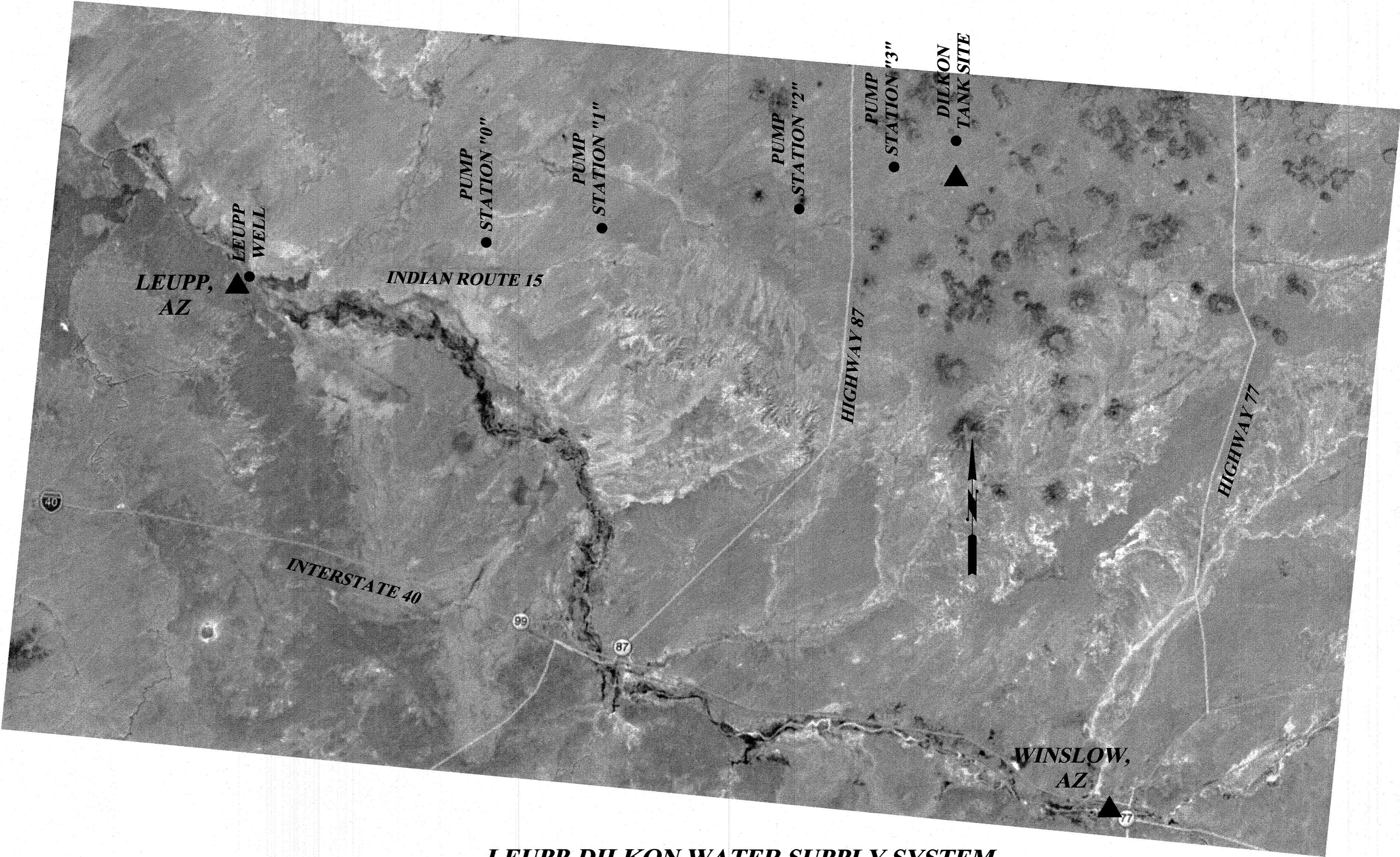


INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
LEUPP-DILKON WATER SUPPLY SYSTEM

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PIPING PLAN AND ELEVATIONS	1	6-4 TO 6-8
STATION ELEVATIONS	1	6-9
ROOF JOIST LAYOUT AND ELEVATION	1	6-10
STATION ELECTRICAL	1	6E-1 TO 6E-3
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LEUPP-DILKON WATER SUPPLY SYSTEM  
WELL, TANK, AND PUMP STATION LOCATIONS  
VICINITY MAP  
SCALE: 1" = 20,000'

*Marc DePauli*  
34329  
MARC A.  
DEPAULI  
Date Signed 12/15/21  
Professional Engineer  
Arizona U.S.A.

# GENERAL UTILITY CONSTRUCTION NOTES:

1. WORKMANSHIP AND MATERIALS FOR ITEMS OF WORK CONTAINED HEREIN SHALL CONFORM TO THE SPECIFICATIONS HEREIN AND IN THE CONTRACT DOCUMENTS. THE LATEST EDITION OF IHS STANDARDS AND THE NTUA SPECIFICATIONS FOR WATER FACILITY CONSTRUCTION SHALL ALSO APPLY.

2. REMOVAL OF STRUCTURES AND OBSTRUCTIONS INCLUDING ASPHALT PAVEMENT, CONCRETE PAVEMENT, CULVERTS, TREES, SHRUBS, SIDEWALK, CURB & GUTTER, ROCK AND OTHER MISCELLANEOUS ITEMS THAT NEED TO BE REMOVED OR DISPOSED OF SHALL BE TAKEN TO DESIGNATED AREAS AND/OR AN APPROVED LANDFILL. IN ACCORDANCE WITH PROVISIONS OF THE NAVAJO NATION AND THE STATE OF ARIZONA, PROVIDED HOWEVER, THAT RECYCLABLE MATERIAL MAY BE TAKEN TO APPROPRIATE COMPANIES.

3. WATER FOR PIPELINE EARTHWORK CONSTRUCTION AND WATER FOR FILLING, PRESSURE TESTING AND BACTERIOLOGICAL TESTING OF WATERLINE MAY BE TAKEN FROM AN APPROVED CONNECTION TO THE EXISTING LEUPP OR DILKON WATER SYSTEM AT A DESIGNATED LOCATION UTILIZING STATIC OR PUMPED HEAD AVAILABLE PROVIDED PROPER APPARATUS FOR CROSS-CONNECTION PREVENTION AND METERING IS IN PLACE. CONTRACTOR TO USE WATER FLUSHED FROM NEW LINE TO THE EXTENT POSSIBLE FOR PIPELINE CONSTRUCTION. WATER HAULING SHALL BE IN CLEAN, POTABLE WATER TANKERS. CONTRACTOR TO COORDINATE WITH NTUA WATER DEPARTMENT AS REQUIRED TO OBTAIN WATER AND ACCESS WATER FACILITIES. CONTRACTOR TO PROVIDE ALL MATERIALS, FITTINGS AND EQUIPMENT REQUIRED TO FACILITATE PIPELINE TESTING.

4. QUALITY CONTROL TESTING FOR PROJECT MATERIALS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB AS HIRED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS IN ADVANCE WHEN CONCRETE PLACEMENTS ARE SCHEDULED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE TESTING LAB WHEN COMPACTION TESTS ARE NEEDED AND WHEN CONCRETE PLACEMENTS ARE GOING TO BE MADE. THE CONTRACTOR SHALL PROVIDE THE TESTING LAB ACCESS AT ANY TIME FOR TESTING AT THE CONSTRUCTION SITE. THE CONTRACTOR SHALL ASSIST THE TESTING LAB AS REQUIRED TO OBTAIN MATERIAL SAMPLES.

5. CONCRETE FOR THIS PROJECT SHALL BE 4000 PSI (28 DAY) CONCRETE WITH 4 1/2 - 7 1/2% ENTRAINED AIR. CONCRETE TO BE PLACED WITH NO MORE THAN 4-INCH SLUMP WITH LIMITED WATER TO BE USED TO FACILITATE FINISHING. ALL REINFORCEMENT FOR CAST IN PLACE CONCRETE SHALL BE GRADE 40 OR 60 DEFORMED BARS AS SPECIFIED PER ASTM A615. CEMENT TO BE TYPE II. SEE THE CONTRACT DOCUMENTS FOR ADDITIONAL CONCRETE REQUIREMENTS.

6. THE CONTRACTOR SHOULD BE AWARE THAT NO CONSTRUCTION SHALL COMMENCE UNTIL ALL UTILITY LOCATIONS ARE MARKED. THE CONTRACTOR SHOULD EXPECT THAT SOME SHIFTS IN ALIGNMENT WILL BE MADE TO AVOID EXISTING UTILITIES AND MEET PROXIMITY REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE EXPLORATORY EXCAVATION AT LOCATIONS SHOWN ON THE PROJECT DRAWINGS OR AS REQUIRED FOR ALIGNMENT CHANGES.

7. CONSTRUCTION STAKING: THE ENGINEER WILL PROVIDE THE FOLLOWING CONSTRUCTION STAKING:

A. WATERLINES - CENTERLINE OR OFFSET STAKES AT APPROX. 200-FEET, P.I.S AND APPURTENANCES, CONTROL FOR GRADE STAKES WHERE GRADE IS CALLED FOR.

B. SITE GRADING - STAKES FOR MAJOR STRUCTURES WITH CUTS AND FILLS. BASIC SITE CONTROL AND BENCH MARK.

OCCASIONAL STAKE REPLACEMENT REQUIRED WHEN STAKES ARE UNAVOIDABLE LOST DUE TO CONSTRUCTION WILL BE REPLACED BY THE ENGINEER, PROVIDED HOWEVER, THAT THE COST OF STAKE REPLACEMENT DUE TO CARELESSNESS OR INATTENTIVE CONSTRUCTION AROUND SURVEY CONTROL WILL BE DEDUCTED FROM PAYMENT TO THE CONTRACTOR. RANDOM BENCH MARKS WILL BE ESTABLISHED FOR USE BY THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR BLUETOP STAKING FOR SUBGRADE AND BASE COURSE. DETAILED MEASUREMENTS AND ELEVATIONS FOR STRUCTURES, DRAINAGE FLOW LINES AND PIPELINES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH OCCASIONAL CHECKS BY THE ENGINEER. MEASUREMENT FOR DETERMINATION OF QUANTITIES SHALL BE ACCOMPLISHED MUTUALLY BY THE ENGINEER AND CONTRACTOR.

8. BASE COURSE FOR STREET CONSTRUCTION SHALL BE ADOT TYPE I. GRAVEL (BASE COURSE) FOR DETOURS OR GRAVEL SURFACED ROADS AND DRIVEWAYS TO BE TYPE I OR TYPE II.

9. ALL ABANDONED LINES SHALL BE PLUGGED WITH CONCRETE (OR OTHER CEMENT BASED PRODUCTS) OR M.J. CAPS AT TIE-IN LOCATIONS UNLESS OTHERWISE NOTED. REMOVE OLD VALVES WHERE CALLED FOR, OTHERWISE REMOVE VALVE CANS & COMPACT BACKFILL OR INSTALL FLOWABLE FILL WITH OLD VALVE TO BE CLOSED AND REMAIN IN PLACE. PROVIDE 10-FEET MINIMUM HORIZONTAL SEPARATION OF WATER AND SEWER LINES.

10. SUBMITTALS ARE REQUIRED FOR ALL MATERIALS AND EQUIPMENT PROPOSED FOR THE PROJECT WITH APPROVAL REQUIRED BY NTUA AND OR IHS. SCHEDULES FOR MANHOLE BARRELS, CONES AND RIMS SHALL BE PROVIDED.

11. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY ABANDONED MINE EVIDENCE THAT MAY AFFECT PIPELINE CONSTRUCTION OR OF ANY CULTURAL ARTIFACTS OR REMNANTS ENCOUNTERED (SEE CONTRACT DOCUMENTS).

12. EXISTING UTILITIES: EXISTING UTILITIES SHOWN ARE FROM UTILITY COMPANY MAPS, EVIDENCE ON THE GROUND AND CONVERSATION WITH UTILITY COMPANY OFFICIALS. THE EXACT LOCATION, DEPTH AND SIZE OF SOME OF THE LINES ARE UNKNOWN. CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UTILITIES PRIOR TO TRENCHING. UTILITIES THAT ARE DAMAGED OR CUT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST. THE CONTRACTOR SHALL CALL 811 AND NTUA AT 928-729-5721 FOR "LOCATES" ON ALL UTILITIES PRIOR TO CONSTRUCTION.

13. WATERLINE PIPE TO BE INSTALLED WITH A MINIMUM COVER OF 4.0-FEET UNLESS OTHERWISE DESIGNATED. THE WATERLINE GRADES AND ELEVATIONS SHOWN ON THE PROJECT PROFILES ARE INTENDED TO GIVE THE CONTRACTOR A GENERAL IDEA OF SLOPES THAT WILL BE ENCOUNTERED IN THE INSTALLATION OF THE PIPE. THE DEPTHS SHOWN ON THE PROFILES SHOULD BE CONSIDERED AS MINIMUMS, ESPECIALLY UNDER DRAINAGE DITCHES AND ARROYOS. WATERLINE AT AIR RELEASE SHALL BE INSTALLED WITH 5-FEET OF MINIMUM COVER TO PROVIDE ADEQUATE CLEARANCE FOR AIR RELEASE VALVE, PIPING, AND APPURTENANCES. IN FLAT TERRAIN (LESS THAN 1% SLOPE) THE CONTRACTOR WILL BE EXPECTED TO MAINTAIN GRADES NEAR TO THOSE SHOWN ON THE PROJECT DRAWINGS. DEVIATIONS FROM THE GRADES DEPICTED COULD RESULT IN AIR POCKETS OR INADEQUATE PIPE COVER. PIPE IS TO GRADE UPHILL IN ALL LOCATIONS TO EITHER AN AIR RELEASE VALVE, TANK OR A RESERVOIR.
- DEPTH INCREASES MAY BE PERMITTED IN SOME LOCATIONS (NOT TO EXCEED 10-FEET IN COVER UNLESS APPROVED BY THE ENGINEER) TO ELIMINATE THE NEED FOR "CALLED FOR" FITTINGS. THE LOCATION OF VERTICAL POINTS OF INTERSECTION (PVI's) WHERE NO FITTINGS ARE CALLED FOR, ARE APPROXIMATE, THE REQUIRED DEFLECTION CAN BE ACHIEVED BY DEFLECTION OF ONE OR MORE NEARBY STANDARD JOINTS.
14. THE CONTRACTOR SHALL NOT TO EXCEED THE PIPE MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION, HORIZONTALLY OR VERTICALLY. THE CONTRACTOR SHALL DEVISE AND DEMONSTRATE A METHOD TO DETERMINE PIPE DEFLECTION AT A JOINT. PIPE SUBMITTALS ARE TO INCLUDE THE MANUFACTURERS MAXIMUM RECOMMENDED JOINT DEFLECTION.

15. PROPOSED REVISIONS BY THE CONTRACTOR OF VERTICAL PIPELINE ALIGNMENT IN SPECIFIC AREAS WILL REQUIRE A "LAYING SCHEDULE" FOR APPROVAL OF THAT AREA. LAYING SCHEDULE TO INCLUDE PLAN & PROFILE, WITH STATIONS, ELEVATIONS, GRADES, DEFLECTIONS, JOINT RESTRAINT AND OTHER INFORMATION REQUIRED TO DETERMINE HOW PIPELINE DESIGN IS TO BE IMPLEMENTED.

16. ALL PIPE BEDDING SHALL BE AN IMPORTED GRANULAR MATERIAL COMPACTED TO 95% S.P. TRENCH BACKFILL ABOVE BEDDING SHALL BE GRANULAR MATERIAL IN SPECIAL LOCATIONS WHERE CALLED FOR IN PROJECT DOCUMENTS. GRANULAR MATERIAL MAY BE TAKEN FROM ANY SUITABLE SOURCE. THE MATERIAL SHALL BE SANDY IN NATURE, FRIABLE WITH NO CLODS OR CLAY BALLS AND EXHIBIT MINIMAL "PUMPING" CHARACTERISTICS WHEN COMPACTED AT MOISTURE CONTENT SLIGHTLY BELOW OPTIMUM. IN ADDITION, MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING	ACCEPTABLE SOURCES ON PAST PROJECTS INCLUDE THE FOLLOWING:
1"	100	1. CRUSHER FINES FROM LOCAL AGGREGATE COMPANIES.
NO. 4	40 - 100	2. CONFORMING NATIVE MATERIAL APPROVED BY PROJECT ENGINEER
NO. 200	LESS THAN 35	3. LOCAL QUARRY OR STOCKPILE.
PI < 12		

17. THE USE OF "WATER FLOODING" OR "WATER JETTING" TO ACHIEVE COMPACTION OF PIPE BEDDING OR BACKFILL WILL NOT BE PERMITTED. BACKFILL TO BE COMPLETED WITHIN 100-FEET OF THE END OF PIPE DURING LINE CONSTRUCTION AT ALL TIMES AND TO END OF COMPLETED PIPE AT THE COMPLETION OF EACH WORKDAY.

18. FITTINGS TO BE MJ TYPE WITH RESTRAINING GLANDS UNLESS OTHERWISE NOTED. ALL BOLTED FITTINGS, GLANDS, FLANGES & DUCTILE IRON PIPE TO BE WRAPPED OR SLEEVED WITH 2 PROTECTIVE LAYERS CONSISTING OF 8 MIL AWWA C105 POLYETHYLENE & V-BIO W/ STAGGERED JOINTS. THE POTENTIAL PUNCTURING OF WRAP BY RESTRAINING BOLTS AND GLANDS TO BE MITIGATED BY INSTALLING STYROFOAM OR OTHER MATERIAL ADJACENT TO BOLTS, TAPED IN PLACE, PRIOR TO INSTALLING PROTECTIVE WRAP. CONTRACTOR TO USE CAUTION WHEN POURING THRUST BLOCKS TO INSURE THAT MJ BOLTS ARE NOT COVERED WITH CONCRETE. WRAPPED PIPE TO BE CAREFULLY LIFTED INTO PLACE WITH SLINGS THAT WILL NOT DAMAGE THE WRAP (CHAINS NOT PERMITTED). LATERAL COMPACTION SHALL PROCEED IN A CAREFUL, CONTROLLED MANNER WHILE PROTECTING THE WRAP. WRAP TO BE HELD REASONABLY TIGHT AGAINST THE PIPE W/ TAPE OR OTHER APPROVED MEANS.

19. GATE VALVES TO BE AWWA RESILIENT WEDGE TYPE WITH EPOXY COATING INSIDE AND OUT. CHECK VALVES AND AIR RELEASE VALVES TO BE AS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS.

20. PIPELINE MEASUREMENT AND BASIS OF PAYMENT - ITEMS OF WORK CONSIST OF FURNISHING ALL MATERIALS, PLANT, EQUIPMENT AND LABOR IN INSTALLING PIPE OF THE DIAMETER AND MATERIAL SPECIFIED, COMPLETE WITH MAIN LINE FITTINGS CALLED FOR, APPURTENANCES AND TRENCHING, BEDDING AND BACKFILL. THE ITEMS DO NOT INCLUDE PAVEMENT REMOVAL AND REPLACEMENT OR ROCK EXCAVATION. VERTICAL MEASUREMENT WILL BE BY THE LINEAR FOOT ALONG THE CENTERLINE OF THE PIPE THROUGH VALVES, MANHOLES AND FITTINGS WITHOUT CORRECTION FOR SLOPE. PAYMENT WILL BE FOR THE ACTUAL LINEAR FEET OF PIPE INSTALLED, COMPLETE AND IN PLACE, AT THE CONTRACT UNIT PRICE BID FOR THE ITEM.

21. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES AS DESCRIBED IN THE USDOT/FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES ON ALL PARTS OF THE PROJECT UNDER CONSTRUCTION. THE DEVICES SHALL INCLUDE, BUT NOT BE LIMITED TO, TYPE 1 BARRICADES TYPE 2 BARRICADES, CONES, DRUMS, WARNING SIGNS, DETOUR SIGNS, NIGHT TIME FLASHERS AND PORTABLE FLASHERS. THE DEVICES SHALL BE MAINTAINED, IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN AND PROJECT DOCUMENTS, SEVEN (7) DAYS A WEEK FOR THE DURATION OF THE PROJECT. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN DURING THE PROGRESSION OF WORK, TO ENSURE THAT LIFE AND PROPERTY ARE PROTECTED AT ALL TIMES.

22. PROPERTY CORNERS, BENCHMARKS AND CONTROL POINTS TO BE PROTECTED AT ALL TIMES. LOST OR DAMAGED POINTS DUE TO NEGLIGENCE SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

23. WATERLINE TIE-INS TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE PROJECT DRAWINGS AND SHALL INCLUDE ALL PIPE, SLEEVES, SPECIALS AND APPURTENANCES EXCEPT VALVES REQUIRED TO COMPLETE THE TIE-IN. FITTINGS AND PIPE INTERIORS TO BE WIPED DOWN WITH CHLORINE SOLUTION (50 PPM) AT WATER TIE-INS.

24. DUCTILE IRON PIPE WATERLINES SHALL BE PRESSURE TESTED AT 250 PSI AT THE LOW END OF TEST SEGMENTS FOR PIPELINES. TEST PRESSURE FOR PVC TO BE 200 PSI. THE LINE SEGMENT BEING TESTED MAY EXTEND UPHILL UNTIL RESULTING TEST PRESSURE IS NO LESS THAN 125 PSI. THE MAXIMUM LENGTH FOR A PRESSURE SEGMENT IS 4000-FEET

25. ALL PIPING SHALL BE SEALED AT WORK DAYS END TO PREVENT THE ENTRANCE OF INSECTS, MAMMALS AND REPTILES. CLOSURE SHALL ALSO BE SUCH AS TO PREVENT VANDALISM AND FLOOD DAMAGE. CLOSURE TO BE COVERED WITH EXCAVATED MATERIAL SO THAT THE END OF PIPE AND METHOD OF CLOSURE IS NOT VISIBLE. ADDITIONAL CLOSURE EFFORTS TO BE TAKEN, AS REQUIRED OR DIRECTED, ON WEEK ENDS AND OTHER PERIODS WHILE PIPELINE WORK IS SUSPENDED.

26. CONTRACTOR SHALL DEVELOP, SECURE APPROVAL OF, IMPLEMENT AND MAINTAIN A STORM WATER POLLUTION PREVENTION PLAN (SWPPP).

27. CONTRACTOR SHALL TAKE PRECAUTIONS AS REQUIRED TO PREVENT DAMAGE TO THE ENVIRONMENT ADJACENT TO CONSTRUCTION. CONTRACTOR TO REMOVE ONLY THE TREES, SHRUBS, GROUND COVER AND ROCK AS ABSOLUTELY NECESSARY TO COMPLETE THE PROJECT. TREES, EXCESS ROCK AND SPOIL, SHALL BE REMOVED AND PROPERLY DISPOSED OF, PROVIDED HOWEVER, THAT EXCAVATED ROCK MAY BE USED AS EROSION CONTROL AS DIRECTED. STAGING AREAS TO BE LIMITED TO AREAS WHERE CONSTRUCTION IS PLANNED, CONSTRUCTION RW'S OR AREAS PROPERLY SECURED FROM LANDOWNERS. ALL AREAS AFFECTED BY CONSTRUCTION TO BE PROPERLY CLEANED, GRADED AND DRESSED UPON COMPLETION. RE-SEEDING WILL BE REQUIRED IN SOME AREAS PER THE PROJECT SWPPP. CONTOUR BERMS WILL BE REQUIRED AS DIRECTED TO PREVENT RUNOFF FROM TRAVELING ALONG PIPELINE TRENCH PER THE THE PROJECT SWPPP.
- ## PARTIAL LIST OF INCIDENTALS:
1. INCIDENTAL CONSTRUCTION STAKING BY CONSTRUCTOR - BLUE TOP STAKING FOR SUBGRADE AND BASE COURSE. CONTROL STAKES AS REQUIRED TO PLACE SAW CUTS IN CONCRETE PAVEMENT. MISCELLANEOUS STAKES AND MEASUREMENT FOR DETAILED CONSTRUCTION OF STRUCTURES AND APPURTENANCES.

2. STORM WATER POLLUTION PREVENTION - PERMITS, NOTICES, PLANS, IMPLEMENTATION AND MAINTENANCE OF PLANS UTILIZING EROSION AND SEDIMENT CONTROL DEVICES PROVIDED SHALL BE CARRIED OUT FOR ALL PORTIONS OF THIS PROJECT.

3. LANDSCAPE - REPLACE SHRUBS, TREES, RAILROAD TIES, DECORATIVE GRAVEL AND PLAYGROUND EQUIPMENT AS REQUIRED.

4. TRAFFIC CONTROL - IMPLEMENTATION AND MAINTENANCE OF TRAFFIC CONTROL PLAN.

5. BASE COURSE RAISED TO PAVEMENT LEVEL IN DRIVEWAYS AND STREETS FOR PUBLIC TRAVEL PRIOR TO PLACEMENT OF FINAL SURFACING

6. LOCAL STANDBY PERSONNEL TO HANDLE 24 HOUR (INCLUDING WEEKENDS) EMERGENCIES.

7. PROPER DISPOSAL OF ALL TRASH, DEBRIS, AND WASTE INCLUDING HAULS TO DISPOSAL SITES AND GRADING.

8. ROCK & OTHER EXCAVATION & LATERAL BACKFILL FOR REINFORCED CONCRETE STRUCTURES.

9. MINOR GRADING, DIKES AND SWALES CALLED FOR ALONG WATER LINE INCLUDING DRESSING AND CLEANUP.

10. PRESSURE TESTING, DISINFECTION, BACTERIOLOGICAL TESTING, FLUSHING, COORDINATION WITH THE NTUA NOTIFICATION OF THE PUBLIC FOR WATER LINE WORK. MEANS OF FLUSHING OTHER THAN APPARATUS AND LOCATIONS CALLED FOR.

11. WATER HAULING AS REQUIRED FOR CONSTRUCTION AND DUST CONTROL.

12. EXCAVATION AND POTHOLING INCLUDING BACKFILLING FOR UTILITIES & STRUCTURES FOR LOCATION & GRADE CHECKS AT PROPOSED WATER LINE CROSSINGS AS SHOWN ON PROJECT DRAWINGS AND AS MARKED BY UTILITY COMPANIES.

13. PROTECTION & MAINTENANCE OF PRIVATE & PUBLIC PROPERTY DURING STORMS & RUNOFF THAT MAY BE MORE VULNERABLE TO DAMAGE BECAUSE OF CONSTRUCTION.

14. MEASUREMENTS FOR PAY QUANTITIES.

15. REMOVE AND RE-INSTALL EXISTING TRAFFIC SIGNS, GUARD RAILS, FENCES AND MAIL BOXES..

16. PIPELINE ALIGNMENT ADJUSTMENTS DUE TO EXISTING UTILITIES AND STRUCTURES OR TO MAINTAIN POSITIVE SLOPE WITH MINIMUM BURY DEPTH.

17. PROTECTION OF HORIZONTAL AND VERTICAL SURVEY CONTROL MONUMENTS.

18. MOBILIZATION FOR ALL PROJECT LOTS UNLESS OTHERWISE NOTED.

19. HAULING FOR PIPE BEDDING AND BACKFILL.

20. EXISTING FENCE REMOVAL AND REPLACEMENT.

21. THE MAINTENANCE OF PROXIMITY REQUIREMENTS & THE REQUIRED CUTTING OF PIPE TO PROVIDE REQUIRED JOINT DISTANCE FROM SEWER LINES AS SHOWN ON MISC. DETAIL SHEETS.

22. BARRIER WALLS AT THE HEAD OF STEEP SLOPES.

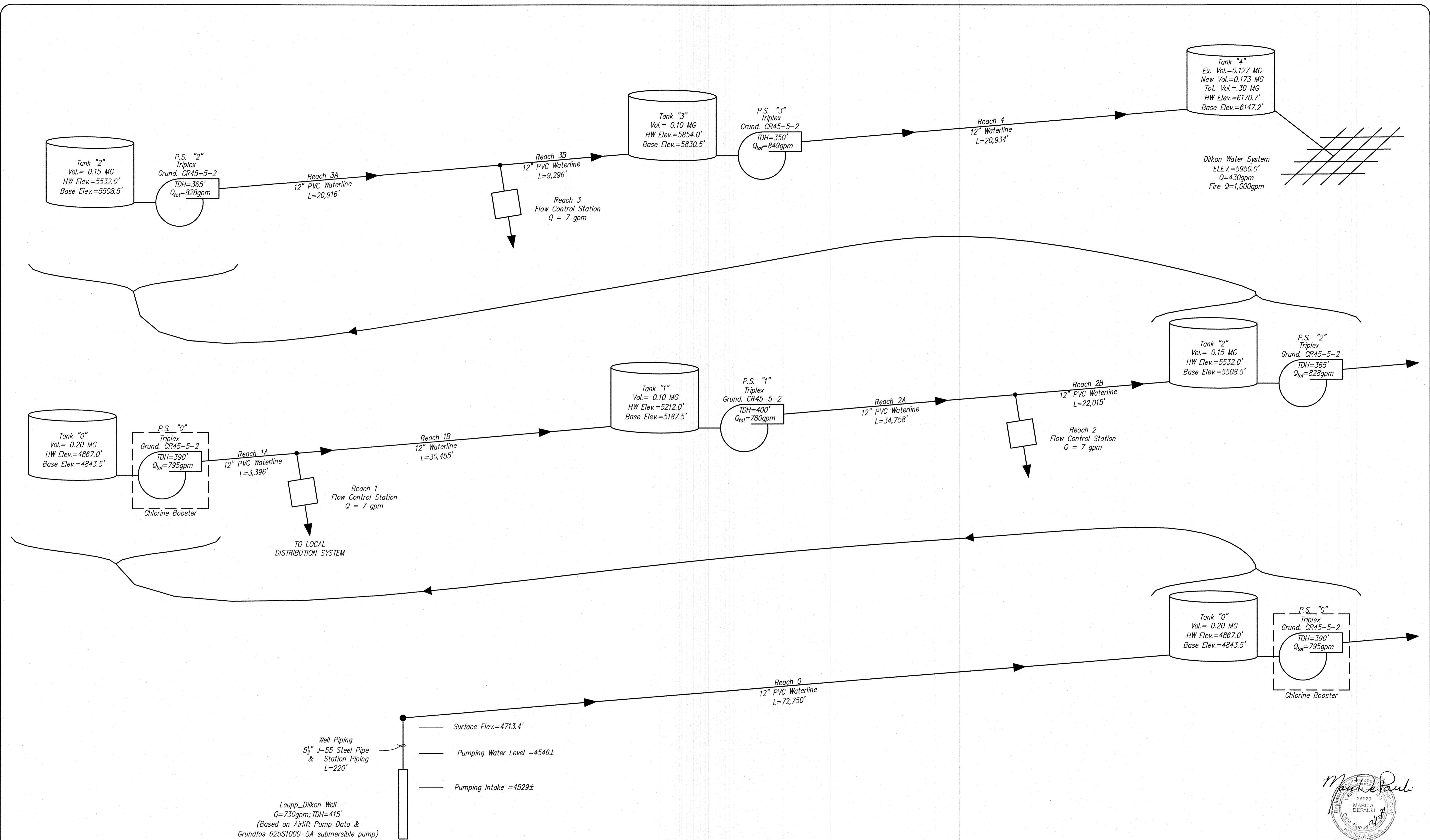
23. NNDOT AND OR ADOT GENERAL, LIABILITY, ETC. INSURANCE REQUIREMENTS FOR WORK WITHIN NMDOT RIGHTS OF WAY.

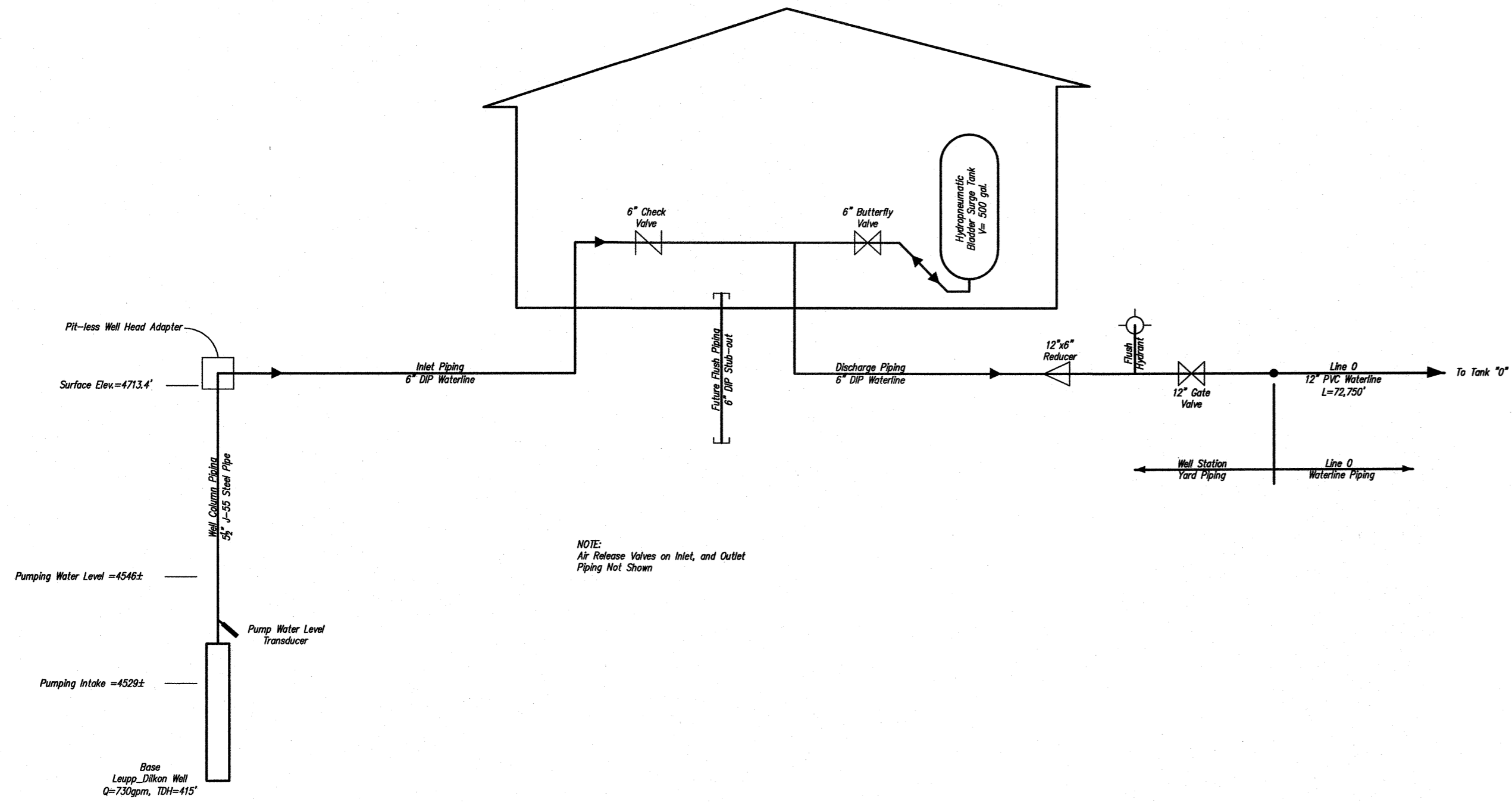
24. PROJECT SCHEDULE, SUBMITTALS, SHOP DRAWINGS, "LAYING SCHEDULES" AND CUT SHEETS.

25. REMOVAL AND REPLACEMENT OF EXISTING CULVERTS (CMP AND RCP)
- ## ABBREVIATIONS
- |             |                                   |            |                                |
|-------------|-----------------------------------|------------|--------------------------------|
| PVC         | POLYVINYLCHLORIDE PLASTIC PIPE    | R/W, ROW   | RIGHTS-OF-WAY                  |
| G.R.P.      | GLASS REINFORCED PLASTIC          | CL         | PIPE PRESSURE CLASS            |
| D.I.P.      | DUCTILE IRON PIPE                 | RR         | RAILROAD                       |
| G.V.        | GATE VALVE                        | PI         | POINT-OF-INTERSECTION          |
| MH          | MANHOLE                           | PVI        | POINT-OF-VERTICAL-INTERSECTION |
| FH          | FIRE HYDRANT                      | ARV        | AIR RELEASE VALVE              |
| S.P.        | STANDARD PROCTOR                  | HOR        | HORIZONTAL                     |
| GALV, G.I.. | GALVANIZED MATERIAL               | FLG        | FLANGE                         |
| ARS         | AIR RELEASE STATION (TYPE 1 OR 2) | NTS        | NOT TO SCALE                   |
| BF          | BUTTERFLY VALVE                   | F.G., P.G. | FINISH GRADE, PROFILE GRADE    |
| MJ          | MECHANICAL JOINT                  |            |                                |
- ## SURVEY NOTES:
1. COORDINATES SHOWN ARE REFERENCED TO A PROJECT CONTROL SYSTEM WHICH IS BASED ON NAD 83 DATUM REFERENCED TO ARIZONA STATE PLANE EAST ZONE "SPC(0201 AZE)" GROUND COORDINATES WITH A COMBINED FACTOR OF 0.999671948.

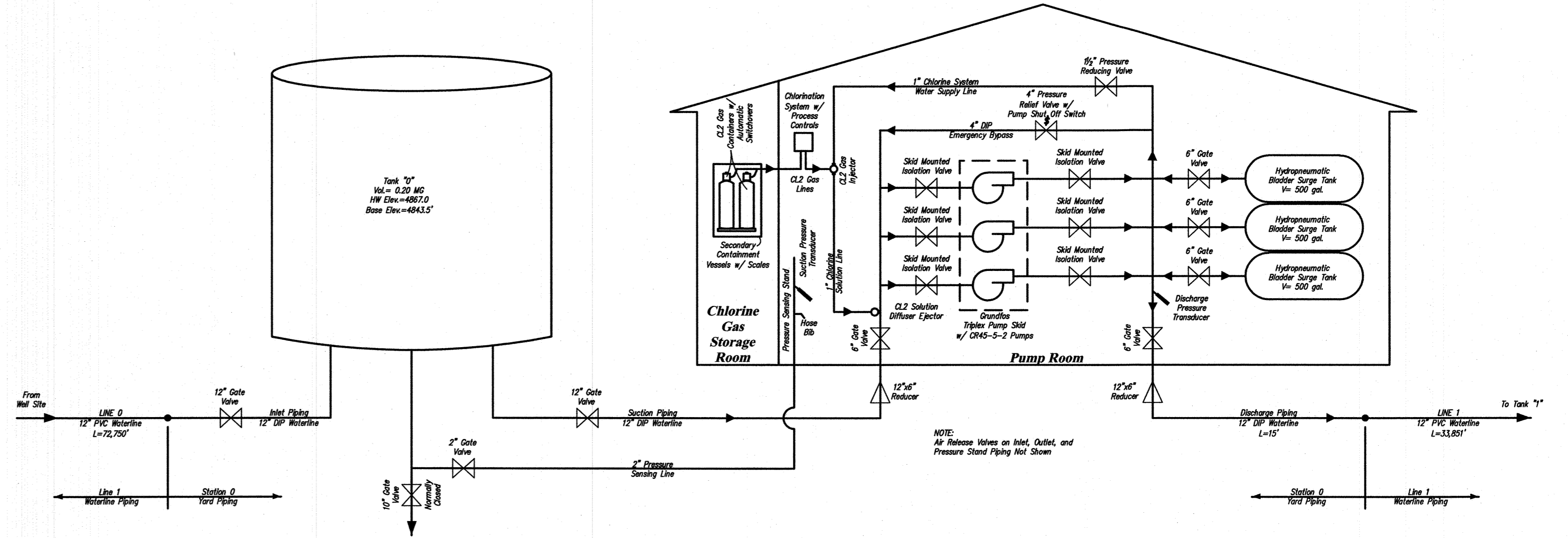
2. BEARINGS SHOWN ARE GRID.

3. ELEVATIONS ARE BASED ON NAVD88/GEOID18 (VERTICAL DATUM)
- ## PLAN SET LEGEND:
- | EXISTING |                               | PROPOSED |
|----------|-------------------------------|----------|
|          | CONTOURS                      |          |
|          | DRAINAGE FLOW LINE            |          |
|          | CULVERT AND END FLARE         |          |
|          | TREE                          |          |
|          | CONTROL POINT/ BENCH MARK     |          |
|          | PROPERTY CORNER OR R/W MARKER |          |
|          | WATERLINE                     |          |
|          | WATERLINE GATE VALVE          |          |
|          | WATER METER                   |          |
|          | WATERLINE PLUG/CROSS/TEE      |          |
|          | AIR RELEASE VALVE             |          |
|          | FIRE HYDRANT                  |          |
|          | FORCE MAIN                    |          |
|          | SEWER LINE                    |          |
|          | LIFT STATION                  |          |
|          | MANHOLE                       |          |
|          | MANHOLE TO BE ABANDONED       |          |
|          | SEWER LINE TO BE ABANDONED    |          |
|          | STORM DRAIN                   |          |
|          | POWER POLE                    |          |
|          | DOWN GUY                      |          |
|          | OVERHEAD ELECTRIC LINE        |          |
|          | UNDERGROUND ELECTRIC          |          |
|          | STREET LIGHT                  |          |
|          | YARD LIGHT                    |          |
|          | GAS LINE                      |          |
|          | TELEPHONE RISER               |          |
|          | UNDERGROUND TELEPHONE         |          |
|          | WIRE FENCING                  |          |
|          | CHAIN LINK FENCING            |          |
|          | WOOD FENCING                  |          |
|          | SIGN                          |          |
|          | MAIL BOX                      |          |
- 
- for  
NAVAJO ENGINEERING &  
CONSTRUCTION AUTHORITY
- for the  
INDIAN HEALTH SERVICE  
WINSLOW SERVICE UNIT  
WINSLOW, ARIZONA
- | NO. | BY | DATE |
|-----|----|------|
|     |    |      |
|     |    |      |
|     |    |      |
- INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
LEUPP-DILKON WATER SUPPLY SYSTEM
- GENERAL NOTES
- |             |           |
|-------------|-----------|
| SCALE:      | SHOWN     |
| DATE:       | DEC. 2021 |
| DRAWN BY:   | KAS       |
| CHECKED BY: | MDP       |
- SHEET  
1 - 2

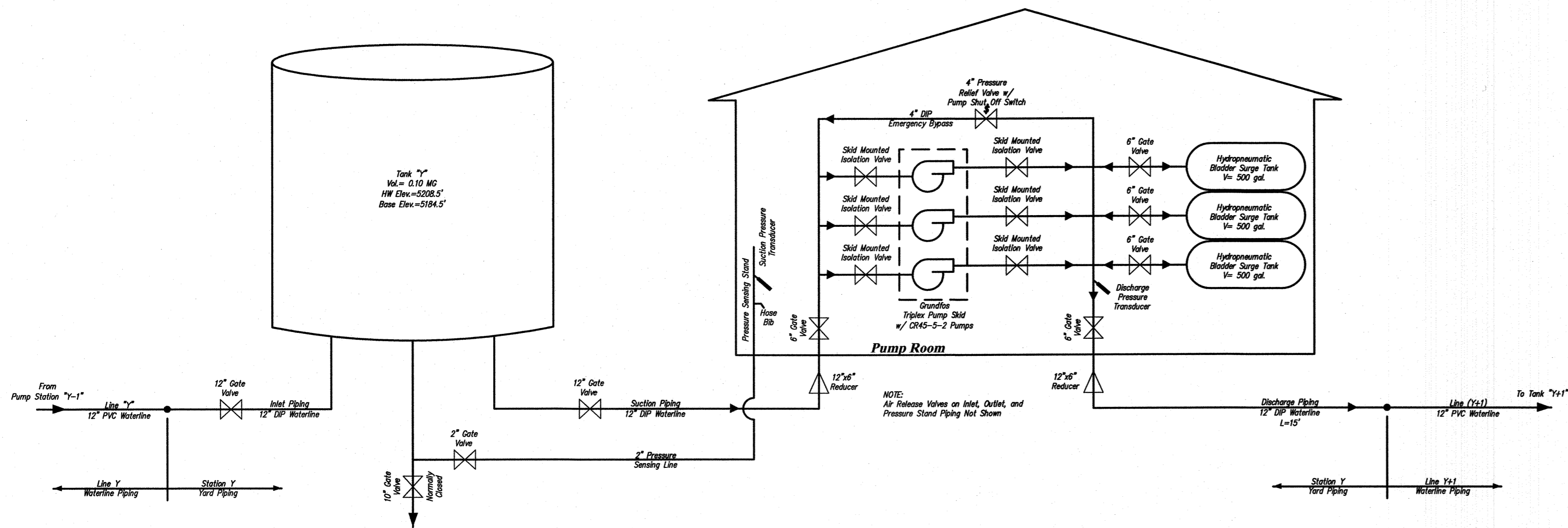




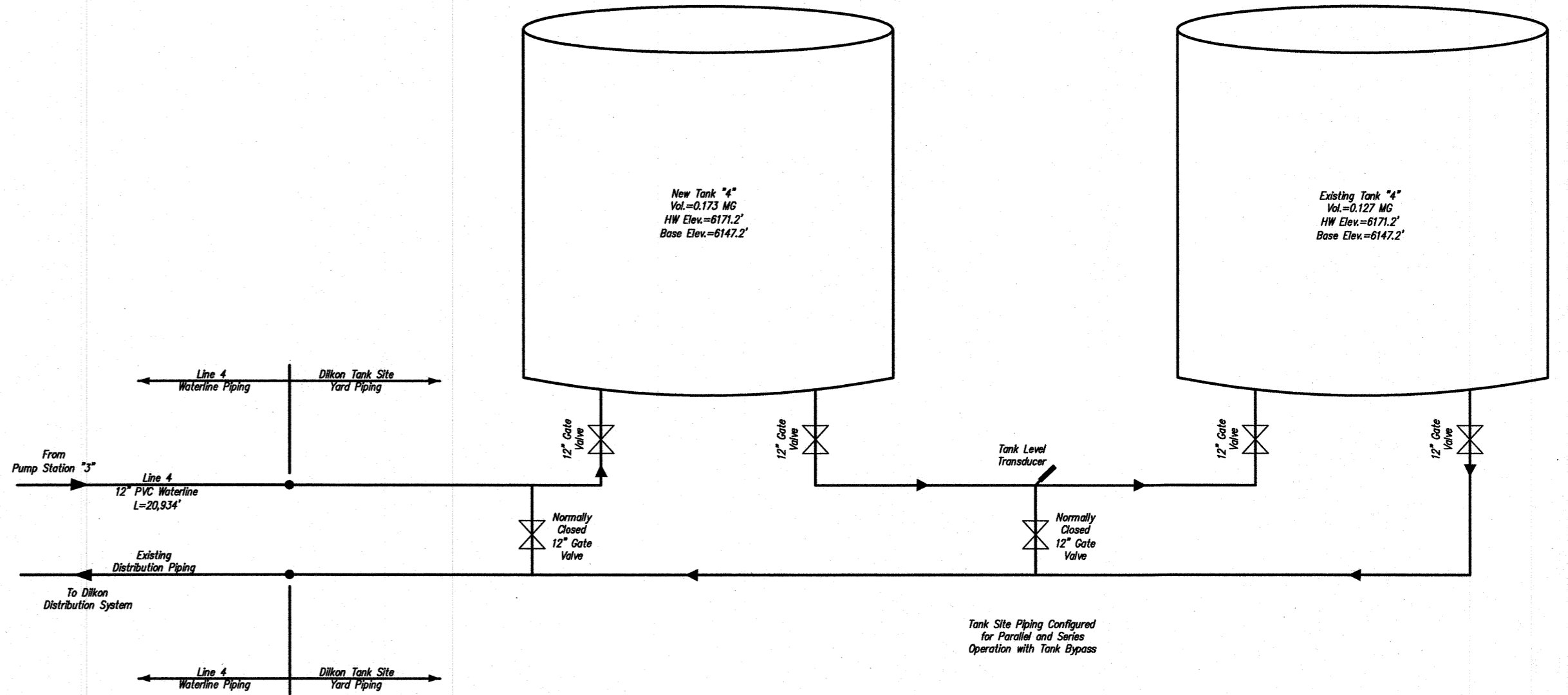
**LEUPP WELL PROCESS DIAGRAM**  
NTS



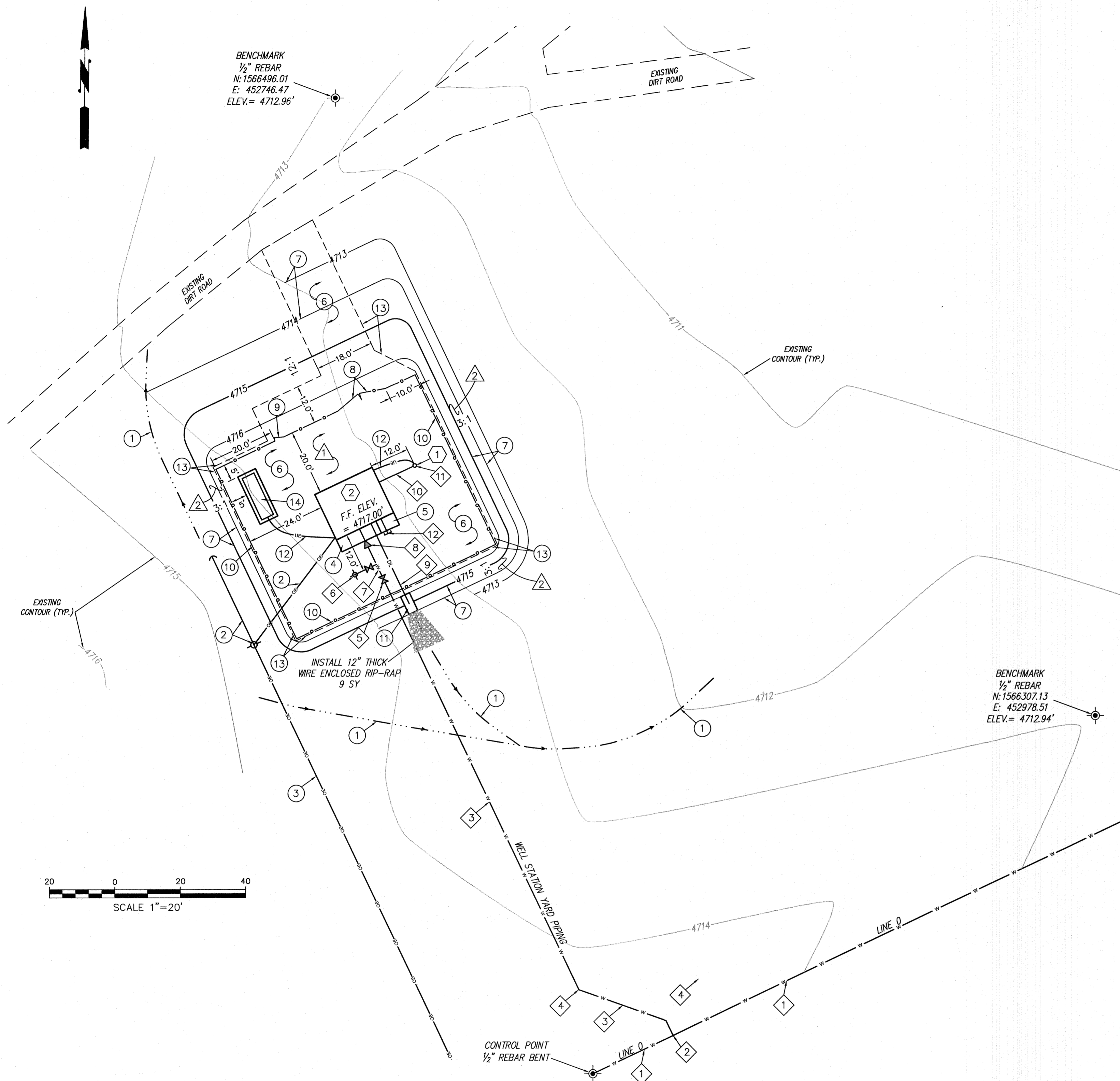
**PUMP STATION "0" PROCESS DIAGRAM**  
NTS



**PUMP STATIONS "1", "2", AND "3" PROCESS DIAGRAM**  
NTS



**DILKON TANK SITE PROCESS DIAGRAM**  
NTS



LEUPP WELL SITE & GRADING PLAN  
SCALE 1"=20'

LEUPP WELL  
SITE, GRADING, & PIPING PLAN KEYED NOTES:

BUILDING/STRUCTURE PAD KEYED NOTES:

- 1 LEUPP WELL - SEE SHEET 2-2 FOR CONSTRUCTION DETAILS AND INFORMATION TABLE
- 2 LEUPP WELL BUILDING (SEE SHEETS 2-4 TO 2-8 FOR DETAILS)

BUILDING PAD KEYED NOTES:

- 1 BUILDING PAD SHALL BE COMPACTED TO 95% STANDARD PROCTOR. MAXIMUM CONSTRUCTION LOOSE LIFT SHALL NOT EXCEED 10"
- 2 CONSTRUCT PAD SIDE SLOPES @ SLOPES SHOWN WITH MAXIMUM SLOPE OF 3:1

CONSTRUCTION KEYED NOTES:

- 1 PROPOSED DRAINAGE DITCH FLOWLINE, GRADE TO DRAIN
- 2 POWER POLE, SERVICE POLE, DOWN GUY AND SERVICE LINES (OVERHEAD) BY NTUA
- 3 OVERHEAD ELECTRIC LINE BY NTUA
- 4 INSTALL CONCRETE DRIVE PAD SEE SHEET 2-3 FOR DETAILS
- 5 INSTALL CONCRETE ACCESS PAD SEE SHEET 2-3 FOR DETAILS
- 6 PLACE 5" OF GRAVEL OR BASE COURSE ON NON-WOVEN FABRIC FOR WELL STATION YARD.
- 7 NEW FINISHED GRADE CONTOURS FOR PUMP STATION SITE (TYP.)

- 8 INSTALL 16' CHAIN LINK (TWO (2)-8' PANELS) ACCESS GATE (2 REQUIRED) PER IHS STANDARD DETAIL W-34
- 9 INSTALL 3' PERSONNEL GATE (1 REQUIRED) PER IHS STANDARD DETAIL W-34
- 10 INSTALL NEW CHAIN LINK FENCE AS SHOWN L=300'± PER IHS STANDARD DETAIL W-34
- 11 WELL STATION DRAIN PAD SEE DETAIL ON SHEET 2-3
- 12 UNDERGROUND ELECTRICAL AND CONTROL CONDUITS PER ELECTRICAL DESIGN
- 13 EDGE OF 5" GRAVEL SURFACING.
- 14 INSTALL 16'x6' CONCRETE ELECTRICAL PAD WITH GENERATOR PER ELECTRICAL DETAILS

PIPING KEYED NOTES:

- 1 12" PVC SDR-21 WATER TRANSMISSION LINES BY OTHERS
- 2 INSTALL 12" TEE AND PROVIDE ADAPTER GASKETS AS REQUIRED. INSTALL PLUGS OR CONNECT TO 12" PVC TRANSMISSION LINE BY OTHERS
- 3 INSTALL 12" PVC SDR-21 WELL YARD PIPING
- 4 INSTALL 12" CL 350 DUCTILE IRON 45° ELL. PROVIDE ADAPTER GASKETS AS REQUIRED
- 5 INSTALL 12" MJ&MJ GATE GATE VALVE. END DUCTILE IRON YARD PIPING BEGIN PVC YARD PIPING. PROVIDE ADAPTER GASKETS AS REQUIRED
- 6 INSTALL FLUSHING HYDRANT WITH 6" GATE VALVE AND 12"x6" TEE. SEE DETAIL ON SHEET 2-3

- 7 INSTALL 12" CL 350 DUCTILE IRON WELL YARD PIPING
- 8 INSTALL 6"x12" CL 350 DUCTILE IRON REDUCER END YARD PIPING & BEGIN STATION PIPING
- 9 INSTALL 4" SCH. 80 PVC WELL STATION DRAIN LINE WITH CLEANOUT AND FITTINGS AS REQUIRED
- 10 INSTALL 6" CL 350 DUCTILE IRON WELL SUPPLY PIPING
- 11 BAKER MONITOR PITLESS WELL HEAD ON 13 3/8" J-55 SURFACE CASING
- 12 INSTALL CAP ON END OF FUTURE 6" CL 350 DUCTILE IRON FLUSH LINE.

NOTES:

1. CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
2. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL TO THE GREATEST EXTENT POSSIBLE. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 ML. POLYETHYLENE ENCASEMENT. POLYETHYLENE ENCASEMENT JOINTS SHALL BE STAGGERED.
4. BURIED VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
5. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.

SITE, GRADING & PIPING PLAN  
CONSTRUCTION COORDINATES

WELL HEAD	DESC.	NORTHING	EASTING
1	WELL HEAD	1566383.91	452770.56

WELL STATION	DESC.	NORTHING	EASTING
2	NE COR.	1566395.34	452751.86
3	NW COR.	1566387.05	452734.39
4	SW COR.	1575976.28	519731.52
5	SE COR.	1575980.15	519756.55

FENCE CORNERS/PI'S	DESC.	NORTHING	EASTING
6	NE COR.	1566432.72	452760.70
7	NW COR.	1566403.88	452699.85
8	SW COR.	1566330.99	452734.41
9	SE COR.	1566359.83	452795.25

PI/FITTING DESC.	NORTHING	EASTING
10	12"x6" REDUCER	1566359.97 452755.86
11	12" GATE VALVE	1566349.13 452761.00
12	45° ELL	1566219.20 452822.60
13	45° ELL & TRANSMISSION LINE CONNECTION	1566209.70 452849.23
14	4" DRAIN OUTLET	1566343.55 452767.92
15	FLUSH HYDRANT TEE	1566353.65 452758.86
16	FLUSH HYDRANT	1566350.55 452752.32

SURVEY NOTES:

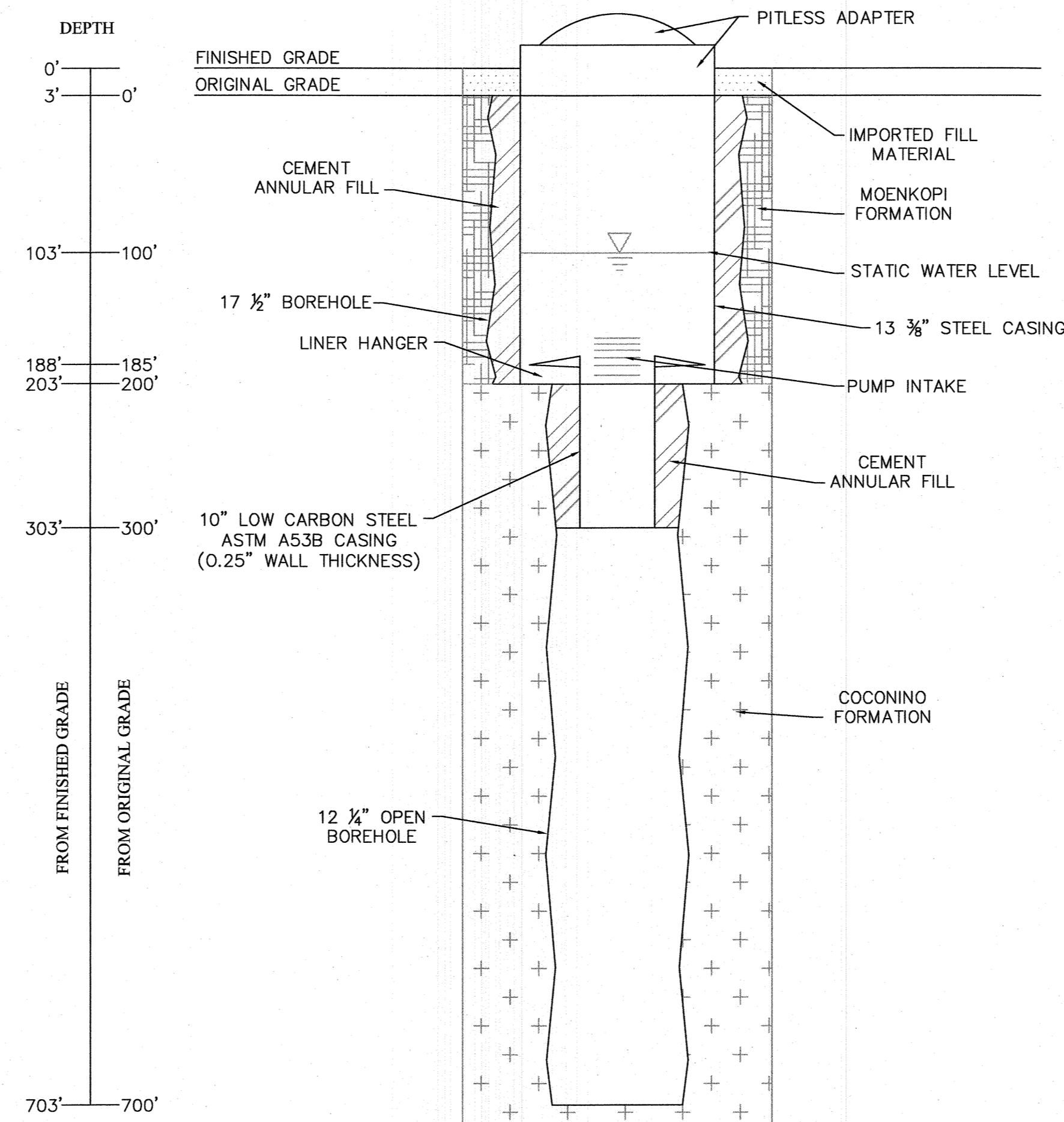
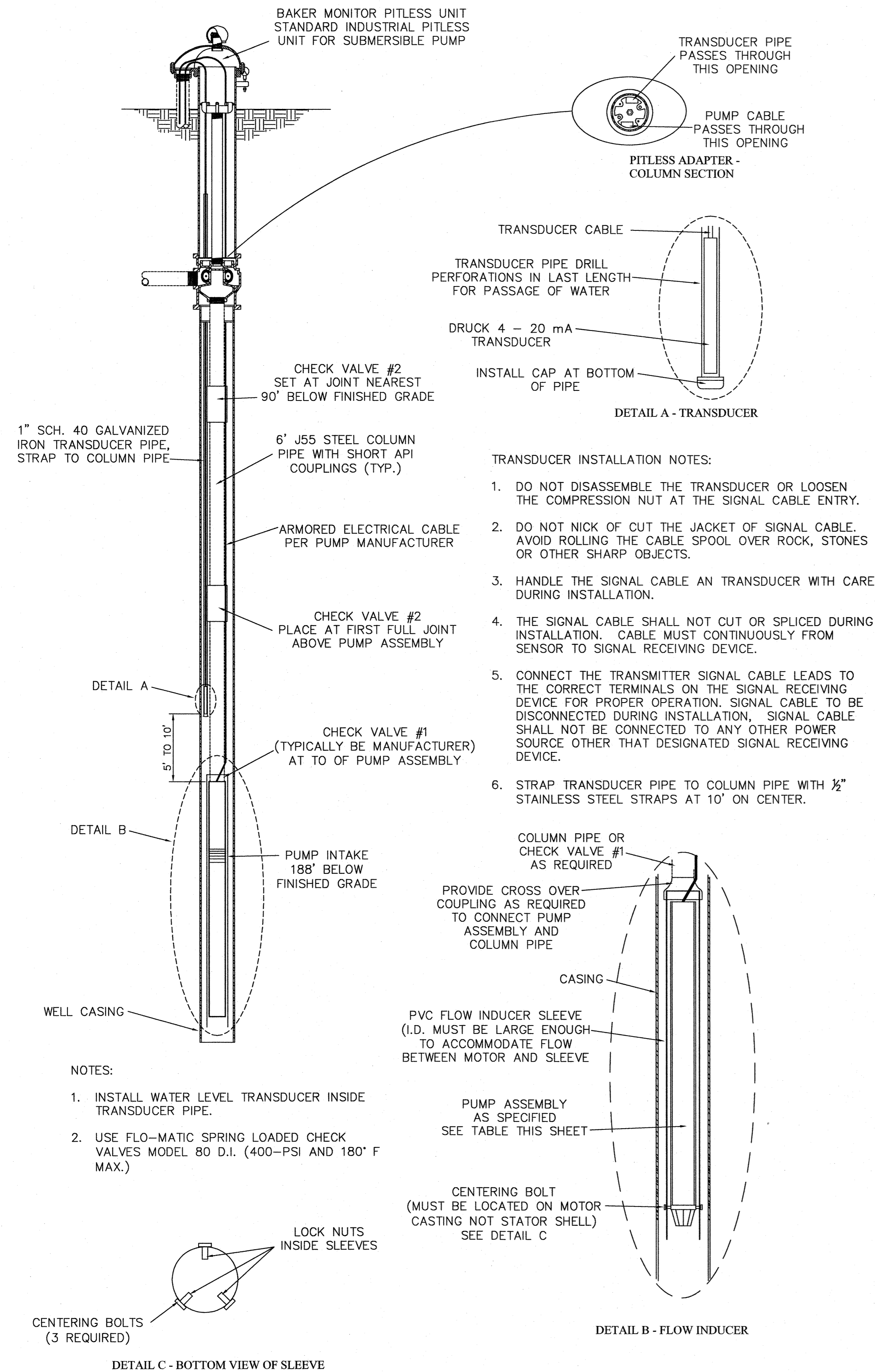
1. COORDINATES SHOWN ARE REFERENCED TO A PROJECT CONTROL SYSTEM WHICH IS BASED ON NAD 83 DATUM REFERENCED TO ARIZONA STATE PLANE EAST ZONE "SPC(201 AZE)" GROUND COORDINATES WITH A COMBINED FACTOR OF 0.999671948.
2. BEARINGS SHOWN ARE GRID.
3. ELEVATIONS ARE BASED ON NAVD88/GEOD18 (VERTICAL DATUM)

ESTIMATED EARTHWORK QUANTITIES

ITEM	EXCAVATED IN-SITU VOLUME 0 CY	EMBANKMENT EARTHWORK VOLUME 0 CY	EXCESS IN-SITU VOLUME 0 CY
NATIVE MATERIAL			
IMPORTED MATERIAL			
ENGINEERED FILL MATERIAL	-	651 CY	-
GRAVEL SURFACING	-	82 CY	-
TOTAL IMPORTED MATERIAL	-	733 CY	-
TOTALS	0 CY	733 CY	0 CY

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED OR NATIVE MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.

MADE PAULI  
34929  
MARIO A. DEPAULI  
DATE SIGNED 12/5/22  
ARIZONA U.S.A.



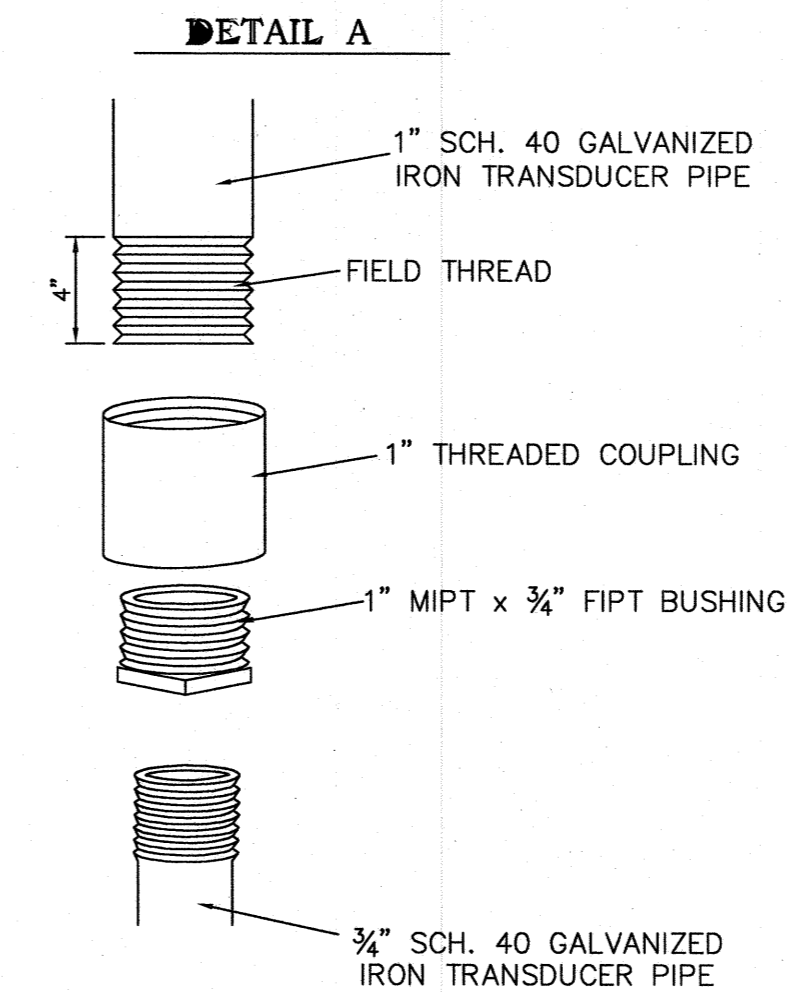
**LEUPP WELL COMPLETION DIAGRAM**

NTS

**LEUPP WELL CONSTRUCTION INFORMATION TABLE**

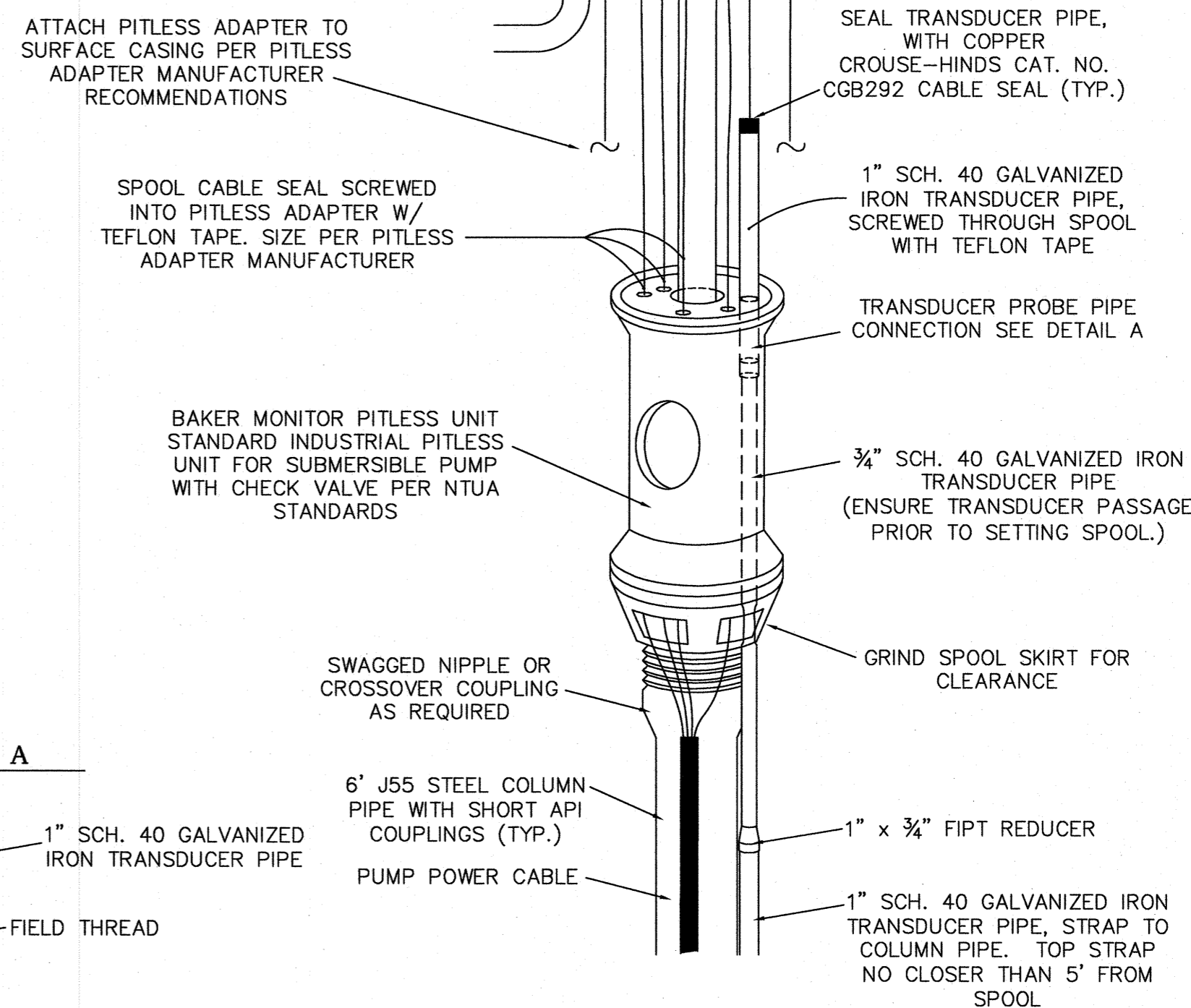
FROM IHS DOCUMENTS AND RECORDS

LEUPP DILKON WELL: PROJECT NA-16-W01	
POWER COMPANY	NTUA
DEPTH	703'
SIZE OF BOREHOLE	17 1/2" TO 203'; 12 1/2" TO 703'
PITLESS UNIT MAKE	BAKER-MONITOR
PITLESS UNIT MODEL	-
CASING SIZE	13 3/8" SURFACE CASING & 10" LINER
CASING TYPE	STEEL
CASING LOCATION	13 3/8" 0' TO 203'; 10" 203' TO 303' BLS
SCREEN	N/A; OPEN HOLE BELOW CASING
GRAVEL PACK	N/A
DEPTH OF GROUT EVELOPE	203'
STATIC WATER LEVEL	104'
DATE OF SWL	2/9/2020
PUMP MAKE/MODEL	GRUNDFOS 625S1000-5
PUMP HORSEPOWER	100 HP
PUMP VOLTAGE	460 V
PUMP PHASING	3-PHASE
PUMP FULL-LOAD AMPERAGE	126-AMPS
PUMPING RATE	730-GPM
PUMPING WATER LEVEL	170'
PUMP SETTING	188'
WATER LEVEL MEASURING DEVICE	NTUA Standard DRUCK SUBMERSIBLE 4 - 20 mA TRANSUDER FOR 0- FEET TO 200- FEET
DROP PIPE SIZE/TYPE	6-INCH J-55 STEEL
SUBMERSIBLE CABLE SIZE/TYPE	PER MANUFACTURER
CHECK VALVE TYPE/MODEL	FLO-MATIC MODEL 80 D.I.
CHECK VALVE LOCATIONS	90'±, 160'±, & 180'± BLS
PUMP CONTROLS	PUMP STATION 0 TANK LEVEL
RADIO TELEMETRY AT TANK	SEE COMMUNICATION BLOCK
0"/RECEIVER AT PUMP	DIAGRAM SHEET 1-5



**PITLESS ADAPTER DETAIL**

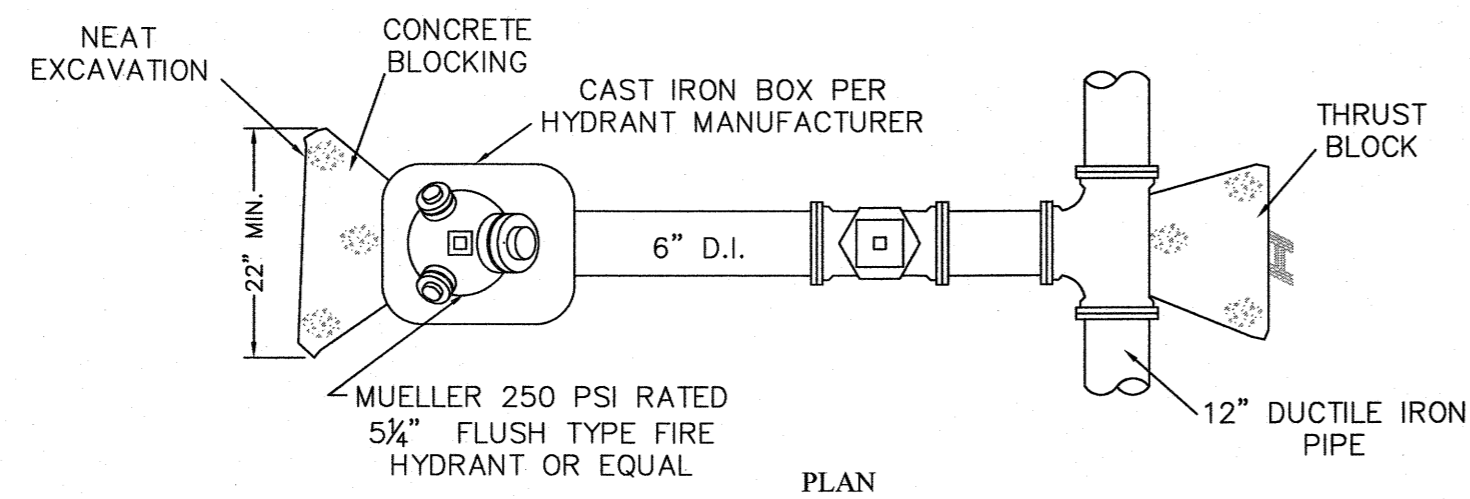
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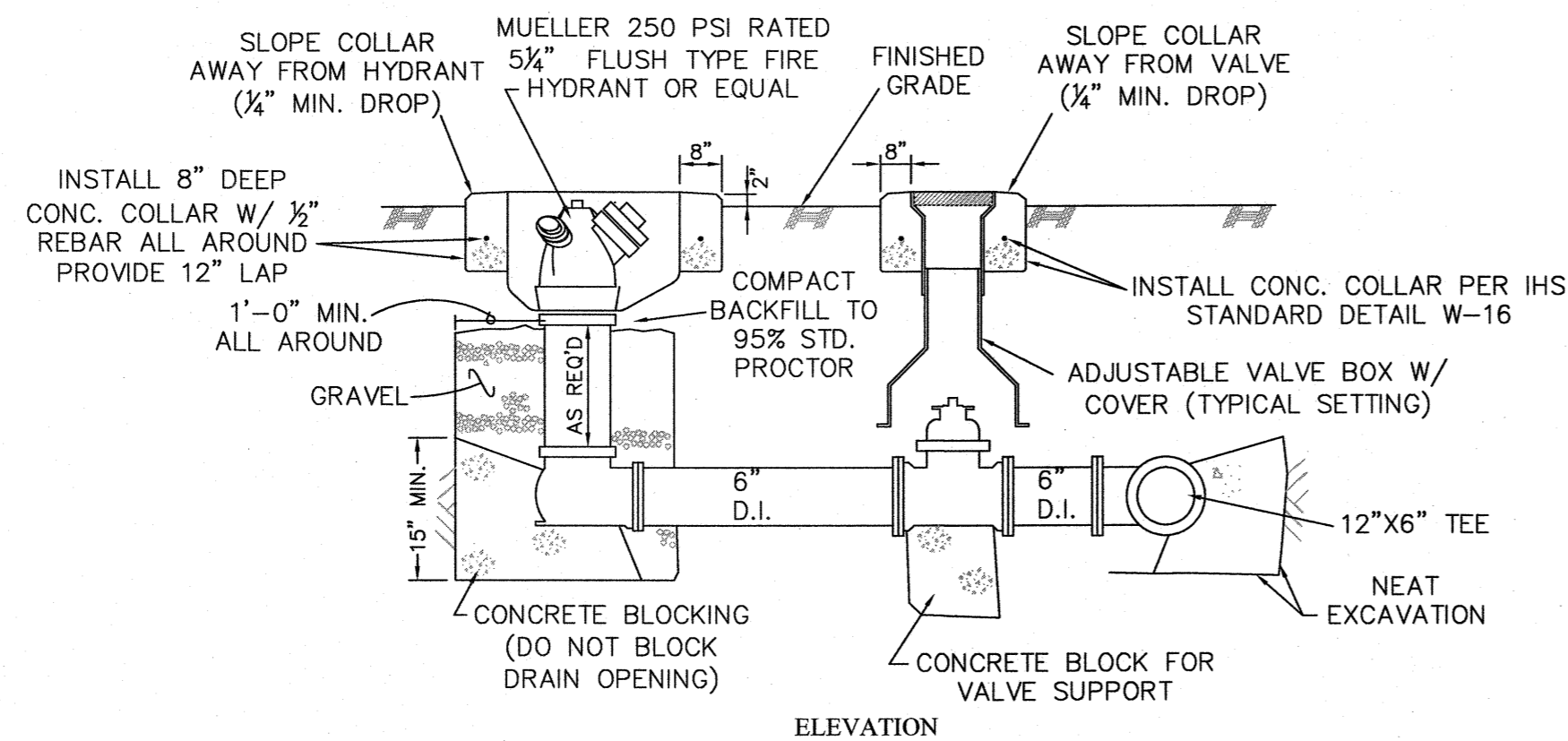
DESCRIPTION	BRAND	RATING
CABLE SEAL	COOPER GROUSE-HINDS	4 40 PSI FIELD VERIFIED) > >40 PSI UNVERIFIED
CABLE SEAL	BAKER MONITOR	BAKER MONITOR
CABLE SEAL	PAVE TECHNOLOGY	PAVE TECHNOLOGY
LIFT OUT HOOKS	BAKER MONITOR	HOLD WEIGHT 30,000 LBS
SCH. 40 G.I. PIPE		700 PSI
SPOOL SEAL	BAKER MONITOR	300 PSI

**LEUPP WELL EQUIPPING DETAIL**

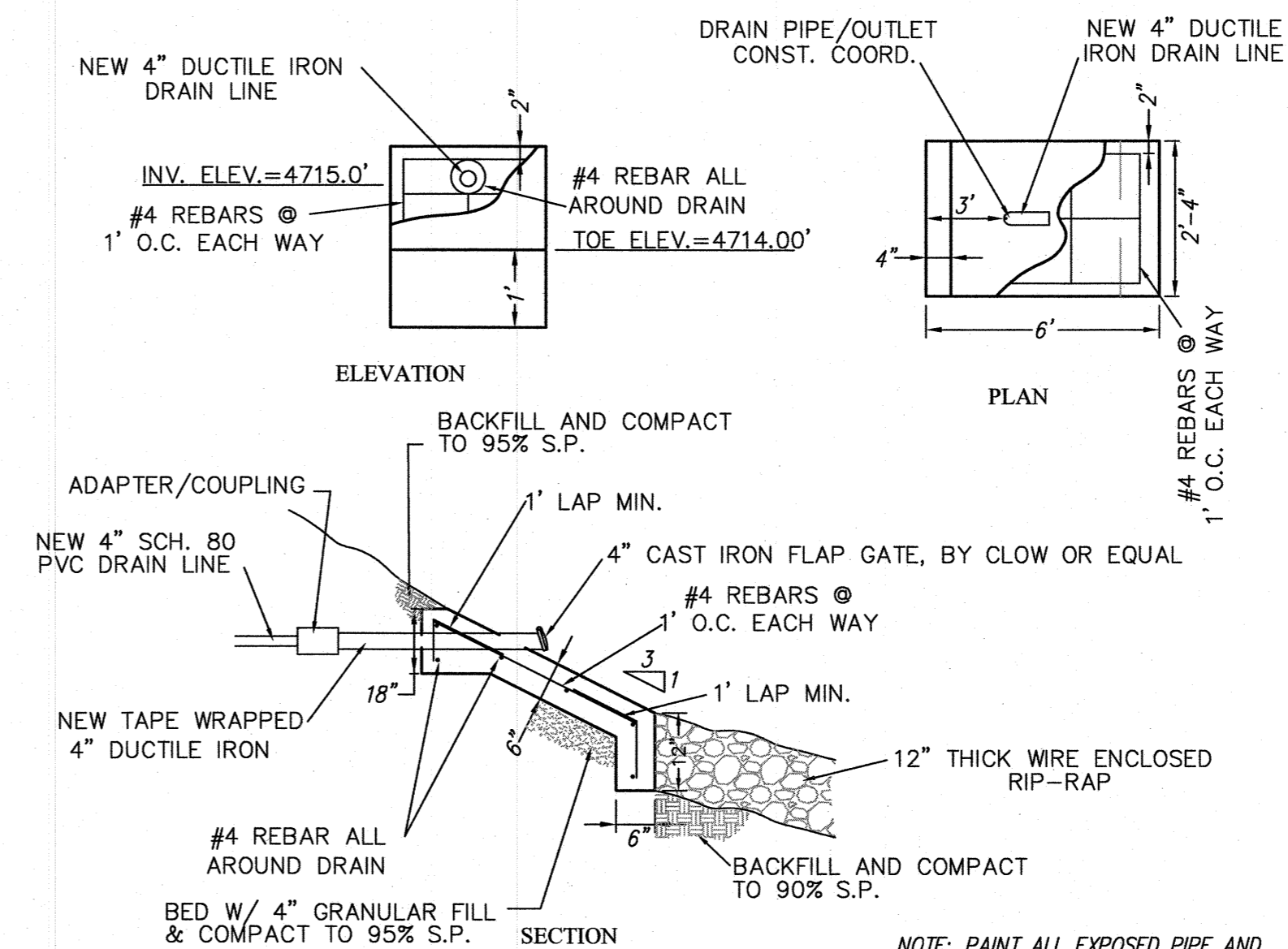
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- TEMPORARY TANK CONNECTION NOTES:
1. CONTRACTOR TO PROVIDE HYDRANT BARREL HEIGHT AS REQ'D. FOR PROPER HEIGHT ABOVE FINISHED GRADE.
  2. ALL JOINTS SHALL UTILIZE MECHANICAL JOINTS AND USE RESTRAINING GLANDS.
  3. PIPING FROM TEE TO VALVE AND FROM VALVE TO HYDRANT SHALL NOT CONTAIN ANY INTERMEDIATE JOINTS.
  4. INSTALL GATE VALVE PER PER IHS STANDARD DETAIL W-16
  5. TEMPORARY TANK CONNECTION INCLUDES TEE, PIPING, VALVE, HYDRANT AND APPURTENANCES.
  6. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASMENT. POLYETHYLENE ENCASMENT JOINTS SHALL BE STAGGERED.



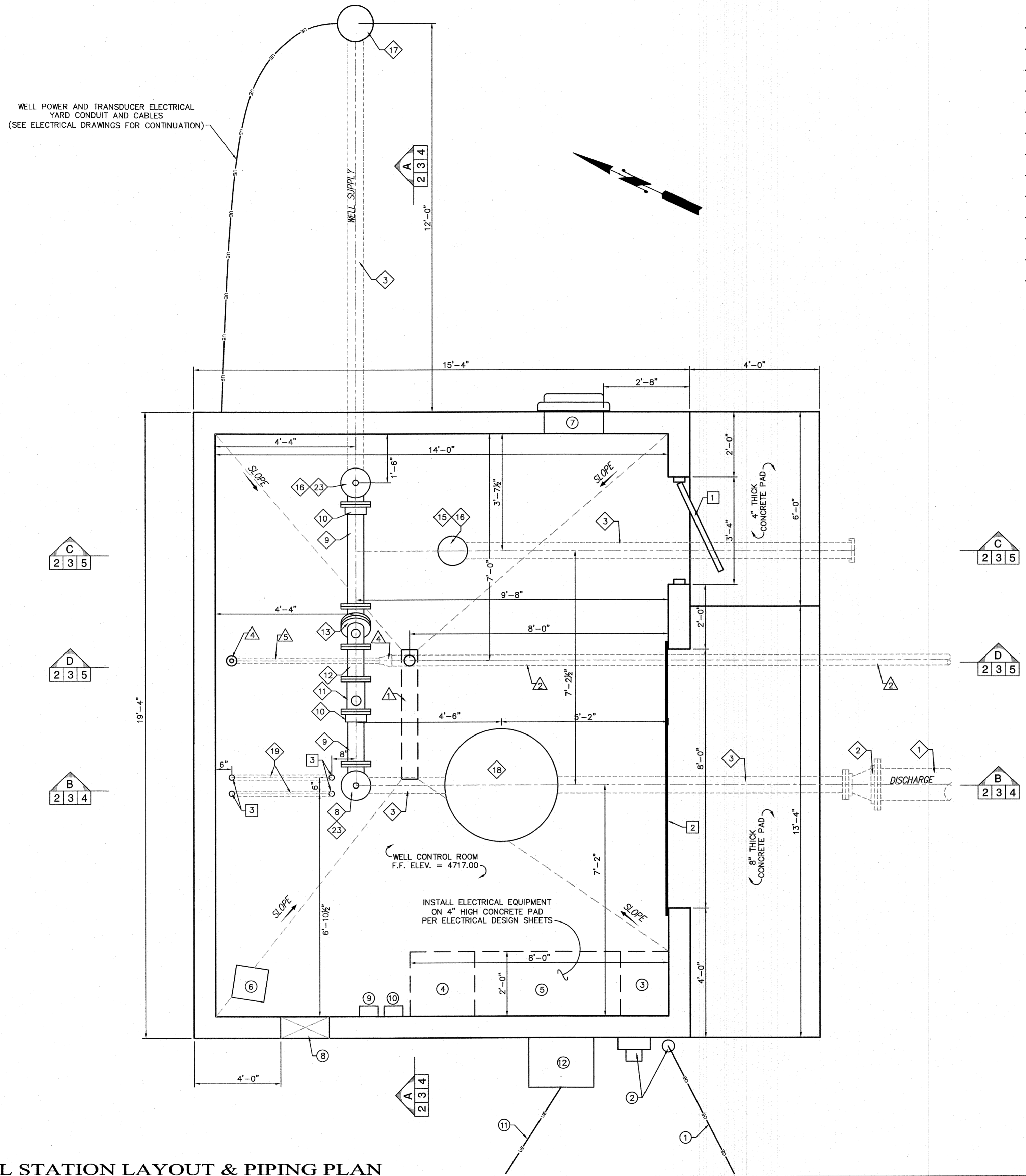
**FLUSH HYDRANT ASSEMBLY DETAIL**  
NTS



**WELL STATION DRAIN PAD**  
NTS

NOTE: PAINT ALL EXPOSED PIPE AND FITTINGS W/ SHOP APPLIED PRIME COAT AND 2 COATS FIELD APPLIED OF ALKYL ENAMEL

*Marc DePauli*  
34929  
MARC A. DEPAULI  
Date Signed 12/15/21  
ARIZONA



WELL STATION LAYOUT & PIPING PLAN  
SCALE: 1/2"=1'

**PRESSURE FITTING & PIPING KEYED NOTES:**

- |  |  |
|--|--|
| 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)                  | 14 NOT USED  |
| 2 12" MJ 12"x6" REDUCER. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)                 | 15 6" BLIND FLANGE   |
| 3 6" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)                   | 16 6" FLG'D TEE  |
| 4 6" MJ TEE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)                              | 17 BAKER MONITOR PITLESS WELL HEAD ON EXISTING 1 3/4" J-55 SURFACE CASING W/ 4' BURY DEPTH   |
| 5 6" MJ 90° ELL (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)                          | 18 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM   |
| 6 FLOPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE) | 19 2" SCH. 80 PVC ELECTRICAL CONDUIT (SOLVENT WELD) FOR FUTURE CHLORINE HOSE CARRIER PIPE  |
| 7 6" FLG'D BUTTERFLY VALVE, MUELLER LINESEAL III WITH LEVER OPERATOR OR EQUAL            | 20 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED |
| 8 6" FLG'D TEE WITH TWO (2) - 2" TAPPED AND PLUGGED BOSSES FOR FUTURE CHLORINE INJECTION | 21 2" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)   |
| 9 6" FLOPE SPOOL, (L=AS REQUIRED)  | 22 NON-SUBMERISIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, DISCHARGE PRESSURE 0-300 PSI.                            |
| 10 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER  | 23 6" FLANGE WITH 2" THREADED TAP  |
| 11 6" FLG'D ELSTER EVO Q4 FLOW METER   | 24 HIGH PRESSURE SHUT-OFF SWITCH MERCOD OR EQUAL   |
| 12 6" FLG'D SPOOL, (L=12')   | 25 2" SCH. 80 PVC ELECTRICAL CONDUIT LONG SWEEP 90° ELL (SOLVENT WELD) FOR FUTURE CHLORINE HOSE CARRIER PIPE                           |
| 13 6" FLG'D VALMATIC TILTED DISC CHECK VALVE OR EQUAL                                    |  |

**DRAIN FITTING & PIPING KEYED NOTES:**

- 1 WATTS DEAD LEVEL 70" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC TEE (SOLVENT WELD)
- 4 4"x2" SCH. 80 PVC REDUCER. (SOLVENT WELD)
- 5 2" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 6 2" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

**CONSTRUCTION KEYED NOTES:**

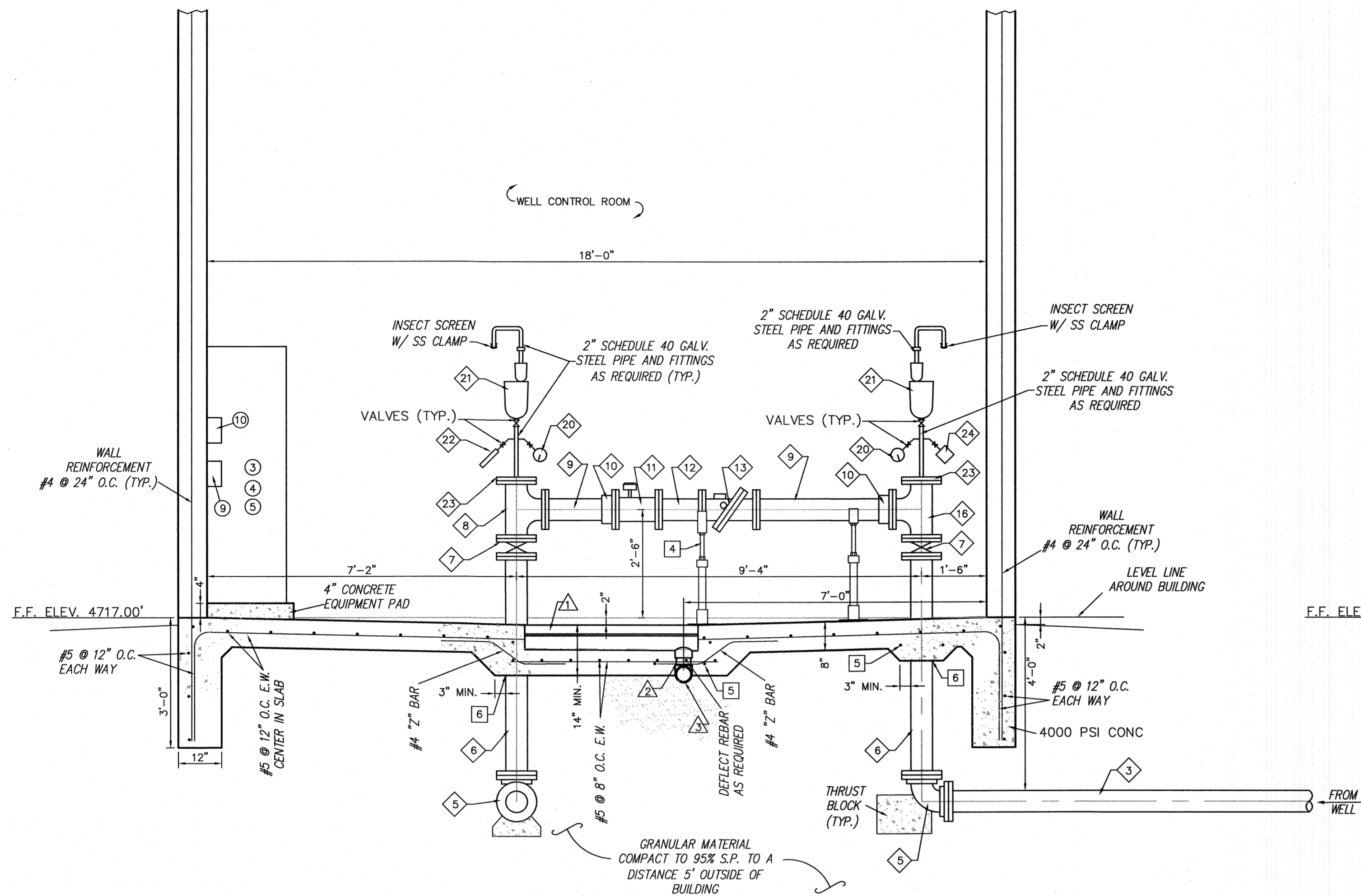
- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- 2 8" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP CHARGE DOOR
- 3 3" STD. STEEL FLUSH FLOOR PENETRATION (SEE DETAIL SHEET B-1)
- 4 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL. (SEE DETAIL SHEET B-1)
- 5 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 6 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 7 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET B-1)

NOTE: ALL REBAR HAS A 12" MINIMUM LAP DISTANCE

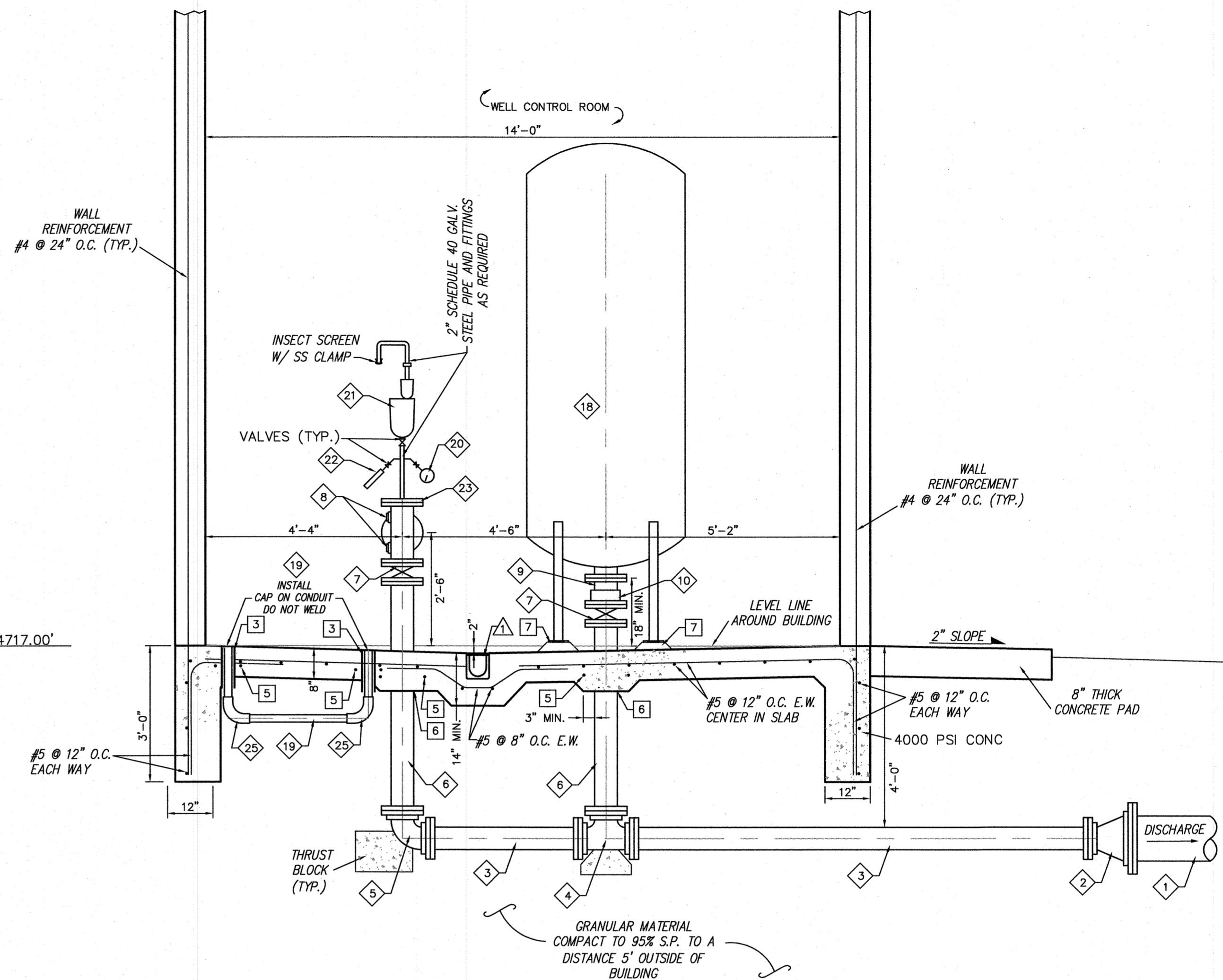
**ELECTRICAL & MECHANICAL KEYED NOTES:**

- 1 OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT (SEE STATION ELEVATION "A")
- 3 NEMA 3R ELECTRICAL AND ON 4" CONCRETE EQUIPMENT PAD PER ELECTRICAL DRAWINGS (SEE STATION ELEVATION "A")
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IAS STANDARDS ON 4" CONCRETE EQUIPMENT PAD (SEE STATION ELEVATION "A")
- 5 WELL MOTOR CONTROL CENTER ON 4" CONCRETE EQUIPMENT PAD (SEE STATION ELEVATION "A")
- 6 ELECTRIC UNIT HEATER, "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MM610 WALL MOUNTED BRACKET. (240V, 16, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET B-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET B-2
- 9 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 10 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 11 UNDERGROUND ELECTRIC LINE FROM GENERATOR SEE ELECTRICAL DRAWINGS FOR DETAILS
- 12 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

Marc A. DePauli  
34929  
MARC A. DEPAULI  
12/17/20  
ARIZONA



**WELL STATION ELEVATION "A"**  
SCALE: 1/2"=1'



**WELL STATION ELEVATION "B"**  
SCALE: 1/2"=1'

**ELECTRICAL & MECHANICAL KEYED NOTES:**

- ① OVERHEAD ELECTRIC SERVICE PER NITUA STANDARDS
- ② ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT (SEE STATION ELEVATION "A")
- ③ NEMA 3R ELECTRICAL AND ATS CABINET PANEL ON 4" CONCRETE EQUIPMENT PAD PER ELECTRICAL DRAWINGS (SEE STATION ELEVATION "A")
- ④ NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NITUA AND HIS STANDARDSON 4" CONCRETE EQUIPMENT PAD (SEE STATION ELEVATION "A")
- ⑤ WELL MOTOR CONTROL CENTER ON 4" CONCRETE EQUIPMENT PAD (SEE STATION ELEVATION "A")
- ⑥ ELECTRIC UNIT HEATER, "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MB10 WALL MOUNTED BRACKET. (240V, 1 $\phi$ , 7.5KW)
- ⑦ EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- ⑧ MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- ⑨ TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- ⑩ FLOW METER DISPLAY AND TRANSMITTER UNIT
- ⑪ UNDERGROUND ELECTRIC LINE FROM GENERATOR SEE ELECTRICAL DRAWINGS FOR DETAILS
- ⑫ AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

**CONSTRUCTION KEYED NOTES:**

- ① 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NITUA WATER SYSTEM STANDARD.)
- ② 8" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- ③ 3" STD. STEEL FLUSH FLOOR PENETRATION (SEE DETAIL SHEET 8-1)
- ④ ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- ⑤ #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- ⑥ PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- ⑦ SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

