

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

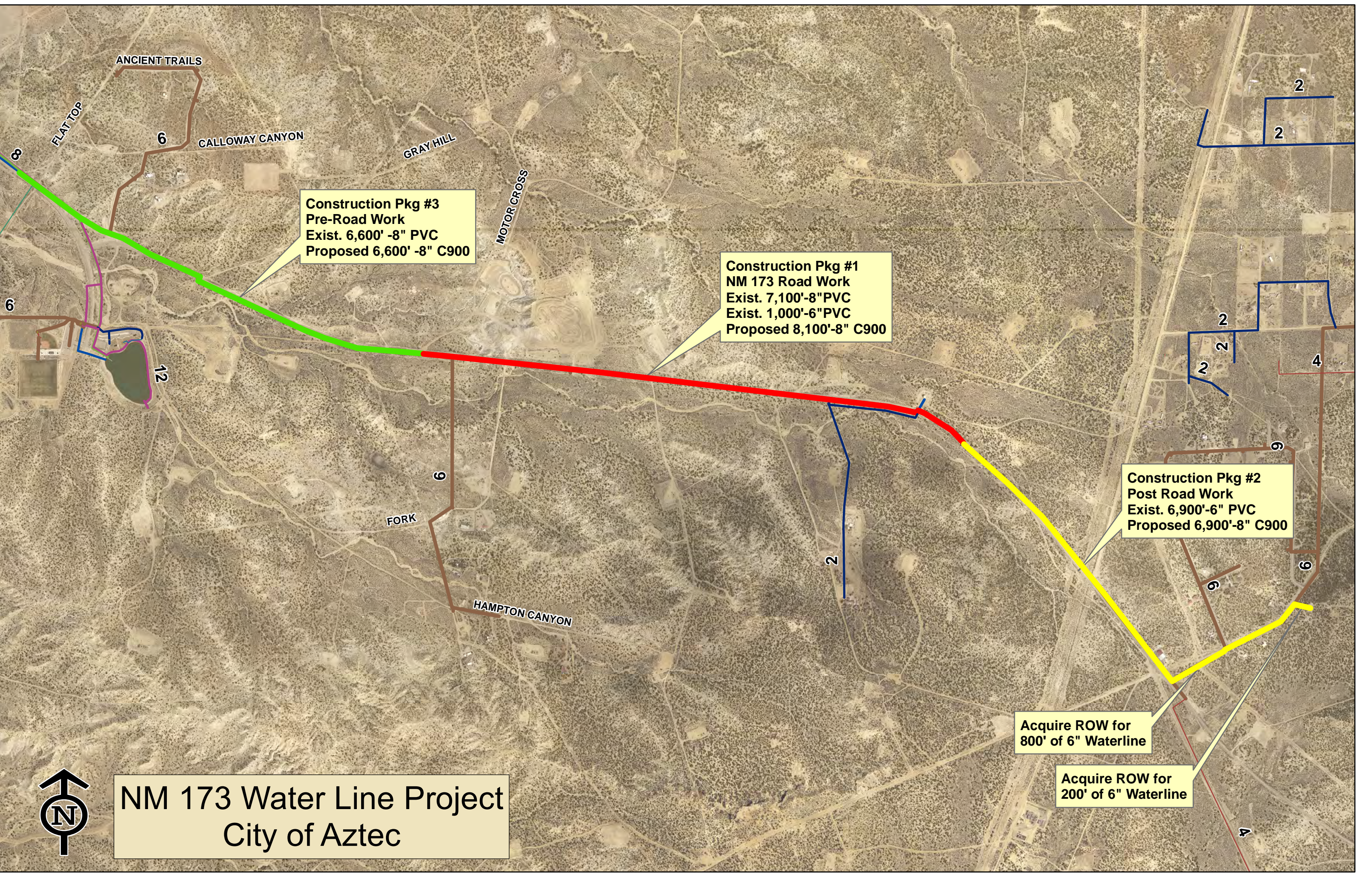
This project will be broken into four phases. In Phase 1, the selected firm will perform all field work and preliminary evaluations needed to complete the design of the water main relocation. This phase will include the collection of all field data needed to select, size, and dimension all system components 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.



ANCIENT TRAILS

FLAT TOP

CALLOWAY CANYON

GRAY HILL

MOTOR CROSS

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

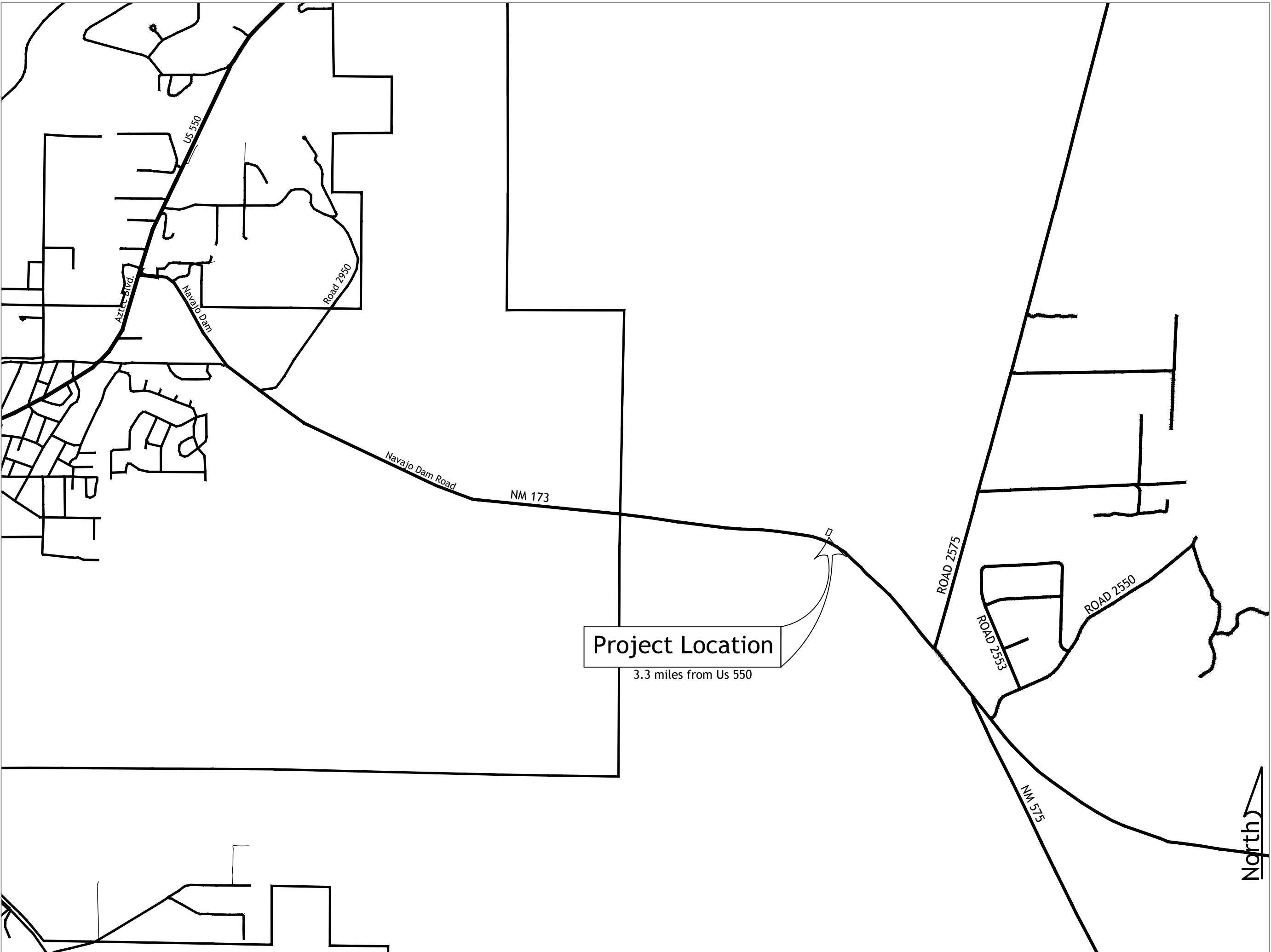
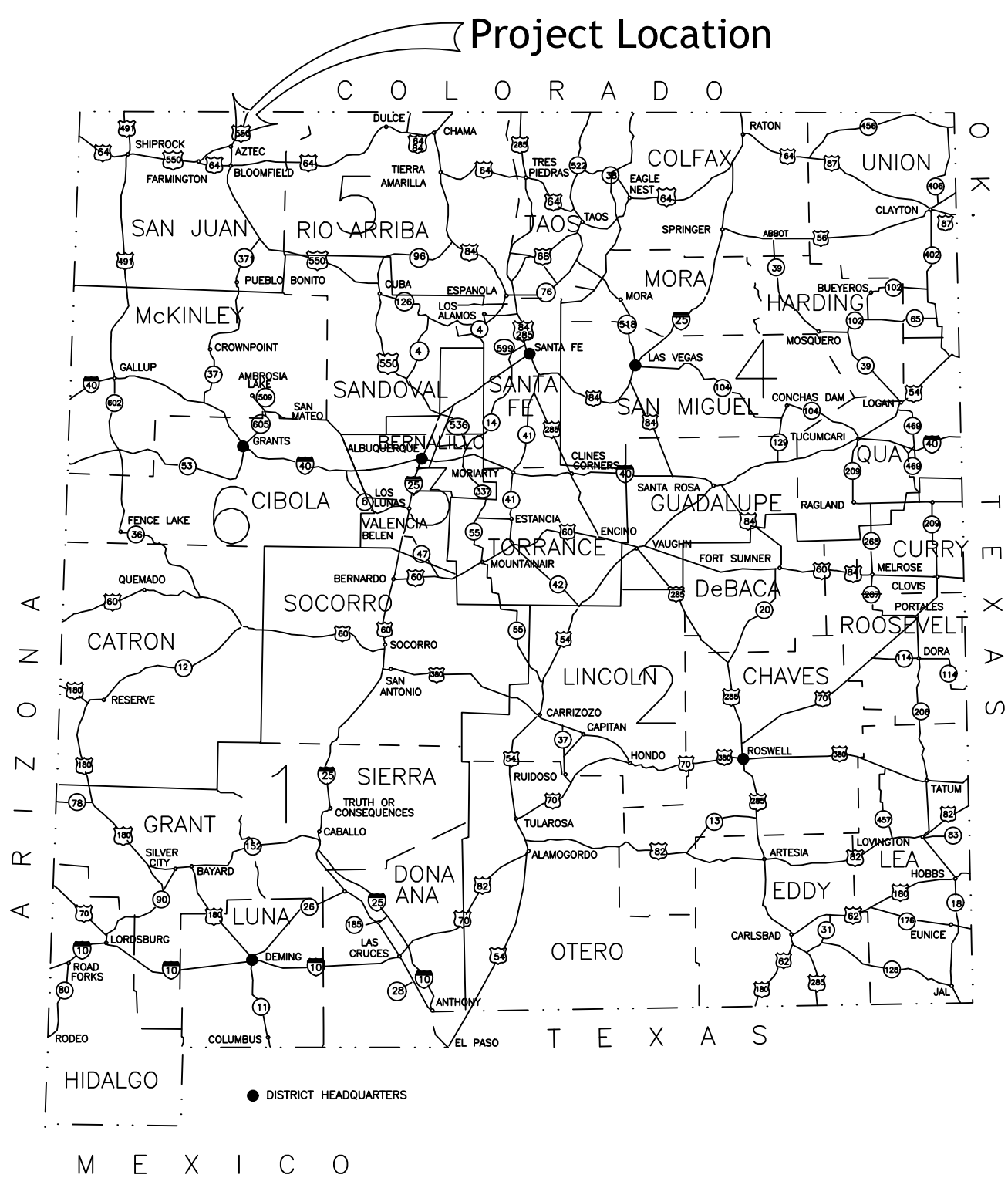
FORK

HAMPTON CANYON

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

Know what's below.
Call before you dig.

It's the Law!

New Mexico One Call, Inc.

