paving Sealants:

- a. Two-Part Urethane: Self-Leveling, ASTM C 920, Type M, Grade P, Class 25.
 - 1). Vulkem 202 by Tremco. (Jet Fuel Resistant) (FS SS-S-200E, Type H only).
 - 2). NR-300 Urexpan by Pecora (FS SS-S-200E).
- b. One-Part Urethane: Self-Leveling, ASTM C 920, Type S, Grade P, Class 25.
 - 1). SONOMETRIC 1 Sealant by Sonneborn (FS SS-S-200E).
 - 2). Vulkem 45 by Tremco.
- D. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MISCELLANEOUS MATERIALS

- A. Joint Cleaner: Provide the type of joint cleaning compound recommended by the sealant manufacturer for the joint surfaces to be cleaned.
- B. Joint Primer / Sealer: Type of joint primer / sealer recommended by the sealant manufacturer for the joint surfaces to be primed or sealed.
- C. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by the sealant manufacturer, to be applied to the sealant contact surfaces where bond to the substrate or joint filler must be avoided for proper performance of the sealant. Provide self-adhesive tape where applicable.
- D. Sealant Backer Rod: Compressible rod stock of polyethylene foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable non-absorbable material as recommended by the sealant manufacturer for compatibility with the sealant.
- E. Masking tape and similar accessories as necessary to protect adjacent surfaces from damage.

2.3 COLORS

- A. Generally use sealant colors to match the color of the material in which the joint is located. Select from the manufacturer=s standard colors.
- B. Where a joint occurs between two materials of differing colors and the Contractor cannot determine which material to match, contact the Owner=s representative for a decision.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - Verify that joint widths are in conformance with the sealant manufacturer=s allowable limits.
 - 2. Verify that contaminants capable of interfering with adhesion have been cleaned from joints.
 - 3. Verify that joints has been properly prepared.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 JOINT PREPARATION

- A. Prepare and size joints in accordance with the manufacturer's instructions.
- B. Clean joint surfaces immediately before installation of sealant. Remove dust, dirt, laitance, unsecured coatings, mortar, moisture and other substances which could interfere with bond of sealant or caulking compounds using a solvent or abrasion as recommended by the manufacturer. Remove loose materials and foreign matter which could impair adhesion of the sealant.
- C. Etch concrete and masonry joint surfaces as recommended by the sealant manufacturer.
- Roughen vitreous and glazed joint surfaces as recommended by the sealant manufacturer.
- E. Prime or seal joint surfaces where indicated, and where recommended by the sealant manufacturer.
- F. Verify that the sealant is suitable for the substrate.
- G. Verify that joint backing and release tapes are compatible with the sealant.
- H. Verify that the sealant is paintable if a paint finish is indicated.

3.3 INSTALLATION

- A. Install in accordance with the manufacturer=s printed instructions, except where more stringent requirements are shown or specified, and except where the manufacturer=s technical representative directs otherwise. Perform the work in accordance with ASTM C 1193 for latex base sealants.
- B. Prime or seal joint surfaces where recommended by the sealant manufacturer. Do not

- allow the primer or sealer to spill or migrate onto adjoining surfaces.
- A. Set joint filler units at the proper depth or position to coordinate with other work, including the installation of bond breakers, backer rods and sealants. Do not leave voids or gaps between the ends of joint filler units.
- B. Install sealant backer rods, except where shown to be omitted or recommended to be omitted by the sealant manufacturer for the application indicated.
- **C.** Install pre-formed compressible and non-compressible fillers in accordance with the manufacturer's published instructions.
- D. Install bond breaker tape where indicated and where required by the manufacturer=s recommendations to ensure that elastomeric sealants will perform properly.
- E. Employ only proven installation techniques which will ensure that the sealants are deposited in uniform, continuous ribbons without gaps or air pockets, foreign embedded matter, ridges and sags, with complete Awetting@ of joint bond surfaces equally on both sides.
- F. Except as otherwise indicated, fill sealant rabbet to a slight concave surface, slightly below the adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill the joint to form a slight cove so the joint will not trap moisture and foreign matter.
- G. Dry tool joints. Do not use soap, water or solvent to tool the joints.
- H. Seal joints before adjacent surfaces are waterproofed or painted.
- I. Install sealants to the depths shown or, if not shown, as recommended by the sealant manufacturer, but within the following general limitations, measured at the center (thin) section of the bead:
 - For sidewalks, pavements and similar joints sealed with elastomeric sealants and subject to traffic and other abrasions and indentation exposures, fill the joints to a depth equal to 75% of the joint width, but not less than 3/8" deep or more than 1/2" deep.
 - 2. For normal moving joints sealed with elastomeric sealants not subject to traffic, fill joints to a depth equal to 50% of the joint width, but not less than 1/4" deep or more than 2" deep.
 - 3. For joints sealed with non-elastomeric sealants, fill the joints to a depth in the range of 75% to 125% of the joint width.
- L. Epoxy Floor Joint Sealant: Install sealant at floor construction and control joints in accordance with the manufacturer's published instructions.

3.4 SPILLAGE

A. Protect materials surrounding the work of this Section from damage and disfigurement. Do not allow sealants to overflow or spill onto adjacent surfaces, or to migrate into the voids of adjoining surfaces.

- B. Recess exposed edges of exposed joint fillers slightly behind the adjoining surfaces, unless otherwise shown, so the compressed units will not protrude from the joints.
- C. Bond ends of joint fillers together with an adhesive or Aweld@ by other means recommended by the manufacturer to ensure a continuous watertight and airtight installation.

3.5 CURING

A. Cure sealants in compliance with the manufacturer's published instructions.

3.6 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect sealant work for proper installation, depth and adhesion.

3.7 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Remove excess and spillage of sealants promptly as the work progresses using the materials and methods recommended by the sealant and substrate manufacturers.
- Clean adjoining surfaces to eliminate evidence of spillage without damage to the adjoining surfaces and finishes.

3.8 SEALANT SCHEDULE

- A. Exterior Joints:
 - 1. Perimeters of exterior openings where frames and other penetrations meet the exterior face of the building; precast concrete, concrete masonry, polymer reinforced concrete:
 - a. Sealant No. 2.1, C.1.b
 - 2. Expansion and control joints in exterior surfaces of cast-in-place concrete walls and precast architectural wall panels:
 - a. Sealant No. 2.1, C.1.b
 - b. Sealant No. 2.1, C.1.d
 - c. Material No. 2.1, C.6.a
 - 3. Expansion and control joints in exterior surfaces of unit masonry walls, polymer reinforced concrete and metal panels:
 - a. Sealant No. 2.1, C.1.b
 - 4. Coping joints, coping-to-facade joints, cornice and wash, and horizontal surface joints not subject to foot or vehicular traffic:
 - a. Sealant No. 2.1, C.1.b

- b. Sealant No. 2.1, C.1.d
- 5. Exterior joints in horizontal wearing and non-wearing surfaces:
 - a. Sealant No. 2.1, C.1.a
 - b. Sealant No. 2.1, C.1.c
 - c. Material No. 2.1, C.6.a
- 6. Paving joints and curb:
 - a. Sealant No. 2.1, C.1.d
 - b. Sealant No. 2.1, C.2.a
- 7. Setting bed for thresholds and saddles:
 - a. Sealant No. 2.1, C.1.c
- 8. Painted metal lap and flashing joints:
 - a. Sealant No. 2.1, C.2.a
- B. Interior Joints:
 - 1. Seal the interior perimeters of exterior openings.
 - 2. Expansion and control joints on the interior of exterior cast-in-place concrete walls.
 - 3. Expansion and control joints on the interior of exterior precast, architectural wall panels.
 - 4. Expansion and control joints on the interior of exterior surfaces of unit masonry walls.
 - 5. Perimeters of interior aluminum and hollow metal frames.
 - 6. Interior masonry vertical control joints and intersecting unit masonry walls; masonry-to-masonry, masonry-to-concrete.
 - 7. For all of the above interior joints:
 - a. Sealant No. 2.1, C.1.b
 - b. Sealant No. 2.1, C.1.d
 - c. Sealant No. 2.1, C.1.a (for pre-finished materials only).
 - 8. Exposed interior control joints in drywall and concealed joints:
 - a. Sealant No. 2.1, C.3.a
 - b. Sealant No. 2.1, C.4

- c. Sealant No. 2.1, C.4.c
- d. Sealant No. 2.1, C.6.a
- 9. Joints at the top of non-load-bearing unit masonry walls at the underside of cast-in-place concrete:
 - a. Sealant No. 2.1, C.1.b
 - b. Sealant No. 2.1, C.1.d
- 10. Perimeters of architectural woodwork: overhead cabinets, base cabinets, vanities, countertops, shelving, etc.:
 - a. Sealant No 2.1, C.2.b
- Perimeters of suspended acoustical ceilings where edge trim meets vertical surfaces:
 - a. Sealant No. 2.1, C.2.b
- 12. Perimeters of toilet / bath fixtures: mirrors, sinks, urinals, tubs, vanities, waterclosets, accessories, etc.:
 - a. Sealant No. 2.1, C.2.b
- 13. Interior expansion and control joints in floor surfaces exposed to foot traffic:
 - a. Sealant No. 2.1, C.1.a
 - b. Sealant No. 2.1, C.1.c
 - c. Material No. 2.1, C.6.a
- 14. Interior saw-cut contraction joints in exposed concrete floors exposed to forklift traffic:
 - a. Sealant No. 2.1 C.7
- 15. Interior non-moving joints, including control, contraction, and construction joints in interior floor slabs exposed to heavy duty traffic:
 - a. Sealant No. 2.1, C.7
- 16. Painted metal lap joints:
 - a. Sealant No. 2.1, C.2
- C. Glass and Glazing:
 - Structural Glazing.
 - a. Sealant 2.1, C.2.a

- 2. General Purpose Glazing.
 - Sealant 2.1, C.2.b a.
- End Damming. 3.
 - Sealant 2.1, C.5 a.
 - b.

END OF SECTION

SECTION 08100

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Steel doors.
 - Steel door frames.
 - Steel window frames.
 - 4. Door vision panels.
 - 5. Louvers.
 - 6. Accessories.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 03300 Cast-In-Place Concrete: Substrate for anchorage.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for anchorage.
 - 3. Section 08210 Wood Doors: Doors installed in steel frames.
 - 4. Section 08710 Door Hardware: Hardware coordination.
 - Section 08800 Glass and Glazing: Glass installed in vision panels in doors and steel window frames.
 - 6. Section 09900 Painting: Field painting and finishing of frames and doors.

1.2 DESCRIPTION OF WORK

- A. The extent of standard steel doors and frames work is indicated on the Drawings and Schedule and as specified herein, and includes providing and installing exterior entrance and storefront assemblies, designed and fabricated to comply with the requirements for system performance characteristics below, as demonstrated by testing of the manufacturer=s corresponding stock systems in compliance with the test methods designated.
- B. Door hardware is specified in Section 08710.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced.
 - Publications are referred to in the text by basic designation only.
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE / SEI 7 Minimum Design Loads for Buildings and Other Structures.
- C. American Society for Testing and Materials (ASTM):
 - ASTM A 153 / A 153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM A 568 / A 568M Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
 - 3. ASTM A 653 / A 653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.
 - 4. ASTM A 1008 / A 1008M Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
 - 5. ASTM A 1011 / A 1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
 - 6. ASTM D 2201 Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products.
 - 7. ASTM E 90 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
 - 8. ASTM E 330 Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 - 9. ASTM E 413 Classification for Rating Sound Insulation.
- D. Americans with Disabilities Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
- E. Door Hardware Institute (DHI):
 - 1. DHI The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- F. International Code Council:
 - International Building Code (IBC), 2009.
- G. Steel Door Institute (SDI):
 - 1. SDI-100 Standard Steel Doors and Frames.
 - 2. SDI-105 Recommended Erection Instructions for Steel Frames.

- H. National Fire Protection Association (NFPA):
 - 1. Standard No. 80 Standard for Fire Doors and Other Opening Protectives.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Identify door and frame materials, gauges, configurations, location of cutouts, hardware reinforcement, fire-rating and finish.
 - 2. Shop Drawings: Include elevations of each door type, details of each frame type, conditions at openings, details of construction, location and installation requirements of reinforcements and finish hardware, and details of joints and connections. Show anchorages and accessory items. Indicate door elevations, internal reinforcement, closure method, sidelights, and cutouts for louvers and vision panels.
 - 3. Schedule: Provide for doors and frames using the same reference numbers for details and openings as those used on the Drawings.
 - 4. Samples: Full range of color samples for selection. Two (2) 6" x 6", minimum, of each color and texture selected from factory-finished doors and frames.
 - Assurance / Control Submittals:
 - a. Certificates:
 - 1) Manufacturer=s Certificate that the products meet or exceed the specified requirements.
 - 2) Manufacturer=s certification that hot-dip galvanizing for doors and frames comply with the requirements.
 - 3) Manufacturer=s certification that oversized fire-rated frame and door assemblies have been constructed with materials and methods equivalent to the requirements for labeled construction.
 - b. Calculations indicating that exterior doors, frames and anchorages satisfy the performance requirements.
 - c. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: procedures for closeout submittals.
 - 1. Warranty: Submit a written special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with

- a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing work of this Section with a minimum of five (5) years documented experience.
- 3. Provide frames and doors complying with Steel Door Institute, SDI-100 ARecommended Specifications: Standard Steel Doors and Frames@ and as specified herein.

B. Performance Requirements:

- 1. Provide the capacity to withstand the following loading requirements for exterior units:
 - Design and install to resist combined positive and negative windloading in a. accordance with IBC 2009, Section 1609 with a Vmph of 170, qs of 74.0 psf.
- 2. Fire-Rated Assemblies: Provide fire-rated doors investigated and tested as fire door assemblies, complete with type of hardware to be used. Identify each fire door with recognized testing laboratory labels indicating the applicable fire-rating. Construct and install assemblies to comply with NFPA, Standard No. 80, and as herein specified.

DELIVERY, STORAGE AND PROTECTION 1.6

- Α. Section 01600 - Product Requirements: Transport, handle, store, and protect the products.
- В. Deliver hollow metal work cartoned or crated for protection during transit and storage.
- C. Provide additional sealed plastic wrapping for factor-finished doors.
- D. Deliver products to the Project Site in the manufacturer=s original, unopened packages, dry and undamaged with seals and labels intact.
- E. Inspect products for damage. Minor damages may be repaired provided the finish items are equal, in all respects, to new work, and acceptable to the Owner=s representative; otherwise remove and replace the damaged items.
- F. Store under cover in dry, weathertight conditions. Place units on 4" high wood sills or store otherwise in a manner to prevent rust and damage. Provide 1/4" space between stacked doors to allow for air circulation. Avoid the use of non-ventilated plastic or canvas shelters. If the cardboard wrapper becomes wet, remove the carton immediately.
- G. Break seals to permit ventilation.

WARRANTY 1.7

- Section 01780 Closeout Submittals: Procedures for closeout. Α.
- B. Special Warranty:
 - 1. Provide a written Warranty, signed by the door manufacturer, and the door installer agreeing to repair or replace doors that do not meet the requirements, or that fail in materials or workmanship.

2. Warranty Period: Two (2) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering items which may be incorporated in the work include the following:
 - 1. Amweld Building Products.
 - Ceco Door Products.
 - 3. Republic Doors and Frames.
 - Steelcraft.
 - Curries.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 1011 / A 1011M and ASTM A 568 / A 568M.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 1008 / A 1008M and ASTM A 568 / A 568M.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 653 / A 653M, ASTM D 2201, G60 zinc coating, mill phosphatized.
- D. Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.
- E. Inserts, Bolts and Fasteners: Manufacturer=s standard units, hot-dip galvanized complying with ASTM A 153 / A 153M, Class C or D, as applicable.

2.3 FABRICATION

- A. Fabricate units rigid, neat in appearance, and free from defects, warp, twist and buckle. Fit and assemble units in the manufacturer=s plant. Fabricate KD or welded. Clearly identify work that cannot be permanently factory-assembled before shipment to assure proper assembly at the Project Site.
- B. Weld the exposed surface of joints continuously; grind, dress, and make joints smooth, flush and invisible. When prime painted, the use of metallic filler to conceal manufacturing defects is not acceptable.
- C. Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units from only cold-rolled steel.

- D. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and molding from either cold-rolled or hot-rolled steel (fabricator=s option); galvanized.
- E. Fabricate doors, panels and frames from galvanized sheet steel. Close top and bottom edges of doors as an integral part of the door construction or by the addition of inverted steel channels.
- F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips head for exposed screws and bolts; galvanized.
- G. Sound-Rated (Acoustical) Assemblies:
 - Where shown or scheduled, provide frame and door assemblies which have been fabricated as sound-reducing type, tested in accordance with ASTM E 90 and classified in accordance with ASTM E 413.
 - 2. Unless otherwise indicated, the minimum sound rating for acoustical assemblies shall be STC 33.

H. Door Hardware Preparation:

- 1. Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by the hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for door and frame preparation for hardware.
- 2. For concealed overhead door closers, provide space, cutouts, reinforcing and provisions for fastening in the top rail of doors or heads of frames, as applicable.
- 3. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at the Project site.
- 4. Locate finish hardware as shown on final Shop Drawings or, if not shown, in accordance with ARecommended Locations for Builder=s Hardware, Apublished by the Door and Hardware Institute and ADA Accessibility Guidelines.
- I. Prepare frame for silencers. Provide three single rubber silencers for single doors; two single silencers on the frame head at double doors without mullions.
- J. Equip frames with one welded-in floor anchor in each jamb. Furnish a minimum of three (3) steel jamb anchors and two (2) head anchors for field insertion at a maximum of 24" o.c. Anchors shall be of the proper type for particular construction involved (i.e., masonry, concrete, metal framing, etc).
- K. Factory install louvers and vision panels in prepared openings.
- L. Shop Painting:
 - 1. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
 - 2. Clean, treat and paint exposed surfaces of steel doors, louvers and frames including galvanized surfaces.
 - 3. Apply one shop coat of rust-inhibitive enamel or primer paint, either air-

dryed or baked-on, of even consistency, and suitable as a base for the specified finish paint.

2.4 STANDARD STEEL FRAMES

- A. Provide galvanized steel frames for doors, transoms, sidelights, borrowed lights, windows and other openings of the types and styles shown on the Drawings.
- B. Exterior Frames including sidelights, if required:
 - 1. Cold-rolled steel; factory mitered corners and full-welded construction; 2" face, jamb dept as required or as shown on the Drawings; galvanized to ASTM D 2201.
 - 2. 14 gage for exterior frames and other frames wider than 48".
 - 3. 18 gage for all other frames.
- C. Interior Frames:
 - 1. Cold-rolled steel; 2" face, jamb depth as required or as shown on the Drawings.
 - 2. 16 gage.
 - 3. Fire-rated frames per NFPA, Standard No. 80.
- D. Silencers: Except on weatherstripped frames, drill stops to receive three (3) silencers on the strike jambs of single-swing frames and two (2) silencers on the heads of double-swing frames. Install plastic plugs to keep holes clear during construction.
- E. Plaster Guards: Provide 26 gage, steel plaster guards or mortar boxes welded to the frames at the back of door hardware cutouts where mortar or other materials might obstruct hardware operation.
- F. Anchors: Equip frames with one welded-in floor anchor in each jamb. Furnish a minimum of three (3) steel jamb anchors and two (2) head anchors for field insertion at a maximum or 24" o.c.. Anchors shall be of the proper type for the particular construction involved, i.e., concrete, masonry, metal framing, etc. Conceal fastenings unless indicated otherwise.

2.5 STANDARD STEEL DOORS

- A. Exterior Doors: Extra Heavy-Duty, Grade III per SDI-100, 1-3/4" thick, types and styles as indicated on the Drawings; top edge closed flush; 14 gage cold-rolled steel, galvanized to ASTM D 2201; insulated core.
- B. Interior Doors: Standard-duty, Grade I per SDI-100, 1-3/4" thick, types and styles as indicated on the Drawings; top edge closed flush; 16 gage cold-rolled steel. Fire-rated UL labeled where indicated or required by the Building Code.
- C. Fire-Rated Doors: Per NFPA, Standard No. 80.
- D. Vision Panels: Laminated glass in metal frames as required by the fire-rating. Install removable steel stops on the room side of the doors.
- E. Louvers:
 - 1. Exterior: Weatherproof, stationary, where shown on the Drawings. Construct of

AZ@ shaped, 16 gage, hot-dip galvanized steel blades. Space blades not more than 1-1/2" o.c., Provide removable 1/4" stainless steel wire mesh screen at the interior face of doors, in formed metal frame with removable clips. Provide insect screens at lovers in exterior doors.

- 2. For fire-rated openings, provide tightly fitted, spring-loaded, automatic closing louvers with operable blades equipped with a fusible link; arranged so metal overlaps metal at every joint.
- 3. Provide louvers complying with UL or NFPA standards only, and factory-applied in doors.
- 4. Interior (Non-fire-rated): Roll-formed, 20 gage, galvanized steel, inverted AY@ blades; sight-proof; prime painted for field applied finish paint; size as indicated on the Drawings.

2.6 **CORE CONSTRUCTION**

- A. Provide one of the following types of core construction (Contractor=s option):
 - 1. Kraft Honeycomb: Phenolic treated.
 - 2. Polyurethane: Foamed-in-place or laminated. 20 psi strength, 1.8 pcf density, 1/2" maximum voids in any direction. Strength of bond between the core and the steel face sheets shall exceed strength of core so delamination will not occur during operating conditions.
 - 3. Polystyrene: Rigid core of polystyrene foam board, 1500 psf compressive strength, 18 psi shear strength. Strength of the bond between the core and the steel face sheets shall exceed strength of core so that delamination will not occur under operating conditions.
 - 4. Vertical Steel Stiffeners: 22 gage vertical steel stiffeners, spaced 6" apart and spot welded to the face sheets at 6" on center. Insulate the spaces between stiffeners with loose fill insulation the full height of the door.

2.7 PROTECTIVE COATINGS

- A. Bituminous Coating: Apply fibered asphalt emulsion at grout filled frames.
- B. Primer: Exposed surfaces shall be cleaned, treated with Bonderite chemical and given one baked-on shop coat of grey synthetic primer.

PART 3 **EXECUTION**

EXAMINATION 3.1

- Section 01700 Execution Requirements: Verification of existing conditions before A. starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.

C. Report in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install standard steel doors, frames and accessories in accordance with the final Shop Drawings, the manufacturer=s published instructions, as herein specified, and at the locations shown on the Drawings.

В. Door Installations:

- 1. Fit hollow metal doors accurately in frames, within clearances specified in SDI-
- 2. Install fire-rated doors with the clearances specified in NFPA, Standard No. 80.

C. Frame Installations:

- 1. Comply with the provisions of SDI-105 ARecommended Erection Instructions for Steel Frames@, unless indicated otherwise.
- 2. Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction of the enclosing walls. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After the wall construction is completed, remove temporary braces and spreaders leaving the surfaces smooth and undamaged.
- 3. At in-place concrete construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.
- In masonry construction, locate wall anchors at the hinge and strike levels. 4. Building-in of anchors and grouting of frames is specified in Division 4 and as shown on the Drawings...
- 5. In steel framed partitions, install wall anchors at the hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.
- 6. Install fire-rated frames with clearances specified in NFPA, Standard No. 80.
- D. Field Finish: Field paint door, frames, louvers and vision panel frames as specified in Section 09900 - Painting.

3.3 CONSTRUCTION

- A. Interface with Other Work:
 - 1. Coordinate frame installations for size, location, and the particular construction
 - 2. Coordinate with the door opening construction, door frames, door hardware, door louver and vision panel glazing installation.
- B. Site Tolerances:

1. Maximum Diagonal Distortion: 1/16" measured with straight edge from corner to corner.

3.4 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Immediately after installation, sand smooth any rusted or damaged areas of the prime coat and touch-up with a compatible air-drying primer.
- C. Check and readjust operating door hardware items. Leave steel doors and frames undamaged and in complete and proper operating condition.
- D. Adjust hardware for smooth and balanced door and window movement.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect metal door, frame and window installations, alignment, attachment to structure, and operation.

3.6 CLEANING

- A. Section 01700 Execution Requirements: Cleaning installed Work.
- B. Immediately prior to final inspection, remove protective plastic wrappings from prefinished doors.
- C. Wipe down all doors and frames before final acceptance inspection.

END OF SECTION

SECTION 08210

WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Flush solid core wood doors with wood veneer.
 - 2. Flush solid core wood doors with plastic laminate face.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 06200 Finish Carpentry: Wood door frames.
 - 2. Section 08710 Door Hardware: Hardware coordination for wood doors.
 - 3. Section 08800 Glass and Glazing: Glass installed in wood doors.
 - 4. Section 09900 Painting: Field painting of wood doors.

1.2 DESCRIPTION OF WORK

A. The extent of the wood doors work is indicated on the Drawings and Schedules and as specified herein, and includes providing and installing standard hollow core and solid core wood doors, panel doors and louvers.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE / SEI 7 Minimum Design Loads for Buildings and Other Structures.
- C. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
- D. National Electrical Manufacturers Association (NEMA):
 - NEMA LD-3 High Pressure Decorative Laminates.
- E. Architectural Woodwork Institute (AWI):

- Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program.
- 2. AWI 1300 Architectural Flush Doors.
- F. International Code Council:
 - 1. International Building Code (IBC), 2009.
- G. National Wood Window and Door Association (NWWDA):
 - 1. I.S.-1. Alndustry Standard for Wood Flush Doors@.
- H. National Woodwork Manufacturers Association (NWMA).
 - 1. ACare and Finishing of Wood Doors@.
- I. Woodwork Institute (WI):
 - 1. AManual of Millwork@ Designations for wood door grades and core construction.

1.3 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Door manufacturer=s product data, specifications and installation instructions for each type of door. Include details of core and edge construction, and louvers, if any, and similar components.
 - 2. Shop Drawings: Indicate locations and size of each door, elevation of each kind, details of construction, locations and extent of hardware blocking, swings, and other pertinent information. Indicate cutouts for vision panels and louvers, if any.
 - 2. Samples: For review and approval of color and texture only. Compliance with other requirements is the exclusive responsibility of the Contractor. Submit the following:
 - a. 8" x 10" representative finished veneer sheet for each available flitch to be used for face veneer of transparent finished doors.
 - b. 3" x 10" solid wood strips of species to be used for exposed edges, trim and other solid wood components.
 - 3. Assurance / Control Submittals:
 - c. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Special Warranty: Submit written special Warranty forms completed in the name of the Owner and registered with the manufacturer.

1.4 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- B. Obtain doors from a single manufacturer to ensure uniformity in quality of appearance and construction, unless approved otherwise.
- C. Mark each door with NWWDA, Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of ANSI/NWWDA I.S.-1. For manufacturer=s not participating in the NWWDA Hallmark Program, a certification of compliance may be substituted for marking of the individual doors.
- D. Perform Work in accordance with AWI 1300 for Custom Grade doors.
- F. Performance Requirements:
 - 1. Fabricate and install to withstand the following loading requirements for exterior units:
 - a. Combined positive and negative windloading in accordance with IBC 2009, Section 1609.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect doors from damage, soiling and deterioration.
- B. Ship doors individually wrapped.
- C. Deliver products to the Project Site in the manufacturer=s original, unopened packaging, dry and undamaged with seals and labels intact.
- D. Comply with the AOn-Site Care@ recommendations of NWMA pamphlet ACare and Finishing of Wood Doors@ and with the manufacturer=s instructions.
- E. Store under cover in dry, weathertight conditions.

1.6 COORDINATION

- A. Design Intent: It is the intent of the design that similar woodwork throughout the Project match. Coordinate work between the separate installers providing similar woodwork to ensure that the design intent is achieved to the satisfaction of the Owner=s representative.
- B. Pre-Construction Meetings: Prior to the purchase and fabrication of materials and prior to installation of the scheduled work, conduct meetings with the various related woodwork installers to coordinate efforts to achieve the design intent. Participants to include the Contractor, finish carpentry installer, architectural woodwork installer, painting applicator and the Owner=s representative.

1.7 JOB CONDITIONS

A. Condition doors to the average prevailing humidity in the installation areas prior to

installation.

1.8 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:
 - Provide a written Warranty, signed by the door manufacturer agreeing to repair or replace doors that do not meet the requirements, or that fail due to delamination of veneer, warping beyond the specified installation tolerances, defective materials or telegraphing of the core construction.
 - 2. Warranty Period:
 - a. Exterior Doors: Two (2) years from the date of Substantial Completion.
 - b. Interior Doors: Life of the installation.
 - c. Stile and Rail Doors: Fabricator=s special warranty for two (2) years against defects in materials and workmanship including, but not limited to, defects against warpage and wracking.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Cal-wood Door Div., Timberland Industries.
 - 2. Eggers Industries, Architectural Door Div.
 - 3. Mohawk Flush Doors, Inc.
 - 4. Weyerhaeuser Co.
 - 5. SUN-DOR-CO.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Solid Core Wood Doors (interior doors): AWI 1300.
 - 1. Type: Institutional, flush, solid core wood, AWI, premium grade.
 - 2. Thickness: As indicated on the Drawings.
 - 3. Core: Mat-formed wood particleboard with closed grain hardwood stiles, commercial Standard CS 236-66, Type 1, Density AC@, Class 1. Minimum 30 pounds per cubic foot density. Mineral core with UL label for fire-rated doors.

- 4. Face Finish: Veneer shall be premium grade sliced hardwood for doors with a transparent finish; custom grade, medium density overlay for doors scheduled for paint finish: conform to commercial standard CS35: minimum, 1/8" thick, Wood species as selected. Plastic laminate where indicated.
- Stiles and Rails: One piece hardwood stiles and top and bottom rails with wood 5. species to match the face veneer. Where door closers are specified, the top rail width shall be doubled.
 - The bottom rail of a transom panel shall run the full width of the panel. a.
- 6. Plastic Laminate: High pressure laminate. Color and texture as selected.

В. Hollow Core Wood Doors:

- 1. Type: Institutional, flush hollow core, AWI, premium grade.
- 2. Thickness: As indicated on the Drawings.
- 3. Core: Expanded corrugated core with wood lock blocks.
- 4. Face Finish: Veneer shall be premium grade, plain sliced hardwood for doors with a transparent finish; custom grade, medium density overlay for doors scheduled for paint finish. Wood species as selected.
- 5. Plastic Laminate: High pressure laminate. Color and texture as selected.

C. Panel Doors:

- 1. Type: Custom fabricated, solid wood construction. AWI, premium grade.
- 2. Stiles, Rails and Panels: Fabricated from clear, kiln dried solid lumber core with sliced veneer faces and edges as scheduled and solid trim pieces as required. Wood species as scheduled or selected. Vertical stiles shall be of the same species and color as the face veneer.
- D. Louvered / Half-Louvered Doors: Minimum 1-3/8" thick; conform to NWWDA, I.S.-6.

E. Louvers:

- 1. Wood: Door manufacturer=s standard solid wood louvers of the same species as the door face veneer, unless indicated otherwise and of the size, type and profile shown. Factory install in prepared openings.
- F. Transom and Side Panels: Where transom or side panels are shown in the same framing system as wood doors, provide panels which match the quality and appearance of the associated wood doors, unless otherwise indicated. Fabricate matching panels with the same construction, exposed surfaces and finish as specified for the associated doors.
- G. Adhesive: Type 1, waterproof bond.

2.3 **FABRICATION**

Fabricate non-fire-rated doors in accordance with AWI 1300. Α.

- B. Furnish and install lock blocks at lock edge, and at the top of doors for closer hardware reinforcement.
- C. Bond edge banding to the core.
- D. Factory machine doors for door hardware in accordance with the hardware requirements and dimensions. Do not machine for surface hardware.
- E. Factory install louvers in prepared openings.
- F. Factory fit doors for the frame opening dimensions identified on the approved Shop Drawings.
- G. Doors may be provided pre-fitting, set in frames and ready for installation in rough openings.
- H. Before delivery of doors to the Project Site, shop-prime all wood surfaces per Section 09900 Painting.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
- C. Installer must examine door frames and verify that the frames are the correct type and have been installed as required for the proper hanging of corresponding doors.
- D. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Condition doors to average prevailing humidity in the installation areas prior to hanging.
- B. Install wood doors in accordance with the manufacturer=s instructions and as shown.
- C. Install non-fire-rated doors in accordance with AWI Quality Standards requirements.
- D. Job Fit Doors: Align doors to the frames for proper fit and uniform clearance at each edge and machine for hardware. Seal cut surfaces after fitting and machining.
 - 1. Bevel non-fire rated doors 1/8" in 2" at lock and hinge edges.
- E. Machine cut doors for the hardware. Install the door hardware specified in Section 08710.
- F. Clearance: For non-fire rated doors provide a clearance of 1/8@ at jambs and heads, 1/8" at meeting stiles for pairs of doors, and 3/16" from the bottom of the door to the top of decorative floor finish or covering. Where thresholds are shown or scheduled, provide 1/4" clearance from the bottom of the door to the top of the threshold.

- G. Tolerance: Conform to AWI 1300 for requirements for maximum diagonal warp.
- H. Install door louvers plumb and level.
- I. Job Site Finished Doors: For requirements for finishing wood doors, louvers and vision panel frames see Section 09900 Painting.

3.3 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting and cleaning the installed work.
- B. Rehang or replace doors which do not swing or operate smoothly.

3.4 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect door installations for alignment, hardware installations and door operation.

3.5 PROTECTION

- A. Section 01700 Execution Requirements: Protecting the installed work.
- B. Implement procedures for the protection of installed wood doors from damage and deterioration until final acceptance.
- C. Refinish or replace doors damaged during installation as directed by the Owner=s representative.

END OF SECTION

SECTION 08310

ACCESS DOORS AND PANELS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Access door and frame units.
 - 2. Wall- and ceiling-mounted locations.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 03300 Cast-In-Place Concrete: Substrate for anchorage.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for anchorage.
 - Section 09110 Non-Load Bearing Steel Framing: Wall and ceiling framing for attachment of units.
 - 4. Section 09250 Gypsum Board: Adjacent wall and ceiling finish material.
 - 5. Section 09900 Painting: Field painting of door and frame units.

1.2 DESCRIPTION OF WORK

A. The extent of access door work is indicated on the Architectural, Mechanical, Plumbing and Electrical Drawings and as specified herein, and includes providing and installing access doors where access to mechanical, plumbing and electrical items is required, whether or not the access doors are shown on the Drawings.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 153 / A 153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM A 568 / A 568M Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
 - 3. ASTM A 653 / A 653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

- 4. ASTM A 1008 / A 1008M Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
- 5. ASTM A 1011 / A 1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- 6. ASTM D 2201 Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products.
- C. National Fire Protection Association (NFPA):
 - 1. Standard No. 80 Standard for Fire Doors and Other Opening Protectives.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - Product Data: Manufacturer=s technical data and installation instructions for each type of access door assembly, including setting drawings, templates, instructions and directions for installation of anchorage devices.
 - 2. Shop Drawings: Indicate the location, size, type, finish, hardware, and details of adjoining work for all access door units.
 - 3. Schedule: Indicate all doors by type, size, rating and location keyed to the Drawings.
 - 4. Assurance / Control Submittals:
 - Manufacturer's certificate that products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Project Record Documents: Accurately record the location of all access units.
 - 2. Warranty: Submit a written special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- B. Fire-Resistance Ratings: In all Corridor walls, rated partitions and ceilings, provide access door assemblies with panel door, frame, hinge, and latch from a manufacturer listed in Underwriter=s Laboratories, Inc; AClassified Building Materials Index@ for 90 minutes

rating.

- Provide UL label on each fire-rated access door.
- C. Size Variation: The selected manufacturer=s standard units may vary in size slightly from the sizes indicated herein. Secure the Owner representative=s approval for sizes that differ from the units specified.
- Coordination: Furnish inserts and anchoring devices which must be built into other work for the installation of access doors. Coordinate delivery with other trades to avoid delaying the work.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened packaging, dry and undamaged with seals and labels intact.
- C. Handle and store to prevent damage to frames, panels and operating mechanisms.

1.7 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout.
- B. Special Warranty:
 - 1. Provide a written Warranty, signed by the manufacturer, and the Installer agreeing to repair or replace doors and panels that do not meet the requirements, or that fail in materials or workmanship.
 - 2. Warranty Period: Two (2) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. J. L. Industries, Inc.
 - 2. Karp Associates, Inc.
 - 3. Larsen=s Manufacturing Co.
 - 4. Milcor (Gibraltar Building Products).
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 ACCESS DOORS

A. General: Manufacturer=s standard fully-welded steel construction. Provide units with means for anchoring properly to the adjacent construction.

B. Non-Fire-Rated Units:

- Doors:
 - a. Flush Units: 14 gage, minimum.
 - b. Recessed Units: 18 gage, minimum.
- 2. Hinges: Stainless steel, piano or pin type, concealed and continuous, 175 degrees opening, constant force closure, spring type.
- 3. Operation: Flush screw driver slot for quarter turn cam latch with welded steel access sleeves at recessed panel doors.
- C. Fire-Rated Units: As required for the fire-rating, but not less than the following:
 - 1. Doors: Steel-faced, insulated core panel, 20 gage minimum.
 - 2. Hinges: Stainless steel, piano or pin type, concealed and continuous, 175 degrees opening, constant force closure with spring or other self-closing mechanism.
 - 3. Operation: Flush screw driver slot for quarter turn cam latch.

D. Unit Construction Types:

- Non-Fire-Rated:
 - a. Flush: Flush door with bead to give the unit a frameless appearance.
 - b. Recessed: Recessed door to allow installation of acoustical tile, gypsum board or similar finish into the recess to provide a concealed appearance. Units for plaster or mortarbed to have integral expanded metal lath.
 - Universal: Flush door with exposed frame, Exposed flange of frame not to exceed 1" in width.
- 2. Fire-Rated: Flush insulated door with exposed frame. Exposed flange of frame not to exceed 1" in width, unless approved otherwise.

2.3 FABRICATION

- A. General: Fabricate each access door assembly as an integral unit, complete, with all necessary parts, and ready for installation.
- B. Steel Access Doors and Frames: Fabricate units of continuous welded steel construction. Fill and grind welds smooth and flush with adjacent surfaces. Fabricate units square. Furnish attachment devices and fasteners of the type required to secure the units to the adjacent substrate. All doors in fire-rated assemblies shall have been tested and have a Class B, 1-1/2 hour fire-rating label attached.
- C. Frames and Flanges:
 - 1. Fabricate frames from 16 gage steel, minimum, with exposed flanges approximately 1" in width around the perimeter of the frame for units to be installed

in the following construction types, except as noted:

- a. Exposed concrete.
- Exposed masonry.
- c. Gypsum board.
- d. Plaster.
- e. Ceramic tile.
- f. Wood paneling, flush type with wood inlay to match the adjacent panel.
- 2. For installation in masonry construction, fabricate frames with adjustable metal masonry anchors.
- 3. For installation in plaster finish, fabricate frames with galvanized expanded metal lath, and exposed casing bead welded to the perimeter of the frame.
- D. Access doors and frames for installation in concrete, masonry, plaster and ceramic tile shall be flush, stainless steel; #4 satin finish: Model DSC-214M by Karp Associates or approved equal.
- E. Access doors for installation in gypsum board shall be concealed frame, recessed; finish as selected: Model KDW by Karp Associates or approved equal.
- F. For recessed panel doors, provide access sleeves for each locking device. Furnish plastic grommets. Install in a hole cut thru the finish material.
- G. Finish: Phosphate treated and shop painted with the manufacturer=s standard rust inhibitive primer.

2.4 ACCESSORIES

- A. Anchorage Devices:
 - 1. Devices of the type required to secure units to the abutting structure.

2.5 SCHEDULE

- A. General: Where not otherwise indicated, provide access doors in accordance with the following:
 - 1. Size: As required to comfortably achieve the purpose for which access is required.
 - 2. Types:
 - a. Flush: In non-public areas that are not restrooms, conference rooms or offices.
 - b. Recessed: In all public areas, restrooms, conference rooms and offices.
 - c. Universal: In exposed concrete and masonry surfaces.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - Verify that rough openings for the units are correctly located and properly sized.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install units in accordance with the manufacturer's published instructions, where indicated on Drawings, and where required for access.
- B. Coordinate with mechanical, plumbing and electrical trades and other work requiring access.
- C. Position units to provide convenient access to concealed work requiring access.
- D. Set frames in position accurately and securely attached to supports with face panels plumb and level in relation to the adjacent finish surfaces.
- E. Field paint surfaces exposed to view. See Section 09900 Painting.
- F. Built-in anchors and grouting of frames in concrete and masonry is included in Sections of Divisions 3 and 4.

3.3 PROTECTION

A. Institute and maintain protective measures and take other precautions necessary to ensure that all assemblies will be without damage and deterioration at the time of final acceptance.

3.4 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Adjust hardware and panels after installation for proper operation.
- C. Remove and replace panels and frames that are warped, bowed, twisted or otherwise damaged.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect installed units for location, alignment, plumb, level, attachment to framing, and

operation.

3.6 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean the units before final acceptance inspection.

END OF SECTION

SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. Finish Hardware items required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same Section as the doors and windows.
- 2. Hinges.
- 3. Locks, latches and bolts.
- 4. Push / Pull units.
- 5. Exit devices. (Panic Hardware).
- Closers.
- 7. Stops, holders and bumpers.
- 8. Thresholds.
- 9. Weatherstripping.
- 10. Miscellaneous hardware.
- B. Related Documents: The Contract Documents, as defined in Section 01110 Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other Documents.

C. Related Sections:

- 1. Section 06400 Architectural Woodwork: Cabinet hardware.
- 2. Section 08100 Hollow Metal Doors and Frames: Hardware for metal doors.
- 3. Section 08210 Wood Doors: Hardware for wood doors.
- 4. Section 08420 Aluminum Doors and Windows: Door and window hardware.

1.2 DESCRIPTION OF WORK

A. The extent of the finish hardware work is indicated on the Drawings and as specified herein, and includes furnishing and installing all finish hardware, trim, attachments and fastenings specified complete and proper. Under this Section include all hardware that is not specified in other Sections, whether or not such hardware is herein scheduled.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American National Standards Institute (ANSI);
 - ANSI A117.1 Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
 - 1. ANSI A156.1 National Standard for Butts and Hinges.
 - 2. ANSI A156.2 National Standard for Locks and Lock Trim.
 - ANSI A156.3 National Standard for Exit Devices.
 - 5. ANSI A156.4 National Standard for Closers.
 - 6. ANSI A156.5 Standard for Auxiliary Locks and Associated Products.
 - 7. ANSI A156.6 National Standard for Architectural Door Trim.
 - 8. ANSI A156.13 National Standard for Mortise Locks & Latches.
 - 9. ANSI A156.16 Standard for Auxiliary Hardware.
- C. American Society for Testing and Materials (ASTM):
 - 1. ASTM E 283 Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors.
- D. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
- E. Door Hardware Institute (DHI):
 - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames.
- F. National Fire Protection Association (NFPA):
 - 1. NFPA 80 Standard for Fire Doors and Other Opening Protectives.
 - 2. NFPA 101 Life Safety Code.
 - 3. NFPA 252 Standard Methods for Fire Tests of Door Assemblies.
- G. Underwriters Laboratories (UL):
 - 1. UL 10B Standard for Safety Fire Tests for Door Assemblies.
 - 2. UL 305 Panic Hardware.
- 1.4 HARDWARE FOR FIRE DOORS AND EXIT DOORS

A. Provide all hardware necessary to meet the requirements of NFPA No. 80 for fire doors and NFPA No. 101 for exit doors, as well as other requirements specified, even if such hardware is not specifically mentioned in the AHardware Schedule@. Such hardware shall bear a UL label.

