

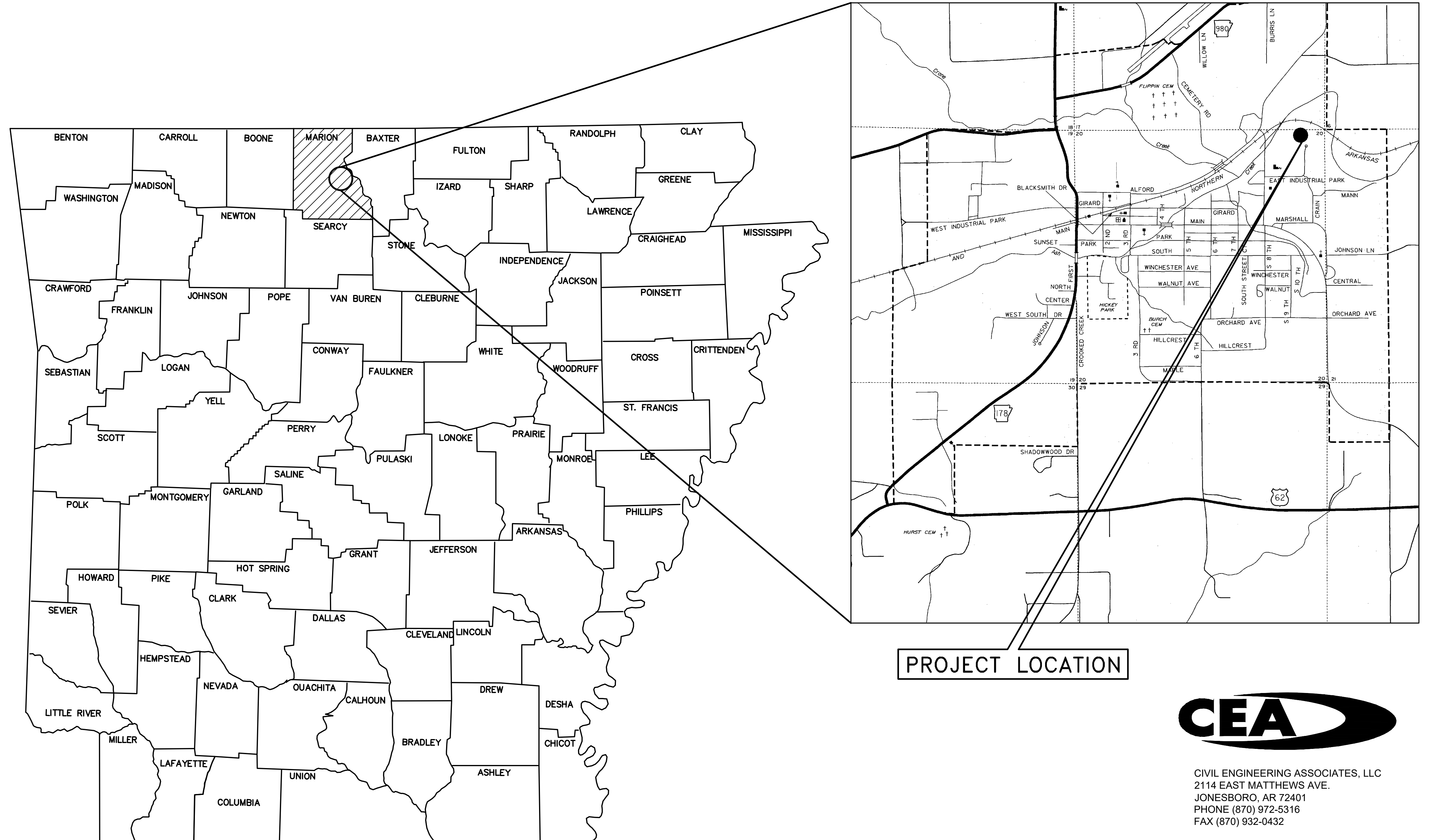
WASTEWATER SYSTEM IMPROVEMENTS

CITY OF FLIPPIN

FLIPPIN, ARKANSAS

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2. HYDRAULIC PROFILE & FLOW SCHEMATIC
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8. PUMP BUILDING DETAILS
9. PUMP BUILDING ELEVATION VIEWS
10. LIFT STATION & BUILDING DETAILS
11. STANDARD DETAILS

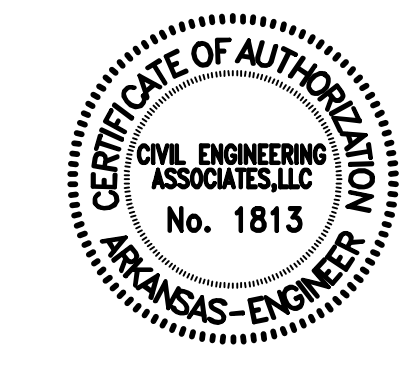


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CITY OF FLIPPIN
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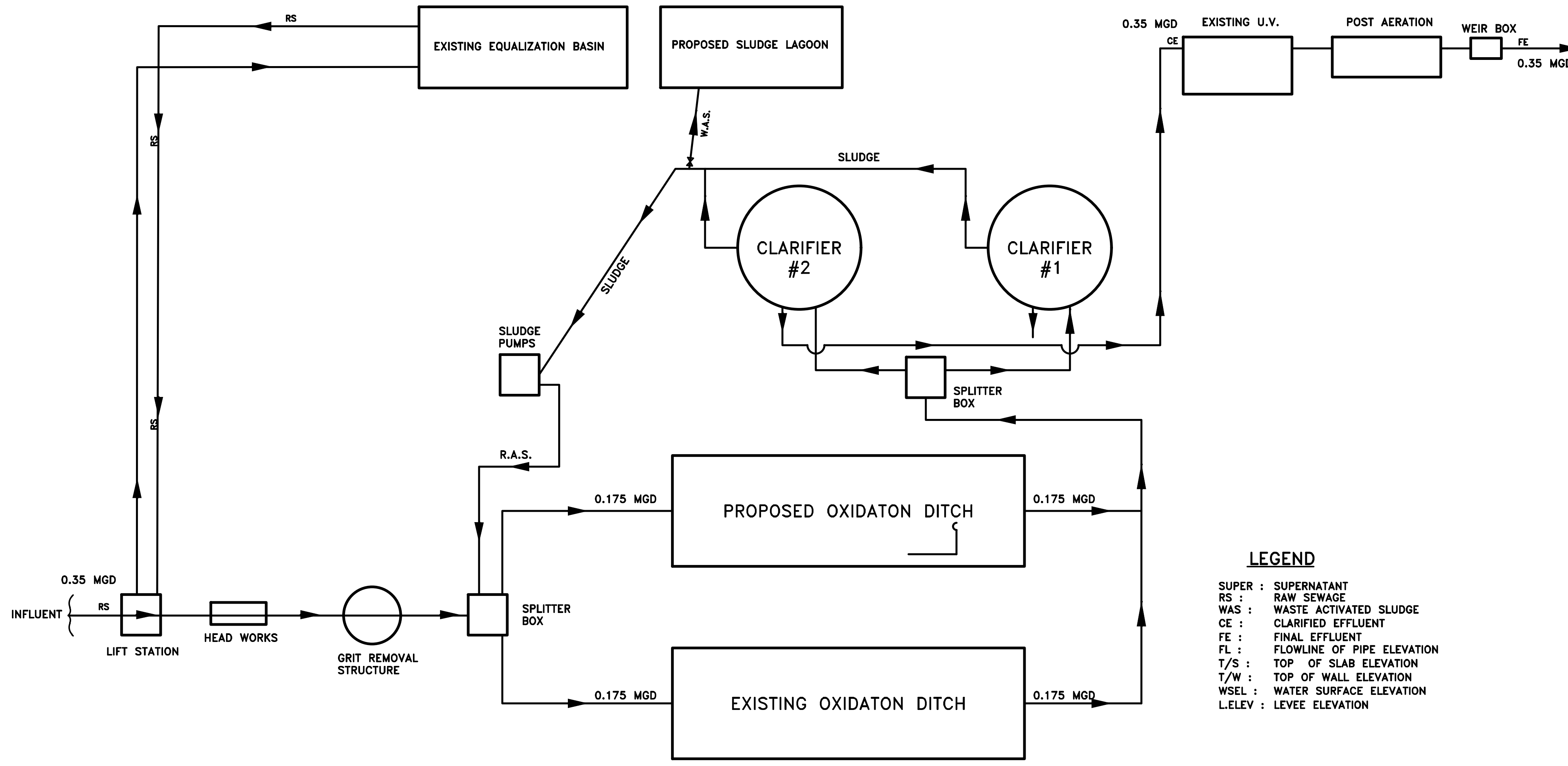
PROJECT LOCATION



CIVIL ENGINEERING ASSOCIATES, LLC
2114 EAST MATTHEWS AVE.
JONESBORO, AR 72401
PHONE (870) 972-5316
FAX (870) 932-0432



NOVEMBER 2020



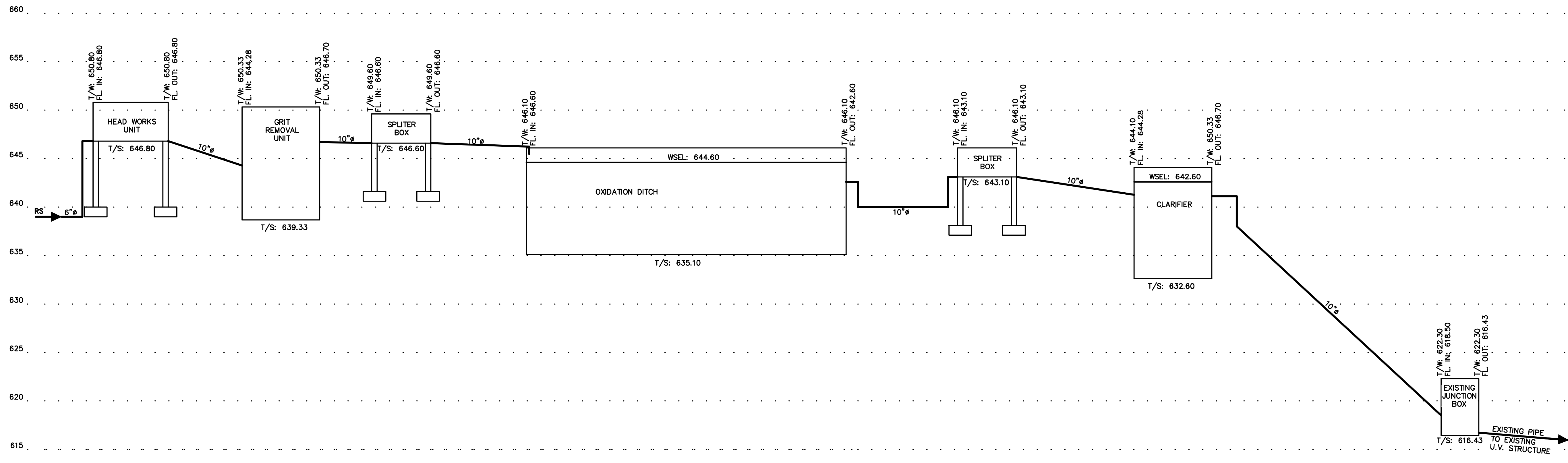
FLOW SCHEMATIC

LEGEND
 SUPER : SUPERNATANT
 RS : RAW SEWAGE
 WAS : WASTE ACTIVATED SLUDGE
 CE : CLARIFIED EFFLUENT
 FE : FINAL EFFLUENT
 FL : FLOWLINE OF PIPE ELEVATION
 T/S : TOP OF SLAB ELEVATION
 T/W : TOP OF WALL ELEVATION
 WSEL : WATER SURFACE ELEVATION
 L.ELEV : LEVEE ELEVATION

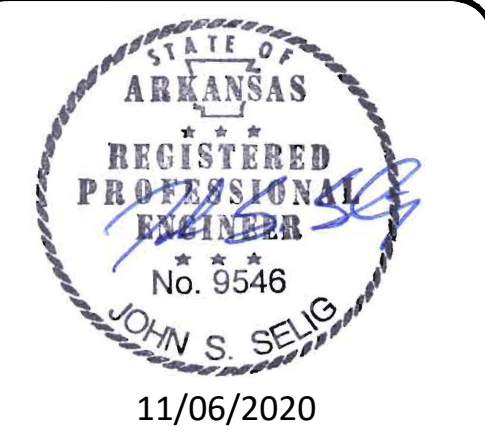
DESIGN DATA

DESIGN FLOW, MGD
 Average Dry Weather Flow _____ 0.350
 DESIGN PARAMETERS, MG/L
 BOD₅ _____ 210
 TSS _____ 40
 NH₃-N _____ 15

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
		Monthly Average	Monthly Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	five/week	Instantaneous
Overflow	Monthly Total SSOs (occurrences/month)			See Comments	
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Comments	
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	15.0	10.0	15.0	once/month	grab
Total Suspended Solids (TSS)	22.0	15.0	22.5	once/month	grab
Ammonia Nitrogen (NH ₃ -N)					
(April)	5.8	4.0	4.0	once/month	grab
(May - October)	3.0	2.0	3.0	once/month	grab
(November - March)	13.0	9.0	10.5	once/month	grab
Dissolved Oxygen (DO)	N/A	3.0 (Inst. Min.)		once/month	grab
Fecal Coliform Bacteria		(colonies/100 ml)			
(May - September)	N/A	200	400	once/month	grab
(October - April)	N/A	1000	2000	once/month	grab
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab



HYDRAULIC PROFILE



WASTEWATER SYSTEM IMPROVEMENTS
CITY OF FLIPPIN
FLIPPIN, ARKANSAS

HYDRAULIC PROFILE
 & FLOW SCHEMATIC

Designed: JSS
 Checked: JAM
 Drawn: ALA
 Approved: JSS

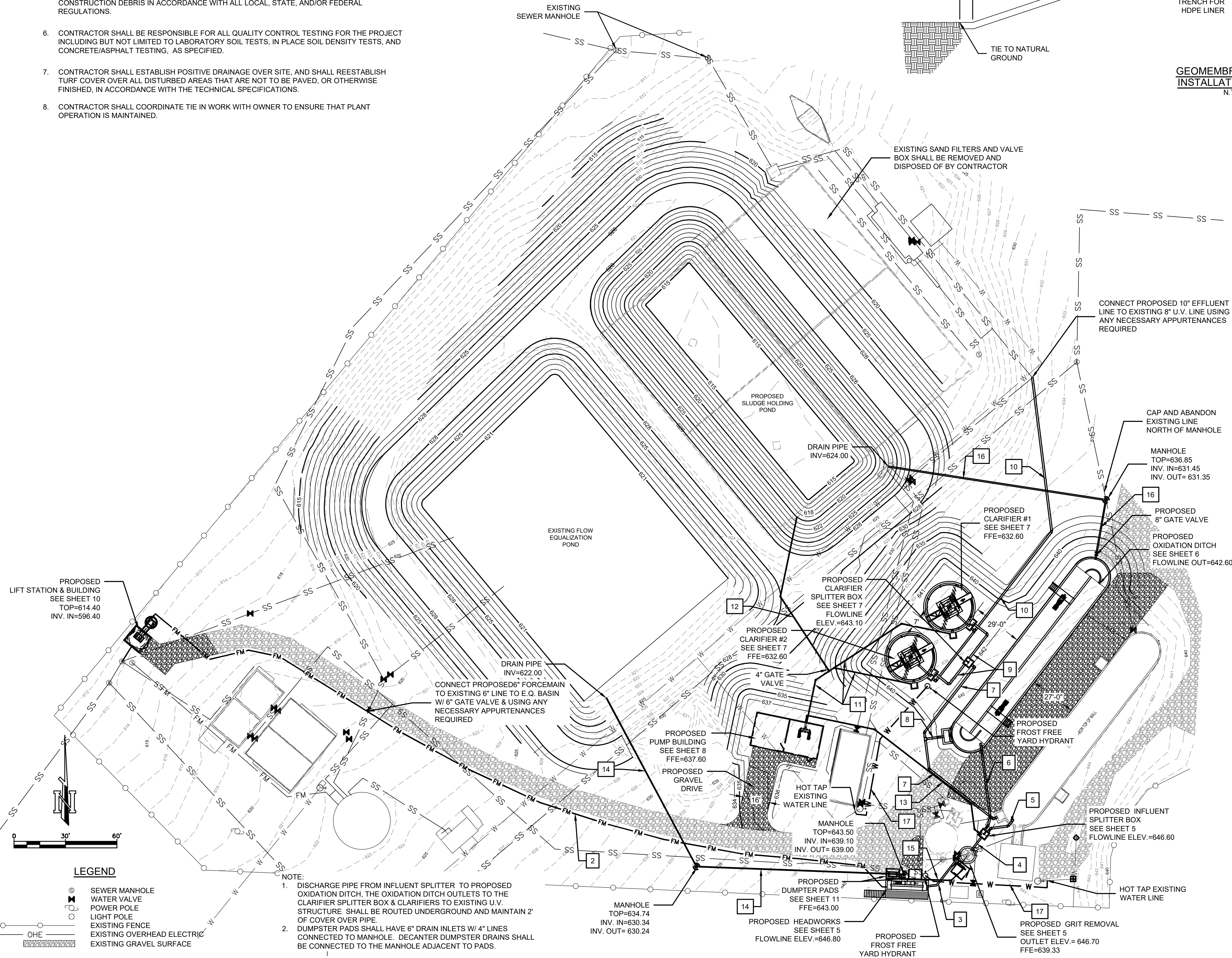
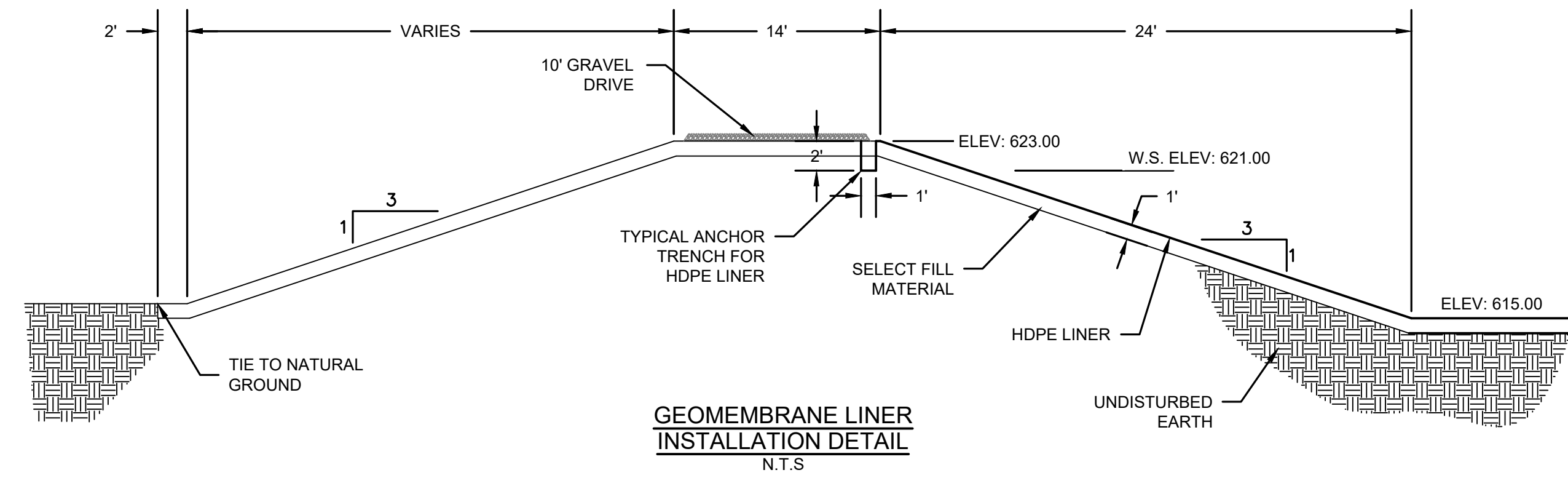
SCALE: N.T.S. JOB NO: OGH-16-02
 DATE: AUGUST 2017 SHEET: 2

NOTES:

1. ALL EXPOSED PIPING SHALL BE PAINTED ACCORDING TO PAINT SPECIFICATION 09900.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKEOUT. CONTRACTOR SHALL VERIFY ALL MEASUREMENTS, ELEVATIONS, STATIONS, ETC. BEFORE ORDERING MATERIALS OR PROCEEDING WITH WORK, AND IS RESPONSIBLE FOR SAME. IF ANY DISCREPANCY IN THE PLANS OR SPECIFICATIONS ARISES, THE CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE INITIATING WORK AFFECTED BY THE DISCREPANCY.
3. THE CONTRACTOR IS CAUTIONED AND SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER'S REPRESENTATIVE OF ANY ERROR OR OMISSION ON THE PLANS WHICH MAY CREATE ADDITIONAL WORK OR EXPENSE BY THE CONTRACTOR, AND SHALL OBTAIN A WRITTEN WORK ORDER FROM THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH ANY EXTRA WORK WHICH MAY BE CAUSED FROM SUCH ERROR OR OMISSION ON THE PLANS.
4. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO EXISTING FACILITIES AND/OR ADJACENT PROPERTIES, AND SHALL BE RESPONSIBLE FOR SAME. CONTRACTOR SHALL CALL ARKANSAS ONE-CALL PRIOR TO ANY EXCAVATION AT THE SITE.
5. CONTRACTOR SHALL KEEP AN ORDERLY WORK SITE AND SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE, AND/OR FEDERAL REGULATIONS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL QUALITY CONTROL TESTING FOR THE PROJECT INCLUDING BUT NOT LIMITED TO LABORATORY SOIL TESTS, IN PLACE SOIL DENSITY TESTS, AND CONCRETE/ASPHALT TESTING, AS SPECIFIED.
7. CONTRACTOR SHALL ESTABLISH POSITIVE DRAINAGE OVER SITE, AND SHALL REESTABLISH TURF COVER OVER ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED, OR OTHERWISE FINISHED, IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
8. CONTRACTOR SHALL COORDINATE TIE IN WORK WITH OWNER TO ENSURE THAT PLANT OPERATION IS MAINTAINED.

YARD PIPING NOTES:

1. ALL LENGTHS SHOWN ARE APPROXIMATE LAYING LENGTHS OF PIPE. SEE MECHANICAL SHEETS FOR ADDITIONAL PIPES AND FITTINGS.
2. ALL LENGTHS SHOWN ARE FOR ASSISTING CONTRACTOR IN BIDDING. CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL LENGTH THAT MAY BE REQUIRED AND SHOULD INCLUDE IN THEIR BID PRICING. NO ADDITIONAL MONIES WILL BE ADDED.



ESTIMATED DIRT QUANTITIES

CUT= 2,156 CU. YDS.
FILL= 9,371 CU. YDS.

NOTE: QUANTITIES ARE AN ESTIMATE WITH A 15% COMPACTION FACTOR FIGURED INTO THE FILL QUANTITY.

1. ALL DIRT WORK SHALL FOLLOW THE REQUIREMENTS OF SPECIFICATION 02300.

OUTSIDE PIPING SCHEDULE

LINE NO.	LINE SIZE	LINE TYPE	DESCRIPTION	APPROX. QUANTITY
1	6"	PVC	PROPOSED 6" FORCE MAIN TO PROPOSED HEADWORKS	480 L.F.
2	10"	D.I.	PROPOSED DISCHARGE LINE FROM HEADWORKS TO GRIT REMOVAL STRUCTURE	26 L.F.
3	3"	D.I.	PROPOSED DISCHARGE LINE FROM GRIT REMOVAL PUMP TO DECANTER DUMPSTER	26 L.F.
4	10"	D.I.	PROPOSED DISCHARGE LINE FROM GRIT REMOVAL STRUCTURE TO INFLUENT SPLITTER BOX	10 L.F.
5	10"	D.I.	PROPOSED SPLITTER BOX DISCHARGE LINE TO EXISTING OXIDATION DITCH	18 L.F.
6	10"	D.I.	PROPOSED SPLITTER BOX DISCHARGE LINE TO PROPOSED OXIDATION DITCH	67 L.F.
7	10"	DIP	PROPOSED EXISTING OXIDATION DITCH DISCHARGE LINE TO PROPOSED CLARIFIER SPLITTER BOX	127 L.F.
8	10"	DIP	PROPOSED EXISTING OXIDATION DITCH DISCHARGE LINE TO COMBINED OXIDATION DISCHARGE LINE	14 L.F.
9	10"	DIP	PROPOSED DISCHARGE LINES FROM CLARIFIER SPLITTER BOX TO CLARIFIERS INLETS	55 L.F.
10	10"	PVC	PROPOSED DISCHARGE LINES FROM CLARIFIERS TO EXISTING U.V. LINE CONNECTION	220 L.F.
11	4"	PVC	PROPOSED SLUDGE LINES FROM CLARIFIERS TO SLUDGE PUMPS IN PUMP BUILDING	166 L.F.
12	4"	PVC	PROPOSED SLUDGE LINE FROM CLARIFIER SLUDGE LINE TO SLUDGE POND	100 L.F.
13	4"	PVC	PROPOSED R.A.S LINE FROM SLUDGE PUMP TO INFLUENT SPLITTER BOX	148 L.F.
14	6"	PVC	PROPOSED DRAIN LINE FROM DUMPSTER DRAIN MANHOLE TO EXISTING EQUALIZATION POND	236 L.F.
15	3"	PVC	PROPOSED GRIT LINE TO DECANTER DUMPSTER	45 L.F.
16	8"	PVC	PROPOSED OXIDATION DITCH DRAIN LINE TO PROPOSED SLUDGE HOLDING POND	165 L.F.
17	1"	PVC	PROPOSED WATER LINE TO YARD HYDRANTS	170 L.F.

LEGEND

- ⊙ SEWER MANHOLE
- ⊕ WATER VALVE
- ⊙ POWER POLE
- ⊙ LIGHT POLE
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING GRAVEL SURFACE

NOTE:

1. DISCHARGE PIPE FROM INFLUENT SPLITTER TO PROPOSED OXIDATION DITCH, THE OXIDATION DITCH OUTLETS TO THE CLARIFIER SPLITTER BOX & CLARIFIERS TO EXISTING U.V. STRUCTURE SHALL BE ROUTED UNDERGROUND AND MAINTAIN 2' OF COVER OVER PIPE.
2. DUMPSTER PADS SHALL HAVE 6" DRAIN INLETS W/ 4" LINES CONNECTED TO MANHOLE. DECANTER DUMPSTER DRAINS SHALL BE CONNECTED TO THE MANHOLE ADJACENT TO PADS.



