



CITY OF AUSTIN, TEXAS
Purchasing Office
REQUEST FOR PROPOSAL (RFP)

SOLICITATION NO: NST0401
DATE ISSUED: JUNE 23, 2014

COMMODITY/SERVICE DESCRIPTION: STACK DAMPER FOR HEAT RECOVERY STEAM GENERATOR

REQUISITION NO.: MAX46866
COMMODITY CODE: 94125

PRE-PROPOSAL CONFERENCE TIME AND DATE: 1:30PM ON JULY 7, 2014

LOCATION: SAND HILL ENERGY CENTER, 1101 FALLWELL LANE, AUSTIN, TX 78617

FOR CONTRACTUAL AND TECHNICAL ISSUES CONTACT THE FOLLOWING AUTHORIZED CONTACT PERSON:

PROPOSAL DUE PRIOR TO: 3:00PM ON JULY 21, 2014

NICOLE TURNER
Senior Buyer

PROPOSAL CLOSING TIME AND DATE: 3:00PM ON JULY 21, 2014

LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET RM 308, AUSTIN, TEXAS 78701

Phone: (512) 322-6586
E-Mail: nicole.turner@austinenergy.com

When submitting a sealed Offer and/or Compliance Plan, use the proper address for the type of service desired, as shown below:

P.O. Address for US Mail	Street Address for Hand Delivery or Courier Service
City of Austin	City of Austin, Municipal Building
Purchasing Office-Response Enclosed	Purchasing Office-Response Enclosed
P.O. Box 1088	124 W 8 th Street, Rm 310
Austin, Texas 78767-8845	Austin, Texas 78701
	Reception Phone: (512) 974-2500

To ensure prompt delivery, all packages SHALL BE CLEARLY MARKED ON THE OUTSIDE "Purchasing Office-Response Enclosed" along with the offeror's name & address, solicitation number and due date and time. See Section 0200 Solicitation Instructions for more details.

All Offers (including Compliance Plans) that are not submitted in a sealed envelope or container will not be considered.

SUBMIT 1 ORIGINAL, 4 COPIES, AND 1 ELECTRONIC COPY (CD/FLASH) OF YOUR RESPONSE

*****SIGNATURE FOR SUBMITTAL REQUIRED ON PAGE 3 OF THIS DOCUMENT*****

This solicitation is comprised of the following required sections. Please ensure to carefully read each section including those incorporated by reference. By signing this document, you are agreeing to all the items contained herein and will be bound to all terms.

SECTION NO.	TITLE	PAGES
0100	STANDARD PURCHASE DEFINITIONS	*
0200	STANDARD SOLICITATION INSTRUCTIONS	*
0300	STANDARD PURCHASE TERMS AND CONDITIONS	*
0400	SUPPLEMENTAL PURCHASE PROVISIONS	7
0500	SCOPE OF WORK	7
ATT1	ATTACHMENT 1	52
0600	PROPOSAL PREPARATION INSTRUCTIONS & EVALUATION FACTORS	3
0605	LOCAL BUSINESS PRESENCE IDENTIFICATION FORM – Complete and return	1
0700	REFERENCE SHEET – Complete and return	2
0705	COST PROPOSAL SHEET	1
0800	NON-DISCRIMINATION CERTIFICATION	*
0805	NON-SUSPENSION OR DEBARMENT CERTIFICATION	*
0810	NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING CERTIFICATION	*
0835	NONRESIDENT BIDDER PROVISIONS – Complete and return	1

*** Documents are hereby incorporated into this Solicitation by reference, with the same force and effect as if they were incorporated in full text. The full text versions of these Sections are available, on the Internet at the following online address:**

http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS

If you do not have access to the Internet, you may obtain a copy of these Sections from the City of Austin Purchasing Office located in the Municipal Building, 124 West 8th Street, Room #308 Austin, Texas 78701; phone (512) 974-2500. Please have the Solicitation number available so that the staff can select the proper documents. These documents can be mailed, expressed mailed, or faxed to you.

I agree to abide by the City’s MBE/WBE Procurement Program Ordinance and Rules. In cases where the City has established that there are no M/WBE subcontracting goals for a solicitation, I agree that by submitting this offer my firm is completing all the work for the project and not subcontracting any portion. If any service is needed to perform the contract that my firm does not perform with its own workforce or supplies, I agree to contact the Small and Minority Business Resources Department (SMBR) at (512) 974-7600 to obtain a list of MBE and WBE firms available to perform the service and am including the completed No Goals Utilization Plan with my

submittal. This form can be found Under the Standard Bid Document Tab on the Vendor Connection Website:

http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS

If I am awarded the contract I agree to continue complying with the City's MBE/WBE Procurement Program Ordinance and Rules including contacting SMBR if any subcontracting is later identified.

The undersigned, by his/her signature, represents that he/she is submitting a binding offer and is authorized to bind the respondent to fully comply with the solicitation document contained herein. The Respondent, by submitting and signing below, acknowledges that he/she has received and read the entire document packet sections defined above including all documents incorporated by reference, and agrees to be bound by the terms therein.

Company Name: _____

Federal Tax ID No.: _____

Printed Name of Officer or Authorized Representative: _____

Title: _____

Signature of Officer or Authorized Representative: _____

Date: _____

E-Mail Address: _____

Phone Number: _____

*** Proposal response must be submitted with this Offer sheet to be considered for award**

Section 0605: Local Business Presence Identification

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE) TO BE CONSIDERED FOR LOCAL PRESENCE.

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN, SECTION 0900 OF THE SOLICITATION.

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm						
Physical Address						
Is Firm located in the Corporate City Limits? (circle one)	Yes			No		
In business at this location for past 5 yrs?	Yes			No		
Location Type:	Headquarters	Yes	No	Branch	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm						
Physical Address						
Is Firm located in the Corporate City Limits? (circle one)	Yes			No		
In business at this location for past 5 yrs?	Yes			No		
Location Type:	Headquarters	Yes	No	Branch	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm						
Physical Address						
Is Firm located in the Corporate City Limits? (circle one)	Yes			No		

In business at this location for past 5 yrs?	Yes			No		
Location Type:	Headquarters	Yes	No	Branch	Yes	No

Section 0700: Reference Sheet

Please include the following information if required in the solicitation:

Responding Company Name _____

1. Company's Name _____
 Name and Title of Contact _____
 Present Address _____
 City, State, Zip Code _____
 Telephone Number (____) _____ Fax Number (____) _____
 Email Address _____

2. Company's Name _____
 Name and Title of Contact _____
 Present Address _____
 City, State, Zip Code _____
 Telephone Number (____) _____ Fax Number (____) _____
 Email Address _____

3. Company's Name _____
 Name and Title of Contact _____
 Present Address _____
 City, State, Zip Code _____
 Telephone Number (____) _____ Fax Number (____) _____
 Email Address _____

4. Company's Name _____
Name and Title of Contact _____
Present Address _____
City, State, Zip Code _____
Telephone Number (_____) _____ Fax Number (_____) _____
Email Address _____

5. Company's Name _____
Name and Title of Contact _____
Present Address _____
City, State, Zip Code _____
Telephone Number (_____) _____ Fax Number (_____) _____
Email Address _____

Section 0835: Non-Resident Bidder Provisions

Company Name _____

- A. Bidder must answer the following questions in accordance with Vernon's Texas Statutes and Codes Annotated Government Code 2252.002, as amended:

Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "non-resident Bidder"?

Answer: _____

- (1) Texas Resident Bidder- A Bidder whose principle place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
- (2) Nonresident Bidder- A Bidder who is not a Texas Resident Bidder.

- B. If the Bidder id a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state?

Answer: _____ Which State: _____

- C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

Answer: _____

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The following Supplemental Purchasing Provisions apply to this solicitation:

1. **EXPLANATIONS OR CLARIFICATIONS:** (reference paragraph 5 in Section 0200)

All requests for explanations or clarifications must be submitted in writing to the Purchasing Office by 8:00 a.m. on July 9, 2014. Submissions may be made via email to nicole.turner@austinenergy.com

2. **INSURANCE:** Insurance is required for this solicitation.

A. **General Requirements:** See Section 0300, Standard Purchase Terms and Conditions, paragraph 32, entitled Insurance, for general insurance requirements.

- i. The Contractor shall provide a Certificate of Insurance as verification of coverages required below to the City at the below address prior to contract execution and within 14 calendar days after written request from the City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award
- ii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.
- iii. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or holdover period is exercised, as verification of continuing coverage.
- iv. The Certificate of Insurance, and updates, shall be mailed to the following address:

City of Austin Purchasing Office
P. O. Box 1088
Austin, Texas 78767

B. **Specific Coverage Requirements:** The Contractor shall at a minimum carry insurance in the types and amounts indicated below for the duration of the Contract, including extension options and hold over periods, and during any warranty period. These insurance coverage's are required minimums and are not intended to limit the responsibility or liability of the Contractor.

- i. **Worker's Compensation and Employers' Liability Insurance:** Coverage shall be consistent with statutory benefits outlined in the Texas Worker's Compensation Act (Section 401). The minimum policy limits for Employer's Liability are \$1,000,000 bodily injury each accident, \$1,000,000 bodily injury by disease policy limit and \$1,000,000 bodily injury by disease each employee.
 - (1) The Contractor's policy shall apply to the State of Texas and include these endorsements in favor of the City of Austin:
 - (a) Waiver of Subrogation, Form WC420304, or equivalent coverage
 - (b) Thirty (30) days Notice of Cancellation, Form WC420601, or equivalent coverage
- ii. **Commercial General Liability Insurance:** The minimum bodily injury and property damage per occurrence are \$1,000,000 for coverage's A (Bodily Injury and Property Damage) and B (Personal and Advertising Injury).
 - (1) The policy shall contain the following provisions:
 - (a) Contractual liability coverage for liability assumed under the Contract and all other Contracts related to the project.
 - (b) Contractor/Subcontracted Work.
 - (c) Products/Completed Operations Liability for the duration of the warranty period.
 - (d) If the project involves digging or drilling provisions must be included that provide Explosion, Collapse, and/or Underground Coverage.
 - (2) The policy shall also include these endorsements in favor of the City of Austin:
 - (a) Waiver of Subrogation, Endorsement CG 2404, or equivalent coverage

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- (b) Thirty (30) days Notice of Cancellation, Endorsement CG 0205, or equivalent coverage
 - (c) The City of Austin listed as an additional insured, Endorsement CG 2010, or equivalent coverage
 - iii. **Business Automobile Liability Insurance:** The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of \$1,000,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are \$1,000,000 bodily injury per person, \$1,000,000 bodily injury per occurrence and at least \$1,000,000 property damage liability per accident.
 - (1) The policy shall include these endorsements in favor of the City of Austin:
 - (a) Waiver of Subrogation, Endorsement CA0444, or equivalent coverage
 - (b) Thirty (30) days Notice of Cancellation, Endorsement CA0244, or equivalent coverage
 - (c) The City of Austin listed as an additional insured, Endorsement CA2048, or equivalent coverage.
- C. **Endorsements:** The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

3. PAYMENT BOND:

- A. The Contractor shall provide a Payment Bond in an amount equal to 100% of the Contract amount within 14 calendar days (14 unless a different period is inserted) after notification of award. The Payment Bond serves as security for the faithful payment of all of the Contractor's obligations for subcontracts, work, labor, equipment, supplies, and materials furnished under the Contract. The Payment Bond shall be issued by a solvent company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by the City pursuant to applicable law. The Surety must obtain reinsurance for any portion of the risk that exceeds 10% of the Surety's capital and surplus. For bonds exceeding \$100,000, the Surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Texas and holds a certificate of authority from the U.S. Secretary of the Treasury.
- B. The Payment Bond shall remain in effect throughout the term of the Contract, and shall be renewed for each respective extension.

4. PERFORMANCE BOND

- A. The Contractor shall provide a Performance Bond in an amount equal to 100% of the Contract amount within 14 calendar days (14 unless a different period is inserted) after notification of award. The Performance Bond serves as security for the faithful performance of all of the Contractor's obligations under the Contract. The Performance Bond shall be issued by a solvent company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by the City pursuant to applicable law. The Surety must obtain reinsurance for any portion of the risk that exceeds 10% of the Surety's capital and surplus. For bonds exceeding \$100,000, the Surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Texas and holds a certificate of authority from the U.S. Secretary of the Treasury.
- B. The Performance Bond shall remain in effect throughout the term of the Contract and shall be renewed for each respective extension.

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5. **TERM OF CONTRACT:**

- A. The Contract shall be in effect until the project is completed, accepted by the City and the warranty period [reference the Standard Purchase Terms & Conditions (Section 0300, parts 21 & 22)] is over.

6. **DELIVERY REQUIREMENTS:**

Location:	Days:
Sand Hill Energy Center	Monday - Fridays
1101 Fallwell Lane	7:30 AM – 3:30 PM
Del Valle, Texas 78617	
Project Manager: Robert Anderson 512-322-6187	

7. **INVOICES and PAYMENT:** (reference paragraphs 12 and 13 in Section 0300)

- A. Invoices shall contain a unique invoice number and the information required in Section 0300, paragraph 12, entitled “Invoices.” Invoices received without all required information cannot be processed and will be returned to the vendor.

Invoices shall be mailed to the below address:

	City of Austin
Department	Austin Energy
Attn:	Robert Anderson
Address	721 Barton Springs
City, State Zip Code	Austin, TX 78704

- B. The Contractor agrees to accept payment by check or Electronic Funds Transfer (EFT) for all goods and/or services provided under the Contract.
- C. Progress Payment Schedule. Contractor shall invoice according to the following payment schedule:
- i. Fabrication Drawings @ 50% developed = 15% (The Deliverables are drawings; the acceptance will come from the AE Project Manager after drawing review.)
 - ii. Fabrication Drawings @ 100% = 10% (The Deliverables are drawings; the acceptance will come from the AE Project Manager after drawing review.)
 - iii. Material Purchase Fabrication = 25% (The Deliverable is metal purchases to fabricate the stack damper. Acceptance criteria will be copies of the invoices provided to AE Project Manager.)
 - iv. Mobilization = 5% (The Deliverable is the Contractor’s physical move-in to Sand Hill (trailers, equipment, etc.). Acceptance is visual verification by the AE Project Manager.)
 - v. Installation, Inspection, Commissioning = 35% (The Deliverable is installation of the stack damper, testing and operation. Acceptance will come from the AE Project Manager.)

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- vi. O&M Manuals, Punch list completion, Retainage Release = 10% (The Deliverable are hard-copies of the Operation and Maintenance Manuals, completion of the Punch List work. Acceptance will come from the AE Project Manager.)
8. **LIQUIDATED DAMAGES:** Time is of the essence in the performance of the Contract; therefore, the Contractor shall strictly adhere to the Contract delivery schedule [reference the Scope of Work (Section 0500, part 7.1)]. No changes in the delivery schedule shall be effective unless in writing executed by both the City and the Contractor. The parties agree that if, due to no fault of the City, delivery of any material or performance of any service is delayed beyond the time specified in the Contract, the actual damages sustained by the City because of such delay will be uncertain and difficult to determine, and that the reasonable foreseeable damage incurred by the City is hereby stipulated to be \$5,000 per calendar day. The Contractor therefore agrees to pay, and the City agrees to accept, as liquidated damages, the sum of \$5,000 per calendar day for each calendar day of delay.
9. **RETAINAGE:** The City will withhold 10 percent (%) retainage until completion of all work required by the Contract. The Contractor's invoice shall indicate the amount due, less the retainage. Upon final acceptance of the work, the Contractor shall submit an invoice for the retainage to the City and payment will be made as specified in the Contract. Payment of the retainage by the City shall not constitute nor be deemed a waiver or release by the City of any of its rights and remedies against the Contractor for recovery of amounts improperly invoiced or for defective, incomplete or non-conforming work under the Contract.
10. **HAZARDOUS MATERIALS:**
- A. If this Solicitation involves hazardous materials, the Offeror shall furnish with the Offer Material Safety Data Sheets (MSDS), (OSHA Form 20), on all chemicals and hazardous materials specifying the generic and trade name of product, product specification, and full hazard information including receiving and storage hazards. Instructions, special equipment needed for handling, information on approved containers, and instructions for the disposal of the material are also required.
- B. Failure to submit the MSDS as part of the Offer may subject the Offer to disqualification from consideration for award.
- C. The MSDS, instructions and information required in paragraph "A" must be included with each shipment under the contract.
11. **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING:**
- A. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2.7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offeror's or potential Offeror's are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.
- B. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.
- C. If an Offeror has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Offeror is given written notice and a hearing in advance of the debarment.

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- D. The City requires Offeror's submitting Offers on this Solicitation to provide a signed Section 0810, Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying Affidavit, certifying that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance. The text of the City Ordinance is posted on the Internet at: <http://www.ci.austin.tx.us/edims/document.cfm?id=161145>

12. **NON-SOLICITATION:**

- A. During the term of the Contract, and for a period of six (6) months following termination of the Contract, the Contractor, its affiliate, or its agent shall not hire, employ, or solicit for employment or consulting services, a City employee employed in a technical job classification in a City department that engages or uses the services of a Contractor employee.
- B. In the event that a breach of Paragraph A occurs the Contractor shall pay liquidated damages to the City in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation; or (ii) 100 percent of the employee's annual compensation while employed by the City. The Contractor shall reimburse the City for any fees and expenses incurred in the enforcement of this provision.
- C. During the term of the Contract, and for a period of six (6) months following termination of the Contract, a department that engages the services of the Contractor or uses the services of a Contractor employee will not hire a Contractor employee while the employee is performing work under a Contract with the City unless the City first obtains the Contractor's approval.
- D. In the event that a breach of Paragraph C occurs, the City shall pay liquidated damages to the Contractor in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation or (ii) 100 percent of the employee's annual compensation while employed by the Contractor.

13. **WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID):**

- A. Contractors are required to obtain a certified criminal background report with fingerprinting (referred to as the "report") for all persons performing on the contract, including all Contractor, Subcontractor, and Supplier personnel (for convenience referred to as "Contractor's personnel").
- B. The report may be obtained by reporting to one of the below governmental entities, submitting to fingerprinting and requesting the report [requestors may anticipate a two-week delay for State reports and up to a four to six week delay for receipt of a Federal report.].
- i. Texas Department of Public Safety for any person currently residing in the State of Texas and having a valid Texas driver's license or photo ID card;
 - ii. The appropriate governmental agency from either the U.S. state or foreign nation in which the person resides and holds either a valid U.S. state-issued or foreign national driver's license or photo ID card; or
 - iii. A Federal Agency. A current Federal security clearance obtained from and certified by a Federal agency may be substituted.
- C. Contractor shall obtain the reports at least 30 days prior to any onsite work commencement. Contractor also shall attach to each report the project name, Contractor's personnel name(s), current address(es), and a copy of the U.S. state-issued or foreign national driver's license or photo ID card.
- D. Contractor shall provide the City a Certified Criminal Background Report affirming that Contractor has conducted required security screening of Contractor's personnel to determine those appropriate for execution of the work and for presence on the City's property. A list of all Contractor Personnel requiring access to the City's site shall be attached to the affidavit.

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- E. Upon receipt by the City of Contractor's affidavit described in (D) above and the list of the Contractor's personnel, the City will provide each of Contractor's personnel a contractor ID badge that is required for access to City property that shall be worn at all times by Contractor's personnel during the execution of the work.
 - F. The City reserves the right to deny an ID badge to any Contractor personnel for reasonable cause, including failure of a Criminal History background check. The City will notify the Contractor of any such denial no more than twenty (20) days after receipt of the Contractor's reports. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work of the contract, the Contractor shall so notify the City's Contract Manager, in writing, within ten (10) calendar days of the receipt of notification of denial.
 - G. Contractor's personnel will be required to wear the ID badge at all times while on the work site. Failure to wear or produce the ID badge may be cause for removal of an individual from the work site, without regard to Contractor's schedule. Lost ID badges shall be reported to the City's Contract Manager. Contractor shall reimburse the City for all costs incurred in providing additional ID badges to Contractor Personnel.
 - H. ID badges to enter and/or work on the City property may be revoked by the City at any time. ID badges must be returned to the City at the time of project completion and acceptance or upon removal of an individual from the work site.
 - I. Contractor is not required to obtain reports for delivery personnel, including but not limited to FedEx, UPS, Roadway, or other materials delivery persons, however all delivery personnel must present company/employer-issued photo ID and be accompanied by at least one of Contractor's personnel at all times while at the work site.
 - J. The Contractor shall retain the reports and make them available for audit by the City during regular business hours (reference paragraph 17 in Section 0300, entitled Right to Audit).
14. **WORKING ON OR NEAR ENERGIZED EQUIPMENT – ARC FLASH PROTECTION (reference Section 0300 Paragraph 11. Compliance With Health, Safety, and Environmental Regulations)**: Contractor's employees shall wear at all times the proper personal protective equipment and clothing required for the head, face, torso, arms, hands, and lower body that provides a minimum Arc Thermal Protection Value (ATPV) of 12 calories per square centimeter (cal/cm²) when working on or near energized electrical equipment, or greater, if required by the NFPA Standard 70E and/or Article 410 of the NESC for the work being performed.
15. **OWNERSHIP AND USE OF DELIVERABLES**: The City shall own all rights, titles, and interests throughout the world in and to the Deliverables.
- A. **Patents**: As to any patentable subject matter contained in the Deliverables, the Contractor agrees to disclose such patentable subject matter to the City. Further, if requested by the City, the Contractor agrees to assign and, if necessary, cause each of its employees to assign the entire right, title, and interest to specific inventions under such patentable subject matter to the City and to execute, acknowledge, and deliver and, if necessary, cause each of its employees to execute, acknowledge, and deliver an assignment of letters patent, in a form to be reasonably approved by the City, to the City upon request by the City.
 - B. **Copyrights**: As to any Deliverable containing copyrighted subject matter, the Contractor agrees that upon their creation, such Deliverables shall be considered as work made-for-hire by the Contractor for the City and the City shall own all copyrights in and to such Deliverables, provided however, that nothing in this Paragraph 36 shall negate the City's sole or joint ownership of any such Deliverables arising by virtue of the City's sole or joint authorship of such Deliverables. Should by operation of law, such Deliverables not be considered work made-for-hire, the Contractor hereby assigns to the City (and agrees to cause each of its employees providing services to the City hereunder to execute,

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acknowledge, and deliver an assignment to the City of Austin) all worldwide right, title, and interest in and to such Deliverables. With respect to such work made-for-hire, the Contractor agrees to execute, acknowledge and deliver and cause each of its employees providing services to the City hereunder to execute, acknowledge, and deliver a work-for-hire agreement, in a form to be reasonably approved by the City, to the City upon delivery of such Deliverables to the City or at such other time as the City may request.

