ADDENDUM NO. 1 Date: October 23, 2023
TO THE CONTRACT DOCUMENTS Project No.: W7Y29003
for the construction of
SPANISH FORK SANTAQUIN PIPELINE
SANTAQUIN REACH
Contract C-2023-01

To All Planholders and/or Prospective Bidders:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the construction of Spanish Fork Santaquin Pipeline Santaquin Reach dated October 2023 as fully and completely as if the same were fully set forth therein:

A. PART 1, PROCUREMENT REQUIREMENTS

1. Section 00 21 13, Instructions to Bidders.

   a. Page 1, Paragraph 1.1.2. DELETE "QuestCDN" and REPLACE with "ProjectMates".

   b. Page 2, Paragraph 3.1. DELETE "QuestCDN" and REPLACE with "ProjectMates".

2. Section 00 41 13, Bid Form. DELETE in its entirety and REPLACE with the attached.

B. PART 2, CONTRACTING REQUIREMENTS

1. N/A.

C. PART 3, SPECIFICATIONS

1. Section 01 29 00, Payment Procedures. Page 8, Article 1.07 Payment, Schedule A Table. ADD the following:

"A17	Orchard Payments	Payment will be made to the Orchard owners as specified in Section 01 31 13, Project Coordination. Payment must be made within 90 days of signing the Agreement."

2. Section 05 31 00, Steel Decking. ADD Section 05 31 00, Steel Decking in its entirety as herein attached.

3. Section 26 05 02, Basic Electrical Requirements. DELETE in its entirety and REPLACE with the attached.

4. Section 40 27 06, Plunger Valves.

   a. Page 6, Article 2.01 Plunger Valve Performance Requirements, Paragraph D. 16-inch, Type SZ 40, Flow Control Plunger Valve Operation Data. DELETE “SZ 40” and REPLACE with “SZ 30-20”.

   b. Page 7, Article 2.01 Plunger Valve Performance Requirements, Paragraph G. 12-inch, Type SZ 40, flow Control Plunger Valve Operation Data. DELETE “SZ 40” and REPLACE WITH “SZ 30-20”.

   c. Page 7, Article 2.01 Plunger Valve Performance Requirements, Paragraph G. 12-inch, Type SZ 40, flow Control Plunger Valve Operation Data, Subparagraph 1. DELETE “129 psi” and REPLACE with “250 psi”.

   d. Page 7, Article 2.01 Plunger Valve Performance Requirements, Paragraph G. 12-inch, Type SZ 40, flow Control Plunger Valve Operation Data, Subparagraph 1.e. DELETE “129 psi” and REPLACE with “250 psi”.

   e. Page 7, Article 2.01 Plunger Valve Performance Requirements, Paragraph G. 12-inch, Type SZ 40, flow Control Plunger Valve Operation Data, Subparagraph 1. ADD the following:

      “g. Minimum Outlet Pressure: 225 psi.”

   f. Page 14, Article 2.07 Plunger Valve Manufacturer, Paragraph D. DELETE in its entirety.

5. Section 40 30 95, Quick-Opening Pipe Access Doors. ADD Section 40 30 95, Quick-Opening Pipe Access Doors in its entirety as herein attached.

6. Section 40 90 01, Instrumentation and Control for Process Systems.

   a. Page 35, Article 3.10 Supplements, Paragraph A., Subparagraph 4. DELETE and REPLACE with the following:

      “4. Control Specifications.”

   b. Supplement 03, Control Panel Schedule. DELETE in its entirety and REPLACE with the attached.

   c. Supplement 04, Control Specifications. DELETE in its entirety and REPLACE with the attached.

D. DRAWINGS

1. Drawing No. PP-90, Plan and Profile STA 801+00 to STA 810+00. DELETE in its entirety and REPLACE with the attached.

2. Drawing No. GE-2, General Electrical Notes, Legend, and Abbreviations. DELETE in its entirety and REPLACE with the attached.

3. Drawing No. 10-E-2, Mapleton High Pressure Turnout Electrical Plan. DELETE in its entirety and REPLACE with the attached.

4. Drawing No. 10-E-3, Mapleton High Pressure Turnout Electrical Details. DELETE in its entirety and REPLACE with the attached.

5. Drawing No. 15-E-1, Salem East Turnout Site Plan. DELETE in its entirety and REPLACE with the attached.

6. Drawing No. 15-E-2, Salem East Turnout Electrical Plan. DELETE in its entirety and REPLACE with the attached.

7. Drawing No. 15-E-3, Salem East Turnout Electrical Details. DELETE in its entirety and REPLACE with the attached.

8. Drawing No. 20-E-1, Salem Woodland Hills Drive Turnout Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

9. Drawing No. 20-E-2, Salem Woodland Hills Drive Turnout Electrical Plan. DELETE in its entirety and REPLACE with the attached.

10. Drawing No. 20-E-3, Salem Woodland Hills Turnout Electrical Details. DELETE in its entirety and REPLACE with the attached.

11. Drawing No. 20-N-2, Salem Woodland Hills Turnout Process and Instrumentation Diagrams. DELETE in its entirety and REPLACE with the attached.

12. Drawing No. 30-E-1, Salem 250 West Blowoff Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

13. Drawing No. 30-E-2, Salem 250 West Blow Off Vault Electrical Plan. DELETE in its entirety and REPLACE with the attached.

14. Drawing No. 30-E-3, Salem 250 West Blow Off Vault Electrical Details. DELETE in its entirety and REPLACE with the attached.

15. Drawing No. 30-N-2, 250 West Blowoff Vault Process and Instrumentation Diagram. DELETE in its entirety and REPLACE with the attached.

16. Drawing No. 40-E-1, Payson East Turnout & Isolation Valve Vault Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

17. Drawing No. 40-E-2, Payson East Turnout & Isolation Valve Vault Electrical Plan. DELETE in its entirety and REPLACE with the attached.

18. Drawing No. 40-E-3, Payson East Turnout & Isolation Valve Vault Electrical Details. DELETE in its entirety and REPLACE with the attached.

19. Drawing No. 45-E-1, Payson Main Street Turnout Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

20. Drawing No. 45-E-2, Payson Main Street Turnout Electrical Plan. DELETE in its entirety and REPLACE with the attached.

21. Drawing No. 45-E-3, Payson Main Street Turnout Electrical Details. DELETE in its entirety and REPLACE with the attached.

22. Drawing No. 45-N-2, Payson Main Street Turnout Process and Instrumentation Diagram. DELETE in its entirety and REPLACE with the attached.

23. Drawing No. 50-E-1, Payson South Turnout Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

24. Drawing No. 50-E-2, Payson South Turnout Vault Electrical Plan. DELETE in its entirety and REPLACE with the attached.

25. Drawing No. 50-E-3, Payson South turnout Vault Electrical Details. DELETE in its entirety and REPLACE with the attached.

26. Drawing No. 60-C-1, Santaquin North Turnout Site Plan. DELETE in its entirety and REPLACE with the attached.

27. Drawing No. 60-S-1, Santaquin North Turnout Vault Structural Plan. DELETE in its entirety and REPLACE with the attached.

28. Drawing No. 60-M-1, Santaquin North Turnout Vault Mechanical Plan. DELETE in its entirety and REPLACE with the attached.

29. Drawing No. 60-E-1, Santaquin North Turnout Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

30. Drawing No. 60-E-2, Santaquin North Turnout Vault Electrical Plan. DELETE in its entirety and REPLACE with the attached.

31. Drawing No. 60-E-3, Santaquin North Turnout Vault Electrical Details. DELETE in its entirety and REPLACE with the attached.

32. Drawing No. 10-C-3, Mapleton High Pressure Turnout Site Paving Plan. ADD Note 2:

"2. Construction Sequencing - The new North fence, automated gate and controls, and new asphalt must be installed prior to working on the Mapleton High Pressure Turnout Vault. 3. The full site mill and overlay must be done after completion of all other work on the Mapleton High Pressure Turnout site. Protect in place all existing and new fencing and controls."

33. Drawing No. 70-C-1, Summit Creek Reservoir #1 – Pigging Basin Overall Site Plan. ADD Note 1:

"1. Install 562 feet of wire fence (3231-455) along the north edge of SFS-186 to enclose the chain link fence between Summit Ridge Pkwy and the chain link fence on the west side of site 70."

34. Drawing No. 70-M-1, Santaquin South Turnout/Pigging Structure. Material Schedule Item 22. DELETE "t=5/8" and REPLACE with "t=1/2".

35. Drawing No. 70-E-1, Pigging Structure Electrical Site Plan. DELETE in its entirety and REPLACE with the attached.

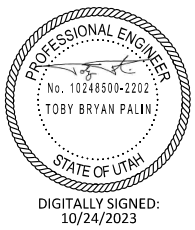
36. Drawing No. 70-E-2, Pigging Structure Electrical Plan. DELETE in its entirety and REPLACE with the attached.

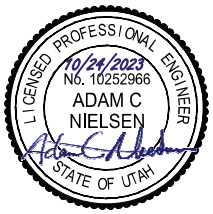
37. Drawing No. 70-E-3, Pigging Structure Electrical Details. DELETE in its entirety and REPLACE with the attached.

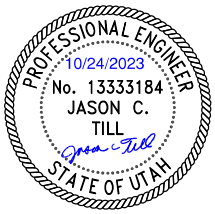
38. Drawing No. 70-N-2, Pigging Structure Process & Instrumentation Diagram. DELETE in its entirety and REPLACE with the attached.

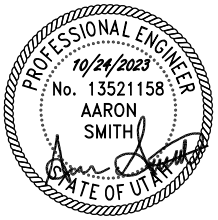
All Bidders shall acknowledge receipt and acceptance of this Addendum No. 1 in the Bid Form or by submitting the Addendum with the bid package. Bid Forms submitted without acknowledgment or without this Addendum will be considered in nonconformance.

Jacobs









Appended hereto and part of Addendum No. 1:

A. Section 00 41 13, Bid Form.
B. Section 05 31 00, Steel Decking.
C. Section 26 05 02, Basic Electrical Requirements.
D. Section 40 30 95, Quick-Opening Pipe Access Doors.
E. Section 40 90 01, Supplement 03, Control Panel Schedule.
F. Section 40 90 01, Supplement 03, Control Panel Schedule.
G. Drawing No. PP-90, Plan and Profile STA 801+00 to STA 810+00.
H. Drawing No. GE-2, General Electrical Notes, Legend, and Abbreviations.
I. Drawing No. 10-E-2, Mapleton High Pressure Turnout Electrical Plan.
J. Drawing No. 10-E-3, Mapleton High Pressure Turnout Electrical Details.
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M. Drawing No. 15-E-3, Salem East Turnout Electrical Details.
N. Drawing No. 20-E-1, Salem Woodland Hills Drive Turnout Electrical Site Plan.
O. Drawing No. 20-E-2, Salem Woodland Hills Drive Turnout Electrical Plan.
P. Drawing No. 20-E-3, Salem Woodland Hills Turnout Electrical Details.
Q. Drawing No. 20-N-2, Salem Woodland Hills Turnout Process and Instrumentation Diagrams.
R. Drawing No. 30-E-1, Salem 250 West Blowoff Electrical Site Plan.
S. Drawing No. 30-E-2, Salem 250 West Blow Off Vault Electrical Plan.
T. Drawing No. 30-E-3, Salem 250 West Blow Off Vault Electrical Details.
U. Drawing No. 30-N-2, 250 West Blowoff Vault Process and Instrumentation Diagram.
V. Drawing No. 40-E-1, Payson East Turnout & Isolation Valve Vault Electrical Site Plan.
W. Drawing No. 40-E-2, Payson East Turnout & Isolation Valve Vault Electrical Plan.

X. Drawing No. 40-E-3, Payson East Turnout & Isolation Valve Vault Electrical Details.
Y. Drawing No. 45-E-1, Payson Main Street Turnout Electrical Site Plan.
Z. Drawing No. 45-E-2, Payson Main Street Turnout Electrical Plan.
AA. Drawing No. 45-E-3, Payson Main Street Turnout Electrical Details.
BB. Drawing No. 45-N-2, Payson Main Street Turnout Process and Instrumentation Diagram.
CC. Drawing No. 50-E-1, Payson South Turnout Electrical Site Plan.
DD. Drawing No. 50-E-2, Payson South Turnout Vault Electrical Plan.
EE. Drawing No. 50-E-3, Payson South turnout Vault Electrical Details.
FF. Drawing No. 60-C-1, Santaquin North Turnout Site Plan.
GG. Drawing No. 60-S-1, Santaquin North Turnout Vault Structural Plan.
HH. Drawing No. 60-M-1, Santaquin North Turnout Vault Mechanical Plan.
II. Drawing No. 60-E-1, Santaquin North Turnout Electrical Site Plan.
JJ. Drawing No. 60-E-2, Santaquin North Turnout Vault Electrical Plan.
KK. Drawing No. 60-E-3, Santaquin North Turnout Vault Electrical Details.
LL. Drawing No. 70-E-1, Pigging Structure Electrical Site Plan.
MM. Drawing No. 70-E-2, Pigging Structure Electrical Plan.
NN. Drawing No. 70-E-3, Pigging Structure Electrical Details.
OO. Drawing No. 70-N-2, Pigging Structure Process & Instrumentation Diagram.

END OF ADDENDUM

SECTION 00 41 13
BID FORM

Bidder will complete Bid Form and upload to the Projectmates website and submit as their Bid.

1. BID RECIPIENT

1.1. To: Central Utah Water Conservancy District.

1.2. Date: November 7, 2023.

1.3. Project: Spanish Fork Santaquin Pipeline – Santaquin Reach.

1.4. Contract No: C-2023-1.

2. CONTRACT EXECUTION AND BONDS

2.1. Undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Owner in the form included in the Contract Documents to perform the Work as specified or indicated in said Contract Documents.

2.2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in Section 00 21 13, Instructions to Bidders, dealing with the disposition of the Bid Security.

2.3. This Bid will remain open for the period stated in Section 00 11 13, Advertisement for Bids, unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in Section 00 21 13, Instructions to Bidders, and will furnish the insurance certificates, Payment Bond, and Performance Bond required by the Contract Documents.

3. CONTRACT TIMES, COMPLETION MILESTONES, AND LIQUIDATED DAMAGES

3.1. To all the foregoing, and including all Bid Forms contained in this Bid, Bidder further agrees to complete the Work required under the Contract Documents within the Contract Times and the Work milestones stipulated in the Contract Documents, and to accept in full payment therefore the Contract Price based on the Lump Sum Bid Price(s) named in this Bid.

3.2. Work completion dates and liquidated damages for exceeding these dates are listed in the supplements to this Bid Form.

4. BIDDER'S REPRESENTATION

4.1. In submitting this Bid, Bidder represents that:

4.1.1. Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality where the Work is to be performed, the legal requirements (federal, state, and local laws, ordinances rules, and regulations), and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as Bidder deems necessary.

4.1.2. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the Addenda, receipt of which is hereby acknowledged. Failure to acknowledge addenda shall render the bid nonresponsive and shall be cause for its rejection.

4.1.3. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

4.1.4. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, and performance of the Work.

4.1.5. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

4.1.6. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) Bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

4.1.7. Bidder is aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

4.1.8. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, and data with the Bidding Documents.

4.1.9. Bidder has provided written notice to the Owner of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by the Owner is acceptable to Bidder.

4.1.10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.1.11. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

4.1.12. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation.

4.1.13. Bidder has not directly or indirectly included or solicited any other Bidder to submit a false or sham Bid.

4.1.14. Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought collusion to obtain for itself any advantage over any other Bidder or over the Owner.

4.1.15. Bidder understands and agrees that the Owner reserves the right to reject any and all Bids and to waive any informalities in the Bidding.

4.1.16. Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving Bids.

4.1.17. Bidder is responsible for the quantity takeoffs from which the Bid is based from the information in the Contract Documents.

4.1.18. Bidder has examined the Agreement Form attached hereto, and the Specifications, and proposes and agrees that if his Bid as submitted, and as more fully described in the attached sheets, be accepted, the Bidder will contract in the form so attached to furnish the items and perform work called for in accordance with the provisions of said Agreement Form and the Specifications and to deliver the same within the time stipulated therein.

4.1.19. Bidder will accept in full payment, therefore, the prices named in this Bid.

5. SALES AND USE TAX

5.1. The Bidder agrees to pay all Federal, State, and local sales and use taxes for the Work contemplated herein.

6. SUBCONTRACTOR WORK

6.1. The Bidder shall perform at least 50 percent of the total project Work with the Bidder's own forces. Failure to comply with this requirement will render the Bid nonresponsive and may cause its rejection.

6.2. The Bidder shall list as part of the Bid the name and the location of the place of business of each Subcontractor who will perform Work or labor or render service to the Bidder in or about the construction of the Work or improvement, in an amount in excess of 2 percent of the Prime Contractor's total Bid. A sample table of Subcontractors is shown below. The Bidder shall also list the portion of the Work which will be done by each Subcontractor under this Contract. The Bidder shall list only one Subcontractor for each portion as is defined by the Bidder in its Bid. Failure to comply with this requirement will render the Bid nonresponsive and may cause its rejection. The Bidder shall also list the name and location of the place of business of each supplier to be used to complete the work. A sample table of suppliers is shown below. Use of the listed supplier will be contingent on an approved submittal. Rejected equipment or supplies can be provided by an alternate vendor assuming an approved submittal is produced. Failure to comply with this requirement may render the Bid nonresponsive and may cause its rejection.

7. BASIS OF LUMP SUM BID

7.1. Award of the Contract will be based upon the total bid price for the Contract. The Bid Schedule consists of lump sum bid amounts. The Total Lump Sum Bid Price is the sum of these figures plus any increased amount the Contractor determines necessary to complete the entire project based on the Work shown in the Contract Documents that may not be included as an individual Bid item in the Schedule of Bid Items.

7.2. Bid Schedule A includes the prices which will be incorporated into the Agreement by reference. Bid Schedule B, when included, includes Owner-Selected Options which may be incorporated into the Agreement at the Owner's option. Bid Schedule C includes unit price bids for changes in the work that may be incorporated into the Agreement at the Owner's option. Bidders must bid on all schedules included in the Bid Form. The determination of the low Bidder will be based on Bid Schedule A.

8. PROPOSAL ADJUSTMENT

8.1. The proposed adjustment allows the Bidder to adjust their Bid prior to Bid opening without the need to adjust individual bid item amounts. The sum of the extended total shall be increased (or decreased) by this Proposal Adjustment amount. Indicate decrease in parenthesis (_____). For payment purposes, this correction amount will be applied proportionally to all items in the Bid Schedule.

9. SEGREGATED FACILITIES

9.1. For a Bid to be considered responsive, Bidder shall sign and submit with the Bid the Certification of Nonsegregated Facilities included as a supplement to this specification.

10. AFFIRMATIVE ACTION

10.1. For a Bid to be considered responsive, Bidder shall sign and submit with the Bid the Certification of Affirmative Action included as a supplement to this specification.

10.2. Bidders who will sublet work under this Contract shall include the following affirmative action information in the Certification of Affirmative Action with the Bid proposal:

10.2.1. Procedures which have been adopted to identify and contact disadvantaged business enterprises.

10.2.2. Responses of DBE firms to solicitations.

10.2.3. Anticipated awards to DBE.

11. WITNESS

In compliance with Section 00 21 13, Instruction to Bidders, and all conditions of the Contract Documents,

the undersigned _____

a corporation organized under the laws of the State of _____

a partnership consisting of _____

or an individual trading as _____

of the City of _____, hereby proposes and agrees to furnish any and all materials, labor, construction equipment, services, transportation and other items as required for performing all the work for the construction described in the Contract Documents and to construct the same and

install the material therein for the Owner in a good and workmanlike and substantial manner acceptable to the Owner and strictly pursuant to and in conformity with the Specifications and Drawings prepared by the Engineer, and with such modifications of the same and other documents that may be made by the Owner as provided herein.

The undersigned hereby declares, as Bidder, that the only persons or parties interested in this Bid as principals are those named herein; that no elected official or employee of the Owner is in any manner interested directly or indirectly in this Bid or in the profits to be derived from the Contract proposed to be taken, other than as permitted by law; that this Bid is made without any connection with any other person or persons making a separate Bid for the same purpose; that the Bid is in all respects fair and without collusion or fraud.

By signing this Bid, the Bidder certifies that neither the Bidder nor any of its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in any program or project which is 100 percent or partially funded with federal funds.

Respectfully submitted,

_____

_____
Bidder

(Corporate Seal)
If Bid is by corporation

By _____

_____
Title

_____
Witness: if Bidder is an individual

Bidder's post office address:
_____

Names and address of all members of the firm or names and titles of all officers of the corporation. _____

Name and Title	Address
_____	_____
_____	_____
_____	_____
Phone:	_____

SEAL

12. SUPPLEMENTS

12.1. The supplements listed below, following "End of Section," are part of the Specification.

1. Project Milestones and Liquidated Damages.
2. Bid Schedule A – Basis of Award (to be completed by Bidder).
3. Addenda to the Bidding Documents (to be completed and acknowledged by Bidder).
4. List of Subcontractors (to be completed by Bidder).
5. List of Suppliers (to be completed by Bidder).
6. Nonsegregated Facilities Certification (to be completed by Bidder).
7. Affirmative Action Certification (to be completed by Bidder).