1.5 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s technical product data for each item of hardware. Include information necessary to show compliance with requirements, instructions for installation, and maintenance of operating parts and finishes.
 - 2. Hardware List: Prepare and submit three (3) copies of a Hardware List for review. One (1) copy will be returned. The List shall identify each hardware item by manufacturer, manufacturer=s catalog number, and the exact location in the work. Indicate applicable scheduled door data, including the door numbers shown on the Drawings, the number of doors, hand of operation with an explanation of how the hand is determined, and indicate the active leaf where a pair of doors are required. Indicate hardware finishes.
 - a. Fastening Data: Indicate and clearly highlight Aexposed on surface of hardware@ fasteners, and through fastenings which would be exposed on the opposite door face when other than Phillips flat-head devices are proposed.
 - b. The Hardware List shall be in a suitable form to facilitate ready review by the Owner=s representative. Acceptance of the List will not relieve the Hardware Supplier from the responsibility for furnishing the job complete.
 - 3. Catalog Cuts: Submit three (3) catalog cuts of every item to be furnished. One (1) copy will be returned. Show all finishes, sizes, catalog numbers and pictures, include information necessary to show compliance with the requirements, instructions for installation, and maintenance of operating parts and finishes. Explain all abbreviations fully.
 - 4. Mounting Locations: Submit mounting locations data for each type of hardware required.
 - 5. Hardware Schedule: Submit a Hardware Schedule as indicated below. Coordinate hardware with the doors, frames and related work to ensure proper size, thickness, backset, hand, function and finish.
 - a. Final Hardware Schedule Content: Based on the finish hardware indicated, organize a Hardware Schedule into "Hardware Sets", indicating a complete designation of every item required for each door. Provide the following information:
 - 1). Type, style, function, size and finish of each hardware item.
 - 2). Name and manufacturer of each item.
 - 3). Fastenings and other pertinent information.

- 4). Location of the hardware set cross-referenced to the Drawings, both on the Floor Plans and Door Schedule.
- 5). Explanation of all abbreviations, symbols, codes, etc. contained in the Hardware Schedule.
- 6). Mounting locations for hardware.
- 7). Door and frame sizes and materials.
- 8). Keying and master keying information.
- b. Submittal Sequence: Submit the Hardware Schedule at the earliest possible date, particularly where acceptance of the Schedule must precede the fabrication of other work (e.g., aluminum frames) critical to maintaining the Project Construction Schedule. Include with the Schedule, product data, samples, Shop Drawings of other work affected by the finish hardware, and other information essential for a coordinated review of the Schedule. Acceptance of the Hardware List does not relieve the Hardware Supplier from the responsibility of furnishing the job complete for its intended purpose.
- 6. Keying Schedule: Submit with the final Hardware Schedule. Door designations to be the same as those on the Drawings.
- 7. Samples: Prior to submittal of the Final Hardware Schedule, and prior to ordering of the finish hardware, submit one (1) sample of each type of exposed hardware, as selected, with the required finish, including fasteners, and tagged with a full description for coordination with the Hardware Schedule.
 - a. Samples will be returned to the supplier. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of the operation, be used in the work, within limitations of the keying coordination requirements.
- B. Maintenance Related Items: Provide one (1) set of adjusting tools, two (2) sets of Maintenance Manuals, including lubrication requirements, parts list, manufacturers contact for ordering replacement parts and basic installation instructions for locksets, door closers, floor hinges and panic devices to the Owner=s representative. Provide four (4) blanks for each key type.

1.6 QUALITY ASSURANCE

- A. Perform work in accordance with the following requirements:
 - 1. ANSI A117.1
 - 2. NFPA 80.
 - 3. NFPA 101.
 - 4. NFPA 252.
 - 5. UL 10B.
 - 6. UL 305.

7. ADAAG.

B. Regulatory Requirements:

- Conform to the Building Code for requirements applicable to fire-rated doors and frames.
- 2. Conform to ADAAG for operation, mounting heights, and location of accessories.
- C. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- D. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- E. Supplier: A recognized architectural finish hardware supplier, who has been furnishing hardware to similar projects for a period of not less than five (5) years, and who employs an experienced architectural hardware consultant (AHC) for the preparation of Hardware Schedules, and consultation about project hardware requirements.
- F. Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Supplier to deliver the appropriate hardware, at the proper time and to the proper location (shop or Project Site) for installation.
- C. Deliver products to the Project Site in the manufacturer=s original, unopened packages, dry and undamaged, bearing the manufacturer=s name and identification of the hardware item.
- D. Retain the manufacturer=s original packaging. Ensure that the products are complete, including basic installation instructions. Label each product separately to be readily identifiable with the products indicated in the Hardware Schedule.
- E. Supplier to identify sets with the appropriate hardware set number.
- F. Contractor to catalogue the delivered hardware and store in a secure lockable enclosure, i.e. room, storage cabinet, etc.; store off the ground and on shelving. Set up procedures for limited access to the locked storage.
- G. Store products in their original protective packaging to prevent soiling, wetting and physical damage to materials, finishes and operating mechanisms.
- H. Handle to prevent damage to finish surfaces.
- I. Maintain protective covers on all units until installation has been completed. Remove coverings during final clean-up.

PART 2 PRODUCTS

2.1 HARDWARE, GENERAL

- A. Comply with ANSI / BHMA 156 Series standards applicable to the type and grade of hardware required.
- B. Hardware Characteristics: Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware are indicated in the Hardware Schedule at the end of this Section.
- C. Complete Assemblies: Scheduled hardware indicates the primary types and quality of hardware required and is not necessarily descriptive of all the components required. Provide standard accessory components, as necessary, to complete the assembly for a fully functional unit when installed. Provide finishes matching the primary unit where accessory components are exposed-to-view.
- D. Anchorage Devices: Furnish with each hardware type required.
 - Types: Wood and machine screws and other appropriate anchorage devices applicable to the type of substrate the item is to be fastened to. Do not provide exposed through-bolts or nuts unless clearly noted on the Hardware Schedule submittal, and approved by the Architect.
 - 2. Head Style: Phillips flat-head devices.
 - 3. Finish: Match the finish of the primary fastened hardware.
- E. Finish of Hardware: The finish of hardware shall be as stated herein below. Special care shall be taken to coordinate the finish of the various manufacturers to insure a uniform acceptable finish throughout. The finish of all hardware shall match the finish of the locksets, unless otherwise specified.
- F. Hardware manufacturers are listed, within each item Article below, for each hardware item to establish a standard of quality, and minimum functional requirements.

2.2 HINGES

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - 1. Hager.
 - 2. McKinney.
 - 3. Stanley.
 - 4. Henry Soss.
- B. Material:
 - Door Butts: Hinges shall be full mortise, template type, unless half mortise hinges are required; stainless steel. Hinges shall have non-rising loose pins, ball or oilite bearings, and flat button tips with matching plugs, except where otherwise specified. Provide hinges with stainless steel pins; steel pins with steel hinges; non-removable pins (NRP) for exterior and public interior exposures, non-rising for non-security exposure.

- 2. Where necessary to keep the door leaf clear of walls, casings, jambs or reveals in the door opening, furnish wide throw hinges of an approved type shall be furnished. For out-swinging doors, hinges shall have a set screw in the barrel to prevent removal of the pin when the door is closed. All doors over 7'-6" tall shall have one extra hinge for each additional two (2) feet of height, or fraction thereof.
- 3. Ball Bearing Type: Swaged, inner leaf beveled, square corners.
- 4. ANSI 156.1, Grade 1.

2.3 LOCKS, LATCHES AND BOLTS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - 1. Yale.
 - Corbin Russwin.
 - 3. Schlage.
 - 4. Best.
 - 5. Sargent.

B. Materials:

- Lock Uniformity: Except where otherwise specified, all locksets, latchsets, padlocks, cylinders and component parts, as specified hereinunder, shall be by one manufacturer. All internal parts of locksets, latchsets, padlocks and cylinders shall be brass or stainless steel to resist corrosion, and shall be marine function for exterior doors; US 32D finish.
- 2. Lockset Style: All hardware shall have lever handles with rose.
- 3. Locksets: ANSI A156.2. Grade 1. with removable cores.
- 4. Mortise Locks and Latches: ANSI / BHMA A156.13, Series 1000, Operational Grade 1, Security Grade 2; equip with 6-pin tumbler; 2-3/4" backset; keyed alike, or as approved. Levers and roses shall have screwless shanks, and no exposed fasteners.
- 5. Bored Locks and Latches: ANSI / BHMA A156.2, Series 4000, Grade 1. Locks for exterior doors shall have threaded roses or concealed machine screws.
- 6. Latch Sets: Provide release by turning lever, closing door, or turning emergency release key through a hole in the outside knob.
- 7. Cores: All lockset shall have removable cores to facilitate easy replacement.
 - To maintain the established existing master key system, all cylinder, locksets and padlocks shall be furnished with keyways to match the keyway of record.
 - b. Furnish with construction cores for use during construction and until Substantial Completion, or until a portion of the work has been accepted

by the Owner and the Owner=s representative has directed the cores to be change out.

- 8. Hospital Latches: Push / pull latchsets similar and equal to Glynn-Johnson HL6; 2" throw, 2-3/4" backset, to 161 cutout. Cover approximately 2-1/2", covers and handles of stainless steel, BHMA 630 finish, engraved APUSH@ and APULL@ on handles, push handle pointing up, pull handle pointing down.
- 9. Combination Locks: Heavy-duty, mechanical combination locksets with five pushbuttons, standard sized knobs, 3/4" deadlocking latch, 2-3/4" backset. Lock shall be operated by pressing two or more of the buttons in unison or individually in the proper sequence. The inside knob shall always operate the latch. Provide a keyed cylinder on the interior to permit setting the combination.
- 10. Strikes: ANSI Strikes, 1-1/4" x 4-7/8". All lock strikes shall have a curved lip of sufficient length to protect the trim and jamb, and shall be furnished with wrought box strikes with extended lip for latch bolts, except open strike plates may be used in wood frames. Provide dustproof strikes for foot bolts.
- Door Bolts: ANSI / BHMA 156.16. Provide dustproof strikes for bottom bolts, except for doors having metal thresholds. Automatic latching flush bolts: ANSI / BHMA A156.3, Type 25.
- 12. Door Hardware: Hand of lock shall be as shown on the Drawings. If the door hand is changed during construction, the Contractor shall make the necessary changes in the hardware at no additional cost to the Owner.
- 13. Lever Handles: All latch and locksets shall have lever handles with a rose. Lever handles for exit devices shall meet the test requirements of ANSI / BHMA A156.13 for mortise locks. Provide knurled or abrasive-coated lever handles for doors accessible to blind persons, and those which lead to dangerous areas.

C. Keying, General:

- All locksets, padlocks and cylinders shall be keyed, master keyed and grand master keyed at the factory where records shall be established and maintained, as directed.
 - a. All master keys and grand master keys shall be identified with a registry number, not stamped with AMaster@ or the letter AM@.
 - b. Individual room keys shall not be stamped with a key cut, but with a plain identification number only.
- 2. Maintain a security system to ensure that keys used during construction will not open doors after occupancy.
- 3. Provide three (3) keys for each lockset.
- 4. A Keying Schedule will be provided after the initial Hardware Schedule submittal. Keyed alike and master keying will be finalized at that time.
- 5. Furnish exterior door lock sets with removable I/C core cylinders and cylinder guards.

- 6. Restrict the distribution of construction keys. Maintain a record of all persons who receive keys and provide a copy of the record to the Owner=s representative upon request.
- 7. When directed by the Owner=s representative, remove the construction cores, install permanent cores, and return the construction cores to the manufacturer.

2.4 PUSH / PULL UNITS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - 1. H. B. Ives.
 - 2. Quality Hardware Manufacturing Co., Inc.
 - 3. Trimco.
 - 4. Rockwood.
- B. Materials: ANSI A156.6 for 0.050 inch thickness.

2.5 EXIT DEVICES (PANIC HARDWARE)

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - 1. Corbin Russwin.
 - 2. Yale.
 - 3. Von Duprin.
 - 4. Adams Rite.
 - 5. Monarch.
 - 6. Sargent.

B. Materials:

- Exit Devices: ANSI / BHMA A156.3, Grade 1. Provide adjustable strikes for rim type and vertical rod devices. Provide open back strikes for pairs of doors with mortise and vertical rod devices.
- Exit Locks With Alarm: ANSI / BHMA A156.5, Type E0431 (with full-width horizontal actuating bar) for single doors: Type E0431 (with actuating bar) or E0471 (with actuating bar and top and bottom bolts, both leaves active) for pairs of doors, unless otherwise specified. Provide terminals for connection to a remote indicting panel. Provide outside control key. Coordinate with the electrical subcontractor.
- 3. All exposed metal shall match the hardware.

- 4. Size and mount the units as indicated or, if not indicated, to comply with the manufacturer's recommendations for the exposure condition. Reinforce the substrate as recommended.
- 5. ANSI A156.3 Exit Device and Trim, Grade 1, surface-mounted vertical rod device with dust-proof strike at the head and threshold.

2.6 CLOSERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - 1. LCN.
 - Norton.
 - 3. Sargent.
 - 4. Corbin Russwin.
 - 5. Rixon-Firemark.
 - 6. Yale.
 - 7. Dorma.
- B. Materials and features:
 - 1. ANSI A156.4, Grade 1.
 - 2. ANSI A117.1.
 - 3. Non-Sized; adjustable 1-5.
 - 4. 180 degree door opening.
 - 5. Heavy-duty parallel arm.
 - 6. Standard cover.
 - 7. Exposed metal to match the hardware.
 - 8. Mounting: Hinge face mounting. Do not mount closers on the exterior side of doors.
 - 9. Size and mount units as indicated or, if not indicated, comply with the manufacturer's recommendations for the exposure condition. Reinforce the substrate as recommended.
 - 10. Provide drop brackets, mortise shoes, and long arms, as required.
 - 11. Closers attached to mineral core or particle filled doors shall be installed with sex bolts.
 - 12. Closers to be installed to allow the door to swing as shown on the Drawings.

13. All closers shall be ADAAG type, adjustable for spring setting, latch and sweep speed, and backcheck.

2.7 STOPS, HOLDERS AND BUMPERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - H. B. Ives.
 - 2. Quality Hardware Manufacturing Co., Inc.
 - 3. Trimco.
 - Dor-O-Matic.
 - Glenn-Johnson.

B. Materials:

- 1. Door Stop Mounting: Utilize the appropriate anchor method for the substrate encountered (plastic anchor, drywall anchor, expansion shield).
- 2. Provide resilient grey rubber bumpers.
- 3. Adjust the height of floor stops to suit the undercut of the adjacent door, and for out-swinging exterior doors.

2.8 THRESHOLDS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - Pemko.
 - National Guard.
 - 3. Reese.
 - 4. Wooster.
 - 5. Zero.

B. Thresholds by type:

- 1. Type as scheduled or indicated, or where not shown provide a manufacturer=s standard aluminum threshold, with standard cast or extruded non-slip profile. For out-swinging exterior doors use vinyl or silicone rubber inserts in the face of the stop. 2005V profile by Pemko, or as approved; non-slip.
- 2. Thresholds shall be one-piece, continuous the full width of the doorway.
- 3. Where not indicated, the dept of the flat portion of the threshold to be not less than the door frame depth.

- 4. End Returns: Mitered and returns where ends would otherwise be exposed; of material / finish to match the primary threshold unit.
- 5. Height: As indicated, except do not exceed 1/2" in height where handicapped access is required. Comply with ADAAG.
- 6. Method of fastening: Provide the manufacturer=s special concealed fastener system for installation for single units.
- 7. Sealant: For thresholds, single component, urethane complying with Section 07900 Joint Sealers.

2.9 WEATHERSTRIPPING

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - 1. Pemko.
 - 2. Reese.
 - 3. Zero.
- B. Continuous Adhesive-Applied Jamb & Head Weatherstripping: Continuous at jambs and head. Air leakage of weatherstripped doors shall not exceed 0.5 CFM of air per square foot or door when tested in accordance with ASTM E 283. Pemko PK88BL, or approved equal.

2.10 LIGHT PROOFING AND SOUNDPROOFING

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
 - National Guard.
 - 2. Pemko.
 - 3. Zero.
- B. A set shall include adjustable door stops at the head and jambs of doors, and an automatic door bottom of extruded aluminum, anodized finish, surface-applied, with vinyl fin seals between the plunger and housing. Door stops shall have a solid neoprene tube, silicone rubber, or closed-cell sponge gasket. Door bottoms shall have an adjustable operating rod and silicone rubber or closed-cell sponge neoprene gasket. Door stops shall be mitered at the corners.

2.11 MISCELLANEOUS HARDWARE

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the followings, as specified below:
- B. Products:
 - 1. Smoke Seals: Fire-tested, continuous at jambs and head; PK 55 by Pemko, or approved equal, color as selected.
 - 2. Bottom Sweep: 307 by Pemko, or approved equal, color as selected.

- 3. Overlap Astragal: 18 gauge minimum, but not less than required for the tested assembly provided for: 357 by Pemko, or approved equal, color as selected.
- 4. Split Astragal for doors: 18 gauge minimum, but not less than required for the tested assembly provided for; 309 by Pemko, or approved equal, color as selected.
- 5. Door Rain Drips: Extruded aluminum, not less than 0.08" thick, approximately 1-1/2" high x 5/8" projection, as selected. Align the bottom with the bottom edge of the door.
- 6. Overhead Rain Drip: Extruded aluminum, not less than 0.08" thick, approximately 1-1/2" high x 2-1/2" projection, with length equal to the overall door frame width. Align the bottom with the door frame rabbet; 346 by Pemko, or approved equal, color as selected.

2.12 SUBSTITUTIONS

A. Section 01600 - Product Requirements: Product Options: Substitutions permitted.

2.13 FABRICATION

- A. Finish and Base Material Designations: Number indicate BHMA Code or nearest traditional U.S. commercial finish.
- B. Where base material and quality of the finish are not otherwise indicated, provide at least commercially recognized marine quality as specified in the applicable Federal Specifications.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - 1. Verify that doors and frames are ready to receive the work, and that dimensions are as instructed by the manufacturer.
- C. Report in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until unsatisfactory the conditions have been corrected.

3.2 INSTALLATION

- A. Where not specified under other Sections to be performed by the manufacturer or supplier, machine, fit and drill wood and metal doors, and frames.
- B. Prepare doors of the various types to receive hardware, using templates and instructions provided with the hardware items for on-site work.

- C. Install each hardware item in compliance with the manufacturer's instructions and recommendations.
- D. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate the hardware removal, storage and reinstallation, or the application of surface protection with the finishing work specified in Section 09900 Painting. Do not install / reinstall surface-mounted items until the finishes have been completed on the substrates.
- E. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units not factory-prepared for anchorage fasteners, flush with the fastened surface. Space fasteners and anchors in accordance with industry standards.
- G. Set thresholds for exterior doors in a full bed of sealant to ensure waterproof integrity.

3.3 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Adjust and check each operating item of hardware and each door to ensure proper operation and function of every unit. Replace units which cannot be adjusted to operate freely and smoothly for their intended application.
- C. Adjust door control devices to compensate for the final operation of cooling and ventilating equipment.
- D. Door operation shall meet ADAAG requirements for opening force.
- E. Adjust operating hardware to provide a tight fit at contact points and weatherstripping, for smooth operation and weathertight closure.
- F. Lubricate moving components and hardware.
- G. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make a final check and adjustment of all hardware items.

3.4 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect hardware installations for proper locations, heights, level, plumb, square, attachment to the substrate and opening force.

3.5 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean adjacent surfaces soiled by the hardware installation.
- Clean operating items as necessary to restore proper function and finish of the hardware and doors.

3.6 TRAINING

A. Instruct the Owner=s personnel in the proper adjustment and maintenance of hardware items and finishes during final adjustment of the hardware.

3.7 HARDWARE SCHEDULE

A. Door Material Types:

AL Aluminum
SCWD Solid Core Wood
WD Wood
HM Hollow Metal

HW-2 Electrical, SCWD

Hinges	1-1/2pr	A5133, 4-1/2 x 4-1/2	US32D
Lockset	1ea	Series 4000, Keyedlock F86	US32D
Closer	1ea	Surface Mtd, Room side	Alum
Stop	1ea	Wall bumper	

HW-4 Storage, SCWD

A5133, 4-1/2 x 4-1/2	US32D
Series 4000, F86	US32D
Surface Mtd, Room side	Alum
Wall bumper	US32D
	Series 4000, F86 Surface Mtd, Room side

HW-5 Family Restroom, SCWD

Hinges	A5133, 4-1/2 x 4-1/2	US32D
Lockset	Series 4000, F76	US32D
Closer	Surface Mtd, Room side	Alum
Stop	Wall bumper	US32D

END OF SECTION

SECTION 09110

NON-LOAD-BEARING STEEL FRAMING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior non-load-bearing steel partition framing.
 - Metal furring.
 - Interior suspended steel ceiling framing.
 - 4. Blocking and backing plates.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 05500 Metal Fabrications: Backing plates.
 - 2. Section 06100 Rough Carpentry: Wood blocking.
 - 3. Section 07210 Building Insulation: Wall insulation.
 - 4. Section 07900 Joint Sealers: Sealants.
 - 5. Section 09250 Gypsum Board: Wall finish.

1.2 DESCRIPTION OF WORK

A. The extent of non-load-bearing steel framing work is indicated on the Drawings and as specified herein, and includes providing and installing interior partition framing, suspended ceiling framing, furring and metal blocking and backing plates in walls and ceilings.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - 2. ASTM C 645 Specification for Non-Structural Steel Framing Members.
 - 3. ASTM C 754 Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

- 4. ASTM C 840 Standard Specification for Application and Finishing of Gypsum Board.
- 5. ASTM C 954 Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033-inch (0.84 mm) to 0.112- inch (2.84 mm) in Thickness.
- 6. ASTM D 226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- 7. ASTM D 2201 Standard Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products.
- 8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- 9. ASTM E 90 Standard Test Method for Laboratory Measurements of Airborne Sound Transmission Loss of Building Partitions and Elements.
- 10. ASTM E 413 Classification for Rating Sound Insulation.
- ASTM E 119 Standard Test Method for Fire Tests of Building Construction and Materials.

C. Gypsum Association

1. GA-600 - Fire Resistance Design Manual.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data:
 - a. Framing Members: Standard materials and finish, product criteria, sizes and lengths, load charts and limitations.
 - b. Fasteners and Anchorage Devices: Standard materials and finish, sizes and load charts.

2. Shop Drawings:

- a. Indicate prefabricated work, component details, framing layout, framed openings, anchorage to the structure, type and location of fasteners and accessories or items required of other related work.
- b. Indicate the method of securing studs and framing to tracks, splicing, suspension, blocking / backing plates for support of items specified in other Sections and reinforcement of framing connections.
- c. Indicate details associated with fireproofing and acoustical seals.
- Indicate location of blocking and backing plates required for installation of other work.

3. Samples:

- a. If requested, two (2) 6" long sections of each shape required.
- 4. Assurance / Control Submittals:
 - a. Documentation of experience indicating compliance with the specified qualifications requirements.

1.5 QUALITY ASSURANCE

A. Qualifications:

- Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Protect metal framing materials from corrosion, deformation and other damage during delivery, storage and handling.
- C. Deliver products to the Project Site in the manufacturer=s original, unopened packages, containers or bundles bearing the brand name and identification of the manufacturer.
- D. Store and protect the metal framing with a weatherproof covering; ventilate to avoid condensation.
- E. Store, handle and install to prevent bending.

1.7 JOB CONDITIONS

A. Maintain environmental conditions (temperature, humidity and ventilation) within the limits recommended by the manufacturer. Do not install products under environmental conditions outside the manufacturer=s absolute limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Unimast Incorporated.
 - Dale Industries.
 - 3. National Gypsum Company (Gold Bond Building Products).
 - Clark Steel Framing Systems.

B. Section 01600 - Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Unimast Incorporated framing component designations are used within this Section to establish quality and to identify the framing types.
- B. Interior Non-Load-Bearing Partition Framing: ASTM C 645 and D 2201; galvanized sheet steel, channel shaped, punched for utility access, depth as indicated on the Drawings, gages as indicated below, unless indicated otherwise on the Drawings.
 - 1. 212ST20 2-1/2" Studs Unbraced Length 13 Feet or Less: Minimum 20 gage; Minimum 18 gage where greater than 13 feet.
 - 358ST22 3-5/8" Studs Unbraced Length 18 Feet or Less: Minimum 22 gage; Minimum 20 gage where greater than 18 feet.
 - 3. 600ST22 6" Studs Unbraced Length 25 Feet or Less: Minimum 22 gage: Minimum 20 gage where greater than 25 feet.
 - 4. Bridging Same depth and gage as the studs.
- C. Partition Floor Tracks and Runners: ASTM C 645 and D 2201; galvanized sheet steel, channel shaped, solid web, same depth and gage as the studs.
 - 1. 22 Gage Studs: CR22 x stud size.
 - 2. 20 Gage Studs: CR20 x stud size.
- D. Slip-Type Top Tracks: Provide one of the following:
 - Deflection Track: Steel sheet top runner, manufactured to prevent the cracking of finishes applied to interior partition framing resulting from deflection of the structure above; in thickness not less than the studs and in a width to accommodate the depth of the studs.
 - 2. Double Runner System: ASTM C 645 runner; inside runner with 2" deep flanges, in thickness not less than that indicated for the studs and fastened to the studs; outer runner sized to friction fit inside the inside runner.
 - 3. Single Long-Leg Runner System: ASTM C 645 runner with 2" deep flanges, in thickness not less than that indicated for the studs, installed with studs friction fit into the runner and with bridging located within 12" of the top of the studs.
- E. Partition Framing Fasteners: Corrosion-resistant, self-drilling, self-tapping steel screws.
 - 1. 22 Gage Framing: ASTM C 1002; 3/8", Type S, pan head.
 - 2. 20 Gage and Heavier Framing: ASTM C 954; 5/8", Types S-12, low-profile head.
- F. Partition Floor Track Anchorage Device: Low velocity, powder-actuated drive pins; minimum 0.140" shank diameter x 1-1/2" shank length with 7/8" diameter washer.
 - 1. DX 451 System using X-DNI Pins with R23 washers by Hilti.

- 2. Ramset / Red Head System using 4700SD Pins by ITW Ramset / Redhead.
- G. Wall Furring: ASTM C 645 and D 2201; galvanized sheet steel.
 - 1. Studs: ST22 2-1/2" deep, 22 gage.
 - 2. Studs: ST20 3-5/8" deep, 20 gage.
 - 3. Hat-Shaped Channels: 7/8" deep x 1-1/2" wide, 25 gage.
 - 4. AZ@ Furring Channels: 1-1/2" deep, 25 gage.
 - 5. Clip Angles: 2" x 2" x 1/4" less than stud width, 16 gage.
- H. Wall Furring to Concrete or Masonry Fasteners: Hex head sleeve anchors; minimum 1/4" diameter x minimum 1-1/8" embedment.
 - 1. Slv Anch H X 5/16 X 2-1/2 by Hilti.
 - 2. Dynabolt HN-1413 by ITW Ramset / Redhead.
- I. Furring Channel to Masonry or Concrete Fasteners: Low velocity, powder-actuated drive pins of size to suit the application.
- J. Suspended Interior Ceiling and Soffit Framing:
 - Wire Hangers: ASTM A 641 / A 641M, Class 1 zinc coating, soft temper, 0.162" diameter.
 - 2. Flat Hangers: Galvanized steel sheet, 1" x 3/16" x length required.
 - 3. Stud Hangers: ASTM C 645; cold rolled, galvanized sheet steel, channel shaped, cross braced, minimum 20 gage.
 - 4. Carrying Channels: ASTM C 645; cold rolled, galvanized sheet steel, channel shaped, minimum 20 gage.
 - 5. Furring Channels: ASTM C 645; galvanized, hat-shaped, 7/8" deep x 1-1/2" wide, 25 gage.
 - Tie Wire: ASTM A 641 / A 641M, Class 1 zinc coating, soft temper, 0.0625" diameter.
- K. Flat Straps and Backing Plates: ASTM D 2201; galvanized sheet steel, 22 gage, minimum.
- L. Isolation Strips at Exterior Walls and Suspended Concrete Floors: ASTM D 226; asphalt-saturated organic felt, Type I (No. 15 asphalt felt), non-perforated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Verification of existing conditions before starting the work.

- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - 1. Verify that building framing components are ready to receive the work.
 - 2. Verify that rough-in utilities are in-place and properly located where required.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION - PARTITION FRAMING

- A. Install framing and fasteners in accordance with the manufacturer's published instructions and ASTM C 754.
- B. Install tracks / runners at floors, ceilings, and structural walls and columns where steel framing abuts.
 - 1. Install asphalt felt between tracks / runners and wall / floor where framing is installed directly against exterior walls and floor slabs.
- C. Metal Stud Spacing: 16" on center, maximum.
- D. Align stud web openings horizontally; install horizontal bridging at 5' o.c., maximum.
- E. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate below suspended ceilings.
- F. Install studs so flanges point in the same direction.
- G. Splice studs with an 8" nested lap, minimum; fasten each stud flange with a minimum of two (2) screws.
- H. Construct corners using a minimum of three (3) studs.
- I. Install double studs at wall openings and door jambs, maximum 2" from each side and at the top of openings.
- J. Extend vertical jamb studs through suspended ceilings and attach to the underside of the structure above.
- K. Frame other openings, in the same manner as for doors.
- L. Place studs 2", minimum, from abutting walls.
- M. Install intermediate studs above and below openings to match the wall stud spacing.
- N. Fasten studs adjacent to door frames, partition intersections and corners to the top and bottom runner flanges in double-stud fashion.
 - Securely fasten studs to jamb and head anchor clips of doors and borrowed light frames.
 - 2. Place a cut-to-length section of runner horizontally with the web-flange bent at

each end; fasten with a minimum of two (2) fasteners per flange.

- 3. Position a cut-to-length stud (extending to the top runner) at vertical panel joints over door and window headers.
- O. Allow for deflection of roof or floor slabs.
 - 1. Leave 1/2" gap between the top end of studs and the top track.
- Ρ. Framing Fastening: Fasten framing in accordance with the manufacturer's published instructions and the schedule below, unless indicated otherwise on the Drawings.

Connection	<u>Fasteners</u>
Plates and Straps to StudsStud Web to Stud Web	
Runner to Header	1 screw at 16" on center, maximum 6" from each end

- Q. Install framing, blocking and backing plates between studs for the attachment of work by other trades.
- R. Install batt insulation in walls and ceilings, where indicated on the Drawings and as specified in Section 07210 - Building Insulation.

3.3 **INSTALLATION - FURRING**

A. **Furring Channels:**

- 1. Vertically spaced at 16" on center, maximum; attach to concrete and masonry surfaces with hammer set or powder-driven fasteners, staggered 24" o.c. on opposite flanges.
- 2. Nest channels 8" at splices and anchor with two (2) fasteners in each flange.
- В. Wall Furring:
 - Secure top and bottom runners to the structure in a manner to permit minor slab 1. deflection.
 - 2. Space metal furring at 16" on center, maximum.

INSTALLATION - CEILING AND SOFFIT FRAMING 3.4

- Suspend ceiling hangers directly from the building structure. Α.
 - 1. Install hangers plumb and free from contact with other objects within the ceiling plenum.
 - Where other construction within the ceiling plenum interferes with the typical 2. hanger spacing, install supplemental suspension members and hangers in the

- form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support the imposed ceiling loads.
- 3. Secure wire hangers by looping and wire-tying, either directly to the structure or to inserts.
- 4. Do not suspend framing from ducts, pipes or conduits.
- 5. Keep hangers and braces 2" clear of ducts, pipes and conduits.
- B. Install framing per ASTM C 754.
 - 1. Install framing components in the sizes and spacing indicated on the Drawings, but not less than that required by the referenced standards.
- C. Wire-tie furring channels to support the framing.
- D. Attach perimeter wall track or angle where the suspension system meets vertical surfaces. Mechanically join the main beam and cross-furring members to each other and fit furring into the wall track.
- E. Install compression struts and sway bracing system with tie wires as indicated on the Drawings, and as required by the Building Code.
 - 1. Provide hanger wires splayed 45 degrees within 3" of the intersection between main runners and cross runners, and at each light fixture.
 - 2. Provide compression struts and splayed hanger wire sway bracing as follows:
 - a. Within 6 feet of walls.
 - b. At 12 feet on centers, maximum.
- F. Install steel framing components for suspended ceilings so members for attachment of finish panels are level to within 1/8" in 12 feet measured lengthwise and transversely.
- G. When the ceiling system provides lateral support for permanent or relocatable partitions, the connection, ceiling system and lateral force bracing shall be sized and installed to support the reaction force of the partitions.

3.5 INSTALLATION - BLOCKING AND BRIDGING

- A. Screw attach wood blocking / metal backing plates between studs for the support of surface-mounted items for:
 - 1. Plumbing fixtures.
 - 2. Wall cabinets.
 - Toilet accessories.
 - 4. Hardware.
 - Architectural woodwork.
 - 6. Grab bars.

- 7. Writing / Bulletin boards.
- 8. Fire extinguishers and fire extinguisher cabinets.
- 9. Other items requiring backing for attachment.
- B. Provide bridging between opposite sides of plumbing cavity walls at a maximum of 36" o.c., vertically.

3.6 CONSTRUCTION

- A. Interface with Other Work:
 - 1. Coordinate the erection of studs at openings and with door and window frames.
 - 2. Coordinate the installation of anchors, supports and blocking for mechanical, electrical and building accessory items installed within the framing.
- B. Site Tolerances:
 - 1. Maximum Variation From True Position: 1/8" in 10 ft.
 - 2. Maximum Variation From Plumb: 1/8" in 10 ft.

3.7 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect metal framing erection, placement, spacing, seismic joints, expansion joints, fasteners and connections.

END OF SECTION

SECTION 09250

GYPSUM BOARD

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Gypsum board.
 - Cement board.
 - Gypsum sheathing.
 - 4. Accessories.
 - 5. Joint treatment.
 - 6. Finishing.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 06100 Rough Carpentry: Wood framing and blocking for attachment of gypsum board.
 - 2. Section 07210 Building Insulation: Sound attenuation blankets.
 - 3. Section 07900 Joint Sealers: Acoustical sealants.
 - 4. Section 09110 Non-Load Bearing Steel Framing: Metal framing for attachment of gypsum board.
 - 5. Section 09200 Lath and Plaster: Finish for gypsum sheathing.
 - 6. Section 09300 Tile: Ceramic wall finish on gypsum board.
 - 7. Section 09900 Painting: Field paint finish on gypsum board.

1.2 DESCRIPTION OF WORK

A. The extent of gypsum board work is indicated on the Drawings and Schedules and as specified herein, and includes providing and installing gypsum board for all applications, cement fiber board, gypsum sheathing, galvanized and PVC trim, accessories and the finishing of installations exposed to view.

1.3 REFERENCES

A. The publications listed below form a part of this Specification to the extent referenced.

Publications are referred to in the text by basic designation only.

- B. American Society for Testing and Materials (ASTM):
 - ASTM C 475 Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - ASTM C 630 Specification for Water-Resistant Gypsum Backing Board.
 - 3. ASTM C 840 Specification for the Application and Finishing of Gypsum Board.
 - ASTM C 954 Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 inches (0.84 mm) to 0.112 inches (2.84 mm) in Thickness.
 - 5. ASTM C 919 Practice for Use of Sealants in Acoustical Applications.
 - ASTM C 1002 Specification for Steel Self-Piercing Topping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - 7. ASTM C 1280 Specification for Application of Gypsum Sheathing.
 - 8. ASTM C 1325 Specification for Non-Asbestos Fiber-Mat Reinforced Cement Substrate Sheets.
 - 9. ASTM C 1396 Specification for Gypsum Board.
 - ATM D 3678 Specification for Rigid Poly (Vinyl Chloride) (PVC) Interior-Profile Extrusions.
 - 11. ASTM E 119 Test Methods for Fire Tests of Building Construction and Materials.
- C. Gypsum Association (GA):
 - 1. GA-201 Gypsum Board for Walls and Ceilings.
 - 2. GA-214 Recommended Specification for Levels of Gypsum Board Finish.
 - GA-216 Recommended Specifications for the Application and Finishing of Gypsum Board.
 - 4. GA-600 Fire Resistance Design Manual.
- D. International Code Council:
 - International Building Code (IBC), 2009.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s product specifications and installation instructions for each gypsum drywall component, including other data required to show compliance with these specifications.

12. Assurance / Control Submittals:

- a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
- b. Documentation of experience indicating compliance with the specified qualifications requirements.
- c. Test Reports from recognized testing laboratories, upon request.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- B. Fire-Resistance Ratings: Where gypsum drywall systems with fire-resistance ratings are indicated, provide materials and installations which are identical to those of applicable assemblies tested per ASTM E 119 by a fire testing laboratory acceptable to the authorities having jurisdiction.
 - 1. Provide fire-resistance rated assemblies identical to those indicated by reference to GA File No. S in GA AFire Resistance Design Manual@ or to design designations in U.L. AFire Resistance Directory@ or in listing of other testing and agencies acceptable to the authorities having jurisdiction.
- C. Single-Source Responsibility: Obtain gypsum board products from a single manufacturer, or from manufacturer=s recommended by the prime manufacturer of the gypsum board.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
 - B. Deliver products to the Project Site in the manufacturer=s original, unopened, undamaged packages, containers, or bundles bearing the brand name with identification labels intact.
 - B. Store materials inside and under cover; keep dry; protect from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes.
 - D. Neatly stack gypsum boards flat to prevent sagging.
 - **E.** Handle to prevent damage to edges, ends and surfaces.
 - **F.** Protect corner beads and trim from being bent and damaged.

1.7 JOB CONDITIONS

A. Environmental Requirements, General: Comply with requirements of the referenced gypsum board application standards and recommendations of the gypsum board manufacturer for environmental conditions before, during and after installation.

B. Ventilation: Ventilate building spaces as required to remove water in excess of that required for the drying of joint treatment materials immediately after application. Prevent drafts during hot, dry weather to avoid excessively rapid drying.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - United States Gypsum Co.
 - 2. National Gypsum Company (Gold Bond Building Products).
 - 3. Georgia-Pacific.
 - 4. Domtar Gypsum.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 GYPSUM BOARD MATERIALS

A. General:

- 1. Provide boards where called for on the Drawings in lengths to minimize the number of end-to-end butt joints.
- 2. United States Gypsum (Sheetrock) designations are used in this Section to identify gypsum board and accessory types, unless otherwise noted.
- B. Standard Gypsum Board: ASTM C 1396; natural finish, paper faces, 1/2" at ceilings and over wall furring, 5/8" thick at walls unless noted otherwise, 48" width, maximum practical length to meet conditions; ends square cut, tapered edges.
 - 1. Provide where gypsum board is called for unless otherwise indicated.
- C. Fire-Resistant Gypsum Wallboard: Type X, ASTM C 1396; paper faces, 2" at ceiling, or 5/8" thick at walls, 48" width, maximum practical length to meet conditions; ends square cut, edges tapered; providing at least 1-hour fire-retardant rating when tested in accordance with ASTM E 119.
 - 1. Provide where a fire-resistance rating is required.
- D. Water-Resistant Gypsum Backing Board: ASTM C 630; 2" at ceiling and over wall furring, and 5/8" thick at walls, 48" width, maximum practical length to meet conditions; ends square cut; edges tapered; ends and edges straight and solid. Board consisting of a non-combustible water-resistant gypsum core, surfaced on face and back with green treated water-repellent paper bonded to the core. Suitable for receiving paint or wallpaper and in compliance with IBC.
 - Provide at ceilings and walls in showers, toilets and other wet areas not scheduled for tile finish.

- E. Impact / Penetration-Resistant Gypsum Board: Type X, ASTM C 1396, 5/8" thick, 48" width, maximum practical length to meet the conditions, ends square cut; edges tapered; gypsum core with additives to enhance fire resistance; 1-hr fire-retardant rating when tested in accordance with ASTM E 119; surfaced with paper on the front, back and long edges; 0.30" GE Lexan film bonded to the back side to enhance impact / penetration resistance without penetration.
 - Provide at Corridor walls where indicated and other locations subject to high abuse.
- F. Tile Backing Board: 5/8" thick; inorganic fiberglass mat with moisture-resistant gypsum core; paperless; heat-cured acrylic coating; DensShield Tile Backer by Georgia-Pacific, or approved equal.
 - 1. Provide at shower and toilet room walls scheduled to receive ceramic tile finish.
- G. Cement Board: High density, glass fiber reinforced, 1/2" thick x 26" or 48" width; Durock Cement Board as manufactured by United States Gypsum or approved equal.
 - Provide at shower and toilet room walls scheduled to receive ceramic tile finish, and at ceilings and walls exposed to the weather.
- H. Gypsum Sheathing: ASTM C 630, 5/8" thick x 48" width x maximum practical length to meet conditions; ends square cut; edges tapered; ends and edges straight and solid. Weather and sag resistant for exterior applications, water repellent paper faces suitable for painting or plastering.
 - 1. Provide at ceilings and walls exposed to the weather.
- I. Solid Shaftliner: 1" thick x 23-7/8" or 47-3/4" width, Type X core, ASTM C 1396, moisture-resistant paper faces.
 - 1. Provide at fire-rated shaft and chase walls, as indicated.

2.3 FASTENERS

- A. Metal Framing: ASTM C 1002, Type S, Phillips-head recess, bugle head, corrosion-resistant, self-drilling, self-tapping, fine thread steel screws.
 - 1. One Layer 1/2@ board: 1" long.
 - 2. One Layer 5/8" board: 1-1/8" long.

2.4 TRIM ACCESSORIES

- A. General: Install vinyl plastic accessories at exterior work and work in high humidity and non-air-conditioned spaces. Use galvanized accessories at interior air conditioned, normally humidity areas.
- B. Plastic Accessories: High-Impact PVC plastic; ASTM D 3678, including corner beads, stop beads, casing beads, trim beads, baseboard and ceiling beads; as manufactured by Plastic Components, Inc. or approved equal.
- C. Galvanized Accessories:

- 1. Edge Trim: Galvanized steel casing.
 - a. AL@ shape for tight abutment at edges; Sheetrock Brand, No. 200-B.
 - b. AJ@ shape at other locations; Sheetrock Brand, No. 200-A.
- 2. Corner Beads: Galvanized steel corner beads, Sheetrock Brand, Dur-A-Bead Metal Corner Bead.
- 3. Control Joint: Roll-formed zinc; Sheetrock Brand, Zinc Control Joint.
- D. Pre-finished Corners: Pre-finished inside corner reinforcement as manufactured by ULTRAFLEX or approved equal.