C. **Additional Assignments:** The Contractor further agrees to, and if applicable, cause each of its employees to execute, acknowledge, and deliver all applications, specifications, oaths, assignments, and all other instruments which the City might reasonably deem necessary in order to apply for and obtain copyright protection, mask work registration, trademark registration and/or protection, letters patent, or any similar rights in any and all countries and in order to assign and convey to the City, its successors, assigns, and nominees, the sole and exclusive right, title, and interest in and to the Deliverables, The Contractor's obligations to execute acknowledge, and deliver (or cause to be executed, acknowledged, and delivered) instruments or papers such as those described in this Paragraph 36 A., B., and C. shall continue after the termination of this Contract with respect to such Deliverables. In the event the City should not seek to obtain copyright protection, mask work registration or patent protection for any of the Deliverables, but should arise to keep the same secret, the Contractor agrees to treat the same as Confidential Information under the terms of Paragraph above.

16. **CONTRACT ADMINISTRATOR:** The following person is designated as Contract Administrator, and will act as the contact point between the City and the Contractor financial and contractual terms during the term of the Contract:

Ray Moncada
Austin Energy
(512) 322-6190

17. **PROJECT MANAGER:** The following person is designated as Project Manager, and will act as the contact point between the City and the Contractor for all project related items during the term of the Contract:

Robert Anderson
Austin Energy
(512) 322-6187

*Note: The above listed Contract Administrator and Project Manager are not the authorized Contact Person for purposes of the **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING Provision** of this Section; and therefore, contact with the Contract Manager is prohibited during the no contact period.

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**SCOPE OF WORK
FOR
FABRICATION AND INSTALLATION OF A HEAT RECOVERY STEAM GENERATOR
EXHAUST STACK DAMPER AND ACCESS PLATFORM**

1.0 PURPOSE

City of Austin, Austin Energy (AE) requests proposals from Contractors qualified to fabricate, deliver, install and commission an exhaust stack damper and access platform on Sand Hill Energy Center (SHEC) Unit 5A Heat Recovery Steam Generator (HRSG). The purpose of the exhaust stack damper is to eliminate the "stack effect" (draft) through the gas turbine/HRSG train, exiting from the stack during shutdown periods and quickly cooling the equipment causing rapid pressure decay of the HRSG steam drums.

The HRSG is a 3-pressure level steam generator manufactured by Doosan and was placed in service in 2003, providing steam to a General Electric D-11 model steam turbine in a 1 X 1 configuration. The gas turbine (GT) is a General Electric 7FA model.

SHEC is located at 1101 Fallwell Lane, in Del Valle, Texas 78617 approximately 5-miles southeast of Austin, Texas.

2.0 PERFORMANCE REQUIREMENTS – Contractor shall provide a product meeting the following requirements:

- 2.1 The damper shall withstand normal operating temperatures and temperature extremes due to unit upset trip conditions.
- 2.2 Damper blade contour shall minimize the pressure drop of the exhaust stream flowing across the damper blades.
- 2.3 Base-load exhaust flow through the nominal 18-ft. diameter stack with HRSG duct burners on is approximately 3,457,000- lbs/hr.
- 2.4 Opening and closing of the damper shall be initiated manually by the plant operators for maintenance and testing purposes. Austin Energy requires the design to allow for future automatic open/close operation if desired remotely from the Control Room Distributed Control System (DCS).
- 2.5 The damper shall be opened and closed by an electric actuator, with position verified by open/closed position switches.
- 2.6 The damper shall be constructed to minimize heat leakage across the metal-to-metal sealing surface between the damper blades and the stack inside diameter when closed.

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3.0 **TECHNICAL REQUIREMENTS** – Contractor shall provide a product meeting the following requirements:

3.1 Mechanical

- 3.1.1 The damper drive system shall assure that the damper will remain wide-open under all expected operating conditions.
- 3.1.2 When the GT is in operation, the damper blades shall be held in the full-open position by mechanical means.
- 3.1.3 Damper shall be constructed such that gravity/weight of the damper blades shall assist the actuator in closing.
- 3.1.4 Damper shall be located in the stack a **minimum of two stack diameters** UPSTREAM of the Continuous Emissions Monitoring (CEMS) test ports/probes.
- 3.1.5 Damper blade construction shall resist the effects of water ingress (rain) down the stack and collecting on top of the damper blades.

3.2 Electrical, Control & Instrumentation

Note: Unless otherwise noted, all hardware or equipment will be provided by the Contractor with the exception of the DCS connection points located in a remote Foxboro cabinet inside the CEMS shelter.

A. Actuator

- 1. Type/Size. The actuator shall be a Limitorque SMB series. It is the Contractor's responsibility to determine and procure the size and type of actuator needed for this project. The actuator must be rated for Class I Div II Hazardous Locations.
- 2. Breaker. Austin Energy will provide a 15 amperes breaker located at panel 5AAP011E breaker number 2, the breaker is a General Electric catalog number SELA36AT0030. If Contractor requires a different size of breaker, then the Contractor shall procure it keeping in mind that this other breaker shall fit in the same GE panel as the breaker mentioned above. Note: this breaker can be upgraded to 30-AMPS with the corresponding GE module.
- 3. Interconnection Box. Contractor shall provide and install a NEMA 4X 16"X12"X6" Hoffman (or approved equivalent) enclosure next to the actuator. At least three terminal strips (Grainger # 6ZEJ7 or approved equivalent) with 20 poles on each strip shall be installed inside this box. All electrical connections between the actuator shall be prewired to this box. Contractor shall provide a connection diagram during fabrication drawing review period.
- 4. Control Scheme. The actuator shall be the type with three modes of operation: Manual, Off & Auto (future). In both Manual and Auto, the actuator 02/14/2014 02/13/2017 "LATCH" or "HOLD" the command received until stopped at fully closed or fully opened positions by limit switch and/or torque switch. AE will provide three DCS contacts as follows: -Permissive to close, close command and open command.

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The damper control system shall prevent the damper from being closed (remotely or locally) while the GT is running.

In Auto mode (future if desired), the damper will be allowed to open with no permissive needed and will be allowed to close if the permissive to close contact is closed.

For purpose of damper position indication in the DCS, AE will provide two discrete inputs and one analog input (4-20 mA). The discrete inputs shall be wetted by the actuator's control power, typically 120VAC. The two contacts (part of the actuator), must be a NFC type (Not fully Closed) and NFO (Not Fully Opened). The discrete inputs are of high impedance and will draw a very small current in the range of milliamps, therefore one or two amps rated contacts will be enough. Note: If the actuator proposed by Contractor does not have these contacts, then new contacts should be added as Limit Switches in addition to the ones mentioned on section B1.

For the analog input, the DCS can either power the analog loop or accept a self powered loop. The required calibration is 4 mA for closed position (0%) and 20 mA for fully opened position (100%).

B. Tripping/Interlock Scheme.

1. For the purpose of redundant "Permit to Start the combustion turbine" and "Trip the combustion turbine", Contractor shall provide two external limit switches rated for Class I Div II Hazardous Locations, heavy duty. Each limit switch shall provide three normally open switches and one normally close switch. If the combination of switches required (Six NO and two NC) cannot be achieved with two limit switches, then more switches can be used. Contacts shall be rated for two amps or more. The limit switches can be plunger or lever type. Contractor shall pre wire the contacts to the enclosure mention above as per an AE drawing that will be provided after contract award. These switches shall be actuated by an arm and mounted as close as possible to the vanes so future mechanical play due to wear and tear does not become a problem.

C. Pressure switch. As an OPTION for AE consideration, and listed apart from the main bid as an additional price, AE requests the installation of a pressure switch, wiring and conduit all the way to the interconnection box mention above.

1. Purpose: The pressure switch will be use to detect high duct pressure and trip the Combustion Turbine in case:
 - a. Limit position trips fail for whatever reason.
 - b. Vanes become mechanically loose or detached and start causing partial or full restriction of flue gas flow.

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2. Location and calibration settings to be determined by contractor's Engineers based on experience or direct contact with HRSG manufacturer.
- D. Wiring and Conduit. Besides an interconnection sketch, AE will not provide any type of layout prints. Contractor shall arrange a visit and inspect the area and determine exact cable lengths and best conduit routes. Unless otherwise noted all cable shall be rated 600VAC, suitable for cable tray, insulation RHW or better. For convenience an estimated distance is provided. Conduit shall be rigid galvanized steel (Electrical Metallic Tubing is not allowed) and size shall comply with National Electric Code, based on amount of wiring per conduit. All rigid couplings, nipples, boxes, mounting and support hardware shall be provided by contractor.
1. Actuator power. Three conductor cable, size to be determined by contractor and approved by AE.
 - a. Length of conduit from actuator to existing distribution panel: 100 ft.
 - b. Length of cable from actuator to existing distribution panel: 130 ft.
 2. Control Cable for Discrete Inputs and Outputs from interconnection box to Foxboro cabinet located inside CEMS shack. Quantity 2, 12 conductor #14 AWG (total 24 conductors).
 - a. Length of conduit from interconnection box to existing cable tray: 120 ft.
 - b. Length of cable from interconnection box to Foxboro cabinet: 320 ft. times 2.
Note: The remaining length of the cable must be routed thru existing cable tray.
 3. Analog signal cable for damper percent position from interconnection box to Foxboro cabinet located inside CEMS shack. Shielded twisted pair #16 AWG.
 - a. Length of conduit from interconnection box to existing cable tray: 120 ft.
 - b. Length of cable interconnection box to Foxboro cabinet: 320 ft. Note: The remaining length of the cable must be routed thru existing cable tray.
 4. Control Cable for Discrete Inputs and Outputs from interconnection box to Mark VI cabinet located inside lower PECC building. Quantity 1, 12 conductor #14 AWG
 - a. Length of conduit from interconnection box to existing cable tray: 120 ft.
 - b. Length of cable from interconnection box to Mark VI cabinet located inside lower PECC building: 560 ft. Note: The remaining length of the cable must be routed thru existing cable tray.
 5. As part of section 3.2.C above, Contractor shall estimate amount of cable and conduit for the pressure switch. Quantity 1, minimum 5 conductor #14 AWG.

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Note: above distances are approximate. Contractor shall verify exact distances during the design phase after contract award.

E. Controls.

1. The actuator's OPEN and CLOSE commands, PERMIT TO CLOSE, PERMIT TO START GT, and the GT's TRIP logic will be coded by Austin Energy.

3.3 Structural

- 3.3.1 Contractor shall include in their Cost Proposal the cost to perform a structural analysis of the existing exhaust stack to support the added weight of the damper, damper drive actuator, and access platform. If the analysis determines major structural modification of the stack is required, Contractor shall be compensated for the additional work using established Austin Energy change order procedure.
- 3.3.2 Provide an opening for viewing the condition of the damper blades. Contractor shall incorporate a man way entry if needed for installing or entering the stack to perform blade maintenance.
- 3.3.3 The damper access platform shall be constructed to integrate with the existing stack platform and allow technicians to safely access the damper actuator, interconnection enclosure, and limit switches without the need for additional safety equipment.

3.4 Exhibit A

- 3.4.1 Specifications and details used in the original construction of the Unit 5 metal fabrications are attached as part of this solicitation **for informational purpose only (Exhibit A)**. They are intended to establish a minimum quality and style of new construction. Contractor shall produce their own documents for use in fabrication and construction of the stack damper and access platform. AE must approve Contractor's standard specifications/details in appearance, style or quality from this exhibit. Austin Energy's approval for any deviation must be approved prior to construction.

3.5 Paint and Galvanizing

- 3.5.1 New galvanized metal fabrication shall conform to ASTM- A123 "Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products", ASTM-A384 "Standard Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies", and ASTM-A385 " Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)".
- 3.5.2 Paint systems for new metal fabrication shall be in accordance with the following:

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HRSG stack (outside) - high temperature inorganic zinc primer; two coat high heat silicone (intermediate and finish).

Structural Steel (not galvanized) - high temperature inorganic zinc primer; two coat system, epoxy intermediate and polyurethane finish.

Note: Colors to be selected by AE from Contractor submitted samples.
Finish coats shall match the color of existing HRSG stack and platform color.

- 3.5.3 Stack damper blades shall be painted black with high-temperature, corrosion-resistant paint to minimize radiation heat loss out the stack when the damper is closed, and to resist corrosion when the unit is off-line.

4.0 CONTRACTOR REQUIREMENTS

- 4.1 All Contractor personnel shall attend a one-time, 20-minute, safety / housekeeping orientation in the SHEC Administration Building prior to beginning any work.
- 4.2 Contractor shall provide all tools, equipment, labor and field supervision for installing and commissioning the stack damper and operator access platform.
- 4.3 Contractor shall attend two (2) pre-construction meetings at SHEC:
- 4.3.1 Initial review of damper fabrication drawings and platform installation prior to beginning fabrication.
- 4.3.2 Pre-mobilization.
- 4.4 During installation, Contractor's installation Supervisor(s) shall attend weekly status meetings in the SHEC Administration Building for the purpose of reporting work accomplished and briefing SHEC staff on up-coming work and schedule.
- 4.5 Contractor shall provide on-site, experienced supervision at all times work is in progress at SHEC.
- 4.6 Contractor shall adhere to SHEC's Contractor Work Requirements (Exhibit B), Hot Work Permit Program, and Lockout / Tagout Program.
- 4.7 Contractor shall provide two, 1-hr training sessions to accommodate SHEC personnel working rotating shifts at the plant. Training sessions shall include written hand-outs describing how the exhaust damper system operates, 3-D drawings for visualization of the damper / platform location, and instructions for routine maintenance. Training sessions shall be conducted during the installation phase.

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5.0 AUSTIN ENERGY RESPONSIBILITIES – AE will:

- 5.1 Provide 480-VAC power source for the damper actuator drive system.
- 5.2 Provide lay down area and onsite vehicle parking for Contractor's personnel.
- 5.3 Provide potable water, compressed utility air and 120-VAC electrical outlets for Contractor's tools.
- 5.4 Provide limit switch wiring diagram (section 3.2.B.1) to Contractor.
- 5.5 Provide a one-time, safety/orientation meeting in the SHEC Administration Building.
- 5.6 Provide damper control contacts and DCS operator graphics (section 3.2).

6.0 SUBMITTALS AFTER CONTRACT AWARD – Contractor shall provide:

- 6.1 Fabrication drawings, wiring interconnection drawings, and material specifications.
- 6.2 Electrical interconnection box descriptive literature.
- 6.3 Affidavit of All Bills Paid and Release of Liens (at job completion).
- 6.4 Three paper sets of Operation & Maintenance manuals (for training sessions). 7 Two sets of As-built drawings on CD in AutoCad Version 2014 (at job completion).
- 6.5 Contractor's weld procedures as applicable to the Work.

7.0 SCHEDULE

- 7.1 Contractor shall complete installation and testing of the stack damper and platform during the planned Unit 5 outage March 27, 2015 – April 15, 2015. AE anticipates issuing the purchase order to the successful Proposer earlier than October 1, 2014.

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ATTACHMENT 1

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Steel framing and supports for applications where framing and supports are not specified in other Sections.
2. Prefabricated columns.
3. Shelf angles.
4. Metal ladders.
5. Ladder safety cages.
6. Alternating tread devices.
7. Metal floor plate and supports.
8. Structural-steel door frames.
9. Miscellaneous steel trim.
10. Abrasive metal nosings and treads.

- B. Products furnished, but not installed, under this Section:

1. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
2. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design **ladders and alternating tread devices**, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance of Alternating Tread Devices: Alternating tread devices shall withstand the effects of loads and stresses within limits and under conditions specified in ICC's International Building Code.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 1. Temperature Change: **120 deg F**, ambient; **180 deg F**, material surfaces.

1.4 SUBMITTALS

- A. Product Data: For the following:
 - 1. Nonslip aggregates and nonslip-aggregate surface finishes.
 - 2. Prefabricated building columns.
 - 3. Metal nosings and treads.
 - 4. Paint products.
 - 5. Grout.
- B. Shop Drawings: Show fabrication and installation details for metal fabrications.
 - 1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
- C. Qualification Data: For qualified professional engineer.
- D. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

1.7 COORDINATION

- A. Coordinate installation of anchorages for metal fabrication, if required. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- C. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- D. Abrasive-Surface Floor Plate: Steel plate with abrasive granules rolled into surface or with abrasive material metallurgically bonded to steel.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. IKG Industries, a division of Harsco Corporation; Mebac.
 - b. SlipNOT Metal Safety Flooring, a W. S. Molnar company; SlipNOT.
 - c. As approved by the Owner's Project Manager.
- E. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- F. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40) unless otherwise indicated.
- G. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.
 - 1. Size of Channels: **1 5/8" by 1 5/8"**.
 - 2. Material: Galvanized steel, ASTM A 653/A 653M, **structural steel, Grade 33**, with **G90** coating; **0.108-inch** nominal thickness.
 - 3. Material: Cold-rolled steel, ASTM A 1008/A 1008M, **structural steel, Grade 33**; **0.0966-inch** minimum thickness; **hot-dip galvanized after fabrication**.

2.3 NONFERROUS METALS (Not Applicable)

2.4 FASTENERS

- A. General: Unless otherwise indicated, provide **Type 304** stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or **ASTM F 1941**, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
 - 1. Provide stainless-steel fasteners for fastening aluminum.
 - 2. Provide stainless-steel fasteners for fastening stainless steel.
 - 3. Provide stainless-steel fasteners for fastening nickel silver.
 - 4. Provide bronze fasteners for fastening bronze.
- B. Steel Bolts and Nuts: Heavy hexagon-head bolts, **ASTM A 325, Type 3**; with heavy hex nuts, **ASTM A 563, Grade C3**; and, where indicated, flat washers.
- C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, **ASTM F 593**; with hex nuts, **ASTM F 594**; and, where indicated, flat washers; Alloy **Group 1**.

- D. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, flat washers.
 - 1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.
- E. Machine Screws: **ASME B18.6.3**.
- F. Plain Washers: Round, **ASME B18.22.1**.
- G. Lock Washers: Helical, spring type, **ASME B18.21.1**.
- H. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
- I. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.
- J. Post-Installed Anchors: **Torque-controlled expansion anchors or chemical anchors**.
 - 1. Material for Exterior Locations: Carbon-steel components galvanized plated, unless otherwise indicated.
 - 2. Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy **Group 1** stainless-steel bolts, **ASTM F 593**, and nuts, **ASTM F 594**.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
 - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- C. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- D. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- E. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- F. Concrete: Comply with requirements in Division 03 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of **4000 psi**.

2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately **1/32 inch** unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 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.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
 - 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, **1/8 by 1-1/2 inches**, with a minimum **6-inch** embedment and **2-inch** hook, not less than **8 inches** from ends and corners of units and **24 inches** o.c., unless otherwise indicated.

2.7 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
 - 1. Fabricate units from slotted channel framing where indicated.
 - 2. Furnish inserts for units installed after concrete is placed.
- C. Fabricate steel pipe columns for supporting framed construction from steel pipe with steel baseplates and top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to pipe with fillet welds all around. Make welds the same size as pipe wall thickness unless otherwise indicated.
 - 1. Unless otherwise indicated, fabricate from Schedule 40 steel pipe.
 - 2. Unless otherwise indicated, provide **1/2-inch** baseplates with four **5/8-inch** anchor bolts and **1/4-inch** top plates.
- D. Galvanize miscellaneous framing and supports where indicated.
- E. Prime miscellaneous framing and supports with **zinc-rich primer** where indicated.

2.8 PREFABRICATED BUILDING COLUMNS (Not Applicable)

2.9 SHELF ANGLES (Not Applicable)

2.10 METAL LADDERS

- A. General:
 - 1. Comply with ANSI A14.3 unless otherwise indicated.
- B. Steel Ladders:
 - 1. Space siderails **18 inches** apart unless otherwise indicated.
 - 2. Siderails: Continuous, steel flat bars, with eased edges.
 - 3. Rungs: **3/4-inch- diameter** steel bars.
 - 4. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
 - 5. Provide nonslip surfaces on top of each rung, either by coating rung with aluminum-oxide granules set in epoxy-resin adhesive or by using a type of manufactured rung filled with aluminum-oxide grout.
 - 6. Provide platforms as indicated fabricated from welded or pressure-locked steel bar grating, supported by steel angles. Limit openings in gratings to no more than **3/4 inch** in least dimension.
 - 7. Support each ladder, **as indicated on the drawings**, with welded or bolted steel brackets.
 - 8. Galvanize **exterior** ladders, including brackets and fasteners.
- C. Aluminum Ladders: (Not Applicable)

2.11 LADDER SAFETY CAGES

A. General:

1. Fabricate ladder safety cages to comply with ANSI A14.3. Assemble by welding or with stainless-steel fasteners.
2. Provide primary hoops at tops and bottoms of cages and spaced as per the drawings. Provide secondary intermediate hoops spaced as per the drawings.
3. Fasten assembled safety cage to ladder rails and adjacent construction by welding or with stainless-steel fasteners unless otherwise indicated.

B. Steel Ladder Safety Cages:

1. Primary Hoops: As per the drawings.
2. Secondary Intermediate Hoops: As per the drawings.
3. Vertical Bars: As per the drawings.
4. Galvanize ladder safety cages, including brackets and fasteners.

2.12 ALTERNATING TREAD DEVICES (Not Applicable)

2.13 METAL SHIPS' LADDERS AND PIPE CROSSOVERS (Not Applicable)

2.14 METAL FLOOR PLATE (Not Applicable)

2.15 STRUCTURAL-STEEL DOOR FRAMES (Not Applicable)

2.16 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
 1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
- C. Galvanize **exterior** miscellaneous steel trim.

2.17 METAL BOLLARDS (Not Applicable)

2.18 PIPE GUARDS (Not Applicable)

2.19 **STAIR TREADS AND NOSINGS**

A. Cast-Metal Units: Steel grating, with a cast abrasive or attached steel nosing. Fabricate units in lengths necessary to accurately fit openings or conditions.