END OF SECTION

Project Milestones and Liquidated Damages			
Item No.	Description	Project Milestone Date	Liquidated Damages for Failure to Achieve Project Milestone
1	Santaquin Spanish Fork Pipeline Operational	March 15, 2026	$15,000/day
2	Final Completion	May 20, 2026	$5,000/day
3			
4			
5			
6			
7			

Bid Schedule A Basis of Award			
Bid Item	Description	Quantity Unit	Amount
A1	Bidder's Insurance and Mobilization, Demobilization, & Administration	1 LS	
A2	60-Inch Pipe, appurtenances, surface restoration, and required connections from STA 714+00 to STA 949+00	1 LS	
A3	Interstate 15 Tunneled Crossing	1 LS	
A4	Highway 6 Tunneled Crossing	1 LS	
A5	Railroad Tunneled Crossing	1 LS	
A6	Mapleton High Pressure Turnout	1 LS	
A7	Salem East Turnout	1 LS	
A8	Salem Woodland Hills Turnout	1 LS	
A9	Salem 250 West Blowoff	1 LS	
A10	Payson East Turnout and Isolation Valve Vault	1 LS	
A11	Payson Main Street Turnout	1 LS	
A12	Payson South Turnout	1 LS	
A13	Santaquin North Turnout	1 LS	
A14	Pigging Connection Vault	1 LS	
A15	Santaquin South Turnout/Pigging Structure	1 LS	
A16	Salem Power Relocation at Woodland Hills Turnout	1 LS	$100,000
A17	Orchard Payments	1 LS	$351,319
	Total Bid Schedule A =	$	
	Proposal Adjustment =	$	
	Total Adjusted Bid Schedule A	$	

Bidder agrees to accept as full payment for work proposed with the Bidding Documents based upon the undersigned's own estimate of quantities and cost including sales, consumer, use, other taxes, and overhead and profit, the following amount for Bid Schedule A for the Contract:

Written Value: _____ Dollars and

_____ Cents

Numerical Value: $ _____

Addenda to the Bidding Documents		
Addendum No.	Addendum Date	Bidder Acknowledgment

List of Subcontractors			
Work to be Performed	Subcontractor License Number	Percent of Total Bid	Subcontractor's Name and Address
Interstate 15 Tunneled Crossing			
Highway 6 Tunneled Crossing			
Railroad Tunneled Crossing			

List of Suppliers		
Material to be Supplied	Percent of Total Bid	Supplier's Name and Address
Plunger Valves		
60-inch Isolation Valve		
V308 Ball Valves		

NONSEGREGATED FACILITIES CERTIFICATION

Bidder certifies that facilities under control of the Bidder which are provided to employees and in which employees perform services will be maintained in a nonsegregated manner as indicated in Section 00 73 01, Additional Supplementary Conditions of the Construction Contract for Federally Funded Projects.

Bidder further certifies that subcontractors will be required to comply with requirements for maintaining nonsegregated facilities and Bidder will obtain certification from proposed subcontractor prior to award of subcontracts exceeding $10,000 which are not exempt from the provisions.

Signature	Date
Name and Title of Signer	Typed Name and Title

AFFIRMATIVE ACTION CERTIFICATION

Bidder certifies that Bidder has read and understands the Affirmative Action requirements for the Project. Bidder further certifies that in the solicitation of subcontractors and suppliers under this Contract, prior to Bidding or entering into any commitments for subcontracting or for purchase of supplies and materials or for leasing equipment, Bidder has made timely contact with potential Disadvantaged Business Enterprises (DBE) to affirmatively solicit their interest, capability, and prices and has documented the results of such solicitation.

Bidder hereby informs the Owner (Check only one):

☐ Bidder does not intend to sublet a portion of the contract work.

☐ Bidder intends to sublet a portion of the contract work and that Bidder has take affirmative action to allow disadvantaged business enterprises to compete for and perform on subcontracts. Contacts made with potential DBE firms regarding work to be performed under this contract and the results of such contracts are as follows:

Name	Result of Contact	Award (Yes or No)

Note: Attach additional sheet(s) if needed with subcontractor results and documentation.

_____

Company (Bidder) Name

_____

Authorized Representative (Name and Title)

_____ _____

Signature Date

SECTION 05 31 00
STEEL DECKING

PART 1 GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this section:

1. American Iron and Steel Institute (AISI): Specifications for the Design of Cold Formed Steel Structural Members.
2. American Welding Society (AWS): D1.3, Structural Welding Code - Sheet Steel.
3. ASTM International (ASTM):
   a. A611, Standard Specification for Structural Steel (SS), Sheet, Carbon, Cold-Rolled.
   b. A653, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   c. A780, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
   d. A924, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
4. Steel Deck Institute (SDI):
   a. Design Manual for Composite Decks, Form Decks and Roof Decks.
   b. Diaphragm Design Manual.
5. Factory Mutual (FM):
   a. Factory Mutual Approval Guide.
   b. FM Research Corporation (FMRC): Approval Requirements for Steel Roof Deck Construction.
6. International Code Council Evaluation Service, Inc. (ICC-ES): Evaluation Reports for Deck Fasteners.
7. Underwriters Laboratories, Inc. (UL): Fire Resistance Directory.

1.02 SUBMITTALS

A. Action Submittals:

1. Plan view layout of decking showing type and section properties of deck panels, reinforcing channels, pans, special jointing, and accessories.
2. Location of openings, deck laps, and deck attachment details.

B. Informational Submittals:

1. Decking manufacturer's installation requirements.
2. Welding Procedures, Qualifications, and Inspection Report: As specified in Section 05 05 23, Welding.
3. Operation manuals for mechanical fastener installation tools.
4. Manufacturer's Certificate of Compliance, in accordance with Section 01 61 00, Common Product Requirements.

1.03 QUALITY ASSURANCE

A. General: For metal decking section properties, meet requirements of AISI Specifications for Design of Cold-Formed Steel Structural Members.

B. FM Requirements:

1. Steel Roof Deck: Listed in Factory Mutual "Approval Guide" for Class 1 fire rating and Class 1-90 wind uplift rating.
2. Mechanical Fasteners: Packing containers shall show name of manufacturer and product and FMRC approval mark.

C. Qualifications for Field Welding: As specified in Section 05 05 23, Welding.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Store deck bundles on platforms or pallets, with one end elevated to provide drainage.

C. Protect bundles against condensation with a ventilated waterproof covering.

D. Stack bundles so there is no danger of tipping, sliding, rolling, shifting or material damage.

PART 2 PRODUCTS

2.01 METAL DECKING

A. Provide metal deck as shown in the following schedule:

STEEL DECK SCHEDULE								
Type	Depth (in)	Panel Width (in)	Design Thickness (in)	Min. Yield Strength Fy (ksi)	Min. (+) S (in^3/ft)	Min. I (in^4/ft)	Minimum Diaphragm Shear Capacity (lbs/ft)	Finish
Roof Deck	1-1/2	36	0.0474 (18 gauge)	50	0.306	0.290	1000	Galv, G-60

B. Materials and Finishes:

1. Galvanized Deck:
   a. Sheet steel for galvanized deck and accessories shall conform to ASTM A653 Structural Quality Grade 33 or higher, as shown in Steel Deck Schedule.
   b. Galvanizing shall conform to ASTM A924 with coating class of G60 or G90 as defined in ASTM A653 and as shown in Steel Deck Schedule.

C. Manufacturers:

1. Vulcraft Division of Nucor Co., Brigham City, UT.
2. BHP Steel Building Products, USA, Inc., West Sacramento, CA.
3. Verco Manufacturing, Inc., Phoenix, AZ.
4. United Steel Deck, Inc., Summit, NJ.

2.02 ACCESSORIES

A. Provide pour stops, column closures, end closures, cover plates, girder fillers, ridge and valley plates, finish strips, reinforcing channels, and other accessories as required for complete installation.

B. Accessories shall be minimum 22-gauge, except edge forms shall be sized as required by the deck manufacturer, unless shown otherwise on the Drawings.

2.03 MECHANICAL FASTENERS

A. Self-Drilling Screws:

1. Self-drilling, self-tapping screws with hexagonal washer head and corrosion-resistant finish.

2. Manufacturers and Products:
   a. ITW Buildex, Itasca, IL; ICH Traxx Self-Drilling Fasteners with Climaseal Coating and Autotraxx Standup Installation Tool.
   b. Hilti, Inc., Tulsa, OK; Kwik-Pro HWH Self-Drilling Screws with Kwik-Cote Treatment and Kwik-Tapper Screwdriver.

B. Powder Driven Fasteners:

1. Knurled shank, minimum 1/2-inch diameter steel washer, corrosion-resistant coating.
2. Pin diameter and length to suit deck type and flange thickness of steel support member.
3. Manufacturers and Products:
   a. ITW Buildex, Itasca, IL; Buildex BX14 pins with yellow dichromate galvanizing and BX900 Installation Tool.
   b. Hilti, Inc., Tulsa, OK; ENP-series fasteners with electroplated zinc coating and DX-750 Installation Tool.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine supporting framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of steel deck.

3.02 INSTALLATION

A. Locate deck bundles to prevent overloading of support framing members.

B. Install at right angles to supporting members in a three span minimum lay-up, unless shown otherwise, and in accordance with Specification and manufacturer's installation recommendation.

C. Bearing: 1-1/2 inches, minimum.

D. Endlaps: Minimum of 2 inches and located over supports.

E. Do not stretch sidelaps.

F. Closure Plates:

1. Install closure and cover plate accessories as recommended by the metal deck manufacturer, unless shown otherwise on the Drawings.

2. Floor Deck and Form Deck Closures:
   a. Fasten column closures, cell closures, and zee closures to deck to provide tight fitting closures at open ends of ribs and sides of decking.
   b. Fasten cell closures at changes of direction of deck units unless otherwise indicated.

G. Holes and Openings

1. Cut and fit around roof openings and other work projecting through or adjacent to decking.
2. Locate holes and openings as shown to clear structural framing and bracing members.
3. Reinforcement around openings:
   a. Roof Deck: For hole sizes of at least 6 inches across, but not more than 12 inches across in roof deck, reinforce with 0.0474-inch design thickness steel plate, painted or galvanized to match deck coating. Extend plate at least 12 inches beyond opening in all directions and attach to top of roof deck with No. 10 self-drilling screws at 6-inch spacing and at all corners. For openings larger than 12 inches across, reinforce roof deck with framing as shown on Drawings.
   b. Composite Floor Deck and Form Deck: Reinforce openings as indicated on Drawings.

H. Protect deck areas from heavy concentrated loads or wheel traffic with planking or other approved means.

I. Install temporary shoring, if required, to meet strength and deflection limitations, before placing any concrete topping on deck panels.

J. Completed Deck: Free from buckles and irregularities, and in accordance with FM and UL requirements.

3.03 DECK ATTACHMENT

A. Fasten panels as shown on Drawings.

B. Welded Connections: Weld deck sidelaps, attachment to framing, and accessories in accordance with AWS D1.3 and as specified in Section 05 05 23, Welding.

C. Mechanical Fasteners:

1. Self-Drilling Screws:
   a. Install screws in accordance with manufacturer's written instructions and with special installation tool. Do not over-torque.

b. Remove and redrive screws at sidelaps where upper sheet is not drawn tightly against lower sheet.

2. Powder Driven Fasteners:
   a. Install fasteners in accordance with manufacturer's written instructions and with special installation tool.
   b. Minimum Sidelap Edge Distance: 3/8 inch.
   c. Minimum End/End Lap Distance: 1 inch.
   d. Head Projection: As specified by manufacturer for correct penetration into flange of steel support member.

3.04 TOUCHUP PAINTING

A. Immediately following erection, remove unused deck edge trimmings, screws, fasteners, welding washers, butt ends of welding rods, and debris from completed installation.

B. Clean field welds, bolted connections, rust spots, and abraded areas.

C. Repair damaged painted surfaces as specified in Section 09 90 00, Painting and Coating.

D. Repair damaged galvanized surfaces with zinc-rich spray paint in accordance with ASTM A780; color to match galvanized deck.

E. Use magnetic gauge to determine that thickness of repair is equal to or greater than base painted or galvanized coating.

3.05 FIELD QUALITY CONTROL

A. An independent testing agency shall be retained by Contractor and approved by Engineer to perform following inspections.

1. Welded Connections: Visually inspect in accordance with AWS D1.3, Section 7, and as specified in Section 05 05 23, Welding.
2. Mechanical Fasteners: Visually inspect, in accordance with manufacturer's instructions, for each type of fastener.

B. Repair or replace defective welds and fasteners.

C. Special inspection will be provided by Owner where indicated on Drawings, See Special Inspection Tables in the Structural General Notes.

END OF SECTION

SECTION 26 05 02
BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED SECTIONS

A. Requirements specified within this section apply to Division 26, Electrical. Work specified herein shall be performed as if specified in the individual sections.

1.02 REFERENCES

A. The following is a list of standards which may be referenced in this section:

1. National Electrical Contractors Association (NECA): National Electrical Installation Standards.
2. National Electrical Manufacturers Association (NEMA):
   a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
   b. Z535.4, Product Safety Signs and Labels.
3. National Fire Protection Association (NFPA): 70, National Electrical Code (NEC).

1.03 DESIGN REQUIREMENTS

A. Provide anchorage and bracing design drawings, calculations, and related information where required under Section 01 88 15, Anchorage and Bracing.

1.04 ELECTRIC SERVICE DIVISION OF RESPONSIBILITY

A. Incoming aerial or underground electrical service facilities provided by the serving utility as part of its normal obligation to customers is work provided outside this Contract. Under this Contract, provide customer required service provisions and electrical work including, but not limited to, primary trench and backfill, primary duct system, transformer pad site preparation, transformer pad, metering components and associated conduit, secondary facilities, and all additional work required by the Utility providing service. Schedule and coordinate work of serving utility as required to provide electric service to the Work.

1.05 SUBMITTALS

A. Action Submittals:

1. Provide manufacturers' data for the following:
   a. Electrical service components.
   b. Nameplates, signs, and labels.
2. Anchorage and bracing drawings and catalog information, as required by Section 01 88 15, Anchorage and Bracing, for loads in Section 01 61 00, Common Product Requirements.

B. Informational Submittals: Anchorage and bracing calculations, as required by Section 01 88 15, Anchorage and Bracing, for loads in Section 01 61 00, Common Product Requirements.

1.06 QUALITY ASSURANCE

A. Provide the Work in accordance with NFPA 70. Where required by Authority Having Jurisdiction (AHJ), material and equipment shall be labeled or listed by a nationally recognized testing laboratory or other organization acceptable to the AHJ, in order to provide a basis for approval under the NEC.

B. Materials and equipment manufactured within the scope of standards published by UL shall conform to those standards and shall have an applied UL listing mark or label.

C. Provide materials and equipment acceptable to AHJ for Class, Division, and Group of hazardous area indicated.

1.07 ENVIRONMENTAL CONDITIONS

A. See Environmental Conditions Table Supplement for environmental conditions specific to this Project.

PART 2 PRODUCTS

2.01 GENERAL

A. Where two or more units of the same class of material or equipment are required, provide products of a single manufacturer. Component parts of materials or equipment need not be products of the same manufacturer.

B. Material and equipment installed in heated and ventilated areas shall be capable of continuous operation at their specified ratings within an ambient temperature range of 40 degrees F to 104 degrees F.

C. Materials and equipment installed outdoors shall be capable of continuous operation at their specified rating within the ambient temperature range stated in Section 01 61 00, Common Product Requirements.

D. Electrical ratings of materials and equipment that are reduced by increased elevation shall be derated as required for Site elevation specified in Section 01 61 00, Common Product Requirements.

2.02 EQUIPMENT FINISH

A. Manufacturer's standard finish color, except where specific color is indicated. If manufacturer has no standard color, finish equipment in accordance with Section 09 90 00, Painting and Coating, light gray color finish as approved by Owner.

2.03 NAMEPLATES

A. Material: Laminated plastic.

B. Attachment Screws:

1. Stainless steel.
2. Adhesive: Single-part, room temperature vulcanizing adhesive suitable for the environment and materials installed. Use adhesive on NEMA 4 or NEMA 4X enclosures only.

C. Color: Black, engraved to a white core.

D. Letter Height:

1. Pushbuttons/Selector Switches: 1/8 inch.
2. Other Electrical Equipment: 1/4 inch.

2.04 SIGNS AND LABELS

A. Sign size, lettering, and color shall be in accordance with NEMA Z535.4.

PART 3 EXECUTION

3.01 GENERAL

A. Electrical Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned. Contractor shall be responsible for actual location of equipment and devices and for proper routing and support of raceways, subject to approval of Engineer.

B. Check approximate locations of light fixtures, switches, electrical outlets, equipment, and other electrical system components shown on Drawings for conflicts with openings, structural members, and components of other systems and equipment having fixed locations. In the event of conflicts, notify Engineer in writing.

C. Install work in accordance with NECA Standard of Installation, unless otherwise specified.

D. Keep openings in boxes and equipment closed during construction.

E. Lay out work carefully in advance. Do not cut or notch any structural member or building surface without specific approval of Engineer. Carefully perform cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, paving, or other surfaces required for the installation, support, or anchorage of conduit, raceways, or other electrical materials and equipment. Following such work, restore surfaces to original condition.

3.02 ANCHORING, BRACING, AND MOUNTING

A. Equipment anchoring and mounting shall be in accordance with manufacturer's requirements for Project design criteria provided in Section 01 61 00, Common Product Requirements, to meet the requirements of Section 01 88 15, Anchorage and Bracing.

3.03 COMBINING CIRCUITS INTO COMMON RACEWAY

A. Drawings show each homerun circuit to be provided. Do not combine power or control circuits into common raceways without authorization of Engineer.

3.04 NAMEPLATES, SIGNS, AND LABELS

A. Arc Flash Protection Warning Signs:

1. Field mark switchboards, motor control centers, panelboards, automatic transfer switches, switchgear, and padmount transformers, to warn qualified persons of potential arc-flash hazards. Locate marking so to be clearly visible to persons before working on energized equipment.
2. Provide arc flash warning labels in accordance with NFPA 70 Article 110.16, and NFPA 70E, Article 130. Use Table 130.7(C)(15)(a) instead of arc flash calculations for PPE category and arc flash boundary. Maximum available fault for all these locations is below 25 kA. Breakers will trip before 0.03 seconds above 3,000-amp fault. See Drawings for equipment voltage. All

available fault currents for 240V services is less than 10,000A. Arc flash warning labels printed in color on thermally bonded adhesive backed, UV- and weather-resistant labels.

B. Available Fault Current Signs:

1. Install label on service equipment to indicate the maximum available fault current at the equipment. Labels shall be of sufficient durability for the environment in which the equipment is installed. Labels shall include the following information:
   a. Equipment name or identification.
   b. Available fault current at the equipment.
2. Where existing electrical systems are modified, completely remove existing fault current labels if present, and install new labels in accordance with the above requirements.
3. Request available fault current at the service from Utility.

C. Multiple Power Supply Sign: Install permanent plaque or directory at each service disconnect location denoting other services, feeders, and branch circuits supplying the building, and the area served by each.

D. Equipment Nameplates:

1. Provide a nameplate to label electrical equipment including switchgear, switchboards, motor control centers, panelboards, motor starters, transformers, terminal junction boxes, disconnect switches, switches and control stations.
2. Switchgear, motor control center, transformer, and terminal junction box nameplates shall include equipment designation.
3. Disconnect switch, starter, and control station nameplates shall include name and number of equipment powered or controlled by that device.
4. Switchboard and panelboard nameplates shall include equipment designation, service voltage, and phases.

3.05 LOAD BALANCE

A. Drawings and Specifications indicate circuiting to electrical loads and distribution equipment.

B. Balance electrical load between phases as nearly as possible on switchboards, panelboards, motor control centers, and other equipment where balancing is required.

C. When loads must be reconnected to different circuits to balance phase loads, maintain accurate record of changes made, and provide circuit directory that lists final circuit arrangement.

3.06 CLEANING AND TOUCHUP PAINTING

A. Cleaning: Throughout the Work, clean interior and exterior of devices and equipment by removing debris and vacuuming.

B. Touchup Paint:

1. Touchup scratches, scrapes and chips on exterior and interior surfaces of devices and equipment with finish matching type, color, and consistency and type of surface of original finish.
2. If extensive damage is done to equipment paint surfaces, refinish entire equipment in a manner that provides a finish equal to or better than factory finish, that meets requirements of specification, and is acceptable to Engineer.

3.07 PROTECTION FOLLOWING INSTALLATION

A. Protect materials and equipment from corrosion, physical damage, and effects of moisture on insulation and contact surfaces.

B. When equipment intended for indoor installation is installed at Contractor's convenience in areas where subject to dampness, moisture, dirt or other adverse atmosphere until completion of construction, ensure adequate protection from these atmospheres is provided and acceptable to Engineer.

3.08 SUPPLEMENT

A. The supplement listed below, following "End of Section," is part of this Specification.

1. Environmental Conditions Table.

END OF SECTION

ENVIRONMENTAL CONDITIONS TABLE						
Project Areas	Class I, Division 1	Class I, Division 2	Corrosive	Nonhazardous and Wet	Indoor and Dry	Dry and Industrial
Outdoor				X		
Below Grade Turnouts				X		
Above Grade Turnouts					X	X
Other Areas				X		

SECTION 40 30 95
QUICK-OPENING PIPE ACCESS DOORS

PART 1 GENERAL

1.01 GENERAL

A. This section includes general requirements for materials, fabrication, installation, and testing of water-tight, quick-opening pipe access doors.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 09 90 00, Painting and Coating.