11/06/2020



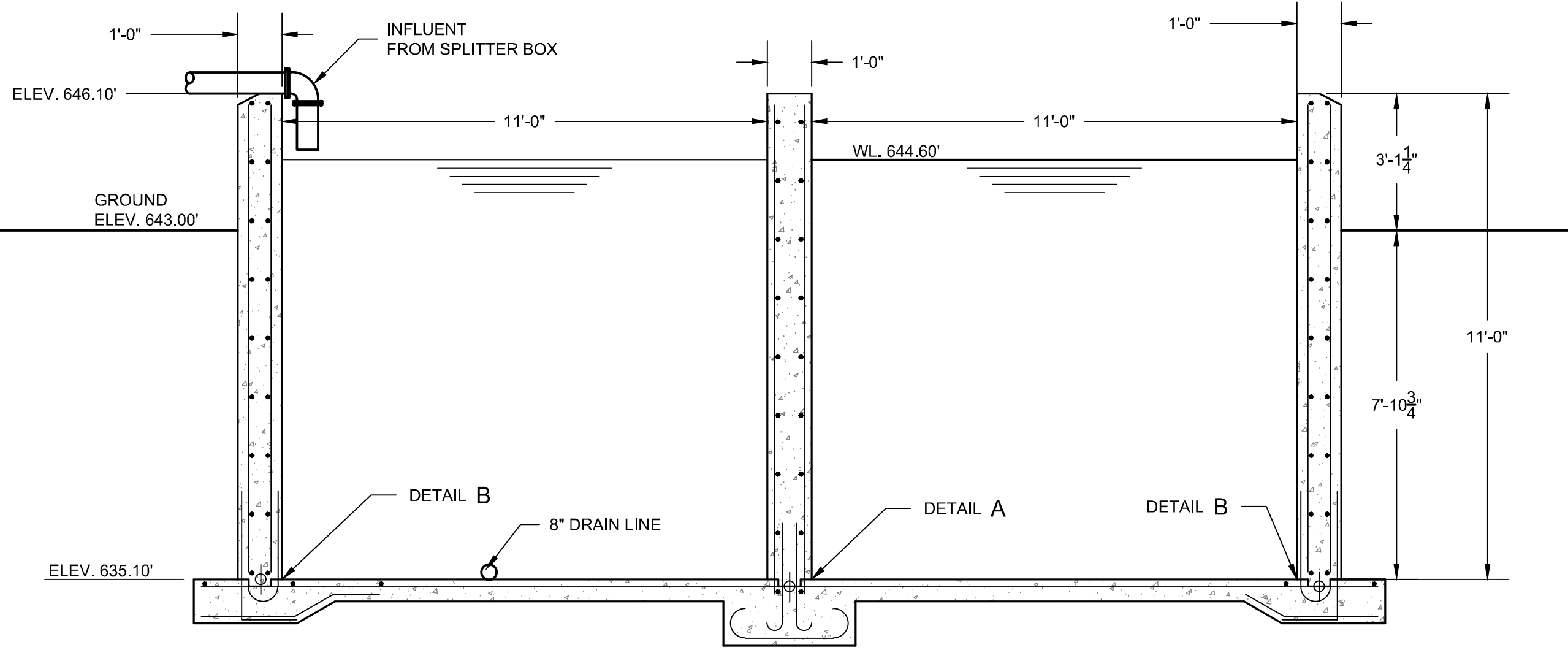
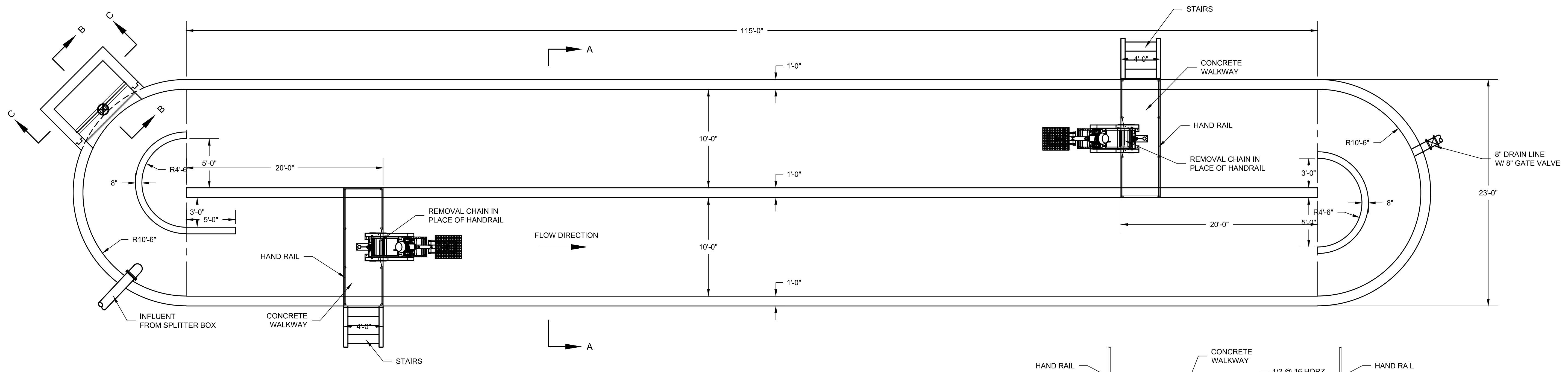
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**CITY OF FLIPPIN
FLIPPIN, ARKANSAS**

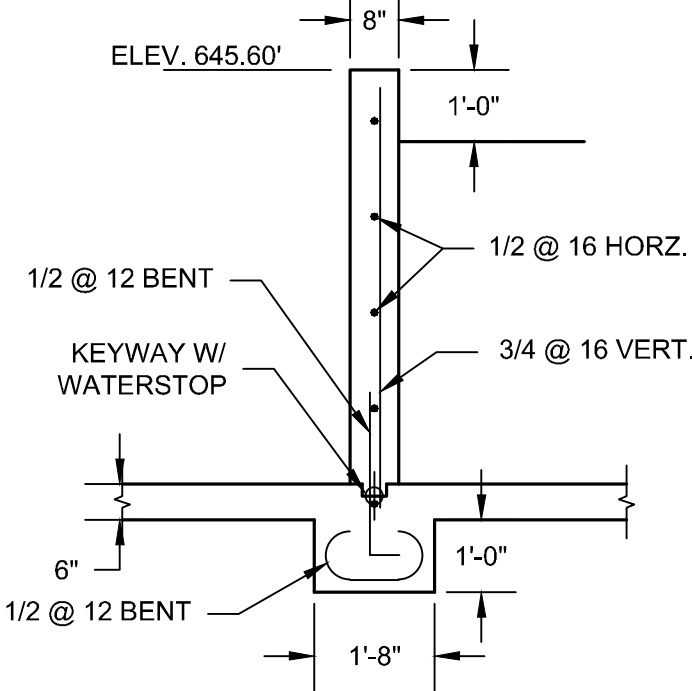
**PROPOSED
SITE PLAN**

Designed JSS
Checked RLP
Drawn ALA
Approved JSS

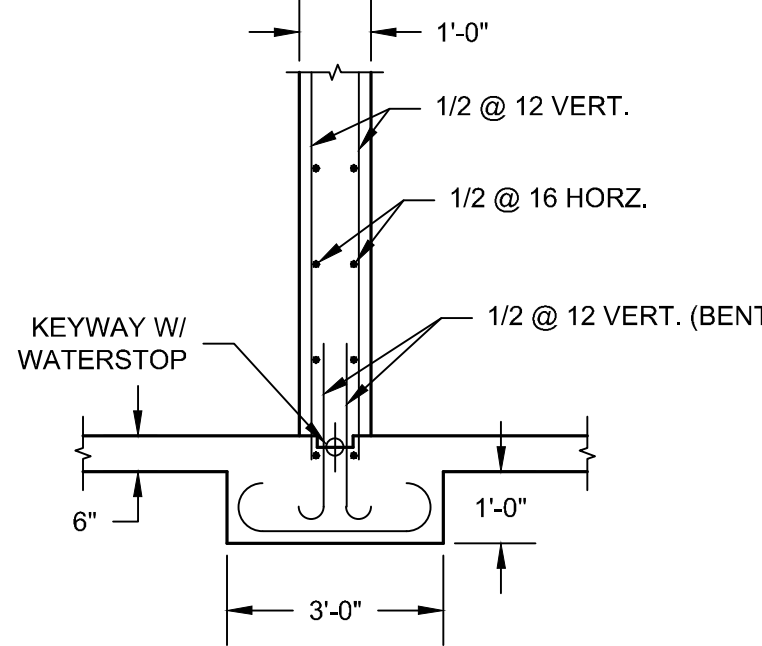
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DATE: NOVEMBER 2020
JOB NO:
SHEET: 4



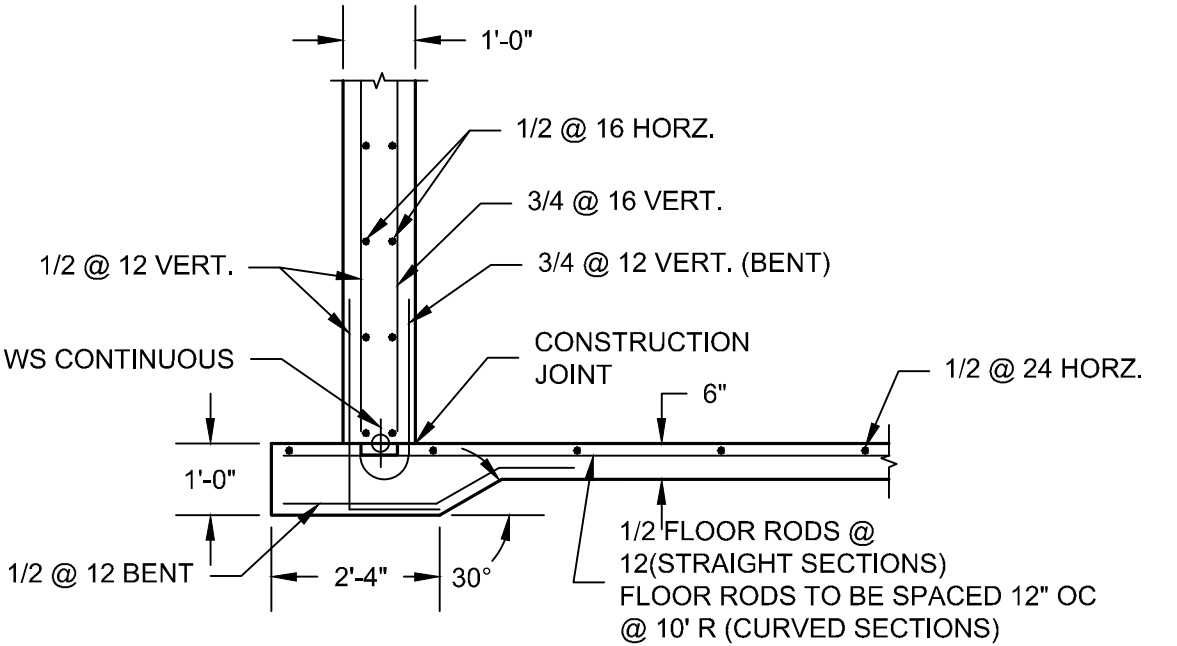
SECTION VIEW A-A
 N.T.S.



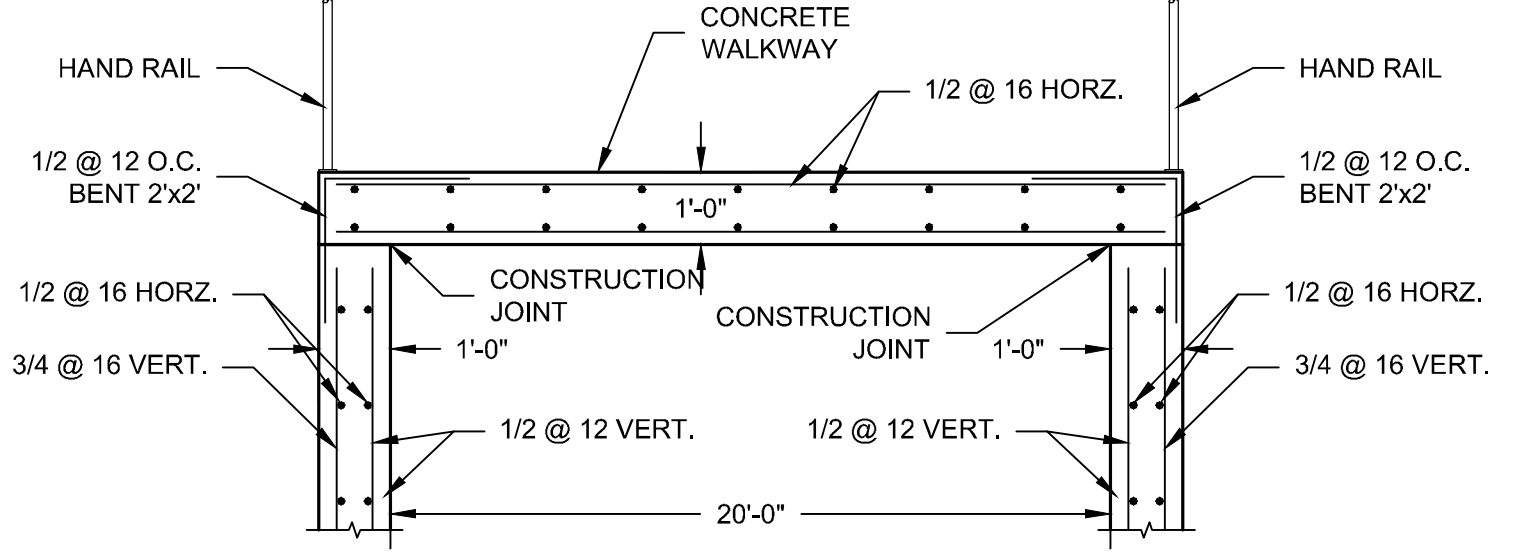
BAFFLE WALL SECTION
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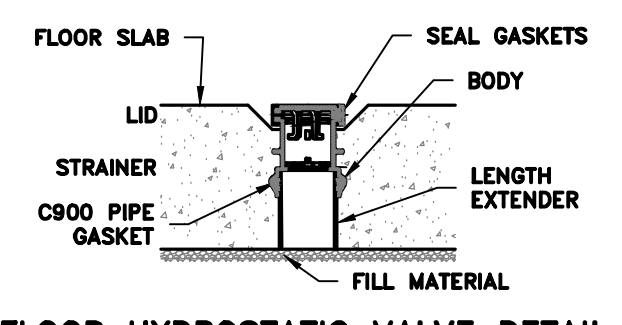
DETAIL A
 N.T.S.