1. Manufacturers: Subject to compliance with requirements, **available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:**

- a. McNichols Company, Type B or C.
- b. As approved by Owner's Engineer.

B. Apply clear lacquer to concealed surfaces of extruded units.

2.20 CAST-IRON WHEEL GUARDS (Not Applicable)

2.21 METAL DOWNSPOUT BOOTS (Not Applicable)

2.22 **LOOSE BEARING AND LEVELING PLATES**

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.

B. Galvanize plates.

2.23 LOOSE STEEL LINTELS (Not Applicable)

2.24 **STEEL WELD PLATES AND ANGLES**

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.25 **FINISHES, GENERAL**

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

- C. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.26 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
 - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
- B. Shop prime iron and steel items **not indicated to be galvanized** unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
 - 1. Shop prime with **universal shop primer** unless **zinc-rich primer is** indicated.
- C. Preparation for Shop Priming: Prepare surfaces to comply with **SSPC-SP 3, "Power Tool Cleaning." requirements indicated below:**
 - 1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 3. Items Indicated to Receive Primers Specified in Division 09 Section "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 4. Other Items: SSPC-SP 3, "Power Tool Cleaning."
- D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. 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. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

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 contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.
- B. Anchor supports for operable partitions securely to and rigidly brace from building structure.
- C. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.
1. Where grout space under bearing plates is indicated for girders supported on concrete or masonry, install as specified in "Installing Bearing and Leveling Plates" Article.
- D. Install steel columns on concrete footings with grouted baseplates. Position and grout column baseplates as specified in "Installing Bearing and Leveling Plates" Article.
1. Grout baseplates of columns supporting steel girders/members after girders/members are installed and leveled.

3.3 INSTALLING PREFABRICATED COLUMNS

- A. Install prefabricated columns to comply with AISC's "Specification for Structural Steel Buildings" and with requirements applicable to listing and labeling for fire-resistance rating indicated.

3.4 INSTALLING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.

1. Use nonshrink grout, either metallic or nonmetallic, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations unless otherwise indicated.
2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.5 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 1. Apply by brush or spray to provide a minimum **2.0-mil** dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 09 painting Sections.
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 055000

STRUCTURAL STEEL GENERAL NOTES

1.0	NOMENCLATURE	2.0	STRUCTURAL STEEL	STRUCTURAL STEEL (CONTINUED)	STRUCTURAL STEEL (CONTINUED)
1.1	ABBREVIATIONS AND DEFINITIONS	2.1	TYPICAL DETAIL DRAWINGS	2.3	HANDRAIL, GRATING, STAIR & LADDER
	<p>AB = ANCHOR BOLT BR = BASE PLATE BL = BEND LINE B = BEAM BB = BACK TO BACK BOTT = BOTTOM BS = BEARING STIFFENER DB = DIAGONAL BRACING E = ANCHOR BOLT EMBEDMENT LENGTH Fy = YIELD STRESS FL = FAR SIDE FDN = FLOOR FDNV = FOUNDATION GALV = GALVANIZED GL = GIRT LINE GP = GUARD PLATE HR = HANDRAIL HP = HIGH POINT IS = INTERMEDIATE STIFFENER ISL = INSTANDING LEG IP = IN PLACE IC = IRON CONDUIT KB = KNEE BRACE LLH = LONG LEG HORIZONTAL FOR UNEQUAL LEG ANGLE SECTION LLV = LONG LEG VERTICAL FOR UNEQUAL LEG ANGLE SECTION LP = LOW POINT LG = LENGTH, LONG LL = LIVE LOAD MC = MOMENT CONNECTION NS = NEAR SIDE NTS = NOT TO SCALE OC = ON CENTER OSL = OUTSTANDING LEG P = ANCHOR BOLT PROJECTION ABOVE ROUGH CONCRETE</p> <p>PL or PL = PLATE PT = INDICATES POINT OF TANGENCY REM = REMOVABLE MEMBER SC = SLIP CRITICAL SS = STAINLESS STEEL T/S = TOP OF STEEL T/G = TOP OF GRATING T/C = TOP OF CONCRETE T & B = TOP AND BOTTOM UN = UNLESS NOTED VB = VERTICAL BRACING WP = WORK POINT</p>	<p>2.1.1 FOR FRAMED BEAM CONNECTION DETAILS 7.1.1, 7.1.2, ETC. SEE DRAWINGS 55-0014 AND 55-0015.</p> <p>2.1.2 FOR POST HANGER AND KNEE BRACE DETAILS SEE DRAWINGS 55-0015 AND 55-0027.</p> <p>2.1.3 FOR BASE PLATE SHEAR BAR DETAILS SEE DRAWING 55-0013.</p> <p>2.1.4 FOR MOMENT CONNECTION DETAILS SEE DRAWING 55-0029.</p> <p>2.1.5 FOR TYPICAL BRACING CONNECTION DETAILS SEE DRAWINGS 55-0016, 55-0017 AND 55-0024.</p> <p>2.1.6 FOR COLUMN BASE PLATE AND ANCHOR BOLT DETAILS SEE DRAWING 55-0012.</p> <p>2.2 DETAILING, FABRICATION & ERECTION REQUIREMENTS</p> <p>2.2.1 ALL STRUCTURAL STEEL SHALL BE GALVANIZED.</p> <p>2.2.2 ALL FRAMING CONNECTIONS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATION.</p> <p>2.2.3 FOR STRUCTURAL STEEL FRAMING CONNECTION NOTES SEE DRAWING 55-0014.</p> <p>2.2.4 ALL FRAMED BEAM CONNECTIONS SHALL BE DETAIL 7.1.1 UNLESS NOTED. FOR DETAIL 7.1.2 (IF NOTED), 7.1.3 (IF NOTED) AND ASSOCIATED CONNECTION TABLES SEE DRAWING 55-0014. FOR FRAMED BEAM CONNECTIONS NOTED 7.1.2, 7.1.3, ETC. SEE NON-STANDARD FRAMED BEAM CONNECTION SCHEDULE ON DRAWING 55-0029.</p> <p>2.2.5 FOR VERTICAL BRACING CONNECTION V1, V2, ETC. CONNECTION SCHEDULE ON DRAWING 55-0025.</p> <p>2.2.6 FOR HORIZONTAL BRACING CONNECTION H1, H2, ETC. CONNECTION SCHEDULE ON DRAWING 55-0028.</p> <p>2.2.7 WELD SIZES NOT SHOWN ON THE DRAWING SHALL CONFORM TO THE THICKNESS OF ADJOINING STEEL SPECIFICATION.</p> <p>2.2.8 WELD SIZES SHOWN ON DRAWINGS ARE MINIMUM DESIGN SIZES AND SHALL BE INCREASED ACCORDING TO THE THICKNESS OF ADJOINING STEEL PER AWS SPECIFICATIONS.</p> <p>2.2.9 COMPLETE PENETRATION WELDS SHALL BE PROVIDED FOR ALL GROOVE WELDING UNLESS OTHERWISE SPECIFICALLY INDICATED.</p> <p>2.2.10 THE TOP OF THE COLUMN OR POST ELEVATION SHALL BE 1" BELOW THE TOP OF THE HIGHEST BEAM MEMBER FRAMING INTO IT UNLESS NOTED.</p> <p>2.2.11 FOR BEAMS WITH COVER PLATES TO THE TOP OF THE COVER PLATE.</p> <p>2.2.12 ON PLAN DRAWINGS POST AND HANGER LENGTHS ARE SPECIFIED BY SHOWING: FROM EL. AND/OR TO EL. THESE ARE REFERENCE ELEVATIONS ONLY. THEY ARE NOT ACTUAL MILLED ELEVATIONS OF THE POST OR HANGER.</p> <p>2.2.13 NO BOLT PROJECTIONS ARE PERMITTED INTERIOR TO OR FRAMING AREAS THAT ARE CROSSED OUT THUS: </p> <p>2.2.14 DOUBLE UNEQUAL ANGLE MEMBERS SHALL HAVE LONG LEGS BACK TO BACK AND HORIZONTAL UNLESS NOTED, WITH A MINIMUM SPACE OF 3/8" BETWEEN THE ANGLES.</p> <p>2.2.15 THE TOP SURFACE OF THE TOP FLANGE OF ALL BEAMS SUPPORTING DECKING SHALL BE CLEAN AND FREE OF PAINT. SURFACES WHERE WELDING STUDS ARE DESIGNATED TO BE WELDED IN THE FIELD SHALL ALSO BE FREE OF PAINT.</p> <p>2.2.16 STEEL COLUMN ANCHOR BOLTS SHALL BE TIGHTENED WITH 1/4" OF A FULL TURN AFTER SNUG TIGHT.</p> <p>2.2.17 NOT USED</p> <p>2.2.18 GIRDDERS AND TRUSSES SHALL BE CAMBERED AS NOTED ON DRAWINGS.</p> <p>2.2.19 METAL DECKING SHALL BE ATTACHED TO SUPPORT STEEL IN ACCORDANCE WITH PROJECT SPECIFICATIONS.</p> <p>2.2.20 FLOOR LOADING: 1. THE SAFE UNIFORM LIVE LOAD FOR 1 1/4" STEEL GRATING IS 75 PSF UNLESS NOTED. 2. THE SAFE UNIFORM LIVE LOAD FOR STEEL GRATING IS 100 PSF UNLESS NOTED. 3. THE SAFE UNIFORM LIVE LOAD FOR CHECKERED PLATE IS 100 PSF UNLESS NOTED.</p> <p>2.2.21 THE T/S ELEVATION FOR HORIZONTAL BRACING MEMBERS PASSING BENEATH FLOOR OR ROOF BEAMS IS BASED ON THE NOMINAL DEPTH OF THE BEAMS. THE T/S ELEVATION MATERIAL BEING PROVIDED TO ACCOMMODATE THE DEPTH OF THESE BEAMS AND THE THICKNESS OF THE GUSSET PLATE BRACING MEMBER. THE TROLLEY BEAM MUST REMAIN HORIZONTAL.</p> <p>2.2.22 DIMENSIONS OF EXISTING WORK SHALL BE VERIFIED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION.</p>	<p>2.3.1 FOR HANDRAIL, GRATING, STAIR, AND LADDER DETAILS SEE DRAWINGS 55-0016, 55-0019, 55-0020 AND 55-0023.</p> <p>2.3.2 ALL CONNECTION BOLTS SHALL BE 7/8" Ø A325-SC (SLIP CRITICAL) U.N.</p> <p>2.3.3 ALL GUSSET PLATES SHALL BE 3/8" THICK UNLESS NOTED.</p> <p>2.3.4 MINIMUM GUSSET PLATE LENGTHS AT WELDS ARE EQUAL TO THE SPECIFIED WELD LENGTHS LONGER THAN THE NUMBER OF CONNECTION BOLTS OR OTHER GEOMETRY CONSTRAINTS.</p> <p>2.3.5 ALL BOLTS SHALL BE A MINIMUM OF 3" ON CENTER UNLESS NOTED.</p> <p>2.3.6 STANDARD GAGE SHALL BE USED FOR ALL BOLTED CONNECTIONS.</p> <p>2.3.7 FOR CONNECTING DIAGONAL MEMBERS TO GUSSET PLATES, THE BRACE MEMBER SHALL BE EXTENDED CLOSE TO THE BEAM OR COLUMN AS IS PRACTICAL TO STIFFEN THE GUSSET PLATE.</p> <p>2.3.8 CONTRACTOR SHALL DESIGN, FURNISH AND INSTALL ALL ADDITIONAL SUPPORT MEMBERS, ADEQUATE GRATING SUPPORT, ALL FIELD CUTOUTS, AND WHERE NECESSARY, ALL FIELD CUTOUTS, SUPPLEMENTARY MEMBERS SHALL RESTORE THE SAME LOAD CARRYING CAPABILITY. THE LOCATION OF THE GRATING AT THE FIELD CUTOUTS, IDENTICAL TO THE LOAD AND DEFLECTION OF THE GRATING AS IF NO FIELD CUTOUTS WERE INSTALLED.</p> <p>2.3.9 ALL GRATING SHALL BE 1 1/4" DEEP AND 1 1/2" NOMINAL DIAMETER STANDARD WEIGHT OR LIGHTER FOR A 75PSF LIVE LOAD UNLESS NOTED OTHERWISE.</p> <p>2.3.10 ALL BAR GRATING SHALL HAVE 3/16" BEARING BARS SPACED AT 1 3/16" O.C. WITH CROSS BARS SPACED AT 1 3/16" O.C. UNLESS NOTED OTHERWISE. STEEL GRATING SHALL BE FABRICATED FROM WELDING QUALITY STEEL EQUAL TO ASTM A569 FOR GUARD RAILS AND ASTM A510 FOR CROSS BARS. GUARD PLATES ATTACHED DIRECTLY TO OVERHANGING BEAMS OF GRATING SHALL BE ASTM A36 AND WHERE SPECIFIED SHALL BE ASTM A283.</p> <p>2.3.11 GRATING SADDLE CLIP FASTENERS SHALL BE PROVIDED FOR ALL GRATING. THE FASTENERS SHALL BE SECURELY ATTACHING TO THE GRATING PER DETAIL 7.1.1 ON DRAWING 55-0018 FOR SPECIFIC RECOMMENDATIONS.</p> <p>2.3.12 RAILS AND POSTS SHALL BE CONSTRUCTED OF 1 1/2" NOMINAL DIAMETER STANDARD WEIGHT (OUTSIDE DIAMETER 1.9" AND WALL THICKNESS 0.45") STEEL PIPE OR STRUCTURAL TUBING. RAILS, PIPE OR STRUCTURAL TUBING IS PREFERRED OVER WELDED PIPE TO PREVENT CORROSION OF THE WELD SEAM FROM THE INSIDE OF THE PIPE. THE ORDER OF PREFERENCE OF HANDRAIL MATERIAL IS AS FOLLOWS: A. ASTM A500 GRADE B WITH A MINIMUM YIELD POINT OF 42ksi B. ASTM A501 WITH A MINIMUM YIELD POINT OF 36ksi C. ASTM A53 GRADE B WITH A MINIMUM YIELD POINT OF 35ksi D. CONTRACTOR SHALL RETAIN FINAL RESPONSIBILITY THAT THE SPACING BETWEEN HANDRAIL POSTS IS SPACED AT 8'-0" O.C. (MAXIMUM).</p> <p>2.3.13 TOP OF GUARD RAILING SHALL BE 1'-6" ABOVE FLOOR OR PLATFORM AND TOP OF INTERMEDIATE RAIL SHALL BE 1'-9" ABOVE FLOOR OR PLATFORM.</p> <p>2.3.14 TOP RAIL FOR STAIR GUARD RAILING AND HANDRAILING SHALL BE 2'-10" ABOVE TREAD NOSING ON A VERTICAL LINE. THE TOP OF THE INTERMEDIATE RAIL SHALL BE 1'-6" ABOVE TREAD NOSING ON A VERTICAL LINE.</p> <p>2.3.15 GUARD PLATE SHALL BE ASTM A36 AND MAY BE SHIP ATTACHED TO RAILING ASSEMBLY OR TO STRUCTURAL STEEL FRAMING AS DETERMINED BY THE FABRICATOR. FOR HANDRAIL ATTACHMENT TO CONCRETE FLOORS/SLABS, STANDARD STRUCTURAL STEEL SUPPORTED SLAB EDGE DETAILS ON DRAWING 55-0019.</p> <p>2.3.16 HANDRAILS SHALL CLEAR ALL HANGERS AND BRACING. WELDING OF HANDRAILS TO HANGERS OR BRACING IS NOT ALLOWED. WHEN HANDRAIL IS WELDED TO COLUMN NO CROSS FLANGE WELD IS ALLOWED.</p>	<p>2.4 STRUCTURAL STEEL & GALLERY MODIFICATIONS</p> <p>2.4.1 ANY EXISTING STRUCTURAL ELEMENT (MEMBERS, PLATES, WELDS, BOLTS, ETC.) WHICH MAY HAVE BEEN REMOVED OR DAMAGED BY THE CONTRACTOR SHALL BE REINSTALLED OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL HAVE THE METHODS AND TECHNIQUE OF CONSTRUCTION MEANS, PROGRAMS AND CONNECTIONS WITH THE WORK.</p> <p>2.4.2 WHEN AN EXISTING MEMBER IS SPECIFIED TO BE REMOVED, THE EXISTING CONNECTION MATERIAL SHALL BE CONSIDERED PART OF THE EXISTING MEMBER. THE BEAM THAT IS TO REMAIN IN PLACE SHALL BE MODIFIED IN ACCORDANCE WITH NOTE 2.4.9 PRIOR TO REMOVING ANY COMMON BOLTS.</p> <p>2.4.3 WHEN MODIFICATIONS ARE MADE TO IN-PLACE STRUCTURAL STEEL, NO CROSS FLANGE WELDING IS ALLOWED UNLESS SPECIFICALLY INDICATED ON DESIGN DRAWING.</p> <p>2.4.4 ALL UNUSED BOLT HOLES SHALL BE PLUGGED WITH BOLTS TACK WELDED IN PLACE.</p> <p>2.4.5 FOR ALL WIDE-FLANGE SHAPES WITH THE WEB ORIENTED HORIZONTALLY AND LEVEL WEEP HOLES SHALL BE PROVIDED TO PREVENT WATER ACCUMULATION.</p> <p>2.4.6 WHERE AN EXISTING GALLERY IS SPECIFIED TO BE REMOVED, THE EXISTING HANDRAIL SHALL ALSO BE REMOVED.</p> <p>2.4.7 WHERE DESIGN DRAWINGS INDICATE REMOVAL OF THE EXISTING HANDRAIL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE GALLERY AND GUARD PLATES, AND INSTALL EXISTING HANDRAIL AND ELIMINATE ANY DISCONTINUOUS HANDRAIL CAUSED BY THE REMOVAL.</p> <p>2.4.8 WHERE DESIGN DRAWINGS INDICATE EXISTING MEMBERS TO BE REMOVED OR REPLACED, THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL AND RE-INSTALLATION OF ANY HANDRAIL, GRATING OR CHECKERED PLATE SUPPORTED ON THE MEMBERS, AS REQUIRED.</p> <p>2.4.9 WHERE A NEW BEAM FRAMES INTO THE BACK OF AN EXISTING BOLTED CONNECTION, THE EXISTING BOLTS MAY BE REMOVED TO ACCOMMODATE THE NEW CONNECTION BY FIELD WELDING THE OUTSTANDING LEGS OF THE EXISTING CONNECTION USING A CONTINUOUS 5/16" VERTICAL FILLET WELD WITH A TOP RETURN WELD EQUAL TO 1" PRIOR TO BOLT REMOVAL. SEE DETAIL 7.1.3 ON DRAWING 55-0014.</p> <p>2.4.10 WHERE THE CONNECTION OF AN EXISTING BEAM THAT IS TO BE REMOVED SHARES BOLTS WITH THE CONNECTION OF A BEAM THAT IS NOT BEING REMOVED, THE OUTSTANDING LEG OF THE CONNECTION ANGLES THAT ARE NOT BEING REMOVED SHALL BE FIELD WELDED USING A CONTINUOUS 5/16" VERTICAL FILLET WELD WITH A TOP RETURN WELD OF EQUAL TO 1" PRIOR TO BOLT REMOVAL.</p> <p>2.4.11 WHERE THE CONTRACTOR IS REQUIRED TO REMOVE EXISTING FRAME AND THEN REINSTALL THE NEW FIELD CONNECTION SHALL CONSIST OF WELDING THE OUTSTANDING LEG OF THE EXISTING CONNECTION ANGLES USING A CONTINUOUS 5/16" VERTICAL FILLET WELD WITH TOP RETURN WELD OF EQUAL TO 1" UNLESS OTHERWISE NOTED ON THE DESIGN DRAWING.</p> <p>2.4.12 E7018 WELDING ELECTRODES SHALL BE USED FOR ALL WELDS ON THE CONNECTING BEAMS AND CONNECTIONS. E7018 OR E7020 WELDING ELECTRODES SHALL BE USED FOR ALL OTHER CONNECTIONS UNLESS NOTED.</p>	
1.2	SYMBOLS				
	<p>(-1') = DENOTES THE NOMINAL DISTANCE OF THE MEMBER BELOW THE LOWEST T/S ELEVATION OF ITS SUPPORTING MEMBERS. FOR HORIZONTAL DOUBLE ANGLE MEMBERS FROM THIS DISTANCE IS TAKEN FROM THE BOTTOM ELEVATION OF THE TOP ANGLE.</p> <p>SLOPE = INDICATES DIRECTION OF DOWNWARD SLOPE.</p> <p> = INDICATES DIRECTION OF BAR GRATING SPAN.</p> <p> = INDICATES CHECKERED PLATE.</p> <p> = SUPPORT BEAM</p> <p> = INDICATES DIAGONAL MEMBER PASSING BENEATH OR ABOVE FLOOR BEAM AND CONNECTING TO THE FLOOR BEAM WITH TWO BOLTS.</p> <p> = INDICATES TWO ANGLES WITH HORIZONTAL LEGS BACK TO BACK.</p> <p> = INDICATES TWO ANGLES WITH VERTICAL LEGS BACK TO BACK.</p> <p> = TROLLEY BEAM</p> <p> = INDICATES LOCATION OF STOP ANGLES AT END OF TROLLEY BEAM.</p> <p> = INDICATES DIRECTION OF SPAN OF EXPANDED METAL GRATING.</p> <p> = INDICATES VERTICAL BRACING EITHER ABOVE OR BELOW WITHIN THAT BAY.</p> <p> = INDICATES AN EXISTING MEMBER.</p> <p> = (42) INDICATES MATERIAL YIELD STRENGTH OF THE BRACING MEMBER MATERIAL IS A36 UNLESS SHOWN OTHERWISE.</p>				

REFERENCE NOTES	
1.	FOR ARCHITECTURAL NOTES SEE DRAWING 5A-0001.
2.	FOR DETAILS OF GALLERY STAIRS, HANDRAIL, GUARD PLATES ETC. SEE PROJECT SPECIFICATION.
3.	FOR HORIZONTAL BRACING CONNECTION NOTES SEE DRAWING 55-0014.
4.	FOR HORIZONTAL BRACING CONNECTION NOTES SEE DRAWING 55-0017.
5.	FOR VERTICAL BRACING CONNECTION NOTES SEE DRAWINGS 55-0016 AND 55-0024.