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 APPELEGATE 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

CHC Engineers, LLC
50 Valley Court
Durango, CO
970-387-8765

Project Date:
12/18/19

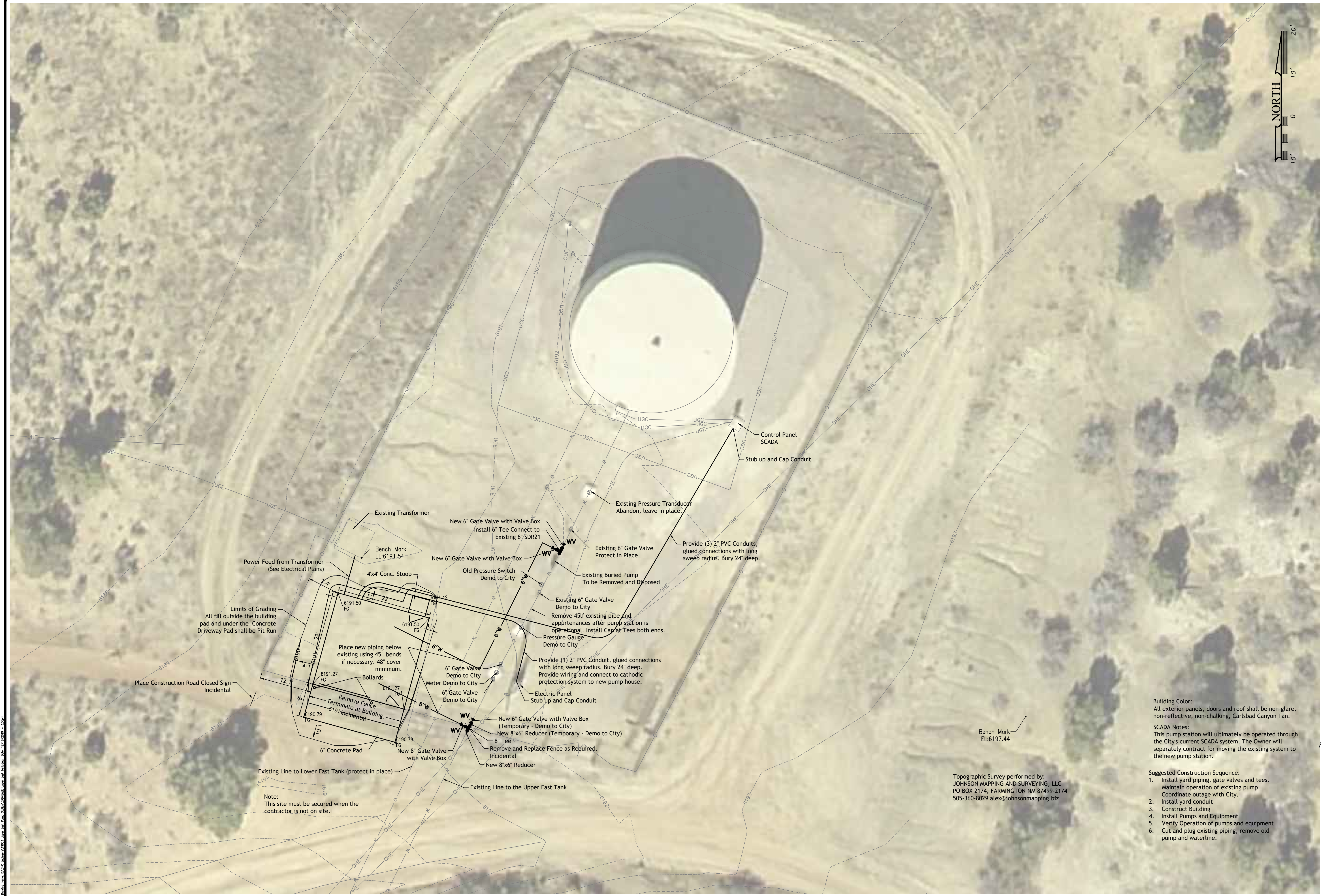
Proj: 19003

1-1



Drawn by: [Signature] Date: 12/18/2019

Revision Log	
1.	
2.	
3.	
4.	
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Plot Date: 12/18/2019 - 3:06pm	
Owner:	City of Aztec
Project:	EAST AZTEC PUMP STATION
Sheet Description:	OVERVIEW
50 Valley Court Durango, CO 970-387-8765	
Project Date: 12/18/19	
Proj: 19003	
1-2	



Drawn by: JCH, Checked by: JCH, Date: 12/18/2019, Scale: 1"=30'0"

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

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 watertine.

Revision Log	
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2.	
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5.	
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Owner:
City of Aztec

Project:
EAST AZTEC PUMP STATION

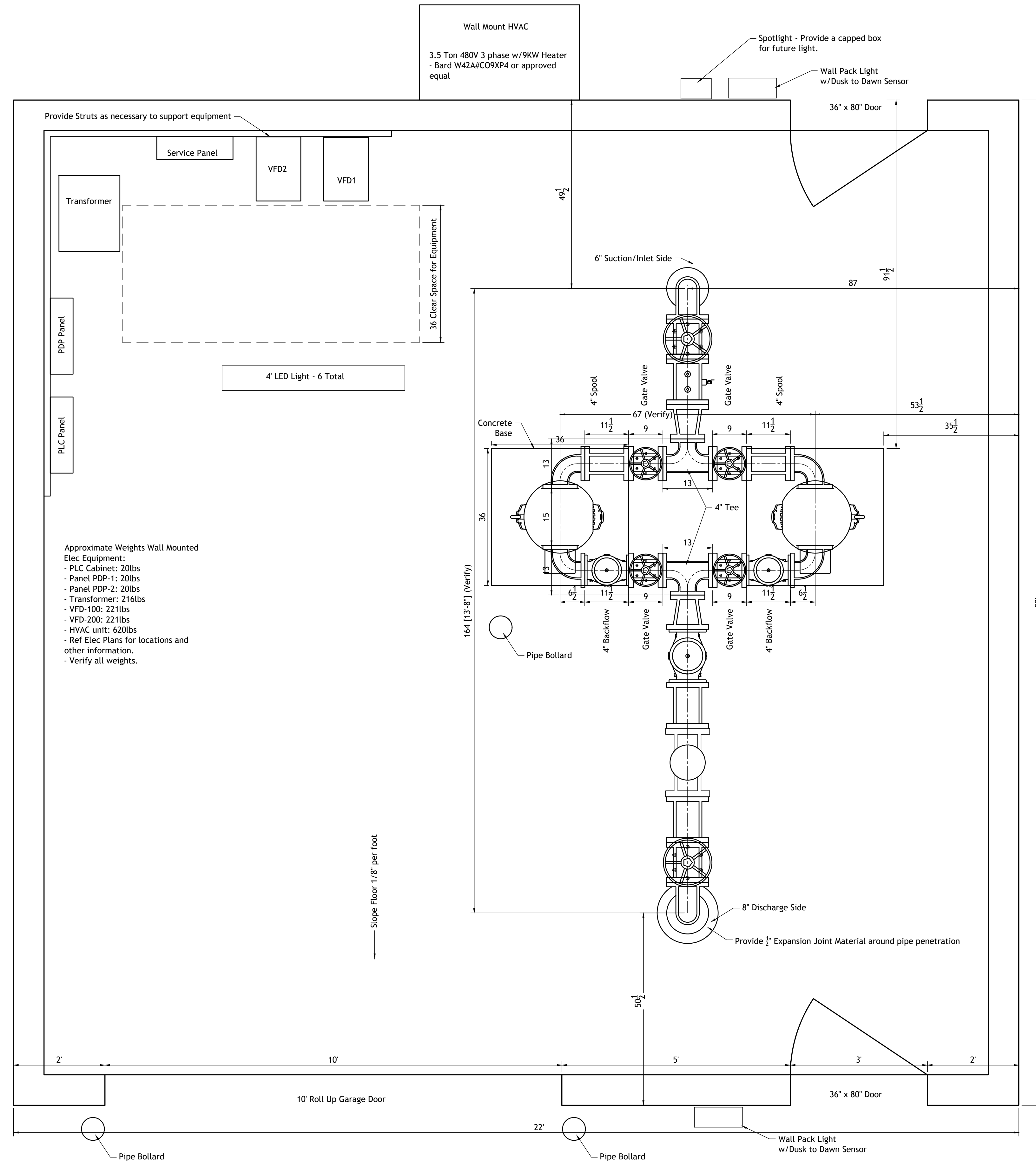
Sheet Description:
SITE PLAN



Project Date:
12/18/19



Proj: 19003

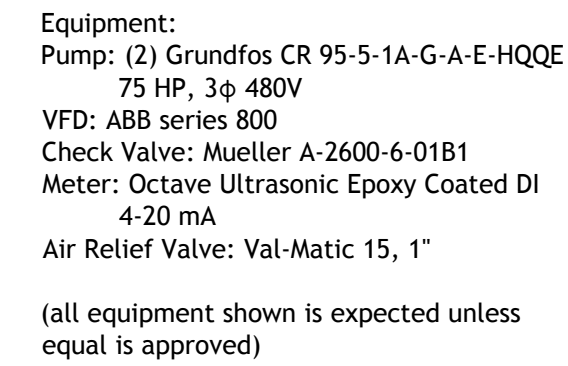
- All Fittings shall be AWWA C110 PC 250 with Flanged Ends.
- Provide 1" Threaded wettable to spools for gauges and testing ports with appropriate sized inserts.
- All necessary fittings, bolts, gaskets, adjustments, etc. necessary for completion of the project not specifically called out are considered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







0 0'-6" 1'-0" 1'-6" 2'-0" Scale: 3/4"=1'

