

ADDENDUM NO. 1

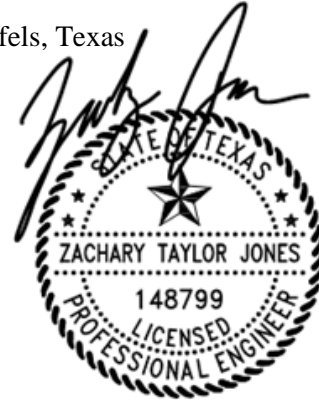
Date: February 11th, 2025

PROJECT: Wells Ranch II Emergency Generator Project; New Braunfels, Texas

PROPOSAL NO.: 2025-002

BID DATE: **2:00 pm; Friday, February 28, 2025**

FROM: Zachary Jones, P.E.
Project Manager
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1341 W. Mockingbird Lane, Suite 310W
Dallas, TX 75247



To: **Prospective Offerors and Interested Parties**

02/11/2025

This addendum forms a part of the bidding documents and will be incorporated into the Contract Documents, as applicable. Insofar as the original Contract Documents, Specifications, and Drawings are inconsistent, this Addendum shall govern. Please acknowledge receipt of this Addendum on the Proposal form, Section 00 41 00 submitted to the Canyon Regional Water Authority. **FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA ON THE PROPOSAL FORM MAY BE CAUSE FOR DISQUALIFICATION.**

CONTRACT DOCUMENTS:

1. 00003-Specification 00003 Table of Contents: Remove Pages 00003-2-3 and replaced with revised Pages 00003-2-3.

SPECIFICATIONS:

1. 01110-Specification 01110 Protection of the Environment: Add Specification 01110 in its entirety.
2. 16112-Specification 16112 Cable Trays for Electrical Systems: Replace revised Specification 16112 in its entirety.

CONSTRUCTION DRAWINGS:

1. Sheet E-002. Replace Sheet E-002 with revised Sheet E-002.
2. Sheet E-301. Replace Sheet E-301 with revised Sheet E-301.

END OF ADDENDUM NO. 1

Zachary Jones, P.E.
Project Manager

TECHNICAL SPECIFICATIONS

<u>Section</u>	<u>No. of Pages</u>
DIVISION 1 GENERAL CONDITIONS	
01025 Measurement and Payment Procedures.....	4
01110 Protection of the Environment	15
01100 Summary of Work.....	11
01200 Measurement and Payment	6
01311 Construction Schedule (with Attachment)	6
01350 Submittals.....	8
01380 Construction Photographs	6
01400 Contractor Quality Control.....	2
01450 Testing Laboratory Services.....	4
01500 Temporary Facilities and Controls	12
01505 Mobilization	2
01565 TPDES Requirements (with Attachments).....	11
01600 Material and Equipment	2
01610 Basic Product Requirements	6
01630 Product Options and Substitutions	4
01640 Manufacturers Service.....	4
01700 Contract Closeout.....	2
01710 Cleaning	4
01720 Field Surveying	4
01731 Operation and Maintenance Data	10
01755 Starting Systems.....	6
 DIVISION 2 SITE WORK	
02223 Excavation Trenching and Backfilling for Utilities	12
 DIVISION 3 CONCRETE – NOT USED	
 DIVISION 4 MASONRY – NOT USED	
 DIVISION 5 METALS – NOT USED	
 DIVISION 6 WOODS, PLASTICS, AND COMPOSITES – NOT USED	
 DIVISION 7 THERMAL AND MOISTURE PROTECTION – NOT USED	
 DIVISION 8 DOORS AND WINDOWS – NOT USED	
 DIVISION 9 PROTECTIVE COATING AND FINISHES – NOT USED	



TECHNICAL SPECIFICATIONS

<u>Section</u>	<u>No. of Pages</u>
DIVISION 10 SPECIALTIES – NOT USED	
DIVISION 11 EQUIPMENT – NOT USED	
DIVISION 12 - NOT USED – NOT USED	
DIVISION 13 SPECIAL CONSTRUCTION	
13300	Process Control Systems General Provisions..... 11
13310	Application Engineering Services4
13315	Process Control Systems Submittals 11
13320	Process Control Systems Testing9
13340	Process Control System Input/Output List4
13340.01	Raceways and Boxes for Electrical Systems2
13350	Process Control Descriptions9
13350.01	Wagner Booster Pump Station Standby Generator Unit3
13350.02	Leissner Booster Pump Station Standby Generator Unit3
13350.03	Dead Man Well Facilities Standby Generator Unit.....3
13350.04	Wells Ranch Facilities Standby Generator Unit No. 13
13350.05	Wells Ranch Facilities Standby Generator Unit No. 23
13420	Programmable Logic Controllers9
13460	Control Panel Enclosures and Panel Equipment 10
DIVISION 14 CONVEYING SYSTEMS – NOT USED	
DIVISION 15 MECHANICAL – NOT USED	
DIVISION 16 ELECTRICAL	
16000	Electric General Provisions7
16055	Power System Studies7
16060	Commissioning of Electrical Demolition.....7
16073	Hangers and Supports for Electrical Systems 10
16110	Raceways and Boxes for Electrical Systems10
16112	Cable Trays for Electrical Systems5
16120	Low-Voltage Electrical Power Conductors and Cables8
16161	Panelboards7
16195	Identification for Electrical Systems5
16301	Automatic Transfer Switch6
16360	Underground System.....4
16410	Enclosed Switches and Circuit Breakers8
16425	Switchboards 11
16443	Surge Protective Devices for Low Voltage Electrical Power Circuits6



SECTION 01110
PROTECTION OF THE ENVIRONMENT



PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The work covered by this Section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, silt fences, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area. Specific requirements for erosion and sedimentation controls are specified in Section 01565.
- D. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings. These are general guidelines. It is Contractor's responsibility to determine the specific construction techniques to meet these guidelines.
- E. All phases of sedimentation and erosion control shall comply with and be subject to the approval of the Texas Commission on Environmental Quality (TCEQ) and the U.S. Environmental Protection Agency.

1.02 MEASUREMENT AND PAYMENT

- A. No separate payment will be made for work performed under this Section. Include the cost for this work in the lump sum Base Bid Item.

1.03 APPLICABLE REGULATIONS

- A. Comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

1.04 NOTIFICATIONS

- A. The Owner's Representative will notify Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectional acts and corrective action to be

taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the Owner's Representative, of any non-compliance with State or local requirements. Contractor shall, after receipt of such notice from the Owner's Representative or from the regulatory agency through the Owner's Representative, immediately take corrective action. Such notice, when delivered to Contractor or his/her authorized representative at the site of the work, shall be deemed sufficient for the purpose. If Contractor fails or refuses to comply promptly, Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by Contractor unless it is later determined that Contractor was in compliance.

1.05 IMPLEMENTATION

- A. Prior to commencement of the work, meet with Owner to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the Owner's Representative, and incorporate permanent control features into the project at the earliest practicable time.