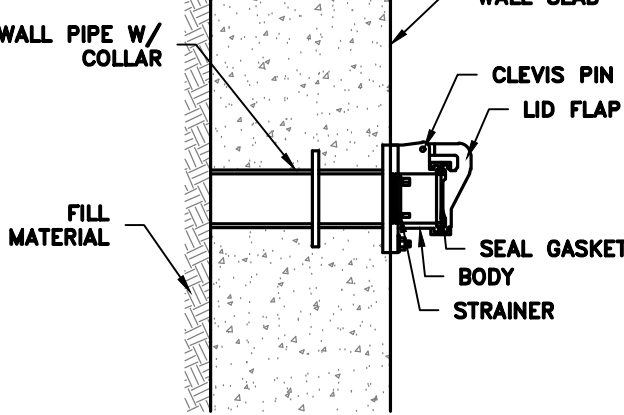
DETAIL B
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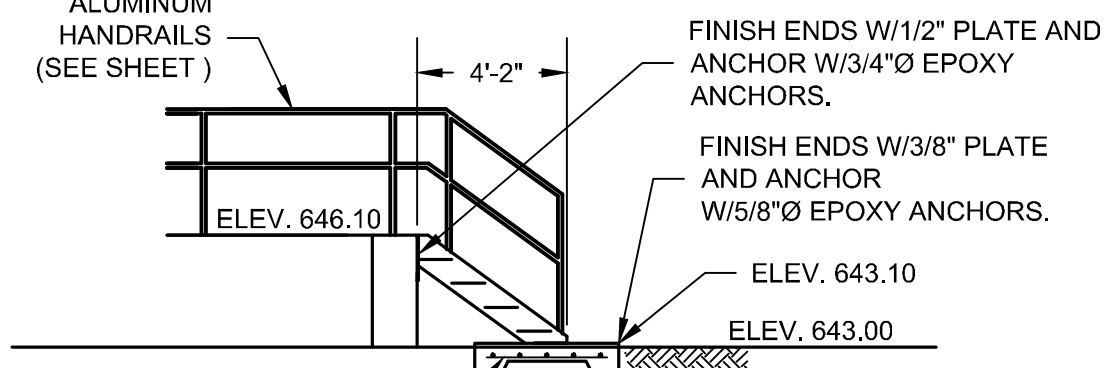
CONCRETE WALKWAY DETAIL
 N.T.S.



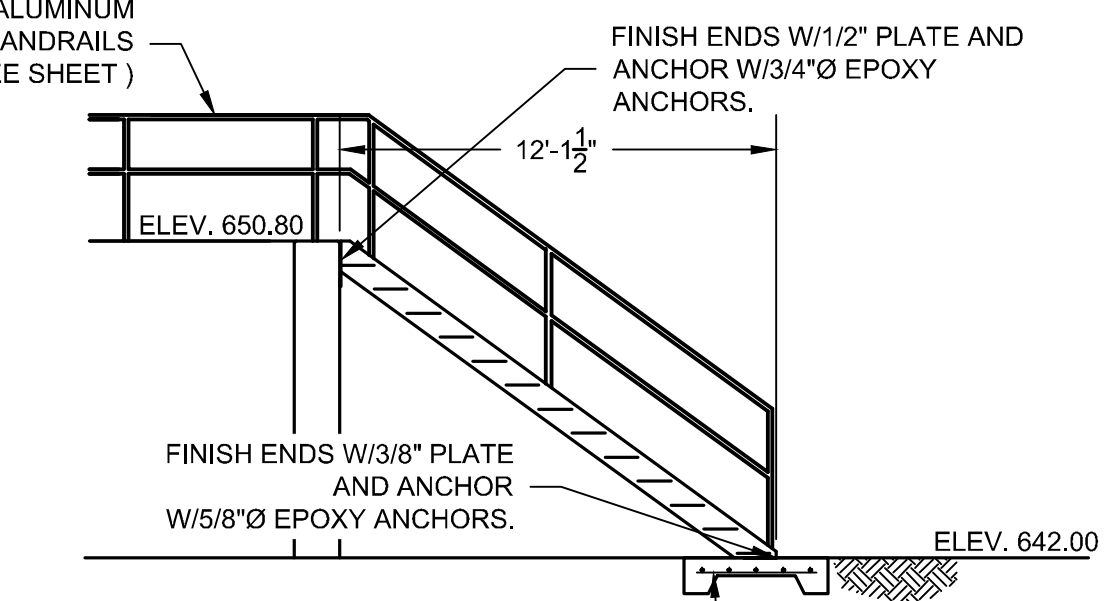
FLOOR HYDROSTATIC VALVE DETAIL
 NO SCALE



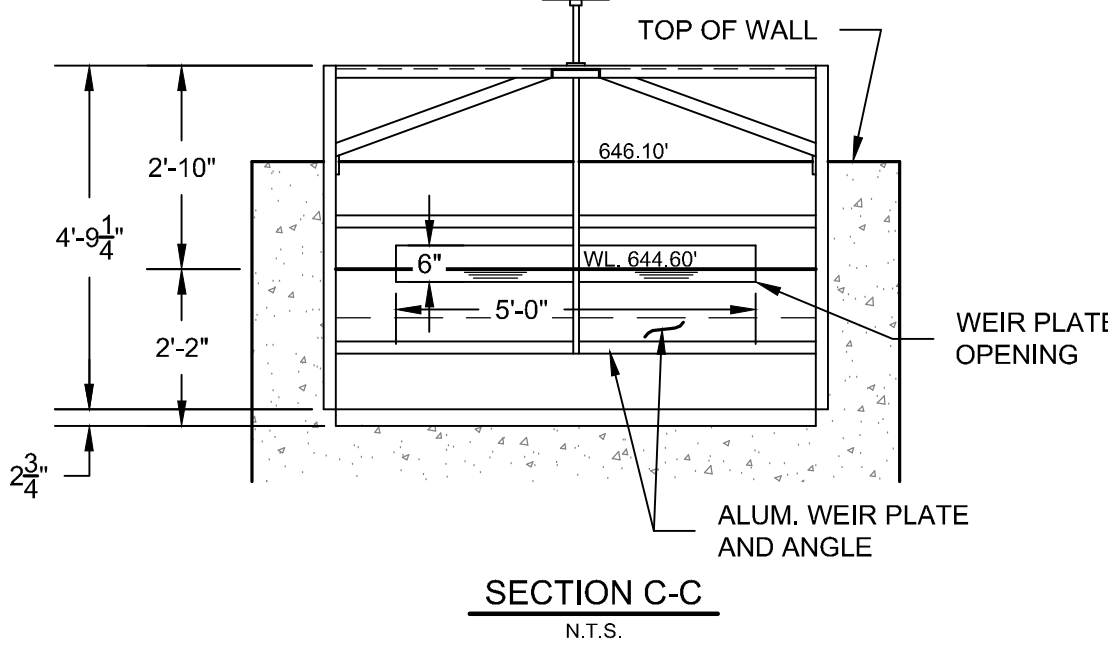
WALL HYDROSTATIC VALVE DETAIL
 NO SCALE



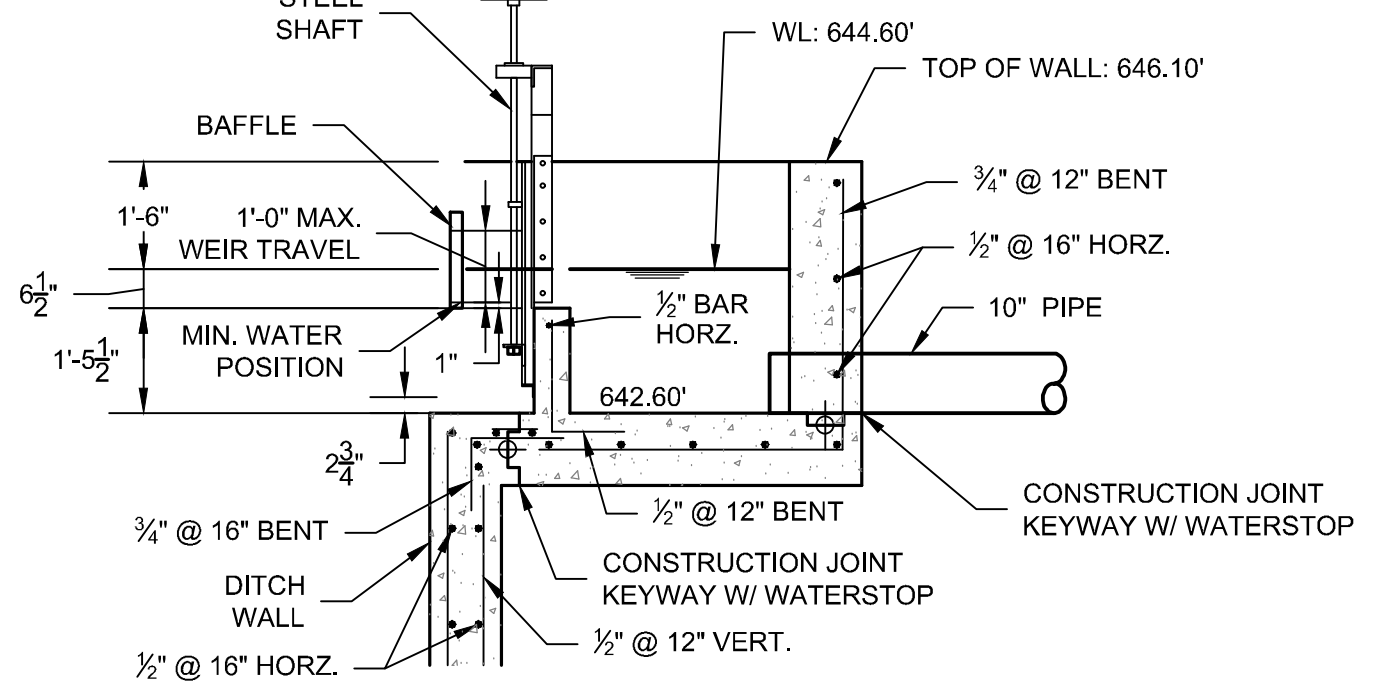
OXIDATION DITCH STAIR SECTION
 N.T.S.



