Bid Document and Specification

WASHINGTON CITY
Grapevine Substation
Steel Structures

Decmeber 2024

Intermountain Consumer Professional Engineers, Inc.
1145 East South Union Avenue
Midvale, Utah 84047
(801) 255-1111

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DRAWING LIST

NOTICE TO BIDDERS

NOTICE TO BIDDERS:

Sealed bids will be received by Washington City for:

Washington City
GRAPEVINE SUBSTATION
SUBSTATION STEEL STRUCTURES

The bids will be for furnishing substation steel structures for the Grapevine Substation. Bids shall be in accordance with the Bid Documents prepared by Intermountain Consumer Professional Engineers, Inc.("ICPE"), hereinafter referred to as the "Engineer".

Proposals (emailed) are to be delivered to Tara Pentz (tpentz@washingtoncity.org) at Washington City (Purchaser), at their office located at 111 North 100 E, Washington City, Utah 84780 before 3:00 pm on January 31, 2025. Bids will be publicly opened and evaluated. Purchaser shall provide only one Purchase Order for the steel structures to be provided under these bid documents.

The project schedule is as follows:

Bid due date: January 31, 2025

Substation Steel Structures delivered to the project site on or before: August 1, 2025.

Washington City reserves the right to reject any or all bids or to waive any formality or technicality in any bid in the interest of Washington City.

Instructions, specifications and proposal blanks will be on file in the office of Intermountain Consumer Professional Engineers, Inc., ("Engineer") 1145 East South Union Avenue, Midvale, UT 84047, where they may be consulted or secured for the purpose of bidding.

INSTRUCTIONS TO BIDDERS

1. SCOPE OF CONTRACT

   Bidder shall be fully responsible for all labor, material and equipment necessary for complete fabrication and delivery of the steel structures as required in the Bid Documents.

2. SPECIFICATIONS, OTHER BID DOCUMENTS

   Specifications and other bidding documents may be obtained at the time and place indicated in the Notice to Bidders. Bidders shall comply with all conditions stipulated in such bidding documents.

3. PROPOSALS

   Before submitting a Proposal, each bidder shall carefully examine the Bid Documents, shall fully inform themselves as to all conditions and limitations; and shall include in the Proposal the cost of all items required by the Bid Documents. If the bidder observes that portions of the Bid Documents are at variance with applicable laws, codes, rules, regulations or contain obvious erroneous or uncoordinated information, the bidder shall promptly notify the Engineer and the necessary changes shall be accomplished by Addendum.

   a. The Proposal shall be prepared on forms as found in this bid document.
   b. Bids will bear no marks, erasures, or writing changes, other than those provided or required.
   c. No verbal or telephone bid modifications or cancellations will be considered.
   d. The bidder guarantees there shall be no revisions or withdrawal of bid amount for a period of 60 days after bid opening.
   e. Bids shall be signed by a Principal duly authorized to make contracts.
   f. Bid proposals shall reflect the cost of all work required by the bidding documents, plus additions, deletions, or modifications required by addenda issued prior to bid opening.
   g. Bids shall be submitted by mail or email to:

      Tara Pentz, Recorder
      Washington City
      111 North 100 East
      Washington City, UT 84780
      Email: tpentz@washingtoncity.org

      All bids shall be clearly marked “Bid Proposal – Washington City, Grapevine Substation Steel Structures” as indicated in Section 1, paragraph 1.3.

   h. Bid opening time and date is as per the Notice to Bidders found in this Bid Document.
   i. It is the bidder’s sole responsibility to see that their bid is received at the proper time and place. Any bid received after scheduled bid opening will be considered non-responsive.
   j. Prior to the bid opening, bidders may withdraw a bid by written request or by reclaiming bid envelopes or email.

4. INTERPRETATION OF BID DOCUMENTS

   a. If any person or entity contemplating submitting a bid is in doubt as to the meaning of any part of the specifications or other Bid Documents, such person shall submit to the Engineer a request for an interpretation or correction thereof.
   b. Request for such clarifications must be in the office of the Engineer a minimum of three (3) days prior to bid opening.
   c. The person or entity submitting the request will be responsible for its prompt delivery.

d. Any interpretation of the proposed documents will be made only be Addenda duly issued and a copy of such Addenda will be mailed or delivered to each person or entity receiving a set of documents.
e. Verbal instructions or interpretations will have no validity, regardless of source. Neither the Owner nor the Engineer will be responsible for any other explanations or interpretations of the proposed documents.

5. ADDENDA

Any Addenda issued during the time of bidding shall become part of the bid documents provided to the bidders for the preparation of the bid.

6. AWARD OF PROJECT

a. The Project will be awarded as soon as possible to the bidder that meets the following criteria: (1) ability to meet criteria as stipulated in Bid Evaluation information as required in Part 1 – General Requirements 1.4, and Part 2 Bid Forms; (2) lowest, responsible bidder based on lowest combination of base bid and acceptable alternates; (3) ability to meet time frame required in bid documents; (4) provided the bid is reasonable and is in the interests of the Purchaser to accept. The Purchaser reserves the right to waive any technicalities or formalities in any bid or in the bidding.
b. No Bidder shall consider them under contract until they receive a Purchase Order from the Purchaser.

7. QUALIFICATIONS

The Bidder's past performance and ability to perform and complete their contracts in the manner and within the time limit specified will be elements, along with the cash amount of the bid, which will be considered by the Purchaser in the letting of the Project.

8. RIGHT TO REJECT PROPOSALS

The Purchaser reserves the right to reject any or all Proposals and to waive any irregularities therein.

9. TIME IS OF THE ESSENCE

Time is of the essence in regard to all the requirements of the Bid Documents.

10. WITHDRAWAL OF BIDS

Bids may be withdrawn on written request received from bidders prior to the time fixed for opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

11. PRODUCT APPROVALS

Where reference is made to one or more proprietary products in the Bid Documents, but restrictive descriptive materials of one or more manufacturer(s) is referred to in the Bid Documents, the products of other manufacturers will be accepted, provided they equal or exceed the standards set forth in the drawings and specifications and are compatible with the intent and purpose of the design, subject to the written approval of the Engineer. Requests for the information pertaining to said approval must be submitted to the Engineer no later than four (4) working days (not including Saturday, Sunday or State holidays) prior to the bid opening. The Engineer's written approval will be in an issued Addendum. If the descriptive material is not restrictive, the products of other manufacturers specified will be accepted without prior approval provided they are compatible with the intent and purpose of the design as determined by the Engineer.

12. FINANCIAL RESPONSIBILITY OF BIDDER

Bidder shall respond promptly to any inquiry in writing by the Purchaser to any concern of financial responsibility of the Bidder.

PART 1 – GENERAL BID REQUIREMENTS

1.1 SCOPE

A. The purpose of these requirements is to describe the data and other requirements pertaining to the substation steel structures, to be purchased by Washington City for installation in the Grapevine Substation.

1.2 CORRESPONDENCE

A. All proposals shall be mailed or emailed to Washington City in accordance with Notice to Bidders.

B. All questions regarding the Bid Documents should be addressed to:

Intermountain Consumer Professional Engineers, Inc.
ATTN: Daniel Velarde
1145 East South Union Avenue
Midvale, UT 84047
Telephone: (801)255-1111
Facsimile: (801) 566-0088

1.3 BID PROPOSALS

A. Firm prices shall be quoted. The Bidder's proposal shall **NOT** include sales tax or use taxes. Any price escalation factors employed to establish an invoice price are to be clearly stated and fully explained on the Bid Forms.

B. All bids shall be marked "Washington City - Grapevine Substation Steel Structures."

C. **The Purchaser reserves the right to accept or reject any or all bids, or any portion thereof.**

D. The Purchaser reserves the right to waive minor irregularities or minor errors in any proposal if it appears to the Purchaser that such irregularities or errors were made inadvertently. Any such irregularities or errors so waived must be corrected in the Proposal in which they occur prior to the execution of any contract which may be awarded thereon.

E. All Bidders will be notified of any changes in the Bid Documents by addendum letters. Receipt of addendum letters must be acknowledged in the bid proposal.

F. **Any exceptions to the Bid Documents shall clearly be stated in the Bidder's proposal.**

1.4 BID EVALUATION

A. The Purchaser will consider price and delivery date as two of multiple factors making up the total value of the material to be purchased. Other items which will be considered in the bid evaluation are:

1. The Bidder's past performance(s) in providing tubular steel substation structures and meeting quoted deliveries.
2. The Bidder's past ability and willingness to solve problems that have arisen in a satisfactory and complete manner.
3. The Bidder's deviations from the specifications.
4. Warranties.
5. Manufacturer's cancellation policy.

1.5 PURCHASE CONTRACT

A. It is anticipated that a Purchase Order for the substation steel structures will be issued to the successful Bidder within (60) days after the due date for the receipt of the proposals. Only one Purchase Order will be issued for the substation steel structures. All bids shall remain valid for sixty (60) days.

1.6 DELIVERY AND SHIPPING

A. Delivery dates shall be indicated in the Bidders proposal and delivery shall be no later than indicated unless otherwise mutually agreed to by both parties. Firm delivery dates will be a key consideration during the bid evaluation. Date of shipment shall be as promised by the Bidder, based upon prompt receipt of all

necessary information from the Purchaser. The date of shipment shall be defined as the date the bill of lading is signed by the carrier.

B. Any change in the delivery date shall be reported to the Purchaser immediately by telephone, followed by a written confirmation and explanation thereof. The delivery date shall be extended for the period of any reasonable delay due exclusively to causes beyond the control and without the fault of the Seller.

C. Shipping shall be FOB destination. The title to the substation steel structures furnished hereunder shall pass to the Purchaser at the destination point.

D. On the same day that any shipment to the Purchaser is originated, a transmission, including the following, shall be forwarded to the Purchaser:

1. Packing List - Two (2) copies.
2. Bill of Lading - Original and two (2) copies.
3. Packing list shall also accompany each shipment.

1.7 INVOICING

A. Invoices shall be submitted in triplicate to:

Washington City
Attn: Rick Hansen
111 North 100 East
Washington City, Utah 84780

1.8 PAYMENT

A. Upon shipment of all of the steel structures, the Seller shall submit to the Purchaser a detailed invoice in triplicate of the substation steel structures shipped. Within 30 days after delivery of the substation steel structures, the Purchaser shall make payment therefore to the Seller.

1.9 CANCELLATION

A. In the event the Purchaser shall be required, or deems it advisable, to suspend or terminate the work being performed pursuant to these Bid Documents, the Purchaser may do so at any time by written notice to the Seller. In such cases, the Seller shall take whatever action with respect to work in process as would minimize the Seller's claim against the Purchaser. The Purchaser will pay the Seller a reasonable suspension or termination charge for all disbursements or expenses which the Seller has incurred or become obligated for prior to the date of notice of cancellation, less the reasonable resale value of the materials which shall have been obtained or ordered to become an integral part of the work, and excluding any allowance for anticipated profits on the unperformed portion of the work. The reimbursement portions of this section shall not apply to cancellations caused by design changes by the Manufacturer not authorized by the Purchaser or by delivery of material beyond the quoted delivery date(s) not authorized by the Purchaser.

1.10 EXCEPTIONS

A. Any exceptions to the Bid Documents shall be clearly stated in the Bidder's proposal. The fact that there are exceptions will not necessarily preclude the selection of the Bidder's proposal. Exceptions will be itemized and considered in the evaluation of the proposal. If no exceptions to the Bid Documents are taken by the Bidder, this shall also be clearly stated in the Bidder's proposal.

B. Alternative offerings will be considered, but they must be clearly indicated as alternatives.

1.11 WARRANTY

A. Manufacturer shall warrant to Purchaser that the materials and/or services to be furnished hereunder are of the highest quality and free from defects in material, workmanship, and title and will be of the kind described in the Bid Documents and pertinent purchase order. All materials shall be new. The Manufacturer's warranty shall be effective for a minimum period of twelve (12) months after the date of shipment to Purchaser. Terms of Manufacturer's warranty shall be included in the bid proposal and will be a criterion for evaluation of the proposal.

1.12 STANDARDS

A. Unless otherwise stated, the latest revisions of the standards of ANSI, NEMA, IEEE, ASTM, NEC, NESC and UL, shall be met in the design, testing, and manufacturing of the substation steel structures covered by these Bid Documents. In the event a conflict occurs between these standards and the specifications included subsequently herein, the more stringent requirements shall govern.

B. All materials and devices shall be in accordance with the applicable requirements of the Federal "Occupational Safety and Health Standards."

C. Only new equipment/materials of recent manufacture shall be furnished.

1.13 INSPECTION

A. A representative of the Purchaser shall be allowed free access at all reasonable times to the Manufacturer's facilities and those of the manufacturers suppliers for inspection of the Tubular Steel Structures, or any of their parts, and to obtain information on the progress of the work. Any work or material found to be defective or which does not meet the requirements of this Specification may be rejected and shall be replaced by the Manufacturer at its own expense. Such inspection, however, shall not relieve the Manufacturer from responsibility for the quality and correctness of the work.

1.14 MISCELLANEOUS MATERIALS AND SERVICES

A. Miscellaneous materials and services not otherwise specifically called for shall be furnished by the Bidder in accordance with the following:

1. All nuts, bolts, washers, special fasteners, backing rings, etc., between components and equipment furnished under this specification.
2. All special tools or lifting beams and lugs for offloading.
3. The use of all special tools required for erection of the structures. Erection tools shall remain the property of the Bidder and all shipping costs to and from the jobsite shall be at the Bidder's expense.

1.15 BASE BID

A. The base bid consists of the following steel structures:

1. (1) 69 kV H-Frame Structure – Sheet S101 & S102.
2. (6) 69 kV Single Phase Low Bus Support – Sheet S103.
3. (3) 69 kV Single Phase High Bus Support – Sheet S104.
4. (3) 69 kV Switch Support Structure – Sheet S105.
5. (1) Regulator Bypass Structure – Sheet 106 &S107
6. (1) 15kV Low Switch Support Structure – Sheet 108
7. (1) 15kV High Switch Support Structure – Sheet 109
8. (3) 15kV Single Phase Bus Support Structure – S110
9. (1) 15kV Low Recloser Structure – Sheet 111 & S112
10. (2) 15kV High Recloser Structure – Sheet 111 & S112
11. (3) Static Wire Support Structure – Sheet 113
12. (8) Switch Operating Platform – Sheet S115.
13. (1) Lot Anchor Bolts, Nuts & Washers – Sheet S116.

1.16 BID ADDER

A. The Adder bid consists of the following steel structures:

1. (1) 69 kV Switch Support Structure – Sheet S105.
2. (1) Regulator Bypass Structure – Sheet 106 &S107

3. (1) 15kV Low Switch Support Structure – Sheet 108
4. (3) 15kV Single Phase Bus Support Structure – S110
5. (1) 15kV Low Recloser Structure – Sheet 111 & S112
6. (2) 15kV High Recloser Structure – Sheet 111 & S112
7. (1) Static Wire Support Structure – Sheet 113
8. (1) 15kV Three Phase Bus support – Sheet S114
9. (2) Switch Operating Platform – Sheet S115.

PART 2 – BID FORM

Bidder: _____ Date: _____

The undersigned, in compliance with Instructions to Bidders, having examined the Bid Documents and being familiar with all of the conditions affecting the work, does hereby propose to furnish all required substation steel structures, including anchor bolts, all bolts, nuts and washers required for assembly, for the Washington City Grapevine Substation in accordance with the Bid Documents as prepared by Intermountain Consumer Professional Engineers, Inc., within the time(s) set forth and at the price(s) stated below. The price(s) include all expenses incurred in providing and delivering the substation steel structures as specified in the Bid Documents.

I/We acknowledge receipt of the following addenda:

Addenda No.	Date Received

STEEL STRUCTURE PRICING
Base and Adder Bid

I/We agree to provide substation steel structures, including anchor bolts with nuts and washers and bolts, nuts and washers required for steel structure assembly, for the Washington City Grapevine Substation for the lump sum amount stated below.

_____ Dollars($_____)
(In case of discrepancy, written amount shall govern)

The quantities and pricing for the substation steel structures-base bid and adder bid, to be furnished shall be as shown in the following table.

STRUCTURE DESCRIPTION	REFERENCE DRAWING NO.	BASE QTY	ADDER QTY	UNIT	UNIT PRICE	BASE BID PRICE	ADDER BID PRICE
69 kV Dead End Structure	S101 & S102	1	-	Each	$	$	$
69 kV Single Phase Low Bus Support Structure.	S103	6		Each	$	$	$
69 kV Single Phase High Bus Support Structure.	S104	3	-	Each	$	$	$
69kV Switch Support Structure	S105	3	1	Each	$	$	$
Regulator Bypass Structure	S106 &S107	1	1	Each	$	$	$
15kV Low Switch Support Structure	S108	1	1	Each	$	$	$
15kV High Switch Support Structure	S109	1	-	Each	$	$	$
15kV Single Phase Bus Support Structure	S110	3	3	Each	$	$	$
15kV Low Recloser Structure	S111&S112	1	1	Each	$	$	$
15kV High Recloser Structure	S111&S112	2	2	Each	$	$	$
Static Wire Support Structure	S113	3	1	Each	$	$	$
15kV Three Phase Bus Support	S114		1	Each	$	$	$
Switch Operating Platform	S115	8	2	Each	$	$	$
Anchor Bolts	S116	Lot	-	Lot	$	$	$

STRUCTURE DESCRIPTION	REFERENCE DRAWING NO.	BASE QTY	ADDER QTY	UNIT	UNIT PRICE	BASE BID PRICE	ADDER BID PRICE
				TOTAL		$	$

Delivery of the Substation Steel Structures will be _____ ( ) weeks ARO.

Delivery of the Anchor Bolts will be _____ ( ) weeks ARO.

Substitutions:

The following substitutions of materials and/or equipment are proposed:

Item	Manufacturer and Description	Add/Deduct
_____	_____	$ _____
_____	_____	$ _____

SUBMITTED BY:

_____
Name (Printed)

_____
Signature

_____
Title

PART 3 – ENGINEERING DATA

3.1 GENERAL

A. This section outlines the requirements for data which the Bidder shall submit to the "Engineer".

3.2 CORRESPONDENCE

A. Engineering data shall be emailed to the Engineer as follows:

Original copy to:

Daniel.Velarde@icpeinc.com

B. Letters of transmittal shall accompany all submittals of engineering data and shall include a list of the data included in the transmittal. Lists shall include manufacturer's drawing numbers identified with the corresponding project structure nomenclature as applicable. All correspondence shall be identified with the project name, specification number, project number and manufacturer's order number.