1.06 PROTECTION OF WATERWAYS

- A. Contractor shall observe the rules and regulations of the State of Texas and agencies of the U.S. Government prohibiting the pollution of any lake, stream, river, or wetland by the dumping of any refuse, rubbish, dredge material, or debris therein.
- B. Contractors are specifically cautioned that disposal of materials into any waters of the State must conform with the requirements of the TCEQ, and an applicable permit from the U.S. Army Corps of Engineers.
- C. Contractor shall be responsible for providing holding ponds or an approved method which will handle, carry through, or divert around his work all flows, including storm flows and flows created by construction activity, so as to prevent silting of waterways or flooding damage to the property or adjacent properties.
- D. Contractor is responsible for researching the need for a Texas Pollutant Discharge Elimination System (TPDES) permit for the construction site. If one is required, Contractor is responsible for obtaining the permit and for monitoring the site per the permit requirements until final completion, as well as submitting all certification forms to the Owner and reviewing the implementation of the SWPPP in a meeting with the Owner and Engineer before beginning construction.

1.07 DISPOSAL OF EXCESS EXCAVATION AND OTHER WASTE MATERIALS

- A. Excess excavated material not required or suitable for backfill and other waste material must be disposed of at sites approved by Owner or hauled off site.

- B. Unacceptable disposal sites, include, but are not limited to, sites within a wetland or critical habitat and sites where disposal will have a detrimental effect on surface water or groundwater quality.
- C. Contractor may make his own arrangements for disposal subject to submission of proof to the Owner's Representative that Owner(s) of the proposed site(s) has a valid fill permit issued by the appropriate governmental agency and submission of a haul route plan including a map of the proposed route(s).
- D. Contractor shall provide watertight conveyance of any liquid, semi-liquid, or saturated solids which tend to bleed or leak during transport. No liquid loss from transported materials will be permitted whether being delivered to the construction site or being hauled away for disposal. Fluid materials hauled for disposal must be specifically acceptable at the selected disposal site.

1.08 USE OF CHEMICALS

- A. All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture or any other applicable regulatory agency. Use of all such chemicals and disposal of residues shall be in conformance with the manufacturer's instructions.
- B. Any oil or other hydrocarbon spilled or dumped on Owner's Site during construction must be excavated and completely removed from the site prior to final acceptance. Soil contaminated by Contractor's operations shall become the property of Contractor, who will bear all costs of testing and disposal.
- C. Before Contractor commences work, the following steps shall be completed.
 - 1. Owner will provide a copy of the Chemical List giving the hazardous chemicals to which Contractor, his employees and agents may be exposed to on the project site upon the Contractor's request.
 - 2. Owner will provide copies of all MSDSs to Contractor for the hazardous chemicals which he may be exposed to on the project site upon the Contractor's request.
 - 3. Contractor shall provide MSDSs for all hazardous chemicals he may bring onto the project site that Owner's employees may be exposed to.
 - 4. Contractor shall sign a Contractor Acknowledgement certifying that he has received the information provided by the Owner on hazardous chemicals and maintain the Acknowledgement with the original Contract.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented. Ditches around construction area shall also be used to carry away water resulting from dewatering of excavated areas. At the completion of the work, ditches shall be backfilled and the ground surface restored to original condition.

3.02 PROTECTION OF STREAMS

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any stream from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such streams. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the water in the stream, shall not be directly returned to the stream. Such waters will be diverted through a settling basin or filter before being directed into the streams.
- B. Contractor shall not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water or any storm sewer. Water from dewatering operations shall be treated by filtration, settling basins, or other approved method to reduce the amount of sediment contained in the water.
- C. All preventative measures shall be taken to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the TCEQ. Contractor shall submit two copies of approved contingency plans to the Owner's Representative.
- D. Water being flushed from structures or pipelines after disinfection, with a chlorine residue of 2 mg/l or greater, shall be treated with a Dechlorination solution, in a method approved by the Owner's Representative, prior to discharge.

3.03 PROTECTION OF LAND RESOURCES

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction, that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the Owner's Representative. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use.

- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by Contractor's equipment, dumping or other operations, protect such trees by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly before beginning operations near them.
- D. Any trees or other landscape feature scarred or damaged by Contractor's equipment or operations shall be restored as nearly as possible to its original condition. The Owner's Representative will decide what methods of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of.

All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.

Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by Contractor and are beyond saving in the opinion of the Owner's Representative, shall be immediately removed and replaced.

- E. The locations of Contractor's storage, and other construction buildings, required temporarily in the performance of the work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawings and shall require written approval of the Owner's Representative and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the Owner's Representative.
- F. If Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he/she shall submit the following for approval at least ten days prior to scheduled start of such temporary work.
 - 1. A layout of all temporary roads, excavations and embankments to be constructed within the work area.
 - 2. Details of temporary road construction.
 - 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
 - 4. A landscaping drawing showing the proposed restoration of the area. Removal of any trees and shrubs outside the limits of existing clearing area shall be indicated. The drawing shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to be maintained undamaged. The drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of Contractor's approved drawings shall be made only with the written approval of the Owner's Representative. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.

- G. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess of waste materials, or any other vestiges of construction as directed by Engineer. It is anticipated that excavation, filling and plowing of roadways will be required to restore the area to near natural conditions which will permit the growth of vegetation thereon. The disturbed areas shall be prepared and seeded as described in these specifications, or as approved by the Owner's Representative.
- H. All debris and excess material will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

3.04 PROTECTION OF AIR QUALITY

- A. Burning: The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control: Contractor will be required to maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded, and which would cause a hazard or nuisance to others.
- C. All unpaved streets, roads, detours, or haul roads used in the construction area shall be given an approved dust-preventive treatment or periodically watered to prevent dust. The use of petroleum products is prohibited. The use of chlorides may be used with the approval of the engineer. Applicable environmental regulations for dust prevention shall be strictly enforced.
- D. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the Owner's Representative.
- E. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and Contractor must have sufficient suitable equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the Owner's Representative.

3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

3.06 NOISE AND DUST CONTROL

- A. Contractor shall so conduct all his operations that they will cause the least annoyance to the residents in the vicinity of the work, and shall comply with all applicable local ordinances. The compressors, hoists, and other apparatus shall be equipped with such mechanical devices as may be necessary to minimize noise and dust. Compressors shall be equipped with silencers on intake lines. All gasoline or oil operated equipment shall be equipped with silencers or mufflers on intake and exhaust lines. Storage bins and hoppers shall be lined with material that will deaden the sounds. The operation of dumping rock and of carrying rock away in trucks shall be

so conducted as to cause a minimum of noise and dust. Vehicles carrying rock, concrete, or other material shall be routed over such streets as will cause the least annoyance to the public and shall not be operated on public streets between the hours of 6 p.m. and 7 a.m. or on Saturdays, Sundays or legal holidays unless approved by Engineer.

3.07 NIGHTTIME WORK

- A. If Contractor is required or desires to execute any work between the hours of 6 p.m. to 7 a.m., he shall notify Owner in writing at least 48 hours before the intended start of such work. Contractor shall acquire any necessary permits associated with night work and comply with all permit conditions and all laws and ordinances relating to night work.