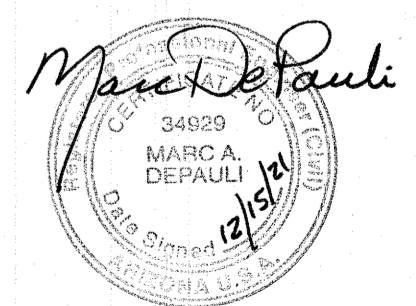
NOTE: ALL REBAR HAS A 12" MINIMUM LAP DISTANCE

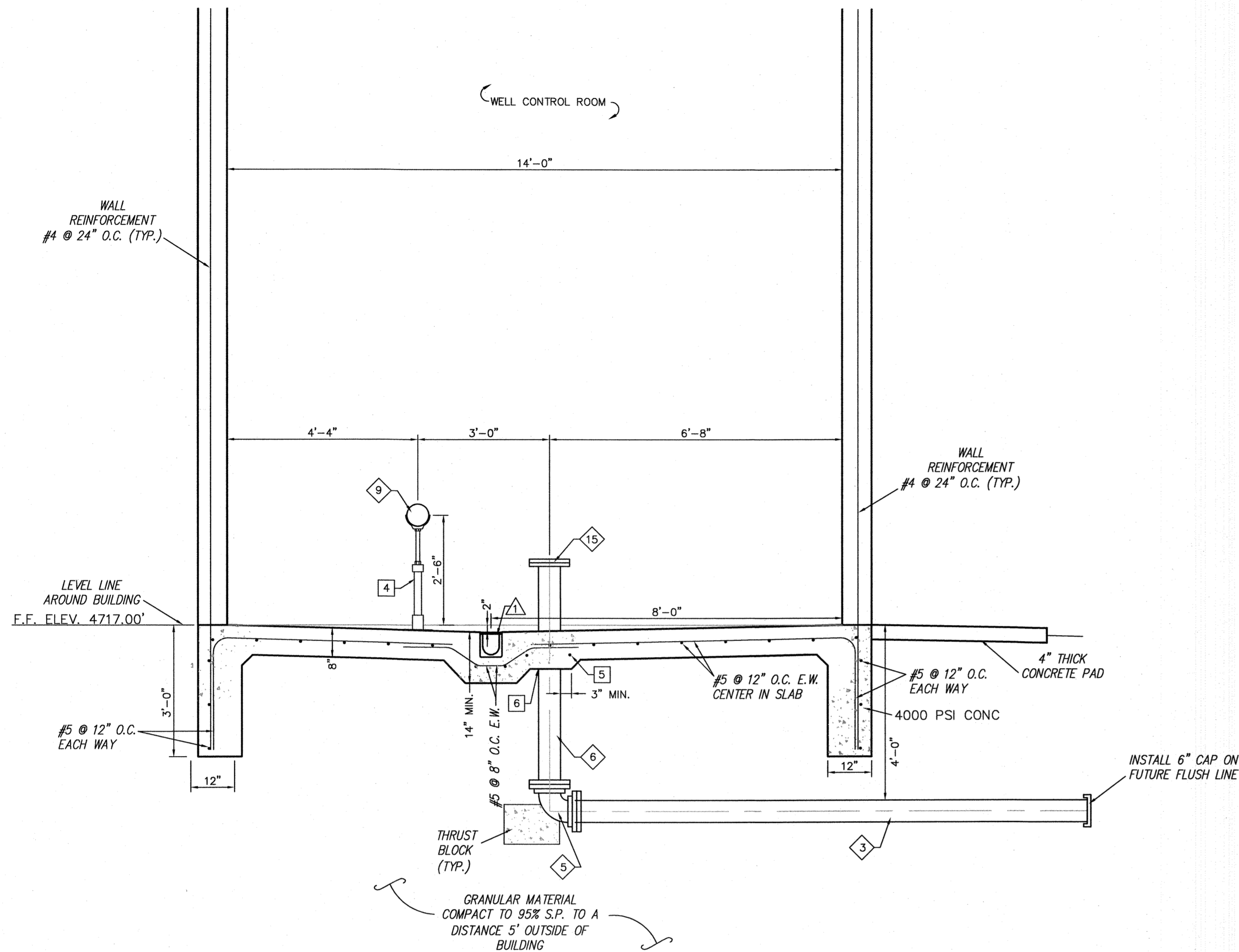
**DRAIN FITTING & PIPING KEYED NOTES:**

- ① WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- ② 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- ③ 4" SCH. 80 PVC TEE (SOLVENT WELD)
- ④ 4"x2" SCH. 80 PVC REDUCER. (SOLVENT WELD)
- ⑤ 2" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- ⑥ 2" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

**PRESSURE FITTING & PIPING KEYED NOTES:**

- ① 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ② 12" MJ 12"x6" REDUCER. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ③ 6" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ④ 6" MJ TEE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ⑤ 6" MJ 90° ELL (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ⑥ 6" FLOPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ⑦ 6" FLOD BUTTERFLY VALVE, MUELLER LINESEAL III WITH LEVER OPERATOR OR EQUAL
- ⑧ 6" FLOD TEE WITH TWO (2) - 2" TAPPED AND PLUGGED BOSSES FOR FUTURE CHLORINE INJECTION
- ⑨ 6" FLOPE SPOOL, (L=AS REQUIRED)
- ⑩ 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- ⑪ 6" FLOD ELSTER EVO Q4 FLOW METER
- ⑫ 6" FLOD SPOOL, (L=12')
- ⑬ 6" FLOD VALMATIC TILTED DISC CHECK VALVE OR EQUAL
- ⑭ NOT USED
- ⑮ 6" BLIND FLANGE
- ⑯ 6" FLOD TEE
- ⑰ BAKER MONITOR PITLESS WELL HEAD ON EXISTING 1.31" J-55 SURFACE CASING W/ 4' BURY DEPTH
- ⑱ 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- ⑲ 2" SCH. 80 PVC ELECTRICAL CONDUIT (SOLVENT WELD) FOR FUTURE CHLORINE HOSE CARRIER PIPE
- ⑳ LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL. (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED.
- ㉑ 2" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 10TS/22.9 OR EQUAL.)
- ㉒ NON-SUBMERISIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, DISCHARGE PRESSURE 0-300 PSI.
- ㉓ 6" FLANGE WITH 2" THREADED TAP
- ㉔ HIGH PRESSURE SHUT-OFF SWITCH MERCOD OR EQUAL
- ㉕ 2" SCH. 80 PVC ELECTRICAL CONDUIT LONG SWEEP 90° ELL (SOLVENT WELD) FOR FUTURE CHLORINE HOSE CARRIER PIPE





**WELL STATION ELEVATION "C"**  
SCALE: 1/2"=1'

**ELECTRICAL & MECHANICAL KEYED NOTES:**

- 1 OVERHEAD ELECTRIC SERVICE PER NITUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT (SEE STATION ELEVATION "A")
- 3 NEMA 3R ELECTRICAL AND AIS CABINET PANEL ON 4" CONCRETE EQUIPMENT PAD PER ELECTRICAL DRAWINGS
- 4 SEE STATION ELEVATION "A" FOR DETAILS OF CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NITUA AND HIS STANDARDSON 4" CONCRETE EQUIPMENT PAD (SEE STATION ELEVATION "A")
- 5 WELL MOTOR CONTROL CENTER ON 4" CONCRETE EQUIPMENT PAD (SEE STATION ELEVATION "A")
- 6 ELECTRIC UNIT HEATER "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MM810 WALL MOUNTED BRACKET. (240V, 1φ, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET B-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET B-2
- 9 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 10 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 11 UNDERGROUND ELECTRIC LINE FROM GENERATOR SEE ELECTRICAL DRAWINGS FOR DETAILS
- 12 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

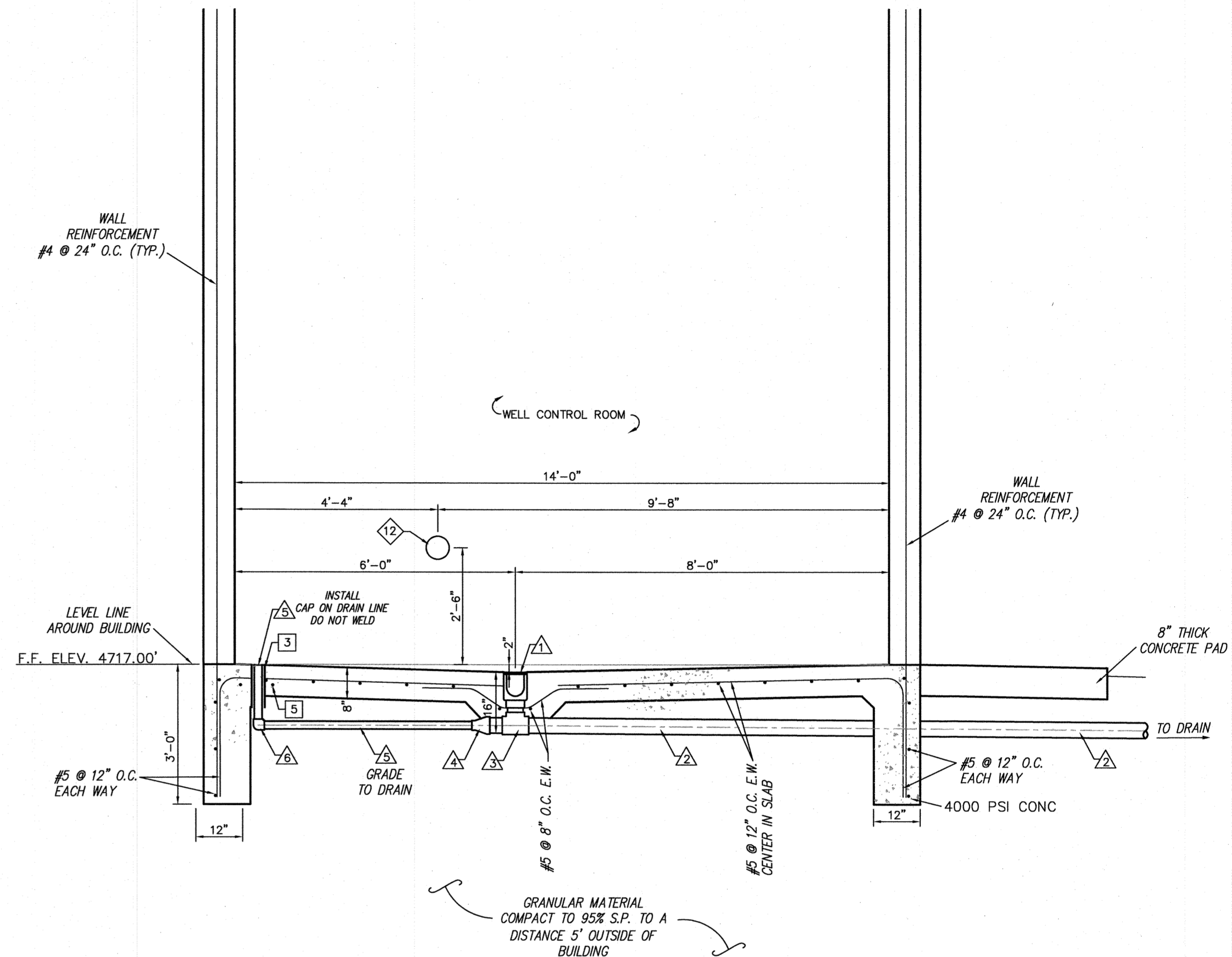
**CONSTRUCTION KEYED NOTES:**

- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NITUA WATER SYSTEM STANDARD.)
- 2 8" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 3" STD. STEEL FLUSH FLOOR PENETRATION (SEE DETAIL SHEET B-1)
- 4 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL. (SEE DETAIL SHEET B-1)
- 5 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 6 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 7 SURGE TANK PEDESTAL (TYP.). (SEE DETAIL SHEET B-1)

NOTE: ALL REBAR HAS A 12" MINIMUM LAP DISTANCE

**DRAIN FITTING & PIPING KEYED NOTES:**

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC TEE (SOLVENT WELD)
- 4 4"x2" SCH. 80 PVC REDUCER. (SOLVENT WELD)
- 5 2" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 6 2" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

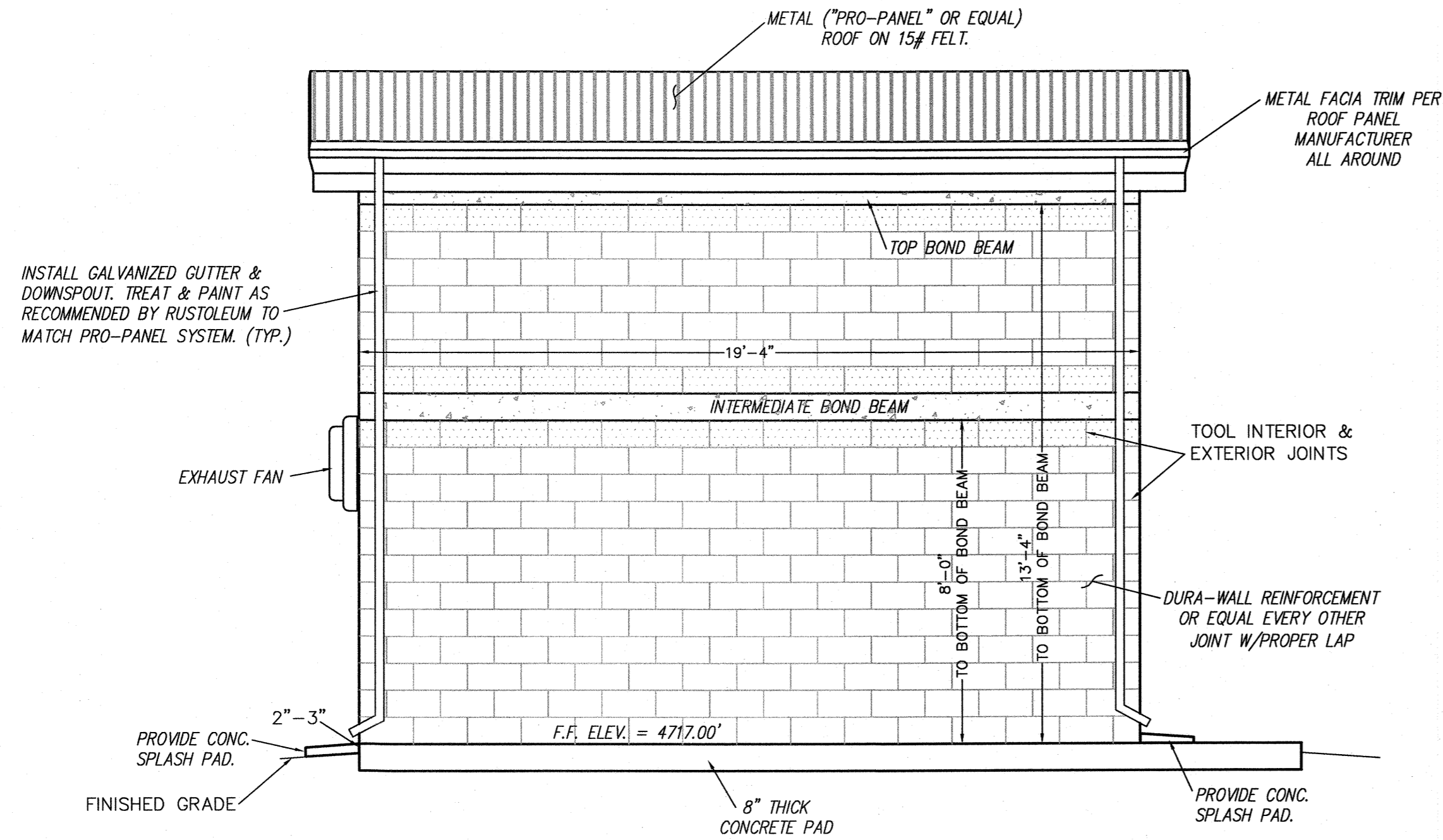


**WELL STATION ELEVATION "D"**  
SCALE: 1/2"=1'

**PRESSURE FITTING & PIPING KEYED NOTES:**

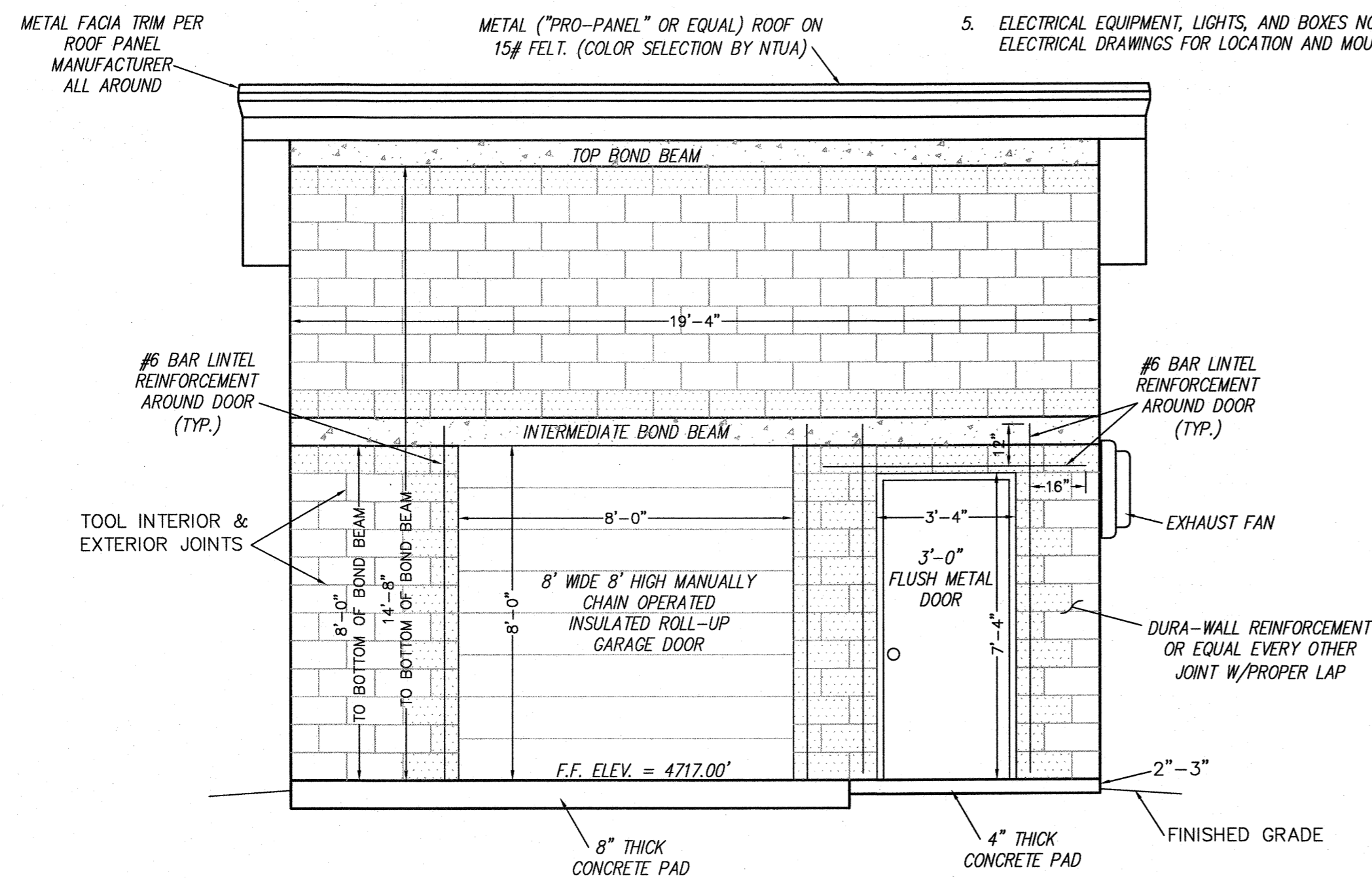
- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" MJ 12"x6" REDUCER. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 6" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 6" MJ TEE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 5 6" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 6 6" FLOPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 7 6" FLOD BUTTERFLY VALVE, MUELLER LINESEAL III WITH LEVER OPERATOR OR EQUAL
- 8 6" FLOD TEE WITH TWO (2) - 2" TAPPED AND PLUGGED BOSSES FOR FUTURE CHLORINE INJECTION
- 9 6" FLOPE SPOOL, (L=AS REQUIRED)
- 10 6" 2100 MEGALANCE RESTRAINED FLANGE ADAPTER
- 11 6" FLOD ELSTER EVO 04 FLOW METER
- 12 6" FLOD SPOOL, (L=12")
- 13 6" FLOD VALMATIC TILTED DISC CHECK VALVE OR EQUAL
- 14 NOT USED
- 15 6" BLIND FLANGE
- 16 6" FLOD TEE
- 17 BAKER MONITOR PITLESS WELL HEAD ON EXISTING 13/16" J-55 SURFACE CASING W/ 4' BURY DEPTH
- 18 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 19 2" SCH. 80 PVC ELECTRICAL CONDUIT (SOLVENT WELD) FOR FUTURE CHLORINE HOSE CARRIER PIPE
- 20 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 21 2" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- 22 NON-SUBMERSIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, DISCHARGE PRESSURE 0-300 PSI.
- 23 6" FLANGE WITH 2" THREADED TAP
- 24 HIGH PRESSURE SHUT-OFF SWITCH MERCROID OR EQUAL
- 25 2" SCH. 80 PVC ELECTRICAL CONDUIT LONG SWEEP 90° ELL (SOLVENT WELD) FOR FUTURE CHLORINE HOSE CARRIER PIPE

*Mark DePauli*  
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MARC A. DEPAULI  
12/5/14  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF ARIZONA

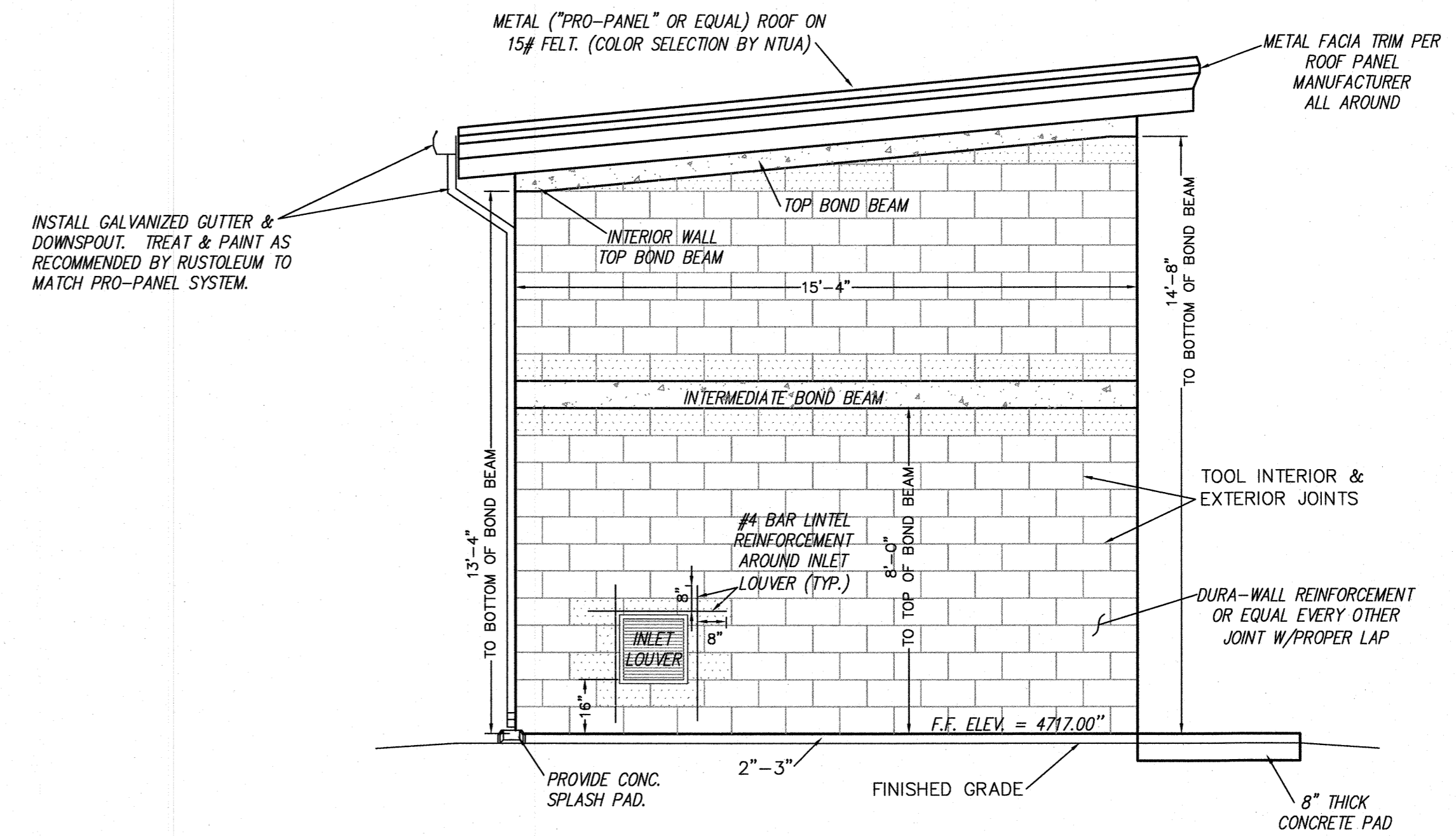


**WELL STATION ELEVATION (LOOKING SOUTH)**  
SCALE: 1/3"=1'

- NOTES:
1. EVERY CMU BLOCK CELL SHALL BE FILLED WITH 4000 PSI GROUT
  2. STATION EXTERIOR SHALL BE SPLIT FACE BLOCK. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS, AS SHOWN.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR
  4. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL. PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  4. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  5. ELECTRICAL EQUIPMENT, LIGHTS, AND BOXES NOT SHOWN IN ELEVATIONS. SEE ELECTRICAL DRAWINGS FOR LOCATION AND MOUNTING DETAILS.

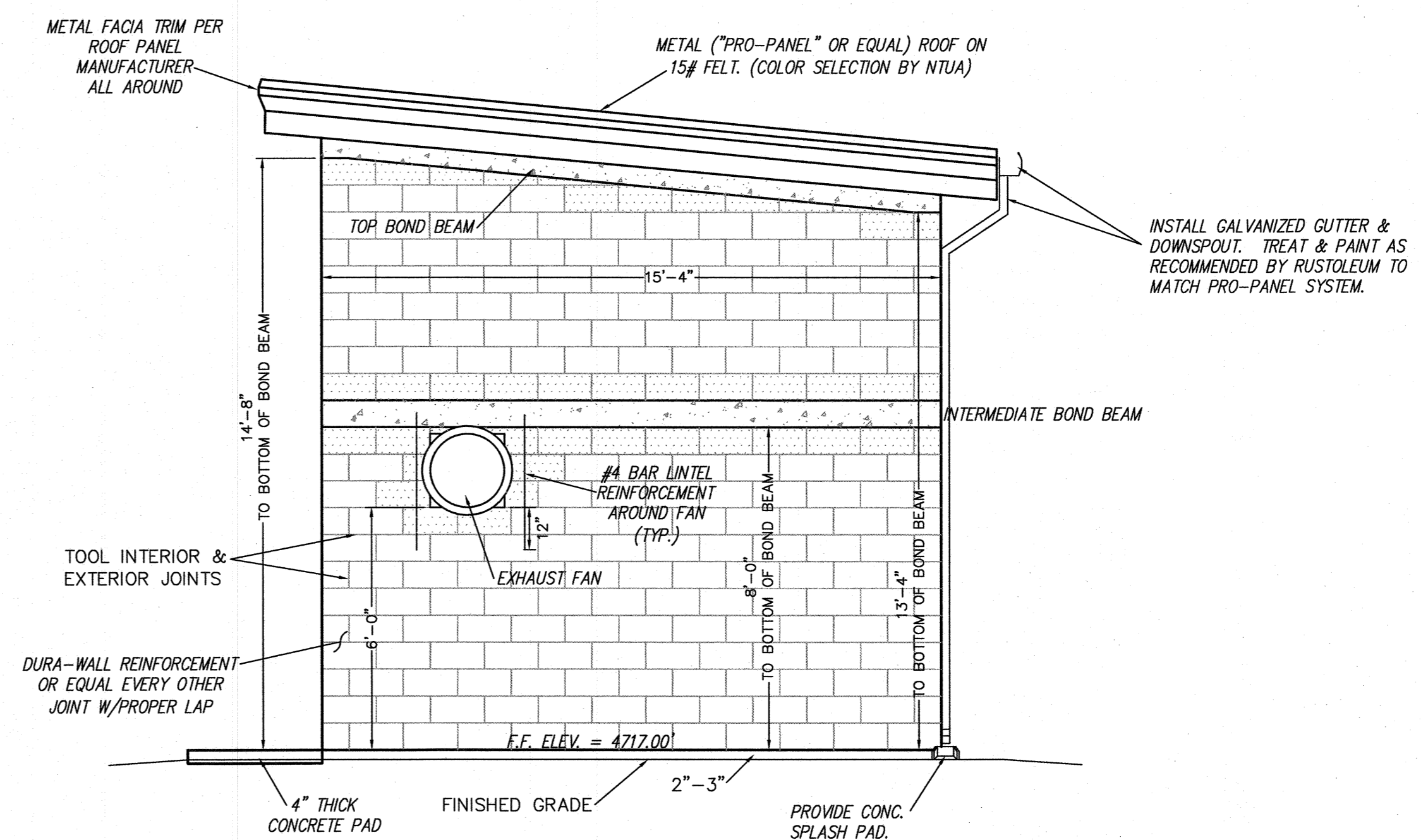
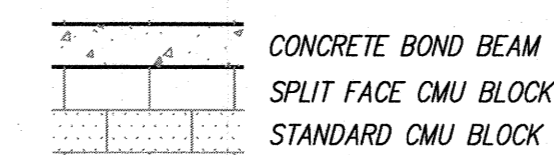


**WELL STATION ELEVATION (LOOKING NORTH)**  
SCALE: 1/3"=1'

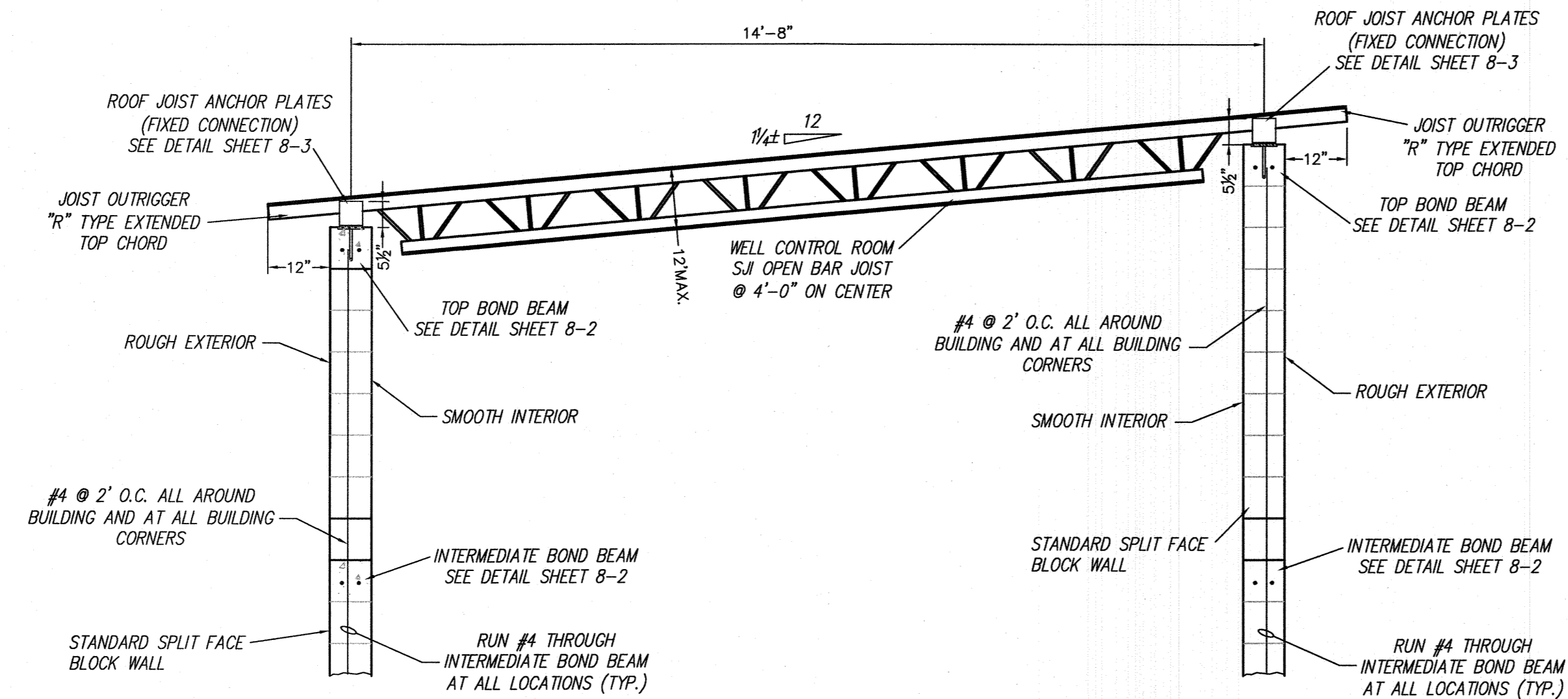


**WELL STATION ELEVATION (LOOKING EAST)**  
SCALE: 1/2"=1'

**BLOCK LEGEND**



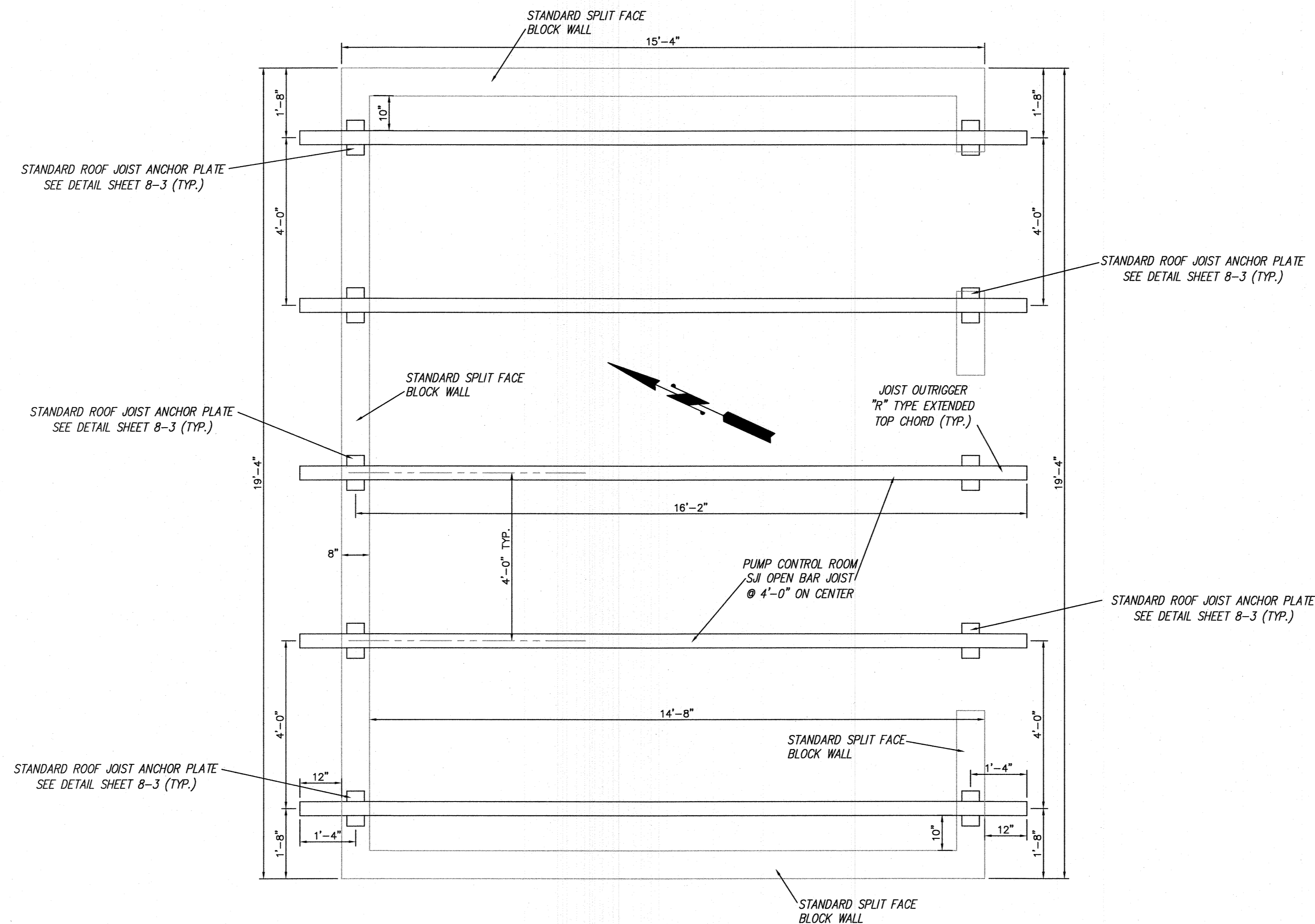
**WELL STATION ELEVATION (LOOKING WEST)**  
SCALE: 1/3"=1'



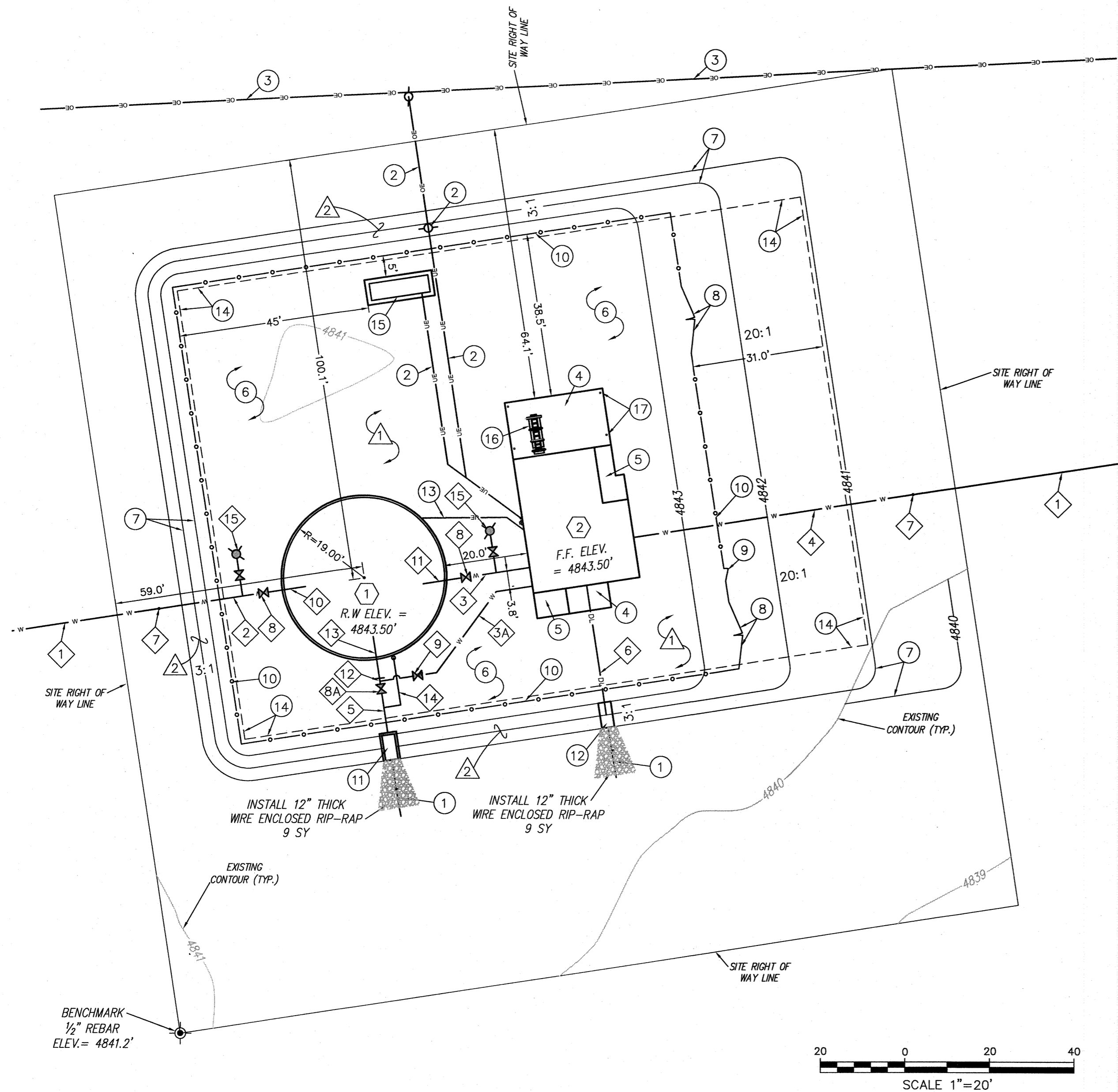
#### ROOF JOIST NOTES:

- JOIST LOADING:
    - LIVE LOAD = 120 PLF (SNOW LOAD)
    - DEAD LOAD = 64 PLF\*
    - UNIFORM LOAD = 184 PLF\*
    - \* ASSUMES A 12 PLF ROOF JOIST (JOIST MANUFACTURER TO ADJUST AS REQ'D)
  - JOIST WEB SHALL BE PER JOIST SUPPLIER WITH A MAXIMUM DEPTH OF 12" AND WIDTH OF 4"
  - JOIST BRIDGING TO BE PROVIDED AND INSTALLED PER JOIST SUPPLIER BEFORE ATTACHING TO WALLS OR GABLE FRAMING AS REQUIRED.
- NOTE: SEE SHEET 8-3 FOR ROOF DECKING DETAILS

**WELL STATION ROOF JOIST ELEVATION**  
SCALE: 1/2"=1'



**WELL STATION ROOF JOIST LAYOUT**  
SCALE: 1/2"=1'



**PUMP STATION "0" SITE & GRADING PLAN**  
SCALE 1"=20'

**ESTIMATED EARTHWORK QUANTITIES**

ITEM	EXCAVATED IN-SITU VOLUME CY	EMBANKMENT EARTHWORK VOLUME CY	EXCESS IN-SITU VOLUME CY
NATIVE MATERIAL	0	0	0
IMPORTED MATERIAL			
ENGINEERED FILL MATERIAL	-	1,400	-
GRAVEL SURFACING	-	210	-
TOTAL IMPORTED MATERIAL	-	1,610	-
TOTALS	0	1,610	0

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED OR NATIVE MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.

**PUMP STATION "0"**  
**SITE, GRADING, & PIPING PLAN KEYED NOTES:**

**BUILDING/STRUCTURE PAD KEYED NOTES:**

- PUMP STATION "0" 0.2-MG TANK, Ø=38.0', 24' HIGH (SEE SHEET 3-3 FOR DETAILS)
- PUMP STATION "0" (SEE SHEETS 3-4 TO 3-12 FOR DETAILS)

**BUILDING PAD KEYED NOTES:**

- BUILDING PAD SHALL BE COMPACTED TO 95% STANDARD PROCTOR. MAXIMUM CONSTRUCTION LOOSE LIFT SHALL NOT EXCEED 10"
- CONSTRUCT PAD SIDE SLOPES @ SLOPES SHOWN WITH MAXIMUM SLOPE OF 3:1

**CONSTRUCTION KEYED NOTES:**

- PROPOSED DRAINAGE DITCH FLOWLINE, GRADE TO DRAIN
- POWER POLE, SERVICE POLE, DOWN GUY AND SERVICE LINES (OVERHEAD OR UNDERGROUND) BY NTUA
- OVERHEAD ELECTRIC LINE BY NTUA
- INSTALL CONCRETE DRIVE PAD SEE SHEET 3-4 FOR DETAILS
- INSTALL CONCRETE ACCESS PAD SEE SHEET 3-4 FOR DETAILS
- PLACE 5" OF GRAVEL OR BASE COURSE ON NON-WOVEN FABRIC FOR TANK AND STATION YARD.
- NEW FINISHED GRADE CONTOURS FOR PUMP STATION SITE (TYP.)
- INSTALL 16" CHAIN LINK (TWO (2)-8" PANELS) ACCESS GATE (2 REQUIRED) PER IHS STANDARD DETAIL W-34
- INSTALL 3' PERSONNEL GATE (1 REQUIRED) PER IHS STANDARD DETAIL W-34
- INSTALL NEW CHAIN LINK FENCE AS SHOWN L=455'± PER IHS STANDARD DETAIL W-34
- TANK DRAIN OUTLET STRUCTURE SEE DETAIL ON SHEET 3-2
- PUMP STATION DRAIN PAD SEE DETAIL ON SHEET 3-2
- UNDERGROUND ELECTRICAL AND CONTROL CONDUITS PER ELECTRICAL DESIGN
- EDGE OF 5" GRAVEL SURFACING.
- INSTALL 16'x6" CONCRETE ELECTRICAL PAD WITH GENERATOR PER ELECTRICAL DETAILS
- 1-TON CHLORINE CYLINDER LOADING SYSTEM
- CHLORINE BRIDGE CRANE COLUMNS (TYP.)

**PIPING KEYED NOTES:**

- 12" PVC SDR-21 WATER TRANSMISSION LINES BY OTHERS
- INSTALL 12" CL 350 DUCTILE IRON TANK INLET PIPING
- INSTALL 12" CL 350 DUCTILE IRON PUMP SUCTION PIPING
- 2" SDR 21 PVC PRESSURE SENSING LINE.
- INSTALL 12" CL 350 DUCTILE IRON PUMP DISCHARGE PIPING
- INSTALL 10" CL 350 DUCTILE IRON TANK DRAIN LINE
- INSTALL 4" SCH. 80 PVC PUMP STATION DRAIN LINE WITH CLEANOUT AND FITTINGS AS REQUIRED
- INSTALL CAP OR CONNECT TO 12" PVC TRANSMISSION LINE BY OTHERS
- INSTALL 12" FLG&M GATE VALVE
- INSTALL HORIZONTAL 10" M&M&J GATE VALVE WITH BEVEL GEAR
- INSTALL 2" M&M&J GATE VALVE
- INSTALL TANK INLET STUB-OUT PER TANK MANUFACTURER
- INSTALL TANK OUTLET STUB-OUT PER TANK MANUFACTURER
- SENSOR LINE CONNECTION TO DRAIN PIPING PER DETAIL ON SHEET 3-2
- INSTALL TANK DRAIN STUB-OUT PER TANK MANUFACTURER
- TANK OVERFLOW PIPING PER TANK MANUFACTURER
- TEMPORARY TANK CONNECTION PER DETAIL ON SHEET 3-2

**NOTES:**

- CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
  - FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL TO THE GREATEST EXTENT POSSIBLE. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
  - ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. POLYETHYLENE ENCASEMENT JOINTS SHALL BE STAGGERED.
  - VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
  - FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
- SURVEY NOTES:**
- COORDINATES SHOWN ARE REFERENCED TO A PROJECT CONTROL SYSTEM WHICH IS BASED ON NAD 83 DATUM REFERENCED TO ARIZONA STATE PLANE EAST ZONE "SPC(0201 AZE)" GROUND COORDINATES WITH A COMBINED FACTOR OF 0.999671948.
  - BEARINGS SHOWN ARE GRID.
  - ELEVATIONS ARE BASED ON NAVD88/GEOD18 (VERTICAL DATUM)

**SITE, GRADING & PIPING PLAN**  
**CONSTRUCTION COORDINATES**

**SITE CORNERS**

DESC.	NORTHING	EASTING
1 NE COR.	1576100.23	519815.90
2 NW COR.	1576069.71	519618.05
3 SW COR.	1575872.04	519648.39
4 SE COR.	1575902.59	519846.34

**0.2 MG RESERVOIR**

DESC.	NORTHING	EASTING
5 TANK CNTR.	1575979.76	519691.52

**PUMP STATION**

DESC.	NORTHING	EASTING
6 NE COR.	1576010.86	519745.74
7 NW COR.	1576007.91	519726.64
8 SW COR.	1575976.28	519731.52
9 SE COR.	1575980.15	519756.55
28 E. INT. COR.	1575997.68	519747.78
29 E. EXT. COR.	1575998.59	519753.71

**FENCE CORNERS/PI'S**

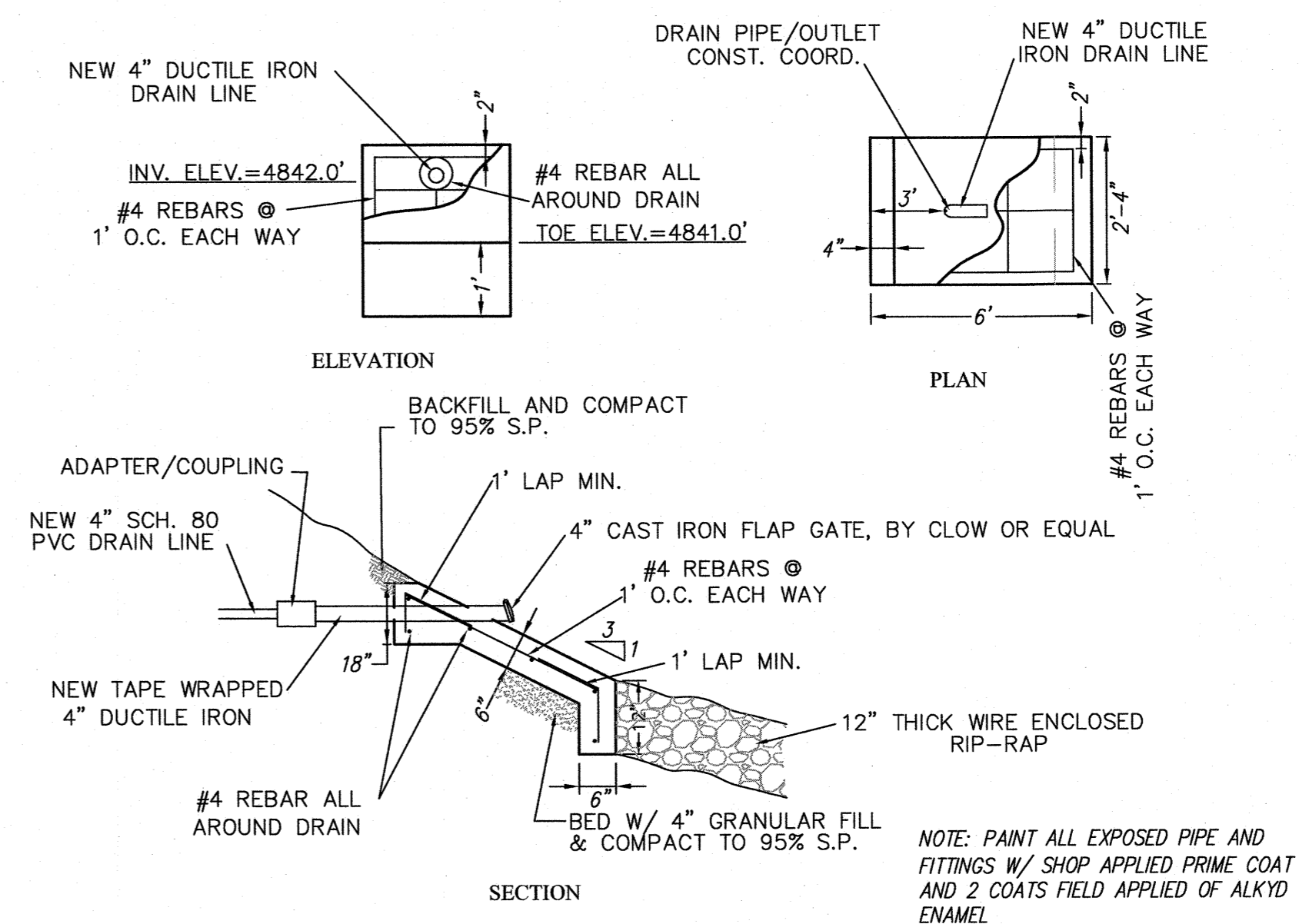
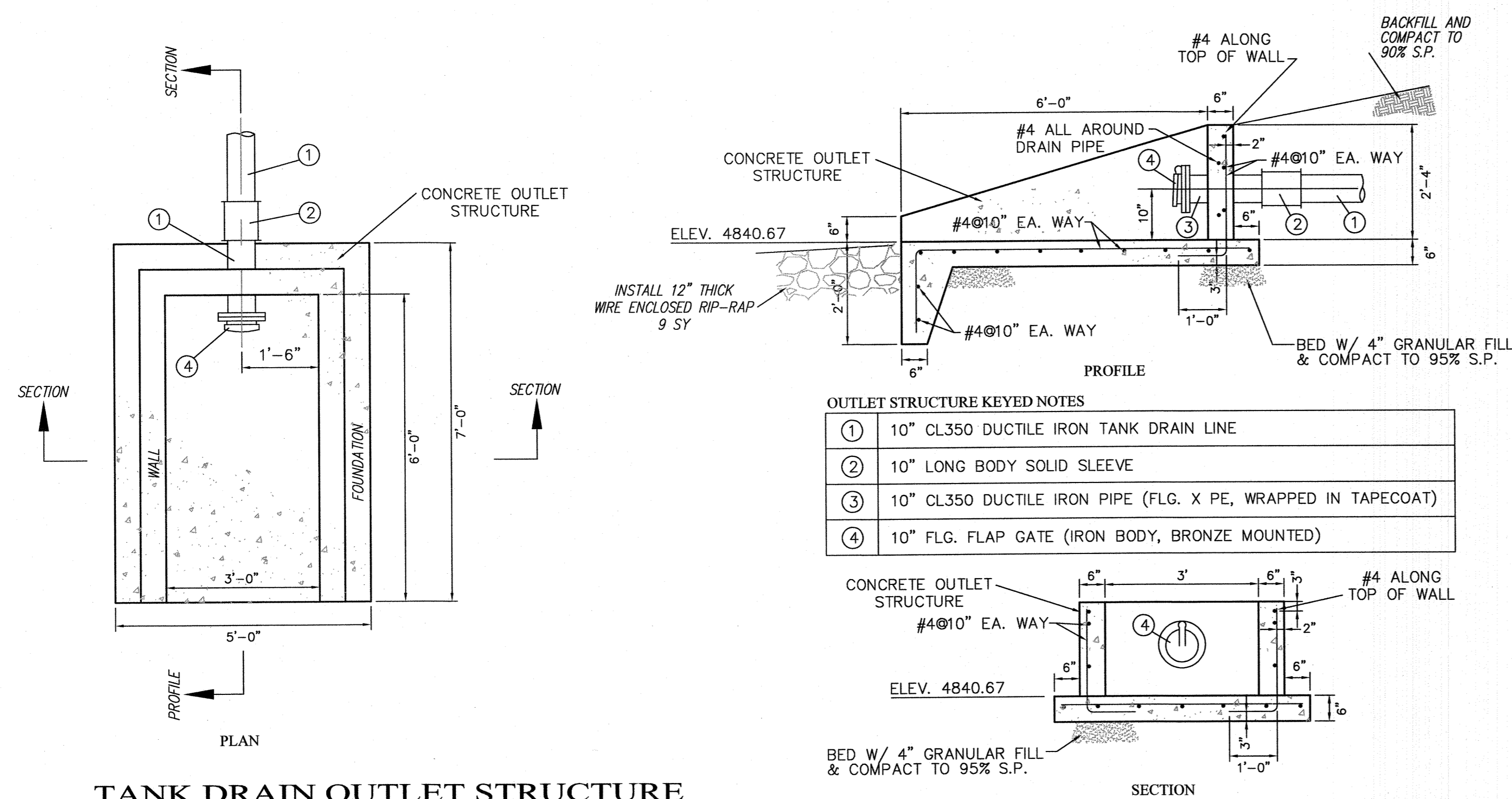
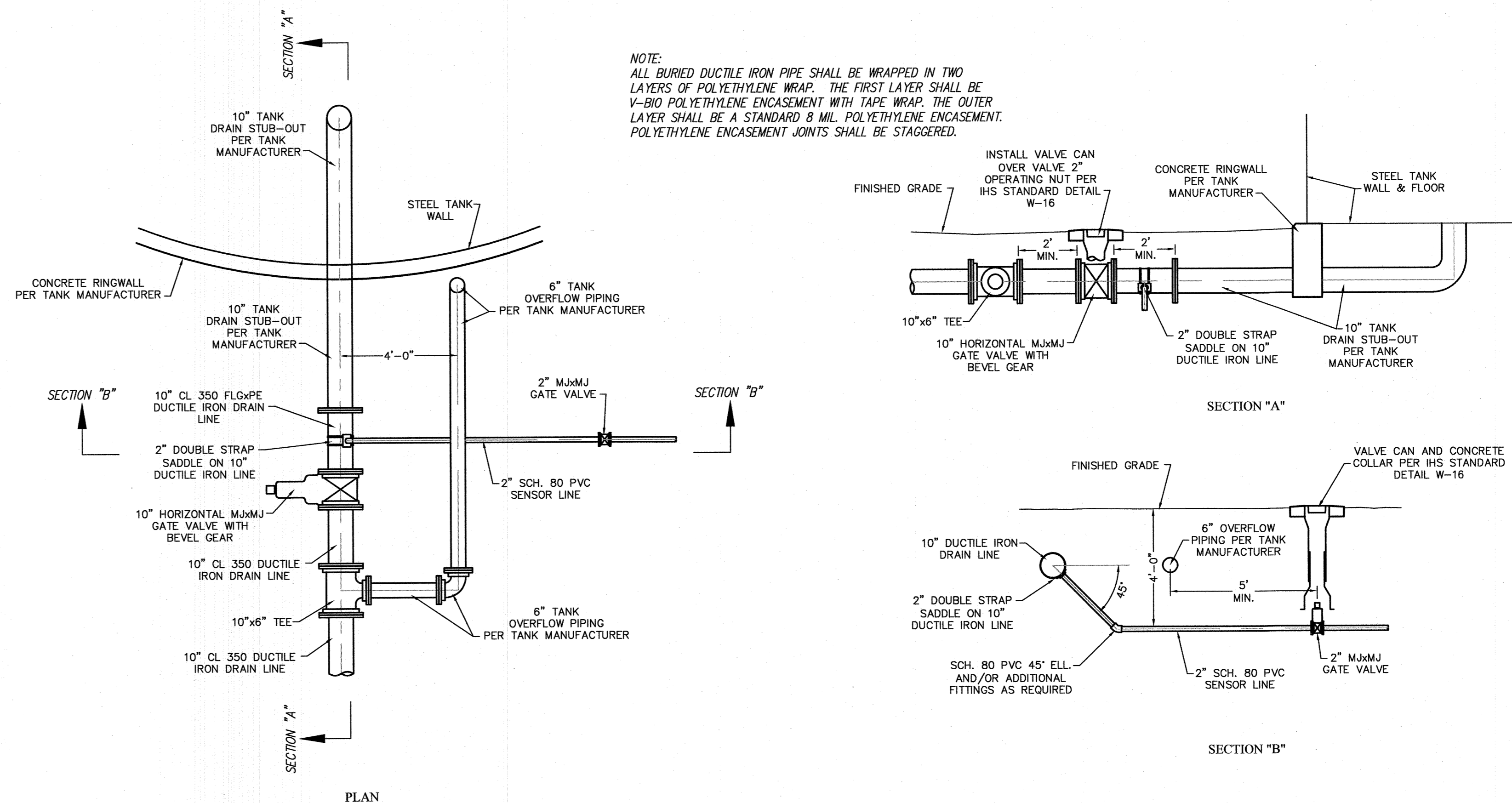
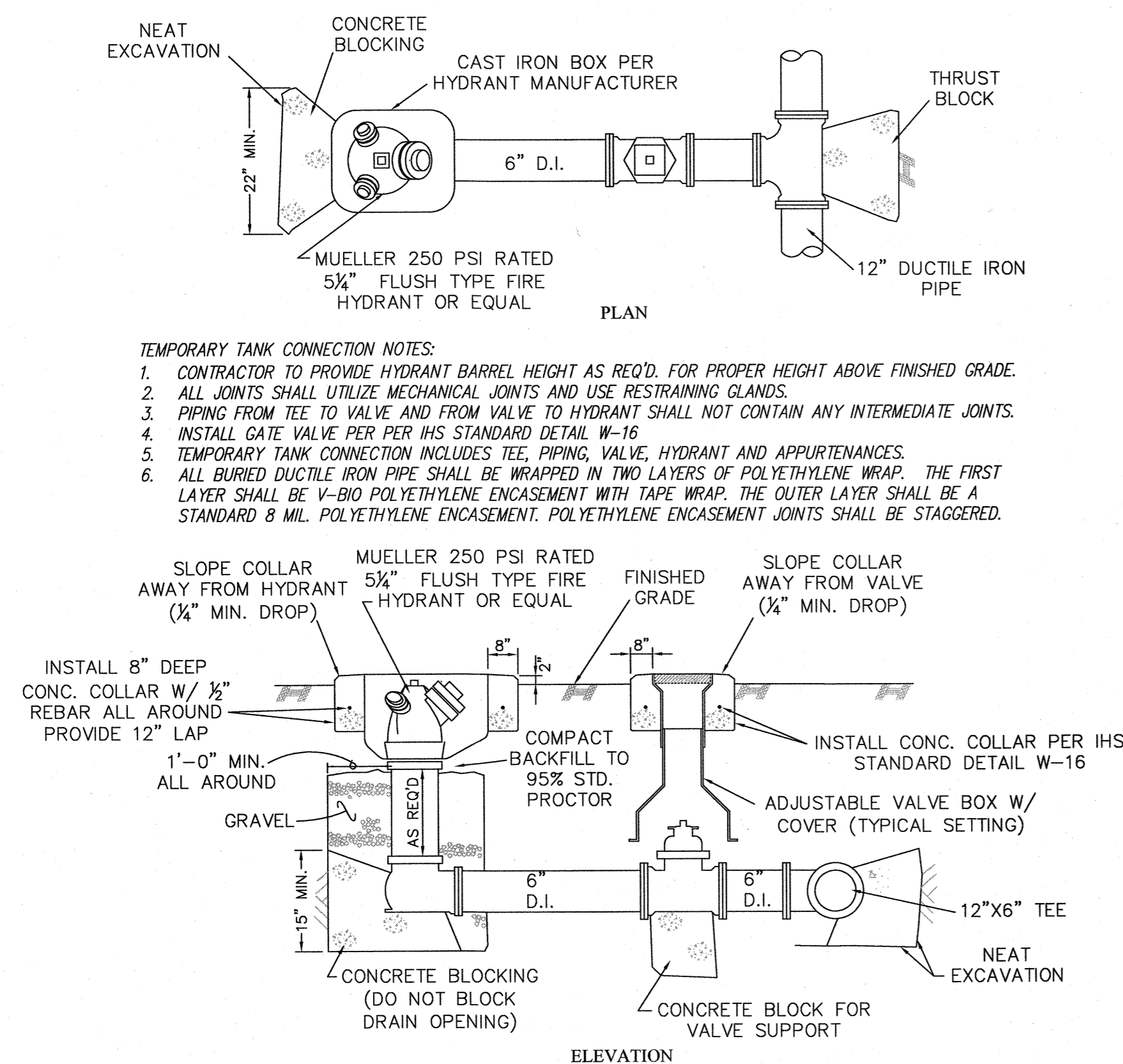
DESC.	NORTHING	EASTING
10 NE COR.	1576046.48	519766.55
11 NW COR.	1576028.36	519649.14
12 SW COR.	1575940.40	519662.65
13 SE COR.	1575958.52	519780.13

**PI/FITTING DESC**

PI/FITTING DESC	NORTHING	EASTING
14 INLET CAP/CONNECTION.	1575972.31	519643.12
15 12" TANK INLET STUB-OUT	1575977.62	519677.68
16 12" TANK OUTLET STUB-OUT	1575978.42	519705.45
17 DISCHARGE CAP/CONNECTION	1575999.71	519821.26
18 2" SENSOR & DRAIN LINE CONNECTION	1575955.35	519695.29
19 10" DRAIN STUB-OUT	1575965.92	519693.65
20 10" DRAIN OUTLET	1575944.68	519696.93
21 2" DRAIN OUTLET	1575949.59	519748.45
22 INLET 12"x6" TEE	1575975.34	519662.86
23 INLET TEMP. TANK CONNECTION	1575985.23	519661.33
24 OUTLET 12"x6" TEE	1575981.10	519722.68
25 OUTLET TEMP. TANK CONNECTION	1575990.98	519721.16
26 2" SENSOR LINE 45' ELL	1575957.43	519708.67
27 2" SENSOR LINE 45' ELL	1575977.37	519723.25

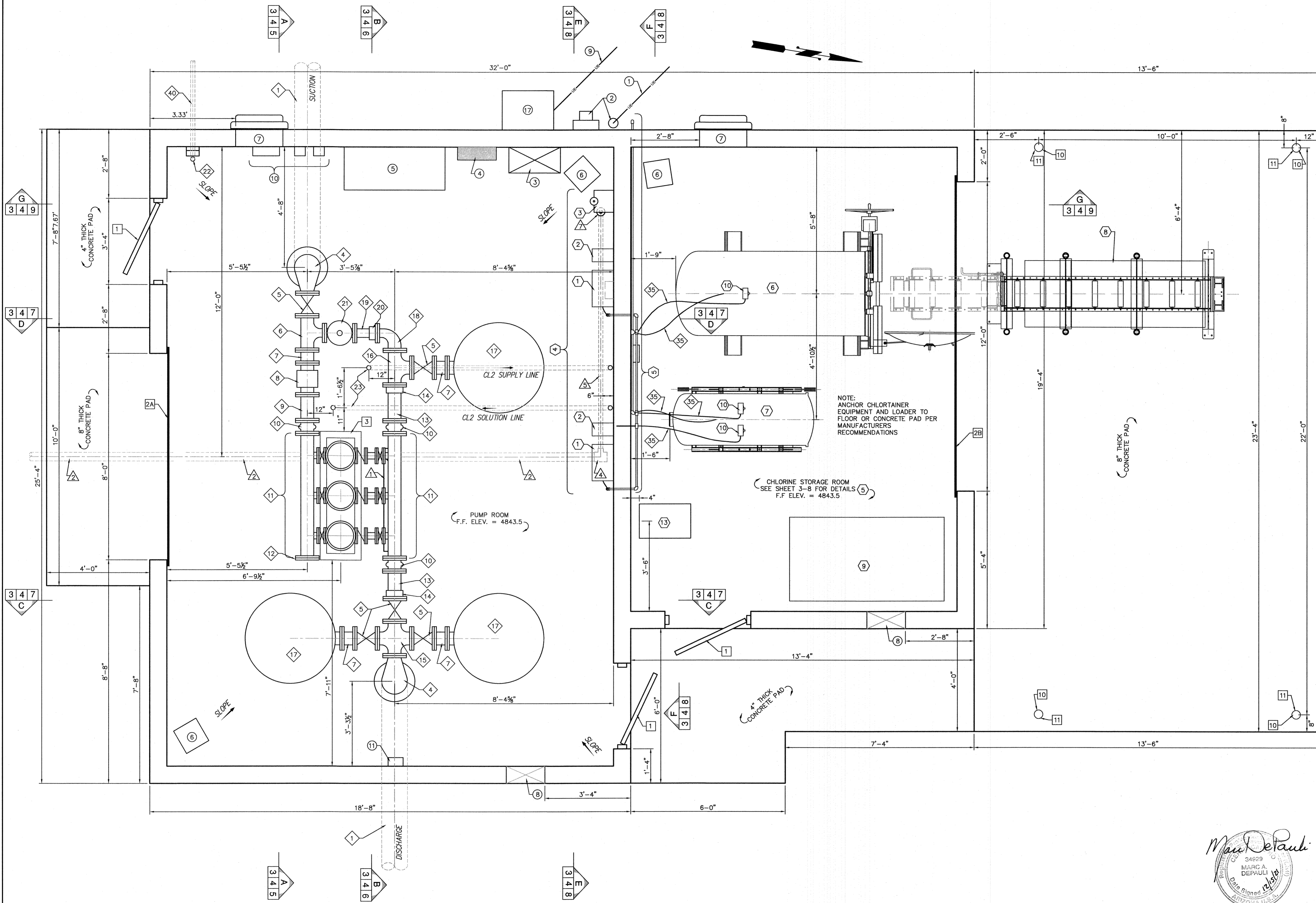
**ELECTRICAL PAD**

DESC.	NORTHING	EASTING
30 NE COR.	1576055.05	519710.60
31 NW COR.	1576050.78	519682.92
32 SW COR.	1576042.87	519684.14
33 SE COR.	1576047.14	519711.82





- NTS



**PRESSURE FITTING & PIPING KEYED NOTES:**

- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" M.J. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLGD 90° REDUCING ELL. WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE AND SENSOR PIPING
- 5 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLGD REDUCING TEE
- 7 6" FLGD SPOOL, (L=6')
- 8 6" FLGD ELSTER EVO Q4 FLOW METER
- 9 6" FLGD SPOOL, (L=12')
- 10 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- 11 GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- 12 6" BLIND FLANGE
- 13 6" FLOWPE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLGD CROSS
- 16 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLGD REDUCING ELL
- 19 4" FLOWPE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 3-9
- 23 2" SCH. 80 PVC ELECTRICAL CONDUIT (SOLVENT WELD) FOR CHLORINE HOSE CARRIER PIPE
- 24 2" SCH. 80 PVC ELECTRICAL CONDUIT LONG SWEEP 90° ELL (SOLVENT WELD) FOR CHLORINE HOSE CARRIER PIPE
- 25 1" 185-PSI WORKING PRESSURE BRAID REINFORCED CLEAR PVC HOSE (NYLOBRADE OR EQUAL) ADAPT AS REQUIRED
- 26 CHLORINE EJECTOR PIPING (SEE DETAIL SHEET 3-5)
- 27 3/4" STANDARD BRASS BODY RETRACTABLE CORP STOP WITH PVC WETTED DIFFUSER EJECTOR (TO MIDDLE OF 6" PIPE) ADAPT TO 1 1/2" PVC CHLORINATION LINE AS REQUIRED
- 28 DOUBLE STRAP BRASS SADDLE (SIZE AS REQUIRED), FORD 20285 OR EQUAL
- 29 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 10 PS) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 29A LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PS) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 30 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)
- 31 1 1/2" SCH. 80 PVC CHLORINATION WATERLINE, SOLVENT WELD TEE, WITH REDUCING BUSHING AND TREADED PLUG FOR MANUAL AIR RELEASE
- 32A NON-SUBMERSIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, TANK LEVEL SENSOR 0-10 PSI
- 32B NON-SUBMERSIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, DISCHARGE PRESSURE 0-300 PSI
- 33 1 1/2" CHLORINE SUPPLY PIPING (SEE DETAIL SHEET 3-6)
- 34 1 1/2" MUELLER 300 BALL CORPORATION VALVE AWWA MALE IRON PIPE THREAD x FEMALE IRON PIPE THREAD & 1 1/2" CLA-VAL CRD-L DIRECT ACTING PRESSURE REDUCING VALVE ADAPT CONNECTIONS AS REQUIRED
- 35 1/2" O.D. (3/4" I.D.) FLEXIBLE POLYETHYLENE PIPING RUN NEATLY ALONG WALL AND ADAPT AS REQUIRED
- 36 3/4" RIGID PVC CHLORINE GAS PIPING W/ FITTINGS, WALL PENETRATIONS AS REQUIRED, (SEE WALL PENETRATION DETAIL ON SHEET 8-1)
- 37 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 38 1" SCH. 80 PVC CHLORINATION LINE PIPING AND FITTING AS REQUIRED (SOLVENT WELD)
- 39 3/4" SCH. 80 PVC CHLORINATION LINE PIPING AND FITTING AS REQUIRED (SOLVENT WELD)
- 40 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 41 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 42 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 43 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 44 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 45 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

**CONSTRUCTION KEYED NOTES:**

- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME, PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOOK TO BE KEED TO NIA WATER SYSTEM STANDARD.)
- 2A 8" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 2B 12" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL. (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTE BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)
- 10 MANUALLY OPERATED BRIDGE CRANE (SEE DETAIL SHEET 3-12)
- 11 BRIDGE CRANE PEDESTAL (TYP.), (SEE DETAIL SHEET 3-12)

**DRAIN FITTING & PIPING KEYED NOTES:**

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC TEE (SOLVENT WELD)
- 4 4"x2" SCH. 80 PVC REDUCING TEE (SOLVENT WELD) PLUG OR CAP AS REQUIRED
- 5 2" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 6 2" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 7 4"x2" SCH. 80 PVC REDUCER. (SOLVENT WELD)
- 8 2" SCH. 80 PVC TEE. (SOLVENT WELD)

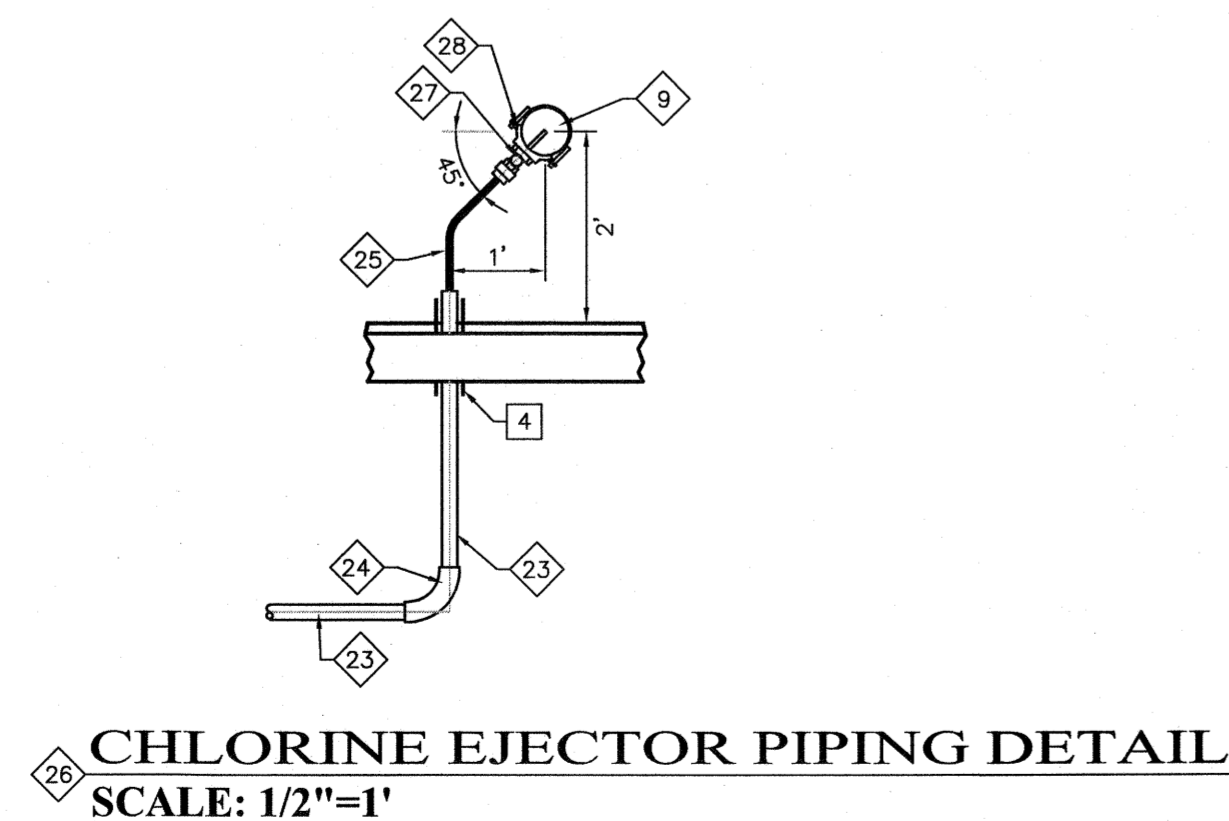
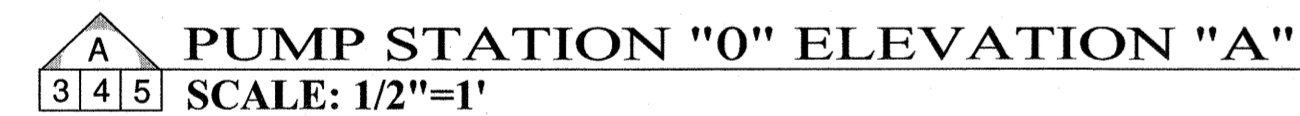
**ELECTRICAL & MECHANICAL KEYED NOTES:**

- 1 OVERHEAD ELECTRIC SERVICE PER NIA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NIA AND IHS STANDARDS VERSION 4.0
- 5 GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER, "OMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #AMBIO WALL MOUNTED BRACKET. (240V, 14, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE AS INDICATED ON DRAWINGS)
- 14 CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS ELECTRONICS ENCLOSURE/DISPLAY
- 15 ELECTRONIC WEIGH SCALE DISPLAY (WIZARD 4000 OR EQUAL) TWO REQUIRED
- 16 DUAL POINT GAS DETECTION SYSTEM RECEIVER MODULE/DISPLAY, (WALLACE & TIERNAN ACUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- 17 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

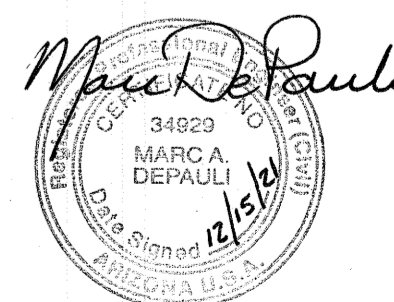
**CHLORINATION KEYED NOTES:**

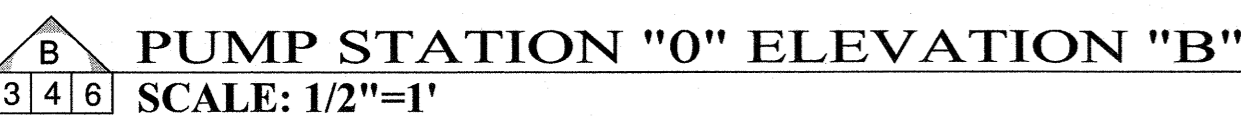
- 1 30 LB/DAY CHLORINATION SYSTEM, WALLACE & TIERNAN VIOK GAS FEED SYSTEM OR EQUAL
- 2 CHLORINATION SYSTEM PROCESS CONTROL UNIT, WALLACE & TIERNAN SFC PC OR EQUAL
- 3 CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS BARE-ELECTRODE FLOW CELL OR EQUAL
- 4 CHLORINATION WALL, SEE SHEET 3-8 FOR DETAILED LAYOUT & ELEVATION
- 5 CHLORINE STORAGE ROOM, SEE SHEET 3-8 FOR DETAILED LAYOUT & ELEVATION
- 6 1 TON CHLORINE GAS CYLINDER SECONDARY CONTAINMENT VESSEL WITH SCALE. 1 TON CHLORINATOR OR EQUAL
- 7 DUAL 150 POUND CHLORINE GAS CYLINDER SECONDARY CONTAINMENT VESSEL WITH SCALE. DUAL 150# CHLORINATOR OR EQUAL
- 8 FIXED 1 TON SECONDARY CONTAINMENT VESSEL, LOADER BY SECONDARY CONTAINMENT VESSEL MANUFACTURER
- 9 PORTABLE 150 LB. SECONDARY CONTAINMENT VESSEL, LOADER BY SECONDARY CONTAINMENT VESSEL MANUFACTURER
- 10 200 PPD VACUUM REGULATOR W/ AUTOMATIC SWITCHOVER CONNECT TO CHLORINATOR SYSTEMS AS REQUIRED, WALLACE & TIERNAN VIOK GAS FEED SYSTEM OR EQUAL
- 11 3" CHLORINE GAS INJECTORS, WALLACE & TIERNAN VIOK GAS FEED SYSTEM OR EQUAL
- 12 DUAL POINT GAS DETECTION SYSTEM SENSER/TRANSMITTER, (WALLACE & TIERNAN ACUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- 13 GUARDIAN G1950-DC-SSH SAFETY STATION WITH EYE/FACE WASH, STAINLESS STEEL, BOWL AND SHOWER HEAD, AND POWDER COATED FINISH. CONNECT TO CHLORINATION AND DRAIN PIPING WAS REQUIRED

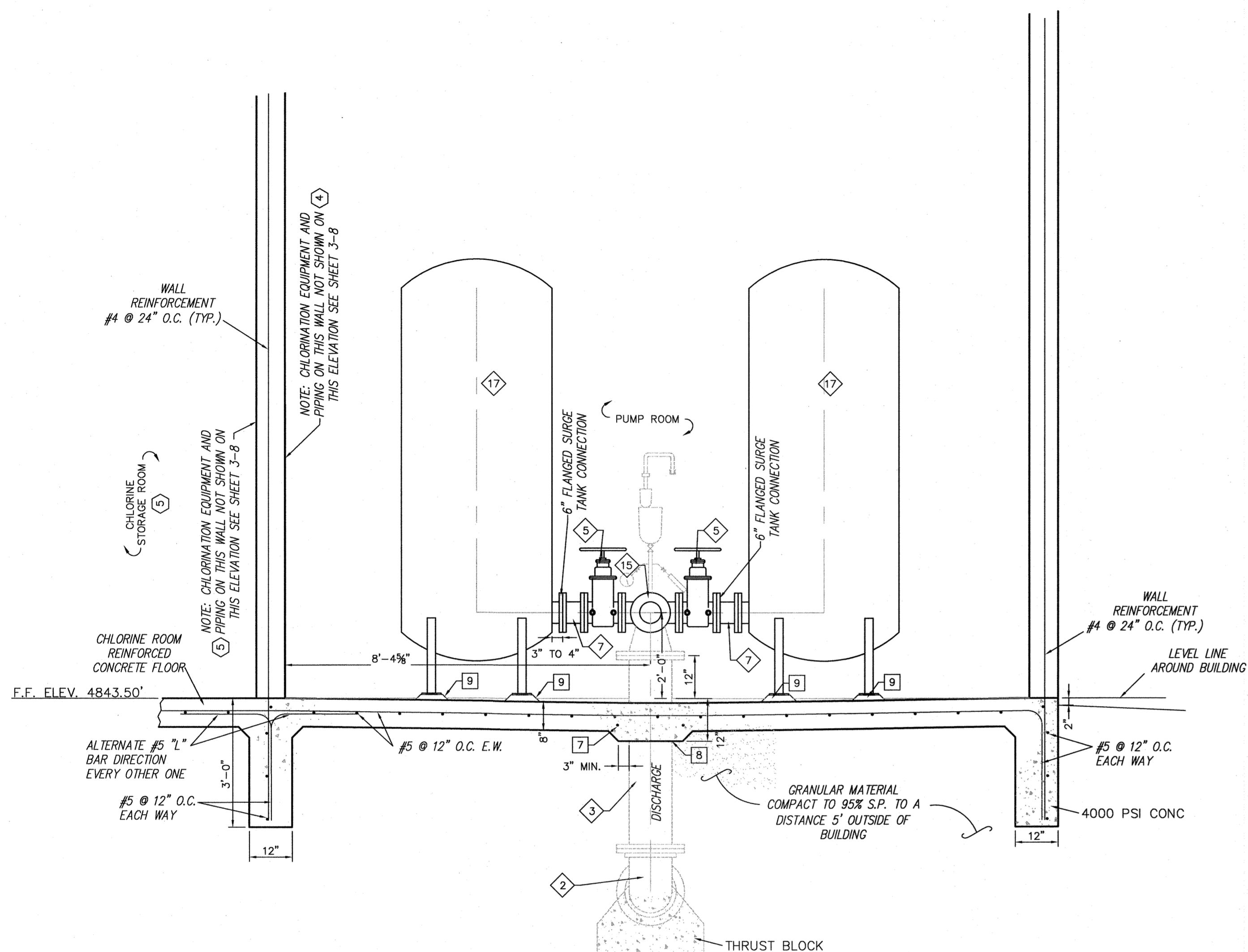
**PUMP STATION "0" LAYOUT & PIPING PLAN**  
SCALE: 1/2"=1'



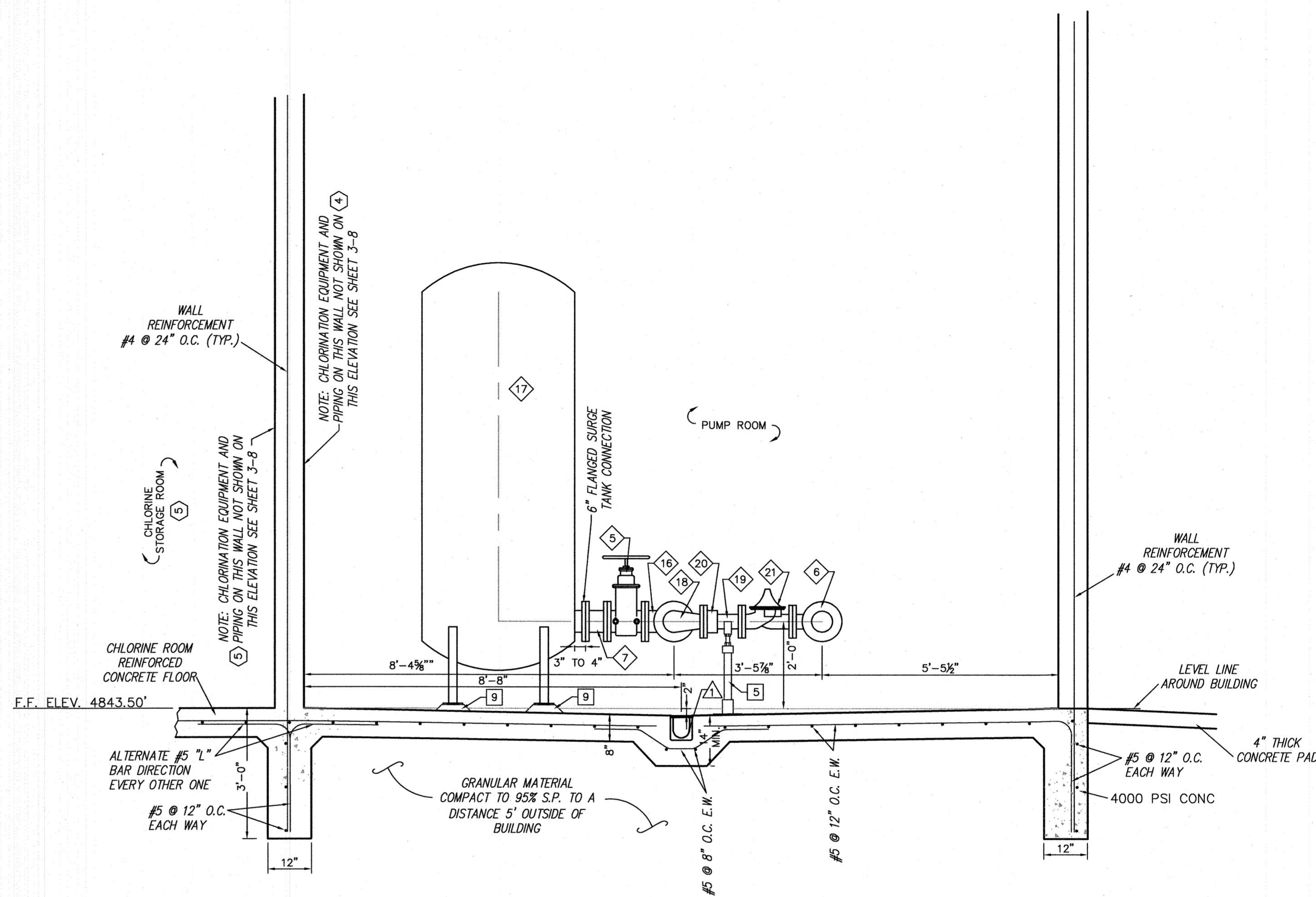
- ① OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ② ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- ③ NEMA 3R ELECTRICAL CABINET PANEL "A"
- ④ NEMA 3R E.S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- ⑤ GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ⑥ ELECTRIC UNIT HEATER, "QMARK" #JWH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #JMB10 WALL MOUNTED BRACKET. (240V, 1 $\phi$ , 7.5KW)
- ⑦ EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- ⑧ MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- ⑨ CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- ⑩ MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- ⑪ TRANSUDER JUNCTION BOX WITH TRANSUDER VENT SEAL TO MATCH TRANSUDER MANUFACTURER
- ⑫ FLOW METER DISPLAY AND TRANSMITTER UNIT
- ⑬ TRANSUDER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- ⑭ CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS ANALYTICS ENCLOSURE/DISPLAY
- ⑮ ELECTRONIC WEIGH SCALE DISPLAY (WIZARD 4000 OR EQUAL) TWO REQUIRED
- ⑯ DUAL POINT GAS DETECTION SYSTEM RECEIVER
- ⑰ DOUBLE DISPLAY (WALLACE & TIERNAN AUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- ⑱ AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS.







**PUMP STATION "O" ELEVATION "C"**  
SCALE: 1/2"=1'



**PUMP STATION "O" ELEVATION "D"**  
SCALE: 1/2"=1'

**PRESSURE FITTING & PIPING KEYED NOTES:**

- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLG&PE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLGD 90° REDUCING ELL. WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE AND SENSOR PIPING
- 5 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLGD REDUCING TEE
- 7 6" FLGD SPOOL, (L=6')
- 8 6" FLGD ELSTER EVO 04 FLOW METER
- 9 6" FLGD SPOOL, (L=12')
- 10 6" PROCO STYLE 231FA NSF81 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- 11 GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 OR45-5
- 12 6" BLIND FLANGE
- 13 6" FLG&PE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLGD CROSS
- 16 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLGD REDUCING ELL.
- 19 4" FLG&PE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 3-9
- 23 2" SCH. 80 PVC ELECTRICAL CONDUIT (SOLVENT WELD) FOR CHLORINE HOSE CARRIER PIPE
- 24 2" SCH. 80 PVC ELECTRICAL CONDUIT LONG SWEEP 90° ELL. (SOLVENT WELD) FOR CHLORINE HOSE CARRIER PIPE
- 25 1" 185-PSI WORKING PRESSURE BRAID REINFORCED CLEAR PVC HOSE (NYLOBRAD OR EQUAL) ADAPT AS REQUIRED
- 26 CHLORINE EJECTOR PIPING (SEE DETAIL SHEET 3-5)
- 27 3/4" STANDARD BRASS BODY RETRACTABLE CORP STOP WITH PVC WETTED DIFFUSER EJECTOR (TO MIDDLE OF 6" PIPE) ADAPT TO 1 1/2" PVC CHLORINATION LINE AS REQUIRED
- 28 DOUBLE STRAP BRASS SADDLE (SIZE AS REQUIRED), FORD 2020S OR EQUAL
- 29 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 10 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 30 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 31 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- 32 NON-SUBMERISIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, TANK LEVEL SENSOR 0-10 PSI
- 33 NON-SUBMERISIBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, DISCHARGE PRESSURE 0-300 PSI
- 34 1 1/2" CHLORINE SUPPLY PIPING (SEE DETAIL SHEET 3-6)
- 35 1 1/2" MUELLER 300 BALL CORPORATION VALVE AWWA MALE IRON PIPE THREAD x FEMALE IRON PIPE THREAD & 1 1/2" CLA-VAL ORD-L DIRECT ACTING PRESSURE REDUCING VALVE. ADAPT CONNECTIONS AS REQUIRED
- 36 1/2" O.D. (1 1/4" I.D.) FLEXIBLE POLYETHYLENE PIPING RUN NEARLY ALONG WALL AND ADAPT AS REQUIRED
- 37 1/2" RIGID PVC CHLORINE GAS PIPING W/ FITTINGS, WALL PENETRATIONS AS REQUIRED, (SEE WALL PENETRATION DETAIL THIS SHEET)
- 38 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 39 1" SCH. 80 PVC CHLORINATION LINE PIPING AND FITTING AS REQUIRED (SOLVENT WELD)
- 40 1" SCH. 80 PVC CHLORINATION LINE PIPING AND FITTING AS REQUIRED (SOLVENT WELD)
- 41 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 42 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 43 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 44 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BB
- 45 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 46 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

**ELECTRICAL & MECHANICAL KEYED NOTES:**

- 1 OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- 5 GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER, "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MB10 WALL MOUNTED BRACKET. (240V, 14, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- 14 CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS ELECTRONICS ENCLOSURE/DISPLAY
- 15 ELECTRONIC WEIGH SCALE DISPLAY (WIZARD 4000 OR EQUAL) TWO REQUIRED
- 16 DUAL POINT GAS DETECTION SYSTEM RECEIVER MODULE/DISPLAY, (WALLACE & TIERNAN ACUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- 17 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

**CHLORINATION KEYED NOTES:**

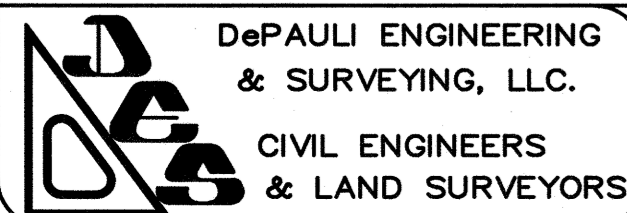
- 1 30 LB/DAY CHLORINATION SYSTEM, WALLACE & TIERNAN VIKOK GAS FEED SYSTEM OR EQUAL
- 2 CHLORINATION SYSTEM PROCESS CONTROL UNIT, WALLACE & TIERNAN SFC PC OR EQUAL
- 3 CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS BARE-ELECTRODE FLOW CELL OR EQUAL
- 4 CHLORINATION WALL, SEE SHEET 3-8 FOR DETAILED LAYOUT & ELEVATION
- 5 CHLORINE STORAGE ROOM, SEE SHEET 3-8 FOR DETAILED LAYOUT & ELEVATION
- 6 1 TON CHLORINE GAS CYLINDER SECONDARY CONTAINMENT VESSEL WITH SCALE. TON CHLORINAIR OR EQUAL
- 7 DUAL 150 POUND CHLORINE GAS CYLINDER SECONDARY CONTAINMENT VESSEL WITH SCALE. DUAL 150# CHLORINAIR OR EQUAL
- 8 FIXED 1 TON SECONDARY CONTAINMENT VESSEL LOADER BY SECONDARY CONTAINMENT VESSEL MANUFACTURER
- 9 PORTABLE 150 LB. SECONDARY CONTAINMENT VESSEL LOADER BY SECONDARY CONTAINMENT VESSEL MANUFACTURER
- 10 200 PPD VACUUM REGULATOR W/ AUTOMATIC SWITCHOVER CONNECT TO CHLORINAIR SYSTEMS AS REQUIRED, WALLACE & TIERNAN VIKOK GAS FEED SYSTEM OR EQUAL
- 11 1" CHLORINE GAS INJECTORS, WALLACE & TIERNAN VIKOK GAS FEED SYSTEM OR EQUAL
- 12 DUAL POINT GAS DETECTION SYSTEM SENSER/TRANSMITTER, (WALLACE & TIERNAN ACUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- 13 GUARDIAN G1950-GC-SSH SAFETY STATION WITH EYE/FACE WASH, STAINLESS STEEL BOWL AND SHOWER HEAD, AND POWER COATED FINISH. CONNECT TO CHLORINATION AND DRAIN PIPING AS REQUIRED

**CONSTRUCTION KEYED NOTES:**

- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYS TO NTUA WATER SYSTEM STANDARD.)
- 2A 8' WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 2B 12' WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL. (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTE BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)
- 10 MANUALLY OPERATED BRIDGE CRANE (SEE DETAIL SHEET 3-12)
- 11 BRIDGE CRANE PEDESTAL (TYP.), (SEE DETAIL SHEET 3-12)

**DRAIN FITTING & PIPING KEYED NOTES:**

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC TEE (SOLVENT WELD)
- 4 4"x2" SCH. 80 PVC REDUCING TEE (SOLVENT WELD) PLUG OF CAP AS REQUIRED
- 5 2" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 6 2" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 7 4"x2" SCH. 80 PVC REDUCER. (SOLVENT WELD)
- 8 2" SCH. 80 PVC TEE. (SOLVENT WELD)



for  
**NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY**

for the  
**INDIAN HEALTH SERVICE WINSLOW SERVICE UNIT**  
WINSLOW, ARIZONA

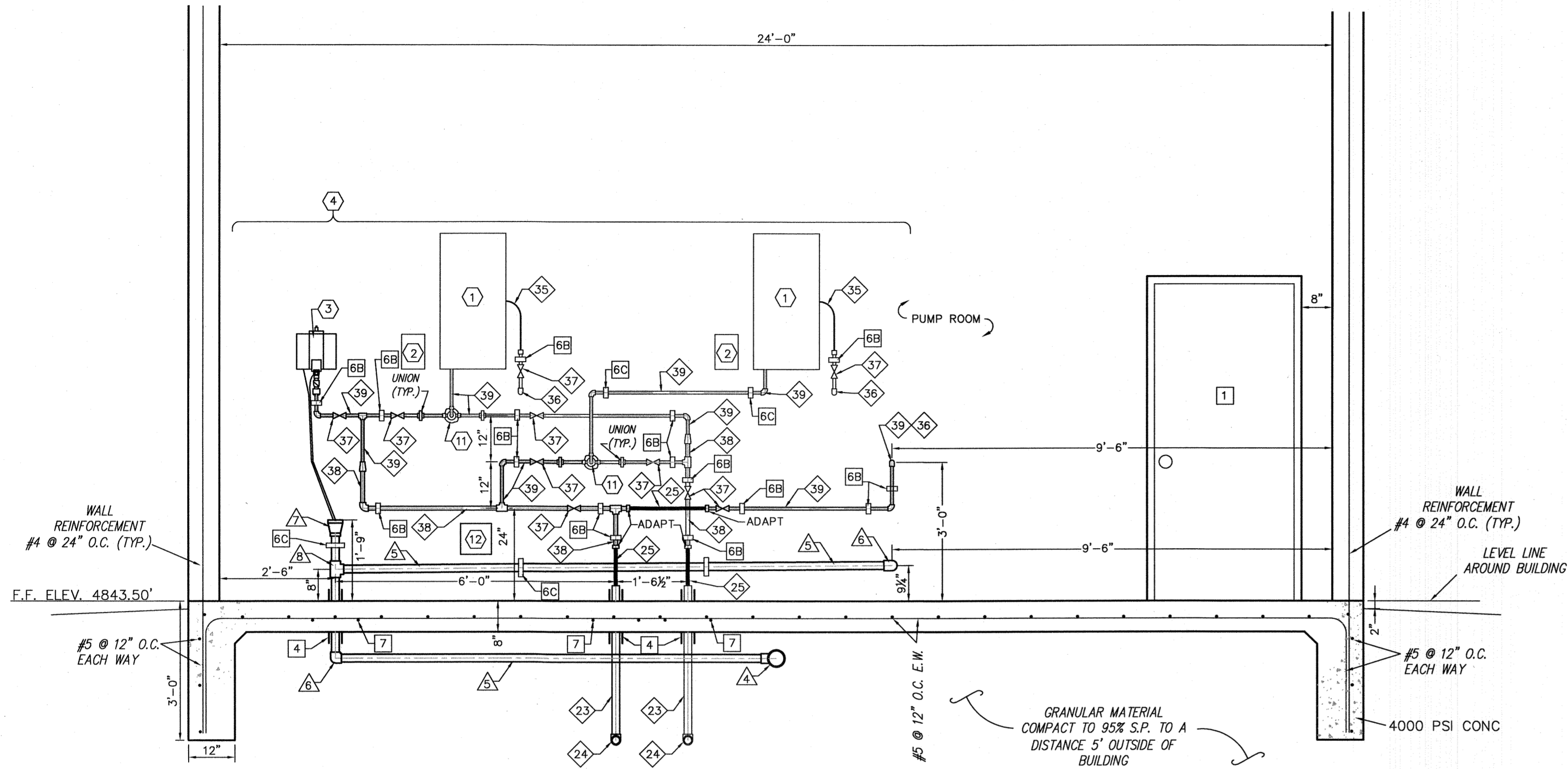
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**INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
LEUPP-DILKON WATER SUPPLY SYSTEM**

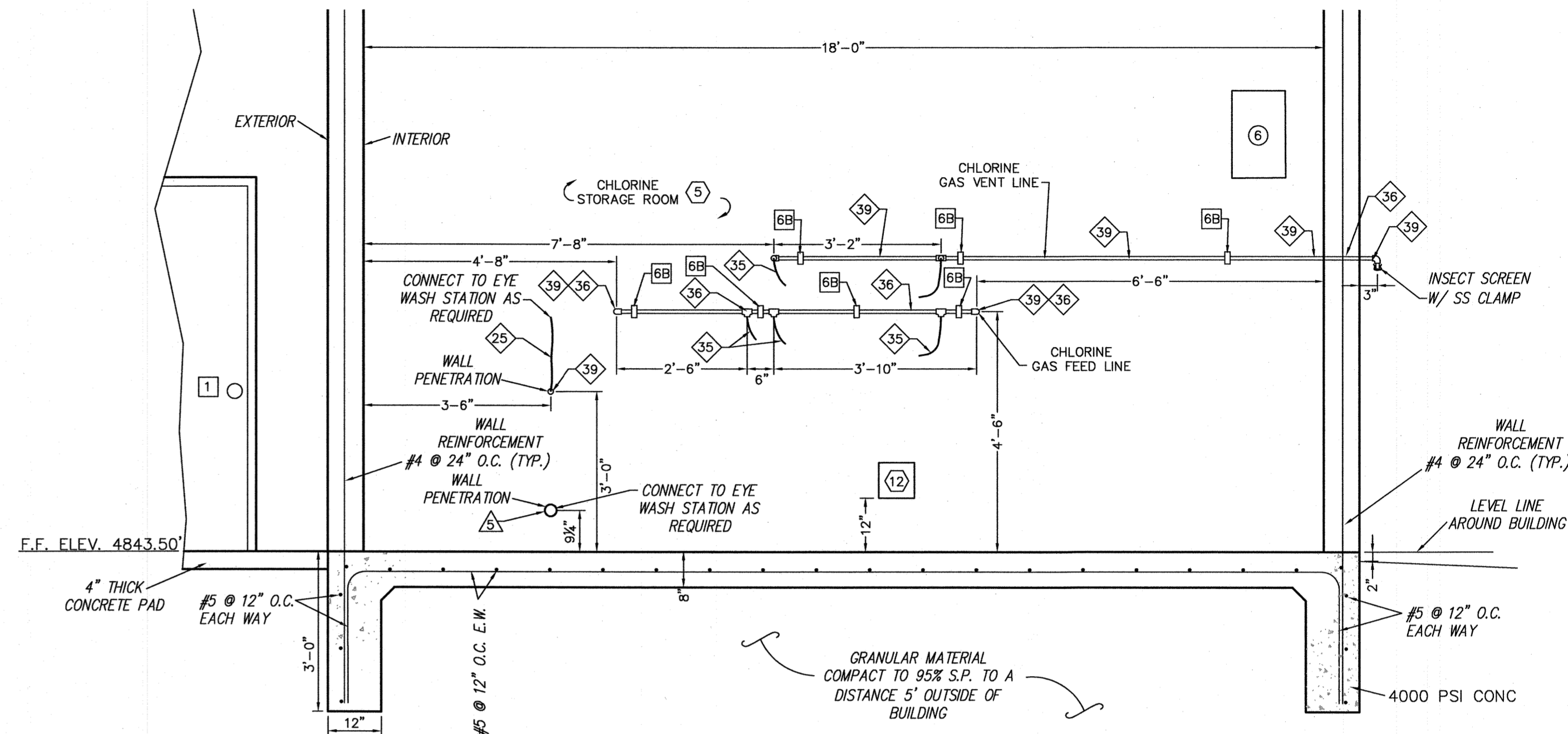
**PUMP STATION "O"  
ELEVATIONS**

SCALE:	SHOWN
DATE:	DEC 2021
DRAWN BY:	KAS
CHECKED BY:	MDP

**SHEET  
3 - 7**



**PUMP STATION "0" ELEVATION "E"**  
SCALE: 1/2"=1'



**PUMP STATION "0" ELEVATION "F"**  
SCALE: 1/2"=1'

#### PRESSURE FITTING & PIPING KEYED NOTES:

- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" M.J. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLG'D 90° REDUCING ELL. WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE AND SENSOR PIPING
- 5 6" FLG'D RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLG'D REDUCING TEE
- 7 6" FLG'D SPOOL, (L=6")
- 8 6" FLG'D ELSTER EVO Q4 FLOW METER
- 9 6" FLG'D SPOOL, (L=12")
- 10 6" PROOD STYLE 231FA NSF1 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6")
- 11 GRUNDFOS BOOSTERPAD TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- 12 6" BLIND FLANGE
- 13 6" FLOWPE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLG'D CROSS
- 16 6" FLG'D TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLG'D REDUCING ELL.
- 19 4" FLOWPE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLG'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 3-9
- 23 2" SCH. 80 PVC ELECTRICAL CONDUIT (SOLVENT WELD) FOR CHLORINE HOSE CARRIER PIPE
- 24 2" SCH. 80 PVC ELECTRICAL CONDUIT LONG SWEEP 90° ELL. (SOLVENT WELD) FOR CHLORINE HOSE CARRIER PIPE
- 25 1" 185-PSI WORKING PRESSURE BRAID REINFORCED CLEAR PVC HOSE (NYLOBRAD OR EQUAL) ADAPT AS REQUIRED
- 26 CHLORINE EJECTOR PIPING (SEE DETAIL SHEET 3-5)
- 27 3/4" STANDARD BRASS BODY RETRACTABLE CORP STOP WITH PVC METED DIFFUSER EJECTOR (TO MIDDLE OF 6" PIPE) ADAPT TO 1 1/2" PVC CHLORINATION LINE AS REQUIRED
- 28 DOUBLE STRAP BRASS SADDLE (SIZE AS REQUIRED), FORD 2028S OR EQUAL
- 29 A LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 10 PSI) (1" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 29 B LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 30 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)
- 31 1 1/2" SCH. 80 PVC CHLORINATION WATERLINE, SOLVENT WELD TEE WITH REDUCING BUSHING AND TREADED PLUG FOR MANUAL AIR RELEASE
- 32 A NON-SUBMERISBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, TANK LEVEL SENSOR 0-10 PSI
- 32 B NON-SUBMERISBLE WKA PRESSURE TRANSDUCER W/ LIGHTNING PROTECTION OR EQUAL, DISCHARGE PRESSURE 0-300 PSI
- 33 1 1/2" CHLORINE SUPPLY PIPING (SEE DETAIL SHEET 3-6)
- 34 1 1/2" MUELLER 300 BALL CORPORATION VALVE ANKA MALE IRON PIPE THREAD x FEMALE IRON PIPE THREAD & 1 1/2" CLA-VAL CRD-L DIRECT ACTING PRESSURE REDUCING VALVE. ADAPT CONNECTIONS AS REQUIRED
- 35 1/2" O.D. (1 1/4" I.D.) FLEXIBLE POLYETHYLENE PIPING RUN NEATLY ALONG WALL AND ADAPT AS REQUIRED
- 36 3/4" RIGID PVC CHLORINE GAS PIPING W/ FITTINGS, WALL PENETRATIONS AS REQUIRED, (SEE WALL PENETRATION DETAIL ON SHEET 8-1)
- 37 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 38 1" SCH. 80 PVC CHLORINATION LINE PIPING AND FITTING AS REQUIRED (SOLVENT WELD)
- 39 3/4" SCH. 80 PVC CHLORINATION LINE PIPING AND FITTING AS REQUIRED (SOLVENT WELD)
- 40 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 41 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 42 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 43 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 44 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 45 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

