

NM173 Waterline Relocation  
Design, Bid and Construction Services  
RFP # 2020-728



Addendum #1  
December 23, 2019

NOTICE TO RESPONDENTS

The following corrections, revisions, additions, and/or information for the above referenced project and shall be incorporated into the Plans, Specifications, and/or Contract Documents for the project as described below. The corrections, revisions, additions, and/or information shall henceforth be regarded as an integral part of the project, carrying the same weight and force as original sections of the plans, specifications, and/or contract documents.

Ensure that you indicate receipt of this Addendum on your Proposal.

Update scope of work is included with this addendum.

Response to questions received as of December 23, 2019, 9:00 AM

- Can proposals be spiral-bound or must they be submitted in 3-ring binders?  
*There is no preference*
- Steve mentioned he will revise map and also reach out to NMDOT about whether the selected firm will have access to survey information for road work area. Both will impact proposal. Additionally, with holidays, it may be hard to get references by 1/9/19. Would the City consider pushing back the deadline?  
*The revised map is included with this addendum. The City has contacted NMDOT for information they have developed for their project but have not had a response as of 12/23/2019. Proposal due date has been extended to January 23, 2020 and the last day for questions extended to January 13, 2020.*
- Page 22 mentions the electronic copy should be on cd/usb but there is mention of a Vendor Registry on page 23. Is an electronic copy to be submitted electronically on a vendor registry in addition to the cd/usb copy?  
*While the City utilizes Vendor Registry to advise of procurement solicitations, we do not accept bids, quotes or proposals via vendor registry. We do require an electronic/digital submission with the printed proposal. The preference for the electronic version is a usb flash drive.*
- Let us know if you have any additional information that becomes available such as:
  - GIS map updates
  - Clayton Harrison pump house design
  - Wilson road drawings
  - Possible as-built water line drawings from Fire Station project?
  - Description and/or location of the additional 1,000 lf of pipe that may need to be replaced southeast of the intersection of Hwy 173 and Old Spanish Trail Rd.

*The revised GIS map is included with this addendum.*

*East Aztec Pump Station design is included with this addendum.*

*Wilson road drawings have been requested from NMDOT.*

*We do not have as-built water drawings for the Fire Station.*

Proposal Due Date: *Thursday, January 23, 2020, 3:00 PM*  
Last Day For Questions: *Monday, January 13, 2020 10:00 AM*

**End of Addendum #1**

Issued by:

Kathy Lamb  
Finance Director  
December 23, 2019

**City of Aztec, NM**  
**Request for Proposal for**  
**NM 173 (Navajo Dam Road) Waterline Relocation and Replacement**  
**Design, Bid and Construction Phase Services**

The City of Aztec, NM (City) is requesting proposals from qualified engineering firms to perform the design and provide bid and construction phase services for the relocation and replacement of approximately 21,600 feet of 8-inch and 6-inch diameter PVC potable water main pipe located east of town and mostly within the NM-173 (Navajo Dam Road) right-of-way with new 8-inch diameter DR 18 C900 pipe. This relocation and replacement is required to avoid disturbance during proposed road construction by NMDOT along NM 173 and to correct pipe size, material and installation deficiencies. Approximately 8,100 feet of 6- and 8-inch diameter pipe needs to be relocated within the NM 173 right-of-way in the proposed roadwork area for the NM 173 improvements. There is approximately 6,600 feet of 8-inch diameter water main pipe prior to the proposed roadwork (pre-roadwork) area that is located within City of Aztec property and NM 173 right-of-way that needs to be replaced. Also there is approximately 6,900 feet of 6-inch diameter water main pipe after the roadwork (post roadwork) area that needs to be replaced. Approximately 5,900 feet of this 6-inch diameter pipe is within NM-173 and CR 2550 rights-of-way with approximately 1,000 feet located on private land without an easement.

**Background**

During the 1980s and 1990s, the East Aztec Water Users Association installed 6” and 8” diameter SDR 21 PVC pipe to convey potable water from the City of Aztec (the City) system to water storage tanks and customers along NM 173 (Navajo Dam Road). In or around 2004, the City obtained ownership of this pipeline and tanks. It has been determined during pipe leak repairs that the pipe was installed on top of sandstone at a shallow depth for perhaps much of its length. NMDOT is proposing improvements to NM 173 in an area where the City main is within the ROW. While the work does not directly contact this pipe for most of the length of the improvements, construction equipment will likely pass above this shallow pipe many times during construction. This fact, coupled with the facts that the pipe material does not meet current City standards and the pipe is undersized for part of its length, the City has determined that the pipe should be replaced and relocated. A preliminary review of the NMDOT NM 173 improvements design drawings indicated that there is apparently room within the NM 173 right-of-way to relocate this pipeline further away from construction activity on the north side of the cartway.

**Proposed Scope of Work**

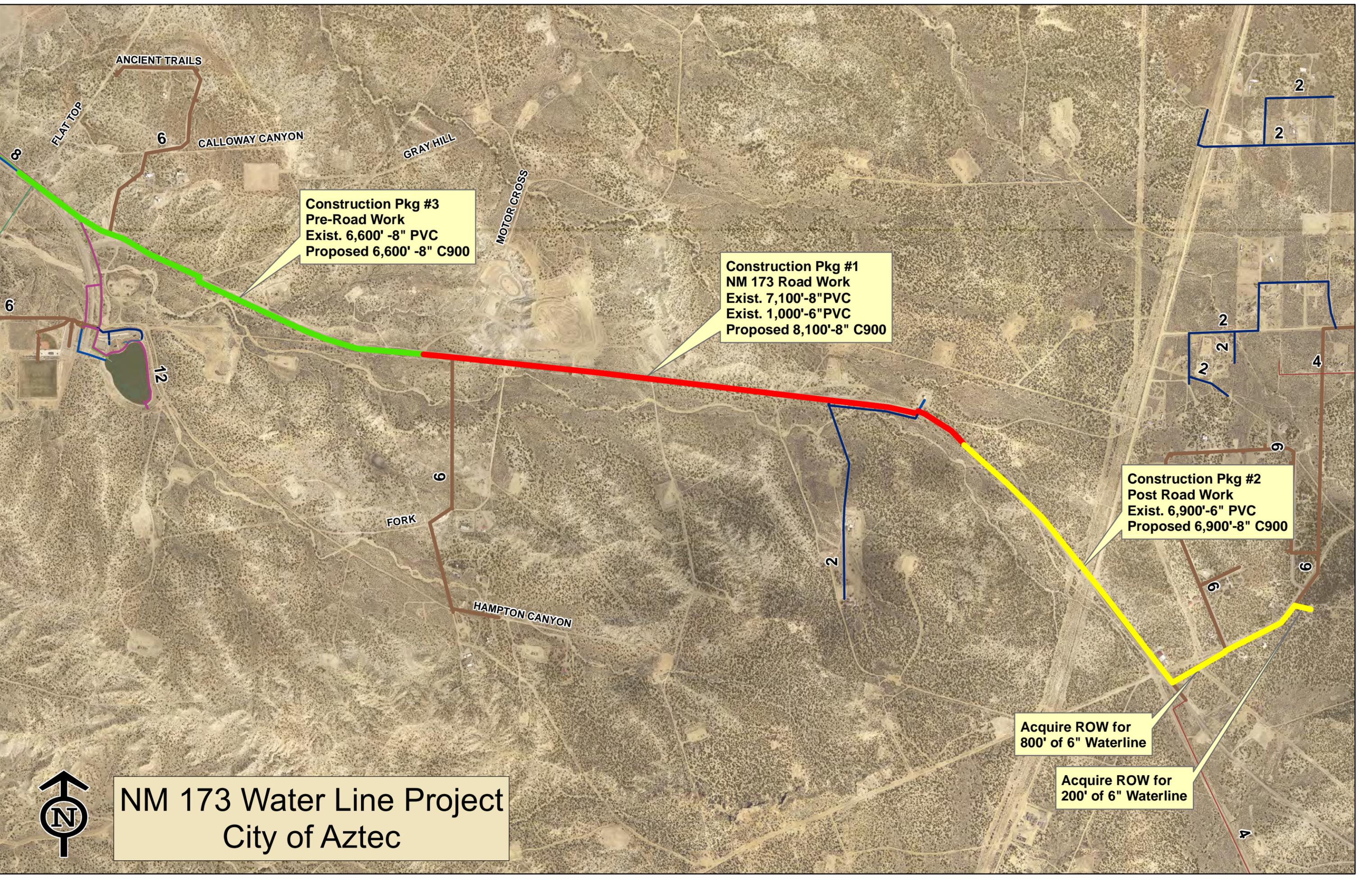
This project will be broken into four phases. In Phase 1, the selected firm will perform all field work and preliminary evaluations needed to complete the design of the water main relocation. This phase will include the collection of all field data needed to select, size, and dimension all system components and prepare all design drawings and specifications needed for the bidding and construction of the water line relocation and replacement. This would include all geotechnical investigations and surveying needed for the design and accurate estimation of bid quantities as well as development of easements for the pipe on private land. At this time it is assumed that additional environmental clearance will not be needed since the water main will be installed in the existing ROW in close proximity to other utilities. Provide the total number of estimated hours for each labor category for this phase as well as for any subcontractors in the cost proposal.

In Phase 2, the selected firm will perform the design of the water main relocation. Three construction packages shall be provided: one for the pre roadwork area water main replacement

(Construction Package 3), one for the roadwork area water main replacement (Construction Package 1), and one for the post roadwork area water main replacement (Construction Package 2). Three design submissions for each of the three construction packages shall be provided with one at approximately 30% completion, the second at approximately 90% completion and the final submission for bidding and construction. An interim submission between 30% and 90% for design direction shall be accepted if desired by the designer but shall be included in the labor and cost estimate. The 30% submission shall include all design sizing, selection and capacity calculations and shall include cut sheets for major equipment or components. Plans and sketches illustrating the design components and proposed location of the new main should be submitted at this time. A table of contents for the specifications should also be submitted. The 90% design submission should include all plans, profiles, sections, elevations and detail drawings as well as completed specifications, opinion of probable cost, and engineering report for review by the City and NMDOT and NMED, if required. The final design submission shall include all of the components of the 90% design with all comments from the City and state agencies addressed. In addition, easement drawings needed for the pipe to be installed on private property should be submitted at this time. In the technical proposal, provide a list of expected final design drawings along with a draft table of contents including all proposed specifications sections to be included in the design. Provide the total number of estimated hours for each labor category for each design submission in the cost proposal.

In Phase 3, the selected firm will provide engineering support during the bid process. The selected firm shall prepare the bid form, conduct the pre-bid conference, answer bidder questions and requests for information, and provide bid review if requested by the City. The City will prepare all contract, agreement, and procurement portions of the bid, and will issue all addendums and summarize all bids. Provide the total number of estimated hours for each labor category for this phase in the cost proposal.

In Phase 4, the selected firm will provide construction phase services. These services shall include conducting a pre-construction conference, performing periodic site inspections, conducting approximately bi-weekly status meetings, shop drawing review, response to requests for information (RFIs), review of proposed change orders, monthly contractor request for payment approvals, punch list generation and final inspection. Geotechnical, material, and/or compaction testing required during construction shall be the contractors responsibility and shall be included in the specifications and their bid. In the cost proposal, provide an estimate of the duration of construction, the number of inspection visits proposed, the number of bi-weekly meetings proposed, and the total number of estimated hours for each labor category for this phase.