3.3 TEST AND INSPECTION DATA

A. Certified copies of test and inspection reports shall be provided by the Bidder for all tests and inspections conducted on the specified structure. Three copies of each report shall be submitted to the Purchaser within two (2) weeks after completion of each test or inspection.

3.4 INSTRUCTION MANUALS

A. Two Instruction Manuals for the unloading, storage, installation and erection of the structures shall be furnished.

B. Content

1. Manuals shall include the following information specific to the furnished equipment.
    a. Table of Contents and index tabs
    b. Description of structures
    c. Instructions in the methods of receiving, inspection, storage and handling prior to installation.
    d. Installation and erection instructions
    e. Assembly drawings
    f. Parts lists
2. The above listed requirements are minimum. Additional information which is necessary for proper installation of the structures shall also be included.

PART 4 – GENERAL STEEL STRUCTURE SPECIFICATION

4.1 GENERAL

A. This General Steel Structure Specification applies to all steel structures and is supplementary to the detailed specifications included in Part 5 – Detailed Steel Structure Specification. If requirements specified herein are in conflict with requirements specified in the detailed specification, the detailed specification shall govern to the extent of such conflict.

B. The Proposal shall be based upon the use of materials complying fully with the requirements of this specification. It is recognized that the Bidder may have standardized on the use of certain components, materials, processes, or procedures different than those specified herein. Alternates in addition to the base proposal on the basis of supplying the Bidder's standard components, materials, processes, or procedures will be considered. The alternate proposal shall clearly stipulate the alternate proposed, the specific exceptions to the specifications, and the price change applicable for supplying such alternate.

4.2 REFERENCED STANDARDS

A. Reference to the standards of any technical society, organization, or association, or to the laws, ordinances, or codes of governmental authorities shall mean the latest standard, code, or specification adopted, published, and effective at the date of taking bids unless specifically stated otherwise in these specifications.

B. The specifications, codes, and standards referenced in these specifications (including addenda, amendments and errata) shall govern in all cases where references thereto are made except where they conflict with these specifications. In case of conflict between the referenced specifications, codes or standards and these specifications, the latter shall govern to the extent of such difference.

4.3 MATERIALS AND EQUIPMENT

A. Unless specifically provided otherwise in each case, all materials furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused and undamaged.

B. Individual parts shall be manufactured to standard sizes and gauges so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable.

4.4 IDENTIFICATION

A. All correspondence, shipping notices, specifications, engineering data, and other documents pertaining to the equipment and materials furnished under these specifications shall be identified by the Purchaser's name, the project name, the unit number and the specification number.

4.5 PRESHIPMENT INSPECTION

A. The Purchaser reserves the right to inspect the structures prior to shipment.

B. The Bidder shall notify the Purchaser of all shipments not less than 30 days prior to the date of shipment to allow the Purchaser to inspect the structures if so desired.

4.6 SHIPMENTS

A. Shipments to the project site shall be delivered to the following location(s).

1. Grapevine Substation, Washington City, Utah 84780.

B. The Bidder shall discuss with the Purchaser the routing of shipments and shall route the same as indicated by the Purchaser provided freight rates are no greater than by other routes.

C. The Bidder shall ship the anchor bolts at least 8 weeks prior to shipment of the substation steel structures.

4.7 SHIPPING NOTICE

A. The Bidder shall submit to the Purchaser one copy of shipping notice describing each shipment of material or equipment. The shipping notices shall be mailed to arrive approximately 5 days ahead of the estimated shipment arrival.

B. Normal hours during which the Purchaser will receive, inspect and unload the equipment and material are 7:00 a.m. - 2:30 p.m., local time, Monday through Thursday. Equipment and material will not be accepted and unloaded outside of these hours. Bidder shall be responsible for all associated layover costs.

C. Failure to give proper five day notice will not guarantee the receiving of equipment and material by the Purchaser. Shipment arrival after 1 p.m. on a Thursday may not be accepted until 7:00 a.m. on the following Monday. Bidder shall be responsible for all associated layover costs.

4.8 MATERIALS LIST

A. The Bidder shall prepare and submit with the first shipping notice two copies of an itemized materials list covering all structures and material furnished under these specifications. The structures and materials list shall be in sufficient detail to permit an accurate determination of the completion of shipment.

4.9 CORRECTION OF ERRORS

A. Structures and materials shall be complete in all respects within the limits herein outlined. All errors or omissions required to be corrected in the field shall be done by the manufacturer or his duly authorized representative at the Bidder's expense.

4.10 QUALITY ASSURANCE

A. The Bidder shall maintain a quality assurance program that provides that structures, materials, and services under these specifications whether manufactured or performed within the Bidder's plant or at another source shall be controlled at all points necessary to assure conformance to contractual requirements. The program shall provide for the prevention and ready detection of discrepancies and for timely and positive corrective action. The Bidder shall make objective evident of quality conformance readily available to the Purchaser and the Engineer. Instructions and records for quality assurance shall be controlled.

4.11 SHOP COATING

A. Shop coating systems for steel structures, anchor bolts, and other ferrous metal surfaces shall be as specified.

1. Galvanized – Anchor bolts
2. Galvanized – Substation steel structures

B. All metallic surfaces subject to corrosion shall be protected by suitable coatings, as specified, applied in the shop. Surfaces which will be inaccessible after assembly shall be protected for the life of the structure. The surfaces shall be cleaned and prepared prior to coating in the shop.

C. Exposed surfaces of anchor bolts shall be finished thoroughly cleaned, and filled as necessary to provide a smooth uniform base for galvanizing.

4.12 PROTECTION

A. All structures shall be suitably protected during shipment, handling and storage.

B. Coated surfaces shall be protected against impact, abrasion, discoloration, and other damages. Surfaces which are damaged shall be repaired.

C. Returnable containers and special shipping devices shall be returned by the Purchaser at the Bidder's expense.

PART 5 – DETAILED STEEL STRUCTURE SPECIFICATION

5.1 GENERAL

This section covers design, materials and fabrication for rectangular tubular substation steel structures.

A. The structures furnished under these specifications shall include all structures to be supplied as rectangular tubular.

B. The quantities required for each structure type are indicated on the drawings included at the end of this document and Section 2 – Bid Forms of this specification.

C. Structures will be self-supporting as indicated on the drawings.

D. The structures shall be complete with all field connection bolts required for erecting the structures.

E. All testing and welding qualifications shall be performed by an independent testing laboratory retained by the Bidder and accepted by the Purchaser. All testing and welding qualification expenses shall be paid by the Bidder.

F. Certain dimensions indicated on the Engineer's drawings shall be adjusted, with written approval by the owners Engineer, as required to suit the equipment furnished by the Purchaser. There will be no adjustment in price because of these requirements.

5.2 DRAWINGS

A. Field erection data and drawings shall include written instructions for proper structure assembly, erection, and inspection, including explicit step by step instructions for proper installation, tightening, and inspection of the connection bolts being furnished.

5.3 CODES AND STANDARDS

Materials shall conform to the applicable codes or standards mentioned in this section.

A. Except as otherwise specified or specifically indicated on the drawings, all materials furnished and work performed in connection with the work under this section shall be in conformity with the AISC "Manual of Steel Construction, Ninth Edition".

5.4 MATERIALS

A. Materials shall be new and undamaged and shall conform to pertinent AISC and ASTM standard specifications and the following requirements:

MATERIAL	STANDARD
W and WT steel shapes	ASTM, A992, Grade 50
Other steel shapes and plates	ASTM A36
Rectangular structural tubular members	ASTM A500, Grade B; 3/16 inch minimum wall thickness
Connection bolts for equipment mounting	ASTM A307 tensile strength bolts and nuts, flat or beveled washers, and MacLean-Fogg “M-F Lock Nut No. 1 “ locking devices or lock washer. All bolting materials shall be galvanized where any connection component is galvanized.
Baseplates	ASTM A633-E weldable quality or ASTM A36; cast or fabricated steel; 3/4” minimum thickness.
Structure framing bolts	ASTM, A325
Anchor Rods (Bolts)	ASTM, F1554, Grade 36
Welding	AWS DI. 1
Welding electrodes	Low hydrogen types (American made including flux) E70XX
Galvanizing all materials	

Shapes and plates	ASTM A 123
Bolts, nuts, and washers	Galvanized as specified in ASTM A153 and ASTM A325

B. Certified mill reports of mechanical and chemical properties of materials shall be submitted to the Engineer for review. There will be no exception permitted to this requirement.

C. Bolt Inspection - Manufacturer

1. Bolts shall be inspection tested, by the manufacturer, prior to shipment in accordance with the Shipping Lot Method described in ASTM A325. A copy of the inspection test reports shall be forwarded by the Bidder to the Purchaser and the Engineer.
2. Random samples of the bolts will be field tested to verify that bolt tensile requirements and chemical composition are met. A lot shall be rejected if any field test or metallurgic investigation fails to meet the applicable test requirements.

D. Field Connection Bolts

1. Field connection bolts, nuts, locking devices, and washers shall be furnished for all structure field connections with an overage of 5 percent plus five bolts of each type, size, and length. The length of bolts shall be sized to provide sufficient projection for two washers, nut, and locknut. With locknuts in place, bolt projection beyond the locknut shall be from 1/4 inch to ½ inch inclusive.
2. Smooth beveled washers shall be furnished for use when the bearing faces of the bolted parts will have a slope of 1:20 or greater with respect to a plane normal to the bolt axis.
3. Bolting materials shall be shipped in sturdy kegs or pails which shall be marked with the size, length, count, and other descriptive data as required to fully describe the contents.

5.5 FABRICATION

A. Structures shall be fabricated in conformity with the dimensions, arrangements, sizes, and weights or thicknesses indicated on the drawings or stipulated in the specifications. Members shall be fabricated in accordance with AISC standards, specifications, and details unless otherwise indicated on the successful Bidder's drawings or specified herein.

B. When delivered, members shall be straight and free from warp, unauthorized splices and bends, or local deformations. Holes and other provisions for field connections shall be accurate and shop checked to provide proper fit when the structure is field assembled. Punching, drilling, and reaming of the holes shall be done in the shop before coating.

C. Fabricated materials shall conform to the tolerances specified in the AISC Manual and ASTM A6. In addition, the allowable tolerance for sweep shall be no more than 1/8 inch in 10 feet of length regardless of the type of steel section. The Bidder shall cull out or straighten materials which do not comply with the specified tolerances. Materials which do not comply with the specified sweep and camber requirements may be rejected.

D. Base plates shall be checked after fabrication and will be rejected if anchor bolt holes are not within 1/32 inch of their theoretical location with respect to the center of the anchor bolt group or cluster.

E. Contact surfaces at all column splices and at all other joints, depending upon contact bearing, shall have the bearing surfaces prepared to a common plane by milling, sawing, or other acceptable means. Shearing, flame cutting, and chipping shall be performed carefully and accurately. Baseplates, fillers, stiffeners, and connection plates shall be neatly fitted and shall not have ragged edges. Holes shall be cut, drilled, or punched at right angles to the surface and shall not be made or enlarged by burning. Holes shall be clean-cut without torn or ragged edges, and burrs resulting from drilling or reaming operations shall be removed with the proper tool.

F. Bolt holes shall be provided for mounting equipment, conduit, and grounding attachments as indicated on the drawings.

G. Shop connections shall be all welded and field connections shall be all bolted. Bolted connections shall be bearing type with all threads excluded from the shear planes of the connected parts.

H. Bolting. ASTM A394 bolted connections shall be securely wrench tightened. Wrench tightened is defined as 75 to 100 foot-pounds of torque on 1/4 inch bolts. Wherever clearances allow, bolts shall be inserted from the outside to place the nuts on the least visible side of each connection. Smooth beveled washers shall be installed where the bearing faces of the bolted parts have a slope of 1:20 or greater with respect to a plane normal to the bolt axis. Locknuts shall be finger tightened to contact the nut, then wrench tightened an additional one-half to one full turn. Nuts and bolts shall be handled and installed in a manner that will not damage the finish. Nuts shall be free spinning.

I. Anchor Rods (Bolts). Anchor rods (see included schedule), nuts, and washers furnished under this section shall be as scheduled and detailed on the drawings. Anchor bolts, 1 ½ " and less, and nuts, washers shall be full length hot-dip galvanized after fabrication, threads being undercut to provide a tolerance equal to ANSI Class 2A. Each bolt shall be furnished with two nuts and washers and sufficient threads to permit a nut to be installed on each side of the concrete form or template. For anchor bolts, larger than 1 ½ ", only the top 18 " of the anchor bolt cage must be galvanized.

5.6 WELDING

A. Except as otherwise specified, all welds, welding, and related operations for carbon steel and low alloy steel structures shall be in conformity with, or qualified by, the applicable provisions of the AWS Structural Welding Code, AWS D1.1 (AWS), as issued by the American Welding Society.

B. Welding shall be performed using only those joint details which have a prequalified status when performed in accordance with the AWS. All welders, welding operators, and tackers shall be qualified by an independent testing laboratory in accordance with the applicable provisions of the AWS. Accurate records of welder, welding operator, and tacker qualifications 'shall be maintained by the Bidder and shall be available to the Purchaser and the Engineer. All fillet welds indicated but not dimensioned on the Engineer's drawings shall be continuous and shall develop the full shear strength of base metal of the least strength component unless otherwise indicated on the drawings.

C. Components shall be thoroughly cleaned before welding. Components shall be accurately fitted and rigidly secured in position during welding to provide a sound full strength weld without distortion. Weld surfaces shall be smooth and uniform and shall be thoroughly cleaned of all slag and flux before galvanizing. All welds and weld sizes shall be indicated on the drawings.

D. General Inspection

1. Acceptance criteria for inspection shall be in accordance with Section 6 of AWS.
2. The Contractor shall be responsible for inspection of the work to assure conformance to the requirements of these documents. Personnel responsible for visual inspection and acceptance of welding shall be Certified Welding Inspectors qualified and certified in accordance with American Welding Society AWS QC1, Standard for Qualification and Certification of Welding Inspectors.
3. Personnel performing welding inspection shall be responsible for verifying that all aspects of welding operation, except nondestructive testing, are in accordance with the requirements defined in Section 4 of the AWS.

E. Nondestructive Testing

1. Nondestructive testing shall be provided in accordance with the requirements of Section 6 of the referenced AWS code as follows.

    a. Personnel performing nondestructive testing shall be qualified in accordance with the current edition of the American Society for Nondestructive Testing Recommended Practice No. SNT-TC-IA.
    b. Magnetic particle inspection and ultrasonic inspection shall both be provided on structures at all critical welds. All complete penetration welds and circumferential welds are considered critical welds.
    c. Inspection and evaluation of the test data shall be performed by persons qualified in accordance with the requirements of Section 6 of AWS. The Bidder shall provide the services of an independent testing laboratory to perform the nondestructive testing services. Copies of the test reports covering this inspection shall be furnished to the Purchaser and the Engineer. There will

be no exception permitted to the requirements for test reports. Any defective weld shall be removed, rewelded, and reinspected at the Bidder's expense.

5.7 IDENTIFICATION

A. All separate structural members and parts shall be plainly marked, as an aid in erection, with the identifying mark on the member corresponding to the identical mark on the erection drawings.

B. Marks shall be metal stamped into each member in characters not less than ½ inch high. Stamping shall be performed before galvanizing, but marks shall be clearly legible after galvanizing. Marks shall be painted on the galvanized members with nonpermanent paint in characters not less than I inch high.

C. Connection materials shall be packaged in separate containers with durable fade proof and weatherproof markings.

5.8 FINISHES

A. All structure components shall be hot dip galvanized steel in accordance with the Bid Documents and structure drawings. Anchor bolts shall be hot dip galvanized.

1. Galvanizing of anchor bolts shall be performed in accordance with the following specifications; as applicable:

   a. ASTM A-123 – Zinc (Hot-Dip Galvanized) coatings on products fabricated from rolled, pressed and forged steel shapes, plates, bars and strips.
   b. ASTM A-143 – Safeguarding against embrittlement of hot-dip galvanized structural steel products and procedure for detecting embrittlement.
   c. ASTM A-153 – Zinc coating (hot dip) on iron and steel hardware.
   d. ASTM A-376 – Measuring coating thickness by magnetic field or eddy current (Electromagnetic) test methods.
   e. ASTM A-384 – Safeguarding against warpage and distortion during hot-dip galvanizing of steel assemblies.
   f. ASTM A-780 – Repair of damaged hot-dip galvanized coatings.

2. Anchor bolts 1½” in diameter or less shall be galvanized over their entire length. Anchor bolts larger than 1½” in diameter may be galvanized for the top 18” of bolt as determined by the Bidder.
3. Structure assembly bolts shall be galvanized.

B. Tubular horizontal cross members with an open end(s) shall be sealed to prevent small birds from roosting or nesting in the members.

Structure Drawings

GENERAL NOTES

1. FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2021 EDITION.
2. SEE CHAPTER 35 FOR CORRESPONDING REFERENCED STANDARD EDITIONS.
2. DRAWING INFORMATION SHALL CONTROL IF CONFLICTING WITH THESE NOTES OR THE PROJECT SPECIFICATIONS.
3. MATERIAL PLACEMENT SHALL BE AS RECOMMENDED BY MANUFACTURER.
4. APPROVALS FOR ALL MATERIALS, SUBSTITUTIONS AND OTHER ITEMS SHALL BE BY THE ENGINEER.
5. COORDINATE DIMENSION, OPENINGS, EMBEDDED ITEMS, OTHER CONSTRUCTION TRADE ITEMS AND ANY OTHER CONDITION AFFECTING PROPER PROJECT COMPLETION.
6. DRAWINGS INDICATE STRUCTURES IN FINAL FORM CAPABLE OF SUPPORTING DESIGN LOADINGS. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT DURING CONSTRUCTION AS REQUIRED.
7. REPORT ANY PROJECT OMISSIONS OR DISCREPANCIES TO THE OWNER IMMEDIATELY.
8. THE LATEST EDITION OF CODES AND STANDARDS SHALL APPLY UNLESS NOTED.
9. DESIGNED TO NESC MEDIUM, (RULE 250B) & HIGH WIND, (250C) CRITERIA.