3.08 TWDB ENVIRONMENTAL PROTECTION CONDITIONS AND MEASURES

- A. Standard emergency condition for the discovery of cultural resources.
- B. Standard emergency condition for the discovery of threatened and endangered species.
- C. Included in this Section is Attachment A: Texas Water Development Board (TWDB) Environmental Determination letter.

END OF SECTION

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SECTION 16112
CABLE TRAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish and install cable trays systems, including all hardware and accessories.

1.02 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Other sections that may relate to the work in this section include, but are not limited to, the following:
 - 1. 01350 – Submittals
 - 2. 16000 – Electrical General Provisions

1.03 SUBMITTALS

- A. Submit to the Owner's Representative, in accordance with Division 1, detailed catalog information or drawings describing electrical and physical characteristics of all equipment specified.
- B. Submittal shall be clearly marked showing only equipment provided. Mark through equipment options not provided.
- C. Literature and drawings describing the equipment in sufficient detail, including parts list and materials of construction, to indicate full conformance with the Specifications.
- D. Submit a letter certifying full and complete compliance with the Specifications, Drawings and other project requirements. The letter shall list any exceptions or deviations from specified requirements, if any and reasons for same. Exceptions or deviation shall also be clearly marked in a separate color in submittals.
- E. Submit detailed cable tray layout showing all support locations, cable tray sizes, and routing prior to installation.

1.04 REFERENCE STANDARDS

- A. Cable trays shall be designed, manufactured, and tested in accordance with NEMA FG-1, NEMA VE-2, ASTM, and the National Electrical Code Article 392.



1.05 QUALITY ASSURANCE

- A. Approved manufacturers
 - 1. Approved manufacturers are B-Line, Thomas & Betts, and Husky. All components shall be of the same manufacturer.

1.06 SYSTEM DESCRIPTION/DESIGN REQUIREMENTS

- A. Cable trays shall be furnished and installed by the Contractor, complete with all fittings, accessories, and supports to form a complete system as herein specified and indicated on the Plans.

1.07 DELIVERY, HANDLING, AND STORAGE

- A. Store products specified in this section in a dry location. Following installation, protect products from the effects of moisture, corrosion, and physical damage during construction.

1.08 MAINTENANCE/SPARE PARTS

- A. Annual inspection is recommended for stainless steel hardware used to join a fiberglass vinyl ester cable tray system when installed in areas where exposed to chlorine gas.

1.09 EXTENDED WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of that fails in materials or workmanship within specified warranty period.
- B. Warranty Period: Two (2) years from date of shipment from the factory. Cost for the removal, shipment, repair, and installation by Contractor shall be included in warranty, as well as correction of defective work.
- C. Store cable trays and accessories in original cartons and in a clean dry space; protect from weather and construction traffic. Wet material should be unpacked and dried before storage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cable trays shall be heavy-duty, ladder type fiberglass vinyl ester, B-Line Series 46FV, or engineer approved equal. Tray shall consist of two longitudinal members (side rails) with transverse members (rungs) mechanically fastened and adhesively bonded to the side rails. Tray shall be furnished with 6-inch side rails (5" load depth) and 9-inch rung spacing in 20 foot lengths except where shorter lengths are required for proper installation.
- B. All cable tray bends shall have a minimum 24-inch radius bend, but not less than the minimum bending radius of the largest cable.
- C. Barriers strips shall be provided 4-inches high and in 10-foot sections where required and where indicated on the Plans. Horizontal barriers shall be slotted for curvature flexibility. Vertical barriers shall be factory formed to the required radius and length. Self-tapping screws shall be used for securing barriers in place.
- D. Cable Firestop Material shall be fiberglass blanket with noncombustible binder, manufactured by Owens Corning or approved equivalent. Conduit sealant material shall be Polywater FST and AFT.

- E. Tray systems shall be complete with all splice plates, expansion joints, hardware, covers, and cover clips, where specified for a complete system. Covers, where required, shall be flanged type in standard lengths and in configurations to fit all width of bends, tees, etc. Cover clips shall be thumb type. Connectors for joining trays shall develop the full strength and rigidity of the run and shall not introduce any sharp edges or corners. Bolt ends and nuts shall not be located inside cable tray. Lock washers shall be used with bolts and nuts. Cable trays shall be bolted at each penetration provided for by the cable tray manufacturer. All nuts, bolts, washers, and all thread shall be 316 stainless steel.
- F. At 12-foot spans, 12-inch cable trays with 3 inches usable fill depth shall sustain a working (allowable) load of 25 lbs. per linear foot, 18 and 24-inch cable trays with 3- or 5-inches usable fill depth shall sustain a working load of 45 lbs. per linear foot, and 30 and 36-inch cable trays with 5 inches usable fill depth shall sustain a working load of 55 lbs. per linear foot. For these loading conditions, the cable trays shall have a safety factor of 2 when tested in accordance with NEMA load test VE13.01. In addition to the loads specified above, trays should be able to withstand a concentrated load of 200 pounds at mid-span, at the center of the rung or on either side rail. The safety factor for this load condition shall be at least 1.5, based on the ultimate capacity of the tray of any of its components as determined by test in accordance with NEMA load test VE13.01.

2.02 FABRICATION (NOT USED)

2.03 CONTROLS (NOT USED)

2.04 FACTORY TESTS (NOT USED)

PART 3 - EXECUTION

3.01 DEMOLITION/PREPARATION (NOT USED)

3.02 INSTALLATION

- A. The installation shall conform to Article 392 of the National Electrical Code, NEMA VE-1, and NEMA VE-2, the manufacturer's shop drawings and recommendations, and in accordance with drawing details and field conditions.
- B. Cable trays
 - 1. Cable trays shall not be walked upon by any personnel, and care shall be exercised during erection to prevent deformation. Additional supports shall be provided if necessary.
- C. Field cutting
 - 1. Field cutting shall be accomplished as necessary, all sharp edges shall be ground smooth where rungs or side channels must be cut or removed.
- D. Tray expansion joints
 - 1. Trays shall have expansion joint splice plates installed at intervals not exceeding 50 feet of straight runs. Expansion joint splice plates shall also be installed at tees and crosses. Trays shall be supported within one foot maximum of each side of the gap. The gap between the tray ends shall be based on a temperature at the time of installation and the

temperature extreme, a maximum of 115°F. and minimum of 32°F. Keamalex gritless inhibitor #30584-22, or equal, shall be used on all sliding surfaces of expansion joints.

E. Building expansion joints

1. Expansion joint splice plates shall also be installed whenever the cable tray crosses a building expansion joint.

F. Installation of tray expansion joints

1. When tray expansion joints are installed, the tray shall be firmly affixed close to the midpoint between expansion joints or to the nearest 90-degree bend. This shall be done to prevent the tray from possibly creeping to one end or the other.