**Construction Pkg #3  
Pre-Road Work  
Exist. 6,600' -8" PVC  
Proposed 6,600' -8" C900**

**Construction Pkg #1  
NM 173 Road Work  
Exist. 7,100'-8"PVC  
Exist. 1,000'-6"PVC  
Proposed 8,100'-8" C900**

**Construction Pkg #2  
Post Road Work  
Exist. 6,900'-6" PVC  
Proposed 6,900'-8" C900**

**Acquire ROW for  
800' of 6" Waterline**

**Acquire ROW for  
200' of 6" Waterline**

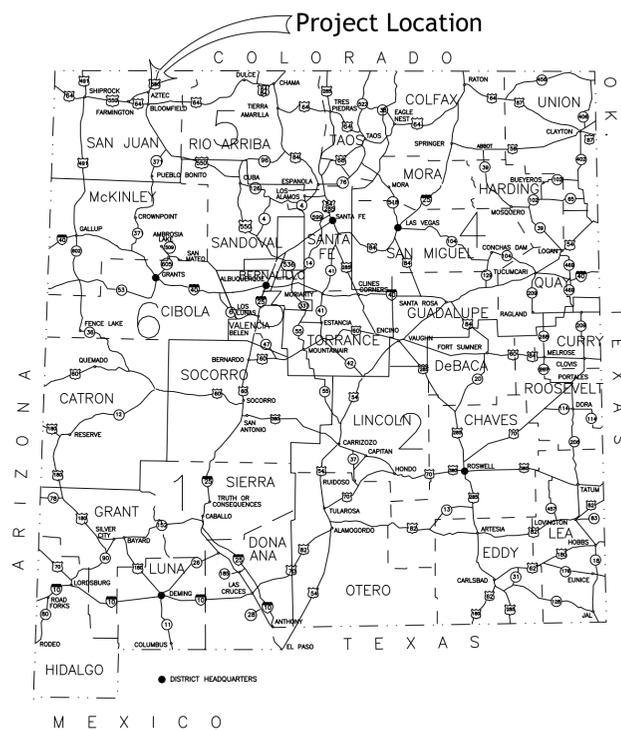


**NM 173 Water Line Project  
City of Aztec**

# East Aztec Pump Station

## City of Aztec, New Mexico

### San Juan County



Vicinity Map  
Scale: 1"= 2000'

Sheet List Table	
Sheet Number	Sheet Title
1-1	Cover Sheet
1-2	Overview
2-1	Site Plan
3-1	Pump House Piping - Plan View
3-2	Pump House Piping Layout - Section View
E000	Electric Sheet Title & Index
E001	Electric Power One Line 480VAC & 240VAC
E002	Electric Panel Schedules 480VAC & 240VAC
E003	Electric Motor Schematic 480VAC Pump P-100
E004	Electric Motor Schematic 480VAC Pump P-110
E005	Equipment Layout & Conduit Routing Plan
E006	Interior Elevation & Bill Of Materials
E007	Interior Elevation & Bill Of Materials
E008	Lighting & Power Plan
E009	Electric Conduit & Cable Schedule
E010	Pump House Grounding Plan
S1	Foundation & Roof Plans & Details
S2	General Structural Specs & Details

811  
Know what's below.  
Call before you dig.  
It's the Law!  
New Mexico One Call, Inc.  
NMOOC  
Professional Resources for Damage Prevention

**UTILITY OWNERS**

CITY OF AZTEC DEPARTMENT OF PUBLIC WORKS  
(505) 334-7660

CITY OF AZTEC ELECTRIC DEVELOPMENT  
(505) 334-7660

QWEST (TELEPHONE)  
(505) 325-2311

COMCAST CABLE  
VICTOR APPLLEGATE 505-402-0055

PNM (GAS)  
505-324-3783

Revision Log

1	
2	
3	
4	
5	
6	

Owner:

City of Aztec

Project:

EAST AZTEC PUMP STATION

Sheet Description:

COVER SHEET



Project Date:  
12/18/19

Proj: 19003



Revision Log

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Owner:  
City of Aztec

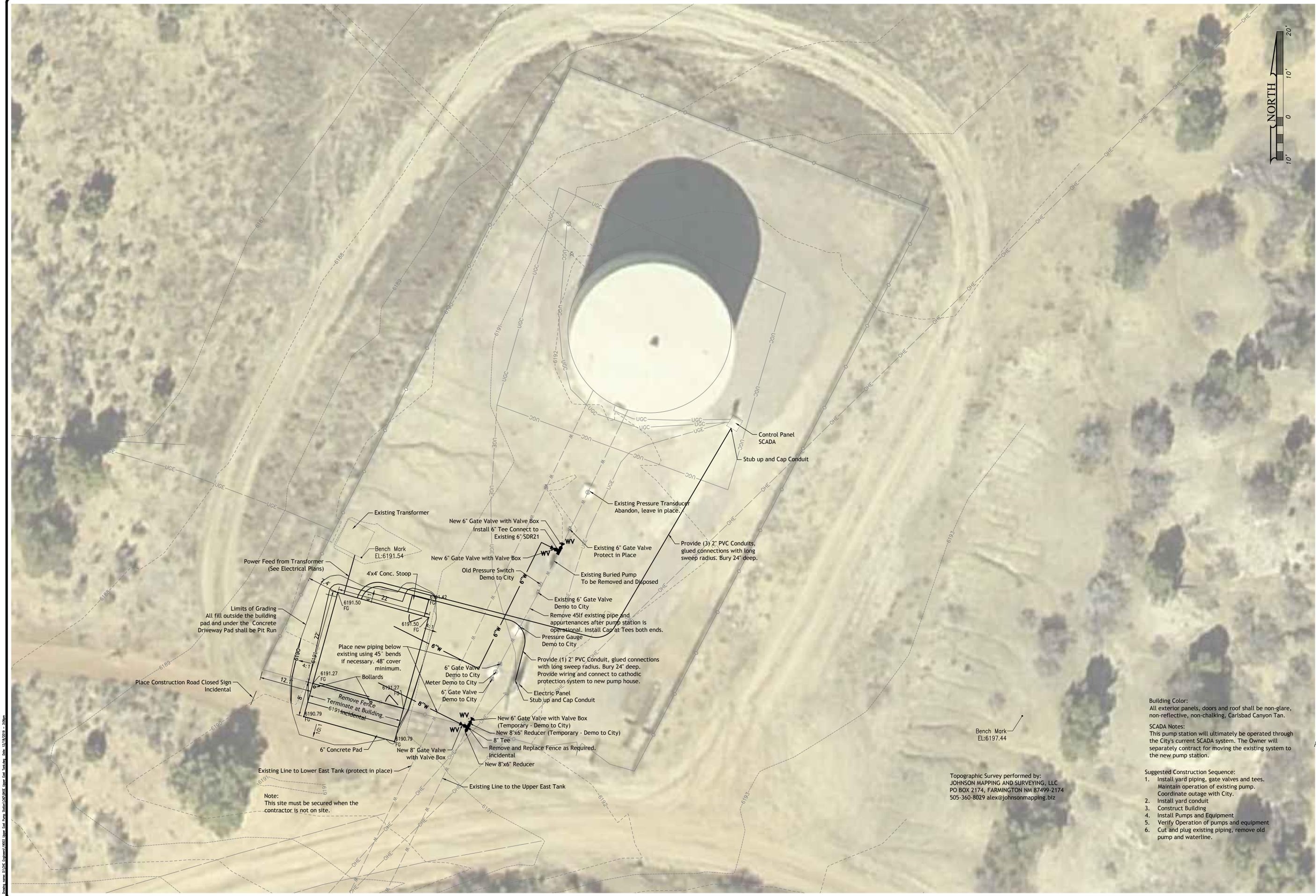
Project:  
**EAST AZTEC PUMP STATION**

Sheet Description:  
**OVERVIEW**



Project Date:  
12/18/19  
Proj: 19003

Drawn by: [unclear] CHC Engineers, LLC, 50 Valley Court, Durango, CO 81301, 970-387-8765, Date: 12/18/2019 - 3:06pm

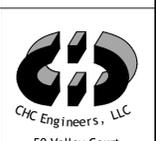


Revision Log	
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Owner:  
City of Aztec

Project:  
**EAST AZTEC PUMP STATION**

Sheet Description:  
**SITE PLAN**



50 Valley Court  
Durango, CO  
970-387-8765

Project Date:  
12/18/19  
Proj: 19003

**Building Color:**  
All exterior panels, doors and roof shall be non-glare, non-reflective, non-chalking, Carlsbad Canyon Tan.

**SCADA Notes:**  
This pump station will ultimately be operated through the City's current SCADA system. The Owner will separately contract for moving the existing system to the new pump station.

- Suggested Construction Sequence:**
1. Install yard piping, gate valves and tees. Maintain operation of existing pump. Coordinate outage with City.
  2. Install yard conduit
  3. Construct Building
  4. Install Pumps and Equipment
  5. Verify Operation of pumps and equipment
  6. Cut and plug existing piping, remove old pump and waterline.

Topographic Survey performed by:  
JOHNSON MAPPING AND SURVEYING, LLC  
PO BOX 2174, FARMINGTON NM 87499-2174  
505-360-8029 alex@johnsonmapping.biz

Note:  
This site must be secured when the contractor is not on site.

Place Construction Road Closed Sign  
Incidental

Limits of Grading  
All fill outside the building pad and under the Concrete Driveway Pad shall be Pit Run

Power Feed from Transformer  
(See Electrical Plans)

Existing Transformer

Bench Mark  
EL:6191.54

New 6" Gate Valve with Valve Box  
Install 6" Tee Connect to Existing 6" SDR21

New 6" Gate Valve with Valve Box

Old Pressure Switch  
Demo to City

Existing Pressure Transducer  
Abandon, leave in place.

Existing 6" Gate Valve  
Protect in Place

Provide (3) 2" PVC Conduits,  
glued connections with long sweep radius. Bury 24" deep.

Existing Buried Pump  
To be Removed and Disposed

Existing 6" Gate Valve  
Demo to City

Remove 45l existing pipe and appurtenances after pump station is operational. Install Cap at Tees both ends.

Pressure Gauge  
Demo to City

Provide (1) 2" PVC Conduit, glued connections with long sweep radius. Bury 24" deep. Provide wiring and connect to cathodic protection system to new pump house.

Electric Panel  
Stub up and Cap Conduit

6" Gate Valve  
Demo to City

6" Gate Valve  
Demo to City

New 6" Gate Valve with Valve Box  
(Temporary - Demo to City)

New 8"x6" Reducer (Temporary - Demo to City)

Remove and Replace Fence as Required.  
Incidental

New 8"x6" Reducer

Existing Line to the Upper East Tank

Existing Line to Lower East Tank (protect in place)

Note:  
This site must be secured when the contractor is not on site.

Bench Mark  
EL:6197.44

4'x4' Conc. Stoop

Place new piping below existing using 45" bends if necessary. 48" cover minimum.

Remove Fence  
Terminate at Building.  
Incidental

Bollards

6" Concrete Pad

12.1'

4.1'

10.1'