PROJECT NUMBER 10889-002

REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D	REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D	NOTES:
A	09-06-2001	FOR REFERENCE ONLY, SPEC.A-7059	DTM	DTM								
B	05-13-2002	FOR CONSTRUCTION, SPEC.A-7059	DTM	JFH								
C	11-15-2002	CONSTRUCTION REVISION, SPEC.A-7059	FQY	JFH								

THE CITY OF AUSTIN
 AUSTIN TEXAS

SAND HILL ENERGY CENTER
 UNIT NO. 5



DRAWN BY:
 MUSZALSKI

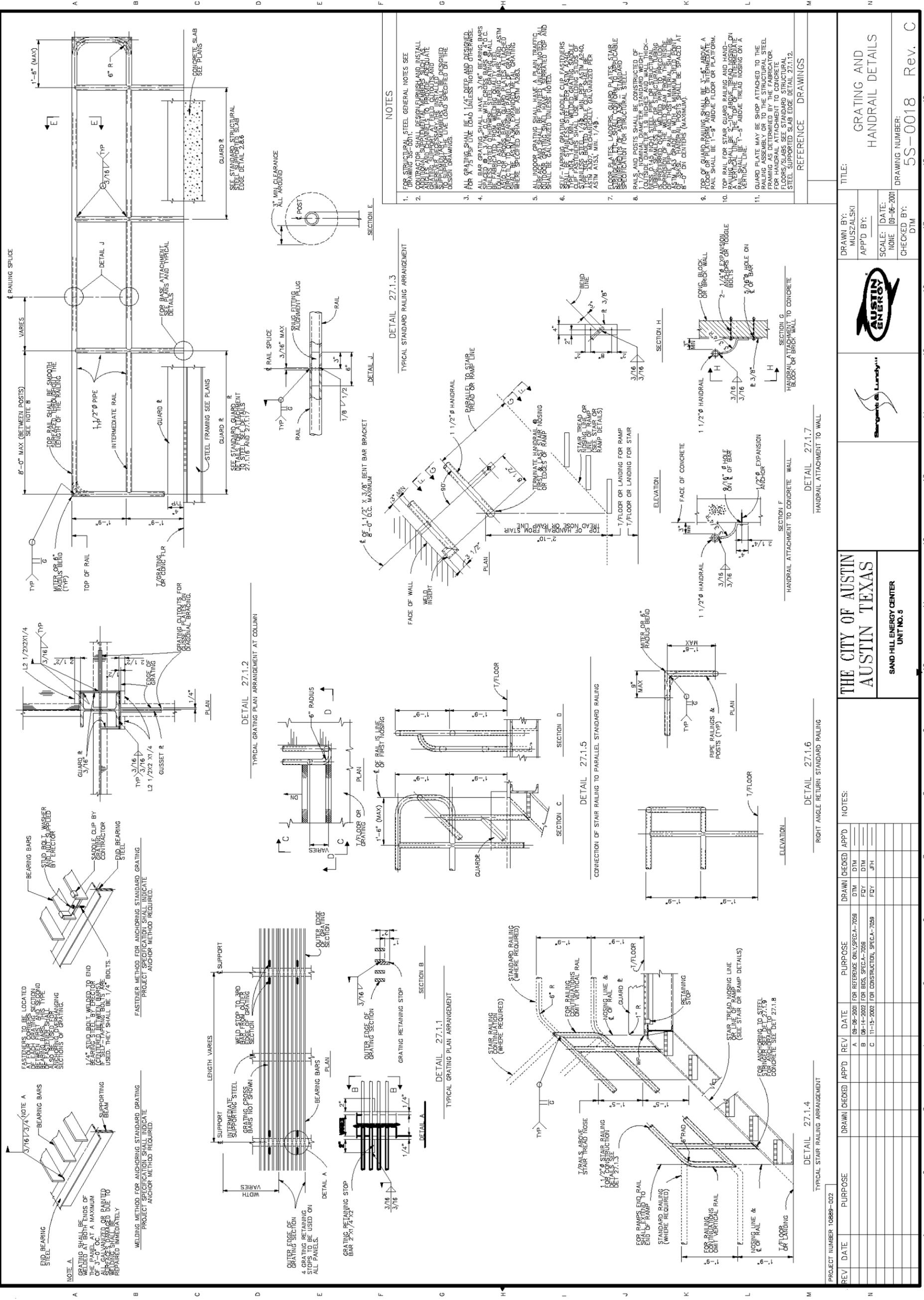
APP'D BY:

SCALE: DATE:
 NONE 09-06-2001

CHECKED BY:
 JFH

TITLE:
 STRUCTURAL STEEL
 GENERAL NOTES

DRAWING NUMBER:
 5S-0011 Rev. C



- NOTES**
- FOR STRUCTURAL STEEL GENERAL NOTES SEE DRAWING SUB-DIVISION.
 - CONNECTIONS SHALL BE DESIGNED TO RESIST ALL APPLIED LOADS AND MOMENTS. CONNECTIONS SHALL BE DESIGNED TO RESIST ALL APPLIED LOADS AND MOMENTS. CONNECTIONS SHALL BE DESIGNED TO RESIST ALL APPLIED LOADS AND MOMENTS.
 - FOR GRATING, FLOOR BEAMS, WALKWAYS AND OVERHEADS, ALL BAR GRATING SHALL HAVE 3/16" BEARING BARS SPACED @ 1 1/2" O.C. WITH CROSS BARS @ 4" O.C. BEARING BARS SHALL BE WELDED TO THE WALKWAY OR OVERHEAD BEAM. CROSS BARS SHALL BE WELDED TO THE BEARING BARS. ALL GRATING SHALL BE WELDED TO THE BEARING BARS AND CROSS BARS. ALL GRATING SHALL BE WELDED TO THE BEARING BARS AND CROSS BARS.
 - ALL GRATING SHALL BE WELDED TO THE BEARING BARS AND CROSS BARS. ALL GRATING SHALL BE WELDED TO THE BEARING BARS AND CROSS BARS.
 - ALL INDOOR GRATING SHALL HAVE A PLAIN TRAFFIC FINISH AND SHALL BE GALVANIZED UNLESS NOTED OTHERWISE.
 - STAIR TREADS AND RISERS SHALL BE CONFORM TO THE SPECIFICATIONS FOR STRUCTURAL STEEL.
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 - STAIR TREADS AND RISERS SHALL BE CONFORM TO THE SPECIFICATIONS FOR STRUCTURAL STEEL.

REFERENCE DRAWINGS

TITLE: GRATING AND HANDRAIL DETAILS

DRAWN BY: MUSZALSKI

APP'D BY: NONE

SCALE: NONE

DATE: 06-06-2001

CHECKED BY: DTM

DRAWING NUMBER: 5S-0018 Rev. C

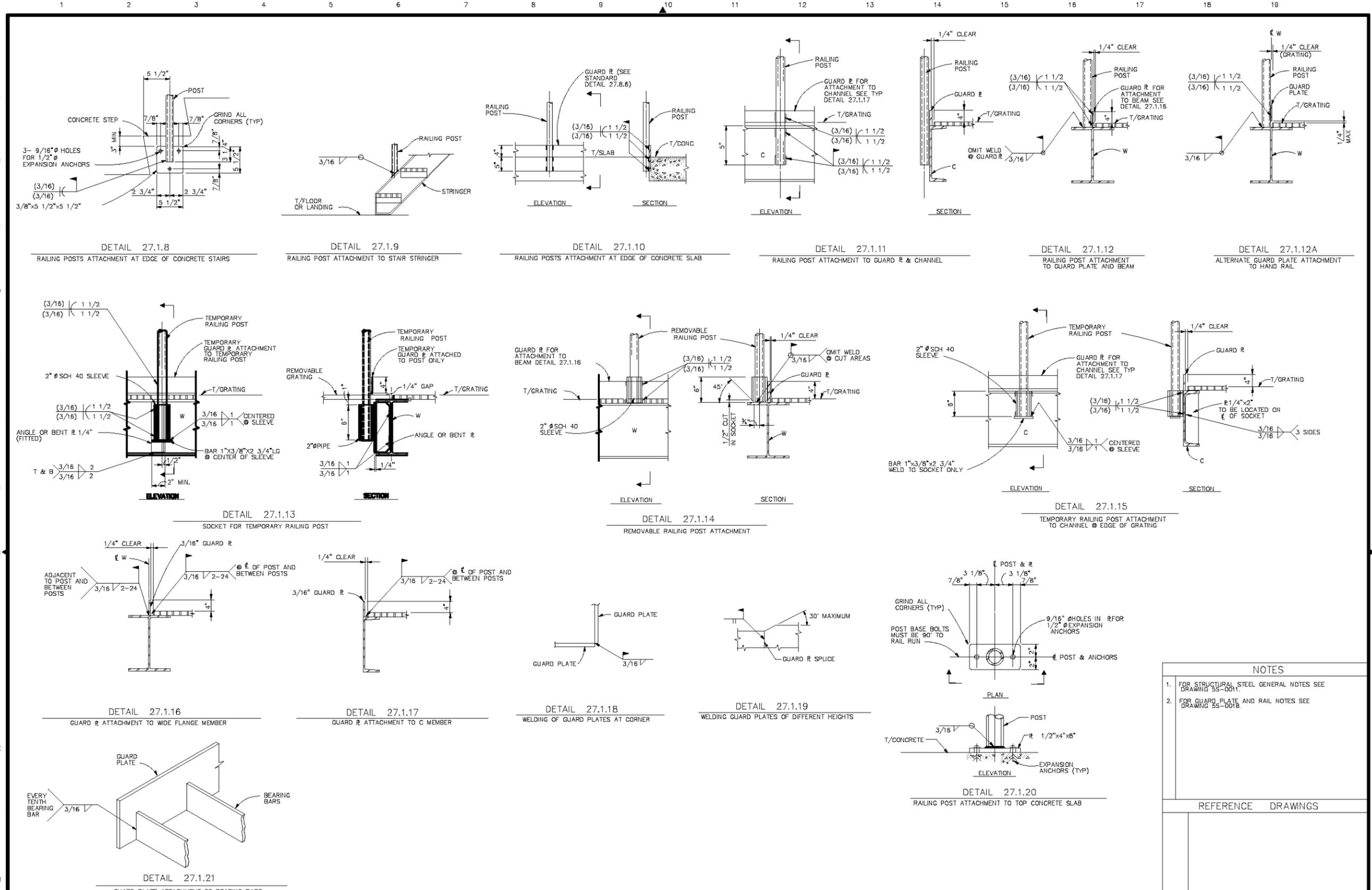
THE CITY OF AUSTIN TEXAS

SAND HILL ENERGY CENTER
UNIT NO. 5

AUSTIN ENERGY

San Gabriel Lumber

REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D	NOTES
A	08-06-2001	FOR REFERENCE ONLY SPEC-A-705B	DTM	DTM	DTM	
B	08-14-2002	FOR BIDS, SPEC-A-705B	FOY	DTM	DTM	
C	11-15-2002	FOR CONSTRUCTION, SPEC-A-705B	FOY	JPH	DTM	



- NOTES**
- FOR STRUCTURAL STEEL GENERAL NOTES SEE DRAWING 5S-0011.
 - FOR GUARD PLATE AND RAIL NOTES SEE DRAWING 5S-0018.

REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D
A	09-06-2001	FOR REFERENCE ONLY, SPEC. A-7059	DTM	DTM	
B	03-27-2002	FOR CONSTRUCTION, SPEC. A-7059	DTM	JFH	

PROJECT NUMBER 10889-002					
REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D
A	09-06-2001	FOR REFERENCE ONLY, SPEC. A-7059	DTM	DTM	
B	03-27-2002	FOR CONSTRUCTION, SPEC. A-7059	DTM	JFH	

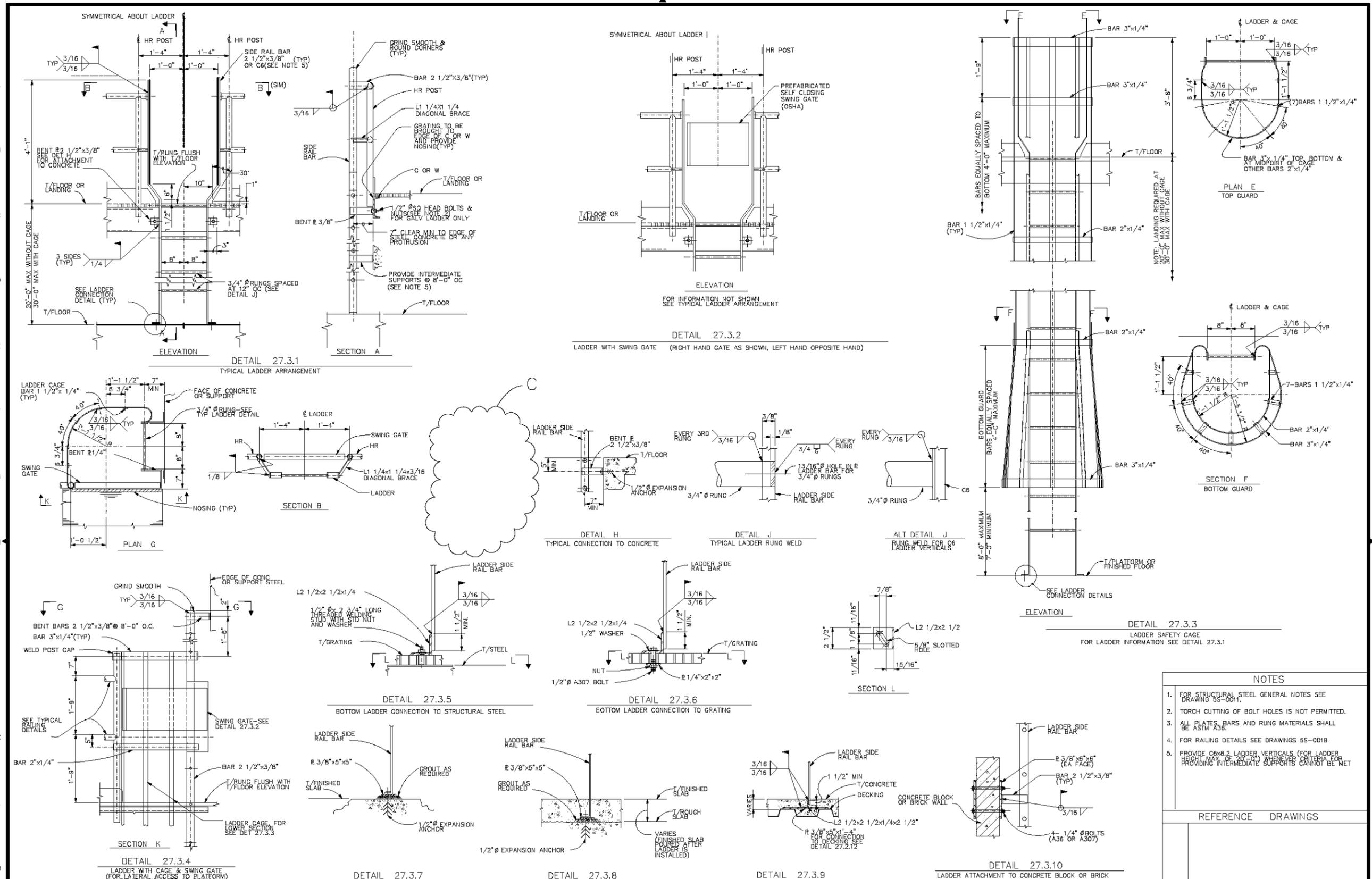
THE CITY OF AUSTIN
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UNIT NO. 5



DRAWN BY: MUSZALSKI
APP'D BY:
SCALE: NONE
DATE: 09-06-2001
CHECKED BY: DTM

TITLE: GUARD PLATE AND REMOVABLE RAIL POST DETAILS
DRAWING NUMBER: 5S-0019 Rev. B



- NOTES**
- FOR STRUCTURAL STEEL GENERAL NOTES SEE DRAWING 5S-0011.
 - TORCH CUTTING OF BOLT HOLES IS NOT PERMITTED.
 - ALL PLATES, BARS AND RUNG MATERIALS SHALL BE ASTM A36.
 - FOR RAILING DETAILS SEE DRAWINGS 5S-0018.
 - PROVIDE C6x8.2 LADDER VERTICALS (FOR LADDER HEIGHT MAX OF 20'-0") UNLESS CRITERIA FOR PROVIDING INTERMEDIATE SUPPORTS CANNOT BE MET.
- REFERENCE DRAWINGS**

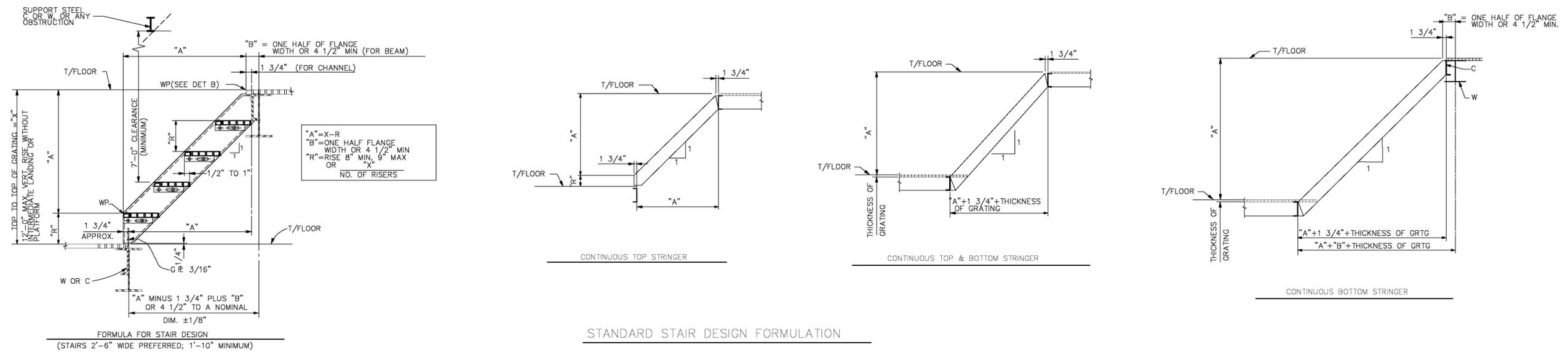
PROJECT NUMBER 10889-002												
REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D	REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D	NOTES:
	A	09-06-2001						FOR REFERENCE ONLY, SPEC.A-7059	DTM	DTM		
	B	03-27-2002						FOR CONSTRUCTION, SPEC.A-7059	DTM	JFH		
	C											

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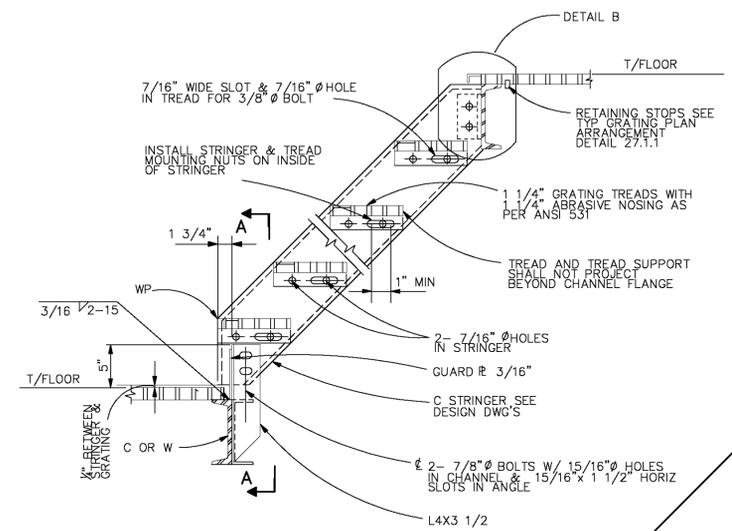
**SAND HILL ENERGY CENTER
UNIT NO. 5**



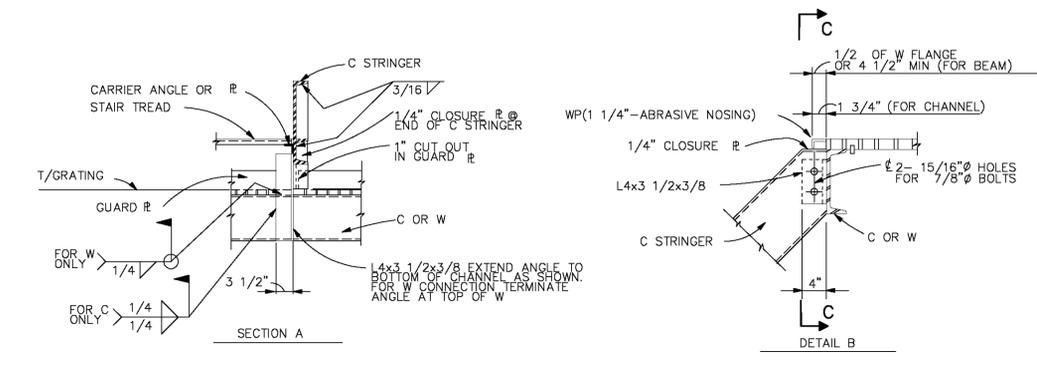

DRAWN BY: MUSZALSKI	TITLE: STANDARD LADDER DETAILS
APP'D BY:	DRAWING NUMBER: 5S-0020 Rev. C
SCALE: NONE	DATE: 09-06-2001
CHECKED BY: DTM	