2.5 JOINT TREATMENT MATERIALS

- A. General: Type recommended by the gypsum board manufacturer for the application, except as otherwise indicated; ASTM C 475.
- B. Reinforcing Tape: Cross-fibered paper with high tensile strength, roughened surface, accurate center crease; Sheetrock Brand, Heavy Drywall Joint Tape.
- C. Joint Compound:
 - 1. Single Grade: Multi-purpose grade for the entire application.
 - 2. Two Grades:
 - a. Interior and Exterior Work: Use chemically-setting, powder compound type for bedding and filling; Sheetrock Brand, Durabond Joint Compound or Easy Sand Lightweight Setting Type Joint Compound.
 - b. Topping: Use ready-mixed, lightweight, vinyl formulation or vinyl powder; Sheetrock Brand, Lite Taping Joint Compound.
- D. Water-Resistant Joint Compound: Special water-resistant type for treatment of joints, fastener heads and cut edges of water-resistant backing boards.

2.6 MISCELLANEOUS MATERIALS

- **A.** General: Provide auxiliary materials of the type and grade recommended by the gypsum board manufacturer.
- B. Adhesives: Commercial adhesives; ASTM C 557.
 - 1. Laminating: Special adhesive or joint compound specifically recommended by the gypsum board manufacturer for laminating gypsum boards.
 - 2. Water-Resistant: Type I, organic adhesive for ceramic tile; ANSI A136.1.
- C. Blocking and backing Plates: Provided by the trade responsible for Section 09110; located by the appropriate trade or as indicated below.
 - 1. Casework and Other Trades: 14 gage galvanized steel, minimum; 3" wide x length required.

2. Plumbing: Size as required for the relevant wall-hung fixture.

PART 3EXECUTION

3.1 EXAMINATION

- Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
 - B. Verification of Conditions: Verify that field measurements, surfaces, substrates, blocking and backing plates and conditions are as required, and ready to receive the work.
 - C. Report, in writing, prevailing conditions that will adversely affect the satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PRE-INSTALLATION MEETING

A. Prior to commencing work, meet on-site with the Owner=s representative and all concerned trades to review the work required by this Section.

3.3 GENERAL REQUIREMENTS

- A. Install in accordance with reference standards, manufacturer=s instructions, product technical bulletins, product catalog and product carton instructions and as required to comply with seismic requirements.
- B. Install supplementary framing, blocking and bracing at terminations in gypsum board assemblies to support fixtures, equipment, heavy trim, grab bars, toilet accessories, cabinetry, furnishings and similar construction.
- C. Install metal framing and gypsum board to enclose all pipes, ducts, conduit, etc. which would otherwise be exposed in finished areas, regardless of whether or not furring is shown or indicated on the Drawings.
- D. Enclosures to receive recessed light fixtures in fire-rated ceilings shall conform to U.L. requirements for materials and assemblies. Provide U.L. Design No. P251 enclosures over all types of recessed lights.
- E. Defects which appear in the work due to faulty workmanship and / or materials, shall be repaired and refinished with materials and in a manner to meet the requirements of this Section.

3.4 GYPSUM BOARD INSTALLATION REQUIREMENTS

- A. Application and Finishing Standards: Install in accordance with manufacturer=s published instructions, GA-201, GA-216 and ASTM C 840.
- B. Install sound attenuation blankets as indicated, prior to the application of gypsum boards unless the blankets can be readily installed after the boards have been installed.
- C. Locate exposed end-to-end butt joints as far as possible from the center of walls and ceilings, and stagger not less than 1'-0" in alternate courses.
- D. Install ceiling boards in the direction and in a manner that will minimize the number of

- end-to-end butt joints and avoid end joints in the central area of each ceilings. Stagger end joints at least 1'-0".
- E. Install wall / partition boards vertically to avoid end-to-end butt joints to the extent possible. Use boards of maximum practical lengths; where applicable stagger end joints. Cut and saw all openings; do not core and punch. Apply edge bead to all exposed edges and outside corners.
- F. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force boards into place.
- G. Locate either edge or end joins over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so both tapered edge joints abut, tapered edges against tapered edges and mill-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends.
- H. Stagger vertical joint over different studs on opposite sides of partitions.
- I. Attach gypsum boards to supplementary framing and blocking provided for additional support at openings and cutouts.
- J. Isolate perimeter of non-load bearing gypsum board partitions at structural abutments. Provide 1/4" to 1/2" space and trim edges with AJ@ type, semifinished, edge trim. Seal joints with acoustical sealant.
- K. Form control joints and expansion joints with space between edges of boards prepared to receive trim accessories.
- L. Space fasteners in boards in accordance with referenced standards and manufacturer=s recommendations, except as otherwise indicated.

3.5 GYPSUM BOARD INSTALLATION METHODS

- A. Single Layer Applications:
 - 1. Install single layer gypsum board in the most economical direction, with edges and ends attached to firm bearing surfaces; panel ends aligning and parallel with framing members.
 - 2. Apply gypsum board on walls and partitions vertically unless indicated otherwise, and provide sheet lengths that will minimize the number of end-to-end butt joints.
 - Apply gypsum board on furring with no end joints. Locate edge joints over furring members.
 - 4. Apply gypsum board on ceilings prior to application on walls and partitions, to the greatest extent possible.
 - 5. Treat cut edges, holes, fastener heads and joints, including those at angle intersections in water-resistant gypsum board, cement board and gypsum sheathing at exterior ceilings and soffits with the specified joint compound. Treat prior to installation.
 - 6. Do not align panel joints with edges of openings.

- В. Wall Tile Base: Where gypsum board is the base for thin-set ceramic tile and similar rigid applied wall finishes, install paperless tile backing boards.
- C. Showers, tubs and similar Awet@ areas: Install paperless tile backing boards. Apply with uncut long edges at the bottom of the work, and space 1/4" above fixture lips. Seal ends, cut edges and penetrations of each piece with water-resistant adhesive or, where recommended by the backing board manufacturer, with water-resistant joint compound.
- D. Double Layer Applications: Install gypsum backing board as the base layer and exposed gypsum board for the face layer.
 - 1. Apply base layer on ceilings prior to application of the base layer on walls / partitions; apply face layers in the same sequence. Offset joints between layers at least 10". Apply base layers at right angles to supports unless indicated otherwise.
 - 2. Apply base layer and face layer on walls / partitions horizontally with joints of the base layer over supports and face layer joints offset at least 10" with base layer joints.
 - 3. Apply base layer on furring members horizontally and the face layer either [vertically] [horizontally] with vertical joints offset at least one furring member. Locate edge joints of the base layer over furring members.
- E. Single Layer Fastening Methods: Secure boards to supports as follows:
 - 1. Install fasteners from the center of the panel field toward the ends and edges. Install fasteners 3/8" from ends and edges of panels, and as follows:
 - a. Ceiling: 12" on center, perimeter and field.
 - Walls: 12" o.c. in the field of walls and 8" o.c. at vertical joints. b.
- F. Double Layer Fastening Methods: Apply base layer of gypsum board and face layer to the base laver as follows:
 - 1. Fasten both the base layer and face layer to supports separately with screws.
- G. One-Hour Fire-Rated Chase Walls: Install framing studs, shaftliner and face layers in strict accordance with the manufacturer=s instructions and the Building Code
- Н. Sound-Rated Walls: Where work is indicated, including double layer work and work on resilient furring, seal the work at perimeters, control and expansion joints, openings and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions.
 - 1. Comply with the manufacturer=s recommendations for location of beads, and close off sound-flanking paths around and through the work, including sealing of partitions above acoustical ceilings. Provide sound insulation at ceilings where walls do not extend to the slab above.
- I. Acoustical Sealant Application: Comply with the details indicated or if not indicated, comply with applicable published recommendations of the AGypsum Construction Handbook@ by the United States Gypsum Company.
- J. Inspection of Acoustical Partitions: Gypsum board partitions with a STC rating of 52 or

- higher shall not be closed and finished until inspected and approved by the Owner=s representative.
- K. Shower Room Ceilings: Install paperless gypsum board in accordance with the manufacturer=s instructions. Reinforce all joints with glass mesh tape and coat the entire surface with a recommended compound to provide a smooth, even finish over the entire surface.

3.6 GYPSUM BOARD TRIM INSTALLATION

- A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as used to fasten the gypsum boards to supports. Otherwise, fasten flanges by nailing or stapling in accordance with the manufacturer=s instructions and recommendations.
- B. Install plastic corner beads at external corners. Use the longest practical lengths. Place edge trim where panels abut dissimilar materials.
- C. Install plastic edge trim wherever the edge of gypsum board would otherwise be exposed or semi-exposed. Provide the type with face flanges to receive joint compound except where semi-finishing type is indicated. Install AL@ trim where work is tightly abutted to other work and install special kerf-type where other work is kerfed to receive the long leg of AL@ trim. Install AJ@ trim where the edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).
- D. Install semi-finishing trim where indicated, and where exterior gypsum board edges are not covered by applied moldings or indicated to receive trim with face flanges covered with joint compound.
- E. Install plastic edge trim or pre-finished internal corners where indicated on wall panels at junctures with ceilings.
- F. Install control joints where indicated.

3.7 GYPSUM SHEATHING INSTALLATION

- A. Install gypsum sheathing in accordance with the manufacturer=s instructions, GA-201, GA-216 and GA-600.
 - Install single layer gypsum sheathing horizontally, with edges butted tight, tongue up with attachment to firm bearing.
- B. Provide construction control joints at a maximum of 30 feet o.c., at inside corners and at all intersections.
 - 1. Install sheathing with 1/4" space between the edge of the sheathing and adjacent walls, beams, columns, and fascia construction.
- C. Install screws at 12" o.c., maximum, to secure sheathing to the supporting substrate.
- Protect all exposed gypsum cores at perimeter edges and penetrations by covering the core with trim.
- E. Place edge trim where sheathing abuts dissimilar materials. Use longest practical lengths.

3.8 JOINT TREATMENT

- A. Reinforce interior and exterior corners at ceiling and wall surfaces.
- B. Apply 2" wide coated glass fiber tape at cement backer board corner joints.
- C. Install control joints the full height of partitions consistent with the lines of building spaces, with 1/4" gap between panels. Apply sealant at the back of the joint and a control joint accessory at the face.
- D. Apply 3" wide initial coating of joint compound, press tape firmly into the compound; wipe off excess compound. Apply a second coat of joint compound with tools of sufficient width to extend beyond the joint center approximately 4". Draw the joint compound down to a smooth even plane.
- E. Sand after the second and third applications of joint compound. Do not raise the nap of the paper when sanding.
- F. Feather coats onto adjoining surfaces with a maximum camber of 1/32" in 12".
- G. After drying or setting, sand or sponge joints, edges, and corners, eliminating high spots and excessive compound to produce a smooth finish surface.
- H. Prepare surfaces to receive subsequent finishes to a height of 6" above the finished ceiling.

3.9 GYPSUM BOARD FINISHING

A. General:

- Refer to Sections on painting, coatings and interior design documents for decorative finishes to be applied to gypsum board work. Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fastener heads, surface defects and elsewhere as required to prepare the work for decoration.
- 2. Prefill open joints and rounded or beveled edges, if any; use the type of compound recommended by the manufacturer.
- 3. Apply joint tape at joints between gypsum boards except where a trim accessory is indicated. Apply joint compound in three (3) coats (not including prefill of openings in the base); sand between the last two coats and after the last coat.
- B. Skim Coat: Wherever gypsum board is to receive eggshell, semigloss or gloss paint finish, apply a thin skim coat of joint compound over the entire gypsum board surface, after the three-coat joint and fastener treatment has been completed and is dry.
- C. Base for Acoustical Tile: Where gypsum board is indicated as the base for adhesively-applied acoustical tile, install tape and two (2) coats compound treatment, without sanding.
- D. Paperless Tile Backing Board or Cement Board Base for Ceramic Tile:
 - 1. Comply with recommendations of the backing board manufacturer for the treatment of joints behind ceramic tile.
 - 2. In areas to be tiled, treat fastener heads with water-resistant joint compound. Fill tapered edges in gypsum panels with water-resistant joint compound, embed joint

- tape firmly and wipe off excess compound; follow immediately with a second coat of water-resistant joint compound over the taping coat; do not crown the joint. Fold and embed tape in all interior corners to form true angles.
- 3. In areas not to be tiled, treat fastener heads and embed tape as indicated above using water-resistant joint compound but finish with two (2) coats of the joint compound used for regular gypsum board work.

3.10 GYPSUM BOARD FINISH LEVELS

- A. Apply finish in accordance with the manufacturer's published instructions and GA-214 Finish Levels.
 - Level 1: All joints and interior angles shall have tape embedded in joint compound. Surfaces shall be free of excess joint compound. Tool marks and ridges are acceptable.
 - Application: In plenum areas above ceilings, in attics, in mechanical a. rooms, in areas where the assembly is generally concealed and in other areas not normally exposed to view. Accessories not required unless shown or required by the rating. Where a fire-resistance rating is required for the gypsum board assembly, the details of construction shall be in accordance with reports of the fire tests of assemblies that have met the fire-rating requirement.
 - 2. Level 2: Embed tape and apply a separate first coat of joint compound to the tape, fasteners and trim flanges.
 - Application: Where panels are the substrate for tile. a.
 - Level 3: Embed tape and apply separate first and fill coats of joint compound to the 3. tape, fasteners and trim flanges.
 - Application: At surfaces scheduled to receive medium- or heavy-textured a. finishes or heavy wall coverings before painting.
 - 4. Level 4: Embed tape and apply separate first, fill and finish coats of joint compound to the tape, fasteners and trim flanges.
 - a. Application: At panel surfaces in mechanical and electrical spaces not exposed to public view.
 - 5. Level 5: Embed tape in joint compound at all joints and interior angles and apply three (3) separate coats of joint compound over all joints, angles, fastener heads and accessories. A thin skim coat of joint compound or a material manufactured especially for this purpose shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges. Prepared surfaces shall be coated with a primer / sealer prior to the application of finish paint. Refer to Specification Section 09900 - Painting.
 - Application: For use where gloss, semi-gloss, enamel and non-textured a. flat paints are specified, or where severe lighting conditions occur. Generally in all public areas exposed to view, except where noted otherwise, to provide a uniform surface and minimize the possibility of joints telegraphing and fasteners showing.

3.11 CONSTRUCTION

- A. Interface with Other Work:
 - Coordinate the installation of firestopping materials specified in Section 07840 at penetrations through fire-resistive rated gypsum board walls, partitions and ceilings.
 - 2. Coordinate the installation of joint sealers specified in Section 07900 at penetrations of non-fire-restive rated walls, partitions and ceilings.

3.12 PROTECTION

- A. Protect other work and finishes from damage by the gypsum board work.
- B. Provide protection and maintain conditions which will ensure that the gypsum board work will be without damage and deterioration at the time of Substantial Completion.

3.13 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect the installed work for alignment, attachment to the structure, backing plates and openings for installations by other trades.

3.14 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean and remove all debris from the Project Site.
- C. Leave the entire Project clean.

END OF SECTION

SECTION 09300

TILE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Floor tile and base tile.
 - 2. Quarry floor and base tile.
 - 3. Ceramic wall tile, shapes and trim units.
 - 4. Porcelain floor tile.
 - 5. Mortar and grout.
 - 6. Sealer.
 - 7. Metal edge strips.
 - 8. Waterproofing membrane.
 - 9. Tile feature strips and patterns set in paving.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 03300 Cast-In-Place Concrete: Substrate for application.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for application.
 - 3. Section 09250 Gypsum Board: Substrate for application.
 - Section 07900 Joint Sealers: Sealant at tile penetrations and dissimilar materials.

1.2 DESCRIPTION OF WORK

- A. The extent of the tile work is indicated on the Drawings and Schedules and as specified herein, and includes providing and installing floor, base and wall units made from clay and other ceramic materials, marble thresholds, waterproofing membrane under tile, metal edge strips, mortar and grout, sealing of expansion and other joints, and feature strips, patterns and accent tiles.
- B. Definition: The term Atile@ includes ceramic surfacing units and trim made from clay or other ceramic materials.

C. Joint sealants are specified in Section 07900 - Joint Sealers.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American National Standards Institute (ANSI):
 - 1. ANSI A108.4 Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive.
 - ANSI A108.5 Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
 - 3. ANSI A108.10 Installation of Grout in Tilework.
 - 4. ANSI A118.1 Specifications for Dry-Set Portland Cement Mortar.
 - 5. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
 - 6. ANSI A118.6 Specifications for Standard Cement Grouts for Tile Installation.
 - 7. ANSI A136.1 Organic Adhesives for Latex Portland Cement Mortar.
 - 8. ANSI A137.1 Specification for Ceramic Tile.
- C. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 373 Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products.
 - 2. ASTM C 482 Test Method for Bond Strength of Ceramic Tile to Portland Cement Plaster.
 - 3. ASTM C 485 Test Method for Measuring Warpage of Ceramic Tile.
 - 4. ASTM C 499 Test Method for Facial Dimensions and Thickness of Flat, Rectangular Ceramic Wall and Floor Tile.
 - 5. ASTM C 501 Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser.
 - 6. ASTM C 502 Test Method for Wedging of Flat, Rectangular Ceramic Wall and Floor Tile.
 - 7. ASTM C 648 Test Method for Breaking Strength of Ceramic Tile.
 - 8. ASTM C 650 Test Method for Resistance of Ceramic Tile to Chemical Substances.
 - ASTM C 1028 Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
- D. Americans with Disabilities Act Accessibility Guidelines (ADAAG):

- 1. Accessibility Guidelines for Buildings and Facilities.
- E. Tile Council of America, Inc. (TCA):
 - 1. Handbook for Ceramic Tile Installation.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s technical information and installation instructions for the materials required.
 - 2. Shop Drawings: Layout drawings and details for proper installation of the work.
 - 3. Samples:
 - a. Initial Selection:
 - Manufacturer=s color charts of actual tiles or sections of tile showing the full range of colors, textures and patterns available for each type of tile indicated.
 - 2) Grout and accessories requiring color selection.
 - b. Final Selection:
 - 1) Full size samples of each type of tile and each color and texture selected.
 - 2) Full size samples of each type of trim, accessory, and for each color.
 - 3) Marble thresholds, 6" long.
 - 4) Stair tread and nosing, full size.
 - 5) Metal edge strip, 6" long.
 - 4. Mock up:
 - a. Waterproof membrane.
 - b. 30 SF of tile for pattern and joint width conformation.
 - c. Expansion and control joints and metal edge strip installations.
 - 5. Assurance / Control Submittals:
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.

- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - Extra Products: Provide extra products as specified herein below.

1.5 COORDINATION

- A. Pre-Installation Meeting: Convene a Pre-Installation Meeting at the Project Site prior to beginning the work of this Section.
 - 1. Require attendance of the Contractor, Owner=s representative, Architect, and all impacted trades.
 - 2. Review coordination and environmental controls required for proper installation and ambient conditions in the areas to receive tile work.
 - 3. Review preparation and installation procedures, and the coordination and scheduling required with the related work.

1.6 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- B. Provide materials from a single source for each type and color of tile, grout, setting material and accessory.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Deliver tile and setting material to the Project Site in the manufacturer=s original, unopened cartons, bearing the name of the manufacturer, the certification mark of the Tile Council of America, and ready for use.
- C. Store materials under cover in a manner to prevent damage and contamination.
- D. Prevent damage and contamination of materials by water, foreign matter and other causes.

1.8 JOB CONDITIONS

A. Environmental Requirements:

- 1. Maintain adequate lighting for the installation of tile work. Lighting level shall be equal to permanent lighting level designed for areas receiving the tile work.
- 2. Maintain sufficient ventilation in areas where the work of this Section is being performed to allow the ceramic tile to properly set.
- 3. Maintain environmental conditions and protect the work during and after installation to comply with the referenced standards and the manufacturer=s

printed recommendations.

1.9 MAINTENANCE

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Extra Products: Upon completion of the installation, deliver to the Owner=s representative, replacement materials from the same production run as the installed materials; 2% of the total amount of each size, style and color.

PART 2PRODUCTS

2.1 GENERAL

- A. ANSI Standard For Ceramic Tile: Comply with ANSI A137.1 for the types and grades of tile indicated.
- B. ANSI Standard For Tile Installation Materials: Comply with the ANSI Standard referenced with the installation products and materials indicated.
- C. Colors, Texture and Patterns: For tile and other products requiring the selection of colors, surface textures and other appearance characteristics, provide products to match the characteristics indicated or, if not otherwise indicated, as selected from the manufacturer=s standards.

D. Mounting:

- 1. Where factory-mounted tile is required, provide back or edge mounted tile assemblies as standard with the manufacturer, unless another mounting method is indicated.
- 2. Where tile is indicted for installation in pools, fountains or at exterior or in wet areas, do not use back or edge mounted tile assemblies unless the tile manufacturer specifies that such type of mounting is suitable for that kind of use and has been successfully used on other projects.
- E. Trim Units: Provide tile trim units to match the characteristics of the adjoining flat tile and to comply with the following requirements:
 - 1. Size: As indicted, coordinate with the sizes and coursing of the adjoining flat tiles, where applicable.
 - 2. Shapes: As follows, selected from the manufacturer=s standard shapes:
 - a. Base for Portland Cement Mortar Installations: Coved.
 - b. Base for Thinset Mortar Installations: Coved.
 - c. Wainscot Cap for Thinset Mortar Installations: Surface bullnose.
 - d. External Corners for Thinset Installations: Surface bullnose.
 - e. Internal Corners: Internal cove with cap angle designed to member with the stretcher shapes.
 - f. Stair tread with nosing.

F. Coefficient of Friction (COF): ADAAG recommends a 0.6 or higher coefficient or higher in dry conditions to meet ADAAG requirements. Typically the COF is indicated in a wet and a dry number under those conditions for the average of the test results. In a situation where there is a potential for water, the tile should meet the COF of 0.6 or higher under wet conditions. ADAAG recommendation for COF on a ramped surface is 0.8. Static coefficient of friction tests are performed according to ASTM C 1028.

2.2 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturer's offering products which may be incorporated into the work include the following:
 - 1. Tile:
 - a. American Olean.
 - b. Dal-Tile Corp.
 - c. Crossville Inc.
 - 2. Mortar and Grout:
 - a. Hydroment by Bostik.
 - b. LATICRETE.
 - c. MAPEI, Corp.
 - 3. Latex-Portland Cement Mortar and Grout:
 - a. ProSpec (formerly Bonsal).
 - b. Hydroment by Bostik.
 - c. LATICRETE.
 - d. Summitville Tiles, Inc.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.3 TILE, GENERAL

- A. Tile: ANSI A137.1.
 - 1. Stain Resistance, CTI Stain Test: Unstainable.
 - 2. Surface Water Absorption, ASTM C 373: 0.5% Max.
 - 3. Abrasive Wear, ASTM C 501: 100.
 - 4. Breaking Strength, ASTM C 648: 250 lbs.
 - 5. Bond Strength, ASTM C 482: 50 psi.
 - 6. Facial Dimension (range), ASTM C 499: 1.5% Max.

- 7. Range of Thickness, ASTM C 499: 0.04" Max.
- 8. Warpage (Diagonal), ASTM C 485: ∀0.75% Max.
- 9. Wedging, ASTM C 502: 1% Max.
- 10. Chemical Resistance, ASTM C 650: Unaffected.
- 11. Coefficient of Friction, ASTM C 1028:
 - a. Dry > 0.7.
 - b. Wet > 0.6.
- 12. Scratch Hardness, Moh's Scale: > 8.

2.4 QUARRY TILE

- A. Dal-Tile, quarry tile, 4" x 8", or size and shape as selected.
- B. Color as selected.

2.5 CERAMIC TILE

- A. American Olean, 2" x 2", ceramic mosaic floor tile.
- B. American Olean, 4" x 4", ceramic glazed wall tile.
- C. Color as selected. Match existing wall and floor tiles used at the Gate 9 Airport Restrooms.

2.6 PORCELAIN TILE.

- A. 20" x 20" or size and shape as selected, glazed floor tile by Dal-Tile.
- B. 6" x 6" or as indicated unglazed floor tile at the exterior by Dal-Tile.
- C. Color as selected. Match existing wall and floor tiles used at the Gate 9 Airport restrooms.
 - 1. Accent tiles shall be a contrasting color to the field tile color.

2.7 WATERPROOF MEMBRANE

- A. Liquid Applied Membrane: Thin, load-bearing, flexible waterproofing system, self-curing liquid rubber polymer, cold-applied with integral reinforcing fabric to form a seamless membrane.
- B. LATICRETE #9235 Waterproofing Membrane by LATICRETE or approved equal.

2.8 MISCELLANEOUS MATERIALS

A. Metal Edge Strip: Brass or stainless steel, as selected; 1/8" wide at the top edge with integral provision for anchorage to mortar bed or substrate, unless otherwise indicated. Style to be as indicated, or appropriate to the use; as manufactured by Schluter Systems, or approved equal. Style to be as appropriate for the use intended

- B. Wall Access Panel: Schluter-REMA by Schluter Systems or approved equal.
- C. Adhesives: Water-resistant organic; ANSI A136.1.
- D. Water: Clean and potable.
- E. Reinforcing Mesh: 2" x 2", 16 gauge, galvanized, welded wire.
- F. Tile / Grout Sealer: Non-flammable, water-soluble, penetrating methyl siliconate clear solution, stain-resistant, matte sealer.
- G. Tile, Grout and Masonry Cleaner: As approved by the tile, grout and sealer manufacturers.

2.9 MORTAR AND GROUT MIX

A. Mix and proportion mortar and grout materials in strict accordance with the manufacturer's instructions.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates slope to drains and conditions are as required, and ready to receive the work.
 - 1. Examine areas to be covered for surface contamination which requires correction before work begins.
- C. Report in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Do not use sealers or curing compounds on concrete slabs to be covered with tile. Slabs shall be covered and wet cured for a minimum of seven (7) days. Surfaces to receive tile installed by the thin set method shall have a wood float finish, be true to within 1/8" in 10 feet, and pitched to drains where required.
- B. Areas requiring fill, patching or leveling shall be prepared by the General Contractor. Do not use gypsum or asphalt leveling compounds.
- C. Seal substrate surface cracks with filler.
- D. Clean substrate surfaces to remove dust, dirt, mortar, etc.
- E. Surfaces to be covered shall be left clean, free of dust, plaster, sealer or curing compounds and form oil. Any such contamination shall be removed by the responsible trade.
- F. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

- G. Protect surrounding work from damage or disfiguration.
- H. Vacuum clean existing substrate and damp clean.
- Wet down or wash and remove excess water from dry or dusty concrete or masonry surfaces just prior to the application of pavers.

3.3 INSTALLATION

- A. Installation Methods: Install ceramic tile in accordance with the TCA, AHandbook for Ceramic Tile Installation@, ANSI A108.4, and ANSI A108.5.
- B. Waterproof Membrane: Install waterproof membrane for all elevated slab floors exposed to water or wind blown rain. For example, install at elevated slabs where Showers, Baths, Kitchens, washing and other wet activities occur; and at terraces and roofs over interior spaces.
 - 1. Contractor shall obtain architect or owner=s representative approval of membrane prior to proceeding with the work.
- C. Installation by Thick Bed Method:
 - 1. Spread mortar to approximately one-half the desired bed thickness, then place reinforcing mesh. Lap mesh 3", minimum, and place additional mortar over the mesh to bring the bed to the desired thickness. Rod and compact mortar with a steel trowel. The setting bed shall be, minimum, 1-1/2" thick.
 - a. Note: The setting bed may be reduced to a nominal 1" thickness and the reinforcing omitted when bonding directly to concrete slabs or a load-bearing membrane.
 - 2. Before placing tile on a green or wet screed bed, apply a slurry of bond coat to the mortar bed using a flat trowel.
 - 3. Tile shall be placed in the wet slurry coat before the surface dries, or apply a slurry bond coat applied to the back of each tile just prior to placing the tile on the bed.
 - 4. Before the mortar takes initial set, place and beat each tile into place with a wooden block or rubber mallet to embed it and to even the surface.
 - 5. Maintain uniform joint widths.
 - 6. The surface shall be pitched to drains, where indicated, or as required.
 - 7. On hardened screed or mortar bed, tiles may be installed by the thin set method if proper tolerances are provided.
- D. Installation by Thin Set Method:
 - 1. Apply mortar with a notched trowel using a scraping motion to work the material into good contact with the substrate to be covered. A trowel having notches approximately 1/4" x 3/8" is recommended for pavers. Apply only as much mortar as can be covered within 30 minutes, or while the surface is still tacky.
 - 2. Trowel a small quantity of mortar onto the back of each piece of tile. Set the tile in place and tap with a small beating block to ensure 100% full bedding and a true

surface.

- 3. Align tile to provide uniform joints and then allow to set until firm.
- Clean excess mortar from the surface of tiles with a wet cloth or sponge while the mortar is still fresh.

E. Mortar:

- 1. Machine Mixing: Mortar mixer shall be the rotating blade type. Place mixing liquid in the mixer, start the machine and add sand, then cement. Mix only long enough to wet out the batch. Stop the mixer and dump the mortar promptly. Do not overmix.
- 2. Hand Mixing: Pre-mix the dry ingredients (sand and cement). Place mixing liquid in a clean container or mixing box, add the dry materials and mix. Adjust the amount of liquid or dry materials to obtain the proper consistency.
- F. Joints: 1/8" width for tiles less than 12"; 3/16" for tiles to 25"; 1/4" for quarry tile.
- G. Expansion and Control Joints:
 - 1. Existing joints in concrete subfloors must be carried through the tile and shall conform to the architectural details.
 - 2. Expansion joints shall be installed where tile abuts restraining surfaces, such as perimeter walls, curbs, columns, corners, etc.
 - Interior installations shall have expansion joints spaced a maximum of 30 feet o.c. in both directions. Exterior areas shall have expansion joints spaced a maximum of 15' in both directions. Expansion joints shall be raked out or cut through the setting bed to the supporting slab or structure below.
- H. Edge Strips: Install at transitions to other flooring materials, for control joints, or as indicated.
- I. Grouting and Pointing Joints:
 - Joints shall be grouted or pointed with Latex-Portland Cement Grout or Epoxy Grout.
 - 2. Joints shall be packed full and free of voids and pits. Tool or rake as specified.
 - 3. Excess mortar shall be cleaned from the surface of tiles with water and a damp sponge as the work progresses, while the mortar is fresh and before it hardens.
- J. Provide a slope in tile setting material as required to slope surfaces at floor transitions and floor drains.
- K. Lay tile to the pattern indicated. Do not interrupt the tile pattern through wall openings.
- L. Cut and fit tile to penetrations through the tile leaving a sealant joint space. Form corners and bases neatly. Align floor, base, and wall joints.
- M. Place tile joints uniform in width, subject to variance in the tolerance allowed in the tile size. Make joints watertight, without voids, cracks, excess mortar or excess grout.

- N. Sound the tile after setting. Replace hollow sounding units.
- O. Expansion, Contraction, Control Joints and Separation: Install tile and a pair of metal edge strips in accordance with the applicable TCA Handbook methods. Keep joints free of adhesive, mortar, and grout; seal. Refer to Section 07900 Joint Sealers.
- P. Allow tile to set for a minimum of 48 hours prior to grouting.
- Q. Grout tile joints in accordance with ANSI A108.10.
- R. Caulk plumbing penetrations thru floor tiles and plumbing and electrical penetrations thru wall tiles.
- S. Apply sealant to the junction of tile and dissimilar materials and at the junction of dissimilar planes as specified in Section 07900 Joint Sealers. Apply in strict accordance with the manufacturer=s instructions.
- T. Install metal edge strips at transitions to other flooring materials, and where tile edges are exposed. Lock solidly into the setting bed.

3.4 INSTALLATION SCHEDULE

- A. Paver Tiles: Install by thick (mortar) bed method. Place waterproof membrane under exterior pavers with occupiable space below. Apply sealer per manufacturer=s instructions.
- B. Quarry Tiles: Install by thin set on hardened thick bed method at Freezer floors; thick bed method at Kitchens; thin set at Bars. Place waterproof membrane at Dishwashing, garbage areas and exterior spaces over structural slabs and other wet areas.
- C. Ceramic Tiles: Install by thin set or thick (mortar) bed method. Place waterproofing membrane at Baths, Shower Rooms, areas on structural slabs subject to wind blown water and other wet areas.

3.5 TOLERANCE

A. Maintain an even and flat plane with variation not to exceed 1/8" in 8 feet. Adjacent tile shall be flush with no protruding or recessed tile edges. The tiles shall be cut neatly and fit to built-in work, penetrations, corners, changes in elevations and other variations.

3.6 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect installations for joint widths, alignment, edge treatments, sound bonding to the substrates.

3.7 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Upon the completion of placement and grouting, clean all ceramic tile surfaces free of foreign matter.
- C. Remove excess mortar and grout from floor, base, and wall surfaces without damaging the

surfaces.

- D. Clean unglazed tiles with acid solutions only when permitted by the tile and grout manufacturer=s printed instructions, but not sooner than fourteen (14) days after installation. Protect metal surfaces, cast iron and vitreous plumbing fixtures from the effects of acid cleaning. Flush surfaces with clean water before and after cleaning.
- E. Clean tile only with cleaning materials recommended by tile and grout manufacturers.
- F. Remove hardened grout film or haze using Laticrete TC-500, Grout and Masonry Cleaner.
 - 1. Saturate grout joints with water, then dampen the surface with the cleaner.
 - 2. Allow to soak 15 30 minutes and then use a power scrubbing machine with a coarse texture nylon pad to remove the grout film.
- G. Clean unglazed pavers by sprinkling fine sand (30 60 mesh) over the surface before scrubbing.
 - 1. Caution: Do not use sand on soft glazed tiles.
- H. Do not use acid type cleaners on colored grout joints.
- Leave finished installations clean and free of cracked, chipped, broken, un-bonded and otherwise defective work.

3.8 PROTECTION

- A. When recommended by the tile manufacturer, apply a protective coat of neutral protective cleaner to the completed floor and wall tiles.
- B. Protect installed tile work with kraft paper or other heavy covering to prevent staining, damage and wear.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven (7) days after grouting has been completed.
- D. Immediately before final inspection, remove the protective coverings and rinse the neutral cleaner from the tile surfaces.
- E. Before final inspection, remove protective coverings and rinse neutral cleaner from the tile surfaces.

END OF SECTION

SECTION 09510

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Suspended metal grid ceiling system.
 - Perimeter trim.
 - 3. Acoustical ceiling panels, suspended.
 - 4. Acoustical ceiling panels, adhered to substrate.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 07900 Joint Sealers: Caulking of joints between perimeter trim and vertical surfaces.
 - 2. Section 15850 Air Outlets and Inlets: Air diffusion devices in the ceiling system.
- 3. Section 16510 Interior Luminaires: Light fixtures attached to the ceiling system.

1.2 DESCRIPTION OF WORK

A. The extent of acoustical ceilings work is indicated on the Drawings and as specified herein, and includes providing and installing suspended metal ceiling grid, perimeter trim, acoustical panels, hanger devices, sealants and accessories for complete adhered and suspended ceiling systems.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 641 Specification for Zinc-Coated (Galvanized Carbon Steel Wire.
 - 2. ASTM C 635 Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 - 3. ASTM C 636 Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

- 4. ASTM D 1779 Specification for Adhesive for Acoustical Materials.
- ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
- 6. ASTM E 400 Test Method for Analysis of Ores, Minerals, and Rocks by the Fire Assay Preconcentration Optical Emission Spectroscopy.
- **7.** ASTM E 413 Classification for Rating Sound Insulation.
- 8. ASTM E 580 Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.
- ASTM E 795 Practices for Mounting Test Specimens During Sound Absorption Tests.
- 10. ASTM E 1264 Classification for Acoustical Ceiling Products.
- C. International Building Code (IBC):
 - 1. Applicable edition in the Project jurisdiction.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - Product Data: Manufacturer=s product specifications and installation instructions for each suspension system and type of seismic brace, and each acoustical ceiling material required; certified laboratory test reports and other data as necessary to show compliance with these Specifications.
 - 2. Shop Drawings: Four (4) sets of accurate layout drawings based on actual field measurements. Indicate all mechanical and electrical items, access panels and other items to be installed in the finished ceiling including seismic bracing locations.
 - 3. Samples:
 - a. Two 6" x 6" square samples of each acoustical unit required, showing the full range of exposed pattern, texture and color to be expected in the finished work.
 - b. Two 12" long samples of each exposed runner.
 - c. Two 12" long samples of each edge molding.
 - Assurance / Control Submittals.
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - Documentation of experience indicating compliance with the specified qualifications requirements.
 - 5. Maintenance Information: Manufacturer=s recommendations for cleaning and refinishing acoustical units, including precautions against materials and methods

which may be detrimental to finishes and acoustical performance.

- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Submit a written special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 COORDINATION

- A. Coordinate layout and installation of the suspension system components and acoustical ceilings with other work supported by or penetrating through the ceilings, including light fixtures, HVAC equipment, fire-suppression system components, and partition systems, if any.
- B. Furnish layouts for inserts, clips and other supports required to be installed by other trades for support of acoustical ceilings.
 - Furnish concrete inserts, steel deck hanger clips and similar devices to other trades for installation well in advance of the time needed for the coordination of other work.
- C. Interface with Other Work:
 - 1. Schedule the installation of acoustical units after all interior wet work has been completed.
 - 2. Install after all major above ceiling work has been completed.
 - 3. Coordinate the location of hangers with other work.
 - 4. Do not install acoustical units until after the building has been enclosed, dust generating activities have ceased, overhead work is complete, tested and approved and the air conditioning system is operational.

1.6 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience; acceptable to the manufacturer as shown by a current written statement from the suspension system manufacturer.
- C. Fire Performance Characteristics: Provide acoustical ceiling components identical to those tested for the following fire performance characteristics, according to the ASTM test method indicated, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify the acoustical ceiling components with appropriate marking by the testing and inspecting agency.
 - 1. Surface Burning characteristics: Tested per ASTM E 84.
 - a. Flame Spread: 25 or less.

- b. Smoke Developed: 50 or less.
- D. Fire Resistance Ratings: As indicated by reference to the design designation in UL AFire Resistance Directory@ or AFM Approval Guide@ for floor, roof or beam assemblies in which acoustical ceilings function as a fire protective membrane, tested per ASTM E 119.
- E. Fire-Rated Ceilings: Provide protection materials for lighting fixtures and air ducts to comply with the requirements indicated for a rated assembly; conform to UL requirements for materials and assemblies. Provide UL Design No. P 251 enclosures over all types of recessed lights.
- F. Limitations: The ceiling and suspension system shall be installed with vertical and lateral seismic bracing as required by the building code. Ceilings shall not support materials or other building components. Ductwork, grilles, light fixtures, plumbing and like work shall have their own support system and shall not use the ceiling system or ceiling suspension wires for support.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened containers, dry and undamaged, with the brand name and type clearly marked.
- C. Store under cover in dry, weathertight conditions.
- Protect against damage from moisture, direct sunlight, surface contamination and other causes.
- E. Handle acoustical ceiling units carefully to prevent chipping of edges and damage to the units in any way.

1.8 JOB CONDITIONS

- A. Do not install acoustical ceiling units until the space has been enclosed and weatherproof, wet work in the space is completed and nominally dry, work above the ceiling is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.
- B. Maintain a uniform temperature range of 60E 85E F and relative humidity of no more than 70%, continuously, prior to, during and after installation.

1.9 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:
 - Provide a written Warranty jointly signed by the manufacturer and the installer certifying that the products and the installation is free of defective materials and workmanship and will repair or replace any defective component or the system, in whole or in part, as necessary to restore the product to its original intended state and integrity.
 - 2. Warranty Period: Ten (10) years from the date of Substantial Completion, subject

to conditions.

1.10 MAINTENANCE

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Extra Materials: Provide not less than 5% of each type, size and color of acoustical ceiling panels, from the same manufacturer as the materials installed.

PART 2PRODUCTS

2.1 MANUFACTURERS

- A. Suspension System: Subject to compliance with the Project requirements, manufacturers offering specified items which may be incorporated into the work include the following:
 - 1. Armstrong Building Products (Armstrong World Industries, Inc.).
 - 2. Chicago Metallic Corp.
 - 3. USG Interiors, Inc. (USG Corp.).
- B. Acoustical Panels: Subject to compliance with the Project requirements, manufacturers offering the specified items which may be incorporated into the work include the following:
 - 1. Armstrong World Industries, Inc.
 - 2. USG Interiors.
 - 3. Celotex Building Products Division (CertainTeed).
- C. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 METAL CEILING GRID SUSPENSION SYSTEMS, GENERAL

- A. Standard for Metal Suspension Systems: Intermediate duty, hot-dipped galvanized steel suspension grid of the type and finish indicated; comply with applicable requirements of ASTM C 635.
- B. Edge Moldings and Trim: Metal or extruded plastic of the types and profiles indicated, or if not indicated, provide manufacturer=s standard molding for edges and penetrations of the ceiling which fits with the type of edge detail and suspension system indicated.
 - 1. For lay-in panels with reveal edge details, provide a stepped edge molding which forms a reveal of the same depth and width as that formed between the edge of panels and flanges at exposed suspension members.
 - 2. For circular penetrations of the ceiling, provide edge moldings fabricated to the diameter required to fit the penetration exactly.
- C. Finishes and Colors: Provide manufacturer=s standard finish for the type of system indicated, unless otherwise required. For exposed suspension members and accessories with painted finish, provide the color indicated or, if not otherwise indicated, as selected from the manufacturer=s full range of standard colors.
 - 1. High Humidity Finish: Comply with ASTM C 635 requirements for ACoating

Classification for Severe Environment Performance@.

- D. Attachment Devices: Size for five (5) times the design load indicated in ASTM C 635, Table 1, Direct Hung.
 - 1. Concrete Inserts: Inserts formed from hot-dipped galvanized sheet steel and designed for attachment to concrete and for embedment in concrete, with holes or loops for attachment of hanger wires.
 - 2. Surface Devices: Standard, hot-dipped galvanized, angle hangers, shot stud attached to concrete ceilings.
- E. Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1 coating, sized for three (3) times the hanger design load indicated in ASTM C 635, Table 1, Direct Hung; not less than 12 gage for vertical hangers and lateral sway bracing.
- F. Stiffner Braces: Manufacturer=s standard vertical struts or attachment to hanger wires to hold the suspension system in place during seismic events.
- G. Hold-Down Clips for Non-Fire-Rated Ceilings: For exterior ceilings and for interior ceilings with lay-in panels weighing less than one pound per square foot, provide hold-down clips spaced at 2'-0" o.c. on all cross tees.

2.3 EXPOSED METAL CEILING GRID SYSTEM

- A. Intermediate duty, hot-dipped galvanized steel, exposed AT@; 15/16" wide; one-hour fire rated; plug-in positive-lock connections, locking tee ends, main tees punched with cross tee and hanger wire holes, stabilizer bars, clips and splices, baked on paint finish; ASTM C 635. Color white, unless selected otherwise.
 - 1. Model:
 - a. Prelude XL 15/16", Exposed Tee System by Armstrong.
 - b. 1200 Seismic System by Chicago Metallic Corp.
 - c. Donn Brand DX / DXL System by USG.
 - 2. Moldings: Shadow molding with exposed flange to match the grid system. Color to match the grid.
 - 3. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.4 CONCEALED METAL CEILING GRID SYSTEM

- A. Intermediate duty, hot-dipped galvanized steel, concealed, 15/16" wide, one-hour fire rated; plug-in positive lock connections, locking tee ends; ASTM C 635.
 - 1. Model:
 - a. Prelude Concealed Tee System by Armstrong.
 - b. Donn Brand DXL, Concealed Ceiling Suspension System by USG.
 - 2. Moldings: Shadow.