DESIGN CRITERIA

INTERNATIONAL BUILDING CODE (IBC) EDITION & NATIONAL ELECTRIC SAFETY CODE (NESC)
MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES – SEI/ASCE 7
SEISMIC: CATEGORY C

MCE PARAMETERS – SDS = 0.474, SD1 = 0.180
SITE CLASS D
IMPORTANCE FACTOR = 1.25
MODAL RESPONSE SPECTRA ANALYSIS PROCEDURE

WIND LOAD: 90 MPH, NESC 250 RULES

LIVE LOAD: FLOOR = 50 PSF

STEEL NOTES

1. DESIGN, FABRICATION, ERECTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE AISC "MANUAL OF STEEL CONSTRUCTION" , IBC AND ASCE 7.
2. STRUCTURAL STEEL SHALL BE NEW WITH ¼" MINIMUM WALL THICKNESS UNLESS OTHERWISE NOTED. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER. MATERIAL SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS UNLESS OTHERWISE NOTED ON THE DRAWINGS:

   STEEL W & WT SHAPES – A992 (fY=50 KSI)
   STEEL PLATES, RODS & OTHER SHAPES – A36
   STRUCTURAL FRAMING BOLTS – A325
   EQUIPMENT MOUNTING BOLTS – EQUIPMENT MANUFACTURER FURNISHED OR RECOMMENDED FLAT OR BEVELED WASHERS AND MAC LEAN–FOGG "M–F LOCK NUT NO.1".
   STEEL TUBING (HSS) – A500, GR B, Fy = 46 ksi (EXPANDED METAL CAP ON OPEN ENDS)

3. STRUCTURES ARE DESIGNED AS STABLE UNITS AFTER ALL PARTS ARE IN PLACE. THE STEEL ERECTION CONTRACTOR SHALL PROVIDE THE NECESSARY SHORING AND BRACING TO INSURE STABILITY DURING ERECTION.
4. BOLTED CONNECTIONS SHALL HAVE (2) 3/4" DIAMETER HIGH STRENGTH BOLTS MINIMUM UN. BOLTS SHALL HAVE A NUT AND (2) WASHERS PLACED SNUG TIGHT IN DRILLED OR PUNCHED HOLES 1/16" LARGER THAN THE BOLT SIZE. EQUIPMENT CONNECTIONS SHALL COMPLY WITH MANUFACTURER RECOMMENDATIONS.
5. WELDED CONNECTIONS SHALL BE MADE WITH E–70XX ELECTRODES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF "AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE" (AWS D1.1). FIELD WELDING IS PERMITTED ONLY WHERE SHOWN ON THE DESIGN DRAWINGS OR APPROVED BY THE ENGINEER. WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH AWS QC7.
6. CONTRACTOR SHALL PROVIDE SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM MAGNETIC PARTICLE AND ULTRASONIC NONDESTRUCTIVE TESTING ON CRITICAL WELDS, INCLUDING COMPLETE PENETRATION AND CIRCUMFERENTIAL WELDS, IN ACCORDANCE WITH AWS, SECTION 6. AS DIRECTED BY THE OWNER COPIES OF TEST REPORTS SHALL BE FURNISHED TO THE ENGINEER AND ANY DEFECTIVE WELDS REMOVED, REWELDED AND RE–INSPECTED AT CONTRACTORS EXPENSE.
7. GRATING SHALL BE WELDED BAR GRATING WITH 1¼"x 3/16" BEARING BARS SPACED AT 1 3/16" c/c AND CROSS BARS SPACED AT 4" c/c. STAIR TREADS SHALL BE STANDARD GRATING WITH NON–SKID NOSING UNLESS NOTED.
8. FABRICATOR SHALL BE RESPONSIBLE FOR ANY STEEL DETAILING REQUIRED IN ADDITION TO WHAT IS SHOWN ON THE DRAWINGS.
9. STRUCTURAL STEEL SHALL BE ZINC COATED BY HOT DIP GALVANIZING, AFTER MEMBER IS FABRICATED. VENT HOLES SHALL BE PROVIDED AS REQUIRED AND A G90 COATING SHALL BE APPLIED IN ACCORDANCE WITH ASTM STANDARDS A123, A143, A153, A384, A385 AND REPAIRED IN ACCORDANCE WITH A780.
10. ALL GUSSET PLATES SHALL BE ⅜" MIN THICKNESS, UNLESS NOTED.

ABBREVIATIONS

AROD	ANCHOR ROD
APPROX	APPROXIMATE
AS&N	AS SHOWN AND NOTED
BC	BOLT CIRCLE
BOT	BOTTOM
B/	BOTTOM OF
BRK'T	BRACKET
C/C	CENTER TO CENTER
CTR'D	CENTERED
CHK'D PL	CHECKERED PLATE
CLR	CLEARANCE/CLEAR
COL	COLUMN
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
CJ	CONTROL JOINT
CONST	CONSTRUCTION
DIA	DIAMETER
DN	DOWN
DL	DEAD LOAD
DWG	DRAWING
EA	EACH
EF	EACH FACE
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDMENT/EMBED
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
FAB	FABRICATOR
FDN	FOUNDATION
FS	FAR SIDE
FOF	FACE OF FLANGE
FIN	FINISHED/FINISH
FLR	FLOOR
GA	GAGE
GL	GIRT LINE
GR	GUARD RAIL
GRT'G	GRATING
H/RAIL	HANDRAIL
HEX	HEXAGONAL
HP	HIGH POINT
ID	INSIDE DIAMETER
JT	JOINT
k	KIPS
KB	KNEE BRACE
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT

ABBREVIATIONS (Cont.)

MFR	MANUFACTURER
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MC	MOMENT CONNECTION
MSL	MEAN SEA LEVEL
MT'G	MOUNTING
NICS	NOT IN CONTRACT SCOPE
NTS	NOT TO SCALE
NS	NEAR SIDE
OD	OUTSIDE DIAMETER
OPNG	OPENING
PIA	POST INSTALLED ANCHOR
PL	PLATE
PR	PAIR
PREP	PREPARE
PLC'S	PLACES
PLTF	PLATFORM
PT	POINT
PROJ	PROJECTION
QTY	QUANTITY
RAD	RADIUS
REF	REFERENCE
R	RISER
REQ'D	REQUIRED
REV	REVISION
SCHED	SCHEDULE
SH	SHEET
SIM	SIMILAR
SPC'S	SPACE/SPACES
SQ	SQUARE
SPEC	SPECIFICATION
SLRS	SEISMIC LOAD RESISTING SYSTEM
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STIFF	STIFFENER
SYMM	SYMMETRICAL
T & B	TOP AND BOTTOM
T/	TOP OF
T	TREAD
TOT	TOTAL
TYP	TYPICAL
UN	UNLESS NOTED
VERT	VERTICAL
XFMR	TRANSFORMER
WMS	WIRE MESH SCREEN
WP	WORK POINT
WT	WEIGHT
W	WIDE FLANGE
WWF	WELDED WIRE FABRIC
W/	WITH

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ENGR.	ML	Date	–
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APPD.	–	Date	–

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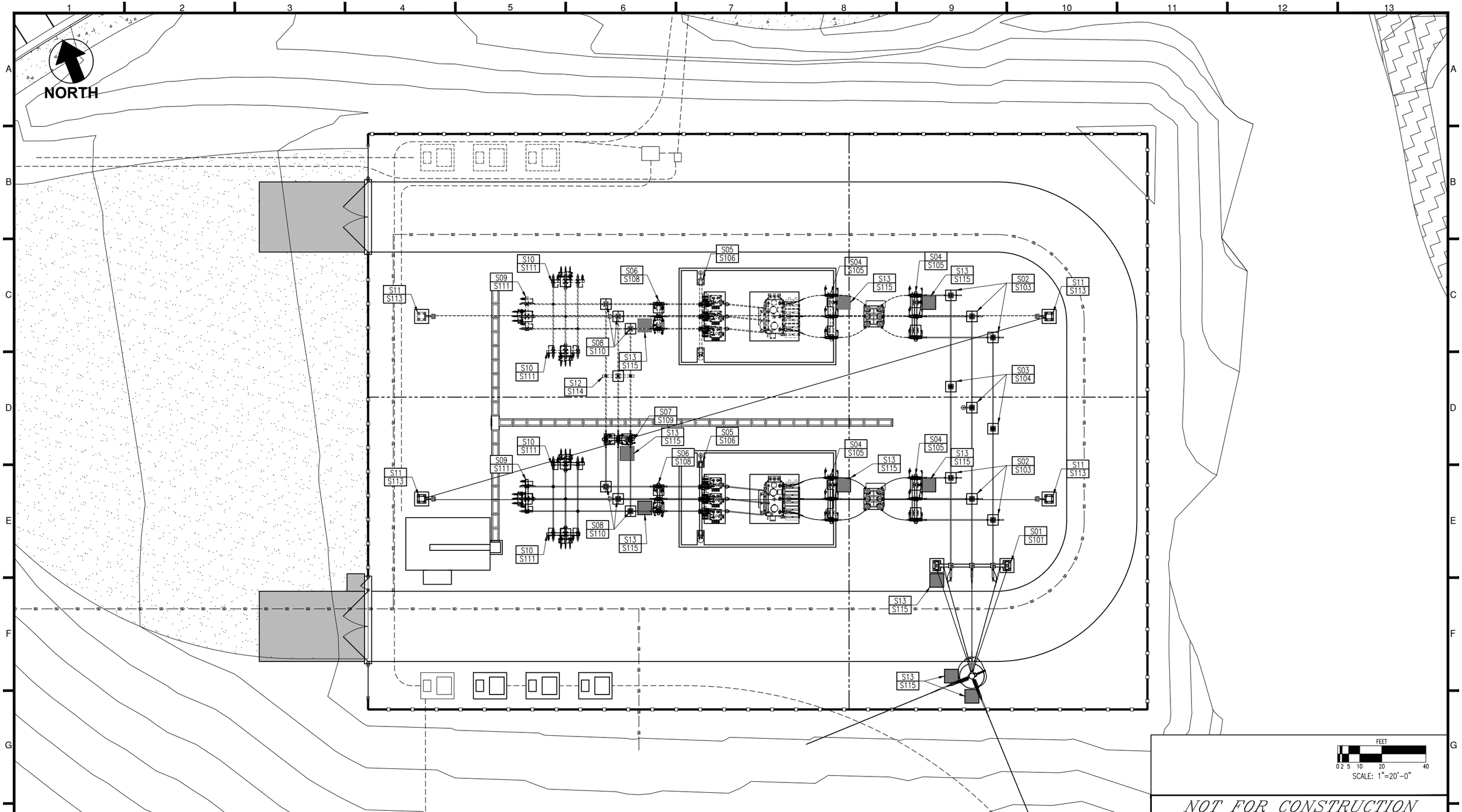
WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
GENERAL NOTES

SCALE	DRAWING No.	REVISION
1"=20'–0"	071–080–S001	A
Project No. 071–080		

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S001.dwg



FEET
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WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
PLAN VIEW

SCALE	DRAWING No.	REVISION
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Project No. 071-080		

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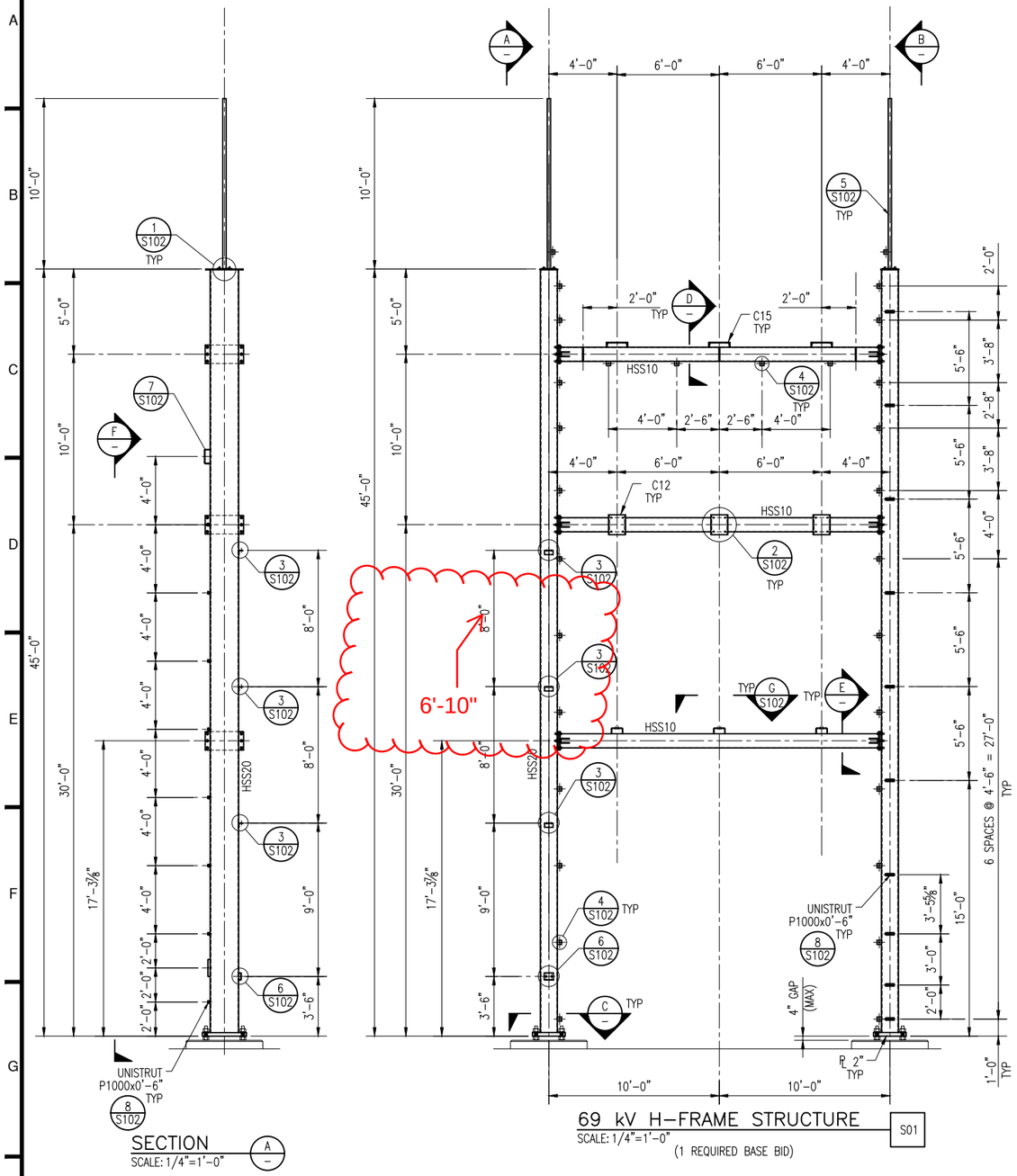

SECTION
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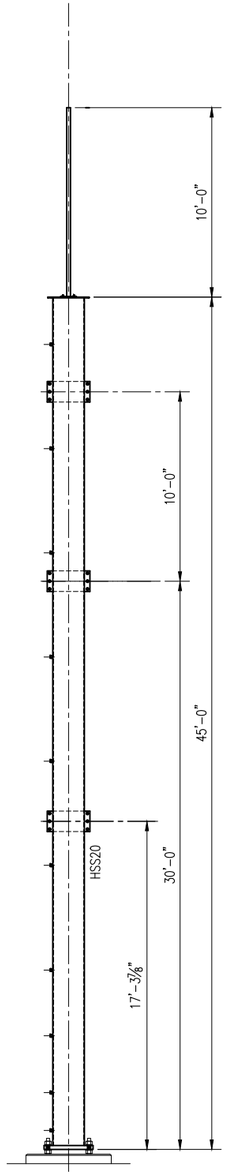
A

69 kV H-FRAME STRUCTURE
SCALE: 1/4"=1'-0"
(1 REQUIRED BASE BID)
S01



SECTION
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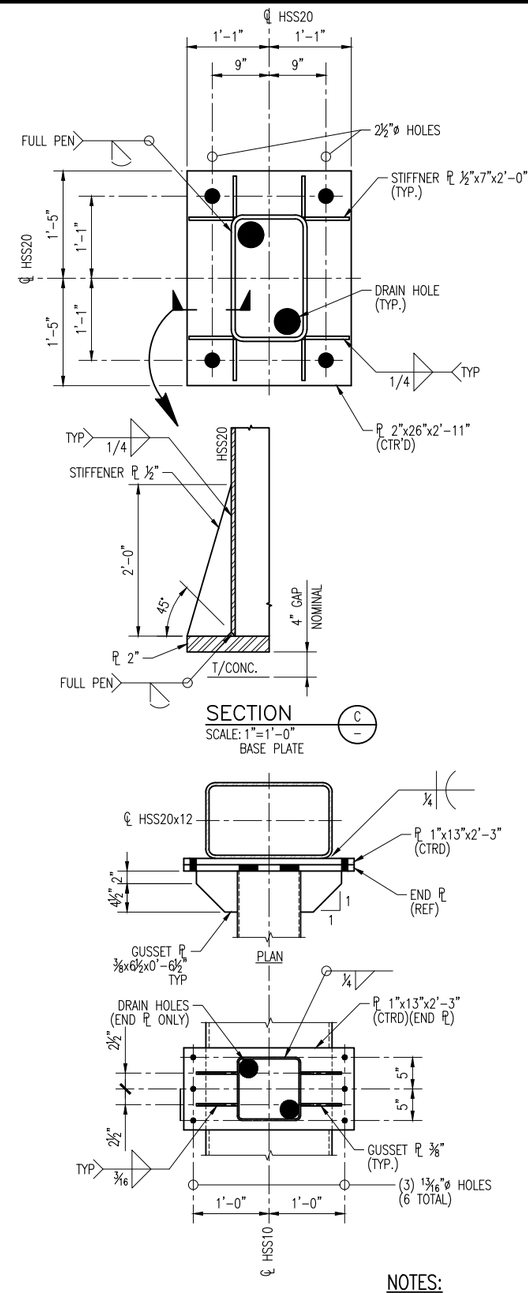
B

HSS20 DENOTES HSS20x12x1/2
HSS10 DENOTES HSS10x10x1/4



SECTION
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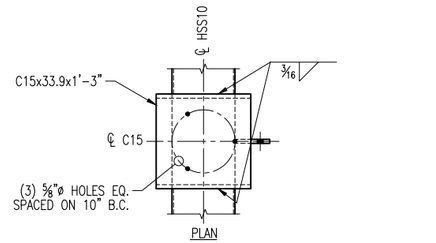
BASE PLATE
C

SECTION
SCALE: 1"=1'-0"
END PLATE
E



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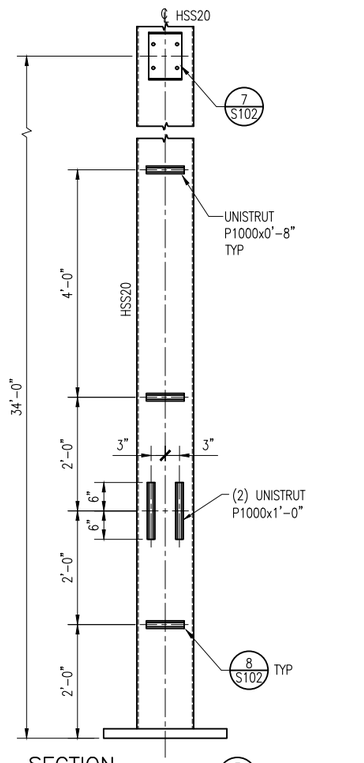
ARRESTER/TRANSMISSION VANG
D



SECTION
SCALE: 3/4"=1'-0"
LIGHTING MOUNTING
F

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.
2. WORK THIS DRAWING WITH DRAWING S102.