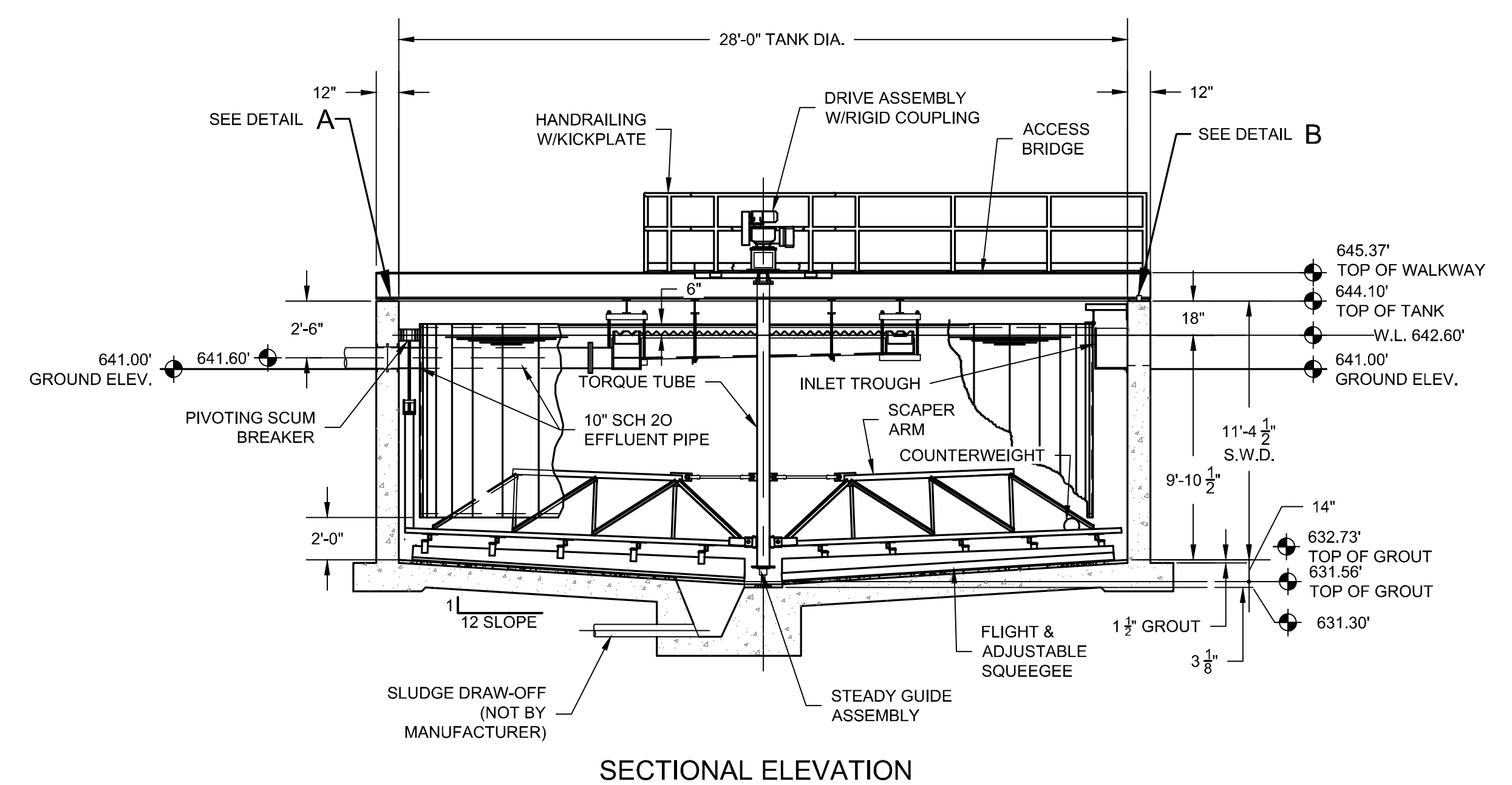
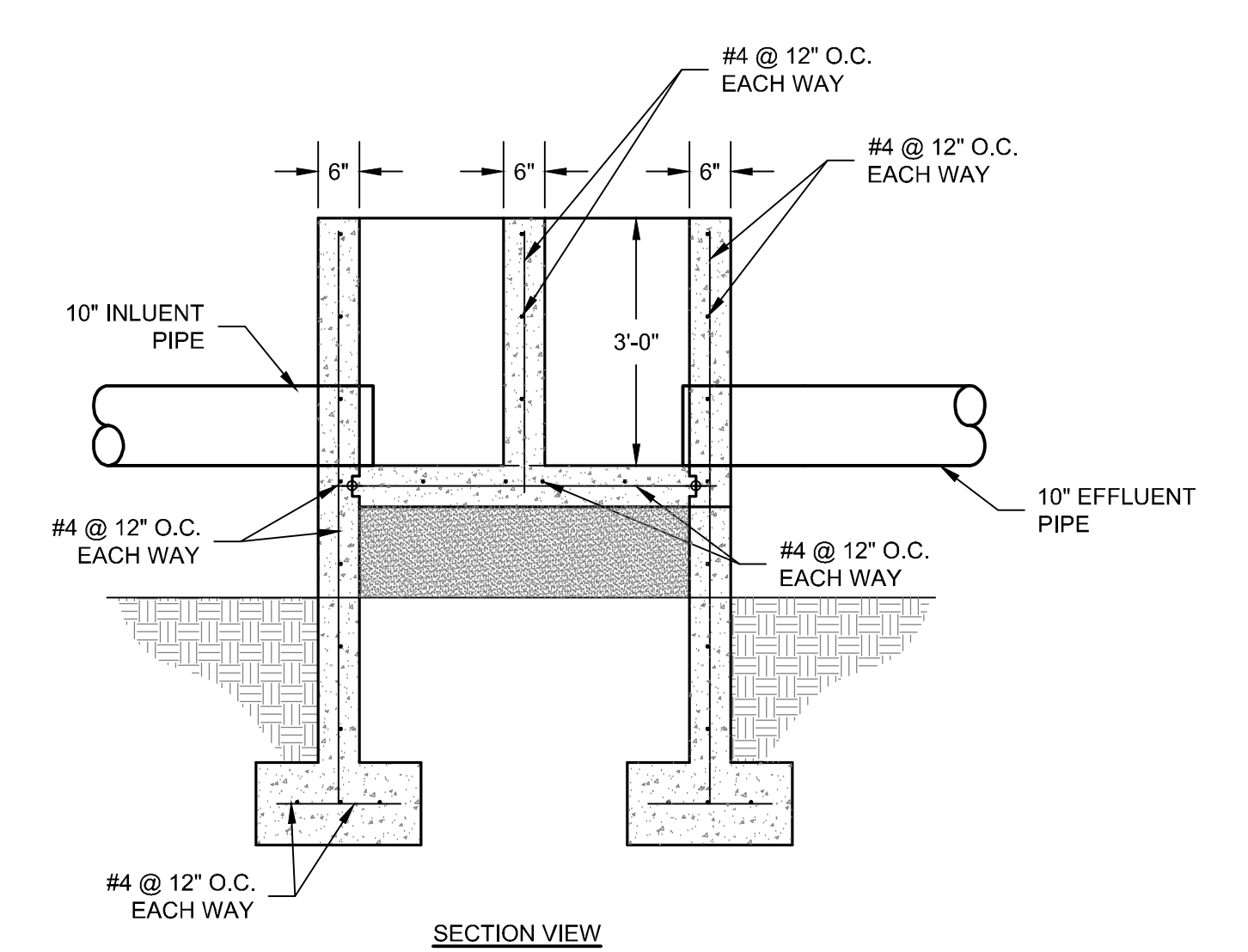
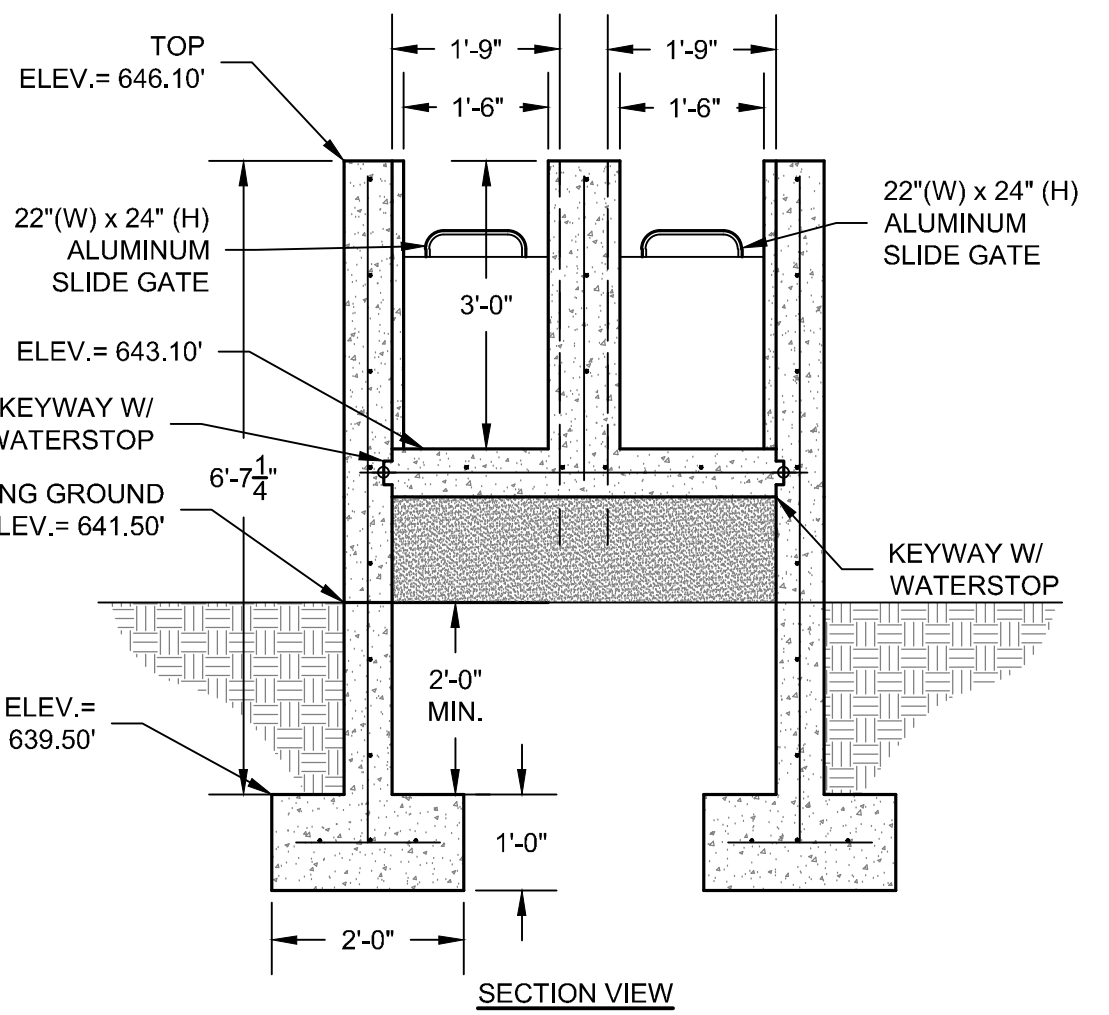
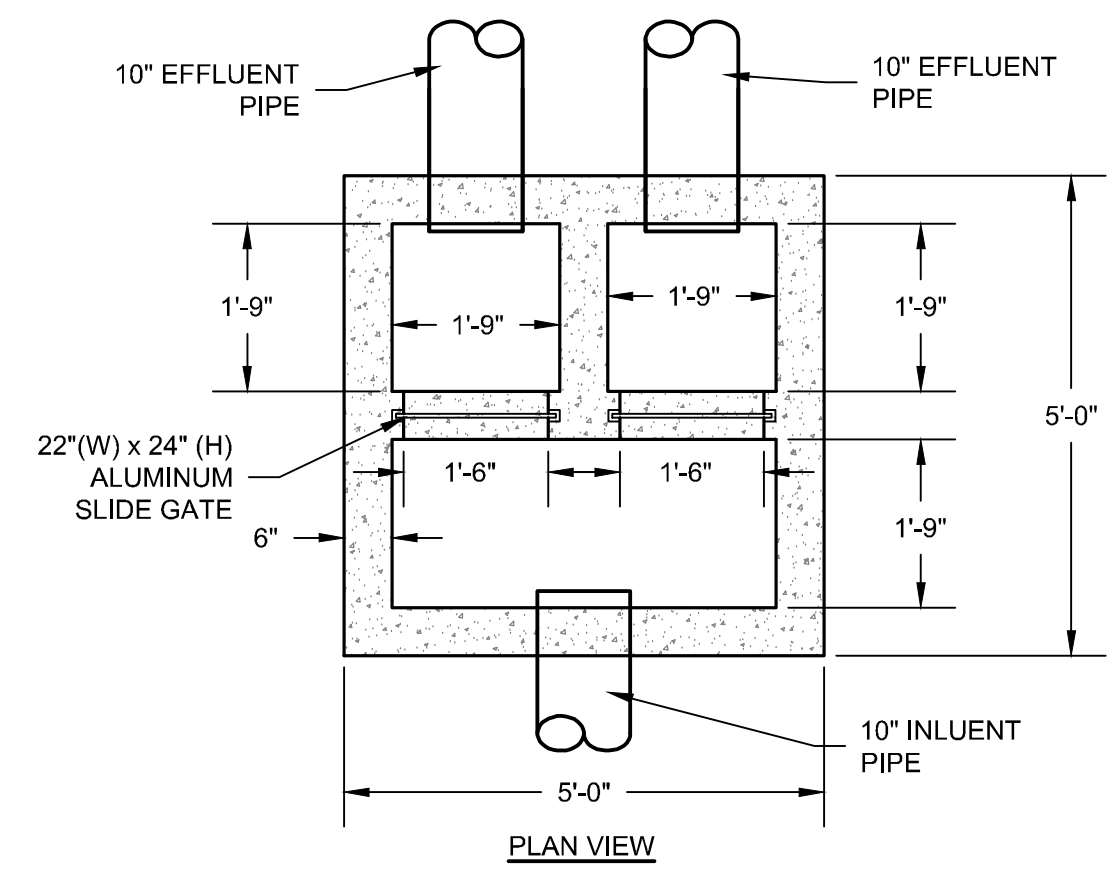
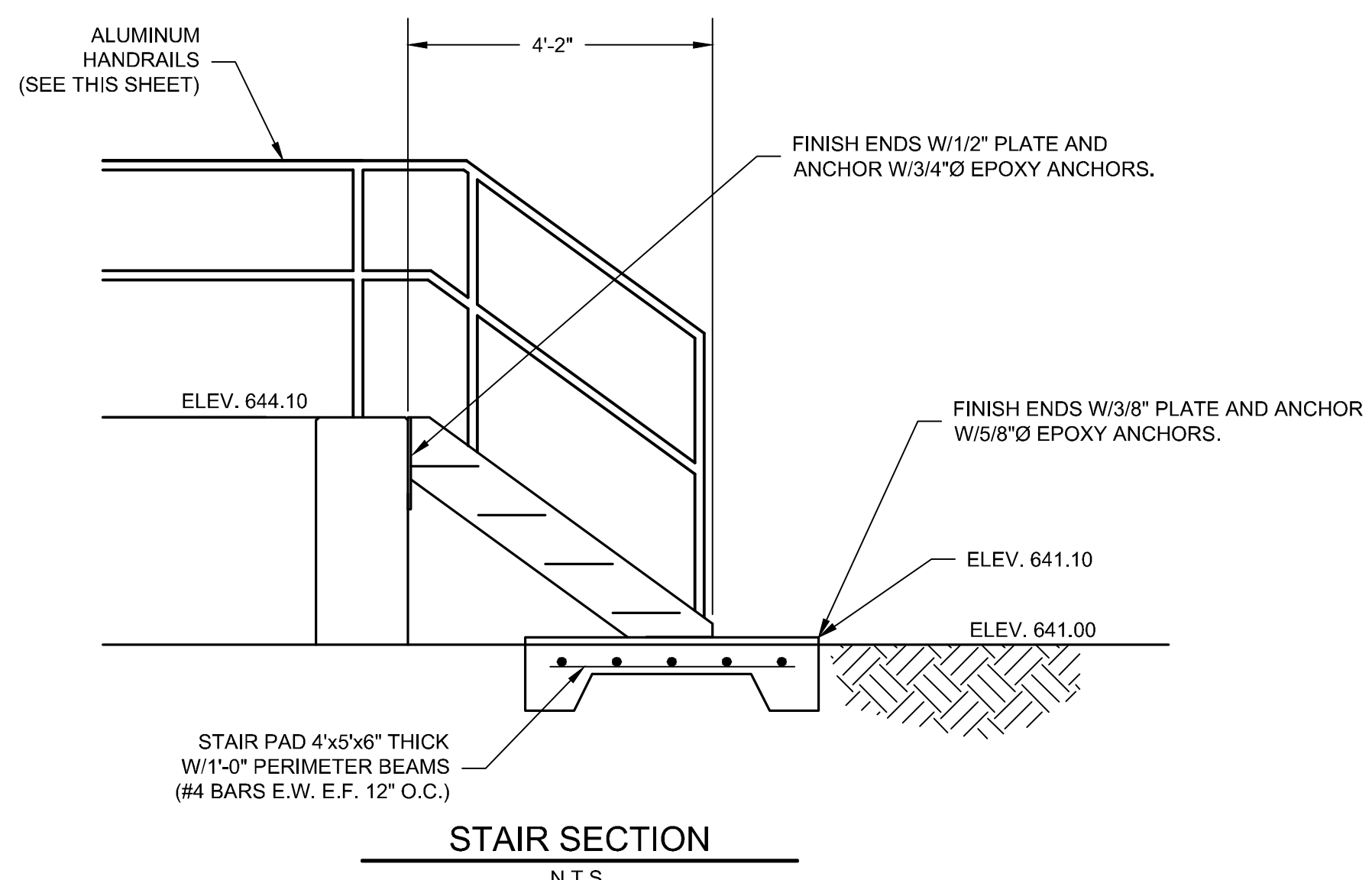
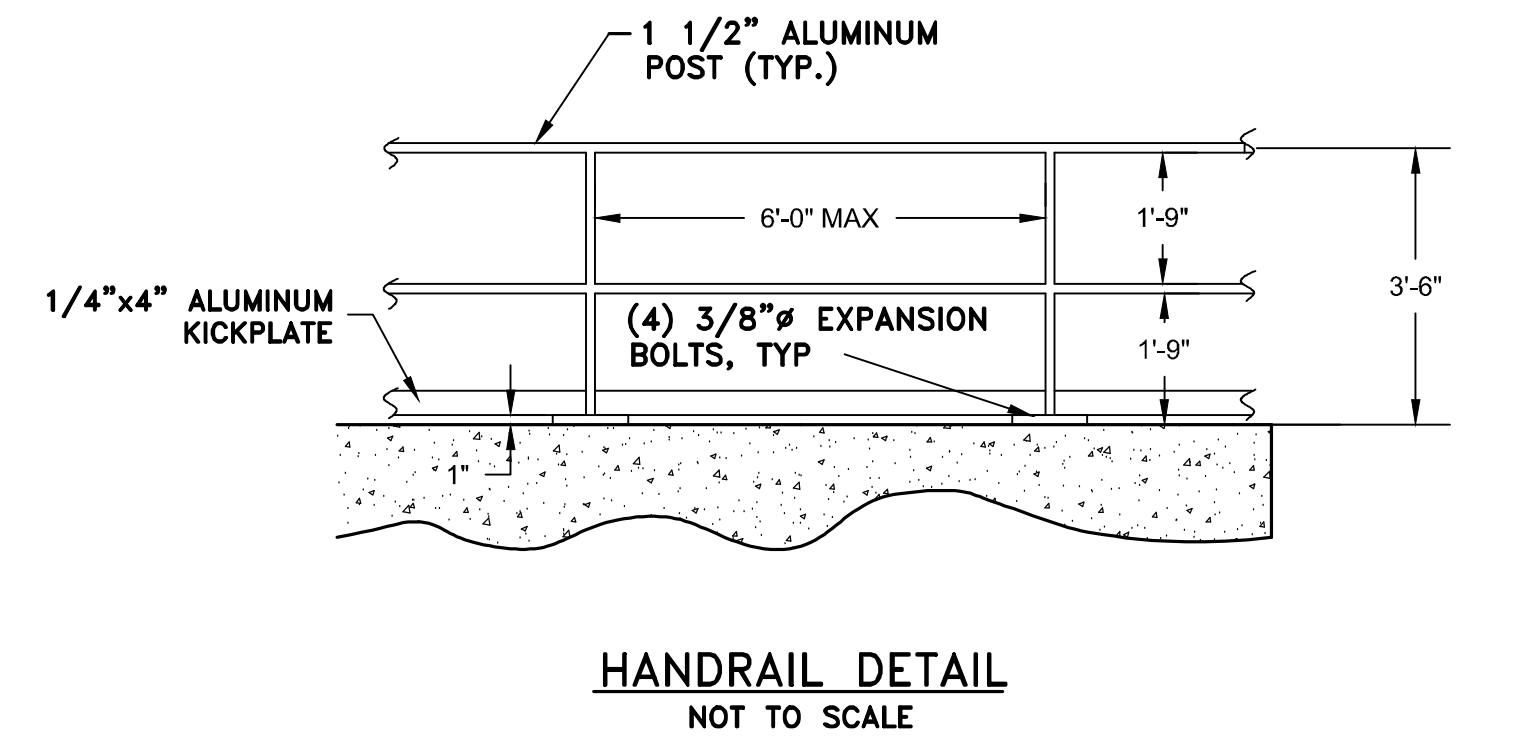
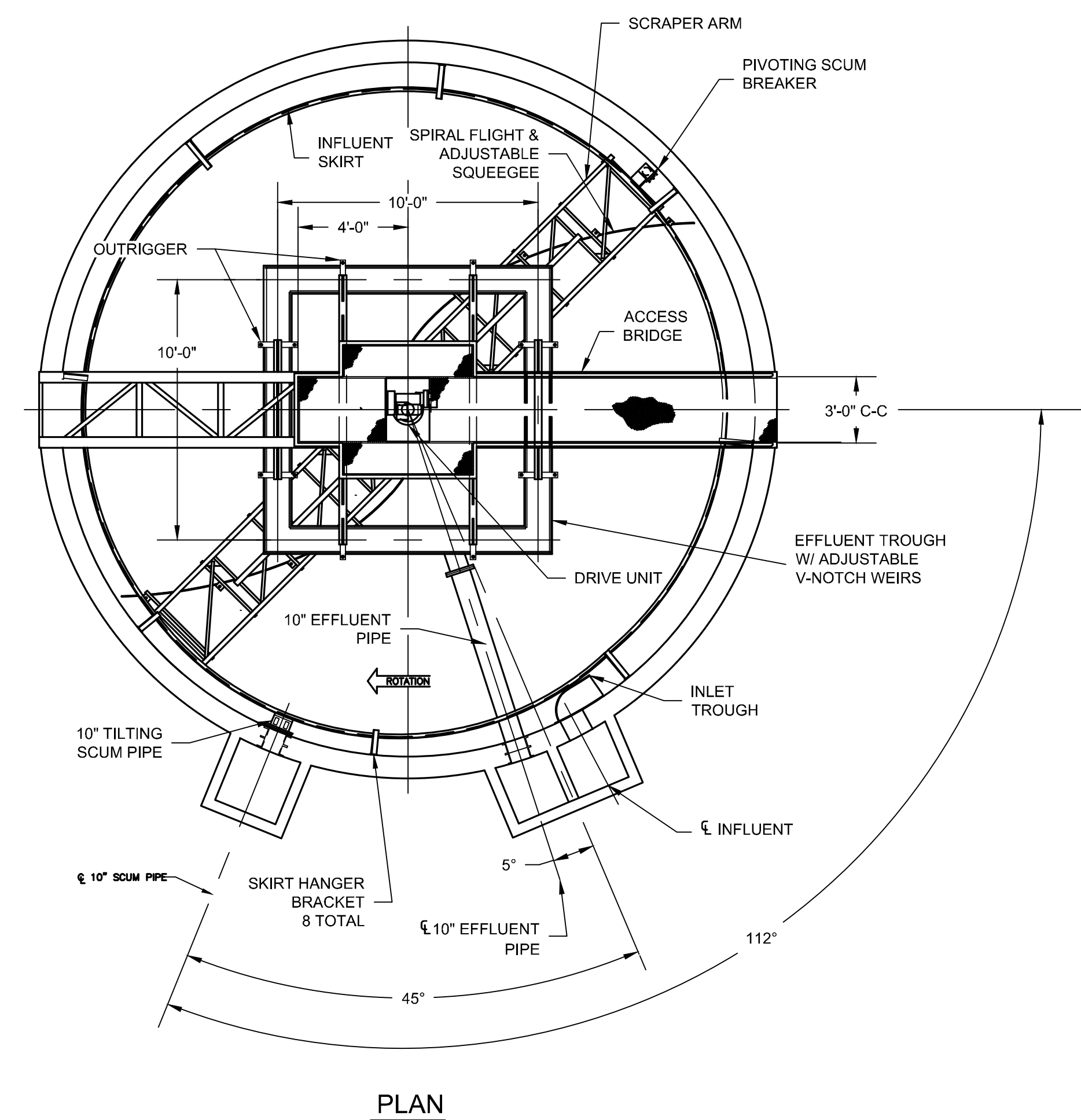
SCREEN CHANNEL STAIR SECTION
 N.T.S.