B. Section 33 05 01, Conveyance Piping—General.

C. Section 33 05 01.01, Welded Steel Pipe and Fittings.

D. Section 33 05 05.31, Pressure Testing of Piping.

1.03 SUBMITTALS

A. Submit dimensioned, fully detailed shop drawings showing materials of construction.

B. Submit manufacturer's data sheets on insulation.

C. Submit manufacturer's installation, operation, and maintenance instructions.

PART 2 PRODUCTS

2.01 WATER-TIGHT, QUICK-OPENING PIPE ACCESS DOORS

A. Provide doors that are hydraulically operated with a hand pump and which are locked such that no locking component slides on the gasket. Provide 66-inch inside diameter doors as shown on the Drawings.

B. Provide door with a manual safety lever which locks the door in a closed position, both hydraulically and mechanically. The manual safety lever shall be furnished with a welded-type, tamper-resistant, steel hasp attached, and a high-security padlock with two keys.

C. Provide door with self-supporting side hinges that swing open at least 90 degrees.

D. Provide design and fabrication in accordance with the requirements of Section VIII, Division 1, of the ASME Boiler and Pressure Vessel Code. The door shall be ASME stamped "U." Design requirements are:

1. Pressure: 400 psi to full vacuum. Watertight for all conditions.
2. Temperature: Minus 20 degrees F to 150 degrees F.
3. Material:
   a. Shell and Head: ASTM A516, Grade 70.
   b. Structural Parts: ASTM A516, Grade 70 or ASTM A283, Grade C or D.
4. Flanges: See Section 33 05 01, Conveyance Piping—General. A corrosion-resistant metal nameplate shall be securely attached to the door which states the manufacturer's name, model designation, serial number, and date of manufacture.

E. The quick-opening door shall be by:

1. Hodge International, 1415 Hyde Park Avenue, Hyde Park, Massachusetts 02136 (617) 567-5100.
2. Melco Steel Inc., 1100 West Foothill Boulevard, Azusa, California 91702 (626) 334-7875.
3. “Or-equal.”

2.02 INSULATION

A. No insulation is required as these doors will be inside an enclosure to keep temperatures above freezing.

PART 3 EXECUTION

3.01 SHOP TESTING OF FABRICATED OR WELDED COMPONENTS

A. See Section 33 05 01.01, Welded Steel Pipe and Fittings.

3.02 HYDROSTATIC, RADIOGRAPHIC, ULTRASONIC, SOAP AND COMPRESSED AIR, LIQUID PENETRANT, AND MAGNETIC PARTICLE TEST METHODS

A. See Section 33 05 01.01, Welded Steel Pipe and Fittings.

3.03 INSTALLING QUICK OPENING PIPE ACCESS DOOR

A. Install per manufacturer's written recommendations.

B. See Section 33 05 01.01, Welded Steel Pipe and Fittings.

C. Provide one day's training of proper door operation. Onsite training of District shall be by manufacturer's authorized representative after installation.

3.04 FIELD HYDROSTATIC TESTING

A. See Section 33 05 05.31, Welded Steel Pipe and Fittings.

3.05 PAINTING AND COATING

A. Exterior: System No. 4 per Section 09 90 00, Painting and Coating.

B. Interior: System No. 1 per Section 09 90 00, Painting and Coating.

C. All outside sharp corners shall be ground to a radius of 1/4-inch per Section 09 90 00, Painting and Coating, except where grinding of part would be detrimental to the watertight integrity of the quick-opening door.

3.06 FIELD THICKNESS MEASUREMENT AND REPAIR OF PAINT COATINGS FOR STEEL PIPE

A. See Section 09 90 00, Painting and Coating.

END OF SECTION

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
MHP-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8T-E-2G. 4. Fiber Optic Patch Panel: Owner's standard. Minimum 12 LC ports. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
SE-RTU-00001	Non-ventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800. 2. UPS: Size per Owner's standard. 3. Ethernet switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	standard. Minimum 12 LC ports. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
SWH-RTU-00001	Non-ventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's standard. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H	W	D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
S2W-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Owner's standard. 2. UPS: Size per Owner's standard. 3. Ethernet switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's standard. Minimum 12 LC ports. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.	Wall mounted	4X	48	36	18	Yes	Heat	Yes	Inside	Yes

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.

CONTROL PANEL SCHEDULE										
Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
SS: Stainless Steel.										

CONTROL PANEL SCHEDULE									
Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
PE-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's standard. Minimum 12 LC ports. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
RR-RTU-00001	Non-ventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810,	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	Backplane- BMX XBP0800, 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's standard. Minimum 12 LC ports. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H	W	D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
PM-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800. 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's standard. Ethernet switch: Cisco CBS350-8FP-2G. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks.	Wall mounted	4X	48	36	18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	7. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
PS-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800UPS: Size per Owner's standard. 2. Ethernet Switch: Cisco CBS350-8FP-2G. 3. Fiber Optic Patch Panel: Owner's	Wall mounted	4X	48 48 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	standard. Minimum 12 LC ports. 4. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 5. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 6. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
SN-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800. 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8FP-2G. 4. Fiber Optic Patch Panel: Owner's standard. Ethernet switch: Cisco CBS350-8FP-2G. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks.	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	7. Provide space to house UPS in bottom of enclosure.								

Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL PANEL SCHEDULE

Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
SS-RTU-00001	Nonventilated local control panel for local monitoring and control of equipment. Local control panel shall incorporate: 1. PLC: Modicon M340, CPU-BMX PS34 1000, Power Supply- BMX CPS 2000, Ethernet Card- BMX NOE 0100.2, DI Card- BMX DDI 1602, DO card- BMX DDO 1602, AI card- BMX AMI 0810, Backplane- BMX XBP0800. 2. UPS: Size per Owner's standard. 3. Ethernet Switch: Cisco CBS350-8FP-2G.	Wall mounted	4X	48 36 18	Yes	Heat	Yes	Inside	Yes

CONTROL PANEL SCHEDULE

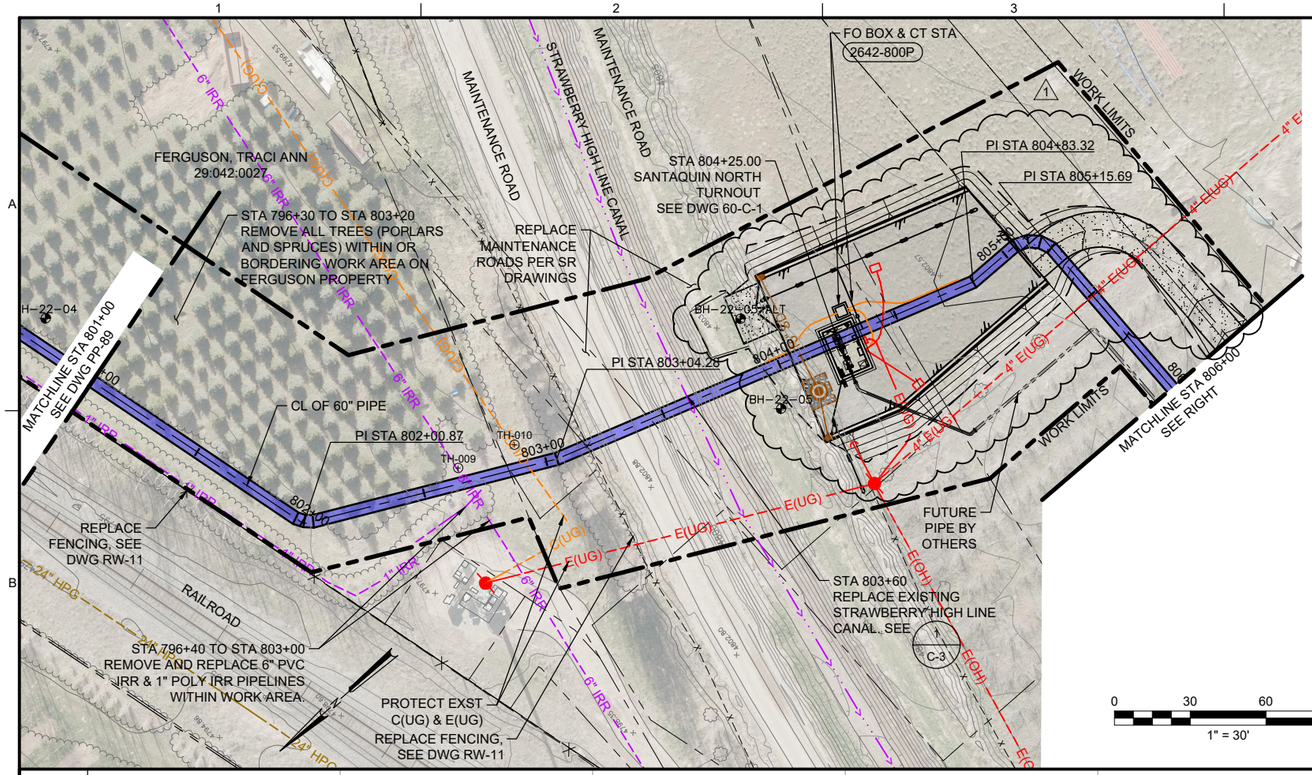
Panel No.	Requirements	Mounting	NEMA	Dimensions H W D	FDT	Heat / Cool	Serv. Lights, Outlets	Environment	SS
	4. Fiber Optic Patch Panel: Owner's standard. Minimum of 48 ports on patch panel. 5. Wire terminations, power supplies, isolation relays, surge protection and other components required to provide complete PICS. 6. Provide power distribution within control panel using circuit breakers and/or fused terminal blocks. 7. Provide space to house UPS in bottom of enclosure.								

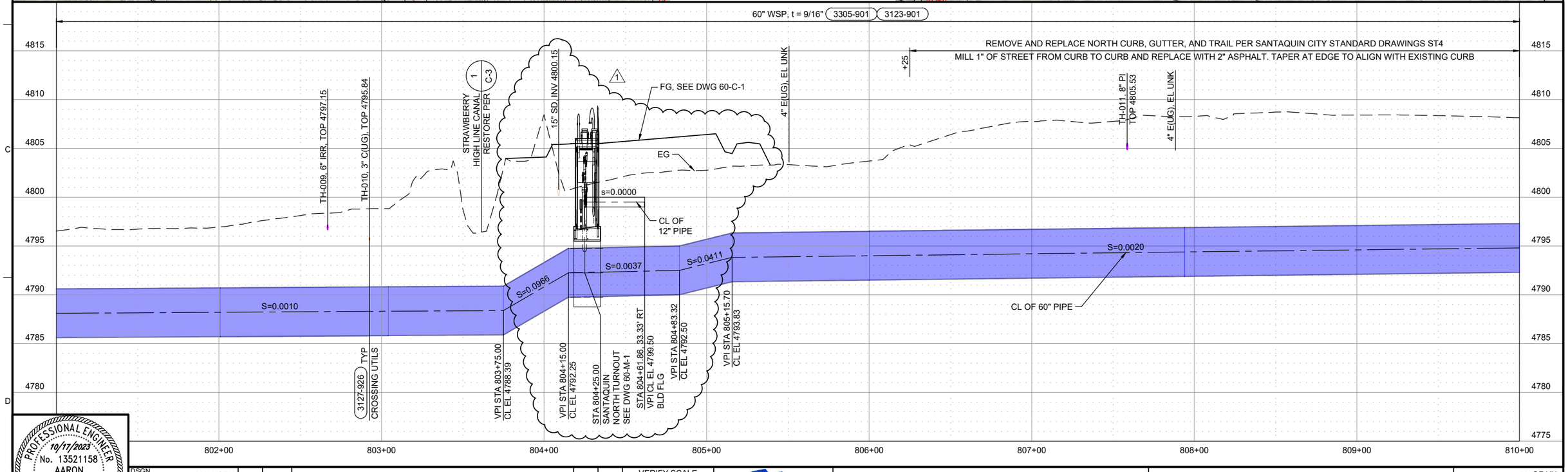
Column Descriptions:
FDT: Functional Demonstration Test required.
Dimensions: Maximum space available for panel.
Heat / Cool: Heating system and cooling system requirements.
SS: Stainless Steel.

CONTROL SPECIFICATIONS

1. General:
    a. It is assumed that APCO understands the general Owner's needs and preferences when it comes to automation and their SCADA system. This supplement is provided to general programming scope to help aid in bidding this work.
    b. Please provide SCADA programming for Owner as you have in your most recent projects. Please reach out to Owner if clarification on the scope of work is needed during bidding period.
2. Programming scope includes:
    a. Programming of individual PLCs within each RTU local control panel.
        i. Monitoring of all inputs.
        ii. Programming Alarms.
        iii. Flow control of flow control valves
    b. Programming of overall SCADA software that is used to monitor these RTUs including but not limited to:
        i. Developing of new screens or modifying additional screens to accommodate typical monitoring and control of system inputs and outputs.
        ii. Providing standard programming for alarm monitoring that is similar to existing facilities.
        iii. Monitoring I/O status, and alarms.
        iv. Trending data and archiving for reporting and historical records.
        v. Monitoring communication to all RTUs.
3. Equipment Control Descriptions:
    a. Flow Control Valves: When controlled remotely the flow control valves shall modulate position to meet a flow set point that is operator adjustable and set through the SCADA system. Valve open position shall be displayed on SCADA screens. Valve positions shall be stored for trending, reporting, and archiving.
    b. Flow Meters: Monitor instantaneous flow at flow meter. Store and trend this data for reporting and archiving. Flow shall be used to control flow control valve position. Monitor total flow accumulator signal for reporting and archiving.
    c. Manual Valves: Monitor valve position status for displaying on SCADA system display screens.
    d. Pressure Transmitters: Monitor pressure transmitter values. Store and trend this data for reporting, troubleshooting, and archiving. This data shall also be displayed on SCADA screens.
    e. Sump Pump Control Panels:
        i. Monitor and store status and alarms for trending, reporting, and archiving.

f. Intrusion Switches: Monitor all intrusion switches. Provide alarm output if any intrusion switch is detected. Provide alarm override or ignore function for operators when entrance to the vault is expected.
g. Exhaust Fan Remote Control: Operator shall be able to remotely run exhaust fan from SCADA system to aid in circulating fresh air into a vault prior arriving at vault.
h. Temperature Transmitter: Monitor facility temperature values. Monitor and store this data for reporting, trending, troubleshooting, and archiving. This data shall be displayed on SCADA screens.
i. Generator: Monitor generator for running status, fuel level, kW output, temperature, and battery health. Monitor and store this data for reporting, trending, troubleshooting, and archiving.
j. Automatic Transfer Switch (ATS): Monitor ATS for generator available, utility available, connected to generator, and connected to Utility status. Monitor and store this data for reporting, trending, troubleshooting, and archiving.
k. Alarms: Provide the following alarms:
    i. Intrusion alarm if any intrusion switch input is removed.
    ii. Flood alarm if Flood switch is activated.
    iii. General generator alarm is true.
    iv. If generator low fuel alarm status is true.
    v. If generator battery trouble is true.
    vi. If ATS Utility available is not true.
    vii. Loss of flow signal
    viii. Flow control valve is not responding.
    ix. Pressure transmitter signal is above or below operator adjustable normal pressure range.





DSGN	J HANSEN					VERIFY SCALE	SPANISH FORK SANTAQUIN PIPELINE
DR	R PHILLIPS					BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	SANTAQUIN REACH
CHK	A MURDOCK	1	10/23	ADD1 - MODIFIED TURNOUT SITE ELEVATIONS	RP	AS	CENTRAL UTAH WATER CONSERVANCY DISTRICT
APVD	A SMITH	NO.	DATE	REVISION	BY	APVD	PLAN AND PROFILE STA 801+00 TO STA 810+00

PROFESSIONAL ENGINEER 10/17/2023 No. 13521158 AARON SMITH STATE OF UTAH

SHEET	X OF XX
DWG	PP-90
DATE	OCTOBER 2023
CONTRACT	C-2023-01

C:\pw_workdir\den003\ch2mhill_rphilli7\d0495721\SANR_PP-90-94 10-12-23 01:34pm rphilli7 XREFS: SANR_ANSI_D;dms_deleted.SANR_HORZ-ALIGNmdl;SANR_VERT-ALIGNmdl;SANR_eAERIAL-Cm;SANR_eAERIAL-Dm;SANR_nWORK_LIMITSm;SANR_eUTILm;SANR_ePROPm;SANR_eTOPOm;SANR_eTREELINEm;SANR_nSITEmdl;SANR_nUTILm;SANR_60-nSANTAQUIN-NORTH-T0m

POWER SYSTEM PLAN - 1

SYMBOL	DESCRIPTION
	CONNECTION POINT TO EQUIPMENT SPECIFIED. RACEWAY, CONDUCTOR,TERMINATION AND CONNECTION IN THIS DIVISION.
MCC-A	MAJOR ELECTRICAL COMPONENT OR DEVICE - NAME OR IDENTIFYING SYMBOL AS SHOWN.
	PANELBOARD - SURFACE MOUNTED
LPA	PANELBOARD LETTER LP - LIGHTING PANEL DP - DISTRIBUTION PANEL
	PANELBOARD - FLUSH MOUNTED
	TERMINAL JUNCTION BOX
M	MOTOR, SQUIRREL CAGE INDUCTION
G	GENERATOR, VOLTAGE AND SIZE AS INDICATED.
LPA-2	HOME RUN - DESTINATION SHOWN
or G	EXPOSED CONDUIT AND CONDUCTORS*
or G	CONCEALED CONDUIT AND CONDUCTORS*

NOTE:
ALL UNMARKED CONDUIT RUNS CONSIST OF TWO NO. 12, ONE NO. 12 GROUND CONDUCTORS IN 3/4" CONDUIT. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF NO. 12 CONDUCTORS. CROSSHATCH WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE.

G	CROSSHATCHES WITH BAR INDICATE NO.10 CONDUCTOR,SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.
[P3]	CONDUCTOR AND RACEWAY CALLOUT - FOR CONDUIT AND CONDUCTORS, SEE CIRCUIT SCHEDULE.
	CONDUIT DOWN
	CONDUIT UP
	CONDUIT, STUBBED AND CAPPED AS SHOWN
	CONDUIT TERMINATION AT CABLE TRAY
	CONDUIT ROUTING AREA
	CABLE TRAY
CE	CONCRETE ENCASED DUCTBANK
J or HH	GENERAL CONTROL OR WIRING DEVICE. LETTER SYMBOLS OR ABBREVIATIONS INDICATE TYPE OF DEVICE.
CS	CONTROL STATION, SEE CONTROL DIAGRAMS FOR CONTROL DEVICE(S) REQUIRED.
30	NONFUSED DISCONNECT SWITCH, SIZE INDICATED, 3 POLE
60/40 F	FUSED DISCONNECT SWITCH, SIZE INDICATED (60/40, 60 = SWITCH RATING: 40 = FUSE RATING) 3 POLE
2	COMBINATION CIRCUIT BREAKER AND INDICATED) MAGNETIC STARTER, NEMA SIZE INDICATED
D X	RJ45 DATA RECEPTACLE, X INDICATES QUANTITY OF PORTS AND CATEGORY-6 CABLES X/H = 'X' QUANTITY DATA PORTS PLUS HDMI TYPE-PASS-THRU CONNECTOR

POWER SYSTEM PLAN - 1

SYMBOL	DESCRIPTION
100/40 B	BREAKER, SEPARATELY MOUNTED, SIZE INDICATED (100/40, 100 = FRAME SIZE; 40 = TRIP RATING) 3 POLE
2	CONTACTOR, MAGNETIC, NEMA SIZE INDICATED
L 30	LIGHTING CONTACTOR, SIZE INDICATED
2	STARTER, MAGNETIC NEMA SIZE INDICATED
	CONVENIENCE RECEPTACLE - DUPLEX UNLESS NOTED OTHERWISE WP - WEATHERPROOF C - CLOCK HANGER TL - TWIST LOCK CRE - CORROSION RESISTANT SUBSCRIPT NUMBER AT RECEPTACLE INDICATES CIRCUIT
	240V RECEPTACLE
	CONVENIENCE RECEPTACLE - QUADRUPLEX
	MULTI OUTLET ASSEMBLY
	DUPLEX CONVENIENCE RECEPTACLE - FLUSH IN FLOOR
	CONVENIENCE RECEPTACLE, PEDESTAL, DUPLEX SINGLE FACE UNLESS INDICATED OTHERWISE
L20R 20	RECEPTACLE, SPECIAL PURPOSE - NEMA CONFIGURATION AND AMPERAGE INDICATED
T	THERMOSTAT
	METERING FACILITY
EUH	ELECTRIC UNIT HEATER
AC	ELECTRIC AIR CONDITIONER (SELF CONTAINED UNIT)
	LUMINAIRE, SEE LUMINAIRE SCHEDULE
	LUMINAIRE, SEE LUMINAIRE SCHEDULE
	LUMINAIRE WITH INTERNAL BATTERY BACKUP. SEE LUMINAIRE SCHEDULE
	LUMINAIRE AND POLE, SEE LUMINAIRE SCHEDULE
	WALL MOUNTED LUMINAIRE, SEE LUMINAIRE SCHEDULE
	EMERGENCY LIGHTING UNIT
	EXIT LIGHT, SEE LUMINAIRE SCHEDULE
a or 1-2a	SMALL LETTER SUBSCRIPT AT SWITCH AND LUMINAIRE INDICATES SWITCHING. SUBSCRIPT NUMBER AT LUMINAIRE INDICATES PANELBOARD AND CIRCUIT.
XE	REMOTE EMERGENCY LIGHTING BATTERY PACK

$ SWITCH:

MOTOR SWITCH:
- M- MOTOR RATED TOGGLE SWITCH WITHOUT OVERLOADS
- MS- MANUAL MOTOR STARTER WITH OVERLOADS

WALL SWITCH:
- 2- DOUBLE POLE
- 3- THREE WAY
- 4- FOUR WAY
- CRE- CORROSION RESISTANT
- D- DIMMER
- EP- EXPLOSION PROOF
- K- KEY OPERATED
- P- PILOT LIGHT
- WP- WEATHERPROOF

GROUND SYSTEM PLAN

	GROUND ROD
	GROUND ROD IN TEST WELL
G	GROUNDING CONDUCTOR, SIZE AS INDICATED
	CABLE TO CABLE TEE (OR MULTIPLE TEE)
	CABLE TO CABLE CROSS
XJ	CABLE TO REINFORCING STEEL
GT	GROUND ROD TO CABLE
	FLEXIBLE GROUND STRAP
GP	CABLE TO PIPE (BOLTED CONNECTION)
WA	CABLE TO STEEL SURFACE (WELDED)
	STUB-OUT FROM CONCRETE FOR CONNECTION TO EQUIPMENT (TYPE LA)
G	EQUIPMENT GROUND BUS
N	EQUIPMENT NEUTRAL BUS
LA	CABLE TO LUG
	GROUND CABLE UP
	GROUND CABLE DOWN
	EMBEDDED GROUNDING CONDUCTOR

GROUND CONDUCTOR SIZE (EXCEPT WHERE INDICATED OTHERWISE):

A: TRUNK CONDUCTOR (ALL NON-TAPPING CONDUCTORS): 4/0

B. TAP CONDUCTOR - ANY MAKING FINAL CONNECTION TO EQUIPMENT OR STRUCTURES

- 4/0 — MEDIUM VOLTAGE EQUIPMENT (15KV CIRCUITS) BURIED GENERATORS MEDIUM VOLTAGE TRANSFORMER (15kV+)
- 2/0 — PAD-MOUNTED TRANSFORMER (UP TO 14kV)
- 1/0 — LOW VOLTAGE ELECTRICAL DISTRIBUTION APPARATUS TURBINES BUILDING STRUCTURES (BEAMS, JOISTS, ETC.)
- #2 — ALL OTHER CONNECTIONS

POWER CIRCUIT CALLOUTS

[P1]	[1/2"FLEX, 2#12,#12G]	[P24]	[1"C,3#8,3#14,1#10G]
[P2]	[3/4"C,2#12,1#12G]	[P25]	[1"C,3#8,4#14,1#10G]
[P3]	[3/4"C,3#12,1#12G]	[P26]	[1"C,3#8,5#14,1#10G]
[P4]	[3/4"C,4#12,1#12G]	[P27]	[1"C,2#6, 1#10G]
[P5]	[3/4"C,5#12,1#12G]	[P28]	[1"C,3#6, 1#8G]
[P6]	[3/4"C,6#12,1#12G]	[P29]	[1"C,3#6, 2#14,1#8G]
[P7]	[3/4"C,7#12,1#12G]	[P30]	[1 1/4"C,3#6, 3#14,1#8G]
[P8]	[3/4"C,8#12,1#12G]	[P31]	[1 1/4"C,3#6, 4#14,1#8G]
[P9]	[3/4"C,3#12,2#14,1#12G]	[P32]	[1 1/4"C,3#6, 5#14,1#8G]
[P10]	[3/4"C,3#12,3#14,1#12G]	[P33]	[1 1/4"C,3#4,1#8G]
[P11]	[3/4"C,3#12,4#14,1#12G]	[P34]	[1 1/4"C,3#4,3#14,1#8G]
[P12]	[3/4"C,3#12,5#14,1#12G]	[P35]	[1 1/4"C,3#4,5#14,1#8G]
[P13]	[3/4"C,3#12,6#14,1#12G]	[P36]	[1 1/4"C,3#3, 1#6G]
[P14]	[1"C,3#12,7#14,1#12G]	[P37]	[1 1/4"C,3#3, 3#14,1#6G]
[P15]	[3/4"C,2#10,1#10G]	[P38]	[1 1/4"C,3#2, 1#6G]
[P16]	[3/4"C,3#10,1#10G]	[P39]	[1 1/2"C,3#1, 1#6G]
[P17]	[3/4"C,3#10,2#14,1#10G]	[P40]	[2"C,3#1, 3#14,1#6G]
[P18]	[3/4"C,3#10,3#14,1#10G]	[P41]	[2"C,3#2/0, 1#4G]
[P19]	[3/4"C,3#10,4#14,1#10G]	[P42]	[2"C,3#3/0, 1#4G]
[P20]	[1"C,3#10,5#14,1#10G]	[P43]	[2"C,3#4/0, 1#3G]
[P21]	[1"C,2#8,1#10G]		
[P22]	[1"C,3#8,1#10G]		
[P23]	[1"C,3#8,2#14,1#10G]		

ANALOG CIRCUIT CALLOUTS

[A1]	[3/4"C,1 TYPE 3]
[A2]	[3/4"C,2 TYPE 3]
[A3]	[1"C,3 TYPE 3]
[A4]	[1 1/4"C,4 TYPE 3]
[A5]	[1 1/4"C,5 TYPE 3]
[A6]	[1 1/4"C,6 TYPE 3]
[A7]	[1 1/2"C,7 TYPE 3]
[A8]	[1 1/2"C,8 TYPE 3]
[A9]	[1 1/2"C,9 TYPE 3]
[A10]	[2"C,10 TYPE 3]
[A11]	[2"C,11 TYPE 3]
[A12]	[2"C,12 TYPE 3]
[A13]	[2"C,13 TYPE 3]
[A14]	[2"C,14 TYPE 3]
[A15]	[3/4"C,1 TYPE 4]
[A16]	[3/4"C,2 TYPE 4]
[A17]	[1"C,3 TYPE 4]
[A18]	[1 1/4"C,4 TYPE 4]
[A19]	[1 1/4"C,5 TYPE 4]
[A20]	[1 1/4"C,6 TYPE 4]
[A21]	[1 1/2"C,7 TYPE 4]
[A22]	[1 1/2"C,8 TYPE 4]
[A23]	[2"C,9 TYPE 4]
[A24]	[3/4"C,1-4 pr. TYPE 5]
[A25]	[1"C,2-4 pr. TYPE 5]

CONTROL CIRCUIT CALLOUTS

[C1]	[3/4"C,MSC]
[C2]	[3/4"C,2#14,1#14G]
[C3]	[3/4"C,3#14,1#14G]
[C4]	[3/4"C,4#14,1#14G]
[C5]	[3/4"C,5#14,1#14G]
[C6]	[3/4"C,6#14,1#14G]
[C7]	[3/4"C,7#14,1#14G]
[C8]	[3/4"C,8#14,1#14G]
[C9]	[3/4"C,9#14,1#14G]
[C10]	[3/4"C,10#14,1#14G]
[C11]	[3/4"C,11#14,1#14G]
[C12]	[3/4"C,12#14,1#14G]
[C13]	[3/4"C,13#14,1#14G]
[C14]	[1"C,14#14,1#14G]
[C15]	[1"C,15#14,1#14G]
[C16]	[1"C,16#14,1#14G]
[C17]	[1"C,17#14,1#14G]
[C18]	[1"C,18#14,1#14G]
[C19]	[1"C,19#14,1#14G]
[C20]	[1"C,20#14,1#14G]
[C21]	[1"C,21#14,1#14G]
[C22]	[1"C,22#14,1#14G]
[C23]	[1"C,23#14,1#14G]
[C24]	[1 1/4"C,24#14,1#14G]
[C25]	[1 1/4"C,25#14,1#14G]

MULTICONDUCTOR POWER CABLE CIRCUIT CALLOUTS

[PC1]	[3/4"C,1 (3C#12,1#12G) TYPE 2]
[PC2]	[3/4"C,1 (3C#10,1#10G) TYPE 2]
[PC3]	[3/4"C,1 (3C#8,1#10G) TYPE 2]
[PC4]	[3/4"C,2 (3C#12,1#12G) TYPE 2]
[PC5]	[1"C,2 (3C#10,1#10G) TYPE 2]
[PC1A]	[3/4"C,1 (2C#12,1#12G) TYPE 2]
[PC2A]	[3/4"C,1 (2C#10,1#10G) TYPE 2]

EMPTY CONDUIT

[EC-1]	[3/4"C,WITH PULL STRING]
[EC-2]	[1"C,WITH PULL STRING]
[EC-3]	[1 1/4"C,WITH PULL STRING]
[EC-4]	[1 1/2"C,WITH PULL STRING]
[EC-5]	[2"C,WITH PULL STRING]
[EC-6]	[3"C,WITH PULL STRING]
[EC-7]	[4"C,WITH PULL STRING]
[EC-8]	[5"C,WITH PULL STRING]

MULTICONDUCTOR CONTROL CABLE CIRCUIT CALLOUTS

[CC3]	[3/4"C,1-3C TYPE 1]
[CC5]	[3/4"C,1-5C TYPE 1]
[CC7]	[3/4"C,1-7C TYPE 1]
[CC9]	[1"C,1-9C TYPE 1]
[CC12]	[1"C,1-12C TYPE 1]
[CC19]	[1 1/2"C, 1-19C TYPE 1]
[CC25]	[1 1/2"C,1-25C TYPE 1]
[CC37]	[2"C,1-37C TYPE 1]
[CCC1]	[1-7C #12 TYPE 1]

FIBER OPTIC CABLE

[F1]	[2" C, 6-STR SM CABLE]
[F2]	[2" C, 24-STR SM CABLE]

1

NOTES:
1. FOR CABLE TYPES, SEE SPECIFICATIONS.
2. POWER CIRCUIT CALLOUTS ARE BASED ON THE AREA OF THW CONDUCTORS. CONTROL CIRCUIT CALLOUTS ARE BASED ON THE AREAS OF SCHEDULE 40 PVC CONDUIT AND TYPES XHHW & XHHW-2 INSULATION.
3. SIZING OF CONDUCTORS #1AWG AND SMALLER BASED ON AMPACITIES AT 60 DEGREES C, SIZING OF CONDUCTORS #1/0AWG AND LARGER BASED ON AMPACITIES AT 75 DEGREES C.
4. WHERE CIRCUITS ARE UNDERGROUND, DIRECT BURIED OR CONCRETE ENCASED, MINIMUM CONDUIT SIZE SHALL BE 1".
5. FOR METRIC CONDUIT SIZES USE THE FOLLOWING CONVERSION:
   1/2" = 16 mm 1 1/4" = 35 mm
   3/4" = 21 mm 1 1/2" = 41 mm
   1" = 27 mm 2" = 53 mm

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWKSI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 [redacted] 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

GENERAL ELECTRICAL NOTES, LEGEND, AND ABBREVIATIONS

SHEET	XX OF XX
DWG	GE-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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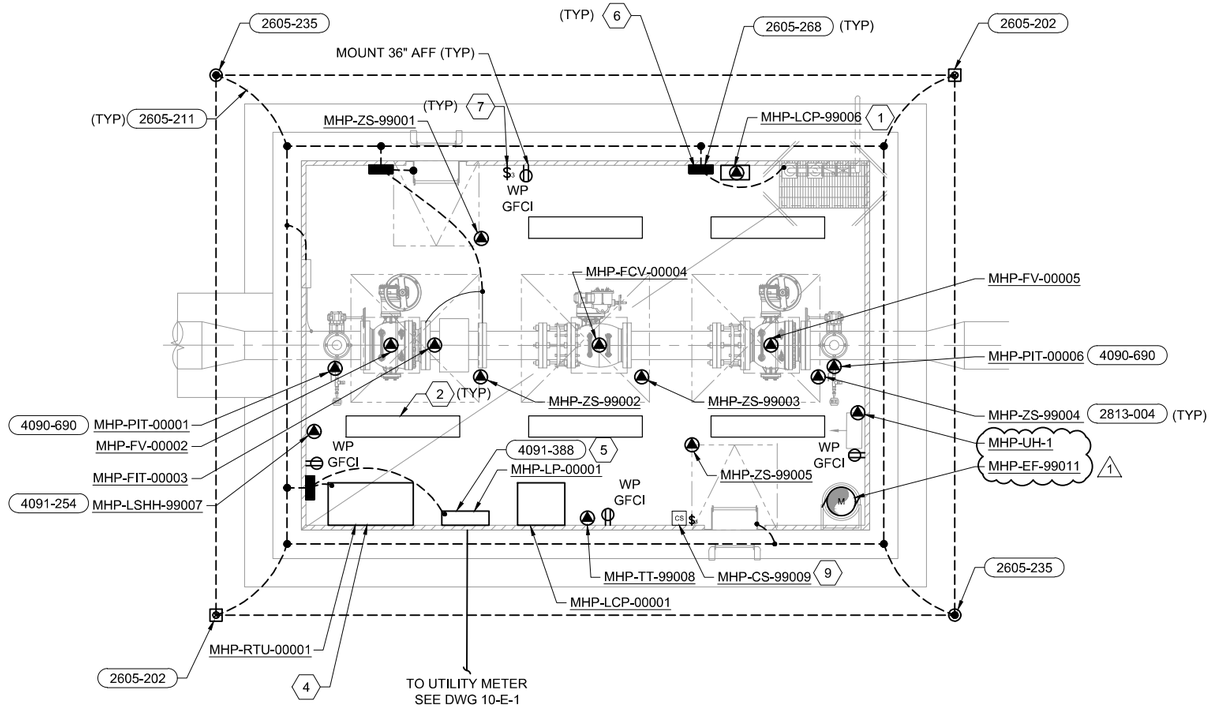
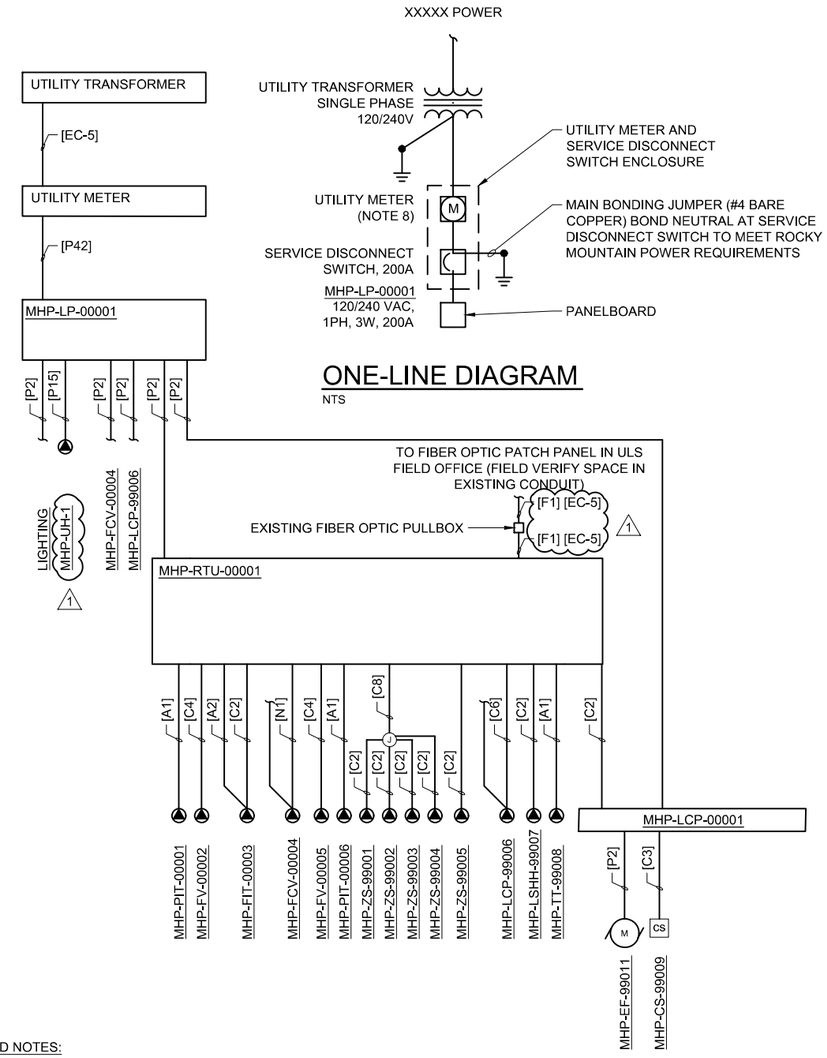


PLAN

3/8" = 1'-0"



ONE-LINE DIAGRAM

NTS

(X) KEYED NOTES:

1. DUPLEX SUMP PUMP PACKAGE CONTROL PANEL. MOUNT CONTROLLER ON WALL AND CONNECT PUMP AND FLOAT SWITCHES PER MANUFACTURERS INSTRUCTIONS.
2. LIGHT FIXTURE: INDUSTRIAL LINEAR LED OUTDOOR WET LOCATION VAPORTITE 120V 42 WATT 6000 LUMEN, AMBIENT OPERATION TEMPERATURE -40 C TO +55 C, WALL OR CEILING MOUNT. METALUX OR EQUAL FIXTURE TYPE: 4VT3-LD5-6-G-120-EL10W-L840-CD1-SSLTP.
3. GENERAL: ROUTE ALL POWER AND CONTROL CONDUITS IN CONCRETE SLAB OR FLOOR WHEN POSSIBLE.
4. MOUNT RTU TO WALL. ALL CONDUITS SHALL ENTER RTU FROM THE BOTTOM OR SIDE NEAR THE BOTTOM OF THE ENCLOSURE.
5. FEEDER CIRCUIT SHALL PENETRATE WALL BELOW MHP-LP-00001. CONDUIT SHALL TEE WITH ONE CONDUIT GOING UP INTO BOTTOM OF PANEL ENCLOSURE AND THE OTHER CONDUIT GOING DOWN WITH A MOISTURE DRAIN FITTING SO ALL INFILTRATED MOISTURE WILL NOT DRAIN INTO THE ELECTRICAL EQUIPMENT. SEE 10-E-3 FOR PANEL SCHEDULE.
6. BOND GRATING AND LADDER FRAME STRUCTURE TO GROUNDING SYSTEM.
7. PROVIDE WET LISTED LIGHT SWITCH AT THE TOP OF THE ACCESS LADDER, BUT BELOW ACCESS HATCH.
8. PROVIDE UTILITY METER SOCKET, SERVICE RISER, AND CONDUITS IN ACCORDANCE WITH ROCKY MOUNTAIN POWER STANDARD ELECTRICAL SERVICE REQUIREMENTS. ROCKY MOUNTAIN POWER SHALL PROVIDE PRIMARY AND SECONDARY CONDUCTORS AND TRANSFORMER. COORDINATE WITH ROCKY MOUNTAIN POWER FOR FINAL SERVICE LOCATIONS AND REQUIREMENTS.
9. PROVIDE EXHAUST FAN CONTROL STATION ADJACENT TO LIGHT SWITCH.

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

MAPLETON HIGH PRESSURE TURNOUT
ELECTRICAL PLAN

SHEET	XX OF XX
DWG	10-E-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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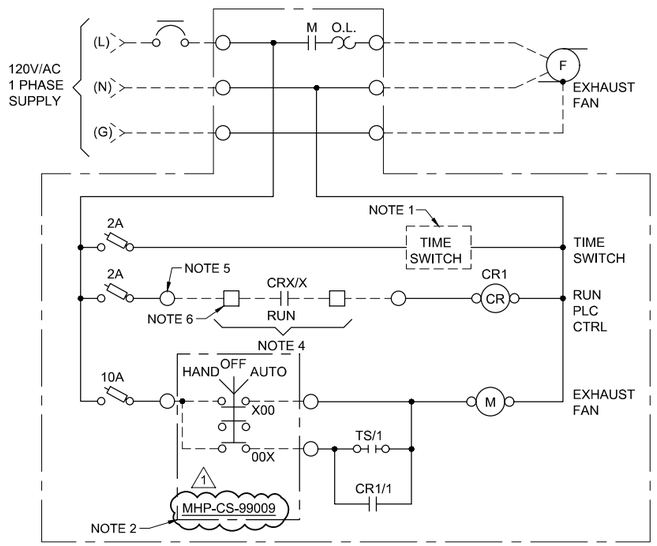

NOTES:

1. TIME SWITCH: TORK 8001 SERIES, WITH TIMER SET FOR TWO 15 MINUTE PERIODS IN 24 HOURS.
2. HAND SWITCH LOCATED AT VAULT HATCH.
3. LOCATE DEVICES IN FAN CONTROL PANEL / PULL BOX. ENCLOSURE SIZED BY CONTRACTOR AS REQUIRED FOR COMPONENTS.
4. CONTACT CLOSURE IN RTU ENCLOSURE, CONTROLLED BY PLC.
5. TERMINAL IN FAN CONTROL PANEL ENCLOSURE.
6. TERMINAL IN RTU ENCLOSURE.