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WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
69KV H-FRAME – S01

SCALE	DRAWING No.	REVISION
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Project No. 071-080		

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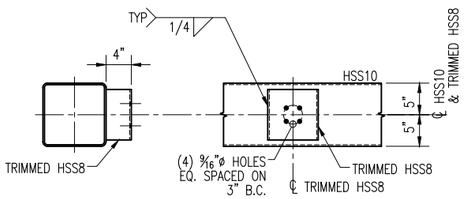

SECTION (G / S101)
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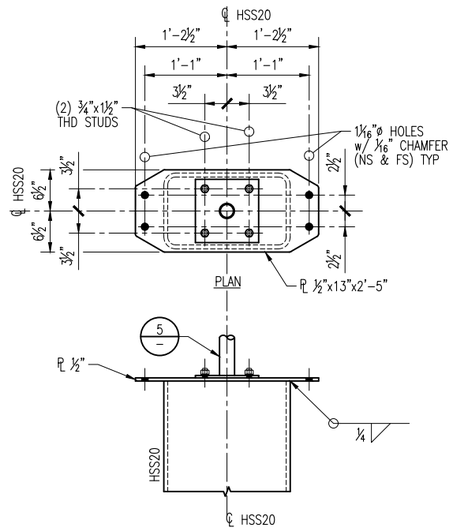
INSULATOR MOUNTING



DETAIL (1 / S101)
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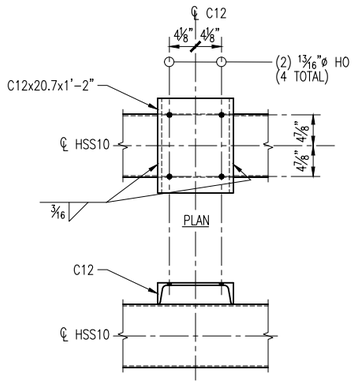
CAP PLATE



DETAIL (2 / S101)
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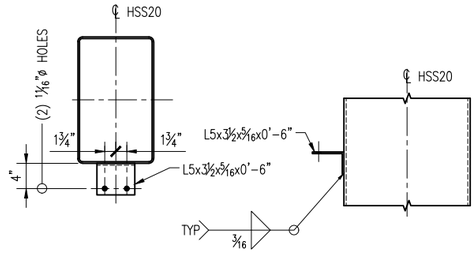
SWITCH MOUNTING



DETAIL (3 / S101)
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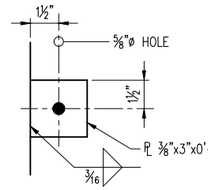
OPERATOR BEARING MOUNT



DETAIL (4 / S101)
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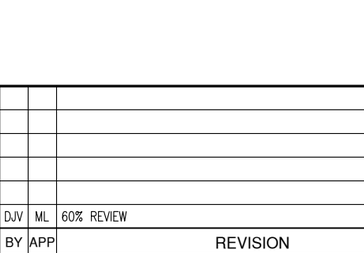
GROUND TAB



DETAIL (5 / S101)
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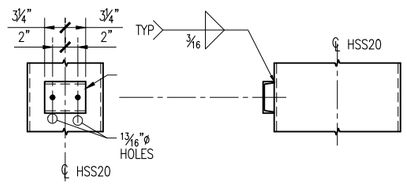
LIGHTENING MAST



DETAIL (6 / S101)
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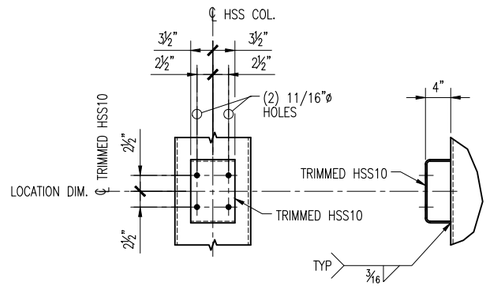
SWITCH HANDLE MOUNTING



DETAIL (7 / S101)
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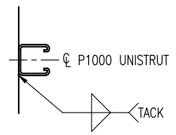
LIGHT MOUNTING



DETAIL (8 / S101)
SCALE: 3"=1'-0"
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HSS20 DENOTES HSS20x12x1/2
HSS10 DENOTES HSS10x10x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.
2. WORK THIS DRAWING WITH DRAWING S101.

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WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
69KV H-FRAME – S01

SCALE: AS NOTED
Project No. 071-080
DRAWING No. 071-080-S102
REVISION A

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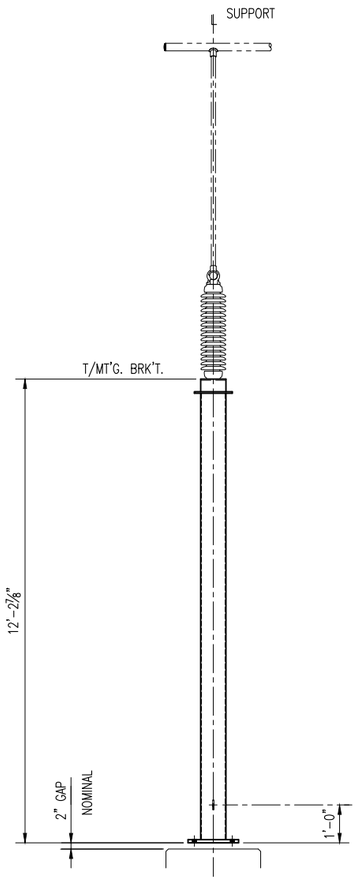
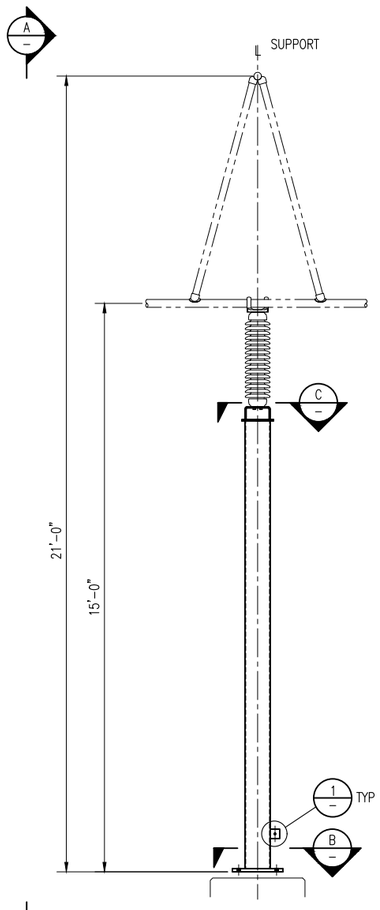
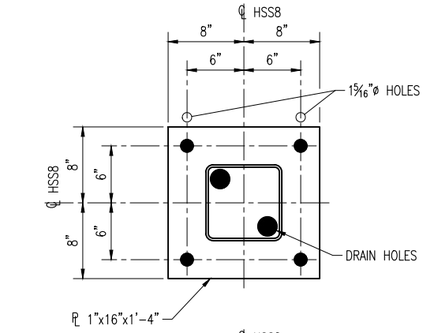
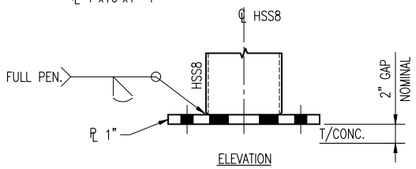


SECTION
SCALE: 3/8"=1'-0"
A

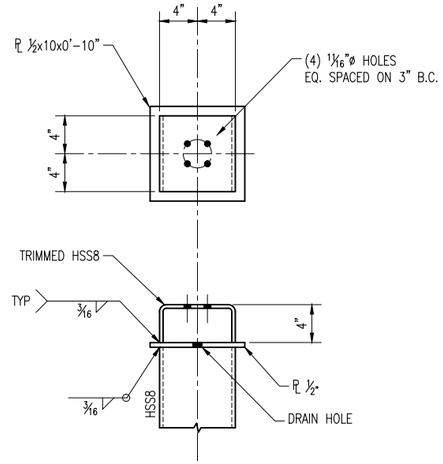




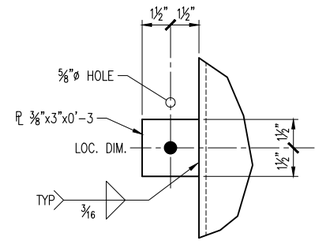


ELEVATION

SECTION
SCALE: 1 1/2"=1'-0"
BASE PLATE
B



SECTION
SCALE: 1 1/2"=1'-0"
INSULATOR MOUNTING
C



DETAIL
SCALE: 3"=1'-0"
GROUND TAB
B

69kV SINGLE PHASE LOW BUS SUPPORT STRUCTURE

SCALE: 3/8"=1'-0"

(6 REQUIRED BASE BID)

S02

HSS8 DENOTES HSS8x8x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

NOT FOR CONSTRUCTION

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

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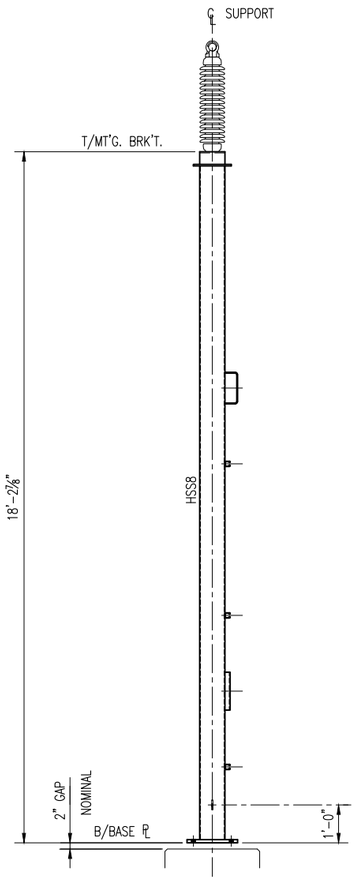
CONFIDENTIAL

Des By: DJV	Date 07/19/24		
Drawn By: DJV	Date 07/19/24		
Chk'd. By: EJS	Date –		
ENGR. ML	Date –		
APPD. –	Date –		
APPD. –	Date –		

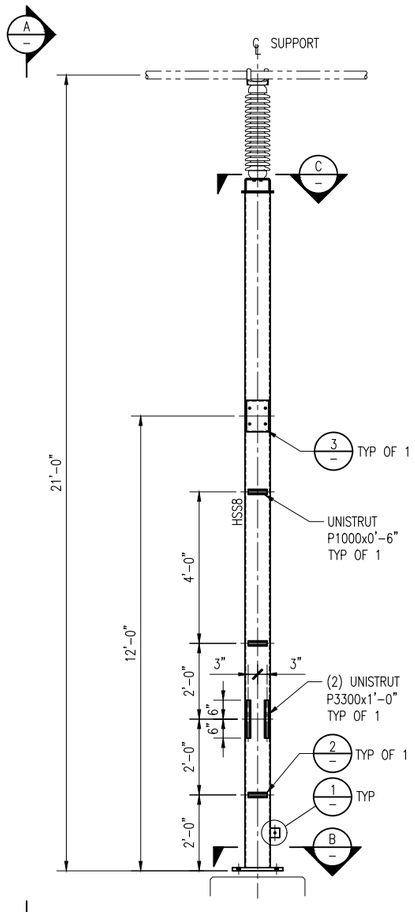
WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
69KV LOW BUS SUPPORT – S02

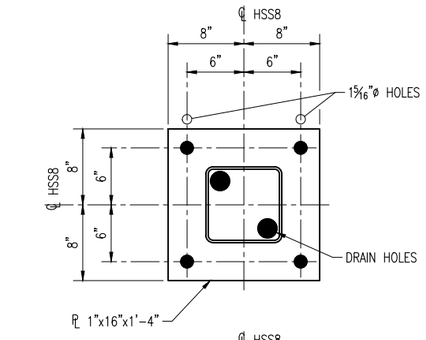
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S103	A
Project No. 071-080		

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S103.dwg



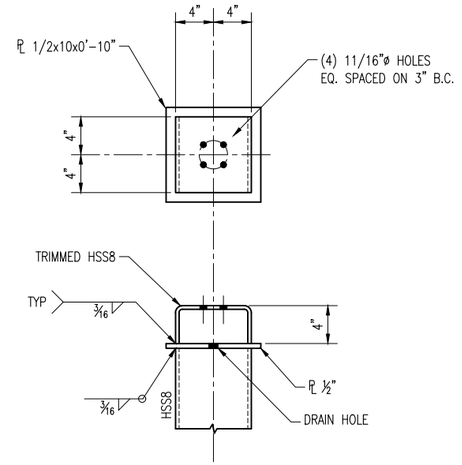
SECTION
SCALE: 3/8"=1'-0"
A





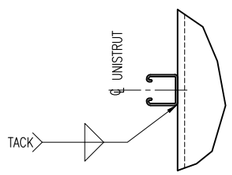
ELEVATION

SECTION
SCALE: 1 1/2"=1'-0"
BASE PLATE
B

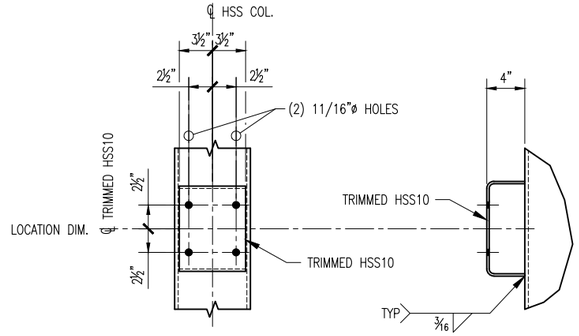


SECTION
SCALE: 1 1/2"=1'-0"
INSULATOR MOUNTING
C

DETAIL
SCALE: 3"=1'-0"
GROUND TAB
1



DETAIL
SCALE: 3"=1'-0"
UNISTRUT
2



DETAIL
SCALE: 3"=1'-0"
LIGHT MOUNTING
(1 REQUIRED)
3

HSS8 DENOTES HSS8x8x1/4
HSS10 DENOTES HSS10x10x¼

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

69kV SINGLE PHASE HIGH BUS SUPPORT STRUCTURE

SCALE: 3/8"=1'-0"

(3 REQUIRED BASE BID)

S03

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

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Des By:	DJV	Date	07/19/24
Drawn By:	DJV	Date	07/19/24
Chk'd. By:	EJS	Date	–
ENGR.	ML	Date	–
APPD.	–	Date	–
APPD.	–	Date	–

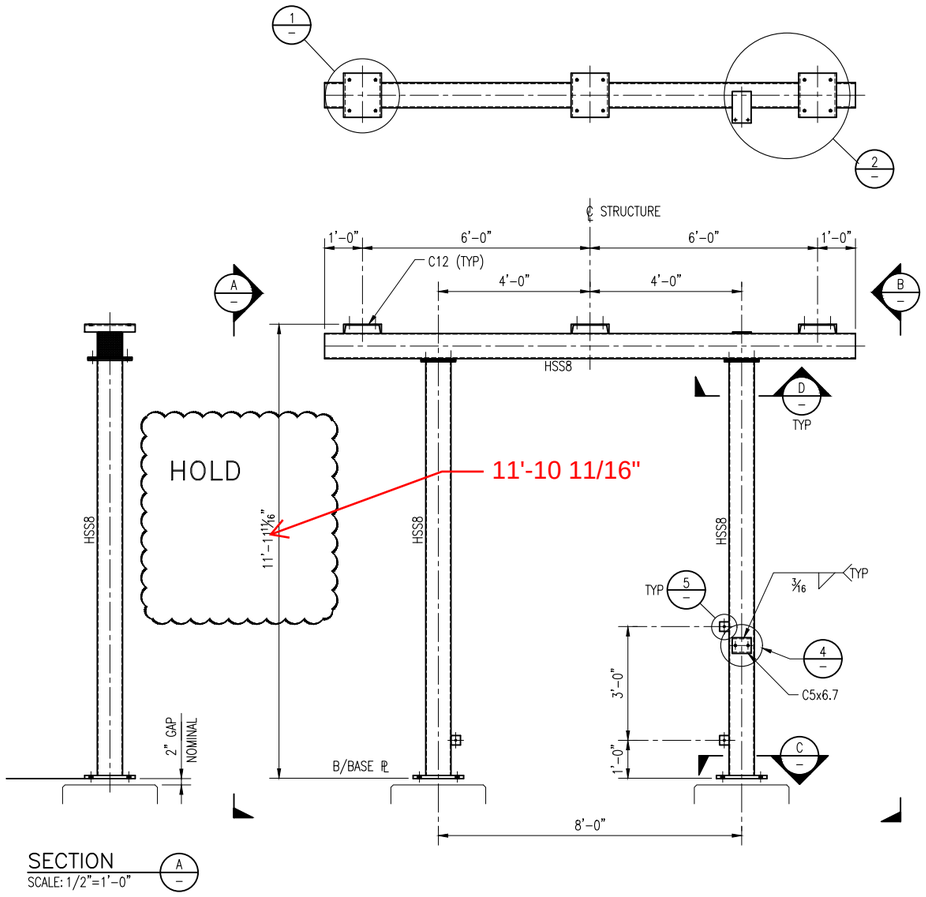
NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
69KV HIGH BUS SUPPORT – S03

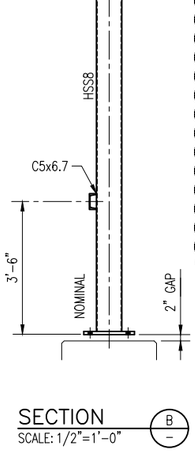
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S104	A