G. Tray expansion joint grounding

1. Expansion joint grounding and tray grounding shall be according to 16450 – Grounding and Bonding for Electrical Systems and as shown on the tray drawings. Trays shall be grounded at both ends and at least every 50 feet.

H. Cable tray identification

1. Cable tray identification shall be as specified in 16195 – Identifications for Electrical Systems.

I. Cable trays and supports.

1. Cable trays and supports shall be installed as indicated on the Plans. Cable trays shall be supported to comply with the NEMA VE-2 Standard.
2. All cable tray mounting hardware shall be 316 stainless steel.

J. Cable lengths

1. Long low voltage cable lengths shall be installed using cable rollers and basket grips and tools designed specifically for this purpose, with care being taken not to exceed pulling tensions and bending radii recommended by the manufacturer of the cable. Short lengths of low voltage cable may be laid in place without special tools.

K. Cable ties

1. Cables shall be fastened in place with plastic Ty-Raps as manufactured by Thomas and Betts, approximately every 5 feet for straight horizontal runs and every 12 inches on radii and vertical bends.

L. Cable tray firestops

1. Cable tray firestops, consisting of fiberglass blankets on both sides of the tray, retained with solid hot-dip galvanized steel covers, shall be installed where required. In general, firestops shall be installed where trays pass through walls, ceilings, and floors. Conduit dropouts shall be sealed with Polywater FST & AFT; vertical firestops shall be sealed with fiberglass. Fiberglass shall also be used to seal any openings around the tray where it passes through floors, walls, or ceilings.



M. Changes in tray size

1. Changes in tray size or direction, crosses, dropouts, etc., shall employ use of standard fittings and standard connectors approved for this purpose.

N. Vertical runs

1. All vertical runs of cable trays shall be provided with ventilated cable tray- covers from the floor line to a point six feet above floor.

3.03 INSPECTION (NOT USED)

3.04 FIELD TESTING (NOT USED)

3.05 FIELD PAINTING (NOT USED)

3.06 CLEANING (NOT USED)

END OF SECTION

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ELECTRICAL ABBREVIATIONS

A	ACU	AMPERAGE
	AFF	AIR CONDITIONING UNIT
	AFG	ABOVE FINISHED FLOOR
	AHU	ABOVE FINISHED GRADE
	ATS	AIR HANDLING UNIT
	AUTO	AUTOMATIC TRANSFER SWITCH
	BFM	AUTOMATIC
	CAP	BLOWER FILTER MOTOR
	CB	CAPACITOR
	CKT	CIRCUIT BREAKER
	CPT	CIRCUIT
	CT	CONTROL POWER TRANSFORMER
	CU	CURRENT TRANSFORMER CONTROL
	DAS	CONDENSING UNIT/COPPER
	DS	DYNAMIC ARC FLASH SENTRY
	EHU	DISCONNECT SWITCH
	ETM	ELECTRIC HEATER UNIT
	EWC	TIME METER EACH WAY
	EWB	ELECTRIC WATER COOLER
	FLA	ELECTRIC WATER HEATER
	FVNR	FULL LOAD AMPERAGE
	FVR	FULL VOLTAGE NON-REVERSING
	G, GND	FULL VOLTAGE REVERSING
	GAL	GROUND
	GEN	GALVANIZED
	GFCI	GENERATOR
	HD	GROUND FAULT CIRCUIT INTERRUPTER
	HG	HOT DIPPED GALVANIZED
	HOA	HOSPITAL GRADE
	IC	HAND OFF AUTOMATIC
	IG	INTERRUPTING CAPACITY
	INST	ISOLATED GROUND
	JB	INSTANTANEOUS
	K	JUNCTION BOX
	KS	KEY INTERLOCK
	KVA	KEY SWITCH
	KW	KILOVOLT-AMPERE
	LC	KILOWATT
	LCP	LIGHTING CONTACTOR
	LTG	LOCAL CONTROL PANEL
	LV	LIGHTING
	M	LOW VOLTAGE
	MCC	MOTOR (ELECTRIC)
	MSC	MOTOR CONTROL CENTER
	MV	MANUFACTURE SUPPLIED CABLE
	MLO	MEDIUM VOLTAGE
	MPC	MAIN LUGS ONLY
	MPR	MINI POWER CENTER
	N	MOTOR PROTECTION RELAY
	NA	NEUTRAL GROUNDED CONDUCTOR
	NC	NON-AUTOMATIC
	NF	NORMALLY CLOSED
	NO	NON-FUSED
	OC	NORMALLY OPEN
	OCPD	OVERCURRENT
	OV	OVERCURRENT PROTECTION DEVICE
	PB	OVERVOLTAGE
	PH, Ø	PUSHBUTTON
	PLC	PHASE
	PMT	PROGRAMMABLE LOGIC CONTROLLER
	PMGR	PAD MOUNTED TRANSFORMER
	PP	PAD MOUNTED SWITCHGEAR
	PT	POWER PANEL
	PTT	POTENTIAL TRANSFORMER
	PVC	PUSH TO TEST
	PWR	POLYVINYL CHLORIDE
	R	POWER
	REV	RELAY
	REQ'D	REVERSE
	RGS	REQUIRED
	RLY	RIGID GALVANIZED STEEL
	RS	RIGID STEEL
	RVNR	RIGID STEEL
	RV	REDUCED VOLTAGE NON-REVERSING
	RVR	REDUCE VOLTAGE
	RVSS	REVERSING
	RTU	REDUCE VOLTAGE SOLID STATE
	SCR	ROOF TOP UNIT
	SCADA	SECURITY CARD READER
	SE	SUPERVISORY CONTROL AND DATA ACQUISITION
	SF	SERVICE ENTRANCE
	SPD	SUPPLY FAN
	SS	SURGE PROTECTIVE DEVICE
	SWGR	STAINLESS STEEL
	S	SWITCHGEAR
	T	SWITCH
	TB	THERMOSTAT
	TD	THERMOSTAT
	TP	TIME DELAY
	TSP	TWISTED PAIR
	TST	TWISTED SHIELDED PAIR
	TVSS	TWISTED SHIELDED TRIAD
	UG	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	UPS	UNDERGROUND
	UV	UNINTERRUPTIBLE POWER SUPPLY
	U.N.O.	UNDERVOLTAGE
	V	UNLESS NOTED OTHERWISE
	VF	VOLT
	VFD	VARIABLE FREQUENCY
	W	VARIABLE FREQUENCY DRIVE
	WP	WIRE
	XFMR	WEATHER PROOF TRANSFORMER