1 EXHAUST FAN CONTROL PANEL W/ HAND / OFF / AUTO CONTROL
NTS

PANEL: MHP-LP-00001 — LOCATION: MAPLETON HIGH PRESSURE TURNOUT
SERVICE VOLTAGE: 120/240V — PHASE: 1 — WIRE: 3
TOTAL LOAD KVA: 11.0 — BUS SIZE: 225 — MAIN SIZE: 200A — TYPE: MCB
REMARKS: NEMA 3R, BOTTOM FEED — NEUTRAL: — MOUNTING: SURFACE

LOAD IN VA			BKR	CKT	CKT	BKR		LOAD IN VA	
A	B	CIRCUIT DESCRIPTION	A/P	NO.	NO.	A/P	CIRCUIT DESCRIPTION	A	B
1627.0		MHP-LCP-00001	20A/1P	1	2	20A/1P	LIGHTING	210.0	
	1200.0	MHP-LCP-99006 /1	20A/1P	3	4	20A/1P	MHP-FCV-00004		1600.0
720.0		RECEPTACLES	20A/1P	5	6	20A/1P	RTU PANEL UPS	600.0	
	0.0	SPARE	20A/1P	7	8	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	9	10	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	11	12	20A/1P	SPARE		0.0
2500.0		MHP-UH-1 /1	30A/2P	13	14	20A/1P	SPARE	0.0	
	2500.0			15	16	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	17	18	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	19	20	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	21	22	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	23	24	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	25	26	20A/1P	SPARE	0.0	
	0.0	SPD	30A/2P	27	28	20A/1P	SPARE		0.0
0.0				29	30	20A/1P	SPARE	0.0	
4847.0	3700.0	TOTAL						810.0	1600.0
								5657.0	5300.0

2 PANELBOARD SCHEDULE
NTS

PROFESSIONAL ENGINEER — No. 10248500-2202 — TOBY BRYAN PALIN — STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
/1	10/23	ADDENDUM 1	RP	TP

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0 1"
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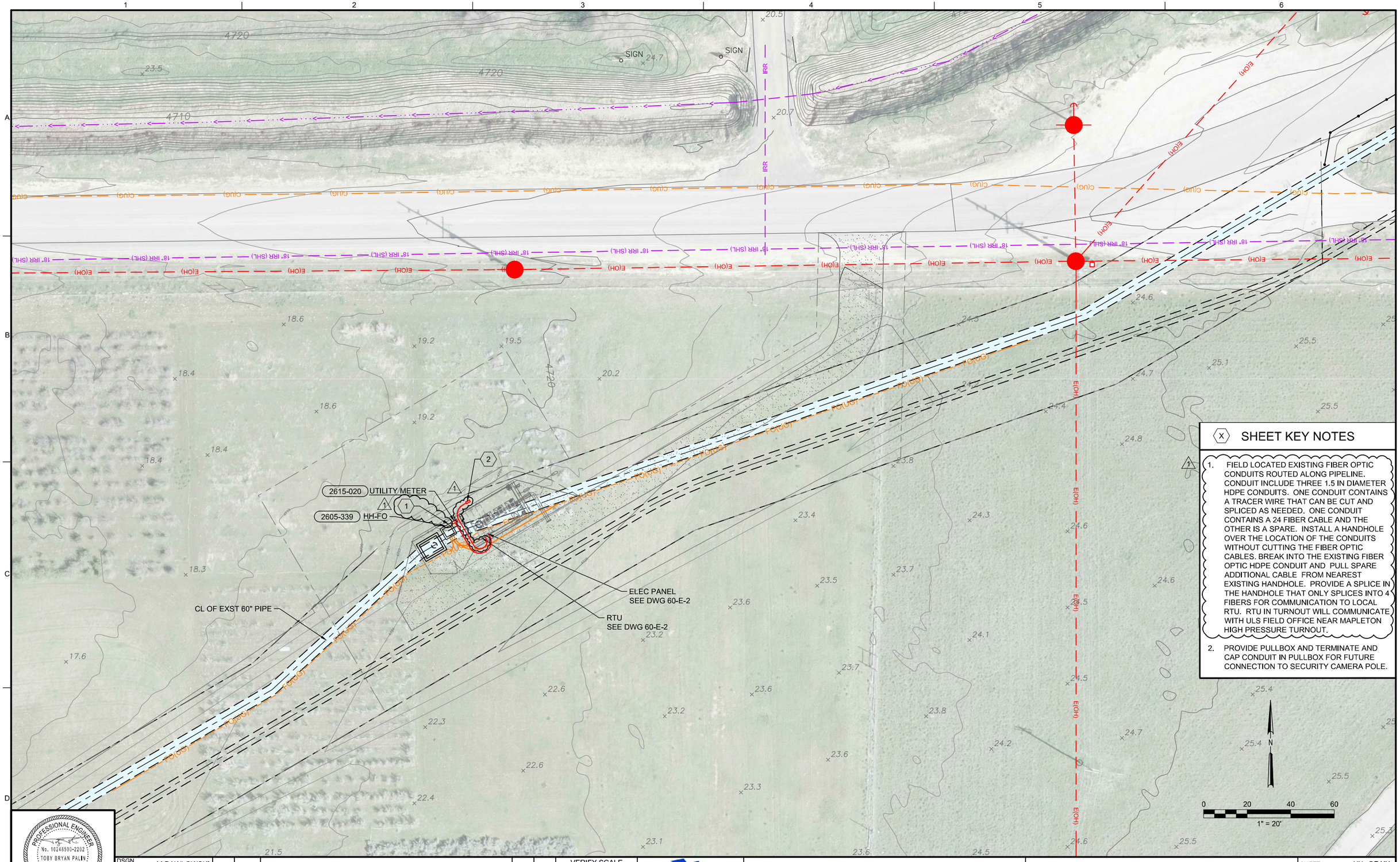
CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE
SANTAQUIN REACH

MAPLETON HIGH PRESSURE TURNOUT
ELECTRICAL DETAILS

SHEET	XX OF XX
DWG	10-E-3
DATE	OCTOBER 2023
CONTRACT	C-2023-01

C:\pw_workdir\den003\ch2mhill_rphilli7\d0495734\SANR_10-E-03d 10-18-23 08:55am rphilli7 XREFS: SANR_ANSI_D;SANR_30-n250-WEST-TOm



SHEET KEY NOTES

1. FIELD LOCATED EXISTING FIBER OPTIC CONDUITS ROUTED ALONG PIPELINE. CONDUIT INCLUDE THREE 1.5 IN DIAMETER HDPE CONDUITS. ONE CONDUIT CONTAINS A TRACER WIRE THAT CAN BE CUT AND SPLICED AS NEEDED. ONE CONDUIT CONTAINS A 24 FIBER CABLE AND THE OTHER IS A SPARE. INSTALL A HANDHOLE OVER THE LOCATION OF THE CONDUITS WITHOUT CUTTING THE FIBER OPTIC CABLES. BREAK INTO THE EXISTING FIBER OPTIC HDPE CONDUIT AND PULL SPARE ADDITIONAL CABLE FROM NEAREST EXISTING HANDHOLE. PROVIDE A SPLICE IN THE HANDHOLE THAT ONLY SPLICES INTO 4 FIBERS FOR COMMUNICATION TO LOCAL RTU. RTU IN TURNOUT WILL COMMUNICATE WITH ULS FIELD OFFICE NEAR MAPLETON HIGH PRESSURE TURNOUT.
2. PROVIDE PULLBOX AND TERMINATE AND CAP CONDUIT IN PULLBOX FOR FUTURE CONNECTION TO SECURITY CAMERA POLE.

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI						VERIFY SCALE
DR	R PHILLIPS						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
CHK	T PALIN	1	10/23	ADDENDUM 1	RP	TP	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
APVD	T PALIN	NO.	DATE	REVISION	BY	APVD	

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM EAST TURNOUT
SITE PLAN

SHEET	XX OF XX
DWG	15-E-1
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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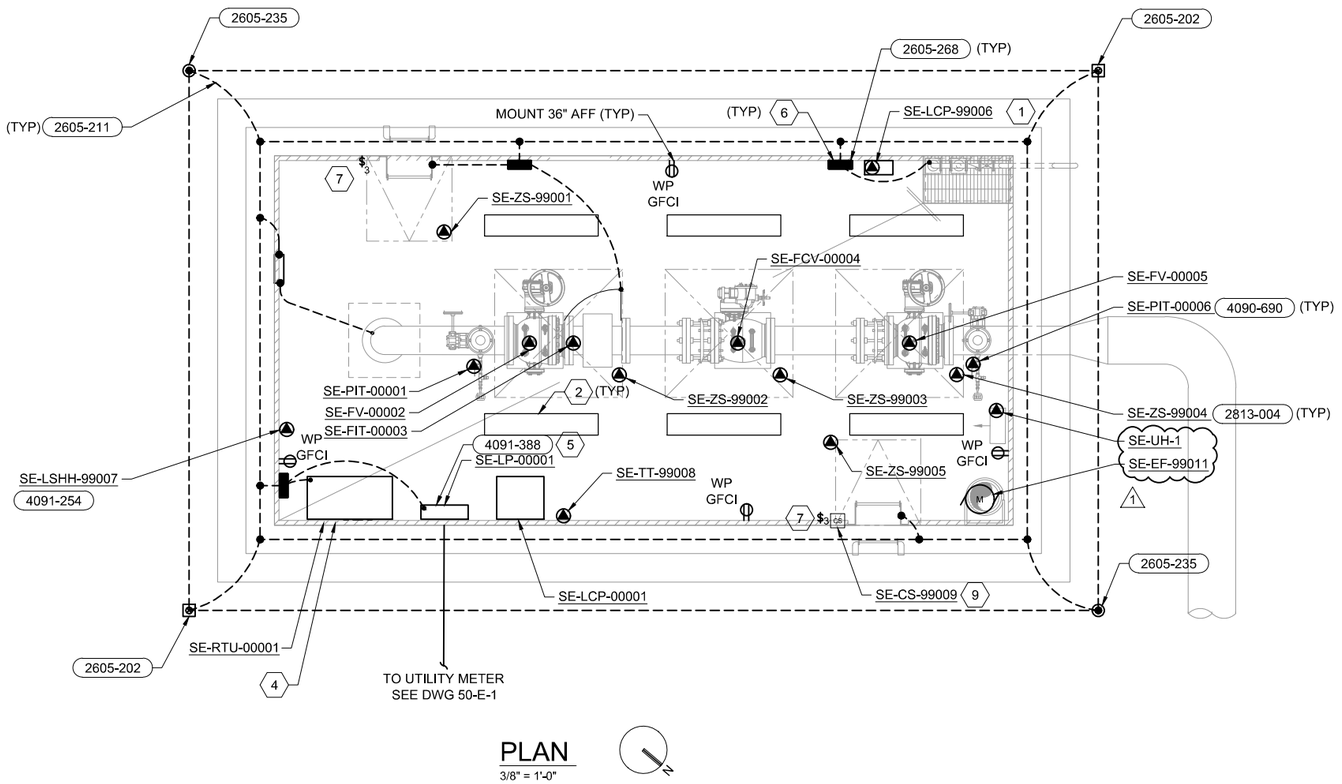
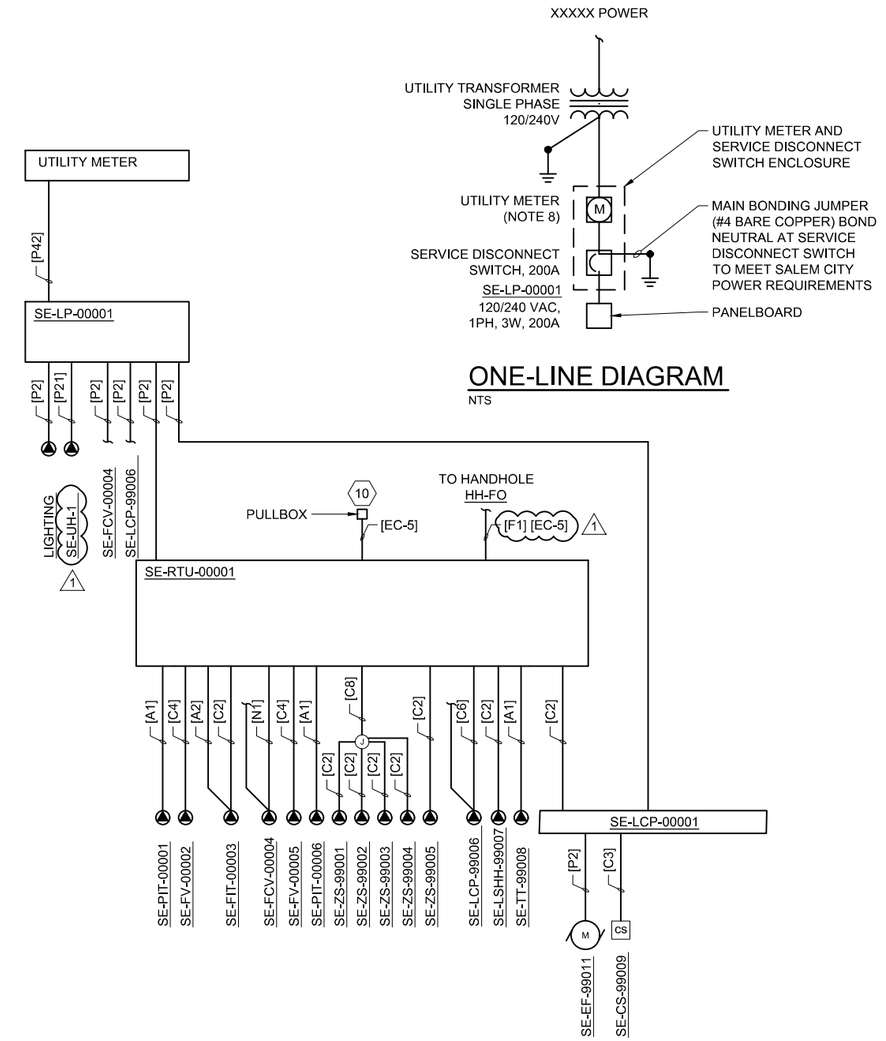


PLAN

3/8" = 1'-0"



ONE-LINE DIAGRAM

NTS

(X) KEYED NOTES:

1. DUPLEX SUMP PUMP PACKAGE CONTROL PANEL. MOUNT CONTROLLER ON WALL AND CONNECT PUMP AND FLOAT SWITCHES PER MANUFACTURERS INSTRUCTIONS.
2. LIGHT FIXTURE: INDUSTRIAL LINEAR LED OUTDOOR WET LOCATION VAPORTITE 120V 42 WATT 6000 LUMEN, AMBIENT OPERATION TEMPERATURE -40 C TO +55 C, WALL OR CEILING MOUNT. METALUX OR EQUAL FIXTURE TYPE: 4VT3-LD5-6-G-120-EL10W-L840-CD1-SSLTP.
3. GENERAL: ROUTE ALL POWER AND CONTROL CONDUITS IN CONCRETE SLAB OR FLOOR WHEN POSSIBLE.
4. MOUNT RTU TO WALL. ALL CONDUITS SHALL ENTER RTU FROM THE BOTTOM OR SIDE NEAR THE BOTTOM OF THE ENCLOSURE.
5. FEEDER CIRCUIT SHALL PENETRATE WALL BELOW SE-LP-00001. CONDUIT SHALL TEE WITH ONE CONDUIT GOING UP INTO BOTTOM OF PANEL ENCLOSURE AND THE OTHER CONDUIT GOING DOWN WITH A MOISTURE DRAIN FITTING SO ALL INFILTRATED MOISTURE WILL NOT DRAIN INTO THE ELECTRICAL EQUIPMENT. SEE DWG 15-E-3 FOR PANEL SCHEDULE.
6. BOND GRATING AND STAIRWAY FRAME STRUCTURE TO GROUNDING SYSTEM.
7. PROVIDE WET LISTED LIGHT SWITCH AT THE TOP OF THE ACCESS STAIRS, BUT BELOW ACCESS HATCH.
8. PROVIDE UTILITY METER SOCKET, SERVICE RISER, AND CONDUITS IN ACCORDANCE WITH SALEM CITY POWER STANDARD ELECTRICAL SERVICE REQUIREMENTS. SALEM CITY POWER SHALL PROVIDE PRIMARY AND SECONDARY CONDUCTORS AND TRANSFORMER. COORDINATE WITH SALEM CITY POWER FOR FINAL SERVICE LOCATIONS AND REQUIREMENTS.
9. PROVIDE EXHAUST FAN CONTROL STATION ADJACENT TO LIGHT SWITCH.
10. ROUTE CONDUIT TO PULLBOX FOR FUTURE SECURITY CAMERA POLE. SEE DRAWING 15-E-1 FOR LOCATION.

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM EAST TURNOUT
ELECTRICAL PLAN

SHEET	XX OF XX
DWG	15-E-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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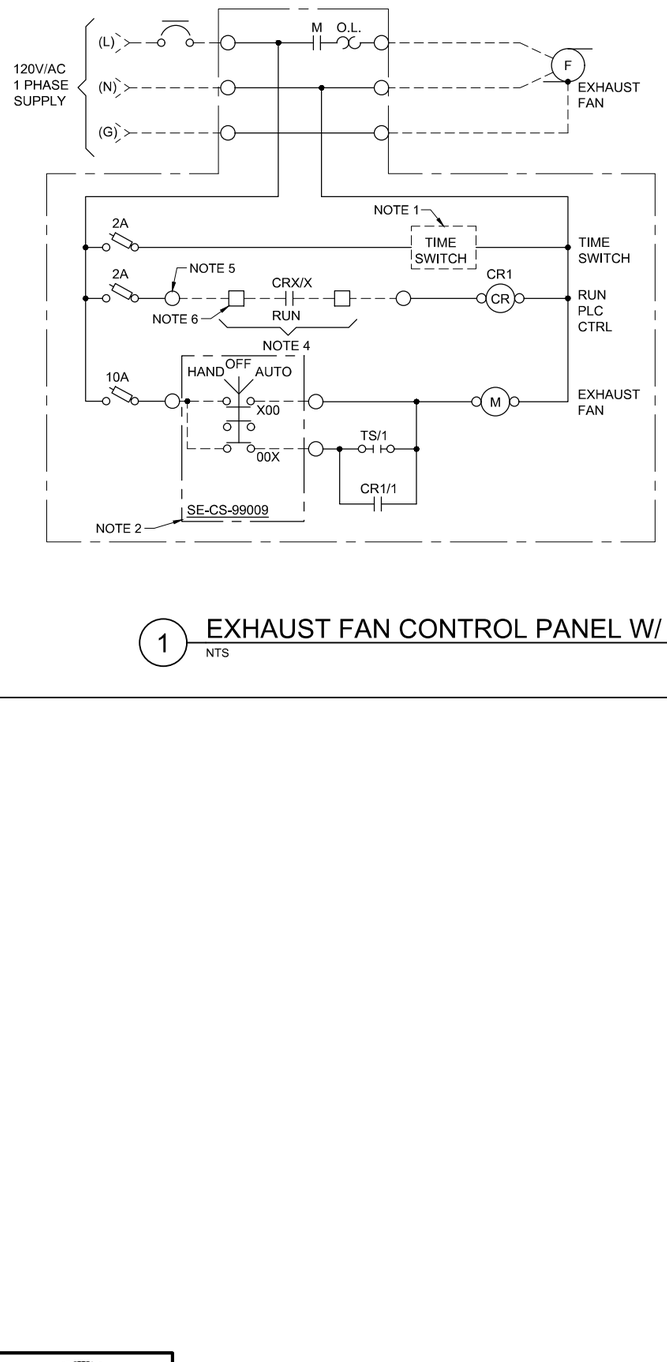

NOTES:

1. TIME SWITCH: TORK 8001 SERIES, WITH TIMER SET FOR TWO 15 MINUTE PERIODS IN 24 HOURS.
2. HAND SWITCH LOCATED AT VAULT HATCH.
3. LOCATE DEVICES IN FAN CONTROL PANEL / PULL BOX. ENCLOSURE SIZED BY CONTRACTOR AS REQUIRED FOR COMPONENTS.
4. CONTACT CLOSURE IN RTU ENCLOSURE, CONTROLLED BY PLC.
5. TERMINAL IN FAN CONTROL PANEL ENCLOSURE.
6. TERMINAL IN RTU ENCLOSURE.

1 EXHAUST FAN CONTROL PANEL W/ HAND / OFF / AUTO CONTROL
NTS

PANEL: SE-LP-00001 — LOCATION: SALEM EAST TURNOUT VAULT
SERVICE VOLTAGE: 120/240V — PHASE: 1 — WIRE: 3
TOTAL LOAD KVA: 13.5 — BUS SIZE: 225 — MAIN SIZE: 200A — TYPE: MCB
REMARKS: NEMA 3R, BOTTOM FEED — NEUTRAL: — MOUNTING: SURFACE

LOAD IN VA		CIRCUIT DESCRIPTION	BKR A/P	CKT NO.	CKT NO.	BKR A/P	CIRCUIT DESCRIPTION	LOAD IN VA	
A	B							A	B
1627.0		SE-LCP-00001	20A/1P	1	2	20A/1P	LIGHTING	210.0	
	1200.0	SE-LCP-99006 /1	20A/1P	3	4	20A/1P	SE-FCV-00004 /1		1600.0
720.0		RECEPTACLES	20A/1P	5	6	20A/1P	RTU PANEL UPS	600.0	
	0.0	SPARE	20A/1P	7	8	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	9	10	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	11	12	20A/1P	SPARE		0.0
3750.0		SE-UH-1 /1	50A/2P	13	14	20A/1P	SPARE	0.0	
	3750.0			15	16	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	17	18	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	19	20	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	21	22	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	23	24	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	25	26	20A/1P	SPARE	0.0	
	0.0	SPD	30A/2P	27	28	20A/1P	SPARE		0.0
0.0				29	30	20A/1P	SPARE	0.0	
6097.0	4950.0	TOTAL						810.0	1600.0
								6907.0	6550.0

2 PANELBOARD SCHEDULE
NTS

PROFESSIONAL ENGINEER — No. 10248500-2202 — TOBY BRYAN PALIN — STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
/1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
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0 1"
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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE
SANTAQUIN REACH

SALEM EAST TURNOUT
ELECTRICAL DETAILS

SHEET	XX OF XX
DWG	15-E-3
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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SHEET KEY NOTES

1. IF EXISTING COILED UP FIBER CABLES IN HANDHOLE ARE SUFFICIENTLY LONG INSTALL EXISTING CABLES IN NEW CONDUITS AND ROUTE TO RTU PANEL. IF THE EXISTING COILED UP CABLE IS NOT SUFFICIENTLY LONG, PROVIDE A FULL 24 STRAND CABLE SPLICES IN EXISTING HANDHOLE AND EXTEND NEW FIBER CABLES TO RTU IN PANEL. EXISTING CABLES INCLUDE: 24 STRAND FO CABLE ROUTED TO THE NORTHEAST AND TWO 24 STRAND FO CABLES ROUTED TO THE SOUTHWEST.
2. PROVIDE PULLBOX AND TERMINATE AND CAP CONDUIT IN PULLBOX FOR FUTURE CONNECTION TO SECURITY CAMERA POLE.
3. LOCATE GENERATOR ENCLOSURE A MINIMUM OF 5 FEET FROM THE BUILDING.