6190.79 FG

6191.27 FG

6191.50 FG

6191.54 FG

6191.50 FG

6191.50 FG

6191.50 FG

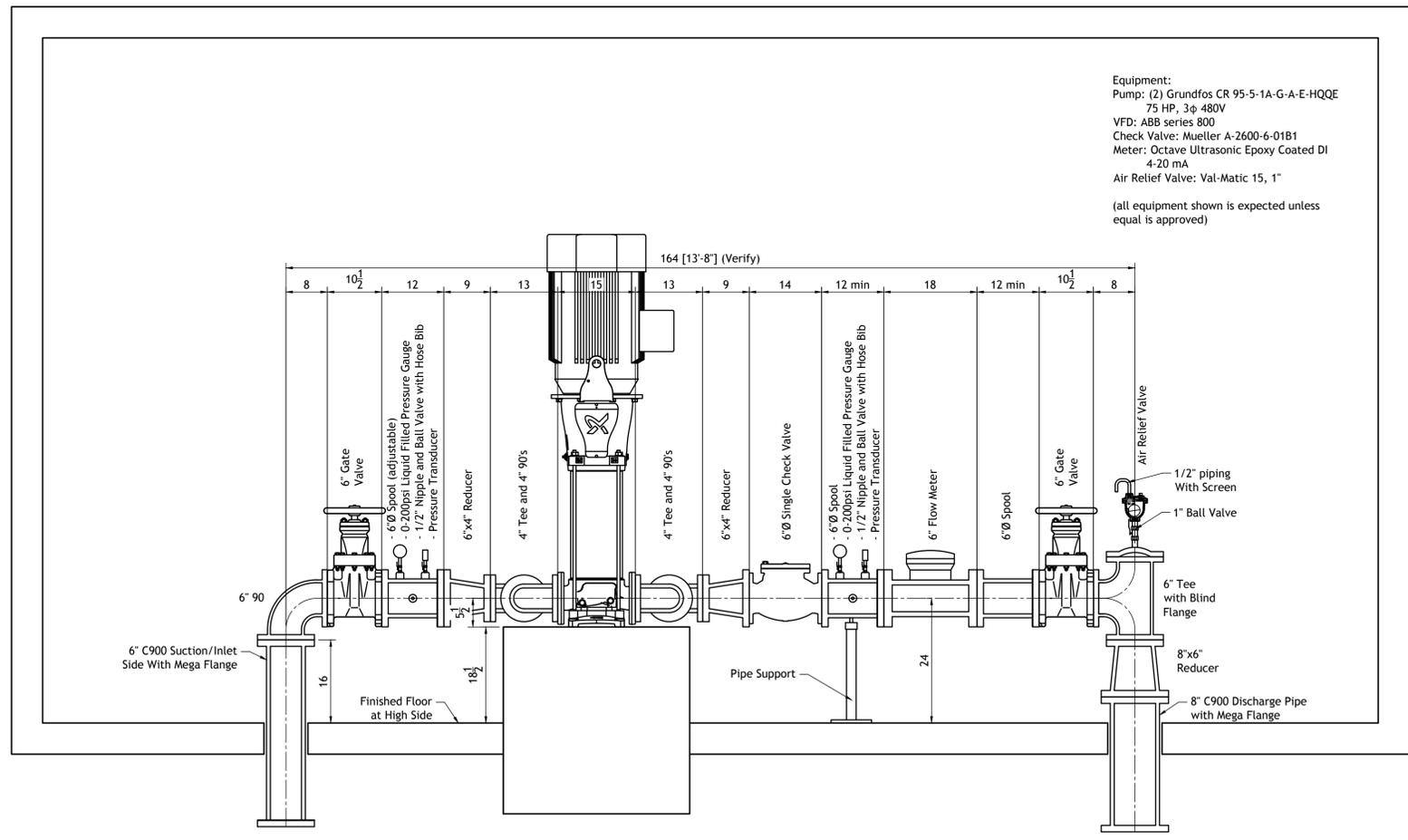
6191.50 FG

6191.50 FG

6191.50 FG



Drawing Name: D:\CADD\Engineering\19003 - Upper East Pump Station\04\Plan\_Pump\_House.dwg Date: 12/18/2019 10:30am



**Pump House - Section**  
 Scale: 3/4"=1'

- Note:
- All Fittings shall be AWWA C110 PC 250 with Flanged Ends.
  - Provide 1" Threadlets welded to spools for gauges and testing ports with appropriate sized inserts.
  - All necessary fittings, bolts, gaskets, adjustments, etc. necessary for completion of the project not specifically called out are considered incidental to the project.
  - Spools called out as adjustable shall be FLxPE with Mega Flange to be field cut to length.

Revision Log	REVISIONS, RPZA AIR INTAKE
1	9/20/17
2	9/26/17
3	
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PUMPHOUSE AS-BUILT  
 Plot Date: 12/18/2019 - 3:06pm

Owner:  
 City of Aztec

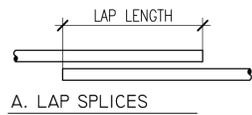
Project:  
 EAST AZTEC PUMP STATION

Sheet Description:  
 PUMP HOUSE PIPING LAYOUT - SECTION VIEW



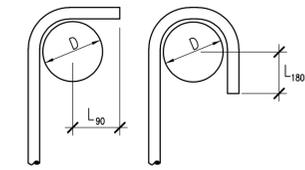
Project Date:  
 12/18/19  
 Proj: 19003





LAP SPLICE SCHEDULE		
BAR SIZE	LAP LENGTH	LAP LENGTH
# 3	18"	
# 4	24"	
# 5	30"	
# 6	40"	
# 7	54"	
# 8	70"	

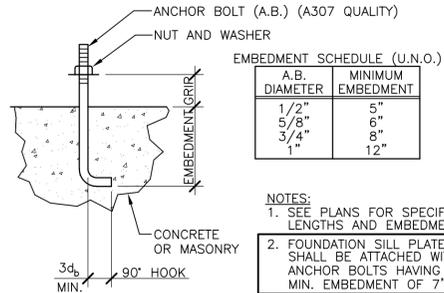
A. LAP SPLICES



B. BENDS AND HOOKS

BEND AND HOOK SCHEDULE			
BAR SIZE	D	L <sub>90</sub>	L <sub>180</sub>
3	2-1/4"	4-1/2"	2-1/2"
4	3"	6"	2-1/2"
5	3-3/4"	7-1/2"	2-1/2"
6	4-1/2"	9"	3"
7	5-1/4"	10-1/2"	3-1/2"
8	6"	12"	4"

2 TYPICAL REINFORCING DETAILS FOR CONCRETE REINFORCEMENTS (NOT TO SCALE)



1 TYPICAL ANCHOR BOLTS (NOT TO SCALE)

EMBEDMENT SCHEDULE (U.N.O.)	
A.B. DIAMETER	MINIMUM EMBEDMENT
1/2"	5"
5/8"	6"
3/4"	8"
1"	12"

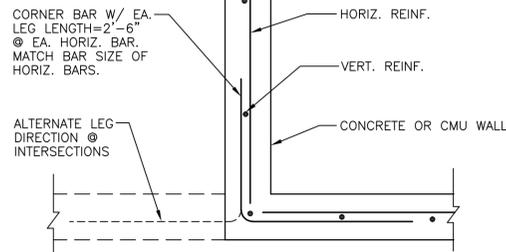
NOTES:  
1. SEE PLANS FOR SPECIFIC LENGTHS AND EMBEDMENTS  
2. FOUNDATION SILL PLATES SHALL BE ATTACHED WITH ANCHOR BOLTS HAVING A MIN. EMBEDMENT OF 7".

NOTICE:

These plans by Wilson Structural Engineering, Inc. are only of the foundation design. The Metal Building shall be designed and provided by others. No check or warranty will be offered or implied by Wilson Structural Engineering, Inc. in any regard to the Metal Building superstructure. The plans indicate the appropriate minimum loads and other minimum requirements for which the building shall be designed and for which the foundation is designed. However, it is the responsibility of the Contractor ordering the building and the Metal Building Manufacturer designing and providing the building to insure that all the proper loads and combination of loads are accounted for in the actual building design. The Metal Building Manufacturer shall provide a separate engineered and stamped set of plans and calculations for the building superstructure.

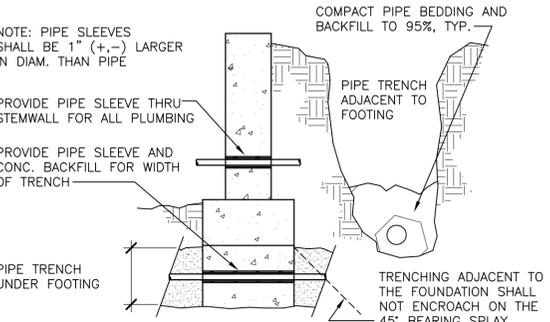
ABBREVIATIONS

- |   |                               |                              |
|---|-------------------------------|------------------------------|
| A.A. = Adhesive anchor  | EQ. = equal                   | NLG = nailing                |
| A.B. = anchor bolt  | E.S. = each side              | N.S. = near side             |
| AB = post above   | E.W. = each way               | NTS = not to scale           |
| ABC = aggregate base course   | EXP = expansion               | O/ = over                    |
| ABV. = above  | EXT = exterior                | O.C. = on center             |
| ADJ. = adjacent   | FF = foundation               | O.H. = opposite hand         |
| AGG = aggregate   | FF = finished floor elevation | OPNG. = opening              |
| ARCHT = architect   | F.J. = floor joist            | OSB = oriented strand board  |
| B.B. = bond beam  | FG = finished grade elevation | P/C = precast                |
| B.F. = bottom of footing elev. or = backfill                        | F.O. = face of concrete       | PL = plate                   |
| BLK = block   | FOC = face of stud            | PLYWD = plywood              |
| BLOG = building   | FORM = face of masonry        | PNL = panel                  |
| BLKG. = blocking  | FRMG = framing                | P.T. = pressure treated      |
| BM = beam   | F.S. = far side               | REIN. = reinforcing          |
| BRTG = bearing  | FTG. = footing                | R.J. = roof joist            |
| BTW = between   | GA = gage                     | SH. = Simpson hardware       |
| B.U. = built-up   | GALV = galvanized             | SHT. = sheet                 |
| C.J. = construction joint or = contraction joint or = ceiling joist | G.B. = Grade Beam             | SHTG. = sheathing            |
| CLG. = ceiling  | GL = glue laminated beam      | SM = similar                 |
| CMU = concrete masonry unit   | GR = grade                    | SPA = space                  |
| COL. = column   | HAS = headed anchor stud      | STL = steel                  |
| CONC. = concrete  | HDR. = header                 | S.O.G. = slab-on-grade       |
| CONN. = connection  | H.F. = Hem-fir                | S.S. = steel stud            |
| CONT. = continuous  | HORIZ. = horizontal           | SW = shearwall               |
| CONTR. = contractor   | H.S. = high strength          | T.B. = top of beam           |
| CTR. = center   | INFO = information            | T.J. = top of joist          |
| CTRD = centered   | INT = interior                | T.L. = top of ledger         |
| DAS = deformed anchor stud  | JST. = joist                  | T.M. = top of masonry        |
| DBL. = double   | JT. = joint                   | TN = toe nail                |
| D.F. = Douglas Fir - Larch  | KS = king stud                | T.O. = top of                |
| DIA. = diameter   | LD = load                     | T.O.C. = top of concrete     |
| DL = dead load  | LL = live load                | T.O.S. = top of steel        |
| DTL. = detail   | LLH = (long leg horizontal    | T.O.SHTG. = top of sheathing |
| DWG. = drawing  | LLV = long leg vertical       | T.O.W. = top of wall         |
| DWL = dowel   | LVL = laminated veneer        | T.P. = top of parapet        |
| EA = each   | lumber                        | T.PL. = top of plate         |
| EE = each end   | MAS = masonry                 | T.R. = threaded rod          |
| E.F. = each face  | MAT = material                | TS = trim studs or           |
| E.J. = expansion joint  | MAX = maximum                 | TU = tube steel              |
| ENGR. = engineer  | M.B.M. = metal building mfr.  | TYP. = typical               |
|   | Mfr. = manufacturer           | UNO = unless noted otherwise |
|   | MIN = minimum                 | VERT = vertical              |
|   | NA = not applicable           | WWF = welded wire fabric     |

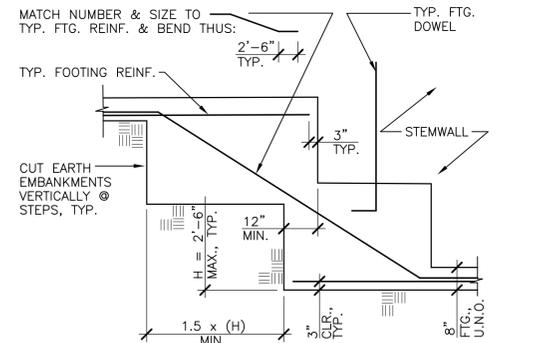


3 TYPICAL CONCRETE WALL CORNER REINFORCING (NOT TO SCALE)

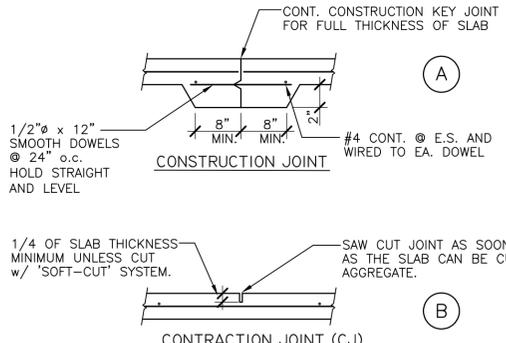
NOTE: TYPICAL JT. SPACING SHALL BE 15'-0" O.C. (+,-) AND 20'-0" MAX. w/ ENGINEER'S APPROVAL, U.N.O. ON PLANS.