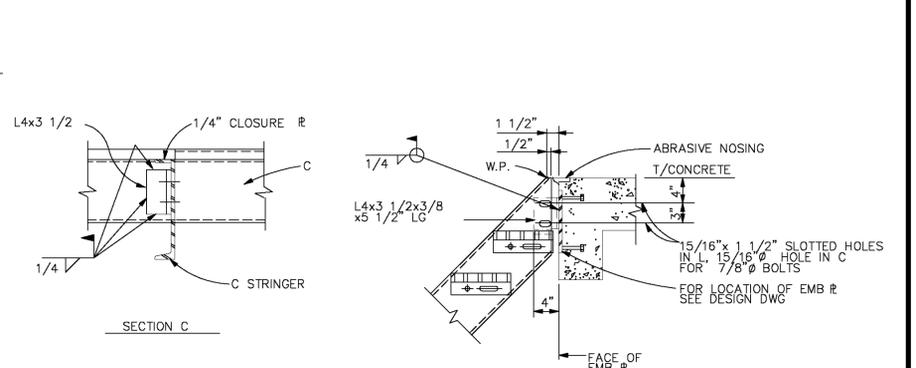
STANDARD STAIR DESIGN FORMULATION



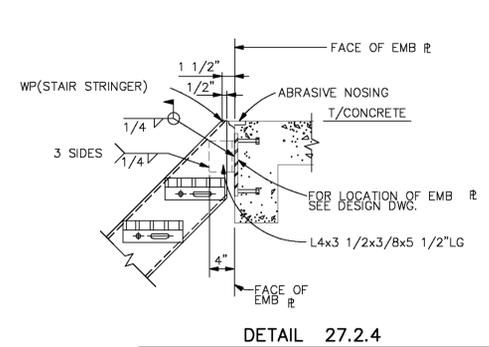
DETAIL 27.2.1
TYPICAL STAIR ARRANGEMENT BETWEEN GRATING FLOORS



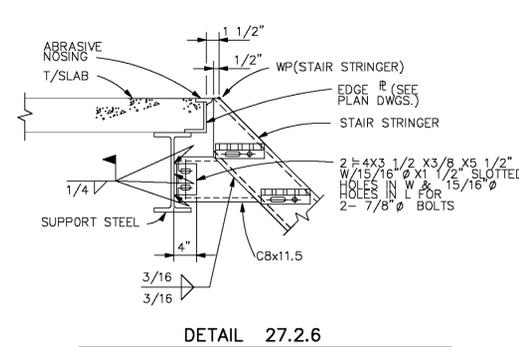
DETAIL 27.2.2
CONTINUOUS STAIRWAY STRINGER AT PLATFORM



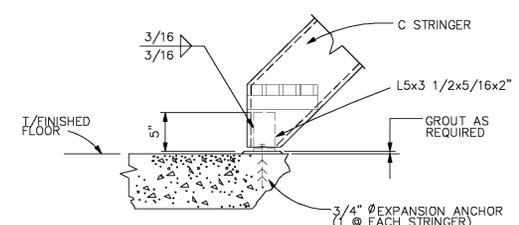
DETAIL 27.2.3
GALVANIZED TOP STAIR CONNECTION TO CONCRETE



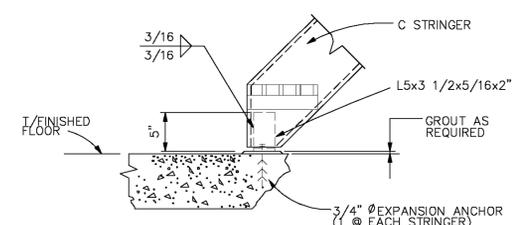
DETAIL 27.2.4
TOP STAIR CONNECTION TO CONCRETE



DETAIL 27.2.5
TOP STAIR CONNECTION TO WIDE FLANGE MEMBER



DETAIL 27.2.6
TOP STAIR CONNECTION AT CONCRETE FLOOR



DETAIL 27.2.7
BOTTOM STAIR CONNECTION TO TOP OF FINISHED FLOOR

- NOTES**
- FOR GENERAL NOTES SEE DWG. 5S-0001.
 - FOR RAILING DETAILS SEE DWGS. 5S-0018.
 - ALL STAIR STRINGERS SHALL BE ASTM A-36 & SHALL BE CHANNELS AS NOTED ON PLAN DRAWINGS. RISERS SHALL BE 9\"/>

REFERENCE DRAWINGS

PROJECT NUMBER 10889-002											
REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D	REV	DATE	PURPOSE	DRAWN	CHECKED	APP'D
A	08-15-2002	FOR BIDS, SPEC.A-7059	LN	DTM							
B	11-15-2002	FOR CONSTRUCTION, SPEC.A-7059	FQY	JFH							
NOTES:											

THE CITY OF AUSTIN
AUSTIN TEXAS

SAND HILL ENERGY CENTER
UNIT NO. 5



DRAWN BY:
LKN

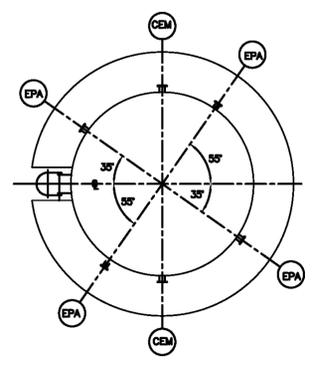
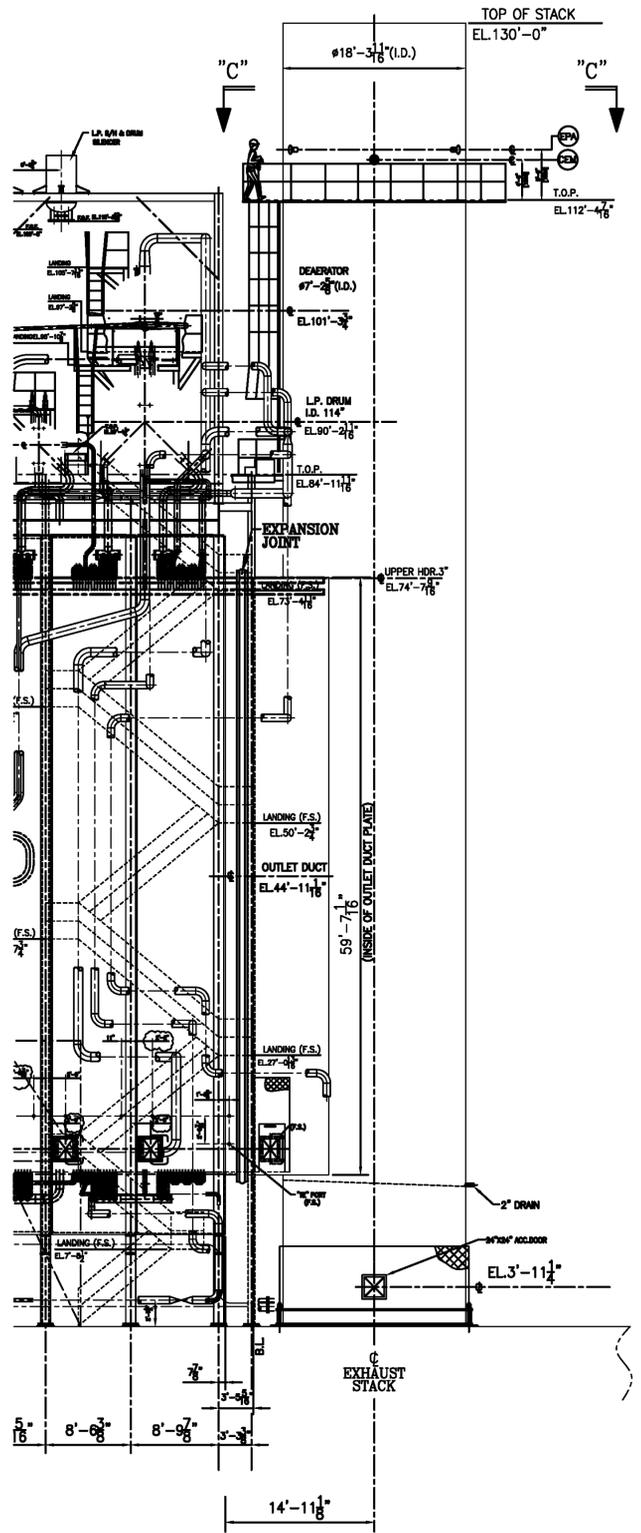
APP'D BY:

SCALE: NONE DATE: 10-05-2001

CHECKED BY:
DTM

TITLE:
STAIR CONNECTION DETAILS

DRAWING NUMBER:
5S-0023 Rev. B



- NOTES :**
1. ALL DIMENSIONS ARE IN INCH [MILLIMETER] .
 2. THIS ARRANGEMENT IS FOR OUTDOOR INSTALLATION.
 3. ALL CONCRETED WORK BY OTHERS.
 4. T.O.S. : TOP OF STEEL
 5. T.O.P. : TOP OF PLATFORM
 6. N.S. : NEAR SIDE
 7. F.S. : FAR SIDE
 8. B.S. : BOTH SIDES
 9. B.L. : BEND LINE
 10. F.O.F. : FACE OF FLANGE
 11. M.S.L. : MEAN SEA LEVEL

SIDE ELEVATION VIEW



GRAPHIC SCALE IN METER

LET	REVISION	CH	DATE	DRAWN	APP'D	LET	REVISION	CH	DATE	DRAWN	APP'D	LET	REVISION	CH	DATE	DRAWN	APP'D
0	XXXX																
A	XXXX																

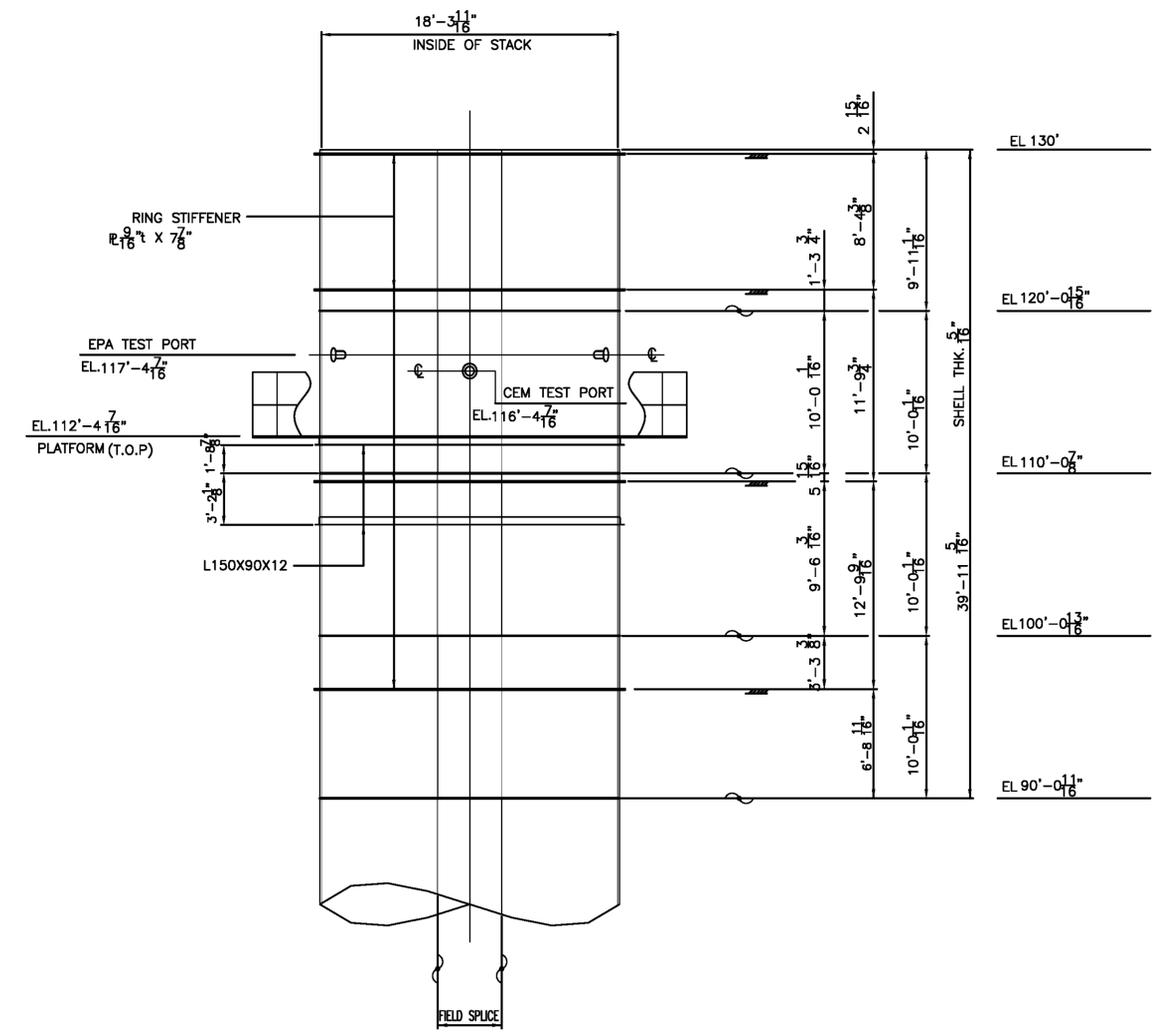
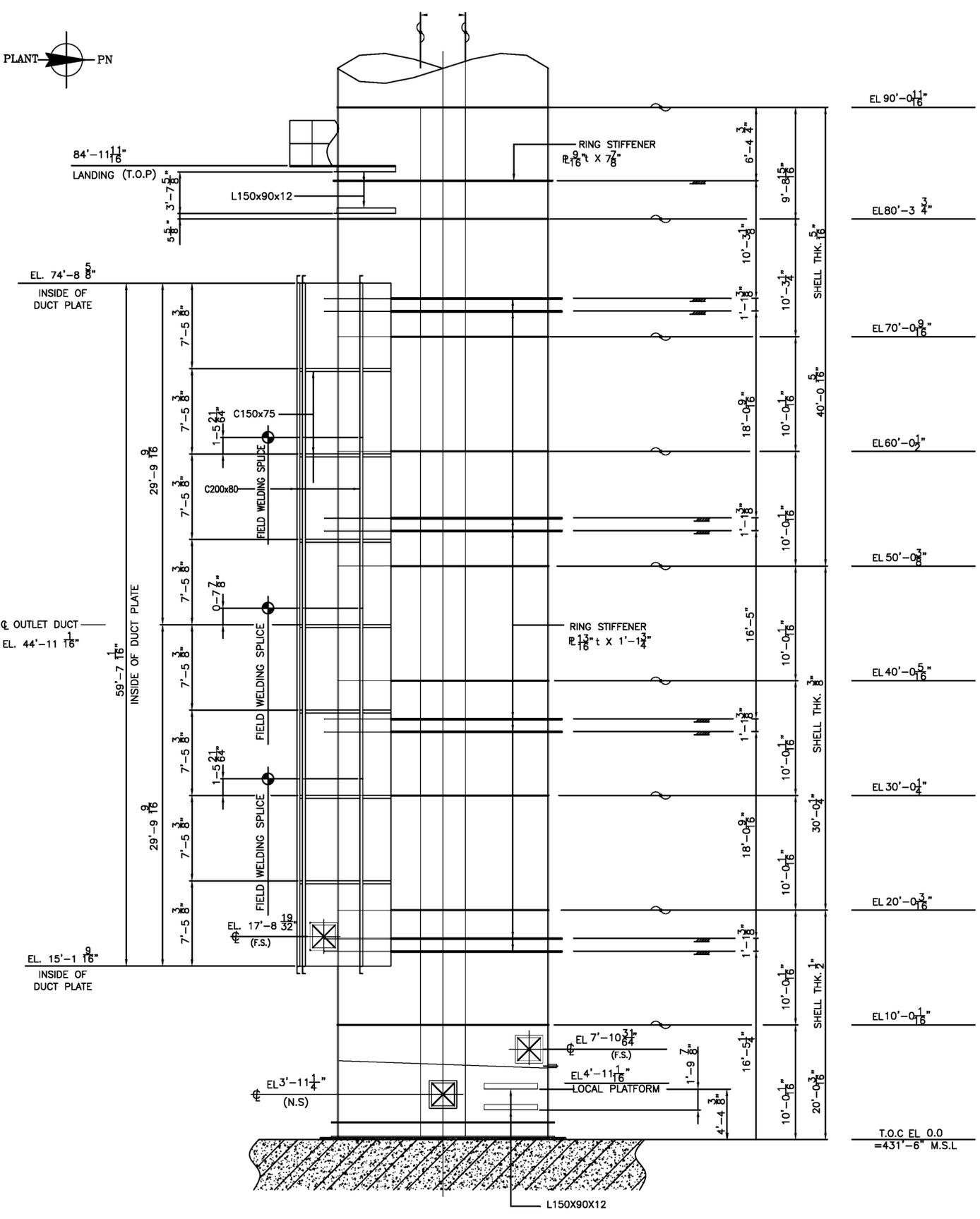
THE CITY OF AUSTIN
AUSTIN TEXAS

SAND HILL ENERGY CENTER
COMBINED CYCLE
POWER BLOCK UNIT 5A

NOTES:



DRAWN BY: VC	TITLE: GENERAL ARRANGEMENT OF H.R.S.G. (SIDE ELEVATION VIEW)
APP'D BY: RA	DRAWING NUMBER: S-001
SCALE: NOTED DATE: 4-21-14	Rev. E
CHECKED BY: JEL	



STACK ELEVATION

LET	REVISION	CH	DATE	DRAWN	APP'D	LET	REVISION	CH	DATE	DRAWN	APP'D	LET	REVISION	CH	DATE	DRAWN	APP'D	
0	XXXX																	
A	XXXX																	

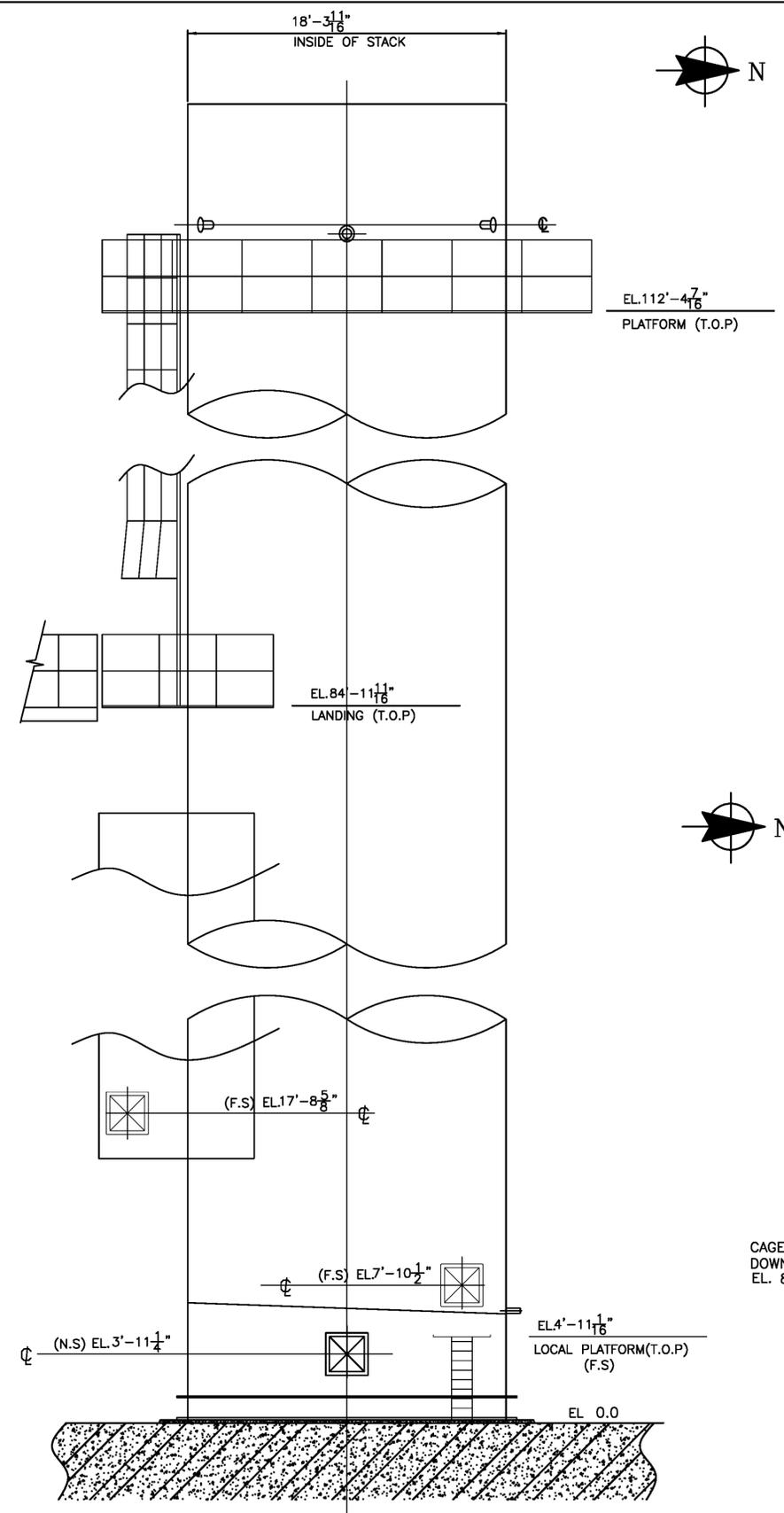
THE CITY OF AUSTIN
AUSTIN TEXAS

SAND HILL
HRSG

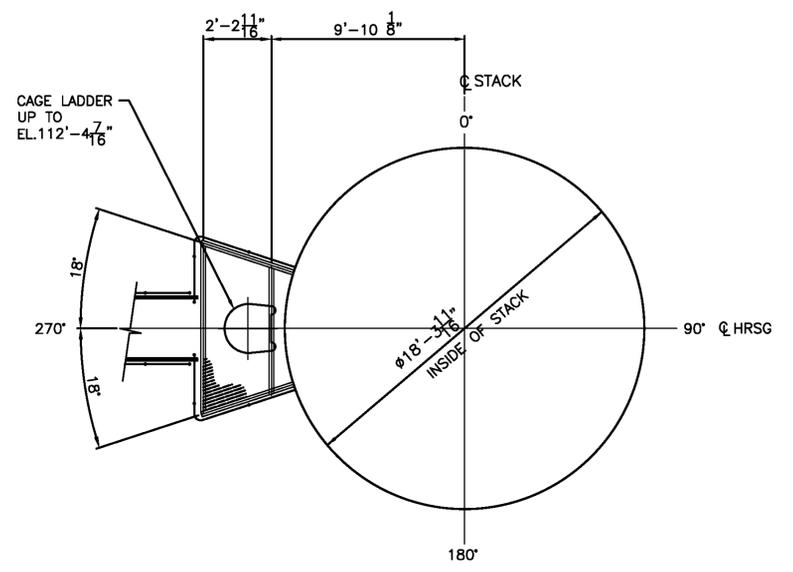
NOTES:



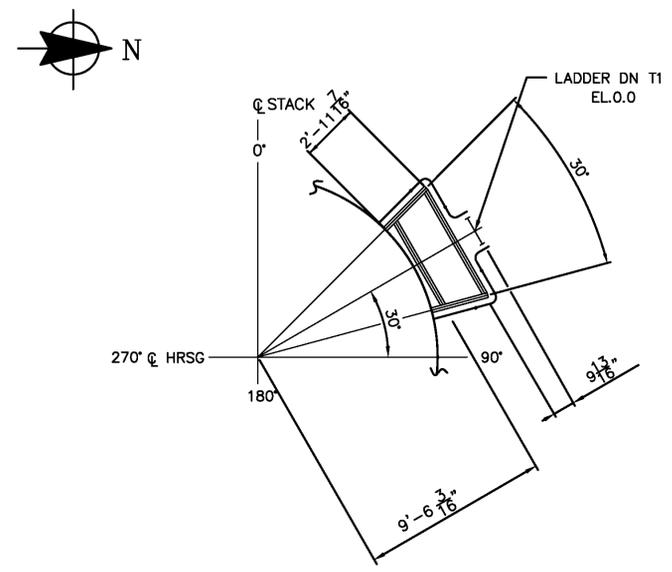
DRAWN BY: VC	TITLE: STACK ELEVATION (1/3)
APP'D BY: RA	DRAWING NUMBER: S-002
SCALE: NOTED	DATE: 4-22-14
CHECKED BY: JEL	Rev. 0



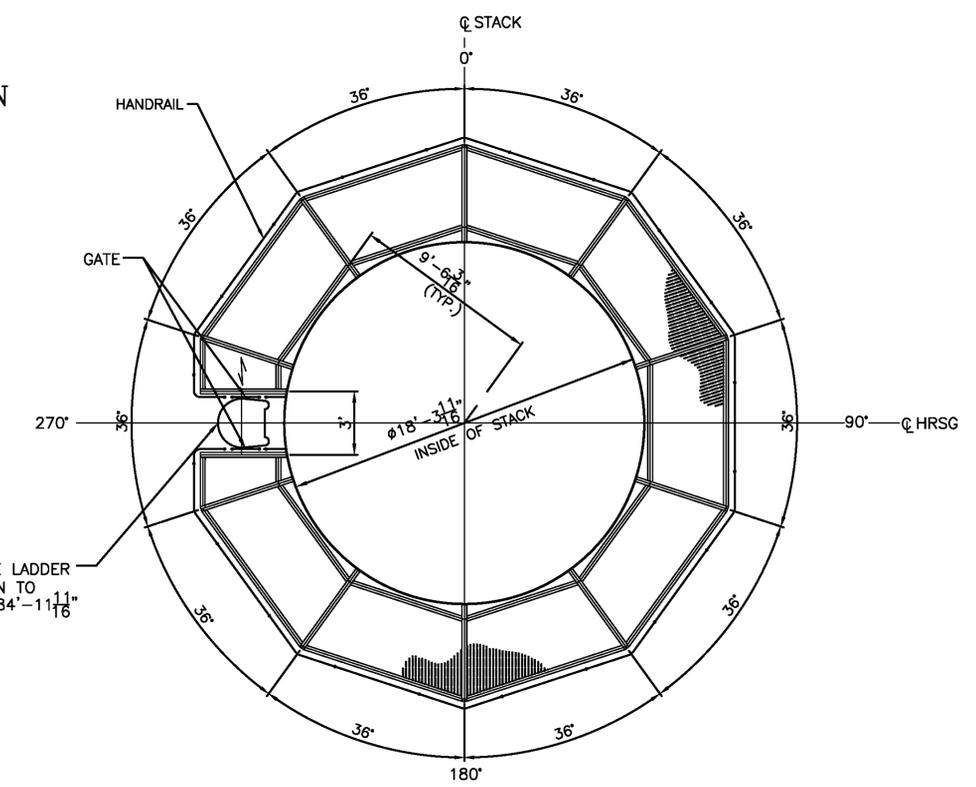
ELEVATION VIEW



LANDING AT EL. 84'-11 11/16\"



LOCAL PLATFORM AT EL. 4'-11 1/16\"



PLATFORM AT EL. 112'-4 7/16\"

LET	REVISION	CH	DATE	DRAWN	APP'D	LET	REVISION	CH	DATE	DRAWN	APP'D	LET	REVISION	CH	DATE	DRAWN	APP'D	
0	XXXX																	
A	XXXX																	

**THE CITY OF AUSTIN
AUSTIN TEXAS**

SAND HILL
HRSG

NOTES:



DRAWN BY: VC	TITLE: PLATFORM FRAMING ELEVATION (1/2)
APP'D BY: RA	DRAWING NUMBER: S-003
SCALE: NOTED	DATE: 4-21-14
CHECKED BY: JEL	Rev. 0

SECTION 09912

FINISH PAINTING AND COATING WORK

PART 1 - GENERAL

101. EXTENT
- 101.1 This Section covers the requirements for finish painting and coating work, complete as indicated on the Design Drawings, as defined in Table 09912-1 and as specified herein.
- 101.2 The intent of the requirements specified herein is to ensure thorough and proper surface preparation and complete coating application to the surfaces specified using the Coating Systems indicated.
- 101.3 Coating work shall include the preparation of surfaces to be coated, the protection of surfaces not to be coated, furnishing and application of the coating material, and the work of a general nature incidental to coating which is required to properly execute and complete the coating work.
- 101.4 Prime and finish coating of carbon steel surfaces shall be performed in the shop to the greatest extent practical. Field work shall consist primarily of touching up areas of shop applied coatings which have been damaged during installation or field welded areas unless otherwise noted. The Contractor shall perform touch-up painting by hand using a roller or hand brush. No spray painting shall be allowed to prevent overspray.
- 101.5 Furnish all labor, material, equipment, operators, apparatus, scaffolding and inspection devices.
- 101.6 Field applied coatings shall be installed by a qualified painting subcontractor. The use of the contractor's labor force is not acceptable.
- 101.7 The use of silca sand as an abrasive blasting media at the plant site will **not be allowed**.
- 101.8 Material and surfaces not to be coated shall include the following, unless otherwise indicated on the Design Drawings:
- a. Copper, and similar nonferrous metals.
 - b. Stainless steel.
 - c. Coated or galvanized grating.
 - d. Factory prefinished surfaces.
 - e. Nickel alloy surfaces.
- 101.9 The applicator must be knowledgeable and qualified in the use of the specified coatings.
- 101.10 Exercise care during handling of painted surfaces. Slings or chokers shall be nylon or padded steel. Storage of painted steel directly on the ground shall not be permitted. Stacks or painted steel shall be made using wood spacers.

102. REFERENCE DOCUMENTS
- 102.1 ASTM - American Society for Testing and Materials: By recommended practice, test method or specification noted.
- 102.2 ANSI - American Material Standards Institute:
- a. A13.1 - Scheme for the Identification of Piping Systems
 - b. Z535.1 - Safety Color Code for Marking Physical Hazards
- 102.3 SSPC - Steel Structures Painting Council:
- a. SSPC - Guide to Vis 1 - Pictorial Surface Preparation Standards for Painting Steel Surfaces.
 - b. SSPC-SP1 - Solvent Cleaning
 - c. SSPC-SP2 - Hand Tool Cleaning
 - d. SSPC-SP3 - Power Tool Cleaning
 - e. SSPC-SP5 - White Metal Blast Cleaning
 - f. SSPC-SP6 - Commercial Blast Cleaning
 - g. SSPC-SP10 - Near White
 - h. SSPC-SP11 - Power Tool Cleaning to Bare Metal
 - i. SSPC-PA1 - Shop, Field, and Maintenance Painting
 - j. SSPC-PA2 - Measurement of Dry Paint Thickness with Magnetic Gages
103. SUBMITTALS
- 103.1 General: In accordance with the general submittal requirements, Section 01340, submit the following for review:
- a. Manufacturer's Data: Submit manufacturer's product data and material safety data sheets for the coating products and application instructions.
 - b. Quality Control and Assurance Program.
 - c. Certification that each coating used is 100% lead free.
104. QUALITY ASSURANCE
- 104.1 Coating work shall be performed in accordance with the methods and procedures incorporated in the applicator's Quality Control and Assurance Program as approved by AE.
- 104.2 This QA program shall as a minimum describe the following for each different coating system:

- a. Surface preparation.
 - b. Quality selection of blasting media, if blasting is used.
 - c. Quality control for personnel proposed to be used for cleaning and coating work, and quality control of workmanship.
105. INSPECTION DEVICES
- 105.1 Wet-film and dry-film thickness gauges shall be made available for use at all times until final acceptance of application.
- 105.2 Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry-film thickness gauge.
- 105.3 Acceptable devices for ferrous metal surfaces include, but are not limited to, Tinker-Razor Model M-1 holiday detector for coatings to 20 mils (500 microns) dry film thickness, Tinker-Razor Modes AP and AP-W holiday detectors for coatings in excess of 20 mils (500 microns) dry-film thickness, and Mikrotest Positest unit for dry-film thickness gauging.
- 105.4 Wet Film Thickness:
- a. The coating applicator shall obtain from the coating manufacturer and submit to the Owner the wet film thickness (WFT) required to obtain the specified dry film thickness (DFT) for each type of coating material and for each method of application.
 - b. The WFT shall be based on applying the material directly from the original containers without thinning. If thinners are to be used, the WFT applicable to the amount of thinner used shall be given. This data shall be submitted to AE for approval prior to the application of any material.
106. INSPECTION
- 106.1 The Contractor shall perform all inspections and shall furnish the services of a testing laboratory to perform in-place and laboratory tests, as applicable, to ensure compliance with these specifications.
- 106.2 All work may be subject to inspection by AE, and any work found not in accordance with the requirements specified herein shall be redone. Inspections and tests made by AE shall not relieve the Contractor of the responsibility of complying with this Specification.
- 106.3 Inspection of surface preparation (steel) will be based upon comparison with: "Pictorial Surface Preparation Standards for Painting Steel Surfaces," SSPC-Vis 1. Anchor profile for prepared surfaces shall be measured by use of a non-destructive instrument such as a Keane-Tator Surface Profile Comparator or Testex Press-O-Film System. Testing to be performed per ASTM D 4417, method A or C.
- 106.4 Inspection of coating thickness (WFT) shall be based on measuring the average wet film thickness (WFT), using a Nordson Wet Film Gauge, #WFG-100, as made by the Nordson Corp., Amherst, Ohio, or an Interchemical direct reading wet film thickness gauge, #GG-6280, as made by Gardner Laboratory, Inc., Bethesda, Maryland. For the Nordson gauge, not less than two (2) applications of the gauge will be made in each area to be tested to determine an average wet film thickness; for

the Interchemical gauge, not less than two (2) rolls of the gauge in opposite directions per the requirements of ASTM D 1212.

106.5 Dry film thickness may also be inspected by AE for verification of coating thickness, and the dry thickness will be tested using an Elcometer gauge or a Nordson Micro gauge. Testing to be performed in accordance with ASTM D 1186.

106.6 AE may make random spot checks of material which have been coated, by removing small swatches of coatings to bare metal with acetone and examining the surface with a 5 power magnifying glass to observe the absence or presence of rust under the prime coat. The presence of rust or rust stains under such swatches shall be sufficient cause for rejecting the work, and Contractor shall repair and recoat the work.

107. SAFETY, STORAGE AND HEALTH REQUIREMENTS

107.1 In accordance with the requirements set forth by regulatory agencies, all safety regulations shall be rigidly adhered to. In addition, all safety precautions noted on the coating manufacturer's product data sheets and application instructions shall be observed.

107.2 Storage of material within any structure or facility of the at the plant site WILL NOT BE PERMITTED. Store paints, coatings and thinners, etc. in fire resistant cabinets.

107.3 Properly clean-up, store and dispose of paints, coatings, thinners, etc. at the end of each shift unless being actively used.

107.4 Temporary Ventilation Requirements: Furnish, operate and maintain ventilation equipment required to satisfactorily perform work and to conform to safety requirements of governing bodies having jurisdiction.

108. PRODUCT IDENTIFICATION

108.1 Deliver material to the Project Site in original, new, and unopened packages and containers bearing manufacturer's name and label.

108.2 Labels on each container shall include the following information:

- a. Name or title of material.
- b. Manufacturer's stock number.
- c. Manufacturer's name.
- d. Contents by volume for major pigment and vehicle constituents.
- e. VOC content.
- f. Thinning instructions.
- g. Shelf life.
- h. Application instructions.

109. PROTECTION

- 109.1 Furnish necessary drop cloths, or other protection required to protect surfaces from droppings or any other conditions in the execution of work. Drop cloths shall be fire-retardant treated. Drop cloths that have become unduly contaminated with coating material shall be removed from the Project Site.
- 109.2 Remove or protect hardware, lighting fixtures, switches, etc.
- 109.3 Surfaces which are not to be coated shall be protected. This type of surface includes sprinkler heads, equipment nameplates, decals, gauges and other instrumentation.
- 109.4 Exercise extreme caution to prevent damage to insulating jacketing, cable trays, and equipment.
- 109.5 Cable trays, equipment or piping shall not be used as platforms, walkways, ladders or for support for staging or scaffolding, etc.
- 109.6 Provide means to catch and contain abrasive blast media and dust, if used at the plant site.
- 109.7 Spray painting on site shall not be allowed due to the real potential of overspray which could damage any adjacent surfaces, building, vehicles, etc. Therefore, the contractor shall perform on-site touch-up painting using rollers and hand brushes.

PART 2 - PRODUCTS

201. MANUFACTURERS AND PRODUCTS

- 201.1 The manufacturers and products listed in the Coating System data sheets for the intermediate and finish coats have been evaluated and accepted for the specific service, no substitutes will be allowed.
- 201.2 Structural steel connections shall be masked unless the prime and finish coats of paint show conformance to the requirements of the AISC Manual and RCSC "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts," based on meeting the slip coefficient requirements for either a "Class A" or a "Class B" faying surface. The mean slip coefficient shall not be less than 0.33. The substitute primer shall also be compatible with the finish products specified.
- 201.3 Mixing, thinning, applying, etc., shall be performed as recommended by the manufacturer of the coating(s) used. Thinning (if required) shall be in strict accordance with the manufacturer's product data sheets and only with the approval of the Owner.

- 201.4 Compatibility:
- a. To ensure the satisfactory performance of each coating, it is essential that products applied in the field be compatible with those applied in the shops.
 - b. The coating applicator shall advise proposed methods to be used for determining shop coating when product data is not available.
- 201.5 All products provided shall be "100% lead free" and so certified and labeled.

PART 3 - EXECUTION

301. GENERAL

- 301.1 All surface preparation and coating material shall conform to the applicable requirements specified and/or referenced herein, and the coating manufacturer's printed instructions.
- 301.2 All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice.
- 301.3 Dust, dirt, oil, grease or any foreign matter that will affect the adhesion or durability of the finish shall be removed by washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags.
- 301.4 Milled surfaces and other machine-finished surfaces shall be protected against corrosion by using lacquer, unless otherwise indicated.
- 301.5 Fabricated members requiring joints to be field welded shall have a three-inch strip on each side of the joints left uncoated.

302. SURFACE PREPARATION

302.1 General:

- a. Refer to individual coating system data sheets and the coating manufacturer's printed instructions for each particular substrate condition.
- b. Surface preparation requirements specified herein shall be performed in conjunction with those requirements specified for each Coating System.

302.2 Preparation of Galvanized Steel Surfaces:

- a. Surfaces shall be cleaned and prepared in accordance with the coating systems manufacturer's printed instructions.

302.3 Preparation of Ferrous Metal Surfaces:

- a. Prepare as specified in the Coating System used.
- b. Before application of finish coats over surfaces previously coated, or prime coated by others, loose, scaly coating, blisters, rust, etc., shall be removed by one of the methods indicated and shall

be coated and/or touched-up as hereinafter specified. Surfaces shall be free of lint, dust, dirt or other foreign matter immediately prior to applying each coat of the specified coating.

- c. Flame cleaning of surfaces will not be permitted unless specifically indicated.
- d. Surfaces shall first be cleaned according to SSPC-SP1 Solvent Cleaning; and if required, SSPC-SP2 Hand Tool Cleaning and SSPC-SP3 Power Tool Cleaning shall be used prior to Blast Cleaning.
- e. Surfaces to be Blast Cleaned as specified in the individual coating system(s) shall produce a general appearance corresponding to the requirements outline in SSPC-Guide to Pictorial Surface Preparation Standards for Painting Steel Surfaces, based on the degree of surface preparation specified.
- f. This Blast Cleaning shall slightly roughen the surface to provide an anchor pattern as recommended by the coating manufacturer. The anchor pattern shall be sharp; a polished surface will not be permitted.
- g. Blast Cleaning equipment shall be suitable for use, and shall be as recommended by the coating manufacturer.
- h. Only the best quality, dry media shall be used in Blast Cleaning. The blasting media shall be of a size recommended by the coating manufacturer to achieve the desired anchor profile. The Contractor is reminded that the use of silica sand on the project site is not permitted. The Contractor is also reminded that when blast cleaning around stainless steel or nickel alloy metals, the blasting media shall not contain any ferrous products which could be detrimental to or cause contamination of these special metals.
- i. After completion of the Blast cleaning, all traces of the blasting media shall be removed from the surfaces by using moisture-free and oil-free compressed air or by vacuum cleaning.
- j. Extreme care shall be exercised to avoid contaminating the Blast Cleaned surfaces with fingerprints or with detrimental material from worker's clothes or from any other sources.

303. COATING APPLICATION

303.1 General:

- a. Application of specified coating materials shall conform to the applicable requirements of SSPC Paint Application Specification No. 1, "Shop, Field and Maintenance Painting," coating system manufacturer's printed instructions, and to the requirements herein specified.
- b. All ferrous metal surfaces shall be finish painted in the shop. Field touch-up is required for painted surfaces which have been damaged during installation or where welding was required.

303.2 Temperature Restrictions:

- a. No coating shall be applied: When the surrounding air temperature or the temperature of the surface to be coated is below 40° F (4.4° C); to wet or damp surfaces, or in rain, snow, fog, or mist; when the temperature is less than 5° F (2.78° C) above the dewpoint; when it is expected that the air temperature will drop below 40° F (4.4° C) or less than 5° F (2.78° C) above the dewpoint within eight hours after application of coating. Dewpoint shall be measured by use of an

instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychometric Tables.

- b. If above conditions are prevalent, coating shall be delayed or postponed until conditions are favorable. The day's coating shall be completed in time to permit the film sufficient drying time to prevent damage by atmospheric conditions.

303.3 Time Restrictions:

- a. The prime coat or wash primer (if specified) shall be applied to ferrous metal surfaces within the following time limitations after completion of specified surface preparations:
 - a1. Within 24 hours for surfaces prepared by SSPC-SP1, SP2 and SP3.
 - a2. Within 8 hours for surfaces prepared by SSPC-SP5, SP6, SP10 and SP11.
 - a3. If the prime coat is not applied within the specified period, the surface shall be reprepared.

303.4 Material Preparation:

- a. Mix and prepare coating material in accordance with manufacturer's directions.
- b. Stir material before application to produce a mixture of uniform density and stir as required during application of material. Do not stir surface film into the material. Remove the film and, if necessary, strain the material before using.
- c. If the coating applicator intends to use thinners, he shall inform the coating manufacturer of his intended method of application. The coating manufacturer shall then re-evaluate the coating and furnish AE and the coating applicator with the new wet film thicknesses required.

303.5 Method of Application:

- a. Only brush and roller painting is permitted unless otherwise directed.
- b. Sanding: Sand and smooth touch-up, prime coats and undercoat on all equipment and on other readily visible surfaces to secure a smooth workmanlike finish coat.

303.6 Application:

- a. Apply coating materials in accordance with the coating manufacturer's printed instructions. Use applicators and techniques best suited for the type(s) of material being applied.
- b. Application of coatings shall be applied evenly, free of runs or sags, with no evidence of poor workmanship. Finish surface shall be free from defects or blemishes.
- c. When two coats of coating are specified, the first coat shall contain sufficient approved color additive to act as an indicator of coverage.
- d. Film thickness per coat shall be within the range specified. The contractor shall apply additional coats as necessary to achieve the specified thickness.
- e. Sufficient time for drying shall be allowed between coats.

- 303.7 Faying Surface Coatings:
- a. Coatings, other than inorganic zinc specified for prime coating of structural steel fabrications, shall NOT be applied to the faying surfaces of bolted connections designed as slip critical.
 - b. When a coating other than inorganic zinc is specified as a prime coat, all faying surfaces including any inadvertent overspray shall be excluded from areas closer than one bolt diameter but not less than one inch from the edge of any hole and all areas within the bolt pattern.
 - c. Do not apply the finish coat of paint within one inch of the faying surfaces of friction type connections for shop applied finish coats. Any accidental application of finish paint in these areas must be removed prior to shipment of steel.
- 303.8 Field touch-up coating shall consist of applying the specified coating systems to the following surfaces after they have been properly cleaned:
- a. Surfaces where shop coat of coating has been marred, scratched or otherwise damaged, due to shipping, handling, erection, installation, weathering, etc.
 - b. Heads of field bolts and nuts, and adjacent surfaces left uncoated in the shop.
 - c. Surfaces of field welds, and adjacent surfaces left uncoated in the shop.
 - d. Surfaces of any ferrous fasteners not otherwise protected.
 - e. Exposed fabrication, erection or shipping marks shall be cleaned off and the areas touch-up to match the adjacent surfaces.
 - f. For surfaces where blast cleaning and wash primer are specified, touch-up coating shall include blast cleaning and application of the wash primer before the touch-up coat, or coats, are applied.
 - g. Dry film thickness of touch-up coating shall be as specified in the Coating Systems.
 - h. Touch-up coating shall overlap the prime, intermediate and finish coats by not less than one inch all around to ensure continuity of coating.
- 303.9 Field Touch-Up For Galvanized Surfaces:
- a. The following shall be touched-up with one coat of zinc-rich coating:
 - a1. Areas of galvanized surfaces which have been marred due to handling, shipping, erection, weathering, etc.
 - a2. Field welds made on hot-dipped galvanized surfaces.
 - b. Touch-up galvanizing shall overlap the original coating by not less than an inch all around to insure continuity of coating.