SALEM CANAL ROAD

WOODLAND HILLS DR

1 HH-301 (EXISTING)

EXISTING FO(UG)

FIBER OPTIC CONDUIT & CABLE SEE DWG 20-E-2

CONCRETE PAD FOR GENERATOR 0330-053

ATS PANEL SEE 20-E-2

ELEC PANEL SEE 20-E-2

RTU SEE 20-E-2

SWH-GEN-00001 3

UTILITY METER

RELOCATE EXST SECTIONALIZER AND TRANSFORMER PER SALEM POWER DESIGN

LOCATION OF RELOCATED ELEC XFMR & SECTIONALIZER PER SALEM POWER DESIGN

LOCATION & SIZE OF PRV VAULT PER SALEM CITY DESIGN

0 10 20 30

1" = 10'

PROFESSIONAL ENGINEER
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STATE OF UTAH

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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM WOODLAND HILLS DRIVE TURNOUT
ELECTRICAL SITE PLAN

SHEET	XX OF XX
DWG	20-E-1
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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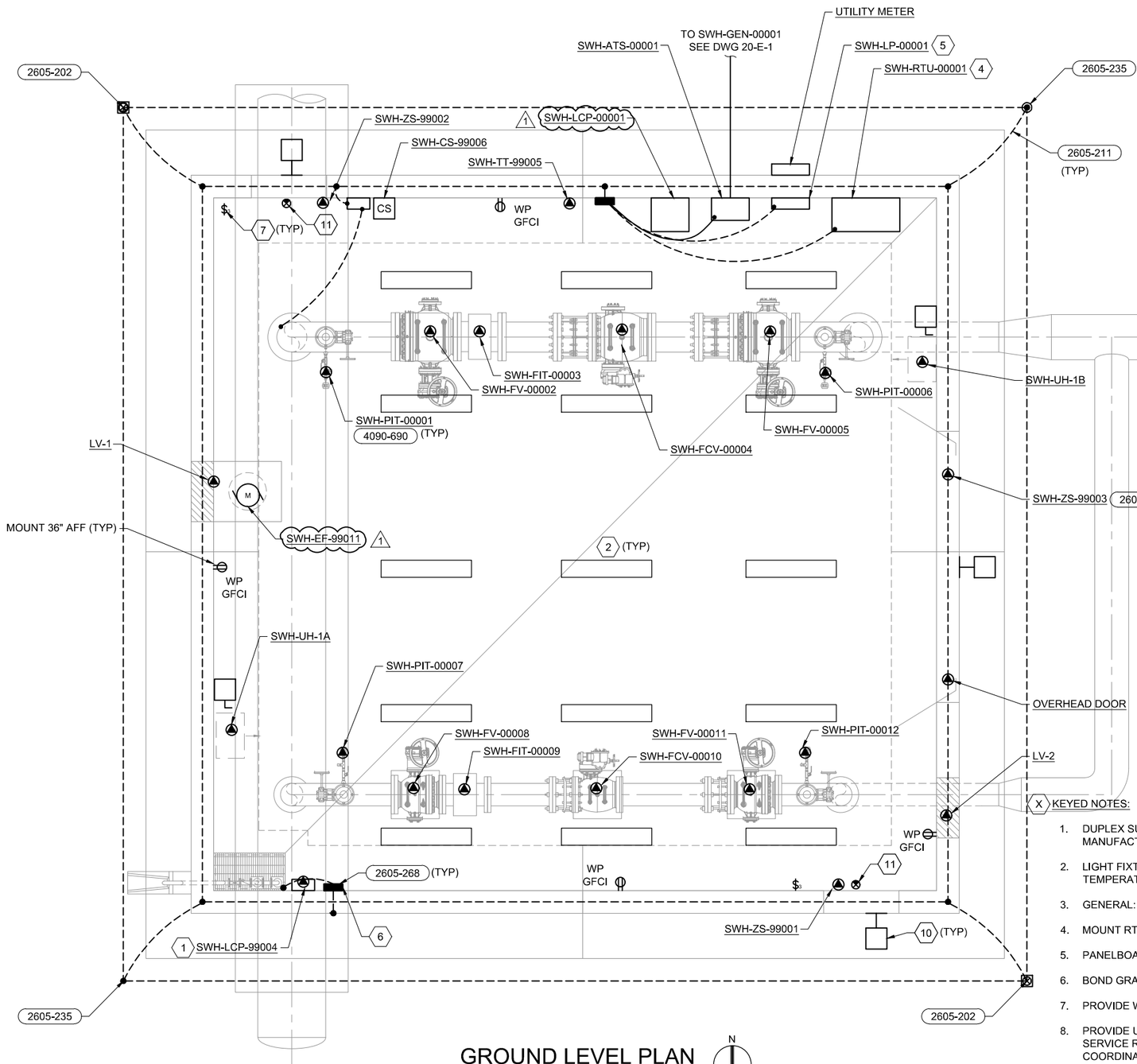
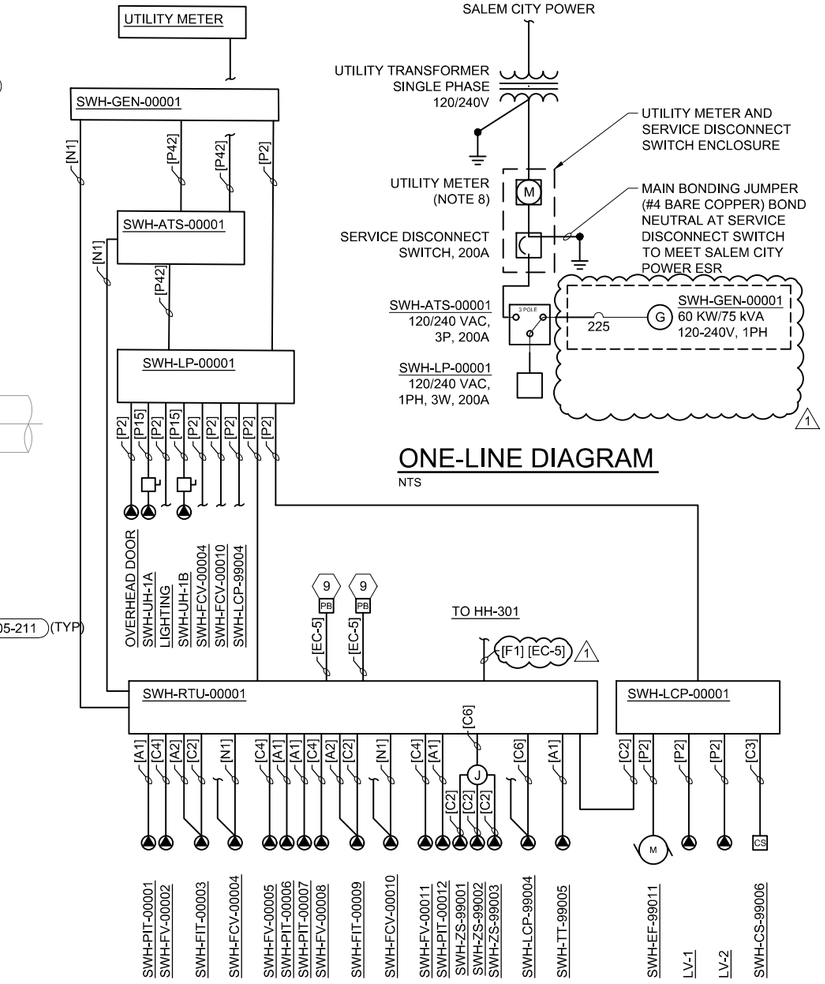


GROUND LEVEL PLAN

3/8" = 1'-0"



ONE-LINE DIAGRAM

NTS

X KEYED NOTES:

1. DUPLEX SUMP PUMP PACKAGE CONTROL PANEL. MOUNT CONTROLLER ON WALL AND CONNECT PUMP AND FLOAT SWITCHES PER MANUFACTURERS INSTRUCTIONS.
2. LIGHT FIXTURE: INDUSTRIAL LINEAR LED OUTDOOR WET LOCATION VAPORTITE 120V 42 WATT 6000 LUMEN, AMBIENT OPERATION TEMPERATURE -40 C TO +55 C, WALL OR CEILING MOUNT. METALUX OR EQUAL FIXTURE TYPE: 4VT3-LD5-6-G-120-EL10W-L840-CD1-SSLTP.
3. GENERAL: ROUTE ALL POWER AND CONTROL CONDUITS IN CONCRETE SLAB OR FLOOR WHEN POSSIBLE.
4. MOUNT RTU TO WALL. ALL CONDUITS SHALL ENTER RTU FROM THE BOTTOM OR SIDE NEAR THE BOTTOM OF THE ENCLOSURE.
5. PANELBOARD SHALL BE SURFACE MOUNTED. ALL CONDUITS SHALL ENTER FROM BOTTOM OF SIDES.. SEE 20-E-3 FOR PANEL SCHEDULE.
6. BOND GRATING TO GROUNDING SYSTEM.
7. PROVIDE WET LISTED LIGHT SWITCH.
8. PROVIDE UTILITY METER SOCKET, SERVICE RISER, AND CONDUITS IN ACCORDANCE WITH SALEM CITY POWER STANDARD ELECTRICAL SERVICE REQUIREMENTS. SALEM CITY POWER SHALL PROVIDE PRIMARY AND SECONDARY CONDUCTORS AND TRANSFORMER. COORDINATE WITH SALEM CITY POWER FOR FINAL SERVICE LOCATIONS AND REQUIREMENTS.
9. ROUTE CONDUIT TO PULLBOX FOR FUTURE SECURITY CAMERA POLE. SEE DRAWING 20-E-1 FOR LOCATION.
10. EXTERIOR LIGHT FIXTURES ABOVE DOOR SHALL BE LITHONIA WSQ LED P1 40K SR2 MVOLT E20WC PIR DDBXD OR EQUAL. MOUNT FIXTURES INCHES ABOVE DOOR FRAME. POWER FROM UNSWITCHED CIRCUIT.
11. PROVED WET LISTED ILLUMINATED EXIT SIGN LITHONIA WLTE-W-G-EL-SD OR EQUAL. MOUNT EXIT ABOVE DOOR. POWER FROM UNSWITCHED CIRCUIT.

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED:
10/23/2023

DSGN	M PAWLOWSKI
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CHK	T PALIN
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NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM WOODLAND HILLS DRIVE TURNOUT
ELECTRICAL PLAN

SHEET	XX OF XX
DWG	20-E-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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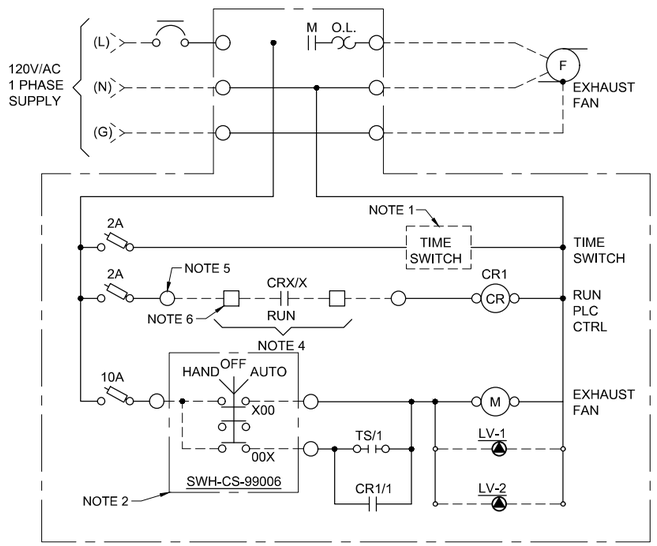

NOTES:

1. TIME SWITCH: TORK 8001 SERIES, WITH TIMER SET FOR TWO 15 MINUTE PERIODS IN 24 HOURS.
2. HAND SWITCH LOCATED AT VAULT HATCH.
3. LOCATE DEVICES IN FAN CONTROL PANEL / PULL BOX. ENCLOSURE SIZED BY CONTRACTOR AS REQUIRED FOR COMPONENTS.
4. CONTACT CLOSURE IN RTU ENCLOSURE, CONTROLLED BY PLC.
5. TERMINAL IN FAN CONTROL PANEL ENCLOSURE.
6. TERMINAL IN RTU ENCLOSURE.

1 EXHAUST FAN CONTROL PANEL W/ HAND / OFF / AUTO CONTROL

NTS

PANEL: SWH-LP-00001 — LOCATION: SALEM WOODLAND HILLS DRIVE TURNOUT
SERVICE VOLTAGE: 120/240V — PHASE: 1 — WIRE: 3
TOTAL LOAD KVA: 28.3 — BUS SIZE: 225 — MAIN SIZE: 200A — TYPE: MCB
REMARKS: NEMA 3R, BOTTOM FEED — NEUTRAL: — MOUNTING: SURFACE

LOAD IN VA A	LOAD IN VA B	CIRCUIT DESCRIPTION	BKR A/P	CKT NO.	CKT NO.	BKR A/P	CIRCUIT DESCRIPTION	LOAD IN VA A	LOAD IN VA B
1627.0		SWH-LCP-00001	20A/1P	1	2	20A/1P	LIGHTING	378.0	
	1200.0	SWH-LCP-99004 /1	20A/1P	3	4	20A/1P	SWH-FCV-00004		1600.0
720.0		RECEPTACLES	20A/1P	5	6	20A/1P	RTU PANEL UPS	600.0	
	5000.0	SWH-UH-1A /1		7	8	20A/1P	SWH-FCV-00010		1600.0
5000.0			60A/2P	9	10	20A/1P	SPARE	0.0	
	600.0	GENERATOR	20A/1P	11	12	20A/1P	SPARE		0.0
5000.0		SWH-UH-1B /1		13	14	20A/1P	SPARE	0.0	
	5000.0		60A/2P	15	16	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	17	18	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	19	20	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	21	22	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	23	24	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	25	26	20A/1P	SPARE	0.0	
	0.0	SPD	30A/2P	27	28	20A/1P	SPARE		0.0
0.0				29	30	20A/1P	SPARE	0.0	
12347.0	11800.0	TOTAL						978.0	3200.0
								13325.0	15000.0

2 PANELBOARD SCHEDULE

NTS

PROFESSIONAL ENGINEER — No. 10248500-2202 — TOBY BRYAN PALIN — STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
/1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE
SANTAQUIN REACH

SALEM WOODLAND HILLS TURNOUT
ELECTRICAL DETAILS

SHEET	XX OF XX
DWG	20-E-3
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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SWH-RTU-00001

SWH-PLC-00001

99005 TEMP
99004 HIHI
99004 PMP1 ON
99004 PMP2 ON
99001 INTRUSION
99002 INTRUSION
99003 INTRUSION
99006 RUN
00001 DATA
00001 DATA

ETHERNET SWITCH
FIBER PATCH PANEL
FO
FO
FO
TO CONTROL BUILDING

TT 99005

(3) ZS 99001 INTRUSION SWITCHES

120V
SWH-LCP-99004
LSHH
LSH
LSH
LSH
M
M
SUMP PUMP 1
SUMP PUMP 2

120V
SWH-LCP-00001
TIMER
SWH-CS-99006
HOA
HS 99006
POWER
M
LV-1
POWER
LV-2
M
AIR INTAKE
M
SWH-EXF-99011

SWH-GEN-00001
SWH-ATS-00001
START
1

DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI						VERIFY SCALE	SPANISH FORK SANTAQUIN PIPELINE	SHEET XX OF XX
DR	R PHILLIPS						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"	SANTAQUIN REACH	DWG 20-N-2
CHK	T PALIN	1	10/23	ADDENDUM 1	RP	TP	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	SALEM WOODLAND HILLS TURNOUT PROCESS AND INSTRUMENTATION DIAGRAM	DATE OCTOBER 2023
APVD	T PALIN	NO.	DATE	REVISION	BY	APVD	CENTRAL UTAH WATER CONSERVANCY DISTRICT		CONTRACT C-2023-01

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SHEET KEYNOTES

1. PROVIDE INLINE SPLICE INTO EXISTING FIBER OPTIC CABLE. SPLICE INTO ONLY 4 FIBERS FOR COMMUNICATION TO LOCAL RTU. ALL OTHER FIBERS SHALL CONTINUE ALONG CABLE UNINTERRUPTED.
2. PROVIDE PULLBOX AND TERMINATE AND CAP CONDUIT IN PULLBOX FOR FUTURE CONNECTION TO SECURITY CAMERA POLE.

△1

ELEC METER & SERVICE DISCONNECT SEE DWG 30-E-2 2615-020

RTU SEE DWG 30-E-2

1-1/2" PVC CONDUIT

FIBER OPTIC CONDUIT & CABLE SEE DWG 30-E-2

4703

4704

MH

SIGN

SCALE: 0 5 10 15 — 1" = 5'

PROFESSIONAL ENGINEER — No. 10248500-2202 — TOBY BRYAN PALIN — STATE OF UTAH

DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM 250 WEST BLOWOFF ELECTRICAL SITE PLAN

SHEET	XX OF XX
DWG	30-E-1
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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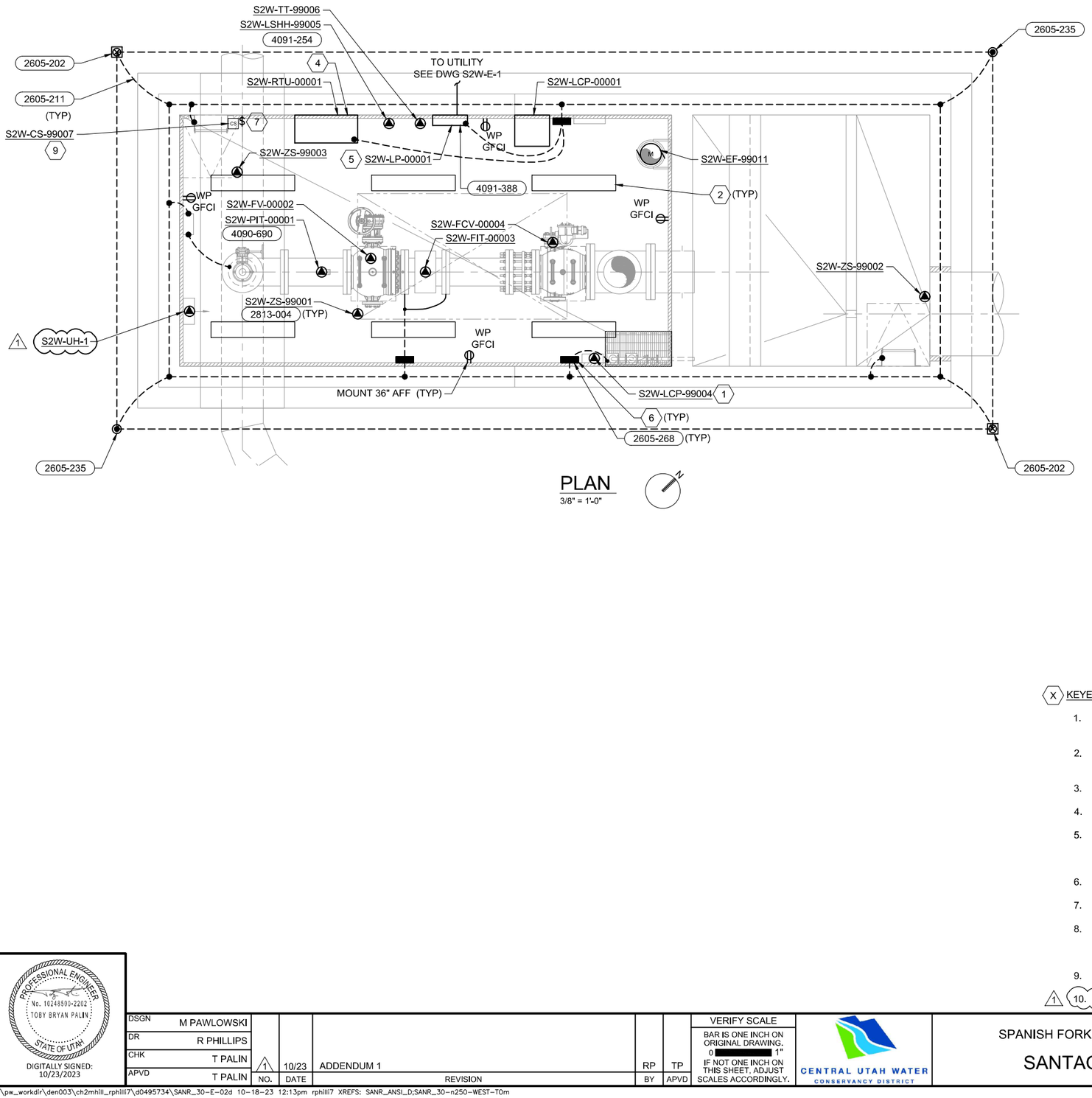
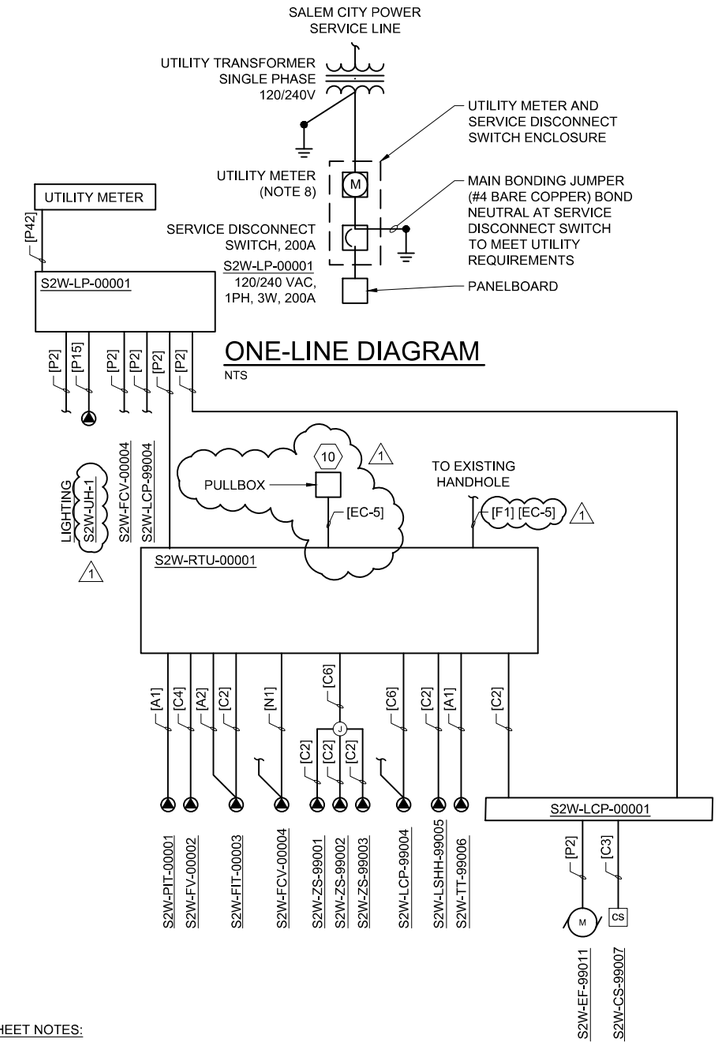