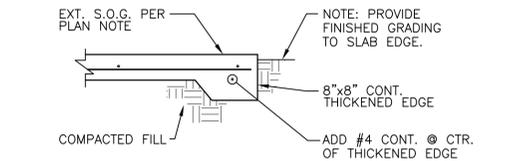
4 TYPICAL PIPING AND TRENCHING AT FOUNDATIONS (NOT TO SCALE)



6 TYPICAL STEPPED FOOTING DETAIL (NOT TO SCALE)



5 TYP. JOINTS IN CONC. SLABS (NOT TO SCALE)



7 TYP. EXTERIOR SLAB EDGE (NOT TO SCALE)

CONCRETE AND REINFORCING

- Concrete shall be made from an approved commercial mix of aggregates, potable water and Portland Cement (type II) meeting ASTM C150 specifications. Admixtures meeting appropriate ASTM requirements may be used when approved by the Engineer.
- The Concrete shall have a minimum of 517 lb. of Portland Cement per yard and have a maximum water to cementitious material ratio of 0.52. Fly ash meeting ASTM specifications may be substituted for up to 15% of the Portland Cement in the mix designs at ratio of 1.1 lb. of fly ash for 1.0 lb. of Portland Cement. The Concrete Mix design shall be provided to the Engineer for approval.
- Concrete shall achieve the following minimum compressive strengths (f'c) in 28 days: footings, stemwalls.....3000 psi interior slabs on grade.....3000 psi exterior slabs on grade.....4000 psi
- Provide the following minimum thickness of concrete coverage around reinforcement: footings.....3" to earth.....3" to formed surfaces.....2" slabs: to earth.....1" interior face.....3/4" exterior face.....1 1/2" face exposed to earth.....2"
- Maximum allowable slump of concrete at the point of placement shall be 4" unless specifically approved otherwise by the Engineer and designed accordingly.
- All concrete (including slabs-on-grade) shall be thoroughly consolidated by mechanical vibration.
- Reinforcing bars shall conform to ASTM A615. Reinforcing to be welded shall conform to ASTM A706. #3 to #5.....grade 40 (U.N.O.) #6 to #11.....grade 60
- All reinforcing, anchorages and embedments shall be securely wired in place during concrete placement.
- Reinforcing shall not be heated to be bent.
- See typical details for reinforcing bending and splicing requirements.
- Reinforcing shall be held above earth on concrete adobes, chairs or by suspension. Bars driven into the earth shall not be used to support reinforcing.
- All openings in slabs or walls shall be reinforced with a minimum of 2-#5 on 4 sides extending 2'-0" minimum beyond opening corners.
- Chamfer all exposed concrete edges unless detailed or noted otherwise.
- Openings in concrete shall be formed, cored or sawcut. Chipping and breaking out shall not be done unless specifically approved.
- Concrete exposed to freezing environment either during construction or in place shall be air entrained. Air entrainment of the mix shall be 5% minimum to 8% maximum based on volume.
- Typical slab on grade: See sheet S1 for different slabs and their locations.
- Concrete Curing: Final concrete quality is highly dependant on curing. Inadequate curing can cause excessive shrinkage, cracking, low strength, slab curling and other detrimental effects. Concrete shall be cured as follows: slabs shall be moist cured with water and an impermeable barrier or with a water saturated cover. No portion of the slab shall be allowed to dry for 7 days. Other concrete shall be moist cured or cured with curing compound conforming to ASTM C308 applied immediately after form work is removed. Special protection measures shall be provided during windy and or hot conditions to prevent rapid drying before curing procedures can begin. Inadequately cured concrete will be adequate cause for rejection.
- Cold weather protection: Concrete shall not be allowed to freeze. Concrete temperature shall be maintained above 40 degrees for the first 7 days. The criteria presented in these notes and the specifications are minimum requirements for the concrete mix design. These minimums will not be adequate in all conditions of cold weather concreting. It shall be the responsibility of the General Contractor to provide additional means to insure the concrete doesn't freeze, remains above 40 degrees for a minimum of 7 days, achieves the minimum required strength and remains durable and serviceable. Additional measures which may include, but are not limited to: insulation and protection blankets, testing and heating, accelerating admixtures, and addition of Portland Cement in the mix design above the minimum requirement.
- Concrete shall be tested as follows: 3 standard ASTM Concrete test cylinders shall be made for every 75 cubic yards of placed concrete with a minimum of 3 cylinders cast for each day that concrete is placed. One slump and one air entrainment test shall be made for each set of cylinders made. The engineer shall be notified immediately of failing tests. Deviations shall not be made from this schedule without the consent of the Engineer.

METAL BUILDING

- All dimensions for footing locations, anchors bolts, and all other entities of the foundation system shown relative to the metal building connections shall be cross-checked and verified with the final shop drawings by the Metal Building Manufacturer before excavation, earthwork or forming is begun.
- If the Metal Building Manufacturer wishes to use an alternate framing layout to that which has been assumed and designed for in this set of structural plans, the metal building design engineer shall notify Wilson Structural Engineering before submitting the shop drawings and calculations. Otherwise, the shop drawings will be rejected.
- All structural components and the lateral resisting systems shall be designed for the loads, factors, and criteria described in the contract documents.
- Concentrated loads such as mechanical units and any others which are not specifically shown in the structural plans but are supported by the metal building structure shall be accounted for in the design of the supporting members. The Owner shall coordinate the location and weights with the Metal Building Manufacturer (M.B.M.).
- The metal building design shall be done under the direct supervision of an Engineer experienced in the design of metal buildings for at least 5 years. The Engineer shall be licensed in the state where the building is to be erected and shall stamp and sign the calculations, shop drawings and erection drawings. Stamped copies shall be submitted to the Architect for approval before production according to the specification requirements.
- Structural steel shall be detailed, fabricated, and erected in accordance with the AISC manual for steel construction, the latest edition, using either the ASD or LRFD design. The metal building design shall also be in conformance with the "Metal Building System Manual" by the Metal Building Manufacturers Association. The most stringent criteria for design shall apply when there is differences between the two standards.
- Minimum anchor bolts sizes shall be determined by the M.B.M. and shown in the erection drawings based on the design requirements for the superstructure. Anchor bolts of greater size may be required governed by the foundation design. The contractor shall provide the largest size governing the design.
- All required field modifications required shall be brought to the attention of the Architect and Engineer. Repairs shall be approved. Specific repair details may be required. The expense of the repair design and detailing shall be borne by the Contractor.
- Reactions of all metal building components directly supported by the foundation shall be reported in the calculations for approval and comparison to design assumptions. The reactions shall include the loads from each individual load case with a description of case.
- Deflection of flexural members due to gravity loads shall not exceed the span divided by 240, (L/240). Deflection of the lateral system shall not exceed 1.0" under wind or seismic loads unless approved otherwise by the Architect or Engineer.
- The deflection limits of 10. above for gravity loads are for total dead load plus snow load.
- The M.B.M. shall determine, design, and locate the buildings lateral load resisting system. The system shall limit movements to those described in 8. above. Components shall not interfere with windows, doors or other architectural features. All lateral shears, uplift loads, and moments shall be submitted with their locations to the Engineer for approval before fabrication. Any foundation re-design because of the system requirements or loads in excess of the foundation design capacity shall be paid for by the contractor.

Design loads for metal building:

Dead Loads:	a) Superstructure load.....weight of building provided by the M.B.M.
	b) Colateral load.....3 psf
	c) Insulation load.....weight of insulation provided by the M.B.M.
	d) Wall mounted equipment....per electrical & mechanical plans
Live Loads:	a) Snow load.....25 psf (Base)
	Wind Load: (per chapter 16 of the 2015 International Residential Code)
	a) Wind speed.....115 mph (3 sec. gust)
	b) Wind exposure.....exposure 'C'
	c) Importance factor(I).....1.0
Seismic Load:	a) See design criteria on this sheet

GENERAL NOTES

- In the absence of specific details refer to appropriate typical details or similar details for information. If any questions remain call the Engineer for clarification.
- The plans and details in some areas represent assumptions made of existing conditions. The Contractor shall notify the Engineer immediately if conditions are found different from those assumed. The Engineer shall also be notified if field conditions necessitate changes from the plans. In either case detail changes may be required before work can proceed.
- The plans shall not be scaled to obtain working dimensions. If dimensions are missing from the plans get clarification from the Engineer. Cross-check all dimensions with the Metal Building Manufacturers plans. All layout dimensions shall be closed from both directions.
- All openings or modifications to structure not shown on the structural plans shall be verified with the Engineer before doing the work.
- The Contractor shall repair or replace all damaged materials.
- The Contractor shall notify the Engineer of any discrepancies found in the contract documents (plans and specifications). Clarifications shall be received from the Engineer before proceeding with the work. The most restrictive condition shall govern when clarification is not obtained.
- All mechanical unit weights shall be verified with loads shown on the structural drawings. Notify the Engineer, if weights are different than those shown or units are required where not shown on the structural drawings.
- These plans represent a design for final in-place conditions. It shall be the Contractors responsibility to account for all construction conditions, loads, sequences, temporary bracing requirements, all safety considerations, OSHA regulations, and all other applicable standards.
- Construction shall follow the plans, details, notes and specifications. The Contractor shall be directly responsible for uncorrected errors or deviations from the Engineers approval. The Engineer will be available for considerations and repairs. Excessive repair detailing or revision to the contract documents shall be paid for by the Contractor.
- Each sub-contractor shall inspect the conditions and work in place before they begin. Errors, problems and unacceptable conditions shall be repaired before beginning the new work. Beginning the new work shall be interpreted as acceptance of the previous work and conditions.
- When shop drawings and product information are required for review by the Architect/Engineer, the Contractor shall allow 2 weeks for the review period. When shop drawings and product information are provided in large format (i.e. larger than 8 1/2' x 11'), one set of reproducible shall be included with 3 sets of blueines for mark-ups and stamping. The reproducible will be returned to the Contractor to allow for his printing of as many sets of marked-up drawings as he shall require.

DESIGN CRITERIA

- Superimposed Design Loads:  
Roof DL = 10 psf.....For foundation design only  
Roof Snow Load = 25 psf (Importance factor: Is = 1.0)
- Applicable Building Code = 2015 International Building Code
- Wind Load:  
a) Basic wind speed.....115 mph (3 sec. gust)  
b) Exposure category.....'C'  
c) Importance factor(I).....1.0
- Seismic Load:  
a) Use Group.....II  
b) Site Class.....D  
c) Short Period Spectral response (S<sub>s</sub>).....17.9% g  
d) Importance factor(I).....1.0
- Earthwork per "Earthwork for Foundations" on this sheet.

SPECIALTY CONNECTIONS / ANCHORAGES / FASTENERS

- Expansion bolts, adhesive anchors, shotpins, headed anchor studs (HAS), self-tapping screws and other proprietary devices shall have ICCB approvals. These approvals along with load capacities and use information shall be submitted to the Engineer when materials other than those specified are proposed.
- Devices shall be used in full accordance with manufacturer's requirements.
- Headed anchor studs shall be welded all around the base of the stud with a 5/16" fillet unless noted otherwise. Stud guns may be used provided the attachment will develop the strength of the stud.
- Typical acceptable anchors (when called out in plans) unless noted otherwise:  
Expansion Bolts: 5/8" diameter by Hillb or Redhead with a minimum embedment of 4"  
Shotpins: 0.145" diameter minimum by Hillb or Redhead with 1" minimum embedment in concrete  
Headed Anchor Studs: 1/2" diameter x 6" long by Nelson Stud  
Adhesive Anchors: Hillb HIT or HVA system sized by bolts required  
Self-Tapping Screws: #10 TEK screws