#### ELECTRICAL & MECHANICAL KEYED NOTES:

- 1 OVERHEAD ELECTRIC SERVICE PER NITUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NITUA AND IHS STANDARDS
- 5 GRUNDFOS BOOSTERPAD TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER, "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #AMBIO WALL MOUNTED BRACKET, (240V, 1ø, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- 14 CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS ELECTRONICS ENCLOSURE/DISPLAY
- 15 ELECTRONIC WEIGH SCALE DISPLAY (WIZARD 4000 OR EQUAL) TWO REQUIRED
- 16 DUAL POINT GAS DETECTION SYSTEM RECEIVER MODULE/DISPLAY, (WALLACE & TIERNAN ACUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- 17 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

#### CHLORINATION KEYED NOTES:

- 1 30 LB/DAY CHLORINATION SYSTEM, WALLACE & TIERNAN VYOK GAS FEED SYSTEM OR EQUAL
- 2 CHLORINATION SYSTEM PROCESS CONTROL UNIT, WALLACE & TIERNAN SFC PC OR EQUAL
- 3 CHLORINE RESIDUAL ANALYZER, WALLACE & TIERNAN DEPOLOX 3 PLUS BARE-ELECTRODE FLOW CELL OR EQUAL
- 4 CHLORINATION WALL, AS DETAILED ON THIS SHEET
- 5 CHLORINE STORAGE ROOM, AS DETAILED ON THIS SHEET
- 6 1 TON CHLORINE GAS CYLINDER SECONDARY CONTAINMENT VESSEL WITH SCALE. 1 TON CHLORINAIR OR EQUAL
- 7 DUAL 150 POUND CHLORINE GAS CYLINDER SECONDARY CONTAINMENT VESSEL WITH SCALE. DUAL 150# CHLORINAIR OR EQUAL
- 8 FIXED 1 TON SECONDARY CONTAINMENT VESSEL LOADER BY SECONDARY CONTAINMENT VESSEL MANUFACTURER
- 9 PORTABLE 150 LB. SECONDARY CONTAINMENT VESSEL LOADER BY SECONDARY CONTAINMENT VESSEL MANUFACTURER
- 10 200 PPD VACUUM REGULATOR W/ AUTOMATIC SWITCHOVER CONNECT TO CHLORINAIR SYSTEMS AS REQUIRED, WALLACE & TIERNAN VYOK GAS FEED SYSTEM OR EQUAL
- 11 1/4" CHLORINE GAS INJECTORS, WALLACE & TIERNAN VYOK GAS FEED SYSTEM OR EQUAL
- 12 DUAL POINT GAS DETECTION SYSTEM SENSER/TRANSMITTER, (WALLACE & TIERNAN ACUTEC 35 DUAL POINT DETECTION SYSTEM OR EQUAL)
- 13 GUARDIAN G1850-GC-SSH SAFETY STATION WITH EYE/FACE WASH, STAINLESS STEEL BOWL AND SHOWER HEAD, AND POWDER COATED FINISH. CONNECT TO CHLORINATION AND DRAIN PIPING WAS REQUIRED

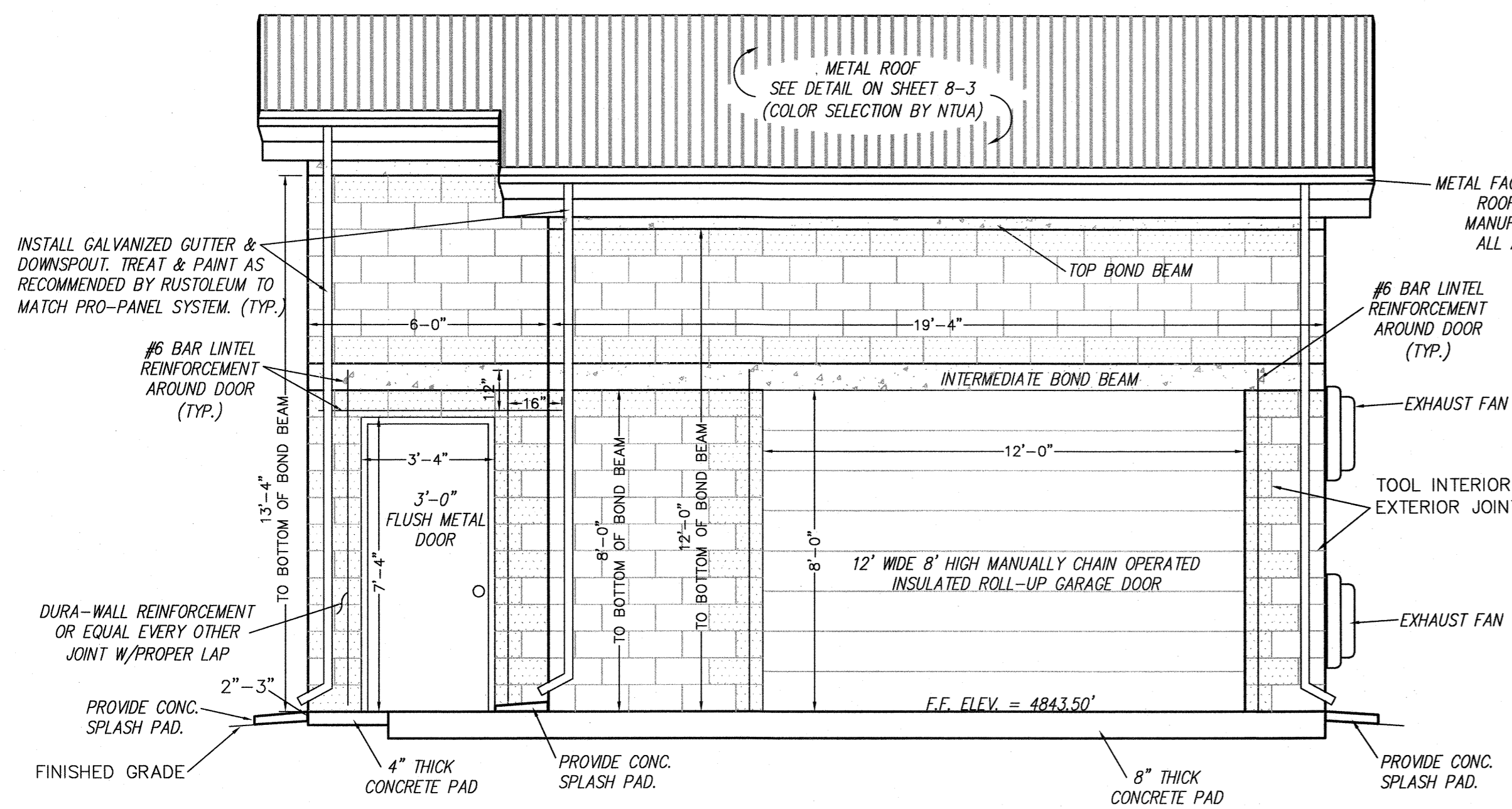
#### CONSTRUCTION KEYED NOTES:

- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK, (LOCK TO BE KEVED TO NITUA WATER SYSTEM STANDARD.)
- 2A 8" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 2B 12" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL, (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTE BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)
- 10 MANUALLY OPERATED BRIDGE CRANE (SEE DETAIL SHEET 3-12)
- 11 BRIDGE CRANE PEDESTAL (TYP.), (SEE DETAIL SHEET 3-12)

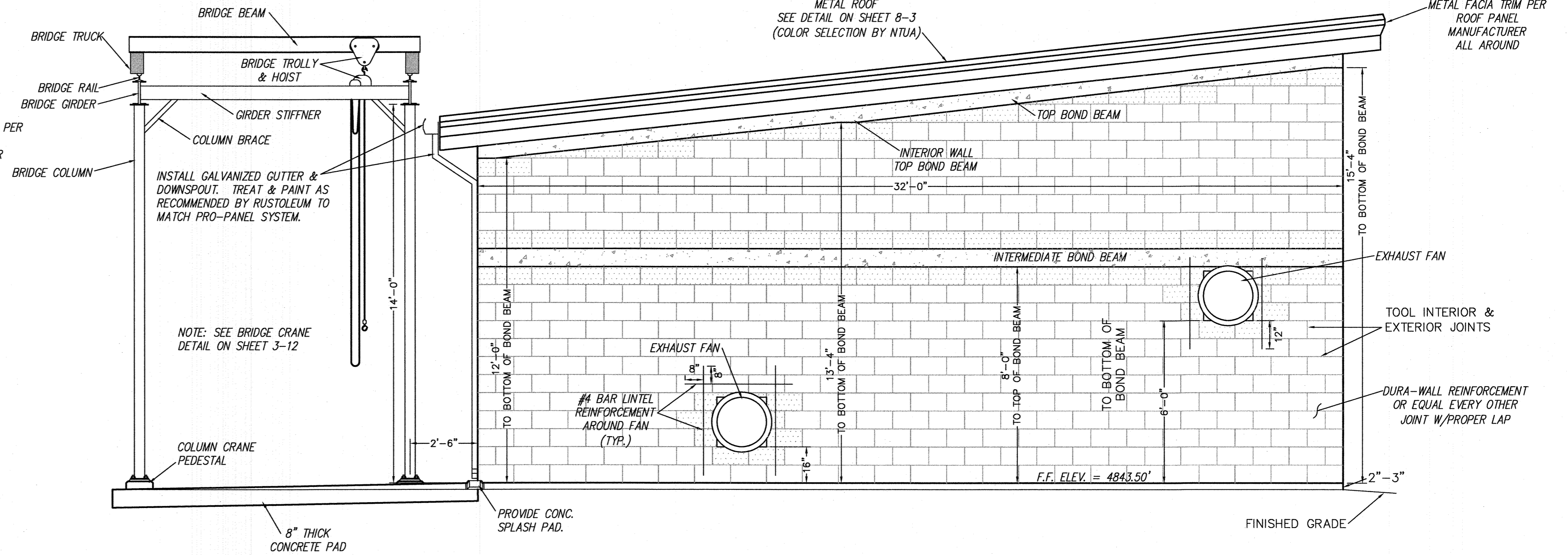
#### DRAIN FITTING & PIPING KEYED NOTES:

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2A 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC TEE (SOLVENT WELD)
- 4 4"x2" SCH. 80 PVC REDUCING TEE (SOLVENT WELD) PLUG OF CAP AS REQUIRED
- 5 2" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 6 2" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 7 4"x2" SCH. 80 PVC REDUCER, (SOLVENT WELD)
- 8 2" SCH. 80 PVC TEE, (SOLVENT WELD)





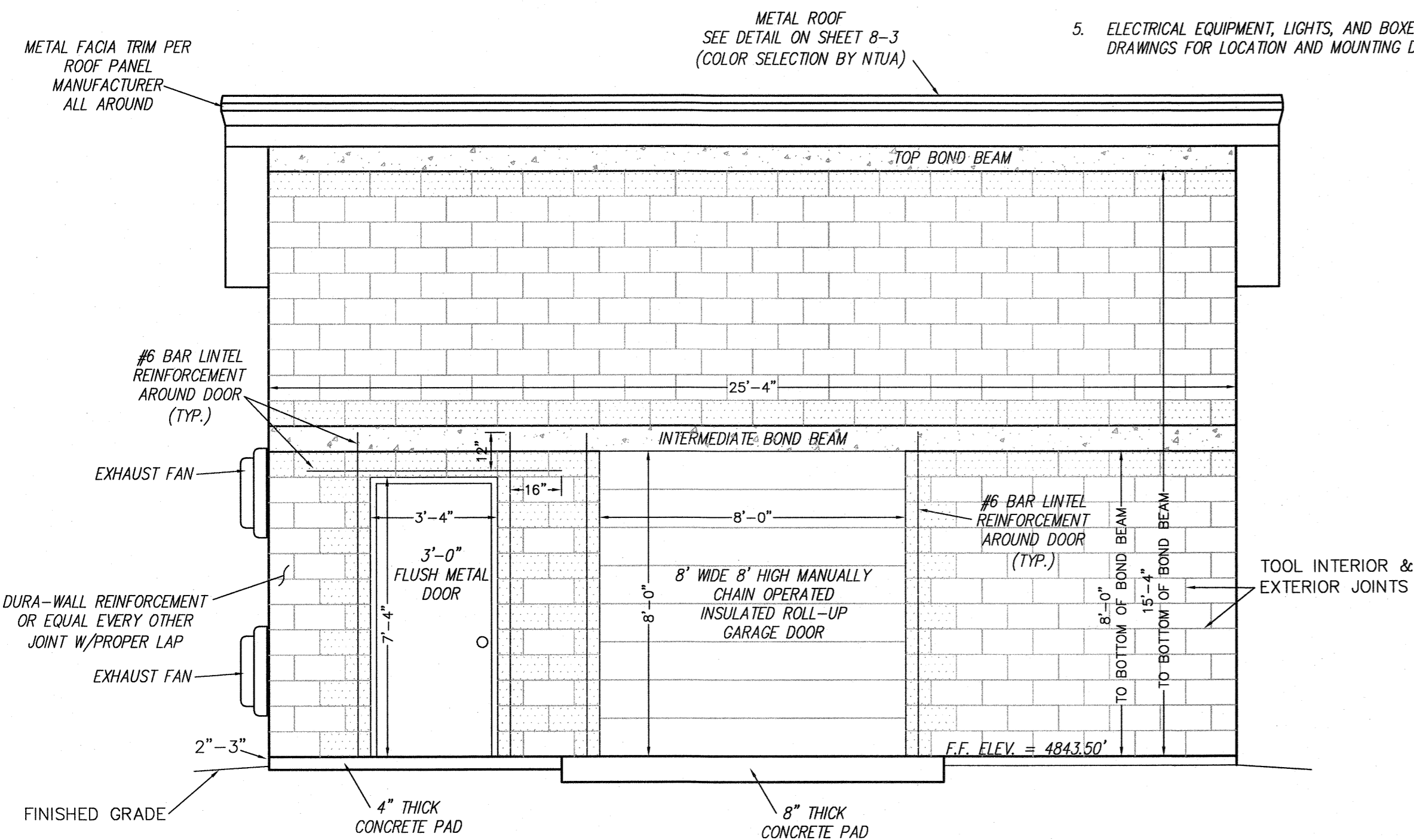
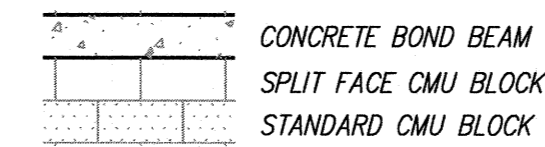
**PUMP STATION "0" STATION ELEVATION (LOOKING SOUTH)**  
SCALE: 1/3"=1'



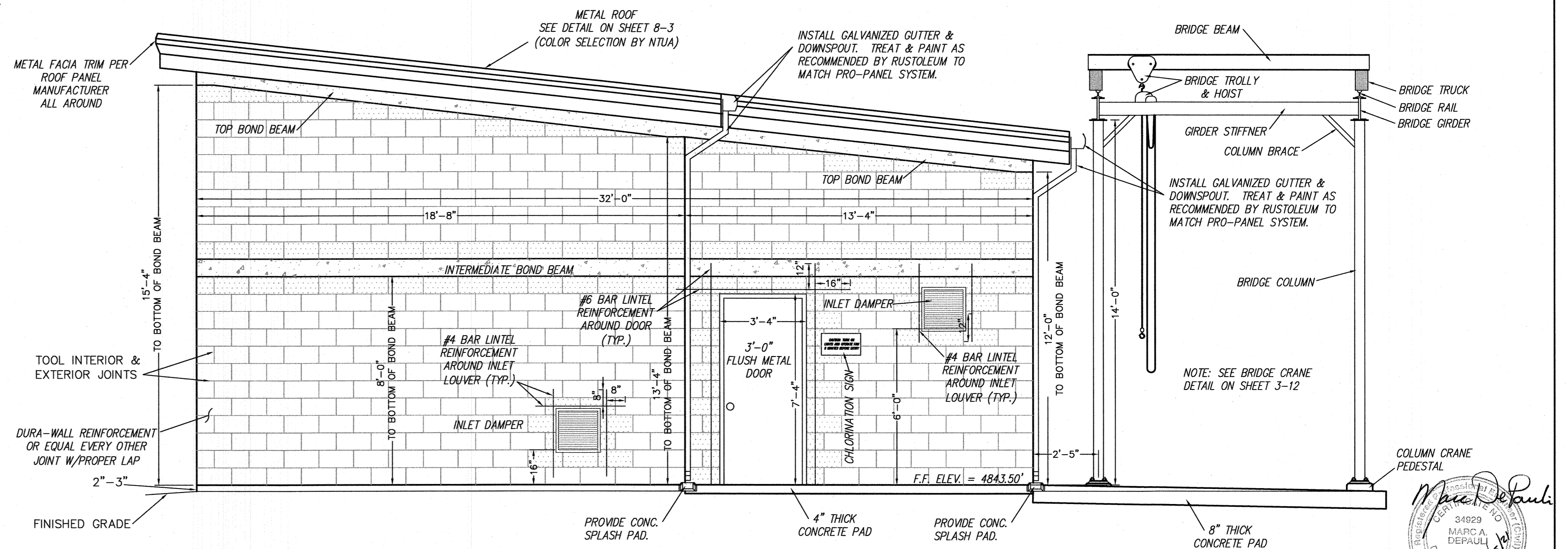
**PUMP STATION "0" STATION ELEVATION (LOOKING EAST)**  
SCALE: 1/2"=1'

- NOTES:
1. EVERY CMU BLOCK CELL SHALL BE FILLED WITH 4000 PSI GROUT
  2. STATION EXTERIOR SHALL BE SPLIT FACE BLOCK. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS, AS SHOWN.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR
  4. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL. PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  4. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  5. ELECTRICAL EQUIPMENT, LIGHTS, AND BOXES NOT SHOWN IN ELEVATIONS. SEE ELECTRICAL DRAWINGS FOR LOCATION AND MOUNTING DETAILS.

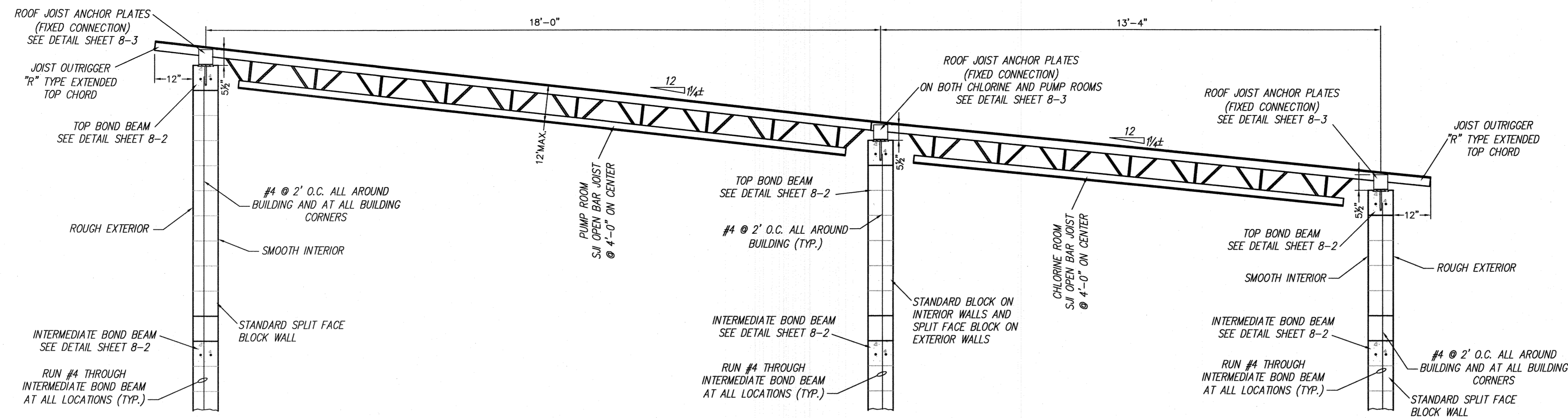
**BLOCK LEGEND**



**PUMP STATION "0" STATION ELEVATION (LOOKING NORTH)**  
SCALE: 1/3"=1'



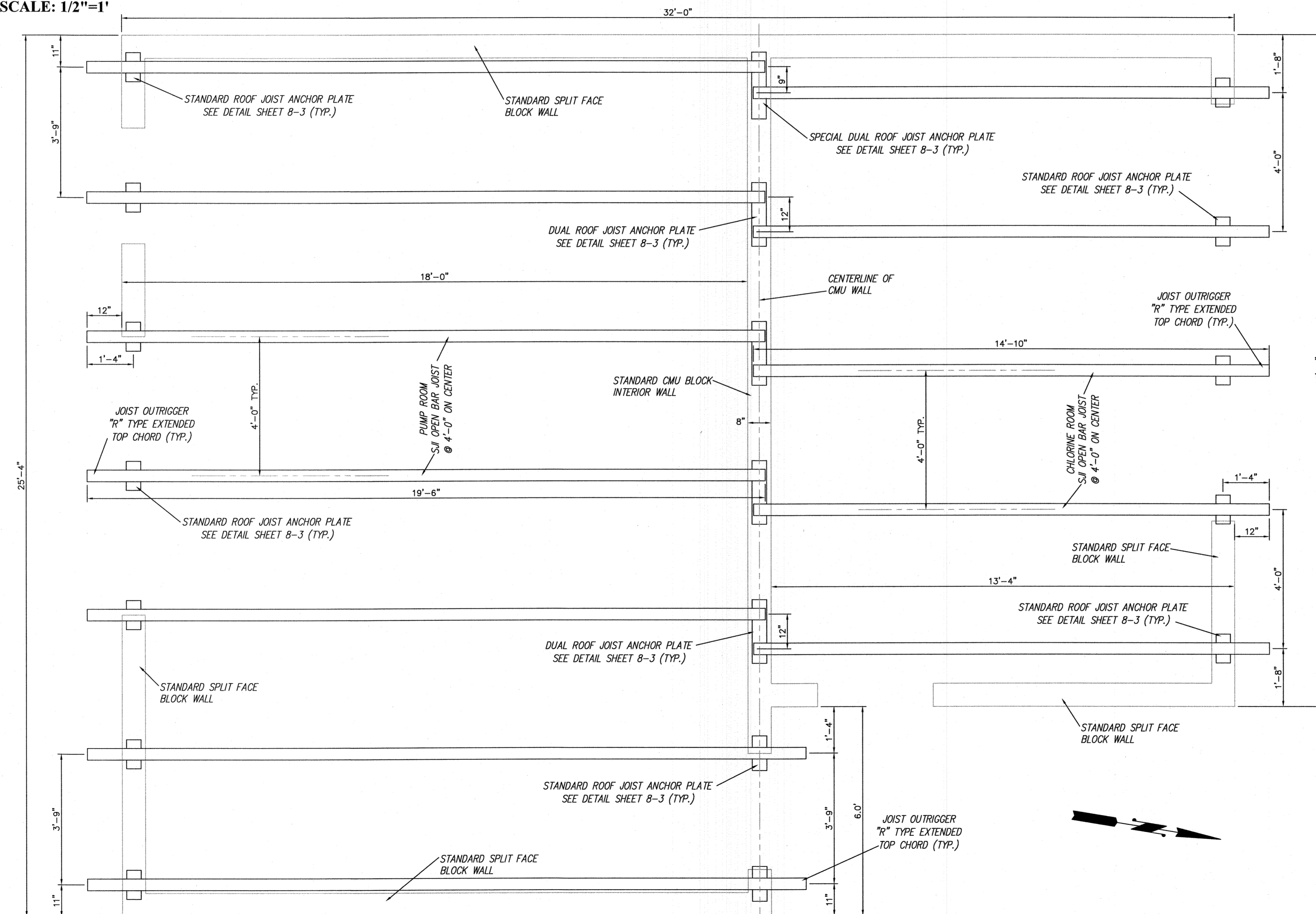
**PUMP STATION "0" STATION ELEVATION (LOOKING WEST)**  
SCALE: 1/3"=1'



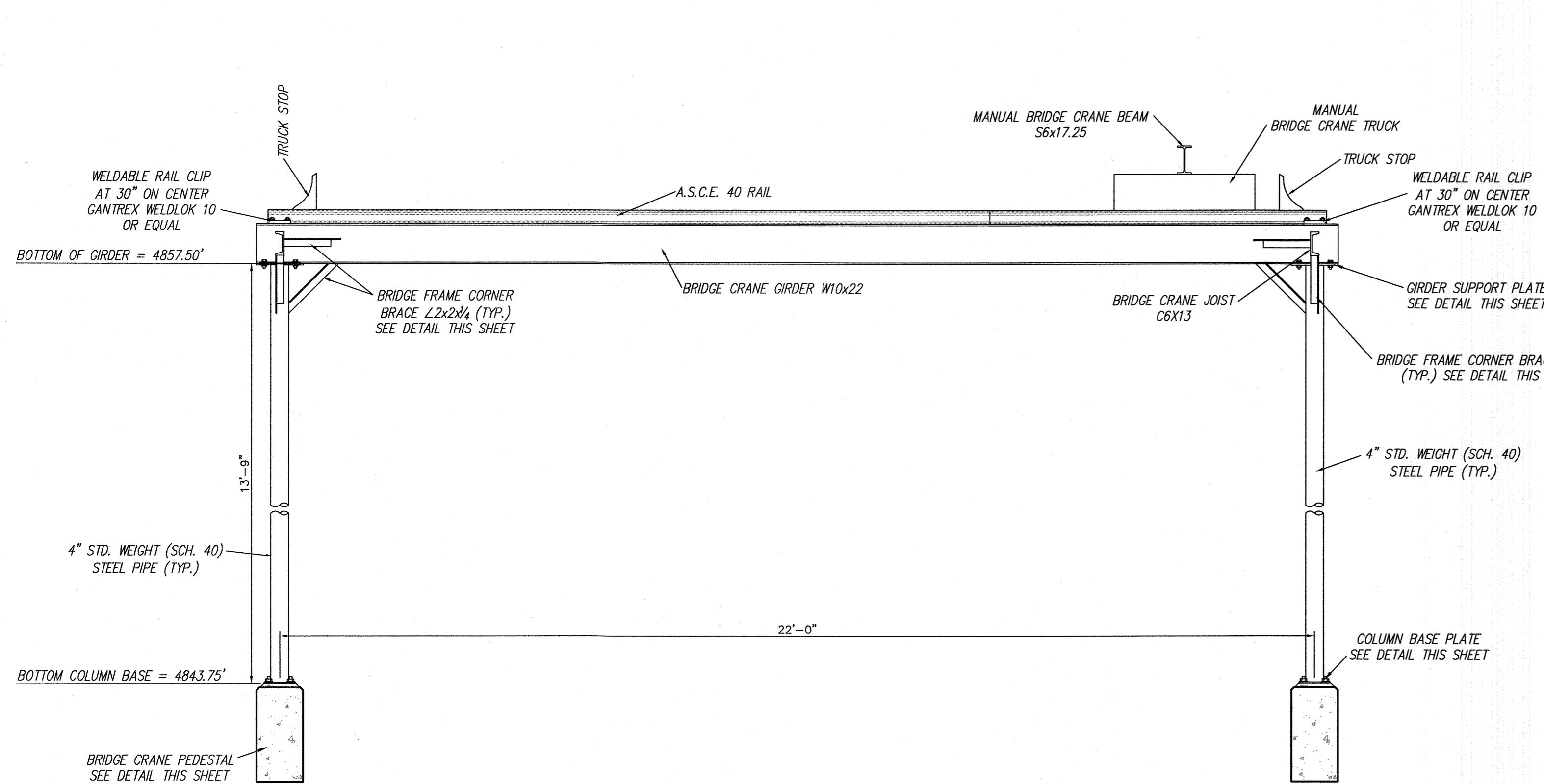
**PUMP STATION "0" ROOF JOIST ELEVATION**  
SCALE: 1/2"=1'

**ROOF JOIST NOTES:**

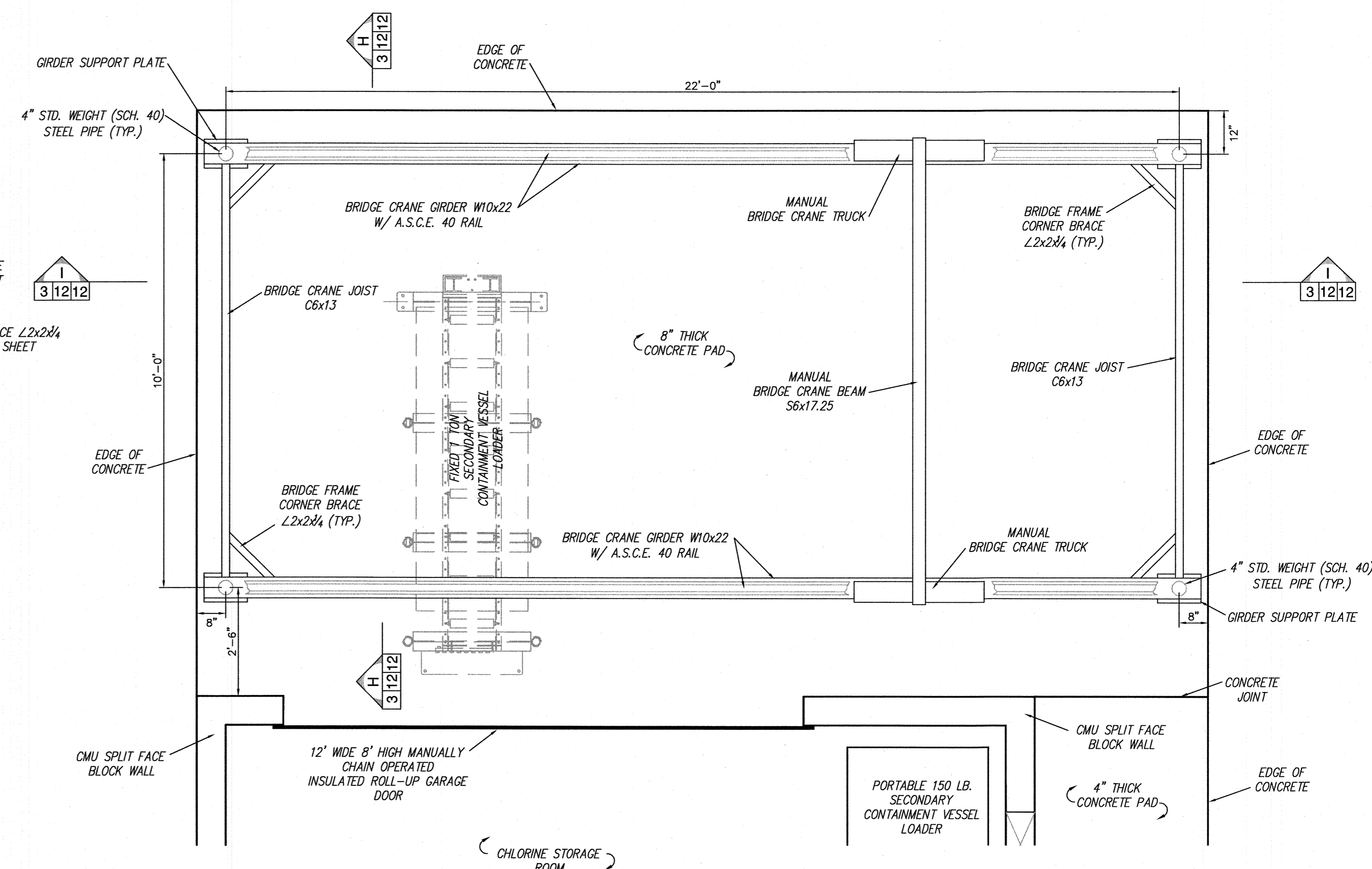
- JOIST LOADING:  
- LIVE LOAD = 120 PLF (SNOW LOAD)  
- DEAD LOAD = 64 PLF\*  
- UNIFORM LOAD = 184 PLF\*  
\* ASSUMES A 12 PLF ROOF JOIST (JOIST MANUFACTURER TO ADJUST AS REQ'D)
- JOIST WEB SHALL BE PER JOIST SUPPLIER WITH A MAXIMUM DEPTH OF 12" AND WIDTH OF 4"
- JOIST BRIDGING TO BE PROVIDED AND INSTALLED PER JOIST SUPPLIER BEFORE ATTACHING TO WALLS OR GABLE FRAMING AS REQUIRED.



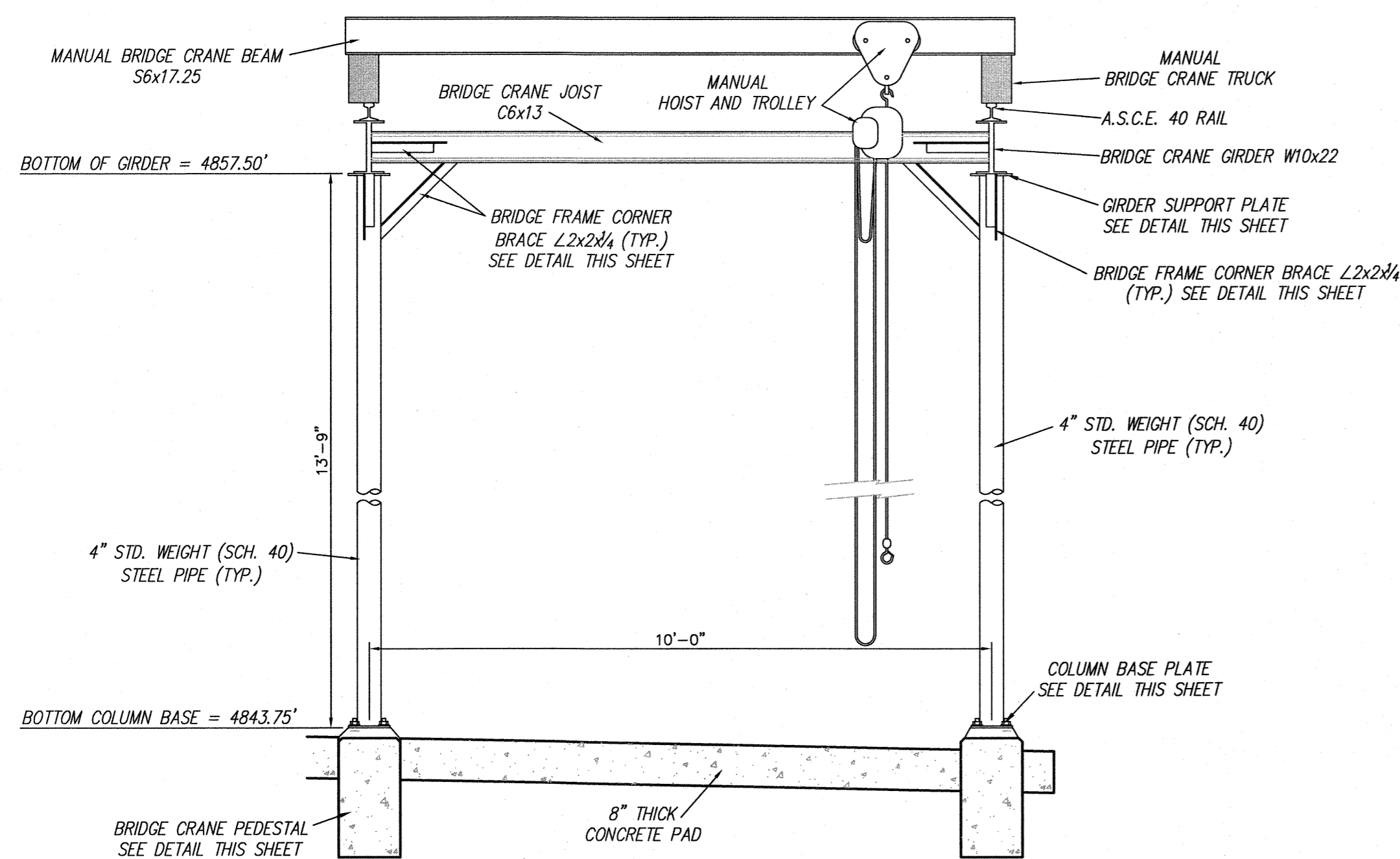
**PUMP STATION "0" ROOF JOIST LAYOUT**  
SCALE: 1/2"=1'



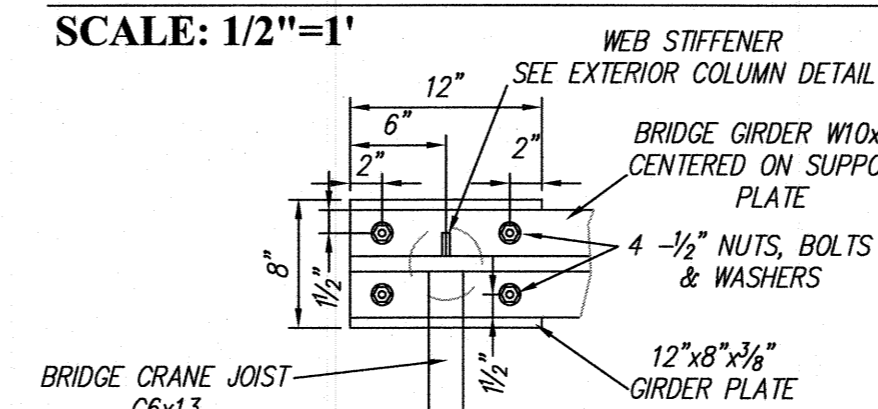
**BRIDGE CRANE ELEVATION "I"**  
 SCALE: 1/2"=1'



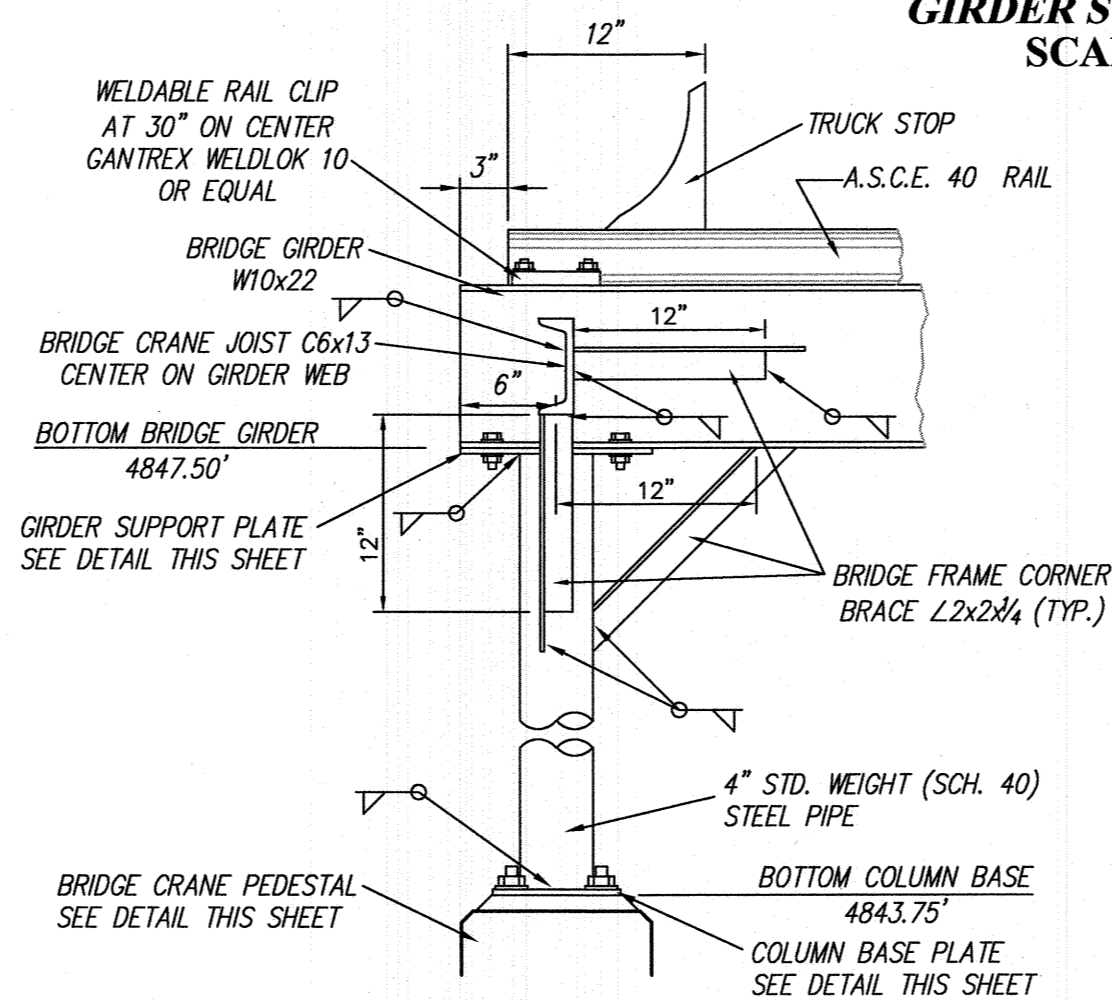
**BRIDGE CRANE LAYOUT DETAIL**  
 SCALE: 1/2"=1'



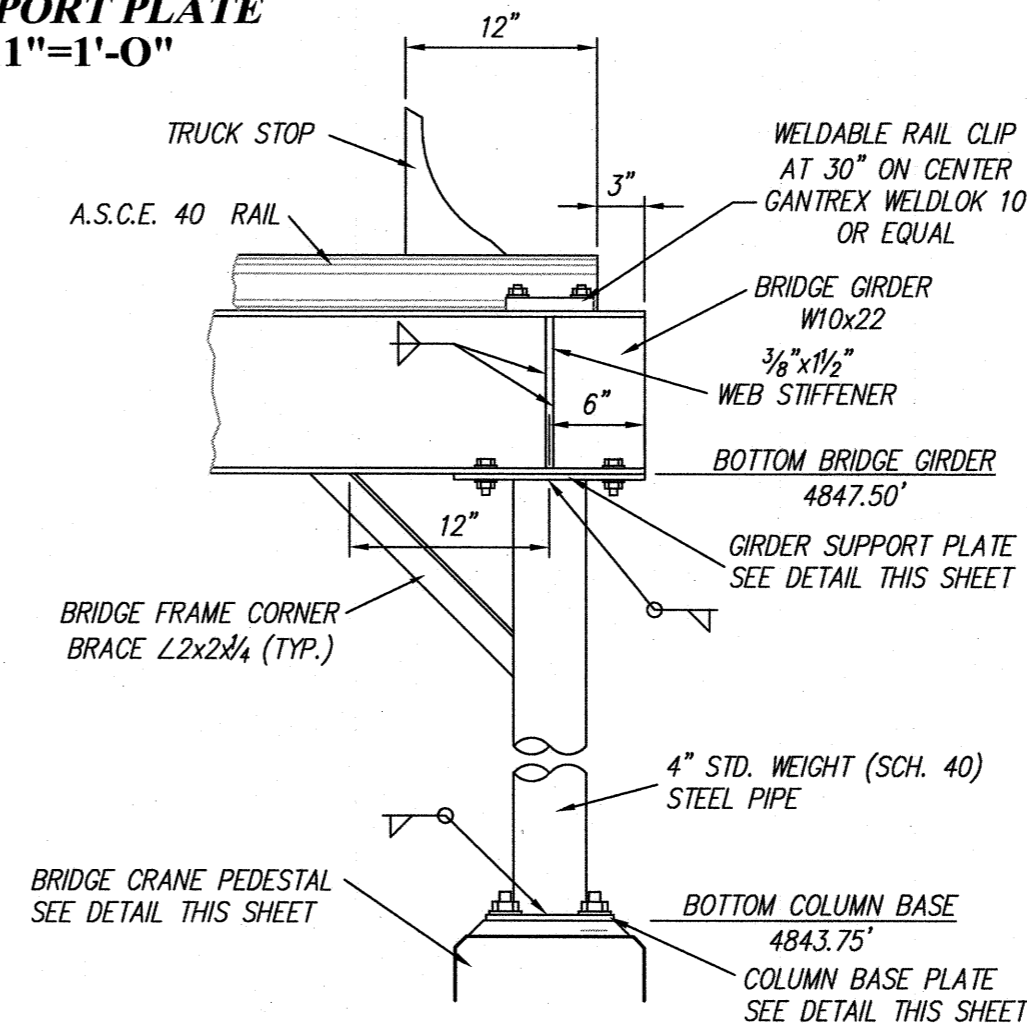
**BRIDGE CRANE ELEVATION "H"**  
 SCALE: 1/2"=1'



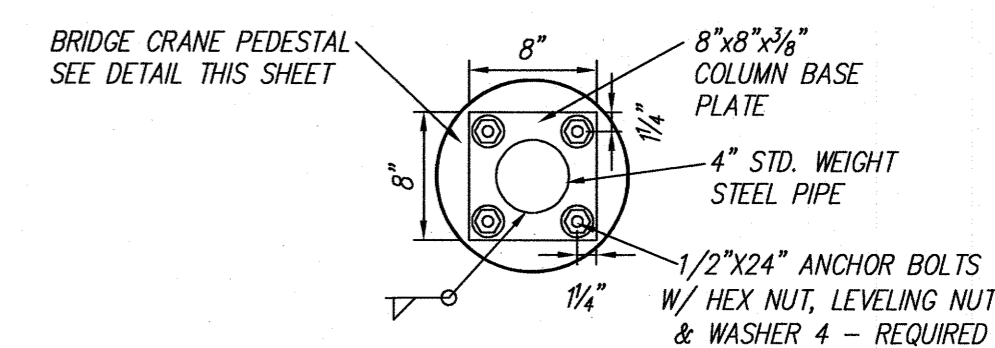
**SECTION  
 GIRDER SUPPORT PLATE**  
 SCALE 1"=1'-0"



**ELEVATION  
 INTERIOR COLUMN DETAIL**  
 SCALE 1"=1'-0"

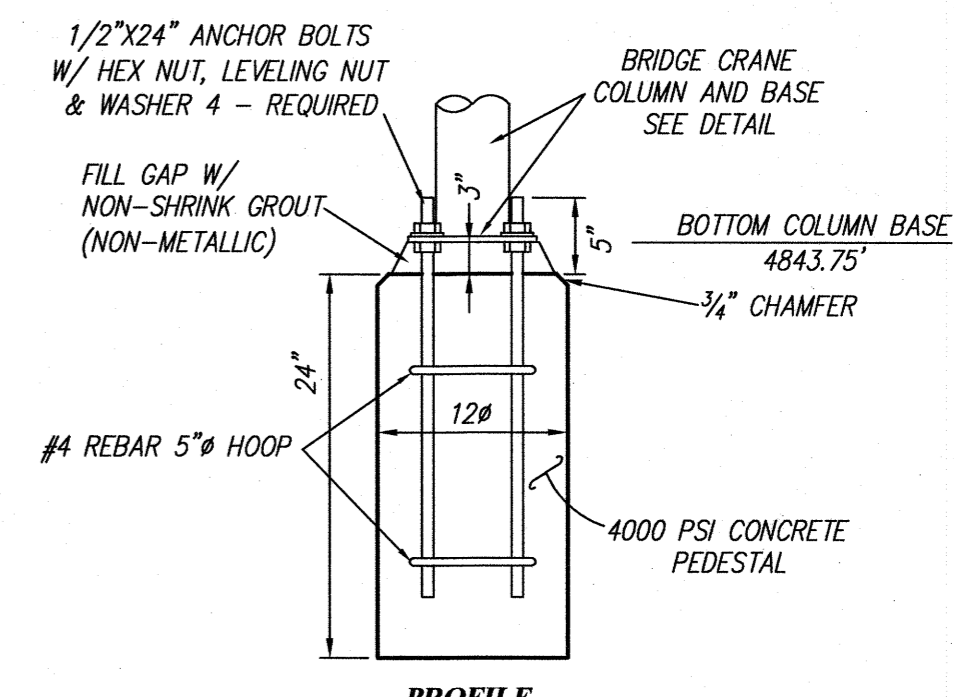


**ELEVATION  
 EXTERIOR COLUMN DETAIL**  
 SCALE 1"=1'-0"

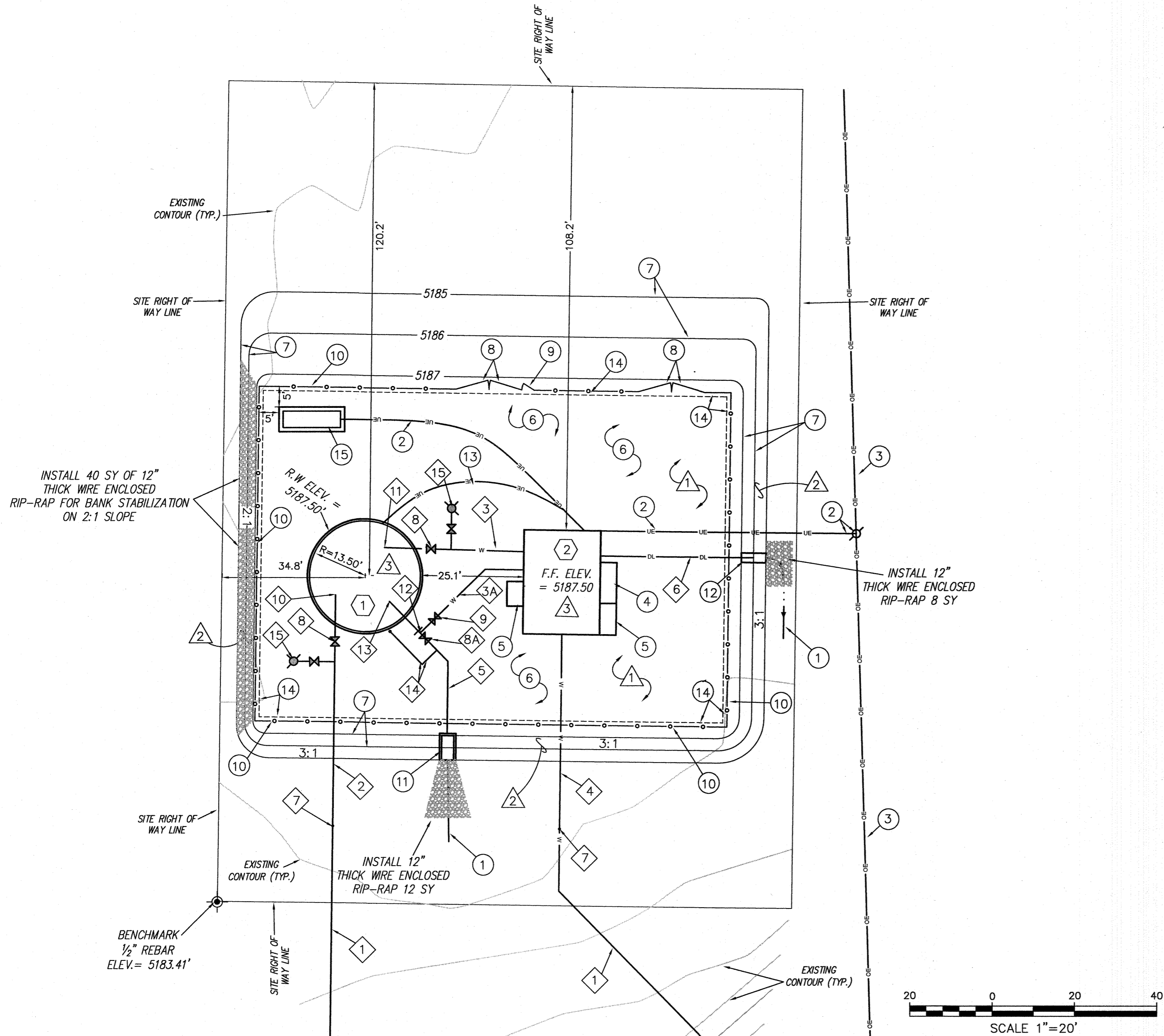


- GIRDER SUPPORT COLUMN BASE NOTES:**
1. DRILL HOLES IN SUPPORT PLATES, GIRDER WEB, AND BOTTOM FLANGE AS REQUIRED.
  2. INSTALL RAIL CLIPS AND TRUCK STOPS PER CRANE MANUFACTURERS RECOMMENDATIONS

**COLUMN BASE PLATE**  
 SCALE 1"=1'-0"



**PROFILE  
 BRIDGE CRANE PEDESTAL**  
 SCALE 1"=1'-0"



PUMP STATION "1" SITE & GRADING PLAN  
SCALE 1"=20'

ESTIMATED EARTHWORK QUANTITIES

ITEM	EXCAVATED IN-SITU VOLUME CY	EMBANKMENT EARTHWORK VOLUME CY	EXCESS IN-SITU VOLUME CY
NATIVE MATERIAL	0	0	0
IMPORTED MATERIAL	0	1,285	0
ENGINEERED FILL MATERIAL	0	1,285	0
GRAVEL SURFACING	0	140	0
TOTAL IMPORTED MATERIAL	0	1,425	0
TOTALS	0	1,425	0

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED OR NATIVE MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.

PUMP STATION "1"  
SITE, GRADING, & PIPING PLAN KEYED NOTES:

BUILDING/STRUCTURE PAD KEYED NOTES:

- PUMP STATION "1" 0.1-MG TANK, Ø=27.0', 24' HIGH (SEE SHEET 4-3 FOR DETAILS)
- PUMP STATION "1" (SEE SHEETS 4-4 TO 4-10 FOR DETAILS)

BUILDING PAD KEYED NOTES:

- BUILDING PAD SHALL BE COMPACTED TO 95% STANDARD PROCTOR. MAXIMUM CONSTRUCTION LOOSE LIFT SHALL NOT EXCEED 10"
- CONSTRUCT PAD SIDE SLOPES @ SLOPES SHOWN WITH MAXIMUM SLOPE OF 3:1 UNLESS SHOWN OTHERWISE
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.

CONSTRUCTION KEYED NOTES:

- PROPOSED DRAINAGE DITCH FLOWLINE, GRADE TO DRAIN
- POWER POLE, SERVICE POLE, DOWN GUY AND SERVICE LINES (OVERHEAD OR UNDERGROUND) BY NTUA
- OVERHEAD ELECTRIC LINE BY NTUA
- INSTALL CONCRETE DRIVE PAD SEE SHEET 4-4 FOR DETAILS
- INSTALL CONCRETE ACCESS PAD SEE SHEET 4-4 FOR DETAILS
- PLACE 5" OF GRAVEL OR BASE COURSE ON NON-WOVEN FABRIC FOR TANK AND STATION YARD.
- NEW FINISHED GRADE CONTOURS FOR PUMP STATION SITE (TYP.)
- INSTALL 16' CHAIN LINK (TWO (2)-8' PANELS) ACCESS GATE (2 REQUIRED) PER IHS STANDARD DETAIL W-34
- INSTALL 3" PERSONNEL GATE (1 REQUIRED) PER IHS STANDARD DETAIL W-34
- INSTALL NEW CHAIN LINK FENCE AS SHOWN L=400± PER IHS STANDARD DETAIL W-34
- TANK DRAIN OUTLET STRUCTURE SEE DETAIL ON SHEET 4-2
- PUMP STATION DRAIN PAD SEE DETAIL ON SHEET 4-2
- UNDERGROUND ELECTRICAL AND CONTROL CONDUITS PER ELECTRICAL DESIGN
- EDGE OF 5" GRAVEL SURFACING.
- INSTALL CONCRETE ELECTRICAL PAD WITH GENERATOR AND TRANSCLASURE PER ELECTRICAL DETAILS

PIPING KEYED NOTES:

- 12" PVC SDR-21 WATER TRANSMISSION LINES BY OTHERS
- INSTALL 12" CL 350 DUCTILE IRON TANK INLET PIPING
- INSTALL 12" CL 350 DUCTILE IRON PUMP SUCTION PIPING
- 2" SCH 80 PVC PRESSURE SENSING LINE
- INSTALL 12" CL 350 DUCTILE IRON PUMP DISCHARGE PIPING
- INSTALL 10" CL 350 DUCTILE IRON TANK DRAIN LINE
- INSTALL 2" SCH. 80 PVC PUMP STATION DRAIN LINE WITH CLEANOUT AND FITTINGS AS REQUIRED
- INSTALL CAP OR CONNECT TO 12" PVC TRANSMISSION LINE BY OTHERS
- INSTALL 12" FLG&M GATE VALVE
- INSTALL HORIZONTAL 10" M&M&J GATE VALVE WITH BEVEL GEAR
- INSTALL 2" M&M&J GATE VALVE
- INSTALL TANK INLET STUB-OUT PER TANK MANUFACTURER
- INSTALL TANK OUTLET STUB-OUT PER TANK MANUFACTURER
- SENSOR LINE CONNECTION TO DRAIN PIPING PER DETAIL ON SHEET 4-2
- INSTALL TANK DRAIN STUB-OUT PER TANK MANUFACTURER
- TANK OVERFLOW PIPING PER TANK MANUFACTURER
- TEMPORARY TANK CONNECTION PER DETAIL ON SHEET 4-2

NOTES:

- CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL TO THE GREATEST EXTENT POSSIBLE. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
- ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASUREMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASUREMENT. POLYETHYLENE ENCASUREMENT JOINTS SHALL BE STAGGERED.
- VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.

SITE, GRADING & PIPING PLAN  
CONSTRUCTION COORDINATES

SITE CORNERS

DESC.	NORTHING	EASTING
1 NE COR.	1580128.48	552421.49
2 NW COR.	1580130.49	552281.64
3 SW COR.	1579930.63	552278.76
4 SE COR.	1579928.75	552418.66

0.1 MG RESERVOIR

DESC.	NORTHING	EASTING
5 TANK CNTR.	1580009.83	552314.74

PUMP STATION

DESC.	NORTHING	EASTING
6 NE COR.	1580020.98	552372.17
7 NW COR.	1580021.22	552353.51
8 SW COR.	1579995.89	552353.19
9 SE COR.	1579995.65	552371.85

FENCE CORNERS/PI'S

DESC.	NORTHING	EASTING
10 NE COR.	1580059.53	552413.55
11 NW COR.	1580061.21	552283.57
12 SW COR.	1579961.22	552282.23
13 SE COR.	1579959.54	552412.26

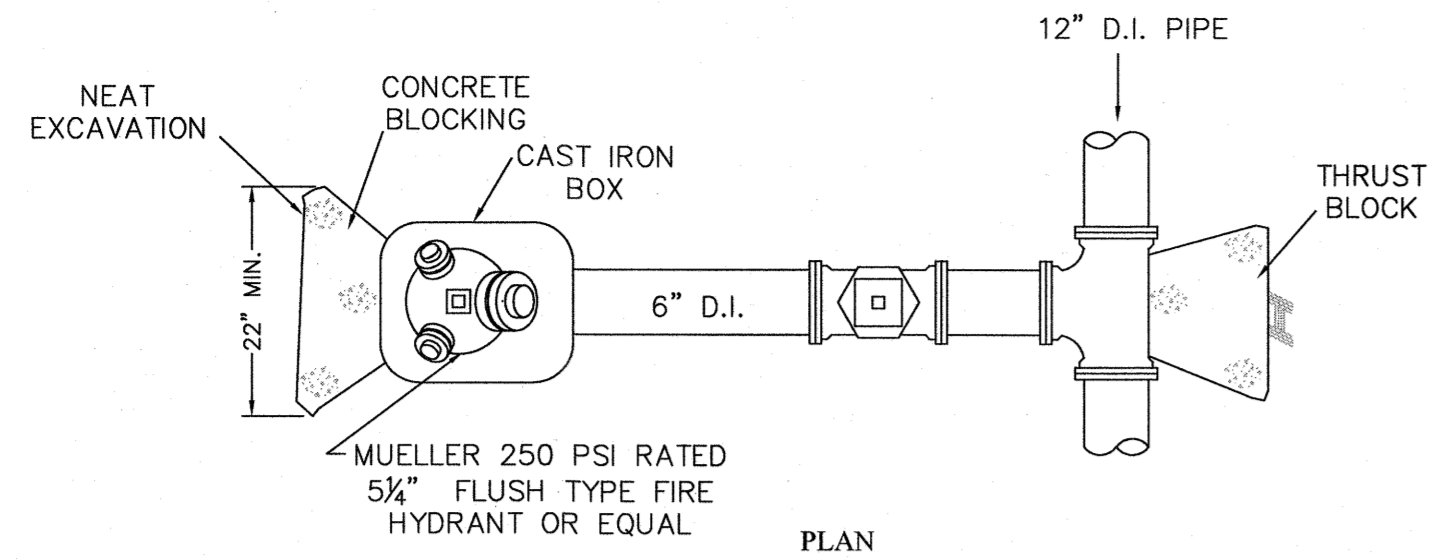
PI/FITTING DESC

PI/FITTING DESC	NORTHING	EASTING
14 INLET CAP/CONNECTION.	1579949.00	552306.86
15 12" TANK INLET STUB-OUT	1580005.23	552307.59
16 12" TANK OUTLET STUB-OUT	1580016.87	552319.45
17 DISCHARGE CAP/CONNECTION	1579948.28	552362.07
18 2" SENSOR & DRAIN LINE CONNECTION	1579996.07	552324.59
19 10" DRAIN STUB-OUT	1580003.74	552320.66
20 10" DRAIN OUTLET	1579983.52	552340.34
21 2" DRAIN OUTLET	1580014.43	552406.44
22 10" DRAIN LINE 45° ELL	1579989.08	552334.93
23 INLET 12"x6" TEE	1579989.02	552307.38
24 INLET TEMP. TANK CONNECTION	1579989.14	552297.38
25 OUTLET 12"x6" TEE	1580016.68	552335.70
26 OUTLET TEMP. TANK CONNECTION	1580026.68	552335.82
27 2" SENSOR LINE 45° ELL	1580011.57	552344.05

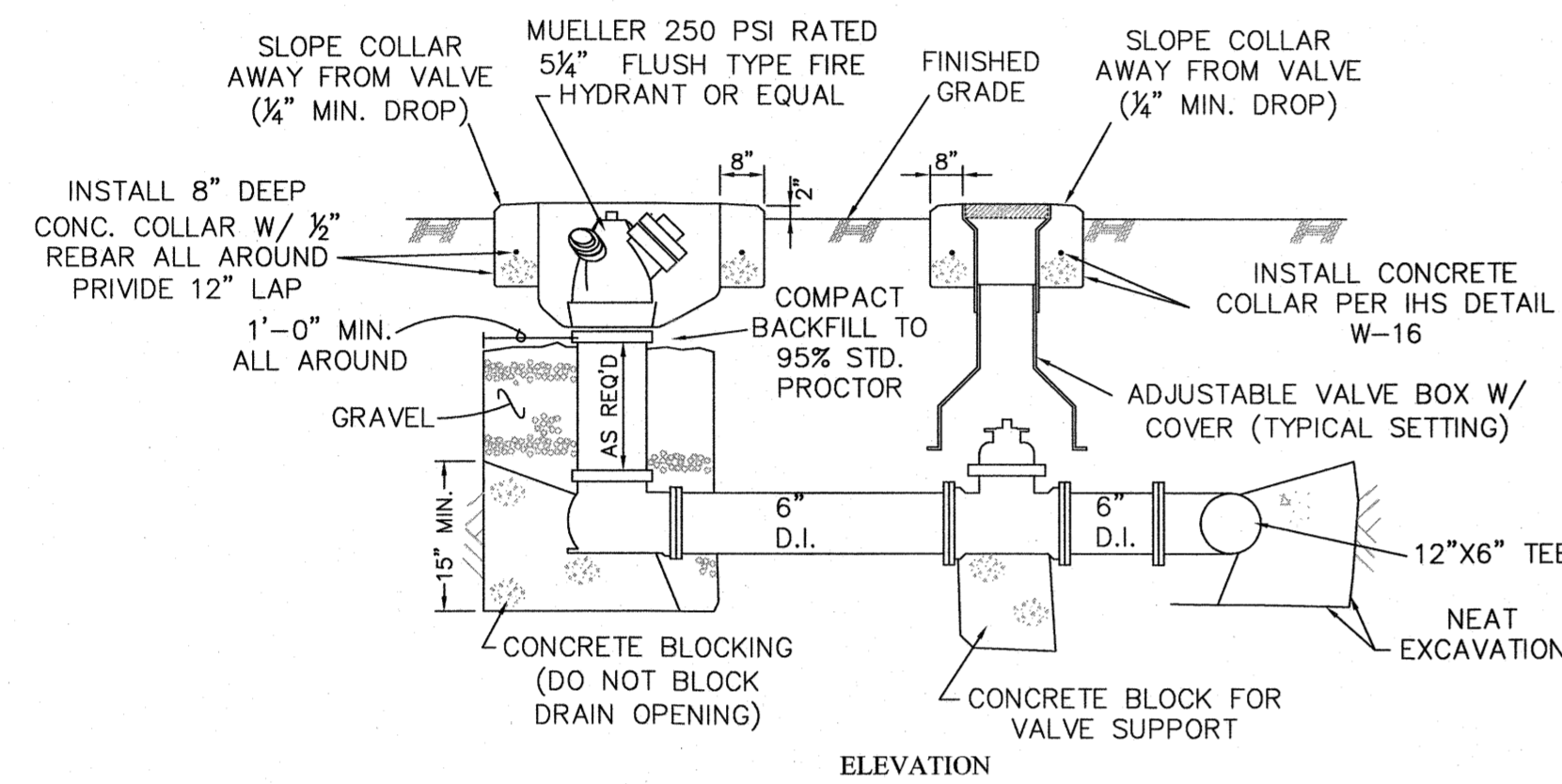
SURVEY NOTES:

- COORDINATES SHOWN ARE REFERENCED TO A PROJECT CONTROL SYSTEM WHICH IS BASED ON NAD 83 DATUM REFERENCED TO ARIZONA STATE PLANE EAST ZONE "SPC(0201 AZE)" GROUND COORDINATES WITH A COMBINED FACTOR OF 0.999671948.
- BEARINGS SHOWN ARE GRID.
- ELEVATIONS ARE BASED ON NAVD88/GEOD18 (VERTICAL DATUM)

MAFICA DEPAULI  
34029  
12/27/21  
ARIZONA

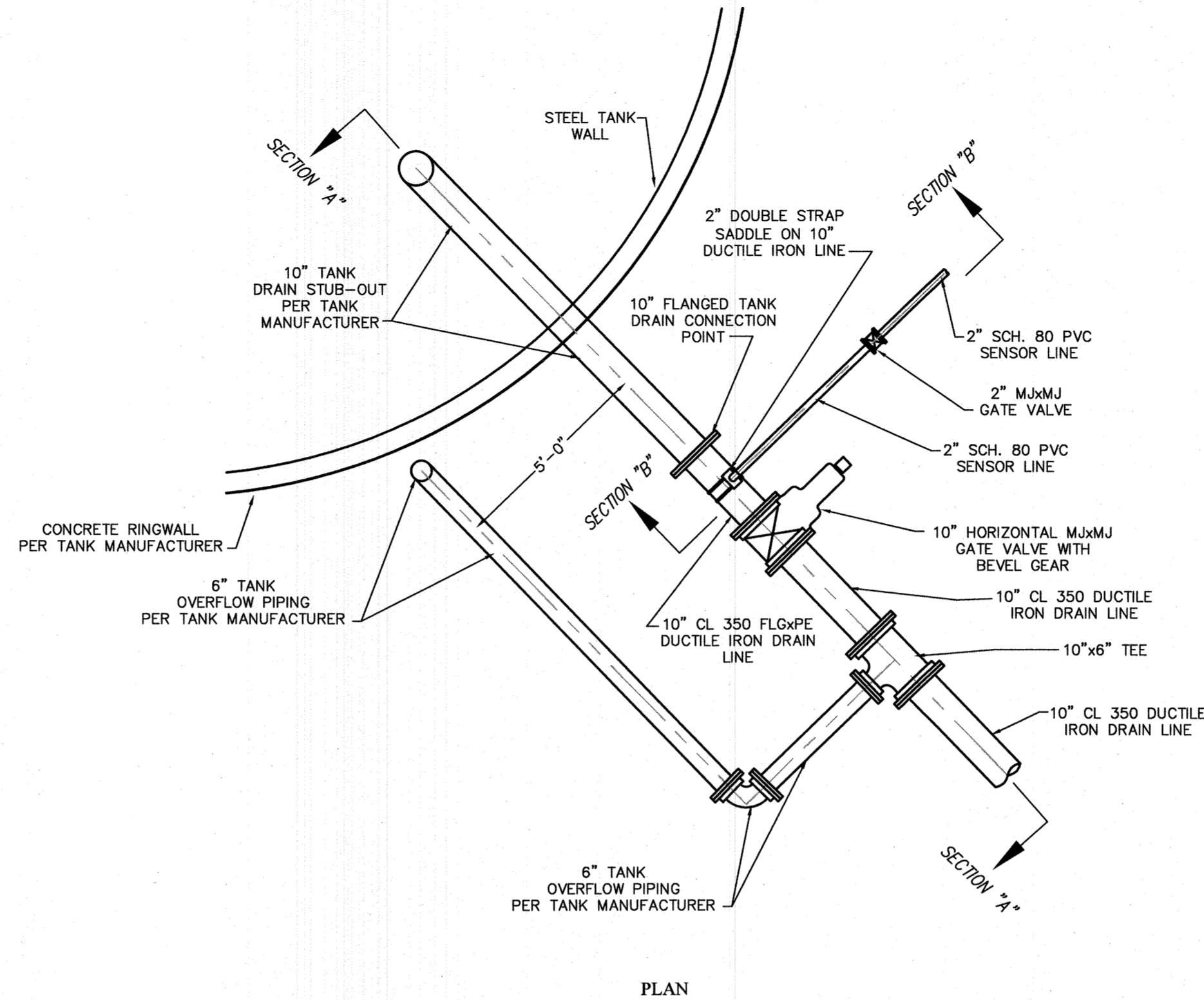


- TEMPORARY TANK CONNECTION NOTES:
1. CONTRACTOR TO PROVIDE HYDRANT BARREL HEIGHT AS REQ'D. FOR PROPER HEIGHT ABOVE FINISHED GRADE.
  2. ALL JOINTS SHALL UTILIZE MECHANICAL JOINTS AND USE RESTRAINING GLANDS.
  3. PIPING FROM TEE TO VALVE AND FROM VALVE TO HYDRANT SHALL NOT CONTAIN ANY INTERMEDIATE JOINTS.
  4. INSTALL GATE VALVE PER PER IHS STANDARD DETAIL W-16
  5. TEMPORARY TANK CONNECTION INCLUDES TEE, PIPING, VALVE, HYDRANT AND APPURTENANCES.
  6. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASUREMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASUREMENT. POLYETHYLENE ENCASUREMENT JOINTS SHALL BE STAGGERED.



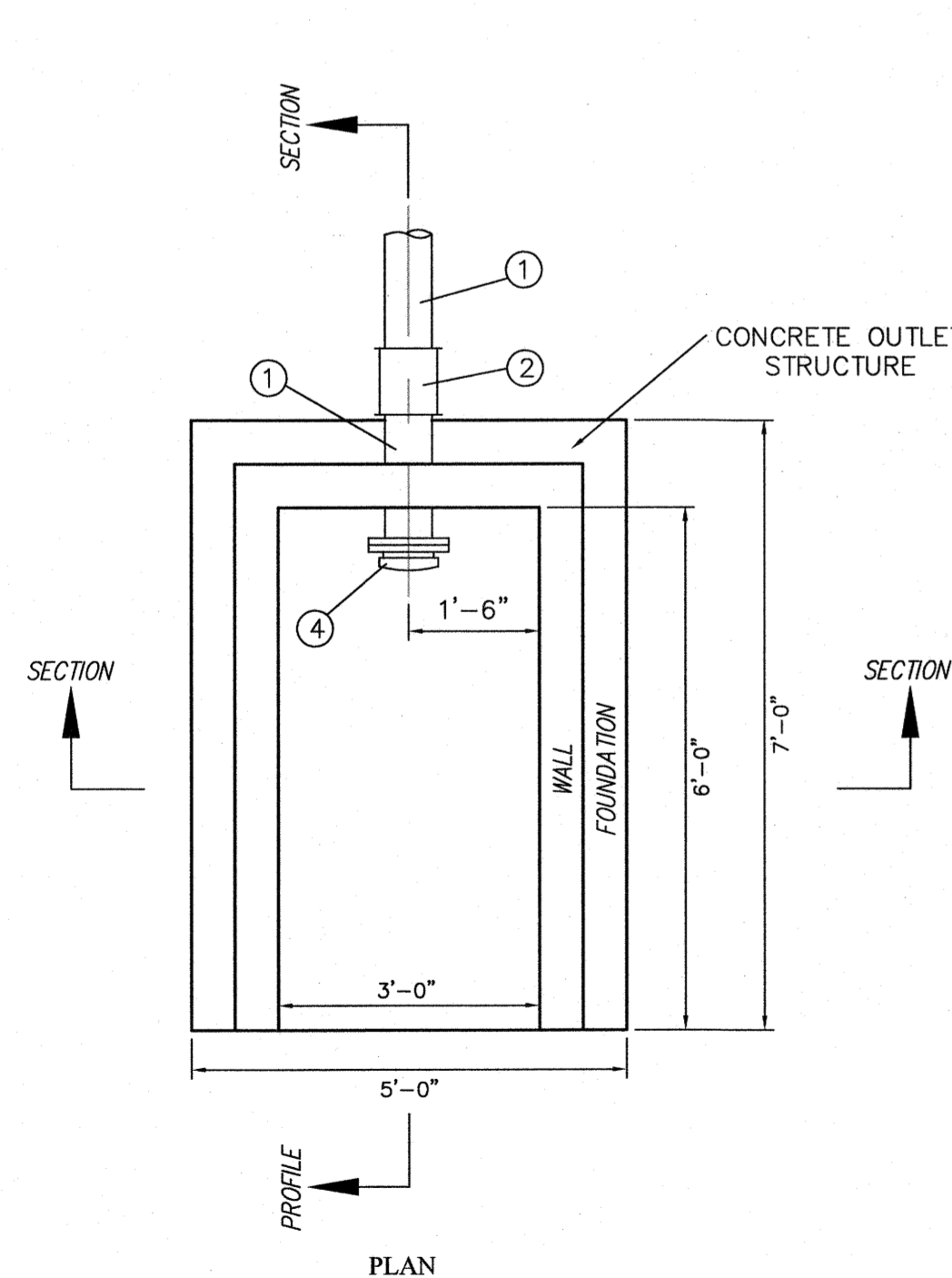
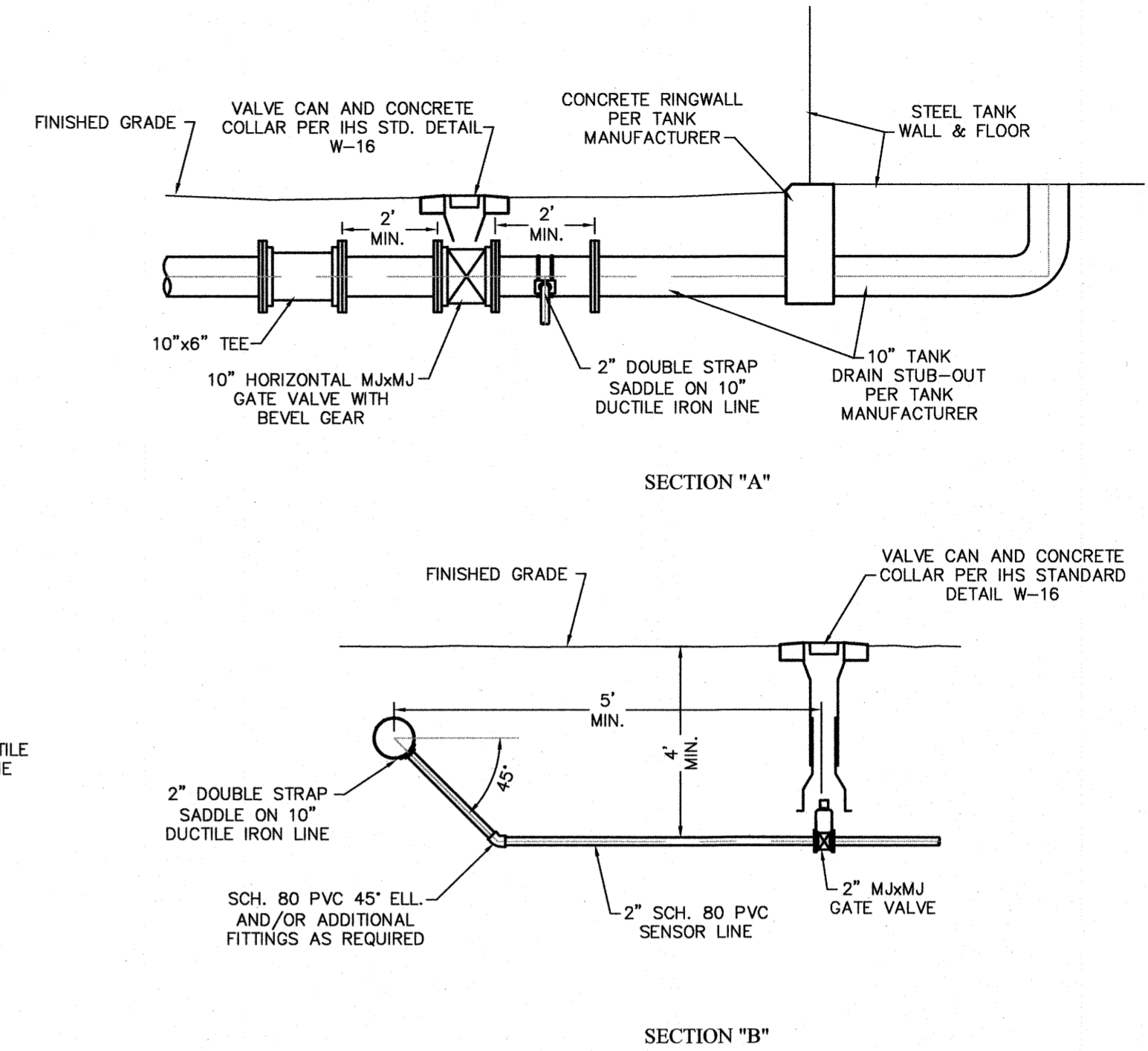
TEMPORARY TANK CONNECTION

NTS



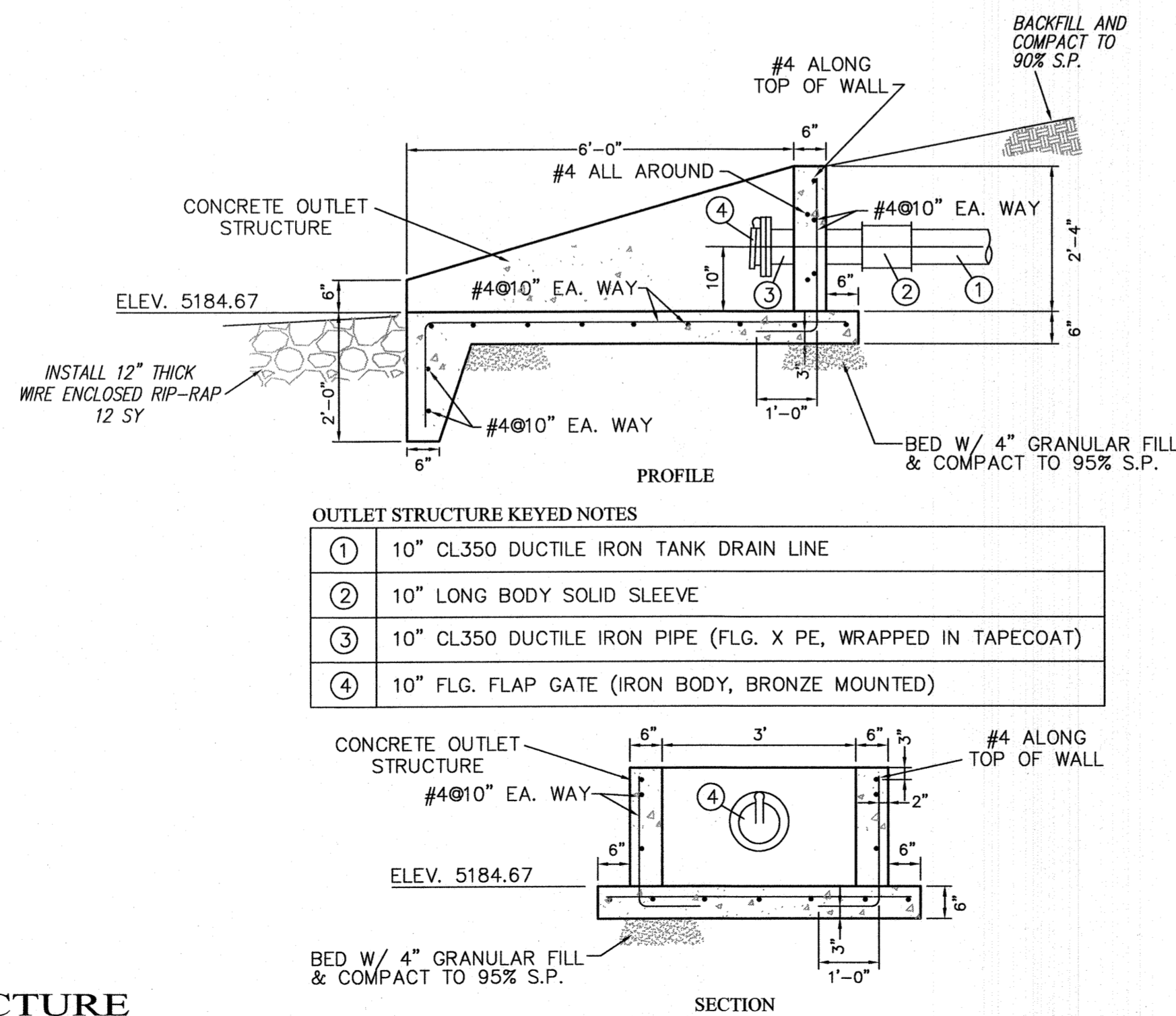
DRAIN AND SENSOR LINE CONNECTION DETAIL

NTS



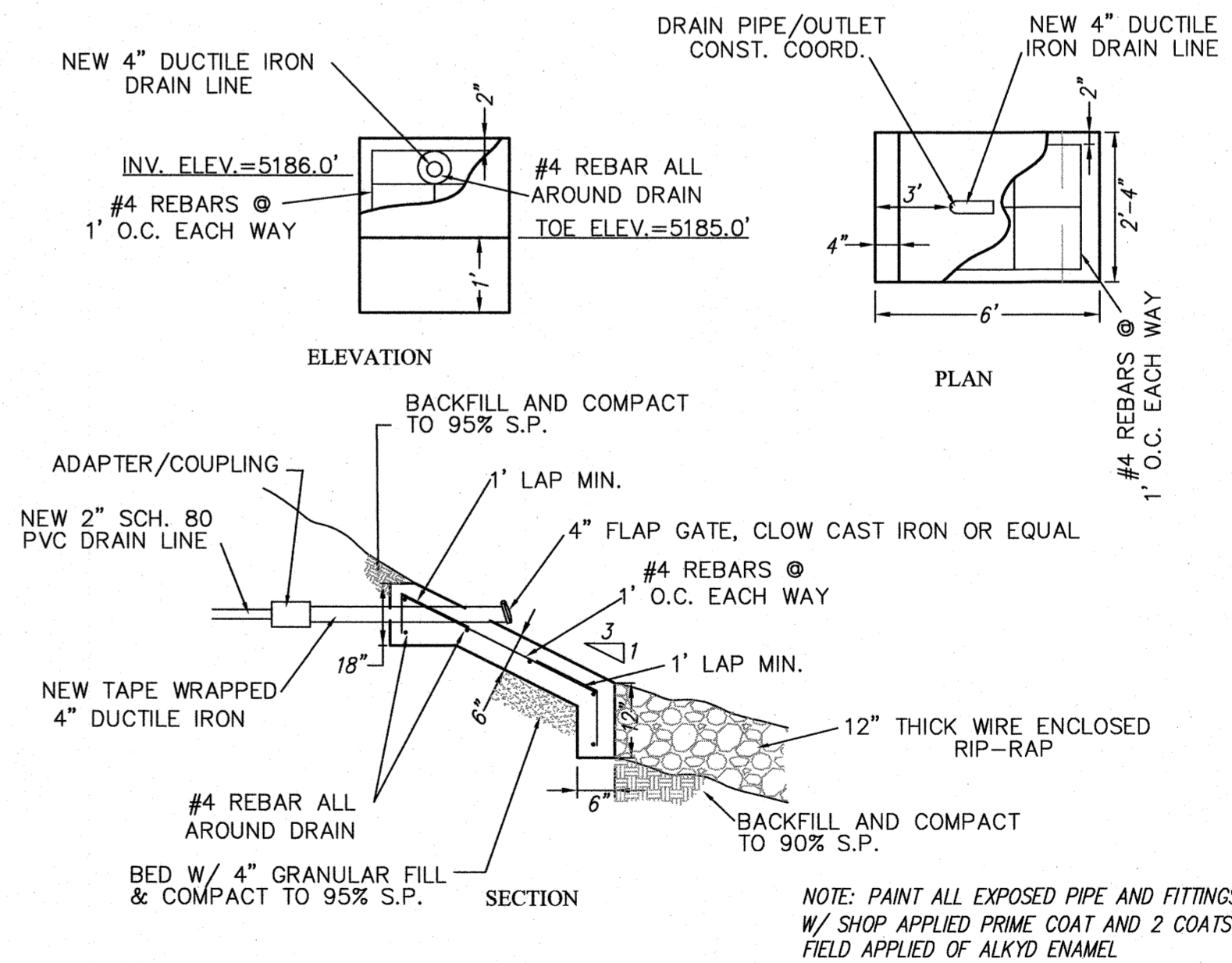
TANK DRAIN OUTLET STRUCTURE

NTS



OUTLET STRUCTURE KEYED NOTES

①	10" CL350 DUCTILE IRON TANK DRAIN LINE
②	10" LONG BODY SOLID SLEEVE
③	10" CL350 DUCTILE IRON PIPE (FLG. X PE, WRAPPED IN TAPECOAT)
④	10" FLG. FLAP GATE (IRON BODY, BRONZE MOUNTED)



PUMP STATION DRAIN PAD

NTS

NOTE: PAINT ALL EXPOSED PIPE AND FITTINGS W/ SHOP APPLIED PRIME COAT AND 2 COATS FIELD APPLIED OF ALKYD ENAMEL

INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
LEUPP-DILKON WATER SUPPLY SYSTEM

PUMP STATION "1"  
SITE PLAN

SCALE: SHOWN  
DATE: DECEMBER 2021  
DRAWN BY: DPT  
CHECKED BY: KAS MDP

SHEET  
4 - 2

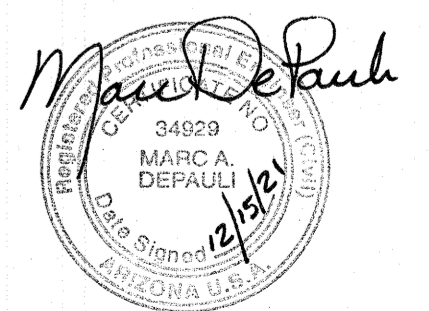
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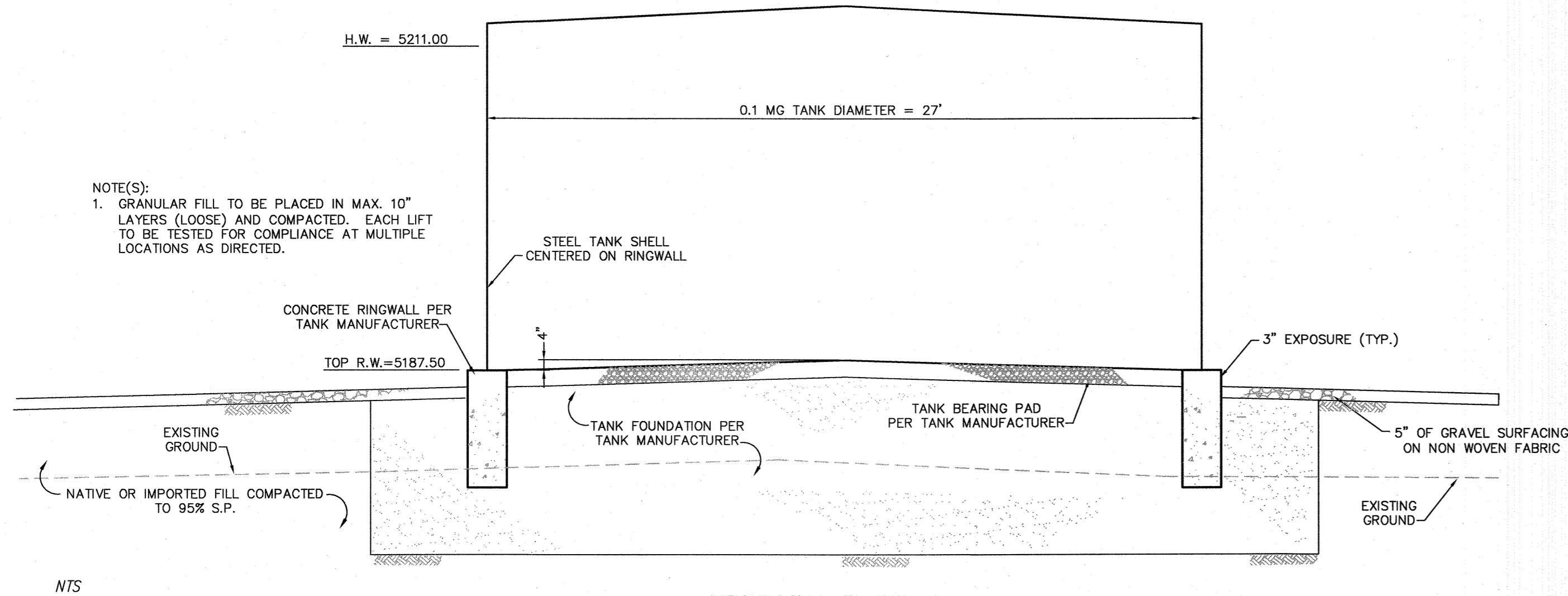
DePAULI ENGINEERING  
& SURVEYING, LLC.  
CIVIL ENGINEERS  
& LAND SURVEYORS

for  
NAVAJO ENGINEERING &  
CONSTRUCTION  
AUTHORITY

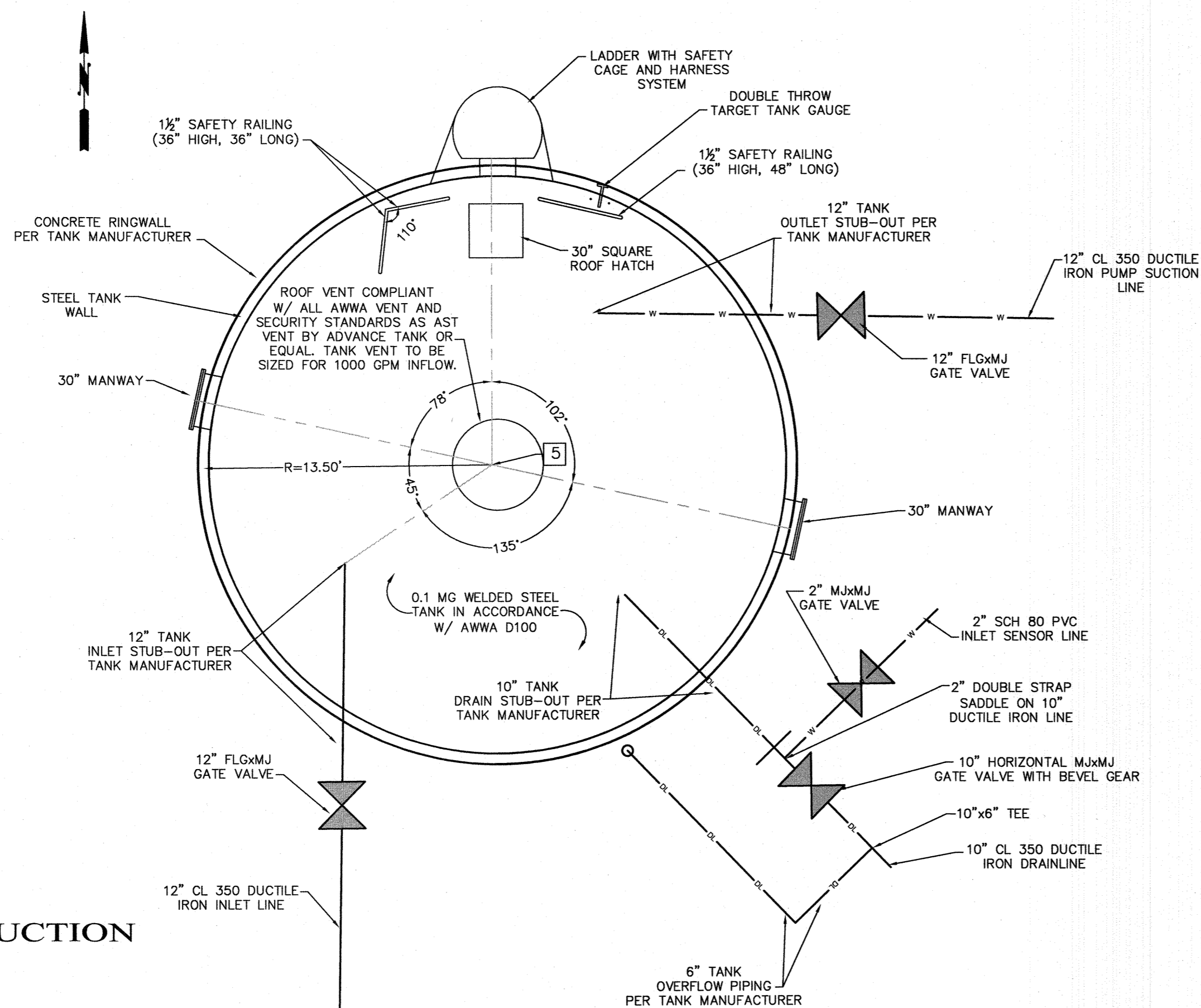
for the  
INDIAN HEALTH SERVICE  
WINSLOW SERVICE UNIT  
WINSLOW, ARIZONA

NO.	BY	DATE



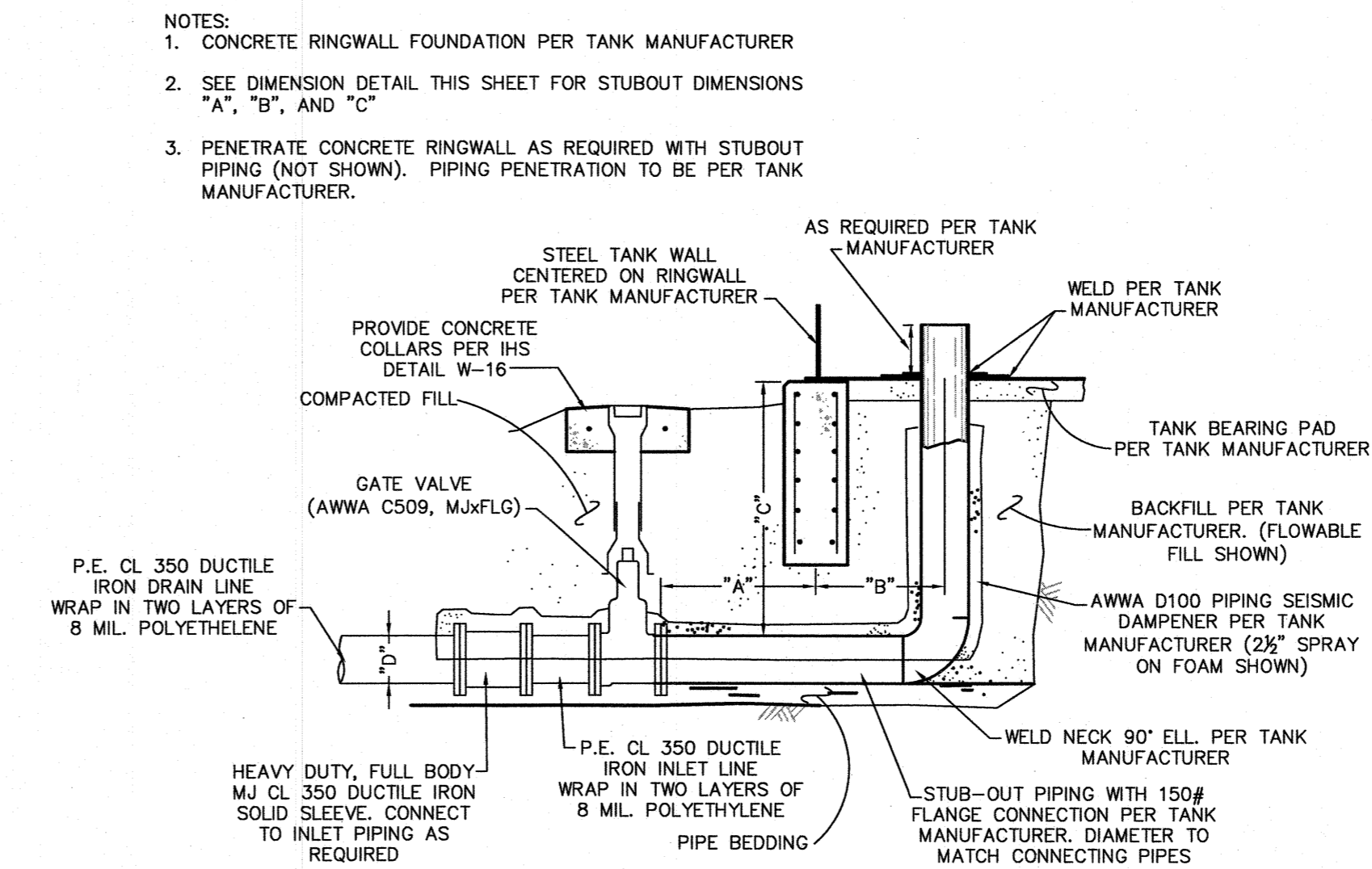


PUMP STATION "1" 0.1-MG TANK GENERAL CONFIGURATION SECTION

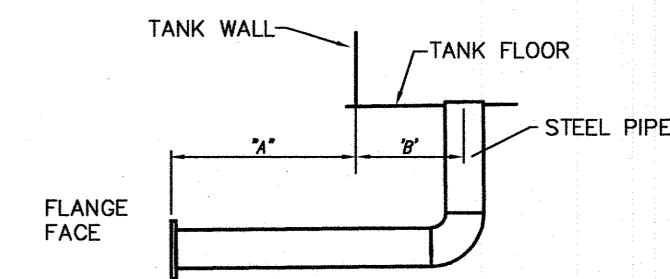


NOTE:  
TANK CONSTRUCTION  
IS COMPLETE

PUMP STATION "1" 0.1-MG TANK PLAN



PUMP STATION "1" TANK STUB-OUT DETAIL



STUB-OUT	DIA.	DIMENSION		
		A	B	C
INLET	12"	4.50'	6.80'	4.00'
OUTLET	10"	4.50'	6.84'	4.00'
DRAIN	10"	4.50'	5.00'	1.50'

STUB-OUT DIMENSIONS

NOTES:  
1. SEE DETAIL THIS SHEET FOR STUBOUT LAYOUT CONFIGURATION

TANK STUBOUT DIMENSION DETAILS

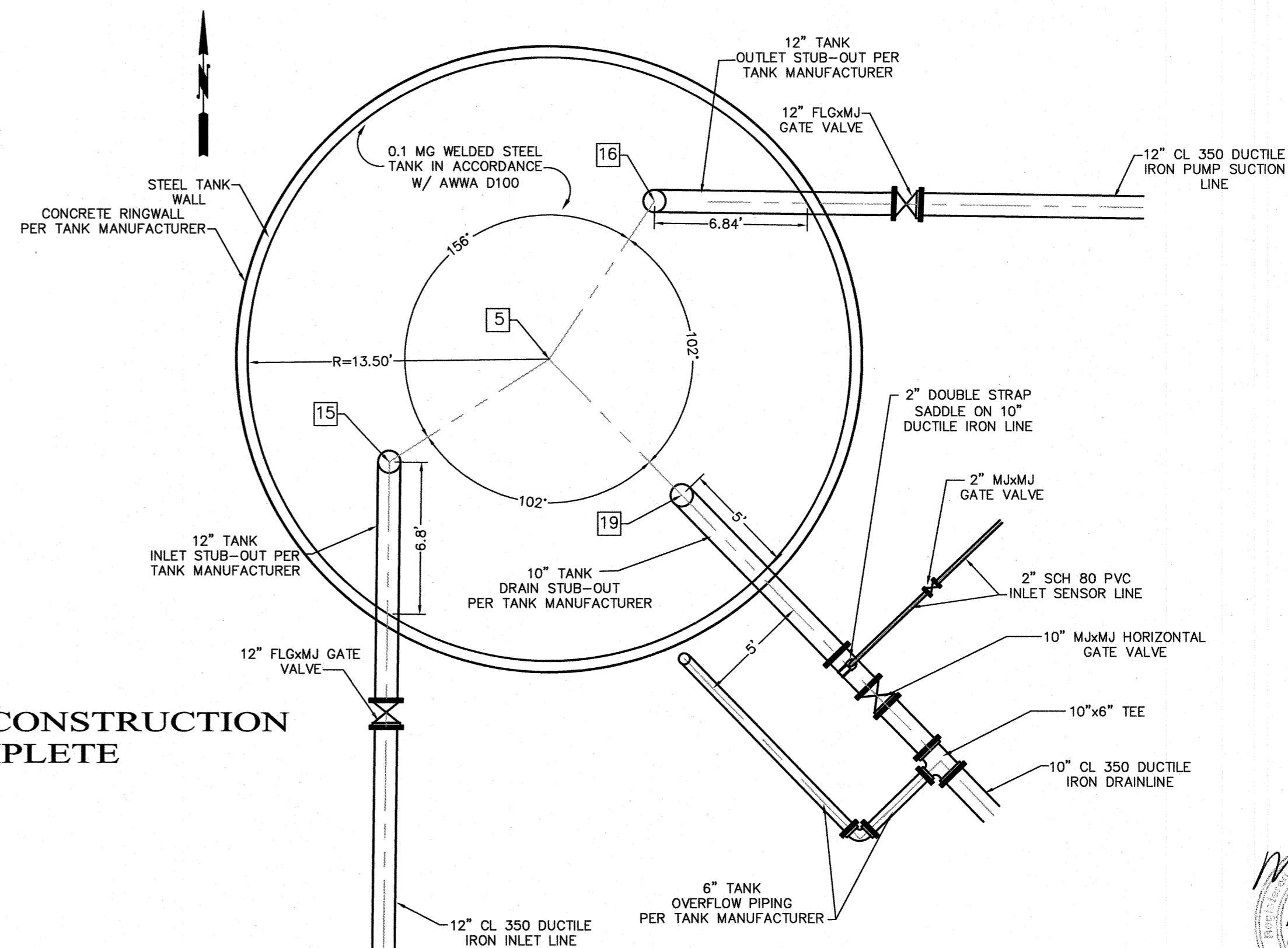
NOTES:

- CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
- ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
- SEE SHEET 4-1 FOR YARD PIPING (WATERLINES AND DRAIN LINES)
- VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
- RESERVOIR APPURTENANCES TO BE ORIENTED IN THE THE FIELD AS DIRECTED.