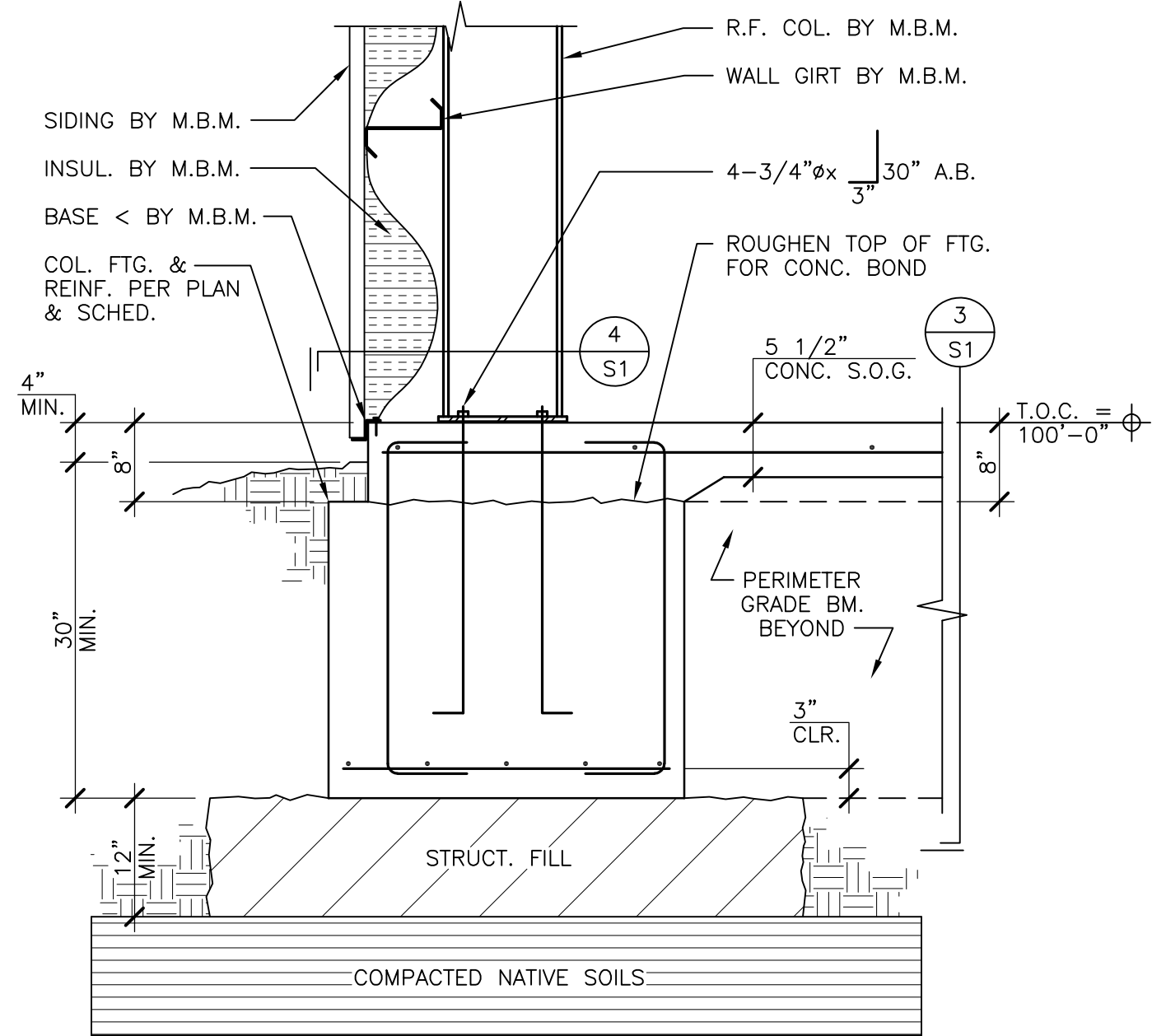


<div style="display: flex; justify-content: space-between;"> <div> <p>Sheet Description:</p> <p>PUMP HOUSE PIPING - PLAN VIEW</p> </div> <div> <p>Project:</p> <p>EAST AZTEC PUMP STATION</p> </div> <div> <p>Owner:</p> <p>City of Aztec</p> </div> </div>		<p>Revision Log</p> <table border="1"> <tr><td>1</td><td>9/20/17</td><td>REVISED, RPZA AIR INTAKE</td></tr> <tr><td>2</td><td>9/26/17</td><td>PUMPHOUSE AS-BUILT</td></tr> <tr><td>3</td><td>.</td><td>.</td></tr> <tr><td>4</td><td>.</td><td>.</td></tr> <tr><td>5</td><td>.</td><td>.</td></tr> <tr><td>6</td><td>.</td><td>.</td></tr> </table>	1	9/20/17	REVISED, RPZA AIR INTAKE	2	9/26/17	PUMPHOUSE AS-BUILT	3	.	.	4	.	.	5	.	.	6	.	.
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2	9/26/17	PUMPHOUSE AS-BUILT																		
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<div style="display: flex; justify-content: space-around;"> <div>  </div> <div>  <p>CHC Engineers, LLC</p> <p>50 Valley Court Durango, CO 970-387-8765</p> </div> </div>		<p>Plot Date: 12/18/2019 — 3:06pm</p>																		
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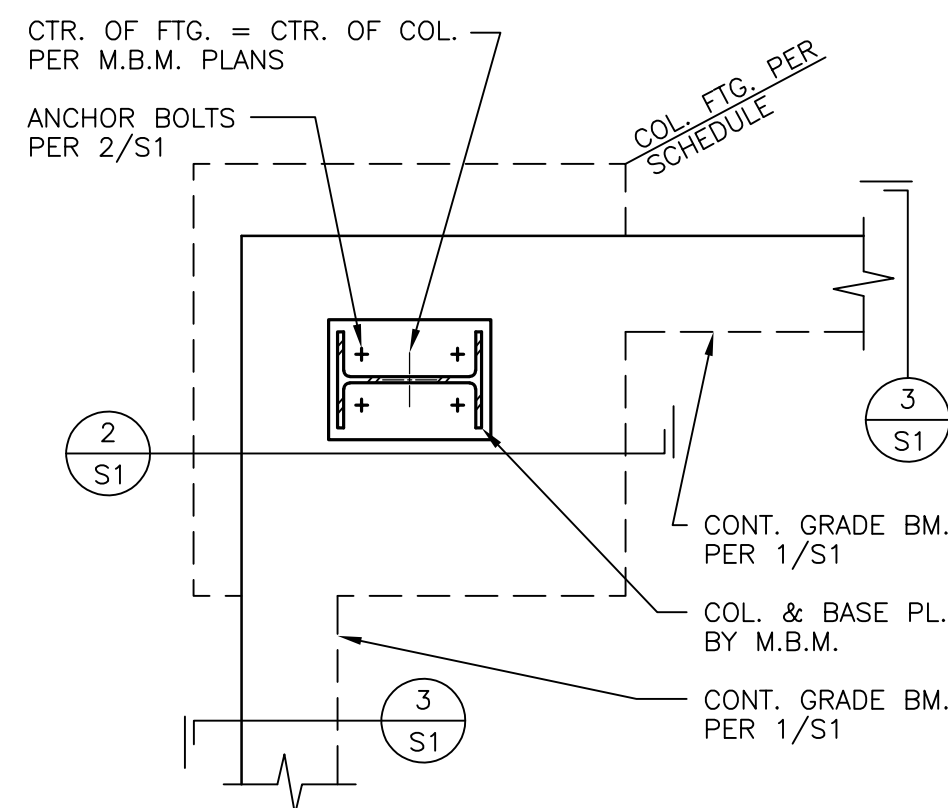


Pump House - Section

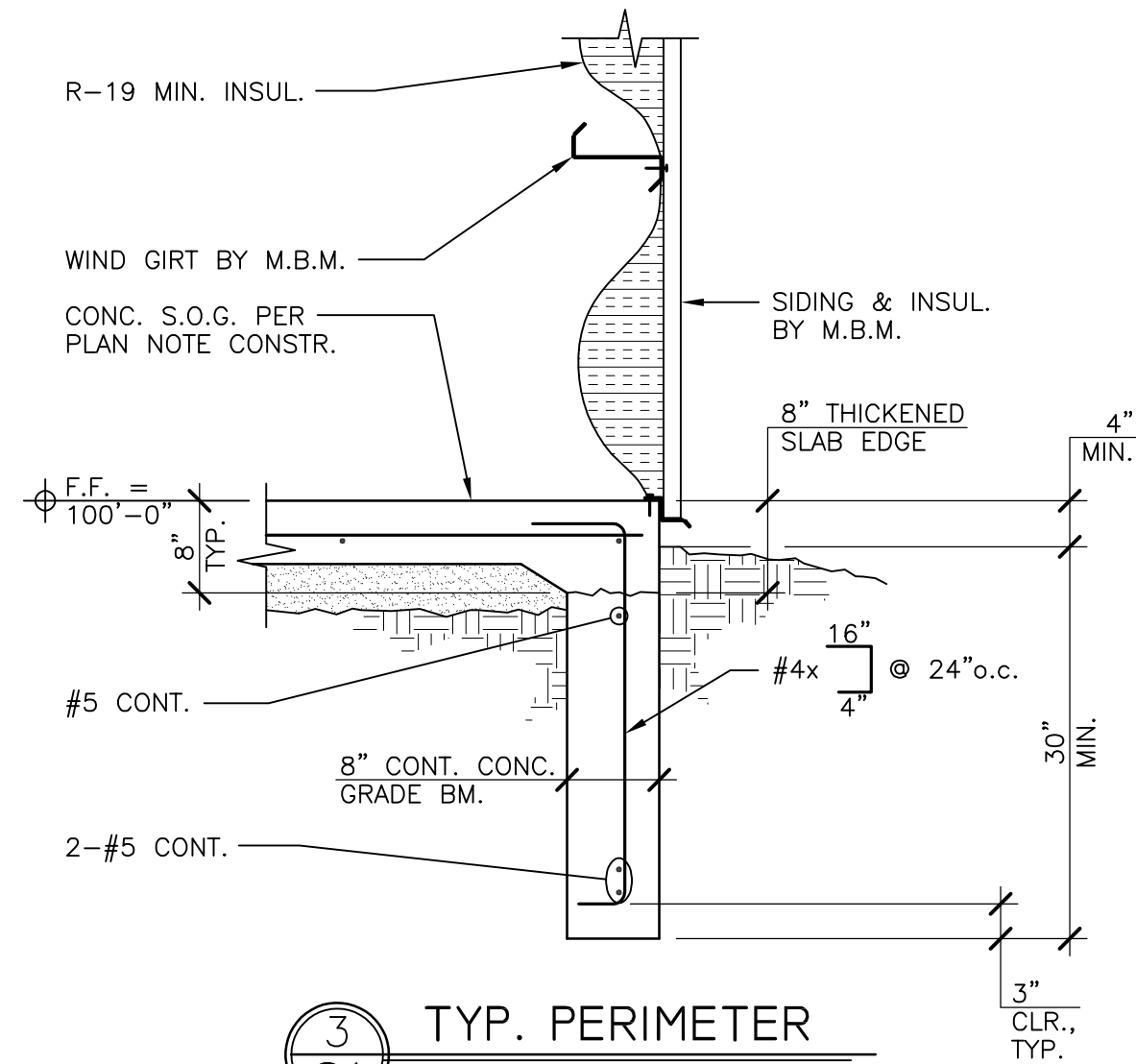
Revision Log		Owner:	Project:	Sheet Description:		 <p>CHC Engineers, LLC</p> <p>50 Valley Court Durango, CO 970-387-8765</p>	Project Date: 12/18/19	Proj: 19003
1	19/20/17	REVISIONS, RPZA AIR INTAKE	City of Aztec	EAST AZTEC PUMP STATION	PUMP HOUSE PIPING LAYOUT - SECTION VIEW		 <p>CHC Engineers, LLC</p> <p>50 Valley Court Durango, CO 970-387-8765</p>	Project Date: 12/18/19
2	9/26/17	PUMPHOUSE AS-BUILT						
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Plot Date: 12/18/2019 -- 3:06pm								



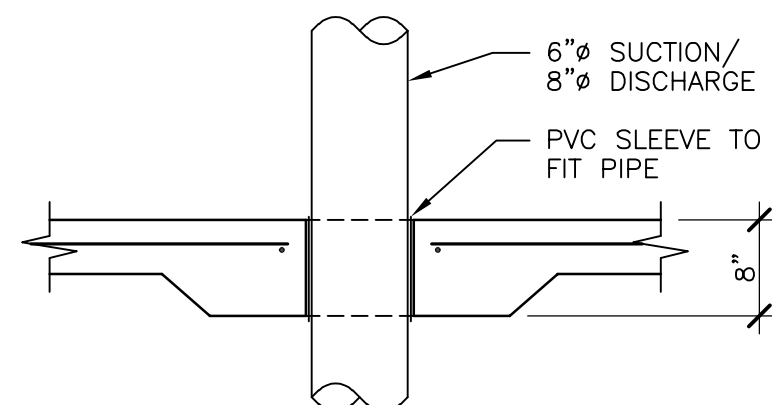
2 TYP. COL. FOUNDATION
(NOT TO SCALE)



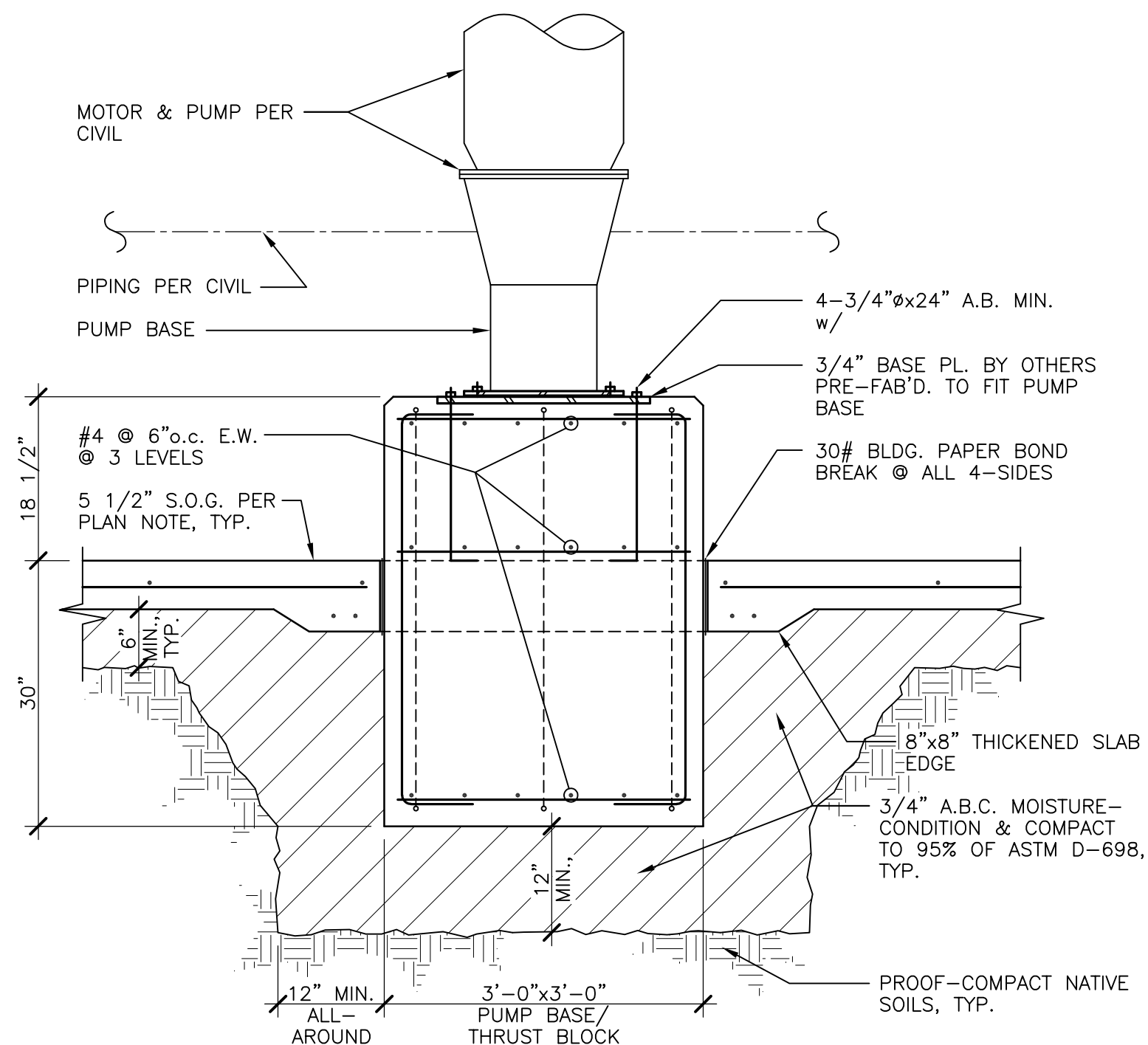
1 TYP. M.B. RIGID FRAME & CRANEWAY BM. CONNS.
(NOT TO SCALE)