EARTHWORK FOR FOUNDATIONS

- The foundation designs are based on Table 1806.2 of the 2015 International Building Code. Allowable soil bearing pressure on native soils:  
@ 3'-0" minimum depth below lowest adjacent ext. grade = 1500 psf
- All column foundations shall bear entirely on structural backfill over proof-compacted native soils. Slabs shall bear on a structural backfill pad placed over proof-compacted native soils. The structural fill shall be compacted to a minimum of 90% of ASTM D-1557. See minimum earthwork detail A/S1 for specifics.
- Unless noted otherwise footings shall bear a minimum of 30" below lowest adjacent grade and 12" minimum below original native grade unless approved otherwise.
- All earthwork cuts and fills shall be made in level benches.
- All structural backfill materials (where necessary) shall be approved by a Soils Engineer. Unless approved otherwise, imported structural (or engineered) backfill shall be granular non-expansive material meeting the following minimum criteria: no more than 5% shall pass a 200 screen, 100% shall pass a 2 inch screen, and the material shall be well graded unless it is sand or 3/4 inch washed gravel. Some site material may be useable for structural backfill when approved by a Soils Engineer.
- Structural backfill shall be moisture conditioned, placed in thin lifts and mechanically compacted. Lifts shall not exceed 6" of compacted depth and shall be of depths compatible with the capabilities of the machinery used.
- Backfill shall be uniformly moisture controlled to maintain specified compaction densities.
- Unless noted otherwise all backfill shall be compacted to a minimum of 90% of the maximum density as determined by ASTM method D-1557. All compaction densities noted in the plans are relative to maximum density per ASTM D-1557 at optimum moisture content plus or minus 3% unless noted otherwise.
- Foundations shall be constructed of concrete cast in clean trenches cut neatly in engineered earth or in secure formwork if the native soils and compacted backfill won't allow clean open trenches. Reinforcement for concrete foundations shall be supported 3" minimum from earth on all sides. Reinforcement shall not be supported on bars driven into the earth. It shall be supported on approved chairs or adobes or suspended from above.
- Foundations shall not be placed on frozen earth or unstable conditions. Frozen earth shall be thawed and re-compacted before placing foundations. All soft materials discovered shall be over-excavated as directed by the Soils Engineer and replaced with compacted engineered material. Geotextile fabric shall be provided for stabilization when conditions dictate.
- Water shall not be allowed from any source to accumulate in excavations. The Contractor shall provide de-watering.
- The Contractor shall be responsible for safely retaining all earth embankments.
- Exterior grades adjacent structures without paving shall slope away from the structure on all sides at a minimum slope of 10% for 20 feet. A positive water flow shall be provided for all locations to natural water courses. Provide swales where necessary. No ponding of water shall be allowed.
- Planters shall not be adjacent structure except when a design is specifically provided.
- Roof drains shall not empty onto exterior grade within five feet of the foundations. Splash blocks, leaders, concrete swales, or other means shall be used to direct water away from the structure for at least 5' from the structure.
- Deep rooted vegetation shall not be placed closer than 8'-0" to the structure.
- Backfill shall be tested for compaction. Material failing the tests shall be re-compacted and then re-tested. Failing tests shall be paid for by the earthwork contractor. One compaction test shall be provided for every 32 cubic yards of backfill material. Compaction densities shall also be made under all foundations where the native earth is scarified and re-compacted. One compaction test shall be made for every 50 linear feet of footing. Deviations from this schedule shall require the approval of the Engineer.



10-16-2019

**WILSON STRUCTURAL ENGINEERING, INC.**

1235 THOROUGHbred RD.  
DURANGO, CO 81303  
Phone: (970) 385-6774

A PROPOSED FOUNDATION DESIGN FOR THE NEW:		FILE NAME:
<b>AZTEC PUMP STATION</b>		06419.NOT
AZTEC, NEW MEXICO		PROJECT:
GENERAL STRUCTURAL SPECIFICATIONS AND TYPICAL DETAILS		06419
DRAWN:	CHECKED:	DATE:
TS	DW	10-16-2019
		SHEET:
		<b>S2</b>
		OF S2

**FINAL FOR CONSTRUCTION**  
10-16-2019

# CITY OF AZTEC UPPER EAST TANK PUMP HOUSE ELECTRICAL DESIGN DRAWING PACKAGE

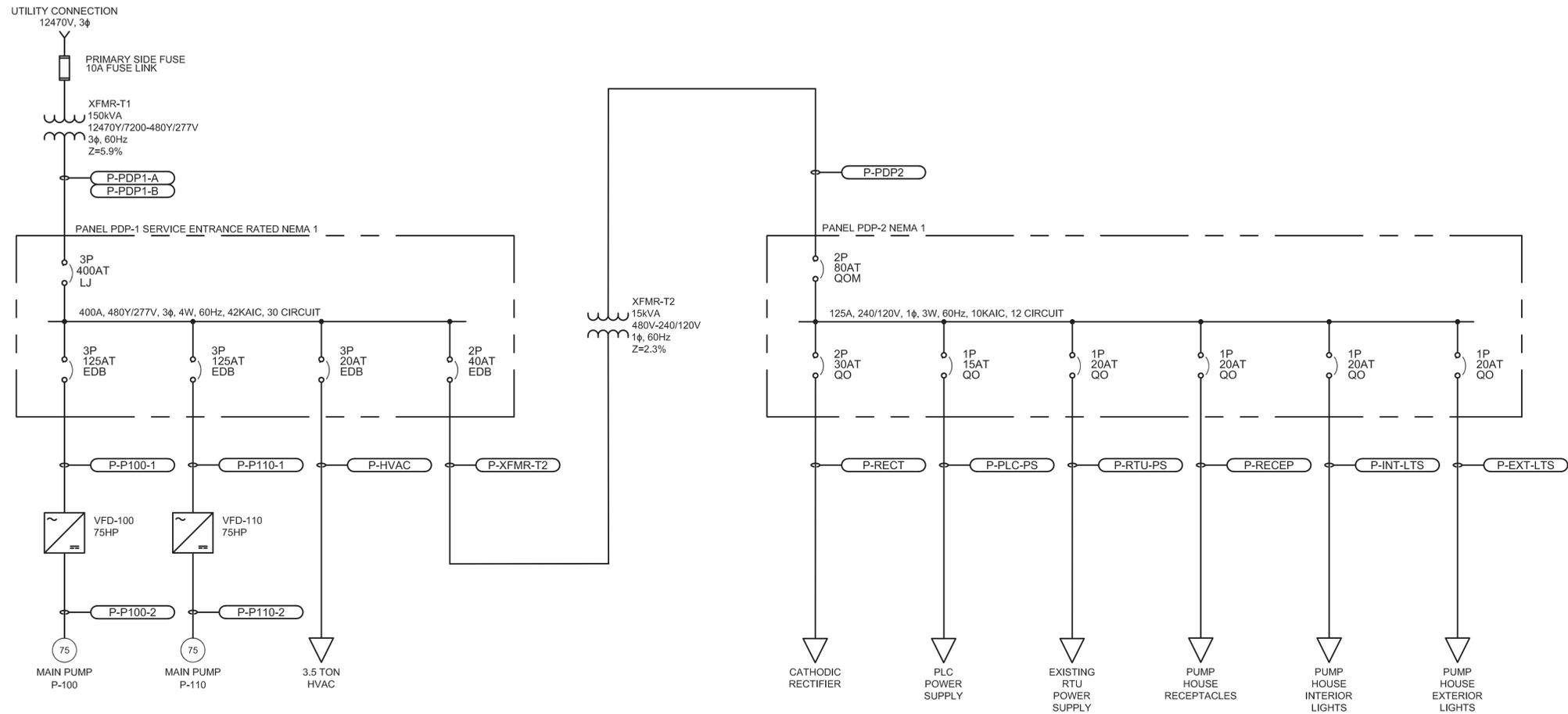
DRAWING LIST				
DRAWING NUMBER	REV	DATE	DESCRIPTION	
1800067-E000	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	SHEET TITLE & INDEX
1800067-E001	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC POWER ONE LINE 480VAC & 240VAC
1800067-E002	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC PANEL SCHEDULES 480VAC & 240VAC
1800067-E003	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC MOTOR SCHEMATIC 480VAC PUMP P-100
1800067-E004	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC MOTOR SCHEMATIC 480VAC PUMP P-110
1800067-E005	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	EQUIPMENT LAYOUT & CONDUIT ROUTING PLAN
1800067-E006	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	INTERIOR ELEVATION & BILL OF MATERIALS
1800067-E007	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	INTERIOR ELEVATION & BILL OF MATERIALS
1800067-E008	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	LIGHTING & POWER PLAN
1800067-E009	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC CONDUIT & CABLE SCHEDULE
1800067-E010	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC GROUNDING PLAN

						DESIGNED BY: <b>CRF</b>
						CHECKED BY: <b>CRF</b>
						APPROVED BY: <b>---</b>
						CLIENT APPROVAL: <b>---</b>
<b>0</b>	<b>11/7/2019</b>	<b>ISSUED FOR CONSTRUCTION</b>	<b>CRF</b>	<b>CRF</b>		
NO	DATE	REVISION	BY	CK.	APPR.	



AZTEC UPPER EAST TANK  
PUMP HOUSE  
SHEET TITLE & INDEX

JOB NO. <b>18000-67</b>	SCALE
FILENAME <b>1800067-E000</b>	<b>NTS</b>
DWG. NO. <b>1800067-E000</b>	REV. NO. <b>0</b>



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CLIENT APPROVAL:	---				
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AZTEC UPPER EAST TANK  
PUMP HOUSE  
ELECTRIC POWER ONE LINE  
480VAC & 240VAC

JOB NO.	18000-67	SCALE	NTS
FILENAME	1800067-E001	REV. NO.	0
DWG. NO.	1800067-E001		

PANEL PDP-1														400 AMP BUS			480 / 277 VOLTS			SURFACE MOUNTED		
LOCATION PUMP HOUSE														400 AMP MAIN			3 / 4 PH / WIRE			42,000 A BRACING		
EQUIPMENT DESCRIPTION	PH A (VA)	PH B (VA)	PH C (VA)	TYPE *	COUNT	BREAKER	POLES	CIR #	CIR #	POLES	BREAKER	COUNT	TYPE *	PH A (VA)	PH B (VA)	PH C (VA)	EQUIPMENT DESCRIPTION					
BOTTOM FEED THRU POSITION MAIN BRKR					1	400	3	FT	FT								BLANK TOP FEED THRU POSITION					
75 HP WATER PUMP P-100	26,592	26,592		M1	1	125	3	1	2	3	20	1	M	4,432			3.5 TON HVAC					
75 HP WATER PUMP P-110	26,592	26,592	26,592	M1	1	125	3	3	4	3	20	1	M		4,432		BLANK					
15 KVA XFMR T-2	4,040			L	1	40	2	13	14								BLANK					
BLANK		3,020		L	1	40	2	15	16								BLANK					
BLANK								17	18								BLANK					
BLANK								19	20								BLANK					
BLANK								21	22								BLANK					
BLANK								23	24								BLANK					
BLANK								25	26								BLANK					
BLANK								27	28								BLANK					
BLANK								29	30								BLANK					

* LOAD TYPE	CODE	DEMAND	PH A	PH B	PH C
LONG CONTINUOUS LOAD	L	100%	4,040	3,020	0
RECEPTACLES	R	100%	0	0	0
MISC	O	100%	0	0	0
LARGEST MOTOR	M1	100%	26,592	26,592	26,592
MOTORS	M	100%	31,024	31,024	31,024
STANDBY	S	0%	0	0	0
HEATERS	H	100%	0	0	0
KITCHEN	K	100%	0	0	0
TOTAL LOAD PER PHASE			61,656	60,636	57,616

NEUTRAL BUS: 100%	GROUND BUS: 50%	ISO. GROUND BUS: NONE	FEEDER SOURCE:
TOTAL LOAD: 179.9 KVA	TOTAL LOAD: 217 AMPS		

PANEL: PDP-1

PANEL PDP-2														125 AMP BUS			240 / 120 VOLTS			SURFACE MOUNTED		
LOCATION PUMP HOUSE														80 AMP MAIN			1 / 3 PH / WIRE			10,000 A BRACING		
EQUIPMENT DESCRIPTION	PH A (VA)	PH B (VA)	PH C (VA)	TYPE *	COUNT	BREAKER	POLES	CIR #	CIR #	POLES	BREAKER	COUNT	TYPE *	PH A (VA)	PH B (VA)	PH C (VA)	EQUIPMENT DESCRIPTION					
CATHODIC RECTIFIER	1,920			L	1	30	2	1	2	1	30	1	L	600			P/H EXTERIOR LIGHTS					
P/H RECEPTACLES	1,200	1,920		R	1	20	1	5	6	1	20	1	L	800	300		P/H INTERIOR LIGHTS					
EXISTING RTU P/S		800		L	1	20	1	7	8								PLC POWER SUPPLY					
BLANK								9	10								BLANK					
BLANK								11	12								BLANK					

* LOAD TYPE	CODE	DEMAND	PH A	PH B
LONG CONTINUOUS LOAD	L	100%	3,320	3,020
RECEPTACLES	R	60%	720	0
MISC	O	100%	0	0
AIR HANDLING EQUIP	M1	80%	0	0
MOTORS	M	100%	0	0
STANDBY	S	0%	0	0
HEATERS	H	100%	0	0
KITCHEN	K	100%	0	0
TOTAL LOAD PER PHASE			4,040	3,020

NEUTRAL BUS: 100%	GROUND BUS: 50%	ISO. GROUND BUS: NONE	FEEDER SOURCE:
TOTAL LOAD: 7.1 KVA	TOTAL LOAD: 29 AMPS		

PANEL: PDP-2

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DESIGNED BY: CRF	
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APPROVED BY: ---	
CLIENT APPROVAL: ---	
0 11/7/2019 ISSUED FOR CONSTRUCTION	CRF CRF
NO DATE REVISION	BY CK. APPR.