GENERAL NOTES

- ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
 - NFPA 70, NATIONAL ELECTRICAL CODE.
 - NFPA 101 LIFE SAFETY CODE.
- ALL ELECTRICAL CIRCUITS SHALL INCLUDE A GREEN GROUNDING CONDUCTOR SIZED PER NEC.
- CONDUIT AND DEVICE LOCATIONS ARE SHOWN DIAGRAMMATICALLY ONLY, CONTRACTOR SHALL FIELD LOCATE OR ROUTE AS REQUIRED.
- ALL CONDUIT SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
- ALL PANEL SCHEDULES SHALL BE RETYPED AND LAMINATED TO REFLECT UP TO DATE CONDITIONS. TRACE EXISTING CIRCUITS. ALL PANEL LEGENDS SHALL INDICATE THE PANELS, SOURCE PANEL AND ITS LOCATION.
- ELECTRICAL EQUIPMENT AND DEVICES SHALL BE PROVIDED WITH PHENOLIC NAMEPLATES. ALL NAMEPLATES SHALL BE MECHANICALLY FASTENED WITH S.S. SCREWS OR RIVETS. THE USE OF ADHESIVE NAMEPLATES SHALL NOT BE ALLOWED.
- CONTRACTOR SHALL MAINTAIN A SET OF PRINTS AND MARK-UP DURING CONSTRUCTION TO REFLECT "AS-BUILT" CONDITIONS.
- CONDUIT RUNS SHALL NOT EXCEED 270 DEGREES OF TOTAL BENDS BETWEEN PULL POINTS.
- PROVIDE CONDUIT EXPANSION FITTINGS AS CONDUIT CROSSES BUILDING EXPANSION JOINTS.
- ALL SUPPORTING AND FASTENING DEVICES SHALL BE 316 STAINLESS STEEL.
- CONTRACTOR MAY COMBINE HOMERUNS TO 120V PANELBOARD CIRCUIT PER NEC. COMBINING MORE THAN THREE 120V CIRCUITS WILL NOT BE ALLOWED WITHOUT SUBMITTING NEC DERATING CALCULATIONS.
- ALL RECEPTACLE BRANCH CIRCUITS OVER 75' IN LENGTH SHALL USE #10 AWG CONDUCTOR (FOR VOLTAGE DROP).
- CONTRACTOR SHALL PROVIDE 2 SPARE FUSES FOR EACH FUSE INSTALLED INCLUDING ALL EQUIPMENT AND CONTROLS.
- CONTROL AND POWER CONDUITS SHALL BE SEPARATED BY 12" MIN. AND SHALL BE IN SEPARATE JUNCTION BOXES AND DUCT BANKS. MAINTAIN 12" SEPARATION BETWEEN DUCT BANKS.
- INSTALLATION OF THE NEW FACILITIES WILL REQUIRE FIELD COORDINATION WITH PLANT OPERATIONS TO PERMIT MAINTENANCE OF OPERATION DURING CONSTRUCTION. DURATION OF POWER OUTAGES SHALL BE MINIMUM REQUIRED FOR SAFE INSTALLATION AND SHALL BE SCHEDULED WITH AND APPROVED BY THE OWNER.
- THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID EXISTING UNDERGROUND UTILITIES INCLUDING PROCESS PIPING, WATER LINES, CHEMICAL FEED PIPING, ELECTRICAL CONDUITS. HAND EXCAVATION SHALL BE REQUIRED IN CONGESTED AREAS WHERE THE EXACT LOCATION OF ALL UTILITIES IS UNKNOWN. LOCATIONS SHOWN FOR THE EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. NOT ALL OF THE EXISTING UNDERGROUND UTILITIES ARE SHOWN. FIELD ADJUST LOCATIONS OF THE NEW FACILITIES TO ACCOMMODATE THE EXISTING SITE CONDITIONS AND UNDERGROUND UTILITIES.
- CONTRACTOR SHALL PROVIDE A GROUNDING SYSTEM AS REQUIRED BY THE NEC AND IEEE GREEN BOOK. THE INSTALLED GROUNDING SYSTEM SHALL HAVE A RESISTANCE OF LESS THAN 5 OHMS TO GROUND. PROVIDE A CONTINUOUS #4/0 TINNED COPPER GROUNDING SYSTEM.
- IF ITEM IS PROPOSED FROM OTHER THAN FIRST NAMED MANUFACTURER AND WILL REQUIRE ADDITIONAL ENGINEERING TO INCORPORATE INTO DRAWINGS, I.E., ADDITIONAL I/O, DIFFERENT OR ADDITIONAL BREAKERS, LARGER CONDUCTOR SIZE OR ADDITIONAL CONDUCTORS, LARGER OR ADDITIONAL CONDUIT(S). CONTRACTOR SHALL BE REQUIRED TO PAY FOR ALL ADDITIONAL ENGINEERING CHARGES AND ADDITIONAL EQUIPMENT, MATERIAL COST, ETC.
- NAMEPLATES ON ELECTRICAL EQUIPMENT SHALL HAVE P&ID TAG NUMBER AS WELL AS DESCRIPTION OF LOAD BEING SERVED AND EQUIPMENT TAG NUMBER AS A MINIMUM. EQUIPMENT BEING SERVED SHALL HAVE IDENTICAL TAG AS ELECTRICAL GEAR AND BREAKER NOTATION WHICH IS SERVING EQUIPMENT.
- REFER TO HVAC DRAWINGS FOR THE LOCATIONS OF 120 VOLT UNIT HEATER THERMOSTATS AND PROVIDE 3/4-IN C, 2#12 AND 1#12 GND BETWEEN EACH HEATER AND ITS RESPECTIVE CONTROL THERMOSTAT. INTERCONNECTION WIRING BETWEEN HVAC COMPONENTS SHALL BE BY THE HVAC CONTRACTOR.
- THIS PROJECT IS SUBJECT TO THE U.S. IRON AND STEEL (U.S. I&S) REQUIREMENTS OF TEXAS WATER CODE § 17.183 AND/OR TEXAS GOVERNMENT CODE, CHAPTER 2252, SUBCHAPTER G, AS AMENDED BY SB 1289, 85TH LEGISLATIVE SESSION, AS APPLICABLE. ALL IRON AND STEEL PRODUCTS USED IN PROJECT CONSTRUCTION MUST BE PRODUCED IN THE UNITED STATES.
- ENCLOSURE AND CONTROL PANELS SHALL BE THE FOLLOWING:
 - INDOOR AIR CONDITIONED NON-PROCESS AREAS SHALL BE NEMA 12 WITH NO VENTILATION TO THE OUTSIDE. MAY BE NEMA 1 IN A CLEAN ROOM WITH CARBON FILTERS.
 - INDOOR PROCESS AREAS SHALL BE NEMA 4X, 316 STAINLESS STEEL UNLESS LOCATED IN CHEMICAL ROOM WITH NON COMPATIBLE CHEMICAL.
 - OUTDOOR ENCLOSURE SHALL BE GALVANIZED STEEL.
 - ALL CONTROL PANELS SHALL BE UL-508A AND COMPLY WITH ARTICLE 409 OF THE NEC. ALL CONTROL PANELS IN DESIGNATED HAZARDOUS LOCATIONS OR CONTAINING WIRING WHICH IS HAZARDOUS LOCATIONS SHALL BE UL-698A.
 - CONNECTIONS TO SCREW TYPE TERMINALS ARE ONLY ALLOWED IF COMPRESSION TYPE TERMINAL ARE NOT AVAILABLE.
 - ALL CONTROL CABINET WIRING TO THE PLC AND CONTROL DEVICES SHALL BE 16 AWG FOR ANALOG AND 16 AWG FOR DIGITAL AND TERMINATED WITH FERRULES.
 - ALL CONTROL PANEL SUBMITTALS SHALL CONTAIN SLOTTED HINGED DUCT CALCULATIONS FOR CONDUCTOR FILL. ALL CONTROL PANEL SUBMITTALS SUBMITTED WITHOUT WIRE FILL CALCULATIONS SHALL BE RETURNED INCOMPLETE WITHOUT EVALUATIONS. NO DUCT SHALL CONTAIN MORE THAN 40% FILL BASED ON NEC WIRE FILL STANDARDS. CALCULATIONS SHALL INCLUDE ALL FILED CONDUCTORS DESIGNED TO ENTER THE PANEL IN FIELD TERMINATIONS PORTION OF THE PANEL. ALL CONTROL PANELS SHALL CONTAIN DESIGNATED DUCTS FOR INTERNAL WIRING AND A SEPARATE DUCT(S) FOR FIELD WIRING.
 - ALL KEY INTERLOCKED SET (KIRK KEY) IF PART OF THE DESIGN, MUST BE INSCRIBED TO INDICATE SET LOCATIONS AND KEYED DIFFERENTLY TO PREVENT UNAUTHORIZED BREAKER COMBINATIONS. SPARE BREAKER INTERLOCKED KEYS MUST BE TIGHTLY CONTROLLED TO PREVENT UNAUTHORIZED BREAKER COMBINATIONS.
 - PANEL DRAWINGS SHALL BE LAMINATED, ATTACHED TO THE DOOR AND IN COLOR. DRAWING SHALL BE PRINTED ON 8.5 X 11 IF 11 X17 IS TOO LARGE TO FIT ON THE DOOR. FULL SET OF ELECTRICAL DRAWINGS PRINTED WITH A LASER PRINTER AND IN COLOR SHALL BE INSERTED IN THE DOOR POCKET. INK JET IS NOT ACCEPTED.
 - ALL CONTROL PANEL WITH A PLC/HMI/VFD SHALL BE EQUIPPED WITH A PANEL TEMPERATURE SENSOR. TEMPERATURE SENSOR SHALL BE CONNECTED TO SCADA WHERE APPLICABLE.