SECTION C-C
 N.T.S.



SECTION B-B
 N.T.S.



CLARIFIER SPLITTER BOX
 N.T.S.

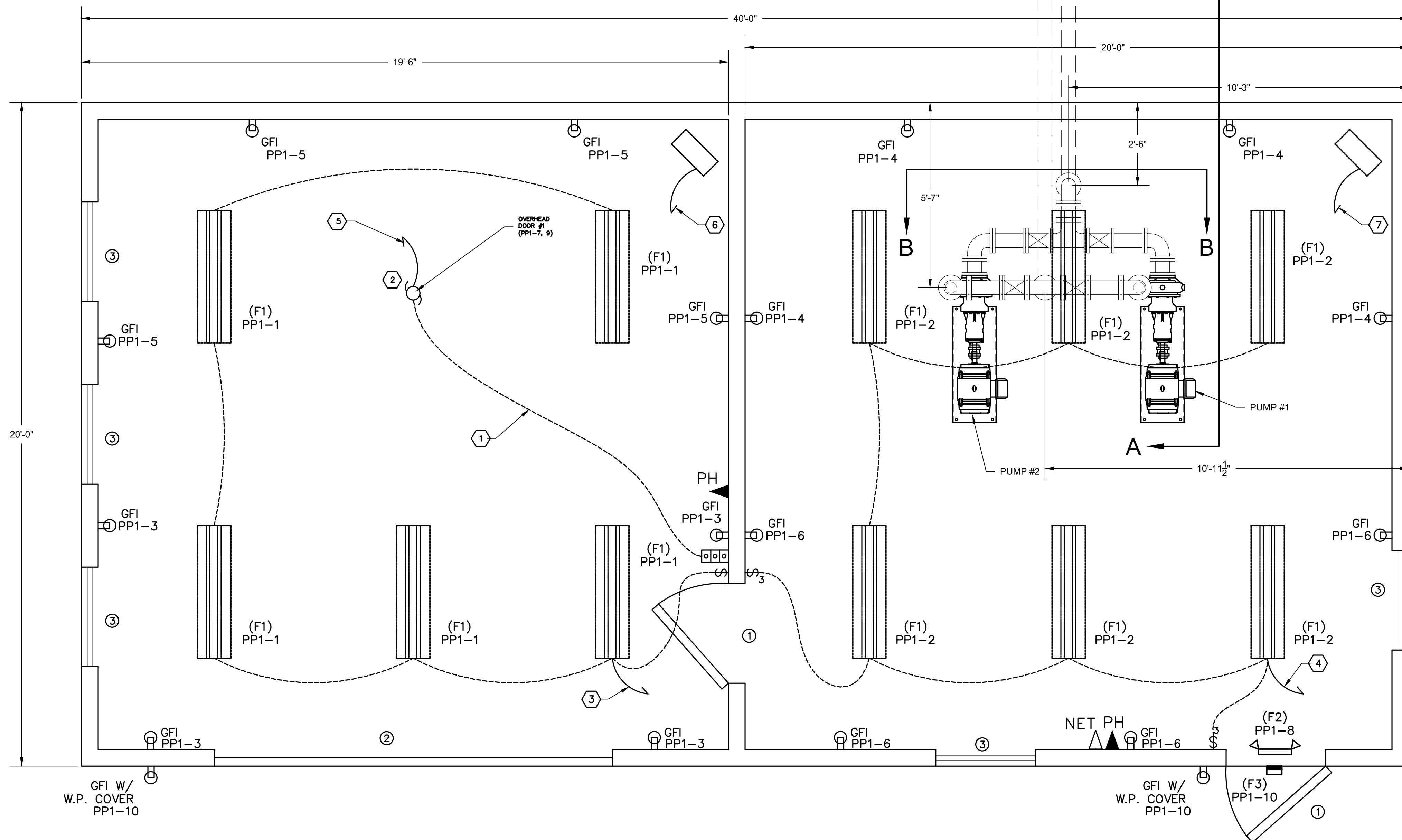
DOOR AND FRAME SCHEDULE										
MK	SIZE	DOOR			FRAME			REMARKS		
		TYPE	MATERIAL	GLAZING	TYPE	MATERIAL	HEAD JAMB THRES			
①	3'-6" x 6'-1" 3/4"	A	HOL. MTL.	NONE	A	HOL. MTL.	1	1	1	INSL. DOOR W/ GLASS
②	12'-1" x 12'-1" 1/2"	A	HOL. MTL.	NONE	A	HOL. MTL.	1	1	1	INSL. DOOR

DOOR HARDWARE TO BE COMMERCIAL GRADE AUTOMATIC LEVER. ALL EXTERIOR DOORS TO HAVE AUTOMATIC CLOSING DEVICES. ALL METAL DOORS SHALL BE PAINTED.