3. Section 01600 - Product Requirements: Product Options: Substitutions permitted.

2.5 ACOUSTICAL CEILING UNITS, GENERAL

- A. Standard for Acoustical Ceiling Units: Provide manufacturer=s standard units of the configuration indicated which are prepared for the mounting method designated and which comply with the requirements of ASTM E 400, including those indicated by reference to type, form, pattern, grade, noise reduction coefficient (NRC), ceiling attenuation class (CAC), light reflectance (LR), edge detail, and joint detail, if any.
 - 1. Mounting Method for Measuring NRC: No. 7 (mechanically mounted on special metal support), ASTM E 400 mounting per ASTM E 795.

B. Sound Attenuation Performance:

- 1. Provide acoustical ceiling units with ratings for ceiling attenuation class (CAC) values of the range indicated as determined in accordance with ASTM E 413.
- 2. Provide acoustical ceiling units with ratings for ceiling sound attenuation class (STC) of the range indicated as determined according to AMA 1-II ACeiling Sound Transmission Test by Two-Room Method@ with ceilings continuous at partitions and supported by a metal suspension system of a type appropriate for ceiling units of the configuration indicated (concealed for tile, exposed for panels).
- C. Colors, Textures, and Patterns: Provide products to match the appearance characteristics indicated or, if not otherwise indicated, as selected from the manufacturer=s standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of the quality designated.

2.6 ACOUSTICAL CEILING UNITS

- A. General: The following product type numbers in parenthesis are those used on the Drawings.
- B. (ACT-1): Mineral fiber, fire-resistant, Class A: flame spread 25 or less per ASTM E 1264, R-1.6, weight 1.0 lbs / sf, factory-applied vinyl latex paint finish, medium texture, non-directional, NRC .50 -.60, CAC 30 40, LR 0.80, angled tegular edge, 24" x 24" x 5/8". Color as selected.
 - 1. Cortega, #816 by Armstrong.
 - 2. Sandrift by USG.
 - 3. Natural Fissured by Celotex.
 - 4. Section 01600 Product Requirements: Product Options: Substitutions permitted.
- C. (ACT-2): Mineral fiber, fire-resistant, Class A: flame spread 25 or less per ASTM E 1264, R-1.6, weight 0.9 lbs / sf, factory-applied vinyl latex paint finish, medium texture, non-directional, NRC .45-.55, CAC 30 40, LR 0.80, beveled edge, for concealed spline installations, 12" x 12" x 5/8". Color as selected.
 - 1. Cortega, #745 by Armstrong.
 - 2. Section 01600 Product Requirements: Product Options: Substitutions permitted.

- D. (ACT-3): Ceramic and mineral fabric composite, fire resistant, Class A: flame spread 25 or less per ASTM E 1264, R-1.4, weight 1.40 lbs / sf, scrubbable factory-applied vinyl plastic paint, sag resistant, fine fissured, perforated, NRC .50 -.60, CAC 35 39, LR 0.80, square edge, lay-in, 24" x 24" x 5/8". Color white.
 - 1. Ceramaguard #607 by Armstrong.
 - 2. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.7 MISCELLANEOUS MATERIALS

- A. Tile Adhesive: Type recommended by the tile manufacturer, bearing UL label of Class 0 25 flame spread; comply with ASTM D 1779.
- B. Tile Fasteners: Cadmium plated, type recommended by the tile manufacturer, length for not less than 1/2" penetration of substrate.
- C. Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag sealant intended for interior sealing of concealed construction joints.
 - 1. Tremco Acoustical sealant by Tremco Global Sealants.
 - 2. USG Acoustical Sealant by United States Gypsum Co.
 - 3. Chem-Calk 600 by Bostik.
 - 4. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.8 WAVE PROFILE ALUMINUM CEILING FIN IN SELECTED ENAMEL FINISH

- A. Hunter Douglas Pte. Ltd.21 Jalan Buron #02.02Singapore 619478Jennifer Ang (+65) 6862 4466
- B. Custom Linear V2000 Sliding Screen
- C. Size, HT 200 mm (RAL 1013 Pearlweib)
- 2.9 TRANSLUCENT PVC-BASED SHEETING, CLASS 1 LIGHTWEIGHT, WITH PRINTABLE SURFACE
 - A. Barrisol print your mindo 01050 Blanc Extra mot
 - B. Casa Int'l Pte. Ltd.
 102 F Posir Panjang Raod #07-06/07
 Citilink Warehouse Complex, Singapore 118530
 Ms. Jessie Tan (+65) 6274 9366

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Verification of existing conditions before starting the work.

- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - Verify that the layout of hangers will not interfere with other work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Layout:

- Locate the system on room axes according to the Reflected Ceiling Plan, as indicated on the Drawings, or establish layout to balance the border tile widths at opposite edges of each ceiling. Avoid the use of less than 1/2 width units at borders.
- 2. Where the acoustical ceiling continues thru a wall opening, continue the established pattern without interruption. One row of panels may be cut to less than full size, if necessary, to establish the pattern in the adjoining room.
- B. Substrate Testing: Before installing adhesively applied tile on wet-placed substrates such as cast-in-place concrete or plaster, test and verify that the moisture level is below the tile manufacturer=s recommended limits.
- C. Prior to installation, store acoustical units for 24 hours, minimum, at the same temperature and relative humidity as the space where the materials are to be installed.

3.3 INSTALLATION - GENERAL

A. Install materials in accordance with the manufacturer=s printed instructions, ASTM C 635 and ASTM C 636, in compliance with governing regulations, fire-resistance rating requirements as indicated, and industry standards applicable to the work.

3.4 INSTALLATION - CEILING SUSPENSION SYSTEM

A. General:

- 1. Install the suspension system with hangers supported only from the building structural members. Locate hangers not less than 6" from each end and spaced at 4'-0" o.c. along each carrying channel or direct-hung runnner, unless otherwise indicated.
- 2. Install metal hanger tabs and clips attached to the structure above where required for the attachment of suspension wires.
- 3. Secure wire hangers by looping and wire-tying, either directly to the structure or to inserts, eye-screws, or other devices which are secure, appropriate for the substrate, and which will not deteriorate or fail with age or temperature change.
- 4. Install hangers plumb and free from contact with insulation, ductwork and other objects within the ceiling plenum which are not part of the supporting structure or ceiling suspension system. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying

channels to span the extra distance. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing. Where carrying members are spliced, avoid visible displacement of the face plane of adjacent members.

- 5. Install edge molding of the type indicated, at the perimeter of acoustical ceiling areas, at the intersection of the ceiling and vertical surfaces and at locations where necessary to conceal the edges of acoustical units. Use the longest practical lengths. Provide edge molding at junctions with other interruptions. Secure at 16" o.c., maximum.
- 6. Screw-attach moldings to the substrate at intervals not over 16" o.c. and not more than 3" from ends; level with the ceiling suspension system. Miter corners accurately and connect securely.
- 7. Rivet cross tee's to the edge molding at 48" o.c., typical.
- 8. In areas larger than 144 sq. ft., rivet the cross tees on two adjacent walls per ASTM E 580.
- 9. Do not support components on the main runners or cross runners if the weight causes the total dead load to exceed the allowable limits. Do not eccentrically load the system or produce rotation of runners.
- Install the system level, in a uniform plane, and free of twists, warp, dents, scratches, stains and other defects. Variation from Flat and Level Surface: 1/8" in 12 feet.
- 11. Caulk between the edge molding and adjacent vertical surfaces.

B. Vertical Support System:

- 1. Suspension wires shall be 12 gage, minimum, galvanized, attached to main runners at 4'-0" o.c., maximum, spacing in both directions.
- 2. Each wire shall be anchored to the structure above with a device capable of supporting 75 pounds, minimum.
- 3. Wires supporting fixtures shall be capable of supporting four (4) times the fixture weight.
- 4. Suspension wires shall not hang more than 1:6 out of plumb, unless counter sloping wires are provided.
- 5. Wires shall not be attached to or bend around interfering work such as piping, conduits or ductwork. Trapeze or equivalent devices shall be used where obstructions interfere with direct suspension. Trapeze shall be suspended back-to-back, 1-1/2" cold formed channels, minimum, for spans up to 6 feet.

C. Horizontal Support System:

- 1. Lateral support systems for ceilings shall be shown in detail on the Shop Drawings.
- 2. Adequacy of the system shall be demonstrated by calculations, and / or test results, including adequacy of main runner intersection connections. Tests shall show a capacity of twice the calculated load to provide a safety factor.

- 3. Provisions shall be made for possible differential movement between ceilings and side walls. The terminal ends of each main and each cross runner shall be wire supported. Wall trim angles shall not provide the primary support for runners.
- 4. Lateral support of ceilings shall not be provided by the angle trim, and runners shall not be riveted to the wall trim.
- D. Lateral Force Bracing: Provide cross-bracing for ceilings greater than 144 sq. ft. in area.
 - Where substantiating calculations are not provided, horizontal restraints shall be provided by four No. 12 gage wires secured to a main runner within 2" of a cross runner intersection and splayed 90 degrees from each other at an angle not exceeding 45 degrees from the plane of the ceiling. A strut fastened to the main runner shall extended up to and be fastened to a structural member supporting the roof or floor above. The strut shall be adequate to resist the vertical force induced by the bracing wires. These horizontal restraint points shall be placed 12 feet o.c. in both directions with the first point within 6 feet of each wall. Attachment of the restraint wires to the structure shall be adequate for the load imposed.

3.5 INSTALLATION - ACOUSTICAL PANELS

- A. Arrange acoustical units and orient directionally patterned units, if any, in the manner shown on the Drawings. If not indicated, install units with the pattern running in one direction only, as approved by the Owner=s representative.
- B. Fit the acoustical units in place free of damaged edges, dents, scratches, stains and other defects; install level and in a uniform plane.
- C. Hold Down Clips: For fire-rated and security areas, install clips spaced at 2'-0" o.c. on all cross tees. Do not install clips at panels for access and at one panel in each corner of a room.
- D. Mark access panels with a black adhesive dot.

3.6 INSTALLATION - ACOUSTICAL PANELS ADHERED TO SUBSTRATE

- A. Install acoustical panels in accordance with the panel manufacturer=s recommendations.
- B. Apply adhesive in accordance with the adhesive manufacturer=s printed directions, unless directed otherwise.
- C. Spread only enough adhesive to permit the installation of acoustical panels before initial set.
- **D.** Scribe panels to walls, columns, junction boxes, and other appurtenances as necessary to produce tight joints.

3.7 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect the ceiling grid suspension system installation, connections to the structure, edge moldings and acoustical panel placement.

3.8 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Adjust the grid for alignment and level.
- C. Adjust the acoustical panels for proper fit within the grid.

3.9 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Clean exposed surfaces of the ceiling grid, perimeter trim, and acoustical panels.
- C. Comply with the manufacturer=s instructions for cleaning and touch-up of minor finish damage.
- D. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 09650

RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Vinyl composition tile.
 - 2. Vinyl strip flooring.
 - Resilient edge strip.
 - 4. Rubber base.
 - Accessories.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 03300 Cast-In-Place Concrete: Substrate for resilient flooring.
 - 2. Section 09250 Gypsum Board: Substrate for rubber base.
 - 3. Section 09680 Carpet: Floor finish for rubber base.

1.2 DESCRIPTION OF WORK

A. The extent of resilient flooring work is indicated on the Drawings and Schedule and as specified herein, and includes providing and installing adhesively applied vinyl composition tile, sheet vinyl flooring, resilient edge strips, rubber base and resilient accessories.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - ASTM E 648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
 - 2. ASTM E 662 Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
 - 3. ASTM F 1066 Specification for Vinyl Composition Floor Tile.
 - ASTM F 1303 Specification for Sheet Vinyl Floor Covering with Backing.

5. ASTM F 1861 - Specification for Resilient Wall Base.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Technical data and installation instructions for each type of resilient flooring and accessory.
 - a. Two boxes 2" x 2" samples of each type, color and pattern in the specified group of the manufacturer selected for each type of resilient flooring required.
 - b. 12" x 12" samples of sheet flooring.
 - c. Samples of available colors for resilient edge strip.
 - d. One chain of available colors for rubber base selection.
 - 3. Final Samples: Submit for final selection.
 - a. 2 full-size samples of vinyl tile.
 - b. 2 12" x 12" samples of sheet flooring.
 - c. 2 6" long sections of resilient edge strip.
 - d. 2 6" long sections of rubber base.
 - 4. Assurance / Control Submittals:
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
 - 5. Maintenance Instructions: Submit two (2) copies of the manufacturer=s recommended maintenance practices for each type of resilient flooring and accessory required.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- B. Regulatory Requirements:
 - 1. Critical Radiant Flux in Accordance with ASTM E 648: More than 0.45 watts per square centimeter.
 - 2. Specific Optical Smoke Density in Accordance with ASTM E 662: Less than 450.

C. Where possible, provide each type of resilient flooring and accessories as the products of a single manufacturer, including recommended primers, adhesives, and sealants.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer's original, unopened cartons and containers, each bearing the name of the product and manufacturer, project identification, and shipping and handling instructions.
- C. Store the materials in a dry space, protected from the weather, with ambient temperatures maintained between 50E and 90E F.
- D. Store on a flat surface.

1.7 JOB CONDITIONS

- A. Environmental Requirements:
 - Do not install flooring over concrete slabs until the slabs have been cured and are sufficiently dry to achieve bond with the adhesive, as determined by the manufacturer=s recommended bond and moisture tests.
 - 2. Store materials in the area of installation for at least 48 hours prior to beginning installation.
 - 3. Maintain the ambient temperature required by the adhesive manufacturer, not less than 72E F, for three days prior to, during, and for 48 hours after installation.
 - 4. Install flooring and accessories only after other finishing operations, including painting, have been completed.
 - 5. Provide adequate temporary ventilation during installation.

1.8 MAINTENANCE

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Extra Materials: At completion of the installation deliver to the Project Site extra materials from the same manufactured lot as the materials installed in the following quantities:
 - 1. Not less than 2% of each type, size and color of flooring.
 - 2. Not less than 2% of each type and color of base.
 - 3. Submittal of extra accent tiles is not necessary.
- C. Maintenance Data: Submit two (2) copies of manufacturer=s recommended maintenance practices for each type of flooring and accessory required, recommended maintenance materials and suggested schedule for cleaning.

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering the specified items which may be incorporated into the work include the following:
 - 1. Tile:
 - a. Armstrong Floor Products (Armstrong World Industries, Inc.).
 - b. Azrock.
 - c. Tarkett.
 - 2. Vinyl Strip Flooring at play area:
 - a. Forbo Flooring
 190 Middle Road #19-05 Fortune Center
 Singapore, 188979
 Ms. Perlyn Nyu (+65) 9878-7806
 - b. Azrock.
 - c. Tarkett.
 - 3. Resilient Edge Strip:
 - a. Armstrong Floor Products.
 - c. Roppe.
 - d. Burke Mercer.
 - 4. Rubber Base:
 - a. Armstrong Floor Products.
 - b. Roppe.
 - c. Burke Mercer.
- B. Colors, patters and sizes shall be selected from the manufacturer=s standards.
- C. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Vinyl Composition Tile:12" x 1/8" gauge composition tile; resistant to alkali, grease and oils and able to withstand static loads of 125 psi; ASTM F 1066; marbleized design as follows:
 - 1. (VCT-1):
 - a. Standard Excelon, Imperial Texture by Armstrong.
 - b. Cortina Colors & Classics by Azrock.

- c. Standard, Expressions by Tarkett.
- 2. (VCT 2):
 - a. Standard Excelon, Imperial Texture by Armstrong.
 - b. Cortina Colors & Classics by Azrock.
 - c. Standard, Expressions by Tarkett.
- Color: As selected. Accent tile (VCT-2) shall be a color contrasting with the field tile color.
- B. Vinyl Strip Flooring: Alura Wood WG1228/soft tiger wood. Randomly placed, high-contrast colors to create a terrazzo-like pattern; ASTM F 1303 Class A backing, Grade 1, Type II, flexible fiberglass; 6 feet wide; nominal 0.080A overall gage, 0.050" nominal wear layer; modified static load limit 500 psi; as follows:
 - 1. Connection Corlon by Armstrong.
 - 2. Section 01600 Product Requirements: Product Options: Substitutions permitted.
- C. Resilient Edge Strip: Homogeneous vinyl, tapered or bullnose edge, 1/8" thick x not less than 1" wide x length required or roll length. Color as selected.
- D. Rubber Base (RB-1): Type TP, [4"] [6"] high, 1/8" thick, topset; standard coved toe at resilient flooring, toeless at carpet; matching end stops and preformed corner units; roll length; ASTM F 1861. Color as selected.

2.3 ACCESSORIES

- A Subfloor Filler: Latex underlayment mixed with undiluted latex liquid, furnished by or as recommended by the resilient flooring manufacturer as follows:
 - Levelayer I by Dayton Superior Corporation.
 - 2. No. 345 by W.W. Henry Company.
 - 3. Section 01600 Product Requirements: Product Options: Substitutions permitted.
- B. Concrete Slab Primer: Non-staining type as recommended by the resilient flooring manufacturer.
- C. Adhesive: As recommended by the resilient flooring manufacturer for the specific material and substrate conditions; clear color.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Verification of existing conditions before starting the work.

- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.
- D. Start of the flooring installation shall indicated acceptance of the subfloor conditions and full responsibility for the completed work.

3.2 PREPARATION

- A. Prepare the substrate for product installation in accordance with the manufacturer's published instructions.
- B. Remove existing floor finishes and prepare substrate as recommended by the flooring manufacturer.
- C. Remove curing compounds not compatible with the adhesive. Avoid organic solvents.
- D. Remove ridges, bumps and other irregularities in the substrate.
- E. Fill cracks, joints, holes and depressions with a subfloor filler and leveler recommended by the flooring manufacturer to achieve a smooth, flat, hard surface, with no more than 1/8" variation from plane within 10 feet in any direction.
- F. Prohibit traffic until the filler has cured.
- G. Broom clean and vacuum surfaces to be covered by resilient flooring; inspect the subfloor.
- H. Perform bond and moisture tests on concrete slabs to determine that concrete surfaces are sufficiently cured, dried and are ready to receive the flooring utilize a bond test recommended by the flooring manufacturer. Ensure that moisture content of the concrete substrate does not exceed 3% as measured by the Calcium Carbide Hygrometer Procedure or 5% by normal Protimeter.
- I. If bond test is negative, surface the existing floor with latex underlayment as recommended by the manufacturer.
- J. Apply concrete slab primer, if recommended by the flooring manufacturer, prior to the application of adhesive. Apply in compliance with the manufacturer=s instructions.

3.3 INSTALLATION - GENERAL

- A. Install resilient flooring using the methods indicated, and in strict compliance with the manufacturer=s recommendations.
- B. Maintain subfloor reference marks, penetrations, and openings that are in place or plainly marked for future cutting by repeating on the finished flooring. Use chalk or other non-permanent marking device.
- C. Cut flooring to and fit around all permanent fixtures, built-in furniture, cabinets, pipes, and outlets. Cut edges, and fit and scribe to walls and partitions after the field flooring has been installed.
- Extend flooring into toe spaces, door rabbets, closets and similar openings.

- E. Tightly cement flooring to the subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections.
- F. Install flooring on covers for telephone and electrical ducts, and other such items that occur within finished floor areas; maintain overall continuity of colors and patterns with pieces of flooring installed in the covers. Tightly cement edges to the perimeter of the floor around the covers and to the covers.
- G. Hand roll flooring at the perimeters of each covered area to ensure proper adhesion.

3.4 INSTALLATION - VINYL COMPOSITION TILE FLOORING

- A. Install the resilient tile flooring in accordance with the manufacturer's published instructions.
- B. Prime concrete slabs in contact with the ground with cut-back type primer as recommended by the flooring manufacturer. Work the primer with a non-absorptive base completely into the surface. Primer shall be thoroughly dry before applying adhesive.
- C. Apply adhesive in accordance with the adhesive manufacturer=s printed directions, unless specified or directed otherwise. Apply only cut-back adhesive to primed concrete surfaces.
- D. Spread only enough adhesive to permit the installation of floor materials before initial set.
- E. Open only the number of floor tile cartons for the quantity of material required to cover each area. Mix tile pieces to ensure that noticeable shade variations do not occur within any one area.
- F. Install tile flooring in a checker board pattern, or as indicated. Start in the center of the room or area and work from the center towards the edges. Vary edge width as necessary to maintain full-size tiles in the field, but no edge tile shall be less than 1/2 the field tile size, except where irregular shaped rooms or conditions make it impossible. Keep tile lines and joints square, symmetrical, tight, and even; keep each floor in a true, level plane, except where indicated as sloped.
- G. Locate accent tiles where shown, or if not shown locate per Architect=s instructions.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances accurately for tight joints.
- I. Where flooring continues through a wall opening, continue the established pattern without interruption. One row of tiles may be cut to less than full size, if necessary, to establish the pattern in the adjoining room.
- J. Where an adjacent floor finish is dissimilar, terminate the resilient flooring at the centerline of openings or centerline of doors in the closed position.
- K. Press installed flooring with a 150 pound resilient flooring roller to attain full adhesion.

3.5 INSTALLATION – VINYL STRIP FLOORING – ALURA WOOD WG1228 SOFT TIGER WOOD

- A. Layout sheet flooring for as few seams as possible with economical use of materials.
- B. Match edges for color, pattern and shading at seams in compliance with the manufacturer=s recommendations.

- C. Prepare seams in the vinyl strip flooring in accordance with the manufacturer=s instructions for the most inconspicuous appearance. Seal continuously with fluid applied sealant or adhesive as required with the manufacturer.
- D. Adhere sheet flooring to the substrate using a method approved by the flooring manufacturer for the type of sheet flooring and substrate conditions.
- E. Use conventional perimeter bonding adhesive procedures where recommended by the flooring manufacturer. Use special perimeter bonding adhesive for unfilled vinyl strip flooring with vinyl backing.

3.6 INSTALLATION - RESILIENT EDGE STRIP

- A. Install edge strips at unprotected and exposed edges where resilient flooring terminates and where flooring terminates at points higher than the contiguous finished flooring, except at doorways where thresholds are located.
- B. Place resilient edge strips tightly butted to the resilient flooring. Secure with adhesive to the flooring and substrate.

3.7 INSTALLATION - RUBBER BASE

- A. Install rubber base in accordance with the manufacturer's published instructions.
- B. Apply rubber base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install the base in lengths as long as practicable.

 Maintain a minimum measurement of 18" between joints. Install true to line, level and with tight vertical joints. Scribe and fit accurately to and around permanent fixtures, equipment and bases.
- C. Use preformed units at external corners and exposed ends. Miter or cope inside corners.
- D. Install on solid backing; firmly adhere to walls, floor surfaces and permanent fixtures, except carpet throughout the length of each piece, with continuous contact at horizontal and vertical surfaces.
- E. On masonry surfaces, or other similar irregular surfaces, fill voids along the top edge of wall base with the manufacturer=s recommended adhesive filler material.
- F. Roll the installation per the manufacturer=s instructions.

3.8 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect the resilient flooring and base installation, pattern, layout and attachment to the substrate.

3.9 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Remove excess adhesive and other surface blemishes from the floor finish, base and wall surfaces without damage; use neutral type cleaners recommended by the flooring manufacturer.

- C. Just prior to final inspection, thoroughly clean the flooring, edge trims and base.
- D. Apply polish and buff. Use the type of polish, number of coats, and buffing procedures in compliance with the flooring manufacturer=s instructions.

3.10 PROTECTION

A. Protect installed flooring with heavy Kraft paper or other covering until final acceptance inspection.

END OF SECTION

SECTION 09900

PAINTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Interior and exterior paint systems.
 - 2. Schedule of Items to be painted.
 - 3. Painting Treatments Schedule.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.

1.2 DESCRIPTION OF WORK

A. The extent of the work of this Section is indicated on the Drawings and Schedules and as specified herein, complete, and includes cleaning and preparation of all interior and exterior surfaces to be painted or finished, and finishing of all interior and exterior surfaces, unless hereinafter excluded.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.

1.4 GENERAL

- A. The term APaint@ as used herein, means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as primer, intermediate coat or finish coat.
- B. The following categories of work are included under other Sections of these Specifications:
 - 1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various Sections of structural steel, metal fabrications, hollow metal doors and frames, and similar items.
 - Unless otherwise specified, shop priming of fabricated components such as architectural woodwork, wood casework and shop-fabricated or factory-built mechanical and electrical equipment or accessories is included under other Sections.

1.5 SUBMITTALS

- A. Section 01300 Submittal Procedure: Procedures for submittals.
 - 1. Product Data: Submit for each type of paint specified.
 - a. Manufacturer=s technical information including paint analysis, and application instructions for each material proposed for use.
 - b. Painting Schedule listing the surfaces to be painted with cross reference to the specific painting and finishing system, and application. Identify each paint material by manufacturer's catalog number and general classification.

2. Samples:

- a. Prior to beginning the painting work, the Architect will furnish color chips for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples of color and texture only for the Architect=s review. Provide a listing of materials and application for each coat of each finish sample.
- b. Provide two (2) samples of each color and material on 8" x 12" hardboard, with texture to simulate actual conditions. Re-submit samples as requested by the Architect until acceptable color, sheen, and texture is achieved.
- c. Provide two (2) 8" x 12" samples of natural and stained wood finish on actual wood surfaces. Label and identify each as to location and application.
- d. Provide two (2) 8 " x 12" samples of masonry for each type of finish and color on concrete masonry, showing the filler, prime coat and finish coats.
- Mock-Up: On actual wall surfaces and other interior and exterior building components, duplicate the paint finish of the prepared samples. Provide full-coat finish samples on at least 80 sq. ft. of surface, as directed, until the required color, sheen and texture is obtained; simulate the final lighting conditions for review of the work in-place.
- 4. Assurance / Control Submittals:
 - a. Manufacturer's certificate that the products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
 - c. Manufacturer's Material Safety Data Sheets (MSDS) for each paint type specified.

1.6 COORDINATION

A. Pre-Application Meeting: Convene a Pre-Application Meeting at the Project Site prior to beginning the painting work.

- 1. Require attendance of the Contractor, Owner=s representative, Architect, representatives of the paint subcontractor and other finish products, and the mechanical and electrical trades.
- 2. Review coordination and environmental controls required for the proper application and ambient conditions in the areas to receive paint.
- 3. Review preparation and installation procedures, and the coordination and scheduling required with the painting work.

1.7 QUALITY ASSURANCE

A. Qualifications:

- 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- 2. Applicator: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

B. Regulatory Requirements:

- Surface Burning Characteristics in Accordance with ASTM E 84 for Class I or A finish:
 - a. Flame Spread (Non-Combustible Surfaces): Less than 25.
 - b. Smoke Density (Non-Combustible Surfaces): Less than 450.
- 2. Provide paint and coating materials that conform to Federal, and local Government restrictions for volatile organic compounds (VOC) content.
- C. Codes and Standards: The work and materials shall conform to regulations of the Fire Department, safety color coding in conformance with OSHA and all other regulatory ordinances having jurisdiction. Conform to the most stringent requirements of the authorities having jurisdiction.
- D. Single Source Responsibility: Provide primers and other undercoat paint products by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only within the recommended limits.
- E. Coordination of Work: Review other Section of these Specifications in which prime paints are to be provided to ensure compatibility of the total coating system for various substrates. Upon the request of other trades, furnish information or characteristic of the finish materials provided for use, to ensure that compatible prime coats are use.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, new and unopened packages and containers bearing the following information:

- 1. Manufacturer=s name.
- Name or title of the material.
- Manufacturer=s lot number and date of manufacture.
- 4. Contents by volume for major pigment and vehicle constituents.
- 5. Color name and number.
- 6. Thinning or reducing instructions.
- 7. Application instructions including surface preparation and coverage.
- 8. Drying time.
- 9. Cleanup requirements.
- C. Store products, not in actual use, in tightly covered containers, off the ground and under cover. Maintain containers used in the storage of paint, in a clean condition, free of foreign materials and residue.
- D. Store paint materials at a maximum ambient temperature of 90E F, in a ventilated area, and in compliance with the manufacturer's published instructions.
- E. Keep storage areas neat and orderly. Remove oily rags and waste daily.
- F. Protect against fire hazards and spontaneous combustion.
- G. Take all precautions to ensure that workmen and the work areas are adequately protected from health hazards that might result from handling, mixing and application of paints.

1.9 JOB CONDITIONS

- A. Environmental Requirements:
 - 1. Do not apply paint during rain, fog or mist when the relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by the paint manufacturer=s printed instructions.
 - 2. Apply paint finishes only when the moisture content of the surfaces to be coated is within the manufacturer's acceptable range for the type of finish to be applied.
 - 3. Painting may be continued during inclement weather if the areas and surfaces to be painted are enclosed and within the humidity limits specified, and allowed by the paint manufacturer=s printed instructions.
 - 4. Do not apply paint in areas where dust is being generated.
 - 5. In areas being painted provide a lighting level of, at least 80 foot-candles, measured at mid-height of the surface being painted.

1.10 MAINTENANCE

A. Section 01780 - Closeout Submittals: Procedures for closeout submittals.

B. Extra Materials:

- 1. Upon completion of the work, provide replacement materials from the same production run as the materials applied. Provide 2% of each, but not less than one (1) quart, nor more than ten (10) gallons of each type, color and sheen.
- 2. Label each container with the color, type and texture, in addition to the manufacturer's label.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Frazee Paint & Wallcovering.
 - 2. Benjamin Moore & Co.
 - 3. Sherwin-Williams Co.
 - 4. Olympic Stains.
 - Watco Co.
 - 6. ZAR by United Gilsonite Laboratories.
 - 7. JASCO.
 - 8. Thoro Systems Products.
 - 9. PPG Amercoat (formerly Ameron Protective Coatings).
 - 10. Textured Coatings of America, Inc. (TEX-COTE).
 - 11. Rain Products Company.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Material Quality:
 - Manufacturer=s best quality grade of the various types of coatings, and suitable for the intended purpose, as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying the manufacturer=s identification as a standard, best-grade product will not be acceptable.
 - a. Proprietary names used to designate colors or materials are not intended to imply that the products of the named manufacturers are required to the exclusion of equivalent products by other manufacturers.
- B. Color Pigments:

- Pure, non-fading, applicable types to suit the substrates and service indicated.
 Manufacturer shall confirm that exterior applied pigments will not fade when exposed to UV light.
- 2. All exterior colors and interior deep tone colors shall be ground-in at the factory. Shop mixing is not permitted.
- 3. Colors to be as selected by the Architect, and subject to modification on the Project Site at the Architect=s discretion.
- 4. Lead content in pigment, if any, is limited to not more than 0.06%, based on the total non-volatile (dry film) of paint by weight. This limitation extends to interior surfaces and those exterior surfaces, such as stairs, decks, porches, railings, windows, and doors which are readily accessible to children.

C. Paint:

- 1. Ready-mixed, pigments fully-ground, maintaining a soft paste consistency, capable of readily and uniformly dispersing to a complete homogeneous mixture.
- 2. Provide good flowing and brushing properties, and capable of drying or curing free of streaks and sags.
- D. Primers and Undercoaters: Produced by the same manufacturer as the intermediate and finish coats.
- E. Paint Accessory Materials: Linseed oil, shellac, turpentine and other materials not specifically indicated herein, but required to achieve the finishes specified to be of high quality, and by an approved manufacturer.

2.3 PAINT SYSTEMS

- A. (EAE) Exterior Acrylic Emulsion: A 100% acrylic latex, water-thinned coating with extra mildewcide, flat finish, #203 Duratec and #266 Epotilt acrylic-epoxy sealer by Frazee, or Loxon acrylic primer with A-100, 100% exterior acrylic latex by Sherwin-Williams.
- B. (EAHE) Exterior Acrylic High Build Emulsion: A high-build, heavy-bodied, water-based, acrylic emulsion with 67% solids conforming to Federal Spec # TTC 00555B, paragraph 4.4.7. Thorocoat by Thoro Systems Products, smooth finish. Finish with two (2) coats of Thoroglaze or other sealer recommended by the manufacturer. Primer to be as recommended by the manufacturer for the Project conditions.
- C. (TC) Textured Coating: Tex-Cote XL-70 primer and top coat system by Textured Coatings of America. Texture as selected by the Architect.
- D. (AFE) Interior Acrylic Flat Emulsion Copolymer: 100% acrylic latex, water thinned, washable, velvet flat finish, #002 Majestic by Frazee.
- E. (AEE) Interior Acrylic Eggshell Enamel: 100% acrylic, water thinned, semi-gloss enamel, #022 Lo-Glo by Frazee.
- F. (LOAE) No VOC Interior Acrylic Paint: Envirokote Interior Low Odor, flat, eggshell or semi-gloss as noted, with Envirokote primer by Frazee.
- G. (AREM) Alkyd Resin Enamel for Interior and Exterior Metal: 628 Aro-plate II SG, semi-gloss with 661 metal primer by Frazee.

- H. (AREW) Alkyd Resin Enamel for Exterior Wood: 372 wood undercoat with two coats of 352 Classic House and Trim Gloss Enamel, semi-gloss by Frazee.
- I. (EPC) Epoxy Paint for Cementitious Materials: Polyamide epoxy coating system, two-component coating self-priming, semi-gloss, Amerlock 400 by PPG Americoat.
- J. (EPM) Epoxy Paint for Metal: 561 acrylic metal primer with Aro-Gard 542 finish coats, two-component coating, semi-gloss by Frazee. Prepare metal with JASCO Prep and Primer.
- K. (RIP) Rust Inhibitive Primer: Alkyd mineral spirit thinned, satin finish primer; #661 metal prime, rust preventive alkyd primer by Frazee.
- L. (BF) Block Filler: Acrylic block filler; #262 acrylic block filler by Frazee.
- M. (PS) Primer Sealer: PVA vinyl acrylic resin, water-thinned, flat finish primer, #061 Aqua Seal interior PVA Sealer by Frazee.
- N. (PSU) Polyurethane: Clear finish exterior polyurethane varnish, Satin; ZAR #203.
- O. (WS) Wood Stain: Olympic semi-transparent wood stain or ZAR transparent interior stain as selected by the Architect.
- P. (CWF) Clear Wood Finish: Oil alkyd resin, satin or hand rub finish, Deft Clear Wood Finish.
- Q. (DO) Wood Sealer: Watco Danish Oil finish, exterior formula where exposed to wind blown water.
- R. (CS) Concrete Stain: Lithochrome stain in water solution by Scofield Co.
- S. (TEC) Cementitious Sealer: Elasto-grip FC, waterborne modified polyamine epoxy by Tnemec.
- T. (TEC) Concrete Coating: Enviro-crete 156, modified waterborne acrylate by Tnemec.
- U. (GRC) Graffiti Resistant Coating: Water repellant, clear, deep-penetrating, non-film forming, non yellowing, heavy duty chemical water repellant solution. VandiGuard non-sacrificial graffiti coating system.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory and timely execution of the work of this Section. State, in writing, any anticipated problems with using the specified coating systems on substrates primed by others. Do not proceed with the work until the unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.

D. Starting the painting work will be construed as the Applicator=s acceptance of the surfaces and condition within any particular area.

3.2 SURFACE PREPARATION

- A. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the formation of a durable paint film.
- B. Perform preparation and cleaning procedures in accordance with the paint manufacturer's published instructions, and as herein specified, for each substrate condition.
 - 1. Provide barrier coats over incompatible primers, or remove and reprime as necessary.
 - 2. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be field painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of the painting of each space or area, reinstall all removed items.
 - 3. Clean surfaces to be painted before applying paint or surface treatment. Remove any oil or grease prior to mechanical cleaning.
 - 4. Program cleaning and painting so contaminants from the cleaning process do not fall onto wet, newly painted surfaces.
- C. Ferrous Metals: Clean ferrous surfaces not galvanized or shop-coated, of oil, grease, dirt, loose mill scale, and other foreign substances by solvent or mechanical cleaning.
 - 1. Touch-up shop-applied prime coats where damaged or bare, when required by other Sections of these Specifications. Clean and touch-up with the same type of shop primer.
- D. Galvanized Surfaces: Remove oil and other surface contaminants with a non-petroleum based solvent. Apply a coat of etching primer if required by the paint manufacturer.
- E. Cementitious Materials: Prepare cementitious surfaces of concrete, concrete blocks, cement plaster and cement-asbestos board to be painted by removing efflorescence, chalk, dust, dirt, grease and oils, and by roughening as required to remove glaze. Wash concrete surfaces scheduled to be painted with a commercial solution of muriatic acid, or other etching cleaner. Flush with clean water to neutralize the acid, and allow to dry before painting.
 - Determine the alkalinity and moisture content of surfaces to be painted by performing the appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of the finish paint, correct the condition before starting the application of paint.
 - 2. Do not paint over surfaces where the moisture content exceeds that permitted in the manufacturer's printed instructions.
 - 3. Clean floor surfaces, scheduled to be painted, with a commercial solution of muriatic acid, or other etching cleaner. Flush the floor with clean water to neutralize the acid, and allow to dry before painting.

- F. Wood: Clean wood surfaces to be painted of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as necessary. Sandpaper smooth, finished surfaces exposed to view, and remove dust. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before application of the prime coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dry.
 - Prime, stain, or seal wood required to be field painted, immediately upon delivery to the Project Site. Prime ends, edges, faces, undersides, and backsides of such wood, including cabinets, counters, cases and paneling.
 - 2. When a transparent finish is required, use spar varnish for backpriming.
 - 3. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on the backside.
 - 4. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to the Job Site.
- G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

3.3 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with the manufacturer=s printed instructions.
- B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into the material. Remove the film and, if necessary, strain the material before using.

3.4 APPLICATION

A. General:

- 1. Apply paint products in accordance with the manufacturer's written directions using applicators and techniques best suited for the substrate, type of material being applied, and texture required.
- 2. Paint finishes are scheduled. Provide prime coats compatible with the finish paints to be used.
- 3. Apply additional coats, when the undercoats, stains, or other conditions show through the final coat, until the paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- 4. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment and furniture with prime coat only before final installation of the item.
- 5. Paint the back sides of access panels, and removable or hinged covers to match the exposed surfaces.

- Finish exterior doors on tops, bottoms and side edges the same as the exterior faces.
- 7. Paint tops, edges, and bottoms of wood and hollow metal doors: .
- 8. Sand lightly between each succeeding enamel and varnish coat.
- 9. Omit the first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.
- 10. Apply each coat slightly darker than the preceding coat, unless otherwise approved by the Owner=s representative. Sand surfaces lightly between coats, as necessary to achieve the specified finish.
- 11. Do not apply finishes on surfaces that are not dry.
- 12. The number of coats and the film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured, as recommended by the paint manufacturer.
- 13. Paint the interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
- 14. Apply block filler to concrete masonry units at the rate necessary to provide complete coverage with pores filled.
- B. Scheduling Painting: Apply first coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - 1. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until the paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spread rate to provide a total dry film thickness or, if not indicated, as recommended by the coating manufacturer.
- D. Prime Coats: Apply a prime coat of material required to be painted or finished and has not been prime coated by others.
 - Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in the first coat, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- E. Stipple Enamel Finish: Roll and re-distribute paint to an even and fine texture. Leave no evidence of rolling such a laps, irregularity in texture, skid marks, or other surface imperfections.
- F. Pigmented (Opaque) Finishes: Completely cover surfaces to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness and other surface imperfections are not acceptable.

- G. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of an even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, and other imperfections.
 - 1. Provide a satin finish for final coats, unless otherwise indicated.
- H. Surfaces To Be Painted: Except where natural finish of material is specifically noted as a surface to not be painted, paint exposed surfaces whether or not colors are designated. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials, or areas. If color or finish is not designated, the Architect will select from the manufacturer=s standard colors or finishes.
- I. Equipment in Finished Rooms: Unless otherwise authorized, paint wall grilles and diffusers, door louvers, panel board fronts and other equipment having a factory-finish, occurring in rooms other than storage, mechanical and custodial.
- J. Do not paint over any code-required labels, such as Underwriter=s Laboratories and Factory Mutual, or any other equipment identification, performance rating name, door label or nomenclature plates.
- K. Paint exposed interior and exterior plumbing, heating and electrical equipment, apparatus, conduits, pipes and fittings, supports and hangers and all other unfinished surfaces of the mechanical and electrical work.
 - Work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primer or factory-painted metal surfaces of equipment installed under the mechanical and electrical work, except as otherwise indicated.
- L. Mechanical and Electrical Work: Painting of mechanical and electrical work includes those items exposed in mechanical equipment rooms, in occupied spaces, and equipment on roofs.
 - Exposed Mechanical: Items to be painted include, but are not limited to, the following:
 - a. Factory pre-painted diffusers at public spaces.
 - b. Ductwork insulation.
 - c. Piping, pipe hangers and supports.
 - d. Sprinkler covers and piping.
 - e. Heat exchangers.
 - f. Motors, mechanical equipment and supports.
 - g. Tanks.
 - h Accessory items.
 - 2. Exposed Electrical: Items to be painted include, but are not limited to the following:
 - a. Panel boards in public spaces.

- b. Speaker grilles.
- c. Conduit and fittings.
- d. Switchgear.
- e. Rooftop equipment.
- M. Roof Flashings: Paint all exposed roof flashings that are not stainless steel or factory-finished.
- N. Completed Work: Match the approved samples for color, sheen, texture and coverage. Remove, re-finish or re-paint work not in conformance with the specified requirements.
- O. The following categories of work are not included as part of field-applied painting work.
 - Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.
 - 2. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of prefinished aluminum, anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials do not require finish painting.
 - 3. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkage, sinkage, sensing devices, motor and fan shafts will not require finish painting.

3.5 MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Replace identification markings on mechanical and electrical equipment, if painted over or spattered.
- B. Paint conduit and electrical equipment occurring in finished areas where exposed to public view, color and texture to match the adjacent surfaces.
- C. Paint front, back and all edges of plywood backboards for electrical equipment before installing, and mounting the equipment.

3.6 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. The Owner reserves the right to invoke the following material testing procedures at any time, and any number of times during the field painting work:
 - 1. Engage the services of an independent testing laboratory to sample the paint being used. Samples of materials delivered to the Project Site will be taken, identified and sealed, and certified in the presence of the Contractor.
 - 2. A testing laboratory will perform appropriate tests for any or all of the following characteristics: abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, re-coating, skinning, color retention, alkali resistance and quantitative materials

analysis.

- 3. If the test results show that the material being used does not comply with the specified requirements, the Contractor may be directed to stop the painting work, remove the non-complying paint, pay for the testing, re-paint surfaces where the rejected paint has been applied, and remove the rejected paint from the previously painted surfaces if, upon re-painting with the specified paint, the two coatings are not compatible.
- B. Inspect painting and coating applications for the scheduled materials, color, sheen, texture, thickness, and coverage.

3.7 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. As work proceeds, and upon completion, promptly remove paint where spilled, splashed, and spattered.
- C. During progress of the work keep the premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.
- D. Remove from the site discarded paint materials, rubbish, cans and rags at the end of each work day.
- E. Collect waste, cleaning cloths, and materials which may constitute a fire hazard, place in closed metal containers, and remove from the site daily.
- F. Upon completion of the work leave the premises neat and clean. Clean metal door and window frames, glass, and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, taking care to not scratch or otherwise damage finished surfaces.