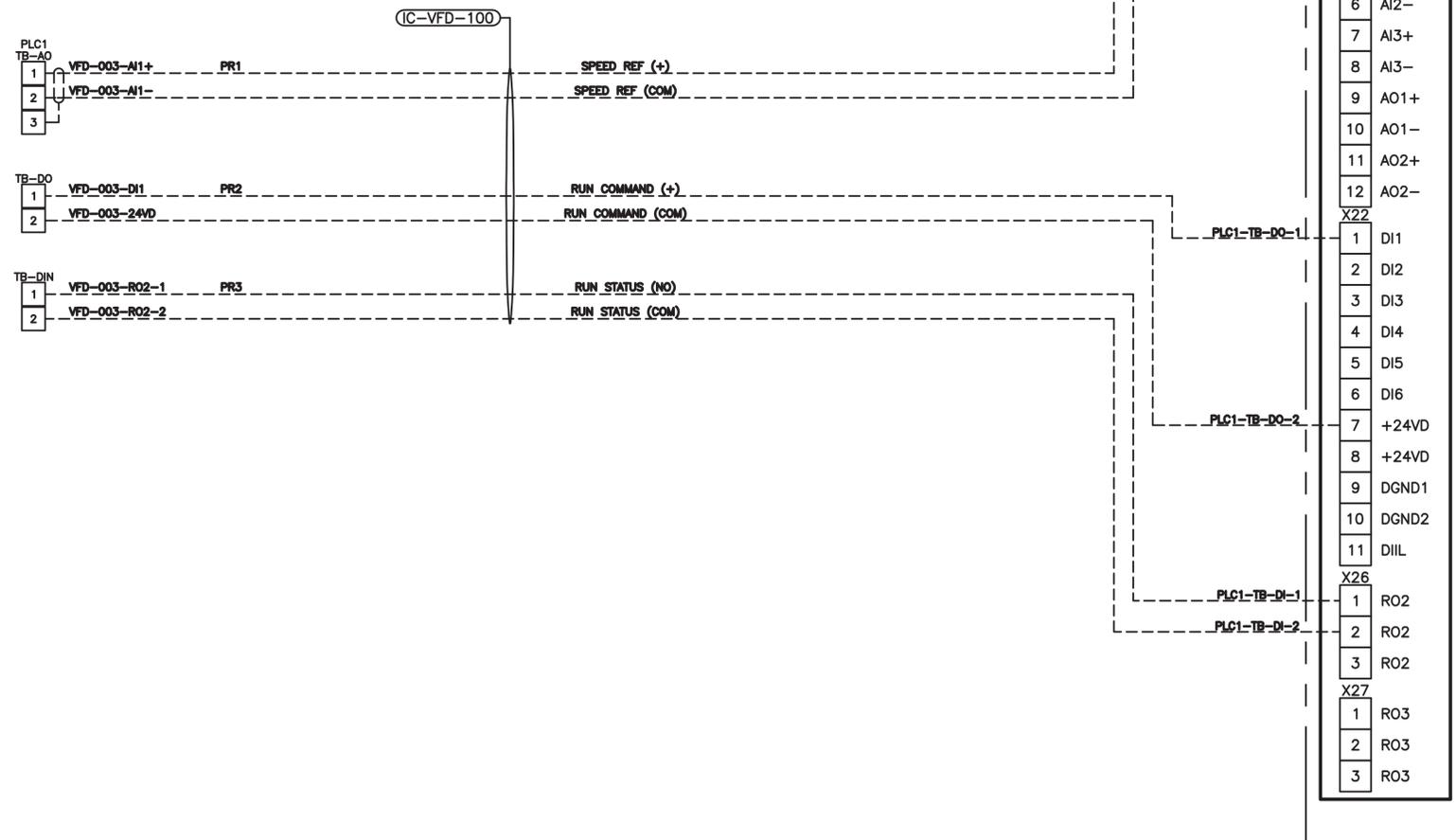
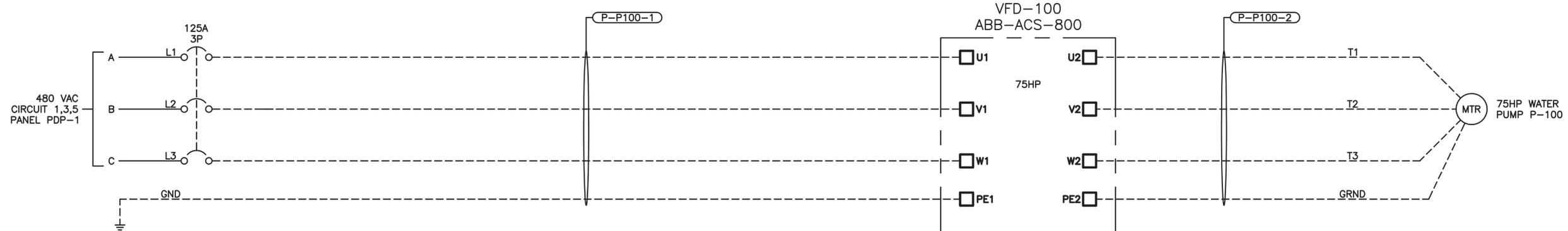


AZTEC UPPER EAST TANK  
PUMP HOUSE  
ELECTRIC PANEL SCHEDULES  
480VAC & 240VAC

JOB NO. 18000-67	SCALE
FILENAME 1800067-E002	NTS
DWG. NO. 1800067-E002	REV. NO. 0



11/7/2019



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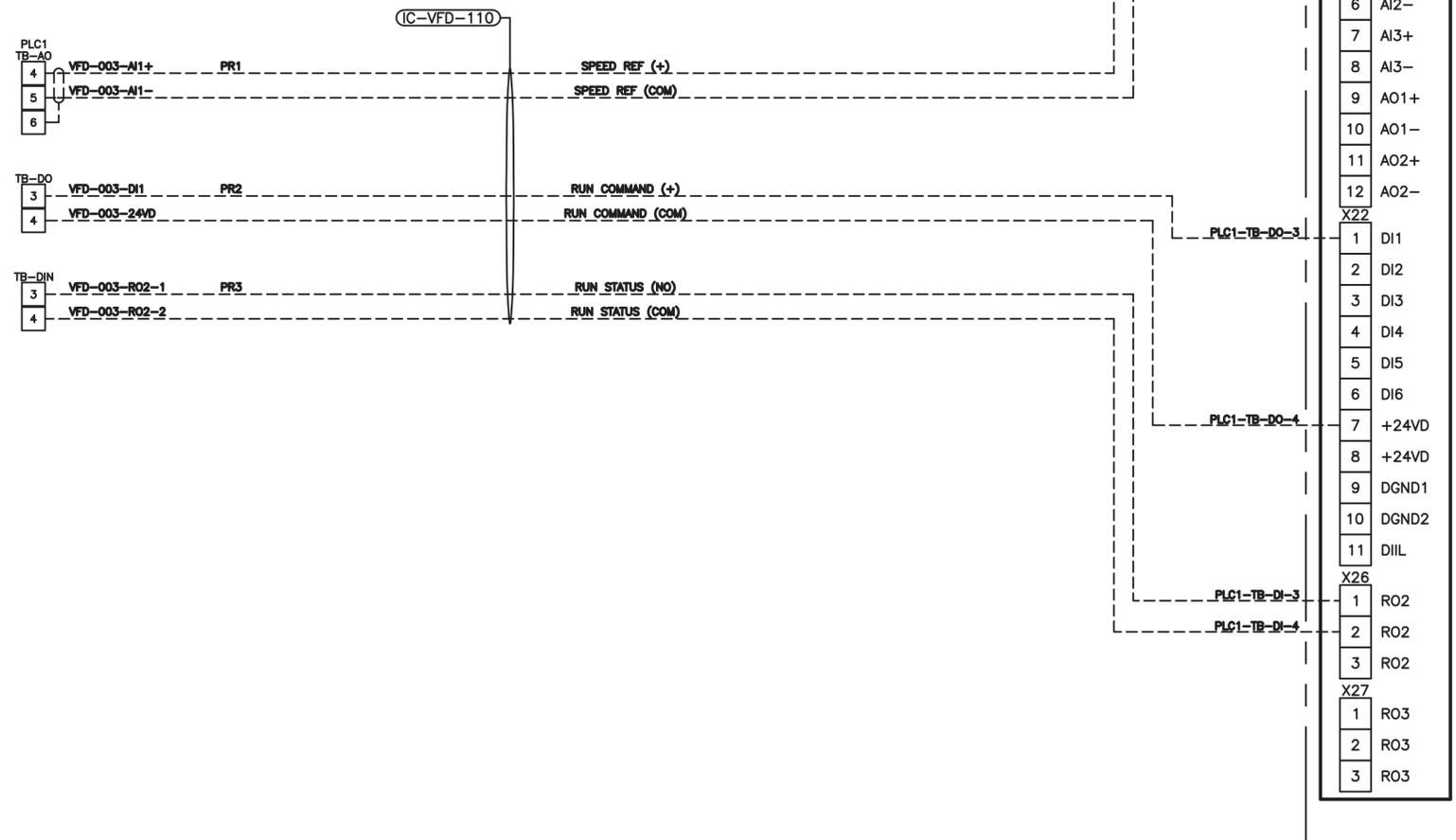


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NO	DATE	REVISION	BY	CK.	APPR.
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AZTEC UPPER EAST TANK  
PUMP HOUSE  
ELECTRIC MOTOR SCHEMATIC  
480VAC PUMP P-100

JOB NO.	18000-67	SCALE	NTS
FILENAME	1800067-E003	DWG. NO.	1800067-E003
REV. NO.	0		



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AZTEC UPPER EAST TANK  
PUMP HOUSE  
ELECTRIC MOTOR SCHEMATIC  
480VAC PUMP P-110

JOB NO.	18000-67	SCALE	NTS
FILENAME	1800067-E004	DWG. NO.	1800067-E004
REV. NO.	0		

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N



TO ELECTRIC SERVICE  
TRANSFORMER XFMR T-1

P-PDP1-A  
P-PDP1-B



PANEL PDP-1  
VFD-100

P-P100-2

P-P110-2

DISCHARGE PRESSURE  
TRANSMITTER PIT-100

TO EXISTING RTU

P-RTU-PS  
IC-RTU  
COMM-RTU

PLC CABINET

I-PIT-100

PUMP MOTOR  
P-110

PUMP MOTOR  
P-100

ALL CONDUITS SHOWN ON THIS PAGE ARE BELOW GRADE.  
INSTALL PVC CONDUIT FOR ALL HORIZONTAL UG  
SECTIONS. FOR THE SCHEDULE 40 CONDUITS INDICATED  
PROVIDE A RIGID METALLIC 90° BEND AT THE STUB UPS  
AND A RIGID METALLIC RISER. WRAP ALL BELOW GRADE  
STEEL WITH APPROVED CORROSION SHIELD EXTENDING  
TO 6" ABOVE GRADE. SERVICE ENTRANCE CONDUITS ARE  
SCH 80 PVC INCLUDING RISERS.