Project No. 071-080

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S104.dwg



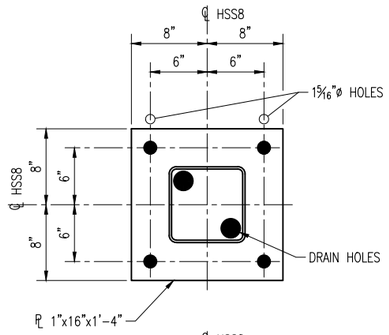
SECTION
SCALE: 1/2"=1'-0"
A



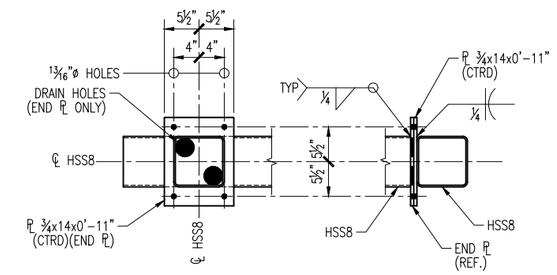
SECTION
SCALE: 1/2"=1'-0"
B

69kV SWITCH SUPPORT STRUCTURE
SCALE: 1/2"=1'-0"
S04

(3 REQUIRED BASE BID)
(1 REQUIRED BID ADDER)

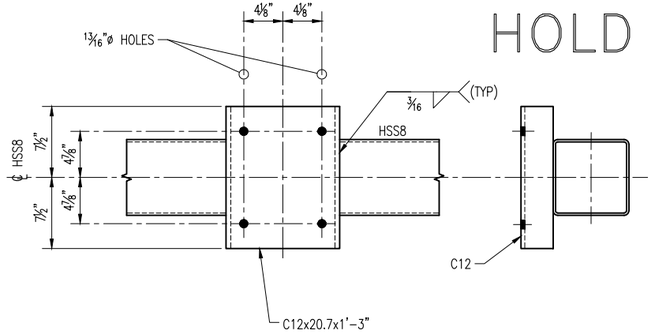


SECTION
SCALE: 1 1/2"=1'-0"
BASE PLATE
C

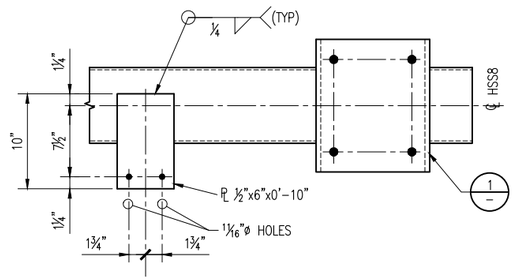


SECTION
SCALE: 1"=1'-0"
CONNECTION PLATES
D

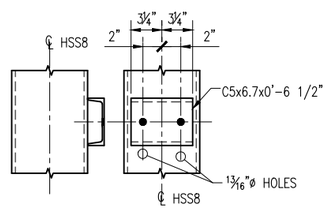
HOLD



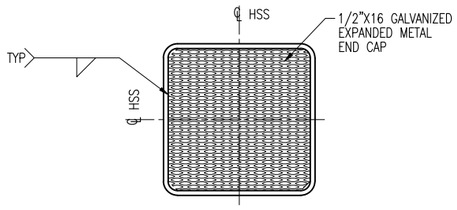
DETAIL
SCALE: 1 1/2"=1'-0"
SWITCH MOUNTING
1



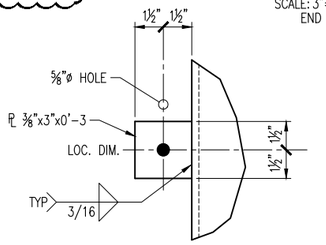
DETAIL
SCALE: 1 1/2"=1'-0"
THRUST BEARING MOUNTING
2



DETAIL
SCALE: 1 1/2"=1'-0"
SWITCH OPERATER MOUNTING
4



DETAIL
SCALE: 3"=1'-0"
END CAP
3



DETAIL
SCALE: 3"=1'-0"
GROUND TAB
5

HSS8 DENOTES HSS8x8x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

No.	DATE	BY	APP	REVISION
A	08/23/24	DJV	ML	60% REVIEW

REFERENCE DRAWING

NUMBER

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Drawn By:	DJV	Date 07/19/24
Chk'd By:	EJS	Date –
ENGR.	ML	Date –
APPD.	–	Date –
APPD.	–	Date –

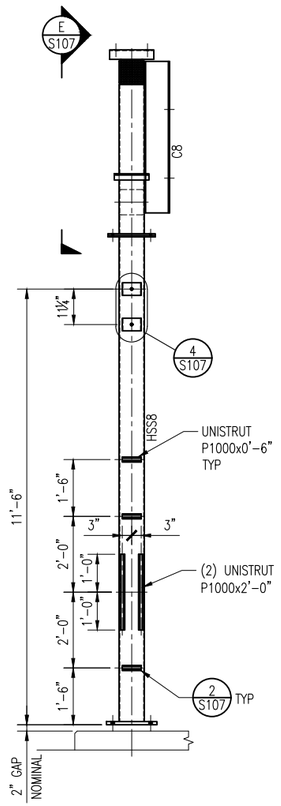
NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
69KV SWITCH SUPPORT – S04

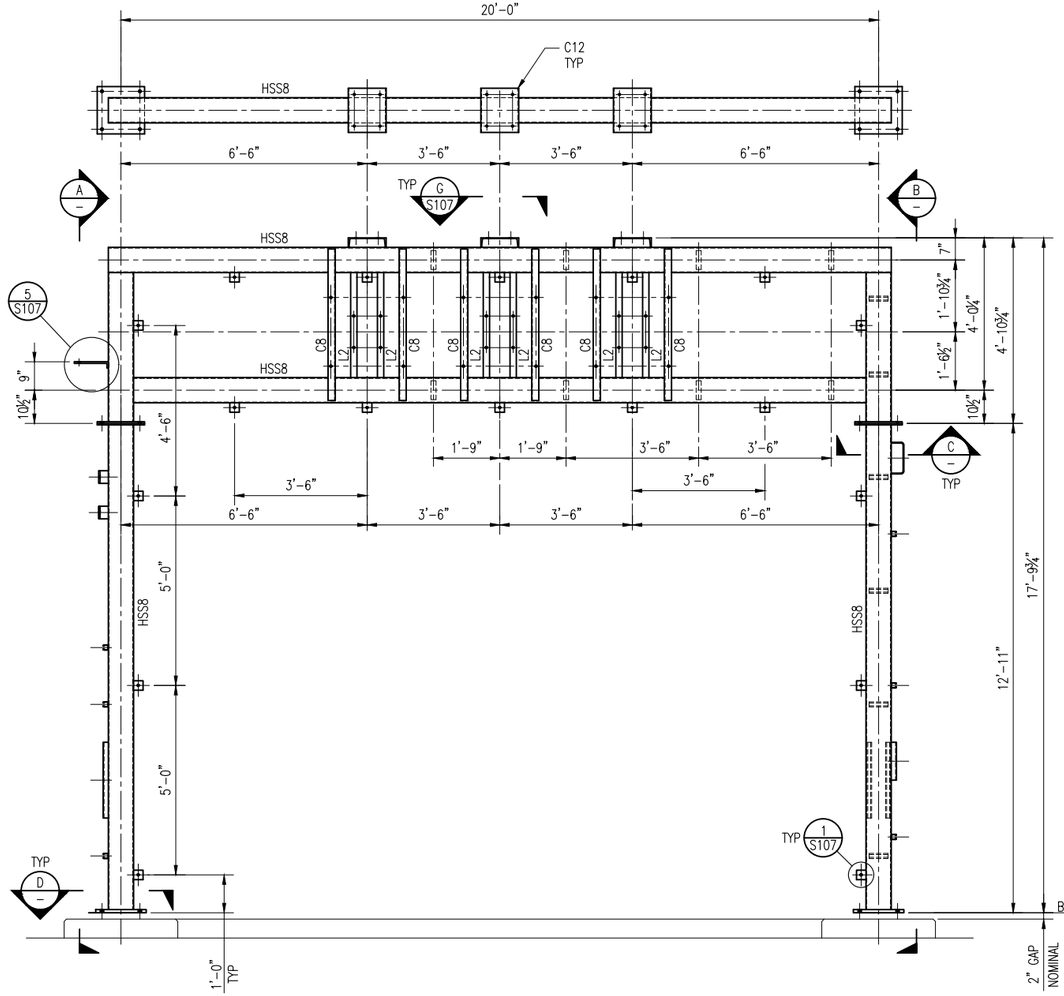
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S105	A

Project No. 071-080

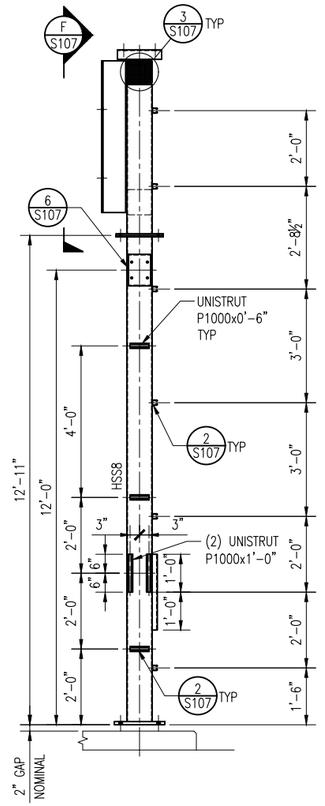
PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S105.dwg



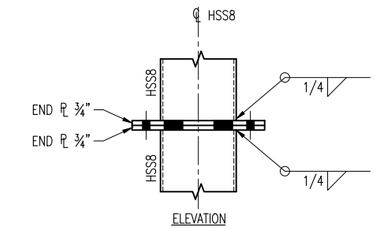
SECTION
SCALE: 1/2"=1'-0"
A



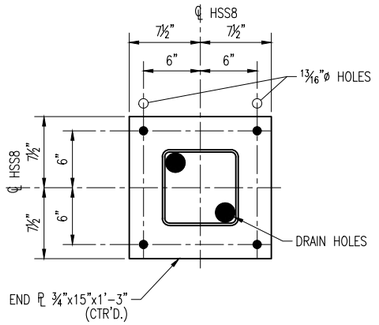
REGULATOR BYPASS STRUCTURE
SCALE: 1/2"=1'-0"
S05
(1 REQUIRED BASE BID)
(1 REQUIRED BID ADDER)



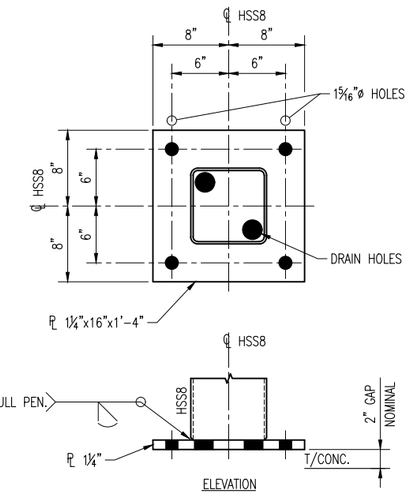
SECTION
SCALE: 1/2"=1'-0"
B



ELEVATION



SECTION
SCALE: 1 1/2"=1'-0"
CONNECTION PLATES
C



ELEVATION

SECTION
SCALE: 1 1/2"=1'-0"
BASE PLATE
D

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.
2. WORK THIS DRAWING WITH DRAWING S107.

HSS8 DENOTES HSS8x8x¼
C8 DENOTES C8x11.5
L2 DENOTES L2x2x¼

No.	DATE	BY	APP	REVISION
A	08/23/24	DJV	ML	60% REVIEW

REFERENCE DRAWING

NUMBER

Washington City
Feels Like Home

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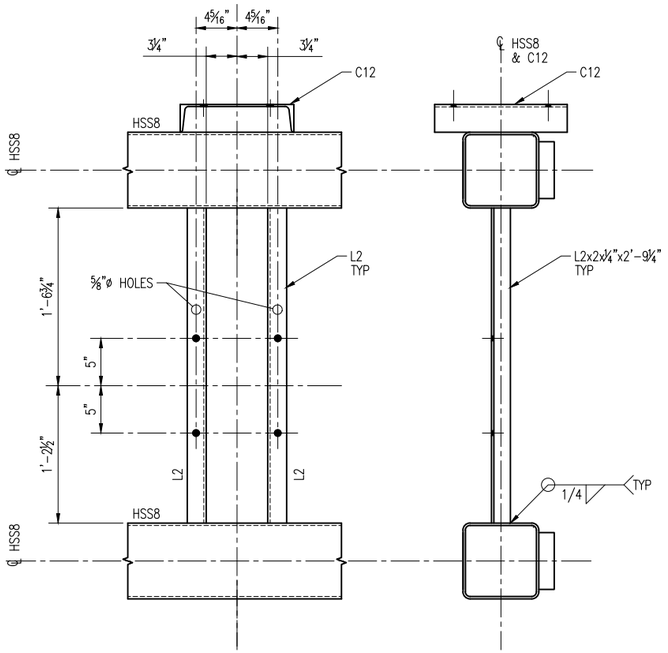
Drawn By:	DJV	Date	07/19/24
Chk'd By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	–	Date	–
APPD.	–	Date	–

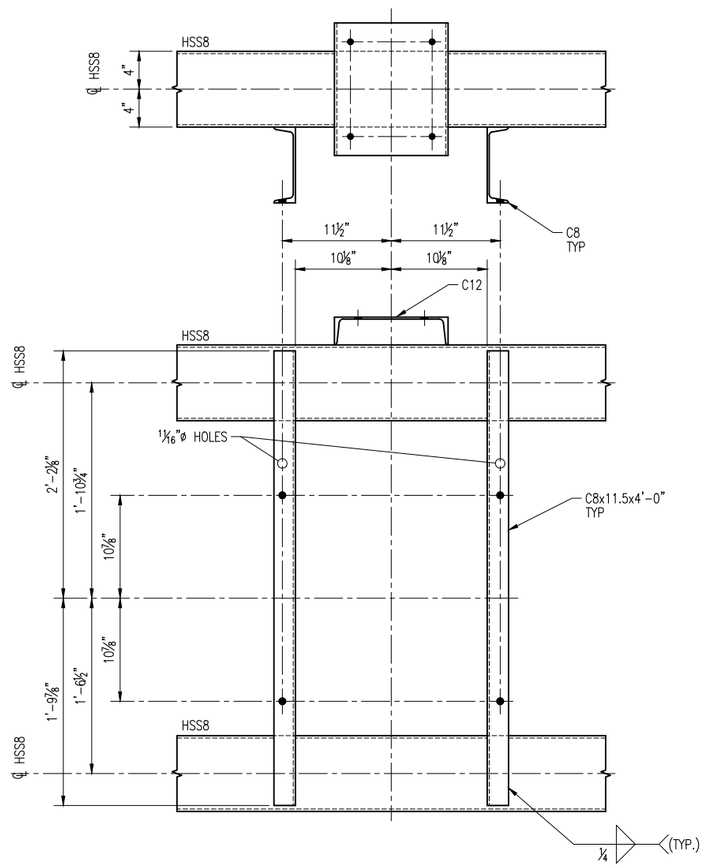
NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
REGULATOR BYPASS STRUCTURE – S05

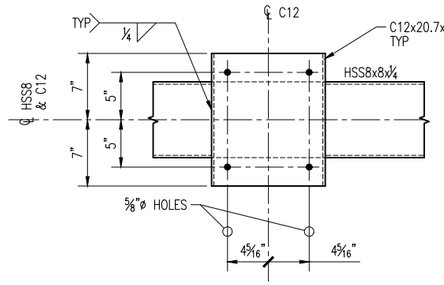
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S106	A
Project No. 071-080		



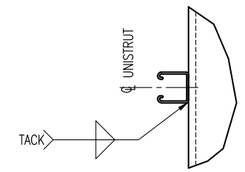
SECTION
SCALE: 1 1/2"=1'-0"
VT MOUNTING
(E S106)



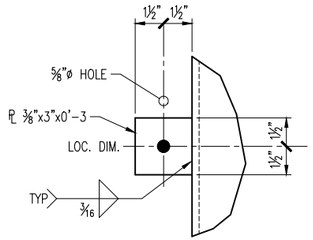
SECTION
SCALE: 1 1/2"=1'-0"
BYPASS SWITCH MOUNTING
(F S106)



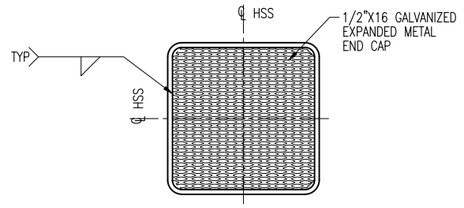
SECTION
SCALE: 1 1/2"=1'-0"
CT MOUNTING
(G S106)



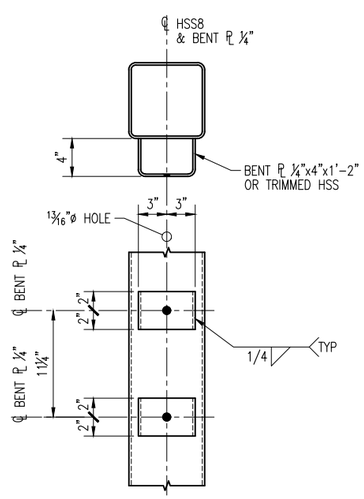
DETAIL
SCALE: 3"=1'-0"
UNISTRUT
(2 S106)



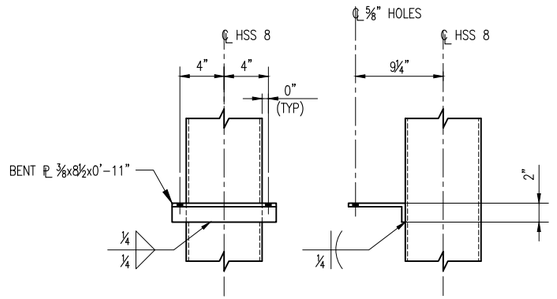
DETAIL
SCALE: 3"=1'-0"
GROUND TAB
(1 S106)



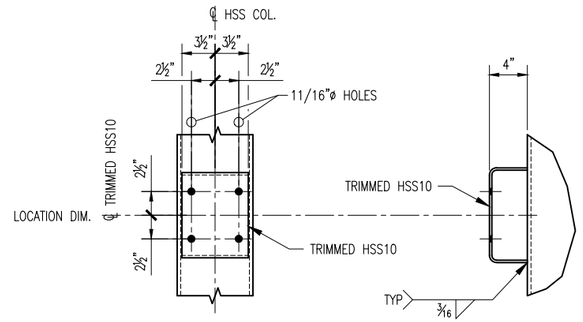
DETAIL
SCALE: 3"=1'-0"
END CAP
(3 S106)



DETAIL
SCALE: 1 1/2"=1'-0"
TRANSFORMER MOUNTING
(4 S106)



DETAIL
SCALE: 1 1/2"=1'-0"
ARRESTER MOUNTING
(5 S106)



DETAIL
SCALE: 1 1/2"=1'-0"
LIGHT MOUNTING
(6 S106)

HSS8 DENOTES HSS8x8x¼
HSS10 DENOTES HSS10x10x¼
C8 DENOTES C8x11.5
L2 DENOTES L2x2x¼

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.
2. WORK THIS DRAWING WITH DRAWING S106.