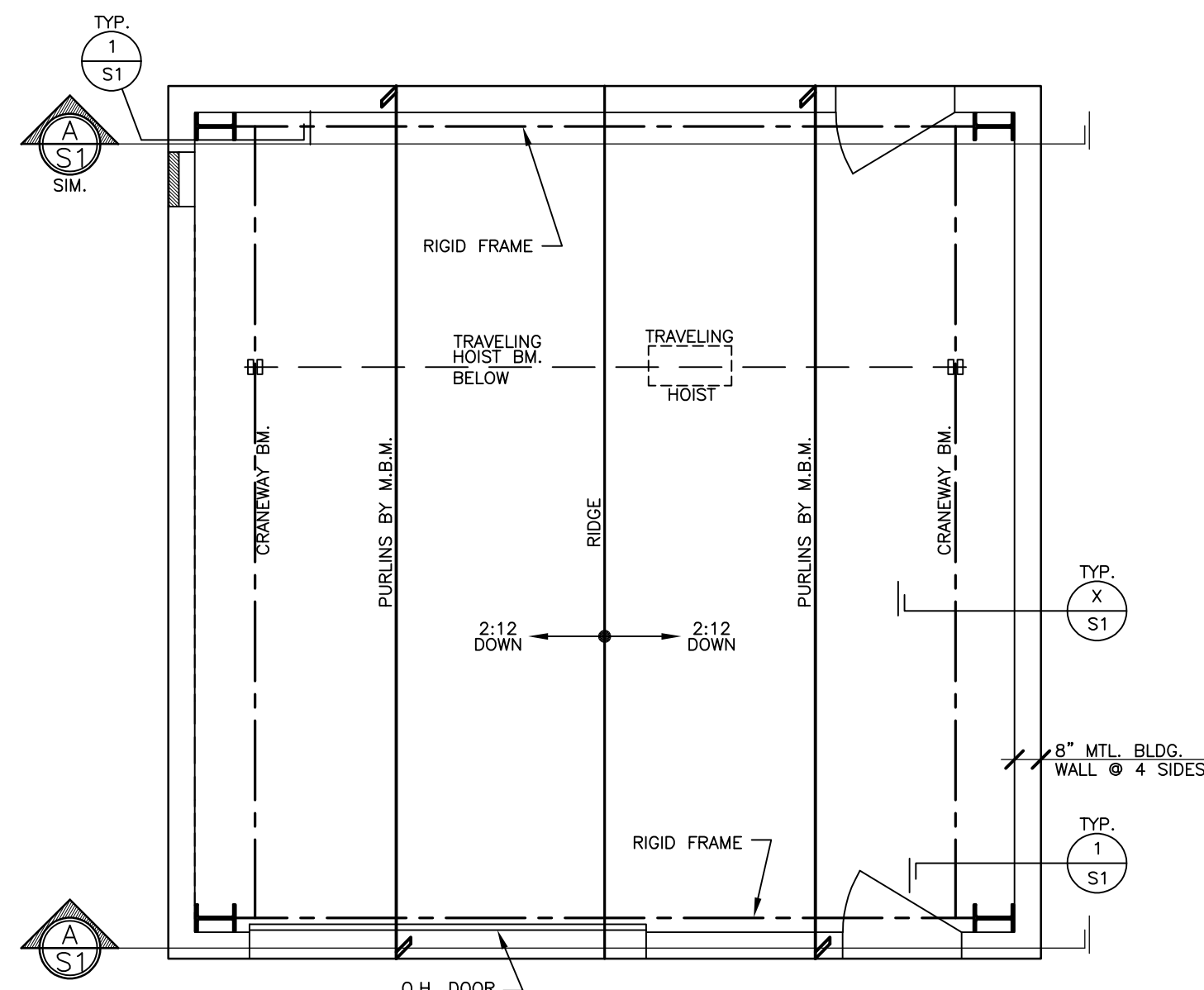
3 TYP. PERIMETER GRADE BM.
(NOT TO SCALE)



6 SLAB DTL. @ SUCTION & DISCHARGE LINES
(NOT TO SCALE)

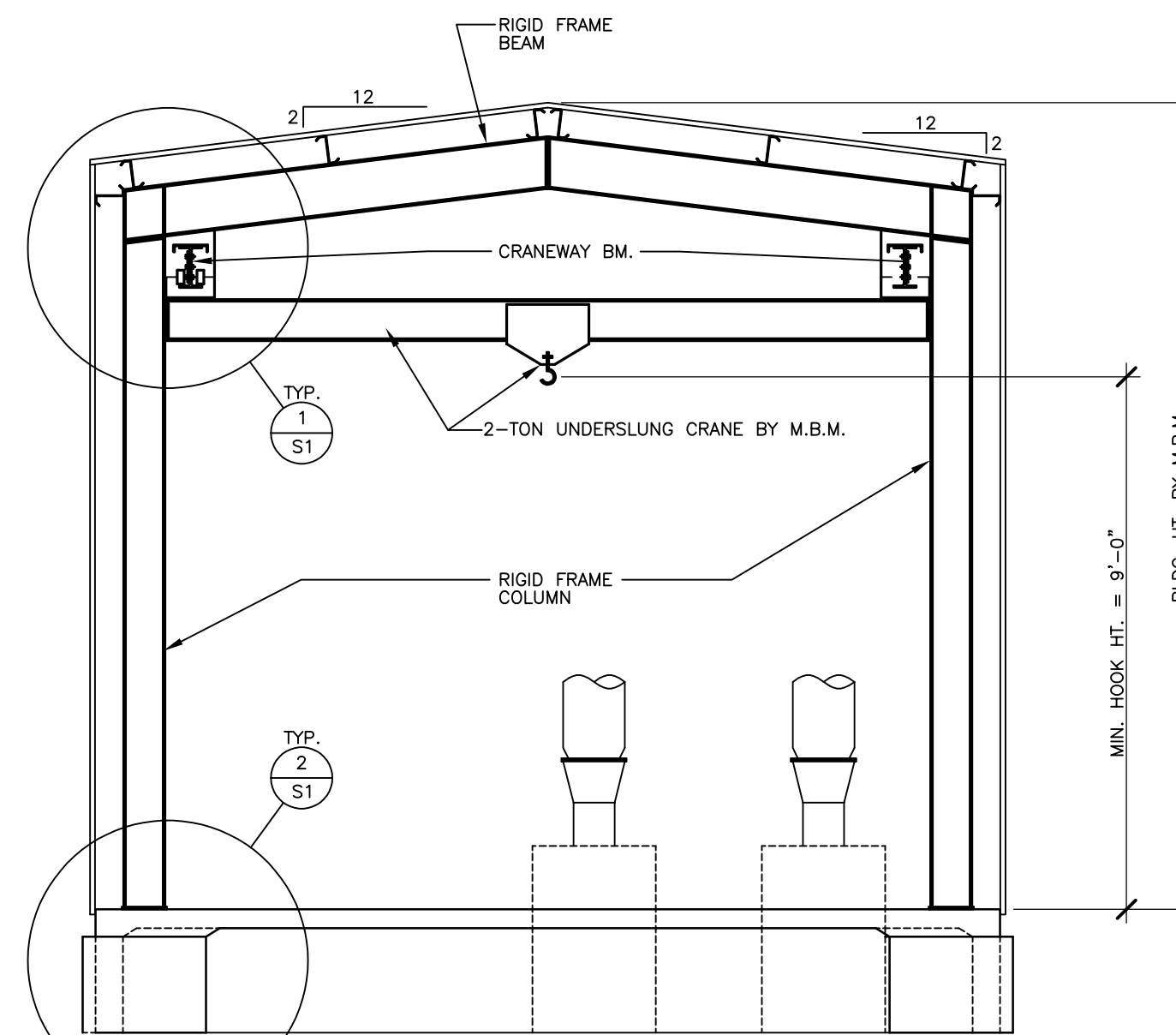


5 PUMP BASE / THRUST BLOCK
(NOT TO SCALE)



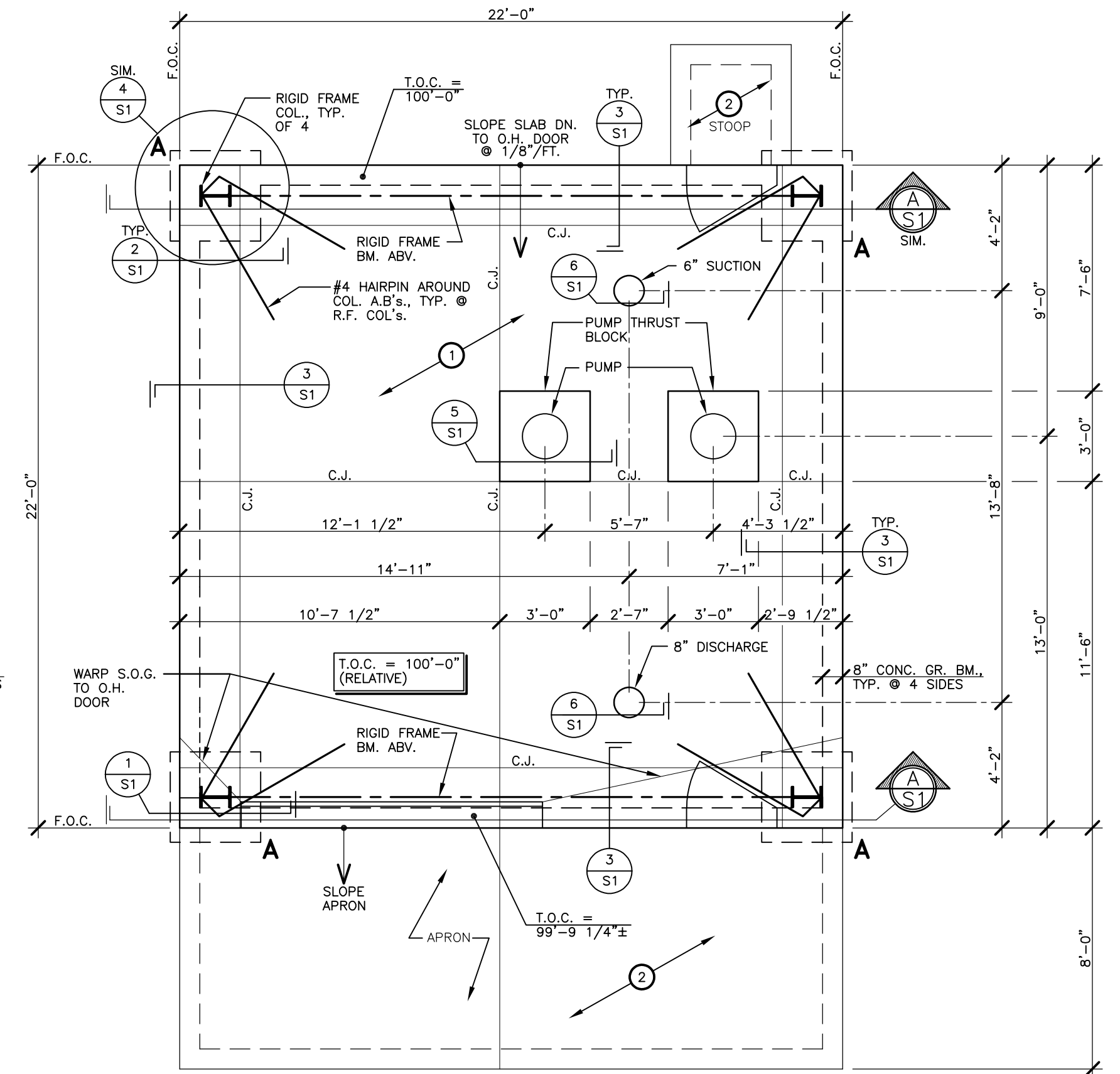
ROOF FRAMING PLAN

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



BLDG. SECTION @ ENDWALLS

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



FOUNDATION PLAN

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

FOUNDATION NOTES:

- SEE DETAIL 2&5/S1 FOR TYPICAL MINIMUM EARTHWORK REQUIREMENTS AT FOUNDATIONS AND SLABS. SEE "EARTHWORK FOR FOUNDATION" NOTES ON SHEET S2 FOR ADDITIONAL REQUIREMENTS.
- SEE SHEET S2 FOR STRUCTURAL SPECIFICATIONS, GENERAL STRUCTURAL NOTES, CONSTRUCTION REQUIREMENTS AND TYPICAL DETAILS NOT SPECIFICALLY REFERENCED BUT WHICH SHALL APPLY TO THE APPROPRIATE CONDITIONS.
- T.O.C. = FINISHED FLOOR ELEVATIONS = TOP OF CONCRETE SLAB-ON-GRADE ELEVATION
- SEE PLANS BY METAL BUILDING MANUFACTURER (M.B.M.) FOR SPECIFIC ANCHOR BOLT LOCATION DIMENSIONS.
- DIMENSIONS ARE TO OUTSIDE FACE-OF-CONCRETE AND TO CENTERLINES OF FOOTINGS AS INDICATED, U.N.O.
- SEE METAL BUILDING NOTES ON S2 FOR DESIGN LIMITATIONS FOR ALLOWABLE DEFLECTIONS FOR THE BUILDING SUPERSTRUCTURE, (WHICH SHALL BE DESIGNED AND PROVIDED BY OTHERS).
- LATERAL BRACING SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE M.B.M. PLANS.
- FOUNDATIONS ARE DESIGNED FOR COLUMNS/GIRTS TO BE PROVIDED IN A 'BY-PASS FRAMED' CONDITION @ ENDWALLS AND SIDE-WALLS PER M.B.M. PLANS.
- FOUNDATIONS ARE DESIGNED FOR WALL GIRT FRAMING TO COL'S. AS INDICATED IN METAL BUILDING DRAWINGS. FINAL SEALED METAL BUILDING DRAWINGS (PDFs) SHALL BE PROVIDED TO THE ENGR. FOR REVIEW & APPROVAL BEFORE ANY CONSTRUCTION BEGINS.
- C.J.: CONTRACTION JT. IN CONC. S.O.G.