- 303.10 Field Finish Painting of Installed Steel Surfaces:
- a. For those instances where field finish painting is required clean, prime coat and finish coat with the type, brand and color of the coating specified in the Painting Schedule, Article 306 of this section. Surface preparation and application of the prime and finish coats shall be as specified.
 - b. Thoroughly clean and prime coat where indicated, and/or touch-up the entire work, or a substantial portion thereof, before starting the intermediate coat of coating. However, work shall proceed in a pattern that will keep to a minimum the necessity for recleaning the touch-up work already done, or the intermediate coat already applied. Cleaning shall be done in such manner as not to liberate dust.
- 303.11 Painting of Surfaces Supporting Grating:
- a. The supporting surfaces of existing grating shall be cleaned as specified herein and then coated with the specified coating system.
 - b. Areas opened during support surface painting shall be carefully marked and restricted access shall be maintained for personnel safety.
 - c. The existing grating shall be reinstalled, complete with all anchors, etc., immediately after coating the supporting surfaces is complete, including adequate time for drying.
- 303.12 Caulking:
- a. Do not apply coatings over Thiokol base or Silicone base rubber sealant caulking.
 - b. Other caulking materials shall be coated with the same coating as used for adjacent surfaces.
304. OSHA AND ANSI SAFETY COLOR STANDARDS
- 304.1 Code Compliance: Items scheduled to be coated with safety colors as required by OSHA shall be coated in colors complying with ANSI Z535.1 ISCC-NBS color designations and block numbers as specified. In addition to items indicated on the Design Drawings, coat items specified herein. Color coating for safety colors are in addition to coats applied under the specified Coating Systems.
- 304.2 Diagonal Wind Bracing, Gusset Plates and Head Knockers:
- a. Diagonal bracing in open bays subject to passage of personnel and equipment: Apply Safety Yellow with Safety Black bands two (2) inches wide, two (2) inches apart (diagonal stripping) to a height of 72" from the floor.
 - b. Bottom gusset plates: Safety Yellow.
 - c. Top gusset plates, balance of diagonal bracing, and diagonal bracing in plane of wall: Same as specified for structural steel.
- 304.3 Handrails, Guard Plates, Ladders and Safety Cages, Safety Equipment, Special Tools, Barriers and All Things Needing High Visibility Exposure: Safety Yellow

- 304.4 Stair Nosings and Grating Edges of Galleries:
- a. Stair Nosings - Steel and Concrete Stairs: Coat top 2 and bottom 2 nosings, 3 inches wide top and face, full width of stair - Safety Yellow.
 - b. Steel Grating Edges: Where there is only one-step differential between grating areas and no handrail occurs, coat the nosing of the higher grating and the face of the riser completely - Safety Yellow.
- 304.5 Fire Hose Cabinets, Extinguishers and Hose Outlet Areas:
- a. Coat fire hose cabinets (exclude hose and hose connections) and branch piping to approximately 5 feet on both sides of the fire house cabinets.
 - b. Mounted on walls: Apply a background panel of Safety Red color extending approximately 1 foot on both sides of the fire hose cabinets.
 - c. Mounted on Columns or Posts: Apply a band of Safety Red color completely around the column or post, extending approximately one foot above and one foot below the facility.
- 304.6 Trolley Beams and Miscellaneous Cranes:
- a. Exposed Surfaces of Trolley Beams: To be coated Safety Orange.
 - b. Miscellaneous Cranes: Per OSHA recommendations and as directed by the Owner.
- 304.7 Dangerous parts of equipment or energized equipment as defined in ANSI Z535.1 shall be identified and coated Safety Orange.
- 304.8 First Aid Kits, Stretchers, Eye Wash Stations, Flush Showers, Rescue Stations: Marked with white rectangle of sufficient size with Safety Green cross in proper proportion.
- 304.9 Class "S" Piping:
- a. Service Air Lines: The color scheme shall be used, as approved by AE, with the service description stenciled on the pipe every ten (10) feet.
 - b. Instrument Air Lines: The color scheme shall be used, as approved by AE, with the service description stenciled on the pipe every ten (10) feet.
 - c. Class "S" Fire Protection Piping: Safety Red F. P. V. Safety Red.
- 304.10 Class "D" Piping:
- a. All Steel Piping for Non Potable Water: The color scheme shall be used, as approved by AE, with the service description stenciled on the pipe every ten (10) feet.
 - b. Secondary Fire Protection: The color scheme shall be used, as approved by AE, with the service description stenciled on the pipe every ten (10) feet.
 - c. Hydrogen Piping: Safety Yellow with "Hydrogen" stenciled on the pipe every ten (10) feet.

- d. Lube Oil Piping: The color scheme shall be used, as approved by AE, with the service description stenciled on the pipe every ten (10) feet.
- 304.11 Fiberglass Pipe and HDPE Pipe shall not be Painted but the service description shall be stenciled on the pipe every ten (10) feet.
- 304.12 Service Water Lines: The color scheme shall be used, as approved by AE, with the service description stenciled on the pipe every ten (10) feet.
- 304.13 Belt Guards: Safety Orange with type stenciled on.
- 304.14 Electric Motors: Forest Green; stencil name on motors.
- 304.15 Conduit and Kendorf: Slate Gray.
- 304.16 Control Valve Wheels: Safety Red.
- 305. COATING FOR ALUMINUM CONTACT SURFACES
- 305.1 Aluminum contact surfaces coating shall be provided as follows:
 - a. Ferrous Metals: To prevent galvanic action where aluminum surfaces will be in contact with ferrous metals (other than galvanized), the contact surfaces of the ferrous metal shall receive one field coat of coating IN ADDITION TO shop and/or field prime coats.
 - b. Nonferrous Metals:
 - b1. Where aluminum will be in contact with copper, lead or other non-ferrous metals not compatible with aluminum, the contact surfaces of these metals shall receive two coats of an epoxy coating per manufacturer's instructions.
 - b2. Nonferrous metals compatible with aluminum, such as stainless steel, zinc, white bronze, etc., will not require coating.
 - c. Concrete Masonry:
 - c1. Where aluminum surfaces will be embedded in concrete or masonry, the aluminum surfaces shall receive two field coats of coating.
 - c2. Where aluminum surfaces will be in contact with concrete or masonry, the contact surfaces of these materials shall receive two field coats of coating.
 - d. Wood: Where aluminum surfaces will be in contact with untreated wood (other than wood in the interiors of buildings), the wood shall receive two coats of coating.
- 305.2 Where desirable, where required, or where requested, contact surfaces of aluminum may be coated with two coats of coating in place of coating contact surfaces of the foregoing specified materials.
- 305.3 Coatings for aluminum contact surfaces shall be as specified in the coating systems.
- 305.4 DFT for aluminum contact surfaces coating shall be 2-4 mils per coat.

306. PAINTING SCHEDULE

- 306.1 All paint coating systems shall consist of surface preparation, a prime coat and a finish coat. The Contractor will submit for approval and use high quality paint products as manufactured by Carboline, Devoe, Hi-Tech, International Coatings, Keeler & Long, Porter and PPG industrial Coatings.
- 306.2 The color scheme shall match the existing color schemes or shall be selected by the AE from color samples and color boards submitted by the Contractor. Final finish coat for electrical and controls enclosures switchgear, control panels, etc., shall be ANSI Z55.1 #61 (light grey) for the exteriors and white for the interiors.
- 306.3 Surface preparation (minimum SSPC-SP10, "Near White" for carbon steel) and paint system application shall be in accordance with the paint system manufacturer's recommendations. The primer and finish coat shall be from the same manufacturer.
- 306.4 The following protective coating systems shall be used unless approved otherwise by AE:
- a. Externally and internally exposed structural steel, steel piping and equipment that is to be painted shall have a surface preparation as indicated above and then be prime coated with one coat of a catalyzed polyamide epoxy-zinc-rich primer. The prime coat shall have a dry film thickness of 3.0 mils. The shop applied finish coat shall be a Type II aliphatic urethane that is compatible with the prime coat. The finish coat shall have a dry film thickness of 5.0 mils. The total dry film thickness shall average 8.0 mils with a minimum and maximum spot reading of 6.5 mils and 10.5 mils respectively.
 - b. Areas where chemical exposures (acidic and alkaline) are anticipated to occur shall have a surface preparation as recommended by the paint manufacture, a primer coat (4-6 mils) of polyamide epoxy paint, and a finish coat (2-3 mils) of acrylic aliphatic polyurethane paint.
 - c. Environmentally controlled areas with interior concrete masonry components requiring painting shall have a surface preparation that is clean, dry and free of contaminants, a primer coat thickness rate per paint manufacture) of masonry filler, an intermediate coat (2-3 mils) of low gloss acrylic latex, and a finish coat (2-3 mils) of low gloss acrylic latex.
 - d. Exterior and non-environmentally controlled areas with concrete and concrete masonry components requiring painting shall have a surface preparation that is clean, dry, and free of contaminants, a primer coat (thickness rate as recommended by the paint manufacturer) of masonry filler, an intermediate coat (2-3 mils) of water-borne acrylic paint, and a finish coat (2-3 mils) of water-borne acrylic paint.
 - e. All drywall areas shall have a smooth, clean, and dry surface preparation, a primer coat (0.5 to 3.0 mils) of sealer or thinned finish coat as recommended by the paint manufacturer, and intermediate coat (1-2 mils) of low gloss acrylic latex paint, and a finish coat (1-2 mils) of low gloss acrylic latex paint.
- 306.5 Exposed surfaces of the concrete water wash pit:
- a. Epoxy or vinyl ester based on temperature of the liquid in the sump.

- b. Surface Preparation: Removal laitance and curing compound residues that could interfere with application per coating manufacturer's recommendation.
- c. Quality Assurance: In-Process coating inspection is required for all field work.
- d. Dry Film Thickness: Per Coating Manufacturer.

e. Approved Suppliers:

		Product	Temperature Limits
e1.	Dudick	Protocoat 300I	120°F
e2.	Dudick	Protocoat 800	180°F
e3.	Others as accepted by AE.		

TABLE 9912-1 -Coating and Painting Schedule

#	Org	Disc	Item Description	Exposure	Primer			Finish		
					System	Color	Shop/ Field	System	Color	Shop/ Field
1	GE	M	Gas Turbine, Steam Turbine, Generator		GE-TBD	Beige	S	GE-TBD	GE-TBD	S
2	Doosan/ GWC	M	HRSG		CS-104SH	Gray	S	CS-211SH	Note 3	F
3	Doosan/ GWC	M	HRSG Stack – inside		CS-104SH	Mfr Std	S	CS-211SH	Mfr Std	F
4	GWC	M	HRSG Stack – outside		CS-104SH	Gray	S	CS-211SH	Note 3	F
5	GWC	A	Concrete masonry walls	Interior	CS-311SH	Grey white RAL 9002	F	CS-311SH	Note 3	F
6	GWC	A	Metal doors and pressed metal door frames – interior exposure	Interior	Mfr Std	NA	S	CS-237SH	Note 3	F
7	GWC	A	Metal doors and pressed metal door frames – exterior exposure	Exterior	Mfr Std	NA	S	CS-233SH	Note 3	F
8	GWC	A	Gypsum wallboard-interior exposure	Interior	CS-313SH	Mfr Std	F	CS-313SH	Note 3	F
9	GWC	A	Cladding (wall & roof)-inside surface	Interior	Mfr Std	Mfr Std	S	Mfr Std	Note 3	F
10	GWC	A	Cladding (wall & roof)-outside surface	Exterior	Mfr Std	Mfr Std	S	Kynar or equivalent	Note 3	S
11	GWC	A	Chemical storage and equipment area floors	Interior, Chemical	CS-238 SH or CS-239SH	Grey	F	CS-238SH or CS-239SH	Grey	F
12	GWC	A	Battery Room Floor	Interior, Chemical	CS-238SH	Grey	F	CS-238SH	Grey	F
13	VENDOR	E	Electrical Equipment	Interior	Mfr Std	Mfr Std	S	Mfr Std	ANSI 61	S

TABLE 9912-1
 Coating and Painting Schedule (cont'd)

#	Org	Disc	Item Description	Exposure	Primer			Finish		
					System	Color	Shop/ Field	System	Color	Shop/ Field
14	OEM/ GWC	E	Electrical Equipment	Exterior	Mfr Std	Mfr Std	S	Mfr Std	ANSI 70	S
15	GWC	E	Rigid Steel Conduit (All but Fire Protection)	Interior, Exterior	Galvanized	Galvanized	S	NA	NA	NA
16	GWC	E	Rigid Steel Conduit (Fire Protection)	Interior	Galvanized	Galvanized	S	CS-233	Red	F
17	GWC	I&C	DCS				S		Graphite textured	S
18	OEM	I&C	Control Room Equipment	Interior	Mfr Std	Mfr Std	S	Mfr Std	Coordinate for all equipment	S
19	GWC	M	Carbon Steel Piping – Buried	Exterior, Buried	N/A	N/A	N/A	AWWA C203	Black	S/F
20	GWC	M	Carbon Steel Piping – Uninsulated, Indoors	Interior	CS-104SH	Mfr Std	S	CS-113	Note 5	F
21	GWC	M	Carbon Steel Piping-Uninsulated Outdoors	Exterior	CS-104SH	Mfr Std	S	CS-214SH	Note 5	F
22	GWC	M	Carbon Steel Piping – Insulated	Temperature	CS-104SH	Mfr Std	S	N/A (Insulated)	Note 5	N/A
23	GWC	M	Pipe Supports – auxiliary steel and ferrous steel hardware, indoors	Interior	CS-104SH	Mfr Std	S	CS-236	Note 3	F
24	GWC	M	Pipe Supports – auxiliary steel and ferrous steel hardware, outdoors	Exterior	CS-104SH	Mfr Std	S	CS-214SH	Note 3	F
25	OEM/ GWC	M	Mechanical Equipment (all except tanks, stacks, and fire protection)	Interior	Mfr Std	Mfr Std	S	Mfr Std	Grey	S
26	OEM/ GWC	M	Mechanical Equipment – Fire Protection	Interior	Mfr Std	Mfr Std	S	Mfr Std	Red	S

TABLE 9912-1
Coating and Painting Schedule (cont'd)



#	Org	Disc	Item Description	Exposure	Primer			Finish		
					System	Color	Shop/ Field	System	Color	Shop/ Field
27	OEM	M	Shop Fabricated Tanks – Inside surface – All	Interior, Chemical, Various	By vendor for service	Mfr Std	S	By vendor for service	Mfr Std	S
28	OEM	M	Shop Fabricated Tanks – Insulated	Interior	CS-104SH	Mfr Std	S	N/A (Insulated)	N/A	N/A
29	GWC	M	Shop Fabricated Tanks – Uninsulated, Indoors	Interior	CS-236SH	Mfr Std	S	CS-236SH Field Touch-Up	Grey	F
30	GWC	M	Shop Fabricated Tanks – Uninsulated, Outdoors	Exterior	CS-309SH	Mfr Std	S	CS-309SH Field Touch-Up	Grey	F
31	GWC	S	Structural Steel-Interior (Not Galvanized)	Interior	CS-104SH	Mfr Std	S	CS-113SH	Note 3	F
32	GWC	S	Structural Steel-Exterior (Not Galvanized)	Exterior	CS-104SH	Mfr Std	S	CS-214SH	Note 3	F
	VENDOR	S	Field Fabricated Tank-Demin.	Exterior	Inorganic Zinc	Mfr Std	S	Aliphatic Urethane	Gray	F

Notes:

1. The Paint Schedule indicates the items to be coated, the coating system description or number, the color, and the location the coating is to be applied (shop or field).
2. Coating systems referenced in the schedule are attached for reference.
3. Colors are to be selected by the Owner from Contractor submitted samples.
4. For equipment and materials that are finish coated in the shop, the equipment supplier shall furnish sufficient touch up paint for use by the installation contractor.
5. Pipe color coding and identification Marking per ANSI A13.1

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-104SH

- Description : 1-coat high heat inorganic zinc primer for interior or exterior properly prepared steel substrates.
- Uses : Primer For Ferritic Steel
- Criteria : Application temperature > 50°F; above ground; embedded; indoors; outdoors; temperature ranges from 350 to 750°F; non-abrasive; corrosive; non-corrosive; uninsulated.
- Surface Preparation : SSPC-SP6.
- Surface Profile : Per coating manufacturer
- Generic Type Touch-Up : Inorganic zinc

Approved Suppliers	Primer	VOC	DFT
Carboline	CZ-11HS	2.2	2-4
Devoe Coatings	Catha-Coat 304V	2.4	2-4
International	Intezinc 22HS	2.8	2-4
Sherwin Williams	B69VZ1/B69D11/B69Z3	2.6	3-5
Valspar Corporation	V13-F-12	2.7	2-3
Ameron	D9HS	2.6	2-4
Tnemec	Series 90-96	2.86	2-3
PPG	97-673/97-675 Series	3.3	2-4
Sigma	7551 US	2.7	2-4

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-109SH

- Description : Touch-up spray/brush applied organic coating for interior or exterior surfaces that have been previously coated with an inorganic zinc primer.
- Uses : Interior or exterior surfaces which have been marred, scratched, or damaged due to any reasons, including surfaces of field welds and adjacent surfaces left uncoated and head of field bolts/nuts and other surfaces left uncoated in the shop.
- Criteria : Application temperature > 50°F; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature 170°F; abrasive; non-abrasive; corrosive; non-corrosive; insulated; uninsulated.
- Surface Preparation : SSPC-SP1, SP2 and/or SP3 as required, unless otherwise specified by the coating manufacturer.
- Surface Profile : Per coating manufacturer
- Generic Type Touch-Up : Zinc

Approved Suppliers	Touch Up	VOC	DFT
Carboline	858	2.52	2-4
International	Interzinc 52	3.38	2-4
Sherwin Williams	B62S100/B60V100	1.43	2-4
Ameron	68 HS	2.4	2-4
Tnemec	Series 90-97	2.67	2.5-3.5

Note: (1) Touch-up coating shall match adjacent inorganic zinc primer.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-113SH

- Description : One coat epoxy finish for interior steel substrates, which have been previously coated with an inorganic zinc primer. Shop primed surface shall be touch-up coated per CS-109SH.
- Uses : Finish coat over shop applied primer.
- Criteria : Application temperature per coating manufacturer:
 » interior steel
 » application temperature per coating manufacturer
 » operating temperature 80°C
- Surface Preparation : SSPC-SP1, SP2 and/or SP3 as required per coating manufacturer
- Generic Type Finish : Epoxy

Approved Suppliers	Product Name	VOC	Dry Film Thickness
Carboline	890	1.78	4-6
Devoe Coatings	Devran 229H	3.2	4-6
International	Interseal 670 HS	2.00	4-6
Sherwin Williams	B58W101/B58V1	1.07	4-6
Ameron	Amerlock 400	1.4	4-6
Tnemec	Series 27	3.01	4-6

Note: Apply mist coat as recommended by coating manufacturer.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-204SH

- Description : 2-coat inorganic zinc, epoxy system for use over properly prepared steel substrates.
- Uses : Interior or exterior surfaces where protection against grease, oil, solvent and chemical splash is desired.
- Criteria : Application temperature > 50°F; above ground; embedded; indoors; outdoors; operating temperature < 170°F; corrosive; non-corrosive; uninsulated.
- Surface Preparation : SSPC-SP6.
- Surface Profile : Per coating manufacturer
- Generic Type Touch-Up : Inorganic zinc
- Generic Type Finish: : Epoxy

Approved Suppliers	Primer	VOC	DFT
Carboline	CZ-11HS	2.2	2-4
International	Interzinc 22 HS	2.8	2-4
Sherwin Williams	B69VZ1/B69VZ3/B69D11	2.6	2-4
Ameron	D9HS	2.6	2-4
Tnemec	Series 90-96	2.86	4-6

Approved Suppliers	Finish	VOC	DFT
Carboline	890	1.78	4-6
International	Interseal 670 HS	2.00	4-6
Sherwin Williams	B58W101/B58V1	1.07	4-6
Ameron	385	2.3	4-6
Tnemec	Series 27	3.01	4-6

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-211SH

- Description : Two-coat high heat silicone system (intermediate and finish) for interior and exterior steel substrates which have been previously coated with a shop applied inorganic zinc primer.
- Uses : Surfaces of steel stacks, vents, valves, etc.
- Criteria : Application temperature > 50°F above ground; underground; underwater; embedded; indoors, outdoors, operating temperature < 450°F abrasive, non-abrasive; corrosive; non-corrosive; insulated, uninsulated.
- Surface Preparation : SSPC-SP1, and as recommended by coating manufacturer*
- Surface Profile : Per coating manufacturer
- Generic Type Touch-up: : Inorganic Zinc
- Generic Type Intermediate : Silicone
- Generic Type Finish : Silicone

Approved Suppliers	Touch-up*	VOC	DFT
Carboline	CZ-11HS	2.2	2-3
International	Interzinc 22 HS	2.8	2-3
Sherwin Williams	B69VZ1/B69VZ3/B69D11	2.6	2-3
Ameron	D9HS	2.6	2-4
Tnemec	Series 90-96	2.86	2-3.5

Approved Suppliers	Intermediate	VOC	DFT
Carboline	4900	4.54	1-1.5
International	Intertherm 875	4.12	1-1.5
Sherwin Williams	B59-300	3.3	1-1.5
Ameron	892 HS	2.7	1-1.5
Tnemec	Series 39	4.9	1-1.5

Approved Suppliers	Finish	VOC	DFT
Carboline	4900	4.54	1-1.5
International	Intertherm 875	4.12	1-1.5
Sherwin Williams	B59-300	3.3	1-1.5
Ameron	892 HS	2.7	1-1.5
Tnemec	Series 39	4.9	1-1.5

*Note: If the steel substrate is not shop primed with inorganic zinc, then the touch-up coat shall be the primer and the surface preparation shall be SSPC-SP10.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-214SH

- Description : Two-coat system including epoxy intermediate and polyurethane finish for exterior steel surfaces that have been shop primed.
- Uses : Intermediate and finish coat over shop primed steel surfaces.
- Criteria :
- Exterior Steel
 - Application temperature per coating manufacturer
 - Operating temperature 80°C
- Surface Preparation : SSPC-SP1, SP2 and/or SP3 as required per coating manufacturer
- Generic Type Intermediate Coat : Epoxy
- Generic Type Finish Coat : Polyurethane