No.	DATE	BY	APP	REVISION
A	08/23/24	DJV	ML	60% REVIEW

REFERENCE DRAWING

NUMBER

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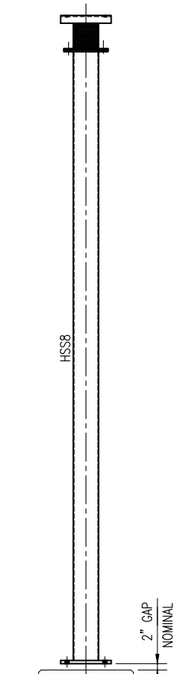
Drawn By:	DJV	Date	07/19/24
Chk'd. By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	–	Date	–
APPD.	–	Date	–

NOT FOR CONSTRUCTION

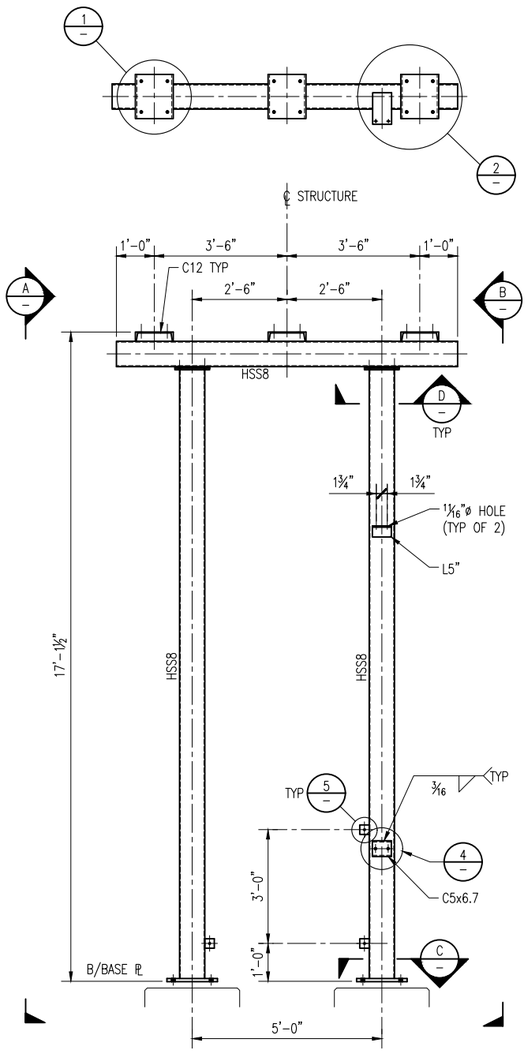
WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
REGULATOR BYPASS STRUCTURE – S05

SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S107	A
Project No. 071-080		

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S107.dwg

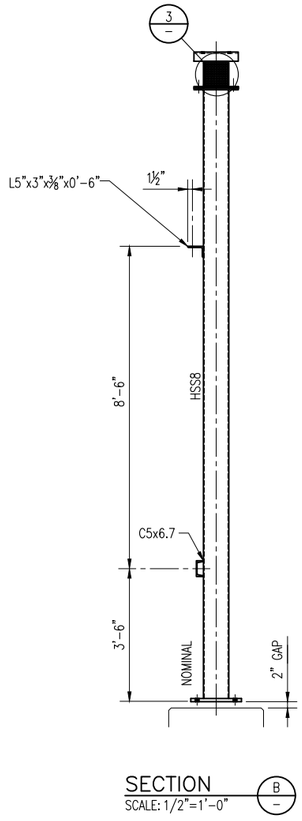


SECTION
SCALE: 1/2"=1'-0"
A

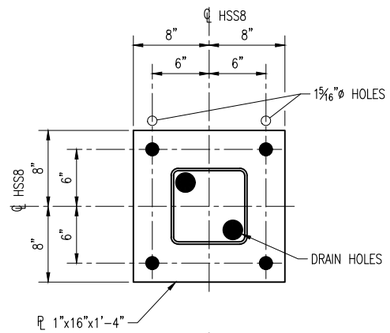


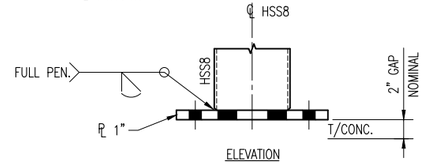
15kV LOW SWITCH SUPPORT STRUCTURE
SCALE: 1/2"=1'-0"
S06

(1 REQUIRED BASE BID)
(1 REQUIRED BID ADDER)



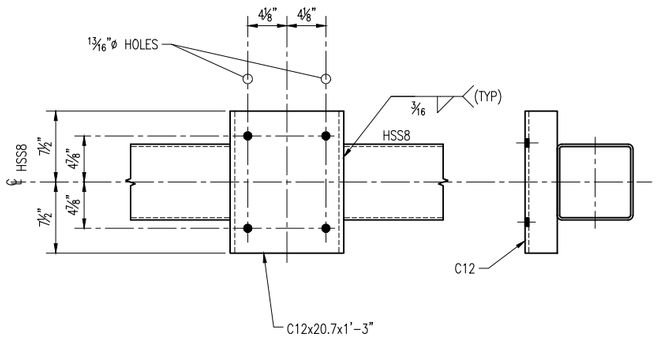
SECTION
SCALE: 1/2"=1'-0"
B





ELEVATION

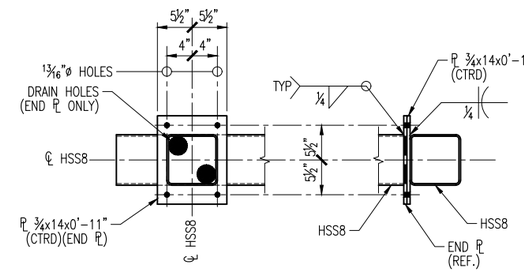
SECTION
SCALE: 1 1/2"=1'-0"
BASE PLATE
C



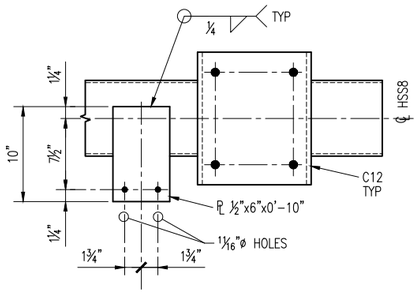
DETAIL
SCALE: 1 1/2"=1'-0"
SWITCH MOUNTING
1

DETAIL
SCALE: 1 1/2"=1'-0"
SWITCH OPERATOR MOUNTING
4

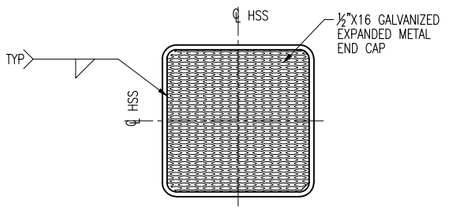
HSS8 DENOTES HSS8x8x1/4



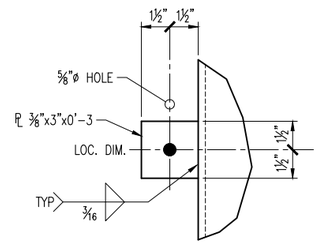
SECTION
SCALE: 1"=1'-0"
CONNECTION PLATES
D



DETAIL
SCALE: 1 1/2"=1'-0"
THRUST BEARING MOUNTING
2



DETAIL
SCALE: 3"=1'-0"
END CAP
3



DETAIL
SCALE: 3"=1'-0"
GROUND TAB
5

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

NOT FOR CONSTRUCTION

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

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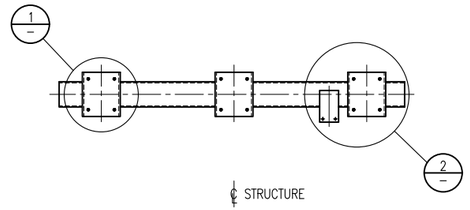
CONFIDENTIAL

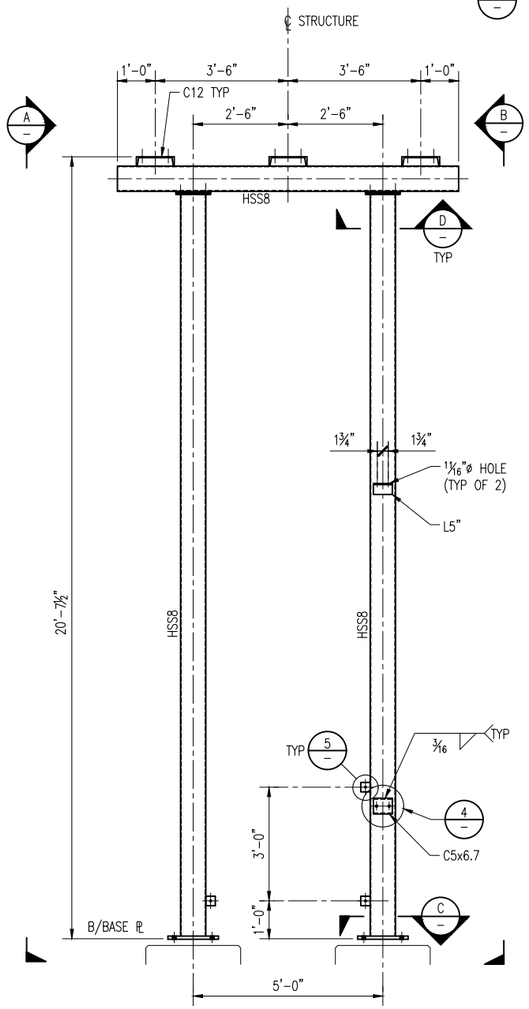
Des By:	DJV	Date	07/19/24
Drawn By:	DJV	Date	07/19/24
Chk'd. By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	_	Date	_
APPD.	_	Date	_

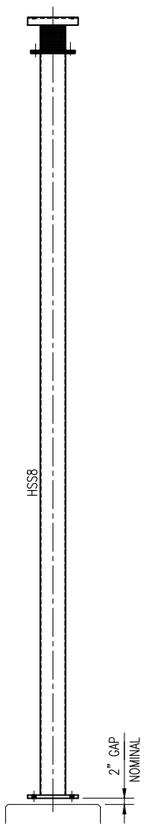
WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
15KV LOW SWITCH SUPPORT- S06

SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S108	A
Project No. 071-080		

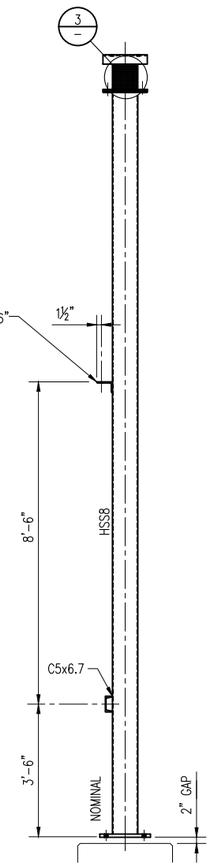
PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S108.dwg





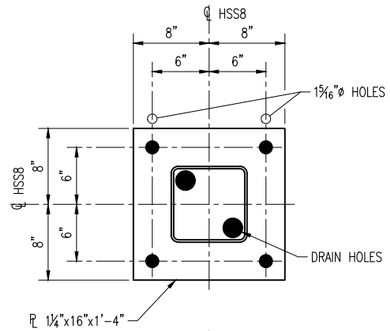


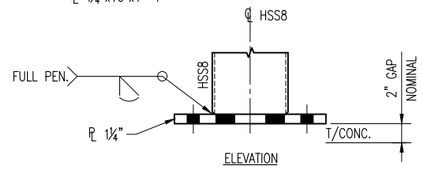
SECTION
SCALE: 1/2"=1'-0"
A



SECTION
SCALE: 1/2"=1'-0"
B

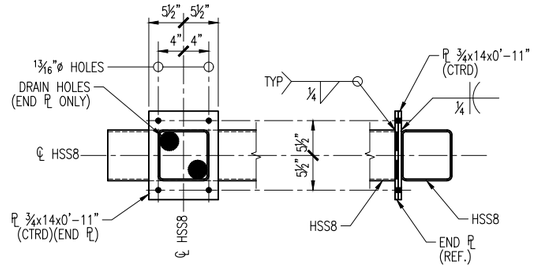
15kV HIGH SWITCH SUPPORT STRUCTURE
SCALE: 1/2"=1'-0"
S07
(1 REQUIRED BASE BID)



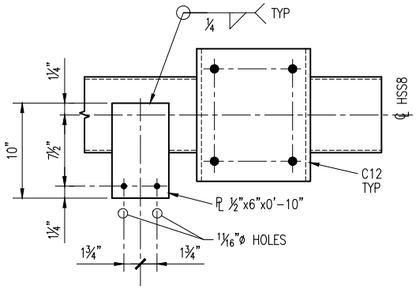


ELEVATION

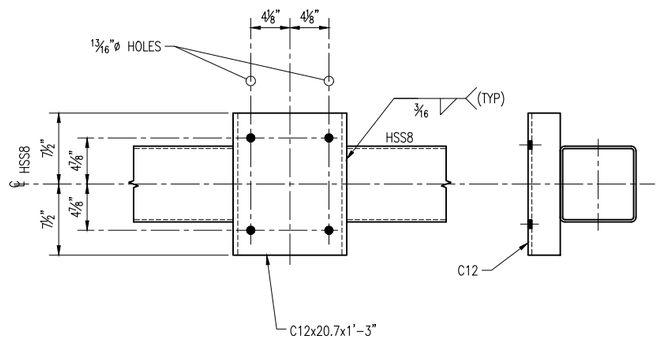
SECTION
SCALE: 1 1/2"=1'-0"
BASE PLATE
C



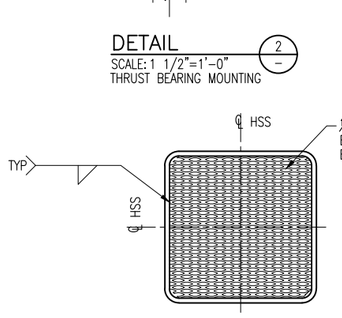
SECTION
SCALE: 1"=1'-0"
CONNECTION PLATES
D



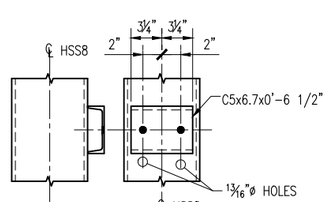
DETAIL
SCALE: 1 1/2"=1'-0"
THRUST BEARING MOUNTING
2



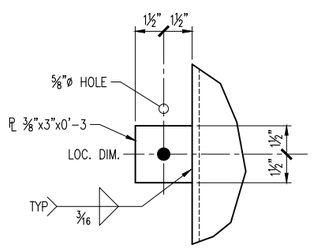
DETAIL
SCALE: 1 1/2"=1'-0"
SWITCH MOUNTING
1



DETAIL
SCALE: 3"=1'-0"
END CAP
3



DETAIL
SCALE: 1 1/2"=1'-0"
SWITCH OPERATOR MOUNTING
4



DETAIL
SCALE: 3"=1'-0"
GROUND TAB
5

HSS8 DENOTES HSS8x8x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

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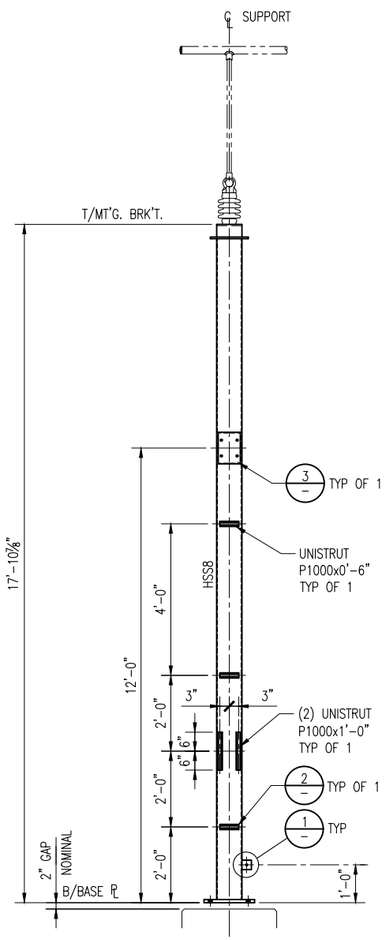
CONFIDENTIAL

Des By:	DJV	Date	07/19/24
Drawn By:	DJV	Date	07/19/24
Chk'd. By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	–	Date	–
APPD.	–	Date	–

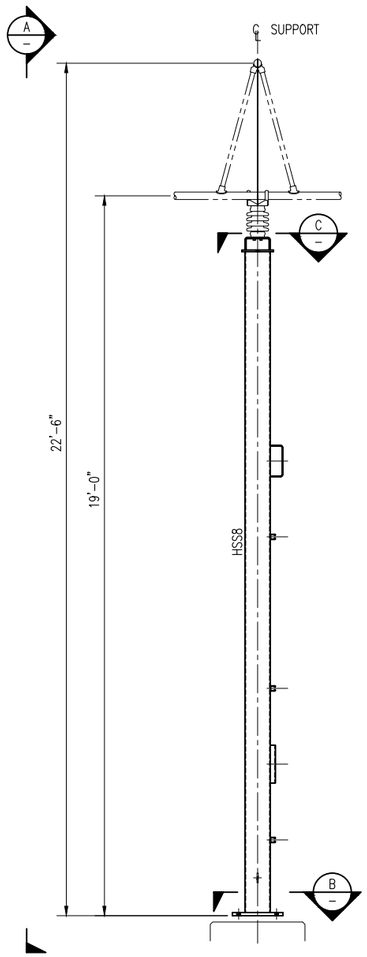
NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
15KV HIGH SWITCH SUPPORT – S07

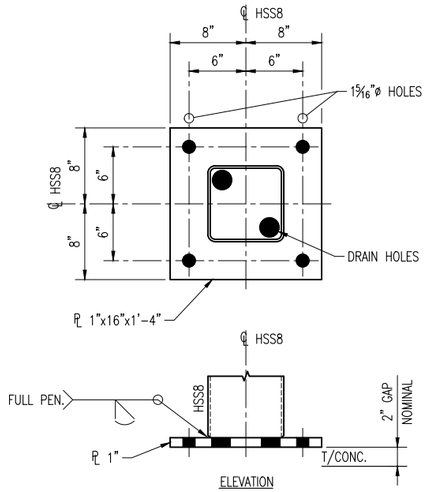
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S109	A
Project No. 071-080		