TEXAS WATER DEVELOPMENT BOARD ENVIRONMENTAL PROTECTION CONDITIONS AND MEASURES

- STANDARD EMERGENCY CONDITION FOR THE DISCOVERY OF CULTURAL RESOURCES.
- STANDARD EMERGENCY CONDITION FOR THE DISCOVERY OF THREATENED AND ENDANGERED SPECIES.

1



NO.	DATE	REVISION	BY
1	02/11/25	REVISED PER ADDENDUM NO. 1	ZTJ

CANYON REGIONAL WATER AUTHORITY
WELL RANCH II EMERGENCY GENERATOR PROJECT

ELECTRICAL ABBREVIATIONS AND GENERAL NOTES



JOB NO: 2024-0767
DATE: 11/12/2024

E-002

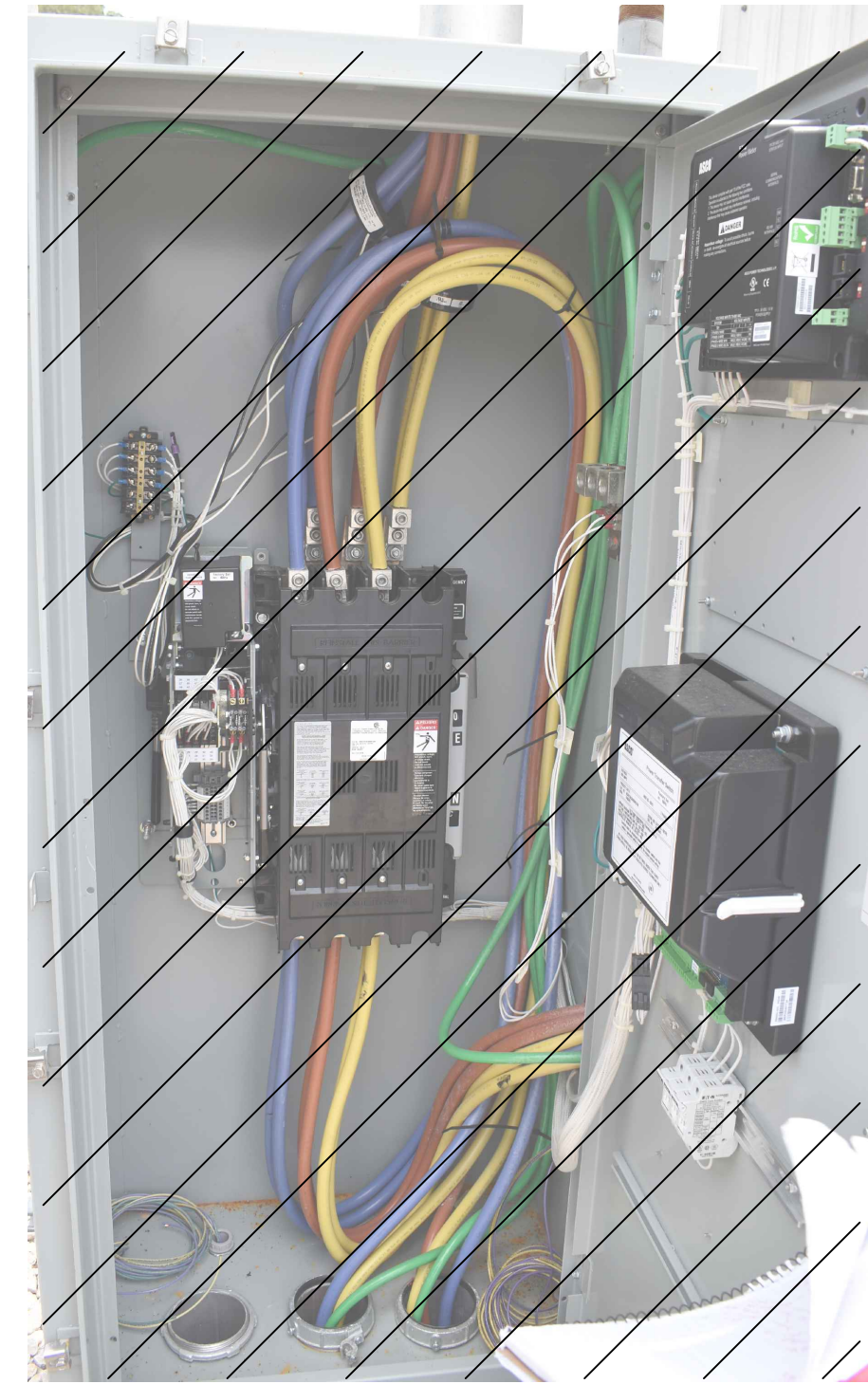
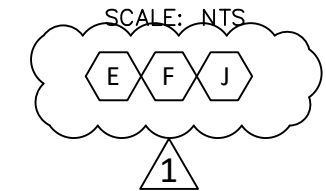
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NOTE:
THIS IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT

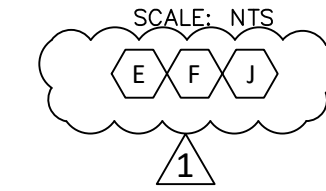
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EXISTING 400A ATS - EXTERIOR



EXISTING 400A ATS - INTERIOR



EXISTING GENERATOR ENCLOSURE SUBPANEL

SCALE: NTS

LEGEND
 DENOTES ITEMS TO BE DEMOLISHED.