Approved Suppliers	Touch-up	VOC	DFT
Carboline	858	2.52	2-4
DeVoe Coatings	Catha-Coat 303H	2.66	3
International	FR51	2.57	2-4
Sherwin Williams	B62S100/B60V100	1.43	2-4

Approved Suppliers	Intermediate	VOC	DFT
Carboline	893	1.62	2-4
Keeler & Long	3200	2.6	2-4
International	Interseal 670HS	2.0	2-4
Sherwin Williams	B58W101/B58V1	1.07	2-4 *
Ameron	385	2.3	2-4
Tnemec	Series 27	3.01	2-4

Approved Suppliers	Finish	VOC	DFT
Carboline	134-HS	2.4	2-3
Keeler & Long	Y-Series	3.5	2-3
International	Interthane 990 HS	2.73	2-3
Sherwin Williams	B65W301 Series/B60V30	2.4	2-3
Ameron	450 HS	2.4	2-3
Tnemec	Series 73	3.4	2-3

*Note: Touch-up coating shall match adjacent inorganic zinc primer.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-233SH

- Description : 2-coat epoxy intermediate and polyurethane finish for steel substrates with a shop applied coating other than inorganic zinc.
- Uses : Interior and exterior surfaces
- Criteria : Application temperature > 50°F; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature, 170°F; abrasive; non-abrasive; corrosive; non-corrosive; insulated; uninsulated.
- Surface Preparation : SSPC-SP1, SP2 and SP3 as required.
- Surface Profile : Per coating manufacturer.
- Generic Type Primer : Equipment manufacturer's standard primer.
- Generic Type Intermediate : Epoxy
- Generic Type Finish : Polyurethane

<u>Approved Suppliers</u>	<u>Intermediate</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	Rustbond Penetrating Sealer	1.62	1-1.5
Keeler & Long	2129		1-1.5
<u>Approved Suppliers</u>	<u>Finish</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	134-HS	2.4	1.5-3
Keeler & Long	U-Series Kolorane	.	1.5-3

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-236SH

- Description : Touch-up spray/brush applied zinc filled epoxy coating and epoxy finish coat for interior surfaces that have been previously coated with an inorganic zinc primer.
- Uses : Interior or exterior surfaces which have been marred, scratched, or damaged due to any reason, including surfaces of field welds and adjacent surfaces left uncoated and head of field bolts/nuts and other surfaces left uncoated in the shop.
- Criteria : Application temperature > 10°C; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature 77°C; abrasive; non-abrasive; corrosive; non-corrosive; insulated, uninsulated.
- Surface Preparation : SSPC-SP1, SP2 and/or SP3 as required, unless otherwise specified by the coating manufacturer.
- Surface Profile : Per coating manufacturer.
- Generic Type Touch-up : Zinc

<u>Approved Suppliers</u>	<u>Touch-up</u>	<u>VOC</u>	<u>DFT</u>
Carboline	858	2.52	2-4
Devoe Coatings	Catha-Coat 303H	2.66	3
International	FR51	2.57	2-4
Sherwin Williams	B62S100/B60V100	1.43	2-4
<u>Approved Suppliers</u>	<u>Finish</u>	<u>VOC</u>	<u>DFT</u>
Carboline	801	1.74	2-4
Devoe Coatings	Devran 250	2.8	2-4
Keeler & Long	J-2-S Series	3.58	2.5-4
International	FR51	2.57	2-4
Sherwin Williams	B58W200/B58V200	3.12	2-4

Note : (1) Touch-up coating shall match adjacent inorganic zinc primer.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-237SH

- Description : 2-coat epoxy intermediate and waterborne acrylic finish for steel substrates with a shop applied coating other than inorganic zinc.
- Uses : Interior and exterior surfaces
- Criteria : Application temperature > 50°F; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature 170°F; abrasive; non-abrasive; corrosive; non-corrosive; insulated; uninsulated.
- Surface Preparation : SSPC-SP1, SP2 and SP3 as required.
- Surface Profile : Per coating manufacturer.
- Generic Type Primer : Equipment manufacturer's standard primer.
- Generic Type Intermediate : Epoxy
- Generic Type Finish : Polyurethane

<u>Approved Suppliers</u>	<u>Intermediate</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	Rustbond Penetrating Sealer	1.62	1-1.5
Keeler & Long	2129		1-1.5
<u>Approved Suppliers</u>	<u>Finish</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	3359	1.15	2-4
Keeler & Long	K-2 Series	0.4	1.5-2

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-238SH

- Description : Chemical resistant coating system for secondary containment surfaces.
- Uses : For interior walls and floors, and concrete supports in acid containment areas. Use also for caustic areas if specifically indicated.
- Surface Preparation : Concrete Surfaces: Brush blast to remote all dirt, spalled concrete loose concrete and other foreign matter. Obtain a surface resembling 80 to 120 grit sandpaper.
Carbon Steel: Conform to SSPC-SP5.
- Systems and Normal Thickness: : As follows:

<u>Location</u>	<u>Coating System</u>
Acid Containment Area Interior Walls and concrete supports- 1/8 inch	-Protecto-Line 10A by Dudick -Ceilcrete 695 by Ceilcote
Containment Area Floor and pump area Floor. -1/4 inch	-Protecto-Crete 140 by Dudick -Ceilcrete 695 by Ceilcote
Containment Area Outside Surfaces Of Walls-40 mils DFT	-Protecto-Coat 800 by Dudick -1 Flakeline 232 by Ceilcote

Notes:

Furnish the services of the manufacturer's technical representative to oversee the installation of the coating system.

Expansion joints and grout: Manufacturer's standards as approved by Owner.

Cleaning and Curing: In accordance with printed requirements of manufacturer.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-239SH

- Description : Chemical resistant coating system for secondary containment surfaces.
- Uses : For interior walls and floors, and concrete supports in acid containment areas.
- Surface Preparation : Concrete Surfaces: Brush blast to remote all dirt, spalled concrete, loose concrete and other foreign matter. Obtain a surface resembling 80 to 120 grit sandpaper.
- Carbon Steel: Conform to SSPC-SP5.
- Systems and Normal Thickness: : As follows:

<u>Location</u>	<u>Coating System</u>
Caustic Containment Area Interior Surfaces of Walls and concrete Supports 40 mils DFT	-Protecto Coat 800 by Dudick - 1Flakeline 232 by Ceilcote
Caustic Containment Area Floor and Pump area floor 1/4 inch	-Protecto-Coat 800 SF by Dudick -Ceilcrete 695 by Ceilcote
Caustic Pump Floor Area	-Protecto-Crete 140 by Dudick -Celcrete 695 by Ceilcote
Caustic Containment Area Outside Surfaces Of Walls – 40 mils DFT	- Protecto-Coat 800 by Dudick – 1 Flakeline 232 by Ceilcoat

Notes:

Furnish the services of the manufacturer's technical representative to oversee the installation of the coating system.

Expansion joints and grout: Manufacturer's standards as approved by Owner.

Cleaning and Curing: In accordance with printed requirements of manufacturer.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-309SH

- Description : 3-coat inorganic zinc primer, epoxy intermediate and polyurethane finish for interior and exterior properly prepared steel substrates.
- Uses : Interior and exterior surfaces
- Criteria : Application temperature > 10°C; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature 77°C; abrasive; non-abrasive; corrosive; non-corrosive; insulated; uninsulated.
- Surface Preparation : SSPC-SP6
- Surface Profile : Per coating manufacturer.
- Generic Type Primer : Inorganic zinc
- Generic Type Intermediate : Epoxy
- Generic Type Finish : Polyurethane

<u>Approved Suppliers</u>	<u>Primer</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	CZ-11HS	2.2	2-4
International	Intezine 22 HS	2.8	2-4
Sherwin Williams	B69VZ1/B69D11/B69VZ3	2.6	2-4
Ameron	D9HS	2.6	2-4
Tnemec	Series 90-96	2.9	2-4
<u>Approved Suppliers</u>	<u>Intermediate</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	893	1.62	4-6
International	Interseal 670 HS	2.0	4-6
Sherwin Williams	B67 Series/B67V5	2.46	4-6
Ameron	385	2.3	4-6
Tnemec	Series 66	3.1	4-6
<u>Approved Suppliers</u>	<u>Finish</u>	<u>VOC</u>	<u>DFT (mils)</u>
Carboline	134-HS	2.4	2-3
International	Interthane 990	2.73	2-3
Sherwin Williams	B65W200/B60V2	2.84	2-3
Ameron	450 HS	2.4	2-3
Tnemec	Series 73	3.1	2-3

Note: Provide a mist coat as recommended by the coating manufacturer over the prime coat.

ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-311SH

- Description : 3-coat latex block filler and acrylic latex semi-gloss intermediate and finish for concrete surfaces.
- Uses : Concrete and concrete masonry unit walls
- Criteria : Application temperature > 50°F; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature 150°F; non-abrasive; non-corrosive; uninsulated.
- Surface Preparation : Remove laitance and curing compound residues that could interfere with application per coating manufacturer's recommendation.
- Surface Profile : Per coating manufacturer.
- Generic Type Filler : Latex block
- Generic Type Intermediate : Acrylic latex semi-gloss
- Generic Type Finish : Acrylic latex semi-gloss

Approved Suppliers	Primer	VOC	DFT (mils) U.N.
Carboline	Flexide Block Filler	0.4	10-15
Keeler & Long	6440	0.55	5-15
International	Intercryl 320	0.0	5-15
Sherwin Williams	B42W46	0.13	5-15
Ameron	147	1.1	5-15
Tnemec	Series 130	0.6	85 to 115 sq. ft. Per gal.
Approved Suppliers	Intermediate	VOC	DFT (mils)
Carboline	3359	1.15	2-4
Keeler & Long	K-2 Series	0.4	1.5-2
International	Intercryl 520	0.87	1.5-2
Sherwin Williams	B66-200	1.15	2-4
Ameron	220	1.5	1.5-2
Tnemec	Series 7	1.6	2-3
Approved Suppliers	Finish	VOC	DFT (mils)
Carboline	3359	1.15	2-4
Keeler & Long	K-2 Series	0.4	1.5-2
International	Intercryl 520	0.87	1.5-2
Sherwin Williams	B66-200	1.15	2-4
Ameron	220	1.5	1.5-2
Tnemec	Series 7	1.6	2-3

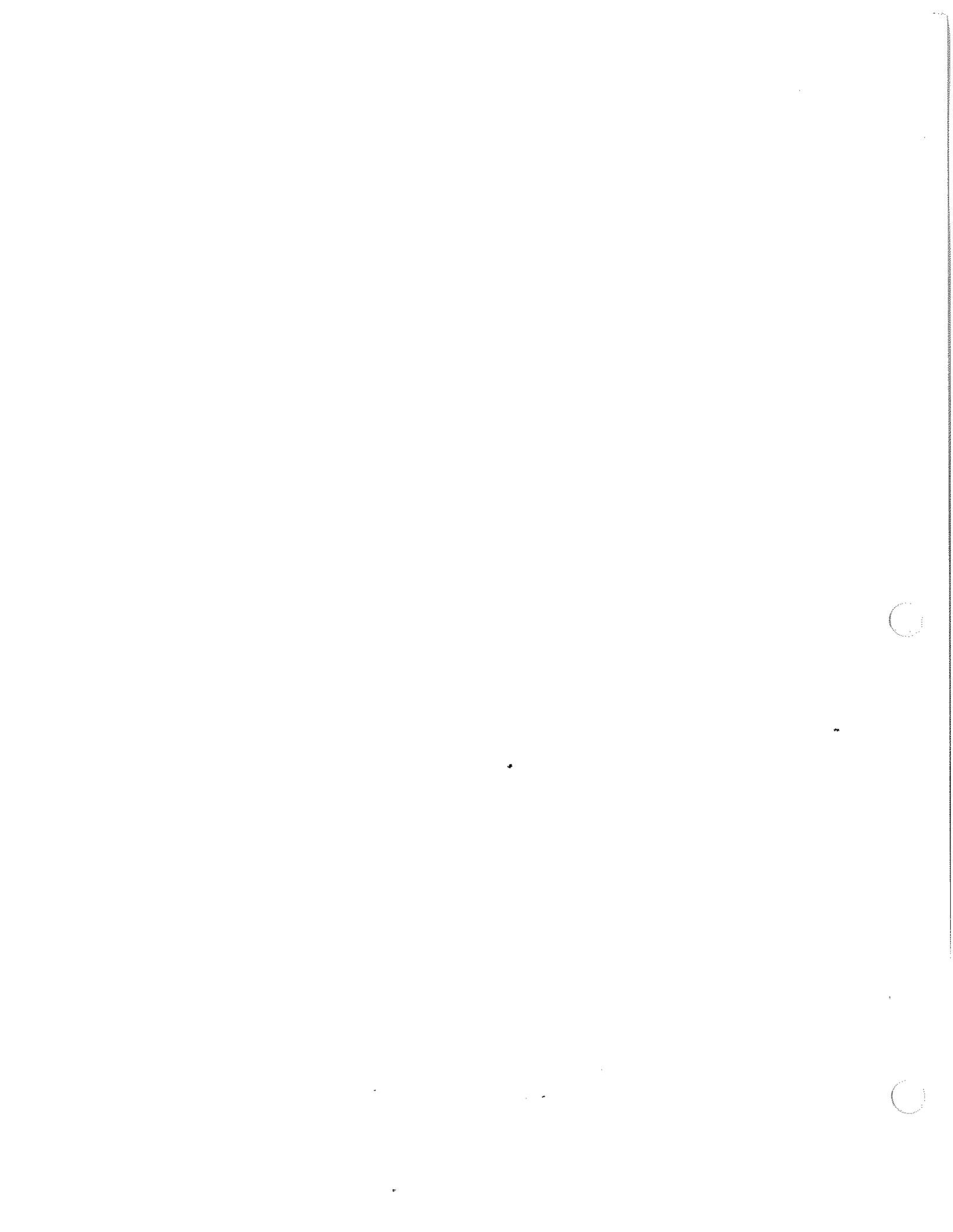
ATTACHMENT A TO TABLE 9912-1

COATING SYSTEM CS-313SH

- Description : 3-coat latex sealer and latex flat intermediate and finish system.
 Uses : Interior surfaces of gypsum board, dry wall, sheetrock, etc.
 Criteria : Application temperature > 50°F; above ground; underground; underwater; embedded; indoors; outdoors; operating temperature 150°F; non-abrasive; non-corrosive; uninsulated.
 Surface Preparation : Per coating manufacturer.
 Surface Profile : Per coating manufacturer.
 Generic Type Sealer : Latex
 Generic Type Intermediate : Latex flat
 Generic Type Finish : Latex flat

<u>Approved Suppliers</u>	<u>Sealer</u>	<u>VOC</u>	<u>DFT (mils)</u>
Keeler & Long	4100	0.99	1-2
International	79-W-1	1.7	1-2
Sherwin Williams	ProMar 200 Primer	0.73	1-2
Tnemec	Series 51-792	1.26	1-2
<u>Approved Suppliers</u>	<u>Intermediate</u>	<u>VOC</u>	<u>DFT (mils)</u>
Keeler & Long	K-3 Series	0.4	1-2
International	79 Series	1.7	1-2
Sherwin Williams	ProMar 200 Flat	0.44	1-2
Tnemec	Series 6	1.41	2.5-3.0
<u>Approved Suppliers</u>	<u>Finish</u>	<u>VOC</u>	<u>DFT (mils)</u>
Keeler & Long	K-3 Series	0.4	1-2
International	79 Series	1.7	1-2
Sherwin Williams	ProMar 200 Flat	0.44	1-2
Tnemec	Series	1.41	2.5-3.0

END OF SECTION



**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER: NST0401**

1. PROPOSAL FORMAT

Prefacing the proposal, the Proposer shall provide an Executive Summary, which gives in brief, concise terms, a summation of the proposal. The proposal itself shall be organized in the following format and informational sequence:

- A. **Business Organization**: State full name and address of your organization and identify parent company if you are a subsidiary. Specify the branch office or other subordinate element which will perform, or assist in performing, work herein. Indicate whether you operate as a partnership, corporation, or individual. Include the State in which incorporated or licensed to operate.
- B. **Authorized Negotiator**: Include name, address, and telephone number of person in your organization authorized to negotiate Contract terms and render binding decisions on Contract matters.
- C. **Cost Proposal**:
 - i. Complete Section 0705, Cost Proposal Sheet. Unless otherwise noted, these shall be the total and only costs to the City for performing the work specified in the Scope of Work (Section 0500).
 - ii. If applicable, describe any deviation from the Progress Payment Schedule stated in the Supplemental Purchase Provisions (Section 0400, part 8C).
- D. **Schedule**: Per the Scope of Work (Section 0500, part 7.1), the City prefers completion during the planned outage of March 27, 2015 to April 15, 2015 based on a Contract execution date by October 1, 2014.
 - i. Describe your ability and commitment to meet this schedule.
 - ii. Provide dates for the project payment milestones stated in the Supplemental Purchase Provisions (Section 0400, part 8C). This should include milestones for any intermediate deliverables such as a drawing approval.
- E. **Technical Solution & Program**: Detail your understanding of the requirement presented in the Scope of Work (Section 0500) of the solicitation and your solution/plan to accomplish the work. At a minimum, specifically provide or indicate the following:
 - i. Any deviations from any of the requirements stated in the above-referenced Scope of Work (Section 0500), including any "proposed equal" parts.
 - ii. 3-D drawing(s) for visualizing location of the proposed stack damper and access platform / ladder.
 - iii. Descriptive literature of damper and actuator, manufacturer/type, and materials of construction.
 - iv. Description of damper operation.
 - v. Describe your plan to accomplish this work.
- F. **Experience & Qualifications**: Describe only corporate experience related to performing the services specified in this solicitation. This solicitation requires that Proposers have a minimum of 10 years of

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER: NST0401**

experience fabricating, installing and commissioning heat recovery steam generators. The submittals herein shall be evidence of this minimum experience. At a minimum, specifically provide:

- i. List of customers to whom similar services have been provided, including company name, contact information, description of the services provided, date of work and contract value.
- ii. Detailed description of experience fabricating, installing and commissioning heat recovery steam generators.

- G. **Exceptions:** Be advised that exceptions to any portion of the Solicitation may jeopardize acceptance of the Proposal.

If any exceptions are taken by a Proposer to any term or condition of this RFP, the Proposer must clearly indicate each specific exception taken, include a full explanation of the reason for said exception, and include any proposed language for any alternative term as a separate attachment to the Proposal, stating clearly in writing that the Proposer's Contract or Legal staff have reviewed and proposed all such terms in the Proposer's exceptions. The failure to identify exceptions or proposed changes with a full explanation and substitute language shall constitute acceptance by the Proposer of the Solicitation as proposed by the City. The City reserves the right to reject a proposal containing exceptions, additions, qualifications or conditions not called for in the Solicitation.

2. ADDITIONAL PROPOSAL TERMS

- A. **Local Business Presence:** The City seeks opportunities for businesses in the Austin Corporate City Limits to participate on City contracts. A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation. Points will be awarded through a combination of the Offeror's Local Business Presence and/or the Local Business Presence of their subcontractors. Evaluation of the Team's Percentage of Local Business Presence will be based on the dollar amount of work as reflected in the Offeror's MBE/WBE Compliance Plan or MBE/WBE Utilization Plan. Specify if and by which definition the Offeror or Subcontractor(s) have a local business presence.
- B. **Proposal Acceptance Period:** All proposals are valid for a period of one hundred and twenty (120) calendar days subsequent to the RFP closing date unless a longer acceptance period is offered in the proposal.
- C. **Proprietary Information:** All material submitted to the City becomes public property and is subject to the Texas Open Records Act upon receipt. If a Proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. The City will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.
- D. **Proposal Preparation Costs:** All costs directly or indirectly related to preparation of a response to the RFP or any oral presentation required to supplement and/or clarify a proposal which may be required by the City shall be the sole responsibility of the Proposer.

**CITY OF AUSTIN
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PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
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3. EVALUATION FACTORS AND AWARD

A. **Competitive Selection**: This procurement will comply with applicable City Policy. The successful Proposer will be selected by the City on a rational basis. Evaluation factors outlined in Paragraph B below shall be applied to all eligible, responsive Proposers in comparing proposals and selecting the Best Offeror. Award of a Contract may be made without discussion with Proposers after proposals are received. Proposals should, therefore, be submitted on the most favorable terms.

B. **Evaluation Factors**:

- i. 100 points.
 - a. Technical Solution & Program (reference 1E) – 20 points
 - b. Experience & Qualifications (reference 1F) – 15 points
 - c. Schedule (reference 1D) – 20 points
 - d. Total Evaluated Cost (reference 1C) – 35 points
 - e. Local Business Presence (reference 2A) – 10 points

Team's Local Business Presence	Points Awarded
Local business presence of 90% to 100%	10
Local business presence of 75% to 89%	8
Local business presence of 50% to 74%	6
Local business presence of 25% to 49%	4
Local presence of between 1 and 24%	2
No local presence	0

- ii. Interviews (Optional). The City will score proposals based on items “a” through “e” above. The City may select a “short list” of Proposers based on those scores. Short-listed Proposers may be invited for interviews and/or demonstrations with the City. The City reserves the right to rescore short-listed proposals as a result of the interviews and to make an award recommendation on that basis. The City reserves the right to negotiate the actual contract scope of work and cost after submission. – 25 points

**COST PROPOSAL SHEET
CITY OF AUSTIN
STACK DAMPER
SOLICITATION: RFP NST0401 BUYER: NICOLE TURNER**

ITEM	ITEM DESCRIPTION	QUANTITY	UNIT	PRICE
1	FABRICATION AND INSTALLATION OF A HEAT RECOVERY STEAM GENERATOR EXHAUST STACK DAMPER AND ACCESS PLATFORM [Inclusive of all costs to perform the work specified in the Scope of Work (Section 0500, except part 3.2.C)]	1	LOT	
2	PRESSURE SWITCH [Inclusive of all costs to perform the work specified in the Scope of Work (Section 0500, part 3.2.C)]	1	LOT	
		<u>TOTAL</u>		

COMPANY NAME: _____

DATE: _____

SIGNATURE OF AUTHORIZED REPRESENTATIVE: _____

PRINTED NAME: _____

EMAIL ADDRESS: _____