FOUNDATION KEYED NOTES:

- INTERIOR CONC. S.O.G. PER TYP. INT. S.O.G. NOTE ON THIS SHEET.
- OPTIONAL EXTERIOR CONC. S.O.G. PER TYP. EXT. S.O.G. NOTE ON THIS SHEET, EXTENT & LOCATION AS DIRECTED BY THE OWNER

FOOTING SCHEDULE

TYPE	SIZE	REINFORCEMENT
A	3'-0"x 3'-0" x 24" THICK	#5 @ 8"o.c. E.W. @ BOT.

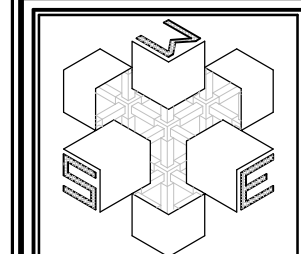
TYP. CONCRETE SLABS-ON-GRADE:

TYPICAL INTERIOR S.O.G.:
 • 5 1/2" THICK CONC. w/ f'c = 3000 psi MIN. @ 28 DAYS.
 • REINFORCE w/ #4 @ 24"o.c. E.W. @ CTR. OF THICKNESS.
 • PLACE ON 6" OF COMPACTED STRUCTURAL FILL.

TYPICAL OPTIONAL EXTERIOR S.O.G.:
 • 4 1/2" THICK CONC. w/ f'c = 4000 psi MIN. @ 28 DAYS.
 • REINFORCE w/ #4 @ 24"o.c. E.W. @ CTR. OF THICKNESS.
 • PLACE ON 4" OF 3/4" A.B.C. COMPACTED TO 90%.
 • SLOPE DOWN AND AWAY FROM BLDG. @ 1/4" MIN. PER FOOT
 • THICKENED EDGES AROUND PERIMETER PER DTL. 7/S2

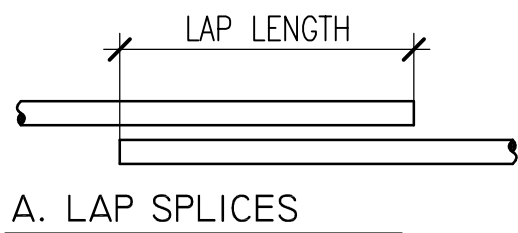


FINAL FOR CONSTRUCTION
10-16-2019

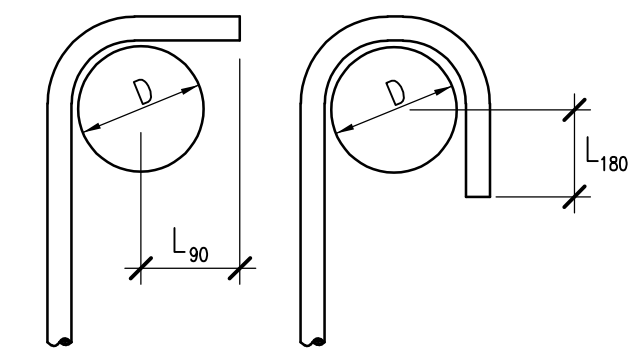


WILSON STRUCTURAL ENGINEERING, INC.
 1235 THOROUGHbred RD.
 DURANGO, CO 81303
 Phone: (970) 385-6774

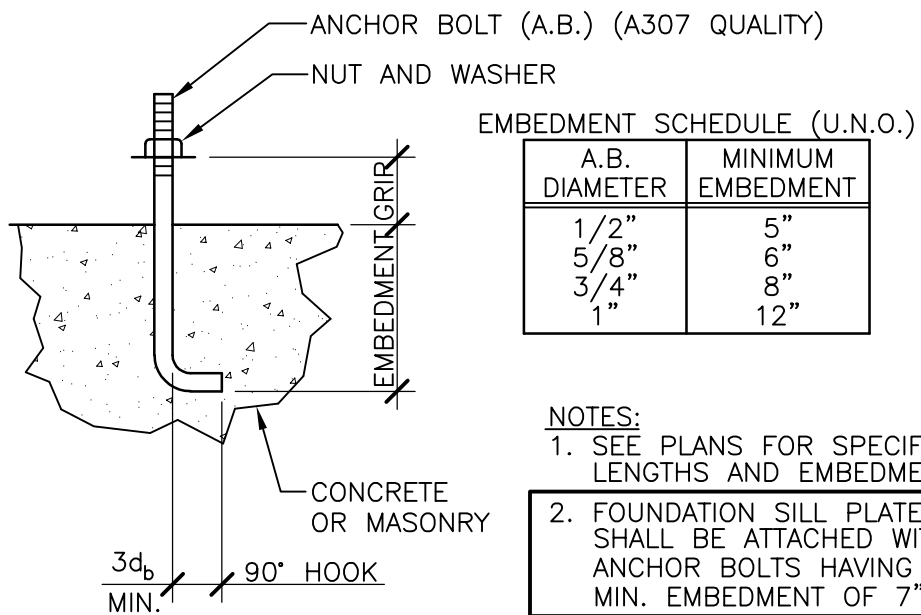
A PROPOSED FOUNDATION DESIGN FOR THE NEW:			FILE NAME:
AZTEC PUMP STATION			06419.S1
AZTEC, NEW MEXICO			PROJECT:
FOUNDATION & ROOF PLANS & DETAILS			06419
DRAWN: GW			SHEET:
CHECKED: DW			SI
DATE: 10-16-2019			OF S2



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



BEND AND HOOK SCHEDULE			
BAR SIZE	D	L ₉₀	L ₁₈₀
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"



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".

RECOMMENDED OBSERVATIONS

- The agreement for the design of these structural plans does not include a fee for construction observation or inspections of any kind to verify compliance. However, it is recommended that the owner/contractor contract with the Engineer or other qualified third party observer to make the following observations.
- Exposed native bearing soils shall be observed and approved by a Soils Engineer before placing structural fill or forming for concrete.
- Material for structural backfill shall be observed and approved by a Soils Engineer before use. Structural backfill placement and compaction shall be observed, tested, and approved by a Soils Engineer before placing foundations.
- Concrete reinforcing and formwork shall be observed and approved by the Engineer before placing concrete.
- The metal building components shall be observed and approved relative to materials and connections by a representative approved by the Metal Building Manufacturer.
- Contractor shall provide 24 hour notice for observations.

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

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:
to earth.....3"
to formed surfaces.....2"
slabs:
to earth.....1"
stemwalls:
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 a curing compound conforming to ASTM C309 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, 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 manufacturer shall be cross-checked and verified with the 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 are 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 moments 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.

Dead Loads:

- Superstructure load.....weight of building provided by the M.B.M.
- Collateral load.....3 psf
- Insulation load.....weight of insulation provided by the M.B.M.
- Wall mounted equipment....per electrical & mechanical plans

Live Loads:

- 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 any uncorrected errors or deviations from the plans without 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 I = 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_s).....17.9% g
d) Importance factor(I_e).....1.0
- Earthwork per 'Earthwork for Foundations' on this sheet.

SPECIALTY CONNECTIONS / ANCHORAGES / FASTENERS

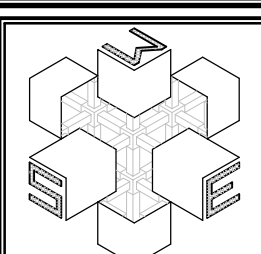
- Expansion bolts, adhesive anchors, shotpins, headed anchor studs (HAS), self-tapping screws and other proprietary devices shall have ICCB approvals. These approvals along with load capacities and use information shall be submitted to the Engineer when materials other than those specified are proposed.
- 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" tie 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 Hilti or Redhead with a minimum embedment of 4"
Shotpins: 0.145" diameter minimum by Hilti or Ramset with 1" minimum embedment in concrete and a minimum safe working load in shear of 200 lb.
Headed Anchor Studs: 1/2" diameter x 6" long by Nelson Stud
Adhesive Anchors: Hilti HIT or HVA system sized for 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'-0" 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

Swift Allen



WILSON STRUCTURAL ENGINEERING, INC.
1235 THOROUGHBRD RD.
DURANGO, CO 81303
Phone: (970) 385-6774

A PROPOSED FOUNDATION DESIGN FOR THE NEW:

AZTEC PUMP STATION
AZTEC, NEW MEXICO

GENERAL STRUCTURAL SPECIFICATIONS AND TYPICAL DETAILS

DRAWN: TS CHECKED: DW DATE: 10-16-2019

FILE NAME:

06419.NOT

PROJECT:

06419

SHEET:

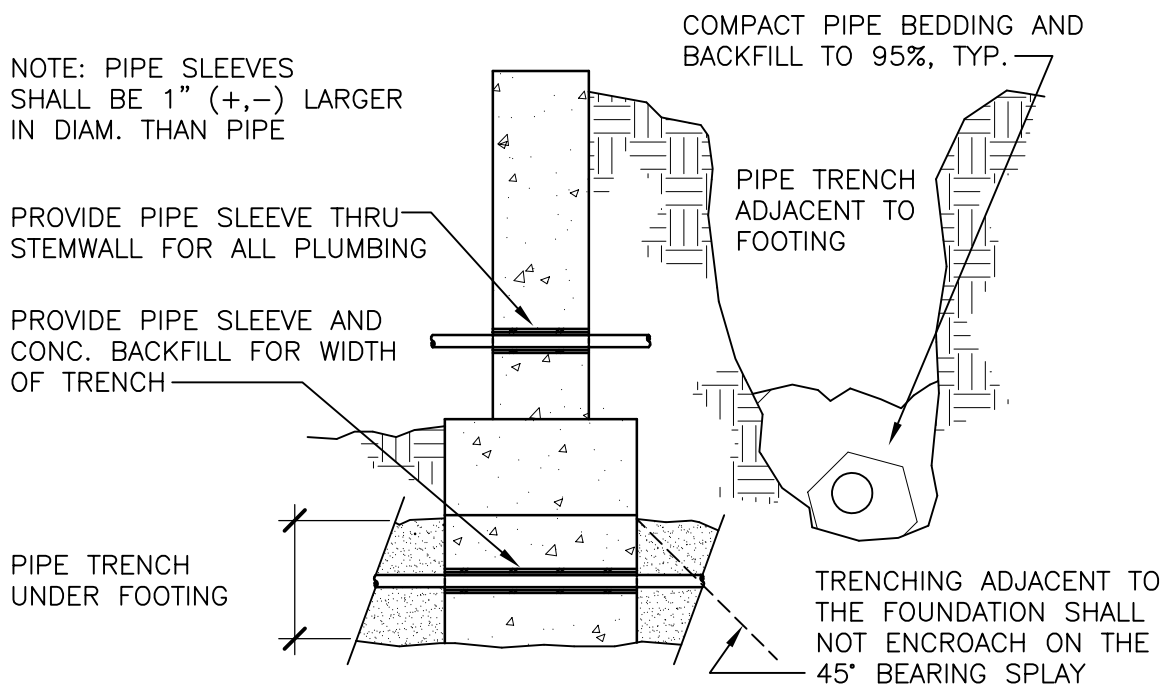
S2

OF S2

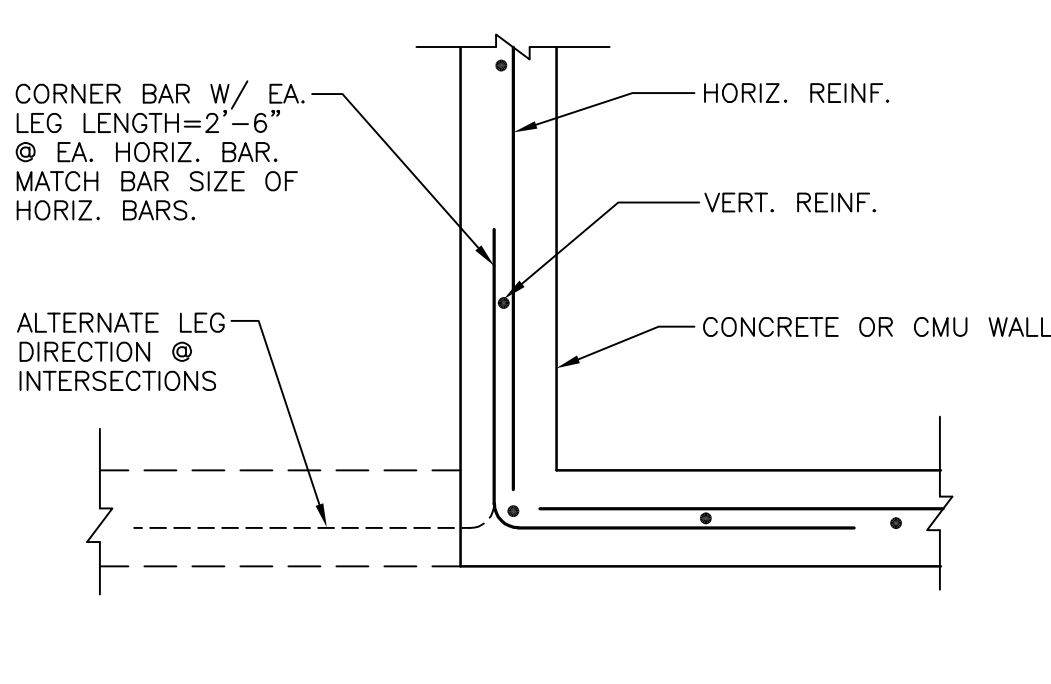
FINAL FOR CONSTRUCTION

10-16-2019

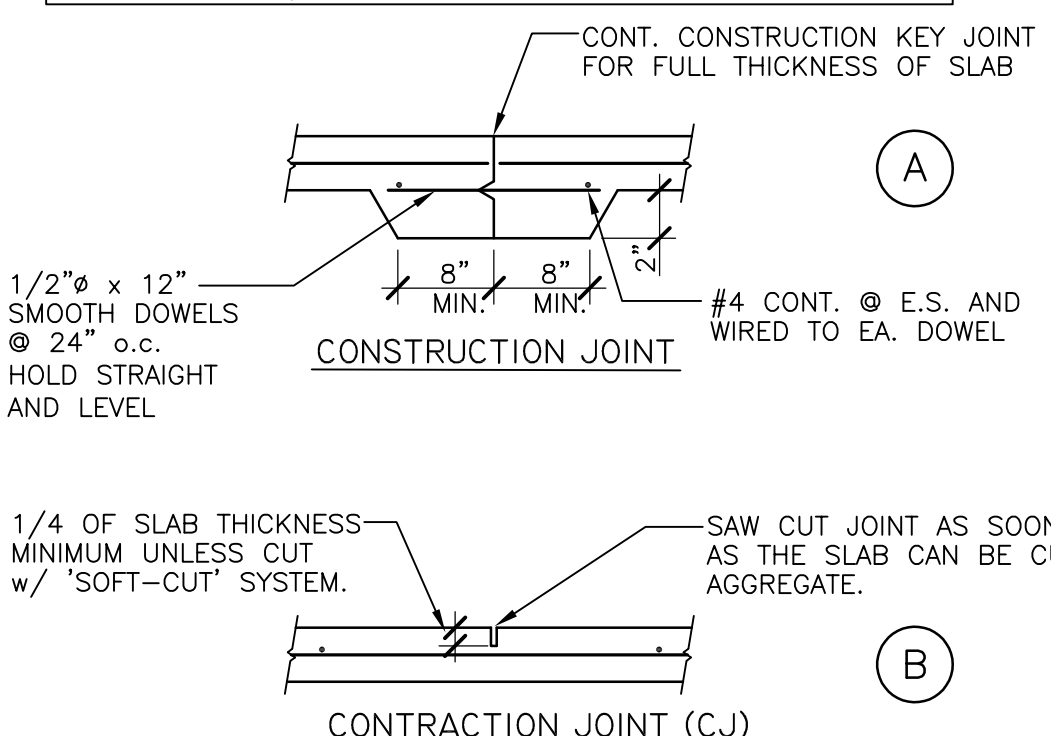
4 TYPICAL PIPING AND TRENCHING AT FOUNDATIONS (NOT TO SCALE)



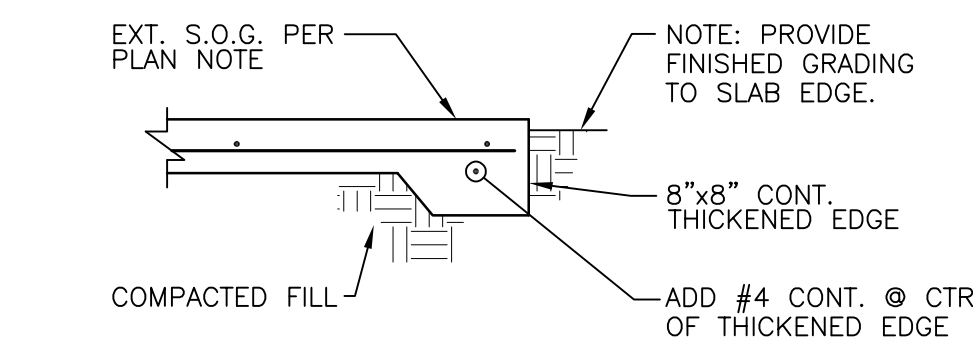
3 TYPICAL CONCRETE WALL CORNER REINFORCING (NOT TO SCALE)



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

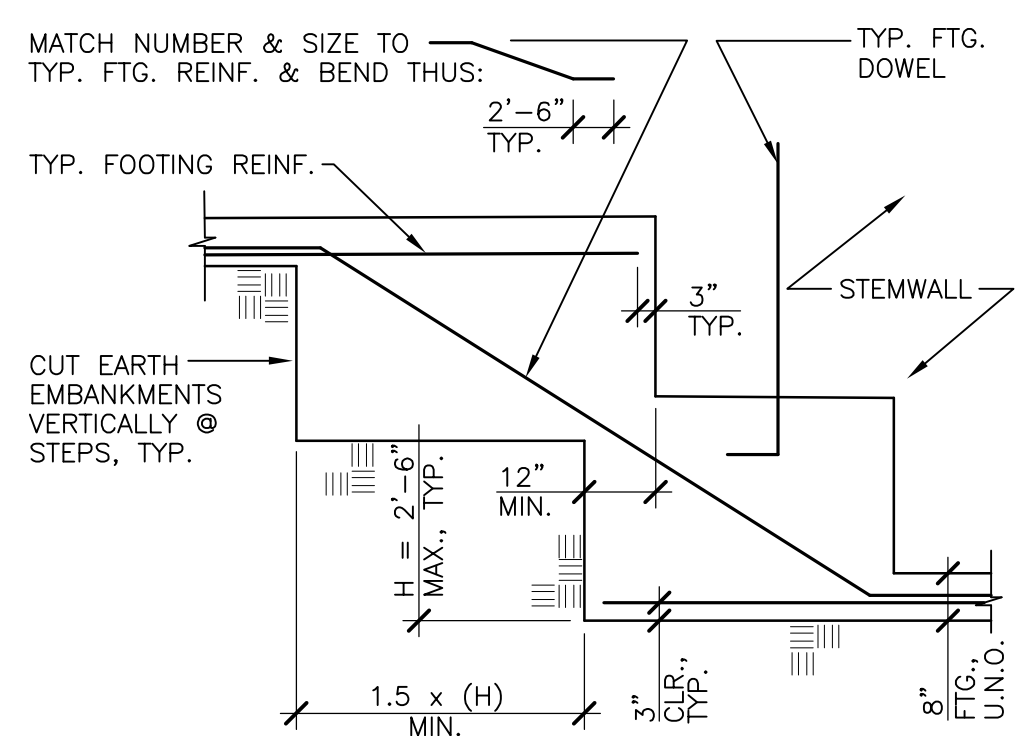


5 TYP. JOINTS IN CONC. SLABS (NOT TO SCALE)



7 TYP. EXTERIOR SLAB EDGE (NOT TO SCALE)

6 TYPICAL STEPPED FOOTING DETAIL (NOT TO SCALE)



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

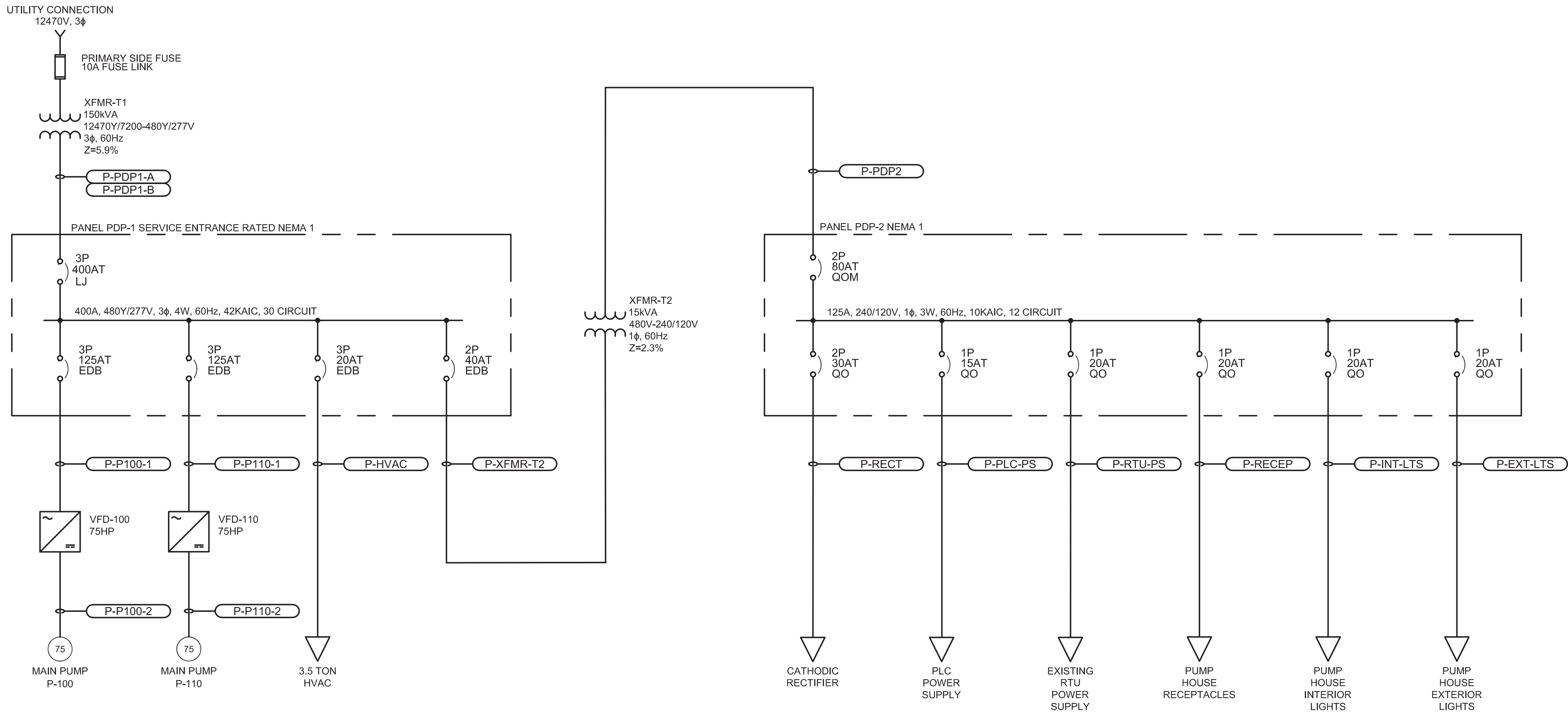
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1800067-E000	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	SHEET TITLE & INDEX
1800067-E001	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC POWER ONE LINE 480VAC & 240VAC
1800067-E002	0	11/7/2019	AZTEC UPPER EAST TANK PUMP HOUSE	ELECTRIC PANEL 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: CRF
						CHECKED BY: CRF
						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
SHEET TITLE & INDEX

JOB NO.	18000-67	SCALE
FILENAME	1800067-E000	NTS
DWG. NO.	1800067-E000	REV. NO.



NOTES:
1.

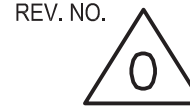


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					CLIENT APPROVAL: ---
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NO	DATE	REVISION	BY	CK.	APPR.