NOTES

- OWNER SHALL RETAIN SALVAGE RIGHTS TO ALL EQUIPMENT BEING REMOVED. RELOCATED OFFSITE AS DIRECTED BY OWNER.
- REFER TO SHEETS E-500 THROUGH E-502 FOR PANEL SCHEDULES.

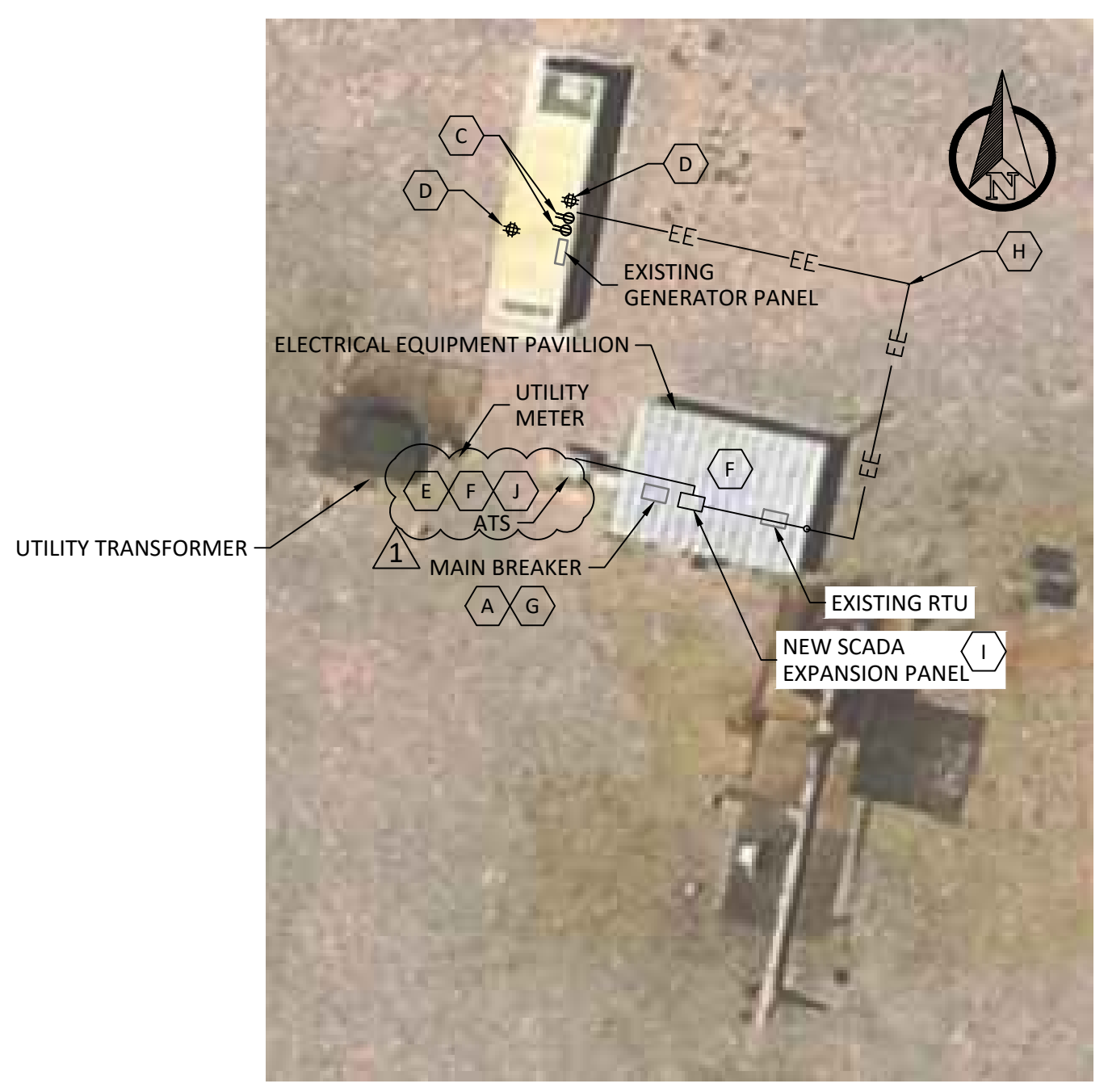
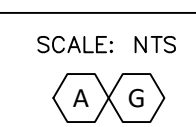
- SHEET KEY NOTES**
- CONTRACTOR TO INSTALL A NEW 600A CIRCUIT BREAKER. CONTRACTOR SHALL TERMINATE EXISTING WIRE BACK TO THE NEW CIRCUIT BREAKER. CONTRACTOR SHALL PROVIDE NEW GROUND AND NEUTRAL LUGS FOR CLEAN AND PROPER TERMINATION OF WIRES INSIDE OF THE EXISTING ENCLOSURE.
 - CONTRACTOR TO REPLACE GENERATOR ENCLOSURE SUBPANEL MAIN CIRCUIT BREAKER WITH (1) NEW 40A, 2P CIRCUIT BREAKER. CONTRACTOR TO ENSURE KAIC RATING TO MATCH EXISTING.
 - CONTRACTOR TO FURNISH AND INSTALL (2) NEW BATTERY BLANKET HEATER RECEPTACLES, ONE FOR EACH GENERATOR BATTERY, AND CONNECT TO LOCAL POWER SOURCE.
 - CONTRACTOR TO FURNISH AND INSTALL (2) NEW 120V, 20A GFCI PROTECTED GENERAL PURPOSE QUAD-RECEPTACLES INSIDE THE GENERATOR ENCLOSURE FED VIA (1) NEW 20A SINGLE POLE CIRCUIT BREAKER FROM WITHIN THE LOCAL GENERATOR ENCLOSURE HOUSE PANEL. COORDINATE LOCATION WITH THE OWNER.
 - CONTRACTOR TO DEMOLISH THE EXISTING ATS AND ASSOCIATED ENCLOSURE. CONTRACTOR TO PRESERVE THE EXISTING CONDUIT AND WIRE CONNECTED TO THE ATS FOR CONNECTION TO THE NEW ATS.
 - CONTRACTOR TO INSTALL A NEW ATS WITH RATINGS AS SHOWN ON SHEET E-300. THE ATS SHALL BE ASCO MODEL J03ATS30600NSXM - 11BE, 18RX, 44G, 72EE, 135L, OR ENGINEER APPROVED EQUAL. CONTRACTOR TO CONNECT THE POWER METER IN THE ATS TO THE SCADA EXPANSION PANEL FOR REMOTE MONITORING VIA A CAT 6 CABLE IN A 1-INCH CONDUIT.
 - CONTRACTOR TO DEMOLISH THE EXISTING 500A MAIN CIRCUIT BREAKER. ASSOCIATED CONDUIT AND WIRE SHALL REMAIN FOR CONNECTION TO THE NEW MAIN CIRCUIT BREAKER.
 - CONTRACTOR TO FIELD VERIFY AND DETERMINE IF THERE ARE SUFFICIENT AMOUNTS OF CONTROL CONDUCTORS (IF ANY) CURRENTLY INSTALLED BETWEEN THE EXISTING RTU AND THE GENERATOR. IF THERE ARE NO CONDUCTORS OR NOT ENOUGH CONDUCTORS TO PROVIDE MONITORING SIGNALS AS SHOWN ON THE SHEET I-300, THE CONTRACTOR SHALL PROVIDE AND INSTALL 12 #14, #14 GND IN A 1-INCH CONDUIT, DIRECT BURIED FROM THE GENERATOR TO THE NEW SCADA EXPANSION PANEL AS INDICATED.
 - CONTRACTOR TO INSTALL A NEW EXPANSION PANEL FOR NEW I/O SIGNALS. PROVIDE PANEL IN THE APPROXIMATE LOCATION SHOWN ON THE EQUIPMENT RACK AND PROVIDE REQUIRED UNISTRUT MOUNTING HARDWARE. PROVIDE 2#12, #12 GND IN A 3/4-INCH CONDUIT FROM THE EXISTING RTU PANEL POWER SUPPLY TO THE NEW EXPANSION PANEL.
 - CONTRACTOR TO VERIFY IF THE GENERATOR START SIGNAL WIRING IS CURRENTLY INSTALLED TO THE GENERATOR FROM THE ATS. IF THE WIRING IS PRESENT AND IS ADEQUATE, THE CONTRACTOR SHALL RECONNECT TO THE NEW ATS. IF THE WIRING IS NOT PRESENT, THE CONTRACTOR SHALL PROVIDE AND INSTALL 8#14, #14G, IN A 1-INCH CONDUIT FROM THE ATS TO THE GENERATOR.