PLAN

3/8" = 1'-0"



ONE-LINE DIAGRAM

NTS

X KEYED SHEET NOTES:

1. DUPLEX SUMP PUMP PACKAGE CONTROL PANEL. MOUNT CONTROLLER ON WALL AND CONNECT PUMP AND FLOAT SWITCHES PER MANUFACTURERS INSTRUCTIONS.
2. LIGHT FIXTURE: INDUSTRIAL LINEAR LED OUTDOOR WET LOCATION VAPORTITE 120V 42 WATT 6000 LUMEN, AMBIENT OPERATION TEMPERATURE -40 C TO +55 C, WALL OR CEILING MOUNT. METALUX OR EQUAL FIXTURE TYPE: 4VT3-LD5-6-G-120-EL10W-L840-CD1-SSLTP.
3. GENERAL: ROUTE ALL POWER AND CONTROL CONDUITS IN CONCRETE SLAB OR FLOOR WHEN POSSIBLE.
4. MOUNT RTU TO WALL. ALL CONDUITS SHALL ENTER RTU FROM THE BOTTOM OR SIDE NEAR THE BOTTOM OF THE ENCLOSURE.
5. FEEDER CIRCUIT SHALL PENETRATE WALL BELOW S2W-LP-00001. CONDUIT SHALL TEE WITH ONE CONDUIT GOING UP INTO BOTTOM OF PANEL ENCLOSURE AND THE OTHER CONDUIT GOING DOWN WITH A MOISTURE DRAIN FITTING SO ALL INFILTRATED MOISTURE WILL NOT DRAIN INTO THE ELECTRICAL EQUIPMENT. SEE 30-E-3 FOR PANEL SCHEDULE.
6. BOND GRATING AND STAIRWAY FRAME STRUCTURE TO GROUNDING SYSTEM.
7. PROVIDE WET LISTED LIGHT SWITCH AT THE TOP OF THE ACCESS STAIRS, BUT BELOW ACCESS HATCH.
8. PROVIDE UTILITY METER SOCKET, SERVICE RISER, AND CONDUITS IN ACCORDANCE WITH SALEM CITY POWER STANDARD ELECTRICAL SERVICE REQUIREMENTS. SALEM CITY POWER SHALL PROVIDE PRIMARY AND SECONDARY CONDUCTORS AND TRANSFORMER. COORDINATE WITH SALEM CITY POWER FOR FINAL SERVICE LOCATIONS AND REQUIREMENTS.
9. MOUNT EXHAUST FAN CONTROL STATION ADJACENT TO LIGHT SWITCH.
10. ROUTE CONDUIT TO PULLBOX FOR FUTURE SECURITY CAMERA POLE. SEE DRAWING 30-E-1 FOR LOCATION.

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED:
10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
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0 1"
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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM 250 WEST
BLOW OFF VAULT
ELECTRICAL PLAN

SHEET	XX OF XX
DWG	30-E-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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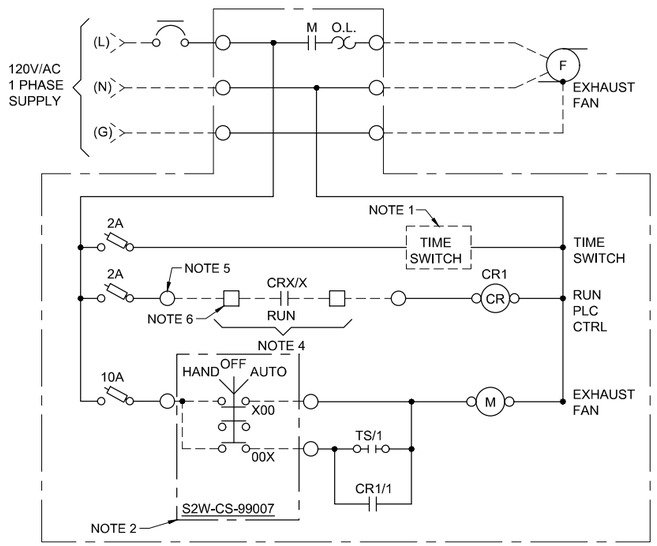

NOTES:

1. TIME SWITCH: TORK 8001 SERIES, WITH TIMER SET FOR TWO 15 MINUTE PERIODS IN 24 HOURS.
2. HAND SWITCH LOCATED AT VAULT HATCH.
3. LOCATE DEVICES IN FAN CONTROL PANEL / PULL BOX. ENCLOSURE SIZED BY CONTRACTOR AS REQUIRED FOR COMPONENTS.
4. CONTACT CLOSURE IN RTU ENCLOSURE, CONTROLLED BY PLC.
5. TERMINAL IN FAN CONTROL PANEL ENCLOSURE.
6. TERMINAL IN RTU ENCLOSURE.

1 EXHAUST FAN CONTROL PANEL W/ HAND / OFF / AUTO CONTROL

NTS

PANEL: S2W-LP-00001 | LOCATION: SALEM 250 WEST BLOW OFF VAULT
SERVICE VOLTAGE: 120/240V | PHASE: 1 | WIRE: 3
TOTAL LOAD KVA: 11.0 | BUS SIZE: 225 | MAIN SIZE: 200A | TYPE: MCB
REMARKS: NEMA 3R, BOTTOM FEED | NEUTRAL: | MOUNTING: SURFACE

LOAD IN VA A	LOAD IN VA B	CIRCUIT DESCRIPTION	BKR A/P	CKT NO.	CKT NO.	BKR A/P	CIRCUIT DESCRIPTION	LOAD IN VA A	LOAD IN VA B
1627.0		S2W-LCP-00001	20A/1P	1	2	20A/1P	LIGHTING	210.0	
	1200.0	S2W-LCP-99004 /1	20A/1P	3	4	20A/1P	S2W-FCV-00004		1600.0
720.0		RECEPTACLES	20A/1P	5	6	20A/1P	RTU PANEL UPS	600.0	
	0.0	SPARE	20A/2P	7	8	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	9	10	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	11	12	20A/1P	SPARE		0.0
2500.0		S2W-UH-1 /1	30A/2P	13	14	20A/1P	SPARE	0.0	
	2500.0			15	16	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	17	18	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	19	20	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	21	22	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	23	24	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	25	26	20A/1P	SPARE	0.0	
	0.0	SPD	30A/2P	27	28	20A/1P	SPARE		0.0
0.0				29	30	20A/1P	SPARE	0.0	
4847.0	3700.0	TOTAL						810.0	1600.0
								5657.0	5300.0

2 PANELBOARD SCHEDULE

NTS

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
/1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

SALEM 250 WEST
BLOW OFF VAULT
ELECTRICAL DETAILS

SHEET	XX OF XX
DWG	30-E-3
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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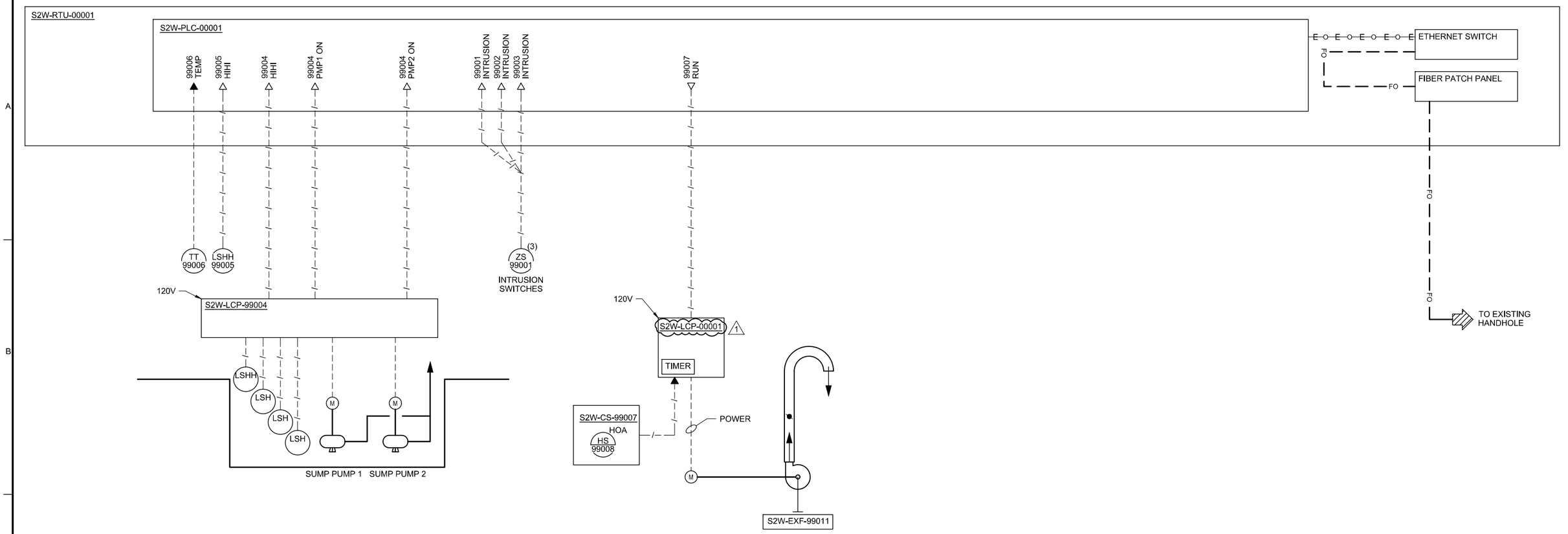

A

B

C

D

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
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0 1"
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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

250 WEST BLOWOFF VAULT
PROCESS AND INSTRUMENTATION DIAGRAM

SHEET	XX OF XX
DWG	30-N-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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SHEET KEY NOTES

1. FIELD LOCATED EXISTING FIBER OPTIC CONDUITS ROUTED ALONG PIPELINE. CONDUIT INCLUDE THREE 1.5 IN DIAMETER HDPE CONDUITS. ONE CONDUIT CONTAINS A TRACER WIRE THAT CAN BE CUT AND SPLICED IN ACCESSIBLE HANDHOLE OR PULLBOX AS NEEDED. ONE CONDUIT CONTAINS A 24 FIBER CABLE AND THE OTHER IS A SPARE. BREAK INTO THE EXISTING FIBER OPTIC HDPE CONDUIT AND PULL SPARE ADDITIONAL CABLE AS NEEDED FROM NEAREST EXISTING HANDHOLE. INSTALL A HANDHOLE IN LOCATION SHOWN. EXTEND CONDUITS TO HANDHOLE. PROVIDE INLINE SPLICE AND ROUTE TO FIBERS FROM CABLE TO LOCAL RTU. RTU IN TURNOUT WILL COMMUNICATE WITH ULS FIELD OFFICE NEAR MAPLETON HIGH PRESSURE TURNOUT. SPLICING OF ALL 24 FIBERS IN EXISTING FIBER CABLE IS ACCEPTABLE TO EXTEND EXSTING CONDUIT RUNS.
2. PROVIDE PULLBOX AND TERMINATE AND CAP CONDUIT IN PULLBOX FOR FUTURE CONNECTION TO SECURITY CAMERA POLE.

1 HH-FO
2605-339

2615-020 UTILITY METER
SEE 40-E DWGS

E(UG)
FO(UG)
E(OH)
2" IRR
6" IRR
CUGG
GOOSENEST DRIVE

N
0 20 40 60
1" = 20'

PROFESSIONAL ENGINEER
No. 10246500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED:
10/23/2023

DSGN	M PAWLOWSKI
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NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

PAYSON EAST TURNOUT & ISOLATION VAVE VAULT ELECTRICAL SITE PLAN

SHEET	XX OF XX
DWG	40-E-1
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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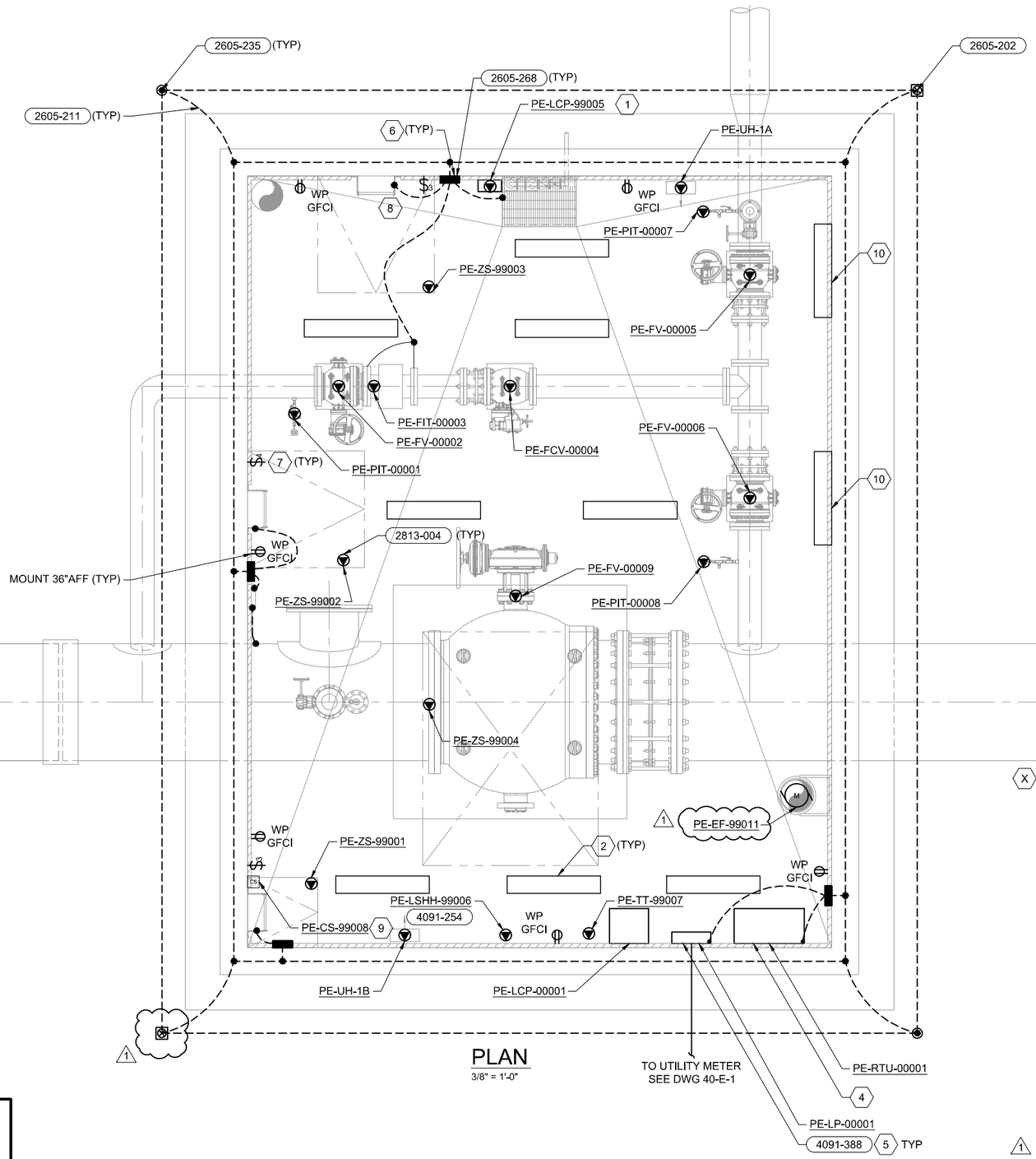
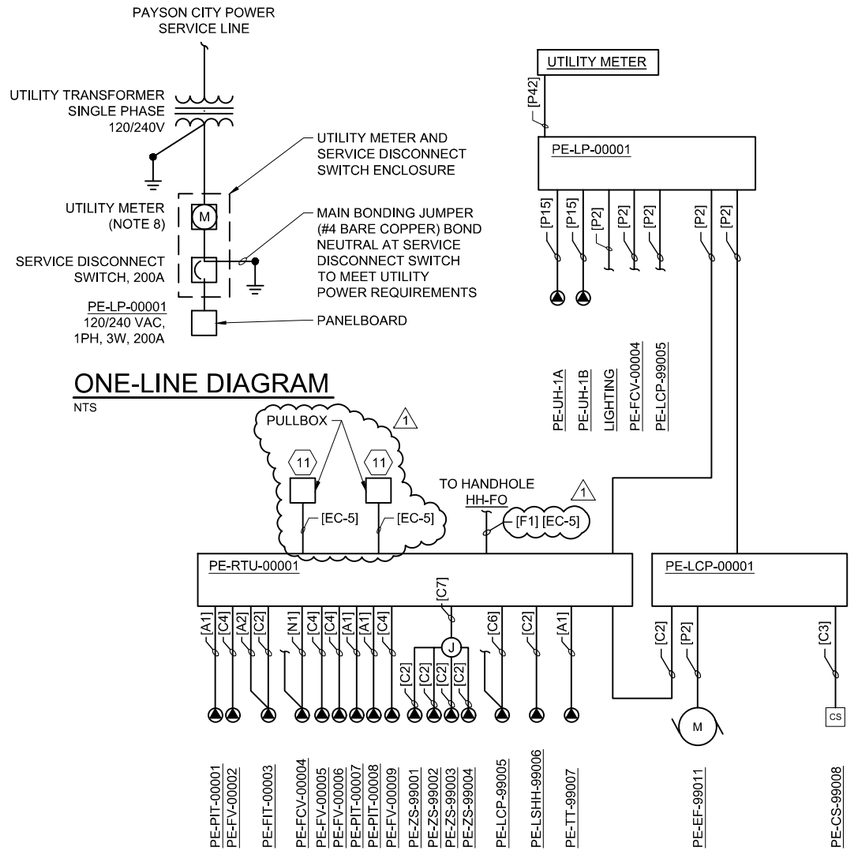


PLAN
3/8" = 1'-0"



ONE-LINE DIAGRAM
NTS

X KEYED NOTES:

1. DUPLEX SUMP PUMP PACKAGE CONTROL PANEL. MOUNT CONTROLLER ON WALL AND CONNECT PUMP AND FLOAT SWITCHES PER MANUFACTURERS INSTRUCTIONS.
2. LIGHT FIXTURE: INDUSTRIAL LINEAR LED OUTDOOR WET LOCATION VAPORTITE 120V 42 WATT 6000 LUMEN, AMBIENT OPERATION TEMPERATURE -40 C TO +55 C, WALL OR CEILING MOUNT. METALUX OR EQUAL FIXTURE TYPE: 4VT3-LD5-6-G-120-EL10W-L840-CD1-SSLTP.
3. GENERAL: ROUTE ALL POWER AND CONTROL CONDUITS IN CONCRETE SLAB OR FLOOR WHEN POSSIBLE.
4. MOUNT RTU TO WALL. ALL CONDUITS SHALL ENTER RTU FROM THE BOTTOM OR SIDE NEAR THE BOTTOM OF THE ENCLOSURE.
5. FEEDER CIRCUIT SHALL PENETRATE WALL BELOW PE-LP-00001. CONDUIT SHALL TEE WITH ONE CONDUIT GOING UP INTO BOTTOM OF PANEL ENCLOSURE AND THE OTHER CONDUIT GOING DOWN WITH A MOISTURE DRAIN FITTING SO ALL INFILTRATED MOISTURE WILL NOT DRAIN INTO THE ELECTRICAL EQUIPMENT. SEE 40-E-3 (1) FOR PANEL SCHEDULE.
6. BOND GRATING AND STAIRWAY FRAME STRUCTURE TO GROUNDING SYSTEM.
7. PROVIDE WET LISTED LIGHT SWITCH AT THE TOPE OF THE ACCESS STAIRS, BUT BELOW ACCESS HATCH.
8. PROVIDE UTILITY METER SOCKET, SERVICE RISER, AND CONDUITS IN ACCORDANCE WITH SALEM CITY POWER STANDARD ELECTRICAL SERVICE REQUIREMENTS. SALEM CITY POWER SHALL PROVIDE PRIMARY AND SECONDARY CONDUCTORS AND TRANSFORMER. COORDINATE WITH SALEM CITY POWER FOR FINAL SERVICE LOCATIONS AND REQUIREMENTS.
9. MOUNT ADJACENT TO LIGHT SWITCH.
10. MOUNT TO WALL AT 8'-0" AFF.
11. (1) ROUTE CONDUIT TO PULLBOX FOR FUTURE SECURITY CAMERA POLE. SEE DRAWING 40-E-1 FOR LOCATION.