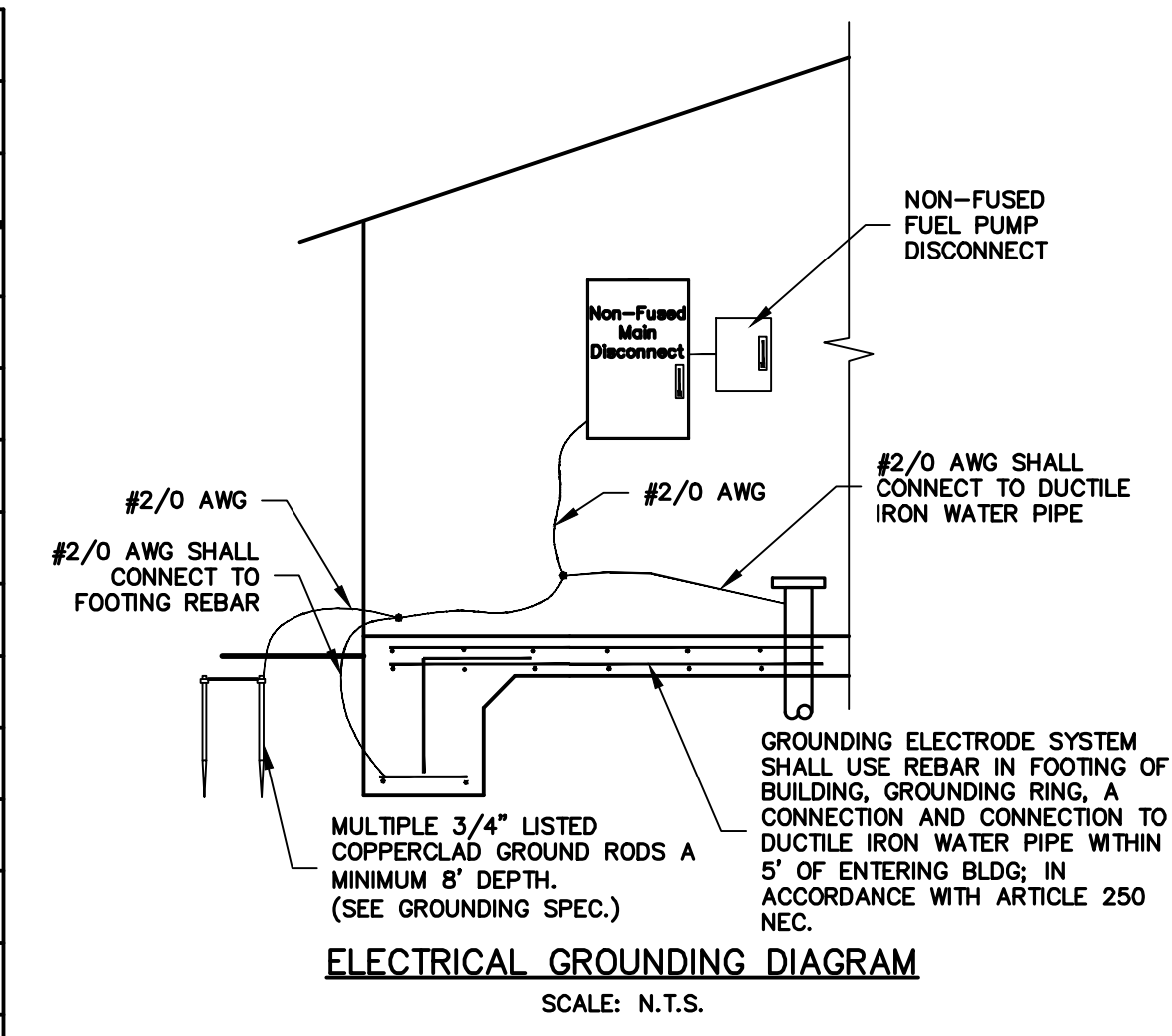
WINDOW AND FRAME SCHEDULE				
MK	SIZE	FRAME TYPE		REMARKS
		STYLE		
③	3'-6" x 4'-6"	ALUMINUM FRAME	LOCKABLE DOUBLE-HUNG W/ SCREEN	ENERGY EFFICIENT

ELECTRIC PLAN SCHEDULE					
SYMBOL	QTY	DESCRIPTION	SYMBOL	QTY	DESCRIPTION
(F1)	11	FLUORESCENT 32 W T8 4 LAMP SURFACE MOUNT FIXTURE, W/ ALUMINUM WHITE FRAME WITH CLEAR ACRYLIC SHELLING, 120V BALLAST WITH 5,000K LAMP COLOR OR EQUAL, ELECTRONIC BALLAST	(GFI)	0	DUPLICATE RECEPTACLE, 20 AMP, 125V, NEMA 5-20R OR EQUAL - 18" ABOVE FINISHED FLOOR
(F2)	1	COMBINATION EXIT/EMERGENCY LIGHT EXTRACTOR # MCL-U-89-182-181	(GFI)	18	GROUND FAULT CIRCUIT INTERRUPTER DUPLICATE RECEPTACLE, 20 AMP, 125V, NEMA 5-20R OR EQUAL - 18" ABOVE FINISHED FLOOR
(F3)	1	BATTERY POWERED EMERGENCY LIGHT (120V) LITRONA # RELIG MOUNT 8" ABOVE FINISHED FLOOR	(GFI)	2	GROUND FAULT CIRCUIT INTERRUPTER DUPLICATE RECEPTACLE, 20 AMP, 125V, NEMA 5-20R OR EQUAL W/ WEATHERPROOF COVER - 18" ABOVE FINISHED FLOOR
(F4)	1	POWER PANEL	(GFI)	1	NETWORK RECEPTACLE - INCLUDES NETWORK LINES TO NETWORK BOX, INSTALL RECEPTACLE 18" ABOVE FLOOR, STUB 3/4" CONDUIT THROUGH WALL PLATE.
(F5)	1	SINGLE POLE LIGHT SWITCH - 120V/20A - 48" ABOVE FINISHED FLOOR (UNLESS OTHERWISE NOTED)	(PH)	2	TELEPHONE RECEPTACLE - INCLUDES PHONE LINES TO PHONE BOX, INSTALL RECEPTACLE 18" ABOVE FLOOR, STUB 3/4" CONDUIT THROUGH WALL PLATE.
(F6)	2	3-WAY LIGHT SWITCH - 120V/20A - 48" ABOVE FINISHED FLOOR (UNLESS OTHERWISE NOTED)	(MDS)	1	MANUAL DISCONNECT SWITCH
(F7)	1	3/4 HP MOTORIZED GARAGE DOOR MOTOR			
(F8)	1	THREE BUTTON GARAGE DOOR CONTROLLER			

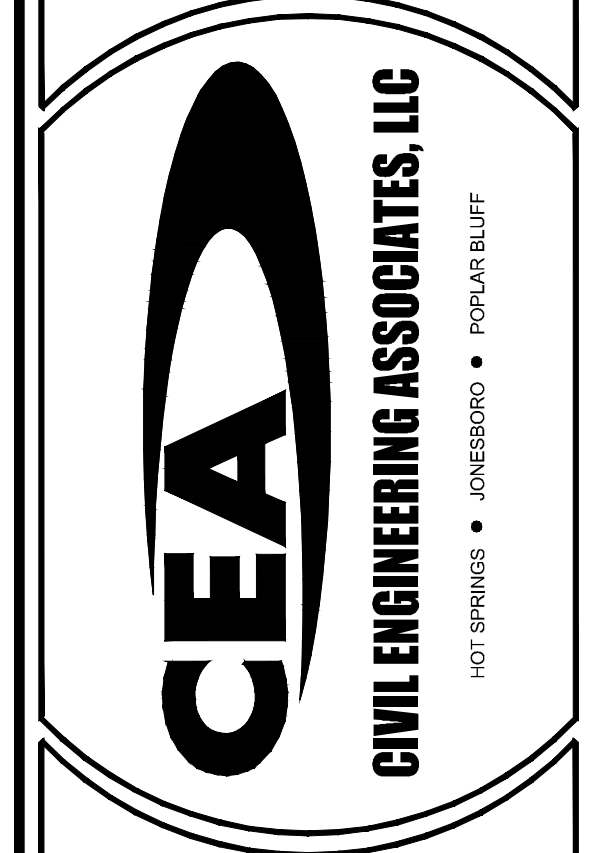
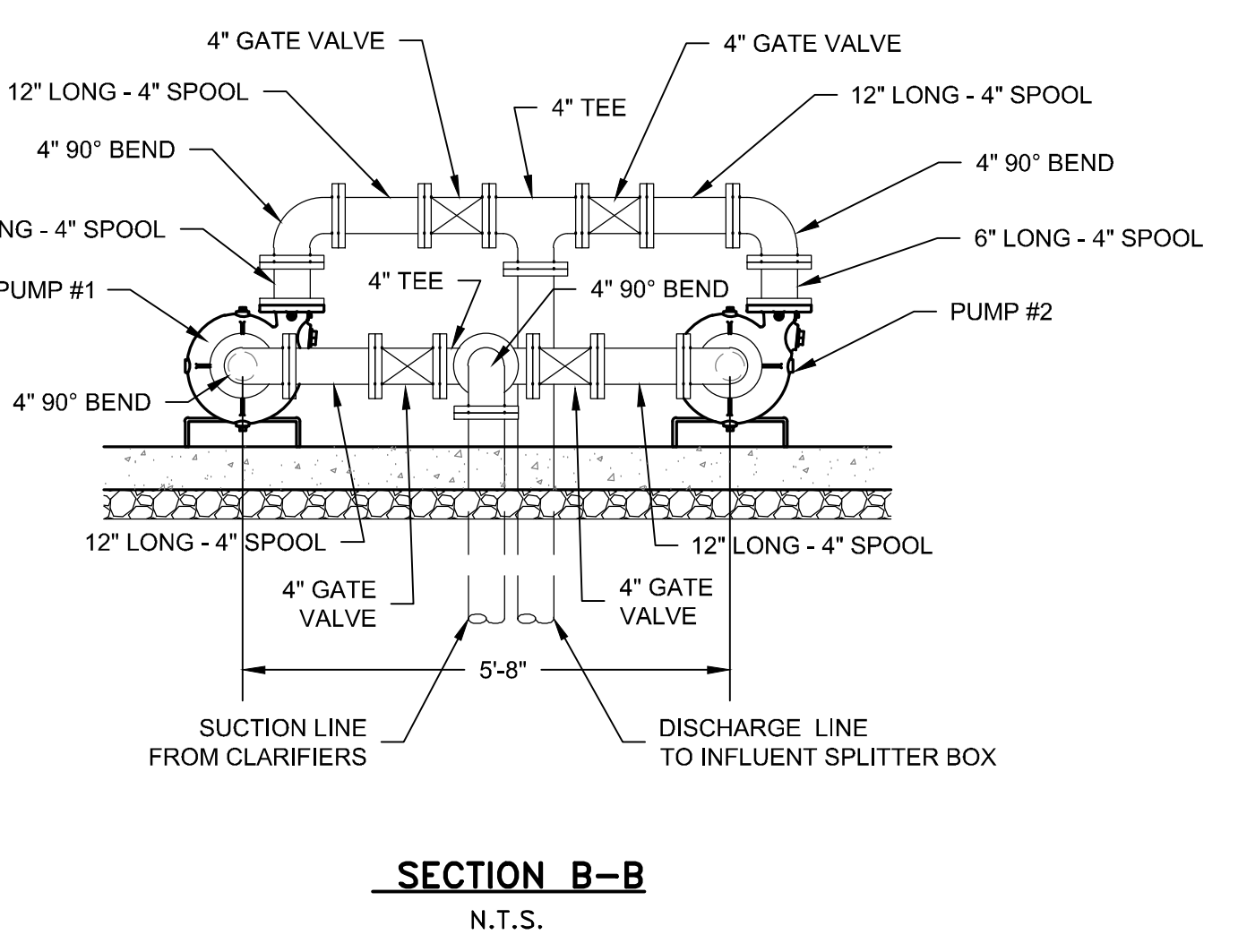
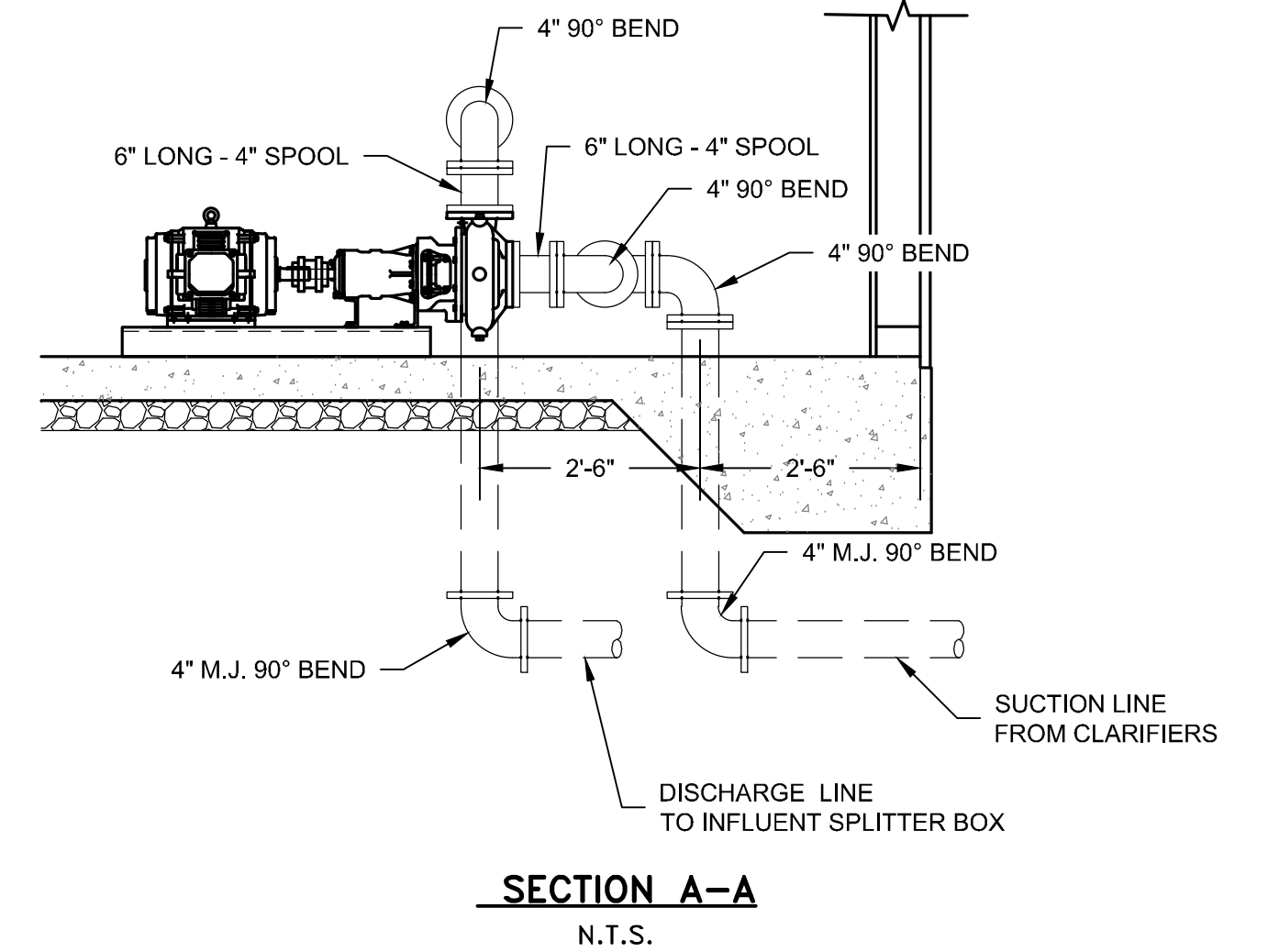
- ① OVERHEAD DOOR CONTROL WIRING IN CONDUIT
- ② 20A/120V/1P DISCONNECT SWITCH, MOUNT BESIDE MOTORIZED EQUIPMENT
- ③ TO POWER PANEL #1 CIRCUIT (PP1-1)
- ④ TO POWER PANEL #1 CIRCUIT (PP1-2)
- ⑤ TO POWER PANEL #1 CIRCUIT (PP1-7 & 9)
- ⑥ TO POWER PANEL #1 CIRCUIT (PP1-11 & 13)
- ⑦ TO POWER PANEL #1 CIRCUIT (PP1-15 & 17)