0.1-MG TANK COORDS

PI/FITTING DESC	NORTHING	EASTING
5 TANK CENTER	1580009.83	552314.74
15 12" TANK INLET STUB-UP	1580005.23	552307.59
16 12" TANK OUTLET STUB-UP	1580016.87	552319.45
19 10" DRAIN STUB-UP	1580003.74	552320.66

NOTE:  
TANK CONSTRUCTION  
IS COMPLETE



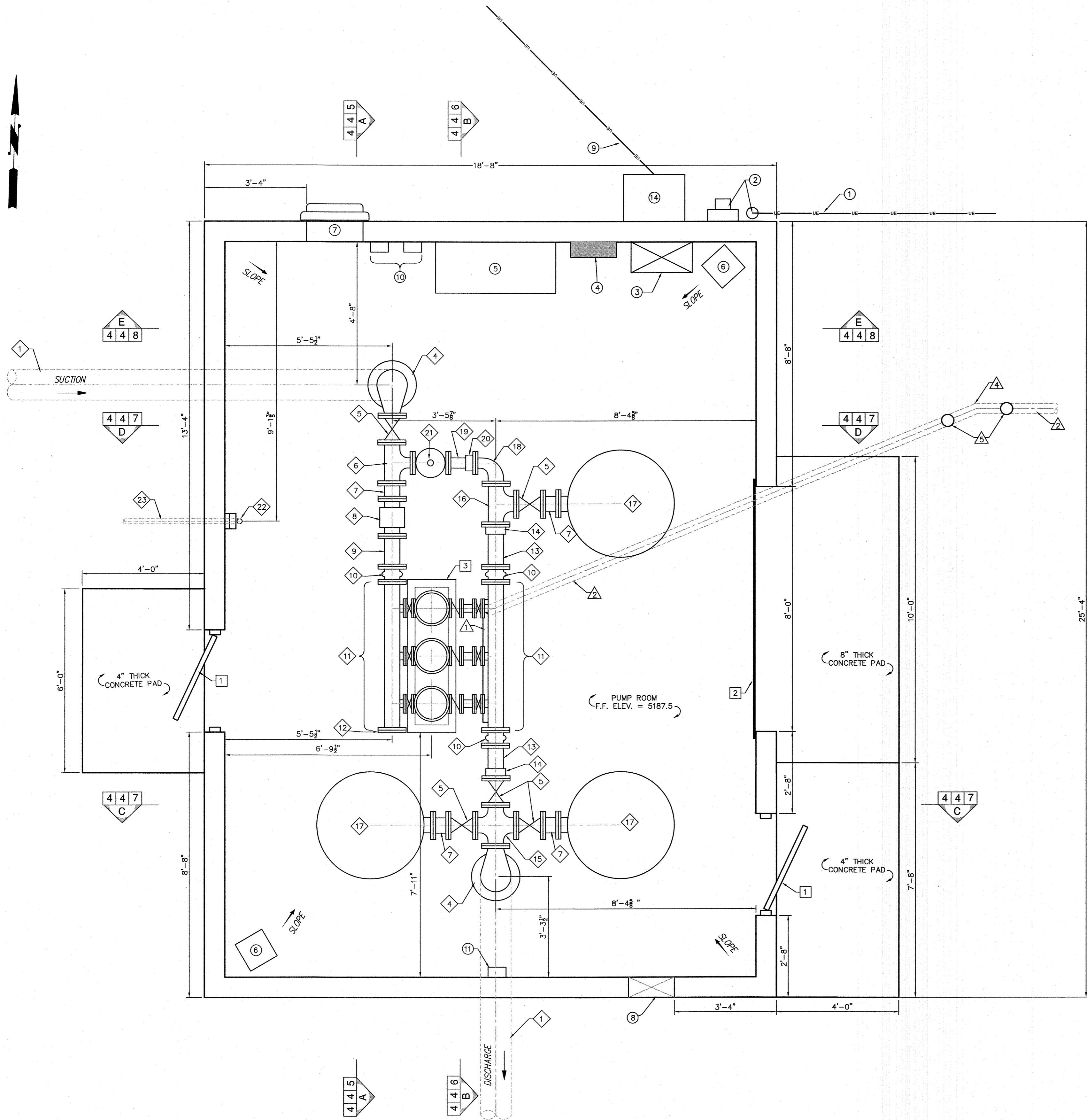
PUMP STATION "1" 0.1-MG TANK STUBOUT LAYOUT

INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
LEUPP-DILKON WATER SUPPLY SYSTEM

PUMP STATION "1"  
GENERAL TANK LAYOUT

SCALE: SHOWN  
DATE: DECEMBER 2021  
DRAWN BY: DPT  
CHECKED BY: KAS MDP

SHEET  
4 - 3



ELECTRICAL & MECHANICAL KEYED NOTES:

- 1 UNDERGROUND ELECTRIC SERVICE PER NTUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- 5 GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER "OMARK" #MH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MB10 WALL MOUNTED BRACKET (240V, 1Ø, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- 14 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

CONSTRUCTION KEYED NOTES:

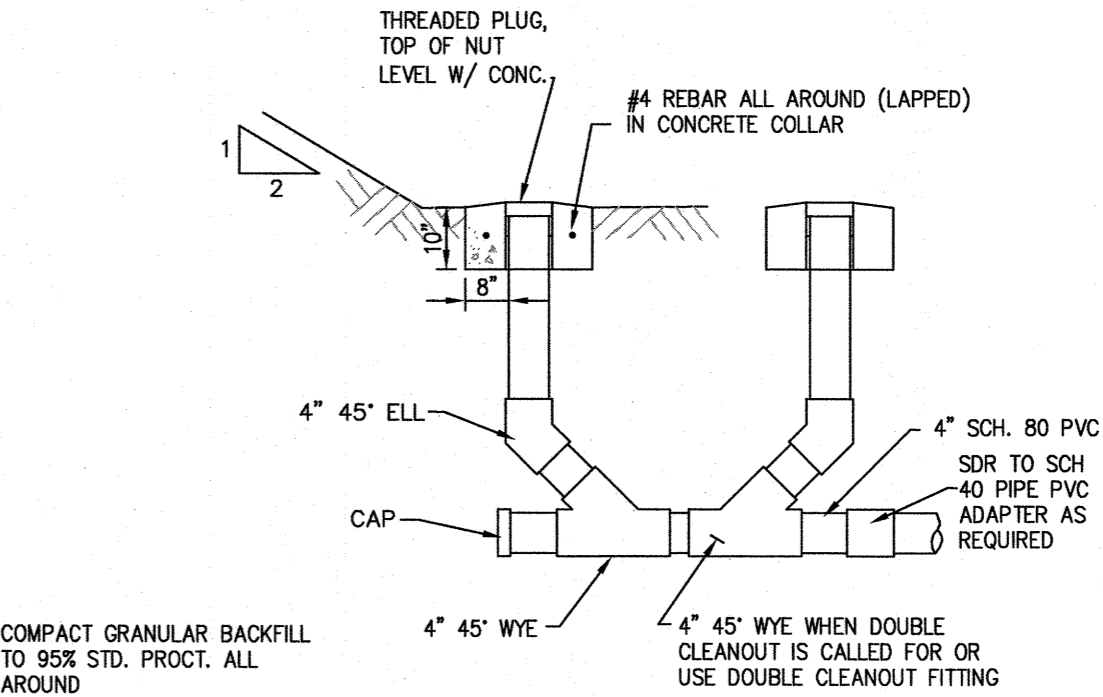
- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME, PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- 2 8' WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

DRAIN FITTING & PIPING KEYED NOTES:

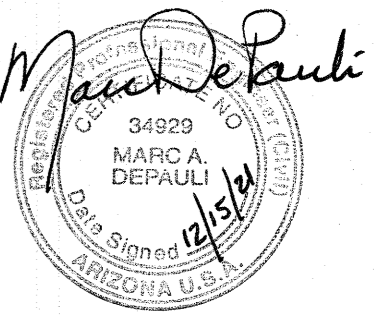
- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 4 4" SCH. 80 PVC 22.5° ELL. (SOLVENT WELD)
- 5 4" DRAIN LINE CLEANOUT SEE SEWER SERVICE CLEANOUT DETAIL SHEET 4-4

PRESSURE FITTING & PIPING KEYED NOTES:

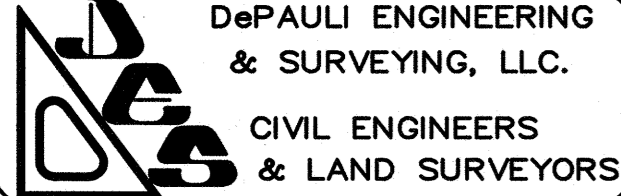
- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" M.J. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLGD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 5 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLGD REDUCING TEE
- 7 6" FLGD SPOOL, (L=6')
- 8 6" FLGD MICRO-METER ULTRA MAG UM06 FLOW METER
- 9 6" FLGD SPOOL, (L=12')
- 10 6" PROCD STYLE 231FA NSF81 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- 11 GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- 12 6" BLIND FLANGE
- 13 6" FLOWPE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLGD CROSS
- 16 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLGD REDUCING ELL
- 19 4" FLOWPE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 4-8
- 23 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 24A LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 24B LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 25 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)
- 26A NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI.
- 26B NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, DISCHARGE PRESSURE 0-300 PSI.
- 27 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 28 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 29 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 30 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 31 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 32 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL



SEWER SERVICE CLEANOUT DETAILS  
SCHED. 80 PVC  
NTS



PUMP STATION "1" LAYOUT & PIPING PLAN  
SCALE: 1/2"=1'



for  
NAVAJO ENGINEERING &  
CONSTRUCTION  
AUTHORITY

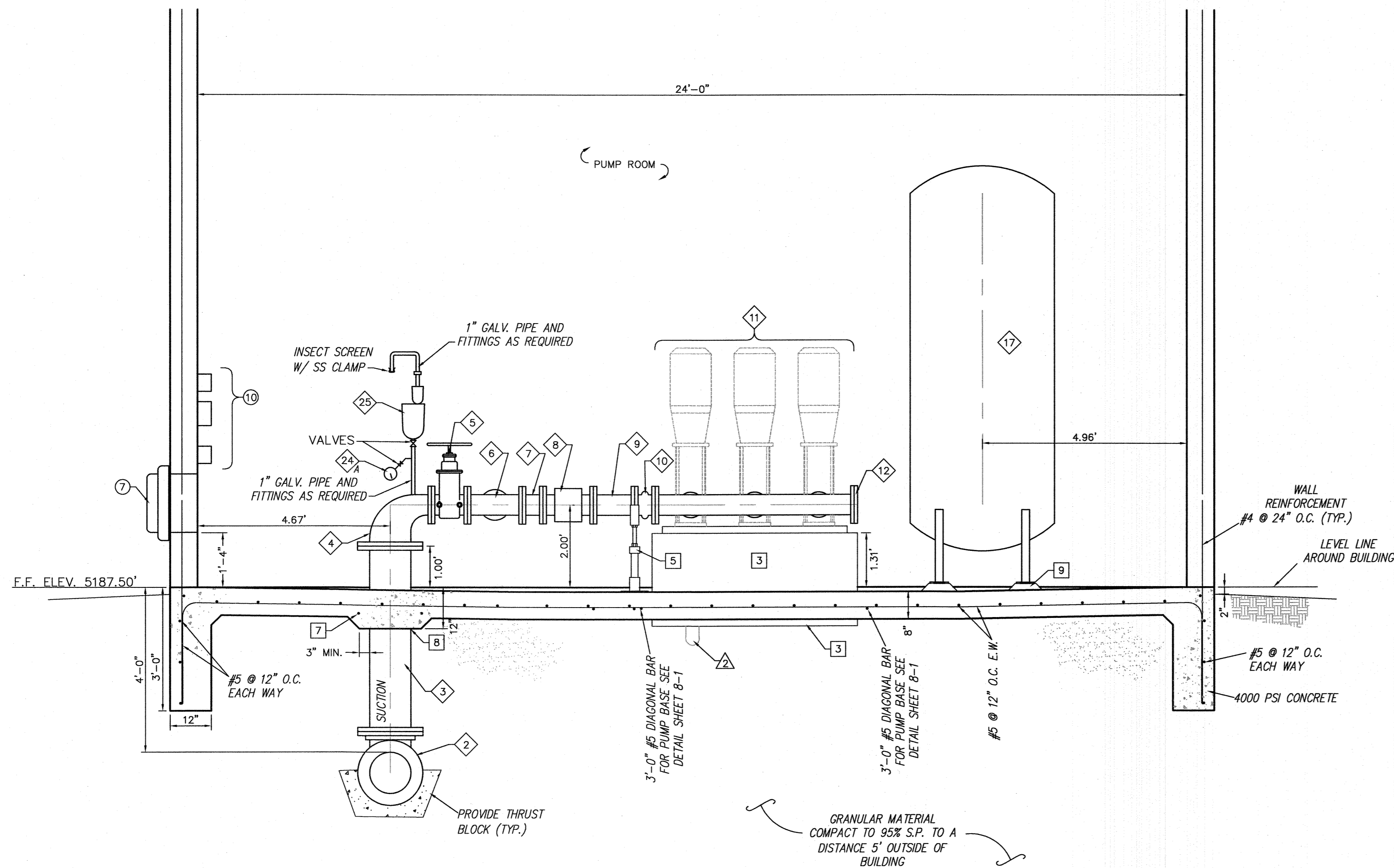
for the  
INDIAN HEALTH SERVICE  
WINSLOW SERVICE UNIT  
WINSLOW, ARIZONA

NO.	BY	DATE

INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
LEUPP-DILKON WATER SUPPLY SYSTEM

PUMP STATION "1"  
LAYOUT & PIPING PLAN

SCALE:	SHOWN
DATE:	DECEMBER 2021
DRAWN BY:	DPT
CHECKED BY:	KAS MDP



**PUMP STATION "1" ELEVATION "A"**  
**SCALE: 1/2"=1'**

### ELECTRICAL & MECHANICAL KEYED NOTES:

- 1 UNDERGROUND ELECTRIC SERVICE PER NTUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- 5 GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER "OMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MMB10 WALL MOUNTED BRACKET (240V, 14, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 4-8 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- 14 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

### CONSTRUCTION KEYED NOTES:

- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- 2 8' WIDE 12' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

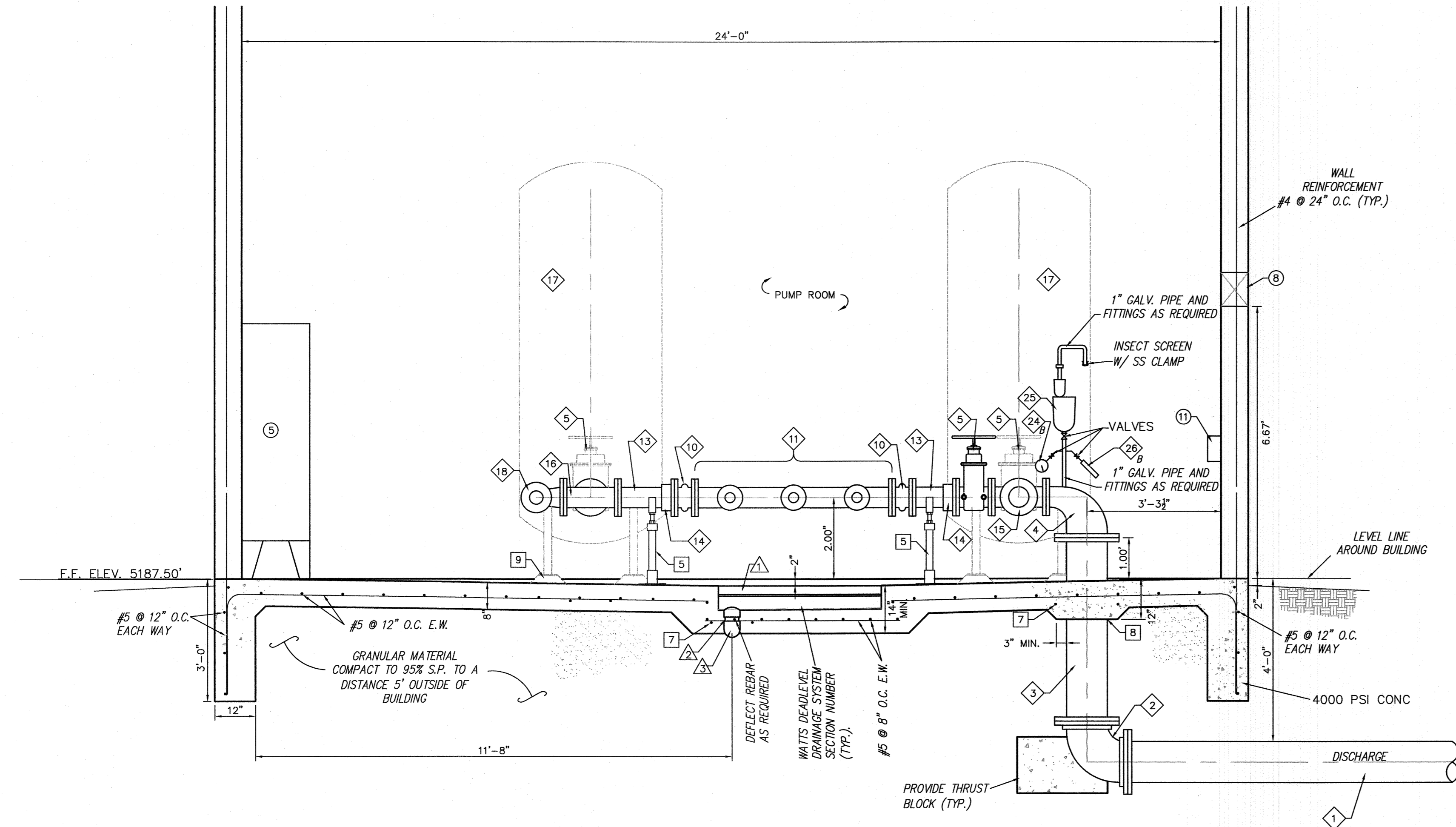
### DRAIN FITTING & PIPING KEYED NOTES:

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 4 4" SCH. 80 PVC 22.5° ELL. (SOLVENT WELD)
- 5 4" DRAIN LINE CLEANOUT SEE SEWER SERVICE CLEANOUT DETAIL SHEET 4-4

### PRESSURE FITTING & PIPING KEYED NOTES:

- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" M.I. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLG&PE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLG'D 90° REDUCING ELL. WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 5 6" FLG'D RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLG'D REDUCING TEE
- 7 6" FLG'D SPOOL, (L=6")
- 8 6" FLG'D MCCROMETER ULTRA MAG UM06 FLOW METER
- 9 6" FLG'D SPOOL, (L=12")
- 10 6" PROCO STYLE 231FA NSF81 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6")
- 11 GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID
- 12 6" BLIND FLANGE
- 13 6" FLG&PE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLG'D CROSS
- 16 6" FLG'D TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLG'D REDUCING ELL.
- 19 4" FLG&PE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLG'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 4-8
- 23 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 24 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 24B LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 25 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC T015/22.9 OR EQUAL)
- 26A NON-SUBMERISBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI.
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- 31 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 32 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

*Marc DePauli*  
 34929  
 MARC A. DEPAULI  
 Date Signed: 12/5/21  
 ARIZONA U.S.A.



**PUMP STATION "1" ELEVATION "B"**  
**SCALE: 1/2"=1'**

#### ELECTRICAL & MECHANICAL KEYED NOTES:

- 1 UNDERGROUND ELECTRIC SERVICE PER NTUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- 5 GRUNDFOSS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MM610 WALL MOUNTED BRACKET (240V, 1Ø, 7.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- 14 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

#### CONSTRUCTION KEYED NOTES:

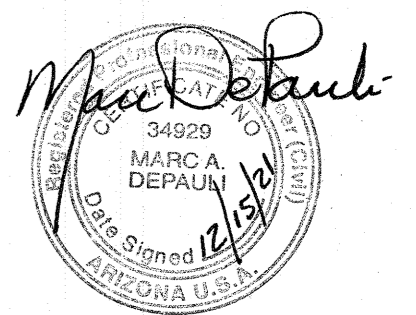
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- 2 8' WIDE 12' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

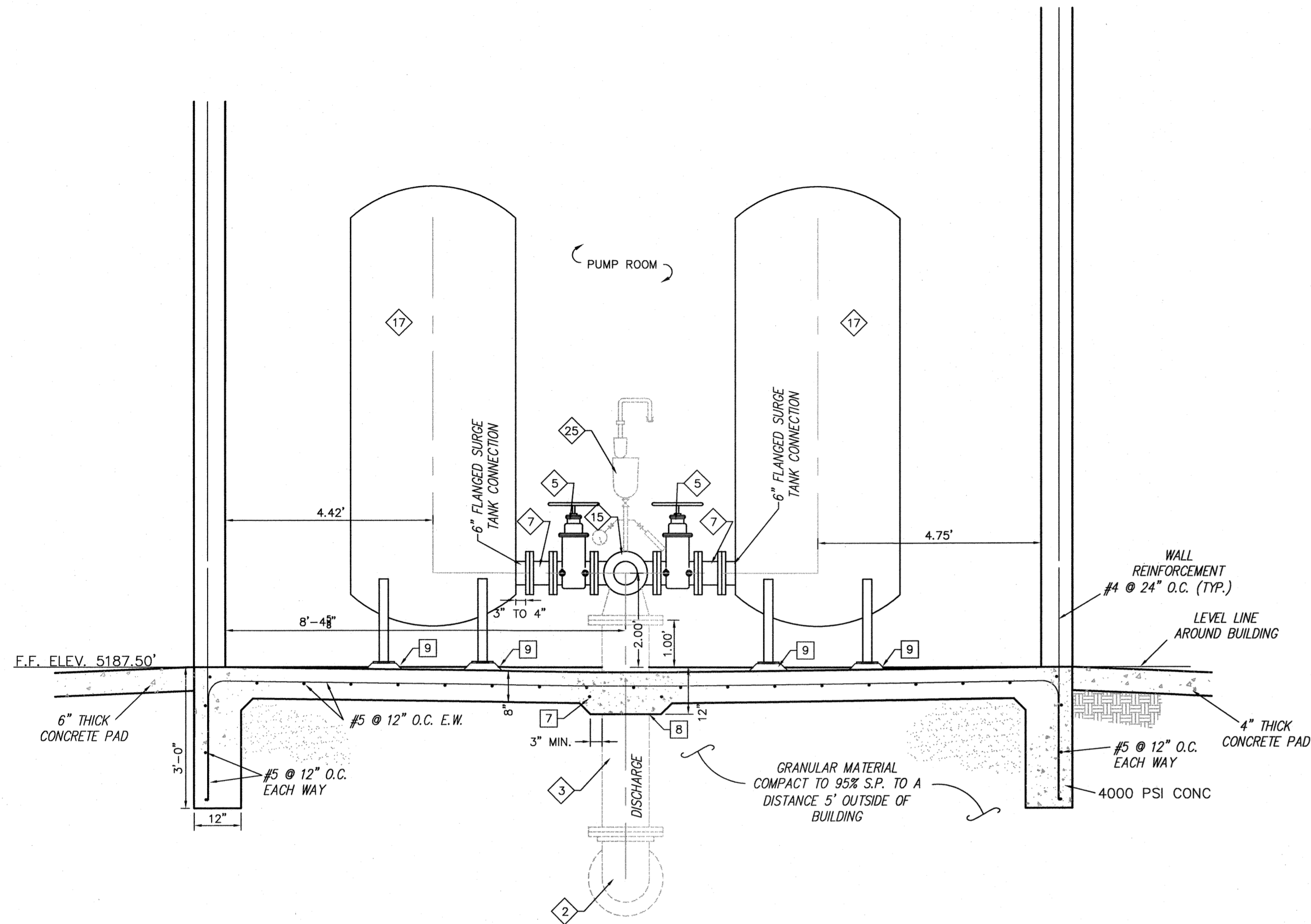
#### DRAIN FITTING & PIPING KEYED NOTES:

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 4 4" SCH. 80 PVC 22.5° ELL. (SOLVENT WELD)
- 5 4" DRAIN LINE CLEANOUT SEE SEWER SERVICE CLEANOUT DETAIL SHEET 4-4

#### PRESSURE FITTING & PIPING KEYED NOTES:

- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" M.J. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLOWPIPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLGD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 5 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLGD REDUCING TEE
- 7 6" FLGD SPOOL, (L=6')
- 8 6" FLGD MICRO METER ULTRA MAG UM06 FLOW METER
- 9 6" FLGD SPOOL, (L=12')
- 10 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- 11 GRUNDFOSS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- 12 6" BLIND FLANGE
- 13 6" FLOWPIPE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLGD CROSS
- 16 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
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- 21 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 4-8
- 23 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
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- 24B LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 25 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)
- 26A NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI
- 26B NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, DISCHARGE PRESSURE 0-300 PSI
- 27 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 28 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
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- 30 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 31 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 32 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL





**C**  
**PUMP STATION "1" ELEVATION "C"**  
**SCALE: 1/2"=1'**

**ELECTRICAL & MECHANICAL KEYED NOTES:**

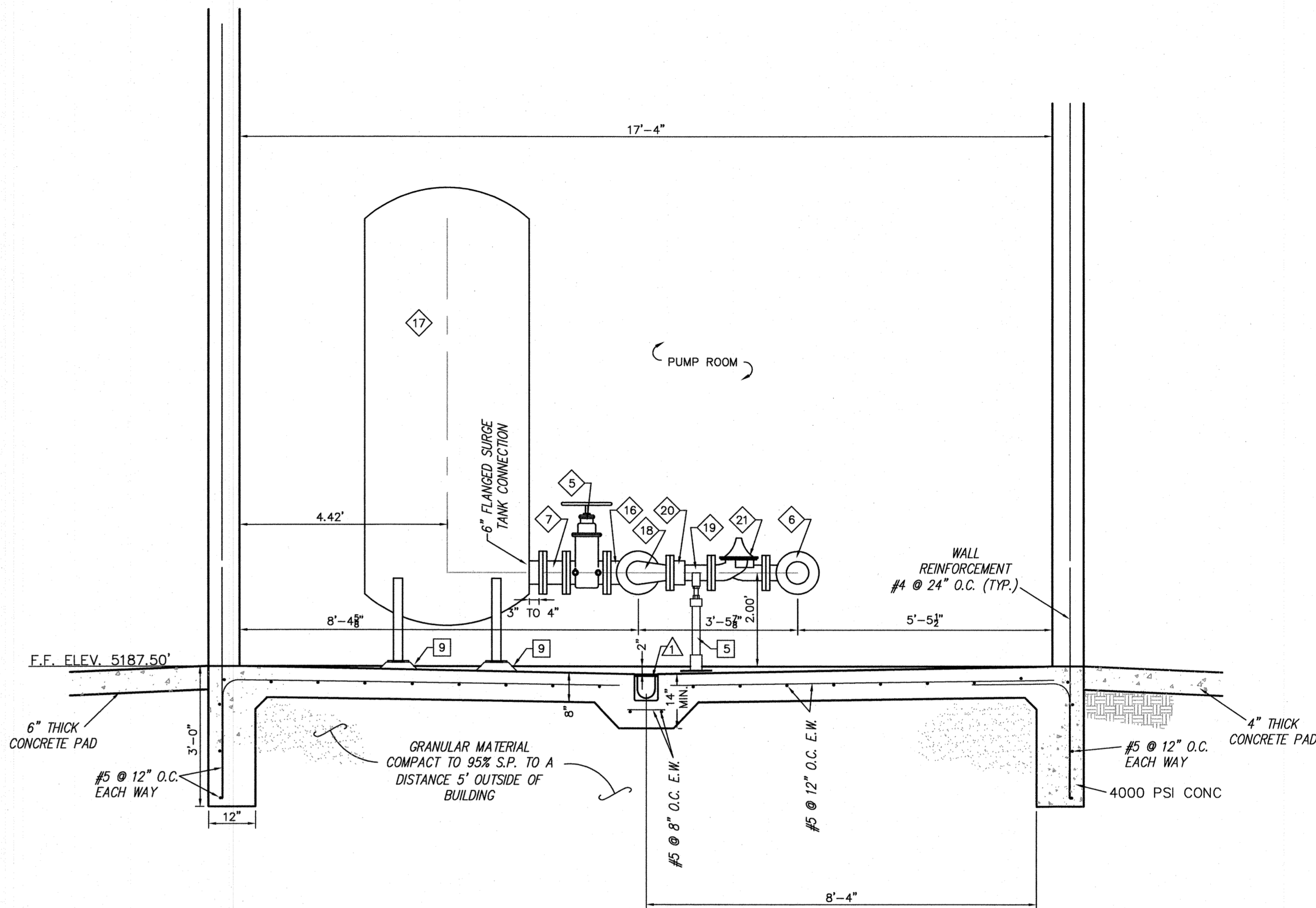
- 1 UNDERGROUND ELECTRIC SERVICE PER NTUA STANDARDS
- 2 ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- 3 NEMA 3R ELECTRICAL CABINET PANEL "A"
- 4 NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- 5 GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- 6 ELECTRIC UNIT HEATER "OMARK" #MH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MM10 WALL MOUNTED BRACKET. (240V, 1ø, 2.5KW)
- 7 EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- 8 MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- 9 CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- 10 MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 4-8 FOR DETAILS
- 11 TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- 12 FLOW METER DISPLAY AND TRANSMITTER UNIT
- 13 TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- 14 AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

**CONSTRUCTION KEYED NOTES:**

- 1 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- 2 8' WIDE 12' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- 7 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 8 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

**DRAIN FITTING & PIPING KEYED NOTES:**

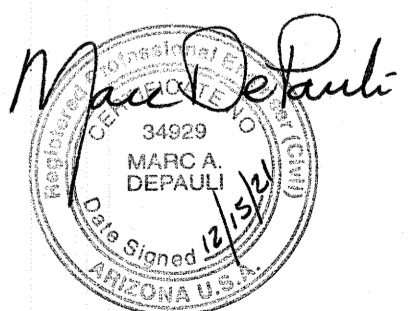
- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 4 4" SCH. 80 PVC 22.5° ELL. (SOLVENT WELD)
- 5 4" DRAIN LINE CLEANOUT SEE SEWER SERVICE CLEANOUT DETAIL SHEET 4-4



**D**  
**PUMP STATION "1" ELEVATION "D"**  
**SCALE: 1/2"=1'**

**PRESSURE FITTING & PIPING KEYED NOTES:**

- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLGD 90° REDUCING ELL. WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 5 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLGD REDUCING TEE
- 7 6" FLGD SPOOL, (L=6')
- 8 6" FLGD MCCROMETER ULTRA MAG UM06 FLOW METER
- 9 6" FLGD SPOOL, (L=12')
- 10 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- 11 GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- 12 6" BLIND FLANGE
- 13 6" FLOWPE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLGD CROSS
- 16 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLGD REDUCING ELL.
- 19 4" FLOWPE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 4-8
- 23 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 24A LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (1" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 24B LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (1" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 25 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- 26A NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI.
- 26B NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI.
- 27 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 28 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 29 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 30 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 31 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 32 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL





- ① UNDERGROUND ELECTRIC SERVICE PER NTUA STANDARDS
- ② ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- ③ NEMA 3R ELECTRICAL CABINET PANEL "A"
- ④ NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND HIS STANDARDS
- ⑤ GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ⑥ ELECTRIC UNIT HEATER, "OMARK" MATH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND JUMBO WALL MOUNTED BRACKET: (240V, 1 $\phi$ , 7.5KW)
- ⑦ EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- ⑧ MOTORIZED INLET DAMPER, SEE DETAIL ON SHEET 8-2
- ⑨ CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- ⑩ MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 4-8 FOR DETAILS
- ⑪ TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- ⑫ FLOW METER DISPLAY AND TRANSMITTER UNIT
- ⑬ TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- ⑭ AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

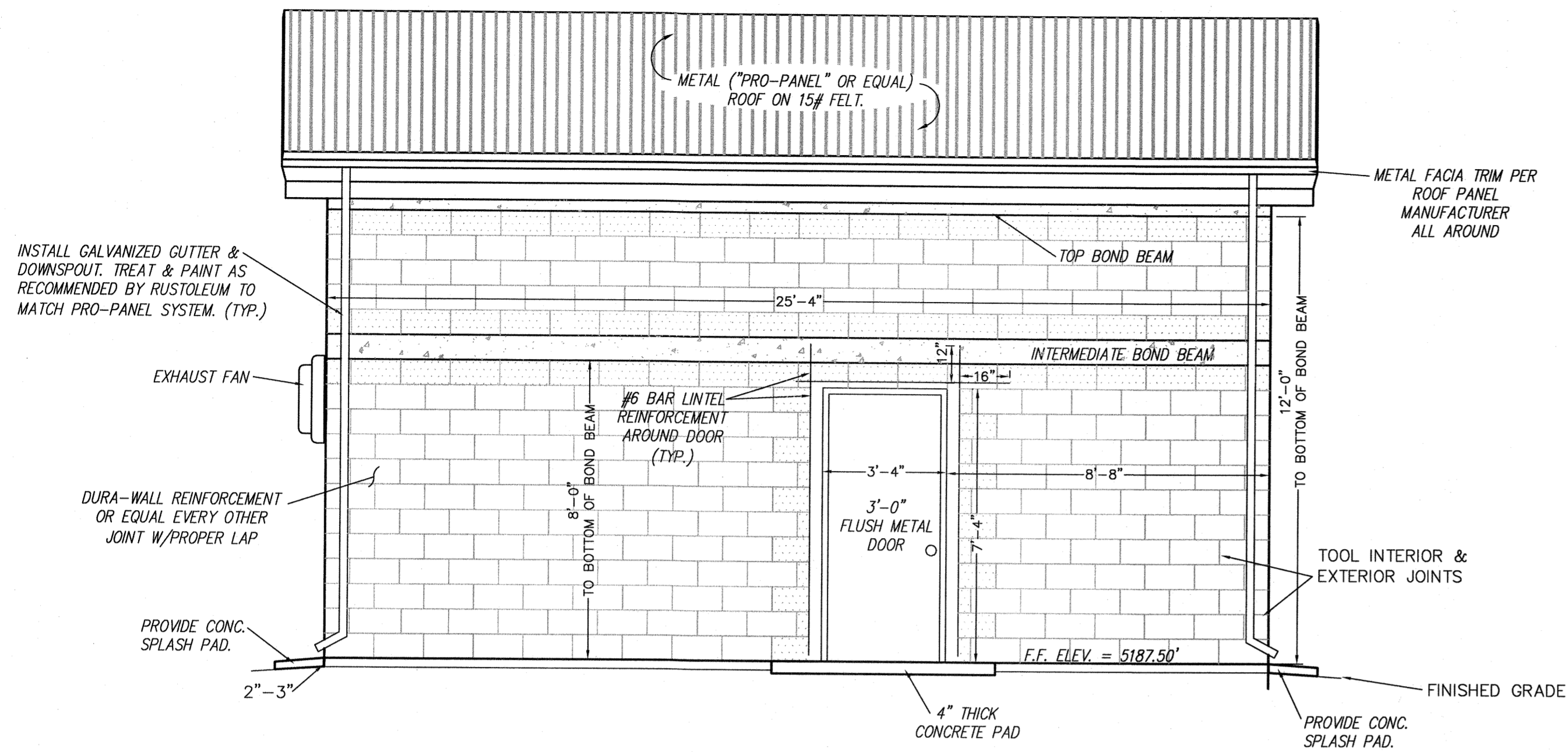
- 1 3"-Ø FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXT BENEATH AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYPED TO NITRA WATER SYSTEM STANDARD.)
- 2 8" WIDE 12" HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- 3 PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 4 3" STD. STEEL PNEUMATION (SEE DETAIL SHEET 8-1)
- 5 ADJUSTABLE PIPE SUPPORT STANDS BY NOTED-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- 6X WALL PIPE SUPPORTS (TYP.) AS STATIONED BY "X"
- 7 (SEE DETAILS SHEET 8-1)
- 8 #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- 9 PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- 9 SURGE TANK PEDESTAL (TYP.) (SEE DETAIL SHEET 8-1)

- 1 WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 2 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 3 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)
- 4 4" SCH. 80 PVC 22.5° ELL (SOLVENT WELD)
- 5 4" DRAIN LINE CLEANOUT SEE SEWER SERVICE CLEANOUT DETAIL SHEET 4-4

- 12" CL 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" MA 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" FLOPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12"x6" FLCD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6"x4" FLGD REDUCING TEE
- 6" FLGD SPOOL, (L=6")
- 6" FLGD MICROMETER ULTRA MAG UM06 FLOW METER
- 6" FLGD SPOOL, (L=12")
- 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6")
- GRUNDFOSS BOOSTERPAAP TRIPLEX PUMP SKID MODEL MPEC (CUE) 3 CR45-5
- 6" BLIND FLANGE
- 6" FLOPE SPOOL, (L=AS REQUIRED)

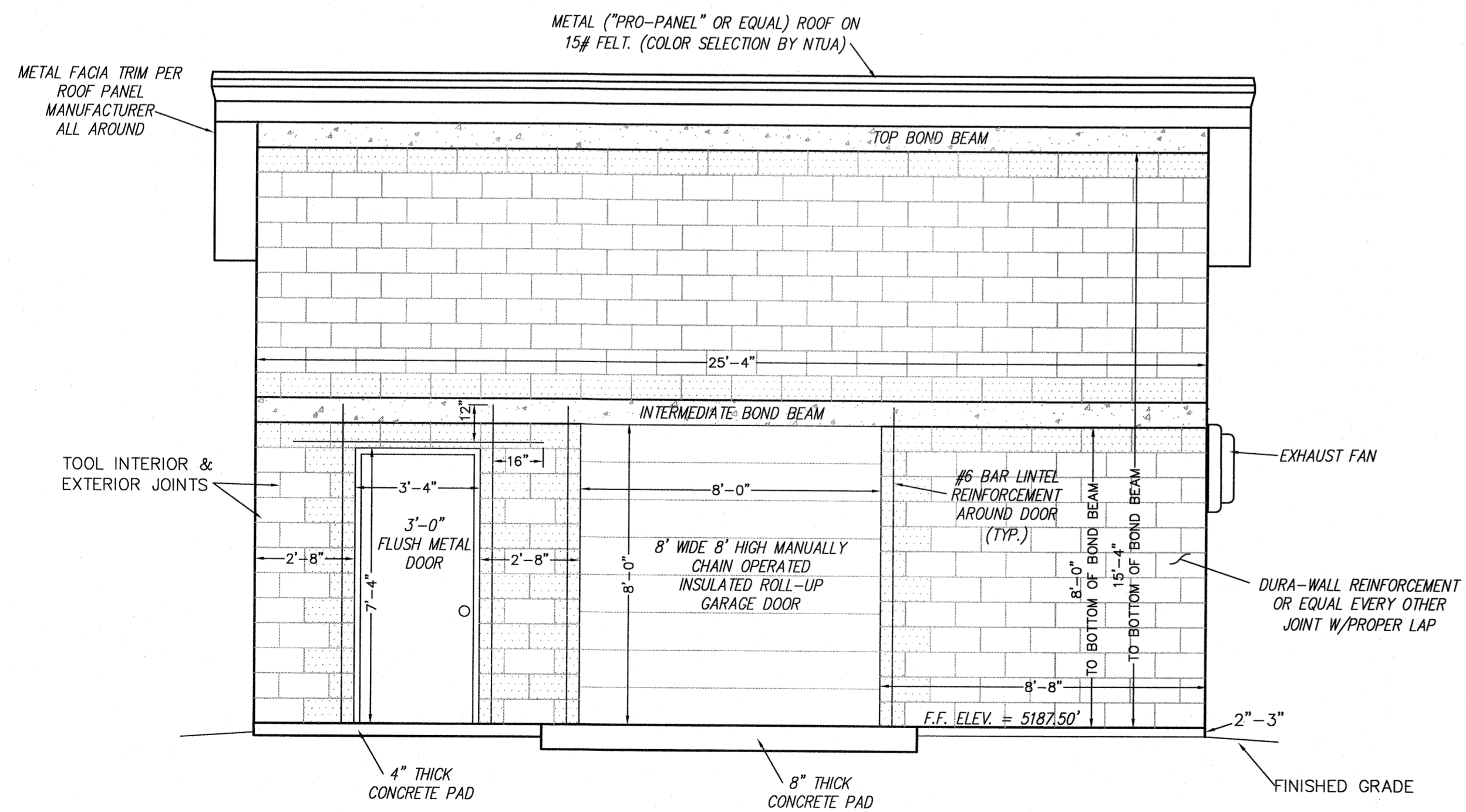
14. 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
15. 6" FLO'D CROSS
16. 6" FLO'D TEE W/ TAPPING BOSS AS REQUIRED
17. 500 GALLON HYDROPNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
18. 6"x4" FLO'D REDUCING ELL
19. 4" FLOAPE SPOOL, (L=AS REQUIRED)
20. 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
21. 4" FLO'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
22. 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 4-B
23. 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
24. LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 24-B. LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED

- |    |   |
|----|---|
| 25 | 1" DUAL BODY COMBINATION AIR VALVE<br>VAL-MATIC 101S; 22.9 OR EQUAL   |
| 26 | NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/<br>LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI,  |
| 26 | NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/<br>LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI, |
| 27 | COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS<br>REQUIRED (150 PSI)                             |
| 28 | 2" SCH. 80 PVC SENSOR STAND 90" ELL. (SOLVENT WELD)   |
| 29 | 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT<br>AS REQUIRED TO GAUGE AND TRANSDUCER VALVES        |
| 30 | 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS<br>REQUIRED TO HOSE BIB                             |
| 31 | 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD)<br>ADAPT AS REQUIRED TO AIR RELEASE VALVE               |
| 32 | 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL  |

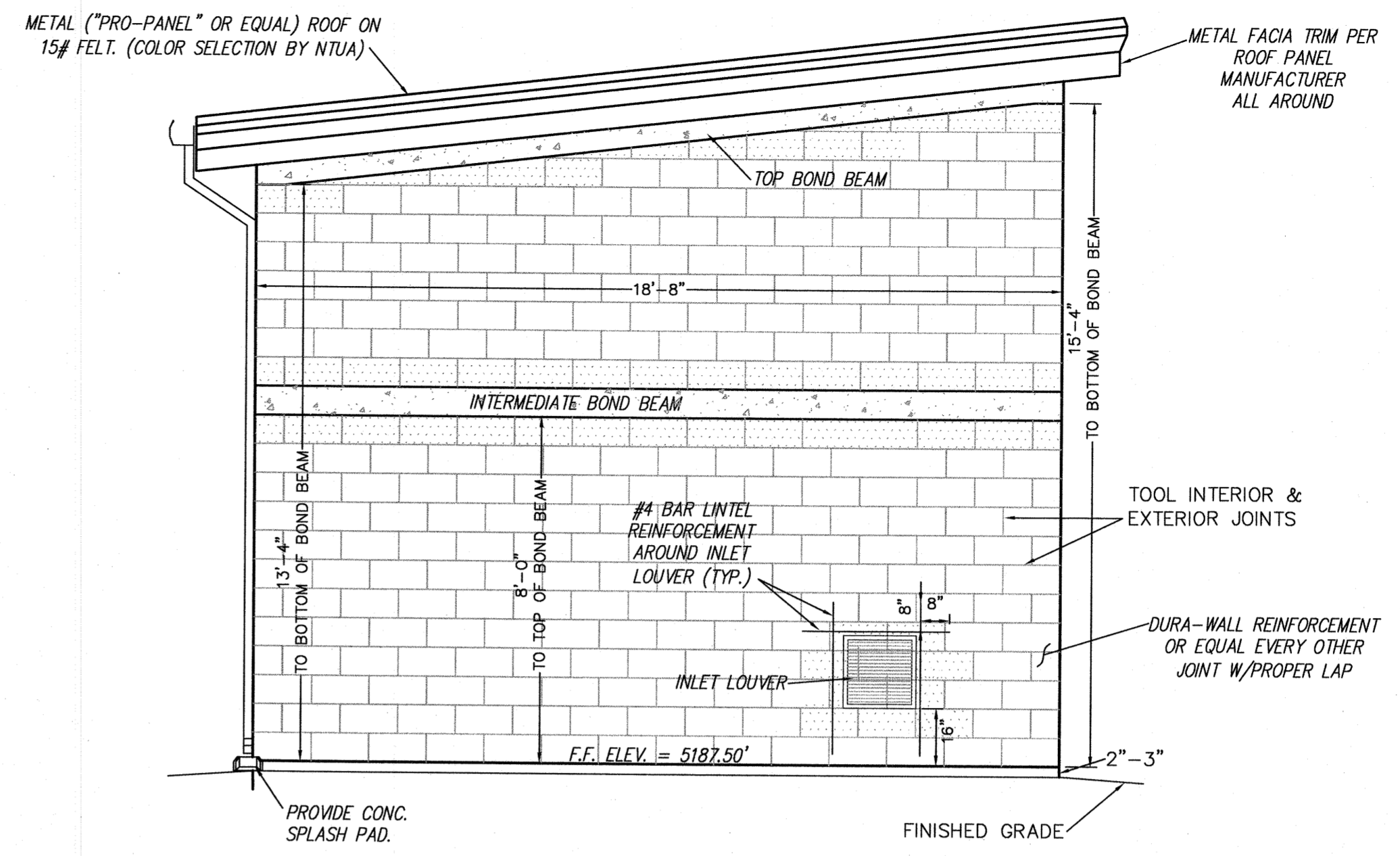


**PUMP STATION "1" STATION ELEVATION (LOOKING EAST)**  
SCALE: 1/3"=1'

- NOTES:
1. EVERY CMU BLOCK CELL SHALL BE FILLED WITH 4000 PSI GROUT
  2. STATION EXTERIOR SHALL BE SPLIT FACE BLOCK. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS, AS SHOWN.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR
  4. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL. PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  4. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  5. ELECTRICAL EQUIPMENT, LIGHTS, AND BOXES NOT SHOWN IN ELEVATIONS. SEE ELECTRICAL DRAWINGS FOR LOCATION AND MOUNTING DETAILS.

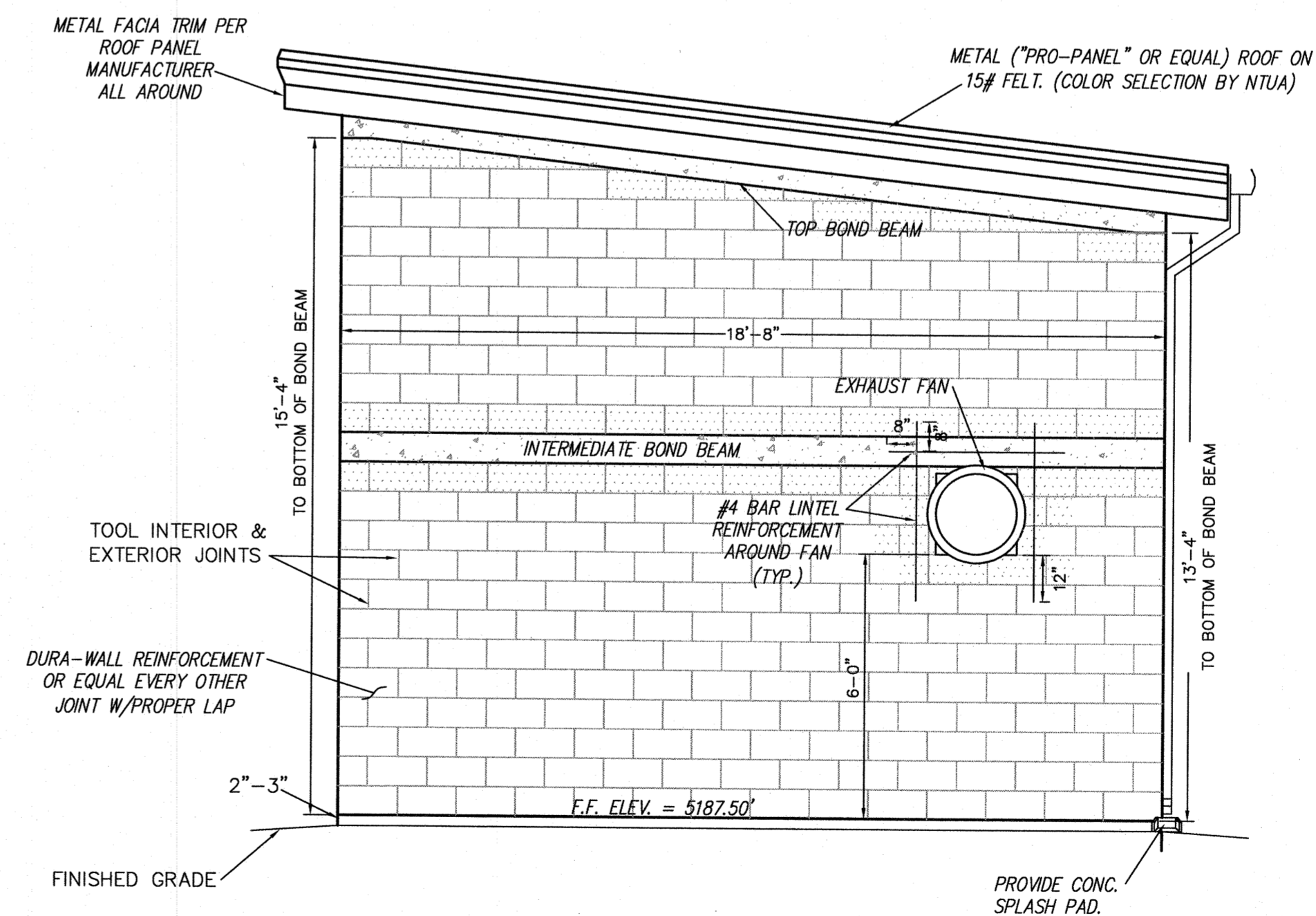
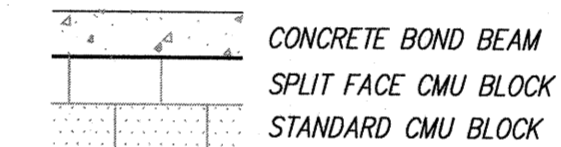


**PUMP STATION "1" STATION ELEVATION (LOOKING WEST)**  
SCALE: 1/3"=1'

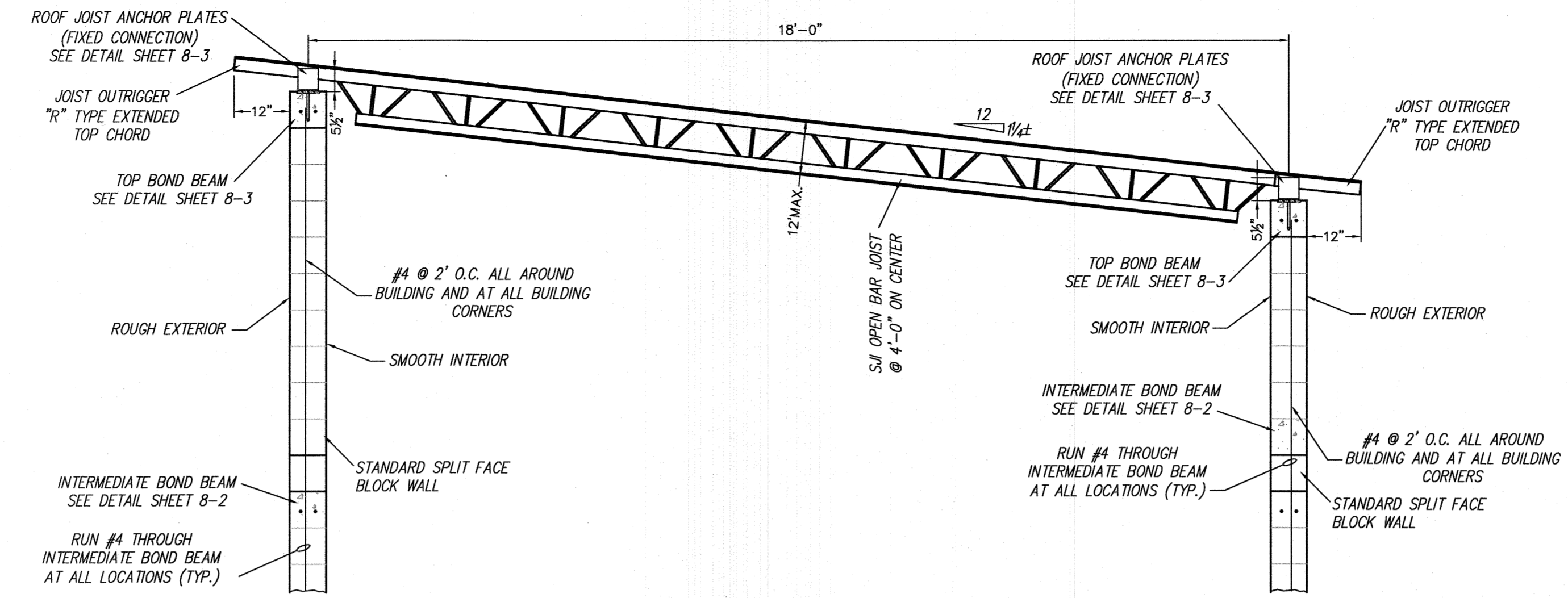


**PUMP STATION "1" STATION ELEVATION (LOOKING NORTH)**  
SCALE: 1/3"=1'

**BLOCK LEGEND**

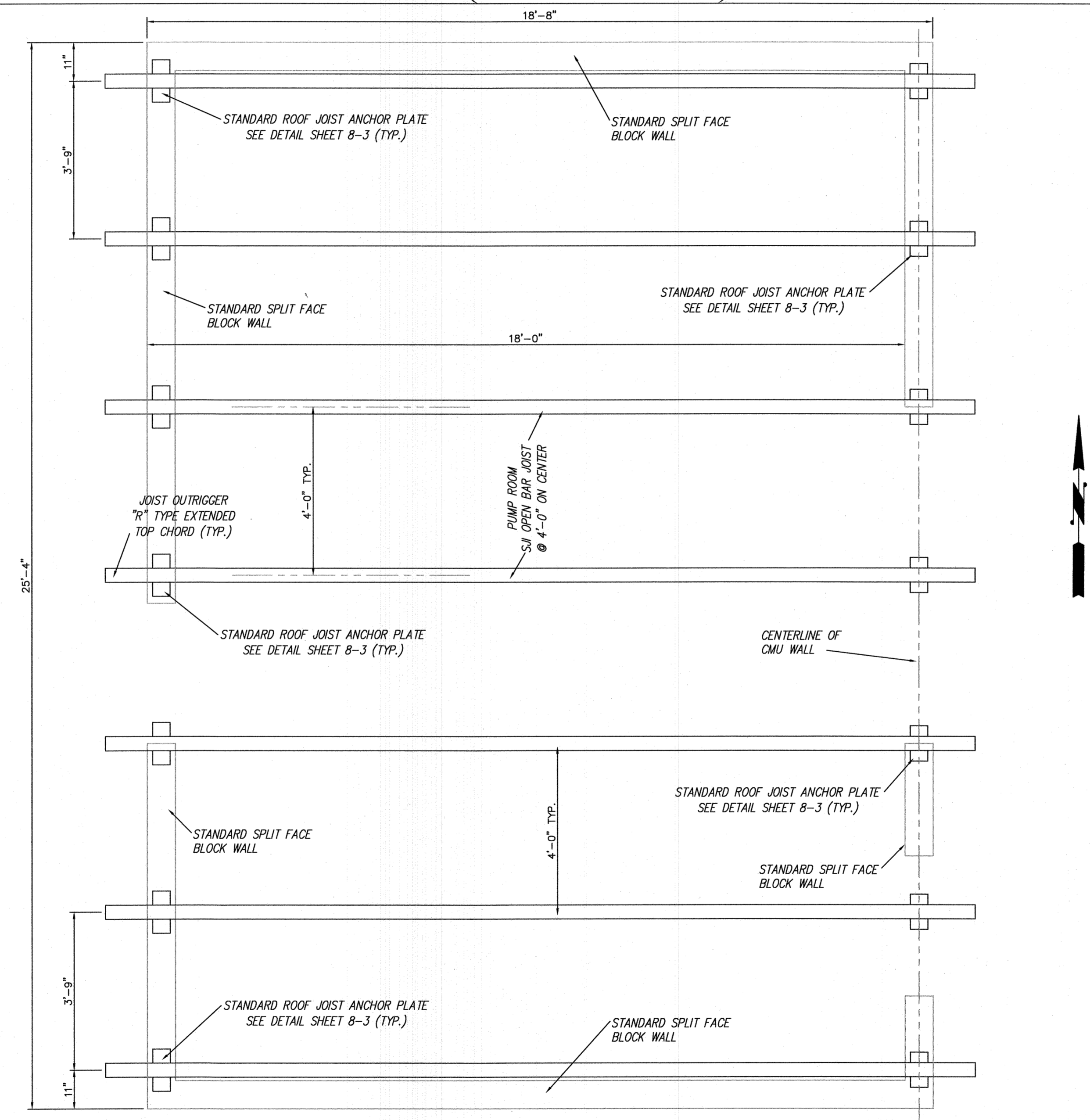


**PUMP STATION "1" STATION ELEVATION (LOOKING SOUTH)**  
SCALE: 1/3"=1'



- ROOF JOIST NOTES:**
- JOIST LOADING:
    - LIVE LOAD = 120 PLF (SNOW LOAD)
    - DEAD LOAD = 64 PLF\*
    - UNIFORM LOAD = 184 PLF\*
    - \* ASSUMES A 12 PLF ROOF JOIST (JOIST MANUFACTURER TO ADJUST AS REQ'D)
  - JOIST WEB SHALL BE PER JOIST SUPPLIER WITH A MAXIMUM DEPTH OF 12" AND WIDTH OF 4"
  - JOIST BRIDGING TO BE PROVIDED AND INSTALLED PER JOIST SUPPLIER BEFORE ATTACHING TO WALLS OR GABLE FRAMING AS REQUIRED.

**PUMP STATION "1" ROOF JOIST ELEVATION (LOOKING SOUTH)**  
SCALE: 1/2"=1'



**PUMP STATION "1" ROOF JOIST LAYOUT**  
SCALE: 1/2"=1'

PUMP STATION "2"  
SITE, GRADING, & PIPING PLAN KEYED NOTES:

BUILDING/STRUCTURE PAD KEYED NOTES:

- 1 PUMP STATION "2" 0.15-MG TANK,  
Ø=33.0', 24' HIGH  
(SEE SHEET 5-3 FOR DETAILS)
- 2 PUMP STATION "2"  
(SEE SHEETS 5-4 TO 5-10)

BUILDING PAD KEYED NOTES:

- 1 BUILDING PAD SHALL BE COMPACTED TO 95%  
STANDARD PROCTOR. MAXIMUM CONSTRUCTION  
LOOSE LIFT SHALL NOT EXCEED 10"
- 2 CONSTRUCT PAD SIDE SLOPES @ SLOPES  
SHOWN WITH MAXIMUM SLOPE OF 3:1
- 3 FINISHED PAD GRADES MAY BE ACHIEVED  
USING A NATIVE FILL. HOWEVER, NATIVE FILL  
UNDER AND WITHIN 5' OF BUILDINGS AND  
TANK HORIZONTALLY SHALL BE REMOVED  
AND RE-COMPACTED AT 95% S.P. TO A  
DEPTH OF 4' BELOW FINISHED FLOOR.

CONSTRUCTION KEYED NOTES:

- 1 PROPOSED DRAINAGE DITCH FLOWLINE, GRADE TO  
DRAIN
- 2 POWER POLE, SERVICE POLE, DOWN GUY AND SERVICE  
LINES (OVERHEAD OR UNDERGROUND) BY NTUA
- 3 OVERHEAD ELECTRIC LINE BY NTUA
- 4 INSTALL 6"x4"x4" CONCRETE DRIVE PAD  
SEE SHEET 5-4 FOR DETAILS
- 5 INSTALL CONCRETE ACCESS PAD  
SEE SHEET 5-4 FOR DETAILS
- 6 PLACE 5" OF GRAVEL OR BASE COURSE ON NON-WOVEN  
FABRIC FOR GRAVELED ROAD AND STATION YARD.
- 7 NEW FINISHED GRADE CONTOURS FOR PUMP STATION  
SITE (TYP.)
- 8 INSTALL 16' CHAIN LINK (TWO (2)-8' PANELS)  
ACCESS GATE (2 REQUIRED) PER IHS STANDARD  
DETAIL W-34
- 9 INSTALL 3' PERSONNEL GATE (1 REQUIRED)  
PER IHS STANDARD DETAIL W-34
- 10 INSTALL NEW CHAIN LINK FENCE AS SHOWN  
L=350'± PER IHS STANDARD DETAIL W-34
- 11 TANK DRAIN OUTLET STRUCTURE  
SEE DETAIL ON SHEET 5-2
- 12 PUMP STATION DRAIN PAD  
SEE DETAIL ON SHEET 5-2
- 13 UNDERGROUND ELECTRICAL AND CONTROL  
CONDUITS PER ELECTRICAL DESIGN
- 14 EDGE OF 5" GRAVEL SURFACING
- 15 INSTALL 24" DIAMETER CMP DRAIN L=190'  
INV. IN= 5506' INV. OUT= 5505'
- 16 INSTALL 16" X 6" CONCRETE ELECTRICAL  
PAD WITH GENERATOR PER ELECTRICAL  
DETAILS

PIPING KEYED NOTES:

- 1 12" PVC SDR-21 WATER TRANSMISSION LINES BY OTHERS
- 2 INSTALL 12" CL 350 DUCTILE IRON TANK INLET  
PIPING
- 3 INSTALL 12" CL 350 DUCTILE IRON PUMP SUCTION  
PIPING
- 3A 2" SCH 80 PVC PRESSURE SENSING LINE.
- 4 INSTALL 12" CL 350 DUCTILE IRON PUMP  
DISCHARGE PIPING
- 5 INSTALL 10" CL 350 DUCTILE IRON TANK DRAIN  
LINE
- 6 INSTALL 2" SCH. 80 PVC PUMP STATION DRAIN LINE  
WITH CLEANOUT AND FITTINGS AS REQUIRED
- 7 INSTALL CAP OR CONNECT TO 12" PVC  
TRANSMISSION LINE BY OTHERS
- 8 INSTALL 12" FLG&M GATE VALVE
- 8A INSTALL 10" HORIZONTAL M&M GATE  
VALVE WITH BEVEL GEAR
- 9 INSTALL 2" M&M GATE VALVE
- 10 INSTALL TANK INLET STUB-OUT  
PER TANK MANUFACTURER
- 11 INSTALL TANK OUTLET STUB-OUT  
PER TANK MANUFACTURER
- 12 SENSOR LINE CONNECTION TO DRAIN  
PIPING PER DETAIL ON SHEET 5-2
- 13 INSTALL TANK DRAIN STUB-OUT  
PER TANK MANUFACTURER
- 14 TANK OVERFLOW PIPING  
PER TANK MANUFACTURER
- 15 TEMPORARY TANK CONNECTION  
PER DETAIL ON SHEET 5-2

NOTES:

1. CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER  
POLLUTION PREVENTION PLAN.
2. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL  
UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND  
RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE  
WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP.  
THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT.  
POLYETHYLENE ENCASEMENT JOINTS SHALL BE STAGGERED.
4. VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS  
OTHERWISE SHOWN, DETAILED, OR NOTED.

SITE, GRADING & PIPING PLAN  
CONSTRUCTION COORDINATES

STRUCTURE COORDS

SITE CORNERS

DESC.	NORTHING	EASTING
1 NE COR.	1585706.28	608049.14
2 NW COR.	1585659.68	607854.42
3 SW COR.	1585464.94	607900.93
4 SE COR.	1585511.51	608095.58

0.15 MG RESERVOIR

DESC.	NORTHING	EASTING
5 TANK CNTR.	1585575.93	607933.99

PUMP STATION

DESC.	NORTHING	EASTING
6 NE COR.	1585552.82	607976.48
7 NW COR.	1585548.64	607958.97
8 SW COR.	1585524.00	607964.85
9 SE COR.	1585528.18	607982.36

FENCE CORNERS/PI'S

DESC.	NORTHING	EASTING
10 NE COR.	1585621.21	607985.87
11 NW COR.	1585548.48	607958.32
12 SW COR.	1585523.84	607964.20
13 SE COR.	1585524.25	608009.00

PI/FITTING DESC

	NORTHING	EASTING
14 INLET CAP/CONNECTION.	1585566.43	607894.26
15 12" TANK INLET STUB-OUT	1585573.26	607922.81
16 12" TANK OUTLET STUB-OUT	1585578.60	607945.18
17 DISCHARGE CAP/CONNECTION	1585599.16	608031.43
18 2" SENSOR & DRAIN LINE CONNECTION	1585556.08	607924.06
19 10" DRAIN STUB-OUT	1585565.65	607928.85
20 10" DRAIN OUTLET	1585531.98	607908.53
21 2" DRAIN OUTLET	1585524.00	607910.44
22 12" 90° OUTLET ELBOW	1585582.84	607963.02
23 2" 90° SENSOR ELBOW	1585558.74	607972.66
24 2" 45° SENSOR ELBOW	1585550.03	607936.17
25 12" 45° DISCHARGE ELBOW	1585534.46	607991.66
26 10" 45° DRAIN ELBOW	1585532.92	607912.47
27 INLET 12" X6" TEE	1585569.77	607908.22
28 INLET TEMP. TANK CONNECTION	1585579.50	607905.90
29 OUTLET 12" X6" TEE	1585581.99	607959.47
30 OUTLET TEMP. TANK CONNECTION	1585595.41	607956.26
31 24" DIAMETER CMP DRAIN INLET	1585516.68	608016.68
32 24" DIAMETER CMP DRAIN OUTLET	1585493.27	607935.10

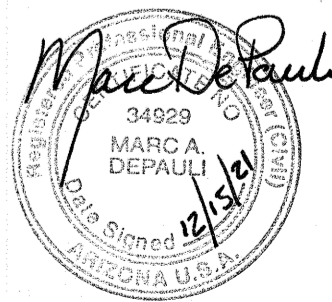
ESTIMATED EARTHWORK QUANTITIES

ITEM	EXCAVATED IN-SITU VOLUME	EMBANKMENT EARTHWORK VOLUME	EXCESS IN-SITU VOLUME
NATIVE MATERIAL	520 CY	230 CY	290 CY
IMPORTED MATERIAL			
ENGINEERED FILL	-	-	-
GRAVEL SURFACING	-	165 CY	-
TOTAL IMPORTED MATERIAL	-	165 CY	-
TOTALS	520 CY	395 CY	290 CY

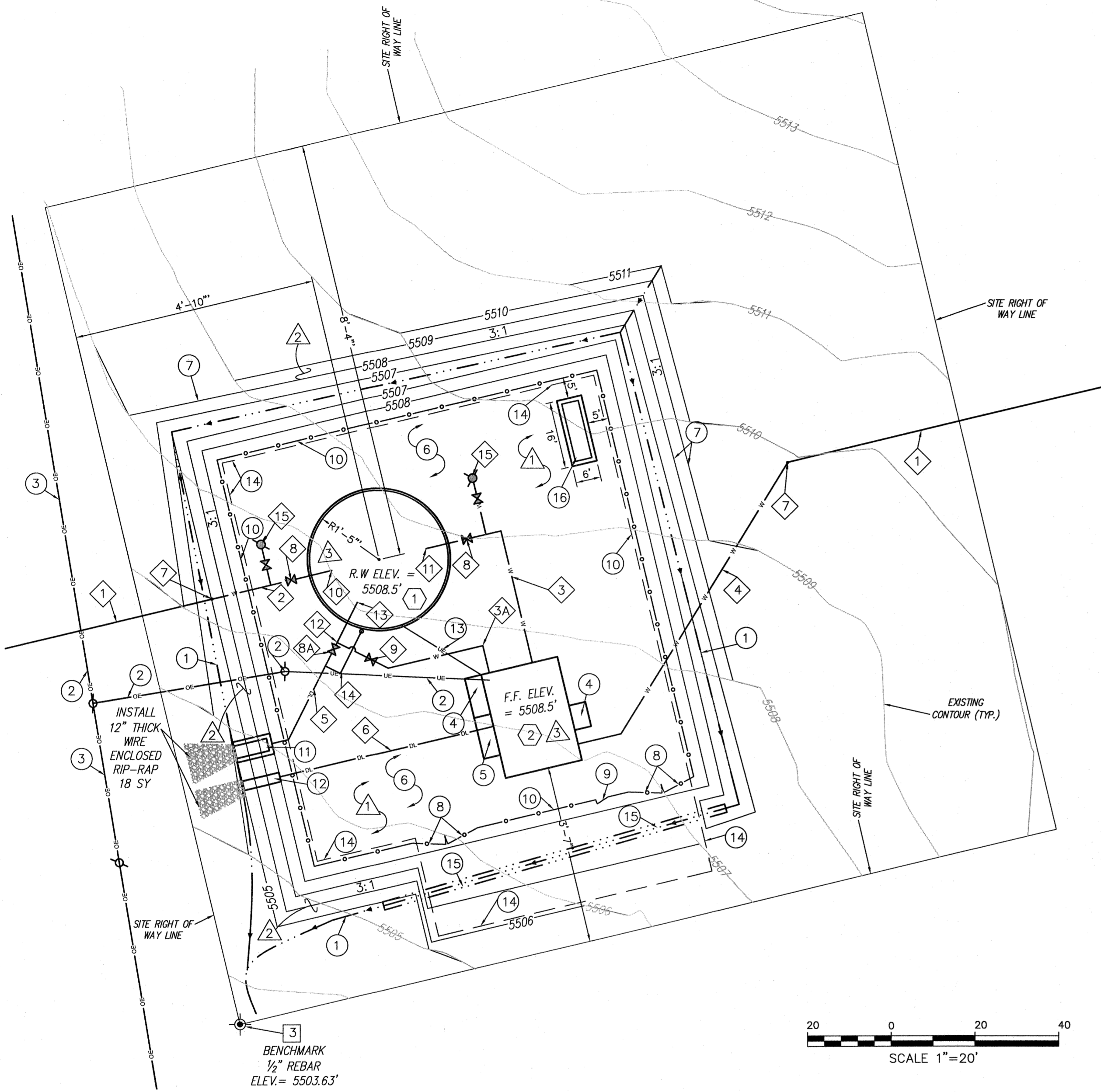
EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES  
CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS  
SHOWN ON DRAWING. NO SHRINKAGE FACTOR WAS USED FOR  
NATIVE OR IMPORTED MATERIAL VOLUMES. CONTRACTOR SHALL  
SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES  
REQUIRED FOR SITE PAD AND BUILDING FOUNDATION  
PREPARATION PRIOR TO BIDDING.

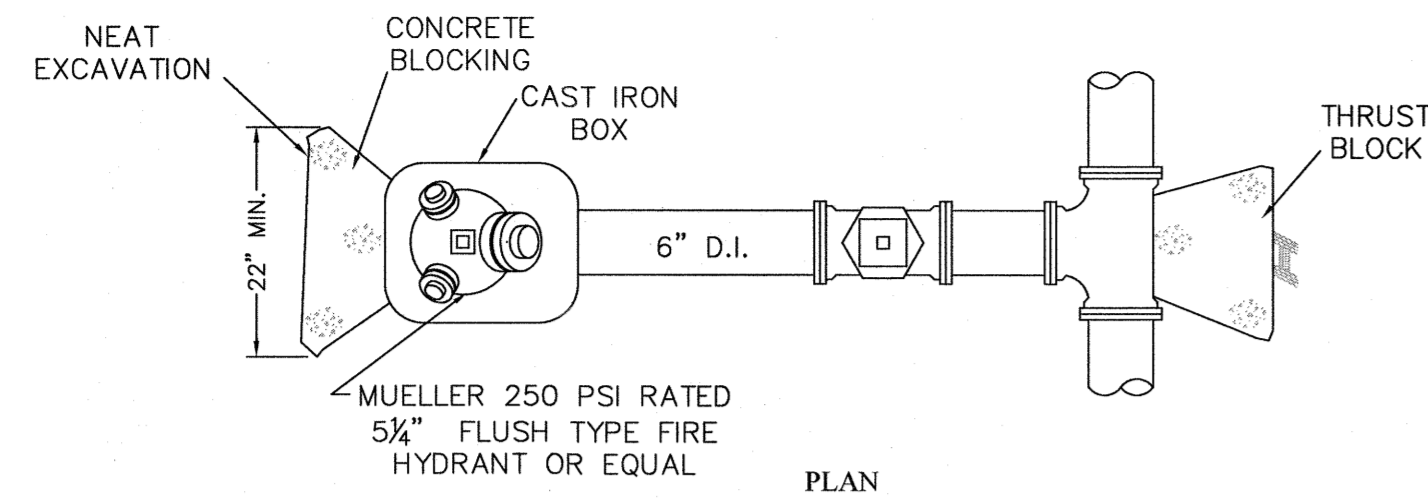
SURVEY NOTES:

1. COORDINATES SHOWN ARE REFERENCED TO A PROJECT CONTROL SYSTEM WHICH IS BASED ON NAD  
83 DATUM REFERENCED TO ARIZONA STATE PLANE EAST ZONE "SPC(0201 AZE)" GROUND  
COORDINATES WITH A COMBINED FACTOR OF 0.999671948.
2. BEARINGS SHOWN ARE GRID.
3. ELEVATIONS ARE BASED ON NAVD88/GEOD18 (VERTICAL DATUM)

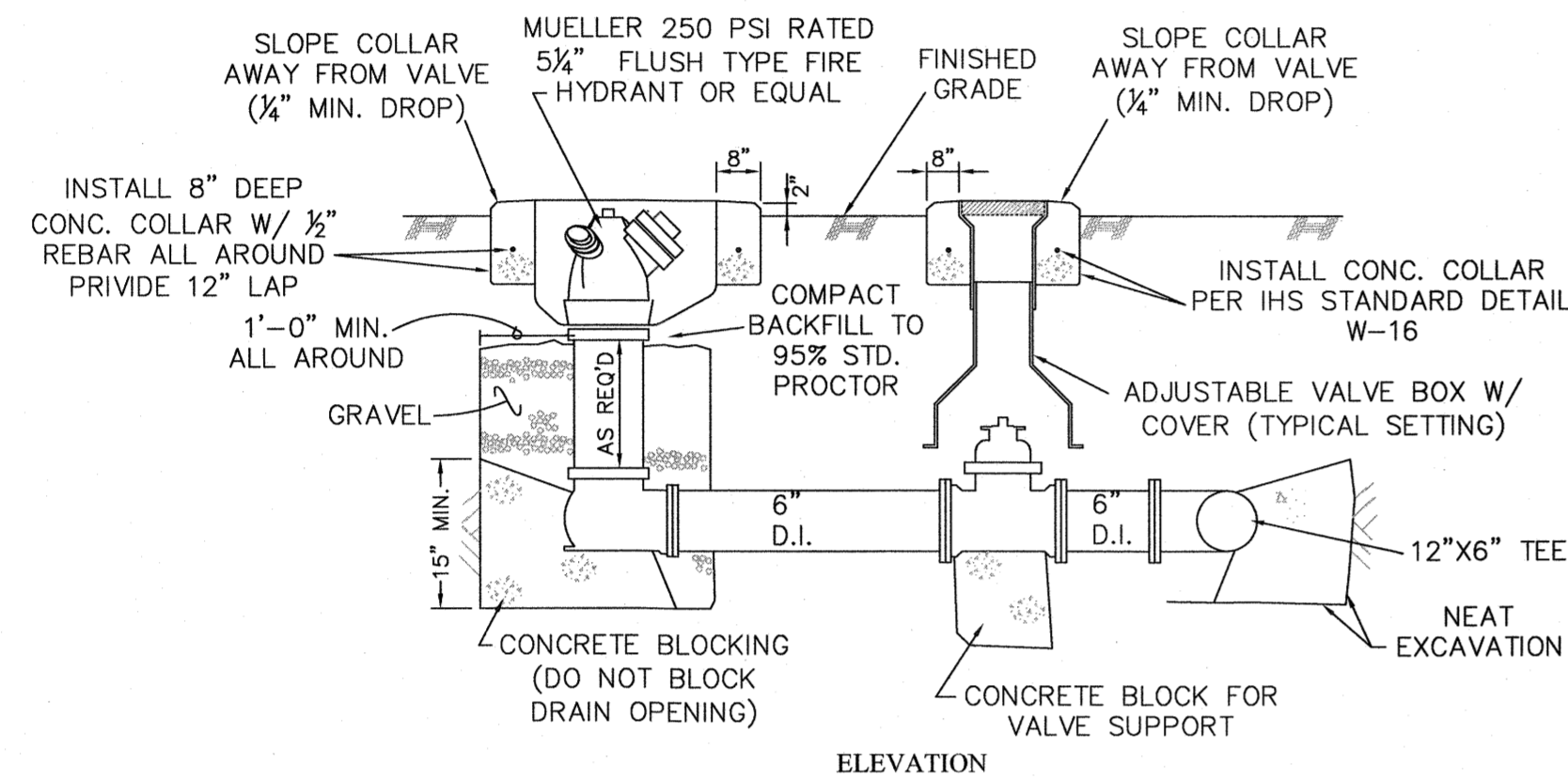


PUMP STATION "2" SITE & GRADING PLAN  
SCALE 1"=20'

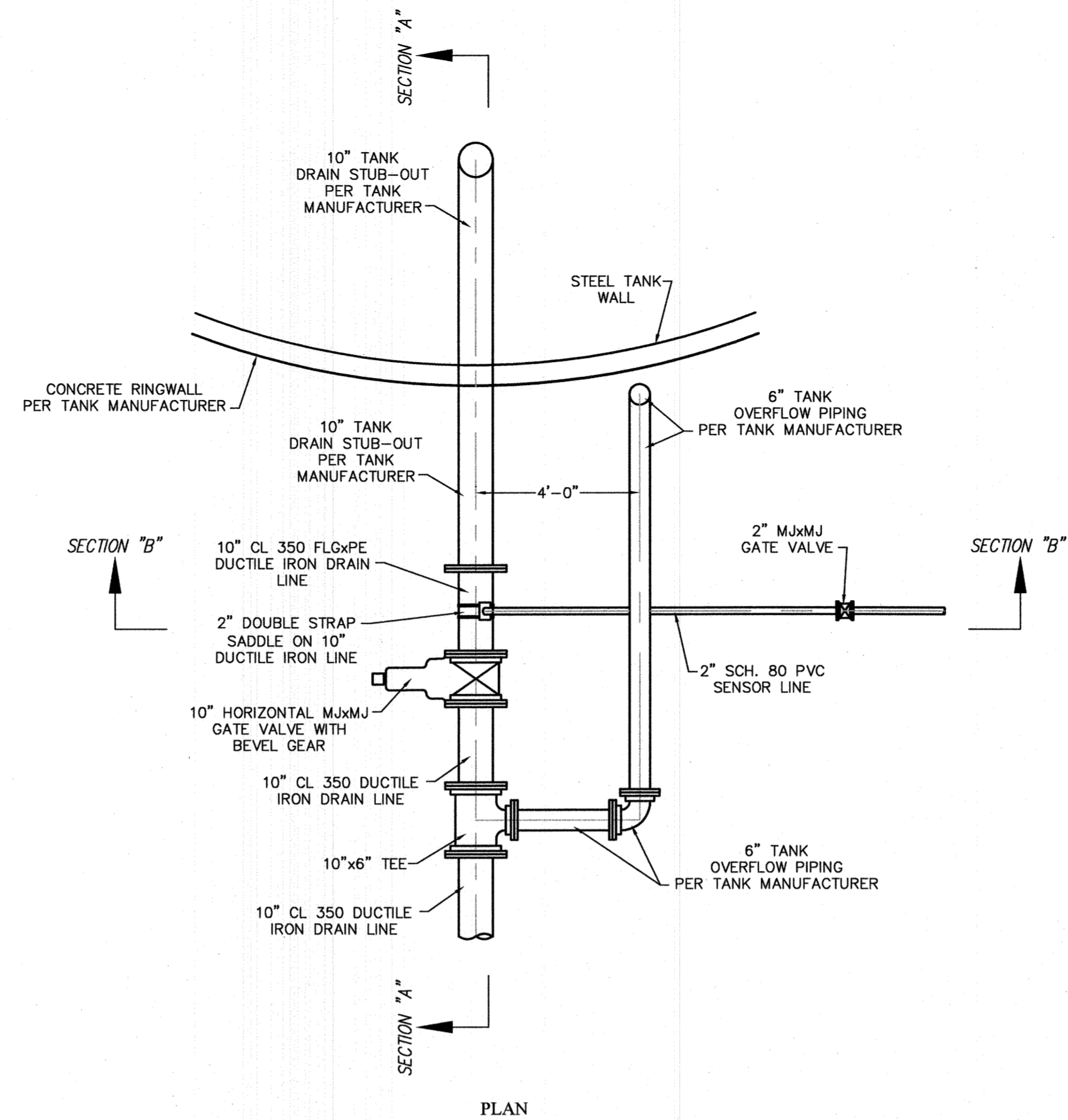




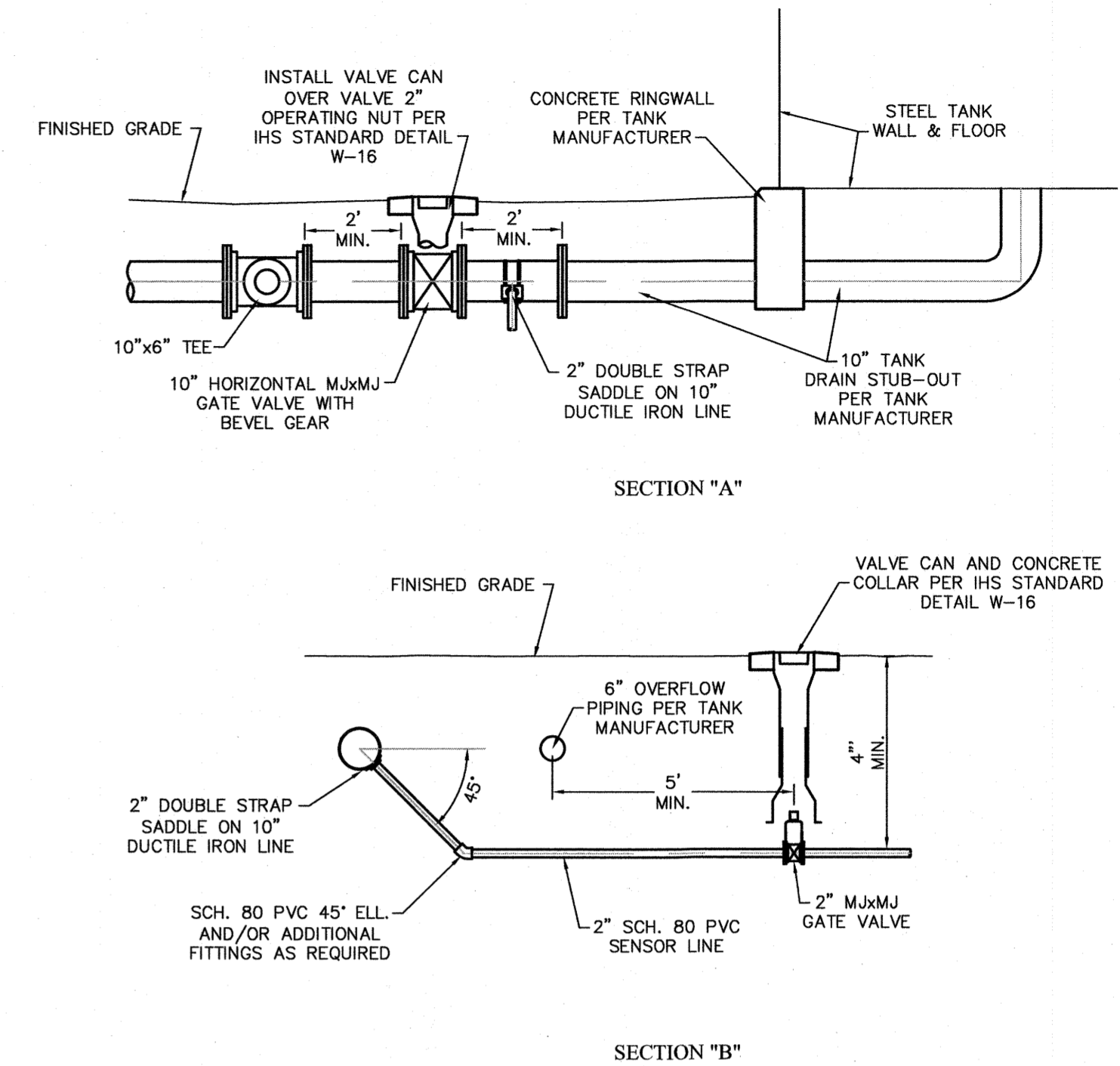
- TEMPORARY TANK CONNECTION NOTES:
1. CONTRACTOR TO PROVIDE HYDRANT BARREL HEIGHT AS REQ'D. FOR PROPER HEIGHT ABOVE FINISHED GRADE.
  2. ALL JOINTS SHALL UTILIZE MECHANICAL JOINTS AND USE RESTRAINING GLANDS.
  3. PIPING FROM TEE TO VALVE AND FROM VALVE TO HYDRANT SHALL NOT CONTAIN ANY INTERMEDIATE JOINTS.
  4. INSTALL GATE VALVE PER PER IHS STANDARD DETAIL W-16
  5. TEMPORARY TANK CONNECTION INCLUDES TEE, PIPING, VALVE, HYDRANT AND APPURTENANCES.



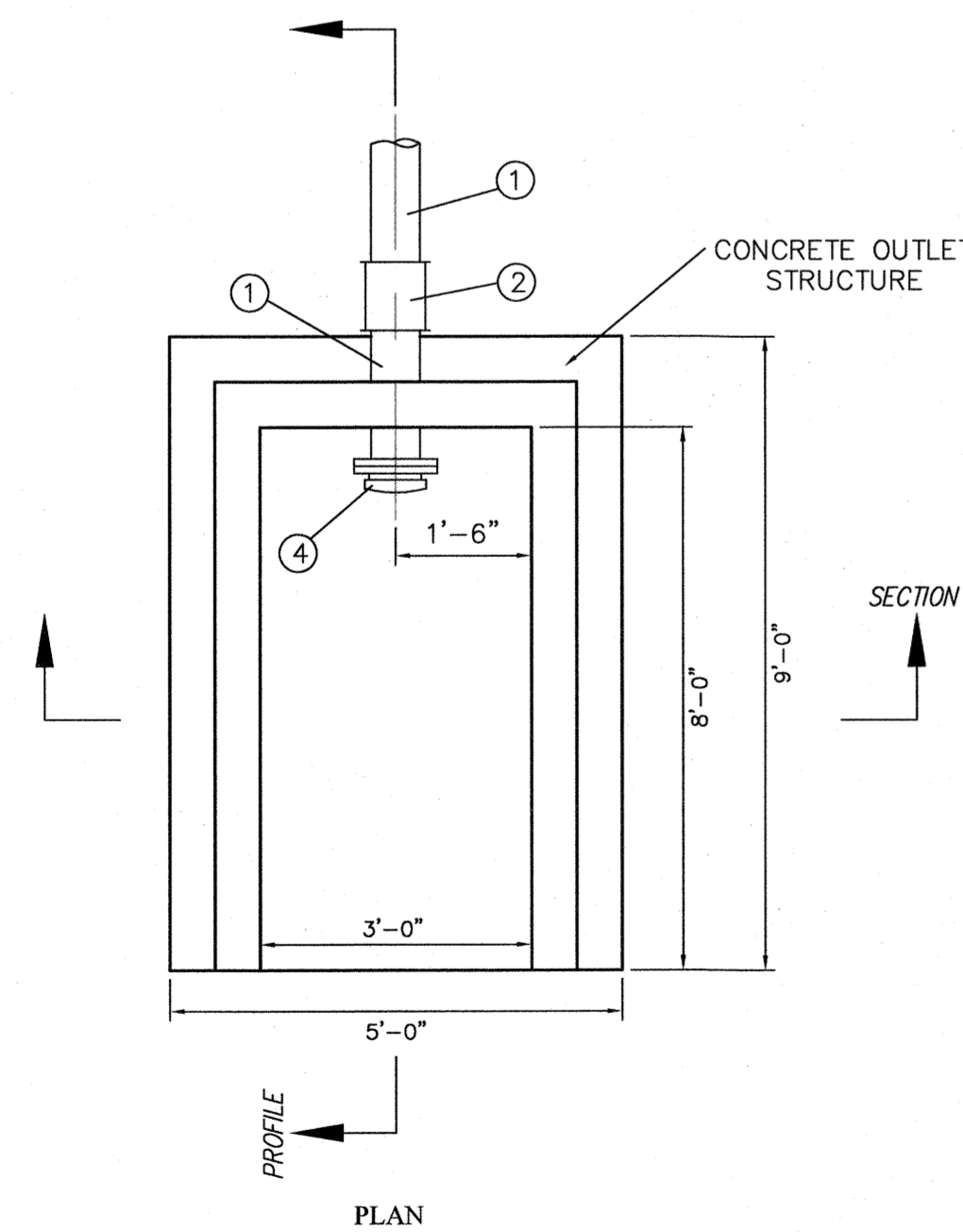
**TEMPORARY TANK CONNECTION**  
NTS



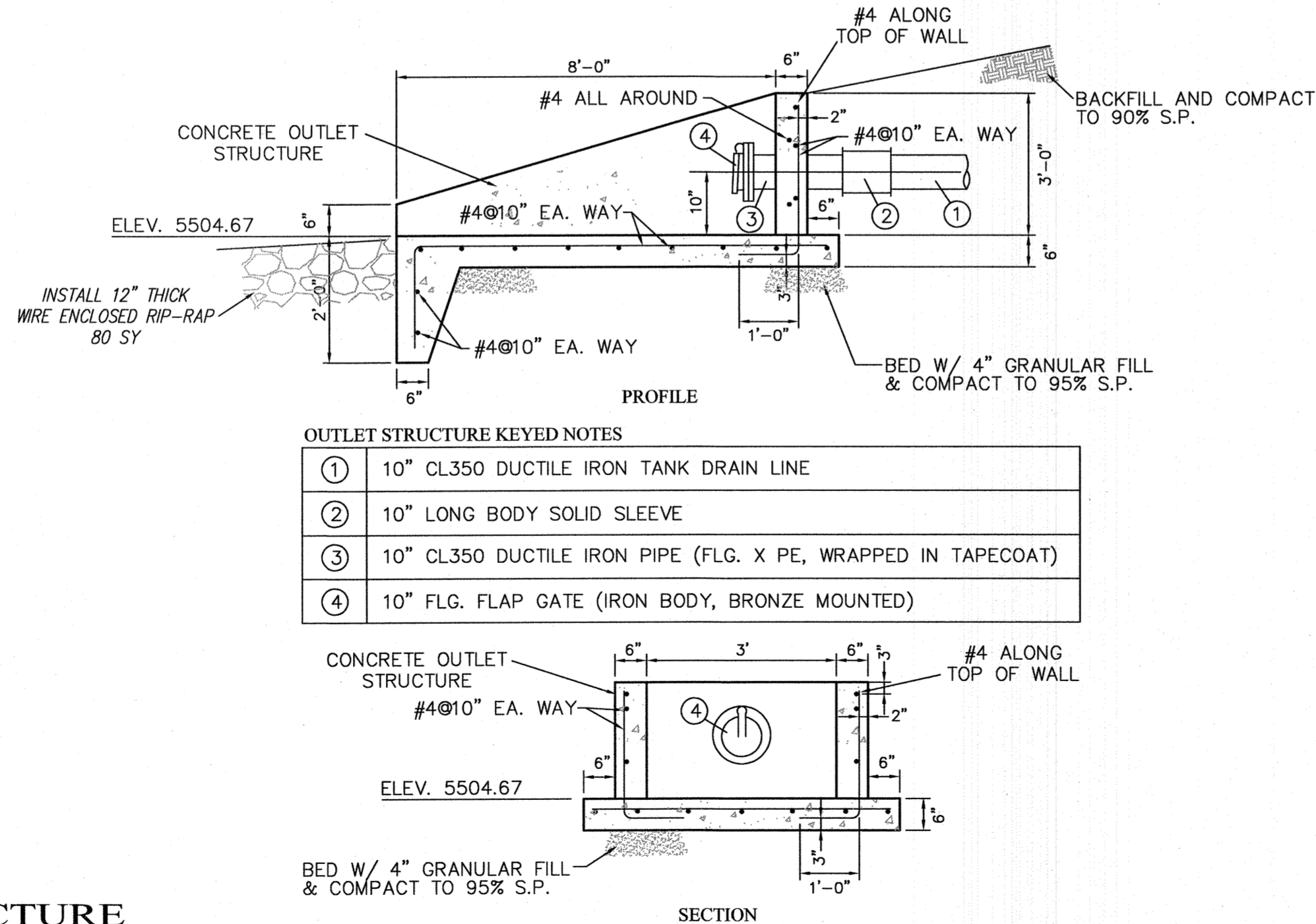
**DRAIN AND SENSOR LINE CONNECTION DETAIL**  
NTS



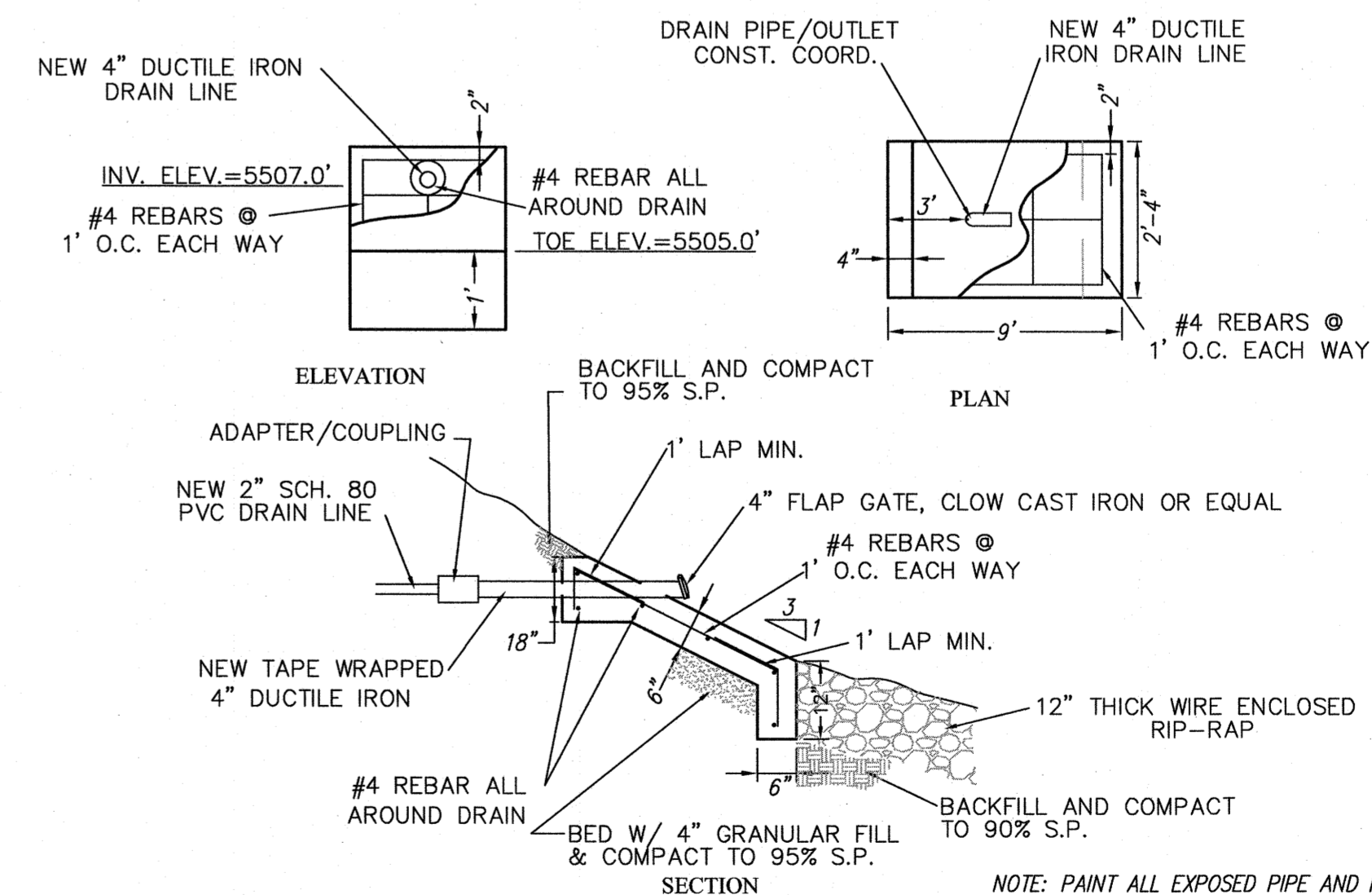
**PUMP STATION DRAIN PAD**  
NTS



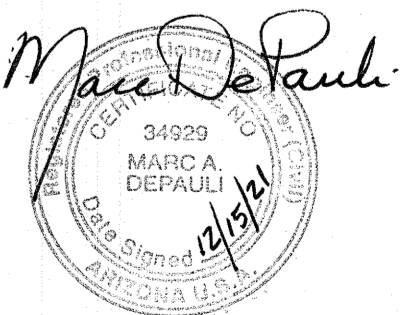
**TANK DRAIN OUTLET STRUCTURE**  
NTS

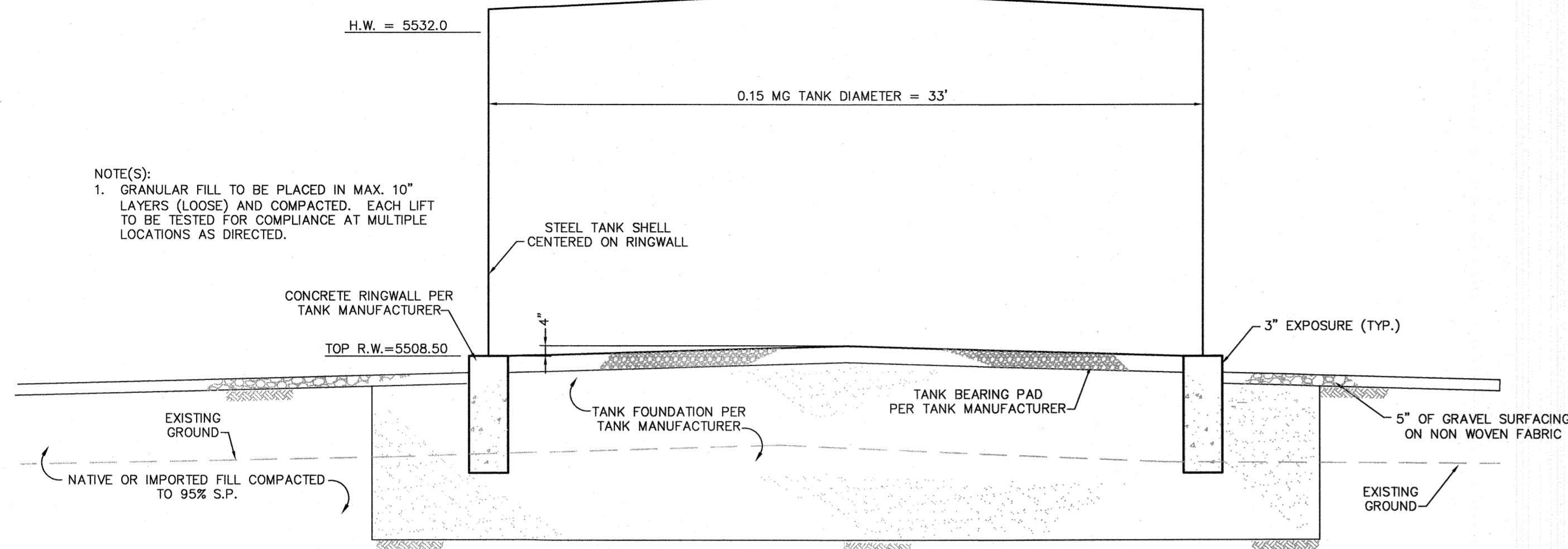


OUTLET STRUCTURE KEYED NOTES	
①	10" CL350 DUCTILE IRON TANK DRAIN LINE
②	10" LONG BODY SOLID SLEEVE
③	10" CL350 DUCTILE IRON PIPE (FLG. X PE, WRAPPED IN TAPECOAT)
④	10" FLG. FLAP GATE (IRON BODY, BRONZE MOUNTED)



NOTE: PAINT ALL EXPOSED PIPE AND FITTINGS W/ SHOP APPLIED PRIME COAT AND 2 COATS FIELD APPLIED OF ALKYD ENAMEL

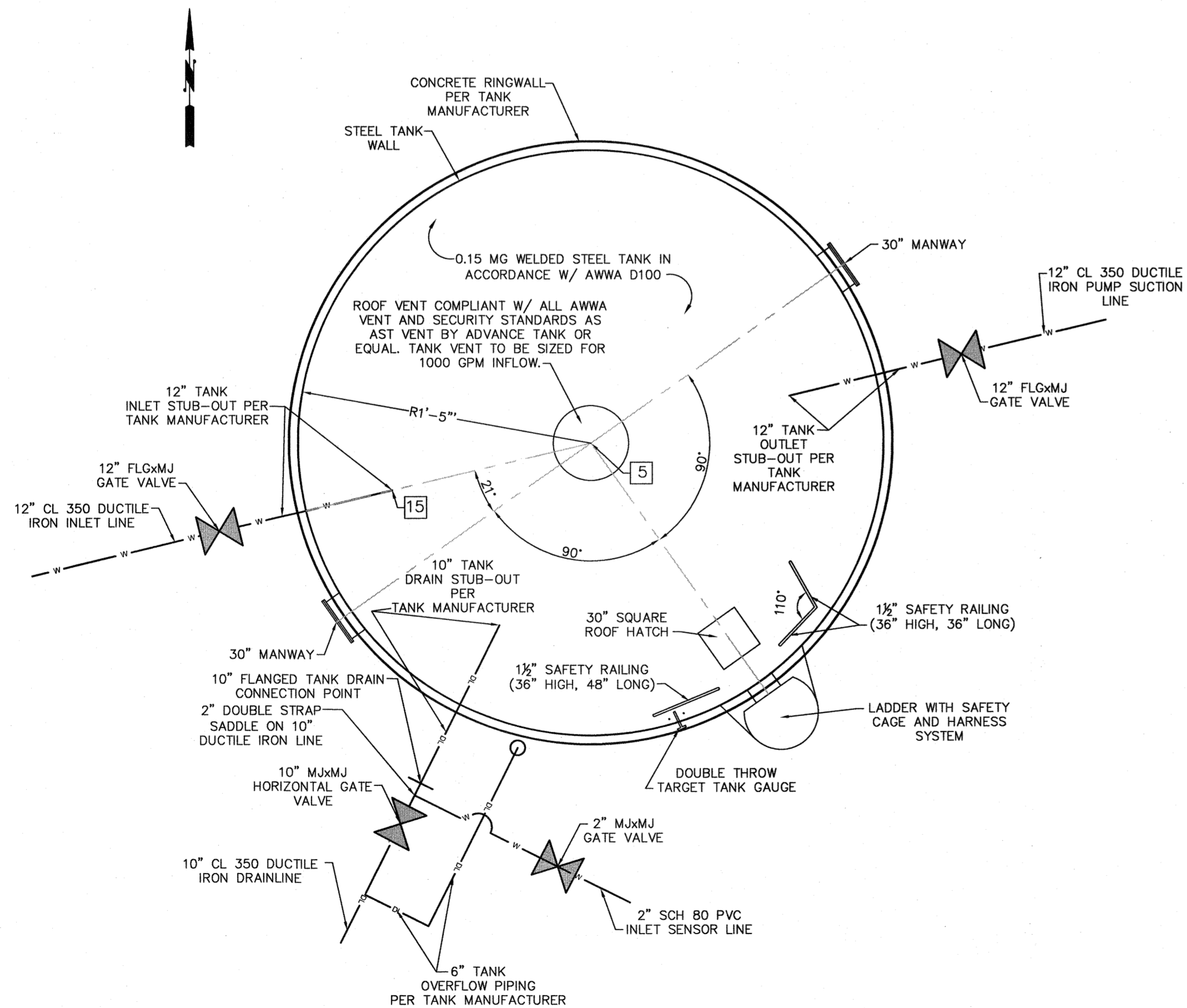




VERTICAL SECTION

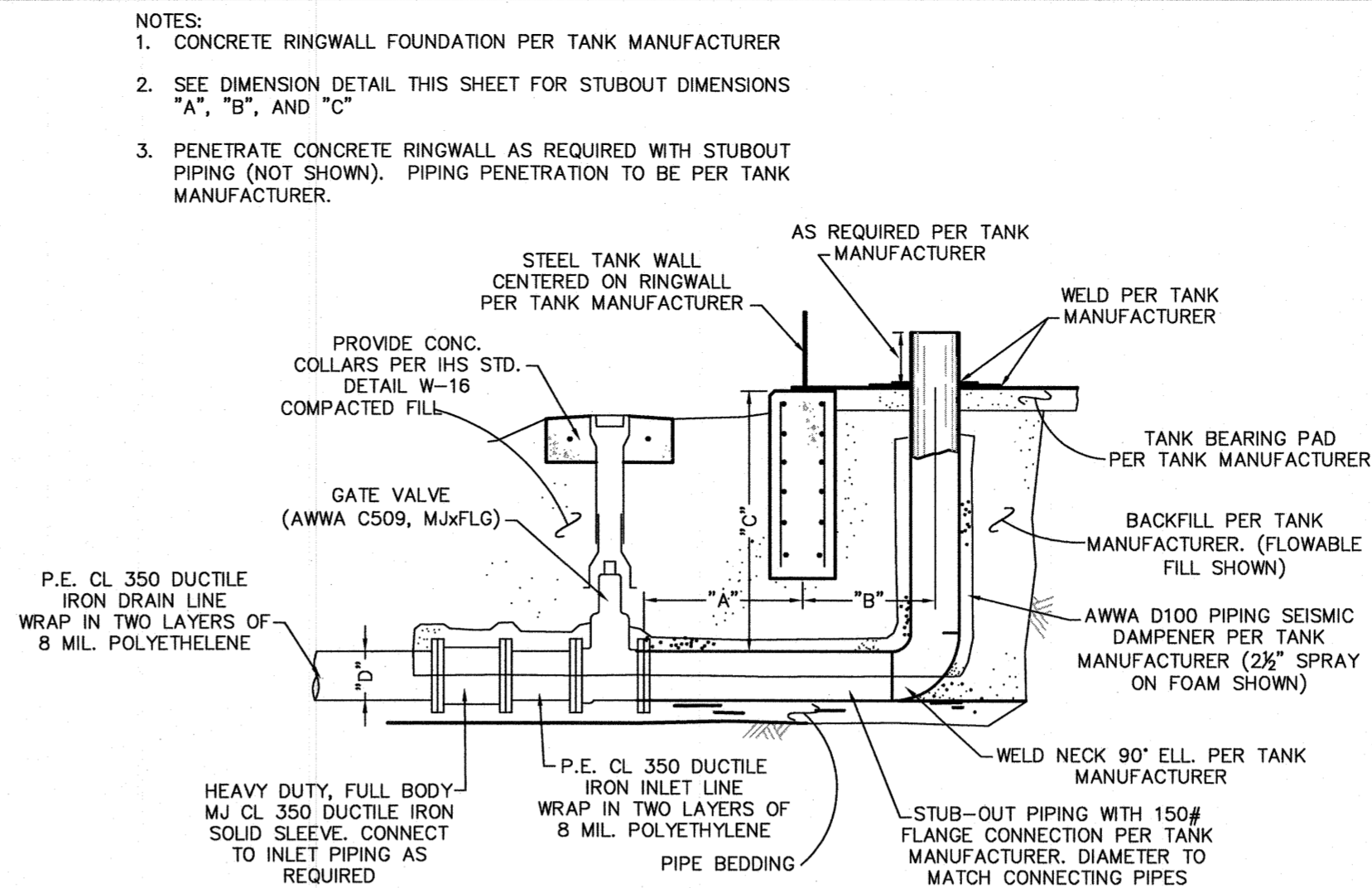
PUMP STATION "2" 0.15-MG TANK GENERAL CONFIGURATION SECTION

NTS



PUMP STATION "2" 0.15-MG TANK PLAN

NTS

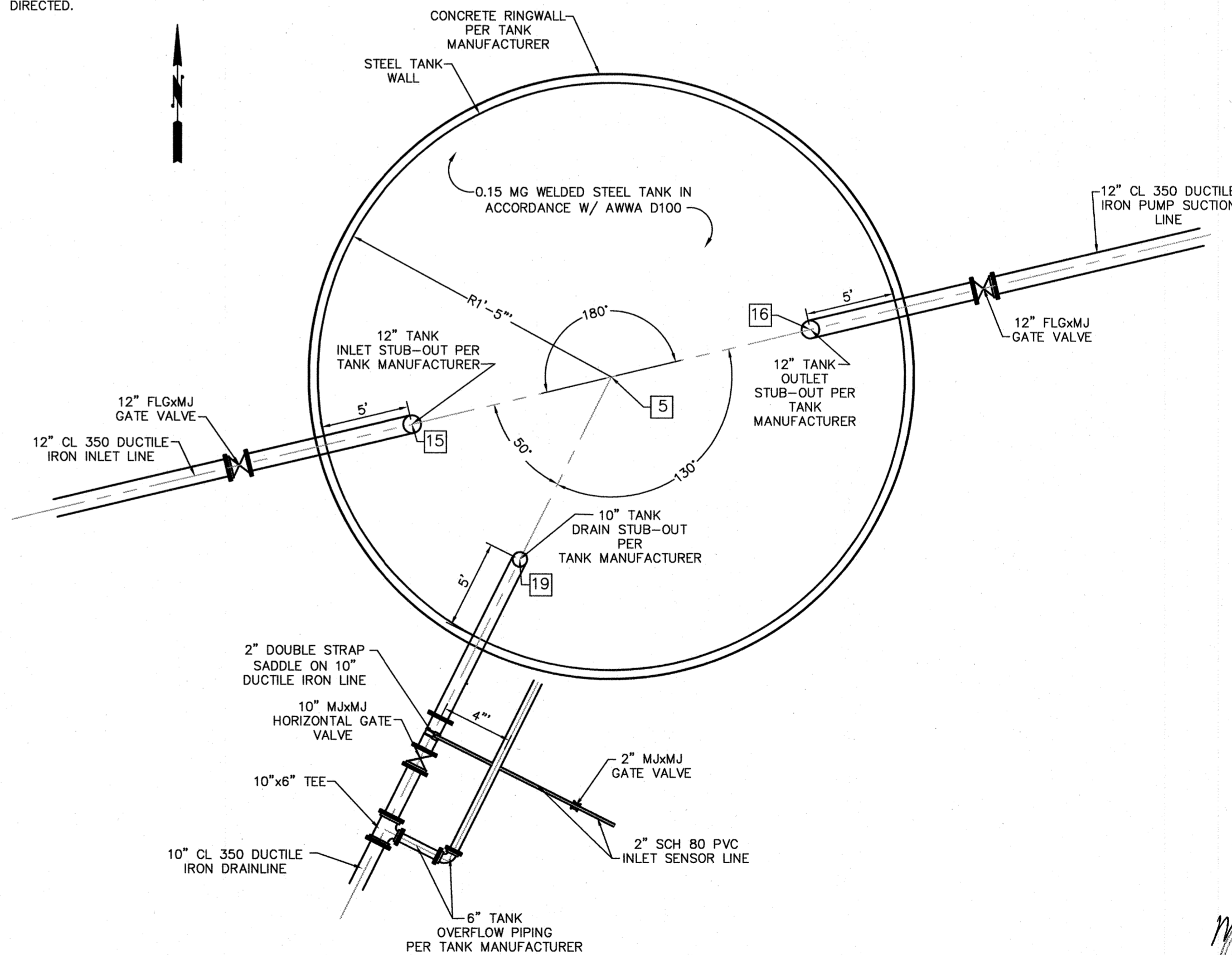


PUMP STATION "2" TANK STUB-OUT DETAIL

NTS

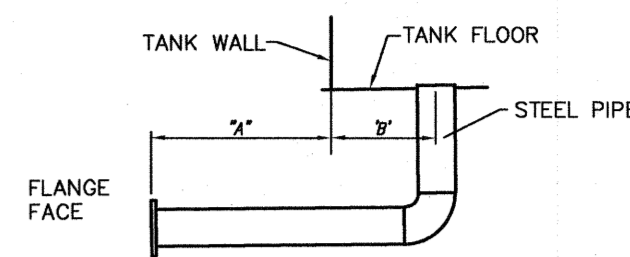
NOTES:

- CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
- ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASUREMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASUREMENT. LAYER JOINTS SHALL BE STAGGERED.
- SEE SHEET 5-1 FOR YARD PIPING (WATERLINES AND DRAIN LINES)
- VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
- RESERVOIR APPURTENANCES TO BE ORIENTED IN THE FIELD AS DIRECTED.