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

PAYSON EAST TURNOUT & ISOLATION VALVE VAULT ELECTRICAL PLAN

SHEET	XX OF XX
DWG	40-E-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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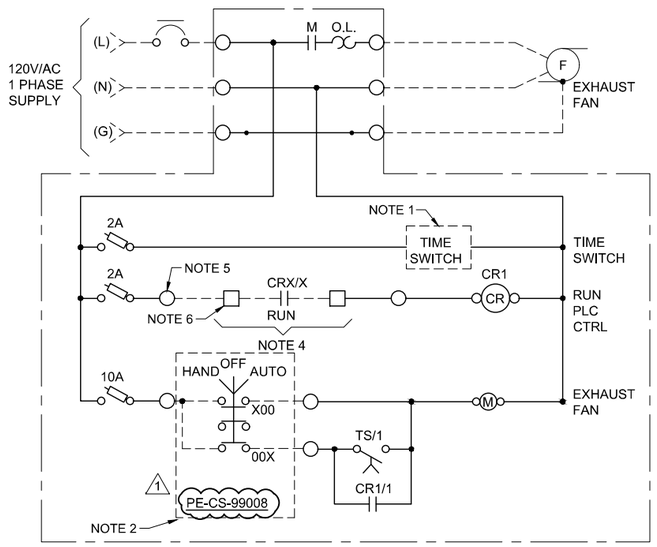

NOTES:

1. TIME SWITCH: TORK 8001 SERIES, WITH TIMER SET FOR TWO 15 MINUTE PERIODS IN 24 HOURS.
2. HAND SWITCH LOCATED AT VAULT HATCH.
3. LOCATE DEVICES IN FAN CONTROL PANEL / PULL BOX. ENCLOSURE SIZED BY CONTRACTOR AS REQUIRED FOR COMPONENTS.
4. CONTACT CLOSURE IN RTU ENCLOSURE, CONTROLLED BY PLC.
5. TERMINAL IN FAN CONTROL PANEL ENCLOSURE.
6. TERMINAL IN RTU ENCLOSURE.

1 EXHAUST FAN CONTROL PANEL W/ HAND / OFF / AUTO CONTROL

NTS

PANEL: PE-LP-00001 — LOCATION: PAYSON EAST TURNOUT
SERVICE VOLTAGE: 120/240V — PHASE: 1 — WIRE: 3
TOTAL LOAD KVA: 16.1 — BUS SIZE: 225 — MAIN SIZE: 200A — TYPE: MCB
REMARKS: NEMA 3R, BOTTOM FEED — NEUTRAL: — MOUNTING: SURFACE

LOAD IN VA			BKR	CKT	CKT	BKR		LOAD IN VA	
A	B	CIRCUIT DESCRIPTION	A/P	NO.	NO.	A/P	CIRCUIT DESCRIPTION	A	B
1627.0		EXHAUST FAN CONTROL PANEL	20A/1P	1	2	20A/1P	PE-FCV-00004	1600.0	
	1200.0	SUMP PUMP CONTROL PANEL	20A/1P	3	4	20A/1P	SPARE		0.0
720.0		RECEPTACLES	20A/1P	5	6	20A/1P	RTU PANEL UPS	600.0	
	2500.0	PE-UH-1A	30A/2P	7	8	20A/1P	LIGHTING		336.0
2500.0				9	10	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	11	12	20A/1P	SPARE		0.0
2500.0		PE-UH-1B	30A/2P	13	14	20A/1P	SPARE	0.0	
	2500.0			15	16	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	17	18	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	19	20	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	21	22	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	23	24	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	25	26	20A/1P	SPARE	0.0	
	0.0	SPD	30A/2P	27	28	20A/1P	SPARE		0.0
0.0				29	30	20A/1P	SPARE	0.0	
7347.0	6200.0	TOTAL						2200.0	336.0
								9547.0	6536.0

1

2 PANELBOARD SCHEDULE

NTS

PROFESSIONAL ENGINEER
No. 10248500-2202
TOBY BRYAN PALIN
STATE OF UTAH
DIGITALLY SIGNED: 10/23/2023

DSGN	M PAWLOWSKI
DR	R PHILLIPS
CHK	T PALIN
APVD	T PALIN

NO.	DATE	REVISION	BY	APVD
1	10/23	ADDENDUM 1	RP	TP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

PAYSON EAST TURNOUT & ISOLATION VALVE VAULT ELECTRICAL DETAILS

SHEET	OF XX
DWG	40-E-3
DATE	OCTOBER 2023
CONTRACT	C-2023-01

C:\pw_workdir\den003\ch2mhill_rphilli7\d0495734\SANR_40-E-03d 10-18-23 01:52pm rphilli7 XREFS: SANR_ANSI_D

SHEET KEY NOTES

1. PROVIDE INLINE SPLICE INTO EXISTING FIBER OPTIC CABLE. SPLICE INTO ONLY 2 FIBERS FOR COMMUNICATION TO LOCAL RTU. ALL OTHER FIBERS SHALL CONTINUE ALONG CABLE UNINTERRUPTED.
2. PROVIDE PULLBOX AND TERMINATE AND CAP CONDUIT IN PULLBOX FOR FUTURE CONNECTION TO SECURITY CAMERA POLE.

PB
E(UG)
2615-020 UTILITY METER
SEE DWG 45-E-2
15" SD
24" W
12" W
4" G

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CENTRAL UTAH WATER CONSERVANCY DISTRICT

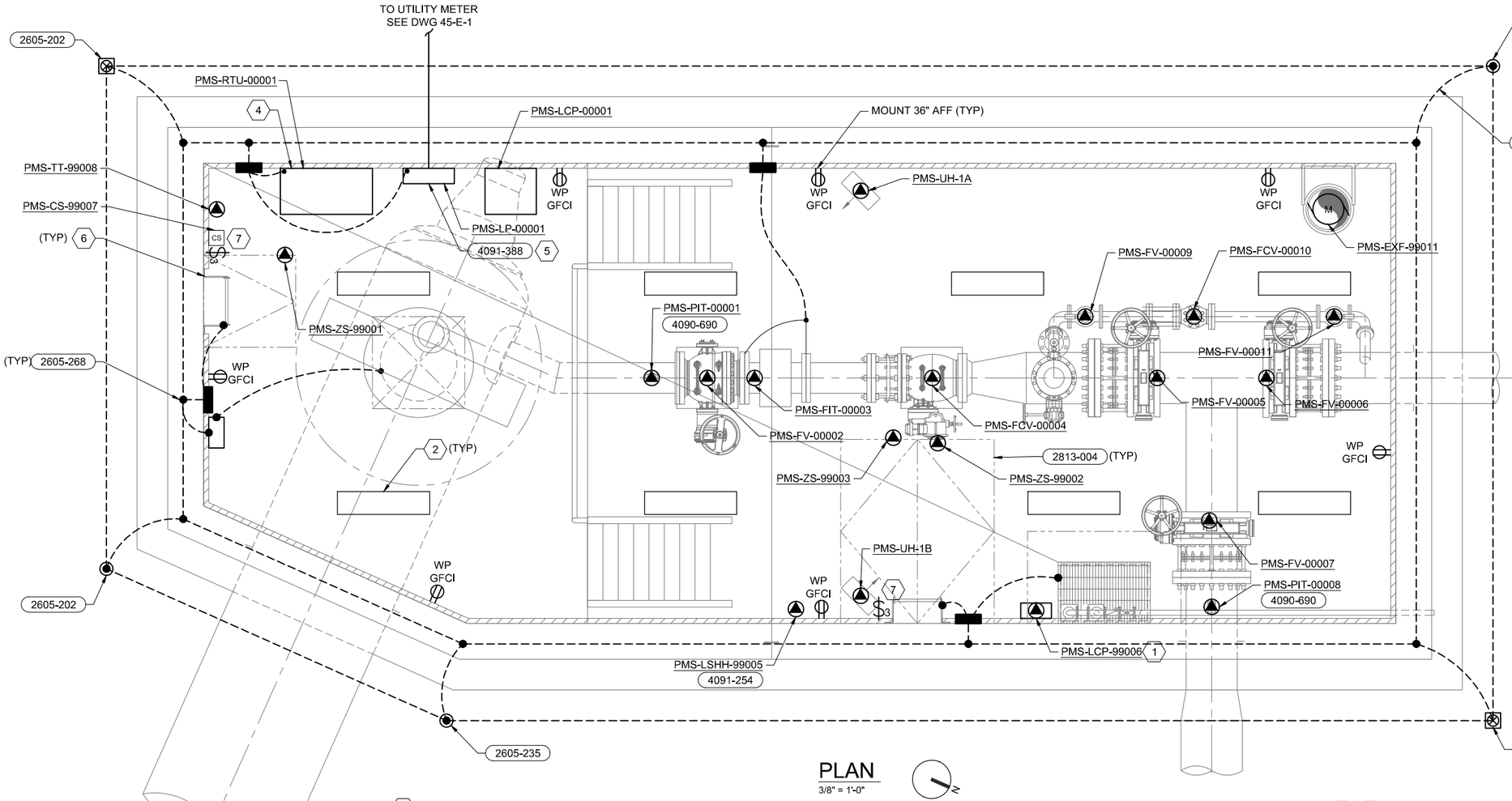
SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

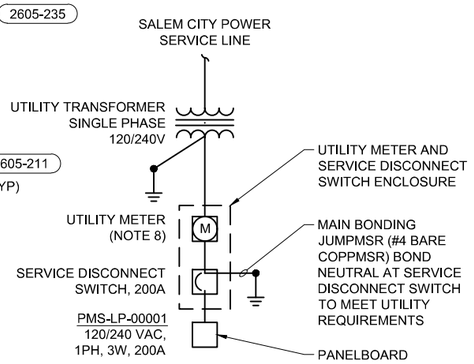
PAYSON MAIN STREET TURNOUT
ELECTRICAL SITE PLAN

SHEET	XX OF XX
DWG	45-E-1
DATE	OCTOBER 2023
CONTRACT	C-2023-01

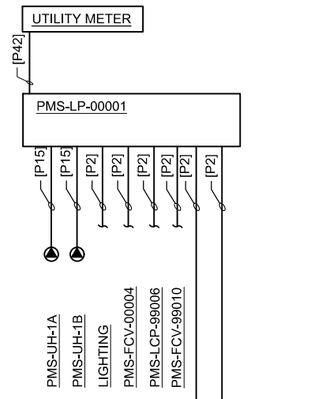
C:\pw_workdir\den003\jeg_quinnbc\d0495734\SANR_45-E-01d 10-23-23 01:50pm QUINNBC XREFS: SANR_ANSI_D;SANR_eTOPOm;PAYR_ePROPERTYm;Payson_Santaquin ExTopo;PAYR_eUTILm;PAYR_nHORZ_ALIGNm;PAYR_nUTILITIESm;SANR_nSITEmdl;PAYR_nROWm;SANR_eAERIAL_PAYSON-MAINm;SANR_45-nPAYSON-MAIN-TOm;SANR_45-nCREEK-DISCHARGEm

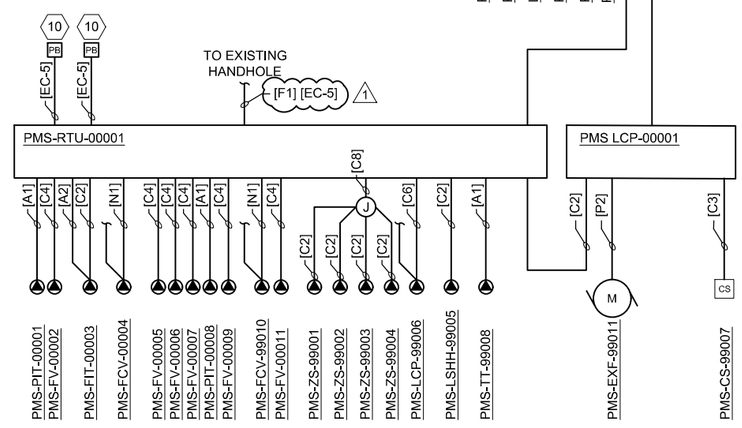


PLAN
3/8" = 1'-0"



ONE-LINE DIAGRAM
NTS





X KEYED NOTES:

1. DUPLEX SUMP PUMP PACKAGE CONTROL PANEL. MOUNT CONTROLLER ON WALL AND CONNECT PUMP AND FLOAT SWITCHES PER MANUFACTURERS INSTRUCTIONS.
2. LIGHT FIXTURE: INDUSTRIAL LINEAR LED OUTDOOR WET LOCATION VAPORTITE 120V 42 WATT 6000 LUMEN, AMBIENT OPERATION TEMPERATURE -40 C TO +55 C, WALL OR CEILING MOUNT. METALUX OR EQUAL FIXTURE TYPE: 4VT3-LD5-6-G-120-EL10W-L840-CD1-SSLTP.
3. GENERAL: ROUTE ALL POWER AND CONTROL CONDUITS IN CONCRETE SLAB OR FLOOR WHEN POSSIBLE.
4. MOUNT RTU TO WALL. ALL CONDUITS SHALL ENTER RTU FROM THE BOTTOM OR SIDE NEAR THE BOTTOM OF THE ENCLOSURE.
5. FEEDER CIRCUIT SHALL PENETRATE WALL BELOW PMS-LP-00001. CONDUIT SHALL TEE WITH ONE CONDUIT GOING UP INTO BOTTOM OF PANEL ENCLOSURE AND THE OTHER CONDUIT GOING DOWN WITH A MOISTURE DRAIN FITTING SO ALL INFILTRATED MOISTURE WILL NOT DRAIN INTO THE ELECTRICAL EQUIPMENT. SEE 45-E-3 FOR PANEL SCHEDULE.
6. BOND GRATING AND STAIRWAY FRAME STRUCTURE TO GROUNDING SYSTEM.
7. PROVIDE WET LISTED LIGHT SWITCH AT THE TOP OF THE ACCESS STAIRS, BUT BELOW ACCESS HATCH.
8. PROVIDE UTILITY METER SOCKET, SERVICE RISER, AND CONDUITS IN ACCORDANCE WITH SALEM CITY POWER STANDARD ELECTRICAL SERVICE REQUIREMENTS. SALEM CITY POWER SHALL PROVIDE PRIMARY AND SECONDARY CONDUCTORS AND TRANSFORMER. COORDINATE WITH SALEM CITY POWER FOR FINAL SERVICE LOCATIONS AND REQUIREMENTS.
9. PROVIDE EXHAUST FAN CONTROL STATION ADJACENT TO LIGHT SWITCH.
10. ROUTE CONDUIT TO PULLBOX FOR FUTURE SECURITY CAMERA POLE. SEE DRAWING 45-E-1 FOR LOCATION.

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CHK	T PALIN
APVD	T PALIN

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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE
SANTAQUIN REACH

PAYSON MAIN STREET TURNOUT
ELECTRICAL PLAN

SHEET	XX OF XX
DWG	45-E-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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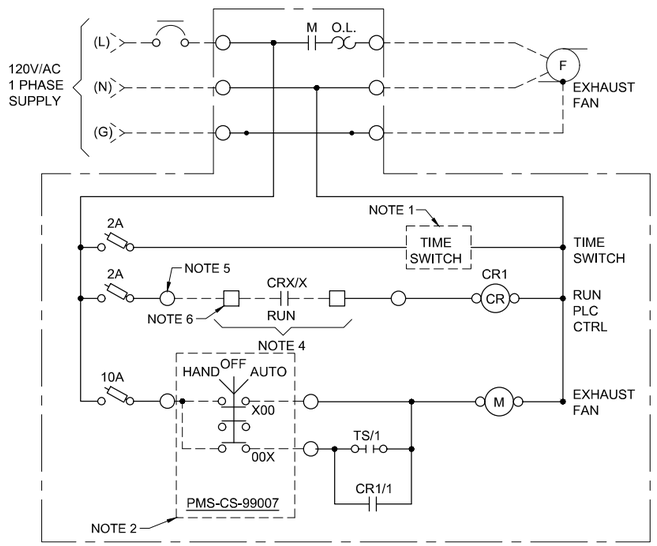

NOTES:

1. TIME SWITCH: TORK 8001 SERIES, WITH TIMER SET FOR TWO 15 MINUTE PERIODS IN 24 HOURS.
2. HAND SWITCH LOCATED AT VAULT HATCH.
3. LOCATE DEVICES IN FAN CONTROL PANEL / PULL BOX. ENCLOSURE SIZED BY CONTRACTOR AS REQUIRED FOR COMPONENTS.
4. CONTACT CLOSURE IN RTU ENCLOSURE, CONTROLLED BY PLC.
5. TERMINAL IN FAN CONTROL PANEL ENCLOSURE.
6. TERMINAL IN RTU ENCLOSURE.

1 EXHAUST FAN CONTROL PANEL W/ HAND / OFF / AUTO CONTROL
NTS

PANEL: PMS-LP-00001 | LOCATION: PAYSON MAIN STREET TURNOUT
SERVICE VOLTAGE: 120/240V | PHASE: 1 | WIRE: 3
TOTAL LOAD KVA: 17.7 | BUS SIZE: 225 | MAIN SIZE: 200A | TYPE: MCB
REMARKS: NEMA 3R, BOTTOM FEED | NEUTRAL: | MOUNTING: SURFACE

LOAD IN VA A	LOAD IN VA B	CIRCUIT DESCRIPTION	BKR A/P	CKT NO.	CKT NO.	BKR A/P	CIRCUIT DESCRIPTION	LOAD IN VA A	LOAD IN VA B
1627.0		EXHAUST FAN CONTROL PANEL	20A/1P	1	2	20A/1P	PM-FCV-00004	1600.0	
	1200.0	SUMP PUMP CONTROL PANEL	20A/1P	3	4	20A/1P	SPARE		1600.0
720.0		RECEPTACLES	20A/1P	5	6	20A/1P	RTU PANEL UPS	600.0	
	2500.0	PMS-UH-1A (1)	30A/2P	7	8	20A/1P	LIGHTING		336.0
2500.0				9	10	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	11	12	20A/1P	SPARE		0.0
2500.0		PMS-UH-1B (1)	30A/2P	13	14	20A/1P	SPARE	0.0	
	2500.0			15	16	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	17	18	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	19	20	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	21	22	20A/1P	SPARE	0.0	
	0.0	SPARE	20A/1P	23	24	20A/1P	SPARE		0.0
0.0		SPARE	20A/1P	25	26	20A/1P	SPARE	0.0	
	0.0	SPD	30A/2P	27	28	20A/1P	SPARE		0.0
0.0				29	30	20A/1P	SPARE	0.0	
7347.0	6200.0	TOTAL						2200.0	1936.0
								9547.0	8136.0

2 PANELBOARD SCHEDULE
NTS

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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE
SANTAQUIN REACH

PAYSON MAIN STREET TURNOUT
ELECTRICAL DETAILS

SHEET	OF XX
DWG	45-E-3
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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PMS-RTU-00001

PMS-PLC-00001

99008 TEMP
99005 HIHI
99006 HIHI
99006 PMP1 ON
99006 PMP2 ON
99001 INTRUSION
99002 INTRUSION
99003 INTRUSION
99008 RUN

E E E E E E E ETHERNET SWITCH
FO
FO
FIBER PATCH PANEL
FO
FO
TO CONTROL BUILDING

TT 99008
LSHH 99005
(3) ZS 99001
INTRUSION SWITCHES

120V
PMS-LCP-99006
LSHH
LSH
LSH
LSH
M
M
SUMP PUMP 1
SUMP PUMP 2

120V
PMS-LCP-00001
TIMER
1
PMS-CS-99007
HOA
HS 99007
POWER
M
PMS-EXF-99011

PROFESSIONAL ENGINEER
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CENTRAL UTAH WATER CONSERVANCY DISTRICT

SPANISH FORK SANTAQUIN PIPELINE

SANTAQUIN REACH

PAYSON MAIN STREET TURNOUT
PROCESS AND INSTRUMENTATION DIAGRAM

SHEET	XX OF XX
DWG	45-N-2
DATE	OCTOBER 2023
CONTRACT	C-2023-01

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