11/7/2019

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CLIENT APPROVAL:	---				
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AZTEC UPPER EAST TANK  
PUMP HOUSE TOP VIEW  
EQUIPMENT LAYOUT AND  
CONDUIT/CABLE ROUTING PLAN

JOB NO.	18000:67	SCALE	1"=1'-0"
FILENAME	1800067-E005	DWG. NO.	1800067-E005
REV. NO.	0		

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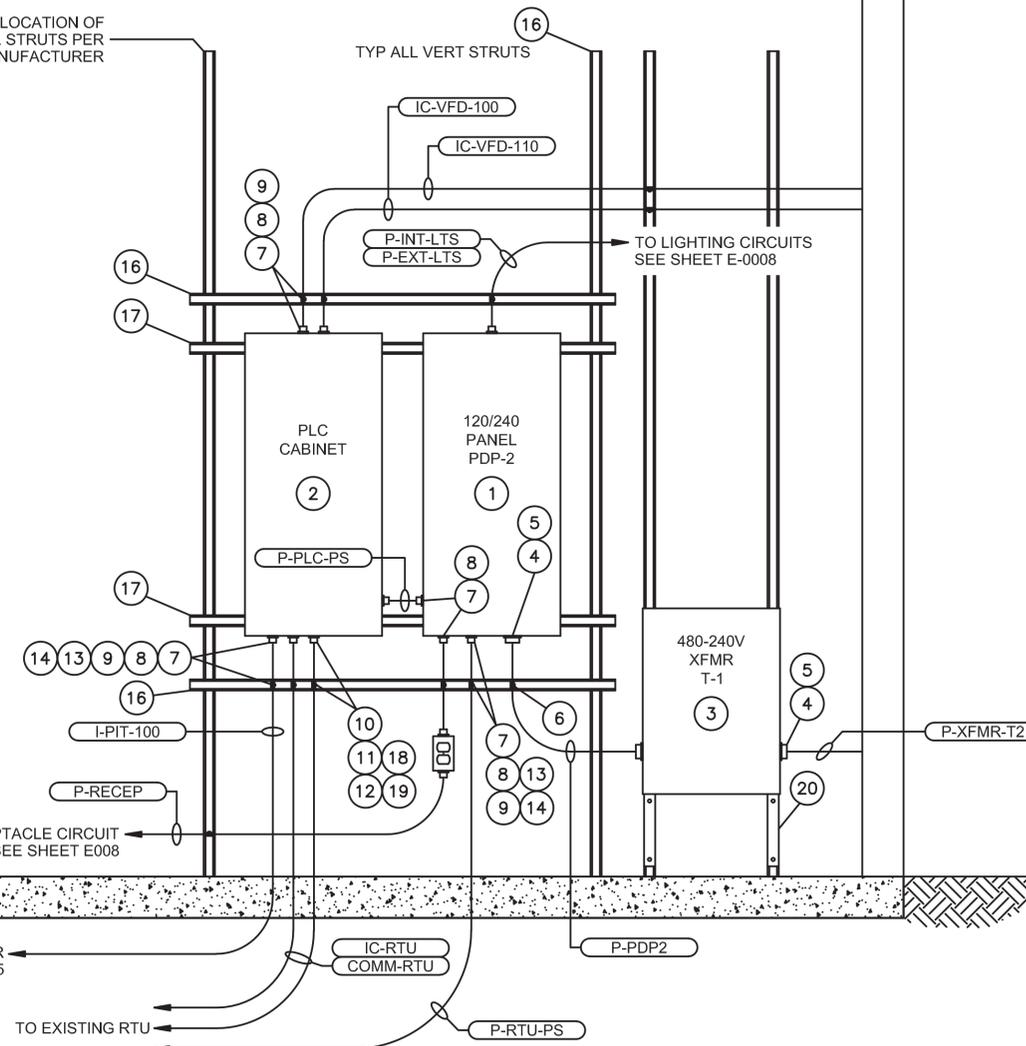
ANSI D, 22 x 34 R.

BILL OF MATERIAL				
NO.	QTY.	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	125A, 1Ø 3W 240V 3Ø SPACE PANELBOARD	SQUARE D	QO112L125G
2	1	VENDOR SUPPLIED PLC CABINET (SUPPLIED BY OTHERS)		
3	1	15KVA, 240/480 X 120/240VAC, DRY TYPE TRANSFORMER	SQUARE D	EE15S3H
4	10 FT	1" LIQUID TIGHT FLEXIBLE METALLIC CONDUIT (LFMC)		
5	3	1" LFMC INSULATED THROAT CONNECTOR		
6	1	1" LFMC STRUT STRAP		
7	A/R	3/4" GALVANIZED RIGID METALLIC CONDUIT (RMC)		
8	10*	3/4" RMC INSULATED THROAT CONDUIT HUB		
9	8*	3/4" RMC STRUT STRAP		
10	A/R	1" GALVANIZED RIGID METALLIC CONDUIT (RMC)		
11	2	1" RMC INSULATED THROAT CONDUIT HUB		
12	2	1" UNI-STRUT STRAP		
13	A/R	3/4" SCHEDULE 40 PVC CONDUIT		
14	2	3/4" PVC FEMALE ADAPTOR		
15	2	1" UNI-STRUT STRAP		
16	A/R	1-5/8" X 1-5/8" GALVANIZED STRUT		
17	A/R	1-5/8" X 7/8" GALVANIZED STRUT		
18	2	1" SCHEDULE 40 PVC CONDUIT		
19	2	1" PVC FEMALE ADAPTOR		
20	2	TRANSFORMER WALL MOUNT BRACKET	SQUARE D	WMB361362

\* NOT ALL POWER AND LIGHT CONDUIT IS SHOWN. CONNECTOR AND STRAP QUANTITIES WILL VARY.

## WEST INTERIOR ELEVATION

QUANTITY AND LOCATION OF VERTICAL STRUTS PER BUILDING MANUFACTURER



11/7/2019

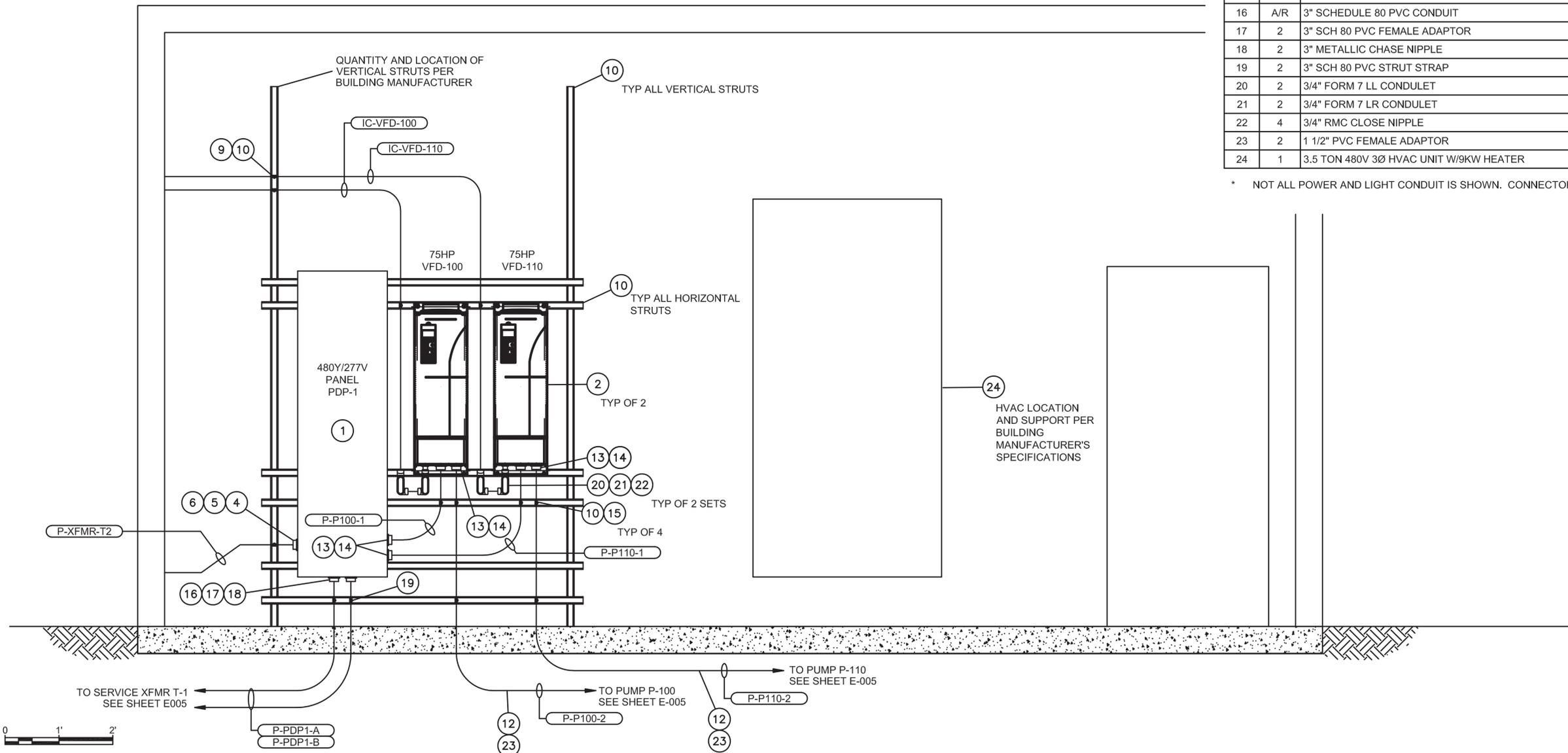
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APPROVED BY:	---				
CLIENT APPROVAL:	---				
NO.	DATE	REVISION	BY	CK.	APPR.
0	11/7/2019	ISSUED FOR CONSTRUCTION	BWH	CRF	



AZTEC UPPER EAST TANK  
PUMP HOUSE INTERIOR  
ELEVATION AND EQUIPMENT  
BILL OF MATERIALS

JOB NO.	18000:67	SCALE	1"=1'-0"
FILENAME	1800067-E006	REV. NO.	0
DWG. NO.	1800067-E006		

# NORTH INTERIOR ELEVATION



BILL OF MATERIAL				
NO.	QTY.	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	400A, 3Ø, 4W, 480Y/277V, 30 SPACE PANELBOARD	SQUARE D	NF MB 400A
2	2	75HP, 480V, 3Ø, ACTIVE FRONT END VFD	ABB	ACS800-U31-0100
3	N/A	NOT USED		
4	N/A	1" LIQUID TIGHT FLEXIBLE METALLIC CONDUIT (LFMC)		
5	1	1" LFMC INSULATED THROAT CONNECTOR		
6	1	1" LFMC STRUT STRAP		
7	A/R	3/4" GALVANIZED RIGID METALLIC CONDUIT (RMC)		
8	N/A	3/4" RMC INSULATED THROAT CONDUIT HUB		
9	6*	3/4" RMC STRUT STRAP		
10	A/R	1-5/8" X 1-5/8" GALVANIZED STRUT		
11	A/R	1-5/8" X 7/8" GALVANIZED STRUT		
12	A/R	1-1/2" SCHEDULE 40 PCV CONDUIT		
13	A/R	1-1/2" GALVANIZED RIGID METALLIC CONDUIT (RMC)		
14	6	1-1/2" RMC INSULATED THROAT CONDUIT HUB		
15	6	1-1/2" RMC STRUT STRAP		
16	A/R	3" SCHEDULE 80 PVC CONDUIT		
17	2	3" SCH 80 PVC FEMALE ADAPTOR		
18	2	3" METALLIC CHASE NIPPLE		
19	2	3" SCH 80 PVC STRUT STRAP		
20	2	3/4" FORM 7 LL CONDULET		
21	2	3/4" FORM 7 LR CONDULET		
22	4	3/4" RMC CLOSE NIPPLE		
23	2	1 1/2" PVC FEMALE ADAPTOR		
24	1	3.5 TON 480V 3Ø HVAC UNIT W/9KW HEATER	BARD	W42A#CO9XP4

\* NOT ALL POWER AND LIGHT CONDUIT IS SHOWN. CONNECTOR AND STRAP QUANTITIES WILL VARY.