3.8 PROTECTION

- A. Protect the work of other trades, whether to be painted or not, against damage by the painting and finishing work.
- B. Place AWet Paint@ signs as required as a warning of newly painted surfaces.
- C. Remove temporary protective wrappings provided by other trades for the protection of their work, after completion of the painting operations.
- D. Upon completion of the work of other trades, touch-up and restore all damaged and defaced painted surfaces.
- E. Correct any damage by cleaning, repairing or replacing and re-painting, as acceptable to the Owner=s representative.
- F. Repair any damage resulting from inadequate and unsuitable protection.

3.9 SCHEDULE OF ITEMS TO BE PAINTED

A. Refer to the Drawings and Painting and Finishing Schedule at the end of this Section for designated finishes. Paint finish shall be provided for, but not limited to, the following items:

- Interior: All interior surfaces as scheduled on the Drawings including, but not limited to:
 - a. Wood and hollow metal doors and frames.
 - b. Metal opening frames and trim.
 - c. Gypsum board.
 - d. Exposed concrete and plaster.
 - e. Steel rails and guards.
 - f. Exposed mechanical ductwork , hangers and supports, if the exposed structure is shown on the Drawings to be painted.
 - g. Exposed piping, hangers and supports, if scheduled on the Drawings to be painted.
 - h. Exposed conduit, hangers and supports, if scheduled on the Drawings to be painted.
 - I. Exposed structure including decking, joists, girders, beams, bridging, and miscellaneous metal fabrications, if scheduled on the Drawings to be painted.
 - j. Exposed structural columns.
 - k. Metal stair stringers and handrails.
 - I. Exposed wood trim.
- 2. Exterior: All exterior surfaces including, but not limited to:
 - a. Wood and hollow metal doors and frames.
 - b. Metal opening frames and trim.
 - c. Metal flashings, if exposed from ground level, and downspouts, other than stainless steel.
 - d. Pipe bollards.
 - e. Steel rails and guards.
 - f. Roof hatches.
 - g. Concrete and plaster walls, soffits, fascia, ceilings, beams and columns.
 - h. Structural steel decking, joists, beams and columns.
- B. Do not paint the following Items:
 - 1. Aluminum, brass, bronze, stainless steel and chrome-plated steel.

- 2. Pre-finished items, such as cabinetry, toilet compartments, acoustical ceiling materials, and mechanical and electrical equipment.
- 3. UL, FM, and other Code required labels.
- 4. Equipment identification, performance ratings, and name plates.
 - 5. Finish hardware.
 - 6. Toilet accessories.

3.10 PAINTING TREATMENTS SCHEDULE

General: The paint abbreviations below refer to those noted above in PART 2, MATERIALS.

NO.	LOCATION	MATERIALS
1	Touch-up Exterior and Interior Metal including factory prefinished items scheduled for field finish	Shop Coat: As specified in other Sections Prime Coat: (RIP) Finish: Two coats (AREM)
2	Touch-up Exterior Plaster, Concrete and Masonry where noted for paint including: Fascia, Soffits, Walls of Buildings, Exposed Concrete Beams, Exposed Concrete Retaining Walls	Prime Coat: Manufacturer=s Representative Finish: Two coats (EAE)
3	Exterior Plaster and Concrete where noted for Textured Coating (other than Special Coating per Section 09800) including: Fascia, Soffits, Walls of Building, exposed Concrete Beams, exposed Concrete Retaining Walls	Prime Coat: As recommended by manufacturer Finish: (EAHE) system or Prime Coat: XL-70 primer Finish: (TC)
4	Exterior Wood	Not used.
5	Interior Smooth Concrete and Gypsum Board, where scheduled	Prime Coat: (PS) Finish: Two coats (AEE) or (AFE)
6	Interior Masonry, where scheduled	Prime Coat: (BF) Finish: Two coats (AEE) or (AFE)
7	Interior Wood for opaque finish including Wood Doors	Prime Coat: Manufacturer recommended primer Finish: Two coats (AEE) or (AFE)
8	Interior Hardwood, natural finish,	Finish: Two coats (DO) or two coats (WS) with

	including Doors, Door and Window Frames and Relights, Panels and all Trim, Wood-Faced Casework	sanding sealers <u>Sealer:</u> Two coats (PSU) or <u>Finish:</u> Three coats (CWF)
9	Interior Concrete, Masonry and Gypsum Board, where noted for epoxy.	Prime Coat: As recommended by manufacturer Finish: Two coats (EPC)
10	Maintenance coating for interior smooth Concrete, Masonry, Gypsum Board and Wood	Prime Coat: As recommended by manufacturer Finish: (LOAE) Coats as required for coverage
11	Interior Metal including factory pre-finished items scheduled for painting	Prime Coat: (RIP) except where pre-finished Finish: Two coats (AREM)
12	Interior Metal where noted for epoxy	Prep Coat: JASCO Prep and Primer Prime Coat: Aro-Gard 561 primer Finish: Two coats (EPM)
13	Graffiti Resistant Coating over specified paint system.	Finish: Three coats (GRC)
14	Stained concrete or plaster: (CS) per manufacturer=s recommendation.	
15	Sealed concrete or plaster:	Finish: Three coats (TEC) or per manufacturer=s recommendation
	END OF	SECTION

SECTION 10156

PHENOLIC TOILET PARTITIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid polymer toilet partitions.
 - 2. Solid polymer urinal screens.
 - Institutional hardware.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 03300 Cast-In-Place Concrete: Substrate for attachment.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for attachment.
 - Section 06100 Rough Carpentry: Backing plates within walls for partition attachment.
 - 4. Section 09110 Non-Load Bearing Steel Framing: Framing and plates within walls for partition attachment.
 - 5. Section 10810 Toilet Accessories: Coordinate compartment installation with subsequent accessories installation.

1.2 DESCRIPTION OF WORK

A. The extent of the phenolic toilet partitions work is indicated on the Drawings and as specified herein, and includes providing and installing floor-mounted / overhead braced toilet compartments, urinal screens, hardware and accessories necessary for a complete and functional system.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- C. Americans with Disabilities Act Accessibility Guidelines (ADAAG):

- Accessibility Guidelines for Buildings and Facilities.
- 2. Accessibility Guidelines for Schools.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s detailed technical data for materials, fabrication, and installation, including catalog cuts of anchors, hardware, fastenings and accessories.
 - 2. Shop Drawings: Fabrication and erection drawings of toilet partitions, urinal screens, assemblies not fully described in the manufacturer=s product drawings, templates, and instructions for anchorage devices built into other work; partitions layout plan, elevations, dimensions, door swings, details of floor and wall supports and connections.
 - 3. Samples: Not less than 2" x 3" of the actual solid polymer material, for selection of finishes, colors and patterns.
 - 4. Assurance / Control Submittals:
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Provide written limited Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 COORDINATION

- A. Coordinate plumbing rough-in locations with Division 15 Installer to ensure proper location and fitting of the work.
- B. Furnish inserts and anchorages which must be built into other work for the installation of toilet partitions, screens and related work. Coordinate deliver with other work to avoid delay.
- C. Coordinate with the installation of toilet accessories, as scheduled.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
 - 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.

- B. Take field measurements prior to the preparation of Shop Drawings and fabrication, where possible, to ensure proper fitting of the work. Allow for adjustments within the specified tolerances whenever taking field measurements before fabrication might delay the work.
- C. Conform to ADAAG for access and operation of compartment doors and hardware by the handicapped.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Protect partitions, screens, hardware, accessories and other items during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- C. Do not deliver products until wet work, grinding and similar operations which could damage, soil or deteriorate the materials has been completed in the installation areas.
- D. If the partitions and screens must be stored in other than the installation areas, store only in areas meeting the same requirements as specified for the installation areas.

1.8 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Limited Warranty:
 - 1. Submit manufacturer=s Limited Warranty against breakage and corrosion, and agreeing to replace products which are defective in materials or workmanship.
 - 2. Warranty Period: Fifteen (15) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Bobrick Washroom Equipment, Inc.
 - 2. Accurate Partitions Corp.
 - 3. Sanymetal (Crane Plumbing Co.).
 - 4. Santana Products, Inc.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

A. Panels, Doors, Pilasters and Screens:

- 1. Solid plastic, fabricated from High Density Polyethylene (HDPE) containing a minimum of 50% recycled material manufactured under high pressure forming a single component section.
- 2. Water-resistant, graffiti-resistant, non-absorbent.
- 3. 1" thick, unless otherwise indicated.
- Self-lubricating surface that resists marking by pens, pencils and other writing instruments.
- 5. All panels, doors, pilasters and screens to be shipped from the manufacturer with a special protective plastic covering.
- Characteristics:
 - a. Dual component compression molded High Density Polyethylene (HDPE) of solid virgin resin materials in colors that extend throughout the material.
 - b. Panels, doors, pilasters and screens shall have recycled material (HDPE) as the core material.
 - c. Use material that has been selected for surface flatness and smoothness. Exposed surfaces that exhibit seam marks, roller marks, discoloration, telegraphing of core, or other imperfections on the finished units are not acceptable.
- B. Pilaster Shoes: Type 302 / 304 stainless steel, 3" high minimum, and 18 gage, No. 4 satin finish, ASTM A 167.
- C. Stirrup Brackets: Manufacturer=s heavy-duty design for attaching panels to walls and pilasters, stainless steel, anodized aluminum or chromium-plated non-ferrous cast alloy, to match the hardware finish.
- D. Style: Floor-Mounted / Overhead-Braced, 1080 DuraLine Series by Bobrick.
- E. Provide colors and patterns as selected from the manufacturer=s full line of standard colors and patterns.

2.3 PARTITIONS AND SCREENS

- A. Shall be solid plastic with Type 304 stainless steel hardware throughout. All hardware shall be concealed on the inside of compartments.
- B. Style: Floor-Mounted, DuraLine Series 1083 by Bobrick.

2.4 HARDWARE AND ACCESSORIES

- A. Manufacturer=s heavy-duty operating hardware and accessories;; stainless steel; Institutional Series.
 - 1. Hinges shall be integral hinge system. Pilasters to be machined to accept door and hinge mechanisms. The hinge mechanism to consists of a 2 piece 1/2"

diameter nylon pin with ACam Action@ and a 3/16" stainless steel pin inserted into the lower portion of the pilaster and door. A one piece 1/2" diameter, 4" long nylon pin to be inserted into the top portion of the pilaster and door. Door closures to be factory set to accommodate all conditions and to allow for positive opening and closing action, free of impediment.

- 2. Door Pull and Wall Stop: Type 304 cast stainless steel.
- 3. Door latch housing fabricated from heavy aluminum extrusion (6364-T5 alloy) with clear anodized finish, surface-mounted and thru-bolted to the door with one-way sex bolts. Slide bolt and button shall be heavy aluminum.
- 4. Door strike and keeper fabricated from heavy aluminum extrusion (6364-T5 alloy) with clear anodized finish, wrap around flange, surface-mounted and thru-bolted to the pilaster with one-way sex bolts. Strike shall be 6" in length.
- Coat Hooks: Combination coat hook and bumper fabricated from Type 304 stainless steel.
- 6. Finish: Stainless steel, No. 4 satin.
- B. Overhead Bracing: Continuous extruded heavy-duty; mill finish;18 gauge stainless steel brackets.
- C. Anchorage and Fasteners: Manufacturer=s standard exposed fasteners of stainless steel, chromium-plate steel, or brass finished to match the hardware; theft-resistant heads and nuts. Use stainless steel concealed anchors.
 - 1. Steel Plate Reinforcement: Carbon steel, prepared for fasteners; 1/8" thick.
- Add one (1) additional coat hook on the inside of handicapped accessible stalls and stalls with out-swinging doors.

2.5 FABRICATION

A. General:

- 1. Comply with the details shown for profile, layout and construction of compartments, screens and other items. Where not otherwise shown, comply with the manufacturer=s written instructions.
- 2. Furnish standard panels, doors, pilasters and screens fabricated from the partition system specified, unless otherwise indicated. Furnish units with cutouts, drilled holes, and internal reinforcement to receive partition-mounted hardware and accessories, as shown.
- 3. Pre-Cut Openings: Fabricate with pre-cut openings, wherever possible, to receive hardware and accessories. Locate openings accurately and use templates or roughing-in diagrams for the proper size and shape. Smooth the edges of cutouts and seal edges of cutouts with a water-resistant material. Provide radiused machined edges and bottom burn strip.
- 4. Fabricate from single piece material, except where the required length exceeds the maximum length fabricated by the manufacturer. Locate joints at even intervals through the material, aligned with other adjacent joints, and as approved on the final Shop Drawings. Form joints using the manufacturer=s recommended adhesive for a smooth even appearance of matching color and inconspicuous

appearance. Provide joints of equal or greater strength than the material being joined.

- B. Floor-Mounted / Overhead-Braced Partitions: Partitions, Doors and Pilasters: Flush type, manufacturer=s standard. Stainless steel bracing assembly, manufacturer=s standard, anchored to each pilaster and to the wall. Furnish 3/8" galvanized steel leveling devices to permit structural connection to the floor. Furnish a shoe at each pilaster to conceal the anchorages.
- C. Doors: Unless otherwise indicated, furnish 24" wide in-swinging doors for standard toilet stalls and 32" wide (clear opening width) out-swinging doors for stalls equipped for use by the handicapped.
- D. Floor-Mounted Urinal Screens: Panels and pilasters of the same construction and finish as the partitions. Furnish 3/8" galvanized steel leveling devices, welded to 11 gauge steel core. Furnish a shoe at each pilaster to conceal the anchorages.

2.6 FINISHES

- A. Panels, Doors, Pilasters and Screens: Single color as selected from the manufacturer's standard colors. Match partition finishes used at the Airport's Gate 9 restrooms. Submit for selection as required above.
- B. Overhead Bracing: Mill finish.
- C. Stainless Steel: No. 4 bright directional polish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work, including spacing of plumbing fixtures, and location of built-in framing and backing plates.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with the manufacturer=s recommended procedures and installation sequence.
- B. Install partitions plumb, level, straight, square, secure and rigid in accordance with the manufacturer's published instructions, and as shown on the Drawings.
- C. Floor-Mounted / Overhead-Braced Partitions:
 - 1. Set pilasters with anchorages having not less than 2" penetration into structural floors, unless otherwise recommended by the partition manufacturer.
 - 2. Secure pilasters to the floor with the anchorage devices provided.

- 3. Level, plumb and tighten the installation with the anchorage devices furnished.
- 4. Secure overhead braces to pilasters with not less than two (2) fasteners per face.
- 5. Hang doors and adjust so tops of doors are parallel with the overhead brace when the doors are in the closed position.

D. Floor-Mounted Urinal Screens:

- 1. Set pilasters with anchorages having not less than 2" penetration into structural floors, unless otherwise recommended by the partition manufacturer.
- 2. Set units in accordance with the manufacturer=s instructions for secure support, and to resist lateral impact.
- 3. Anchor panels to walls with two (2) panel brackets and to vertical upright pilasters anchored to the floor.
- 4. Attach units with heavy-duty concealed anchoring devices, as recommended by the manufacturer, and to suit the wall construction.
- 5. Secure panels to built-in devices using concealed fasteners.
- 6. Level, plumb and tighten the installation with the anchorage devices furnished.
- E. Secure panels to walls with not less than two (2) stirrup brackets attached near the top and bottom of the panels. Locate wall brackets so holes for wall anchorages occur in masonry or tile joints, where occurs. Secure panels to pilasters with not less than two (2) stirrup brackets located to align with the stirrup brackets at the wall. Secure panels in position with the manufacturer's recommended anchoring devices.
- F. Attach panels and pilasters to brackets with through sleeve, tamper-proof bolts and nuts.
- G. Locate head rail joints at the center line of pilasters.
- H. Provide adjustment for floor variations with screw jacks through steel saddles integral with the pilaster.
- I. Conceal floor fastenings with stainless steel shoes.
- J. Provide clearance of not more than 1/2" between pilasters and panels, and not more than 1" between panels and walls.
- K. Align the hardware to provide uniform clearance at vertical edges of doors, not exceeding 3/16".
- L. Install door bumper coat hooks on partitions or walls.
- M. Provide hardware at handicapped accessible compartments in compliance with ANSI A117.1.
- N. Install one (1) additional wall-mounted bumper at handicapped accessible stall doors and out-swinging doors.

3.3 CONSTRUCTION

- A. Interface With Other Work:
 - 1. Coordinate the placement of support framing and backing plates in walls.
- B. Site Tolerances:
 - 1. Maximum Variation from True Position: 1/4".
 - 2. Maximum Variation From Plumb: 1/8".

3.4 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Adjust and lubricate hardware for proper operation after installation.
- C. Adjust hardware for uniform clearance at the vertical edge of doors.
- D. Adjust adjacent components for consistency of line and plane.
- E. In-Swinging Doors: Adjust hinges to locate doors approximately 30 degrees from the closed position when unlatched.
- F. Out-Swinging Doors (and entrance swing doors): Adjust hinges to gently return doors to the fully closed position.
- G. Restore damaged and soiled areas per the manufacturer=s recommendations.
- H. Repair damaged and defective components, where possible, to eliminate defects functionally and visually. Where not possible to repair to the satisfaction of the Owner=s representative, replace the damaged units.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect installations for plumb, level, alignment, square, secure and rigid.

3.6 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Remove protective masking.
- C. Clean exposed and semi-exposed surfaces using materials and by methods recommended by the partitions manufacturer.
- D. Clean hardware, fittings and accessories.

3.7 PROTECTION

A. Provide protection, as necessary, to prevent damage during the remainder of the construction to ensure that the work will be without damage and deterioration at the time of final acceptance.

END OF SECTION

SECTION 10260

WALL AND CORNER GUARDS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wall Rails.
 - 2 Corner Guards.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 03300 Cast-In-Place Concrete: Wall substrate.
 - 2. Section 09250 Gypsum Board: Wall substrate.
 - 3. Section 09110 Non-Load Bearing Steel Framing: Substrate framing for attachment of products.

1.2 DESCRIPTION OF WORK

A. The extent of the wall and corner guards work is indicated on the Drawings and as specified herein, and includes providing and installing pre-molded corner guards and wall rails with all mounting accessories for complete installations.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
- B. National Fire Protection Association (NFPA):
 - 1. NFPA 101 Life Safety Code.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s product literature; style, texture and color options.
 - 2. Shop Drawings:

- a. Indicate layout, terminations, mounting heights, method of attachment and other applicable details.
- b. Installation details.
- 3. Samples: Two (2) 12" long, full-size samples, illustrating type, texture and color.
- 4. Assurance / Control Submittals:
 - a. Manufacturer=s Instructions: Include installation template, attachment devices, and procedures for the care of finished surfaces.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Warranty: Submit a written limited Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
- Single Source Responsibility: Obtain all wall protection system components from a single manufacturer.

1.6 DELIVERY, STORAGE AND HOLDING

- A. Section 01600 Product Requirement: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened protective packaging.
- C. Identify the contents, manufacturer, brand name, and applicable standards.
- D. Store in the original packaging, off the ground, and under protective covers.
- E. Handle to prevent damage.

1.7 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Limited Warranty:
 - 1. Provide a written Warranty jointly signed by the manufacturer and the installer certifying that the products and the installation is free of defective materials and workmanship and will repair or replace any defective component, in whole or in part, as necessary to restore the product to its original intended state and integrity.

2. Warranty Period: Five (5) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. Koroseal Wall Protection Systems.
 - 2. Pawling Corp.
 - C/S Acrovyn.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Corner Guard: Surface-mounted, adhesive-applied, 90 degrees, 0.093" rigid vinyl, 3" wings. Class A fire-rating. Color as selected from manufacturer=s standards.
- B. Wall Rails: 5-1/2" flat profile, full-length vinyl bumper and continuous aluminum retainer, reinforced rigid plastic returns and inside and outside corners; 3" projection, 1-1/2" gripping area. Class A fire-rating. ADAAG compliant. Color as selected from manufacturer=s standards.
- C. Fire Performance Characteristics: Comply with ASTM E 84.
 - 1. Flame Spread: 25 or less.
 - 2. Smoke Developed: 450 or less.

2.3 FASTENERS AND OTHER MATERIALS

- A. Provide non-corrosive fasteners as recommended by the manufacturer; clips, and mounting devices compatible with the product material and finish; concealed or of same color and finish as the components they secure where exposed to view.
- B. Other materials, not specifically described but required for a complete and proper installation; shall be as selected, and subject to approval.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirement: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates, and conditions are as required, and ready to receive the work.
 - 1. Examine walls, structure, and other areas scheduled to receive the products for

conditions that will affect the quality and execution of the work.

C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install wall products in accordance with the manufacturer=s published instructions.
- B. Install products at locations shown or scheduled. Securely mount with concealed theft-resistant fasteners. Attach to substrates in accordance with the manufacturer=s instructions.
- Install field-cut corner guard lengths from top of wall base to align with the top of door frames.
- D. Cooperate with other trades for attachment to finish surfaces.
- E. Install products level and plumb.
- F. Comply with ADAAG for wall rail mounting height.

3.3 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect locations, mounting heights and attachments to verify that installations comply with the Drawings and ADAAG.

3.4 ADJUSTING AND CLEANING

- A. Section 01700 Execution Requirements: Adjusting and cleaning of installed work.
- B. Remove and dispose of all debris, crates and equipment upon completion of the work.
- C. Remove excess adhesive from wall surfaces in accordance with the manufacturer=s instructions.
- D. Adjust wall rails for level and alignment.
- E. Touch-up surfaces damaged during installation; use matching finish.
- F. Wipe down surfaces before final acceptance inspection.

END OF SECTION

SECTION 10436

SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Accessible signage.
 - 2. Directional signage.
 - 3. Tactile exit signs.
 - 4. Exit enclosure signs.
 - 5. Instructional signage.
 - 6. Room identification signage.
 - 7. Occupant load signs.
 - 8. Fire fighting equipment signs.
 - 9. Fire wall signs.
 - 10. Floor and roof design load signs.
 - 11. Dedication plaque.
 - 12. Exterior signage.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 09250 Gypsum Board: Substrate for attachment.
 - 2. Sections of DIVISION 16 Electrical: Requirements for lighted signs.

1.2 DESCRIPTION OF WORK

- A. The extent of signage work is indicated on the Drawings and as specified herein, and includes providing and installing all interior and exterior signage, and all attachment accessories.
- B. Signage mounting height shall comply with ADAAG.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
 - Accessibility Guidelines for Schools.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s product data and mounting details.
 - 2. Shop Drawings:
 - a. Indicate sign styles, lettering font, foreground and background colors, locations, and overall dimensions of each sign.
 - b. Provide installation details.
 - 3. Samples: Two (2) signs, full size, illustrating the type, style, letter font, colors and method of attachment, when requested.
 - Assurance / Control Submittals:
 - a. Manufacturer=s certificate that the products meet or exceed the specified requirements.
 - Installation templates, attachment devices, and procedures for the care of finished surfaces.
 - Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittal.
 - A. Warranty: Provide a written standard Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store, and protect the products.
- B. Deliver products to the Project Site in the manufacturer's original, unopened protective packaging bearing the manufacturer=s name, contents, brand name, and applicable standards.

- C. Handle to prevent damage to surfaces and edges.
- D. Store in the manufacturer=s original packaging, off the ground and under protective covers.

1.7 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Manufacturer=s standard for materials and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with project requirements, manufacture's offering products which may be incorporated into the work include the following:
 - 1. Mohawk Sign Systems, Inc.
 - 2. APCO Graphics Inc.
 - ASI-Modulex.
 - 4. Best Sign Systems, Inc.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 SIGNAGE

- A. Mohawk Sign Systems, Series 200A, is used as the standard for design and quality.
 - Construction: Signs shall be of one-piece construction. Added-on and / or engraved characters are not acceptable. Text shall be accompanied by Grade 2 braille.
 - 2. Design and Location: Comply with ICC A117.1 requirements for visual characters and include the International Symbol of Accessibility.
 - 3. Tactile characters / symbols: Raised 1/32" from the sign plate face.
 - 4. Font: Times Roman Extra Black, upper and lower case.
 - 5. Pictographs: AGA Symbol Signs repro art developed for the U.S. Department of Transportation to be used whenever possible.

2.2.1 ACCESSIBLE SIGNAGE

- A. Accessible Signage: Post signage, including the International Symbol of Accessibility at the following locations:
 - 1. Accessible entrances when not all entrances are accessible.

- 2. Accessible dressing, fitting and locker rooms where not all such rooms are accessible.
- 3. Accessible areas of refuge.
- 4. Exterior areas for assisted rescue.
- 5. Other locations required by the Building Code.
- B. Directional Signage: Signage, including the International Symbol of Accessibility, indicating the route to the nearest like accessible element at the following locations:
 - Inaccessible building entrances.
 - 2. Inaccessible public toilets and bathing facilities.
 - 3. Elevators not serving an accessible route.
 - 4. At each toilet and bathing room indicating the location of the nearest family or assisted-use toilet or bathing room, where provided.
 - 5. At exits and exit stairways serving a required accessible space, but not providing an approved accessible means of egress.
- C. Tactile Exit Signs: Provide AEXIT@ sign complying with ICC A117.1 adjacent to each door to exit discharge, exit passageway, exit ramp, exit stairway, area of refuge and exterior area for assisted rescue. Text shall read as follows:
 - a.. At doors providing access to an area of refuge from an adjacent floor area AAREA OF REFUGE@.
 - b. At doors proving access to an exterior area for assisted rescue AEXTERIOR AREA FOR ASSISTED RESCUE@.
- D. Elevator Signs: Provide an approved pictorial sign of standard design adjacent to each elevator call station on all floors to read AIN FIRE EMERGENCY, DO NOT USE ELEVATOR, USE EXIT STAIRS@.
- E. Exit Enclosure Signs: Provide at each floor landing in exit enclosures connecting more than three (3) stories. Designate the floor level, terminus of the top and bottom of the enclosure and identification of the stair or ramp. Signage shall state the story of, and direction to, the exit discharge and availability of roof access from the enclosure for the fire department. Comply with the following:
 - 1. Size shall be a minimum 8" X 8".
 - 2. Letters designating the identification of the stair enclosure shall be a minimum of 2" in height.
 - 3. All other lettering and numbers shall be a minimum of 1" in height.
 - 4. Characters and background shall have a non-glare finish. Characters shall contrast in color with their background, with either light characters on a dark background or dark characters on a light background.

- 5. Locate 5 feet above the floor landing in a position readily visible when the doors are in the open and closed positions.
- 6. Floor level identification signs in tactile characters complying with ICC A117.1 shall be located at each floor level landing, adjacent to the door leading from the enclosure into the corridor.
- F. Instructional Signage: In areas of refuge and exterior areas for assisted rescue, instructions on the use of the area under emergency conditions shall be posted. Instructions shall include all of the following:
 - 1. Persons able to use the exit stairway do so as soon as possible, unless they are assisting others.
 - 2. Information on planned availability of assistance in the use of stairs or supervised operation of elevators and how to summons such assistance.
 - Directions for use of the two-way communications system, where provided.

2.2.2 ROOM SIGNS

- A Room Identification Signs: Provide wall-mounted signs at each door opening and where indicated on the Drawings.
 - 1. Type A Signs: Size 4A x 6" (typical) at Room entrances indicating room number and name, including braille.
 - 2. Type P Signs: Size 8" x 8" at Toilet Room doors, including the international symbols for Boys / Men, Girls / Women, including braille.
 - 3. Type B Signs: Size 2" x 4" (typical) at secondary spaces, indicating room name only.
 - 4. Type C Signs: Size 10" x 10" (typical) directional signs, including braille.
- B Occupant Load Signs: Provide an approved legible permanent sign indicating the occupant load for all assembly occupancies. Post in a conspicuous place, near the main exit or exit access doorway from the room or space.
- C. Floor and Roof Design Load Signs: Where live loads for floors or roofs, or portion thereof, have been designed to exceed 50 psf, post such design load signs in a conspicuous place in that part of each story or roof in which they apply.

2.2.3 FIRE SIGNS

- A Fire Fighting Equipment Signs: Cabinets containing fire fighting equipment such as standpipes, fire hoses, fire extinguishers or fire department valves shall be identified in an approved manner by a permanently attached sign with letters not less than 2" high in a color that contrasts with the background color, and indicating the equipment contained therein.
- B Fire Wall Signs: Post effective and permanent signs or stenciling along fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions and any other walls required to have protected openings and penetrations. Such identification shall:

- 1. Be located in accessible concealed floor, floor-ceiling and attic spaces.
- 2. Be repeated at intervals not exceeding 30 feet horizontally along the wall or partition.
- 3. Include lettering not less than 1/2" in height to read AFIRE AND / OR SMOKE BARRIER PROTECT ALL OPENINGS@ or other similar wording.

2.3 EXTERIOR SIGNAGE

- A. Subject to compliance with project requirements, manufacture's offering products which may be incorporated into the work include the following:
 - 1. Gemini, Inc.
 - 2. Metal Arts.
 - 3. Metallic Arts.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.
- C. Metal Signage:
 - 1. Size: height as indicated on documents; stroke, depth, and average width per manufacturer=s standard for the size and letter style selected.
 - 2. Material: Cast aluminum.
 - 3. Finish: color as selected.
 - 4. Letter Style: As selected.
 - 5. Mounting: Projected Spacer Mount with aluminum tube spacers.
 - 6. Lettering / Name: To be provided.
 - 7. Location: Mount in location shown or as directed.
- D. Manufacturer to provide layout template.

2.4 FASTENERS AND OTHER MATERIALS

- A. Provide non-corrosive fasteners, hangers, and mounting devices compatible with the sign material and finish. Concealed or of the same color and finish as the components they secure where exposed to view.
- B. Other materials, not specifically described but required for a complete and proper installation shall be as selected, and subject to approval.
- C. Sign face surfaces shall not be deformed, distorted or discolored by the attachment of fasteners.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - 1. Examine walls, doors, ceilings and other areas scheduled to receive signs for conditions that would affect quality and execution of the work. Notify the Owner=s representative if a sign will be obscured from view at any location.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install signage in accordance with the manufacturer's published instructions, and with ADAAG.
- B. Install sign units and components at the locations shown or scheduled, securely mounted with concealed, theft-resistant fasteners.
- C. Install level, plumb, and at the proper height. Cooperate with other trades for the attachment of sign units to finish surfaces.
- D. Installations shall withstand normal wear and tear.
- E. Exterior installations shall withstand environmental actions of wind and rain, and normal wear and tear.

3.3 CONSTRUCTION

- A. Interface with Other Work:
 - 1. Furnish full-size spacing templates for individually bundled letters and numbers for coordination with the work of other trades.
 - 2. Furnish wiring diagrams for illuminated signs for coordination with the electrical trade for service to lighted units.

3.4 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting installed work.
- B. Adjust signage, as necessary, for proper mounting height, plumb, level and secure attachment.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect signage locations, attachments, and messages to verify that the installations conforms to the Drawings or information provided.

3.6 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Remove protective materials from surfaces.
- C. Wipe clean before final acceptance inspection.

END OF SECTION

SECTION 10520

FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fire extinguishers.
 - 2. Mounting brackets.
 - Fire hose cabinets.
 - 4. Mounting brackets.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 03300 Cast-In-Place Concrete: Substrate for attachment.
 - 2. Section 04230 Reinforced Unit Masonry: Substrate for attachment.
 - 3. Section 09110 Non-Load Bearing Steel Framing: Wall framing for attachment of extinguishers and cabinets .
 - 4. Section 09250 Gypsum Board: Adjacent wall finish.

1.2 DESCRIPTION OF WORK

- A. The extent of the fire protection work is indicated on the Drawings and as specified herein, and includes providing and installing fire extinguisher cabinets, fire extinguishers, fire hose cabinets with hoses, and all mounting brackets, devices and accessories.
- B. Fire protection shall comply with the Building Code, and regulations of the governing authorities having jurisdiction.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. National Fire Protection Association (NFPA):
 - NFPA 10 Portable Fire Extinguishers.
- C. Underwriters Laboratories, Inc. (UL):
 - 1. UL 299 Dry Chemical Fire Extinguishers.

- D. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
 - 2. Accessibility Guidelines for Schools.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s specifications, data and list of items.
 - a. Extinguishers: Type, operational features, color.
 - b. Extinguisher: Type, materials, construction, features, finish, color and attachment method.
 - c. Fire Hose Cabinets: Type, materials, construction, features, finish, color and attachment method.
 - 2. Shop Drawings: Show fabrication and installation details including anchorage and interface with adjacent materials.
 - Assurance / Control Submittals:
 - a. Documentation of experience indicating compliance with the specified qualifications requirements.

1.5 COORDINATION

A. Coordinate support and opening requirements with other trades.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.
 - 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- B. Regulatory Requirements: Conform to NFPA 10 and the local governing authorities having jurisdiction for extinguisher locations and mounting heights.
- C. Obtain products from one fire protection specialty manufacturer.
- D. Portable fire extinguishers to be UL-listed and bear a UL Alisting mark@ for the type, rating and classification of extinguisher indicated.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect the products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened protective packaging.

C. Store to prevent damage to materials, finishes and operating mechanisms.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide extinguisher and holder only where AFE@ is shown on the Drawings. Provide cabinet and extinguisher where AFEC@ is shown. Provide hose cabinet where AFHC@ is shown.

2.2 MANUFACTURERS

- A. Subject to compliance with the Project requirements, manufacturers offering products which may be incorporated into the work include the following:
 - 1. J.L. Industries, Inc.
 - 2. Larsen's Manufacturing Company.
 - 3. Potter Roemer Fire Protection Equipment.
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.3 MATERIALS

- A. (FE-1) Fire Extinguisher (at light hazard areas): Multipurpose dry chemical, UL 299; UL-rated 4-A:60:B:C; 10 lb. nominal capacity; cylinder with pressure gage and hose. Finish as selected.
 - 1. J.L. Industries: Cosmic Series.
 - 2. Larsen=s: MP Series.
 - Potter Roemer: 3002-3020.
- B. (FE-2) Fire Extinguisher (at Kitchens and Mechanical Rooms): Surface-mounted; Halotron; 15-1/2 lbs. nominal capacity; cylinder with pressure gage, nozzle and wall mounting bracket. Finish as selected.
 - 1. J.L. Industries: Mercury Series.
 - Larsen=s: HT Series.
 - 3. Potter Roemer: 3101-3115.
- C. (FE-3) Fire Extinguisher (at Parking Garages): Surface-mounted; regular dry chemical; 20 lbs. nominal capacity; cylinder with pressure gage, hose and wall mounting bracket. Finish as selected.
 - J.L. Industries: Galaxy Series.
 - 2. Larsen=s: DC Series.
 - 3. Potter Roemer: 3302-3320.

- D. Mounting Bracket: Device necessary for holding extinguishers and hoses in place. Designed to prevent the accidental dislodging of extinguisher. Size as required for the type and capacity of extinguisher specified; screw attached to the wall. Fire extinguisher manufacturer=s recommended standard type. Enameled steel finish.
- E. Identification Sign. As approved by Fire Department.
- F. Fire Extinguisher and Fire Hose Cabinets:
 - 1. General: Manufacturer=s standard fully welded construction with exposed to view (including inside the cabinet) welds ground smooth and blended with the adjacent surfaces. Miter and weld perimeter door frames.
 - 2. Door Lock: Self contained keyed cylinder lock assembly with internal cabinet trip lever. Key cabinets alike and provide ten (10) keys.
 - 3. Pulls: 5/16" diameter x 4" c.c. x 1-1/8" projection wire (rod) aluminum pull.
 - 4. Door Hinge: Continuous piano type.
 - 5. Decal: Instruction decal on face of door.
 - 6. Finishes: Exposed-to-view exterior and interior surfaces of cabinets and doors, interior tub, and door pull. Finish shall be manufacturer=s standard:
 - a. [Baked enamel coating.]
 - b. [Polyester coating.]
 - c. [Stainless steel.]
 - d. [Anodized aluminum.]
 - 7. Identification: Copy to read AFire Extinguisher@ or AFire Hose@, or such other copy necessary to indicate the primary fire device therein each unit. Letter style to be selected from manufacturer=s standards.
- G. (FEC-1) Fire Extinguisher and Cabinet: Fully-recessed, 3/8" flat trim, horizontal duo panel style with 1/8" Solargray glass with block letters. Tub: 9" x 24" x 4" or as approved. ADAAG compliant.
 - 1. J.L. Industries: 1525.
 - **2.** Larsen=s: AL-C 2409-R.
 - 3. Potter Roemer: 7340.
- H. (FEC-2) Fire Extinguisher and Cabinet: Semi-recessed, 1-1/4" square edge trim; formed aluminum frame and door with rolled edges; 1/8" thick clear acrylic bubble door with block letters. Tub: 9" x 24" x 4" or as approved. ADAAG compliant.
 - 1. J.L. Industries: Clear VU Series, Model No. 1527.
 - 2. Larsen's: AL-C 2409-6R.
 - 4. Potter Roemer: Loma Series, Model No. 7342.

- I. (FEC-3) Fire Extinguisher and Cabinet: Surface-mounted, door / frame, clear acrylic bubble door with block letters. Tub: 11-1/2" W x 26-1/2" H x 4" D or as approved. ADAAG compliant.
 - J.L. Industries: SMB Series.
 - Larsen=s: AL-C 2409-SM.
 - Potter Roemer: 7344.
- J. (FHC) Fire Hose Cabinet: Semi-recessed, formed aluminum frame and door, solid door panel; 2-1/2" rolled edge. Cabinet size 38" x 26" x 8" or as approved. Include fire hose and fire department valve. ADAAG accessible.
 - 1. J.L. Industries: 6427
 - 2. Larsen=s: AL-HC2638-RK
 - 3. Potter Roemer: 1000 Series;
- K Fire Hose Rack Assembly: For one man operation. 1-1/2" FM-approved hose and valve with single jacket lined hose. UL-rated industrial fog nozzle, pin rack and cast brass coupling, angle valve with escutcheon and nipple. Rated 100 GPM at 65 psi at nozzle. Hose length as selected.
 - 1. J.L. Industries: 3000 Series.
 - 2. Guardian Fire Equipment, Inc.: 3000 Series.
 - 3. Potter Roemer: 2500 Series.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - 1. Verify that rough openings for cabinets are correctly sized and located.
- C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install brackets, cabinets and extinguishers in accordance with the manufacturer's published instructions.
- B. Coordinate anchorage, support and opening requirements with other installers.

- C. Install in locations and at the mounting heights indicated and as required by applicable regulations of the governing authorities having jurisdiction.
- D. Securely fasten mounting brackets and fire equipment cabinets to the structure; mount square, level and plumb.
- E. Mount brackets so the height of the top of extinguishers is in compliance with ADAAG or not more than 60" above the finished floor.
- F. Install identification signage approved by Fire Department where not part of equipment.
- G. Do not install defective or damaged units that can not be restored or repaired to the satisfaction of the Owner=s representative.
- H. Turn over lock keys to the Owner=s representative.

3.3 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect brackets installations for secure attachment and for plumb.
- C. Inspect cabinet installations for secure attachment and for plumb, level, square and flush.

3.4 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Touch-up abraded paint coatings with matching paint.
- C. Clean units of dirt, stains, and mars without damage to the finishes.

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END OF SECTION

SECTION 10810

TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Toilet accessories.
 - Attachment hardware.
- B. Related Documents: The Contract Documents, as defined in Section 01010 Summary of Work, apply to the work of this Section. Additional requirements and information necessary to complete the work of this Section may be found in other Documents.
- C. Related Sections:
 - Section 06100 Rough Carpentry: Placement of backing and blocking for attachment of accessories.
 - Section 09110 Non-Load Bearing Steel Framing: Placement of backing plate reinforcement for attachment of accessories.
 - 3. Section 06400 Architectural Woodwork.
 - 4. Section 06650 Solid Polymer Fabrications.
 - 5. Section 10156 Phenolic Toilet Partitions: Substrate for mounting toilet accessories.
 - 6. Section 10165 Plastic Laminate Toilet Partitions: Substrate for mounting toilet accessories.

1.2 DESCRIPTION OF WORK

- A. The extent of toilet accessories work is indicated on the Drawings and as specified herein, and includes providing and installing the various accessory types, locks, keys and miscellaneous attachment hardware.
- B. Mounting heights for toilet accessories shall comply with ADAAG, as applicable.

1.3 REFERENCES

- A. The publications listed below form a part of this Specification to the extent referenced. Publications are referred to in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - ASTM A 123 Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

- 2. ASTM A 167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- 3. ASTM A 366 Specification for Steel, Carbon, Cold-Rolled, Commercial Quality.
- C. Americans with Disabilities Act Accessibility Guidelines (ADAAG):
 - 1. Accessibility Guidelines for Buildings and Facilities.
 - 2. Accessibility Guidelines for Schools.

1.4 SUBMITTALS

- A. Section 01330 Submittal Procedures: Procedures for submittals.
 - 1. Product Data: Manufacturer=s catalog and data for each accessory describing size, finish, details of function and attachment method.
 - 2. Samples: Submit one (1) sample of each item and model specified, if requested.
 - 3. Manufacturer=s recommended maintenance and operating instructions, parts manual and keys for each item and lock.
 - 4. Assurance / Control Submittals:
 - a. Manufacturer's certificate that products meet or exceed the specified requirements.
 - b. Documentation of experience indicating compliance with the specified qualifications requirements.
- B. Section 01780 Closeout Submittals: Procedures for closeout submittals.
 - 1. Deliver accessories Schedule, keys and Parts Manual for Owner=s permanent records. Provide two (2) sets of the following items of manufacturer=s literature:
 - a. Technical Data sheets for each accessory item.
 - b. Service and Parts Manuals.
 - Name of a local representative to be contacted in the event of need for field service or consultation.
 - 2. Warranty: Submit a manufacturer=s special Warranty with forms completed in the name of the Owner and registered with the manufacturer.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing the products specified with a minimum of five (5) years documented experience.

- 2. Installer: Company experienced in performing the work of this Section with a minimum of five (5) years documented experience.
- B. Regulatory Requirements: Comply with Americans with Disabilities Act Accessibility Guidelines (ADAAG). Verify mounting heights and clearances prior to installation.
- C. All accessories alike shall be the product of a single manufacturer.
- D. Keyed (tumbler lock) accessories shall be keyed alike except for coin receiving boxes on vending equipment.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 Product Requirements: Transport, handle, store and protect products.
- B. Deliver products to the Project Site in the manufacturer=s original, unopened protective packaging, labeled bearing the manufacturer's name and the type of accessory.
- C. Store materials in their original protective packaging to prevent soiling, wetting and physical damage.
- D. Handle to prevent damage to finish surfaces.
- E. Maintain protective covers on all units until installation has been completed. Remove coverings during final clean-up.

1.7 WARRANTY

- A. Section 01780 Closeout Submittals: Procedures for closeout submittals.
- B. Special Warranty:
 - 1. Provide a written Warranty signed by the manufacturer certifying that the products are free of defective materials and workmanship and agreeing to replace or repair any defective item, in whole or in part, as necessary to restore the product to its original intended state and integrity.
 - 2. Warranty Period:
 - a. Stainless Mirror Frames: Fifteen (15) years against corrosion.
 - b. Plate Glass Mirrors: Fifteen (15) years against silver spoilage.
 - c. Tempered Glass Mirrors: Five (5) years against silver spoilage.
 - d. Laminated Glass: Five (5) years against silver spoilage.
 - e. Hand Dryers: Ten (10) years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Project requirements, manufacturers offering the specified items which may be incorporated into the work include the following:

- 1. American Specialties, Inc.
- 2. Bobrick Washroom Equipment, Inc.
- 3. Bradley Corp.
- 4. GOJO Corporation
- 5. San Jamar Oceans Corporation
- 6. TC Corporation
- B. Section 01600 Product Requirements: Product Options: Substitutions permitted.