AZTEC UPPER EAST TANK
PUMP HOUSE
ELECTRIC POWER ONE LINE
480VAC & 240VAC

JOB NO.	18000-67	SCALE	NTS
FILENAME	1800067-E001	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
					1	400	3	FT	FT								
					1	400	3	FT	FT								
75 HP WATER PUMP P-100	26,592			M1	1	125	3	1	2	3	20	1	M	4,432			3.5 TON HVAC
		26,592		M1	1	125	3	3	4	3	20	1	M		4,432		
			26,592	M1	1	125	3	5	6	3	20	1	M			4,432	
75 HP WATER PUMP P-110	26,592			M	1	125	3	7	8								BLANK
		26,592		M	1	125	3	9	10								
			26,592	M	1	125	3	11	12								
15 KVA XFMR T-2	4,040			L	1	40	2	13	14								BLANK
		3,020		L	1	40	2	15	16								
	BLANK							17	18								
BLANK								19	20								BLANK
								21	22								
								23	24								
BLANK								25	26								BLANK
								27	28								
								29	30								
* 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 <u>PDP-2</u>				125 AMP BUS				240 / 120 VOLTS				SURFACE MOUNTED			
LOCATION <u>PUMP HOUSE</u>				80 AMP MAIN				1 / 3 PH / WIRE				10,000 A BRACING			
EQUIPMENT DESCRIPTION	PH A (VA)	PH B (VA)	TYPE *	COUNT	BREAKER	POLES	CIR #	CIR #	POLES	BREAKER	COUNT	TYPE *	PH A (VA)	PH B (VA)	EQUIPMENT DESCRIPTION
CATHODIC RECTIFIER	1,920		L	1	30	2	1	2	1	30	1	L	600		P/H EXTERIOR LIGHTS
		1,920	L	1	30	2	3	4	1	30	1	L		300	P/H INTERIOR LIGHTS
P/H RECEPTACLES	1,200		R	1	20	1	5	6	1	20	1	L	800		PLC POWER SUPPLY
EXISTING RTU P/S		800	L	1	20	1	7	8							BLANK
BLANK							9	10							BLANK
BLANK							11	12							BLANK

* LOAD TYPE	CODE	DEMAND	PH A	PH B	NEUTRAL BUS: 100% GROUND BUS: 50% ISO. GROUND BUS: NONE FEEDER SOURCE: TOTAL LOAD: 7.1 KVA TOTAL LOAD: 29 AMPS
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	


PANEL: PDP-2

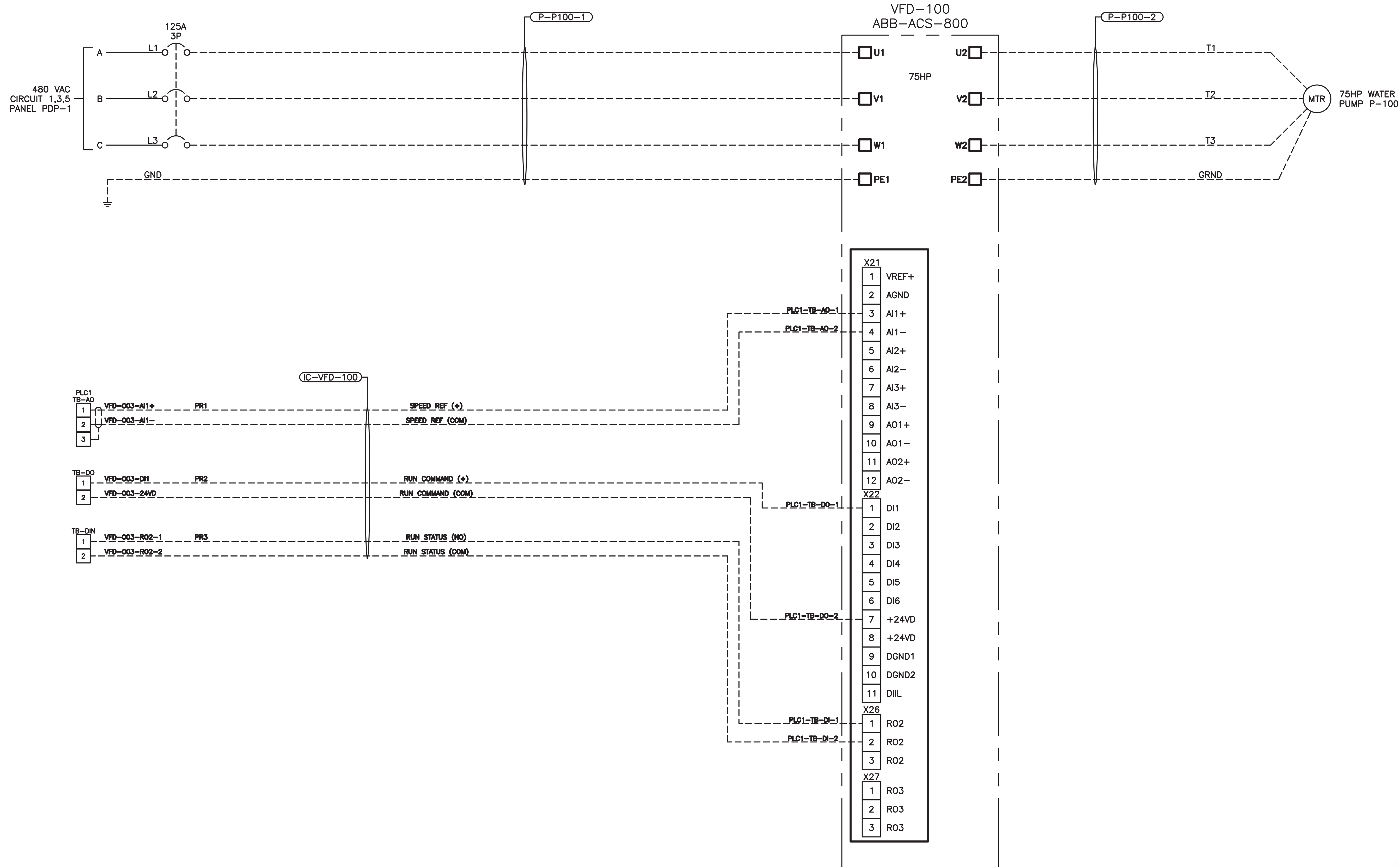
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						CHECKED BY: CRF
						APPROVED BY: <u> </u>
						CLIENT APPROVAL: <u> </u>
0	11/7/2019	ISSUED FOR CONSTRUCTION			CRF	CRF
NO	DATE	REVISION			BY	CK. APPR.



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. 



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					CHECKED BY: CRF
					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 MOTOR SCHEMATIC
480VAC PUMP P-100

JOB NO.	18000-67
FILENAME	1800067-E003
DWG. NO.	1800067-E003

SCALE	NTS
REV. NO.	0



11/7/2019

ANSI D, 22 x 34 in.



SCALE

NTS

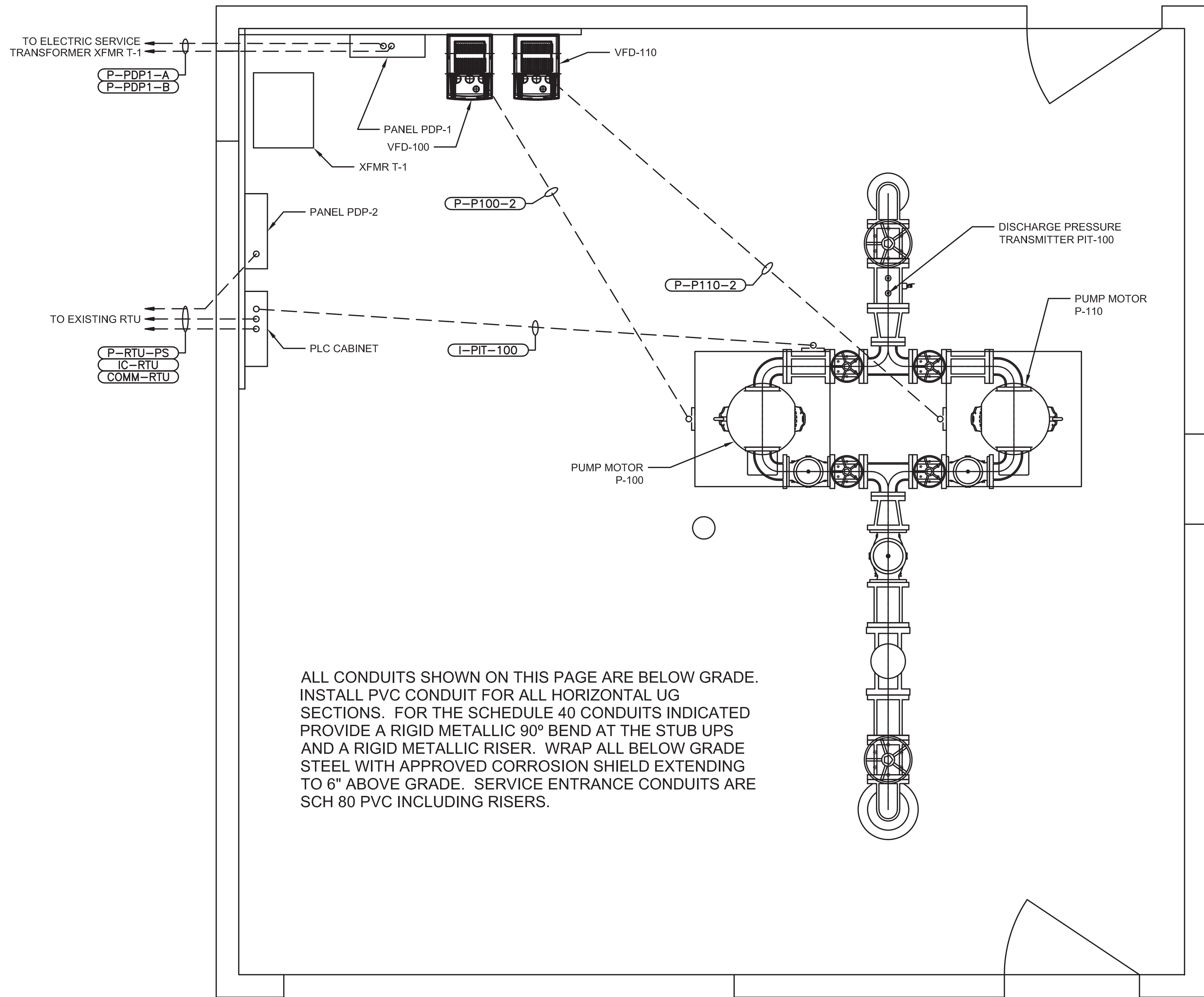
EV NO. 4

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ISI D, 22 x 34 in.

EV. NO. /

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NO	DATE	REVISION	BY	CK.	APPR.



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.



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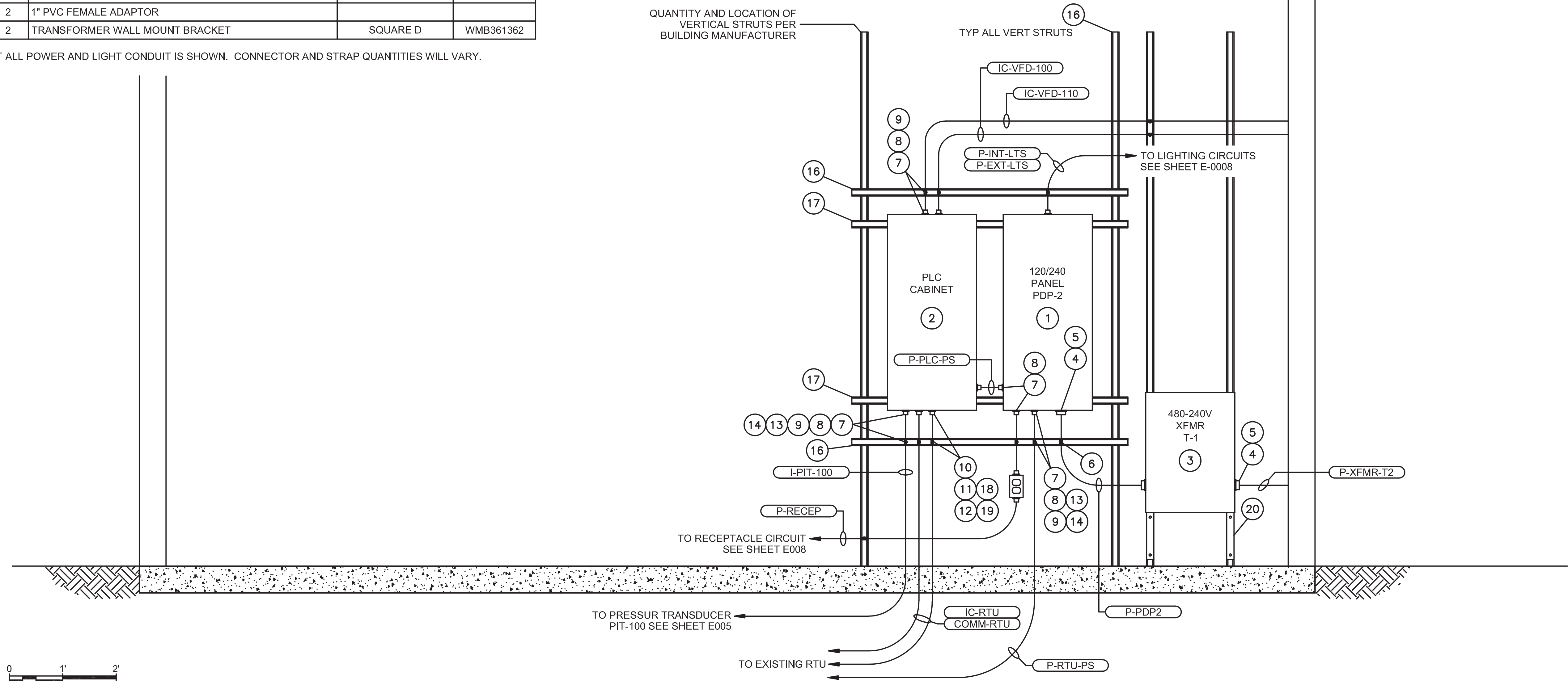
AZTEC UPPER EAST TANK
PUMP HOUSE TOP VIEW
EQUIPMENT LAYOUT AND
CONDUIT/CABLE ROUTING PLAN