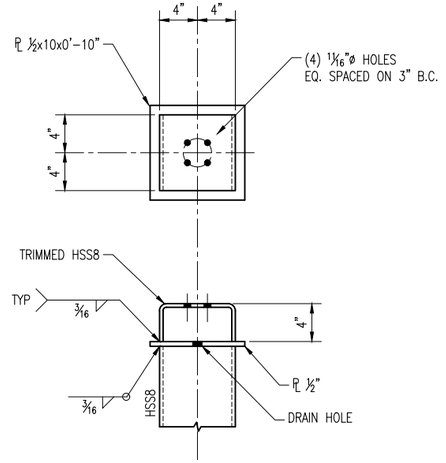
SECTION (A) SCALE: 3/8"=1'-0"



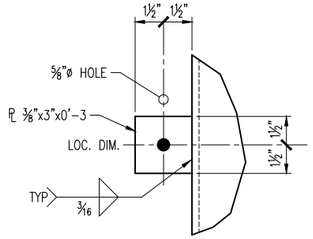
15kV SINGLE PHASE BUS SUPPORT STRUCTURE (S08) SCALE: 3/8"=1'-0"
(3 REQUIRED BASE BID)
(3 REQUIRED BID ADDER)



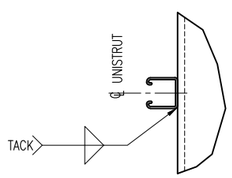
SECTION (B) SCALE: 1 1/2"=1'-0" BASE PLATE



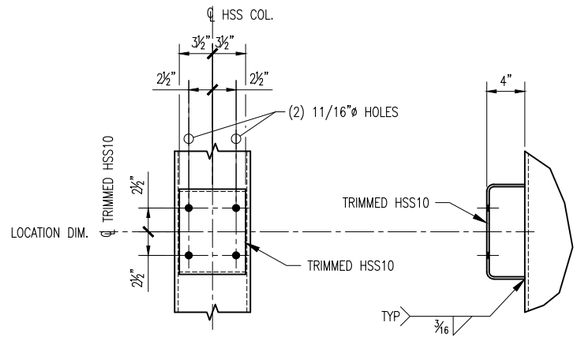
SECTION (C) SCALE: 1 1/2"=1'-0"



DETAIL (1) SCALE: 3"=1'-0" GROUND TAB



DETAIL (2) SCALE: 3"=1'-0" UNISTRUT



DETAIL (3) SCALE: 3"=1'-0" LIGTH MOUNTING (1 REQUIRED)

HSS8 DENOTES HSS8x8x1/4
HSS10 DENOTES HSS10x10x¼

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

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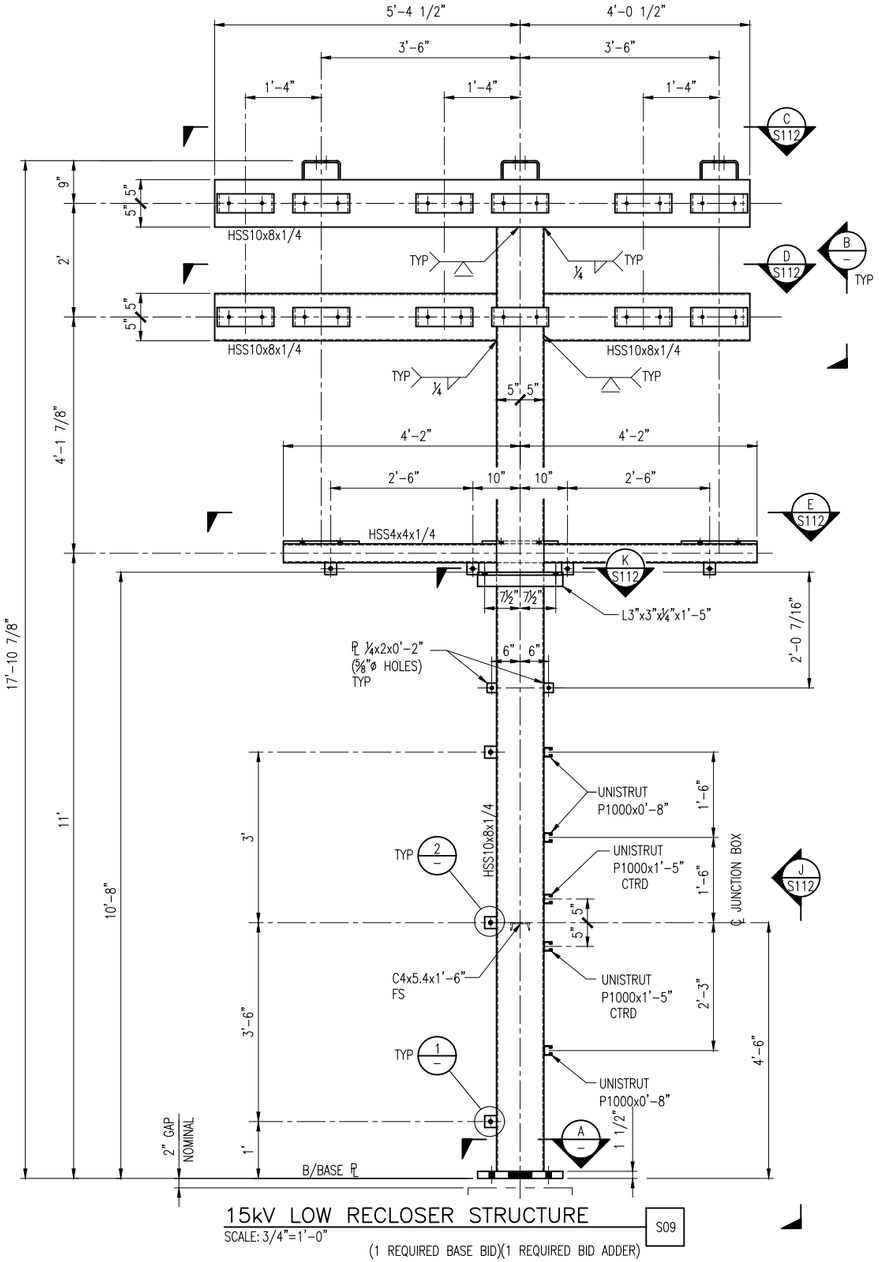
Des By: DJV	Date 07/19/24		
Drawn By: DJV	Date 07/19/24		
Chk'd By: EJS	Date		
ENGR. DJV	Date		
APPD. _	Date _		
APPD. _	Date _		

NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
15KV BUS SUPPORT - S08

SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S110	A
Project No. 071-080		

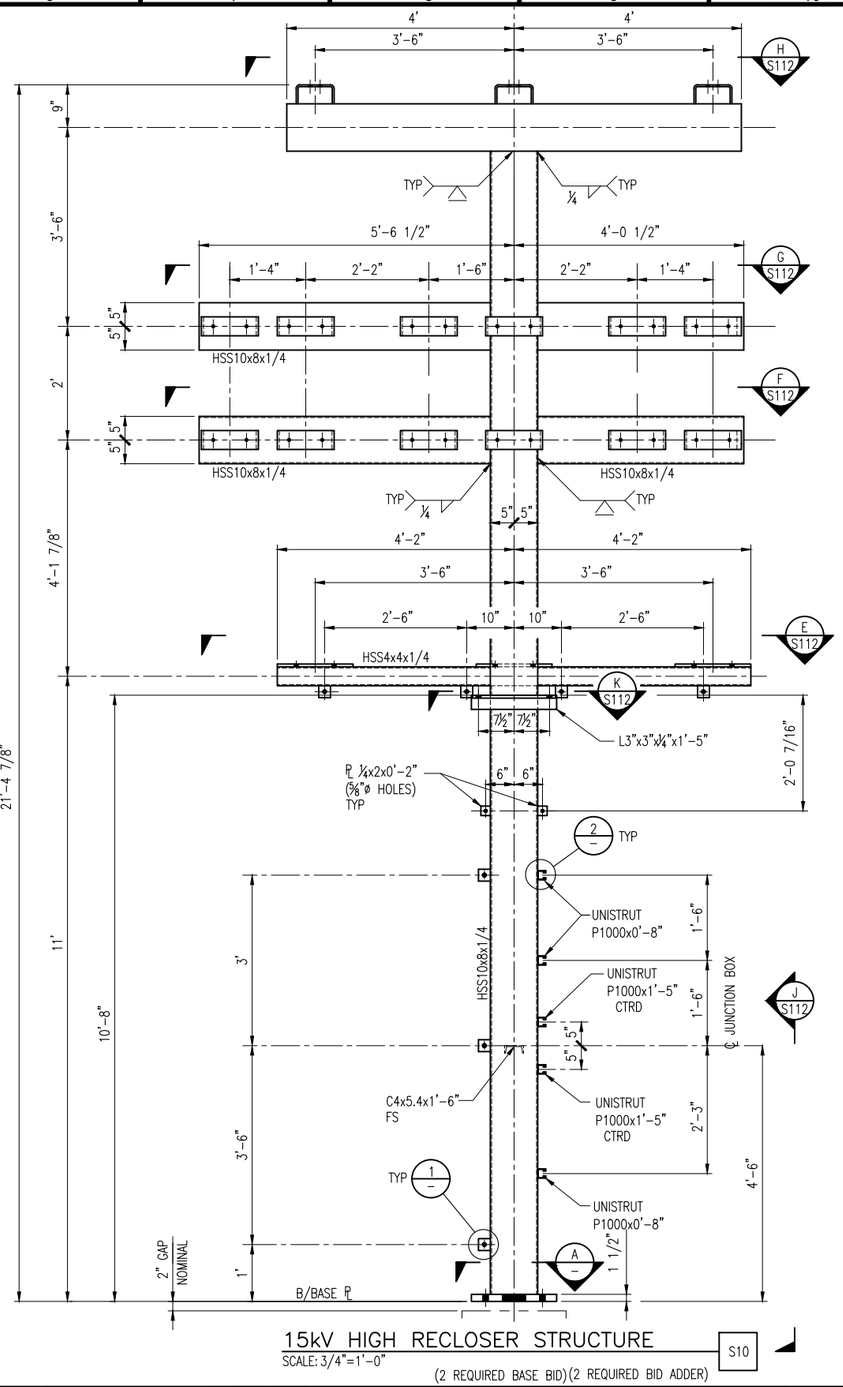
PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S110.dwg



15kV LOW RECLOSER STRUCTURE

SCALE: 3/4"=1'-0" — S09

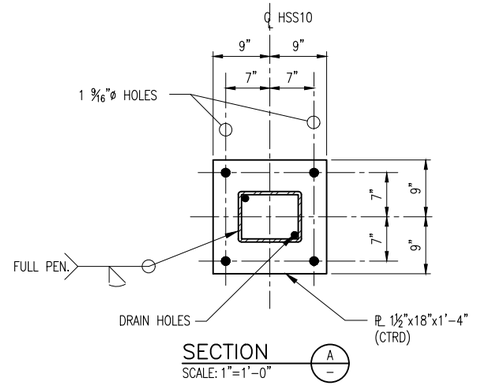
(1 REQUIRED BASE BID)(1 REQUIRED BID ADDER)



15kV HIGH RECLOSER STRUCTURE

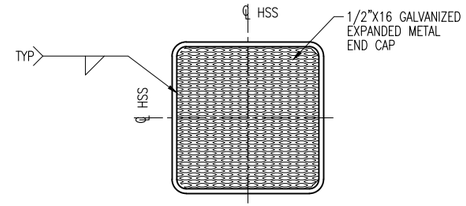
SCALE: 3/4"=1'-0" — S10

(2 REQUIRED BASE BID)(2 REQUIRED BID ADDER)



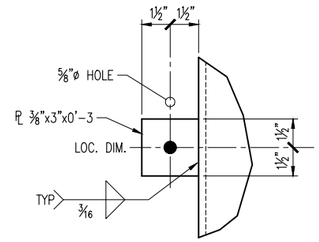
SECTION

SCALE: 1"=1'-0" — A



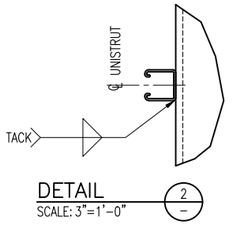
SECTION

SCALE: 3"=1'-0" — B



DETAIL

SCALE: 3"=1'-0" — 1



DETAIL

SCALE: 3"=1'-0" — 2

NOTES:

1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.
2. WORK THIS DRAWING WITH DRAWING S112.

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

Washington City
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CONFIDENTIAL

Des By:	DJV	Date	07/19/24
Drawn By:	DJV	Date	07/19/24
Chk'd By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	–	Date	–
APPD.	–	Date	–

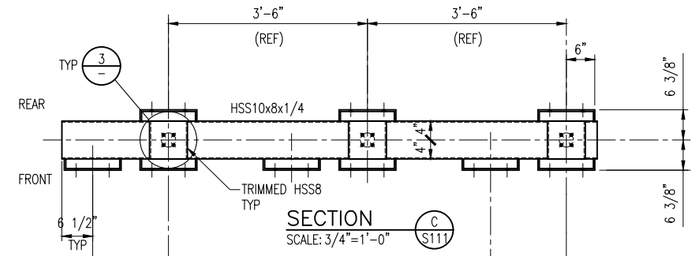
NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
15KV RECLOSER STRUCTURE – S09/S10

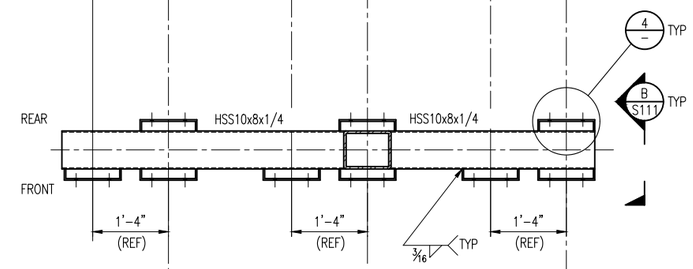
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S111	A

Project No. 071-080

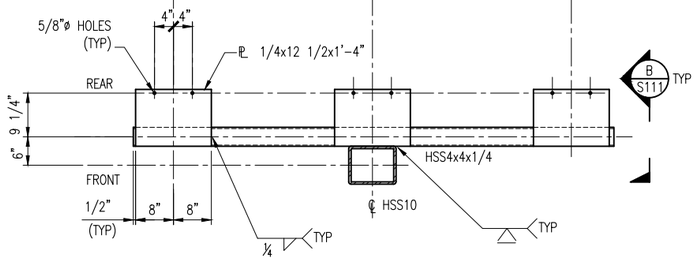
PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S111.dwg



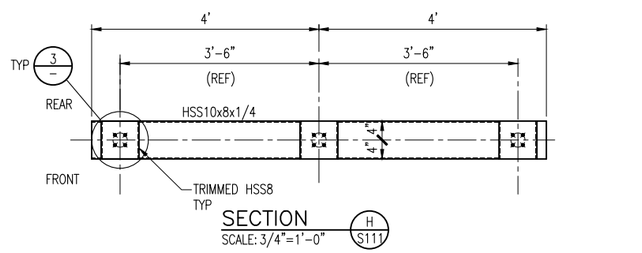
SECTION
SCALE: 3/4"=1'-0" C S111



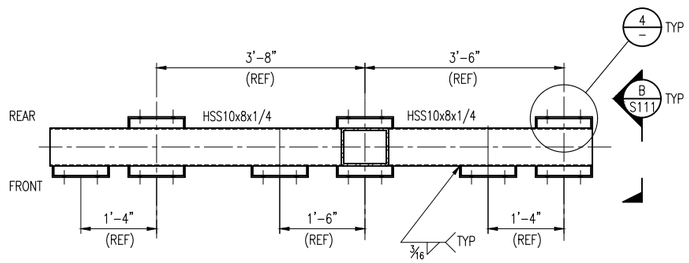
SECTION
SCALE: 3/4"=1'-0" D S111



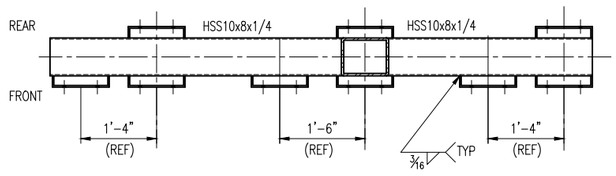
SECTION
SCALE: 3/4"=1'-0" E S111



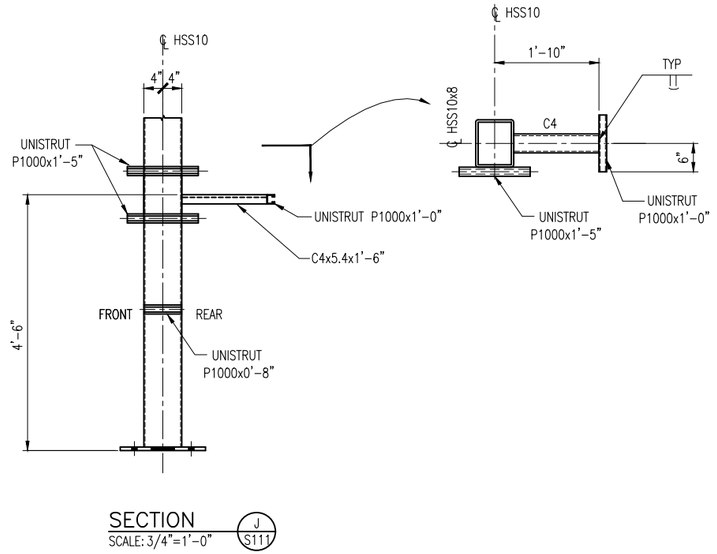
SECTION
SCALE: 3/4"=1'-0" H S111



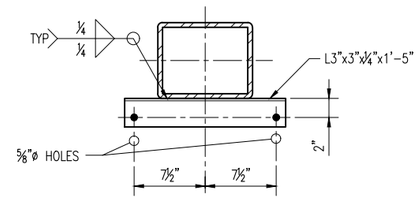
SECTION
SCALE: 3/4"=1'-0" G S111



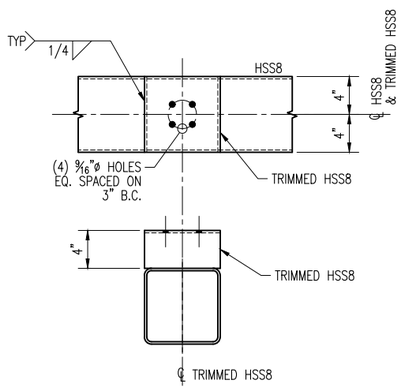
SECTION
SCALE: 3/4"=1'-0" F S111



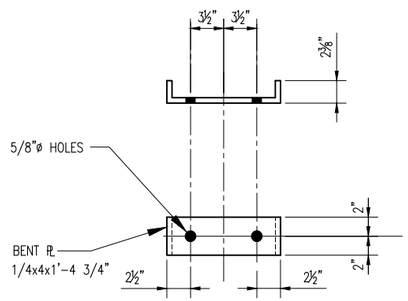
SECTION
SCALE: 3/4"=1'-0" J S111



SECTION
SCALE: 1 1/2"=1'-0" K S111



DETAIL
SCALE: 1 1/2"=1'-0" 3



DETAIL
SCALE: 1 1/2"=1'-0" 4

HSS8 DENOTES HSS8x8x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.
2. WORK THIS DRAWING WITH DRAWING S111.