2.2 MATERIALS

- A. Sheet Steel: ASTM A 366.
- B. Galvanized Sheet Steel: ASTM A 366, ASTM A 123 to 1.25 ounces per square foot.
- C. Stainless Steel Sheet: ASTM A 167, Type 304.
- D. Expansion Shields: Fiber, lead or rubber as recommended by the accessory manufacturer for the component and substrate.
- E. Fasteners, Screws and Bolts: Hot-dip galvanized, tamper-proof. The finish of exposed fasteners shall match the finish of the item secured.

2.3 MANUFACTURED UNITS

- A. TA-1 Liquid Soap Dispenser:
 - 1. Model Numbers:
 - a. American Specialties: 9343.
 - b. Bobrick: B-2112.
 - c. Bradley: 6542.
 - 2. Description: Surface-mounted, horizontal tank-type dispenser for all-purpose liquid soap. 22 gage, Type 304 satin finish stainless steel container; drawn one-piece seamless body; mounting bracket attached to back plate for attachment to wall plate; concealed, vandal-resistant mounting. Unbreakable, clear acrylic refill indicator window; lockable hinged stainless steel lid for top filling; special key. Capacity: minimum, 40 ounces. Molded plastic push button and spout. Corrosion resistant to most soaps and detergents. ADAAG compliant.

TA-1A Touch Free Foam Soap Dispenser

- 1. Model Number:
 - a. GoJo TFX 5362.02
 - b. TC #450017

- 2. Description: Surface mounted foaming hand soap dispenser. Refillable. Battery operated automatic touch free dispenser, with skylight window. ADA compliant. 1200 mL refills.
- 3. Refills: Provide two (2) additional refill packets for each soap dispenser
- B. TA-2 Mirror with Stainless Steel Frame:
 - 1. Model Numbers:
 - f. American Specialties: 0600.
 - g. Bobrick: B-290 Series.
 - h. Bradley: 780 Series.
 - Description: 1/4" polished, tempered glass mirror. One-piece, roll-formed, 18 gage, Type 304 satin finish stainless steel angle frame; mitered corners welded, ground and polished. Concealed hanging bracket locked into top and bottom of frame with tamper-proof set screws. One piece water-resistant back attached to frame with theft-resistant locking device. Manufacturer=s standard size, as indicated.
- C. TA-3 Stainless Steel Mirror:
 - Model Numbers:
 - a. American Specialties: 0600.
 - b. Bobrick: B-290 Series.
 - c. Bradley: 780 Series.
 - Description: Same as TA-2 except with Type 304 polished stainless steel mirror.
- D. TA-4 Combination Paper Towel Dispenser and Waste Receptacle:
 - 1. Model Numbers:
 - a. American Specialties: 0469.
 - b. Bobrick: B-3944.
 - c. Bradley: 234.
 - 2. Description: Recessed, 22 gage, Type 304 satin finish stainless steel, all-welded cabinet. 22 gage, satin finish stainless steel, drawn and beveled one-piece seamless flange. 22 gage, Type 304 satin finish stainless steel dispenser door secured to cabinet with full-length stainless steel piano hinge; semi-concealed tumbler lock. 22 gage, Type 304 satin finish stainless steel dispenser; rounded towel tray with hemmed opening. Capacity: 600 C-fold or 800 multi-fold paper towels. 22 gage, Type 304 satin finish stainless steel waste receptacle; all edges hemmed; secured to cabinet with tumbler lock. Capacity: 12 gallons. Interior hooks for optional vinyl liner. ADAAG compliant.

- E. TA-5 Paper Towel Dispenser:
 - 1. Model Numbers:
 - a. American Specialties: 0215.
 - b. Bobrick: B-2621.
 - c. Bradley: 252.
 - Description: Surface-mounted, 22 gage, Type 304 satin finish stainless steel, all-welded cabinet. Hemmed opening towel tray. 22 gage, Type 304 satin finish stainless steel door, secured to cabinet with full-length stainless steel piano hinge; tumbler lock. Capacity: 200 C-fold or 275 multi-fold paper towels. ADAAG compliant.

TA-5A Automatic Paper Towel Dispenser

- 1. Model Numbers:
 - a. San Jamar Oceans Tear-N-Dry
 - b. Kimvery KP-02
- 2. Description: Touchless towel dispensing system with automatic portion control to dispense, adjustable sheet length setting. Battery operated, dispenser automatically operates with user=s motion. For rolls 8" wide x 8 2" diameter and 4" diameter stub roll with lock.
- 3. Refills: Provide six (6) refill rolls for each towel dispenser.
- F. TA-6 Waste Receptacle:
 - 1. Model Numbers:
 - a. Bobrick: B-2400
 - b. American Specialties
 - c. Bradley
 - 2. Description: Floor-Standing Large Capacity Waste Recptacle; 22 gage, Type 304 satin finish stainless steel; 33 gallon capacity.
- G. TA-6A Circular Waste Chute:
 - 1. Model Numbers:
 - a. Bobrick: B-529
 - b. American Specialities
 - c. Bradley

- Description: Type-300, 24-gauge stainless steel; bright polished finish; 5-7/16" inside diameter; rolled lip.
- H. TA-7 Electric Hand Dryer:
 - 1. Model Numbers:
 - a. Toto HDR100#GY.
 - b. Bobrick: B-7507.
 - c. Bradley: 2899-28.
 - 2. Description: Sensor Activated High Speed Hand Dryer.
- I. TA-8 Touchless Paper Towel Dispenser:
 - 1. Model Numbers:
 - a. Bradley: 2490.
 - b. Maintex, Inc: enMotion.
 - 2. Description: Surface-mounted, automatic touchless paper towel dispenser. Battery operated; high impact translucent plastic door; roll towels; key-activated spring lock.
- I. TA-9 Sanitary Napkin / Tampon Dispenser:
 - 1. Model Numbers:
 - a. American Specialties: 0468.
 - a. Bobrick: 3500 Series.
 - b. Bradley: 4017 Series.
 - 2. Description: Semi-recessed, 18 or 22 gage, Type 304 satin finish stainless steel cabinet. 18 gage, Type 304 satin finish stainless steel door attached to cabinet with full-length stainless steel piano hinge held closed with two (2) tumbler locks keyed alike with manufacturer=s other accessories. 22 gage stainless steel internal coin box secured by separate lock; keyed differently from door locks. Coin mechanism convertible, replaceable in the field without removing cabinet; factory installed coin operation denomination to be determined. Body and door of welded construction with burr-free edges; no exposed fasteners or welded seams. Provide collar, as necessary, for semi-recessed mounting. Capacity: 30 napkins and 27 tampons, minimum. ADAAG compliant.
- J. TA-10 Partition-Mounted, Dual Access Sanitary Napkin / Tampon Disposal:

- 1. Model Numbers:
 - a. American Specialties: 0472 (for two compartments) / 0473 (for single end compartment).
 - b. Bradley: 4721-15 (for two compartments) / 4722-15 (for single end compartment).
- 2. Description: Partition-mounted dual napkin disposal; serves two compartments. 22 gage, Type 304 satin finish stainless steel flanges; one-piece seamless construction, 1" wide with 1/4" return, adjustable for partitions thickness. 22 gage, Type 304 satin finish stainless steel cabinet. All welded construction with one flange welded to cabinet. 22 gage, Type 304 satin finish stainless steel, self-closing push flap door on each side; heavy-duty, full-length, spring loaded, stainless steel piano hinges; doors operate independently. 22 gage, Type 304 stainless steel waste container with tumbler locks keyed alike with manufacturer=s other accessories; hemmed finger grip, removable from one side only. Capacity: 1.5 gallons. Body and doors welded construction; burr-free beveled edges. International graphic waste symbol affixed to doors. ADAAG compliant.

End compartment unit similar but recess-mounted in side wall.

- K. TA-11 Toilet Seat Cover Dispenser:
 - Model Numbers:
 - a. American Specialties: 0477SM.
 - b. Bobrick: B-221.
 - c. Bradley: 583.
 - 2. Description: Surface-mounted; 22 gage, Type 304 satin finish stainless steel; all welded construction. Capacity 250 single or half-fold seat covers.
- L. TA-12 Multi-Roll Tissue Dispenser:
 - 1. Model Numbers:
 - a. American Specialties: 9030.
 - b. Bobrick: B-2888.
 - c. Bradley: 5402.
 - 2. Description: Surface-mounted; 22 gage, Type 304 satin finish stainless steel cabinet. All welded construction. 18 gage drawn, one-piece, Type 304 satin finish stainless steel door, pivot hinge and tumbler lock. 18 gage stainless steel dispensing mechanism, inner housing and cam. Heavy-duty, one-piece, theft-resistant, molded ABS spindles. Holds 2 standard core 5-1/4" diameter tissue rolls. Reserve roll automatically drops in-place when bottom roll is depleted.
- M. TA-13 Toilet Grab Bar: Provide one each 36" and 48" lengths at each accessible toilet stall, ambulatory stall, and family restroom.

- 1. Model Numbers:
 - a. American Specialties: 3100 Series, Type 56.
 - b. Bobrick: B-5837.
 - c. Bradley: 832 Series.
- 2. Description: Heavy-duty, 1-1/4" diameter, horizontal, 1-1/2" wall clearance. 18 gage, Type 304 satin finish stainless steel. Concealed screw attached mounting and anchorage. 3" flange; 11 gage, Type 304 satin finish stainless steel. Minimum 900 pounds supporting capacity. Length as indicated, ADAAG compliant.
- N. TA-14 Robe Hooks:
 - 1. Model Numbers:
 - a. American Specialties: 7345.
 - b. Bobrick: B-6727.
 - c. Bradley: 9124.
 - 2. Description: Double robe hook, Type 304 satin finish stainless steel. Concealed mounting. 4" wide bar with end hooks. Projects 1-5/8", minimum, from wall.
- O. TA-15 Shower Curtain Rod / Hooks / Curtain:
 - 1. Model Numbers:
 - a. American Specialties: 1214 / 1200-SHU / 1200-V.
 - b. Bobrick: B-6107 / 204-1 / 204-3.
 - c. Bradley: 953 / 9536 / 9537.
 - 2. Description: Heavy-duty, 20 gage, 1" diameter, Type 304 satin finish stainless steel rod; screw anchored attachment; length as required. Stainless steel hooks for 1" rod. 8 gage, flame-resistant, anti-bacterial vinyl fabric shower curtain, length as required; color white.
- P. TA-16 Soap Dish: provide one each at shower locations.
 - Model Numbers:
 - a. American Specialties: 7404.
 - b. Bobrick: B-4380.

- 2. Description: Recessed, heavy-duty, one-piece construction, drawn and seamless. 22 gage, Type 304 satin finish stainless steel.
- Q. TA-20 Mop Holder: provide one each at janitor closets.
 - Model Numbers:
 - a. American Specialties: 1315.
 - b. Bobrick: B-224.
 - 2. Description: 18 gage, Type 304 satin finish stainless steel. 8" deep shelf with return. 36" long. 4 rubber mop holders, 3 rag hooks; rod below shelf.

2.4 FABRICATION

- A. Weld and grind smooth joints of fabricated components.
- B. Form exposed surfaces from single sheet of stock, free of joints. Form surfaces flat without distortion. Maintain surfaces without scratches and dents.
- C. Fabricate grab bars of tubing, free of visible joints, return to wall with end attachment flanges.
- D. Shop assemble components and package complete with fittings and anchors.
- E. Provide steel anchor plates, adapters and anchor components necessary for secure installation.
- F. Back paint components where in contact with building finishes to prevent electrolysis.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 Execution Requirements: Verification of existing conditions before starting the work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive the work.
 - 1. Verify that wall openings for recessed accessories are correctly located and of proper dimensions.
 - Verify that attachment blocking and backing plates are in place, plumb and level, and in the correct location for attachment of accessories.
 - 2. Check areas to receive surface-mounted accessories for conditions that would affect quality and execution of the work.
 - 3. Verify spacing of plumbing fixtures and toilet partitions that affect installation of accessories.

C. Report, in writing, prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with the work until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Deliver inserts and rough-in frames to the Project Site for scheduled installation.
- B. Provide and use templates and rough-in measurements as required.

3.3 INSTALLATION

- A. Install fixtures, accessories, and items in accordance with the manufacturer's instructions, ADAAG and as indicated on the Drawings.
- B. Install at the locations and heights indicated or as required, plumb and level, securely and rigidly anchored to the substrate.
- C. Install manufacturer=s recommended anchor system for all grab bars.
- D. Conceal evidence of drilling, cutting and fitting on adjacent finishes.
- E. Fit flanges of accessories snug to wall surfaces. Provide caulking in gaps between 90 degrees return flanges and finish wall surface after accessories are installed.

3.4 ADJUSTING

- A. Section 01700 Execution Requirements: Adjusting the installed work.
- B. Adjust accessories for proper operation.
- C. Verify that mechanisms function smoothly.

3.5 FIELD QUALITY CONTROL

- A. Section 01450 Quality Control: Field inspection.
- B. Inspect accessories to ensure secure attachment to the substrates, proper locations and mounting heights in compliance with ADAAG.

3.6 CLEANING

- A. Section 01700 Execution Requirements: Cleaning the installed work.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces prior to final inspection.

END OF SECTION

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GIAA RESTROOM RENOVATION

MECHANICAL SPECIFICATIONS

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SECTION 15010

BASIC MECHANICAL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

Basic Mechanical Requirements specifically applicable to Division 15 Sections, in addition to Division 1 - General requirements.

1.2 WORK SEQUENCE

Install work in phases to accommodate Owner's storage of owner provided materials and equipment requirements. During the construction period coordination mechanical schedule and operations with G.I.A.A./Engineer.

1.3 ALTERNATE

Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in an Owner-Contract Agreement.

1.4 REFERENCES

Refer to individual sections.

1.5 SUBMITTALS

- A. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.
- B. Mark dimensions and values in units to match those specified.
- C. Indicate on submittals; features, accessories and options pertinent to this project.
- D. Indicate on shop drawings; equipment manufacturer's installation requirements for operation, service and maintenance. Indicate connection of piping, ductwork and wiring. Indicate supports and reinforcements necessary for equipment, ductwork and piping to withstand 155-mph typhoon winds and earthquake forces anticipated in seismic zone 4.

1.6 REGULATORY REQUIREMENTS

- A. General: Conform to applicable 2009 International Building Codes regulations.
- B. Fire Protection: Conform to applicable NFPA/AHJ regulations.
- C. Plumbing: Conform to applicable 2009 International Plumbing Code regulations.

- D. Mechanical: Conform to applicable 2009 International Mechanical Code Regulations.
- E. Obtain permits, and request inspections from authority having jurisdiction.

1.7 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.
- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of G.I.A.A./Engineer before proceeding.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

*** END OF SECTION 15010 ***

SECTION 15121

PIPING EXPANSION COMPENSATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Flexible pipe connectors.
- B. Expansion joints and compensators.
- C. Pipe loops, offsets, and swing joints.

1.2 REFERENCES

A. MIL-E-17814E - Expansion Joints, Pipe, Slip-Type, Packed.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide structural work and equipment required to control expansion and contraction of piping. Verify that anchors, guides, and expansion joints provided, adequately protect system.
- B. Expansion Calculations:
 - 1. Installation Temperature: 80 degrees F.
 - 2. Domestic Hot Water: 140 degrees F (60 degrees C).
 - 3. Safety Factory: 30 percent.

1.4 SUBMITTALS

A. Product Data:

- 1. Flexible Pipe Connectors: Indicate maximum temperature and pressure rating, face-to-face length, live length, hose wall thickness, hose convolutions per foot (meter) and per assembly, fundamental frequency of assembly, braid structure, and total number of wires in braid.
- 2. Expansion Joints: Indicate maximum temperature and pressure rating, and maximum expansion compensation.
- B. Design Data: Indicate selection calculations.
- C. Manufacturer's Installation Instructions: Indicate special procedures, and external controls.

1.5 PROJECT RECORD DOCUMENTS

A. Record actual locations of flexible pipe connectors, expansion joints, anchors, and guides.

1.6 OPERATION AND MAINTENANCE DATA

A. Maintenance Data: Include adjustment instructions.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years experience.
- B. Design expansion compensating system under direct supervision of a Professional Engineer registered in Guam experienced in design of this work.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Accept expansion joints on site in factory packing with shipping bars and positioning devices intact. Inspect for damage.
- B. Protect equipment from exposure by leaving factory coverings, pipe end protection, and packaging in place until installation.

1.9 WARRANTY

- A. Provide five year warranty.
- B. Warranty: Include coverage for leak free performance of packed expansion joints.

1.10 EXTRA MATERIALS

A. Provide two 12 ounce containers of packing lubricant and cartridge style grease gun.

PART 2 PRODUCTS

2.1 FLEXIBLE PIPE CONNECTORS

- A. Steel Piping:
 - 1. Inner Hose: Stainless Steel.
 - 2. Exterior Sleeve: Double braided stainless steel.
 - 3. Pressure Rating: 200 psig WOG and 250 degrees F.
 - 4. Joint: Flanged, threaded, threaded with union, or welded, as required by site

conditions.

- 5. Size: Use pipe sized units.
- 6. Maximum offset: 3/4 inch (20 mm) on each side of installed center line.

B. Copper Piping:

- 1. Inner Hose: Bronze
- 2. Exterior Sleeve: Braided bronze.
- 3. Pressure Rating: 200 psig WOG and 250 degrees F.
- 4. Joint: Flanged, threaded, threaded with Union, or Soldered as required by site conditions.
- 5. Size: Use pipe sized units.
- 6. Maximum offset: 3/4 inch on each side of installed center line.

2.2 ACCESSORIES

A. Pipe Alignment Guides:

1. Two piece welded steel with enamel paint, bolted, with spider to fit standard pipe, frame with four mounting holes, clearance for minimum 1 inch (25 mm) thick insulation, minimum 3 inch (75 mm) travel.

B. Swivel Joints:

 Fabricated steel, bronze, ductile iron, or cast steel body to match existing conditions, double ball bearing race, field lubricated, with rubber (Buna-N) Oring seals.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Construct spool pieces to exact size of flexible connection for future insertion.
- C. Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation. Provide line size flexible connectors.
- D. Install flexible connectors at right angles to displacement. Install one end immediately adjacent to isolated equipment and anchor other end. Install in horizontal plane unless indicated otherwise.

- E. Rigidly anchor pipe to building structure where necessary. Provide pipe guides so movement is directed along axis of pipe only. Erect piping such that strain and weight is not on cast connections or apparatus.
- F. Provide support and equipment required to control expansion and contraction of piping. Provide loops, pipe offsets, and swing joints, or expansion joints where indicated.
- G. Provide Victaulic piping with minimum one joint per (inch) (25 mm) pipe diameter instead of flexible connector supported by vibration isolation. Victaulic piping need not be anchored.
- H. Provide expansion loops as indicated on drawings.

3.2 MANUFACTURER'S FIELD SERVICES

A. Provide inspection services by flexible pipe manufacturer's representative for final installing and certify installation is in accordance with manufacturer's recommendations and connectors are performing satisfactorily.

*** END OF SECTION 15121 ***

SECTION 15140

SUPPORTS AND ANCHORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pipe and equipment hangers, supports, and associated anchors.
- B. Equipment bases and supports.
- C. Sleeves and seals.

1.2 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish hanger and support inserts, and sleeves to Division 3 for placement into formwork.

1.3 RELATED REQUIREMENTS

A. Section 15010, "Basic Mechanical Requirements", applies to this section with the additions and modifications specified herein.

1.4 RELATED SECTIONS

A. Section 15260 - Piping Insulation.

1.5 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Division 1.
- B. Manufacturers' Data: Product information including materials utilized, capacity ratings, and application requirements.
- C. Shop Drawings: Indicate hanger and support framing and attachment methods.

PART 2 PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 1/2 to 1-1/2 Inches: Malleable iron, carbon steel, adjustable swivel, and split ring.
- B. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.
- C. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp; adjustable steel yoke and cast iron roll for hot pipe sizes 6 inches and

over.

- D. Vertical Support: Steel riser clamp.
- E. Floor Support for Pipe Sizes to 4 inches and all Cold Pipe Sizes: Cast iron adjustable pipe saddle, locknut nipple, floor flange, concrete pier or steel support.
- F. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- G. Shield for insulated piping 2 inches and smaller: 18 gage galvanized steel shield over insulation in 180 degree segments, minimum 12 inches long at pipe support.
- H. Shield for Vertical Copper Pipe Risers: Sheet lead.

2.2 HANGER RODS

A. Steel Hanger Rods: Threaded both ends, threaded one end, or continuous threaded.

2.3 INSERTS

A. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.4 FLASHING

- A. Metal Flashing: 24 gage thick galvanized steel.
- B. Lead Flashing: 4 lb/sq ft. sheet lead.
- C. Caps: Steel, 22 gage minimum; 16 gage at fire resistant elements.
- D. Housing: 22 gage minimum galvanized sheet metal, reinforced with galvanized angle iron, size as indicated.

2.5 EQUIPMENT CURBS AND SLEEVES

A. Standard curbs and flanged sheet metal wall sleeves furnished by equipment manufacturers.

2.6 SLEEVES

- A. Provide a minimum of 1-1/2 inches between top of sleeve and top of piping and ductwork for future building settlement.
- B. Sleeves for Pipes through Non-fire Rated Floors: Form with 18 gage thick galvanized steel.
- C. Sleeves for pipes through Non-fire Rated Beams, Walls, Footings, and Potentially

- Wet Floors: Form with steel pipe.
- D. Sleeves for pipes through Fire rated and Fire resistive Floors and Walls, and Fireproofing: Prefabricated fire rated sleeves including seals, UL listed.
- E. Sleeves for Ductwork: Form with galvanized steel.
- F. Stuffing, Fire Stopping Insulation: Glass fiber type, non-combustible.
- G. Caulk: Acrylic sealant of quality specified in section 07900.

2.7 FABRICATION

- A. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- B. Design hangers for installation without disengagement of supported pipe.
- C. Provide copper plated hangers and supports for copper piping.

2.8 FINISH

- A. For all hangers and supports except those fabricated from copper or lead, provide galvanized protective finish.
- B. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

PART 3 EXECUTION

3.1 INSERTS

- A. Provide inserts to Division 3 for placement in concrete formwork.
- B. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
- C. Provide hook rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
- Where concrete slabs form finished ceiling, provide inserts to be flush with slab surface.
- E. Where inserts are omitted, and top of supporting slab does not form finish floor, drill through concrete slab from below and provide thru-bolt with square steel backing plate, and double nut with lock washer.

3.2 PIPE HANGERS AND SUPPORTS

A. Support horizontal piping as follows:

PIPE SIZE	MAX. HANGER SPACING	HANGER (OD)	
1/2 to 1-1/4 in	6'-6"	3/8"	
1-1/2 to 2 in	10'-0"	3/8"	
2-1/2 to 3 in	10'-0"	1/2"	
4 to 6 in	10'-0"	5/8"	
8 to 12 inch	14'-0"	7/8"	
14 inch and over	20'-0"	1"	
PVC (all sizes)	6'-0"	3/8"	
C.I. bell and Spigot			
(or No-Hub)	5'-0" and at joints	3/8"	

- B. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
- C. Place a hanger within 12 inches of each horizontal elbow.
- D. Use hanger with 1-1/2 inch minimum vertical adjustments.
- E. Support horizontal cast iron pipe adjustment to each hub, with 5 feet maximum spacing between hangers.
- F. Support vertical piping at every floor. Support vertical cast iron pipe at each floor at hub.
- G. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- H. Support riser piping independently of connected horizontal piping.

3.3 EQUIPMENT BASES AND SUPPORTS

- A. Provide equipment bases of concrete type specified in Division 3.
- B. Provide templates, anchor bolts, and accessories for mounting and anchoring equipment.
- C. Construct support of steel members. Brace and fasten with flanges bolted to structure.
- D. Provide rigid anchors for pipes after vibration isolation components are installed.
- E. Provide water heater concrete pedestal supports.

3.4 FLASHING

- A. Provide flexible flashing and metal counter-flashing where piping and ductwork penetrate weather or waterproofed walls, floors, and roofs.
- B. Flash vent and soil pipes projecting 3 inches minimum above finished roof surface with lead worked one inch minimum into hub, 8 inches minimum clear on sides with 24 x 24 inches sheet size. For pipes through outside walls, turn flanges back into wall and caulk, metal counterflash and seal.
- C. Flash floor drains in floors with topping over finished areas with lead, 10 inches clear on sides with minimum 36 x 36 inch sheet size. Fasten flashing to drain clamp device.

3.5 SLEEVES

- A. Set sleeves in position in formwork. Provide reinforcing around sleeves.
- B. Extend sleeves through floors one inch above finished floor level. Caulk sleeves full depth and provide floor plate.
- C. Where piping or ductwork penetrating floor, ceiling or wall, close off space between pipe or duct and adjacent work with fire stopping insulation and caulk seal. Provide close fitting metal Collar or escutcheon covers at both sides of penetration.
- D. Install chrome plated steel or stainless steel escutcheons at finished surfaces.

*** END OF SECTION 15140 ***

SECTION 15260

PIPING INSULATION

PART 1 GENERAL

1.1 SECTIONS INCLUDES

- A. Piping insulation
- B. Jackets and accessories.

1.2 RELATED REQUIREMENTS:

Section 15010, "Basic Mechanical Requirements", applies to this section with the additions and modification specified herein.

- 1.3 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
 - A. ASTM C177 Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
 - B. ASTM C335 Steady-State Heat Transfer Properties of Horizontal Pipe Insulation.
 - C. ASTM C518 Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - D. ASTM C534 Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
 - E. ASTM C547 Mineral Fiber Preformed Pipe Insulation.
 - F. ASTM C640 Corkboard and Cork Pipe Thermal Insulation.
 - G. ASTM C921 Determining the Properties of Jacketing Materials for Thermal Insulation.
 - H. ASTM D1056 Flexible Cellular Materials Sponge or Expanded Rubber.
 - I. ASTM E84 Surface Burning Characteristics of Building Materials.
 - J. ASTM E96 Water Vapor Transmission of Materials.
 - K. NFPA 255 Method of Test of Surface Burning Characteristics of Building Materials.

L. UL 723 - Test of Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS

- A. Product Data: Provide product description, list of materials and thickness for each service, and locations.
- B. Samples: Submit two samples of any representative size illustrating each insulation type.
- C. Manufacturer's Installation Instructions: Indicate procedures, which ensure acceptable workmanship and installation standards will be achieved.

1.5 QUALITY ASSURANCE

A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84, NFPA 255, UL 723.

1.6 QUALIFICATIONS

A. Application: Company specializing in performing the work of this section with minimum five years' experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site in accordance with the applicable provisions of General Conditions and General Requirements.
- B. Deliver materials to site in original factory packaging, labeled with manufacturer's identifications, including product density and thickness.
- C. Store insulation in original wrapping and protect from weather and construction traffic.
- D. Protect insulation against dirt, water, chemical, and mechanical damage.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Maintain ambient temperatures during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.1 GLASS FIBER INSULATION

A. Insulation: ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.

- 1. 'K' ('Ksi') value: ASTM C177, 0.24 at 75 degrees F.
- 2. Maximum service temperature: 650 degrees F.
- 3. Maximum moisture absorption: 0.2 percent by volume.
- B. Vapor Barrier Jacket:
 - 1. ASTM C921, White kraft paper with glass fiber yarn, bonded to aluminized film.
 - 2. Moisture vapor transmission: ASTM E96; 0.02 perm-inches.
- C. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.
- D. Vapor Barrier Lap Adhesive:
 - 1. Compatible with insulation.
- E. Insulating Cement/Mastic:
 - 1. ASTM C195; hydraulic setting on mineral wool.
- F. Fibrous Glass Fabric:
 - 1. Cloth: Untreated; 9 oz/sq yd weight.
 - 2. Blanket: 1.0 lb/cu ft density.
 - 3. Weave: 5x5.
- G. Indoor Vapor Barrier Finish:
 - 1. Cloth: Untreated; 9 oz/sq yd weight.
 - 2. Vinyl emulsion type acrylic, compatible with insulation, white color.
- H. Insulating Cement:
 - 1. ASTM C449/C449M.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign materials removed, and dry.

3.2 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. On exposed piping, locates insulation and cover seams in least visible locations.
- C. Glass fiber insulated pipes conveying fluids below ambient temperature:
 - Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
 - 2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
- D. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
- E. Glass fiber insulated pipes conveying fluids above ambient temperature:
 - 1. Provide standard jackets, with or without vapor barrier, factoryapplied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.
 - 2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.

F. Inserts and Shields:

- 1. Application: Piping 1-1/2 inches diameter or larger.
- 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and insert.
- Insert Location: Between support shield and piping and under the finish jacket.
- 4. Insert Configuration: Minimum 12 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
- 5. Insert Material: ASTM C640 cork or other heavy density insulating material suitable for the planned temperature range.
- G. Finish insulation at supports, protrusion, and interruptions.

H. For exterior and inside pipe trench applications, provide vapor barrier jacket.

Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with stainless steel jacket with seams located on bottom side of horizontal piping.

3.3 TOLERANCE

A. Substituted insulation materials shall provide thermal resistance within 10 percent at normal conditions, as materials indicated.

3.4 GLASS FIBER INSULATION SCHEDULE

PIPING SYSTEMS	PIPE SIZE (Inches, IPS)		
	Up to 1.25	1.5-3	3.5-Over
Domestic Water Systems			
Cold Water Supply	1	1	1.5
Hot Water Supply	1	1	1.5

*** END OF SECTION 15260 ***

SECTION 15290

DUCTWORK INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Ductwork insulation.
- B. Insulation jackets.

1.2 REFERENCES

- A. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (ASTM B209M Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.)
- B. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- C. ASTM C553 Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
- D. ASTM C612 Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
- E. ASTM C921 Standard Practice for Determining the Properties of Jacketing Materials for Thermal Insulation.
- F. ASTM C1071 Standard Specification for Thermal and Acoustical Insulation (Glass Fiber, Duct Lining Material).
- G. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- H. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.
- I. ASTM E162 Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.
- J. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- K. NAIMA National Insulation Standards.
- L. NFPA 255 Standard Method of Test of Surface Burning Characteristics of Building Materials.

- M. SMACNA HVAC Duct Construction Standards Metal and Flexible.
- N. UL 723 Standard for Test for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS FOR REVIEW

- A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- B. Samples: Submit two samples of any representative size illustrating each insulation type.

1.4 SUBMITTALS FOR INFORMATION

A. Manufacturer's Instructions: Indicate installation procedures which ensure acceptable workmanship and installation standards will be achieved.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum two years experience.

1.6 REGULATORY REQUIREMENTS

A. Materials: Flame spread/smoke developed rating of 25/50 in accordance with ASTM E84, NFPA 255, and UL 723.

1.7 DELIVERY, STORAGE, AND PROTECTION

- A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.

PART 2 PRODUCTS

2.1 GLASS FIBER DUCT WRAP, FLEXIBLE

- A. Insulation: ASTM C553; flexible, noncombustible blanket.
 - 1. 'K' value: ASTM C518, 0.31 at 75 degrees F.
 - 2. Maximum service temperature: 250 degrees F.
 - 3. Maximum moisture absorption: 0.20 percent by volume.

B. Vapor Barrier Jacket:

- 1. Kraft paper with glass fiber yarn and bonded to aluminized film.
- 2. Moisture vapor transmission: ASTM E96; 0.02 perm.
- 3. Secure with pressure sensitive tape.
- C. Vapor Barrier Tape: Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.
- D. Outdoor Vapor Barrier Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
- E. Tie Wire: Annealed steel, 16 gage.

2.2 JACKETS

- Canvas Jacket: UL listed.
 - 1. Fabric: ASTM C921, 6 oz/sq yd, plain weave cotton treated with dilute fire retardant lagging adhesive.
 - 2. Lagging Adhesive: Compatible with insulation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that ductwork has been tested before applying insulation materials.
- C. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

- A. Quality Control: Install in accordance Manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.

- C. Insulated ductwork conveying air below ambient temperature:
 - 1. Provide insulation with vapor barrier jackets.
 - 2. Finish with tape and vapor barrier jacket.
 - 3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
 - 4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- D. Insulated ductwork conveying air above ambient temperature:
 - 1. Provide with or without standard vapor barrier jacket.
 - 2. Insulate fittings and joints. Where service access is required bevel and seal ends of insulation.
- E. Ductwork Exposed in Finished Spaces Finish with canvas jacket sized for finish painting.

3.3 SCHEDULES

A. FLEXIBLE GLASS FIBER DUCT WRAP INSULATION SCHEDULE

DUCTWORK	INSULATION Type	THICKNESS Inch	FINISH
Supply Air Ducts, Interior	Duct wrap	2	Sealer
Return Air Ducts, Interior	Duct wrap	2	Sealer
Outside Air Ducts, Interior	Duct wrap	2	Sealer

*** END OF SECTION 15290 ***

SECTION 15330

WET PIPE SPRINKLER SYSTEM

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

Section 15010 "Basic Mechanical Requirements," applies to this section, with the additions and modifications specified herein.

1.2 DESCRIPTION

- A. The work includes designing and providing new automatic wet pipe fire extinguishing sprinkler system for uniform distribution of water by hydraulic design to afford complete fire protection coverage throughout the project. Sprinkler protection shall provide 100% coverage for the enclosed areas of the buildings in accordance with NFPA 13.
- B. System shall be provided with earthquake protection. Design and install system to give full consideration to blind spaces, piping, electrical equipment, ductwork, and all other construction and equipment to afford complete coverage in accordance with detailed drawings to be submitted for approval. Devices and equipment for fire protection service shall be listed by the Underwriters' Laboratories, Inc. or approved by Factory Mutual System. In the NFPA publications referred to herein, the advisory provisions shall be considered to be mandatory, as though the word "shall" had been substituted for "should" wherever it appears; reference to the "authority having jurisdiction" shall be interpreted to mean the Government of Guam Fire Department and Department of Public Works. The work shall begin at the point indicated.

1.3 APPLICABLE PUBLICATIONS

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the designation only.

- A. ASTM A 53-83 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
- B. AWWA C 104-80 Cement-Mortar Lining for Cast-Iron and Ductile-Iron Pipe and Fitting for Water
- C. AWWA C 110-82 Gray-Iron and Ductile-Iron Fittings, 3 in. Through 48 in. for Water and Other Liquids
- D. AWWA C 151-81 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water and Other Liquids
- E. AWWA C 500-80 Gate Valves, 3 Inch through 48 Inch, for Water and Sewage

Systems

- F. AWWA C 601-81 Disinfecting Water Mains
- G. FM 1992 Approval Guide
- H. NFPA 10-90 Portable Fire Extinguishers
- I. NFPA 13-91 Sprinkler Systems
- J. NFPA 24-90 Outside Protection
- K. NFPA 70-90 National Electrical Code
- L. UL 262-80 Gate Valves for Fire Protection Service
- M. UL 789-82 Indicator Posts for Fire Protection Service
- N. 1991 Fire Protection Equipment Directory

1.4 QUALIFICATIONS OF INSTALLER

Prior to installation, submit data for approval by the Engineer, showing that the Contractor has successfully installed automatic fire extinguishing sprinkler systems of the same type and design as specified herein, or that he has a firm contractual agreement with a subcontractor having such required experience. The data shall include the names and locations of at least two installations where the Contractor or the subcontractor referred to above, has installed such systems. The Contractor shall indicate the type and design of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than two years.

1.5 SUBMITTALS

Partial submittals will not be acceptable. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 30 inches by 42 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and NFPA 14, and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Engineer, Guam Fire Department and Guam Department of Public Works will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings and calculations for each sprinkler system and working drawings for the standpipe. Working drawings and calculations must be stamped by a registered professional engineer.

A. Manufacturer's Data:

- 1. Pipe, fittings, and mechanical coupling.
- 2. Sprinkler heads.

- 3. Pipe hangers, supports and earthquake sway bracing.
- 4. Sprinkler stoppers.
- B. Shop (Working) Drawings:
 - 1. Sprinkler system layout
 - 2. Hydraulic calculations
- C. Samples: One of each type of sprinkler head and escutcheon plates to be used.
- D. Certificates of Compliance:
 - 1. Contractor's material and test certificate
 - 2. Pipe and fittings
- E. Operation and Maintenance Manuals: For all sprinkler system components.

1.6 AS-BUILT (RECORD) WORKING DRAWINGS

After completion, but before final acceptance of the work, furnish a complete set of drawings of each sprinkler, fire pump and standpipe system for record purposes. The drawings shall be not smaller than 30 inches by 42 inches reproducible drawings on mylar film with title block (8 inches by 4 inches) similar to full size contract drawings. Furnish the as-built (record) working drawings in addition to the as-built contract drawings required by Division 1 Section, "Project Record Documents".

1.7 ELECTRICAL WORK

Provide under this section as specified in Division 16 "Electrical".

PART 2 PRODUCTS

2.1 DESIGN OF SPRINKLER SYSTEMS

- A. Design of wet pipe fire extinguishing sprinkler system shall be by hydraulic calculations for uniform distribution of water over the design area and shall conform to NFPA 13 and to the requirements as specified herein.
- B. Distribution of Water: Distribution shall be essentially uniform throughout the area in which it is assumed the sprinkler heads will open. Variation in discharge from individual heads in the hydraulically most remote area shall be between 100 and 120 percent of the specified density.
- C. Density of Application of Water: Size pipe to provide the specified density when

- the system is discharging the specified total maximum required flow. Application to horizontal surfaces below the sprinklers shall be as indicated.
- D. Sprinkler Discharge Area: Shall be the hydraulically most remote 1,500 sf as defined by NFPA 13.
- E. Water Supply: Water supply information shall be verified on site.
- F. Friction Losses: Calculate losses in pipe in accordance with the Hazen-Williams formula with 'C' value of 120 for steel pipe and 140 for buried cement-lined ductile-iron pipe and asbestos cement pipe.
- G. Velocity: Sprinkler system hydraulic design shall limit velocities of flow in pipes to a maximum of 20 feet per second.
- H. Location of Sprinkler Heads: Heads in relation to the ceiling and walls and the spacing of sprinklers shall not exceed that permitted by NFPA 13.

2.2 EQUIPMENT

- A. Sprinkler Heads: Release element of each head shall be of the ordinary temperature rating or higher as suitable for the individual location where it is installed. Provide concealed chromium-plated pendant sprinklers, and chromium-plated ceiling plates below suspended ceilings; upright type in exposed (no ceiling) areas. Sidewall sprinklers shall be chromium plated. Sprinklers located in exposed areas shall be stainless steel or polyester coated.
- B. Cabinet: Provide extra sprinkler heads and sprinkler head wrench and three of the proper types of sprinkler stoppers in a metal cabinet located as instructed. The number and types of extra sprinkler heads shall be as specified in NFPA 13.

2.3 ABOVE GROUND PIPING SYSTEMS

- A. Inspect, test and approve piping before covering, or concealing. Provide fittings for changes in direction of piping and for all connections. Make changes in piping sizes through reducing pipe fittings; the use of bushings will not be permitted. Welding shall be performed in the shop; field welding will not be permitted.
- B. Pipe and Fittings: Provide in accordance with NFPA 13, except as modified hereinafter. All pipe shall be black steel, schedule 40. Plastic pipe and copper tubing shall not be permitted. Fittings into which sprinkler heads, sprinkler head riser nipples, or drop nipples are threaded shall be welded, threaded, or grooved-end type. Use of plain-end fittings with mechanical couplings (which utilize steel gripping devices to bite into pipe when pressure is applied) will not be permitted. Rubber gasketed grooved-end pipe and fittings with mechanical couplings shall be permitted in pipe sizes 1.25 inches and larger; fittings shall be UL listed or FM approved for use in sprinkler systems.
- C. Provide earthquake sway brace within 24 inches of each flexible coupling which is installed in horizontal piping for purposes other than earthquake protection.

- D. Pipe Hangers, Supports, and Earthquake Sway Bracing: Provide in accordance NFPA 13 and NFPA 14.
- E. Inspector's Test Connection: Provide test connections about 6 feet above the floor for each sprinkler system or portion of each sprinkler system equipped with an alarm device and locate at the hydraulically most part of each system.
- F. Main and Auxiliary Drains: Provide drain piping to discharge at safe points outside each building or to sight cones attached to drains of adequate size to readily receive the full flow from each drain under maximum pressure. Provide auxiliary drains required by NFPA 13.
- G. Pipe Sleeves: Provide where piping passes through walls, floors, roofs, and partitions. Secure sleeves in proper position and location. Provide sleeves of sufficient length to pass through entire thickness of walls, floors, roofs, and partitions. Provide not less than 0.25-inch space between exterior of piping or pipe insulation and interior of sleeve. Firmly pack space with insulation and caulk at both ends of the sleeve with plastic waterproof cement which will dry to a firm but pliable mass, or provide a segmented elastomeric seal.
- H. Sleeves in Masonry and Concrete Walls and Floors: Provide ASTM A 53 or ASTM A 120, Schedule 40 or Standard Weight, zinc-coated steel pipe sleeves. Extend sleeves in floor slabs 3 inches above the finished floor.
- I. Sleeves in Partitions and Other Than Masonry and Concrete Walls, Floors, and Roofs: Provide zinc-coated steel having weight of not less than 0.90 pounds per square foot.
- J. Escutcheon Plates: Provide one piece or split hinge type metal plates for piping passing through floors, walls, and ceilings in exposed areas. Provide chromium-plated finish on plates; in finished areas.
- K. Provide paint finish on plates in unfinished areas. Securely anchor plates in place with setscrews or other approved positive means.

PART 3 EXECUTION

3.1 INSTALLATION

A. Equipment, material, installation, and workmanship shall be in accordance with NFPA 13 and NFPA 14, except as modified herein. Install piping straight and true to bear evenly on hangers. Keep the interior and of new piping and existing piping affected by the Contractor's operations thoroughly cleaned of water and foreign matter. Keep piping systems clean during installation by means of plugs or other approved methods. When work is not in progress, securely close open ends of piping and fittings so that water and foreign matter will not enter the pipes or fittings. Inspect piping before placing into position. Inspect, test, and approve piping before burying, covering, or concealing. Provide fittings for changes in

direction of piping and for all connections. Make changes in piping sizes through tapered reducing pipe fittings; do not use bushings.

B. Pipe Hangers (Supports): Provide additional hangers to support the concentrated loads in piping between hangers, such as for flanged valves.

3.2 DISINFECTION

Disinfect the new water piping and existing water piping affected by Contractor's operations in accordance with AWWA C601. Fill the piping systems with solution containing minimum of 50 parts per million of available chlorine and allow solution to stand for minimum of 24 hours. Flush the solution from the systems with clean water until maximum residual chlorine content is not greater than 0.2 parts per million.