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

BILL OF MATERIAL				
NO.	QTY.	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	125A, 1Ø 3W 240V 30 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



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

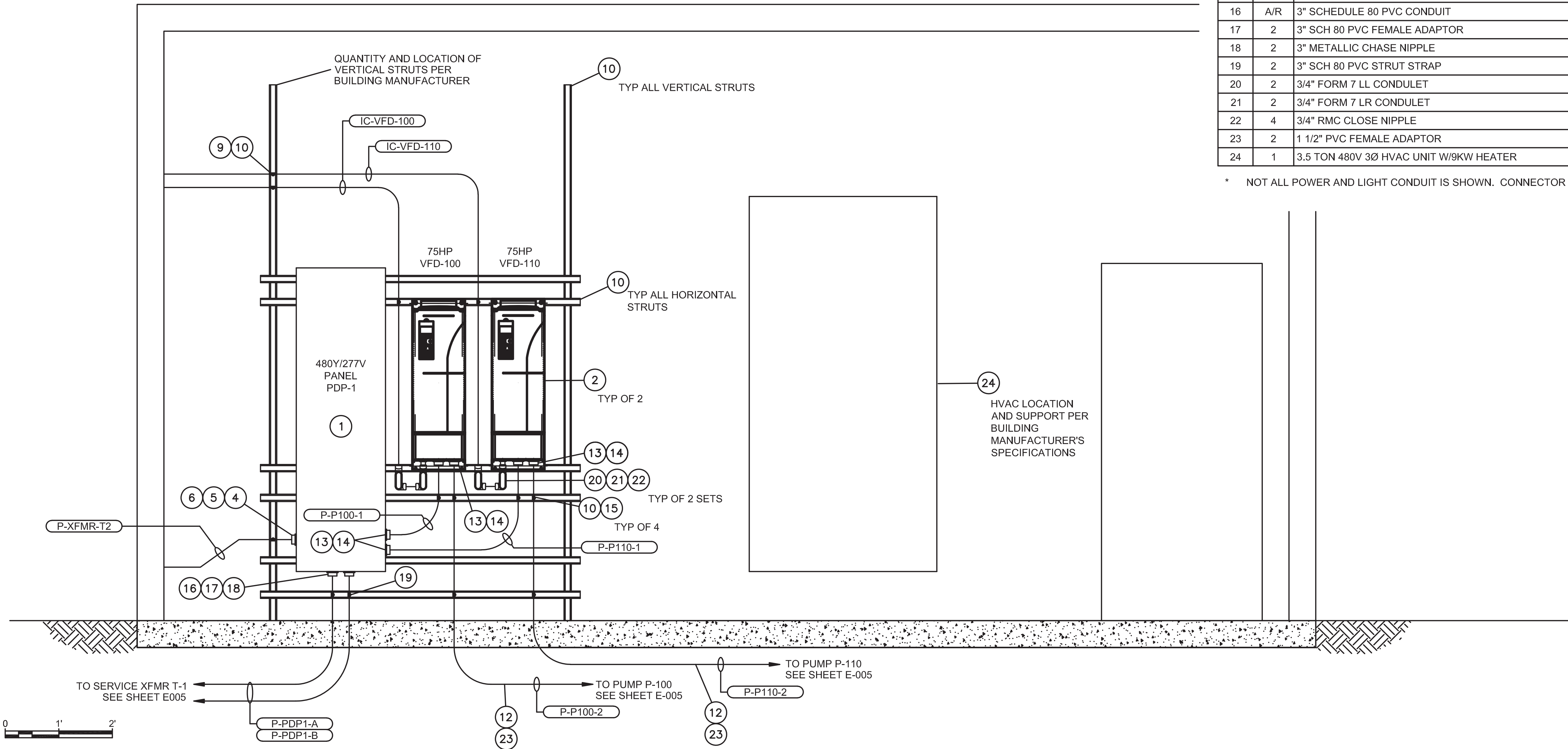
JOB NO.	18000:67	SCALE	1"=1'-0"
FILENAME	1800067-E006	REV. NO.	0
DWG. NO.	1800067-E006		



11/7/2019

ANSI D, 22 x 34 in.

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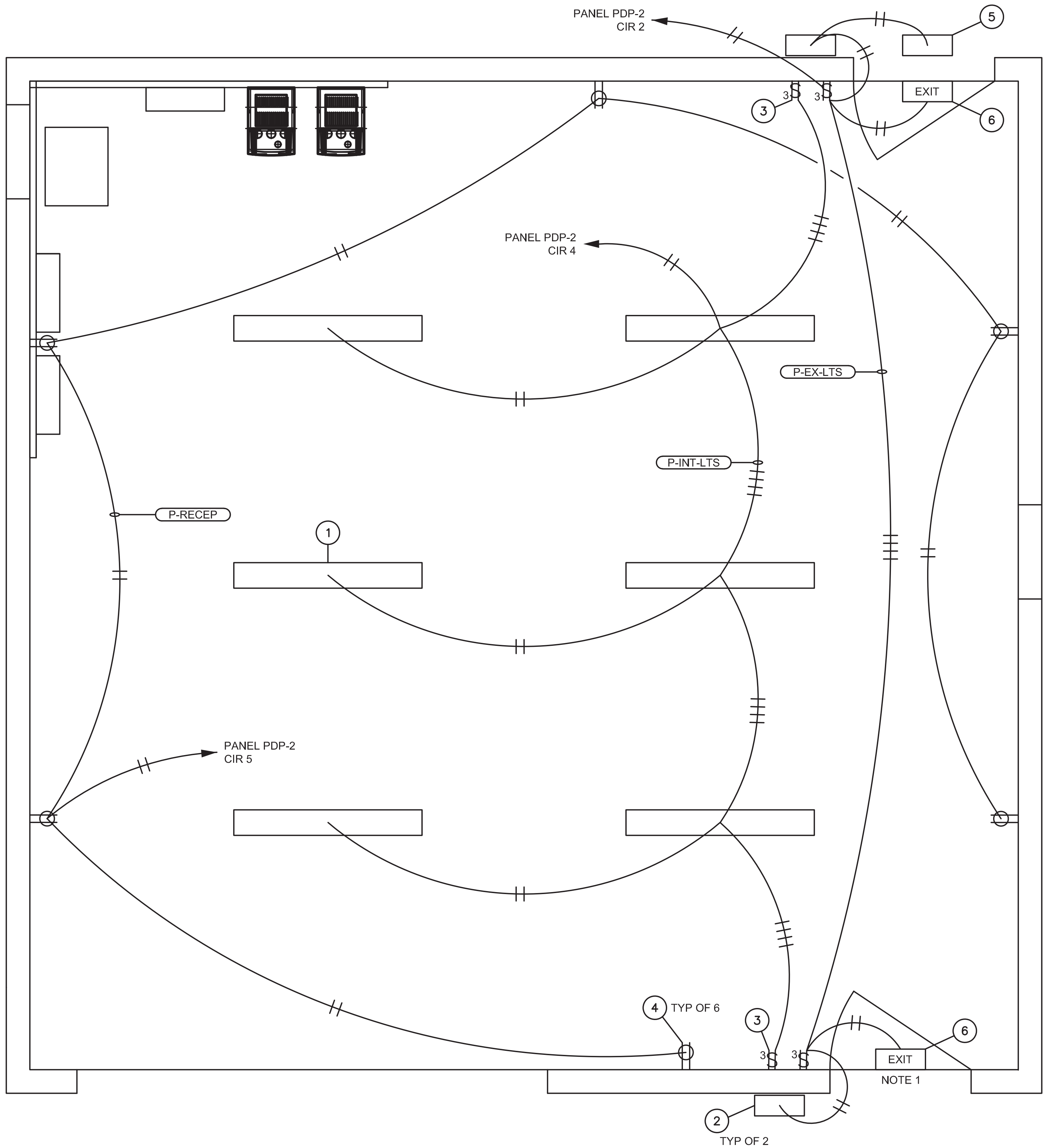
AZTEC UPPER EAST TANK
PUMP HOUSE INTERIOR
ELEVATION AND EQUIPMENT
BILL OF MATERIALS

JOB NO.	18000:67	SCALE	1"=1'-0"
FILENAME	1800067-E007	REV. NO.	0
DWG. NO.	1800067-E007		



11/7/2019

ANSI D, 22 x 34 in.



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	WPMLED
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		



11/7/2019

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:

1. GC = GROUNDED CONDUCTOR (NEUTRAL), EGC = EQUIPMENT GROUNDING CONDUCTOR

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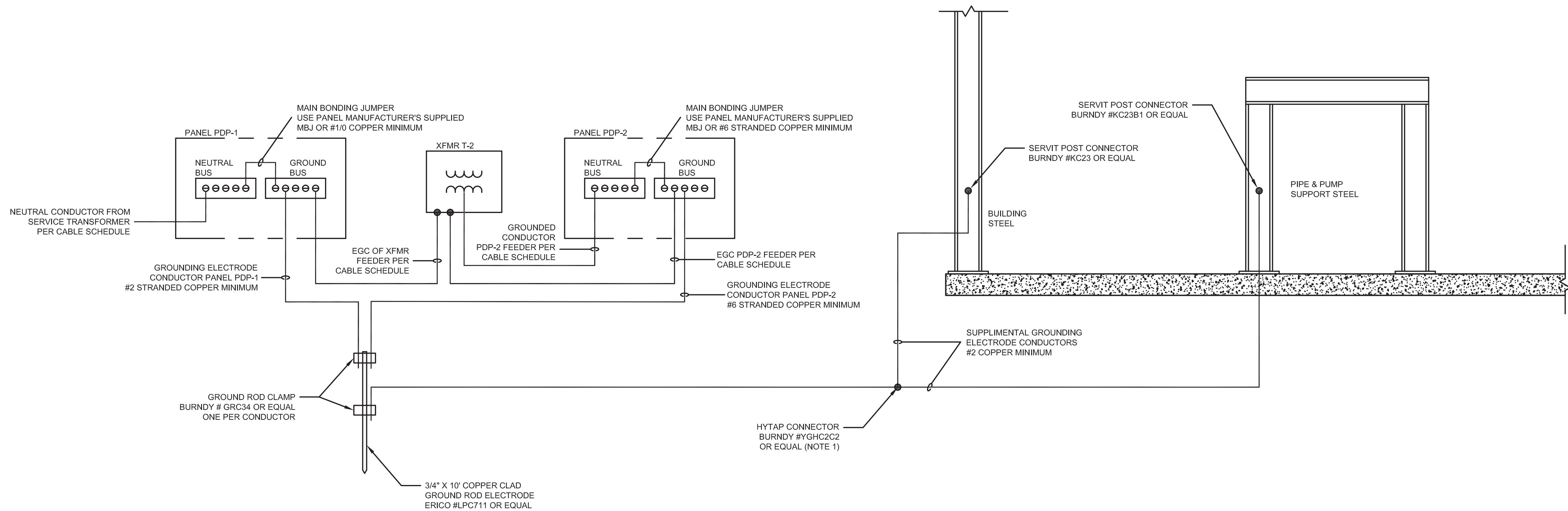


AZTEC UPPER EAST TANK
PUMP HOUSE
ELECTRIC CONDUIT & CABLE
SCHEDULE

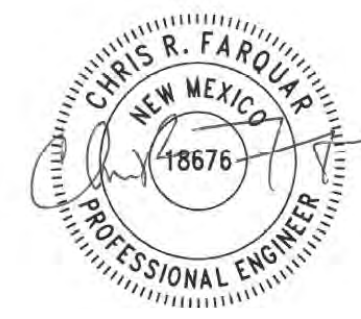
JOB NO.	18000-67	SCALE	
FILENAME	1800067-E009		NTS
DWG. NO.	1800067-E009	REV. NO.	0



11/7/2019



- 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**

FILENAME **1800067-E010**

DWG. NO.

1800067-E010

SCALE

NTS

REV. NO.

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