PUMP STATION "2" 0.15-MG TANK STUBOUT LAYOUT

NTS



STUB-OUT	DIMENSION			
	DIA.	A	B	C
INLET	12"	4.50'	5.00'	4.0'
OUTLET	12"	4.50'	5.10'	4.0'
DRAIN	10"	4.50'	5.00'	1.5'

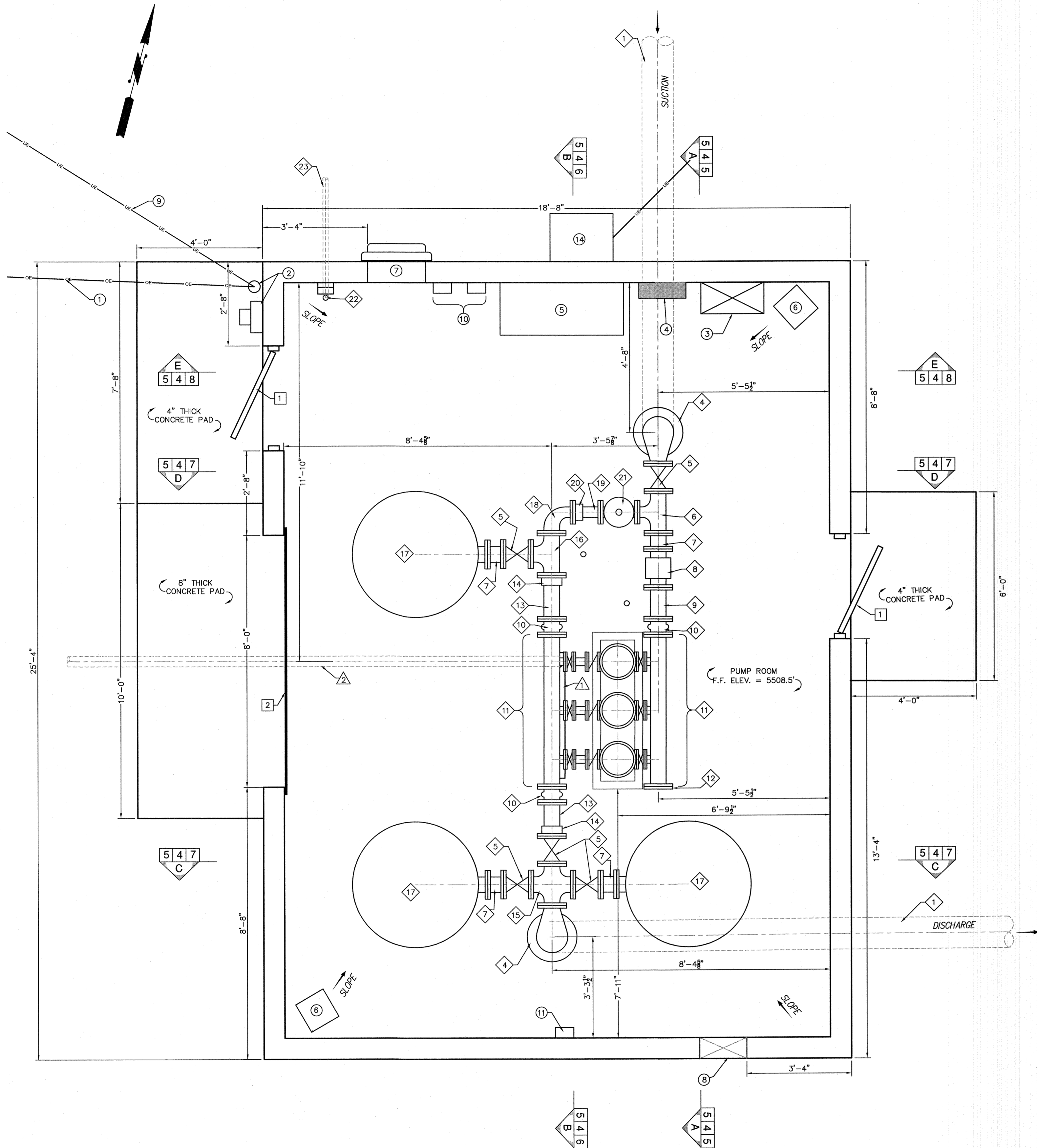
STUB-OUT DIMENSIONS

- NOTES:
- SEE DETAIL THIS SHEET FOR STUBOUT LAYOUT CONFIGURATION

TANK STUBOUT DIMENSION DETAILS

0.15-MG TANK COORDS

P/FITTING DESC	NORTHING	EASTING
5 TANK CENTER	1585575.93	607933.99
15 12" TANK INLET STUB-UP	1585573.26	607922.81
16 12" TANK OUTLET STUB-UP	1585578.60	607945.18
19 10" TANK DRAIN STUB-UP	1585565.65	607928.85



# ELECTRICAL & MECHANICAL KEYED NOTES:

- OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- NEMA 3R ELECTRICAL CABINET PANEL "A"
- NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ELECTRIC UNIT HEATER "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #AMBIO WALL MOUNTED BRACKET (240V, 14, 7.5KW)
- EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 5-8 FOR DETAILS
- TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- FLOW METER DISPLAY AND TRANSMITTER UNIT
- TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

# CONSTRUCTION KEYED NOTES:

- 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- 8' WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

# DRAIN FITTING & PIPING KEYED NOTES:

- WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" HO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

# PRESSURE FITTING & PIPING KEYED NOTES:

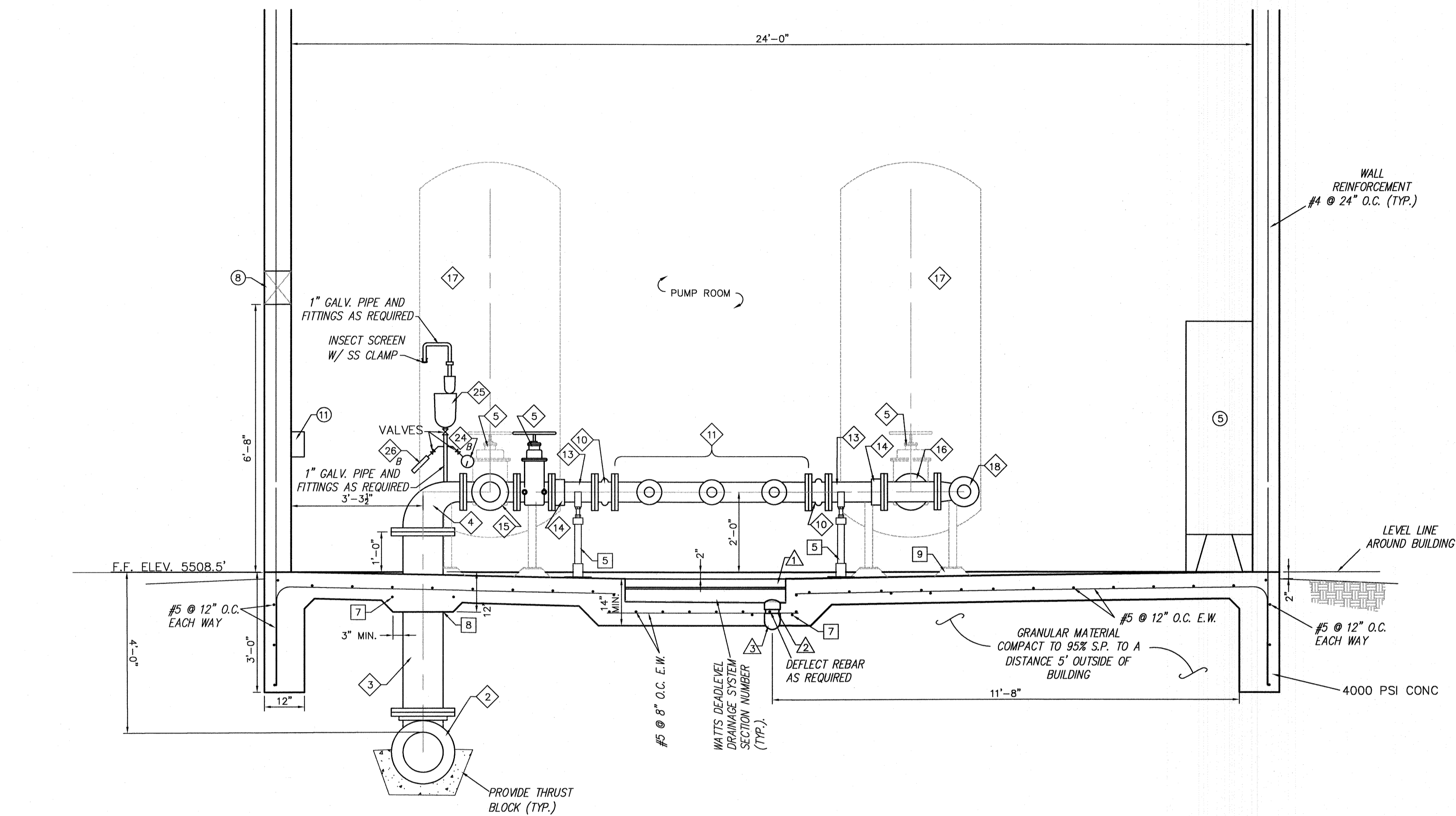
- 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" M.J. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" FLOWPIPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12"x6" FLG'D 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 6" FLG'D RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6"x4" FLG'D REDUCING TEE
- 6" FLG'D SPOOL, (L=6")
- 6" FLG'D MCCROMETER ULTRA MAG UM06 FLOW METER
- 6" FLG'D SPOOL, (L=12")
- 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6")
- GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 OR45-5
- 6" BLIND FLANGE
- 6" FLOWPIPE SPOOL, (L=AS REQUIRED)
- 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 6" FLG'D CROSS
- 6" FLG'D TEE W/ TAPPING BOSS AS REQUIRED
- 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 6"x4" FLG'D REDUCING ELL.
- 4" FLOWPIPE SPOOL, (L=AS REQUIRED)
- 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 4" FLG'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- NON-SUBMERISBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI
- NON-SUBMERISBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI
- COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

PUMP STATION "2" LAYOUT & PIPING PLAN  
SCALE: 1/2"=1'





- 1 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 2 12" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 3 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 4 12"x6" FLGD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 5 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6 6"x4" FLGD REDUCING TEE
- 7 6" FLGD SPOOL, (L=6")
- 8 6" FLGD MCCROMETER ULTRA MAG UM06 FLOW METER
- 9 6" FLGD SPOOL, (L=12")
- 10 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6")
- 11 GRUNDFOS BOOSTERPAD TRIPLEX PUMP SKID MODEL MPEC (CUE) 3 CR45-5
- 12 6" BLIND FLANGE
- 13 6" FLOWPE SPOOL, (L=AS REQUIRED)
- 14 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 15 6" FLGD CROSS
- 16 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 17 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 18 6"x4" FLGD REDUCING ELL
- 19 4" FLOWPE SPOOL, (L=AS REQUIRED)
- 20 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 21 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 22 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- 23 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- 24 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PS) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 25 LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 26 1" DUAL MATE COMBINATION AIR VALVE (VAL-MATIC 10T5/22.9 OR EQUAL)
- 27 NON-SUMMERISER PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI
- 28 NON-SUMMERISER PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI
- 29 COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 30 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 31 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 32 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 33 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 34 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL



**PUMP STATION "2" ELEVATION "B"**  
SCALE: 1/2"=1'

#### ELECTRICAL & MECHANICAL KEYED NOTES:

- OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- NEMA 3R ELECTRICAL CABINET PANEL "A"
- NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ELECTRIC UNIT HEATER, "QMARK" #MH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MM610 WALL MOUNTED BRACKET. (240V, 1 $\phi$ , 7.5KW)
- EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 5-8 FOR DETAILS
- TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- FLOW METER DISPLAY AND TRANSMITTER UNIT
- TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

#### CONSTRUCTION KEYED NOTES:

- 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- 6" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

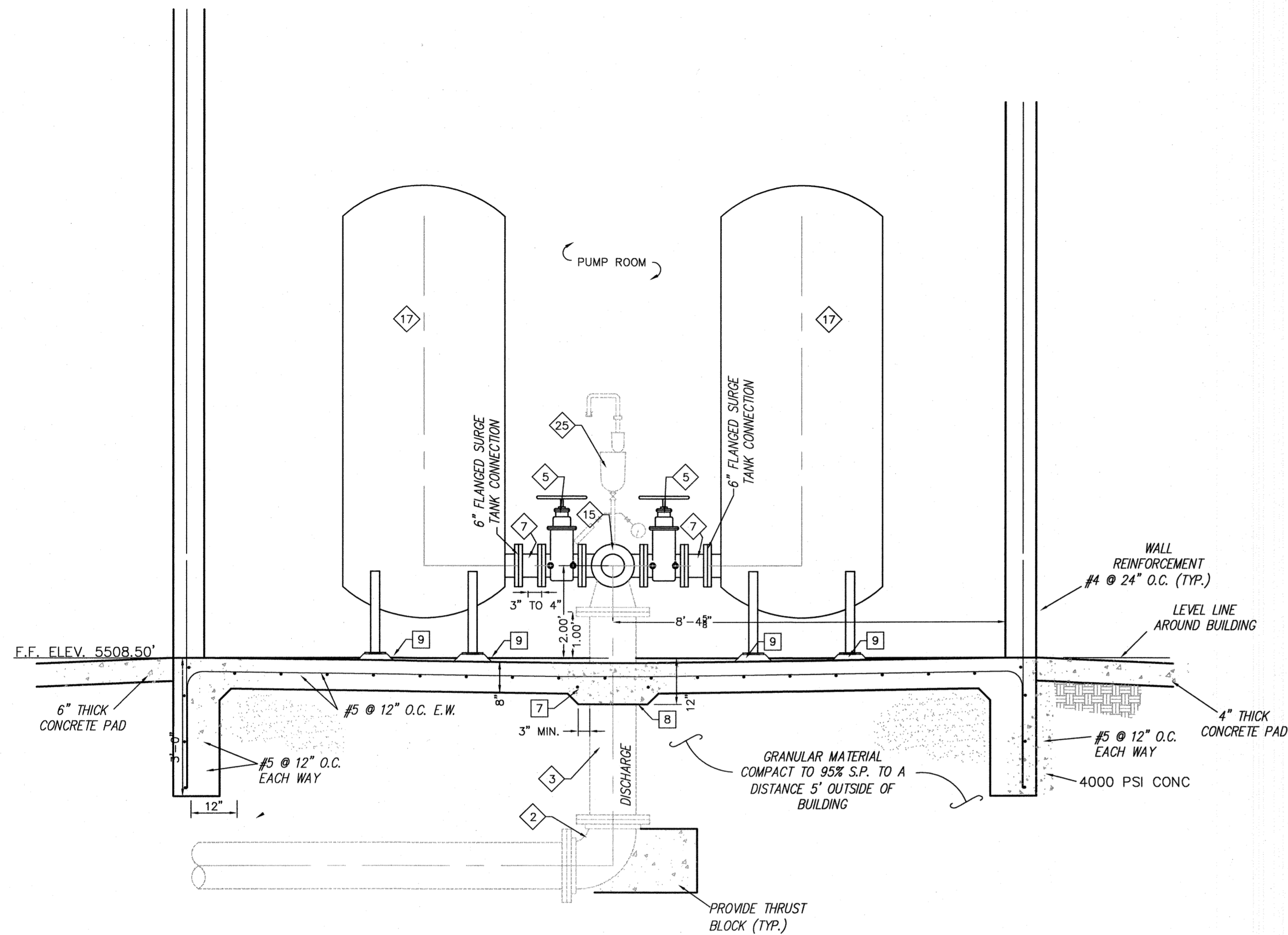
#### DRAIN FITTING & PIPING KEYED NOTES:

- WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

#### PRESSURE FITTING & PIPING KEYED NOTES:

- 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" FLG&PE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12"x6" FLG'D 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 6" FLG'D RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6"x4" FLG'D REDUCING TEE
- 6" FLG'D SPOOL, (L=6')
- 6" FLG'D MICRO METER ULTRA MAG UM06 FLOW METER
- 6" FLG'D SPOOL, (L=12')
- 6" PROCO STYLE 231FA NSF81 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- GRUNDOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- 6" BLIND FLANGE
- 6" FLG&PE SPOOL, (L=AS REQUIRED)
- 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 6" FLG'D CROSS
- 6" FLG'D TEE W/ TAPPING BOSS AS REQUIRED
- 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 6"x4" FLG'D REDUCING ELL.
- 4" FLG&PE SPOOL, (L=AS REQUIRED)
- 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 4" FLG'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- NON-SUBMERISBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI.
- NON-SUBMERISBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI.
- COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

*Mark DePauli*  
34529  
MARC A. DEPAULI  
12/15/21  
ARIZONA U.S.A.



**PUMP STATION "2" ELEVATION "C"**  
SCALE: 1/2"=1'

**ELECTRICAL & MECHANICAL KEYED NOTES:**

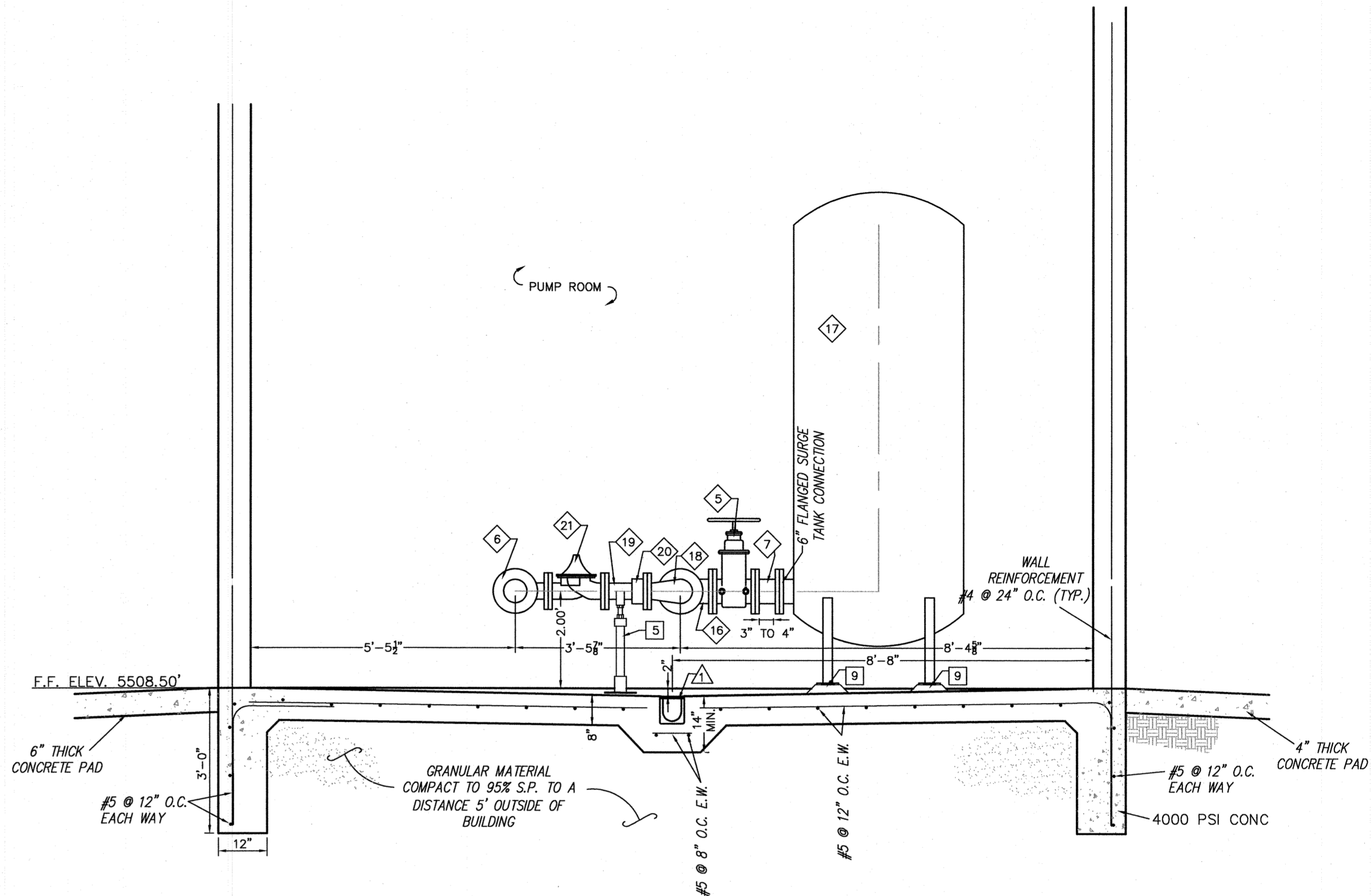
- ① OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ② ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- ③ NEMA 3R ELECTRICAL CABINET PANEL "A"
- ④ NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- ⑤ GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ⑥ ELECTRIC UNIT HEATER "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #AMBIO WALL MOUNTED BRACKET. (240V, 1 $\phi$ , 7.5KW)
- ⑦ EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- ⑧ MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- ⑨ CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- ⑩ MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 5-8 FOR DETAILS
- ⑪ TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- ⑫ FLOW METER DISPLAY AND TRANSMITTER UNIT
- ⑬ TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- ⑭ AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

**CONSTRUCTION KEYED NOTES:**

- ① 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- ② 8' WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- ③ PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- ④ 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ⑤ ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL. (SEE DETAIL SHEET 8-1)
- ⑥ WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- ⑦ #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- ⑧ PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- ⑨ SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

**DRAIN FITTING & PIPING KEYED NOTES:**

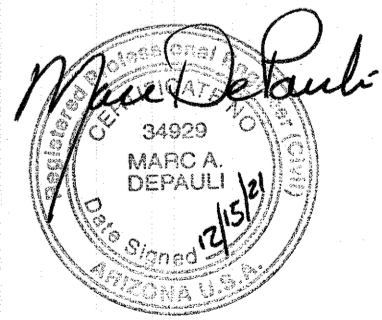
- ① WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- ② 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- ③ 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

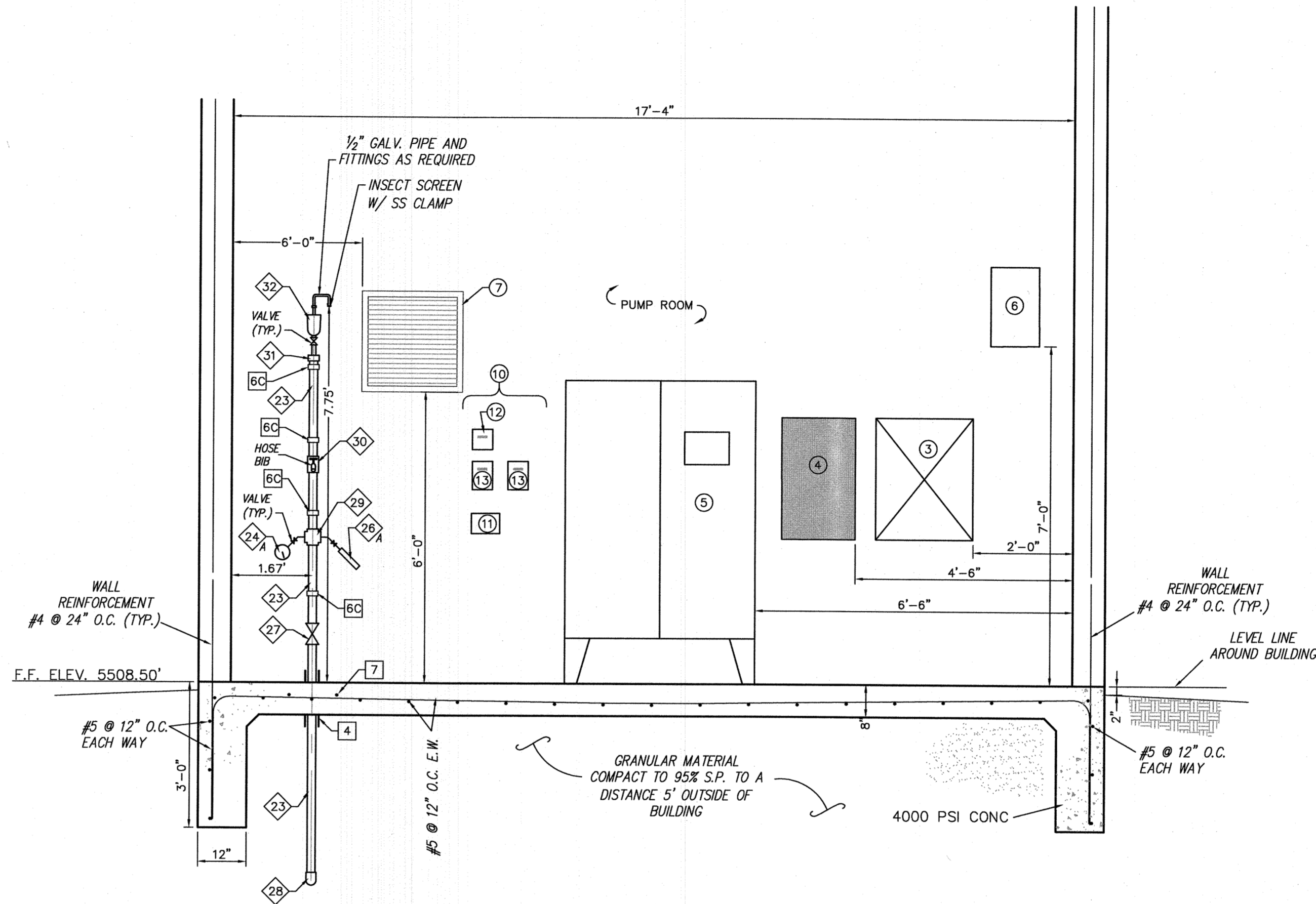


**PUMP STATION "2" ELEVATION "D"**  
SCALE: 1/2"=1'

**PRESSURE FITTING & PIPING KEYED NOTES:**

- ① 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ② 12" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ③ 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ④ 12"x6" FLC'D 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- ⑤ 6" FLC'D RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- ⑥ 6"x4" FLC'D REDUCING TEE
- ⑦ 6" FLC'D SPOOL, (L=6')
- ⑧ 6" FLC'D MCCORMETER ULTRA MAG UN06 FLOW METER
- ⑨ 6" FLC'D SPOOL, (L=12')
- ⑩ 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- ⑪ GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- ⑫ 6" BLIND FLANGE
- ⑬ 6" FLOWPE SPOOL, (L=AS REQUIRED)
- ⑭ 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- ⑮ 6" FLC'D CROSS
- ⑯ 6" FLC'D TEE W/ TAPPING BOSS AS REQUIRED
- ⑰ 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- ⑱ 6"x4" FLC'D REDUCING ELL.
- ⑲ 4" FLOWPE SPOOL, (L=AS REQUIRED)
- ⑳ 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- ㉑ 4" FLC'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- ㉒ 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- ㉓ 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- ㉔ LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- ㉕ LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- ㉖ 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- ㉗ NON-SUBMERSIBLE PRESSURE TRANSDUCER KPFS SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI
- ㉘ NON-SUBMERSIBLE PRESSURE TRANSDUCER KPFS SERIES 30 W/ LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI
- ㉙ COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- ㉚ 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- ㉛ 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- ㉜ 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- ㉝ 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- ㉞ 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL





PUMP STATION "1" ELEVATION "E"  
SCALE: 1/2"=1'

ELECTRICAL & MECHANICAL KEYED NOTES:

- OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- NEMA 3R ELECTRICAL CABINET PANEL "A"
- NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ELECTRIC UNIT HEATER, "QMARK" #MH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #MMS10 WALL MOUNTED BRACKET. (240V, 1Ø, 7.5KW)
- EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 5-8 FOR DETAILS
- TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- FLOW METER DISPLAY AND TRANSMITTER UNIT
- TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DRAWINGS

CONSTRUCTION KEYED NOTES:

- 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYPED TO NTUA WATER SYSTEM STANDARD.)
- 8" WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

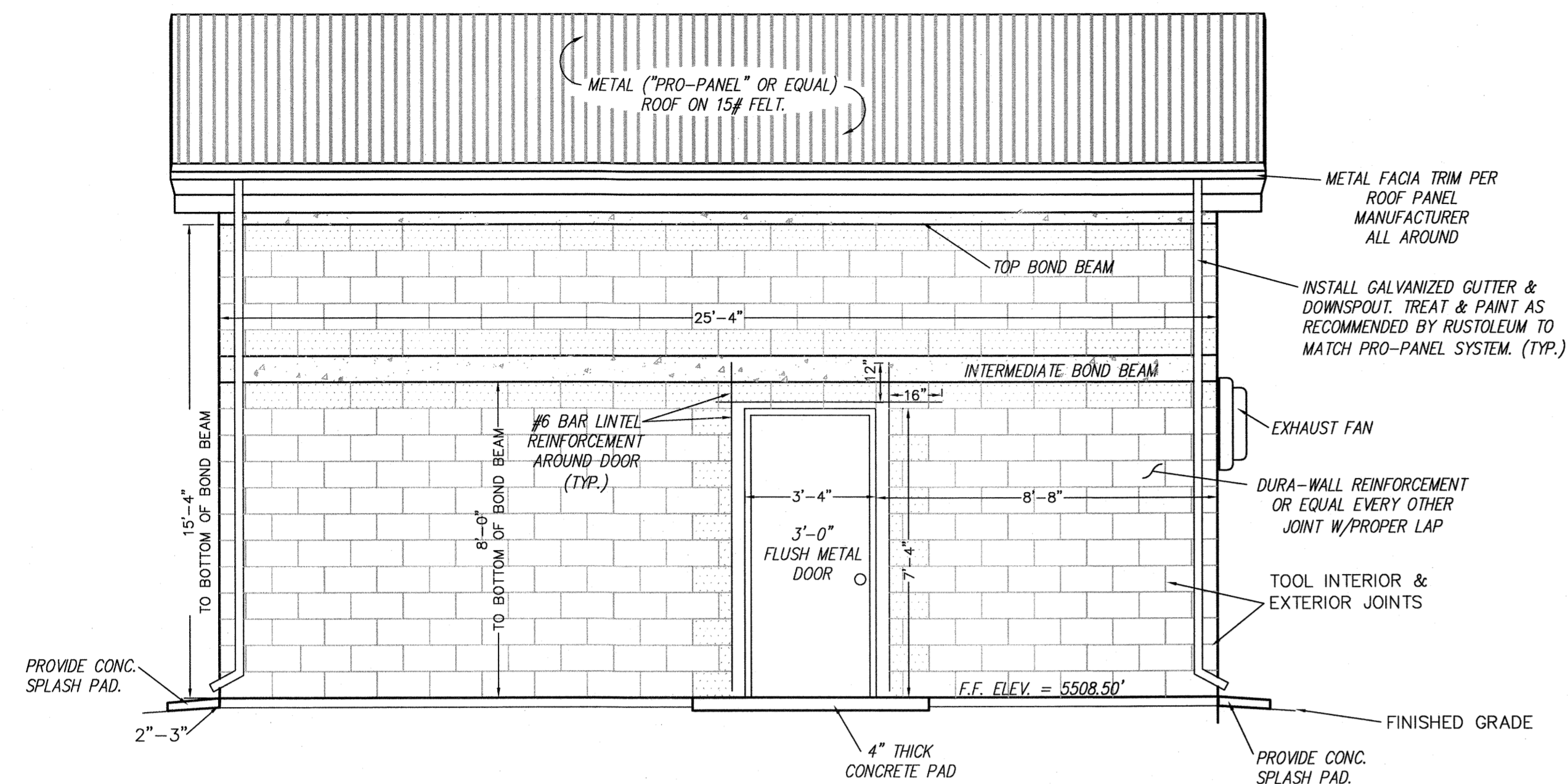
DRAIN FITTING & PIPING KEYED NOTES:

- WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 4" SCH. 80 PVC 90° ELL. (SOLVENT WELD)

PRESSURE FITTING & PIPING KEYED NOTES:

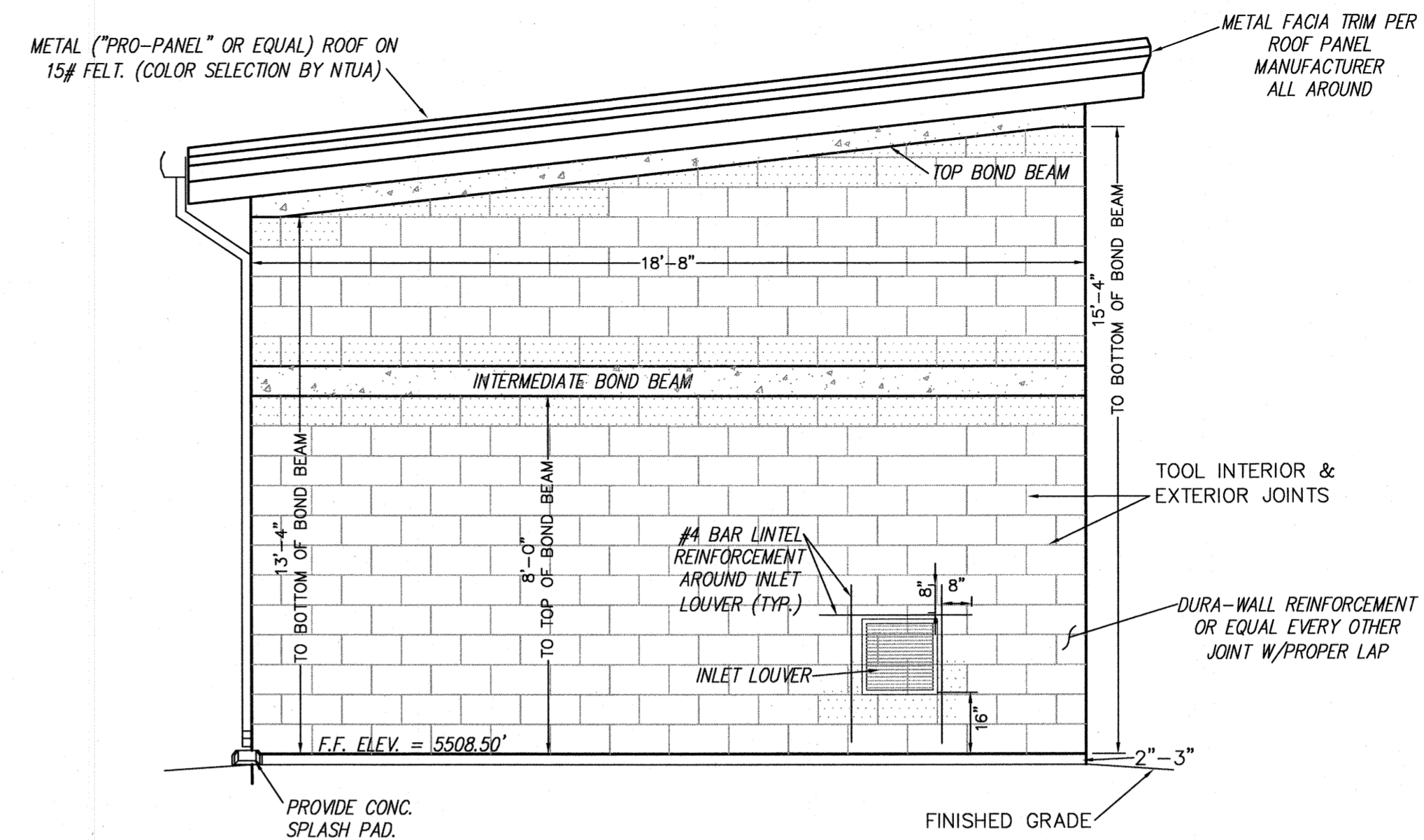
- 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" M.J. 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" FLOPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12"x6" FLOPE 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 6" FLOPE RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6"x4" FLOPE REDUCING TEE
- 6" FLOPE SPOOL, (L=6')
- 6" FLOPE MICRO METER ULTRA MAG UM06 FLOW METER
- 6" FLOPE SPOOL, (L=12')
- 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) J CR45-5
- 6" BLIND FLANGE
- 6" FLOPE SPOOL, (L=AS REQUIRED)
- 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 6" FLOPE CROSS
- 6" FLOPE TEE W/ TAPPING BOSS AS REQUIRED
- 500 GALLON HYDRO PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 6"x4" FLOPE REDUCING ELL
- 4" FLOPE SPOOL, (L=AS REQUIRED)
- 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 4" FLOPE PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)
- NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI,
- NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, DISCHARGE PRESSURE 0-300 PSI,
- COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

MADE PAULI  
34029  
MARC A  
DEPAULI  
Date Signed 12/31/21  
ARIZONA U.S.A.



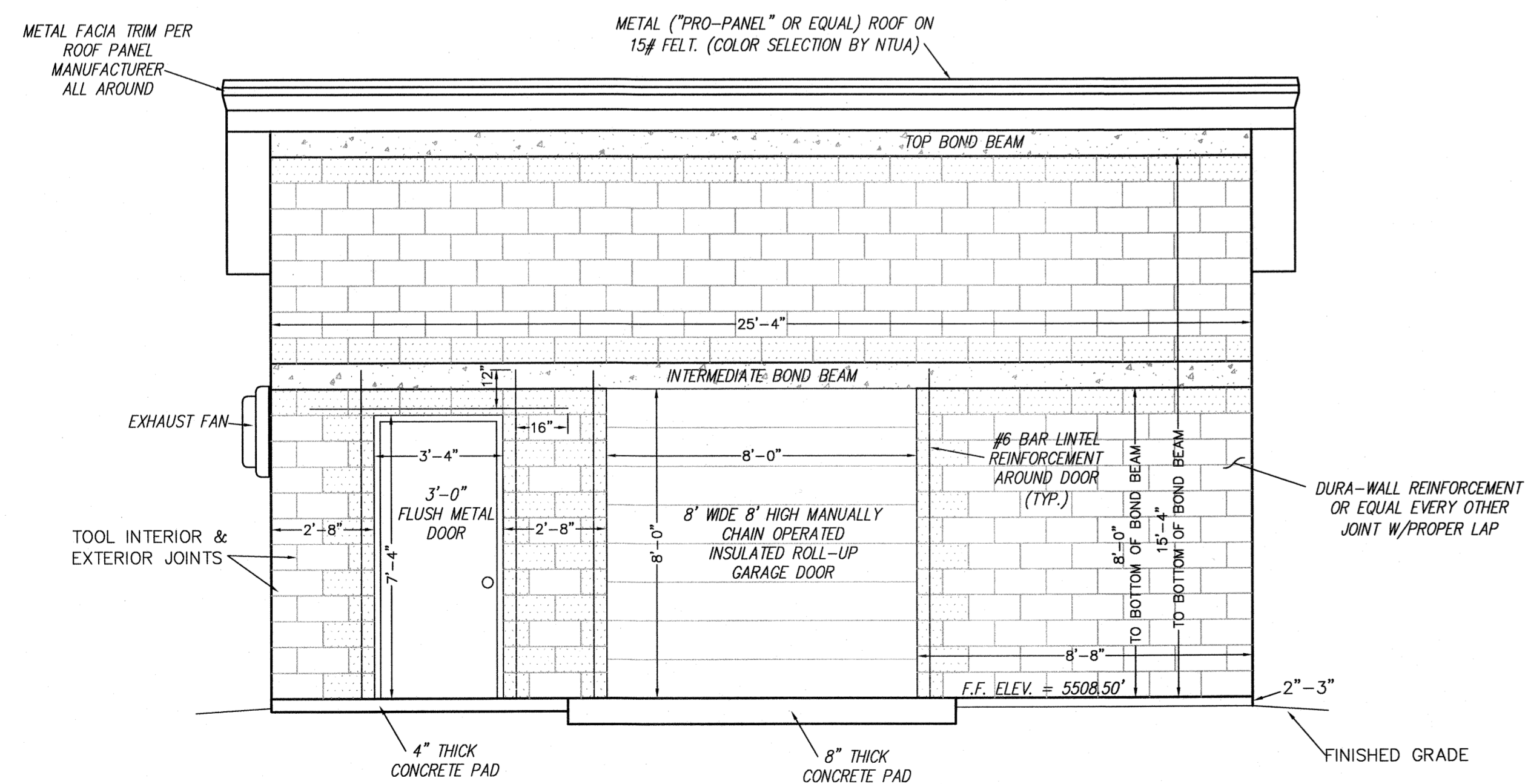
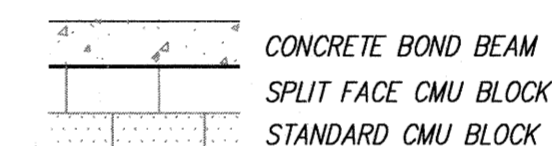
**PUMP STATION "2" STATION ELEVATION (LOOKING WEST)**  
SCALE: 1/3"=1'

- NOTES:
1. EVERY CMU BLOCK CELL SHALL BE FILLED WITH 4000 PSI GROUT
  2. STATION EXTERIOR SHALL BE SPLIT FACE BLOCK. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS, AS SHOWN.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR
  4. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL. PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  5. ELECTRICAL EQUIPMENT, LIGHTS, AND BOXES NOT SHOWN IN ELEVATIONS. SEE ELECTRICAL DRAWINGS FOR LOCATION AND MOUNTING DETAILS.

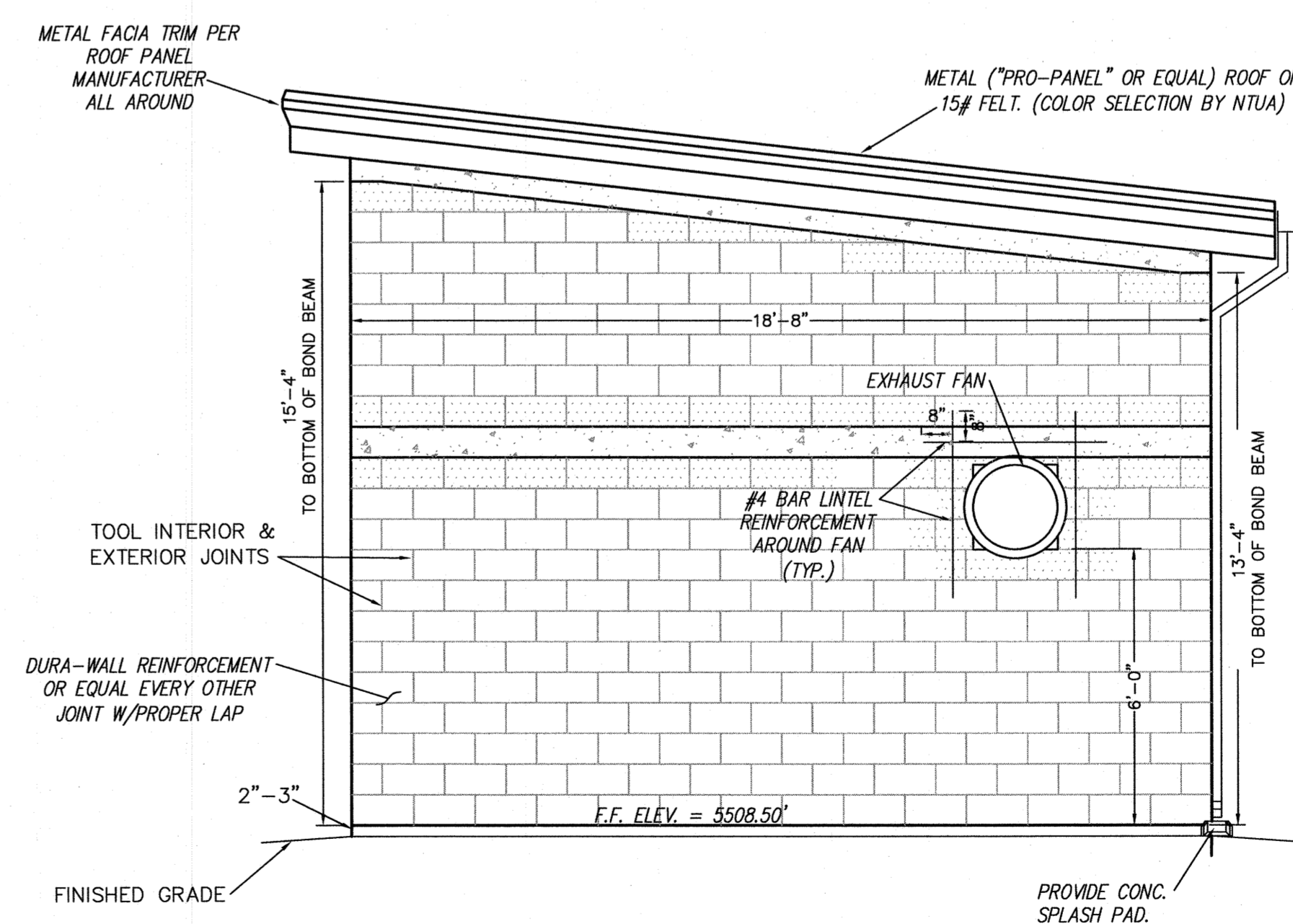


**PUMP STATION "2" STATION ELEVATION (LOOKING NORTH)**  
SCALE: 1/3"=1'

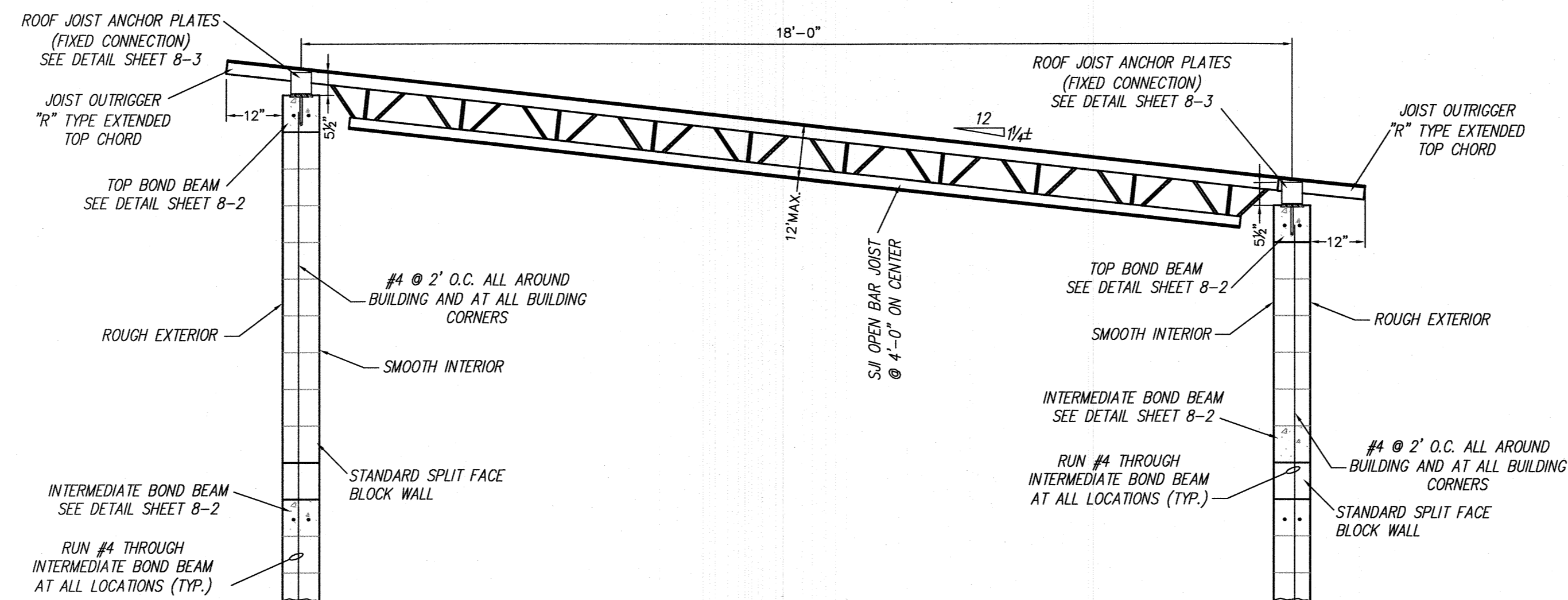
**BLOCK LEGEND**



**PUMP STATION "2" STATION ELEVATION (LOOKING EAST)**  
SCALE: 1/3"=1'



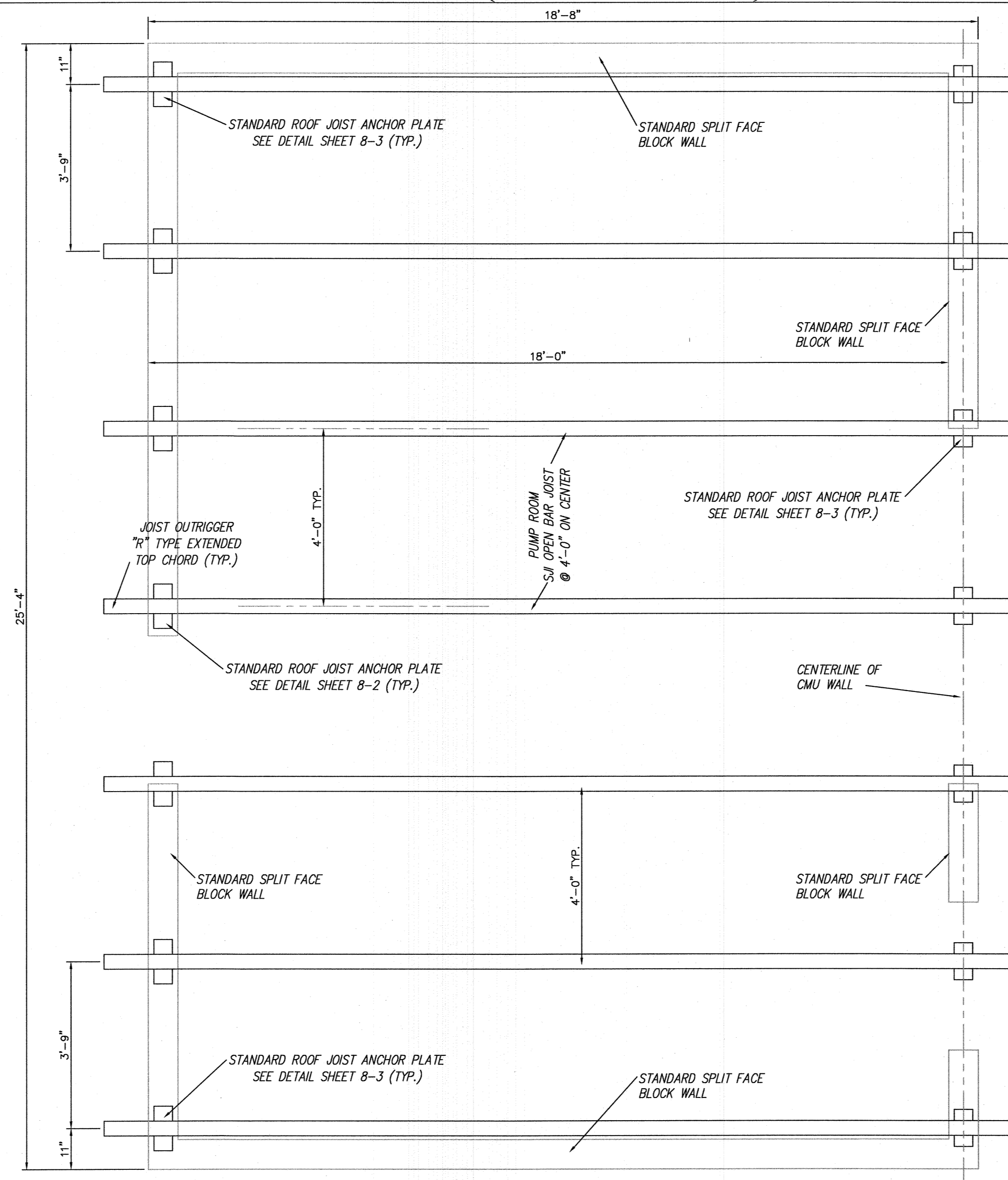
**PUMP STATION "2" STATION ELEVATION (LOOKING SOUTH)**  
SCALE: 1/3"=1'



**PUMP STATION "2" ROOF JOIST ELEVATION (LOOKING NORTH)**  
SCALE: 1/2"=1'

**ROOF JOIST NOTES:**

- JOIST LOADING:  
- LIVE LOAD = 120 PLF (SNOW LOAD)  
- DEAD LOAD = 64 PLF\*  
- UNIFORM LOAD = 184 PLF\*  
\* ASSUMES A 12 PLF ROOF JOIST (JOIST MANUFACTURER TO ADJUST AS REQ'D)
- JOIST WEB SHALL BE PER JOIST SUPPLIER WITH A MAXIMUM DEPTH OF 12" AND WIDTH OF 4"
- JOIST BRIDGING TO BE PROVIDED AND INSTALLED PER JOIST SUPPLIER BEFORE ATTACHING TO WALLS OR GABLE FRAMING AS REQUIRED.



**PUMP STATION "2" ROOF JOIST LAYOUT**  
SCALE: 1/2"=1'



**BUILDING/STRUCTURE PAD KEYED NOTES:**

- BUILDING PAD KEYED NOTES:**

- CONSTRUCTION KEYED NOTES:

- (1) PROPOSED DRAINAGE DITCH FLOWLINE, GRADE TO DRAIN
- (2) POWER POLE, SERVICE POLE, DOWN GUY AND SERVICE LINES (UNDERGROUND) BY NTUA
- (3) OVERHEAD ELECTRIC LINE BY NTUA
- (4) INSTALL CONCRETE DRIVE PAD  
SEE SHEET 6-4 FOR DETAILS
- (5) INSTALL CONCRETE ACCESS PAD  
SEE SHEET 6-4 FOR DETAILS
- (6) PLACE 5" OF GRAVEL OR BASE COURSE ON NON-WOVEN FABRIC FOR TANK AND STATION YARD.
- (7) NEW FINISHED GRADE CONTOURS FOR PUMP STATION SITE (TYP.)
- (8) INSTALL 16' CHAIN LINK (TWO (2)-8' PANELS)  
ACCESS GATE (2 REQUIRED) PER IHS STANDARD  
DETAIL W-34
- (9) INSTALL 3' PERSONNEL GATE (1 REQUIRED)  
PER IHS STANDARD DETAIL W-34
- (10) INSTALL NEW CHAIN LINK FENCE AS SHOWN  
 $L=390\pm$  PER IHS STANDARD DETAIL W-34
- (11) TANK DRAIN OUTLET STRUCTURE  
SEE DETAIL ON SHEET 6-2
- (12) PUMP STATION DRAIN PAD  
SEE DETAIL ON SHEET 6-2
- (13) UNDERGROUND ELECTRICAL AND CONTROL  
CONDUITS PER ELECTRICAL DESIGN
- (14) EDGE OF 5" GRAVEL SURFACING.
- (15) INSTALL 16' X 6' CONCRETE ELECTRICAL  
PAD WITH GENERATOR PER ELECTRICAL  
DETAILS

PIPING KEYED NOTES:

- |    |   |    |  |
|----|---|----|--|
| 1  | 12" PVC SDR-21 WATER TRANSMISSION LINES BY OTHERS                                     | 8A | INSTALL HORIZONTAL 10" MxMxJ GATE VALVE WITH BEVEL GEAR        |
| 2  | INSTALL 12" CL 350 DUCTILE IRON TANK INLET PIPING                                     | 9  | INSTALL 2" MxMxJ GATE VALVE                                    |
| 3  | INSTALL 12" CL 350 DUCTILE IRON PUMP SUCTION PIPING                                   | 10 | INSTALL TANK INLET STUB-OUT PER TANK MANUFACTURER              |
| 3A | 2" SCH 80 PVC PRESSURE SENSING LINE.  | 11 | INSTALL TANK OUTLET STUB-OUT PER TANK MANUFACTURER             |
| 4  | INSTALL 12" CL 350 DUCTILE IRON PUMP DISCHARGE PIPING                                 | 12 | SENSOR LINE CONNECTION TO DRAIN PIPING PER DETAIL ON SHEET 6-2 |
| 5  | INSTALL 10" CL 350 DUCTILE IRON TANK DRAIN LINE                                       | 13 | INSTALL TANK DRAIN STUB-OUT PER TANK MANUFACTURER              |
| 6  | INSTALL 2" SCH. 80 PVC PUMP STATION DRAIN LINE WITH CLEANOUT AND FITTINGS AS REQUIRED | 14 | TANK OVERFLOW PIPING PER TANK MANUFACTURER                     |
| 7  | INSTALL CAP OR CONNECT TO 12" PVC TRANSMISSION LINE BY OTHERS                         | 15 | TEMPORARY TANK CONNECTION PER DETAIL ON SHEET 6-2              |
| 8  | INSTALL 12" FLGxMJ GATE VALVE   |    |  |

## STRUCTURE COORDS

0.1 MG RESERVOIR			
	DESC.	NORTHING	EASTING
5	TANK CNTR.	1597491.62	634698.13

FENCE CORNERS/PI'S		
DESC.	NORTHING	EASTING
10 NE COR.	1597591.90	634702.45
11 NW COR.	1597545.05	634630.09
12 SW COR.	1597500.14	634762.59
13 SE COR.	1597453.29	634691.09

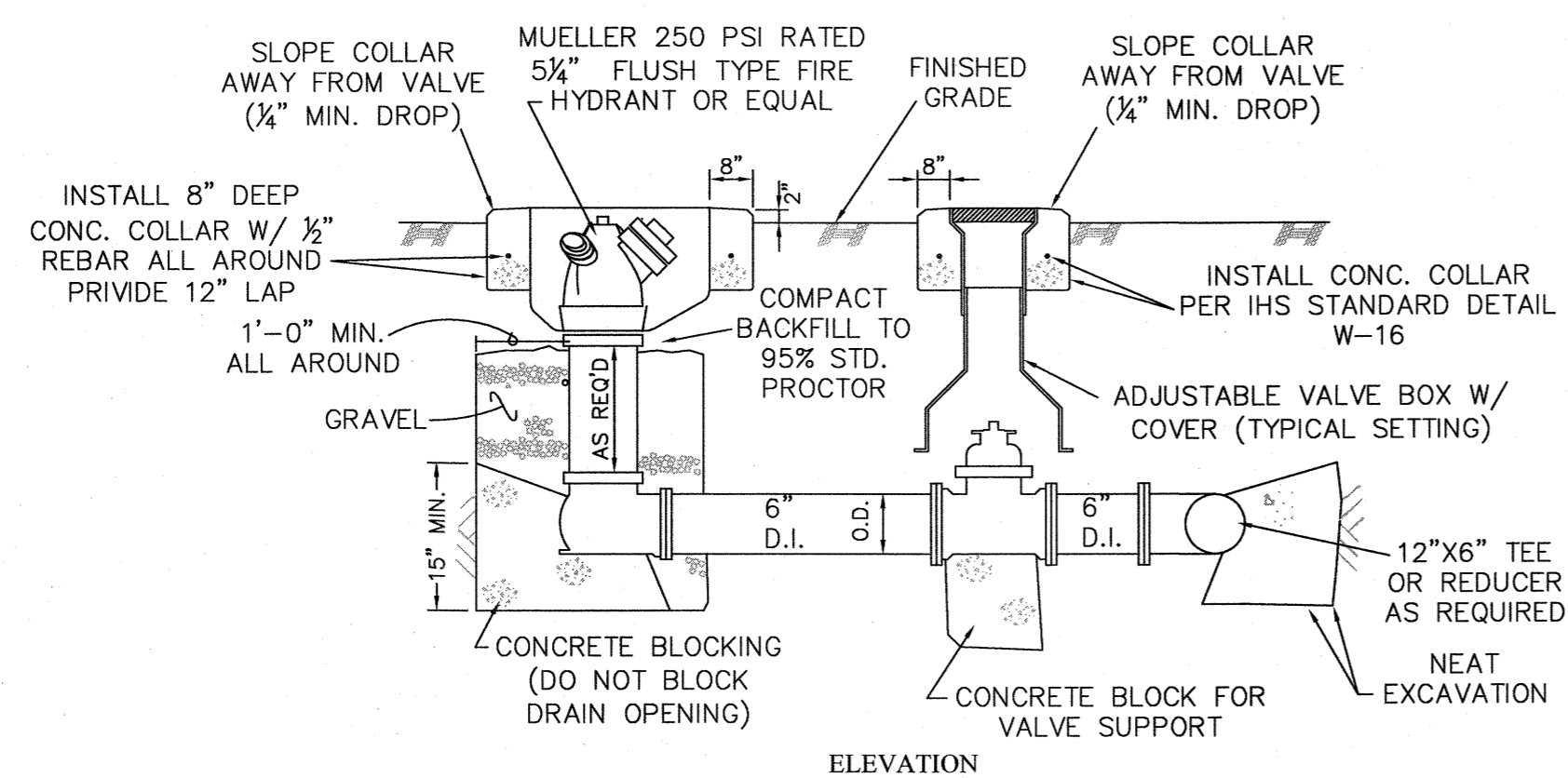
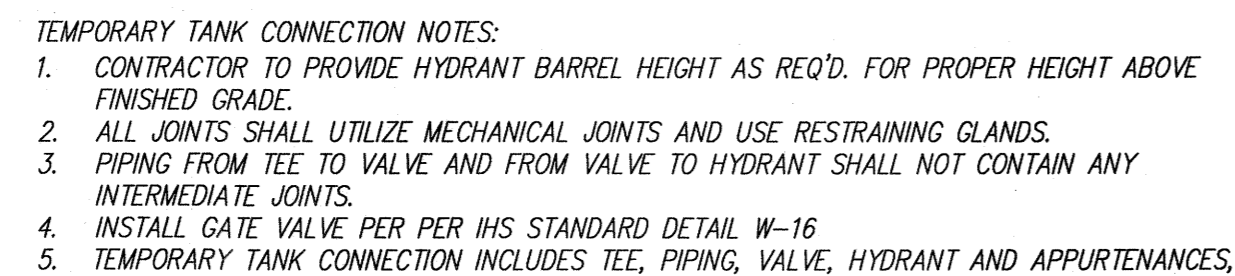
P/FITTING DESC	NORTHING	EASTING
14 INLET CAP/CONNECTION.	1597447.68	634790.24
15 12" TANK INLET STUB-OUT	1597486.89	634691.06
16 12" TANK OUTLET STUB-OUT	1597496.35	634705.19
17 DISCHARGE CAP/CONNECTION	1597553.27	634790.24
18 10" DRAIN STUB-OUT	1597498.68	634693.39
19 10" DRAIN LINE 90" ELL	1597519.41	634679.50
20 10" DRAIN OUTLET	1597503.18	634654.82
21 10"x6" TEE (OVERFLOW)	1597517.15	634376.13
22 2" CONNECTION/SADDLE	1597513.64	634683.40
23 12" DRAIN OUTLET	1597477.91	634739.54
24 INLET 12"x6" TEE	1597749.74	634680.39
25 INLET TEMP. TANK CONNECTION	1597488.05	634673.83
26 OUTLET 12" TEE W/ 12"x6" RED.	1598503.59	634715.99
27 DRAIN TEMP. TANK CONNECTION	1597495.28	634721.55

### ESTIMATED EARTHWORK QUANTITIES

ITEM	EXCAVATED IN-SITU VOLUME	EMBANKMENT EARTHWORK VOLUME
NATIVE MATERIAL	1.00 CY	1.00 CY
IMPORTED MATERIAL		
ENGINEERED FILL	-	1043 CY
GRAVEL SURFACING	-	174 CY
TOTAL IMPORTED MATERIAL	-	1217 CY
TOTALS	1.00 CY	1,218 CY

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED OR NATIVE MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.

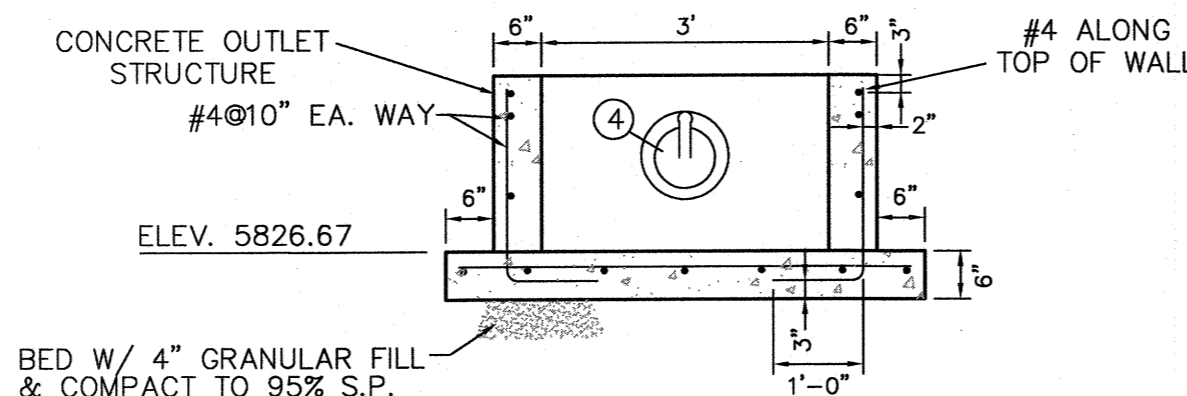




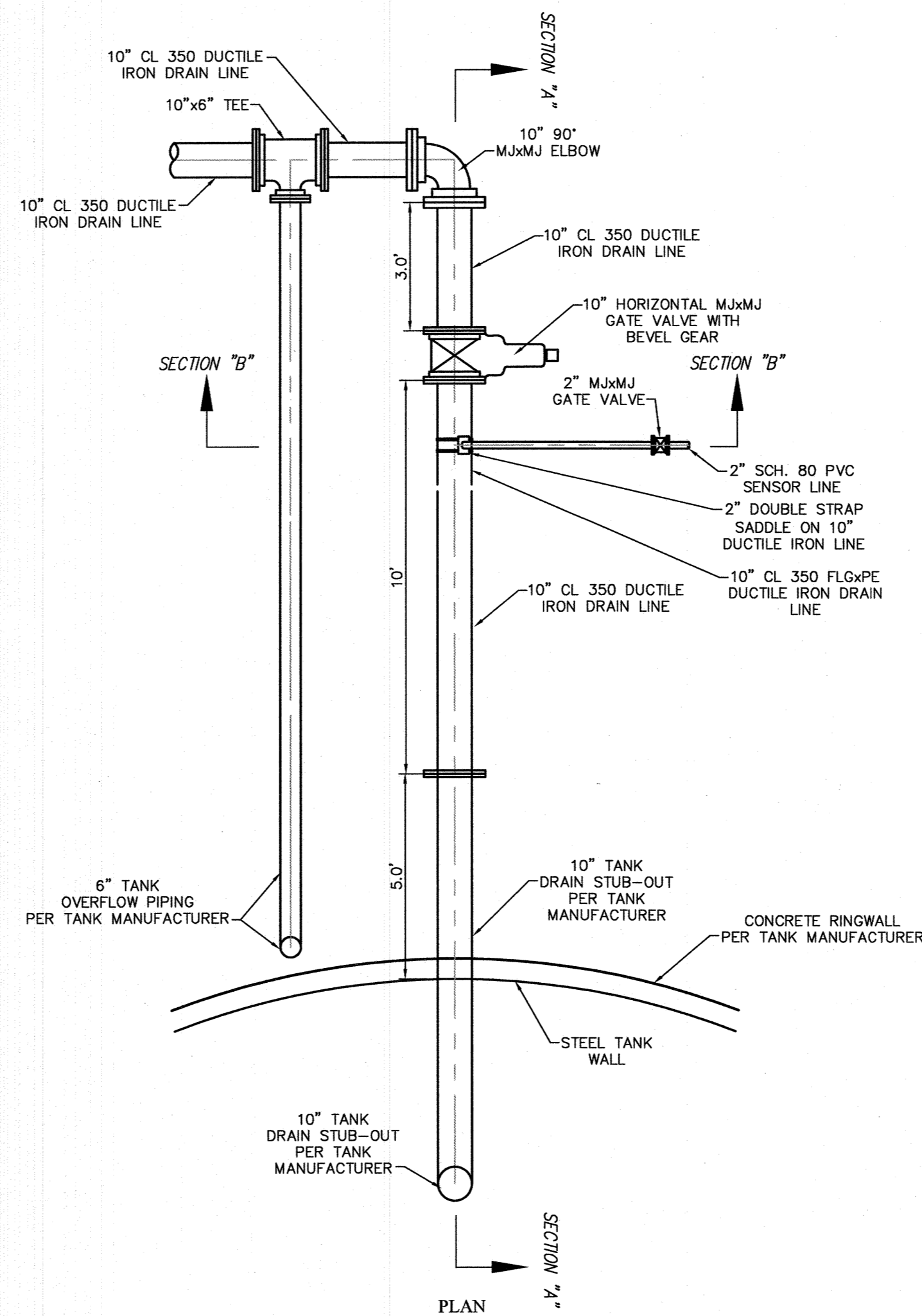
NTS



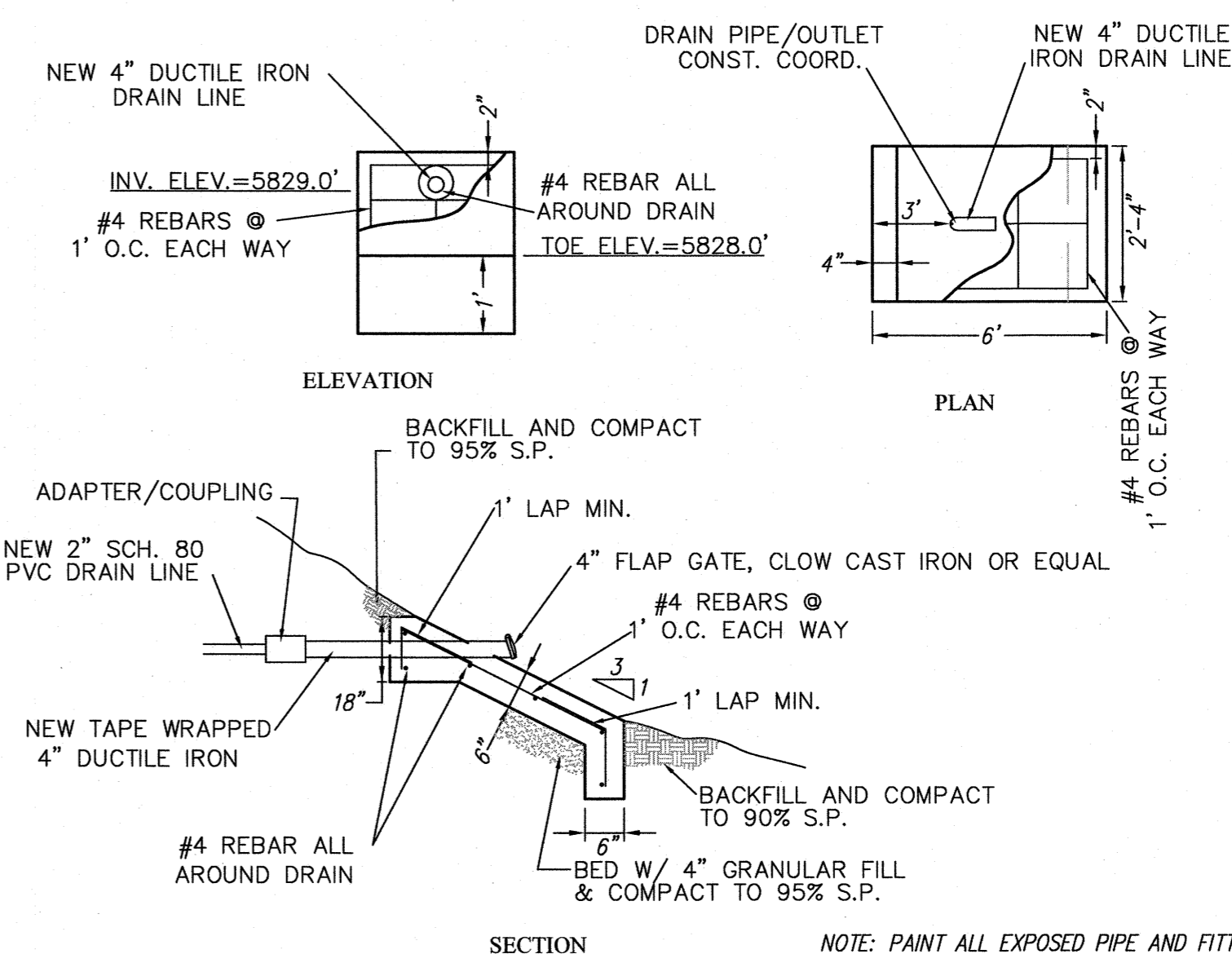
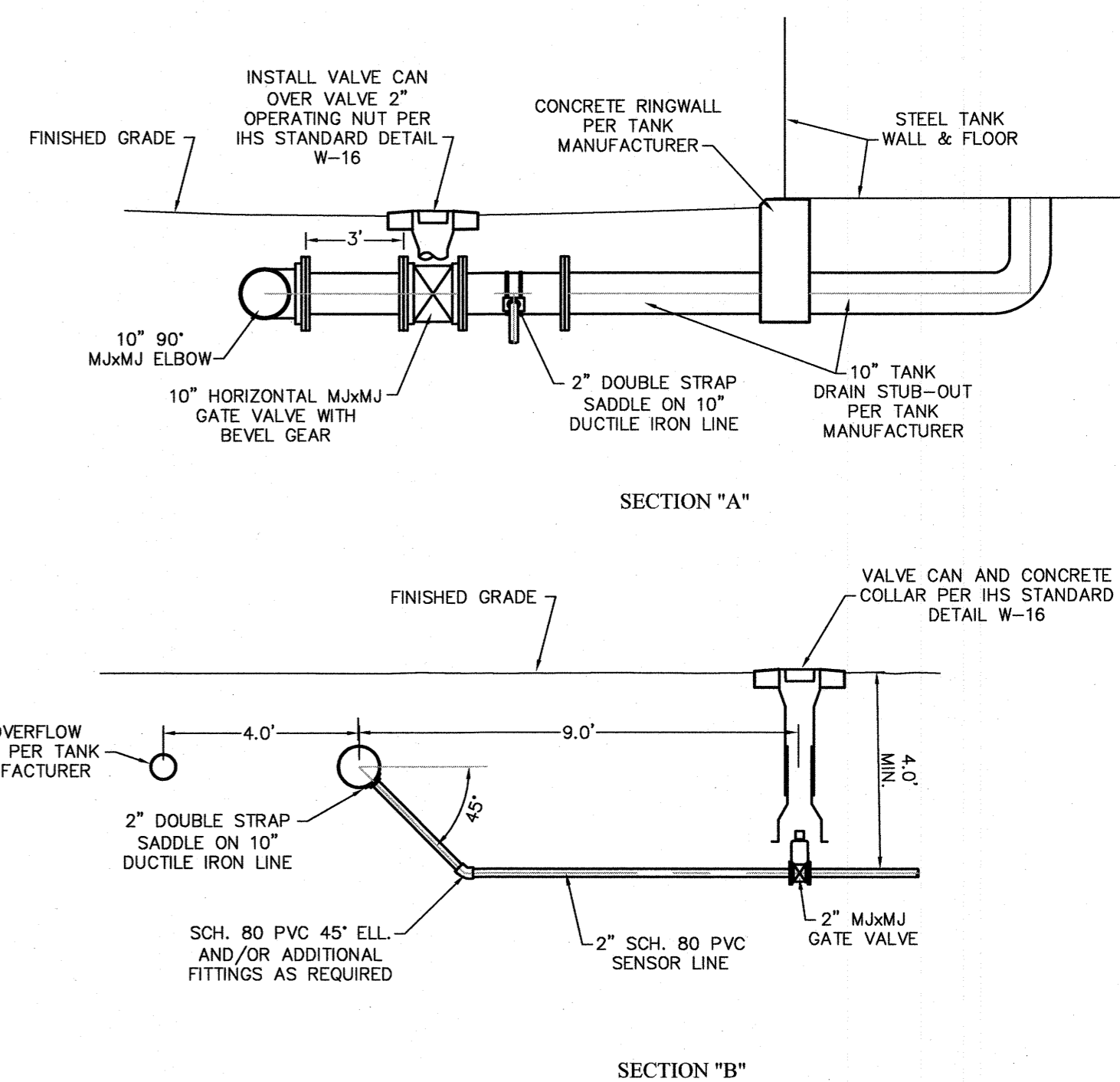
①	10" CL350 DUCTILE IRON TANK DRAIN LINE
②	10" LONG BODY SOLID SLEEVE
③	10" CL350 DUCTILE IRON PIPE (FLG. X PE, WRAPPED IN TAPECOAT)
④	10" FLG. FLAP GATE (IRON BODY, BRONZE MOUNTED)



NTS

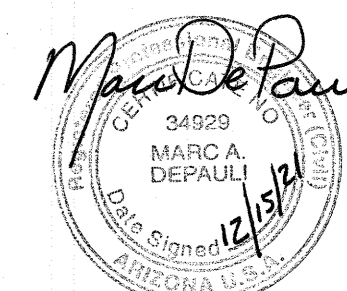


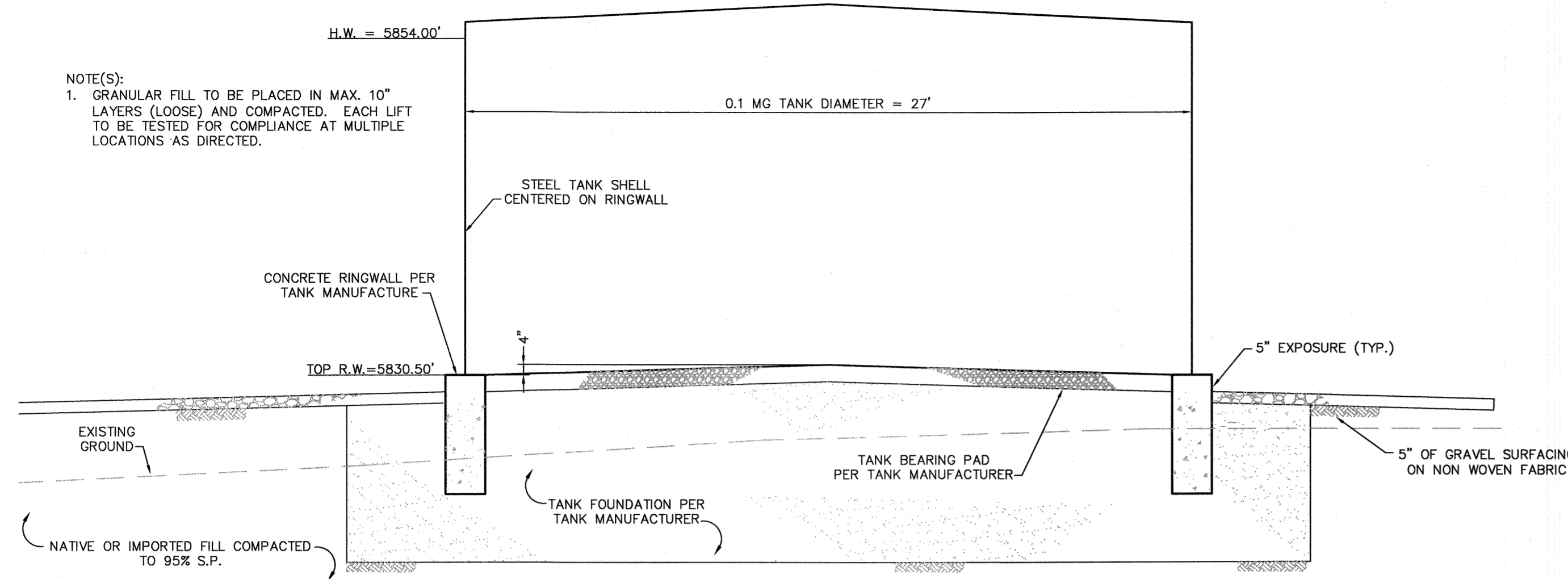
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NOTE: PAINT ALL EXPOSED PIPE AND FITTINGS  
W/ SHOP APPLIED PRIME COAT AND 2 COATS  
FIELD APPLIED OF ALKYD ENAMEL

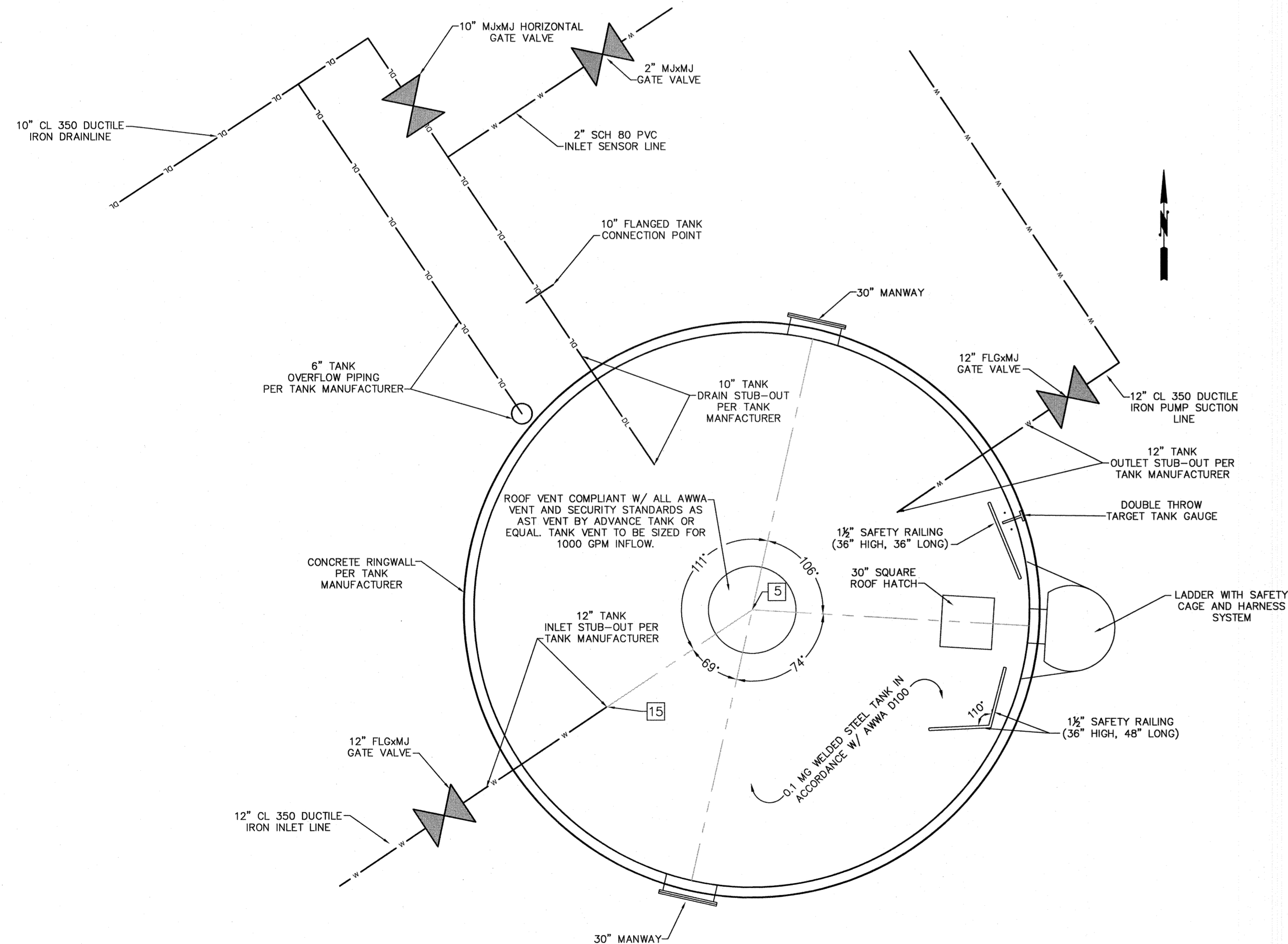




VERTICAL SECTION

PUMP STATION "3" 0.1-MG TANK GENERAL CONFIGURATION SECTION

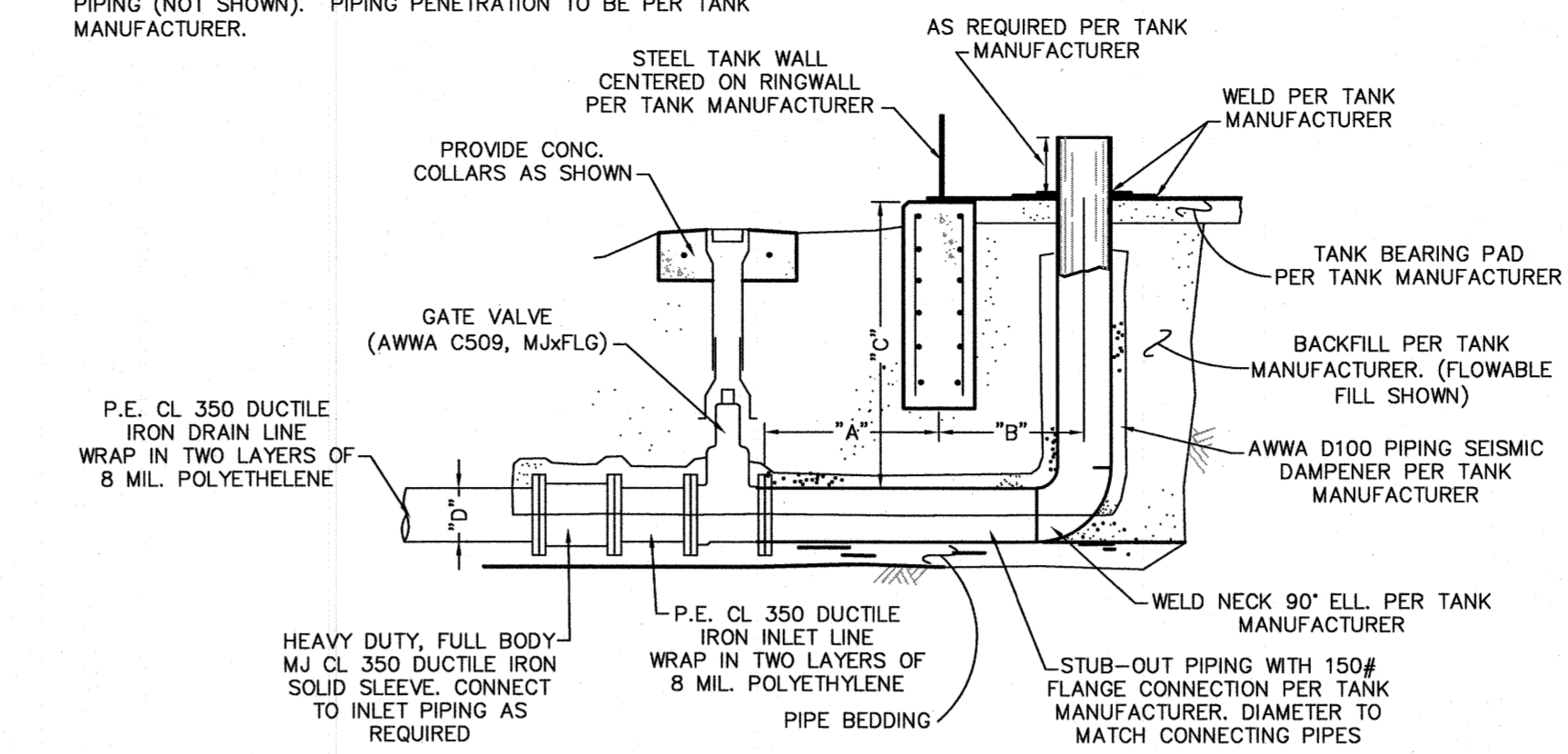
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PUMP STATION "3" 0.1-MG TANK PLAN

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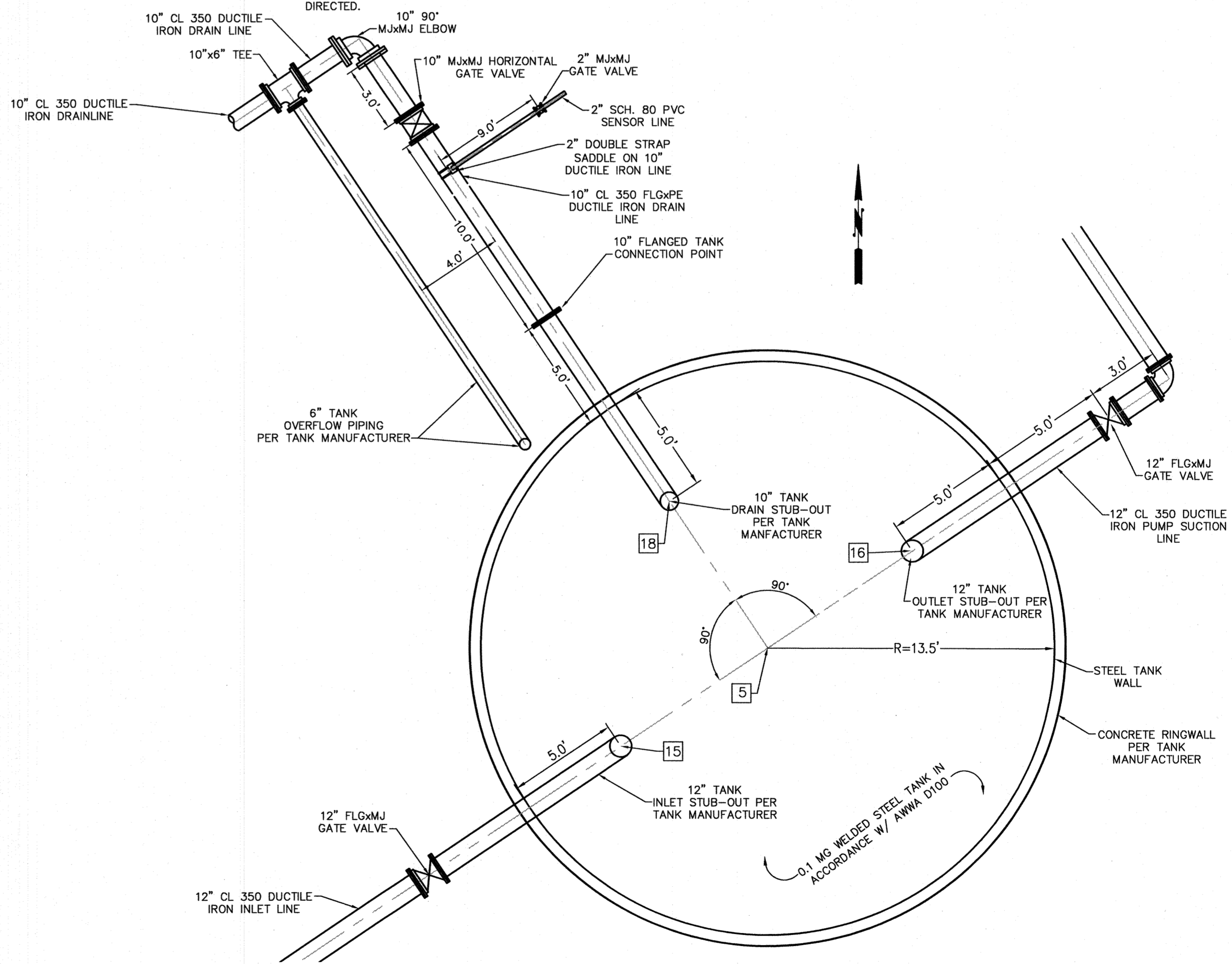
- NOTES:
1. CONCRETE RINGWALL FOUNDATION PER TANK MANUFACTURER
  2. SEE DIMENSION DETAIL THIS SHEET FOR STUBOUT DIMENSIONS "A", "B", AND "C"
  3. PENETRATE CONCRETE RINGWALL AS REQUIRED WITH STUBOUT PIPING (NOT SHOWN). PIPING PENETRATION TO BE PER TANK MANUFACTURER.



PUMP STATION "3" TANK STUB-OUT DETAIL

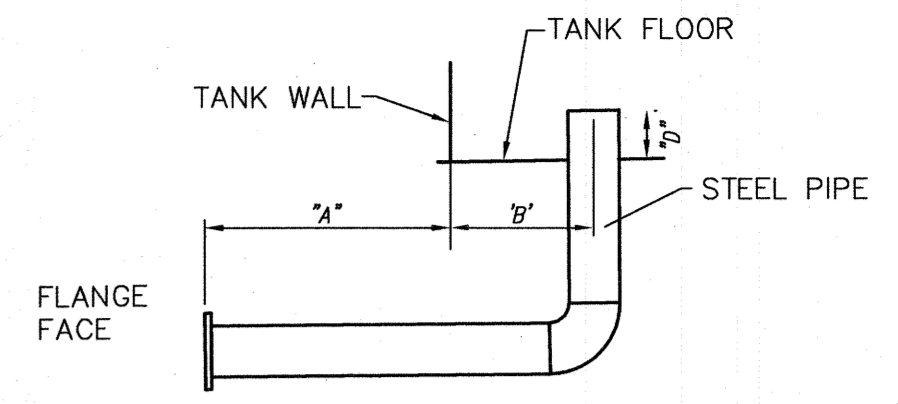
NTS

- NOTES:
1. CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
  2. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
  3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASUREMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASUREMENT. LAYER JOINTS SHALL BE STAGGERED.
  4. SEE SHEET 6-1 FOR YARD PIPING (WATERLINES AND DRAIN LINES)
  5. VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
  6. RESERVOIR APPURTENANCES TO BE ORIENTED IN THE THE FIELD AS DIRECTED.