3.3 FIELD PAINTING

- A. Clean, pre-treat, prime, and paint new sprinkler systems including valves, piping, conduit, hangers, miscellaneous metalwork, and accessories. Apply coatings to clean dry surfaces using clean brushes. Clean the surfaces to remove dust, dirt, rust and loose mill scale. Immediately after cleaning, provide the metal surfaces with one coat of pretreatment primer applied to a minimum dry film thickness of 0.3 mil, and one coat of primer applied to a minimum dry film thickness of one mil. Exercise care to avoid painting of sprinkler heads or protective devices. Remove materials which are used to protect sprinkler heads, while painting is in process, upon the completion of painting. Remove sprinkler heads which are painted and provide new clean sprinkler heads of the proper type. Provide primed surfaces with the following:
- B. Sprinkler Systems in Unfinished Areas: Unfinished areas are defined as attic spaces, spaces above suspended ceilings, crawl spaces, pipe chases, and spaces where walls or ceiling are not painted or not constructed of prefinished material. Provide primed surfaces with one coat of red enamel applied to a minimum dry film thickness of one mil.
- C. Sprinkler Systems in All Other Areas: Provide primed surfaces with two coats of paint to match adjacent surfaces, except provide valves and operating accessories with one coat of red enamel or self adhering red plastic tape bands at maximum of 20-foot intervals throughout the piping systems, except in finished areas, such as offices, the red bands may be deleted.

3.4 FIELD TESTING AND FLUSHING:

- A. Preliminary Tests: Hydrostatically test each system at 200 psig or at 50 psi in excess of maximum pressure when the maximum will be in excess of 150 psi, whichever is greater, for a period of two hours. Piping above suspended ceilings shall be tested, inspected and approved before installation of ceilings.
 - 1. Flush sprinkler and standpipe piping in accordance with NFPA 13. Continue flushing operations until water is clear, but for not less than 10 minutes.

- 2. Test the alarms and other devices. Test the water flow alarms by flowing water through the inspector's test connection.
- When tests have been made completed and corrections made, submit a 3. signed and dated certificate, similar to that specified in NFPA 13, with a request for a formal inspection and tests.
- Formal Inspection and Tests: 4. The Government of Guam Fire Department and Department of Public Works will witness formal tests and approve all systems before they are accepted. Submit the request for formal inspection at least 15 days prior to the date for formal inspection is to take place. An experienced technician regularly employed by the sprinkler installer shall be present during the inspection. At this inspection repeat any or all of the required tests as directed. Correct defects in the work provided by the Contractor, and make additional tests until it has been demonstrated that the system complies with all contract requirements. Furnish appliances, equipment, electrically, instruments, connecting devices, and personnel for the tests.

INSTRUCTING OPERATING PERSONNEL 3.5

Upon completion of the work and at a time designated by the Owner, provide for a period of not less than a 4-hour the services of experienced technicians regularly employed by the manufacturer of the sprinkler to instruct operating personnel in the proper operation and maintenance of the equipment.

*** END OF SECTION 15330 ***

SECTION 15410

PLUMBING PIPING

PART 1 GENERAL

1. 1 SECTION INCLUDES

- A. Sanitary Sewer.
- B. Domestic water piping system.
- C. Valves.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 15140 Supports and Anchors.
- 1.3 RELATED REQUIREMENTS: Section 15010, "Basic Mechanical Requirements", applies to this section with the additions and modifications specified herein.

1.4 RELATED SECTIONS

- A. Section 15140 Supports and Anchors.
- B. Section 15260 Piping Insulation.
- 1.5 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
 - A. ASME B16.1 Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250 and 800.
 - B. ASME B16.3 Cast Iron Threaded Fittings Class 125 and 250.
 - C. ASME B16.18 Cast Copper Alloy Solder-Joint Pressure Fittings.
 - D. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
 - E. ASTM A47 Ferritic Malleable Iron Castings.
 - F. ASTM A53 Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
 - G. ASTM B32 Solder Metal.
 - H. ASTM B88 Seamless Copper Water Tube.

- I. AWWA C651 Disinfecting Water Mains.
- J. CISPI STD HSN Neoprene Rubber Gaskets for Hub and Spigot Cast Iron Soil Pipe and Fittings.
- K. ICC IPC International Plumbing Code.
- L. MSS SP80 Bronze Gate, Globe, Angle and Check Valves.
- M. ASTM A74 Cast Iron Soil Pipe and Fittings.

1.6 SUBMITTALS

A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

1.7 PROJECT RECORD DOCUMENTS

- A. Record actual locations of all buried and concealed piping.
- B. Record actual locations of all valves and cleanouts.

1.8 REGULATORY REQUIREMENTS

- A. Perform Work in accordance with Government of Guam rules and regulations.
- B. Conform to applicable codes for installation of backflow prevention devices.
- C. Provide certificate of compliance from authority having jurisdiction indicating approval of installation of backflow prevention devices.
- D. Potable-water piping and components shall comply with NSF 61.

1.9 QUALITY ASSURANCE

A. Plumbing systems including materials, installation, and workmanship shall be in accordance with the 2009 International Plumbing Code except as modified herein. In the Plumbing Code referred to herein, the advisory provisions shall be considered to be mandatory, as though the word "shall" had been substituted for the word "should" wherever it appears; reference to the "authority having jurisdiction," the Administrative Authority, the Plumbing Official, and the Design Engineer shall be interpreted to mean the Project Engineer. Capacity of equipment shall be not less than that indicated.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site in accordance with the applicable provisions of General Conditions and General Requirements.

- B. Accept valves on site in shipping containers with labelling in place. Inspect for damage.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect piping systems for entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 PRODUCTS

2.1 SANITARY SEWER PIPING, ABOVE GRADE

- A. Cast Iron Pipe: CISPI 301, hub less, service weight.
 - 1. Fittings: Cast iron.
 - 2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.

2.2 WATER PIPING, ABOVE GRADE

- A. Copper Tubing: ASTM B88 (ASTM B88M), Type K, hard drawn.
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, solder, Grade 95TA.

2.3 FLANGES, UNIONS, AND COUPLINGS

- A. Pipe Size 3 Inches and Under:
 - 1. Copper tube and pipe: Class 150 bronze unions with soldered joints.
- B. Pipe Size Over 1 Inch):
 - 1. Copper tube and pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
- C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.4 GATE VALVES

- A. Up To and Including 3 Inches:
 - 1. MSS SP-80, Class 150, bronze body, bronze trim, rising stem, hand wheel, inside screw, solid wedge disc, solder or threaded ends.

2.5 BALL VALVES

- A. Up to and including 2 inches: MSS SP80, bronze one piece body, stainless steel ball, teflon seats and stuffing box ring, lever handle and balancing stops, solder or threaded ends.
- B. Working Pressure: Valves shall be rated at 150 psig minimum.

2.6 RELIEF VALVES

- A. Temperature and Pressure Relief:
 - 1. AGA Z21.22 certified, bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, temperature relief maximum 210 degrees F, capacity ASME SEC IV certified and labelled.

PART 3 EXECUTION

3.1 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient.
- D. Install piping to conserve building space and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- G. Provide clearance for access to valves and fittings.
- H. Provide access where valves and fittings are not exposed. Coordinate size and location of access doors.
- I. Establish elevations of buried piping outside the building to ensure not less than 24 inches of cover.

- J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of sinc rich primer to welding.
- K. Provide support for utility members in accordance with requirements of utility companies.
- L. Prepare pipe, fittings, supports, and accessories not prefinished, ready for finish painting.
- M. Excavate and backfill in accordance with industry standards.
- N. Install bell and spigot pipe with bell end upstream.
- O. Install valves with stems upright or horizontal, not inverted.
- P. Avoid installing piping in concrete walls and in grouted cells of CMU walls. Provide sleeves wherever piping penetrates concrete or CMU.

3.3 APPLICATION

- A. Install unions downstream of valves connections.
- B. Install brass male adapters each side of valves in copper piped system. Sweat solder adapters to pipe.
- C. Install gate or ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.

3.4 ERECTIONS TOLERANCES

- A. Establish invert elevations, slopes for drainage to 1/4 inch per foot (2 percent) minimum. Maintain gradients.
- B. Slope water piping and arrange to drain at low points.

3.5 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Prior to starting work, verify system is complete, flushed and clean.
- B. Ensure PH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.
- D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- E. Maintain disinfectant in system for 24 hours.

- F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.
- I. Discharge treatment and flush water in accordance with Guam EPA regulations.
- J. Provide Certificate of Chlorination to Project Engineer.

3.6 WATER SUPPLY SYSTEM TEST

A. Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure not less than the working pressure of the system; by an air test of not less than 50 psi. This pressure shall be held for at least 15 minutes. The water utilized for tests shall be obtained from a potable source of supply.

*** END OF SECTION 15410 ***

SECTION 15430

PLUMBING SPECIALTIES

PART 1 **GENERAL**

1.1 **SECTION INCLUDES**

- A. Floor drains.
- B. Cleanouts.
- C. Hose bibs.
- D. Water hammer arrestors.

1.2 RELATED SECTIONS

- A. Section 15410 Plumbing Piping.
- B. Section 15440 Plumbing Fixtures.
- C. Section 15450 Plumbing Equipment.
- D. Section 16180 Equipment Wiring Systems: Electrical characteristics and wiring connections.

REFERENCES 1.3

- A. ASME A112.21.1 Floor Drains.
- B. ASME A112.26.1 Water Hammer Arrestors.
- C. PDI WH-201 Water Hammer Arrestors.

1.4 SUBMITTALS FOR REVIEW

A. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.

1.5 SUBMITTALS FOR INFORMATION

A. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.

1.6 SUBMITTALS AT PROJECT CLOSEOUT

A. Project Record Documents: Record actual locations of equipment, cleanouts, and water hammer arrestors.

B. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

2.1 FLOOR DRAINS

A. Floor Drain:

1. ANSI A112.21.1; lacquered cast iron two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable round nickel-bronze strainer with removable perforated sediment bucket.

2.2 CLEANOUTS

A. Interior Finished Floor Areas:

 Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.

B. Interior Finished Wall Areas:

- 1. Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless steel access cover secured with machine screw.
- C. Interior Unfinished Accessible Areas: Calked or threaded type. Provide bolted stack cleanouts on vertical rainwater leaders.

2.3 HOSE BIBS

A. Interior:

1. Bronze or brass with integral mounting flange, replaceable hexagonal disc, hose thread spout, chrome plated where exposed with handwheel, integral vacuum breaker in conformance with ANSI/ASSE 1011.

2.4 WATER HAMMER ARRESTORS

A. ANSI A112.26.1; stainless steel construction, piston type sized in accordance with PDI WH-201, precharged suitable for operation in temperature range -100 to 300 degrees F and maximum 250 psi working pressure.

PART 3 **EXECUTION**

INSTALLATION 3.1

- A. Install in accordance with manufacturer's instructions.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- C. Encase exterior cleanouts in concrete flush with grade.
- D. Install floor cleanouts at elevation to accommodate finished floor.
- E. Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibs.
- F. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatories & sinks.

*** END OF SECTION 15430 ***

SECTION 15440

PLUMBING FIXTURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Water closets.
- B. Urinals.
- C. Lavatories.
- D. Service sinks.
- E. Electric water coolers.
- F. Drinking fountains.
- G. Showers.

1.2 RELATED SECTIONS

- A. Section 15140 Supports and Anchors.
- B. Section 15410 Plumbing Piping.
- C. Section 15430 Plumbing Specialties.
- D. Section 15450 Plumbing Equipment.

1.3 REFERENCES

- A. ARI 1010 Drinking Fountains and Self-Contained Mechanically Refrigerated Drinking Water Coolers.
- B. ASME A112.6.1 Supports for Off-the-Floor Plumbing Fixtures for Public Use.
- C. ASME A112.18.1 Finished and Rough Brass Plumbing Fixture Fittings.
- D. ASME A112.19.2 Vitreous China Plumbing Fixtures.
- E. ASME A112.19.5 Trim for Water-Closet Bowls, Tanks, and Urinals.
- F. NFPA 70 National Electrical Code.

1.4 SUBMITTALS FOR REVIEW

A. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.

1.5 SUBMITTALS FOR INFORMATION

A. Manufacturer's Instructions: Indicate installation methods and procedures.

1.6 SUBMITTALS AT PROJECT CLOSEOUT

A. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.7 REGULATORY REQUIREMENTS

A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.8 DELIVERY, STORAGE, AND PROTECTION

A. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.9 WARRANTY

A. Provide five year manufacturer warranty for electric water cooler.

PART 2 PRODUCTS

2.1 FLUSH VALVE WATER CLOSETS

A. Bowl:

1. ASME A112.19.2; wall hung, siphon jet vitreous china closet bowl, with elongated rim, 1-1/2 inch top spud, china bolt caps. Top of toilet seat height above floor shall be 14 to 15 inches, except 17 to 19 inches for wheelchair water closets.

B. Sensor Operated Flush Valve:

1. ASME A112.18.1; exposed chrome plated, diaphragm type with battery operated solenoid operator, infrared sensor and over-ride button in chrome plated plate, wheel handle stop and vacuum breaker; maximum 1.3 gallon flush volume.

C. Seat:

1. Solid white plastic, open front, extended back, self-sustaining hinge, brass bolts, without cover.

D. Wall Mounted Carrier:

1. ASME A112.6.1; adjustable cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.

2.2 WALL HUNG URINALS

A. Urinal:

1. ASME A112.19.2; vitreous china, wall hung siphon jet urinal with shields, integral trap, 3/4 inch top spud, steel supporting hanger.

B. Sensor Operated Flush Valve:

1. ASME A112.18.1; exposed chrome plated, diaphragm type with battery operated solenoid operator, infrared sensor and over-ride button in chrome plated plate, wheel handle stop and vacuum breaker; maximum 0.125 gallon flush volume.

C. Wall Mounted Carrier:

1. ASME A112.6.1; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

2.3 WALL HUNG, WHEELCHAIR URINALS

A. Urinal:

1. ASME A112.19.2/CSA B45.1, white vitreous china, wall-mounted, wall outlet, siphon jet, integral trap, elongated projecting bowl, 20 inches long from wall to front of flare, and ASME A112.19.5 trim.

B. Sensor Operated Flush Valve:

2. ASME A112.18.1; exposed chrome plated, diaphragm type with battery operated solenoid operator, infrared sensor and over-ride button in chrome plated plate, wheel handle stop and vacuum breaker; maximum 0.125 gallon flush volume.

C. Wall Mounted Carrier:

1. Provide ASME A112.6.1M concealed chair carriers. Mount urinal with front rim a maximum of 17 inches above floor and flush valve handle a maximum of 44 inches above floor for use by handicapped on wheelchair.

2.4 LAVATORIES

A. Vitreous China Counter Top Basin:

 ASME A112.19.2; vitreous china self-rimming counter top lavatory, 19 x 19 inches with drillings on 4 inch centers, front overflow, seal of putty, caulking, or concealed vinyl gasket.

B. Metered Faucet:

 ASME A112.18.1; chrome plated metered mixing faucet with battery operated solenoid operator and infrared sensor, aerator and cover plate, open grid strainer.

C. Accessories:

- 1. Chrome plated 17 gage brass P-trap with clean-out plug and arm with escutcheon.
- 2. Offset waste with plug and strainer.
- 3. Wheel handle stops.
- 4. Rigid supplies.

2.5 SHOWERS

A. Trim:

1. ASME A112.18.1; concealed shower supply with thermostatic mixing valves, integral service stops, bent shower arm, and escutcheon.

B. Shower Head:

1. ASME A112.18.1; chrome plated vandal-proof institutional head with integral wall bracket, built-in 1.5 gpm flow control.

2.6 ELECTRIC WATER COOLERS

A. Fountain:

- 1. ARI 1010; no lead design, recessed, two-level, barrier-free handicapped mounted electric water cooler with stainless steel top, stainless steel body, elevated anti-squirt bubbler with stream guard, automatic stream regulator, push button, mounting bracket, water filter, UV-light, refrigerated with integral air cooled condenser and removable front ventilating stainless steel grille.
 - a. Capacity: 7.5 gph of 50 degree F water with inlet at 80 degree F and room temperature of 90 degree F.
 - b. Electrical: Maximum 370 watts compressor, 4.0 full load amps, 6

foot cord and plug for connection to electric wiring system including grounding connector.

2.7 SERVICE SINKS

A. Bowl:

1. 30 x 30 x 10 inch high white molded stone, floor mounted, with one inch wide shoulders, vinyl bumper guard, and stainless steel strainer.

B. Trim:

 ASME A112.18.1 exposed wall type supply with lever handles, spout wall brace, vacuum breaker, hose end spout, strainers, eccentric adjustable inlets, integral screwdriver stops with covering caps and adjustable threaded wall flanges.

C. Accessories:

- 1. 5 feet of 1/2 inch diameter plain end reinforced plastic hose.
- 2. Hose clamp hanger.
- 3. Mop hanger.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.
- C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.2 PREPARATION

A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.3 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid or flexible supplies to fixtures with stops, reducers, and escutcheons.

- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall supports, wall carriers and bolts.
- E. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07900, color to match fixture.
- F. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

3.4 INTERFACE WITH OTHER PRODUCTS

A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.5 ADJUSTING

A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.6 CLEANING

A. Clean plumbing fixtures and equipment.

3.7 PROTECTION OF FINISHED WORK

A. Do not permit use of fixtures.

3.8 SCHEDULES

- A. Fixture Heights: Install fixtures to heights above finished floor as indicated.
 - 4. Water Closet:
 - a. Standard: 15 inches to top of bowl rim.
 - b. Accessible: 18 inches to top of seat.
 - 5. Water Closet Flush Valves:
 - a. Standard: 11 inches min. above bowl rim.
 - b. Recessed: 10 inches min. above bowl rim.
 - 6. Urinal:
 - a. Standard: 22 inches to top of bowl rim.
 - b. Accessible: 17 inches to top of bowl rim.

7. Lavatory:

a. Standard: 31 inches to top of basin rim.

b. Accessible: 34 inches to top of basin rim.

8. Drinking Fountain:

a. Child: 30 inches to top of basin rim.

b. Standard Adult: 40 inches to top of basin rim.

c. Accessible: 36 inches to top of spout.

9. Shower Heads:

a. Adult Male: 69.5 inches to bottom of head.

b. Adult Female: 64.5 inches to bottom of head.

B. Fixture Rough-In

	Hot	Cold	Waste	Vent
Water Closet: (Flush Valve)		1 inch	4 inch	2 inch
Urinal: (Flush Valve)		3/4 inch	2 inch	1-1/2 in
Lavatory:	1/2 inch	1/2 inch	1-1/2 in	1-1/4 in
Service Sink:	1/2 inch	1/2 inch	2 inch	1-1/2 in
Drinking Fountain:)		1/2 inch	1-1/4 in	1-1/4 in
Shower:	1/2 inch	1/2 inch	1-1/2 in	1-1/4 in

^{***} END OF SECTION 15440 ***

SECTION 15450

PLUMBING EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Water Heaters.

1.2 RELATED SECTIONS

A. Section 16180 - Equipment Wiring Systems: Electrical characteristics and wiring connections.

1.3 REFERENCES

- A. NFPA 70 National Electrical Code.
- B. UL 174 Household Electric Storage Tank Water Heaters.

1.4 SUBMITTALS FOR REVIEW

- A. Product Data:
 - 1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
 - 2. Provide electrical characteristics and connection requirements.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

- A. Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.
- B. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.6 QUALITY ASSURANCE

- A. Ensure products and installation of specified products are in conformance with recommendations and requirements of the following organizations:
 - 1. National Sanitation Foundation (NSF).
 - 2. American Society of Mechanical Engineers (ASME).
 - National Electrical Manufacturers' Association (NEMA).

4. Underwriters Laboratories (UL).

1.7 REGULATORY REQUIREMENTS

A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.8 DELIVERY, STORAGE, AND PROTECTION

A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

1.9 WARRANTY

A. Provide five year manufacturer warranty for domestic water heaters.

PART 2 PRODUCTS

2.1 ELECTRIC WATER HEATERS

- A. Type: Hybrid Electric Heat Pump Type
 - Hybrid Electric Heat Pump type water heaters shall conform to UL 174 with dual back-up electric heating elements. Each element shall be 4.5 KW. The elements shall be wired so that only one element can operate at a time.
 - 2. Air source heat pump shall be energy efficient; with operating range of 40-120 deg. F; built-in freeze/overheat protection; top mounted washable air filter; integral control panel.
 - 3. Tank: Glass lined welded steel, thermally insulated with one inch thick glass fiber; encased in corrosion-resistant steel jacket; baked-on enamel finish.
 - 4. Controls: Automatic water thermostat with externally adjustable temperature range from 120 to 170 degrees F, flanged or screw-in nichrome elements, enclosed controls and electrical junction box. Wire double element units so elements do not operate simultaneously.
 - 5. Accessories: Brass water connections and dip tube, drain valve, magnesium anode, and ASME temperature and pressure relief valve.

B. Electric Instantaneous Water Heaters

1. Tankless type, UL 499 and UL listed flow switch activated, tankless electric instantaneous water heater for wall mounting below sink or lavatory.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install water heaters in accordance with manufacturer's instructions and to UL requirements.
- B. Coordinate with plumbing piping and related electrical work to achieve operating system.

*** END OF SECTION 15450 ***

SECTION 15810

DUCTWORK AND DUCTWORK ACCESSORIES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- A. AMCA 500 (1991) Louvers, Dampers and Shutters
- B. AMCA 501 (1985) Application Manual for Air Louvers
- C. ASTM A 167 (1996) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
- D. ASTM A 653/A 653M (1996) Steel Sheet Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process
- E. ASTM B 209M (1995) Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
- F. ASTM B 209 (1996) Aluminum and Aluminum-Alloy Sheet and Plate
- G. ASTM C 423 (1990; Rev. A) Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
- H. ASTM C 553 (1992) Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
- I. ASTM C 1071 (1991) Thermal and Acoustical Insulation (Mineral Fiber, Duct Lining Material)
- J. ASTM E 90 (1997) Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- K. ASTM E 96 (1995) Water Vapor Transmission of Materials
- L. ASTM E 437 (1992) Industrial Wire Cloth and Screens (Square Opening Series)
- M. NFPA 90A (1996) Installation of Air Conditioning and Ventilating Systems
- N. SMACNA DCS (1985) HVAC Duct Construction Standards Metal and Flexible
- O. SMACNA FGDCS (1992) Fibrous Glass Duct Construction Standards
- P. SMACNA SRM (1991; Errata 1993) Seismic Restraint Manual Guidelines for Mechanical Systems

- Q. UL 181 (1996; R 1996) Factory-Made Air Ducts and Air Connectors
- R. UL 555 (1995; Bul. 1996) Fire Dampers
- S. UL 555S (1996) Leakage Rated Dampers for Use in Smoke Control Systems
- T. UL 723 (1996) Surface Burning Characteristics of Building Materials

1.2 PRESSURE CLASSIFICATION

SMACNA DCS, Section 1, and as indicated.

1.3 DESIGN REQUIREMENTS

A. Duct Span Versus Reinforcement Schedule

Submit maximum duct dimension, board stiffness rating, board thickness, type and spacing of reinforcement, and maximum duct static pressure.

B. Sound Pressure Level Rating

Submit for inlets and outlets including diffusers, registers and grilles.

1.4 SUBMITTALS

SD-01 Preconstruction Submittals

Diffusers, registers, and grilles

SD-02 Shop Drawings

Duct hangers and supports details

SD-03 Product Data

Dampers Flexible ducts and connectors Metal ducts

SD-05 Design Data

Duct span versus reinforcement schedule

SD-08 Manufacturer's Instructions

Ductwork and ductwork accessories

1.5 QUALITY ASSURANCE

A. Modification of References

SMACNA Duct Construction Manuals: The SMACNA recommendations shall be considered as mandatory requirements. Substitute the word "shall" for the word "should" in these manuals.

B. Ductwork and Ductwork Accessories

Submit manufacturer's instruction including job inspection checklist, methods of on-site storage and handling, and recommended repair methods.

PART 2 PRODUCTS

2.1 METAL DUCTS

A. Steel Ducts

ASTM A 653/A 653M galvanized steel sheet, lock-forming quality; coating designation G90.

2.2 DUCTS OF PRESSURE CLASSES 3 INCH WATER GAGE OR LESS

Construction, metal gage, hangers and supports, and reinforcements shall conform with SMACNA DCS, except that ducts with pressure classifications below 2 inch water gage that are located outside of the conditioned space shall have a seal class C. Ductwork shall be airtight and shall not vibrate or pulsate when system is in operation. Pressure sensitive tape shall not be used as a primary sealant on ductwork with pressure classifications above one inch water gage. Air leakage shall be less than 5 percent of the system capacity. Construct ductwork of galvanized steel.

A. Curved Elbows

Make a centerline radius not less than 1 1/2 times the width or diameter of the duct.

B. Laps

Make laps at joints in the direction of air flow. Space button-punch or bolt-connection in standing seams at fixed centers not greater than 150 mm 6 inches. Longitudinal locks or seams, known as "button-punch snap-lock," may be used in lieu of Pittsburg Lock.

C. Fittings

Elbows, vaned elbows, take-offs, branch connections, transitions, splitters, volume dampers, fire dampers, flexible connections, and access doors shall conform with SMACNA DCS, Section 2. Provide factory fabricated airtight, and noncorrosive test holes with screw cap and gasket.

2.3 INSULATED FLEXIBLE DUCTS:

- 1. Two ply vinyl film supported by helically wound spring steel wire; fiberglass insulation; polyethylene vapor barrier film.
- 2. Pressure Rating: 10 inches WG (2.50 kPa) positive and 1.0 inches WG (250 Pa) negative.
- 3. Maximum Velocity: 4000 fpm (20.3 m/sec).
- 4. Temperature Range: -10 degrees F to 160 degrees F (-23 degrees C to 71 degrees C).

2.4 FLEXIBLE DUCTS AND CONNECTORS

UL 181, Class I, UL listed, SMACNA DCS, and additional requirements herein specified. Provide to connect between rigid ducts and outlets or terminals. There shall be no erosion, delamination, loose fibers, or odors from the ducts into the air stream. At 120 degrees C 250 degrees F, minimum rating pressures shall be 1500 Pa positive and 125 Pa negative, up to 20 meters per second 6 inches water positive and 1/2 inch negative, up to 4,000 fpm and 500 Pa positive and 125 Pa negative, up to 13 meters per second 2 inches water positive and 1/2 inch negative, up to 2500 fpm. Flexible ducts shall be maximum 2 meters 6feet in length. Minimum bend radius shall be twice the duct diameter.

A. Materials

Interlocking spiral or helically corrugated type constructed of zinc-coated steel, corrosion-resistant steel, aluminum, or noncollapsible fire-retardant, chloroprene or chlorosulphonated polyethylene impregnated, minimum one kilogram per square meter 30 ounces per square yard- woven mineral fabric.

B. Insulation and Vapor Barrier

ASTM C 553 Type 1, Class B-2, minimum 25 mm one inch nominal thickness and 12 kilogram per cubic meter three-quarter lb./cu. ft. density. Sheathe insulation with a vapor barrier having a maximum water vapor permeance of 0.20 perm in accordance with ASTM E 96, Procedure A. Coat ends of insulation with cement to prevent erosion and delamination.

C. Joints

Make airtight slip joints, seal with pressure-sensitive vapor-seal adhesive tape or duct sealer, and secure with sheet metal screws. To prevent insulation compression, place 50 mm wide by 25 mm thick 2 inch wide by one inch thick closed cell foam plastic spacers over joints under vapor barriers. To provide a vaportight joint, provide a zinc-coated steel corrosion-resistant steel or aluminum clamp over such spacers.

2.5 CASINGS AND PLENUMS

Factory fabricated components with field installation. Furnish certified testing data from plenum or casing manufacturer obtainable directly from an independent acoustical

laboratory, listing sound absorption and transmission loss characteristics of panel assembly. Sound absorption coefficients and sound transmission loss, determined by an independent laboratory, shall be in accordance with ASTM C 423 and ASTM E 90 respectively.

2.6 DUCT SLEEVES, PREPARED OPENINGS, AND CLOSURE COLLARS

A. Duct Sleeves

Fabricate from minimum 20 gage galvanized steel. Where sleeves are installed in bearing walls, provide structural steel sleeves as indicated. Size sleeves to provide 25 mm one inch clearance between duct and sleeve or between insulation and sleeve for insulated ducts.

B. Prepared Openings

Provide 25 mm one inch clearance between the duct and the sleeve, or 25 mm one inch clearance between insulation and sleeve for insulated ducts except at grilles, registers, and diffusers.

C. Packing

ASTM C 553, Type 1, Class B-2, mineral fiber.

D. Closure Collars

100 mm Four inches wide minimum, fabricated from minimum 20 gage galvanized steel.

2.7 DEFLECTORS

Factory-fabricated and factory- or field-assembled units consisting of curved turning vanes for uniform air distribution and change of direction with minimum turbulence and pressure loss. Provide curved vanes for square elbows.

2.8 ACCESS DOORS

Door shall be rigid and airtight with neoprene gaskets and two or more steel hinges and quick fastening locking devices. Provide doors as large as practical. Mount doors, if possible, so that air pressure holds them closed. As an alternative, removable access doors may be used. These access doors shall be constructed from stamped sheet metal and consist of an inner and outer door panel. Where insulated doors are needed, the inner door shall consist of two panels spot-welded together which totally encapsulate fiberglass insulation. The inner and outer doors shall be joined by bolts and threaded handles in such a configuration that the panels can be drawn together to secure the door to the duct in a sandwich fashion. The handles shall be high impact plastic with threaded metal inserts. Conical springs shall be used between the door panels to facilitate installation and removal of the door. Neoprene gasket shall be used around the outside edge of the inner or outer panel, but not both, to seal the door. This type of door is approved for use on rectangular, round and flat-oval ductwork.

2.9 DAMPERS AND LOUVERS

Construct dampers and louvers with galvanized sheet metal two gages heavier than ducts in which installed. Except as modified herein, the construction shall be of aluminum or galvanized steel with interlocking edges and maximum 250 mm 10 inch blade width. Conform with SMACNA DCS. Dampers shall be opposed-blade type. Damper blades shall be connected to the damper frame with a non-metallic anti-friction bushing. The blades shall be connected to the frame with a galvanized, zinc coated steel anti-friction bearing pin. The pin shall consist of a single or double row sealed, stainless steel, maintenance free, roller or ball bearing, lubricated for life with a full stroke test of 200,000 or more strokes in accordance with UL 555S. The bearing shall be pressed onto a steel shaft via a knurled stud. A slotted dowel pin is then inserted thru a hole connecting the two pins.

A. Backdraft Dampers (Gravity Dampers or Shutters)

Factory-fabricated, with statically balanced blades that open automatically when the fan starts and close by gravity when the fan stops. Provide the edges of blades with felt or rubber strips to prevent rattling.

B. Manual Volume Dampers

Balancing, factory-fabricated type. Equip dampers with accessible mechanism such as quadrant operators or 5 mm 3/16 inch rods brought through the side of ducts with locking setscrew and bushing. Where quadrant operators are furnished, provide chrome plated or enamel painted type with exposed edges rounded.

PART 3 EXECUTION

3.1 INSTALLATION

Conform to NFPA 90A, SMACNA DCS. Provide mounting and supporting of ductwork and accessories including, but not limited to, structural supports, hangers, vibration isolators, stands, clamps and brackets, access doors, and dampers. Provide electrical isolation between dissimilar metals. Electrical isolation may be fluorinated elastomers or sponge-rubber gaskets. Install ductwork accessories as indicated and as recommended by manufacturer's printed instruction. Allow clearance for inspection, repair, replacement, and service. Louvers in accordance with AMCA 501.

A. Ductwork

Air distribution systems shall operate with no chatter or vibration.

1. Field Changes to Ductwork

Those required to suit the sizes of factory-fabricated equipment actually furnished, shall be designed to minimize expansion and contraction. Use gradual transitions in field changes as well as modifications to connecting ducts.

2. Dampers

When installed on ducts to be thermally insulated, equip each damper operator with stand-off mounting brackets, bases, or adapters to provide clearance between the duct and operator not less than the thickness of insulation. Stand-off mounting items shall be integral with the operator or standard accessory of damper manufacturer.

3. Deflectors

Provide in square elbows, duct-mounted supply outlets, take-off or extension collars to supply outlets, and tap-in branch-off connections. Adjust supply outlets to provide air volume and distribution as [indicated or] specified.

4. Access Doors

Provide for automatic dampers, volume dampers, fire dampers, coils, thermostats, temperature controllers, valves, filters, humidifiers and other concealed apparatus requiring service and inspection in the duct systems.

5. Duct Sleeves, Prepared Openings, and Closure Collars

Provide for ductwork penetrations in floors, walls, and partitions through which metallic ductwork passes.

- a. Duct Sleeves: Fill space between duct and sleeve or between insulation and sleeve for insulated ducts with mineral fiber, except at grilles, registers, and diffusers.
- b. Prepared Openings: Fill space between duct and opening or between insulation and opening for insulated ducts with mineral fiber, except at grilles, registers, and diffusers.
- c. Closure Collars: Fit collars snugly around ducts or insulation. Grind edges of collar smooth to preclude tearing or puncturing insulation covering or vapor barrier. Provide nails with maximum 150 mm 6 inch centers on collars.

6. Packing

Pack spaces between sleeve or opening and duct or duct insulation with mineral fiber.

7. Provide residue traps in kitchen hood exhaust ducts at base of vertical risers with provisions for clean out. Use stainless steel for ductwork exposed to view and stainless steel or carbon steel for ducts where concealed.

B. Duct Hangers and Supports

SMACNA DCS, Section 4. Provide seismic restraint complying with SMACNA SRM. Attach supports only to structural framing members and concrete slabs. Do not anchor supports to metal decking unless a means is provided and approved for preventing the anchors from puncturing the metal decking. Where supports are required between structural framing member, provide suitable intermediate metal framing. Provide retainer clips where C clamps are used.

1. Flexible Ducts

Support ducts by hangers every one meter 3 feet, unless supported by ceiling construction. Stretch flexible air ducts to smooth out corrugations and long radius elbows. Provide minimum length to make connections.

2. Flexible Connectors

Provide flexible connectors between fans and ducts or casings and where ducts are of dissimilar metals. For round ducts, securely fasten flexible connectors by zinc-coated steel clinch-type draw-bands. For rectangular ducts, lock flexible connectors to metal collars.

C. Inspection Plates and Test Holes

Provide, where required, in ductwork or casings for all balance measurements. If possible, test holes should be located at least 7.5 times diameters downstream from a disturbance. Extend cap through insulation.

D. Flashing

Provide waterproof flashing where ducts pass through exterior walls and roofs. Cleaning of Ducts Remove all debris and dirt from ducts and wipe clean. Before installing air outlets, force air through entire system at maximum attainable velocity to remove accumulated dust. Provide temporary air filters to protect ductwork which may be harmed by excessive dirt. For large systems, clean duct with high power vacuum machines.

3.2 FIELD QUALITY CONTROL

Administer and direct tests. Furnish instruments, equipment, connecting devices, and personnel for the tests. Notify Project Manager 7 days before inspection or testing is scheduled. Correct defects in work. Repeat tests until work is in compliance.

A. Air Duct Leakage Tests

Perform duct air leakage test in accordance with Section 15990, "HVAC Testing/Adjusting/Balancing."

*** END OF SECTION 15810 ***

SECTION 15940

AIR OUTLETS AND INLETS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Diffusers, Registers and Grilles.
- B. Louvers.

1.2 REFERENCES

- A. ADC 1062 Certification, Rating and Test Manual.
- B. ANSI/NFPA 90A Installation of air Conditioning and Ventilating Systems.
- C. ARI 650 Air Outlets and Inlets.
- D. ASHRAE 70 Method of testing for rating the Air Flow Performance of Outlets an Inlets.
- E. SMACNA Low Pressure Duct Construction Standard.

1.3 QUALITY ASSURANCE

A. Test and rate performance of air outlets and inlets in accordance with ADC Equipment Test Code 1062 and ASHRAE 70.

1.4 REGULATORY REQUIREMENTS

A. Conform to ANSI/NFPA 90A.

1.5 SUBMITTALS

- A. Provide product data for items required for this project.
- B. Submit schedule of outlets and inlets indicating type, size, location, application, and noise level. Review requirements as to size, finish, and type of mounting prior to submitting product data and schedule of devices.
- C. Submit manufacturer's installation instructions.

PART 2 PRODUCTS

2.1 RECTANGULAR CEILING DIFFUSERS

- A. Rectangular, stamped, multicore type diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated.
- B. Provide surface mount type frame. In plaster ceilings, provide plaster frame and ceiling frame.
- C. Fabricate of aluminum with baked enamel off-white finish.
- D. Provide radial opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.2 CEILING RETURN REGISTERS

- A. Streamlined blades, depth of which exceeds 3/4 inch spacing, with spring or other device to set blades, vertical face.
- B. Fabricate 1-1/4 inch margin frame with countersunk screw mounting.
- C. Fabricate of aluminum with 20 gage minimum frames and 22 gage minimum blades, aluminum with 20 gage minimum frame, or aluminum extrusions, with factory baked enamel off-white finish.
- D. Provide integral, gang-operated opposed blade dampers with removable key operator, operable from face.

2.3 CEILING EXHAUST GRILLES

- A. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with blades set at 45 degrees, horizontal face.
- B. Frame: 1 1/4 inch margin with concealed mounting.
- C. Fabrication: aluminum extrusions, with factory baked enamel finish, color to be selected.
- D. Damper: Integral, gang operated, opposed blade type with removable key operator, operable from face where not individually connected to exhaust fans.

2.4 LOUVERS

- A. Type: 4 inch deep with blades on 45 degree slope, heavy channel frame, birdscreen with 1/2 inch square mesh.
- B. Fabrication: 12 gage thick extruded aluminum, welded assembly, with factory baked enamel finish, color to be selected.
- C. Mounting: Furnish with interior flat flange for installation.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install devices in accordance with manufacturers' instructions.
- B. Review location of devices and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Install items to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, regardless of whether dampers are specified as part of the diffuser, or grille and register assembly.
- E. Paint ductwork visible behind air outlets and inlets matte black.

*** END OF SECTION 15940 ***

SECTION 15990

HVAC TESTING/ ADJUSTING / BALANCING

PART 1 GENERAL

1.1 SECTION INCLUDED

- A. Testing, adjusting and balancing of air systems.
- B. Measurement of final operating condition of HVAC system.

1.2 REFERENCES

- A. AABC National Standards for Field Measurement and Instrumentation, Total System Balance.
- B. NEBB Procedural Standards for Testing, Balancing and Adjusting of Environmental Systems.
- C. ASHRAE 1984 Systems Handbook: Chapter 37, Testing, Adjusting and Balancing.

1.3 SCOPE OF WORK

The Test and Balance Contractor shall be responsible for furnishing labor, instruments, and tools required in testing, adjusting and the Heating, Ventilating and Air-conditioning (HVAC) systems, as described in these specifications or shown on accompanying drawings and subject to the terms and conditions of the contract. Services shall include checking equipment performance, taking the specified measurements, and recording and reporting the results.

1.4 QUALIFICATIONS

Testing, adjusting and balancing shall be performed by an AABC or NEBB registered sub-contractor. AABC/NEBB Certified Technicians or Test and Balance Engineers (TBE) shall perform all work.

1.5 INSTRUMENTATION

All instruments used for measurements shall be accurate and calibrated. Calibration and maintenance of all instruments shall be in accordance with requirements of AABC and NEBB Standards.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

The specified systems shall be reviewed and inspected for conformance to design documents. Testing, adjusting and balancing (TAB) on each identified system shall be performed. The accuracy of measurements shall be in accordance with AABC National Standards. Adjustment tolerances shall be + or -10% unless otherwise stated.

3.1 FORMAT

The HVAC system includes any interior surface of the facility's air distribution system for conditioned spaces and/or occupied zones. The TAB work for each building is to include but not limited to the following components.

- A. Fan Assemblies
- B. All Outside Air, Supply and Return Ductwork
- C. All associated Air Terminal Devices, i.e. Supply Diffusers, Return Registers, etc.
- D. Ductwork System

3.2 AIR SYSTEMS

The Contractor shall verify that all ductwork, dampers, grilles, registers, and diffusers have been installed per design and set in the full open position. The Contractor shall perform the following TAB procedures in accordance with AABC National Standards.

- A. Zone. Branch and Main Ducts
 - 1. Adjust ducts to within design CFM requirements by means of Pitot-tube duct traverse.

B. Fans

- 1. Fan speeds Test and adjust fan RPM to achieve maximum or design CFM.
- 2. Current and Voltage Test and record motor voltage and amperage, and compare data with the nameplate limits. Ensure fan motor is not in or above the service factor.
- 3. Static Pressure Test and record system static profile of each supply fan.
- C. Diffusers, Registers and Grilles:

- 1. Tolerance Test, adjust, and balance each diffuser, grille, and register to within 10% of design requirements. Contractor shall minimize drafts.
- Identification Identify the type, location, and size of each grille, diffuser, and register. This information shall be recorded on air outlet data sheets

3.3 REPORTS

- A. Final TAB Report Contractor shall submit the final TAB report for review by the Project Engineer outlining the conditions and work completed on each HVAC system. All outlets, devices, HVAC equipment, etc. shall be identified along with a numbering system corresponding to report unit identification.
- B. The contractor shall submit an AABC or NEBB "National Project Performance Guaranty" assuring that the project systems were tested, adjusted and balanced in accordance with the project specifications and AABC National Standards.

3.4 FORMS

Required Forms and entries shall at a minimum include the following:

A. Fan Data

- System number, Location, Manufacturer, Model and Serial Number.
- 2. Drive size, type, number of grooves, and open turns on Variable Pitch Drives, as applicable.
- 3. Number and size of belts, motor and fan shaft sizes, center-tocenter of shafts in inches, and adjustment available motor data, including nameplate data, actual amps, rated and actual motor rpm, volts, phase, hp, and capacity.
- 4. Fan static pressure, suction/discharge and static profile.

B. Air Distribution

- Room identification.
- Outlet or intake balance sequence number.
- 3. Size of outlet or inlet.
- AK Factor.

- 5. Design and Actual FPM and CFM.
- 6. Notes.

3.5 JOB COMPLETION

Contractors obligation shall not be considered satisfied until the Project Engineer has inspected the job site reviewed and approved the test reports submitted by the Contractor.

3.6 WARRANTY

Contractor shall submit an AABC or NEBB "National Project Performance Guaranty" assuring that the project systems were tested, adjusted and balanced in accordance with the project specifications and AABC or NEBB National Standards.

3.7 ACCEPTANCE

At final inspection, recheck random selections of data recorded in balancing report. Recheck points or areas as selected and witnessed by the authorized representative.

*** END OF SECTION 15990 ***

SECTION 16721

FIRE ALARM AND DETECTION SYSTEMS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work Included: Provide fire alarm and detection systems where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to:
 - 1. Smoke detectors;
 - 2. Signal devices;
 - Audiovisual Alarms:
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications;
 - 2. Section 15330: Wet Pipe Sprinkler System; and
 - Section 16400: Electrical Systems.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Qualifications of Installer:
 - 1. Prior to installation, the Prime Contractor shall submit data for the approval of the _____ which will show that he has successfully installed fire alarm systems of the same type and design as specified herein, or that he has a firm contractual agreement with a subcontractor having such required experience. The data shall include the names and locations of at least two installations where the Contractor, or the subcontractor referred to above, has installed such systems. The Contractor shall indicate the type and design of these systems and certify that these systems have performed satisfactorily in the manner intended for a period of not less that 18 months; and

2. Manufacturer's Representative: The service of a qualified manufacturer's representative or technician, experienced in the installation and operation of the type of system being provided shall be furnished to supervise the complete installation including all wiring, testing, final testing, adjustment of the system and instruction to Owner's representative.