EXISTING 500A MAIN CIRCUIT BREAKER - EXTERIOR

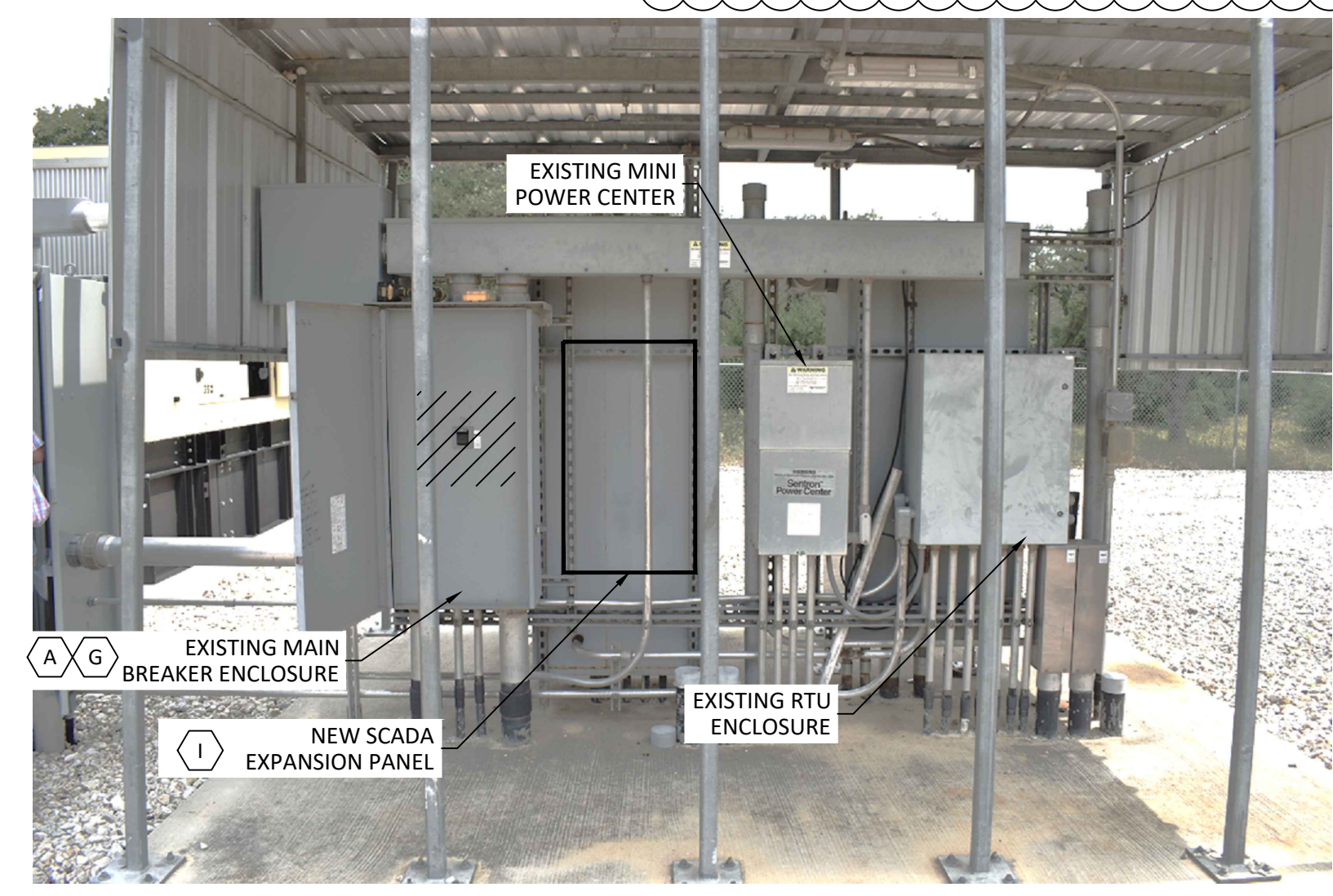


EXISTING 500A MAIN CIRCUIT BREAKER - INTERIOR



DEADMAN WELL PROPOSED SITE PLAN

SCALE: NTS



EXISTING EQUIPMENT RACK

SCALE: NTS

CANYON REGIONAL WATER AUTHORITY
 880 LAKESIDE PASS
 NEW BRAUNFELS, TEXAS 78130
 (830) 609-0740

CANYON REGIONAL
 water authority

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CANYON REGIONAL WATER AUTHORITY
WELL RANCH II EMERGENCY GENERATOR PROJECT
 DEADMAN WELL SITE PLAN

ZACHARY TAYLOR JONES
 48799
 LICENSED PROFESSIONAL ENGINEER
 02/11/2025

JOB NO: 2024-0767
 DATE: 11/12/2024

E-301

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