PUMP STATION "3" 0.1-MG TANK STUBOUT LAYOUT

NTS



STUB-OUT	DIA.	DIMENSION			
		A	B	C	D
INLET	12"	4.50'	5.00'	4.00'	1.00'
OUTLET	12"	4.50'	5.00'	4.00'	0.50'
DRAIN	10"	4.50'	5.00'	2.00'	0.00'

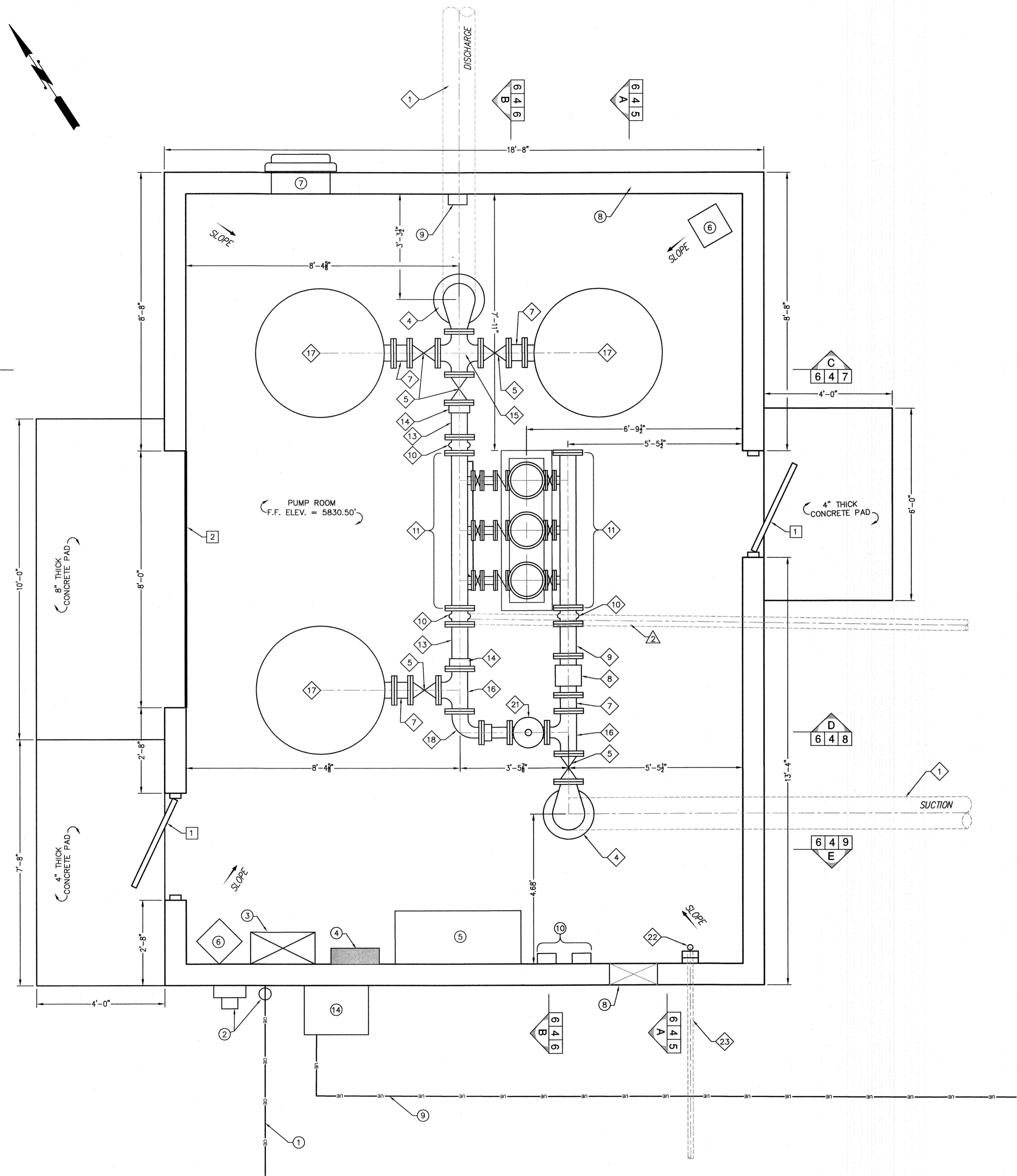
- NOTES:
1. SEE DETAIL THIS SHEET FOR STUBOUT LAYOUT CONFIGURATION

TANK STUBOUT DIMENSION DETAILS

NTS

0.1-MG TANK COORDS

PI/FITTING DESC	NORTHING	EASTING
5 TANK CENTER	1597491.62	634698.13
15 12" TANK INLET STUB-UP	1597486.89	634691.06
16 12" TANK OUTLET STUB-UP	1597496.35	634705.19
18 10" DRAIN STUB-UP	1597498.68	634693.39



**PUMP STATION "3" LAYOUT & PIPING PLAN**  
SCALE: 1/2"=1'

#### ELECTRICAL & MECHANICAL KEYED NOTES:

- ① OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ② ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- ③ NEMA 3R ELECTRICAL CABINET PANEL "A"
- ④ NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- ⑤ GRUNDFOS BOOSTERPAD TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ⑥ ELECTRIC UNIT HEATER "QMARK" #MH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #M810 WALL MOUNTED BRACKET. (240V, 1A, 7.5KW)
- ⑦ EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- ⑧ MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- ⑨ CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- ⑩ MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 6-8 FOR DETAILS
- ⑪ TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- ⑫ FLOW METER DISPLAY AND TRANSMITTER UNIT
- ⑬ TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- ⑭ AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

#### CONSTRUCTION KEYED NOTES:

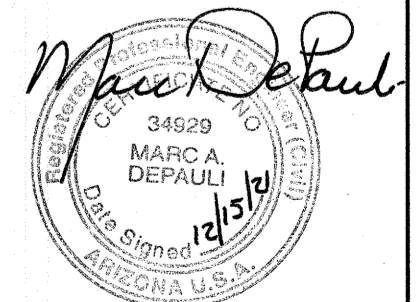
- ① 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO NTUA WATER SYSTEM STANDARD.)
- ② 8' WIDE 8' HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- ③ PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- ④ 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ⑤ ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- ⑥X WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- ⑦ # ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- ⑧ PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- ⑨ SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

#### DRAIN FITTING & PIPING KEYED NOTES:

- ① WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- ② 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)

#### PRESSURE FITTING & PIPING KEYED NOTES:

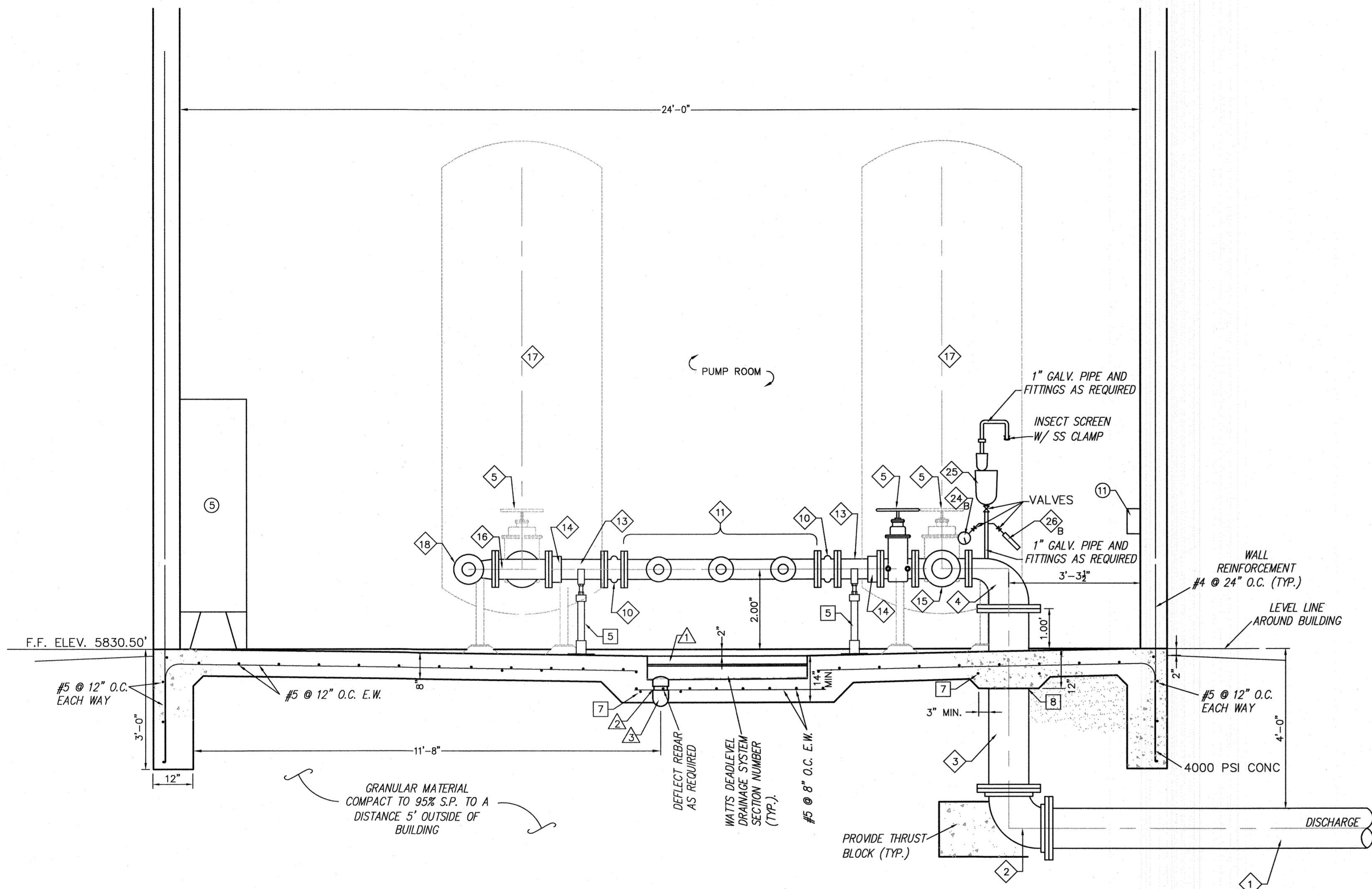
- ① 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ② 12" MA 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ③ 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ④ 12"x6" FLGD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- ⑤ 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- ⑥ 6"x4" FLGD REDUCING TEE
- ⑦ 6" FLGD SPOOL, (L=6')
- ⑧ 6" FLGD MCCROMETER ULTRA MAG UM06 FLOW METER
- ⑨ 6" FLGD SPOOL, (L=12')
- ⑩ 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- ⑪ GRUNDFOS BOOSTERPAD TRIPLEX PUMP SKID MODEL MPC (CUE) 3 CR45-5
- ⑫ 6" BLIND FLANGE
- ⑬ 6" FLOWPE SPOOL, (L=AS REQUIRED)
- ⑭ 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- ⑮ 6" FLGD CROSS
- ⑯ 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- ⑰ 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- ⑱ 6"x4" FLGD REDUCING ELL
- ⑲ 4" FLOWPE SPOOL, (L=AS REQUIRED)
- ⑳ 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- ㉑ 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- ㉒ 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 6-8
- ㉓ 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- ㉔A LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- ㉔B LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- ㉕ 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- ㉖A NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI,
- ㉖B NON-SUBMERSIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, DISCHARGE PRESSURE 0-300 PSI.
- ㉗ COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- ㉘ 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- ㉙ 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- ㉚ 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- ㉛ 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- ㉜ 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL





Notar Public Defauli

34929  
MARC A.  
DEPAULI  
Date Signed 12/15/21  
ARIZONA U.S.A.



**PUMP STATION "3" ELEVATION "B"**  
**SCALE: 1/2"=1'**

**ELECTRICAL & MECHANICAL KEYED NOTES:**

- OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- NEMA 3R ELECTRICAL CABINET PANEL "A"
- NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ELECTRIC UNIT HEATER, "QMARK" MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND JAMBLO WALL MOUNTED BRACKET, (240V, 14, 7.5KW)
- EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- FLOW METER DISPLAY AND TRANSMITTER UNIT
- TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

**CONSTRUCTION KEYED NOTES:**

- 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYPED TO NTUA WATER SYSTEM STANDARD.)
- 8' WIDE 12" HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL. (SEE DETAIL SHEET 8-1)
- WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAIL SHEET 8-1)
- #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- SURGE TANK PEDESTAL (TYP.), (SEE DETAIL SHEET 8-1)

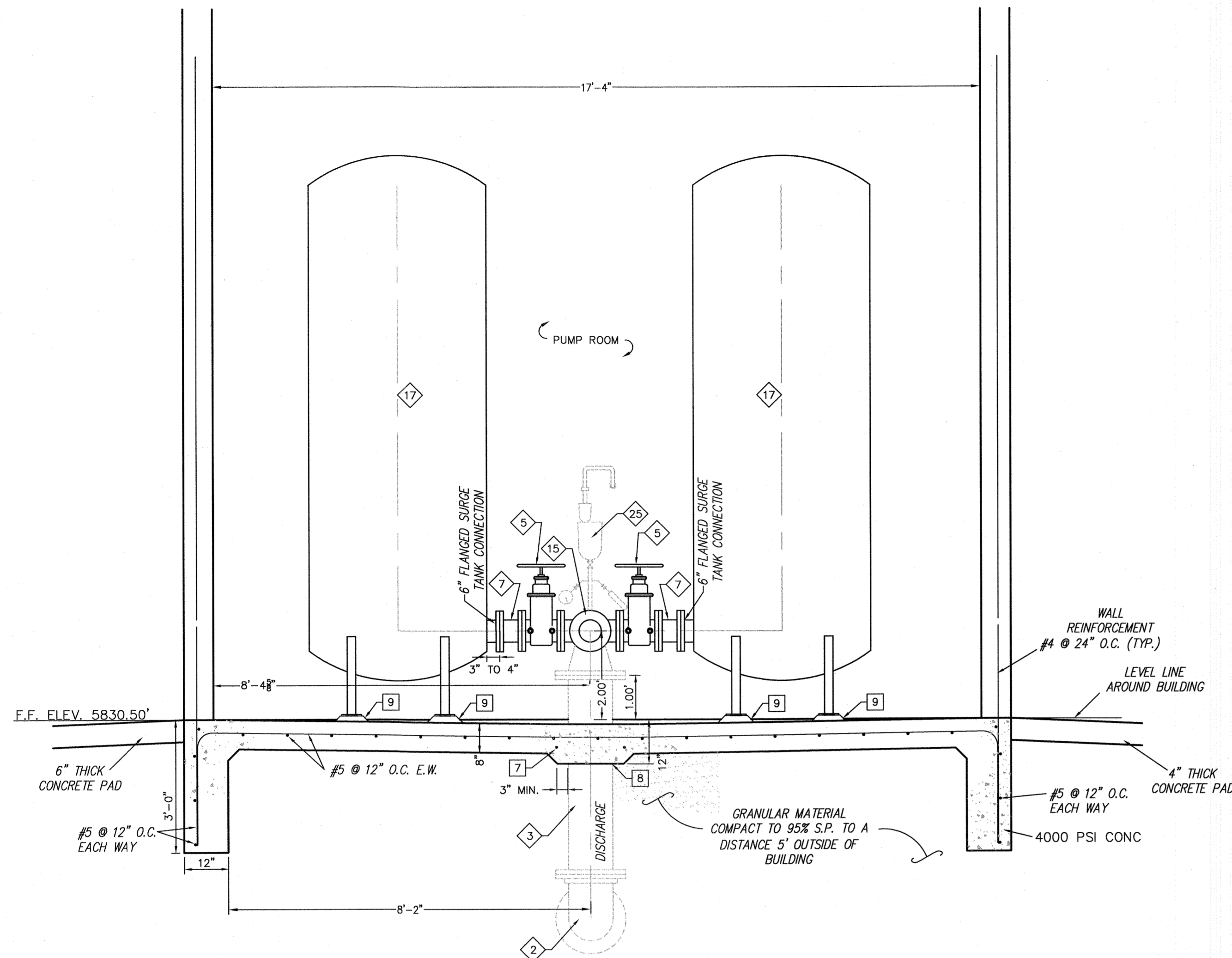
**DRAIN FITTING & PIPING KEYED NOTES:**

- WATTS DEAD LEVEL "D" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)
- 4" SCH. 80 PVC 90° ELL (SOLVENT WELD)

**PRESSURE FITTING & PIPING KEYED NOTES:**

- 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" MU 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12" FLOWPIPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- 12"x6" FLGD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- 6"x4" FLGD REDUCING TEE
- 6" FLGD SPOOL, (L=6')
- 6" FLGD MICRO METER ULTRA MAG UN06 FLOW METER
- 6" FLGD SPOOL, (L=12')
- 6" PROCO STYLE 231FA NSF61 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (CUE) 3 GR45-5
- 6" BLIND FLANGE
- 6" FLOWPIPE SPOOL, (L=AS REQUIRED)
- 6" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 6" FLGD CROSS
- 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- 6"x4" FLGD REDUCING ELL
- 4" FLOWPIPE SPOOL, (L=AS REQUIRED)
- 4" 2100 MEGAFLANGE RESTRAINED FLANGE ADAPTER
- 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI
- NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, DISCHARGE PRESSURE 0-300 PSI
- COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL

*Marc A. DePauli*  
34929  
MARC A. DEPAULI  
Date Signed 12/15/21  
ASCE 408 U.S.A.



**PUMP STATION "3" ELEVATION "C"**  
SCALE: 1/2"=1'

**ELECTRICAL & MECHANICAL KEYED NOTES:**

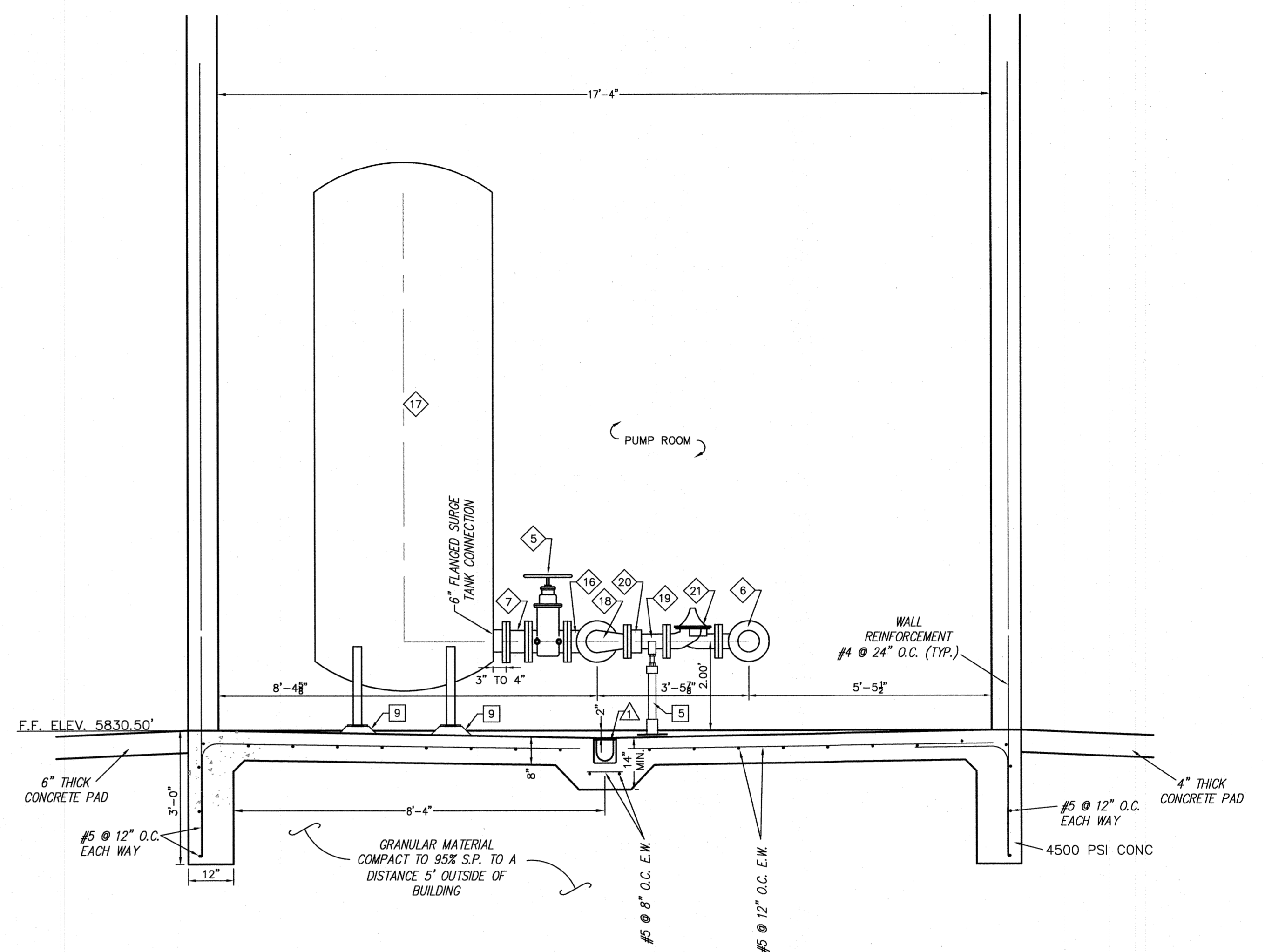
- ① OVERHEAD ELECTRIC SERVICE PER NTUA STANDARDS
- ② ELECTRICAL SERVICE ENTRANCE INCLUDING WEATHERHEAD, METER, AND DISCONNECT
- ③ NEMA 3R ELECTRICAL CABINET PANEL "A"
- ④ NEMA 3R S.C.A.D.A. SYSTEM CABINETS W/ COMMUNICATION AND BATTERY BACKUP PER NTUA AND IHS STANDARDS
- ⑤ GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID ELECTRICAL CONTROL PANEL
- ⑥ ELECTRIC UNIT HEATER, "QMARK" #MUH-07-2 WITH THERMOSTAT PER ELECTRICAL DRAWINGS AND #AMB10 WALL MOUNTED BRACKET. (240V, 1 $\phi$ , 7.5KW)
- ⑦ EXHAUST FAN, SEE DETAIL ON SHEET 8-2
- ⑧ MOTORIZED INLET LOUVER, SEE DETAIL ON SHEET 8-2
- ⑨ CONDUIT AND RADIO CABLE AS REQUIRED FOR TANK MOUNT ANTENNA
- ⑩ MISCELLANEOUS CONTROL AND DISPLAY AREA SEE SHEET 3-9 FOR DETAILS
- ⑪ TRANSDUCER JUNCTION BOX WITH TRANSDUCER VENT SEAL TO MATCH TRANSDUCER MANUFACTURER
- ⑫ FLOW METER DISPLAY AND TRANSMITTER UNIT
- ⑬ TRANSDUCER DISPLAY UNIT IN ENCLOSURE (TANK LEVEL, AND DISCHARGE PRESSURE)
- ⑭ AUTOMATIC TRANSFER SWITCH CABINET PER ELECTRICAL DETAILS

**CONSTRUCTION KEYED NOTES:**

- ① 3'-0" FLUSH METAL DOOR W/ HORIZONTAL ACTUATING BAR EXIT DEVICE AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYPED TO NTUA WATER SYSTEM STANDARD)
- ② 8" WIDE 12" HIGH MANUALLY CHAIN OPERATED INSULATED ROLL-UP GARAGE DOOR
- ③ PUMP SKID CONCRETE PEDESTAL SEE DETAIL ON SHEET 8-1
- ④ 3" STD. STEEL PENETRATION (SEE DETAIL SHEET 8-1)
- ⑤ ADJUSTABLE PIPE SUPPORT STANDS BY STAND-ON OR EQUAL (SEE DETAIL SHEET 8-1)
- ⑥X WALL PIPE SUPPORTS (TYPE AS NOTED BY "X") (SEE DETAILS SHEET 8-1)
- ⑦ #4 ALL AROUND PIPE, DRAIN, OR SLEEVE W/ LAP
- ⑧ PROVIDE 2 LAYERS OF 30# FELT WRAP AROUND D.I. PIPE THROUGH FLOOR (TYP.)
- ⑨ SURGE TANK PEDESTAL (TYP.) (SEE DETAIL SHEET 8-1)

**DRAIN FITTING & PIPING KEYED NOTES:**

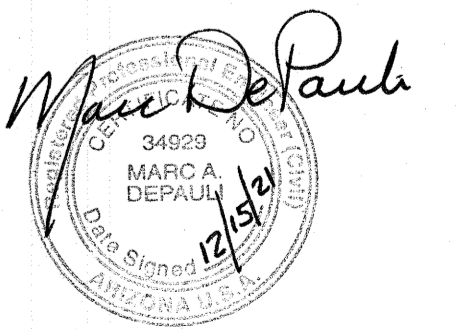
- ① WATTS DEAD LEVEL, 10" TRENCH DRAIN SYSTEM WITH INTEGRAL 4" NO HUB BOTTOM OUTLET WITH DUCTILE IRON FRAME AND GRATING OR EQUAL
- ② 4" SCH. 80 PVC DRAIN LINE (SOLVENT WELD)



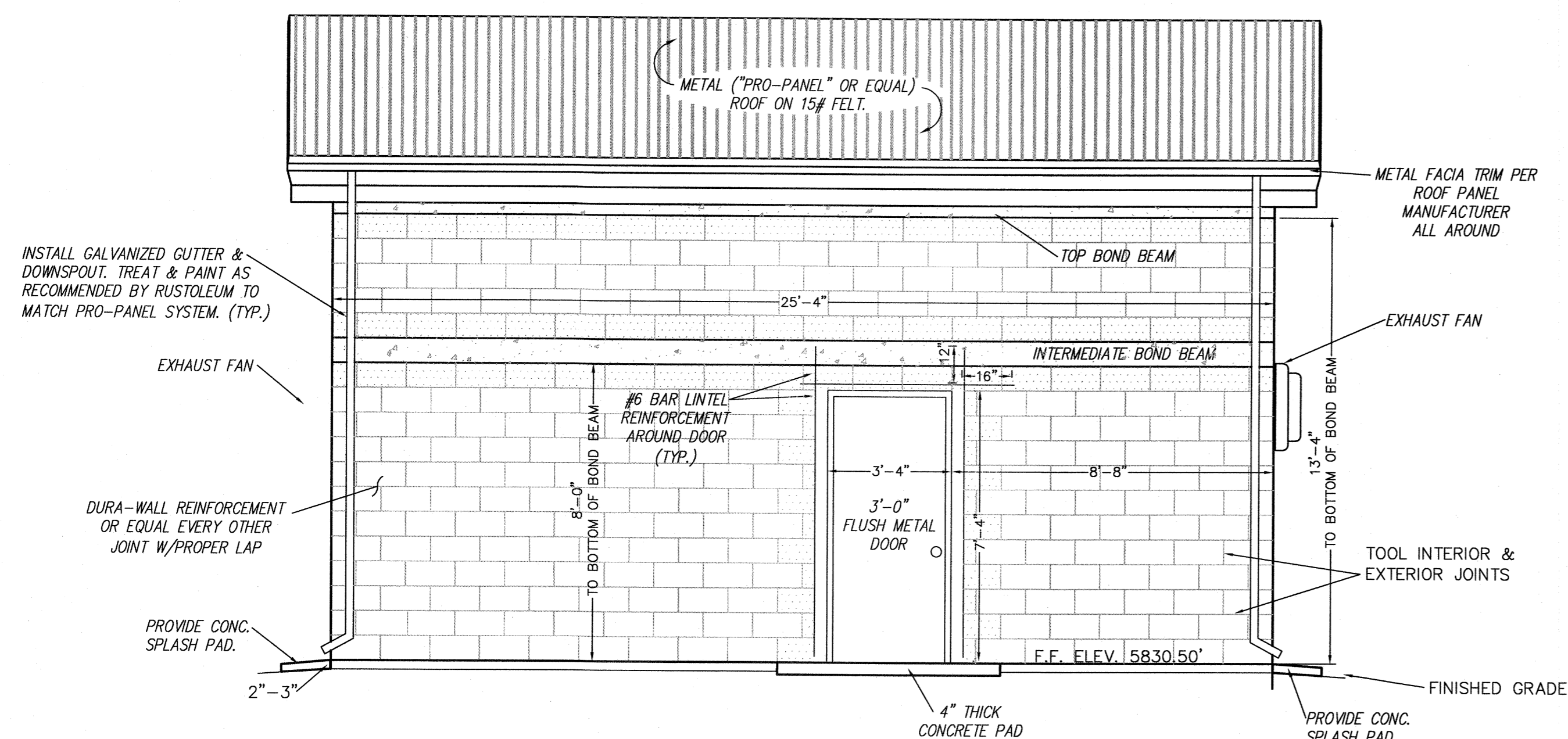
**PUMP STATION "3" ELEVATION "D"**  
SCALE: 1/2"=1'

**PRESSURE FITTING & PIPING KEYED NOTES:**

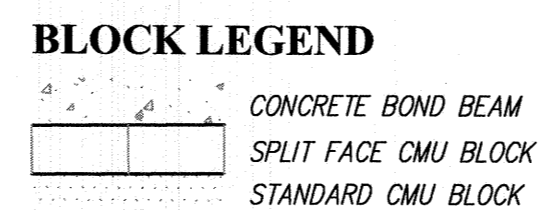
- ① 12" CL. 350 D.I. PIPE (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ② 12" MJ 90° ELL. (WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ③ 12" FLOWPE CL. 350 D.I. PIPE (WRAP BURIED PORTION IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE)
- ④ 12"x6" FLGD 90° REDUCING ELL WITH TAPPING BOSS AS REQUIRED FOR 1" AIR RELEASE
- ⑤ 6" FLGD RESILIENT WEDGE GATE VALVE WITH HAND WHEEL
- ⑥ 6"x4" FLGD REDUCING TEE
- ⑦ 6" FLGD SPOOL, (L=6')
- ⑧ 6" FLGD MCMOMETER ULTRA MAG UN06 FLOW METER
- ⑨ 6" FLGD SPOOL, (L=12')
- ⑩ 6" PROCO STYLE 231FA NSF81 COMPLIANT EXPANSION JOINT WITH LIMIT ROD (NEUTRAL LENGTH =6')
- ⑪ GRUNDFOS BOOSTERPAQ TRIPLEX PUMP SKID MODEL MPC (OUE) 3 OR45-5
- ⑫ 6" BLIND FLANGE
- ⑬ 6" FLOWPE SPOOL, (L=AS REQUIRED)
- ⑭ 6" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- ⑮ 6" FLGD CROSS
- ⑯ 6" FLGD TEE W/ TAPPING BOSS AS REQUIRED
- ⑰ 500 GALLON HYDRO-PNEUMATIC BLADDER TANK SURGE CONTROL SYSTEM WITH MONITORING SYSTEM
- ⑱ 6"x4" FLGD REDUCING ELL
- ⑲ 4" FLOWPE SPOOL, (L=AS REQUIRED)
- ⑳ 4" 2100 MEGAFRANGE RESTRAINED FLANGE ADAPTER
- ㉑ 4" FLGD PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01
- ㉒ 2" PRESSURE SENSOR STAND SEE DETAIL ON SHEET 5-8
- ㉓ 2" SCH. 80 PVC SENSOR STAND LINE (SOLVENT WELD)
- ㉔ LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 20 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- ㉕ LIQUID FILLED PRESSURE GAUGE BY WKA OR EQUAL, (RANGE 0 TO 300 PSI) (3" GLASS FACE GLYCERIN FILLED) CONNECT TO 1" PIPING AS REQUIRED
- ㉖ 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL)
- ㉗ NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-10 PSI
- ㉘ NON-SUBMERISIBLE PRESSURE TRANSDUCER KPSI SERIES 30 W/ LIGHTNING PROTECTION/DISCHARGE PRESSURE 0-300 PSI
- ㉙ COMPACT HEAVY BODIED SOLVENT WELD PVC BALL VALVE, SIZE AS REQUIRED (150 PSI)
- ㉚ 2" SCH. 80 PVC SENSOR STAND 90° ELL. (SOLVENT WELD)
- ㉛ 2" SCH. 80 PVC SENSOR STAND CROSS (SOLVENT WELD) ADAPT AS REQUIRED TO GAUGE AND TRANSDUCER VALVES
- ㉜ 2" SCH. 80 PVC SENSOR STAND TEE (SOLVENT WELD) ADAPT AS REQUIRED TO HOSE BIB
- ㉝ 2" SCH. 80 PVC SENSOR STAND PLUG/CAP (SOLVENT WELD) ADAPT AS REQUIRED TO AIR RELEASE VALVE
- ㉞ 1/2" AIR RELEASE VALVE, VAL-MATIC 15A OR EQUAL



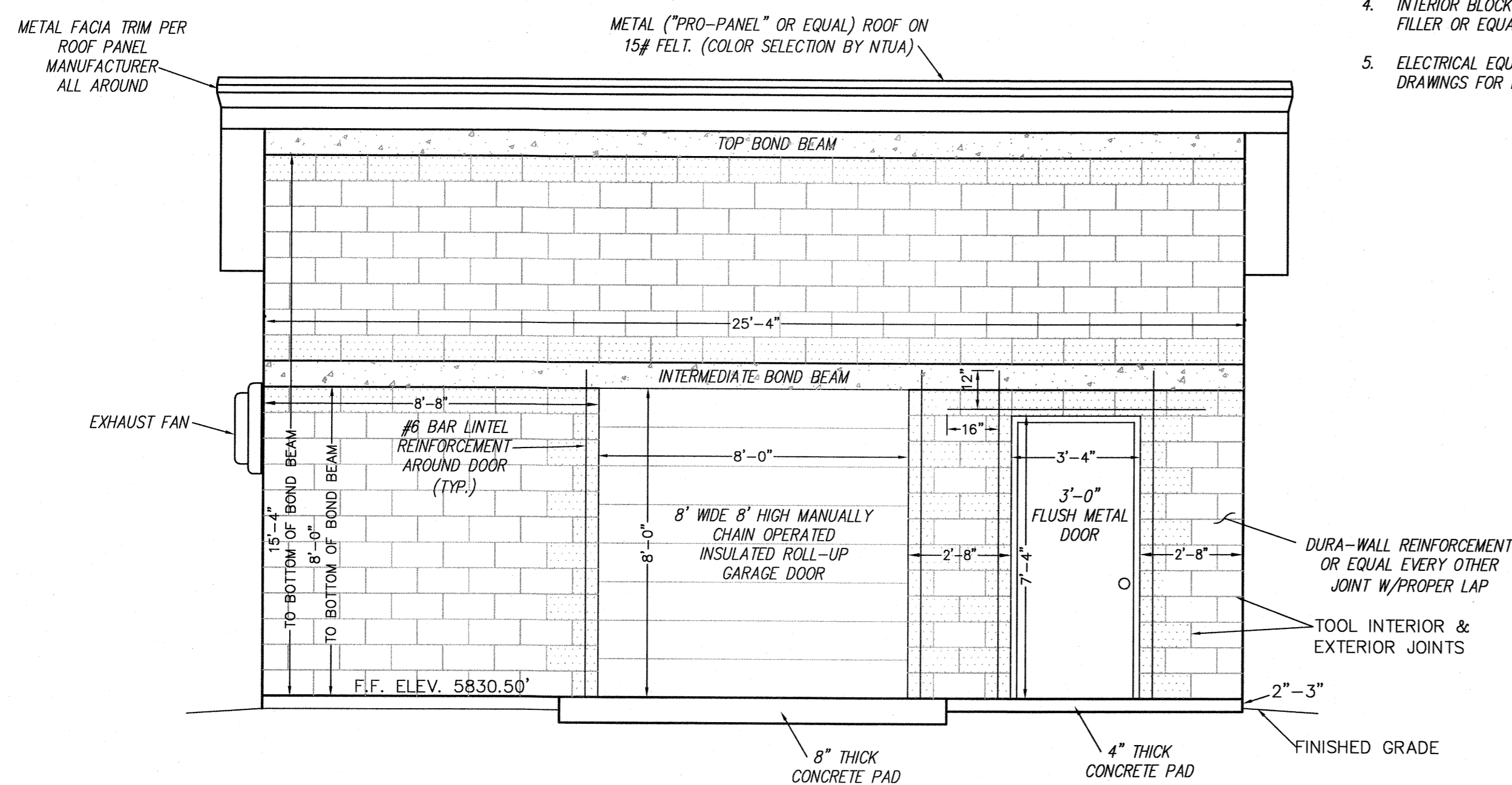




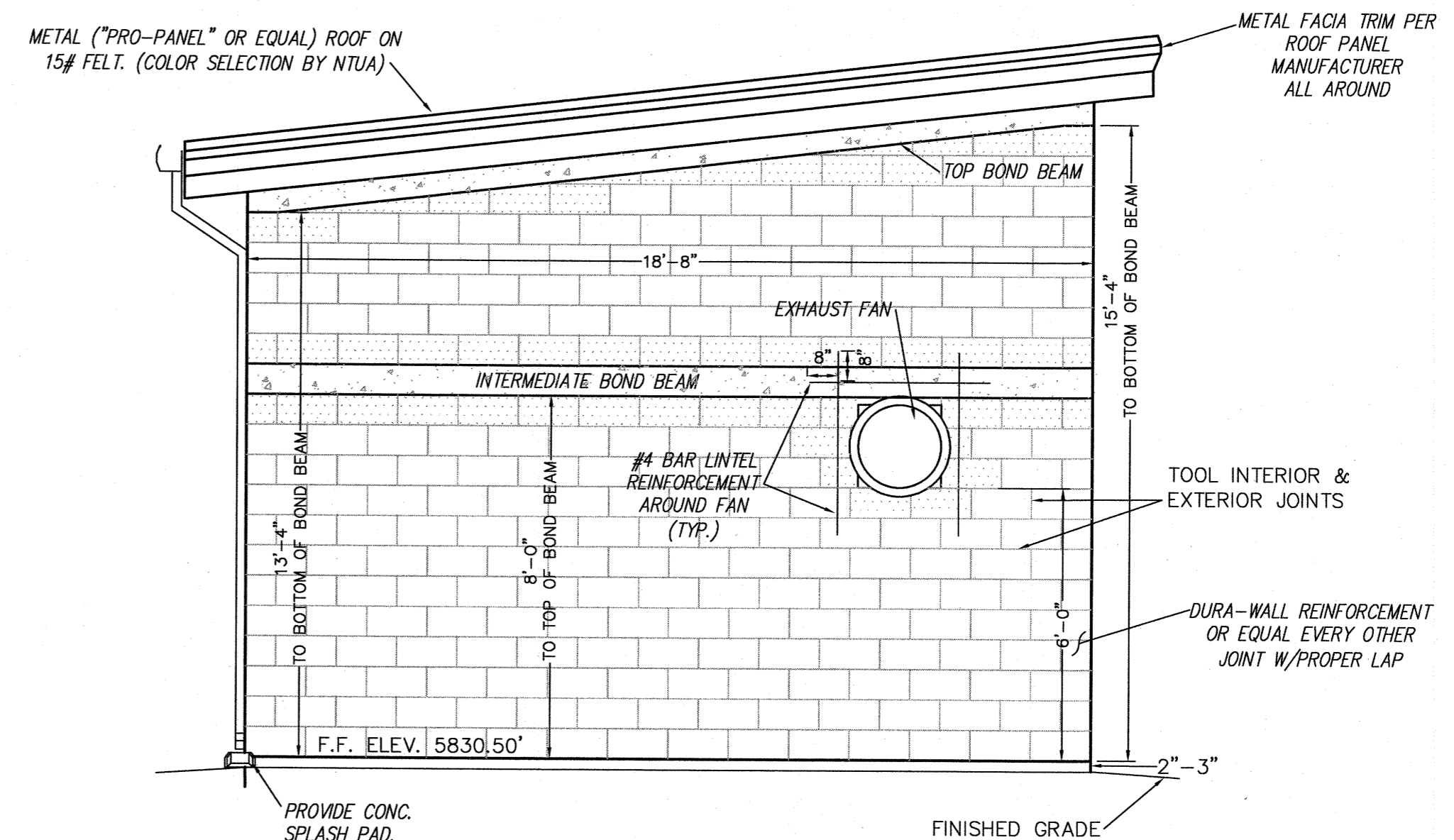
**PUMP STATION "3" STATION ELEVATION (LOOKING NORTH)**  
SCALE: 1/3"=1'



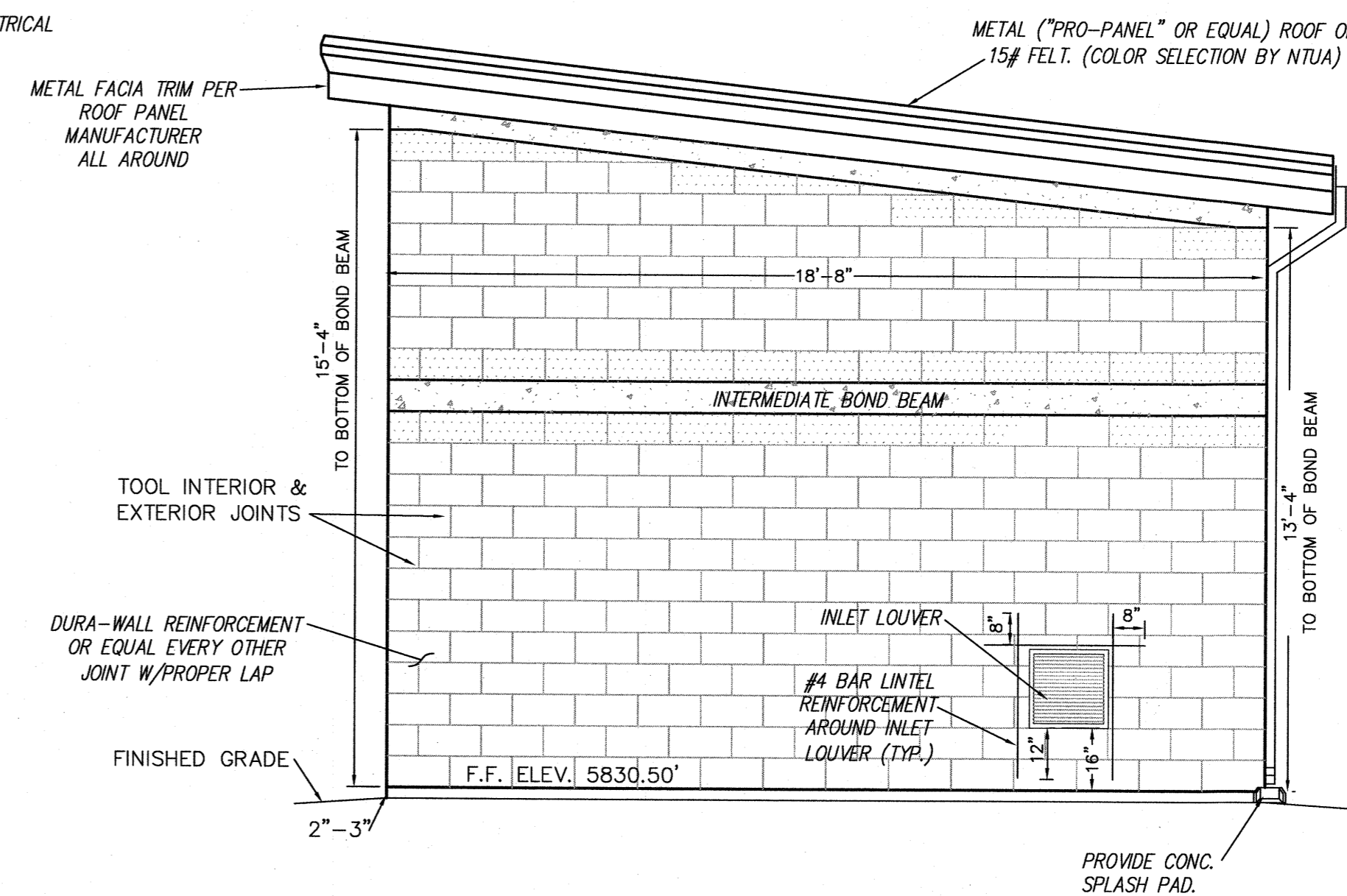
- NOTES:
1. EVERY CMU BLOCK CELL SHALL BE FILLED WITH 4000 PSI GROUT
  2. STATION EXTERIOR SHALL BE SPLIT FACE BLOCK. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS, AS SHOWN.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR
  4. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  4. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  5. ELECTRICAL EQUIPMENT, LIGHTS, AND BOXES NOT SHOWN IN ELEVATIONS. SEE ELECTRICAL DRAWINGS FOR LOCATION AND MOUNTING DETAILS.



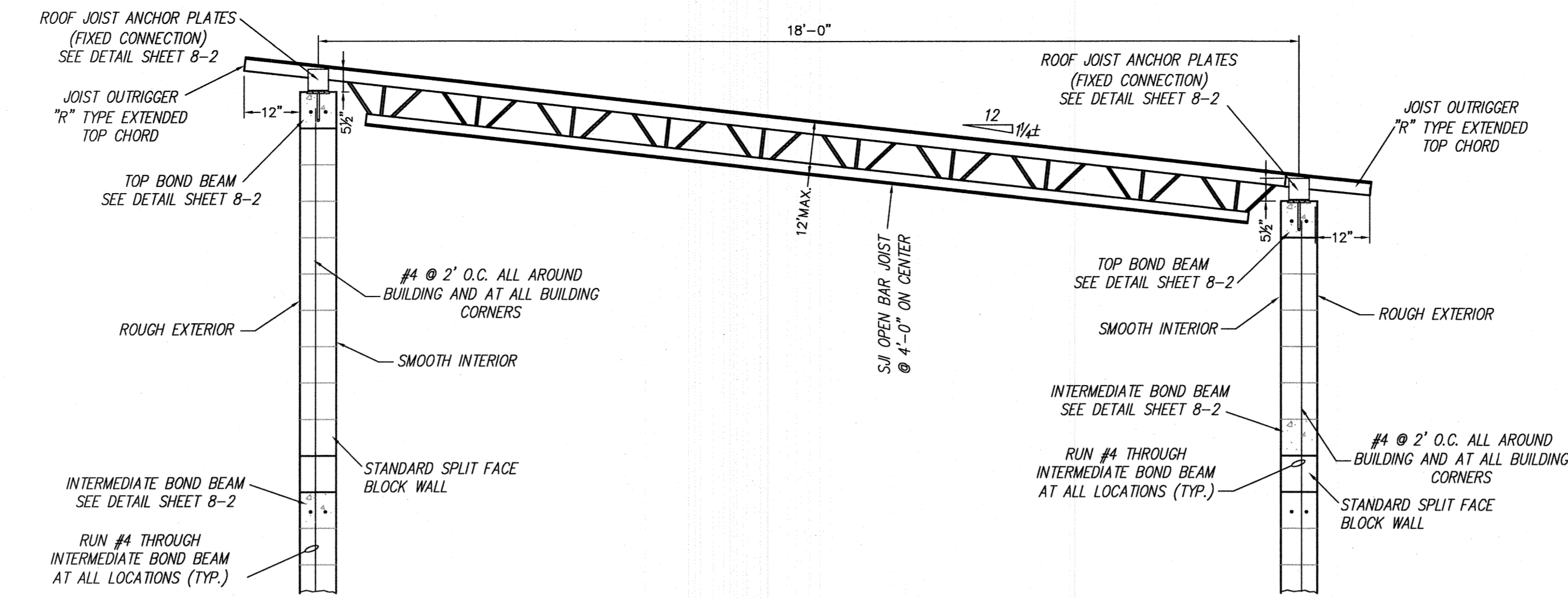
**PUMP STATION "3" STATION ELEVATION (LOOKING SOUTH)**  
SCALE: 1/3"=1'



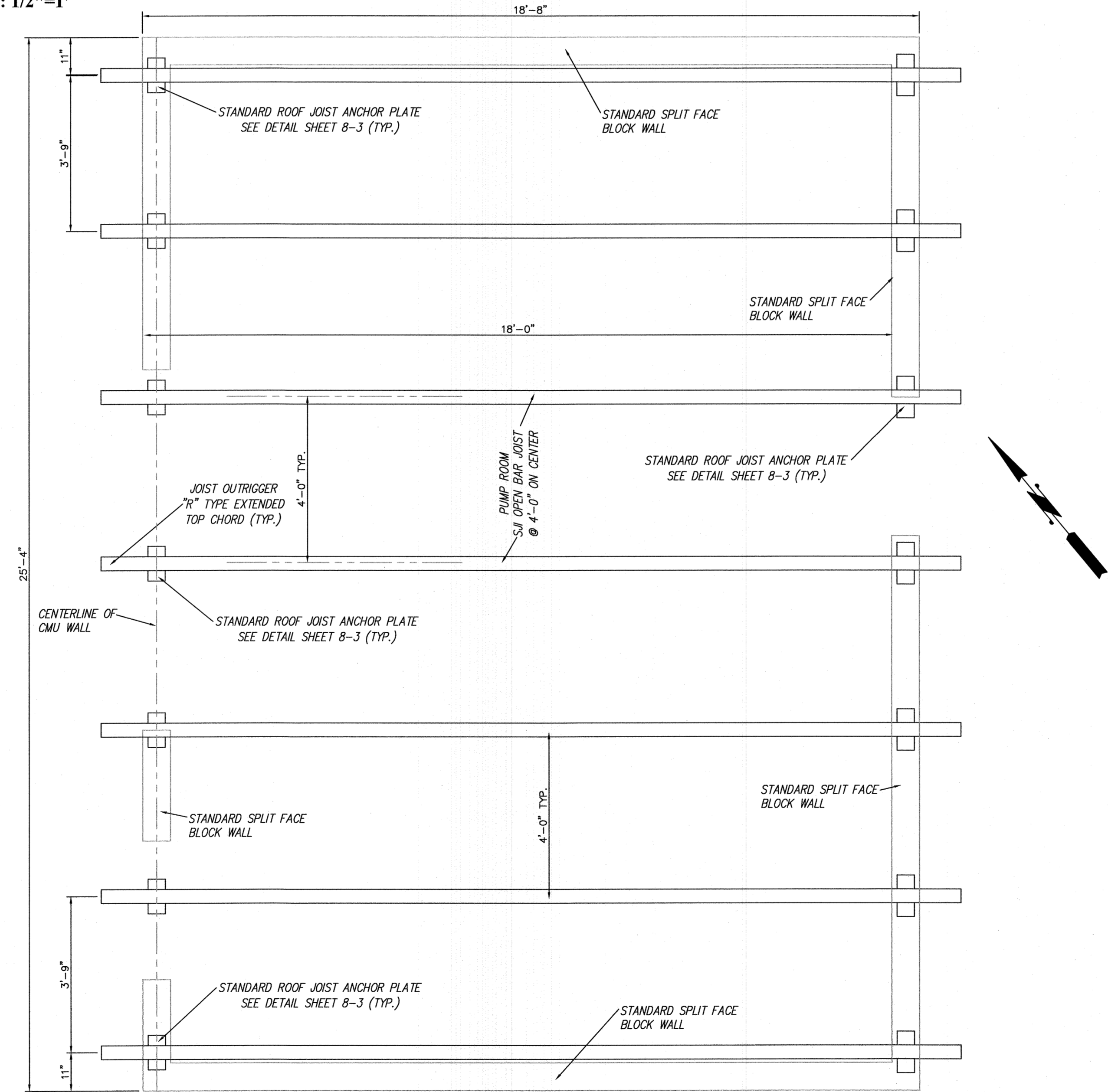
**PUMP STATION "3" STATION ELEVATION (LOOKING WEST)**  
SCALE: 1/3"=1'



**PUMP STATION "3" STATION ELEVATION (LOOKING EAST)**  
SCALE: 1/3"=1'



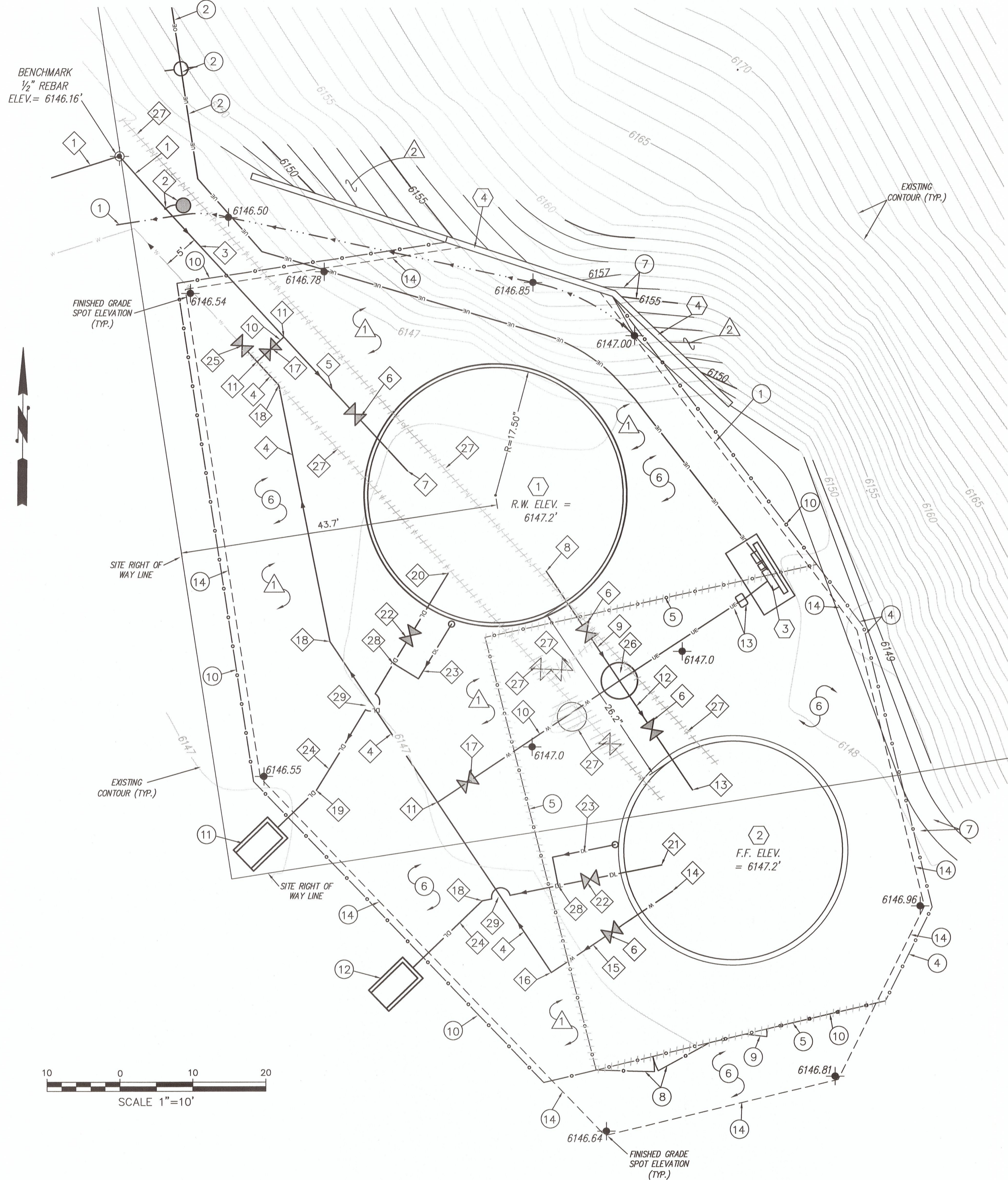
**PUMP STATION "3" ROOF JOIST ELEVATION (LOOKING EAST)**  
**SCALE: 1/2"=1'**



**PUMP STATION "3" ROOF JOIST LAYOUT**  
**SCALE: 1/2"=1'**

**ROOF JOIST NOTES:**

1. JOIST LOADING:  
 - LIVE LOAD = 120 PLF (SNOW LOAD)  
 - DEAD LOAD = 64 PLF\*  
 - UNIFORM LOAD = 184 PLF\*  
 \* ASSUMES A 12 PLF ROOF JOIST (JOIST MANUFACTURER TO ADJUST AS REQ'D)
2. JOIST WEB SHALL BE PER JOIST SUPPLIER WITH A MAXIMUM DEPTH OF 12" AND WIDTH OF 4"
3. JOIST BRIDGING TO BE PROVIDED AND INSTALLED PER JOIST SUPPLIER BEFORE ATTACHING TO WALLS OR GABLE FRAMING AS REQUIRED.



DILKON TANK SITE & GRADING PLAN  
SCALE 1"=10'

DILKON TANK SITE  
SITE, GRADING, & PIPING PLAN KEYED NOTES:

BUILDING/STRUCTURE PAD KEYED NOTES:

- NEW DILKON 0.173-MG TANK,  $\phi=35.0'$ , 24" HIGH (SEE SHEET 7-3 FOR DETAILS)
- EXISTING DILKON 0.127-MG TANK,  $\phi=30.0'$ , 24" HIGH (SEE SHEET 7-4 FOR DETAILS)
- TANK CONTROL WALL F.F. ELEV. =6147.2' (SEE SHEET 7-2 FOR DETAILS)
- CONCRETE RETAINING WALL (SEE SHEET 7-3 FOR DETAILS)

BUILDING PAD KEYED NOTES:

- TANK PAD SHALL BE COMPACTED TO 95% STANDARD PROCTOR. MAXIMUM CONSTRUCTION LOOSE LIFT SHALL NOT EXCEED 10"
- GRADE BEHIND WALL AS SHOWN

CONSTRUCTION KEYED NOTES:

- PROPOSED DRAINAGE DITCH FLOWLINE, GRADE TO DRAIN
- POWER POLE, SERVICE POLE, DOWN GUY AND SERVICE LINES (OVERHEAD OF UNDERGROUND) BY NTUA
- OVERHEAD ELECTRIC LINE BY NTUA (NOT SHOWN ON THIS SHEET)
- EXISTING FENCE TO REMAIN
- REMOVE EXISTING FENCE AND GATES AS SHOWN
- PLACE 5" OF GRAVEL OR BASE COURSE ON NON-WOVEN FABRIC FOR TANK AND STATION YARD.
- NEW FINISHED GRADE CONTOURS FOR TANK SITE (TYP.)
- INSTALL 16" CHAIN LINK (TWO (2)-8" PANELS) ACCESS GATE (1 REQUIRED) PER IHS STANDARD DETAIL W-34
- INSTALL 3" PERSONNEL GATE (1 REQUIRED) PER IHS STANDARD DETAIL W-34
- INSTALL NEW CHAIN LINK FENCE AS SHOWN L=265'± PER IHS STANDARD DETAIL W-34
- NEW TANK DRAIN OUTLET STRUCTURE SEE DETAIL SHEET 7-2
- EXISTING TANK DRAIN OUTLET STRUCTURE SEE DETAIL SHEET 7-2
- UNDERGROUND ELECTRICAL AND CONTROL CONDUITS PER ELECTRICAL DESIGN
- EDGE OF 5" GRAVEL SURFACING.

PIPING KEYED NOTES:

- 12" PVC SDR-21 WATER TRANSMISSION LINES BY OTHERS
- END 12" PVC SDR-21 WATER TRANSMISSION LINE BY OTHERS BEGIN 12" CL 350 DUCTILE IRON YARD PIPING. INSTALL AIR RELEASE STATION PER IHS STANDARD DETAIL W-2 AND 12" SOLID SLEEVE OR TRANSITION COUPLING AS REQUIRED.
- INSTALL 12" CL 350 DUCTILE IRON TANK SITE INLET PIPING
- INSTALL 12" CL 350 DUCTILE IRON TANK SITE OUTLET PIPING
- INSTALL NEW TANK 12" CL 350 DUCTILE IRON INLET PIPING
- INSTALL 12" FLO&MJ GATE VALVE
- INSTALL NEW TANK 12" INLET STUB-OUT PER TANK MANUFACTURER
- INSTALL NEW TANK 12" OUTLET STUB-OUT PER TANK MANUFACTURER
- INSTALL NEW TANK 12" CL 350 DUCTILE IRON OUTLET PIPING
- INSTALL 12" CL 350 DUCTILE IRON TANK SITE BYPASS PIPING (L=35.0')
- INSTALL 12" TEE
- INSTALL 12" CL 350 DUCTILE IRON EXISTING TANK INLET PIPING. REMOVE EXISTING ALTITUDE VALVE VAULT AND PIPING
- REMOVE EXISTING TANK STUB-OUT AND INSTALL 12" INLET STUB-OUT PER TANK MANUFACTURER ON EXISTING TANK
- INSTALL 12" TANK OUTLET STUB-OUT PER TANK MANUFACTURER ON EXISTING TANK
- INSTALL 12" CL 350 DUCTILE IRON EXISTING TANK OUTLET PIPING
- INSTALL 12" 90° ELL
- INSTALL 12" MJ&MJ GATE VALVE (NORMALLY CLOSED)
- INSTALL 12" 22.5° ELL
- INSTALL 12" 11.25° ELL
- INSTALL NEW TANK 10" DRAIN STUB-OUT PER TANK MANUFACTURER
- INSTALL 10" TANK DRAIN STUB-OUT PER TANK MANUFACTURER ON EXISTING TANK. REMOVE OVERFLOW AND OVERFLOW PIPING.
- INSTALL HORIZONTAL 10" FLO&MJ GATE VALVE WITH BEVEL GEAR
- TANK OVERFLOW PIPING PER TANK MANUFACTURER
- INSTALL 10" CL 350 DUCTILE IRON TANK DRAIN LINE
- INSTALL 12" MJ&MJ GATE VALVE (NORMALLY OPEN) AND TIE-IN NEW 12" TANK SITE OUTLET PIPING INTO EXISTING DISTRIBUTION PIPING. PROVIDE FITTINGS AS REQUIRED.
- TANK LEVEL SENSOR VAULT WITH 12" TEE SEE DETAIL ON SHEET 7-2
- REMOVE EXISTING TANK SITE WATERLINE AND DRAIN YARD PIPING AS INDICATED INCLUDING VALVES, VAULTS, AND FITTINGS
- INSTALL 10"x6" MJ TEE
- INSTALL TANK DRAIN LINE ABOVE TANK OUTLET LINE

NOTES:

- CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
- ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. POLYETHYLENE ENCASEMENT JOINTS SHALL BE STAGGERED.
- VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.

SITE, GRADING & PIPING PLAN  
CONSTRUCTION COORDINATES

SITE CORNERS

DESC.	NORTHING	EASTING
1 NE COR.	1604962.93	652232.58
2 NW COR.	1604943.61	652109.09
3 SW COR.	1604745.84	652139.59
4 SE COR.	1604765.01	652263.03
5 BENCH MARK	1604844.70	652124.18

TANK CENTER POINTS

DESC.	NORTHING	EASTING
6 NEW TANK	1604798.42	652175.70
7 EXISTING TANK	1604749.73	652208.27

STRUCTURE CORNERS

DESC.	NORTHING	EASTING
8 W. RETAINING WALL	1604841.61	652142.17
9 RETAINING WALL P.I.	1604825.67	652191.67
10 E. RETAINING WALL	1604810.52	652207.61
11 NW CONTROL WALL	1604791.80	652211.28
12 NE CONTROL WALL	1604785.98	652211.82

FENCE CORNERS/PI'S

DESC.	NORTHING	EASTING
13 NE END	1604825.67	652191.67
14 E TIE-IN	1604788.90	652219.74
15 N END	1604833.03	652168.82
16 NW COR.	1604827.36	652132.08
17 W PI	1604759.18	652142.59
18 SW COR.	1604717.98	652182.29
19 S TIE-IN	1604719.68	652189.47

PI/FITTING DESC	NORTHING	EASTING
20 SOLID SLEEVE/CONNECTION.	1604837.56	652130.51
21 12" TEE (INLET/OUTLET)	1604820.02	652146.74
22 NEW TANK 12" INLET STUB-OUT	1604801.73	652163.64
23 NEW TANK 12" OUTLET STUB-OUT	1604788.03	652182.65
24 12" TEE (TANK CONNECTION)	1604773.04	652192.68
25 EXISTING TANK 12" INLET STUB-OUT	1604758.04	652202.71
26 EXISTING TANK 12" OUTLET STUB-OUT	1604744.17	652199.96
27 12" 90° ELL (OUTLET)	1604733.05	652183.34
28 12" TEE (TANK CONNECTION)	1604756.35	652167.75
29 12" 22.5° ELL (OUTLET)	1604778.35	652153.03
30 12" 22.5° ELL (OUTLET)	1604813.42	652146.03
31 12" TEE (INLET/OUTLET)	1604816.63	652143.06
32 12"x6" REDUCER TIE-IN TO EXISTING WATERLINE	1604818.83	652141.03
33 NEW TANK 10" DRAIN STUB-OUT	1604787.73	652169.22
34 10" 11.25° ELL (NEW TANK DRAIN)	1604757.97	652151.18
35 NEW TANK DRAIN OUTLET	1604752.53	652145.53
36 EXISTING TANK 10" DRAIN STUB-OUT	1604747.77	652198.47
37 10" 22.5° ELL (EXISTING TANK DRAIN)	1604742.87	652173.88
38 EXISTING TANK DRAIN OUTLET	1604733.35	652164.01

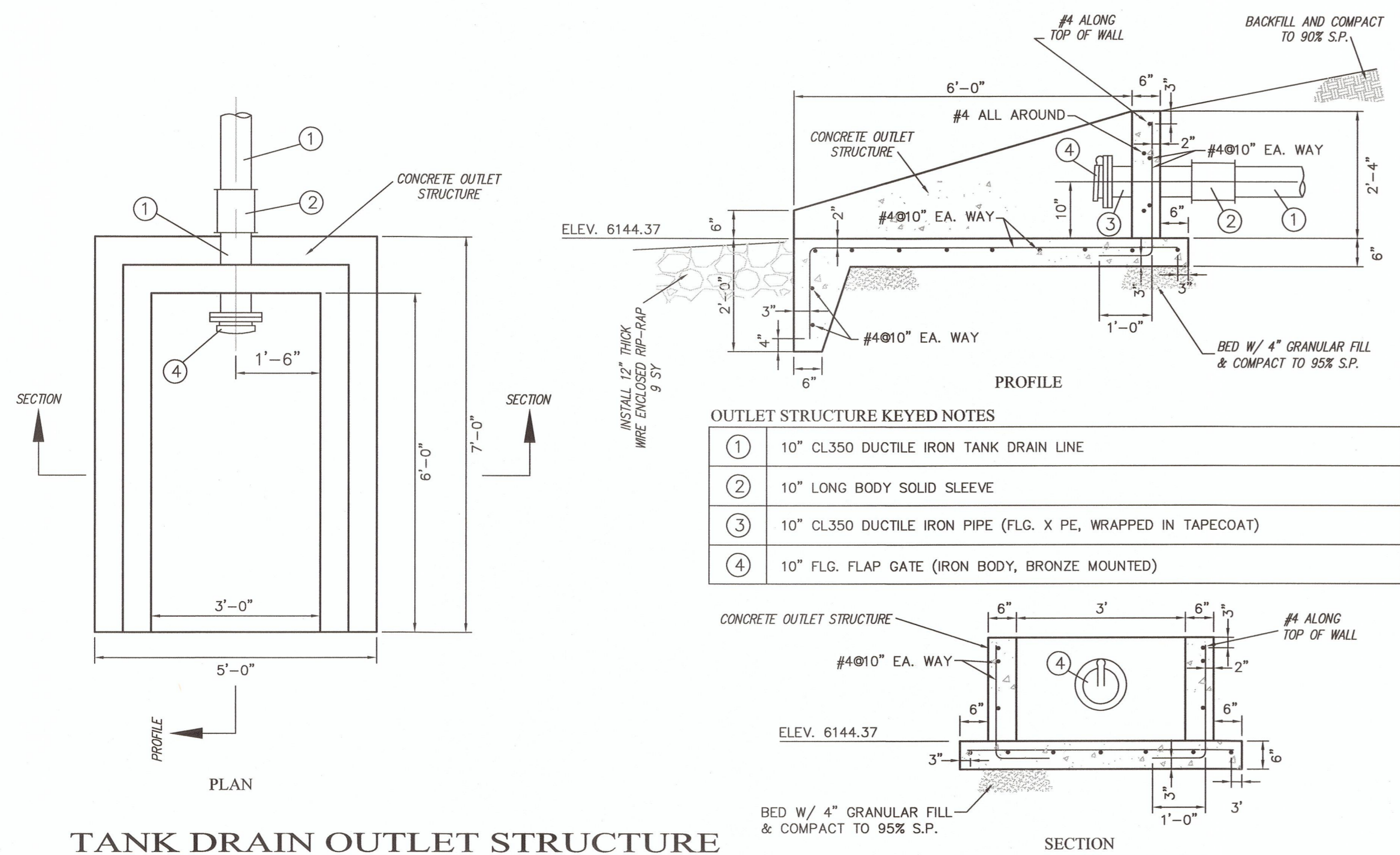
SURVEY NOTES:

- COORDINATES SHOWN ARE REFERENCED TO A PROJECT CONTROL SYSTEM WHICH IS BASED ON NAD 83 DATUM REFERENCED TO ARIZONA STATE PLANE EAST ZONE "SPC(0201 AZE)" GROUND COORDINATES WITH A COMBINED FACTOR OF 0.999671948.
- BEARINGS SHOWN ARE GRID.
- ELEVATIONS ARE BASED ON NAVD88/GEOD18 (VERTICAL DATUM)

ESTIMATED EARTHWORK QUANTITIES

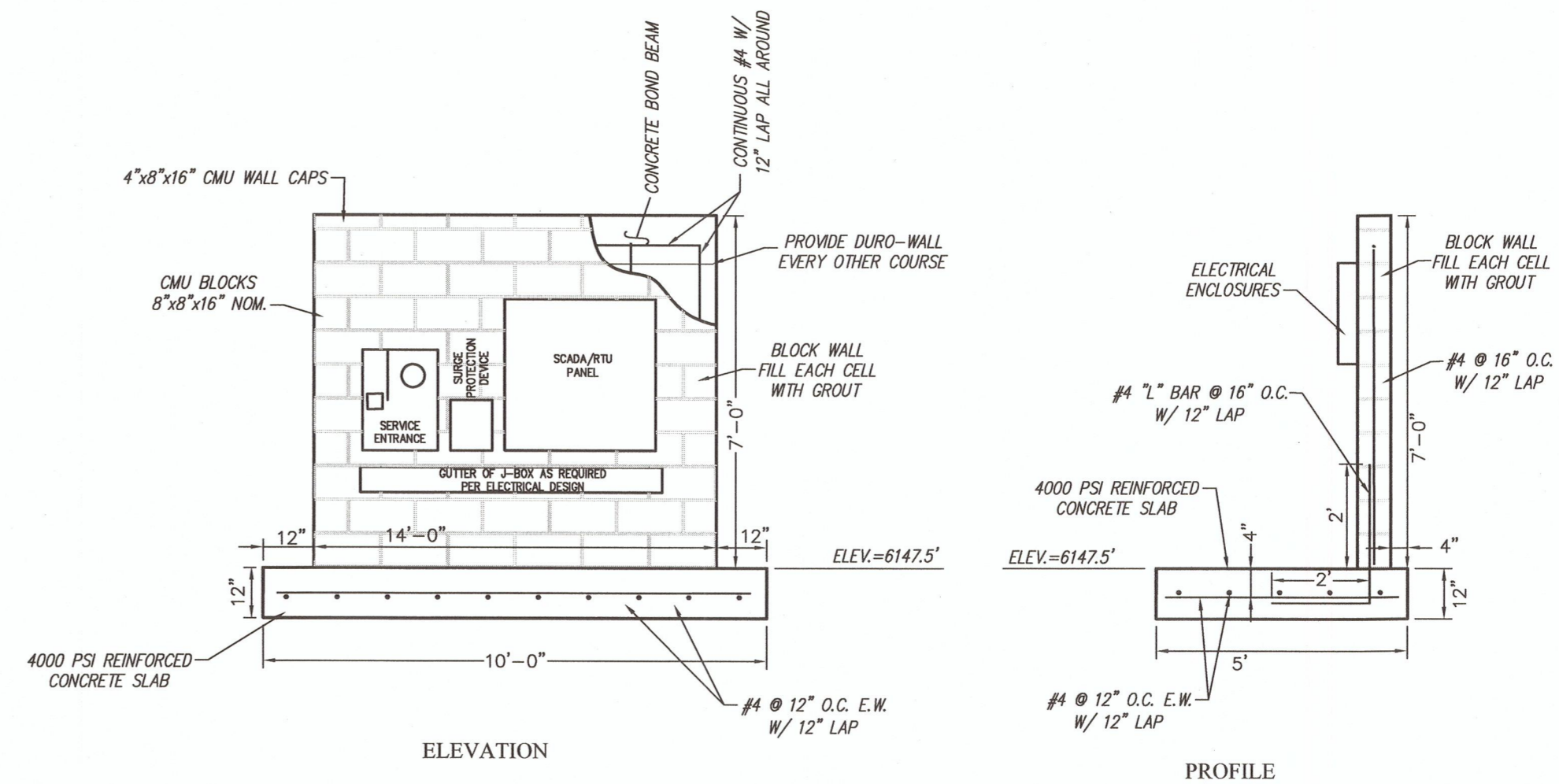
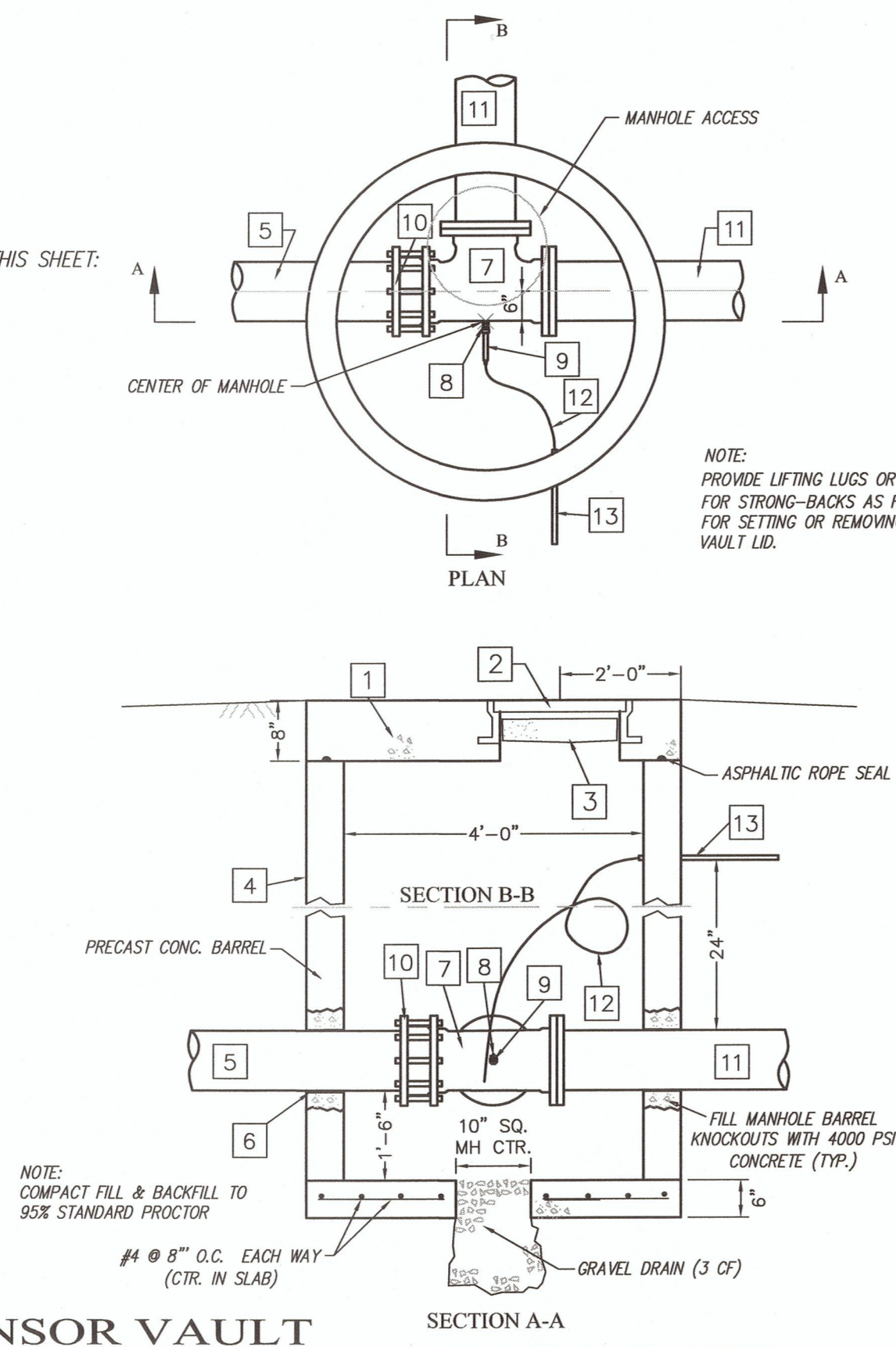
ITEM	EXCAVATED IN-SITU VOLUME	EMBANKMENT EARTHWORK VOLUME	EXCESS IN-SITU VOLUME
NATIVE MATERIAL	204 CY	30 CY	174 CY
IMPORTED MATERIAL			
ENGINEERED FILL MATERIAL	—	0 CY	—
GRAVEL SURFACING	—	96 CY	—
TOTAL IMPORTED MATERIAL	—	96 CY	—
TOTALS	204 CY	124 CY	174 CY

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED OR NATIVE MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.



KEYED NOTES FOR LEVEL SENSOR VAULT THIS SHEET:

- 1 PRECAST H-20 TRAFFIC RATED CONCRETE FLAT TOP MANHOLE LID
- 2 24" TRAFFIC MODEL MANHOLE RING & COVER CAST IN CONCRETE FLAT TOP LID
- 3 4" FOAM INSULATING PAD BY MUELLER OR EQUAL
- 4 APPLY TWO COATS DAMP PROOFING AS HENRY HE 794 OR EQUAL
- 5 PLAIN END x PLAIN END DUCTILE IRON PIPE, MINIMUM LENGTH=6', WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE
- 6 30# FELT WRAP AROUND PIPE (TYP.)
- 7 12" FLANGED TEE TAP AS REQUIRED FOR 3/4" CORP. STOP
- 8 3/4" MUELLER 300 BALL CORPORATION VALVE AWWA MALE IRON PIPE THREAD x FEMALE IRON PIPE THREAD
- 9 NON-SUBMERSIBLE PRESSURE TRANSDUCER KPS SERIES 30 W/ LIGHTNING PROTECTION, TANK LEVEL SENSOR 0-15 PSI
- 10 12" MEGA-FLANGE ADAPTER OR EQUAL
- 11 FLG.XP.E. DUCTILE IRON PIPE, MINIMUM LENGTH=6', WRAP IN TWO (2) LAYERS OF 8 MIL. POLYETHYLENE
- 12 TRANSDUCER CABLE AS REQUIRED
- 13 ELECTRICAL CONDUIT AND MANHOLE PENETRATION PER ELECTRICAL DESIGN

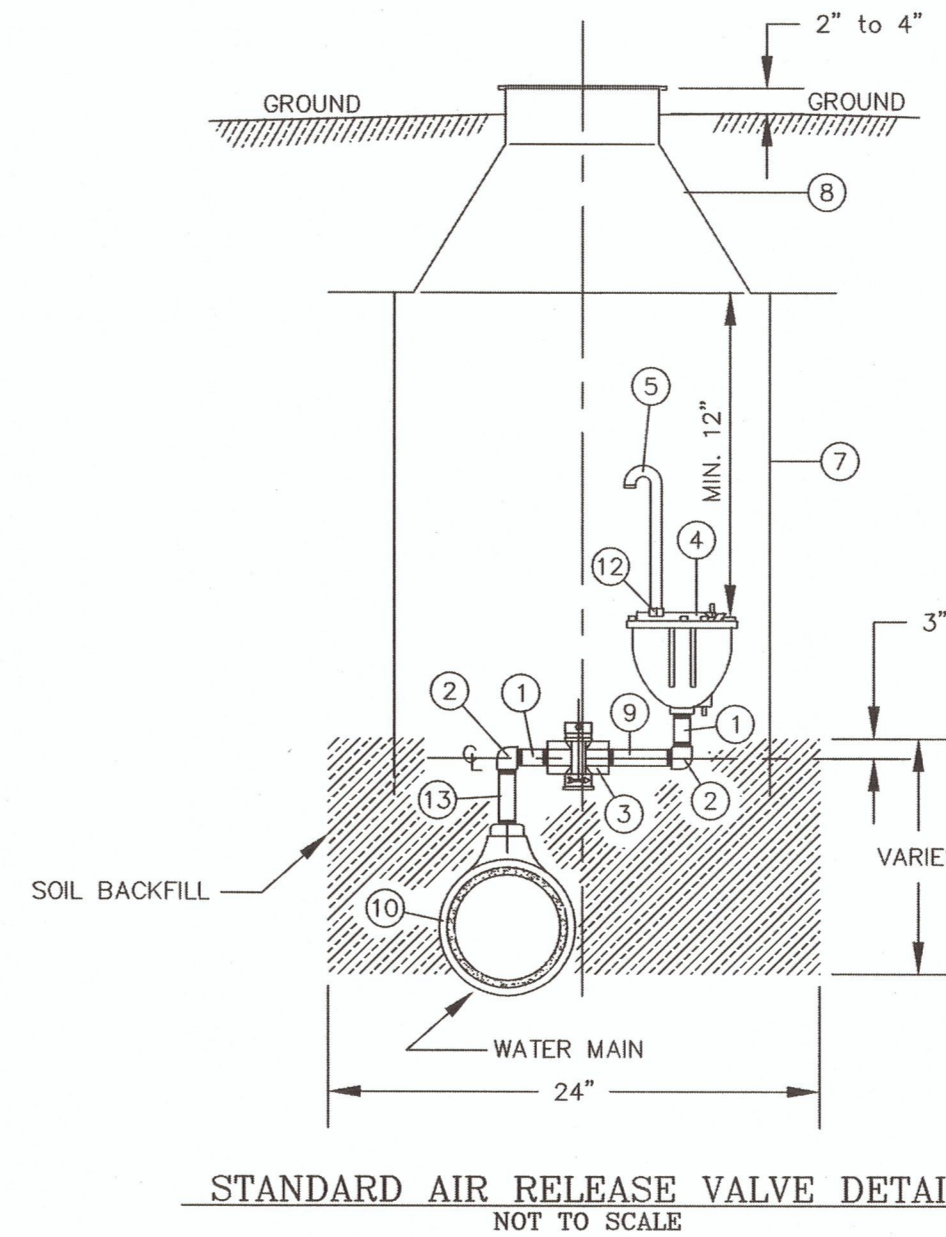


ELECTRICAL AND CONTROL PANEL WALL PAD COORDS:

CORNER	NORTHING	EASTING
NE	1604793.74	652205.51
NW	1604785.98	652211.82
SW	1604790.59	652201.63
SE	1604782.83	652207.94

## TANK CONTROL WALL DETAILS

SCALE 1"=3'



BILL OF MATERIALS		
ITEM	QUAN.	DESCRIPTION
1.	2	NIPPLE, 1" x CLOSE, GALV.
2.	2	ELBOW, 1"-90°, GALV.
3.	1	CURBSTOP VALVE, 1" FIPT
4.	1	AIR RELEASE VALVE, 1" IN x 1/2" OUT BRAND NAME
5.	1	3/8" I.D. COPPER PIPE, 12"
7.	1	METER BOX, 20" DIAMETER
8.	1	METER BOX LID WITH FROST COVER
9.	1	NIPPLE, 1" x 3", GALV.
*10.	1	TEE OR SADDLE, 1" TAP
12.	1	ADAPTER, 1/2" MIPT x 1/2" COMP.
13.	1	NIPPLE, 1" x 6", GALV.

\* NOT ON STANDARD LIST

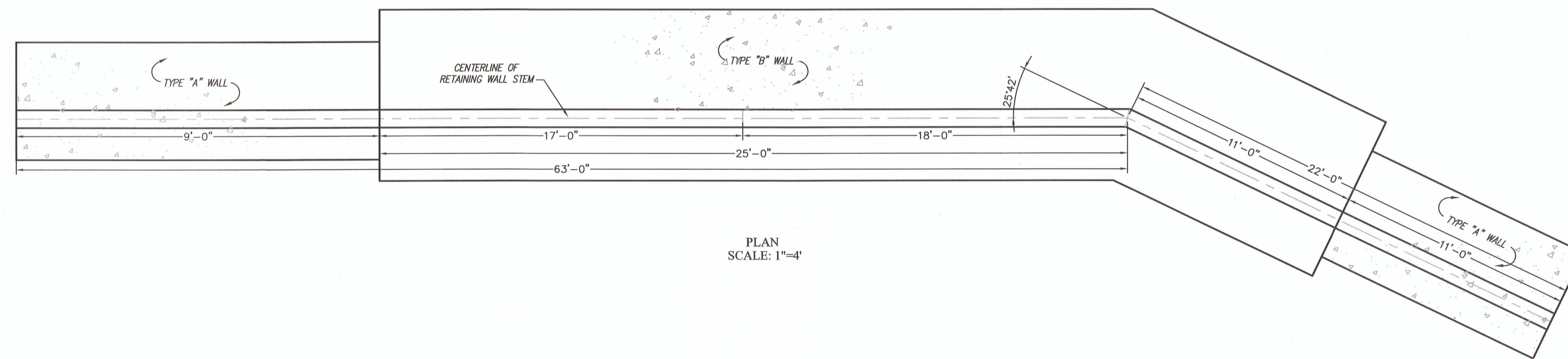
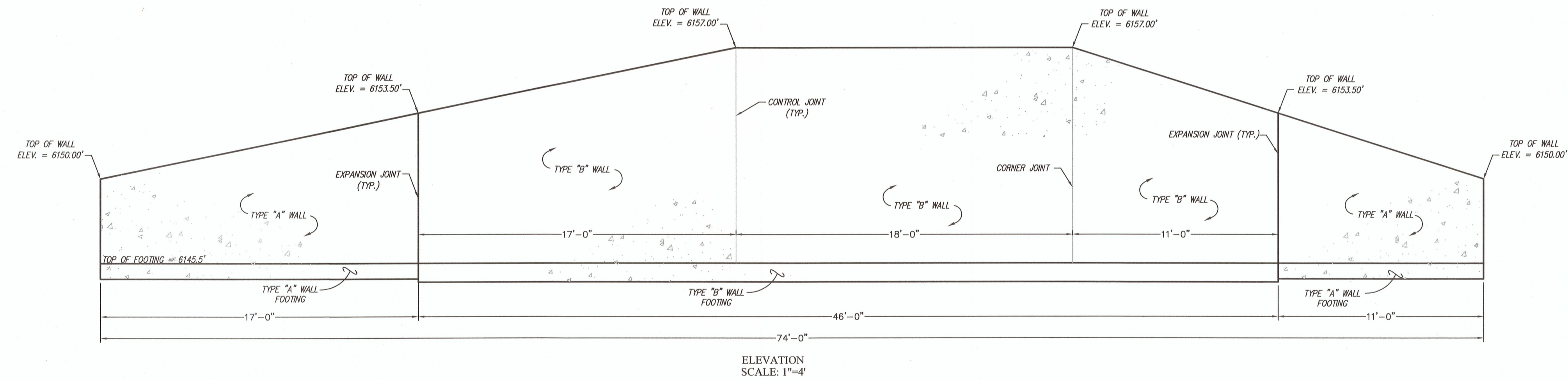
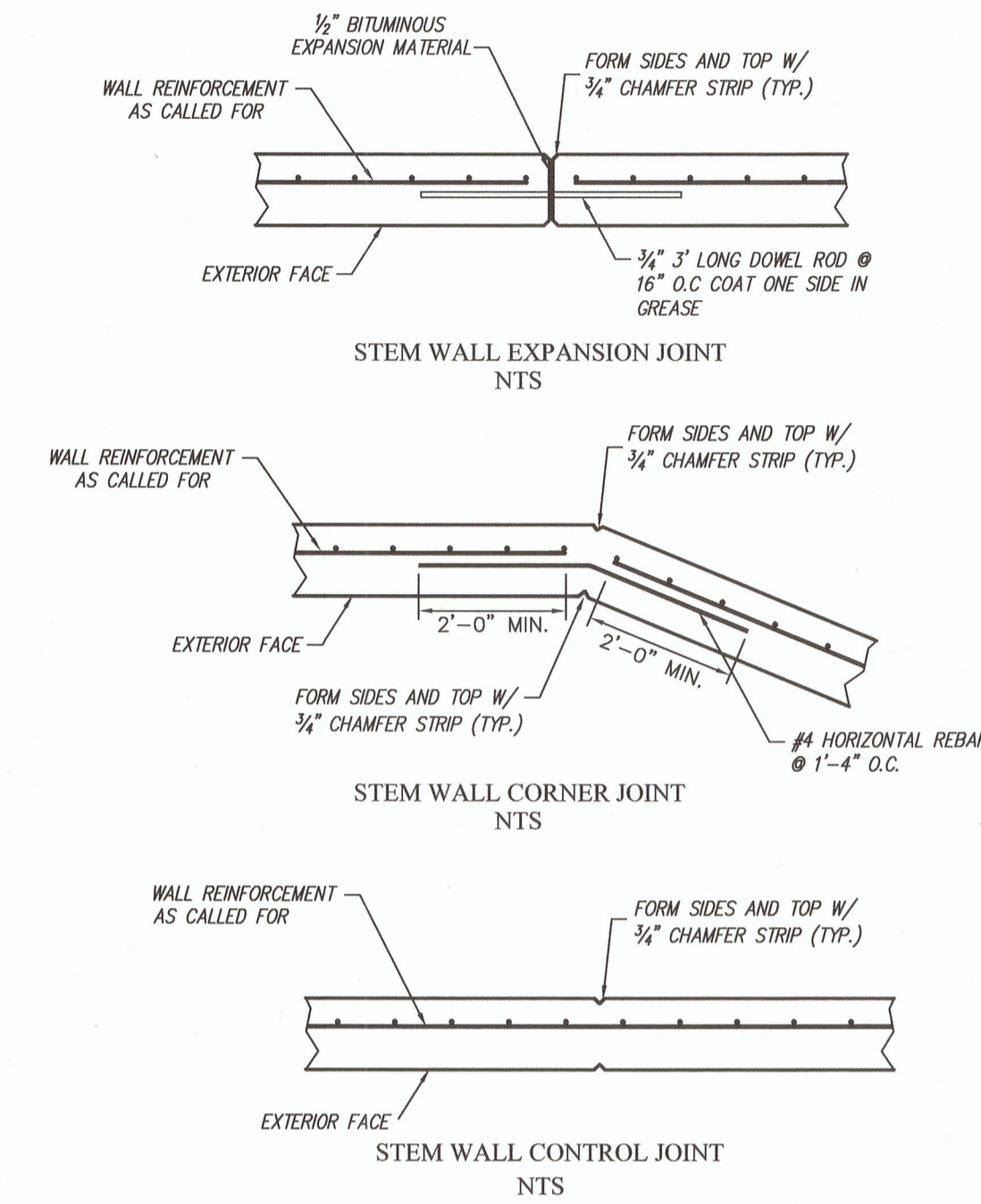
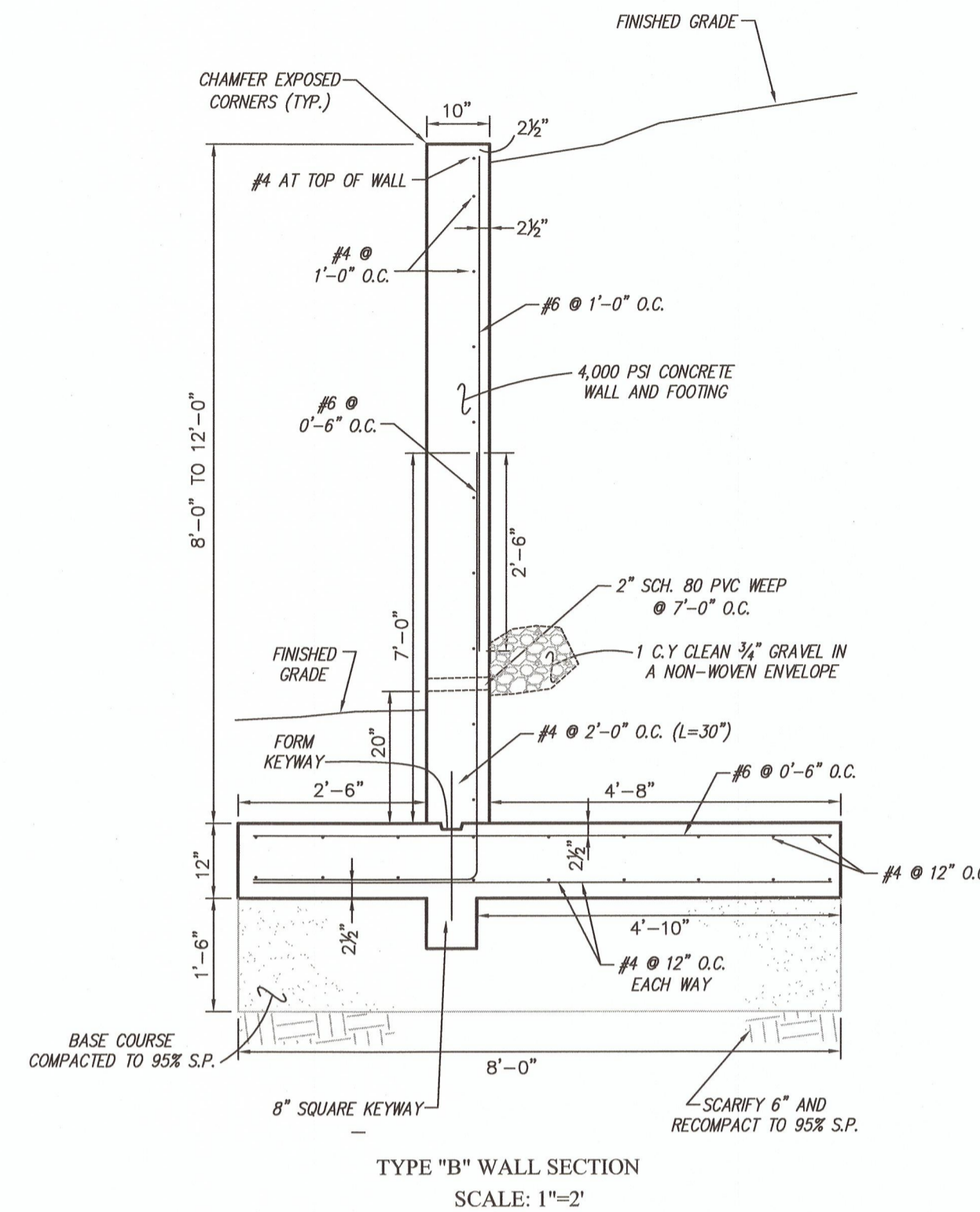
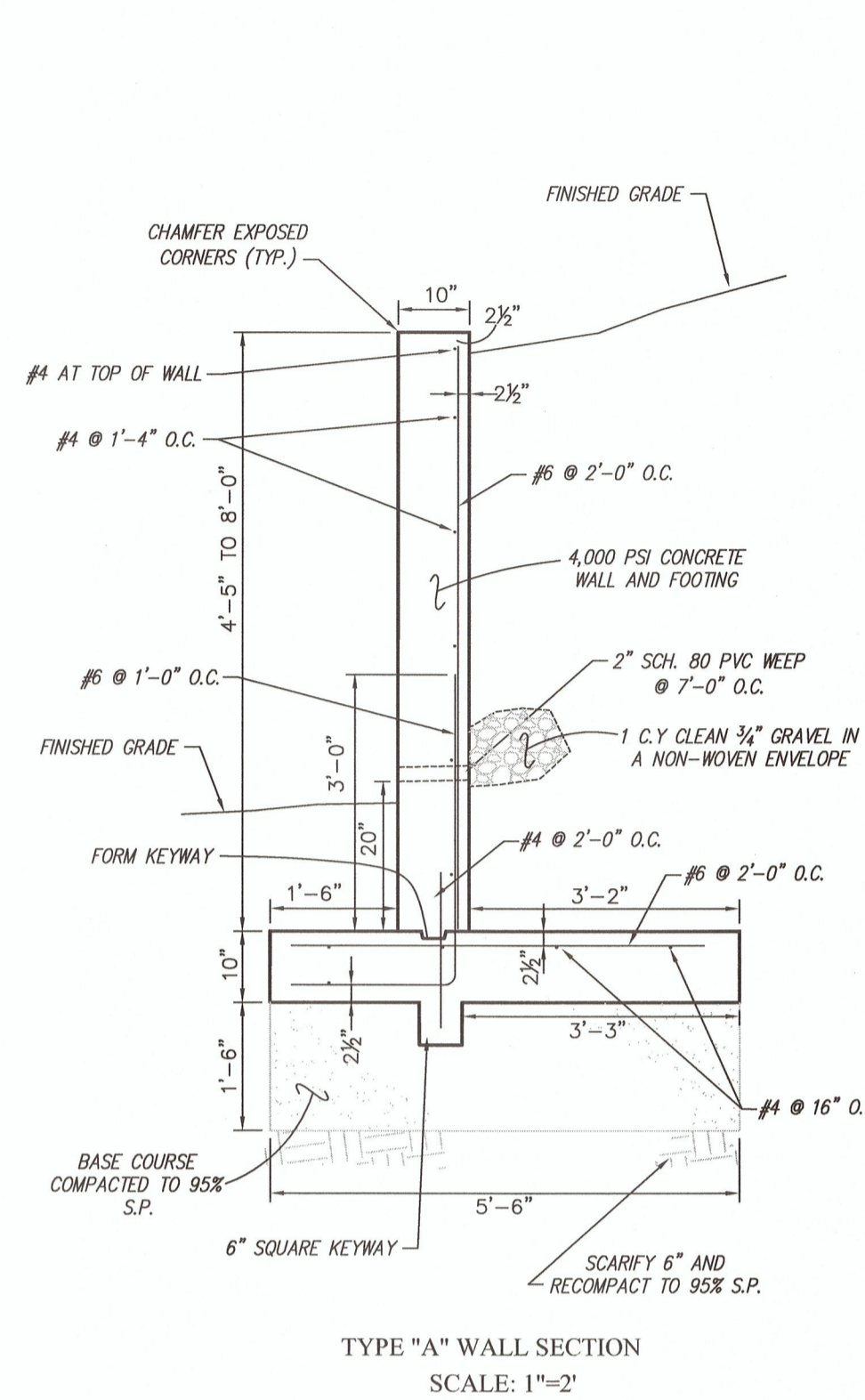
REVISION	DATE	DESCRIPTION	BY
2	8/01	DELETED STATIONARY ROD AND GRAVEL	R.B.M.
1	7/89	STANDARDIZED	B.M.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
 PUBLIC HEALTH SERVICE  
 INDIAN HEALTH SERVICE  
 NAVAJO NATION

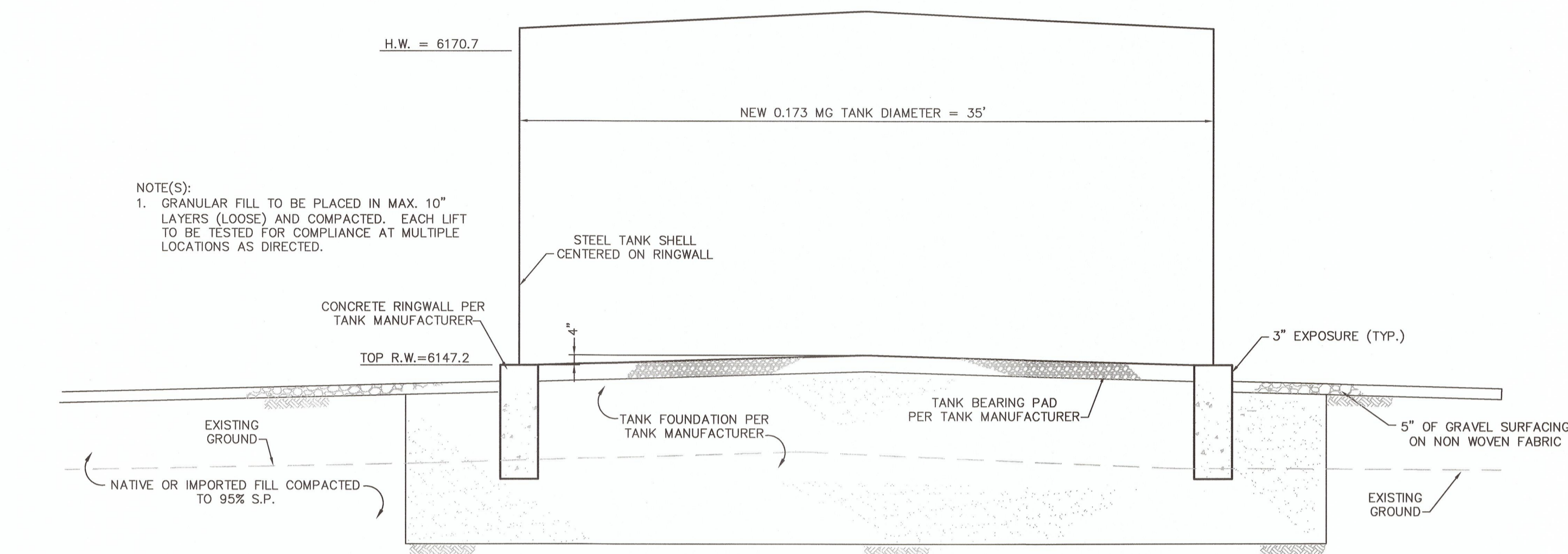
STANDARD DRAWING NO. W-2  
 AIR RELEASE VALVE  
 LIST NO. 001434

OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING  
 NAVAJO AREA OFFICE, WINDOW ROCK, ARIZONA

DRAWN BY: L.S. CHECKED BY: P.S. APPR. BY: P.S. AUTOCAD  
 DATE: 11/92 DATE: 8/93 DATE: 8/93 DRAWING



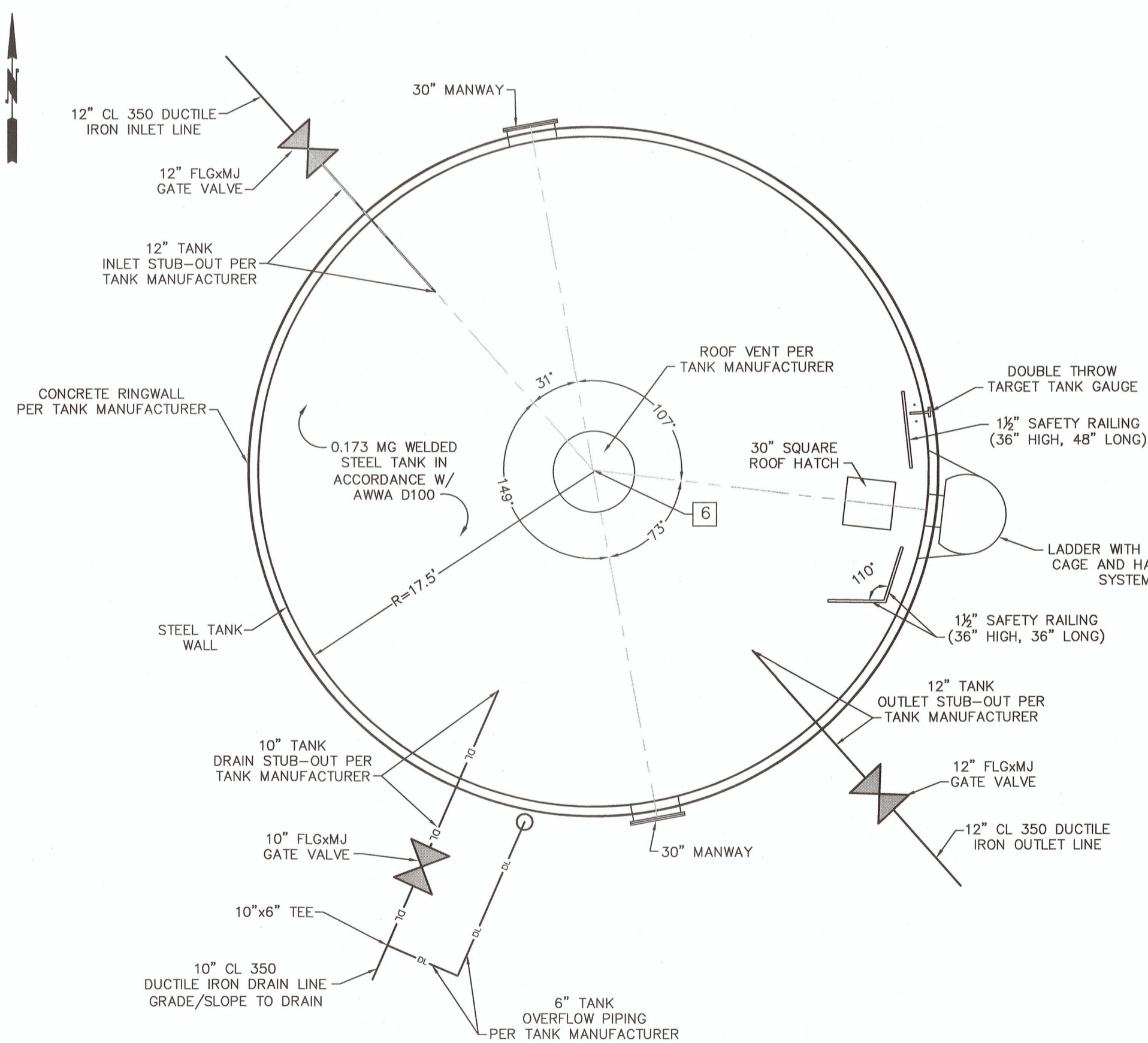
# CONCRETE RETAINING WALL DETAILS SCALE: VARIES



VERTICAL SECTION

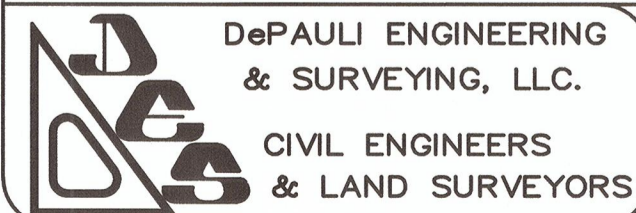
### DILKON TANK SITE NEW 0.173-MG TANK GENERAL CONFIGURATION SECTION

NTS



### DILKON TANK SITE NEW 0.173-MG TANK PLAN

NTS

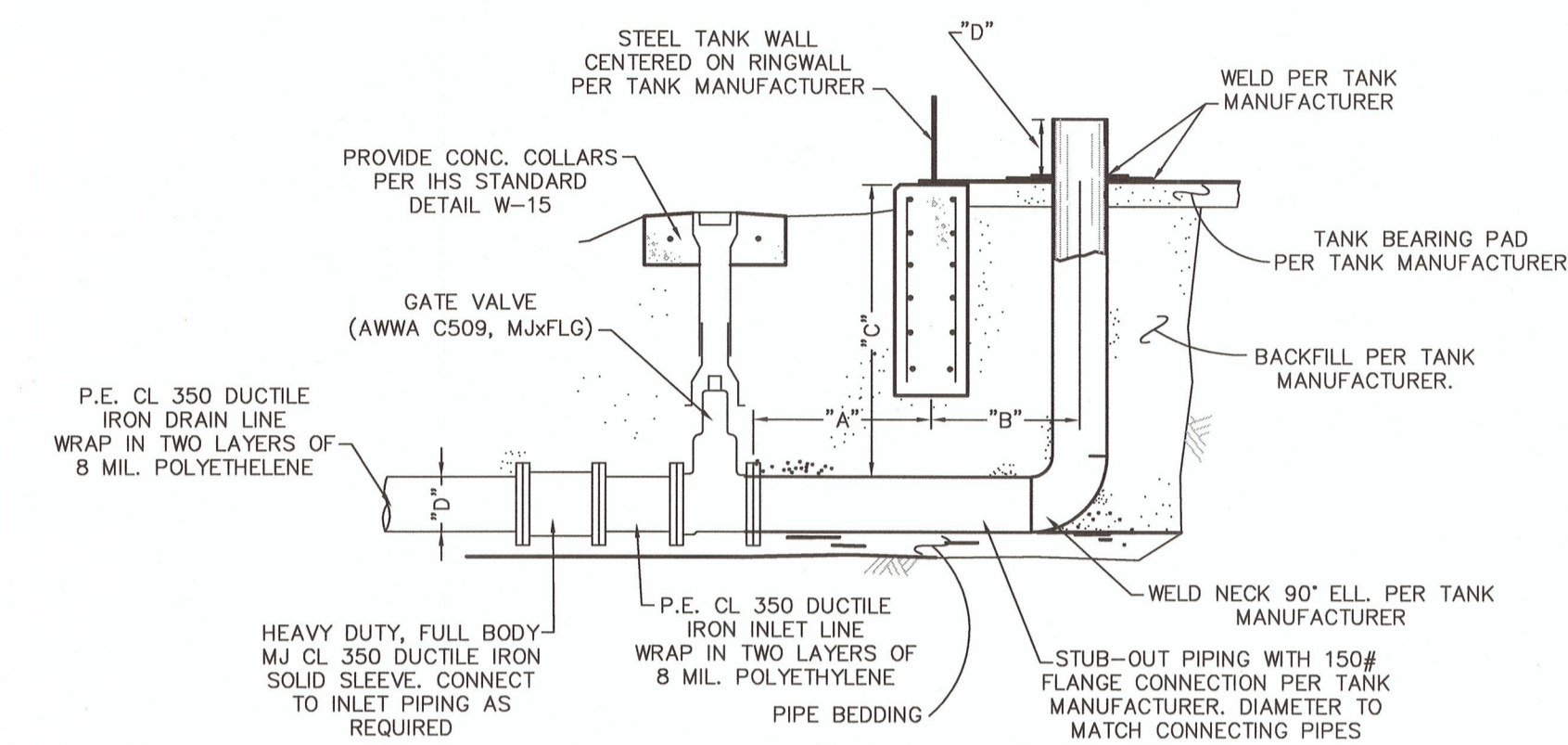


for  
**NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY**

for the  
**INDIAN HEALTH SERVICE  
WINSLOW SERVICE UNIT  
WINSLOW, ARIZONA**

NO.	BY	DATE

- NOTES:
1. CONCRETE RINGWALL FOUNDATION PER TANK MANUFACTURER
  2. SEE DIMENSION DETAIL THIS SHEET FOR STUBOUT DIMENSIONS "A", "B", "C", AND "D"
  3. PENETRATE CONCRETE RINGWALL AS REQUIRED WITH STUBOUT PIPING (NOT SHOWN). PIPING PENETRATION TO BE PER TANK MANUFACTURER.