C. Codes and Regulations:

- 1. In addition to complying with the specified requirements, comply with pertinent regulations of governmental agencies having jurisdiction; and
- 2. In the event of conflict between or among requirements specified herein and those of governmental agencies having jurisdiction, the more stringent requirement shall govern if so determined by the AHJ &/or DOR.

D. Certificates:

- 1. Submit with the Shop Drawings a certified statement that the battery installation conforms to the referenced operating requirements; and
- 2. Submit with the O&M manual a certified statement that the complete installation is installed in accordance with latest code, contract documents, and that the system is in proper operation.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Division 1.
- B. Product Data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades; and Manufacturer's recommended installation procedures which, when approved by the AHJ &/or DOR, will become the basis for accepting or rejecting actual installation procedures used on the Work.
 - 4. Upon completion of the work of this Section, and as a condition of its acceptance, deliver to the owner/architect three copies of an operation and maintenance manual complied in accordance with the provisions of Section 16050 of these Specifications.

1.4 PRODUCT HANDLING: Comply with pertinent provisions of Section 16050 and Division 1.

PART 2 PRODUCTS

2.1 DESIGN

- A. Design a fire alarm and detection system acceptable to the AHJ &/or DOR. and to all governmental agencies having jurisdiction, providing the following functions and such others as are required:
 - 1. Upon activation of any manual station or automatic detectors or sprinkler flow switch, visual and audible signals shall occur immediately, light the red alarm light at the control panel, turn off the AHU, send signal to elevator controller, and signals shall remain locked-in until manually reset at the control panel;
 - 2. Upon activation of any sprinkler supervisory switch, visual and audible signals shall occur immediately at the control panel, and signals shall remain locked-in until manually reset at the control panel; and
 - 3. All detection and signal circuits shall be supervised with warning and visual trouble light for each zone, in case of grounds or loss of continuity.

2.2 MATERIALS

- A. Acceptable Manufacturers:
 - 1. To the maximum extent practicable, use only the products of a single manufacturer; and
 - 2. Use products of one of the following, or an equal approved in advance by the AHJ &/or DOR.:
 - a. Edwards;
 - b. Honeywell;
 - c. Simplex;
 - d. Gamewell;
- B. Smoke Detectors: Provide photoelectric detectors. Operate on a multiple cell concept using a LED light source. Failure of the LED shall not cause an alarm condition but shall operate the detector indicating lamp. The detector shall automatically reset when smoke condition clears.
- C. Single Station Smoke Detectors: Provide UL listed single station type photoelectric fast response detector with built-in horn producing 85 decibels at

10 feet. The detector shall be equipped with test button to simulate smoke condition and LED indicator to indicate that the unit is powered and if smoke is sensed by the unit. The detector shall automatically reset when smoke condition clears. Detector shall be designed suitable for tandem wiring up to 12 or more units. Detection in one unit shall alarm all units that are tandem wired. Provide auxiliary dry contacts in the detector for alarm reporting to the fire alarm control panel. Unit shall be hard wired into a 120 volts AC power source with battery backup. Install as indicated on drawings. Detectors in handicap accessible units shall be equipped with strobe lights.

- D. Audiovisual Alarms: Provide an approved audiovisual alarm devices consisting of a vibrating type alarm horn suitable for use in an electrically-supervised circuit and top-mounted integral flashing strobe light. Horn shall have a sound rating of at least 90 decibels at 10 feet. Strobe light shall be in accordance with ADA current requirements.
- E. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the AHJ &/or DOR.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Install the work of this Section in strict accordance with pertinent requirements of governmental agencies having jurisdiction, and with the manufacturer's recommendations as approved by the AHJ &/or DOR.
- C. Put all components through at least five complete cycles of operation, adjust as required, and verify that the complete system functions at optimum operating level.

3.3 PRELIMINARY TESTS

- A. Conduct the following tests during installation of wiring and system components. Correct any deficiency pertaining to these requirements prior to formal functional and operational tests of the system.
 - 1. Ground Resistance: Measure the resistance of each connection to ground. Ground resistance shall not exceed 25 ohms.

- Dielectric Strength and Insulation Resistance: Test the dielectric strength and the insulation resistance of the system interconnecting wiring by means of an instrument capable of generating 500 volts dc and equipped to indicate leakage current in 1000 mega ohms. For the purpose of this test, the instrument shall be connected between each conductor on the line and between each conductor and ground at the control panel end of the line, with the other extremity open circuited and all series-connected devices in place. The system shall withstand the test without breakdown and shall indicate a resistance of not less than 500,000 ohms, the measurement being taken after an electrification of not more than 1.0 minute with a dc potential of not less than 100 volts nor more than 550 volts.
- 3. Smoke Detector Tests: Prior to formal inspection and tests, clean and perform sensitivity tests on each smoke detector. Clean the smoke detectors in accordance with the manufacturer's recommended procedures. Present recorded data at the formal inspection for verification. Approved copies shall become part of the operations and maintenance manual for the fire alarm system.
- 3.4 FIELD INSPECTION AND TEST: Before final acceptance of the work, test each system to demonstrate compliance with the contract requirement. Each system shall be subjected to complete functional and operations test including tests in place of each heat and smoke detector. When tests have been completed and corrections made, submit a signed and dated certificate with a request for formal inspection and tests.
- 3.5 FORMAL INSPECTION AND TEST: The AHJ &/or DOR and Fire Chief will witness formal tests after receipt of written certification that preliminary tests have been completed and that the system is ready for final inspection. The system manufacturer's technical representative shall be present for the final inspection and test. Preliminary tests shall be repeated, and functional and operational tests conducted, as requested by the AHJ &/or DOR or owner. Correct defects and conduct additional tests to demonstrate that the system conforms to contract specifications.

*** END OF SECTION 16721 ***

SECTION 16050

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

- 1.1 RELATED DOCUMENTS: This Section supplements all sections of Division 16, and shall apply to all phases of work specified, shown on the drawings, and required to provide all electrical systems complete and operable for the project. The work required under the Division is not limited to the work shown on the electrical drawings. Refer to site, architectural, structural and mechanical drawings, coordinate all such work to attain fully operational systems throughout the project. The intent of this specification is to provide a complete and operating electrical system in accordance with all Contract Documents.
- 1.2 WORK INCLUDED: Provide all labor, materials, services and skilled supervision necessary for the construction, erection, installation, connection, testing, and adjustment of all circuits and electrical equipment required by the Contract Documents, complete in all respects and ready for use.

1.3 SUPERVISION OF WORK

A. Electrical work shall be under the full supervision of a <u>professional electrical engineer</u> or a <u>master electrician</u> registered to practice in the Territory of Guam. Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit a certification from the Professional Engineer or master electrician stating that the work will be done under his full supervision. At the conclusion of the work, prior to final inspection, submit certification that the work was done in accordance with electrical construction documents and the installation complies with the latest edition of the National Electrical Code.

1.4 COORDINATION OF WORK

- A. Plan all work so that it proceeds with a minimum of interference with other trades. Coordinate all openings required for equipment and conduit required for work of other trades. Provide all special frames, sleeves and anchor bolts as required. Coordinate electrical work with the mechanical installation.
- B. Work lines and established heights shall be in accordance with architectural drawings. Verify all dimensions shown and establish all elevations and detailed dimensions not shown.
- C. Lay out and coordinate all work well in advance to avoid conflicts or interference with other work in progress so that in the event of interference, the electrical layout may be altered to suit the conditions, prior to the installation of any work, and without additional cost to the Owner. Conflicts arising from lack of coordination shall be the contractor's responsibility.
- D. Maintain all code required clearance around electrical equipment. Unless specifically noted otherwise, establish the exact location of electrical equipment based on the actual dimensions of equipment furnished.

1.5 COOPERATION WITH OTHER TRADES

A. Cooperate and coordinate all work of Division 16 with that of other trades; afford reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.

- B. Examine the drawings and specifications for the general and mechanical work and the work of other trades. Coordinate this work accordingly.
- C. Promptly report to the Contracting Officer any delay or difficulties encountered in the installation of this work which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.

1.6 CODES, PERMITS AND FEES

- A. Perform work in accordance with the National Electrical Code, applicable building ordinances, and other applicable codes, hereinafter referred to as the "Code". Where the Contract Documents exceed minimum requirements, the most stringent shall apply unless variance is approved.
- B. Comply with all requirements for permits, licenses, fees, and codes. Obtain all required permits, licenses, inspections, and pay all fees required to perform the work described in the Contract Documents.
- C. Comply with all requirements of the applicable utility authorities serving the project. Make all arrangements with the utility authorities for proper coordination of the work.
- 1.7 MATERIALS AND EQUIPMENT FURNISHED BY OTHERS: The electrical work includes the installation or connection of certain materials and equipment furnished by others. Verify installation details. Foundations for apparatus and equipment will be furnished by others unless otherwise noted or detailed.
- 1.8 CONTRACT DRAWINGS: The Contract Drawings are shown in part diagrammatic, and intend to convey the scope of work, indicating the intended general arrangement of equipment, conduit and outlets. Follow the drawings in laying out the work and verify spaces for the installation of materials and equipment based on actual dimensions of equipment furnished. Wherever a question exists regarding the intended location of outlets or equipment, circuiting, etc., obtain instructions from the Contracting Officer before proceeding with the work.
- 1.9 EQUIPMENT OR FIXTURES: Equipment or fixtures shall be connected to provide circuit continuity in accordance with applicable codes whether or not each piece of conductor, conduit, or protective device is shown between such items of equipment or fixtures, and the point of circuit origin.

1.10 NEW EQUIPMENT AND MATERIAL:

- A. Unless otherwise specified, equipment and materials of the same type of classification, and used for the same purpose shall be products of the same manufacturer. Use only new and unweathered material.
- B. Furnish products listed and classified by Underwriter's Laboratories, Inc.
- 1.11 APPLICABLE DOCUMENTS: Design, manufacture, testing and method of installation of all apparatus and materials furnished under Division 16 of the specifications shall conform to the latest publications or standard rules of the following:

Institute of Electrical and Electronic Engineers (Formerly American Institute of Electrical Engineers) - IEEE National Electrical Manufacturers' Association - NEMA Underwriters' Laboratories, Inc. - UL National Fire Protection Association - NFPA American Society for Testing and Materials - ASTM
American National Standards Institute - ANSI
National Electrical Code - NEC
National Electrical Safety Code - NESC
Uniform Fire Code - UFC
International Building Code - IBC
Insulated Power Cable Engineers Association – IPCEA
Americans with Disabilities Act Guidelines - ADAG
American Institute of Steel Construction - AISC
Department of Public Works Standards, Government of Guam - DPW
Guam Fire Department Standards, Government of Guam - GFD
Guam Power Authority Standards, Government of Guam - GPA
GTA Standards - GTA
Guam Environmental Protection Agency - GEPA

1.12 EXECUTION OF THE WORK

- A. Install equipment and materials in neat and workmanlike manner and align, level and adjust for proper operation. Install equipment so that all parts are easily accessible for inspection, operation, maintenance, and repair.
- B. Where damage, marring or disfigurement has occurred, replace or refinish the damaged surfaces as directed, and to the satisfaction of the Contracting Officer.
- C. Provide the design, fabrication, and erection of all supplementary structural framing required for attachment of hangers or other devices supporting electrical equipment. Submit design/shop drawing to the Contracting Officer for approval.

D. Outlet Location:

- Position of outlets: Center all outlets with regard to panelling, furring and trim. Symmetrically arrange outlets in the room. Satisfactorily correct outlets improperly located or installed. Repair or replace damaged finishes. Set outlets plumb and extend to the finished surface of the wall, ceiling or floor without projecting beyond same.
- 2. Install all receptacles, switches, and outlets shown on the wood trim, cases or fixtures symmetrically, and where necessary, set the long dimension of the plate horizontal, or ganged in tandem.

1.13 SPECIAL CONSIDERATION

- A. Cutting, Patching and Piercing: Obtain written permission from the Contracting Officer before cutting or piercing structural members.
 - Use craftsmen skilled in their respective trades for cutting, fitting, repairing, patching of plaster and finishing of materials including carpentry work, metal work or concrete work required for by Division 16. Do not weaken walls, partitions or floor by cutting. Holes required to be cut in floors must be drilled or cored without breaking or spalling around the holes. Do all necessary patching and/or refinishing as instructed by the Contracting Officer.
 - 2. Sleeves through floors and walls to be galvanized rigid steel flush with walls, ceiling or finished floors; size to accommodate the raceway.

- 3. Use care in piercing waterproofing. After the part piercing waterproofing has been set in place, seal opening and make absolutely watertight.
- 4. Provide baked white enamel painted spring-clipped escutcheon plates where exposed pipe passes through walls, floors, or ceilings. Cover sleeves and entire opening made for the pipe with escutcheon plates. Field applied paint finish shall match color of surrounding finish. Seal all conduit openings through floor slabs, masonry walls, and continuous partitions to make air and watertight. Tightly caulk space between conduit and abutting materials with fiberglass insulation and nonflammable sealant.
- B. Seal equipment or components exposed to the weather and make watertight and insect-proof. Protect equipment outlets and conduit openings with temporary plugs or caps at all times that work is not in progress.
- C. Equipment Access: Locate starters, switches, receptacles, and pull boxes to allow easy Equipment Identification: Identify each piece of equipment including disconnect switches and motor starters, with plastic laminate nameplates, black face with white core letters, having proper and complete identification. Clearly identify on the equipment served, and spell out the full name of the equipment, such as "Air Handling Unit AHU-1" and "Hot Water Cir. Pump P-1". Do not use abbreviated plan references such as "AHU-1" or "P-1".
- D. Equipment Access: Locate starters, switches, receptacle4s, and pull boxes to allow easy access for operation, repair and maintenance, and if concealed, provide access doors.
- E. Equipment Bases: Provide equipment bases on all floor-mounted equipment furnished under this Contract.
- F. Protection of apparatus, materials and equipment: Take all necessary precautions to properly protect all apparatus, fixtures, appliances, material, equipment and installations from damage of any kind. The Contracting Officer may reject any particular piece or pieces of material, apparatus, or equipment which has scratches, dents or otherwise damaged.
- G. Operation and Maintenance Manuals: During the time of the Contract and before final acceptance of the electrical installation, submit to the Contracting Officer three copies of all descriptive literature, maintenance recommendations from the equipment manufacturer, data of initial operation, wiring diagrams and parts list of each item of electrical equipment installed under the Contract; submit all manufacturer's guarantees and warranties. Submittal shall include: switchboards, motor control centers, generators, and fire alarm system.
 - 1. Refer to Division 1 for additional requirements.
- H. Painting Preparation: Prepare all exposed fittings, boxes, supports and panelboards for painting; remove traces of oil, grease and dirt. Employ all necessary precautionary methods to prevent scratching or defacing of all electrical apparatus and devices.
- I. Painting: Exposed conduit, boxes installed after room has been painted, shall be painted to match room finish by this contractor.
 - 1. Corrosion Control: All corrosive metal surfaces, conduits/fittings, pipelines and structures shall be provided with corrosion inhibiting primer before installation. Appropriate surface preparation shall be made before application of primer.
- J. Rust Prevention: Provide hot dip galvanized finish for all ferrous materials. In addition, outdoor installations shall be field painted with two coats of epoxy paint.

- K. Tests: Provide all tests as outlined hereinafter, and other tests necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted in the presence of the Contracting Officer.
 - 1. Ground Rod Test: Immediately after installation, test driven grounds with direct-reading single-test Megger, utilizing the AC fall-of-potential method and two reference electrodes. Orient the ground to be tested and two reference electrodes in a straight line spaced 50 feet apart. Drive the reference electrodes 5 feet deep. Disconnect the ground rod to be tested from other ground system at the time of testing. Ground resistance for the electrical service shall be 25 ohms or less. Ground resistance for communication system shall meet manufacturer's minimum requirements. Submit the results, date of test, and soil conditions, to the Contracting Officer in writing, immediately after testing.
 - 2. System voltage at each panelboard measure voltage between phases; phase to neutral; phase to ground; and neutral to ground. Measurements shall be conducted during unloaded condition and repeated during loaded condition. Adjust system volume to within ±3% of nominal voltage.
 - 3. Insulation resistance of conductors.
- L. Seismic Consideration: Installation shall meet Seismic Zone 4 requirements.
- M. Windload Consideration: Installation exposed to outdoors shall be designed to withstand 170 MPH wind speed IBC 2009 Exposure C and ASCE7-05.

1.14 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Division.
- B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Division in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.
- 1.15 PRODUCT HANDLING: Comply with pertinent provisions of Division 1.
- 1.16 WARRANTY: Provide one year warranty on all labor and materials.

1.17 AS-BUILT DRAWINGS

- A. The Contractor shall maintain at the site one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders, and other modifications, in good order and marked to record all changes made during construction. These shall be made available to the Contracting Officer.
- B. At the conclusion of the work, the Contractor will be furnished by the Contracting Officer, at the Contractor's expense, a set of reproducibles made from original contract plans. The Contractor shall then incorporate all changes made, as recorded, into the set of reproducibles in a clear, legible and reproducible manner. All feeders, main alarm and communication lines, service entrance, and stub-outs shall be dimensionally located within the building structure. As a condition for acceptance of work, "as-built" reproducibles shall be signed by

Contractor attesting that all changes have been incorporated, dated and delivered to the Contracting Officer.

1.18 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra Products in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

END OF SECTION

SECTION 16402

INTERIOR WIRING SYSTEMS

PART 1 GENERAL

1.1 RELATED REQUIREMENTS: Section 16050, "Basic Electrical Materials and Methods," applies to this section with additions and modifications specified herein.

1.2 SUBMITTALS

A. Shop Drawings - Submit for the following:

Panelboards Transformers

B. Manufacturer's Data:

Receptacles
Circuit breakers
Switches
Conduit and fittings (each type)
Device plates
Insulated conductors
Outlet and junction boxes
Transformers

- C. Test Reports: Submit test results for approval in report form.
 - Transformer tests: Submittal shall include routine NEMA ST20 transformer test results on each transformer and also contain the results of NEMA "design" and "prototype" tests that were made on transformers electrically and mechanically equal to those specified.
 - 2. 600-volt wiring test
 - 3. Grounding system test

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT: Materials, equipment and devices shall, as a minimum, meet the requirements of UL, where UL standards are established for those items, and the requirements of NFPA 70.

2.2 CONDUIT AND FITTINGS

- A. Rigid Steel Conduit (Zinc-Coated): ANSI C80.1, UL 6.
- B. Rigid Aluminum Conduit: ANSI C80.5, UL 6.
- C. Electrical Metallic Tubing (EMT): UL 797, ANSI C80.3.

- D. Flexible Metal Conduit: UL 1.
 - 1. Liquid-Tight Flexible Metal Conduit (Steel): UL 360.
- E. Fittings for Metal Conduit, EMT and Flexible Metal Conduit: UL 514B. Ferrous fittings shall be cadmium- or zinc-coated in accordance with UL 514B.
 - 1. Fittings for Rigid Metal Conduit and IMC: Threaded type. Split couplings unacceptable.
 - 2. Fittings for EMT: Compression-type.
- 2.3 OUTLET BOXES AND COVERS: UL 514A, cadmium- or zinc-coated, if of ferrous metal. UL 514C, if nonmetallic.
- 2.4 CABINETS, JUNCTION BOXES AND PULL BOXES (WITH VOLUME GREATER THAN 100 CUBIC INCHES): UL 50, hot-dip zinc-coated, if of sheet steel.
- 2.5 WIRES AND CABLES: Wires and cables shall meet the applicable requirements of NFPA 70 and UL for the type of insulation, jacket, and conductor specified or indicated. Wires and cables manufactured more than 12 months prior to date of delivery to the site shall not be used.
 - A. Conductors: No. 10 AWG and smaller shall be solid; No. 8 AWG and larger shall be stranded. Conductors shall be copper, unless indicated otherwise.
 - 1. Minimum Conductor Sizes: Minimum size for branch circuits shall be No. 12 AWG; for Class 1 remote-control and signal circuits, No. 14 AWG; and for Class 2 Low-energy, remote-control and signal circuits, No. 16 AWG.
 - B. Color Coding: Provide for all service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors, and white for neutrals, except where neutrals of more than one system are installed in same raceway or box, the other neutral shall be white with a colored (not green) stripe. The color of the ungrounded conductors in different voltage systems shall be as follows:

1. 120/208 volt, 3-phase: Phase A - black

Phase B - red Phase C - blue

2. 277/480 volt, 3-phase: Phase A - brown

Phase B -orange Phase C -yellow

C. Insulation: Unless specified or indicated otherwise or required by NFPA 70, all power and lighting wires shall be 600-volt, Type THW, THWN, XHHW, or RHW, except that grounding wire may be Type TW; remote-control and signal circuits shall be Type TW, THW or TF. Conductors shall conform to UL 83. Where lighting fixtures require 90 degree C conductors, provide only conductors with 90 degree C insulation or better.

- D. Bonding Conductors: ASTM B 1, solid bare copper wire for sizes No. 8 AWG and smaller diameter; ASTM B 8, Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.
- 2.6 SPLICES AND TERMINATION COMPONENTS: UL 486A for wire connectors, and UL 510 for insulating tapes. Connectors for wires No. 10 AWG and smaller diameter wires shall be insulated, pressure-type in accordance with UL 486A or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.
- 2.7 DEVICE PLATES: Provide UL listed, one-piece device plates for outlets and fittings to suit the devices installed. Plates on finished walls shall be urea or phenolic, minimum 0.10-inch wall thickness. Plates shall be the same color as the receptacle or toggle switch with which they are mounted. Screws shall be machine type with countersunk heads in a color to match the finish of the plate. The use of sectional type device plates will not be permitted. Plates installed in wet locations shall be gasketed and UL listed for "wet locations".

2.8 SWITCHES

- A. Toggle Switches: Fed. Spec. W-S-896, totally enclosed with bodies of thermosetting plastic and a mounting strap. Handles shall be ivory. Wiring terminals shall be of the screw type, side wired. Switches shall be rated quiet-type AC only, 120/277 volts, with the current rating and number of poles indicated.
- B. Disconnect Switches: NEMA KS1. Switches serving as motor-disconnect means shall be horsepower rated. Provide heavy duty type switches where indicated, where switches are rated higher than 240 volts, and for double throw switches. Fused switches shall utilize Class R fuseholders and fuses, unless indicated otherwise. Provide switches in NEMA enclosure as indicated, per NEMA ICS 6.
- C. Breakers Used as Switches: For 120-Volt fluorescent fixtures, mark breakers "SWD" in accordance with UL 489.
- 2.9 RECEPTACLES: UL 498 and NEMA WDI, heavy-duty, specification grade grounding type. Ratings and configurations shall be as indicated. Wiring terminals shall be of the screw type, side wired. Connect grounding pole to the mounting strap. Bodies shall be ivory thermosetting plastic supported on a metal mounting strap.
 - A. Ground Fault Circuit Interrupter (GFCI) Receptacles: UL 943, duplex type for mounting in a standard outlet box. The device shall be capable of detecting a current leak of 6 milliamperes or greater and tripping per requirements of UL 943 for Class A GFCI devices.
- 2.10 PANELBOARDS: UL 67 and UL 50. Panelboards for use as service disconnecting means shall additionally conform to UL 869. Panelboards shall be circuit breaker equipped bolt on type. Design shall be such that any individual breakers can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as a means of obtaining clearances as required by UL. Where "space only" (PFB) is indicated, make provisions for the future installation of a breaker sized as indicated. All panelboard locks shall be keyed same. Directories shall be typed to indicate load served by each circuit and mounted in a holder behind transparent protective covering.

- A. Panelboard Buses: Provide panelboard with copper bus. Support bus bars on bases independent of the circuit breakers. Main buses and back pans shall be designed so that breakers may be changed without machining, drilling, or tapping. Provide an isolated neutral bus in each panel for connection of circuit neutral conductors. Provide a separate ground bus identified as equipment grounding bus per UL 67 for connecting grounding connectors; bond to steel cabinet.
- B. Circuit Breakers: Fed. Spec. W-C-375 thermal magnetic type with interrupting capacity as indicated. Series rated circuit breakers are unacceptable. Breaker terminals shall be UL listed as suitable for the type of conductor provided. Plug-in circuit breakers unacceptable.
 - 1. Multipole Breakers: Provide common-trip type with a single operating handle. Breaker design shall be such that an overload in one pole automatically causes all poles to open. Maintain phase sequence throughout each panel so that any three adjacent breaker poles are connected to Phases A, B and C, respectively.
- 2.11 ENCLOSED CIRCUIT BREAKERS: UL 489. Individual molded case circuit breakers with voltage and continuous current ratings, number of poles, overload trip setting, and short circuit interrupting rating as indicated. Enclosure type as indicated. Provide solid neutral.
- 2.12 TRANSFORMERS: NEMA ST20, general-purpose, dry-type, self cooled, ventilated, unventilated, sealed. Provide transformers in a NEMA 1 enclosure. Transformer shall have 220 degrees C insulation system for transformer 15kVA and greater and shall have 180 degrees C insulation for transformers rated 10kVA and less, with temperature rise not exceeding 115 degrees C under full-rated load in maximum ambient of 40 degrees C. Transformer of 115 degrees C temperature rise shall be capable of carrying continuously 115 percent of nameplate kVA without exceeding insulation rating. Transformers shall be quiet type with maximum sound level of minimum 3 decibels less than NEMA standard level for transformer ratings indicated.
- 2.13 NAMEPLATES: Fed. Spec. L-P-387. Provide as specified in Section 16050, "Basic Electrical Materials and Methods."
- 2.14 SOURCE QUALITY CONTROL: Test opening around electrical penetrations through fire resistive-rated walls, partitions, floor or ceiling for fire resistive integrity in accordance with ASTM E 814.

PART 3 EXECUTION

- 3.1 INSTALLATION: Electrical installations shall conform to requirements of NFPA 70 and to requirements specified herein.
 - A. Wiring Methods: Provide insulated conductors installed in conduit, except where specifically indicated or specified otherwise, or required by NFPA 70 to be installed otherwise. Provide insulated, green equipment grounding conductor in all feeder and branch circuits, including lighting circuits. Grounding conductor shall be separate from electrical system neutral conductor. Provide insulated, green conductor for grounding conductors installed in conduit or raceways. Minimum conduit size shall be 3/4 inch in diameter for low voltage lighting and power circuits. Vertical distribution in multiple story buildings shall be made with metal conduit in fire-rated shafts. Metal conduit shall extend through shafts for minimum distance of 6 inches. Conduit which penetrates fire walls, fire

partitions, or floors shall be metallic on both sides of fire walls, fire partitions, or floors for minimum distance of 6 inches.

- 1. Aluminum Conduit: Use in exposed installation and in unairconditioned spaces.
 - a. Do not install underground or encase in concrete.
 - b. Do not use brass or bronze fittings.
- 2. Electrical Metallic Tubing: Use in dry partitions and above drop ceiling.
 - a. Do not use in feeder circuits.
 - b. Do not install underground.
 - c. Do not encase in concrete.
 - d. Do not use in areas where subject to severe physical damage (including, but not limited to, mechanical equipment rooms and electrical equipment rooms).
 - e. Do not use in hazardous areas.
 - f. Do not use in outdoor work.
- B. Conduit Installation: Unless indicated otherwise, conceal conduit within finished walls, ceilings, and floors. Keep conduit minimum 6 inches away from parallel runs of flues and steam or hot-water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project. Run conduits in crawl space under slab as if exposed.
 - Where conduits rise through floor slabs, the curved portion of bends shall not be visible above the finish slab.
 - 2. Conduit Support: Support conduit by pipe straps, wall brackets, hangers, or ceiling trapeze. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts or expansion bolts on concrete or brick; by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. The load applied to fasteners shall not exceed one-fourth of the proof test load. Fasteners attached to concrete ceiling shall be vibration resistant and shock resistant. Holes cut to a depth of more than 1-1/2 inches in reinforced concrete beams or to a depth of more than 3/4-inch in concrete joints shall not cut the main reinforcing bars. Fill unused holes. In partitions of light steel construction, use sheet-metal screws. In suspended-ceiling construction, run conduit above the ceiling. Spring steel fasteners may be used for lighting branch circuit conduit supports in suspended ceiling in dry locations. Where conduit crosses building expansion joints provide a suitable watertight expansion/deflection fitting that maintains the conduit electrical continuity by bonding jumpers or other means.

- 3. Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with a hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of all obstructions.
- 4. Install pull wires in empty conduit in which wire is to be installed by others. The pull wire shall be plastic having minimum 200-pound tensile strength. Leave a minimum 12 inches of slack at each end of the pull wire.
- 6. Conduit Installed in Concrete Floor Slabs: Locate so as not to adversely affect the structural strength of the slabs. Install conduit within the middle one-third of the concrete slab. Do not stack conduits. Space conduit horizontally minimum three diameters except at cabinet locations. Curved portions of bends shall not be visible above the finish slab. Increase slab thickness as necessary to provide a minimum one-inch cover over conduit. Where embedded conduits cross expansion joints, provide suitable watertight expansion/deflection fittings and bonding jumpers. Conduit larger than one-inch trade size shall be parallel with or at right angles to the main reinforcement; when at right angles to the reinforcement, the conduit shall be close to one of the supports of the slab.
- 7. Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use minimum single locknut and bushing. Locknuts shall have sharp edges for digging into the wall of metal enclosures. Install bushings on the ends of conduits and provide insulating type where required by NFPA 70.
- 8. Stub-Ups: Provide conduits stubbed up through concrete floor for connection to free-standing equipment with an adjustable top or coupling threaded inside for plugs, set flush with the finished floor. Extend conductors to equipment in rigid steel conduit, except that flexible metal conduit may be used 6 inches above the floor. Where no equipment connections are made, install screwdriver-operated threaded flush plugs in conduit end.
- 9. Flexible Connections: Provide flexible connections of short length, 6 feet maximum, for recessed and semi-recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Provide liquid-tight flexible conduit in wet locations. Provide separate ground conductor across flexible connections.
- C. Boxes, Outlets and Supports: Provide boxes in the wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be of the cast-metal hub type when located in wet locations, when surface mounted on outside of exterior surfaces, when installed exposed up to 7 feet above interior floors and walkways, or when installed in hazardous areas. Boxes in other locations shall be sheet steel, except that aluminum boxes may be used with aluminum conduit; nonmetallic boxes may be used with nonmetallic conduit system. Each box shall have the volume required by NFPA 70 for the number of conductors enclosed in the box. Boxes for mounting lighting fixtures shall be minimum 4 inches square or octagonal, except that smaller boxes may be installed as required by fixture configurations, as approved. Boxes for use in masonry-block or tile walls shall be

square-cornered tile-type, or standard boxes having square-cornered tile-type covers. Provide gaskets for cast-metal boxes installed in wet locations and boxes installed flush with the outside of exterior surfaces. Provide separate boxes for flush or recessed fixtures when required by the fixture terminal operating temperature; fixtures shall be readily removable for access to the boxes unless ceiling access panels are provided. Support boxes and pendants for surface-mounted fixtures on suspended ceilings independently of the ceiling supports or make adequate provisions for distributing the load over the ceiling support members. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units and with machine screws or welded studs on steel. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support; support sheet metal boxes directly from the building structure or by bar hangers. Where bar hangers are used, attach the bar to raceways on opposite sides of the box and support the raceway with an approved type fastener maximum 24 inches from the box. When penetrating reinforced-concrete members, avoid cutting any reinforcing steel.

- 1. Boxes for use with raceway systems shall be minimum 1-1/2 inches deep, except where shallower boxes required by structural conditions are approved. Boxes for other than lighting-fixture outlets shall be minimum 4 inches square, except that 4 inch by 2 inch boxes may be used where only one raceway enters the outlet. Telephone outlets shall be a minimum of 4 inches square by 1-1/2 inches deep.
- Pull Boxes: Construct of at least the minimum size required by NFPA 70 of code-gage aluminum or galvanized sheet steel, compatible with nonmetallic raceway systems, except where cast-metal boxes are required in locations specified herein. Furnish boxes with screw-fastened covers. Where several feeders pass through a common pull box, tag the feeders to indicate clearly the electrical characteristics, circuit number, and panel designation.
- 3. Extension Rings: Used only on existing boxes in concealed conduit systems where wall is furred out for new finish.
- D. Mounting Heights: Mount panelboards, circuit breakers, and disconnecting switches so the height of the operating handle at its highest position maximum 72 inches above the floor. Mount lighting switches receptacles and other devices as indicated. Measure mounting heights of wiring devices and outlets to the center of device or outlet.
- E. Conductor Identification: Provide conductor identification within each enclosure where a tap, splice, or termination is made. For conductors No. 6 AWG and smaller diameter, color coding shall be by factory-applied color-impregnated insulation. For conductors No. 4 AWG and larger diameter, color coding shall be by plastic-coated self-sticking markers, colored nylon cable ties and plates, or heat-shrink type sleeves. Identify control circuit terminations.
- F. Splices: Make splices in accessible locations. Make splices in conductors No. 10 AWG and smaller diameter with an insulated pressure type connector. Make splices in conductors No. 8 AWG and larger diameter with a solderless connector and cover with an insulation material equivalent to the conductor insulation.
- G. Covers and Device Plates: Install with edges in continuous contact with finished wall surfaces without the use of mats or similar devices. Plaster fillings are not permitted.

- Plates shall be installed with an alignment tolerance of 1/16 inch. The use of sectional type device plates are not permitted. Plates installed in wet locations shall be gasketed.
- H. Electrical Penetrations: Openings around electrical penetrations through fire resistance rated walls, partitions, floors, or ceilings shall be sealed to maintain fire resistive integrity as tested per ASTM E 814.
- I. Grounding and Bonding: In accordance with NFPA 70. Ground all exposed non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in metallic and nonmetallic raceways, and neutral conductor of wiring systems. Where ground fault protection is employed, ensure that the connection of ground and neutral does not interfere with the correct operation of the fault protection. Bond building foundation rebars to ground.
 - Grounding Conductor: Provide an insulated, green equipment grounding conductor in all feeder and branch circuits including lighting circuits. Grounding conductor shall be separated from the electrical system neutral conductor. Provide insulated, green conductor for grounding conductors installed in conduit or raceways.
 - 2. Resistance: The maximum resistance to ground of the grounding system shall not exceed 25 ohms under normally dry conditions. Where the resistance obtained exceed 25 ohms provide additional ground rods to achieve the resistance level. Spacing of ground rods shall not exceed 10 feet apart.
- J. Repair of Existing Work, Demolition, and Modification of Existing Electrical Distribution Systems:
 - 1. Lay out the work carefully in advance. Exercise care where cutting, channeling, chasing, or drilling of floors, walls, partitions, ceiling, or other surfaces is necessary for the proper installation, support, or anchorage of the conduit, raceways, or other electrical work. Repair any damage to buildings, piping, and equipment using skilled craftsmen of the trades involved.
 - 2. Existing concealed wiring to be removed shall be disconnected from its source. Remove conductors; cut conduit flush with floor, underside of floor, and through walls; and seal openings.
 - a. Removal of existing electrical distribution system equipment shall include equipment's associated wiring, including conductors, cables, exposed conduit, surface metal raceways, boxes, fittings, etc., back to equipment's source and as indicated.
 - b. Maintain continuity of existing circuits of equipment to remain. Existing circuits of equipment shall remain energized. Circuits which are to remain but were disturbed during demolition shall have circuits wiring and power restored back to original condition.
- K. Motor Load: When motor size provided differs from the size indicated or specified, make adjustments to the wiring, disconnect devices, and branch circuit protection to accommodate the equipment actually provided.

- 3.2 FIELD QUALITY CONTROL: Furnish test equipment and personnel and submit written copies of test results to the Contracting Officer. Give five working days notice prior to each test.
 - A. Devices Subject to Manual Operation: Each device subject to manual operation shall be operated at least five times, demonstrating satisfactory operation each time.
 - B. Transformer Tests: Perform tests classified as routine in accordance with NEMA ST20 on each transformer.
 - C. Test on 600-Volt Wiring: Test all 600-volt wiring to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on all wiring No. 6 AWG and larger diameter using an instrument which applies a voltage of approximately 500 volts to provide a direct reading of resistance; minimum resistance shall be 250,000 ohms.

END OF SECTION

SECTION 16510

LIGHTING SYSTEM

PART 1 GENERAL

- 1.1 GENERAL REQUIREMENTS: Section 16050, "Basic Electrical Materials and Methods", applies to this Section, with the additions and modifications specified herein.
- 1.2 DESCRIPTION OF WORK: The work includes providing lighting fixtures, photocell switches, dimmer switches, time switches, contactors, and battery-powered units and systems for interior use, including lighting fixtures and accessories mounted on the exterior surfaces of buildings. Materials not normally furnished by manufacturers of these devices are specified in Section 16402, Interior Wiring Systems.
- 1.3 SUBMITTALS: Data, shop drawings and reports shall employ the terminology, classifications and methods prescribed by the IES Lighting Handbook, as applicable, for the lighting system specified.
 - A. Manufacturer's Data:

Lighting Fixtures, including Lamps and Ballasts Occupancy Sensor

- B. Shop Drawings:
 - 1. Lighting fixture assemblies.
 - 2. Emergency lighting systems.
 - 3. Occupancy Sensor.

PART 2 PRODUCTS

- 2.1 FLUORESCENT LIGHTING FIXTURES: UL 1570.
 - A. Fluorescent Lamps: Provide the number, type and wattage indicated. Provide lamp conforming to ANSI C78.
 - B. Fluorescent Ballasts: UL 935, ANSI C82.1 and shall be labeled Certified Ballast Manufacturers (CBM) certified by Electrical Testing Laboratories (ETL).
 - Electronic Ballasts: Provide energy-saving fluorescent ballasts of the CBM certified full light output type. Provide programmed start ballasts. The ballasts shall have an average input wattage of 112 or less when operating four F032T8 lamps, 62 or less when operating two F032T8 lamps, 36 or less when operating one F032T8 lamp, tested in accordance with ANSI C82.2 methods. Ballast shall have a frequency of operation of 20 Khz or greater, and operate without visible flicker. Total Harmonic Distortion shall be less than 20%. Ballast shall meet all applicable ANSI and IEEE standards regarding transient protection. Ballast shall be designed for parallel lamp connection, meaning, if one or more lamps fail, the companion lamps remain fully lit. Ballast shall maintain constant light output over operating range of ± 10% of the input voltage. Ballast factor shall be 0.88 or higher. Nominal power factor shall be 0.95 or

higher. Lamp current crest factor shall be below 1.7. Manufacturer shall provide warranty that ballast will be free from defects in material and workmanship for a period of 5 years from the date of manufacture. Warranty shall cover labor and material to replace the defective ballast. Only new ballasts manufactured not earlier than 6 months at time of installation will be accepted. Use single ballast for two or three lamps light fixtures. Ballast shall be compatible with and not cause interference with the operation of occupancy sensors or other infrared control systems.

- OCCUPANCY SENSORS: UL listed. Occupancy sensors and power packs shall be designed to operate on the voltage indicated. Sensors and power packs shall have circuitry that only allows load switching at or near zero current crossing of supply voltage. Occupancy sensor mounting as indicated. Sensor shall have an LED occupant detection indicator. Sensor shall have adjustable sensitivity and adjustable delayed-off time range of 5 minutes. Wall mounted sensors shall be ivory, ceiling mounted sensors shall be white. Ceiling mounted sensor shall have 6.28 rad 360 degree coverage and wall mounted sensors shall have 180 degree coverage unless otherwise indicated. Provide combination type sensors.
 - A. Ultrasonic sensor shall be crystal controlled and shall not cause detection interference between adjacent sensors.
 - B. Infrared sensors shall have a daylight filter. Sensor shall have a fresnel lens that is applicable to space to be controlled.
 - C. Occupancy detection to turn lights on requires both ultrasonic and infrared sensor detection. Lights shall remain on if either the ultrasonic or infrared sensor detects movement. Infrared sensor shall have lens selected for indicated usage and daylight filter to prevent short wavelength infrared interference. Ultrasonic sensor frequency shall be crystal controlled.
- 2.3 RECESS AND FLUSH-MOUNTED FIXTURES: Provide type that can be relamped from the bottom. Trim for the exposed surface of flush-mounted fixtures shall be as shown on sketches or as indicated.
- 2.4 EMERGENCY LIGHTING EQUIPMENT: UL 924, NFPA 70, and NFPA 101. Provide lamps in wattage indicated.
 - A. Fluorescent Emergency System: Each system shall consist of an automatic power failure device, cover-mounted test switch and pilot light, and fully automatic solid-state charger in a self-contained power-pack. Charger shall be either trickle, float, constant current or constant potential type, or a combination of these. Battery shall be sealed wet or gel electrolyte type with capacity as required to supply power to 1 lamp. Battery shall operate unattended and require no maintenance (including additional water) for a period of not less than 5 years. System shall be capable of operating a dead fluorescent lamp.

PART 3 EXECUTION

3.1 INSTALLATION: Set lighting fixtures plumb, square, and level with ceiling and walls, in alignment with adjacent lighting fixtures, and secure in accordance with manufacturers' directions and approved shop drawings. The installation shall meet with the requirements of NFPA 70. Mounting heights specified or indicated shall be to bottom of fixture for ceiling-mounted fixtures and to center of fixture for wall-mounted fixtures. Obtain approval of the exact mounting for lighting fixtures on the job before installation is commenced and, where applicable, after coordinating with the type, style, and pattern of the ceiling being installed. Light fixtures shall be supported from building main structure. Do not

support fixtures by ceiling acoustical panels. Where fixtures of sizes less than the ceiling grid are indicated to be centered in the acoustical panel, support such fixtures independently and with at least two 3/4-inch metal channels spanning, and secured to, the ceiling tees. Provide rods or wires for lighting fixture support under this section of the specifications. Rods or wires shall conform to the requirements of Division 9. Additionally, for recessed fixtures, provide support clips securely fastened to ceiling grid members, a minimum of one at or near each corner of each fixture.

A. Emergency Lights: Wire emergency lights ahead of the switch to the normal lighting circuit located in the same room or area.

3.2 OCCUPANCY SENSOR:

- A. Provide quantity of sensor units indicated as a minimum. Provide additional units to give full coverage over controlled area. Full coverage shall provide hand and arm motion detection for office and administration type areas and walking motion for industrial areas, warehouses, storage rooms and hallways. Locate the sensor(s) as indicated and in accordance with the manufacturer's recommendations to maximize energy savings and to avoid nuisance activation and deactivation due to sudden temperature or airflow changes and usage. Set sensor "on" duration to 15 minutes.
- 3.3 GROUNDING: Ground noncurrent-carrying parts of equipment as specified in Section 16402, "Interior Wiring System". Where the copper grounding conductor is connected to a metal other than copper, provide specially treated or lined connectors suitable for this purpose.
- 3.4 FIELD TESTS: The Contractor shall provide electric power required for field tests.
 - A. Operating Test: Upon completion of the installation, conduct an operating test to show that the equipment operated in accordance with the requirements of this section.
 - B. Insulation Resistance Test: Perform as specified in Section 16402, "Interior Wiring Systems", both before and after connection of fixtures and equipment.
 - C. Ground Resistance Test: Perform as specified in Section 16402, "Interior Wiring Systems".
 - D. Occupancy Sensor: Test sensors for proper operation. Observe for light control over entire area being covered.
- 3.5 RELAMPING: Relamp luminaires which have failed lamps at completion of work.

3.6 ADJUSTING AND CLEANING:

A. Align luminaires and clean lenses and diffusers at completion of work. Clean paint splatters, dirt, and debris from installed luminaires.

END OF SECTION