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CLIENT APPROVAL:	---				
NO.	DATE	REVISION	BY	CK.	APPR.
0	11/7/2019	ISSUED FOR CONSTRUCTION	BWH	CRF	

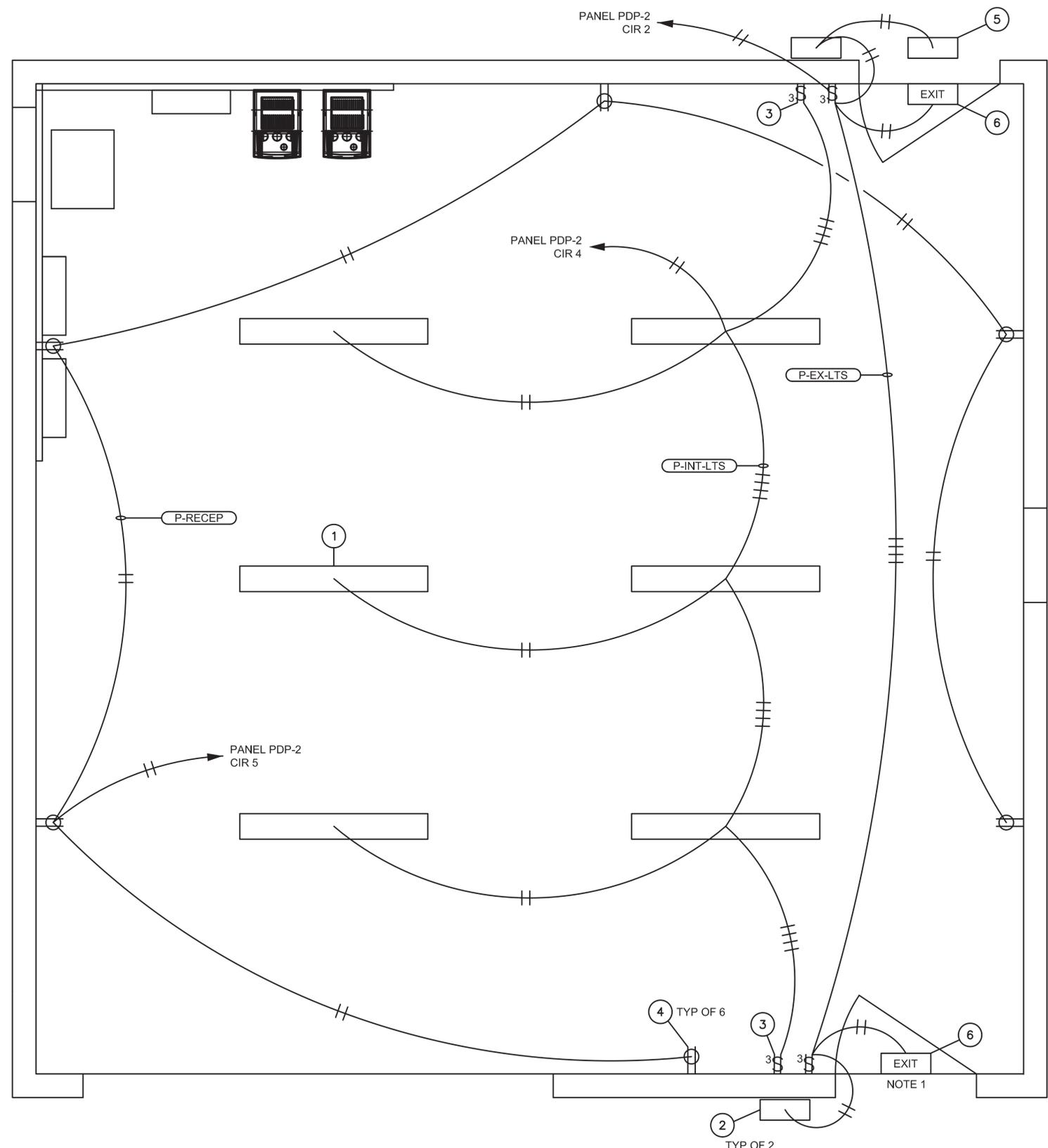


AZTEC UPPER EAST TANK  
PUMP HOUSE INTERIOR  
ELEVATION AND EQUIPMENT  
BILL OF MATERIALS

JOB NO.	1800067	SCALE	1"=1'-0"
FILENAME	1800067-E007	DWG. NO.	1800067-E007
REV. NO.	0		



11/7/2019



... BILL OF MATERIAL

NO.	QTY.	DESCRIPTION	MANUFACTURER	PART NUMBER
1	6	38W MULTI-VOLTAGE VAPOR TIGHT 4' LED SURFACE MT	EATON	4VT2-LD4-4-DR-UNV-840-CD1-WL-U
2	2	76W MULTI-VOLTAGE WALL PACK	EATON	WPMLD
3	2	2-GANG SWITCH BOX W/2-3WAY SWITCHES & IND COVER		
4	6	1-GANG SWITCH BOX W/1-DUPLEX RECEPTACLE & IND COVER		
5	1	WALL MOUNT 120V SPOT LIGHT PER OWNERS SPECIFICATION		
6	2	WALL MOUNT COMBO EMERGENCY/EXIT LIGHT	EATON	RCS182LED

NOTES:  
 1. EXIT/EMERGENCY LIGHTS ARE SUPPLIED BY EXTERIOR LIGHT CIRCUIT WITH NO SWITCHING. TAP FEED CIRCUIT AT SWITCH BOX.



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AZTEC UPPER EAST TANK  
 PUMP HOUSE  
 LIGHTING & POWER PLAN

JOB NO.	18000:67	SCALE	1"=1'-0"
FILENAME	1800067-E008	REV. NO.	0
DWG. NO.	1800067-E008		

Nov 11, 2019 - 11:05am by chrquar - Path = Y:\OES Projects\Aztec Pump Station\CAD Files\1800067-E008.dwg

ELECTRICAL CONDUIT AND CABLE SCHEDULE						
CABLE #	CONDUIT	SIZE & NUMBERS OF CONDUCTORS	INSULATION	VOLTAGE RATING	FROM	TO
P-PDP1-A	3" SCH 80 PVC	3-1C #3/0 & 1-1C #1/0 GC	XHHW-2	600	150KVA TRANSFORMER XFMR-T1	480 VOLT PANEL PD-1 MAIN CB
P-PDP1-B	3" SCH 80 PVC	3-1C #3/0 & 1-1C #1/0 GC	XHHW-2	600	150KVA TRANSFORMER XFMR-T1	480 VOLT PANEL PD-1 MAIN CB
P-P100-1	1-1/2" RMC	3-1C #1 & 1-1C #6 EGC	THHN	600	480 VOLT PANEL PD-1	75HP WATER PUMP VFD VFD-100
P-P100-2	1-1/2" RMC/SCH 40 PVC	3-1C #1 & 1-1C #6 EGC	THHN	600	75HP WATER PUMP VFD VFD-100	75HP WATER PUMP MOTOR P-100
P-P110-1	1-1/2" RMC	3-1C #1 & 1-1C #6 EGC	THHN	600	480 VOLT PANEL PD-1	75HP WATER PUMP VFD VFD-110
P-P110-2	1-1/2" RMC/SCH 40 PVC	3-1C #1 & 1-1C #6 EGC	THHN	600	75HP WATER PUMP VFD VFD-110	75HP WATER PUMP MOTOR P-110
P-HVAC	3/4" RMC	3-1C #10 & 1-1C #10 EGC	THHN	600	480 VOLT PANEL PD-1	3.5 TON HVAC UNIT #1
P-XFMR-T2	1" RMC/LFMC	2-1C #8 & 1-1C #10 EGC	THHN	600	480 VOLT PANEL PD-1	15KVA TRANSFORMER XFMR-T2
P-PDP2	1" RMC/LFMC	2-1C #4, 1C-#4 GC & 1-1C #8 EGC	THHN	600	15KVA TRANSFORMER XFMR-T2	240/120V PANEL PD-2
P-RECT	3/4" RMC	2-1C #10 & 1-1C #10 EGC	THHN	600	240/120V PANEL PD-2	CATHODIC RECTIFIER
P-PLC-PS	3/4" RMC	2-1C #12 & 1-1C #12 EGC	THHN	600	240/120V PANEL PD-2	PLC POWER SUPPLY
P-RTU-PS	3/4" RMC/SCH 40 PVC	2-1C #12 & 1-1C #12 EGC	THHN	600	240/120V PANEL PD-2	EXISTING RTU CABINET
P-RECEP	3/4" RMC	2-1C #12 & 1-1C #12 EGC	THHN	600	240/120V PANEL PD-2	PUMP HOUSE RECEPTACLES
P-INT-LTS	3/4" RMC	2-1C #12 & 1-1C #12 EGC	THHN	600	240/120V PANEL PD-2	PUMP HOUSE INTERIOR LIGHTS
P-EXT-LTS	3/4" RMC	2-1C #12 & 1-1C #12 EGC	THHN	600	240/120V PANEL PD-2	PUMP HOUSE EXTERIOR LIGHTS

CONTROLS CONDUIT AND CABLE SCHEDULE						
CABLE #	CONDUIT	SIZE & NUMBERS OF CONDUCTORS	INSULATION	VOLTAGE RATING	FROM	TO
I-PIT-100	3/4" RMC/SCH 40 PVC	1-4C #18 CABLE W/OS	TC-TFN	600	PLC CABINET	DISCHARGE PRESSURE TRANSDUCER P-100
IC-VFD-100	3/4" RMC	1-4PR #18 CABLE W IS-OS	TC-TFN	600	PLC CABINET	WATER PUMP P-100 DRIVE VFD-100
IC-VFD-110	3/4" RMC	1-4PR #18 CABLE W IS-OS	TC-TFN	600	PLC CABINET	WATER PUMP P-100 DRIVE VFD-110
IC-RTU	1" RMC/SCH 40 PVC	2-1PR #16 OS & 5-1C #16	TC-ITC/THWN	600	PLC CABINET	EXISTING RTU CABINET
COMM-RTU	1" RMC/SCH 40 PVC	1-4PR #22 CAT 5 OUTDOOR RATED	CAT 5	300	PLC CABINET	EXISTING RTU CABINET

NOTES:

- GC = GROUNDED CONDUCTOR (NEUTRAL), EGC = EQUIPMENT GROUNDING CONDUCTOR



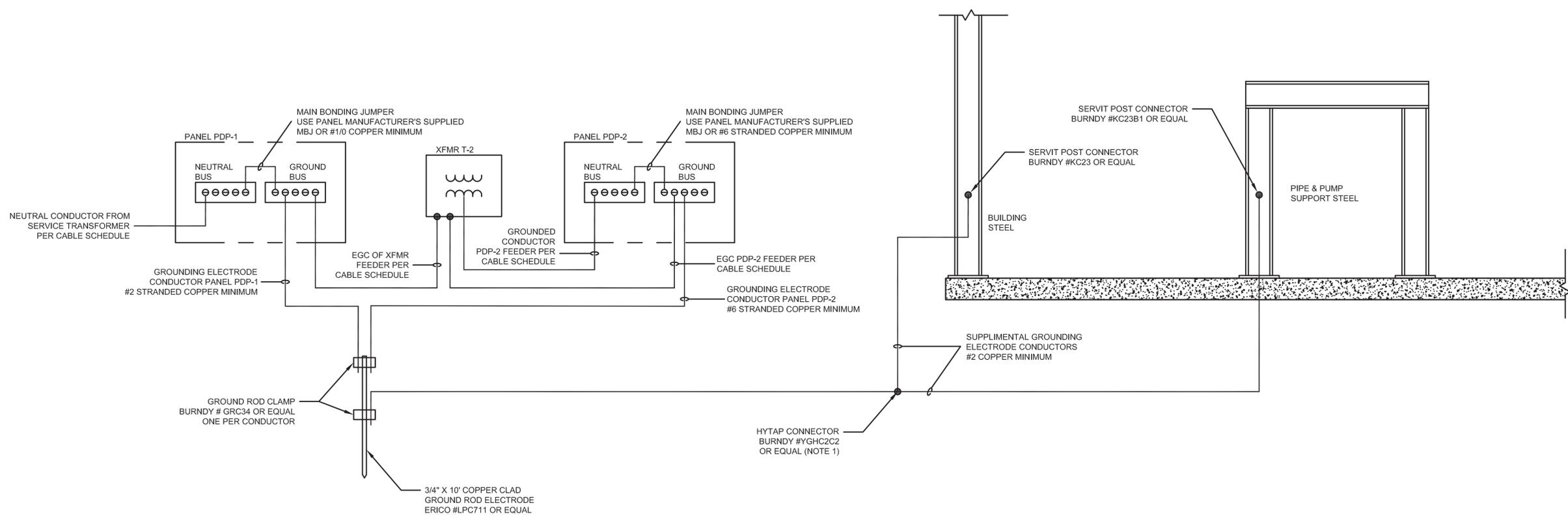
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AZTEC UPPER EAST TANK  
PUMP HOUSE  
ELECTRIC CONDUIT & CABLE  
SCHEDULE

JOB NO.	18000-67	SCALE	NTS
FILENAME	1800067-E009	DWG. NO.	1800067-E009
REV. NO.	0		



NOTES:

- 1. USE BURNDY #K2C23 AT BUILDING STEEL AS ALTERNATE AND AVOID SPLICING A TAP.



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AZTEC UPPER EAST TANK  
PUMP HOUSE  
GROUNDING PLAN

JOB NO.	18000-67	SCALE	NTS
FILENAME	1800067-E010	DWG. NO.	1800067-E010
REV. NO.	0		

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