### DILKON TANK SITE NEW 0.173 TANK STUB-OUT DETAIL

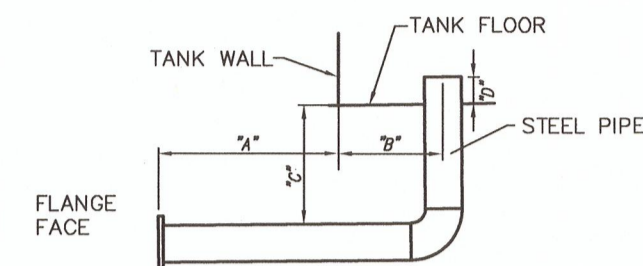
NTS

NOTES:

1. CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
2. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASUREMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASUREMENT. LAYER JOINTS SHALL BE STAGGERED.
4. SEE SHEET 7-1 FOR YARD PIPING (WATERLINES AND DRAIN LINES)
5. VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
6. RESERVOIR APPURTENANCES TO BE ORIENTED IN THE THE FIELD AS DIRECTED.

### NEW 0.173 MG TANK COORDS

PI/FITTING DESC	NORTHING	EASTING
6 TANK CENTER	1604798.42	652175.70
22 12" TANK INLET STUB-OUT	1604801.73	652163.64
23 12" TANK OUTLET STUB-OUT	1604788.03	652182.65
33 10" DRAIN STUB-OUT	1604787.73	652169.22



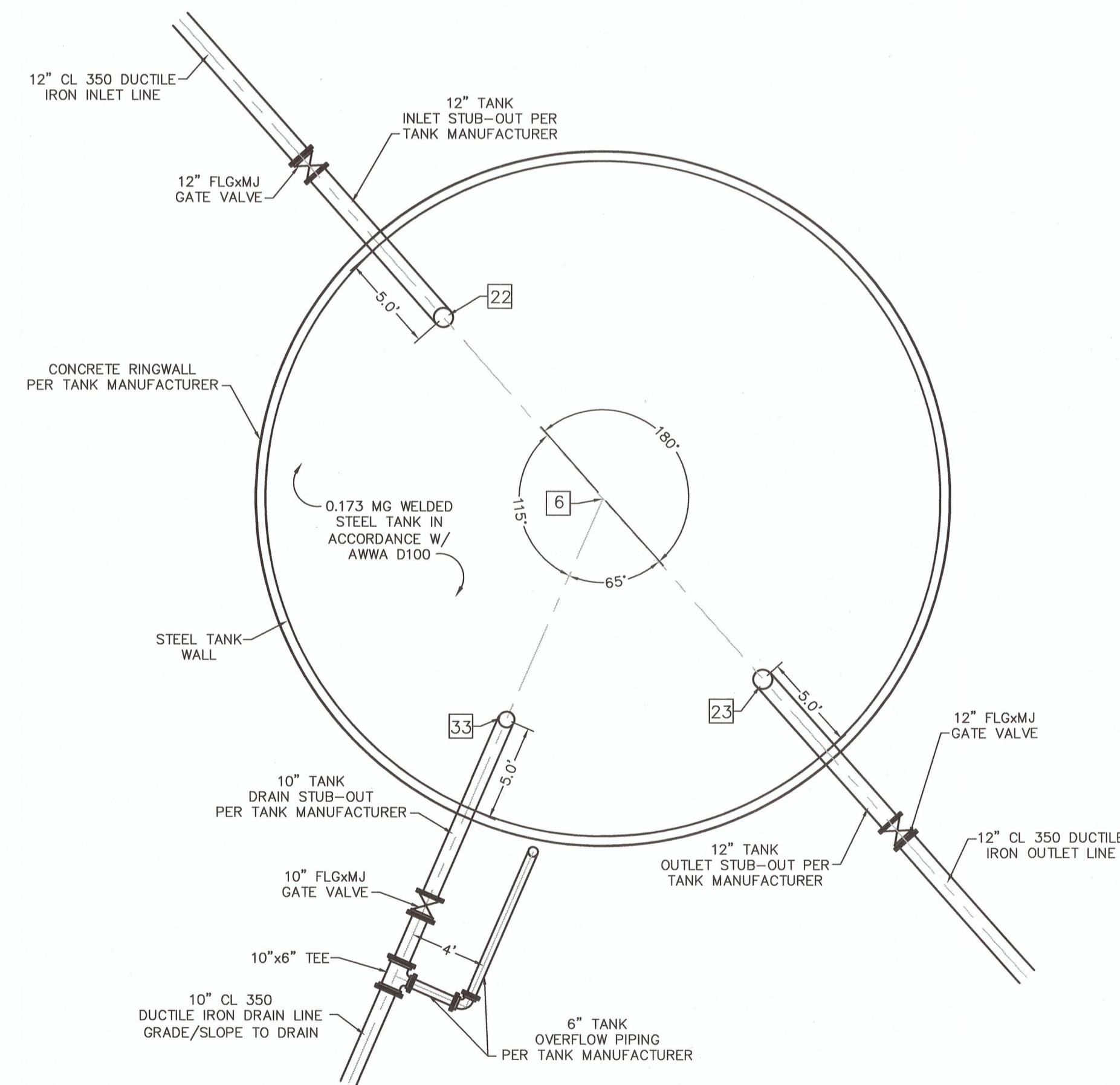
STUB-OUT	DIA.	DIMENSION			
		A	B	C	D
INLET	12"	4.50'	5.00'	4.0'	1.0'
OUTLET	12"	4.50'	5.00'	4.0'	0.5'
DRAIN	10"	4.50'	5.00'	2.0'	0.0'

### STUB-OUT DIMENSIONS

- NOTES:
1. SEE DETAIL THIS SHEET FOR STUBOUT LAYOUT CONFIGURATION

### TANK STUBOUT DIMENSION DETAILS

NTS



### DILKON TANK SITE NEW 0.173-MG TANK STUBOUT LAYOUT

NTS

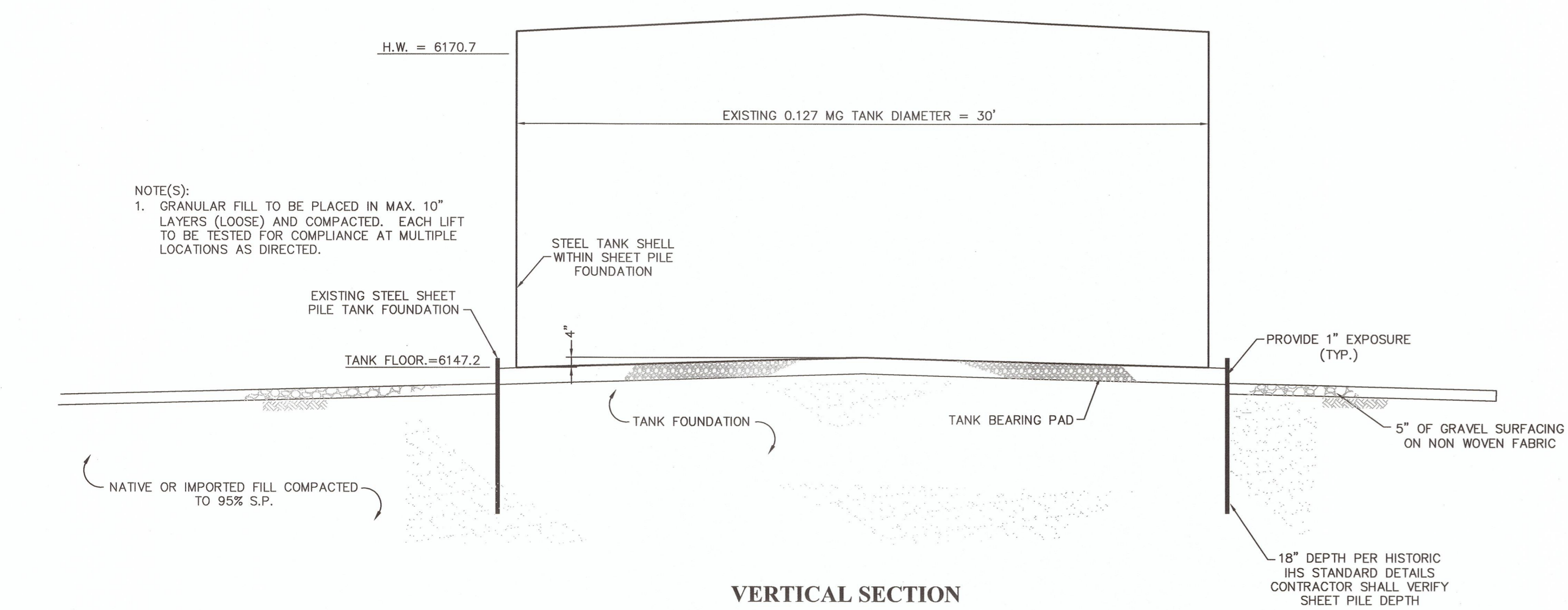
INDIAN HEALTH SERVICE AND  
NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY  
**LEUPP-DILKON WATER SUPPLY SYSTEM**

**DILKON NEW TANK  
GENERAL TANK LAYOUT**

SCALE:	SHOWN
DATE:	DEC. 2021
DRAWN BY:	KAS
CHECKED BY:	MDP

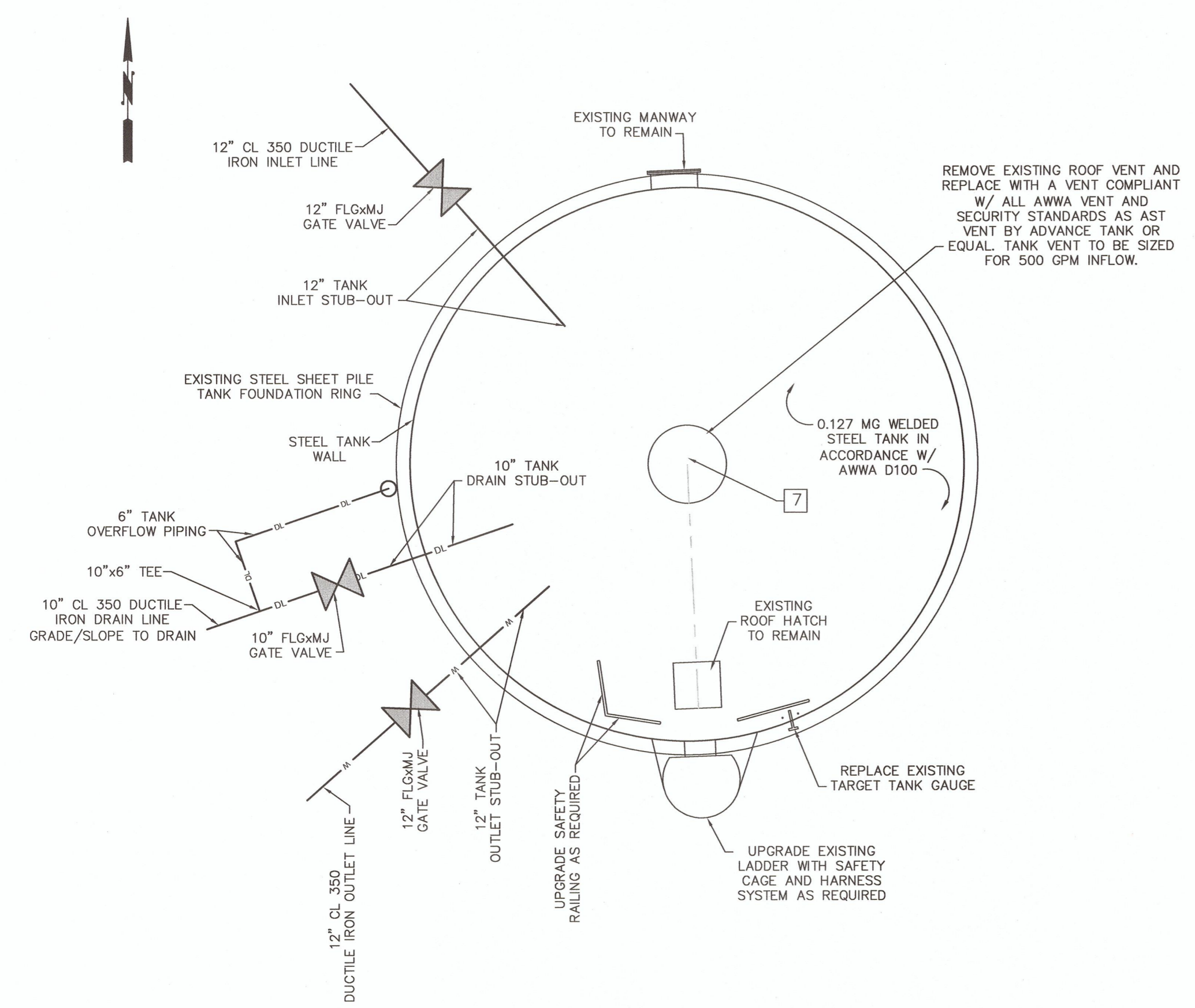
**SHEET  
7 - 4**





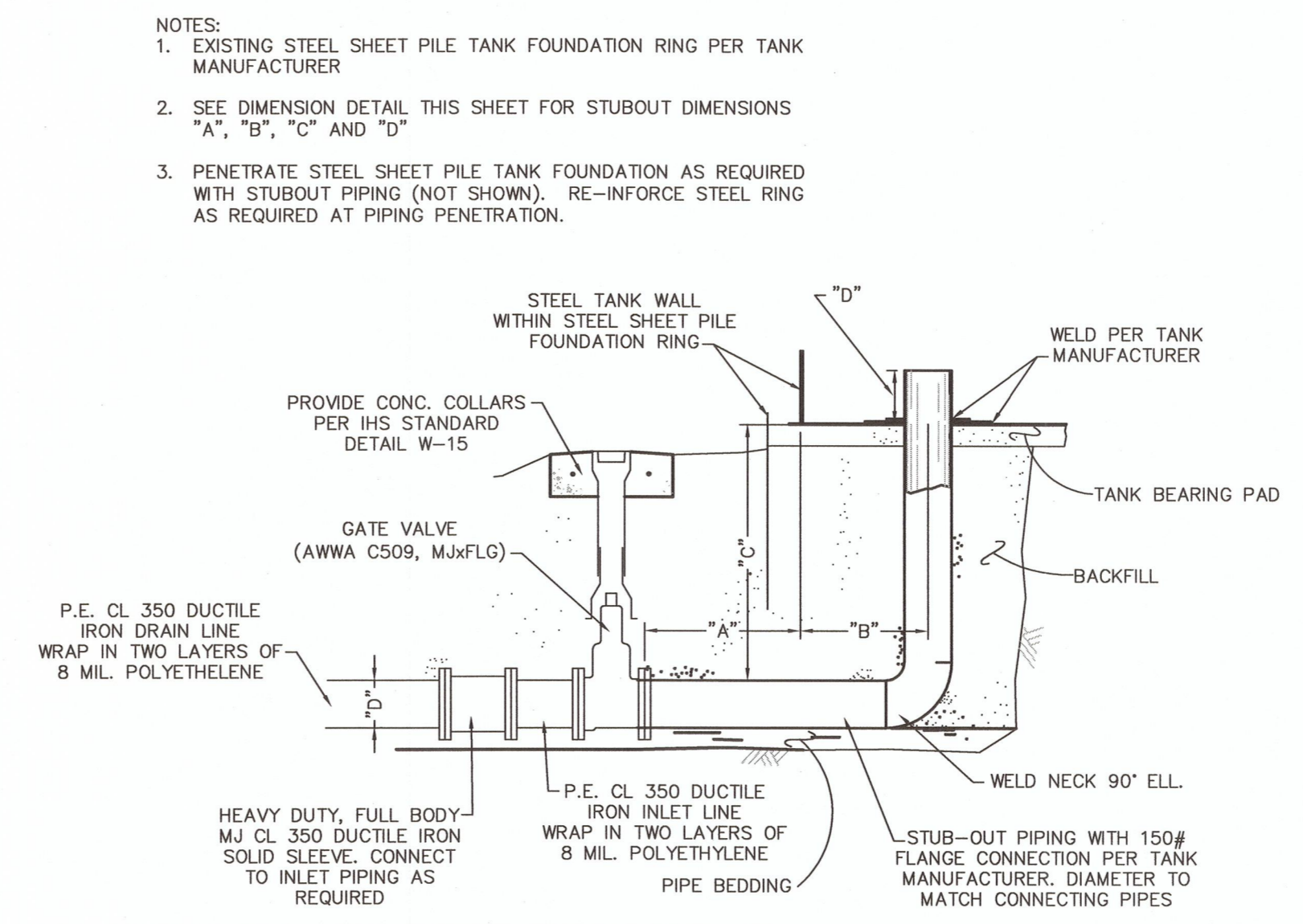
DILKON TANK SITE EXISTING 0.127-MG TANK GENERAL CONFIGURATION SECTION

NTS



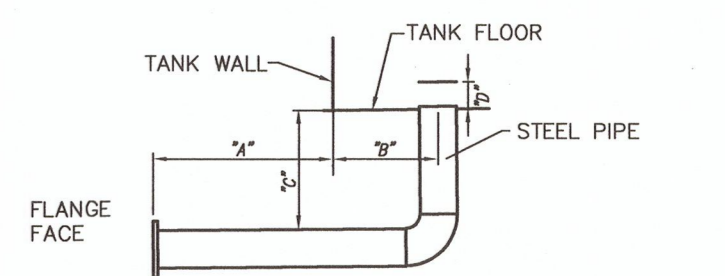
DILKON TANK SITE EXISTING 0.127-MG TANK PLAN

NTS



DILKON TANK SITE EXISTING 0.127 TANK STUB-OUT DETAIL

NTS



STUB-OUT	DIA.	DIMENSION			
		A	B	C	D
INLET	12"	4.50'	5.00'	4.0'	1.0'
OUTLET	12"	4.50'	5.00'	4.0'	0.5'
DRAIN	10"	4.50'	5.00'	2.0'	0.0'

STUB-OUT DIMENSIONS

NOTES:  
1. SEE DETAIL THIS SHEET FOR STUBOUT LAYOUT CONFIGURATION

TANK STUBOUT DIMENSION DETAILS

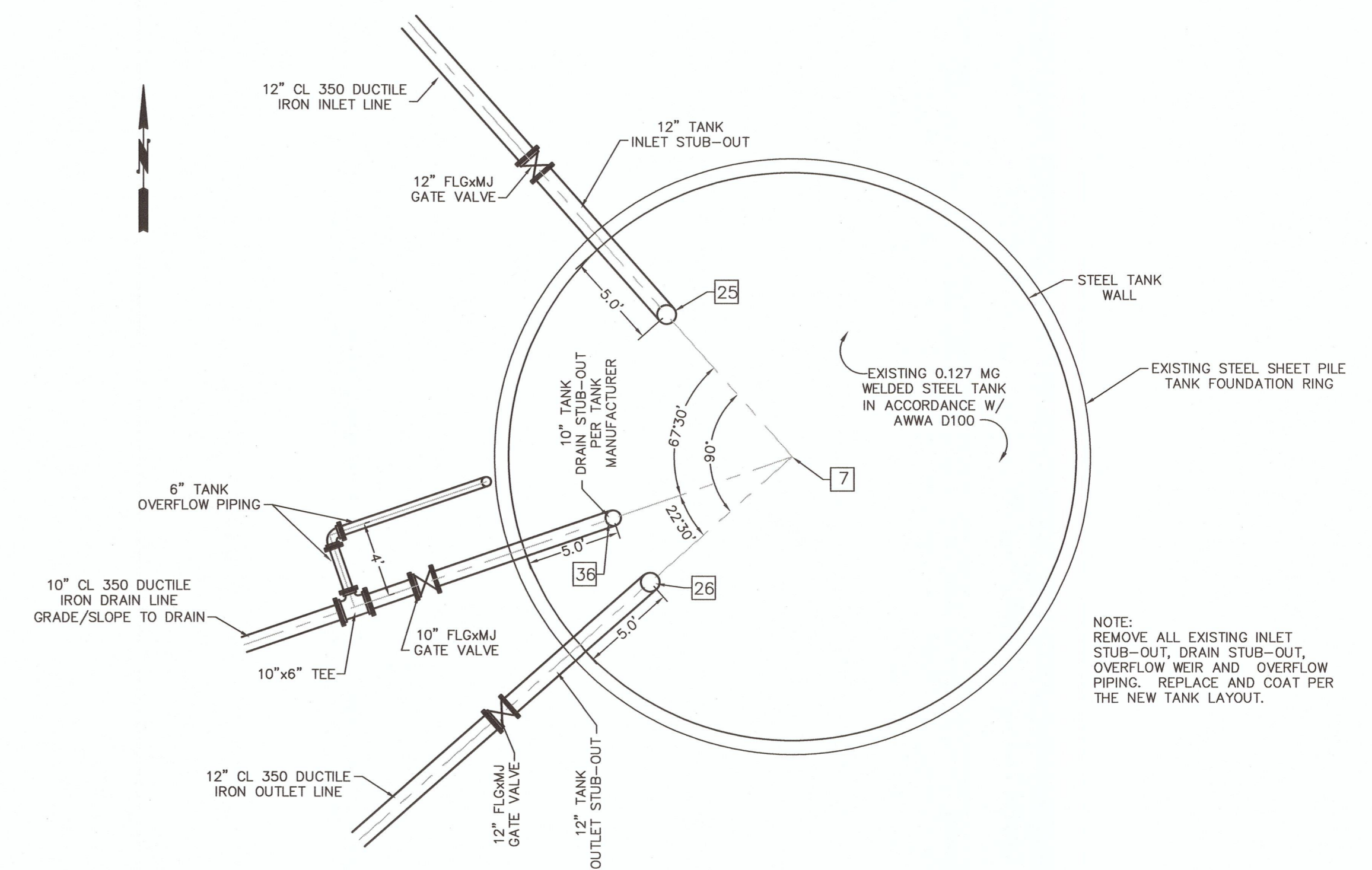
NTS

NOTES:

- CONTRACTOR SHALL DEVELOP, SECURE APPROVAL, AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN.
- FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, NATIVE FILL UNDER AND WITHIN 5' OF BUILDINGS AND TANK HORIZONTALLY SHALL BE REMOVED AND RE-COMPACTED AT 95% S.P. TO A DEPTH OF 4' BELOW FINISHED FLOOR.
- ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYERS OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
- SEE SHEET 7-1 FOR YARD PIPING (WATERLINES AND DRAIN LINES)
- VALVES ARE LOCATED 5' HORIZONTAL FROM NEAREST FITTING OR TANK RINGWALL UNLESS OTHERWISE SHOWN, DETAILED, OR NOTED.
- RESERVOIR APPURTENANCES TO BE ORIENTED IN THE THE FIELD AS DIRECTED.

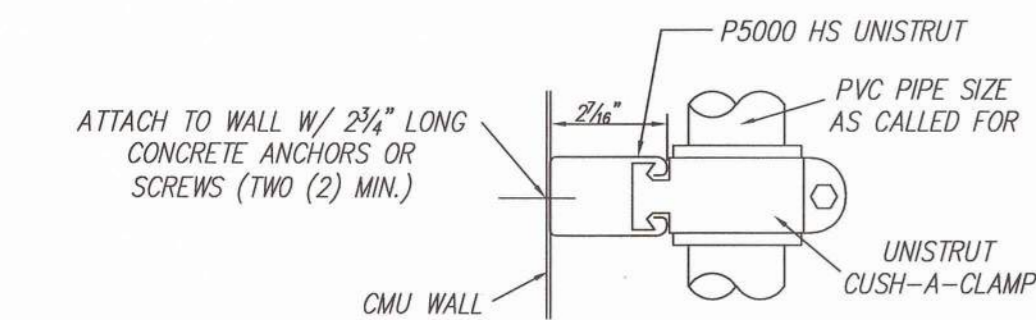
EXISTING 0.127 MG TANK COORDS

PI/FITTING DESC	NORTHING	EASTING
7 TANK CENTER	1604749.73	652208.27
25 12" TANK INLET STUB-OUT	1604758.04	6522002.71
26 12" TANK OUTLET STUB-OUT	1604744.17	652199.96
36 10" DRAIN STUB-OUT	1604747.77	652198.47

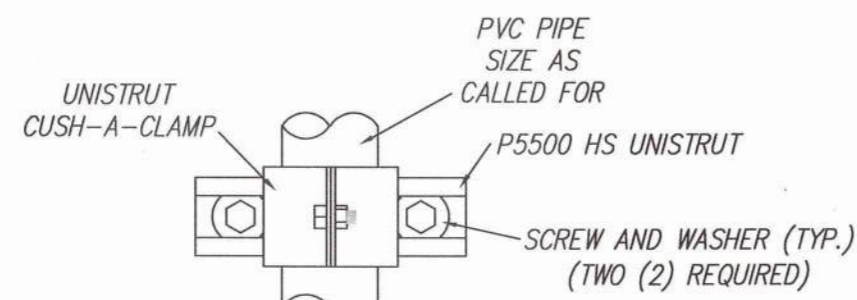


DILKON TANK SITE EXISTING 0.127-MG TANK STUBOUT LAYOUT

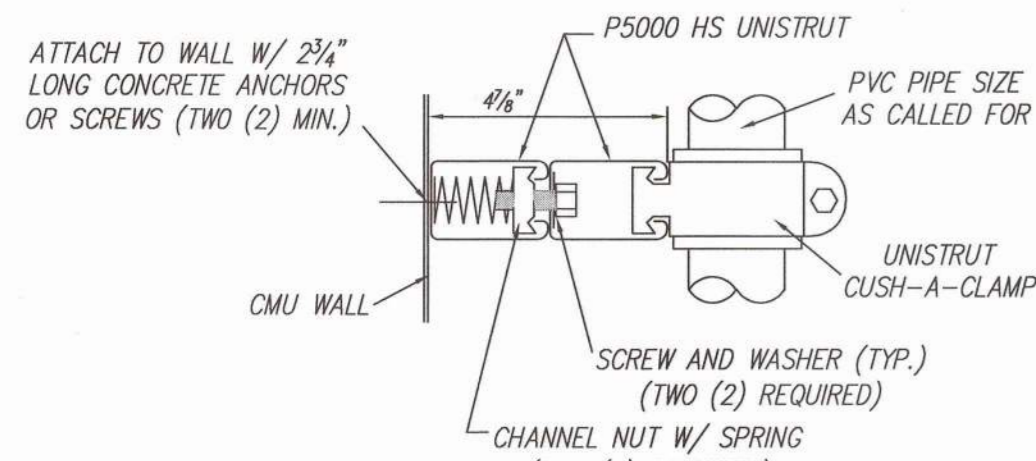
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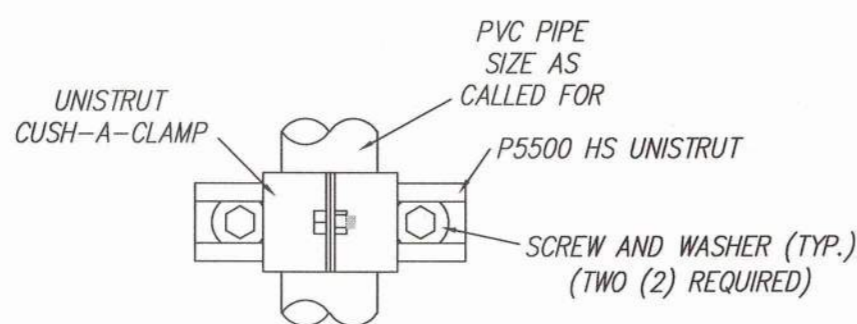
**TYPE "B" PROFILE**  
MAXIMUM SPACING 3' ON CENTER



**TYPE "B" ELEVATION**



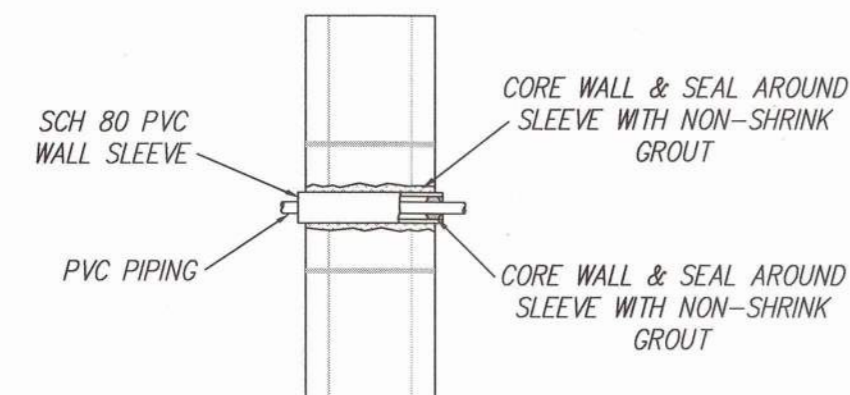
**TYPE "C" PROFILE**  
MAXIMUM SPACING 2' ON CENTER



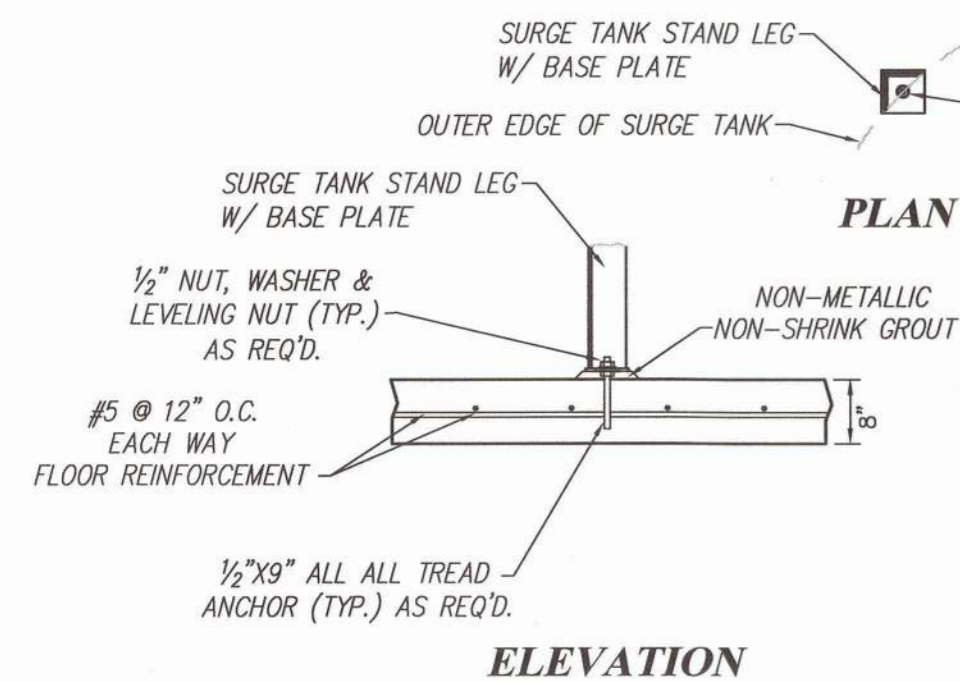
**TYPE "C" ELEVATION**

## PIPE WALL SUPPORTS

ALL MATERIAL AND HARDWARE TO BE UNISTRUT OR EQUAL  
NTS

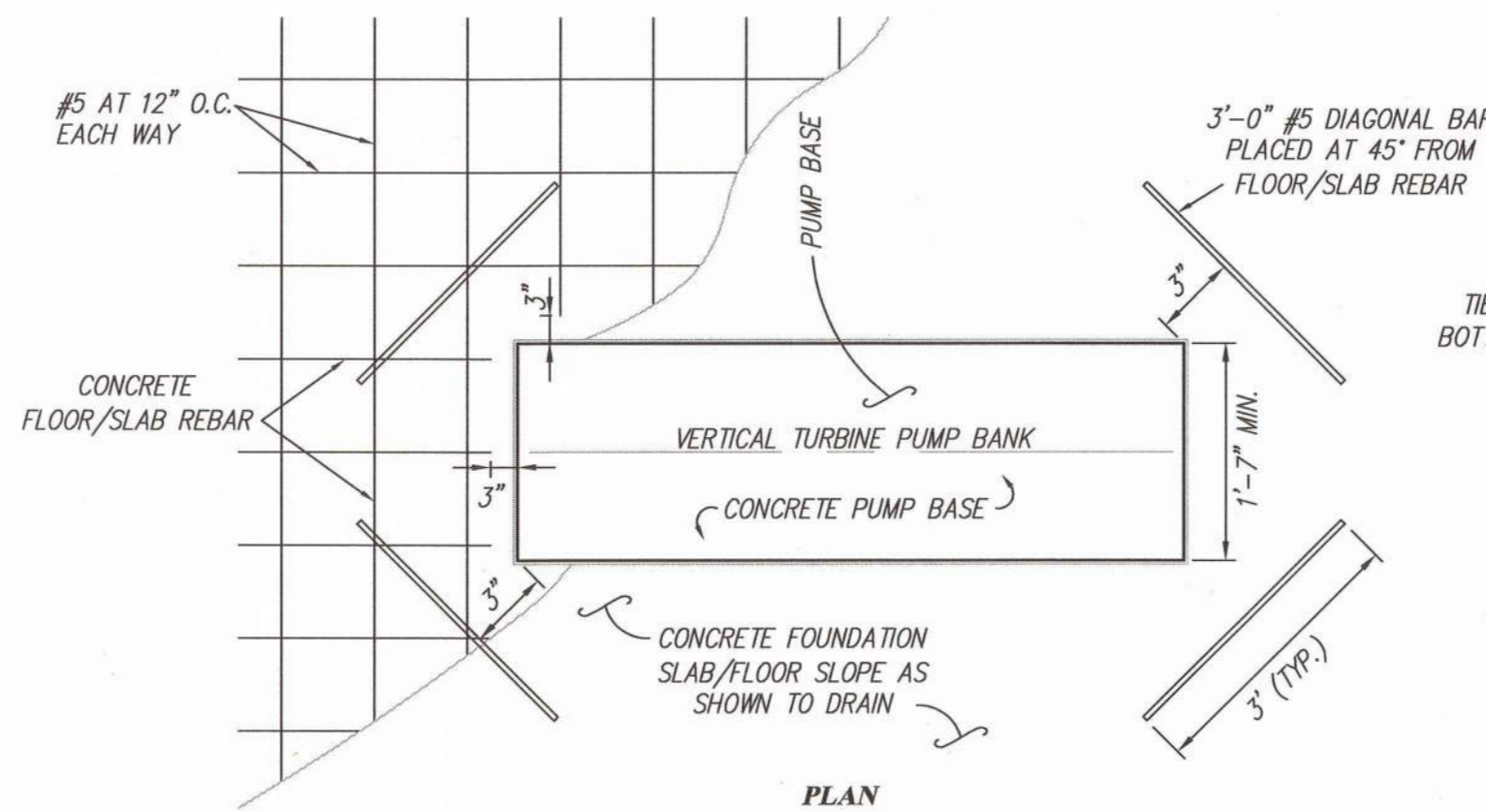


**CHLORINE ROOM WALL  
PIPING PENETRATION**  
NTS



**SURGE TANK PEDESTAL**  
NTS

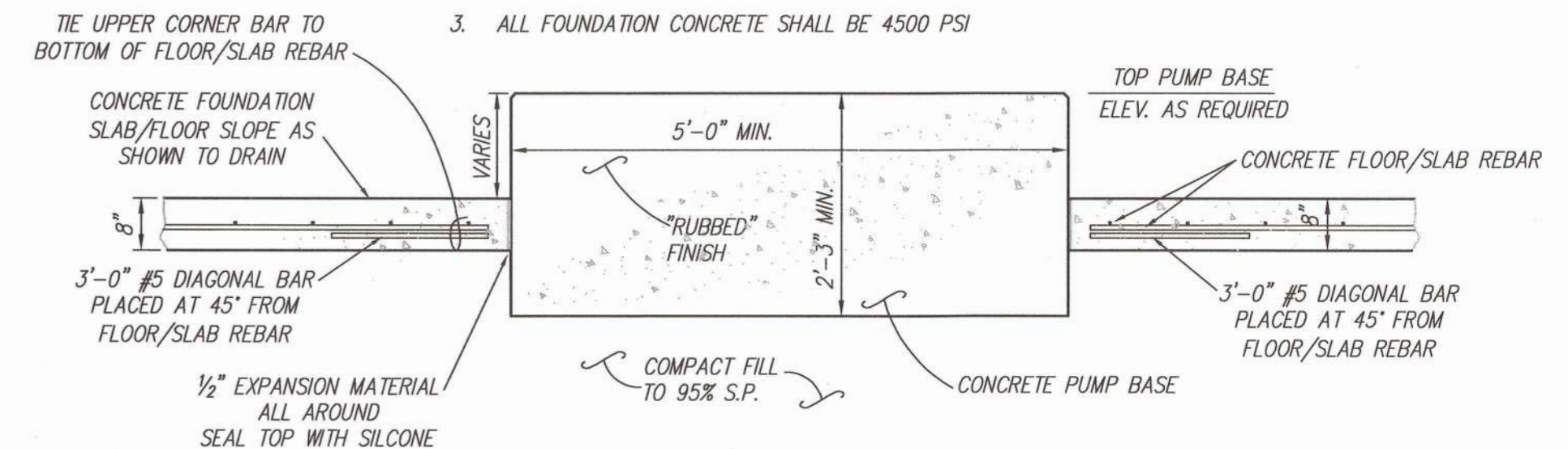
- NOTES:
1. LEVEL BASE PLATE AS REQUIRED AND FILL GAP WITH NON-SHRINK GROUT
  2. PROVIDE 1/2" ANCHOR RODS AS SHOWN OR AS RECOMMENDED BY SURGE TANK MANUFACTURER.
  3. LOCATE ANCHORS/PEDESTALS BASED ON SURGE TANK REQUIREMENTS. INSTALL ANCHORS BY DRILLING CONCRETE FLOOR AND ANCHORING WITH EPOXY.



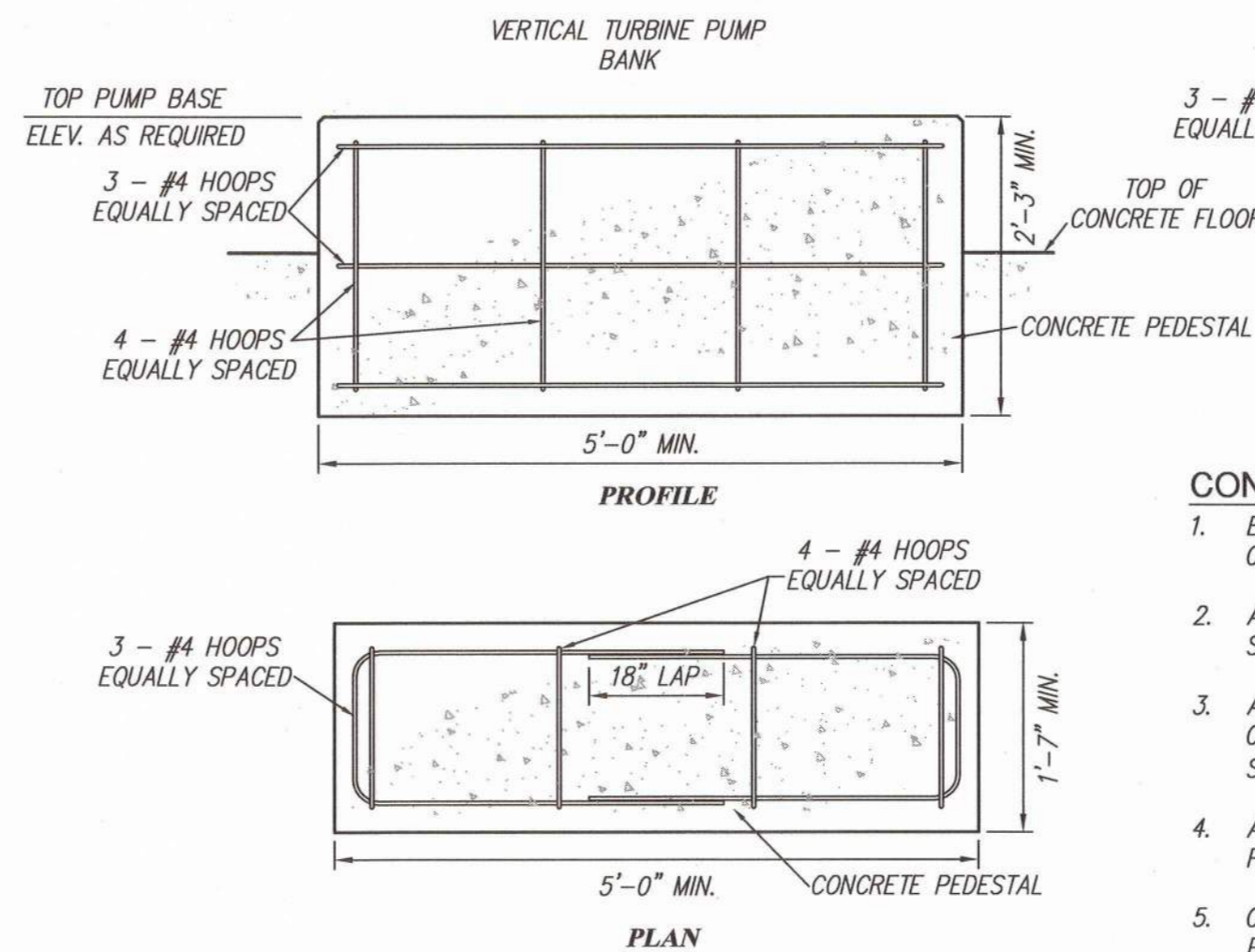
**PUMP BASE DETAILS FLOOR/SLAB REINFORCEMENT**  
NTS

### CONSTRUCTION NOTES:

1. ALL REBAR JOINTS AND SPLICES SHALL HAVE A MINIMUM LAP OF 40 BAR DIAMETERS UNLESS OTHERWISE SHOWN.
2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL FOUNDATION CONCRETE SHALL BE 4500 PSI



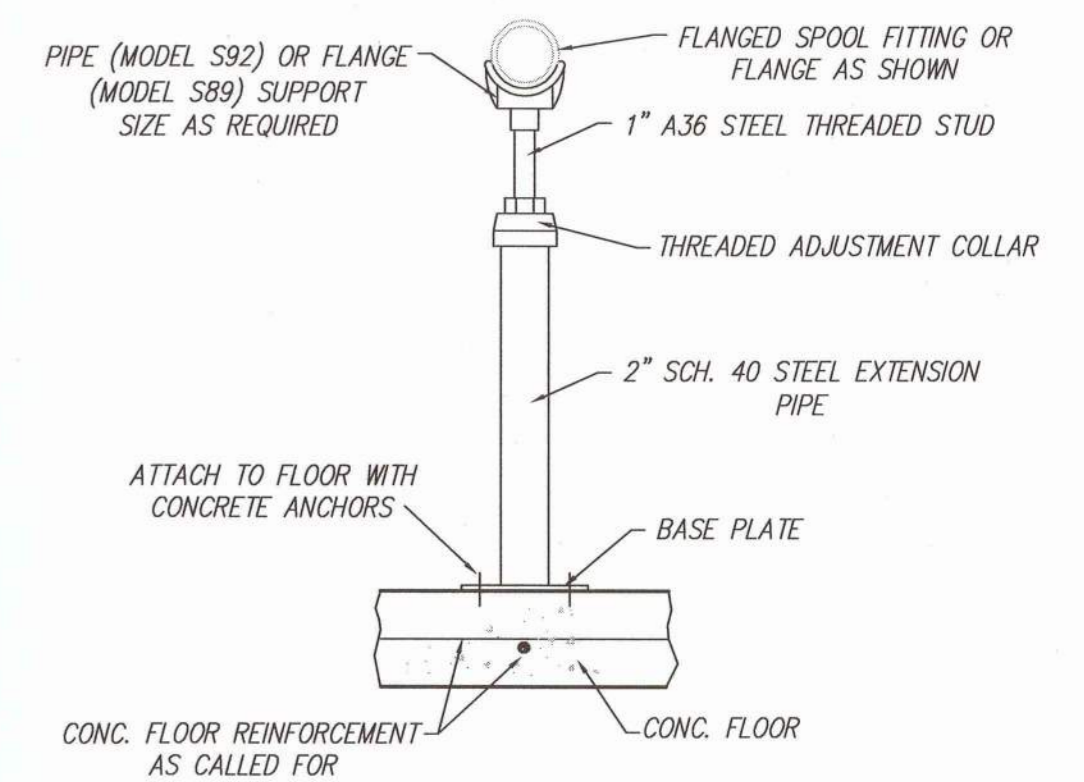
**ELEVATION**



### CONSTRUCTION NOTES:

1. ENGINEERED FILL BELOW PUMP BASE SHALL BE COMPACTED TO 95% S.P.
2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL CONCRETE PEDESTALS SHALL BE 4500 PSI CONCRETE WITH CHAMFERED EXPOSED EDGES. SURFACES TO BE "RUBBED"
4. ANCHOR PUMP AND MOTOR FRAME TO PUMP BASE PER MANUFACTURER RECOMMENDATIONS.
5. CONCRETE PEDESTAL DIMENSIONS TO VERIFY WITH PUMP MANUFACTURER.

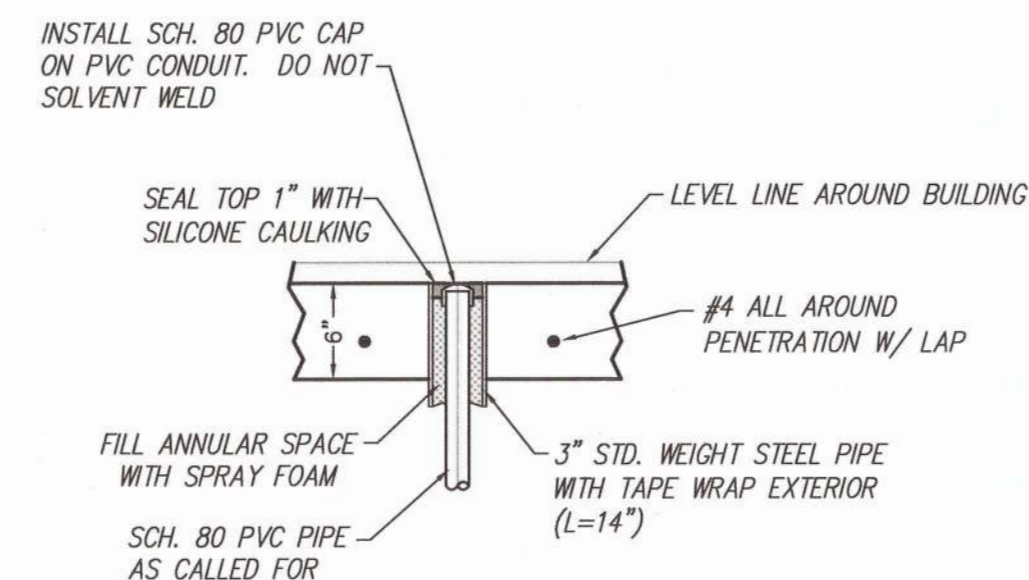
**PUMP BASE DETAILS**  
SCALE 1/2"=1'-0"



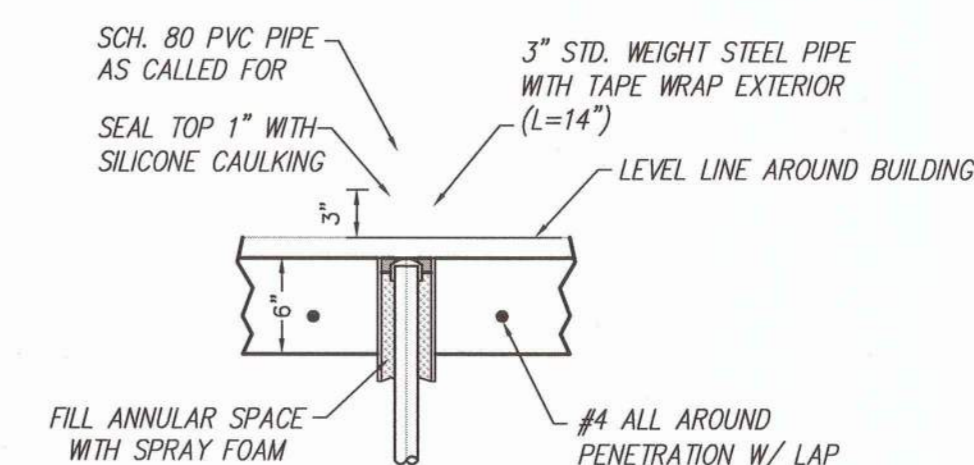
### PIPE STAND NOTES:

1. STAND TO BE PAINTED IN ACCORDANCE WITH STATION PIPING SPECIFICATIONS.
2. STANDS SHALL BE STANDON MODEL S89 OR S92 SUPPORTS OR EQUAL AND BE INSTALLED PER MANUFACTURES RECOMMENDATIONS

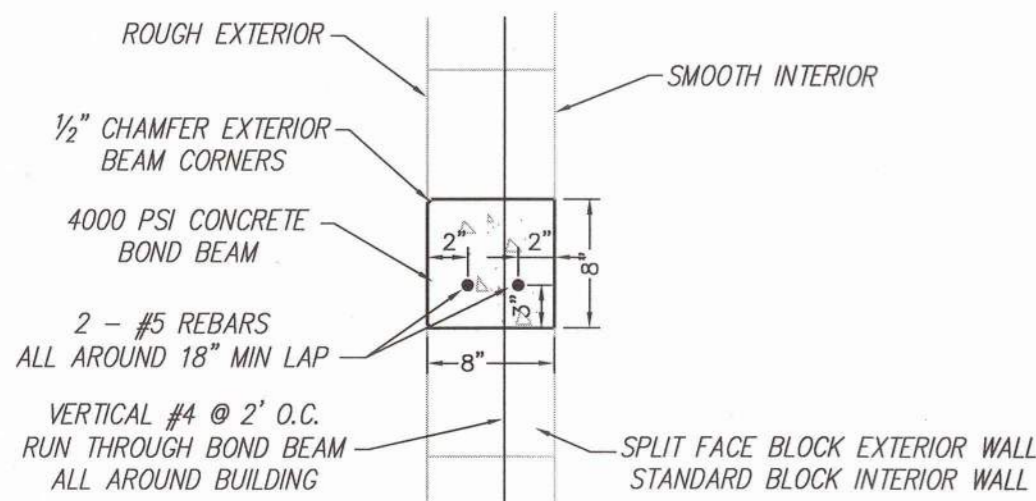
**PIPE SUPPORT STAND**  
NTS



**3" STEEL PIPE FLUSH FLOOR PENETRATION**  
NTS

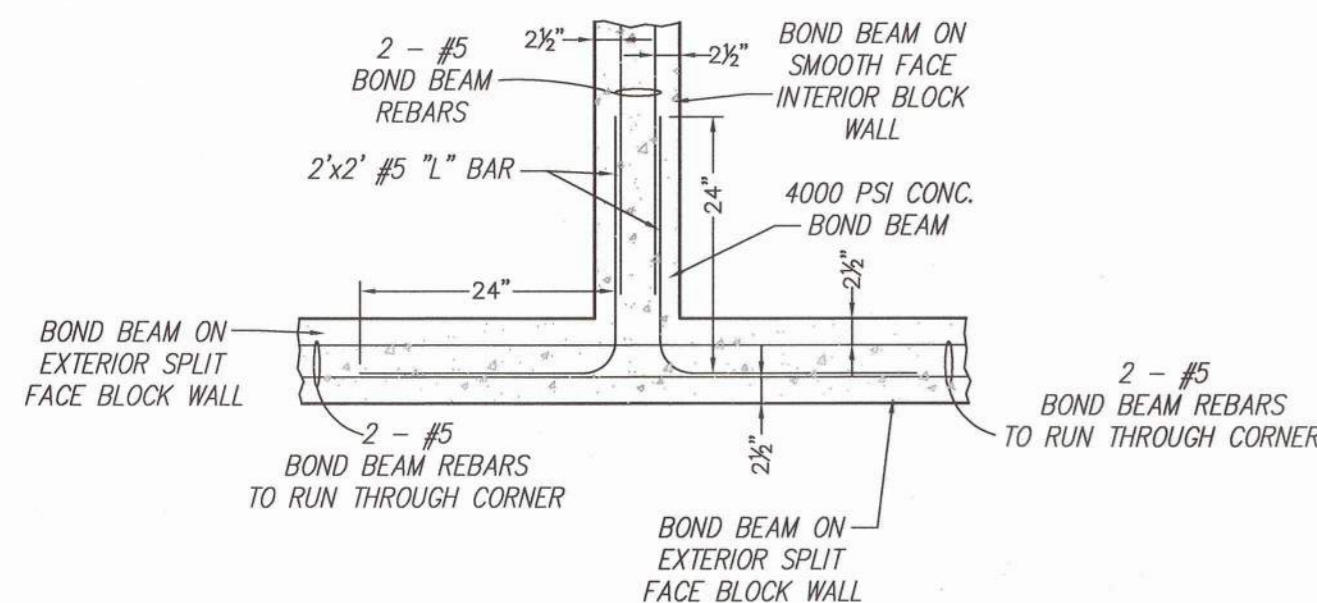


**3" STEEL PIPE FLOOR PENETRATION**  
NTS



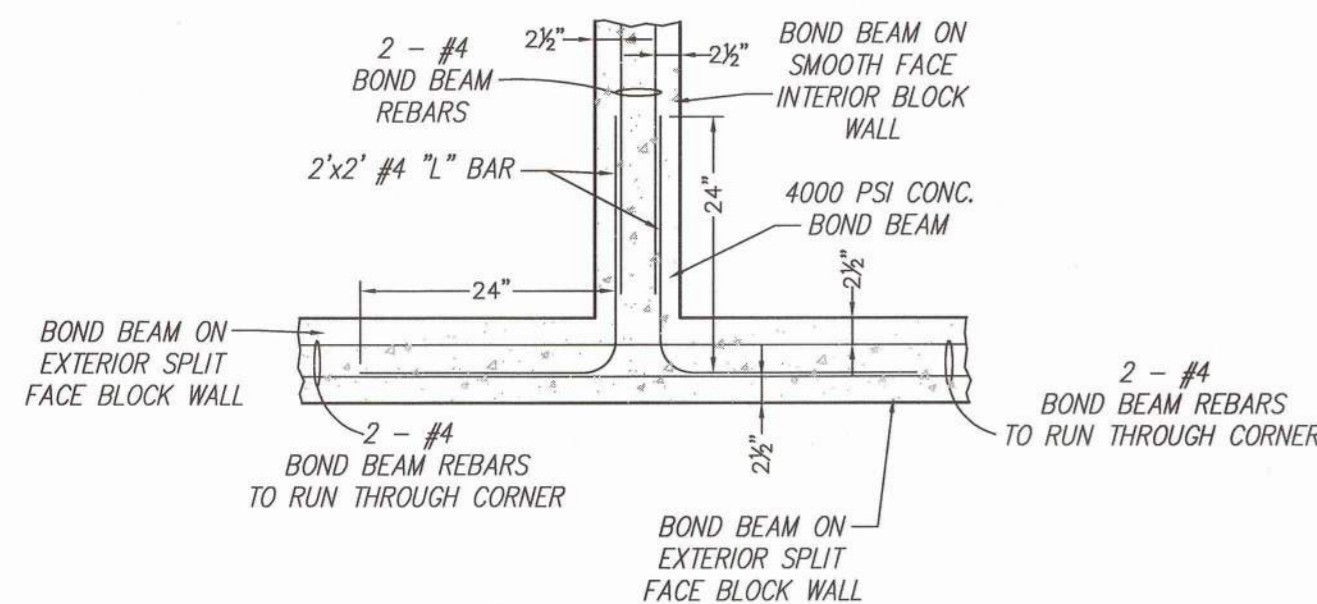
**INTERMEDIATE  
BOND BEAM DETAIL**  
NTS

- NOTE:
1. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL, PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  2. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  3. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS.
  4. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR.



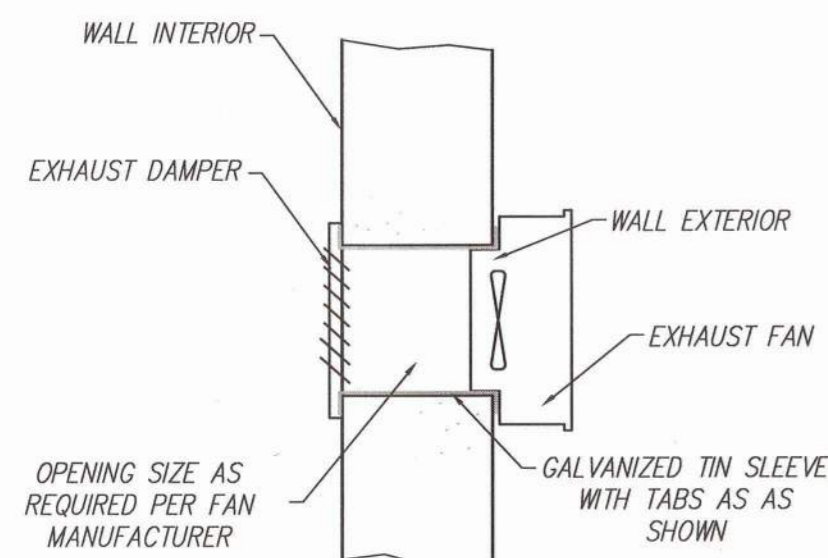
**INTERIOR WALL INTERSECTION**

**INTERMEDIATE BOND BEAM WALL INTERSECTION DETAILS**  
NTS



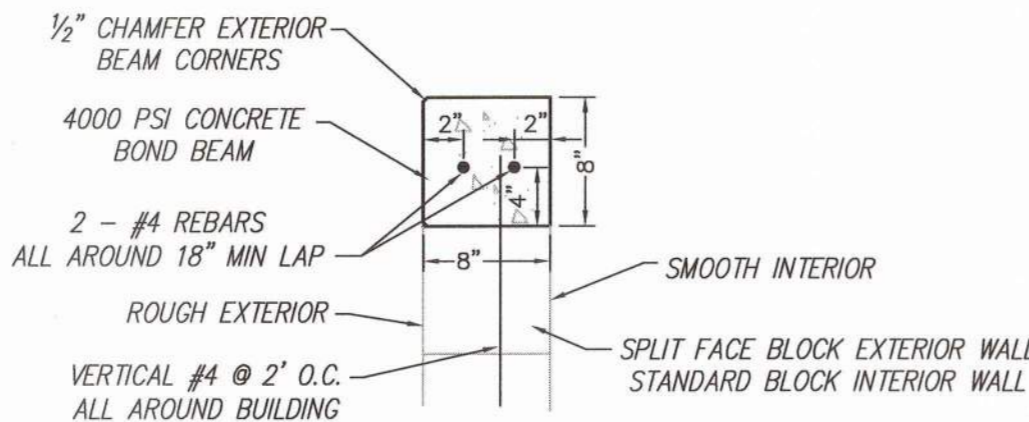
**INTERIOR WALL INTERSECTION**

**TOP BOND BEAM WALL INTERSECTION DETAILS**  
NTS

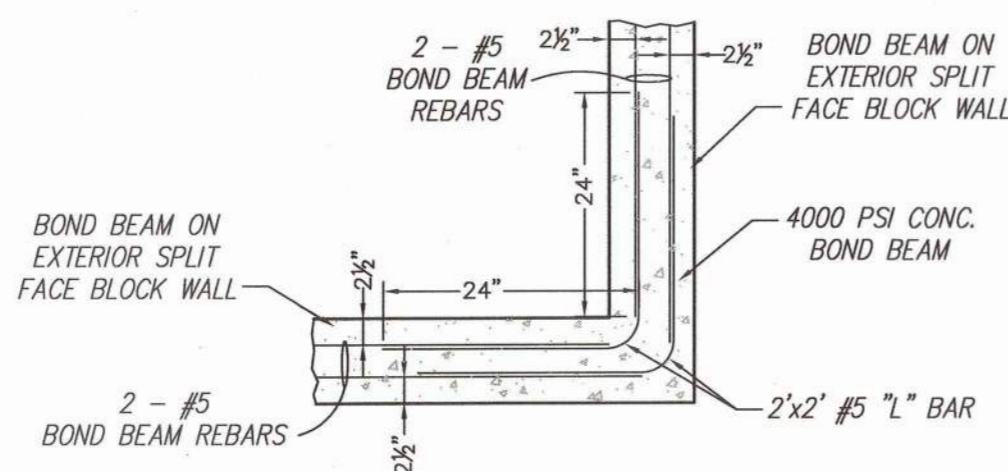


**EXHAUST FAN DETAIL**  
NTS

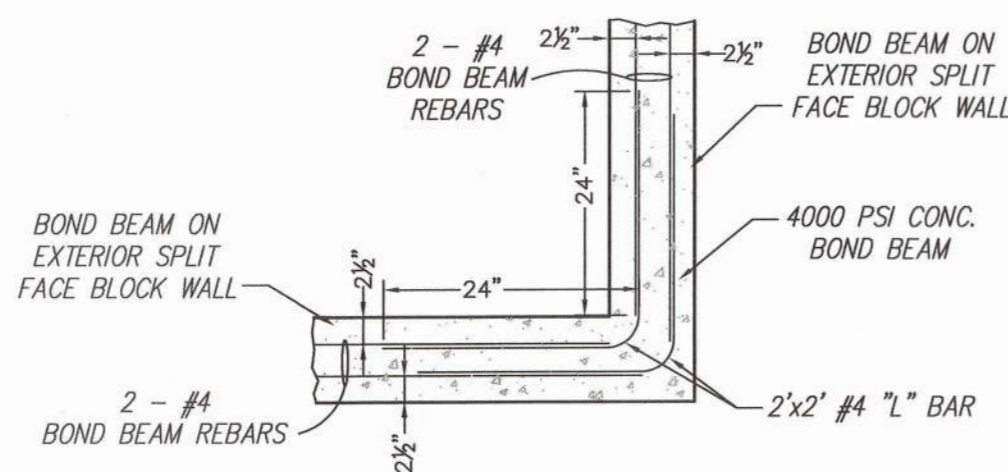
- HVAC NOTES:
1. EXHAUST FAN: GREENHECK SIZE 140 SIDEWALL BELT DRIVEN EXHAUST FAN OR EQUAL, 1/4 HP MOTOR, 1515 CFM @ .5" S.P., MOTOR SPEED 1105 RPM. MOUNT TOP OF UNIT 7"-6" ABOVE FLOOR UNLESS OTHERWISE SHOWN.
  2. EXHAUST DAMPER: MOTORIZED DAMPER AS REQUIRED TO MATCH EXHAUST FAN. DAMPER LOUVERS SHALL HAVE TIGHT CLOSER AGAINST WIND AND WEATHER. DAMPER SHALL HAVE DRAINABLE HEADS AND SILL.
  3. EXHAUST FAN MUST BE REMOVED FROM OUTSIDE OF BUILDING. CONTRACTOR SHALL PROVIDE TRANSITION FROM SQUARE TO CIRCULAR OPENINGS.
  4. INLET DAMPER: MOTORIZED JOHNSON CONTROLS LM-1250 OR EQUAL 18"(W)x8"(H)x30"(H) WITH TWO POSITION SPRING RETURN AND BAKED ENAMEL FINISH MOUNTED TO OUTSIDE WALL OVER OPENING
  5. INSTALL 18 GAUGE GALVANIZED TIN SLEEVE W/ 1" MIN TABS AT WALL. GRIND SPLIT FACE WALL SMOOTH AND ATTACH AS REQUIRED.



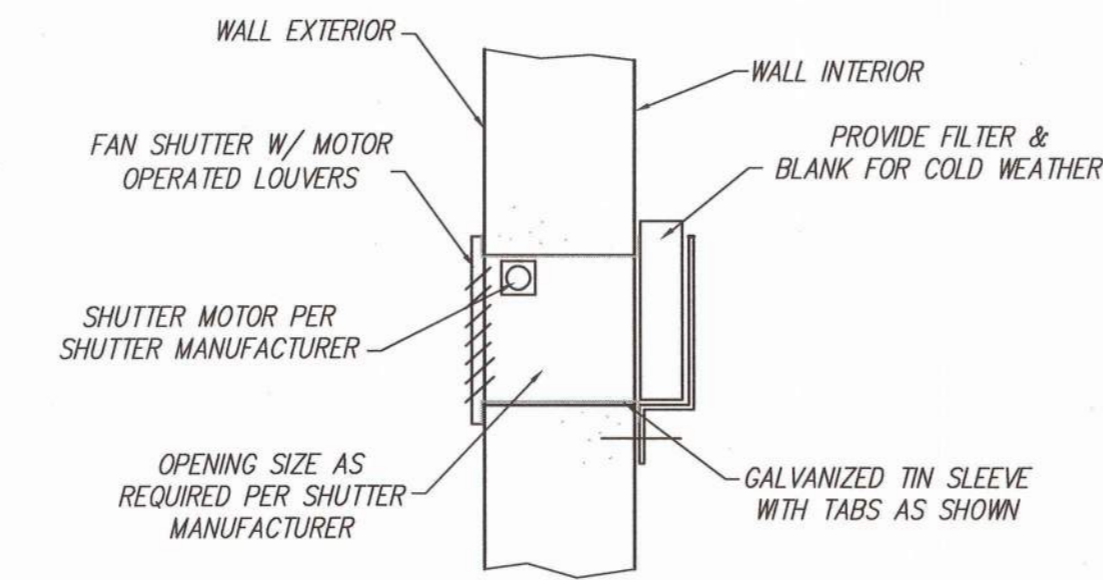
**TOP BOND BEAM DETAIL**  
NTS



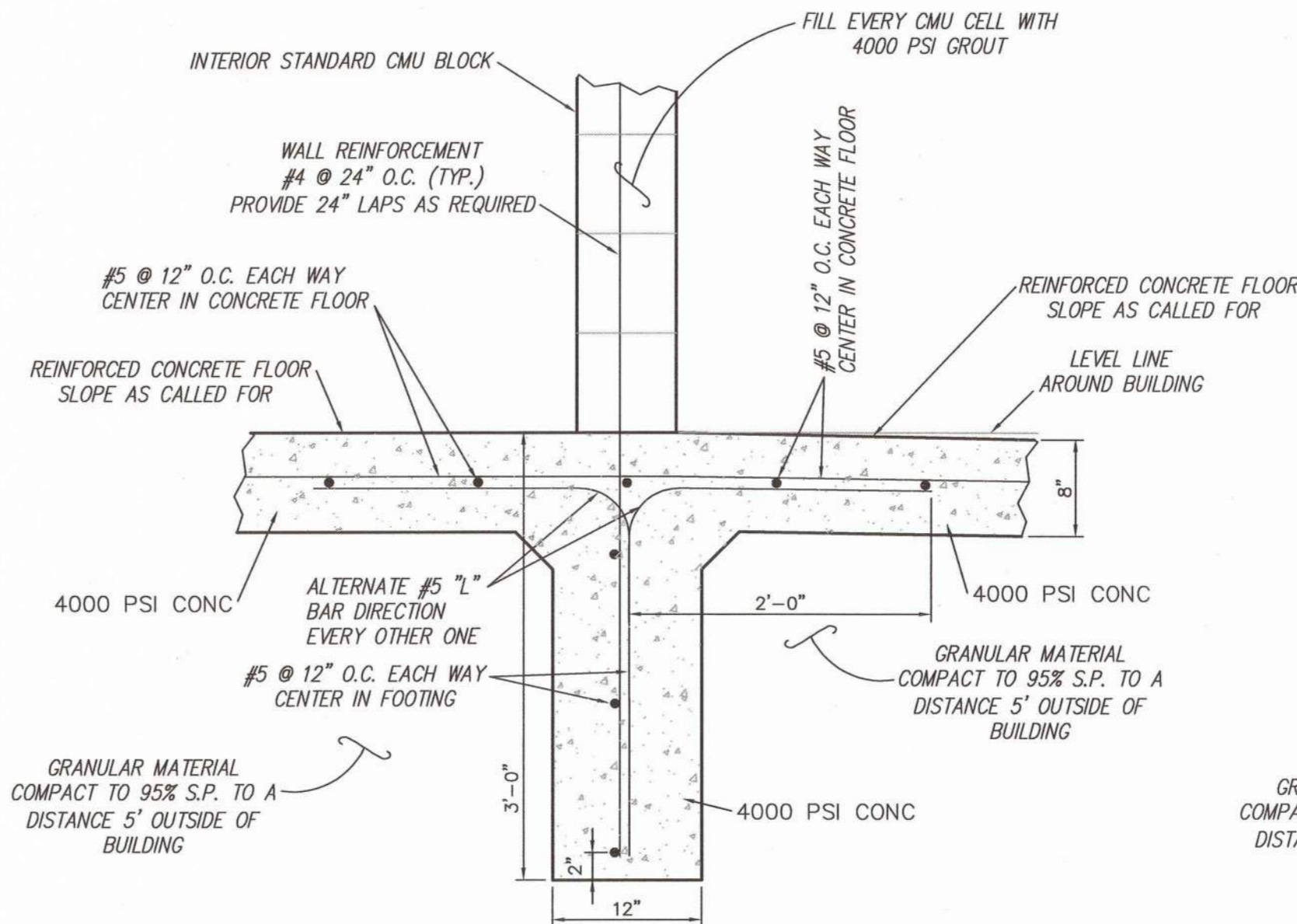
**EXTERIOR WALL INTERSECTION**



**EXTERIOR WALL INTERSECTION**

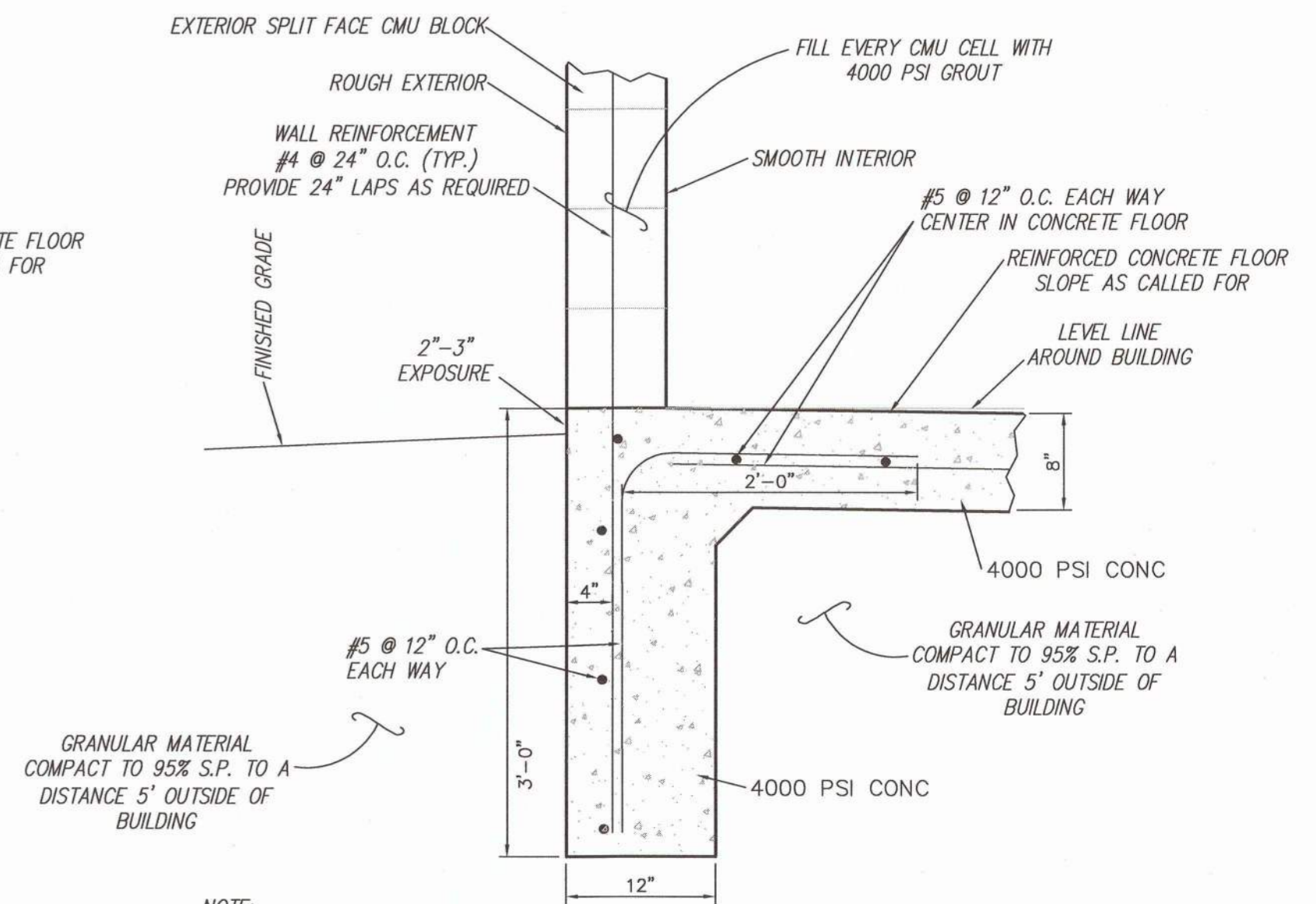


**INLET DAMPER DETAIL**  
NTS



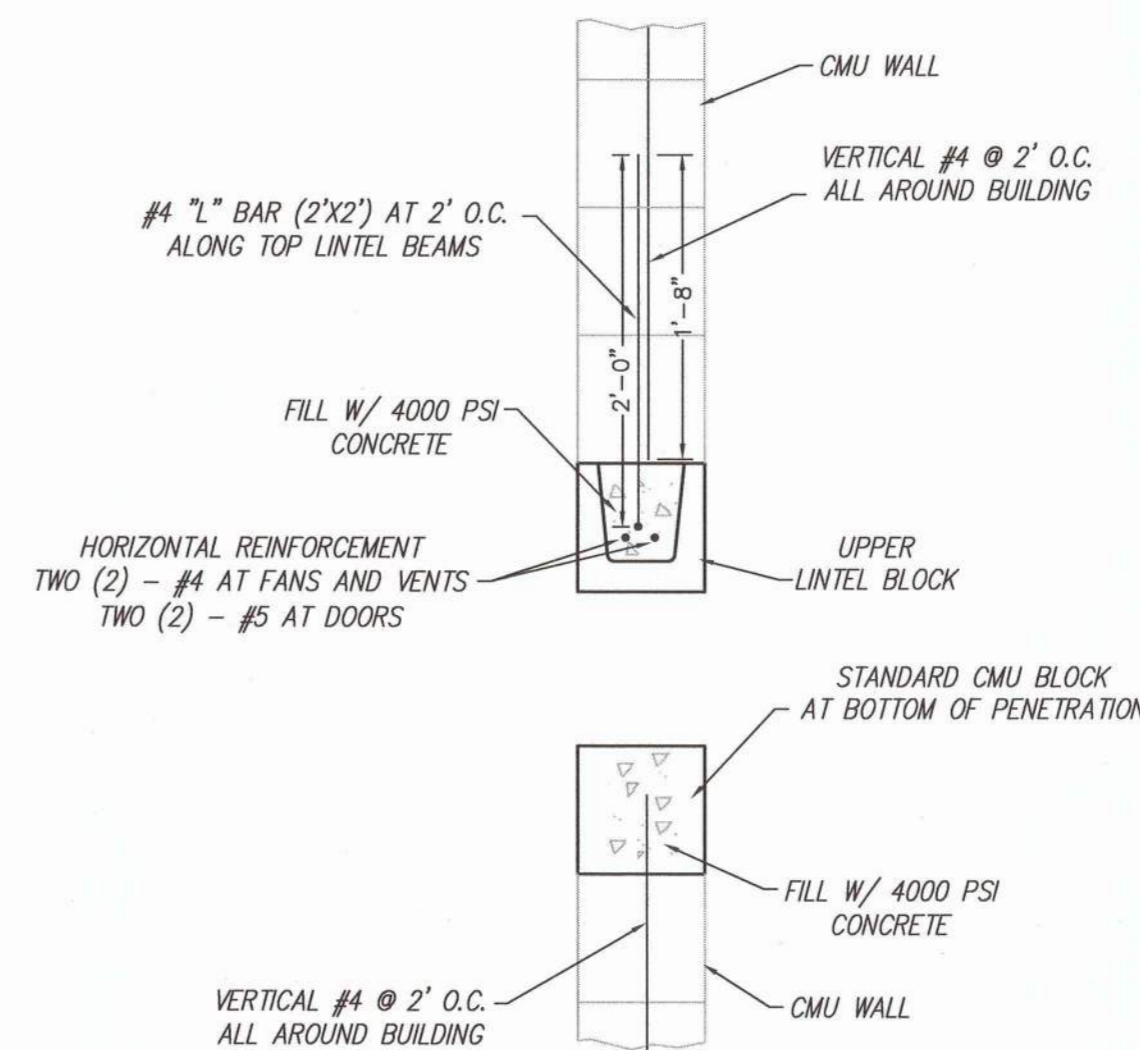
- NOTE:
1. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  2. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR.

**INTERIOR WALL FOOTING AND FLOOR DETAIL**  
NTS



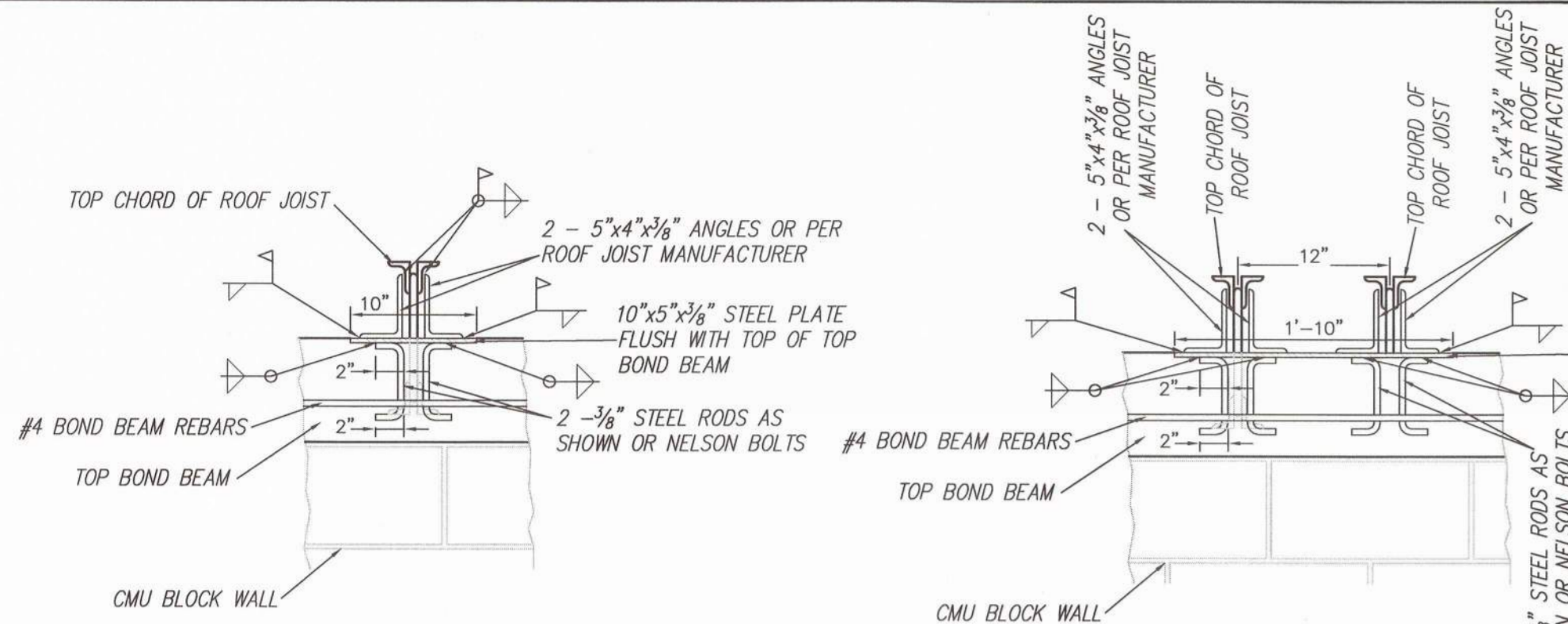
- NOTE:
1. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
  2. STANDARD SMOOTH FACE BLOCKS MAY BE USED IMMEDIATELY ADJACENT TO ALL DOORS, VENTS, FANS, AND BOND BEAMS.
  3. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR.

**EXTERIOR WALL FOOTING AND FLOOR DETAIL**  
NTS

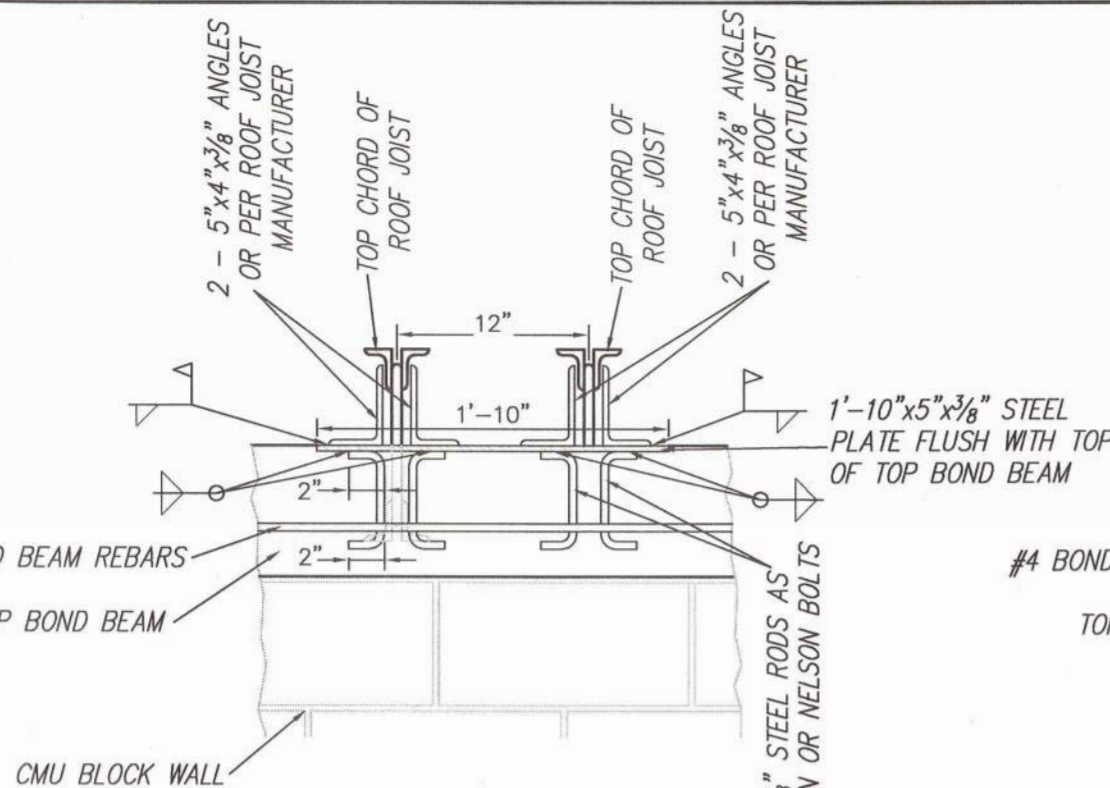


- NOTE:
1. ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL, PAINT FACIA PRIOR TO PRO-PANEL INSTALLATION. ALL PAINT COLORS TO BE SELECTED BY NTUA.
  2. INTERIOR BLOCK SURFACES SHALL BE SEALED WITH SHERMAN WILLIAMS PRO MAR BLOCK FILLER OR EQUAL AND PAINTED WITH TWO COATS OF QUALITY EXTERIOR LATEX PAINT.
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  4. ALL CMU BLOCK SMOOTH AND SPLIT FACE SHALL BE THE SAME COLOR.

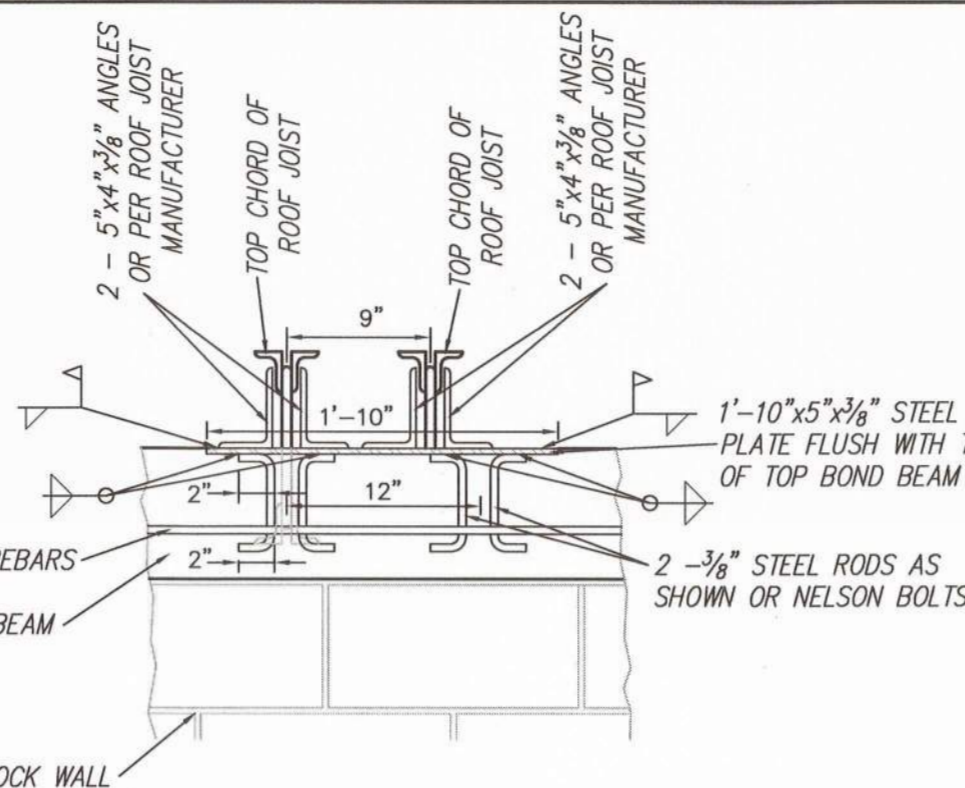
**LINTEL DETAIL**  
NTS



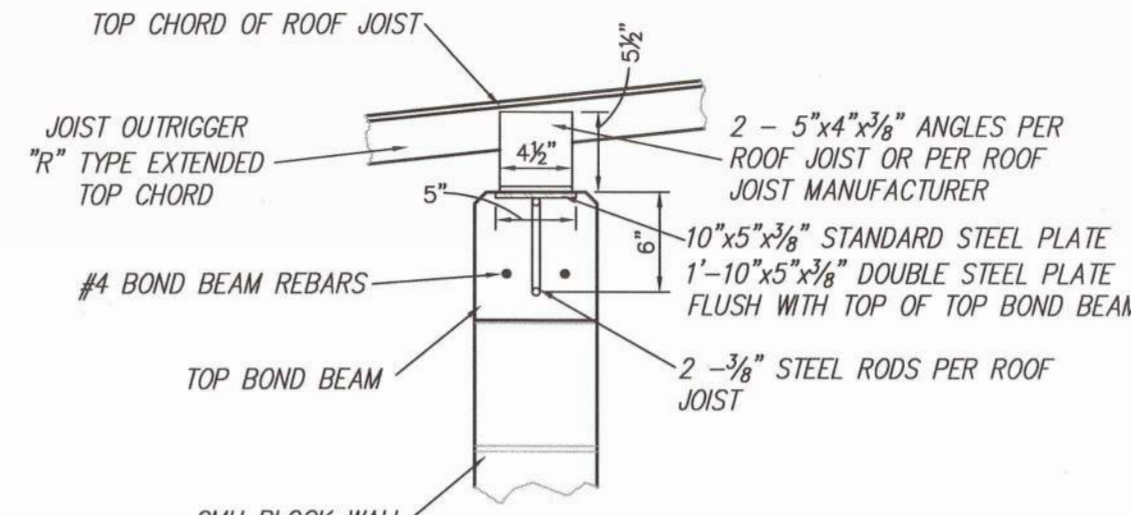
**STANDARD ANCHOR PLATE  
FRONT ELEVATION**



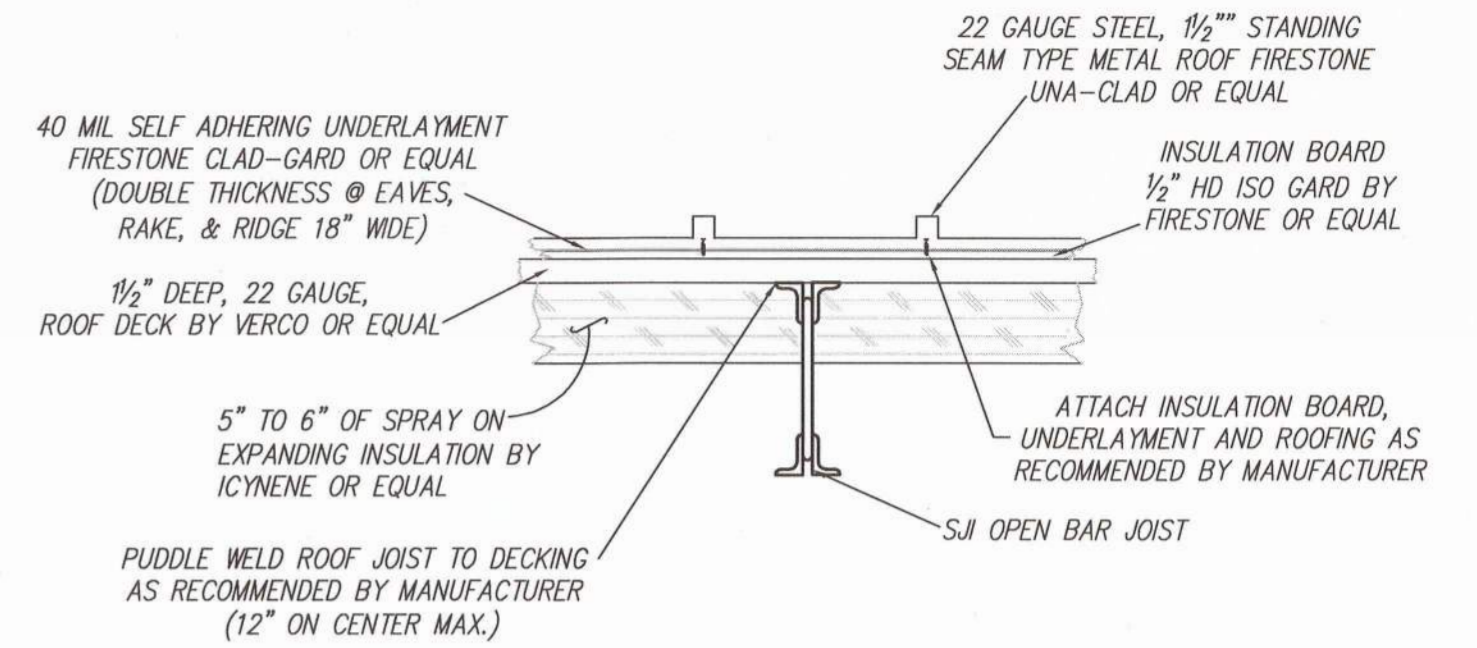
**DUAL ANCHOR PLATE  
FRONT ELEVATION**



**SPECIAL DUAL ANCHOR PLATE  
FRONT ELEVATION**

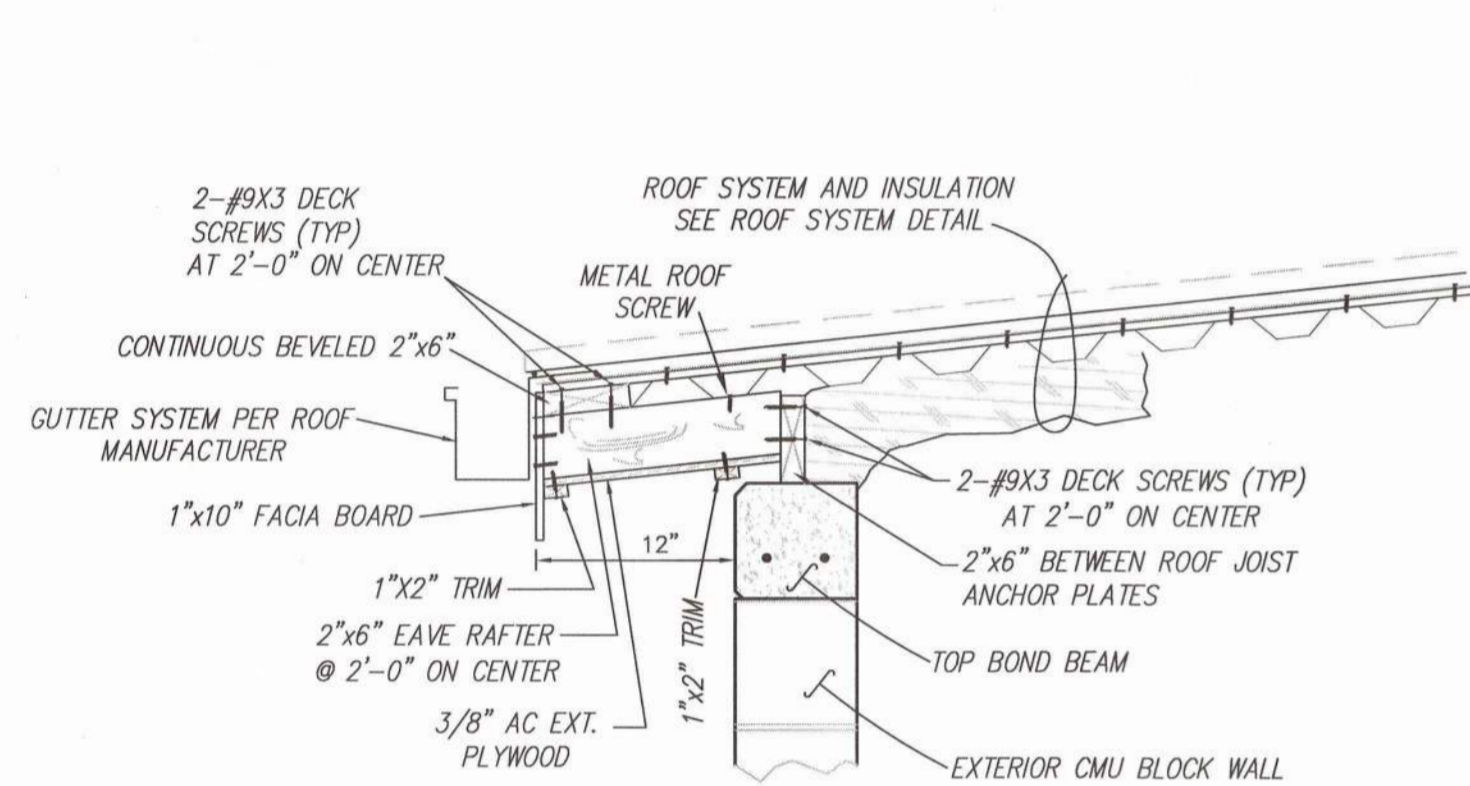


**SIDE  
ELEVATION**

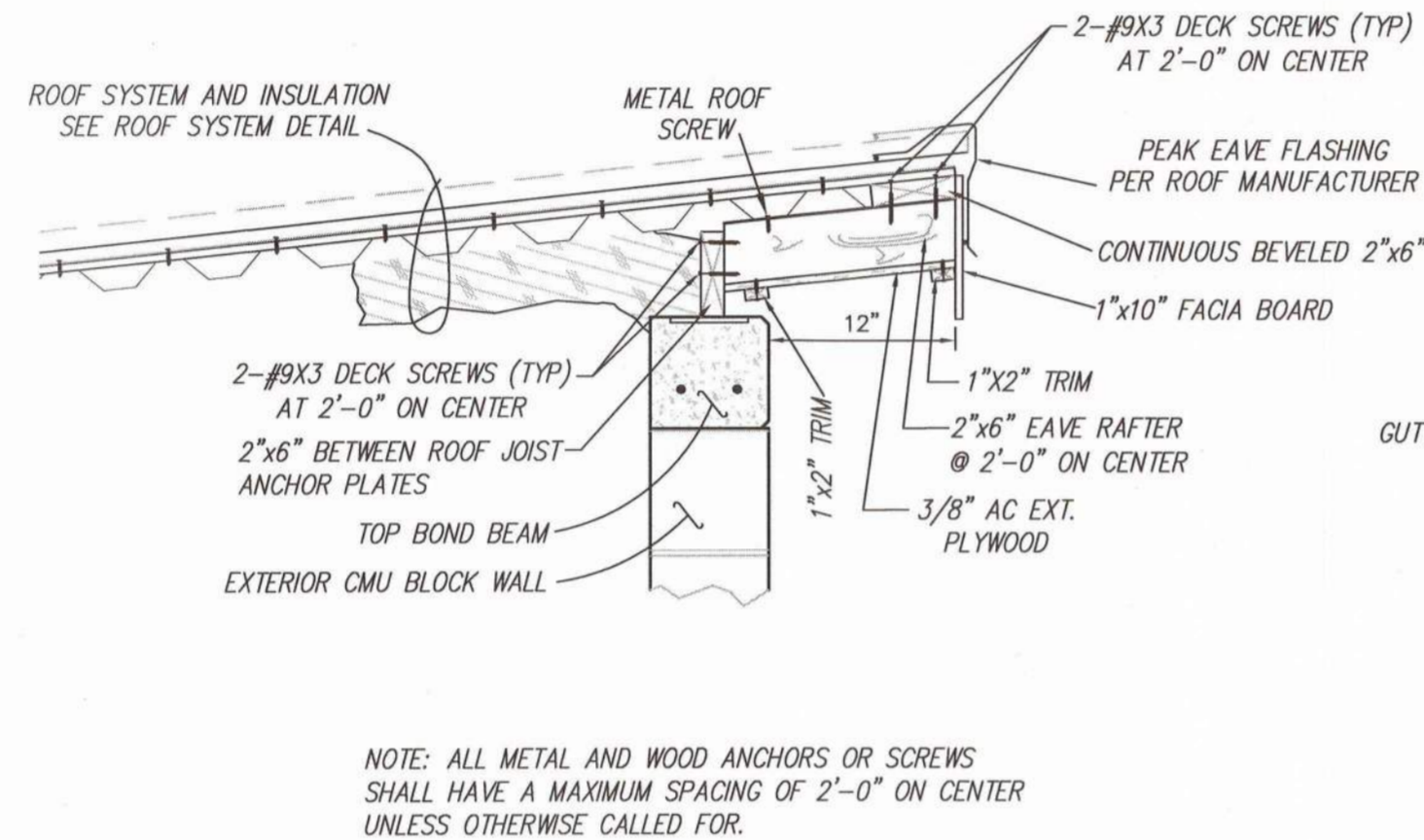


NOTE: ALL METAL AND WOOD ANCHORS OR SCREWS SHALL HAVE A MAXIMUM SPACING OF 2'-0" ON CENTER UNLESS OTHERWISE CALLED FOR.