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

Washington City
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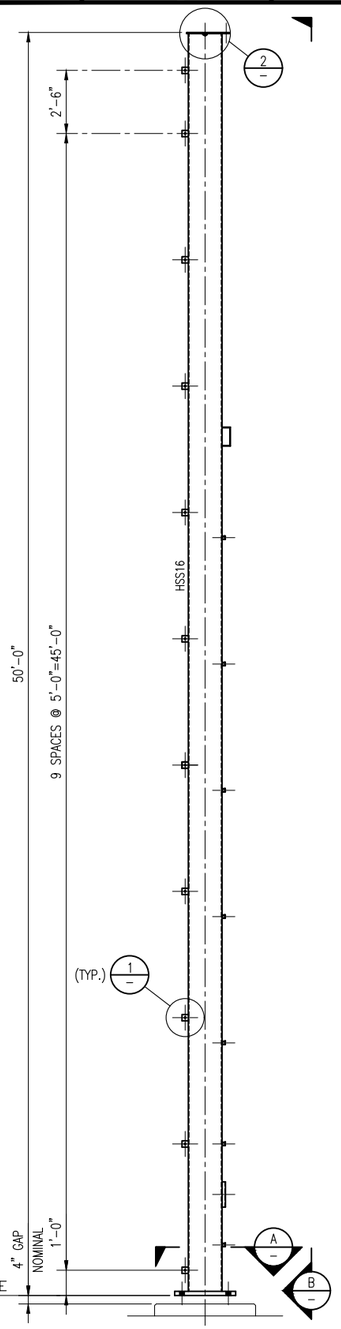
CONFIDENTIAL

Des By: DJV	Date	07/19/24
Drawn By: DJV	Date	07/19/24
Chk'd By: EJS	Date	
ENGR. DJV	Date	
APPD. _	Date	_
APPD. _	Date	_

NOT FOR CONSTRUCTION

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
15KV RECLOSER STRUCTURE - S09/S10

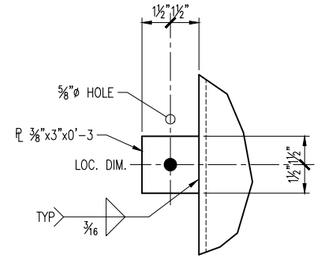
SCALE: AS NOTED
Project No. 071-080
DRAWING No. 071-080-S112
REVISION A



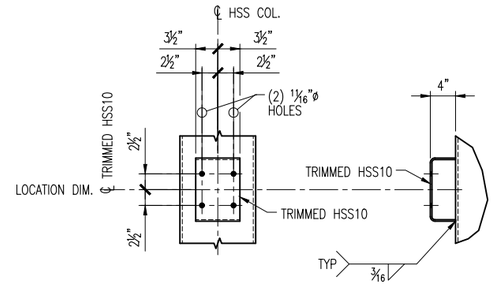
STATIC WIRE SUPPORT STRUCTURE
SCALE: 1"=3'-0"

S11

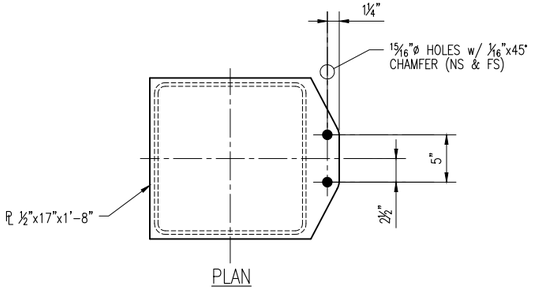
(3 REQUIRED BASE BID)(1 REQUIRED BID ADDER)



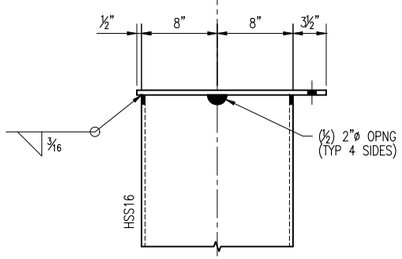
DETAIL 1
SCALE: 3"=1'-0"
GROUND TAB



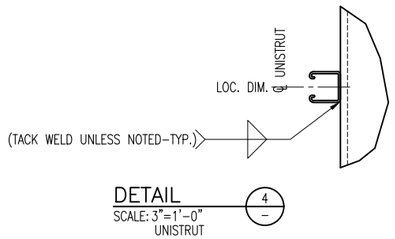
DETAIL 3
SCALE: 1"=1'-0"
LIGHT MOUNTING



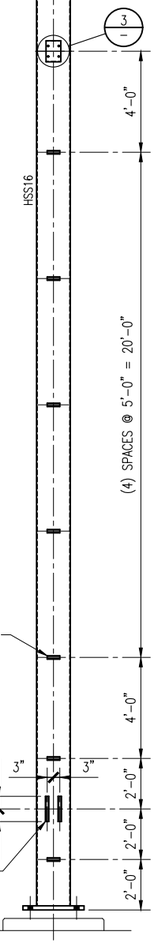
PLAN



DETAIL 2
SCALE: 1 1/2"=1'-0"
CAP PLATE

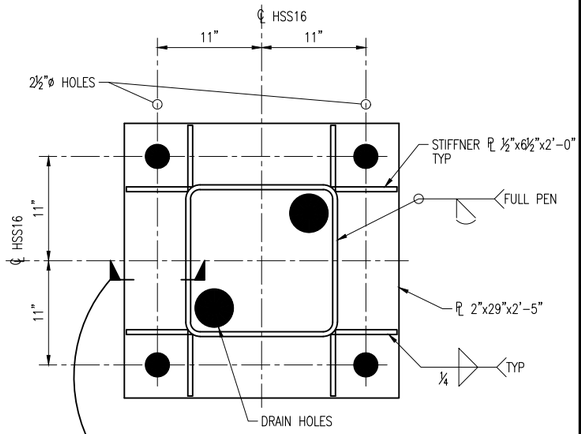


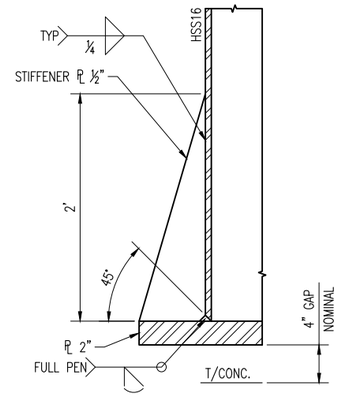
DETAIL 4
SCALE: 3"=1'-0"
UNISTRUT



SECTION
SCALE: 1"=3'-0"

B





SECTION
SCALE: 1 1/2"=1'-0"

A

HSS16 DENOTES HSS16x16x1/2
HSS10 DENOTES HSS10x10x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

NOT FOR CONSTRUCTION

No.	DATE	BY	APP	REVISION
A	08/23/24	DJV	ML	60% REVIEW

REFERENCE DRAWING

NUMBER

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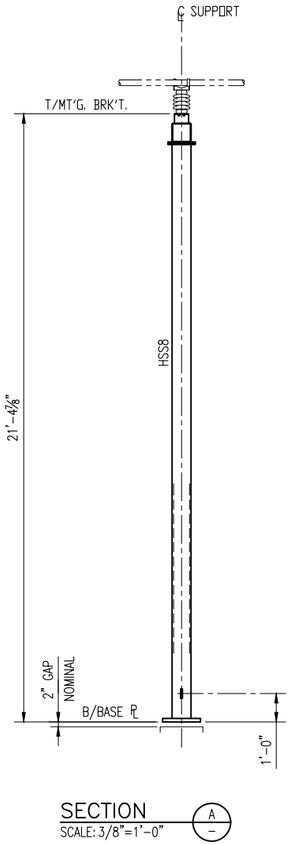
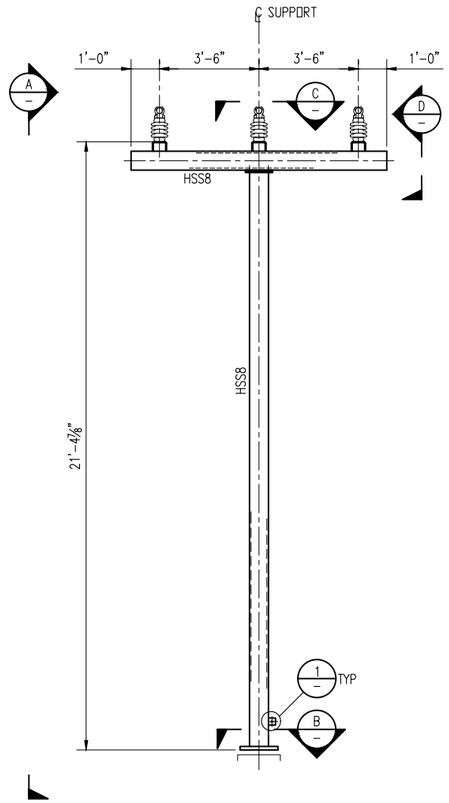
Des By: DJV	Date 07/19/24	
Drawn By: DJV	Date 07/19/24	
Chk'd. By: EJS	Date	
ENGR. DJV	Date	
APPD. _	Date _	
APPD. _	Date _	

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
STATIC MAST - S11

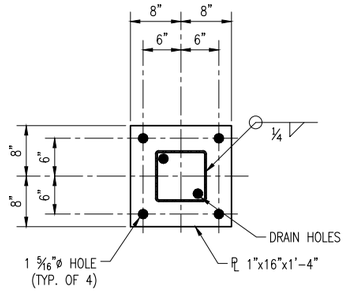
SCALE: AS NOTED
Project No. 071-080
DRAWING No. 071-080-S113
REVISION A



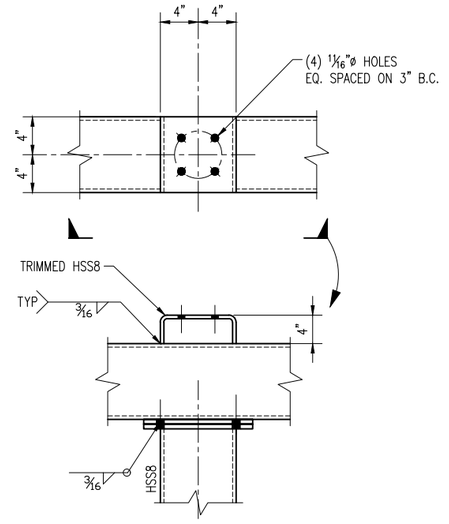
SECTION
SCALE: 3/8"=1'-0"



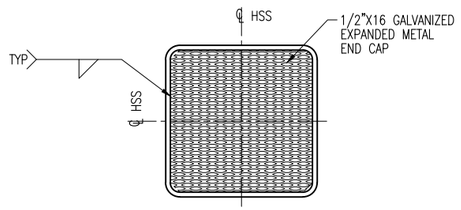
15kV 3 PHASE BUS SUPPORT STRUCTURE
SCALE: 3/8"=1'-0"
S12
(1 REQUIRED BID ADDER)



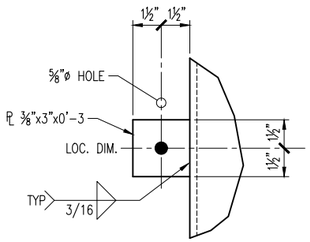
SECTION
SCALE: 1 1/2"=1'-0"
B



SECTION
SCALE: 1 1/2"=1'-0"
C



SECTION
SCALE: 3"=1'-0"
D



DETAIL
SCALE: 3"=1'-0"
1

HSS8 DENOTES HSS8x8x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

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A	08/23/24	DJV	ML	60% REVIEW		

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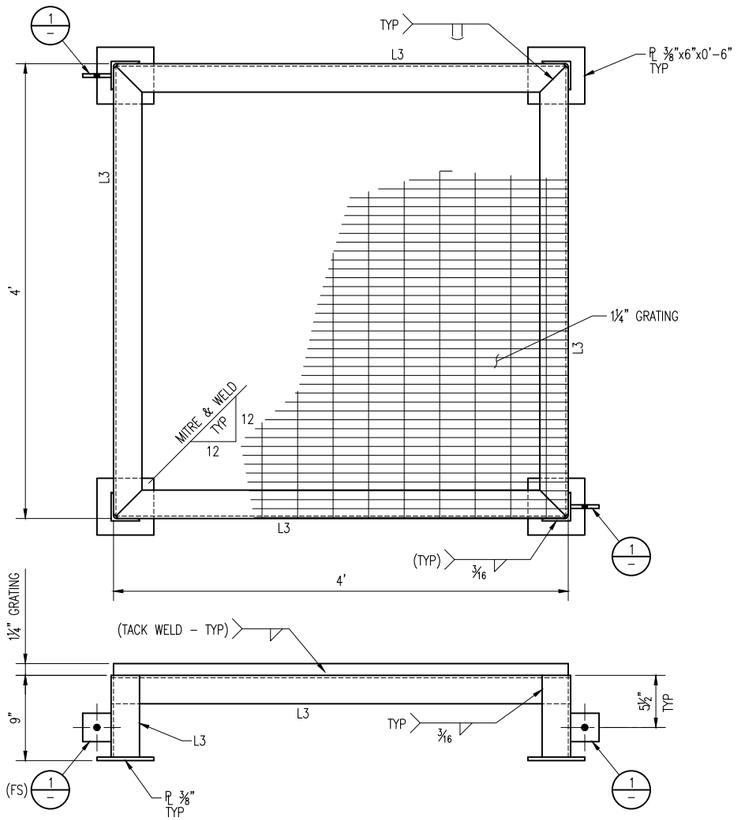
Drawn By:	DJV	Date	07/19/24
Chk'd. By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	_	Date	_
APPD.	_	Date	_

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
15kV THREE PHASE BUS SUPPORT – S12

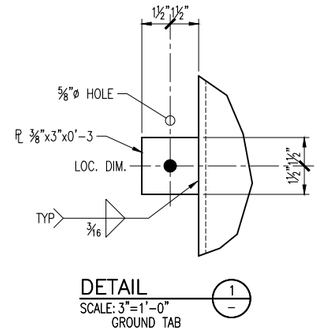
SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S114	A
Project No. 071-080		

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S114.dwg



SWITCH OPERATING PLATFORM
SCALE: 1 1/2"=1'-0"
S13

(8 REQUIRED BASE BID)
(2 REQUIRED BID ADDER)



DETAIL
SCALE: 3"=1'-0"
GROUND TAB
1

L3 DENOTES L3x3x1/4

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

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No.	DATE	BY	APP	REVISION
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REFERENCE DRAWING

NUMBER

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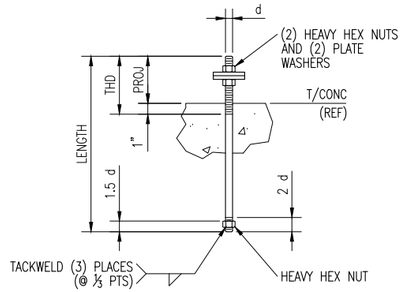
Drawn By:	DJV	Date	07/19/24
Chk'd. By:	EJS	Date	
ENGR.	DJV	Date	
APPD.	_	Date	_
APPD.	_	Date	_

WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
SWITCH PLATFORM - S13

SCALE	DRAWING No.	REVISION
AS NOTED	071-080-S115	A
Project No. 071-080		

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S115.dwg

BASE BID ANCHOR BOLT SCHEDULE



ANCHOR RODS & HEAVY HEX NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554, GRADE 36. PLATE WASHERS SHALL CONFORM TO AISC TABLE 14-2

MARK	QTY	DIA	LENGTH	THD	PROJ	REMARKS
A01	8	2"	6'-6"	11"	10"	69kV H-FRAME STRUCTURE (S01)
A02	24	1"	3'-6"	7"	6"	69kV SINGLE PHASE LOW BUS SUPPORT STRUCTURE (S02)
A03	12	1"	3'-6"	7"	6"	69kV SINGLE PHASE HIGH BUS SUPPORT STRUCTURE (S03)
A04	32	1"	3'-6"	7"	6"	69kV SWITCH SUPPORT STRUCTURE (S04)
A05	16	1"	2'-6"	7"	6"	REGULATOR BYPASS STRUCTURE (S05)
A06	16	1"	2'-6"	7"	6"	15kV LOW SWITCH SUPPORT STRUCTURE (S06)
A07	8	1"	3'-6"	7"	6"	15kV HIGH SWITCH SUPPORT STRUCTURE (S07)
A08	24	1"	3'-6"	7"	6"	15kV SINGLE PHASE BUS SUPPORT (S08)
A09	8	1 1/4"	4'-6"	7"	6"	15kV LOW RECLOSER STRUCTURE (S09)
A10	16	1 1/4"	4'-6"	7"	6"	15kV HIGH RECLOSER STRUCTURE (S10)
A11	16	2"	6'-6"	11"	10"	STATIC WIRE SUPPORT STRUCTURE (S11)
A12	4	1"	3'-6"	7"	6"	15kV 3 PHASE BUS SUPPORT (S12)

NOTES:
1. REFER TO DRAWING S001 FOR GENERAL STEEL NOTES.

No.	DATE	BY	APP	REVISION	REFERENCE DRAWING	NUMBER
A	08/23/24	DJV	ML	60% REVIEW		

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Des By:	DJV	07/19/24
Drawn By:	DJV	07/19/24
Chk'd. By:	EJS	
ENGR.	DJV	
APPD.	–	–
APPD.	–	–

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WASHINGTON CITY
GRAPEVINE SUBSTATION
STEEL
ANCHOR BOLTS

SCALE: AS NOTED
Project No. 071-080
DRAWING No. 071-080-S116
REVISION: A

PLOTTED ON 8/22/2024 BY DANIEL VELARDE, DRAWING LOCATION: L:_DWGs\WAS071 Washington City\WAS071-080 Grapevine Sub Design\201 Drawings\201.02 Structural Drawings\Steel\071-080-S116.dwg