**ROOF SYSTEM DETAIL  
NTS**

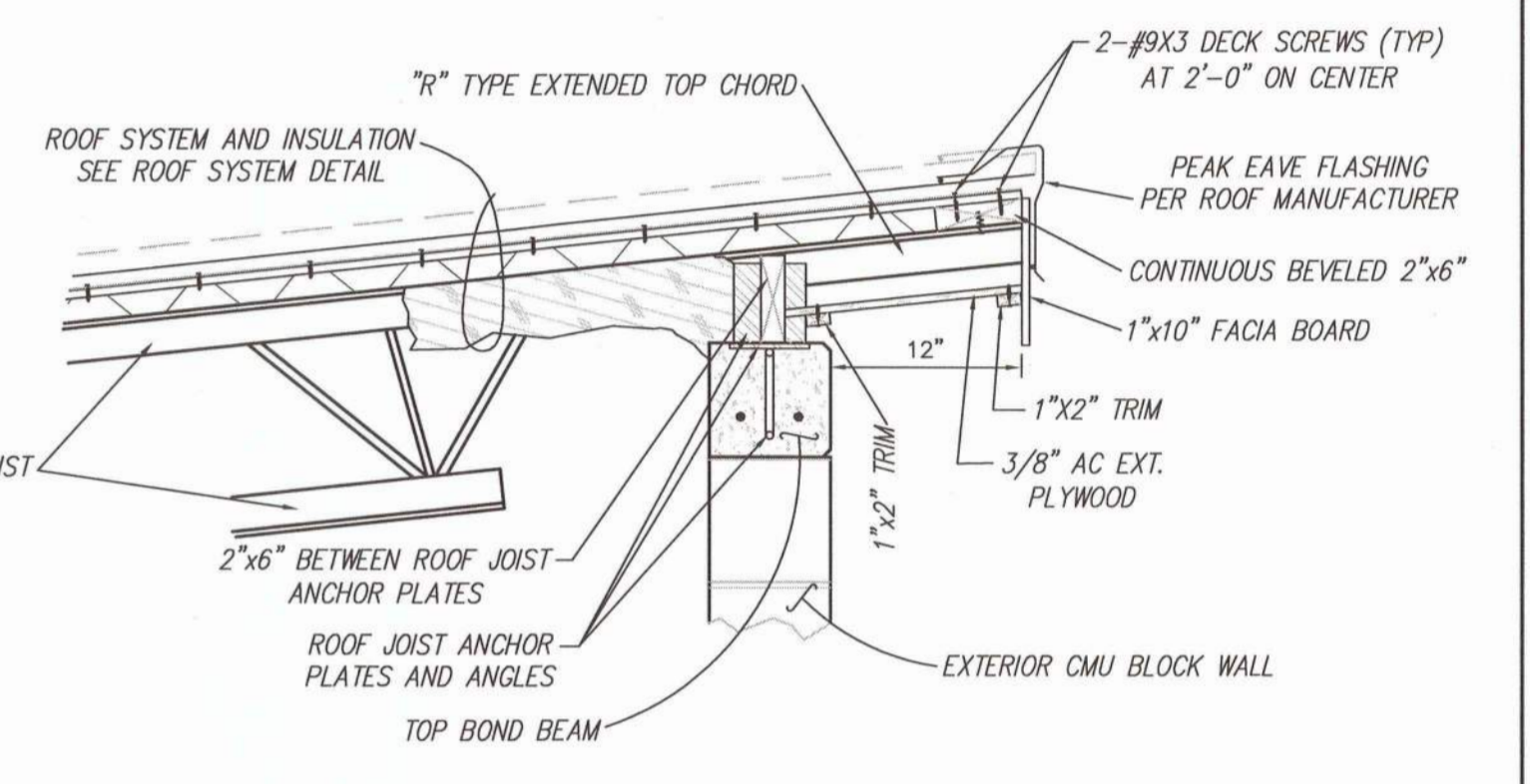
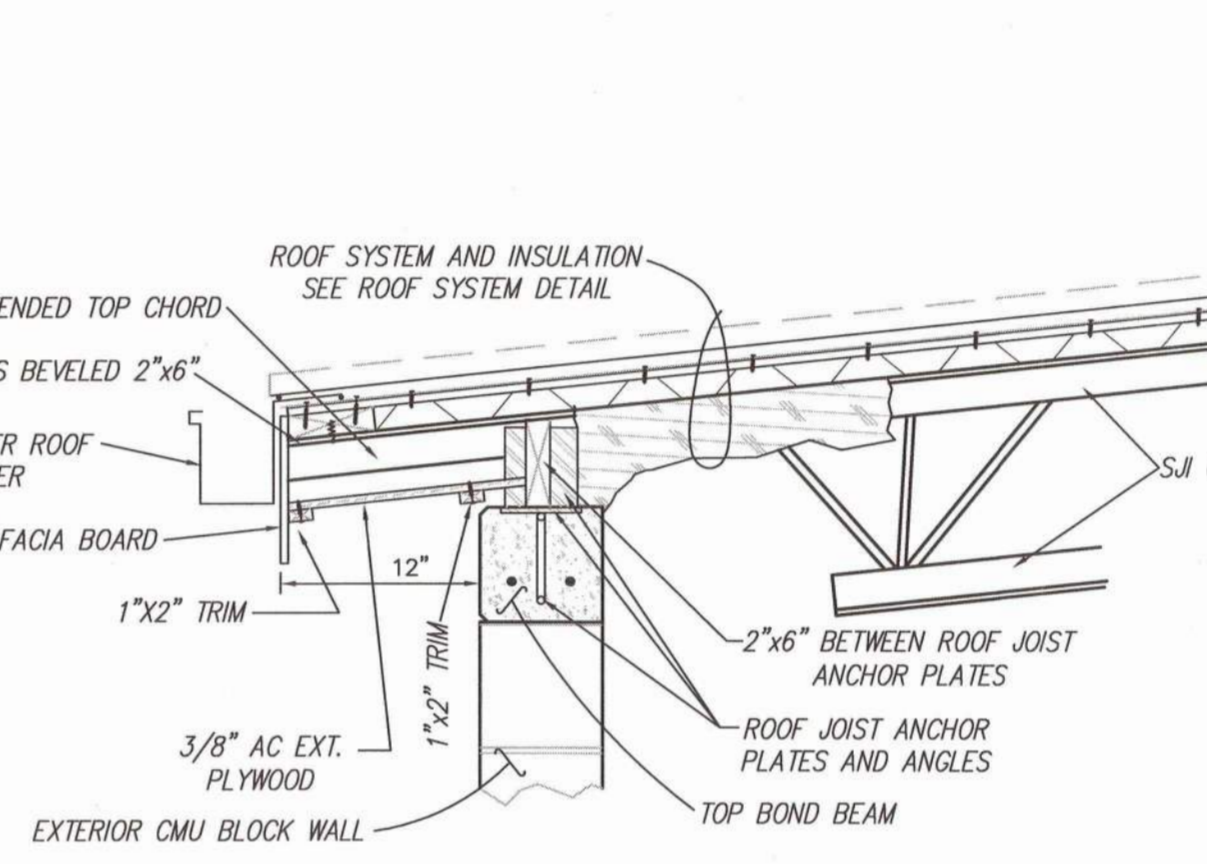


**ROOF EAVE BETWEEN ROOF JOIST DETAIL  
NTS**



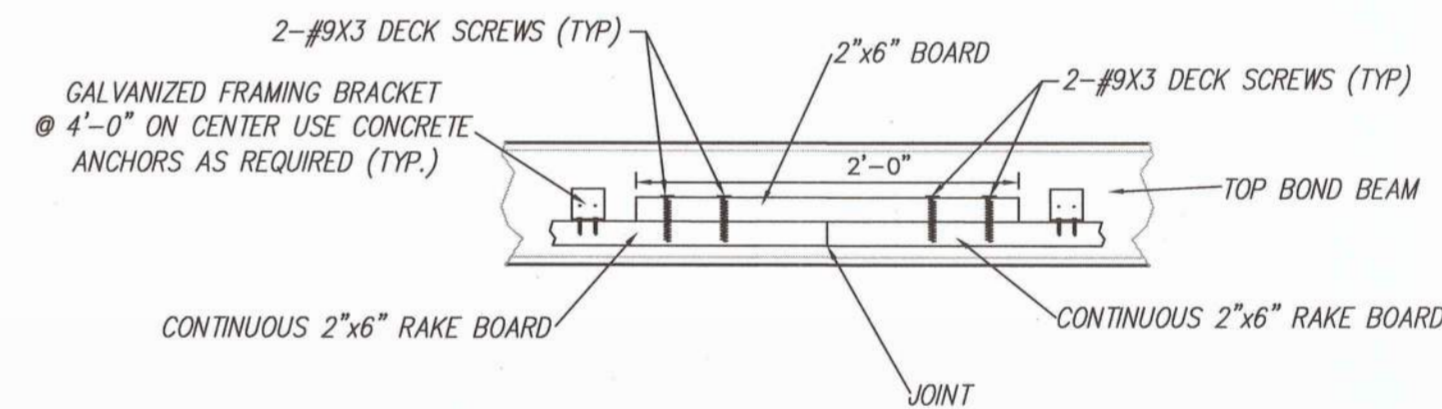
NOTE: ALL METAL AND WOOD ANCHORS OR SCREWS SHALL HAVE A MAXIMUM SPACING OF 2'-0" ON CENTER UNLESS OTHERWISE CALLED FOR.

**ROOF EAVE AT ROOF JOIST DETAIL  
NTS**

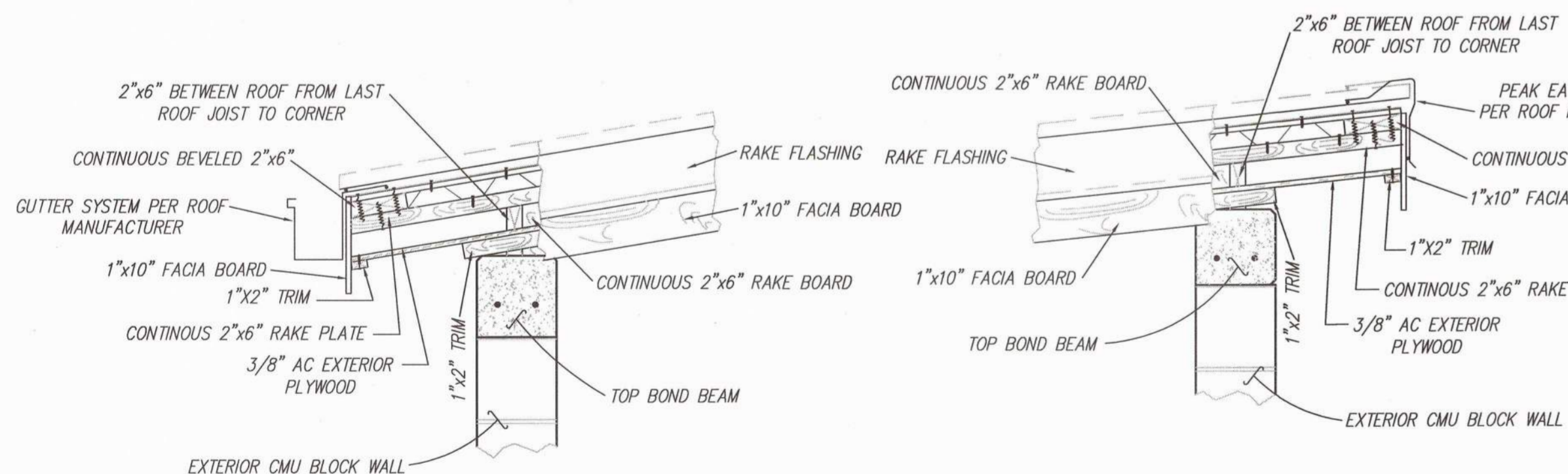
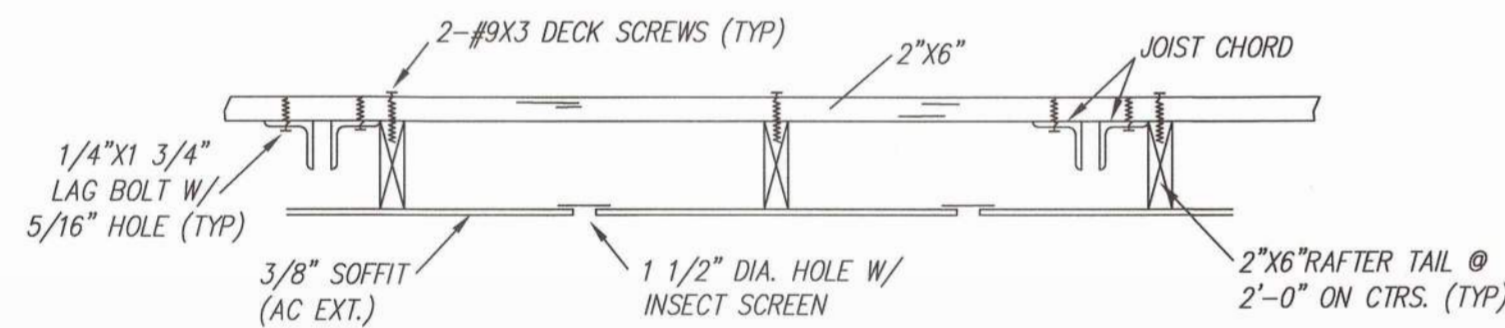


NOTE: ALL METAL AND WOOD ANCHORS OR SCREWS SHALL HAVE A MAXIMUM SPACING OF 2'-0" ON CENTER UNLESS OTHERWISE CALLED FOR.

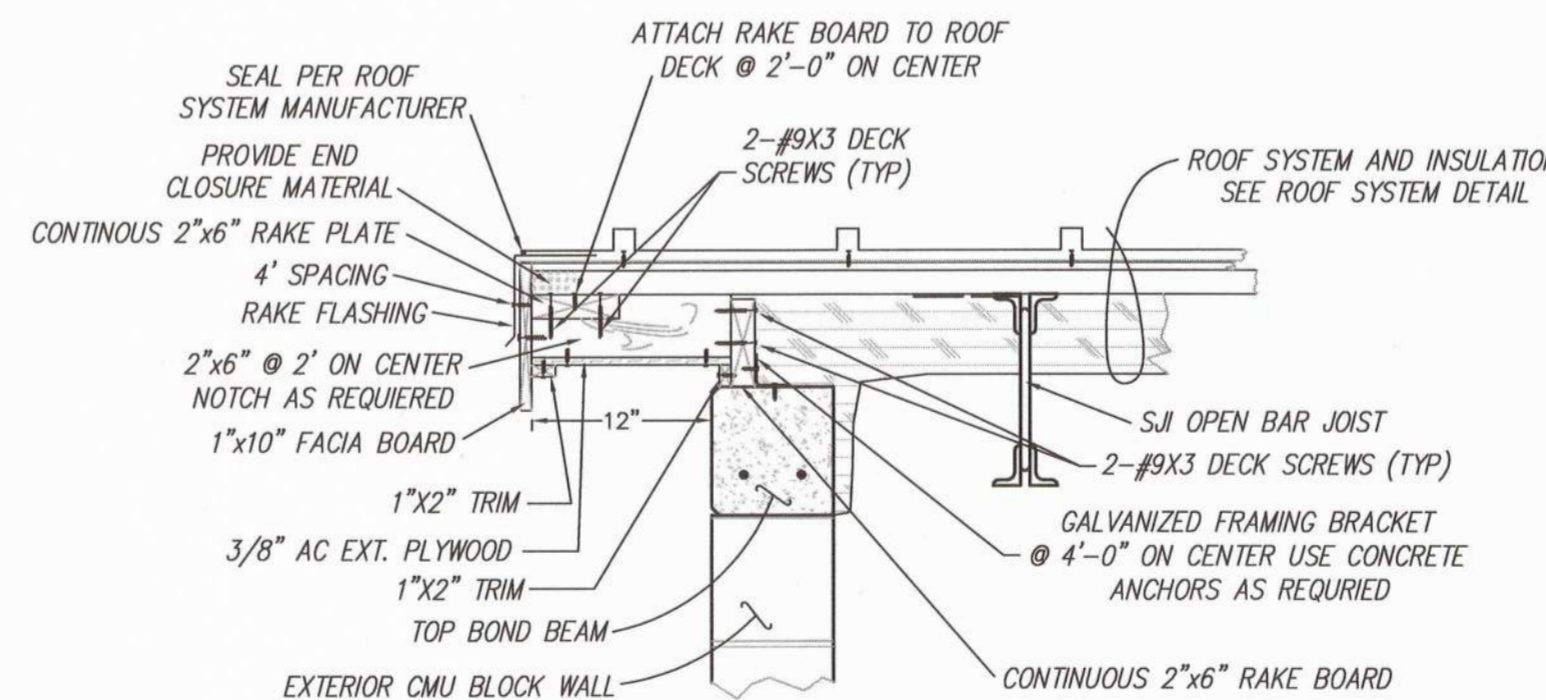
**RAKE BOARD JOINT DETAIL  
NTS**



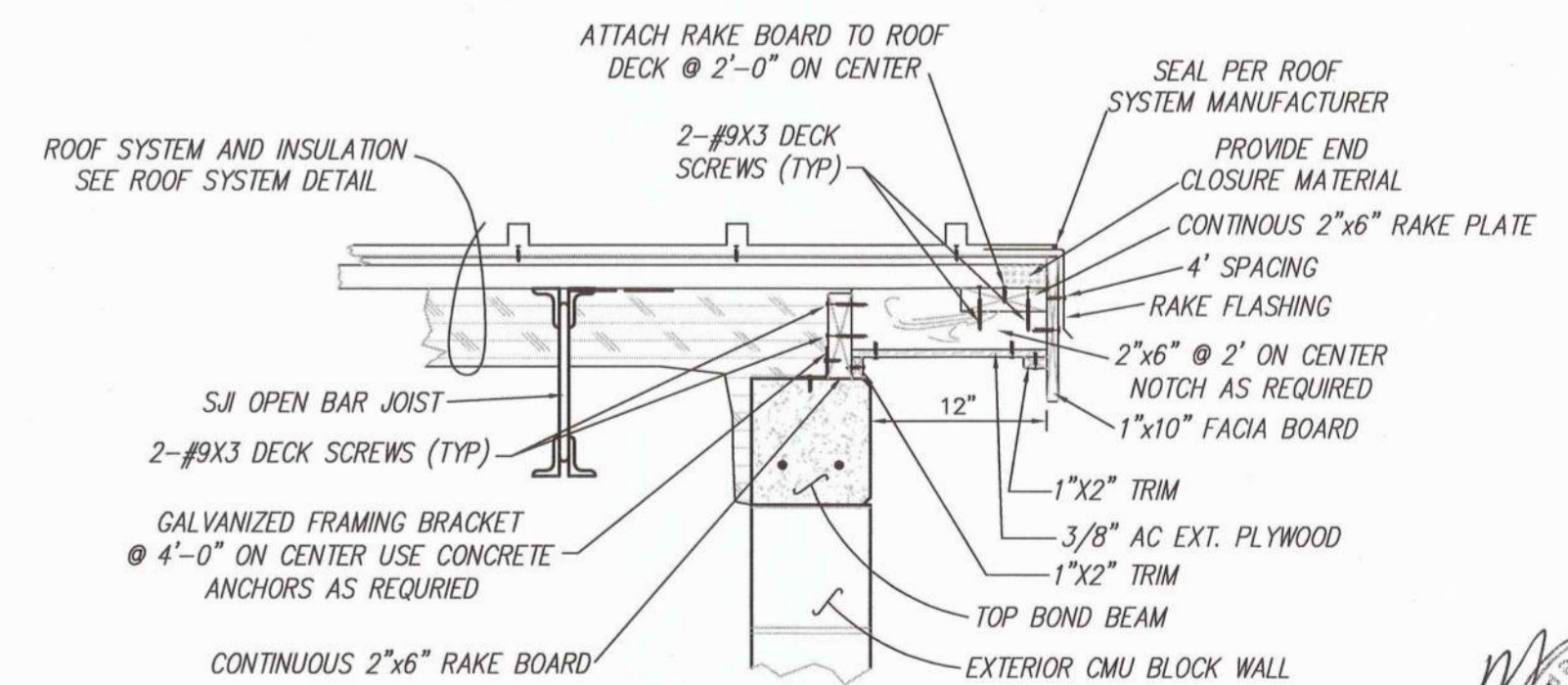
**TRANSVERSE RAFTER TAIL SECTION DETAIL  
NTS**



**ROOF EAVE AND RAKE DETAILS  
NTS**



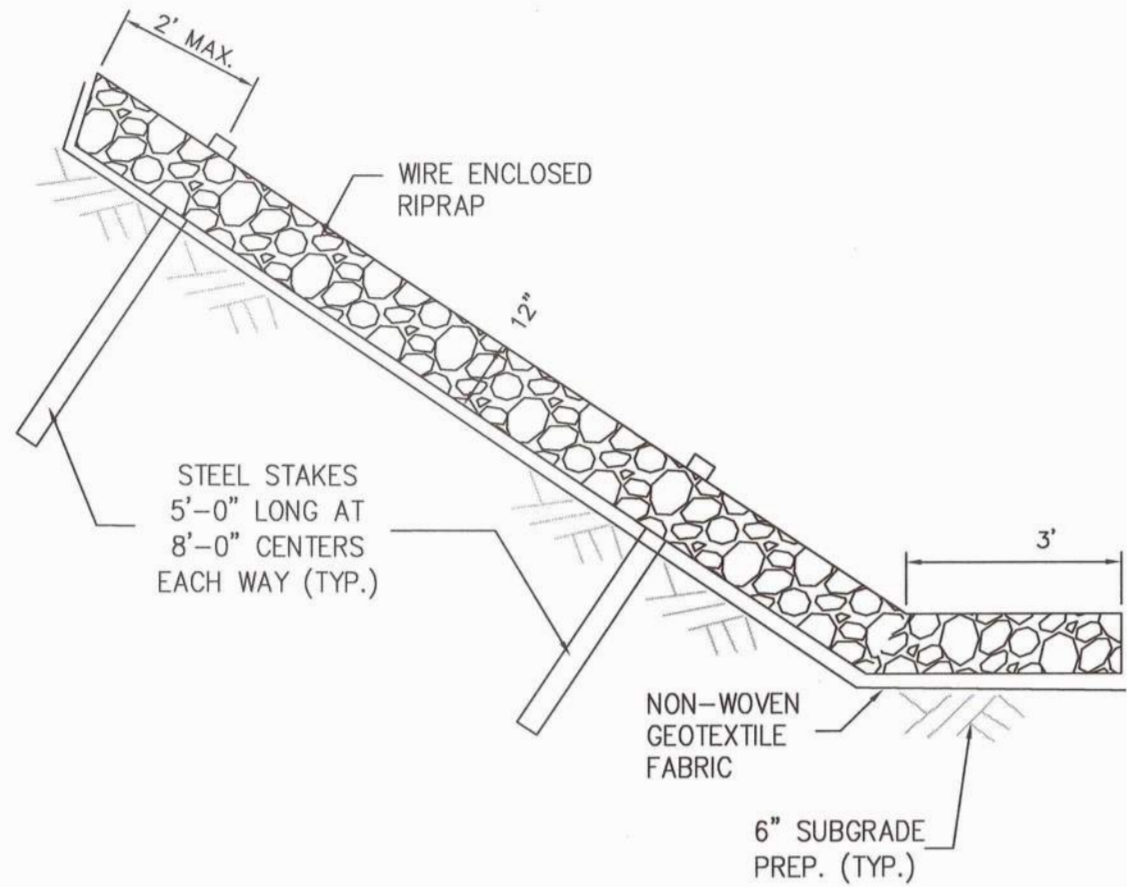
**ROOF RAKE DETAIL  
NTS**



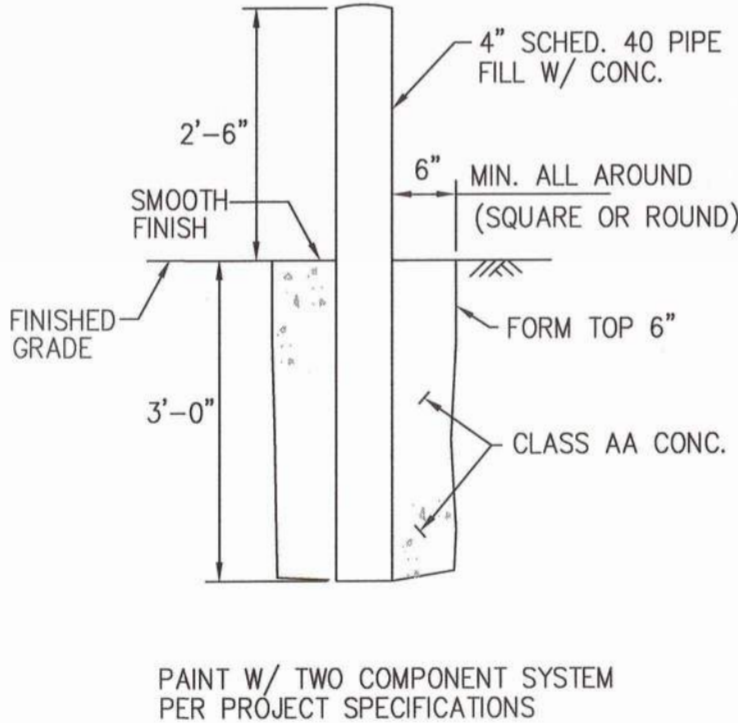
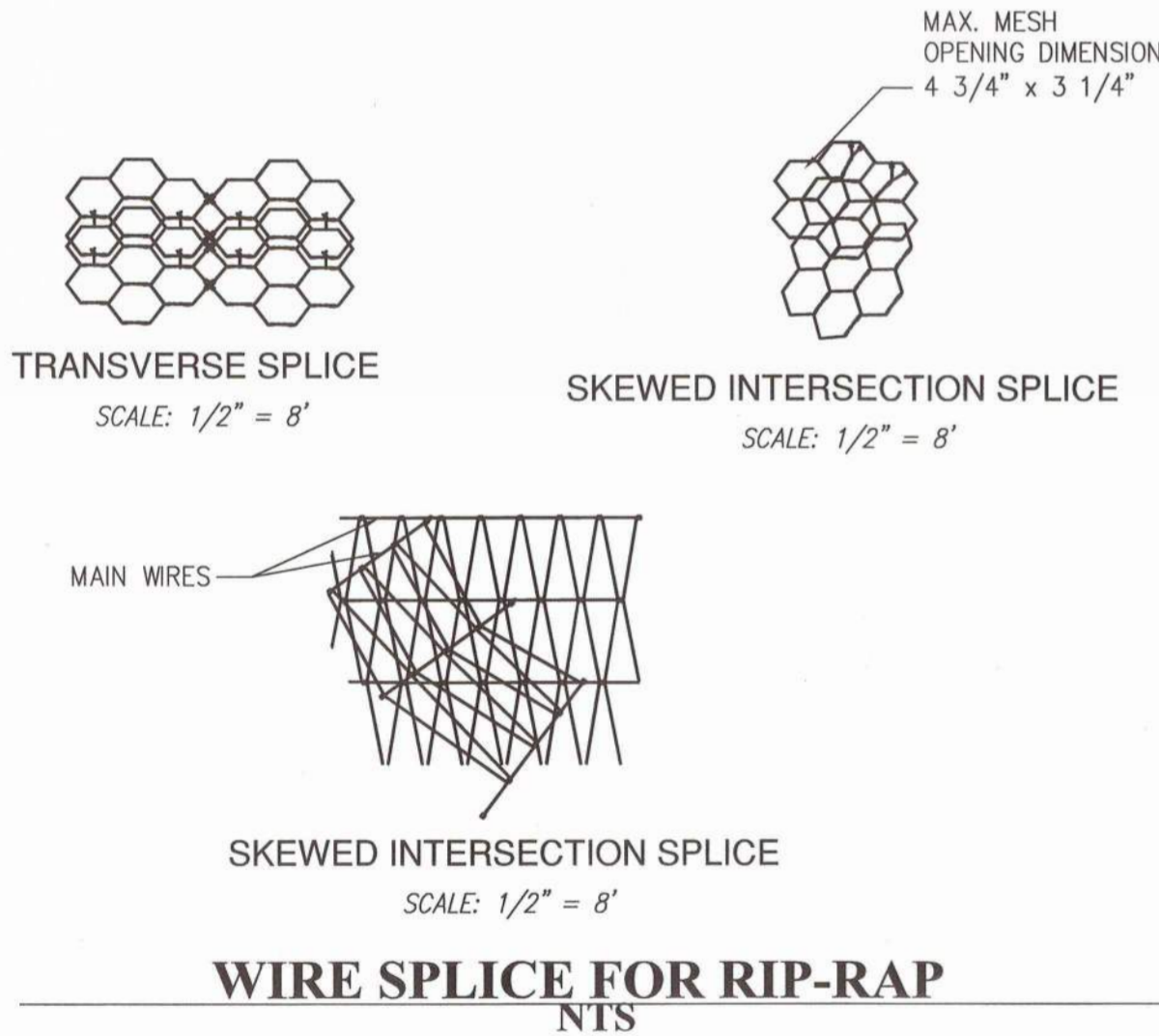
NOTE: ALL METAL AND WOOD ANCHORS OR SCREWS SHALL HAVE A MAXIMUM SPACING OF 2'-0" ON CENTER UNLESS OTHERWISE CALLED FOR.

RIP-RAP NOTES:

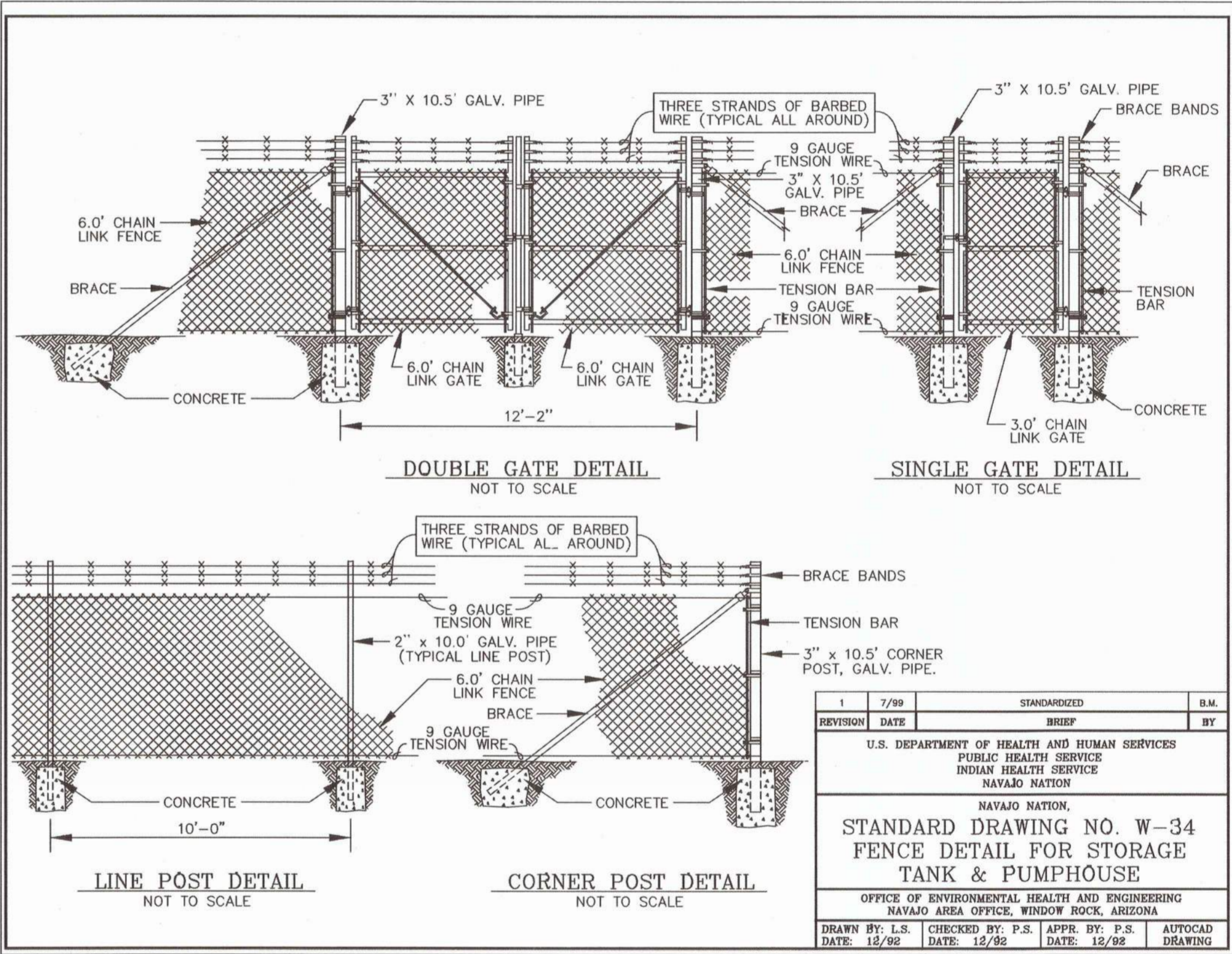
- 1. WIRE FABRIC FOR RIPRAP SHALL BE "W" OR HEXAGONAL MESH MEETING THE REQUIREMENTS LISTED IN THE SPECIFICATIONS.
- 2. STEEL STAKES MAY BE RAILROAD RAILS, WEIGHING NOT LESS THAN 30LBS. PER YARD, 4" O.D. STANDARD STRENGTH GALVANIZED STEEL PIPE OR 4x4x3/8 STEEL ANGLES. STEEL STAKES SHALL PROJECT 3" ABOVE TOP OF RIPRAP. STEEL STAKES ARE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE WORK AND NO DIRECT MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
- 3. IF LENGTH OF SLOPE IS 15' OR LESS, ONLY ONE ROW OF STEEL STAKES 2' FROM THE TOP EDGE OF THE RIPRAP WILL BE REQUIRED UNLESS OTHERWISE NOTED ON PLANS.
- 4. T-12" UNLESS OTHERWISE SHOWN ON PLANS. T-18" AT BRIDGES.
- 5. LONGITUDINAL SPLICES MAY BE MADE WITH ON LAP OF GALVANIZED 9 GAGE TIE WIRE, 9 GAGE GALVANIZED HOG RINGS OR 1 1/2 INTERLOCKING WIRE CLIPS.
- 6. 10' WIDE SECTION SHALL HAVE A MIN. TWO (20) STEEL STAKES HORIZONTALLY @ 8' VERTICALLY.



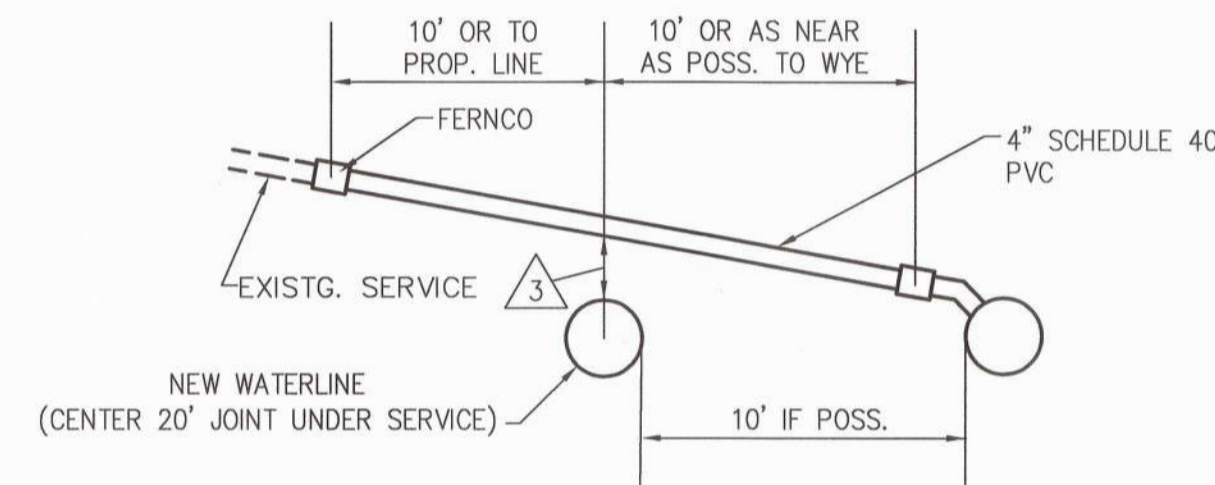
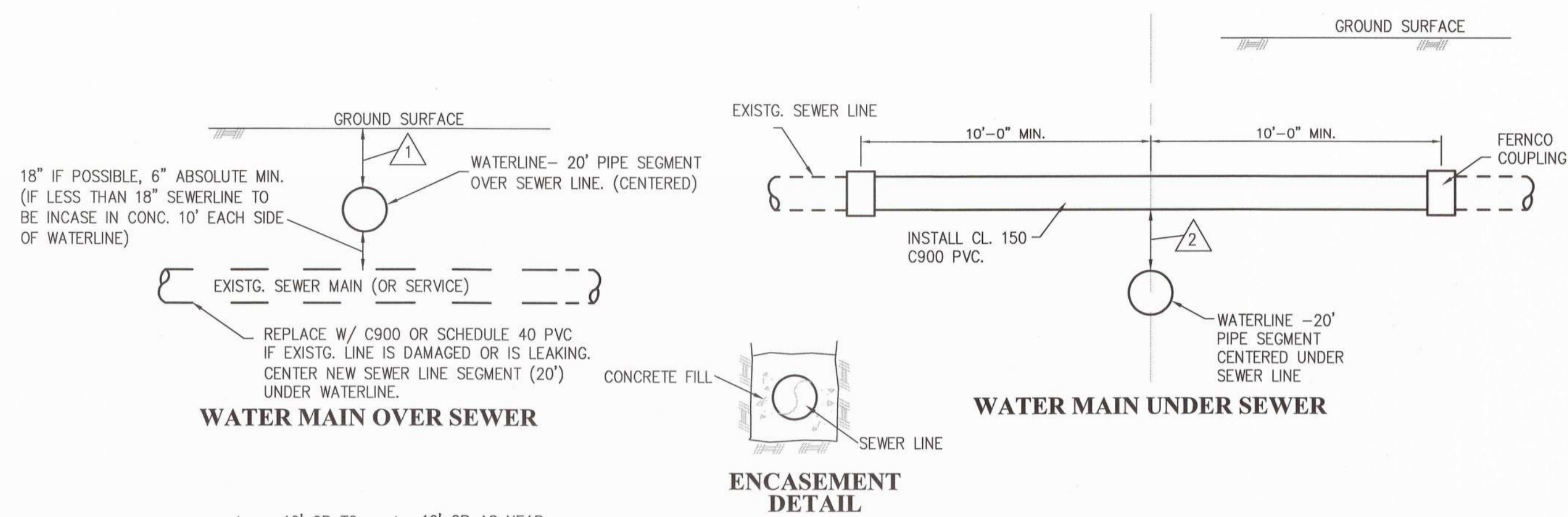
RIP-RAP DETAILS  
NTS



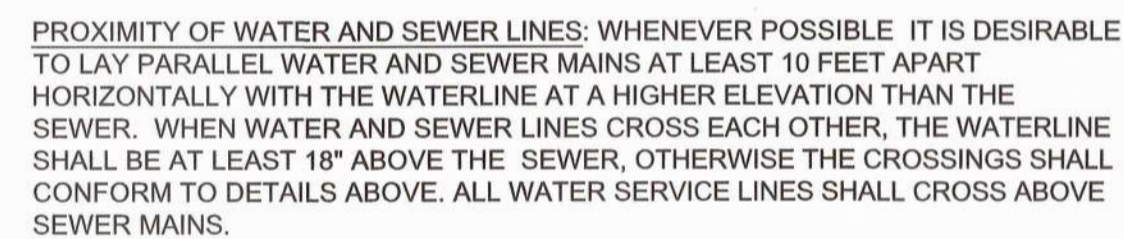
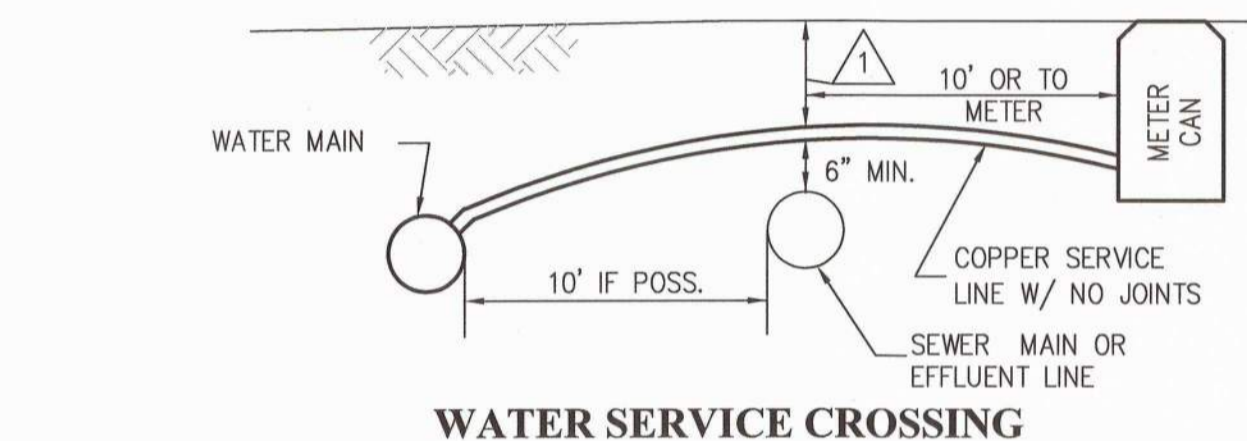
BOLLARD DETAIL  
NTS



1	7/99	STANDARDIZED	B.M.
REVISION	DATE	BRIEF	BY
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE INDIAN HEALTH SERVICE NAVAJO NATION			
NAVAJO NATION, STANDARD DRAWING NO. W-34 FENCE DETAIL FOR STORAGE TANK & PUMPHOUSE			
OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING NAVAJO AREA OFFICE, WINDOW ROCK, ARIZONA			
DRAWN BY: L.S.	CHECKED BY: P.S.	APPR. BY: P.S.	AUTOCAD
DATE: 12/99	DATE: 12/99	DATE: 12/99	DRAWING

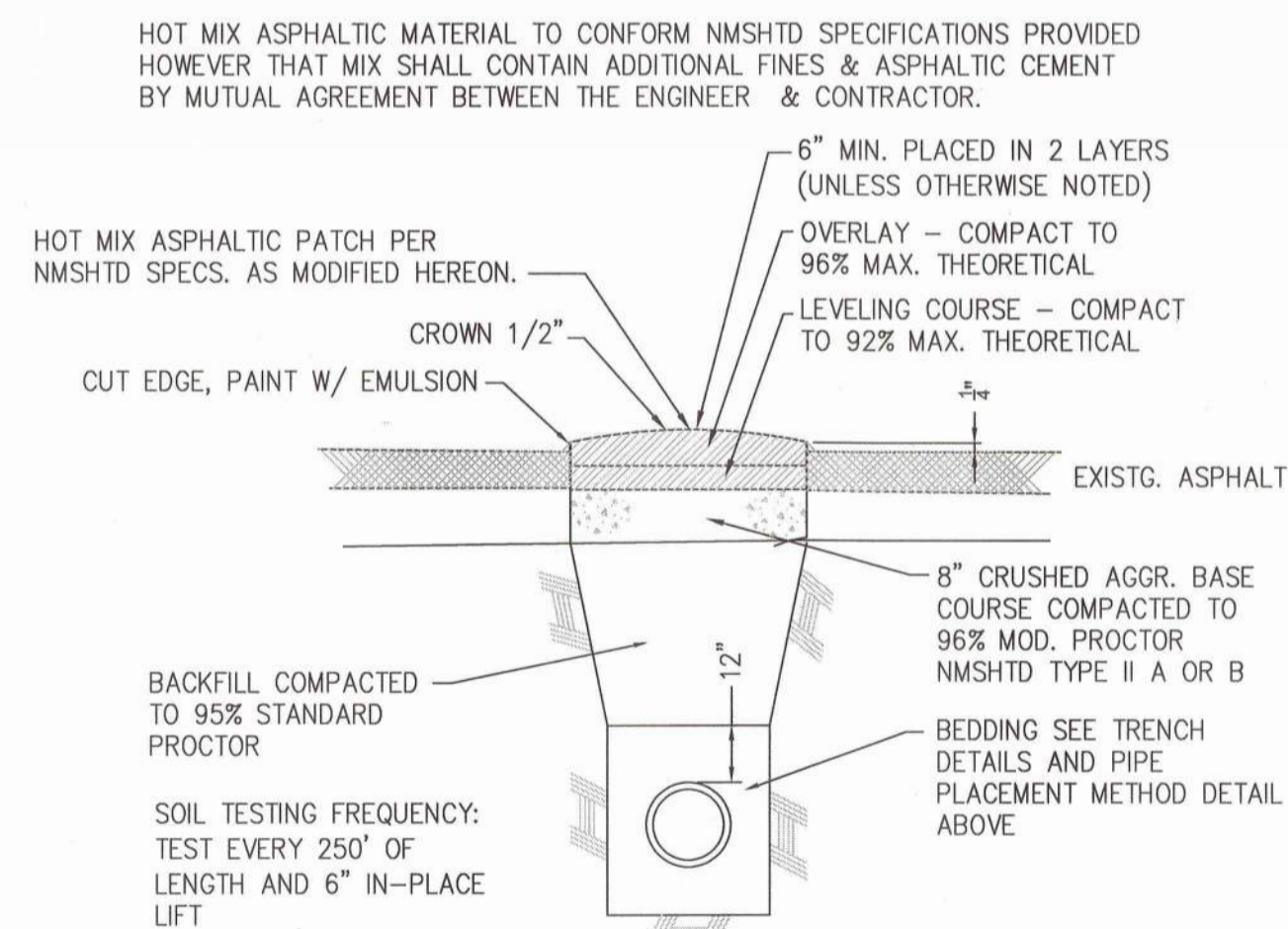


- KEYED NOTES:
1. 36" MIN. IF POSSIBLE
2. 30" MIN. IF APPROVED BY THE ENGINEER
2. 18" MIN. & ENCASE SEWER PAST COUPLINGS
3. 6" MIN.



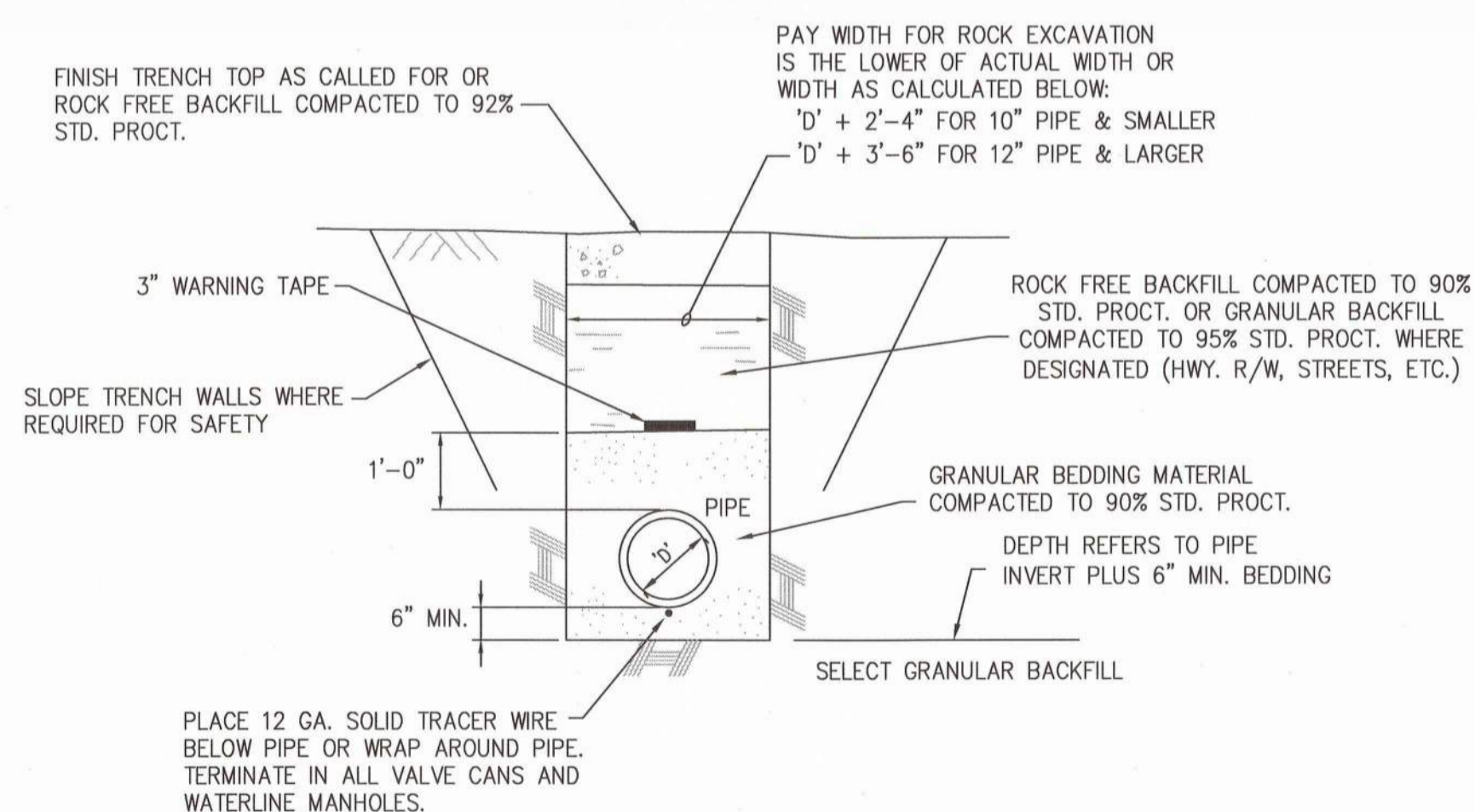
## WATER & SEWER CROSSING DETAILS

NTS



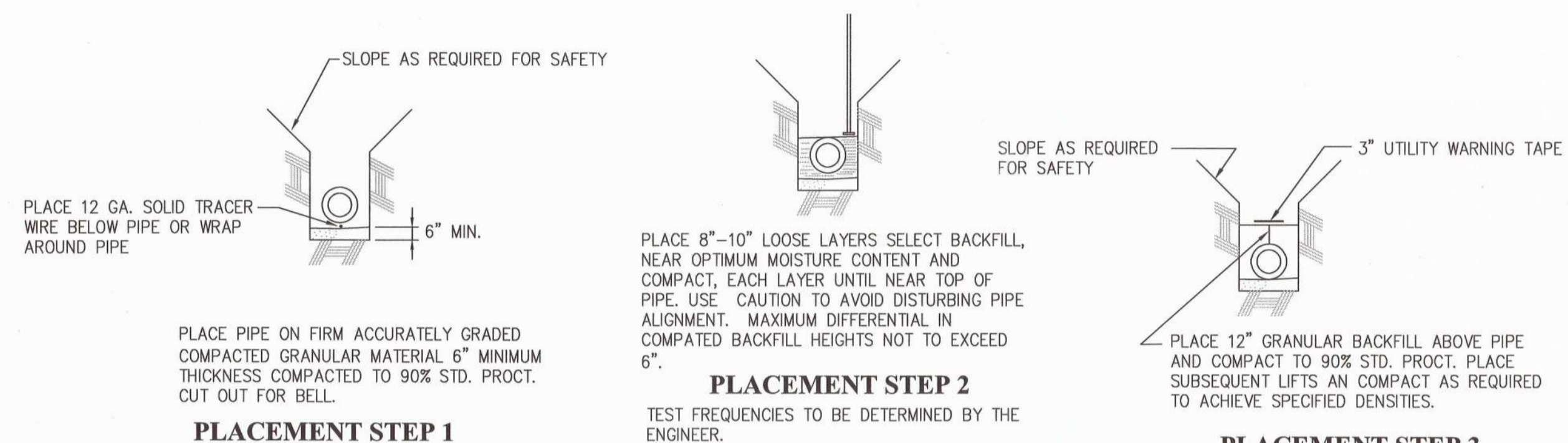
## ASPHALTIC PATCH DETAIL

NTS



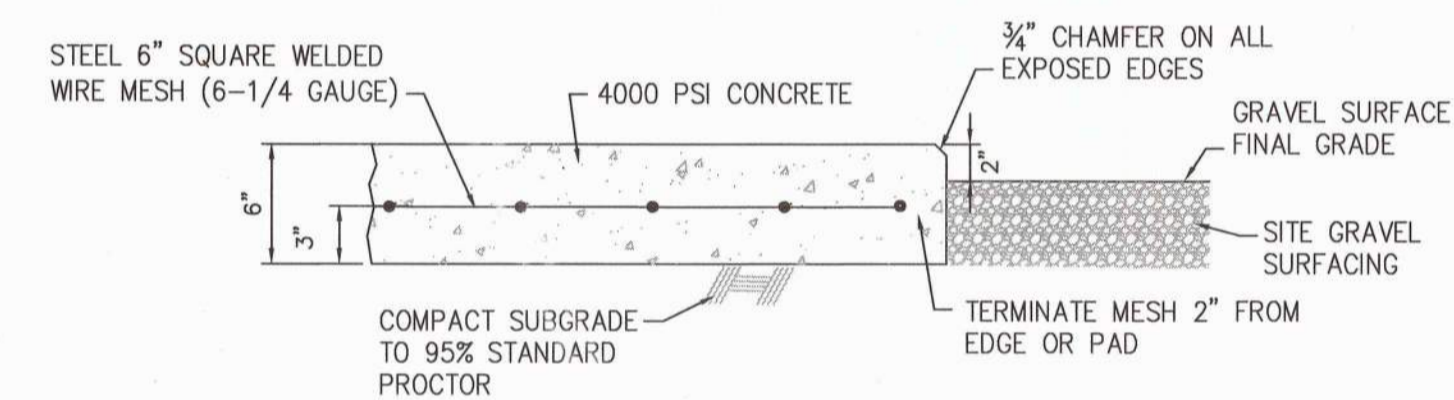
## ROCK EXCAVATION DETAIL

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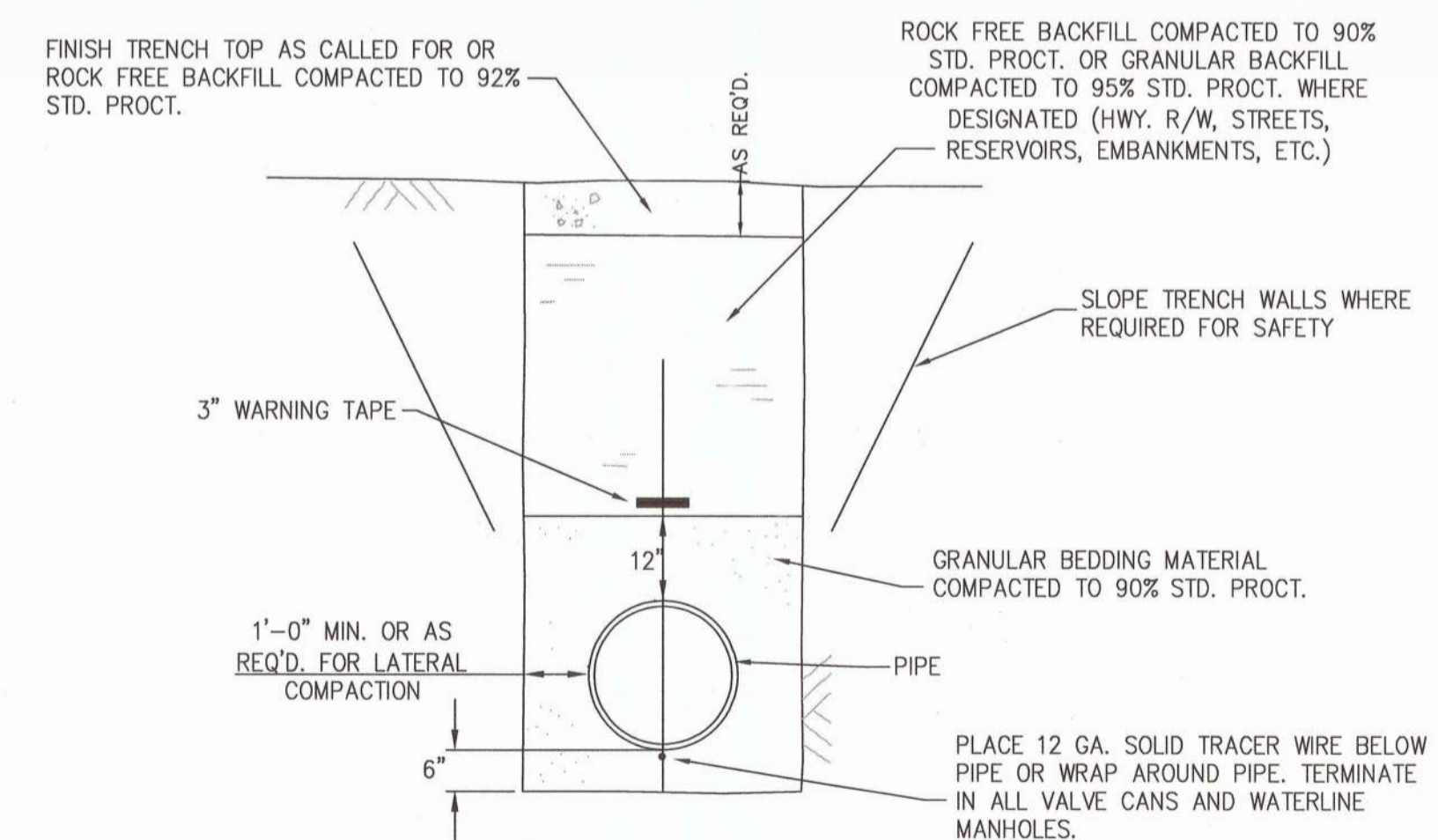
## PIPE PLACEMENT METHOD

NTS



### TYPICAL CONCRETE GENERATOR PAD SECTION

NTS

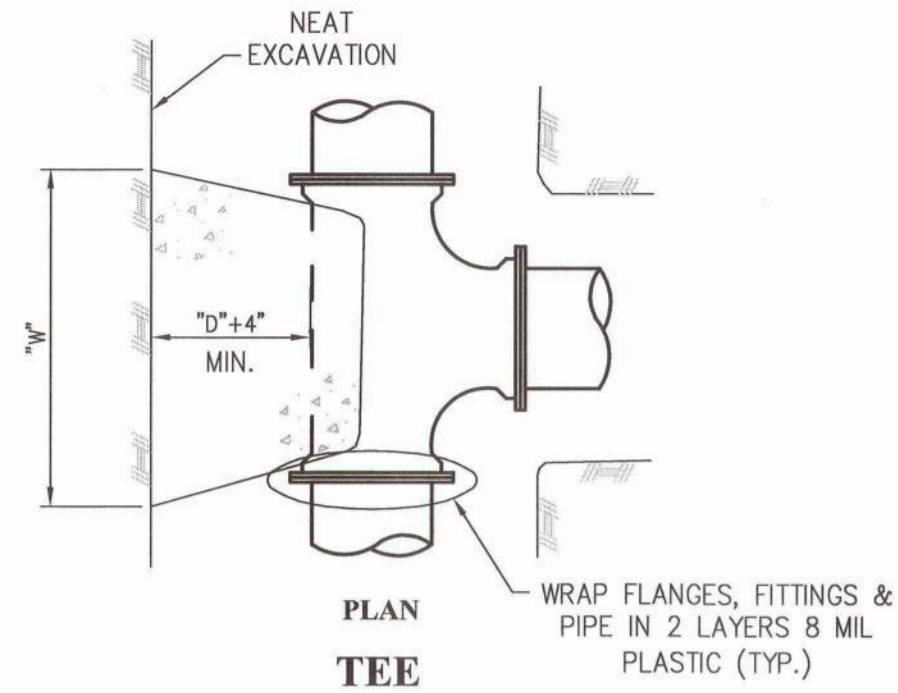


### TYPICAL TRENCH DETAIL

NTS

NOTE:  
SEE MISC. CITY DETAIL THIS SHEET FOR ROCK PAY WIDTH  
WHEN APPLICABLE



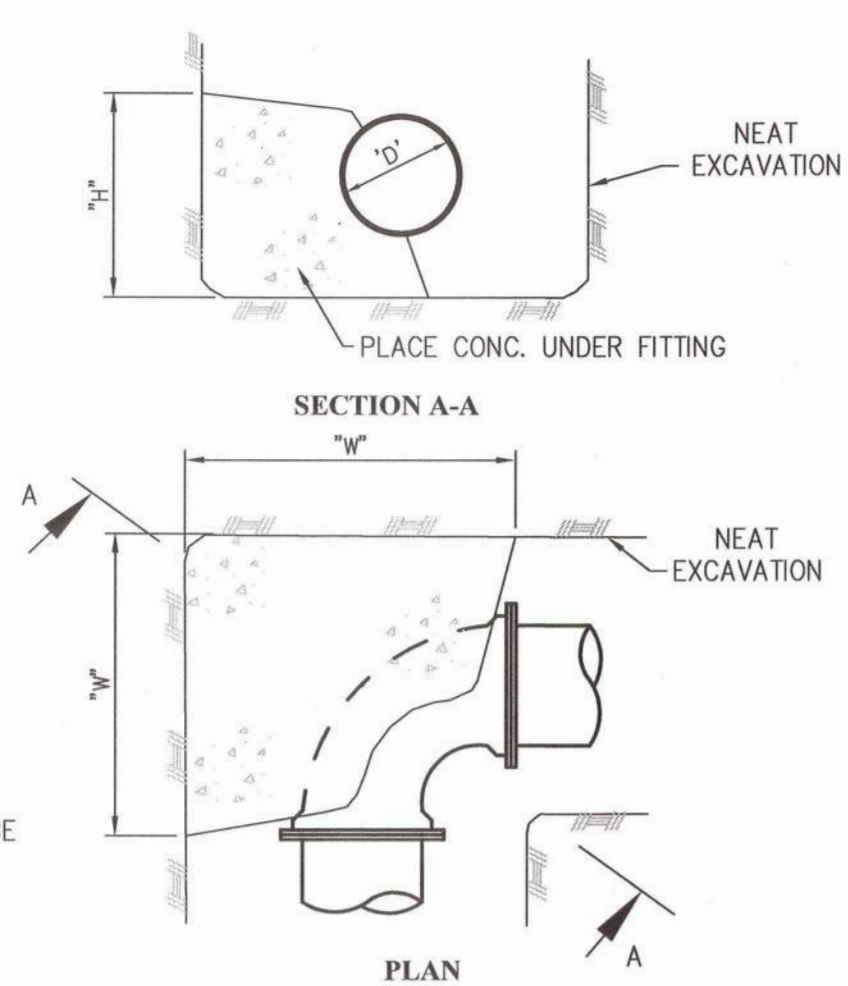


NOTE: HIGHLY SATURATED OR UNCONSOLIDATED SOILS MAY REQUIRE AN INCREASE IN THRUST BLOCK SIZE. VERIFY W/ PROJECT ENGINEER.

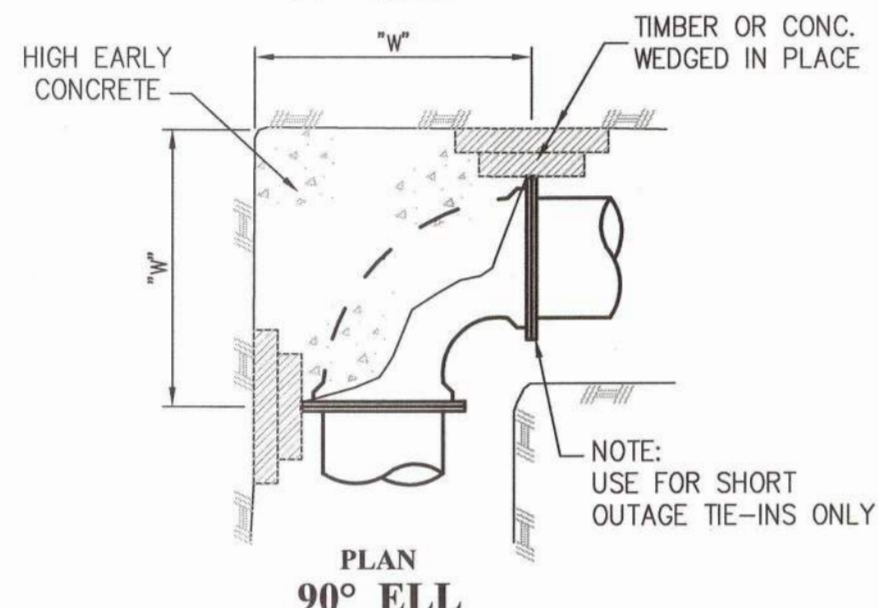
NOTE: BACKFILL SHALL NOT BE PLACED UNTIL THRUST BLOCK CONCRETE HAS FIRMLY SET.

#### MINIMUM THRUST BLOCK DIMENSIONS FOR HORIZONTAL FITTINGS

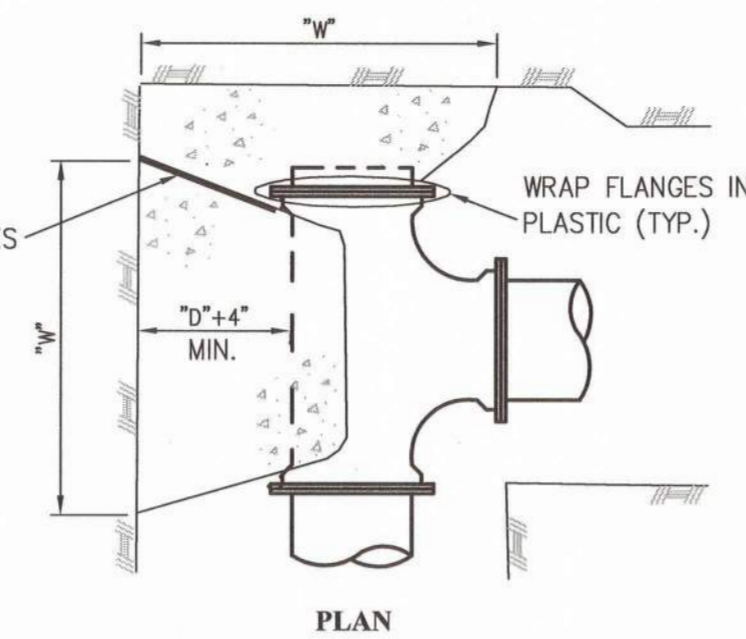
PIPE	TEE		90 ELL		45 ELL		22 1/2 - 1/4 ELL	
"D"	"W"	"H"	"W"	"H"	"W"	"H"	"W"	"H"
4"	14"	10"	14"	10"	12"	10"	12"	10"
6"	18"	14"	18"	14"	16"	12"	14"	10"
8"	24"	16"	22"	16"	18"	16"	16"	14"
10"	30"	30"	30"	30"	24"	16"	18"	12"
12"	32"	32"	32"	32"	30"	18"	20"	14"
14"	36"	36"	36"	36"	32"	24"	24"	16"
16"	48"	36"	48"	36"	36"	26"	30"	18"
18"	50"	38"	50"	38"	38"	28"	32"	20"
24"	58"	40"	58"	40"	40"	30"	36"	26"
30"	66"	46"	66"	46"	48"	34"	44"	34"



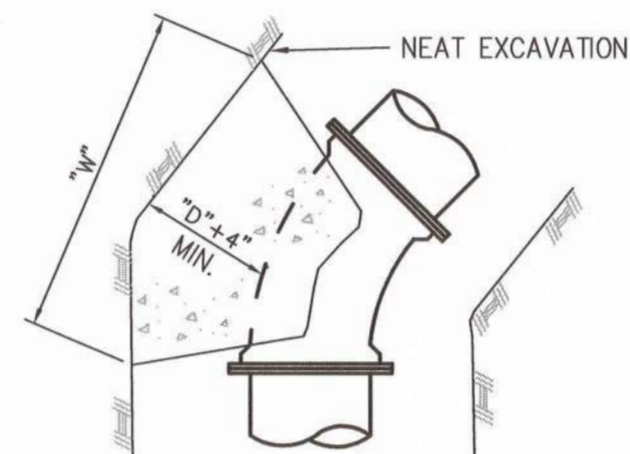
90° ELL



90° ELL



PLUGGED TEE

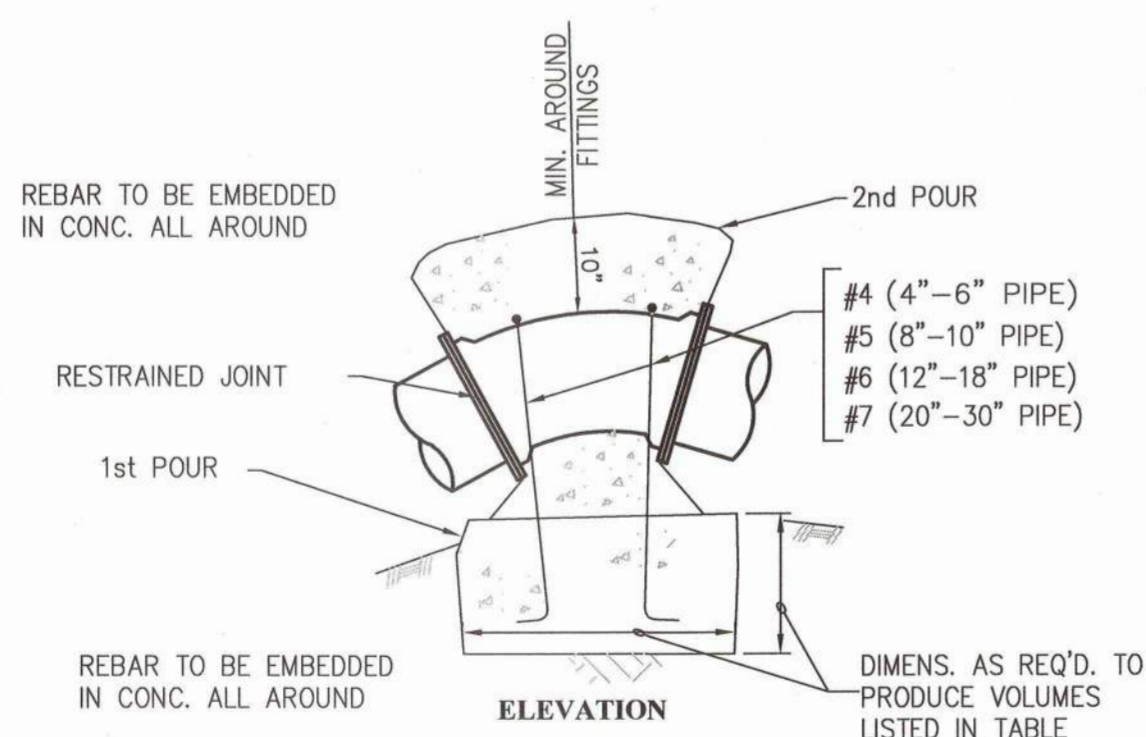
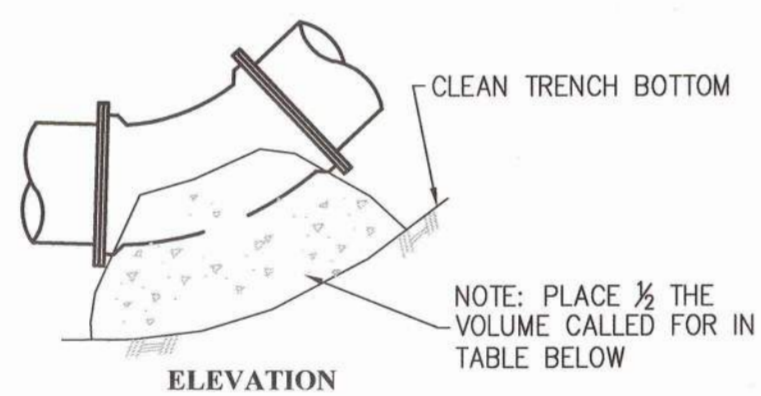
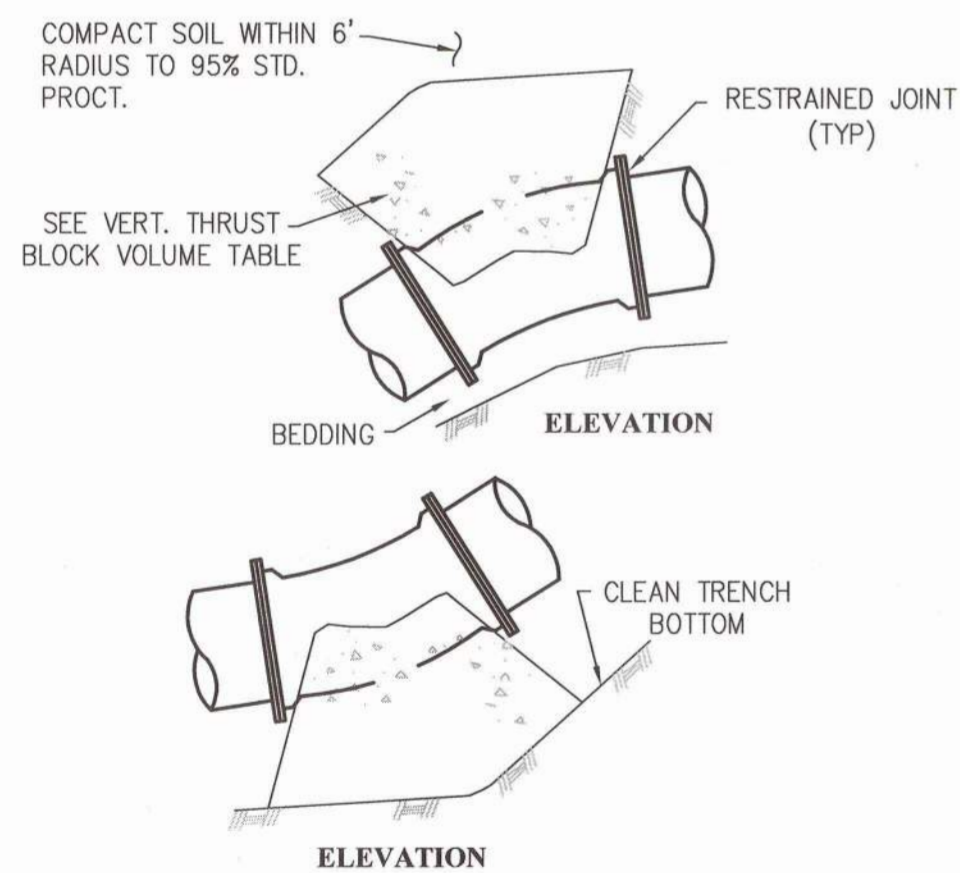


TYPICAL ELL

NOTE: PROVIDE "MEGALUC" GLANDS FOR MJ CONNECTIONS.

#### HORIZONTAL THRUST BLOCK DETAILS

NTS



#### VERTICAL THRUST BLOCK -22 1/2° & 45° ELLS

SEE GENERAL NOTES FOR LIMITATIONS ON VERTICAL FITTING DEFLECTIONS THIS PROJECT AND RESTRAINT REQUIREMENTS FOR ELLS & ADJACENT PIPE.

#### VERTICAL THRUST BLOCK DETAILS

NTS

#### WATER SPECIFICATIONS

NOTE: REFERENCES TO PUBLISHED SPECIFICATIONS ARE FOR LATEST REVISION THEREOF.

##### A. WATERLINES AND APPURTENANCES FOR POTABLE WATER

- Ductile Iron:** Ductile iron for waterlines shall be of the size and class specified, cement lined and shall conform to AWWA C104 and C151. Joints for ductile iron pipe shall be rubber ring "push-on" or as specified on the drawings. Ductile iron pipe shall be wrapped 8 mil polyethylene per AWWA C105.
- PVC:** PVC Waterlines shall conform to requirements of AWWA specification C900 with O.D. equivalent to cast iron with rubber ring "push-on" type gaskets.
- Fittings and Specials:** Fittings and specials shall be ductile iron cement lined mechanical joint ductile iron conforming to AWWA C104 and C110 with retainer glands. Provide adapter gaskets at all fittings and specials, as required, to adapt to IPS or SDR Outside Diameter pipe. Fittings and specials shall be wrapped in two layers of 8 mil. polyethylene
- Gate Valves:** Gate valves 2" and larger shall be epoxy coated, iron body, resilient wedge, non-rising stem valves rated for 250 psi and shall conform to AWWA C-509 or C515. Valves less than 2" in diameter shall be high quality all brass ball valves. Valve boxes shall be ductile iron, adjustable length type. Connections for 2" and larger gate valves shall be mechanical joint with stainless steel trim unless otherwise noted.
- Fire Hydrants:** Fire hydrants shall have a 6" diameter inlet with 5 1/4" valve opening and shall be rated for 150 psi working pressure. Connections for fire hydrants shall be mechanical joint and shall conform to AWWA C502. Fire hydrants shall be Mueller Centurion A 423.
- Testing and Disinfection of Waterlines and Appurtenances**
  - Testing of Waterlines:** All Waterlines shall be tested after installation in accordance with AWWA Specification C600, provided allowable line leakage shall not be more than NDP /7400 gallons per hour where N = number of joints, D = pipe diameter in inches and P = test pressure in psi.

Average Test Pressure (psi)	Allowable Leakage per 100 Joints (gallons/hr.)					
	Pipe Dimension					
	4"	6"	8"	10"	12"	14"
200	0.76	1.15	1.53	1.91	2.29	2.68
						3.06

- Disinfection of Waterlines:** Completed lines shall be treated with chlorine solution of not less than 50 parts per million kept in contact for at least 24 hours. After the 24 hour period, the line shall be flushed until the residual chlorine has been reduced to City of Gallup system residual. Water in the new line shall be sampled by the contractor for biological testing after a period of 48 hrs. Required tests shall be the responsibility of the contractor. Tests to indicate compliance with NMED Standards prior to tying-in.

Disinfection procedures shall be in accordance w/ AWWA C651 specifications and as modified hereon.

Chlorine solution shall normally be introduced at the lowest elevation of the water line. The solution shall be pumped into the line in such a manner as to prevent trapping air. Contractor shall provide filling, sampling and air release taps as required.

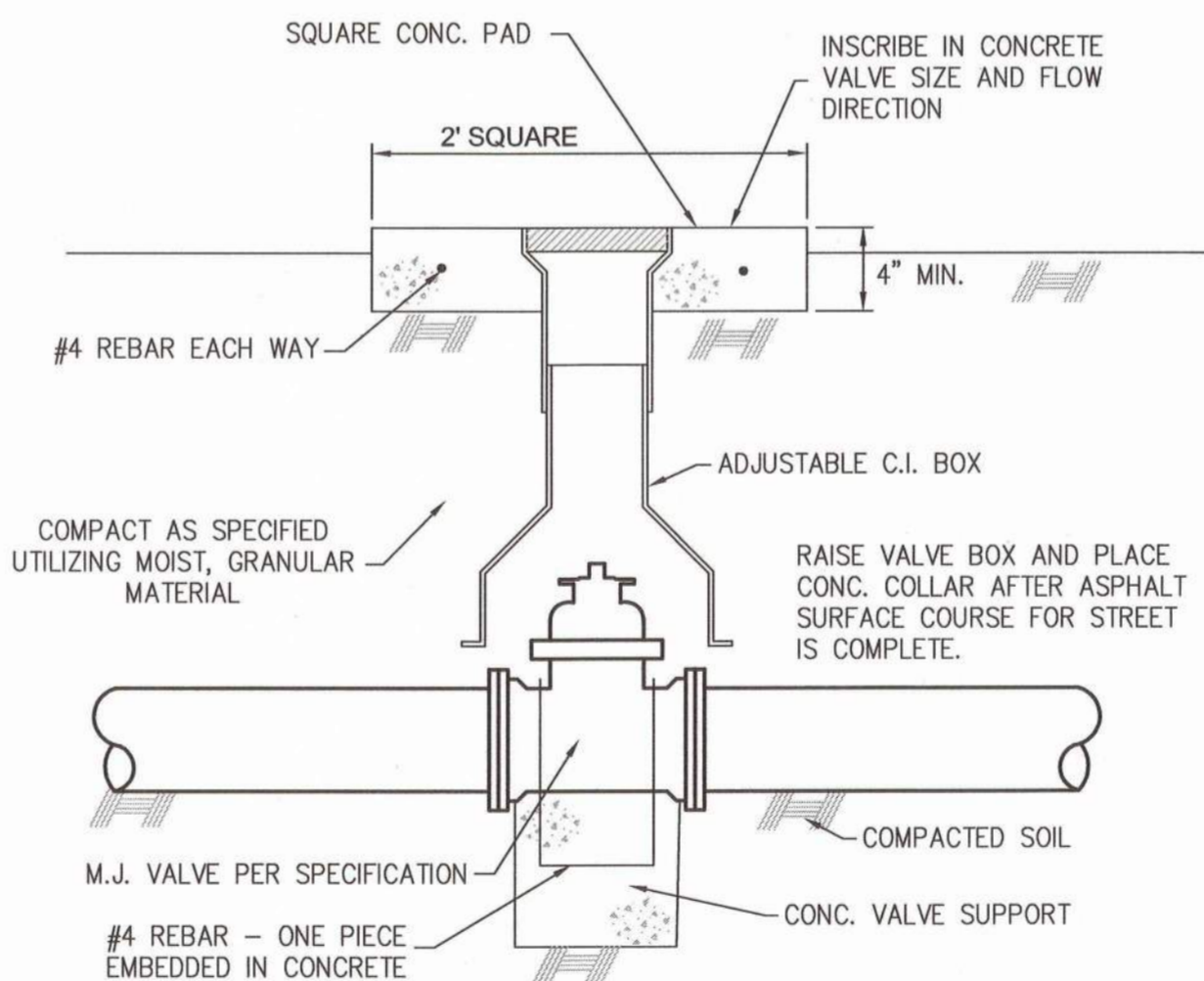
Liquid chlorine concentrate or gas shall be used for chlorine solution. Powder chlorine concentrate will not be permitted. (See Water Line Filling and Flushing Methods)

- Waterline Filling and Flushing Methods:** lines shall be filled w/ chlorine solution, pressure tested, flushed to lower residual and then tested for biological conformance prior to any tie-ins by either of the following methods. contractor to be responsible for apparatus required including methods of pipe & fitting restraint under pressure.

Method 1: Fill the line with pre-mixed chlorine solution from clean water tanker. NOTE: chlorine concentrate may be introduced while pumping water into line, if continued disbursement is assured. After pressure test and 24 hour contact period, replace chlorinated water with low residual water by pumping from clean water tanker. Complete biological sampling and testing after 48 hrs. Tie-in to city system when test results are acceptable. flush lines with city pressure.

Method 2: Connect to new main and existing city main with a line equipped with 2 check valves and a manual valve or with a standard commercial backflow preventor. NOTE: The connecting line and accessories are usually of a smaller size than the mains. Fill the new main through the connecting line while introducing a separate chlorine concentrate feed. Close the valve and disconnect the connecting line. Complete pressure testing and 24 hour contact period. Reconnect the line and flush to acceptable residual from the city main. Close the valve and disconnect the connecting line. Conduct biological sampling for testing after 48 hrs. Tie-in to city main when test results are acceptable. Flush lines to achieve scouring velocity with city pressure.

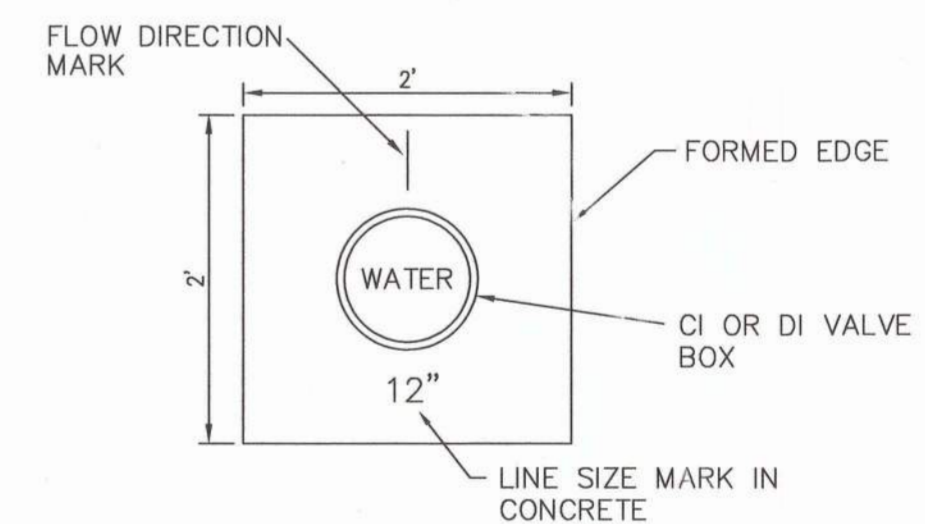
- Water Service Lines:**
  - Corp. Stop - cc tapered inlet by compression fitting as Mueller 110 with stainless steel gripper band.
  - Service Line - Type "K" soft drawn copper 3/4" min.
  - 1/8th or 1/4 Bends - Compression or to corp stop. (w/ ss gripper band)
  - Couplings - Compression by Compression. (w/ ss gripper band)
  - Saddles to be brass, double strap as FORD 202BS or equal. Maintain 2' min. between pipe end and tap.



- NOTES:
- WRAP ALL FLANGES, GLANDS AND BOLTS W/ 8 MIL PLASTIC.
  - HORIZONTAL GATE VALVE SHALL BE PROVIDED WITH BEVEL GEARING AND 2" OPERATING NUTS
  - VALVE CAN SHALL BE CENTERED ON 2" OPERATING NUT FOR HORIZONTAL GATE VALVE WITH BEVEL GEARS PER THIS DETAIL
  - VALVES VERTICAL AND HORIZONTAL SHALL BE INSTALLED PER IHS STANDARD W-16

#### TYPICAL VERICAL VALVE SETTING

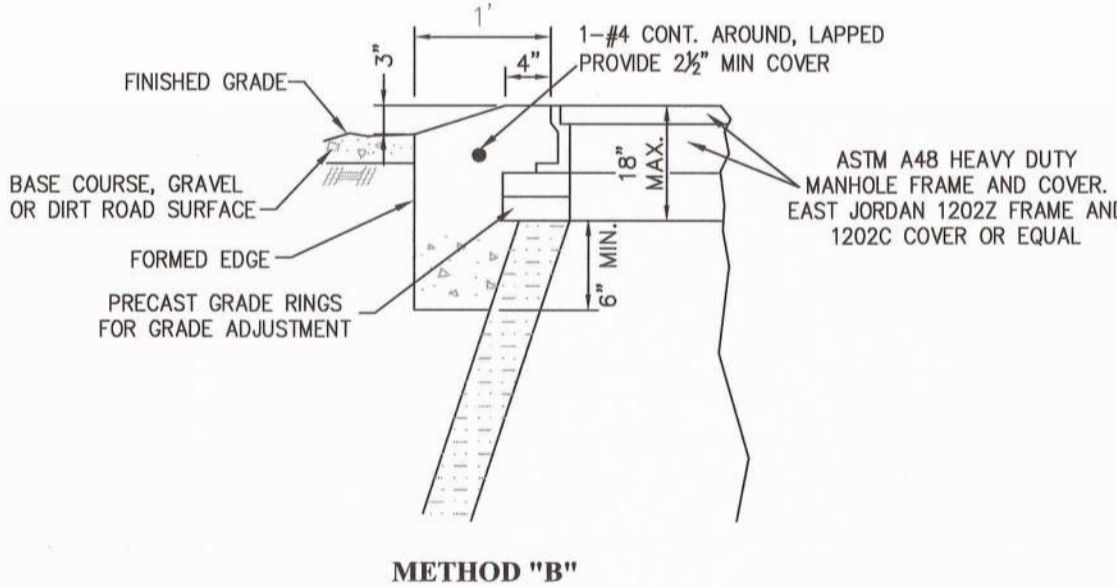
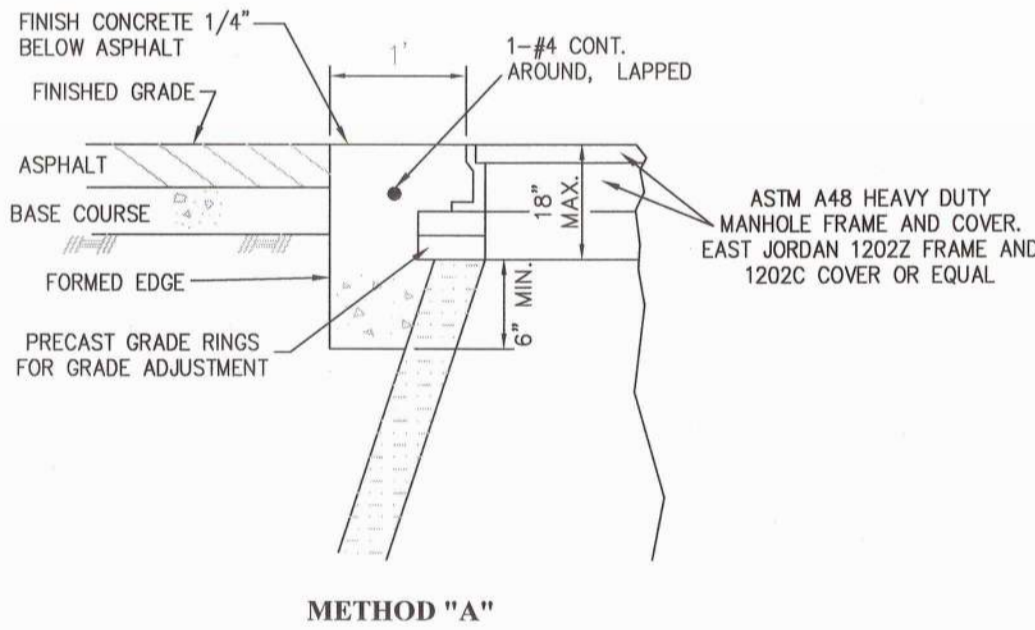
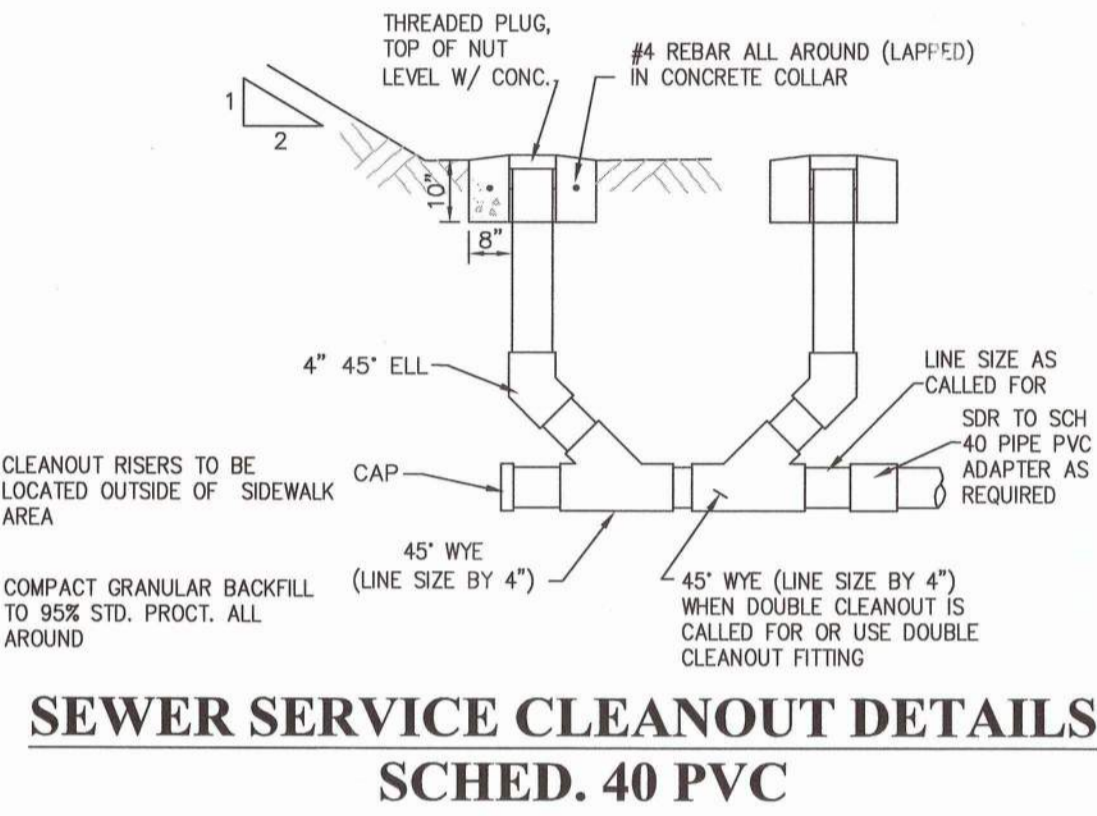
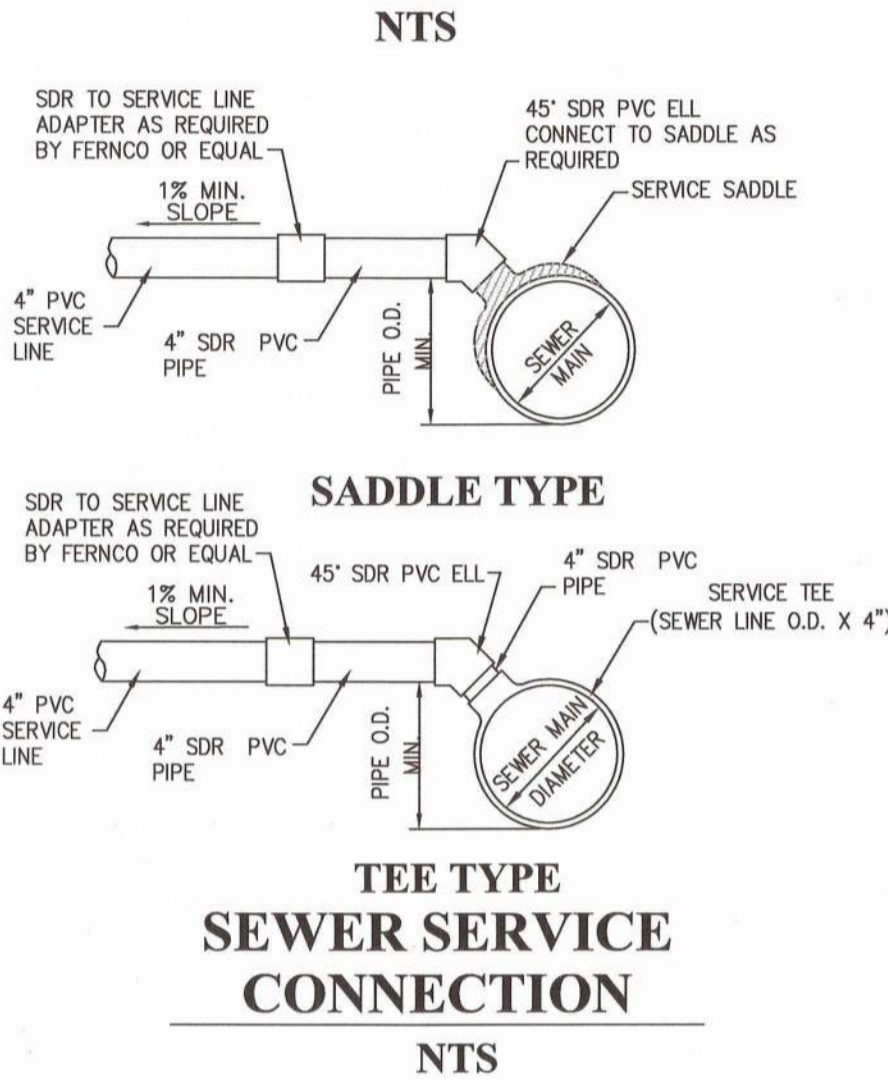
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#### TYPICAL VALVE BOX MARKINGS

SEWER & DRAIN LINE SPECIFICATIONS

- A. SANITARY SEWER & DRAIN LINE AND APPURTENANCES
- PVC SEWER PIPE: PVC SEWER PIPE SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS D-3034 WITH A MINIMUM SDR-35. PIPE CONNECTIONS SHALL BE BELL-SPIGOT WITH RUBBER RING AND SHALL BE WATER TIGHT AT 15 PSI HYDROSTATIC HEAD.
  - MANHOLES AND APPURTENANCES:
    - MANHOLES SHALL BE CONSTRUCTED FROM APPROVED PRECAST BARREL AND CONE SECTIONS MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
    - MANHOLE FRAMES AND COVERS SHALL BE CAST IRON, SOLID LID, TRAFFIC MODEL AND SHALL CONFORM TO ASTM A48-36C.
  - SEWER SERVICE LATERALS:
    - PVC SERVICE WYE, SDR-35 (GXGXG) - GASKET
    - PVC SADDLE TEE SDR-35 (RUBBER SEAL TO MAIN X G BRANCH) WITH STAINLESS STEEL BANDS.
    - PVC SCHD. 40 PIPE, ASTM D-1785 WITH RUBBER RING JOINTS OR SOLVENT WELD.
    - CONNECTION TO EXISTING SERVICE LINES, FERNCO ELASTOMERIC SLEEVES WITH STAINLESS STEEL BANDS.
  - HYDROSTATIC (EXFILTRATION) TESTING: COMPLETED SEWER LINES BETWEEN MANHOLES TO BE SUBJECTED TO MINIMUM 4 FT. OF HEAD FOR 2 HOUR PERIOD. LEAKAGE TO BE 1 GALLON OR LESS. MAXIMUM PERMISSIBLE LOSS IN MANHOLES FOR 2 HOUR PERIOD IS 5 GALLONS.
- NOTE: REFERENCES TO PUBLISHED SPECIFICATIONS ARE FOR LATEST REVISION THEREOF.

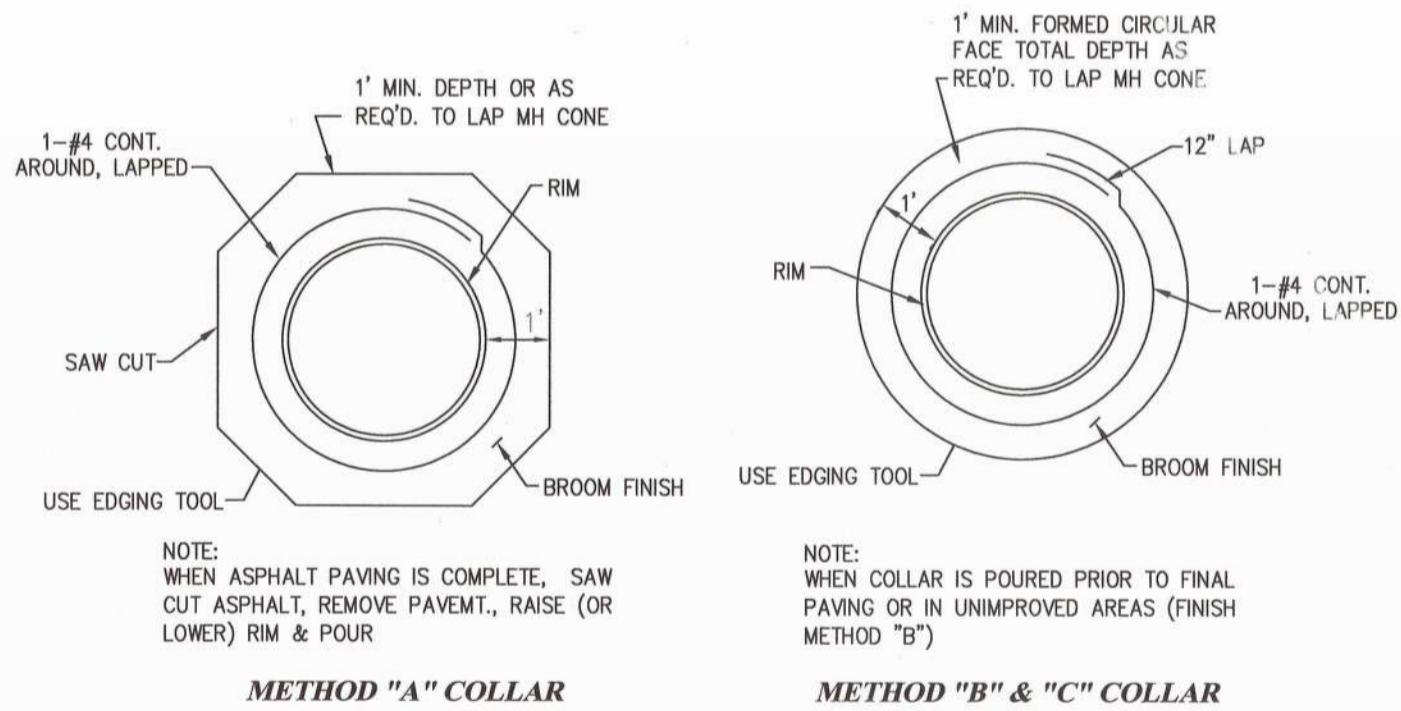


MANHOLE RIM FINISH METHODS

- NOTES:
- TOP OF RING ELEVATION TO BE SET BY ENGINEER OR AS SHOWN ON P&P SHEETS.
  - SAW CUT ASPHALT, RAISE RIM & POUR CONCRETE COLLAR AFTER ASPHALT PAVING IS COMPLETE, (WHEN CALLED FOR.)

SEWER MANHOLE AND VAULT RIM DETAILS

NTS



MANHOLE RIM COLLAR PLAN