POWER PANEL 'PP-1'										
120/208V/1P/3W-400A BREAKER, SURFACE MOUNTED NEMA 1 ENCLOSURE, BOLT IN BREAKER PROVIDE COMBINATION NEUTRAL & EDC BUS BONDED TO ENCLOSURE										
CIR. NO.	CIRCUIT DESCRIPTION	L1 (AMPS)	L2 (AMPS)	BRK.	BRK.	L2 (AMPS)	L1 (AMPS)	CIRCUIT DESCRIPTION	CIR. NO.	
1	LIGHTS GARAGE	8 A	20A/1P	20A/1P	9 A	20A/1P	9 A	LIGHTS PUMP ROOM	2	
3	RECEPTACLES GARAGE	6 A	20A/1P	20A/1P	6 A	20A/1P	6 A	RECEPTACLES PUMP ROOM	4	
5	RECEPTACLES GARAGE	6 A	20A/1P	20A/1P	6 A	20A/1P	6 A	RECEPTACLES PUMP ROOM	6	
7	OVERHEAD DOOR #1	9 A	20A/1P	20A/1P	1 A	20A/1P	1 A	EXIT/EMERGENCY LIGHTS	8	
9	OVERHEAD DOOR #1	9 A	20A/1P	20A/1P	4 A	20A/1P	4 A	OUTSIDE BUILDING LIGHTS - RECEPTACLES	10	
11	HEATER #1 (5,000 WATT)	21 A	30A/1P	30A/2P	24 A	30A/2P	24 A	CONDENSOR #1	12	
13	HEATER #1 (5,000 WATT)	21 A	30A/1P	30A/2P	24 A	30A/2P	24 A	CONDENSOR #1	14	
15	HEATER #2 (5,000 WATT)	21 A	30A/1P	30A/2P	16 A	30A/2P	16 A	AHU #1	16	
17	HEATER #2 (5,000 WATT)	21 A	30A/1P	30A/2P		30A/2P		SPACE	18	
19	SPACE							SPACE	20	
21	SPACE							SPACE	22	
23	SPACE							SPACE	24	
SUB-TOTAL		85 A	57 A			47 A	43 A	SUB-TOTAL		
TOTAL AMPS L1:		108 A		TOTAL AMPS L2:		104 A				

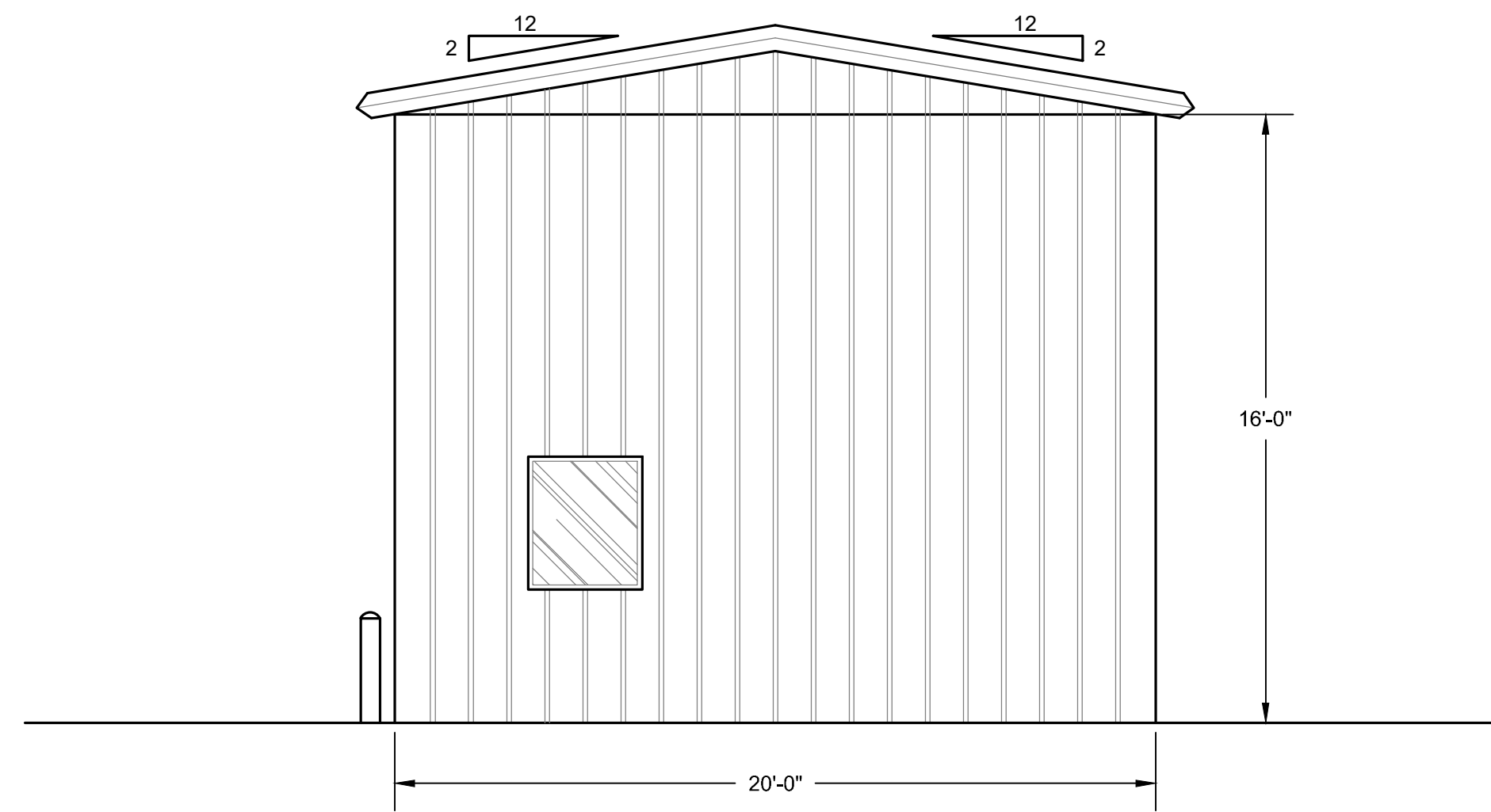


- GENERAL ELECTRICAL NOTES:**
- 1) ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL LOCAL CITY CODES AND ORDINANCES.
 - 2) COORDINATE ELECTRIC SERVICE INSTALLATION WITH LOCAL POWER COMPANY, ALL INCIDENTAL COSTS SHALL BE INCLUDED IN CONTRACTORS BID.
 - 3) ALL INTERIOR METAL PIPING, STRUCTURAL METAL, AND METAL HVAC DUCTWORK SHALL BE BONDED TO THE ELECTRICAL SERVICE GROUNDING SYSTEM IN ACCORDANCE WITH ARTICLE 250.104 OF THE NATIONAL ELECTRICAL CODE.
 - 4) ALL MOTOR CONTROL CENTERS, PANELBOARDS, BREAKERS, DISCONNECT SWITCHES, AND FUSES SHALL HAVE MINIMUM SHORT CIRCUIT CURRENT RATING AS REQUIRED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. THE ELECTRICAL CONTRACTOR SHALL VERIFY BUILDING TRANSFORMER KVA AND IMPEDANCE RATING WITH LOCAL POWER COMPANY, AND INSTALL ALL OVERCURRENT PROTECTIVE DEVICES, MOTOR CONTROL CENTERS, PANELBOARDS, AND DISCONNECT SWITCHES TO MEET MINIMUM SHORT CIRCUIT CURRENT RATING REQUIREMENTS.
 - 5) ALL WIRE SHALL BE #12AWG THWN IN CONDUIT WITH EQUIPMENT GROUND WIRE, UNLESS NOTED OTHERWISE. CONDUCTORS SHALL BE INCREASED IN SIZE WHERE NECESSARY TO ALLOW FOR VOLTAGE DROP.
 - 6) ALL CONDUITS WITHIN INTERIOR OF BUILDING LIGHTING, OUTLETS, AND OTHER BUILDING ELECTRICAL EQUIPMENT SHALL BE EXPOSED ELECTRICAL METALLIC TUBING WITH COMPRESSION FITTINGS OR RIGID GALVANIZED STEEL, UNLESS NOTED OTHERWISE.(CONDUIT, WIRING, AND DEVICE BOXES SHALL BE RECESSED IN WALL FOR LIVING QUARTER AREA.)
 - 7) ALL CONDUITS SERVING OUTSIDE LIGHTS AND OUTLETS SHALL BE ELECTRICAL METALLIC TUBING WITH COMPRESSION FITTINGS CONCEALED IN WALLS OR CEILINGS, UNLESS NOTED OTHERWISE.
 - 8) ALL CONDUIT IN OR BELOW FLOOR OR BURIED SHALL BE RIGID GALVANIZED STEEL OR PVC SCHEDULE 40.
 - 9) ALL BURIED CONDUIT AND WIRING SHALL HAVE MAGNETIC WARNING RIBBON PLACED 12" ABOVE CONDUIT AND WIRING.
 - 10) CONDUIT EXPOSED TO PHYSICAL DAMAGE AND PENETRATING CONCRETE FLOOR OR SLAB SHALL BE RIGID GALVANIZED STEEL.
 - 11) ALL OUTLET AND JUNCTION BOXES WITHIN HANGAR OF BUILDING MAY BE SURFACE MOUNTED UNLESS NOTED OTHERWISE.
 - 12) ALL OUTLET AND JUNCTION BOXES SERVING OUTSIDE LIGHTS AND OUTLETS SHALL BE RECESSED, UNLESS NOTED OTHERWISE.
 - 13) VERIFY EXACT EQUIPMENT POWER REQUIREMENTS OF MECHANICAL AND SPECIAL EQUIPMENT WITH RESPECTIVE CONTRACTOR/SUPPLIER PRIOR TO INSTALLING REQUIRED BREAKERS, DISCONNECTS, AND CIRCUITS.
 - 14) ALL LIGHTING FIXTURES AND CONDUIT SHALL BE BRACED OR ANCHORED TO RESIST A SEISMIC HORIZONTAL FORCE ACTING IN ANY DIRECTION AS REQUIRED BY APPLICABLE LOCAL BUILDING CODES.
 - 15) CONTRACTOR SHALL FURNISH 5"x3 1/2" (MINIMUM SIZE) ARC FLASH WARNING LABEL ON FACE OF ALL SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS AS REQUIRED BY NEC.
 - 16) CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EQUIPMENT AND SHALL BE RESPONSIBLE FOR ALL POWER, CONTROL, AND AIR LINES NECESSARY FOR THE JOB, WHETHER SHOWN OR NOT. NO ADDITIONAL FEES SHALL BE GIVEN TO THE CONTRACTOR FOR ANY ADDITIONAL CONDUIT OR WIRING NECESSARY.

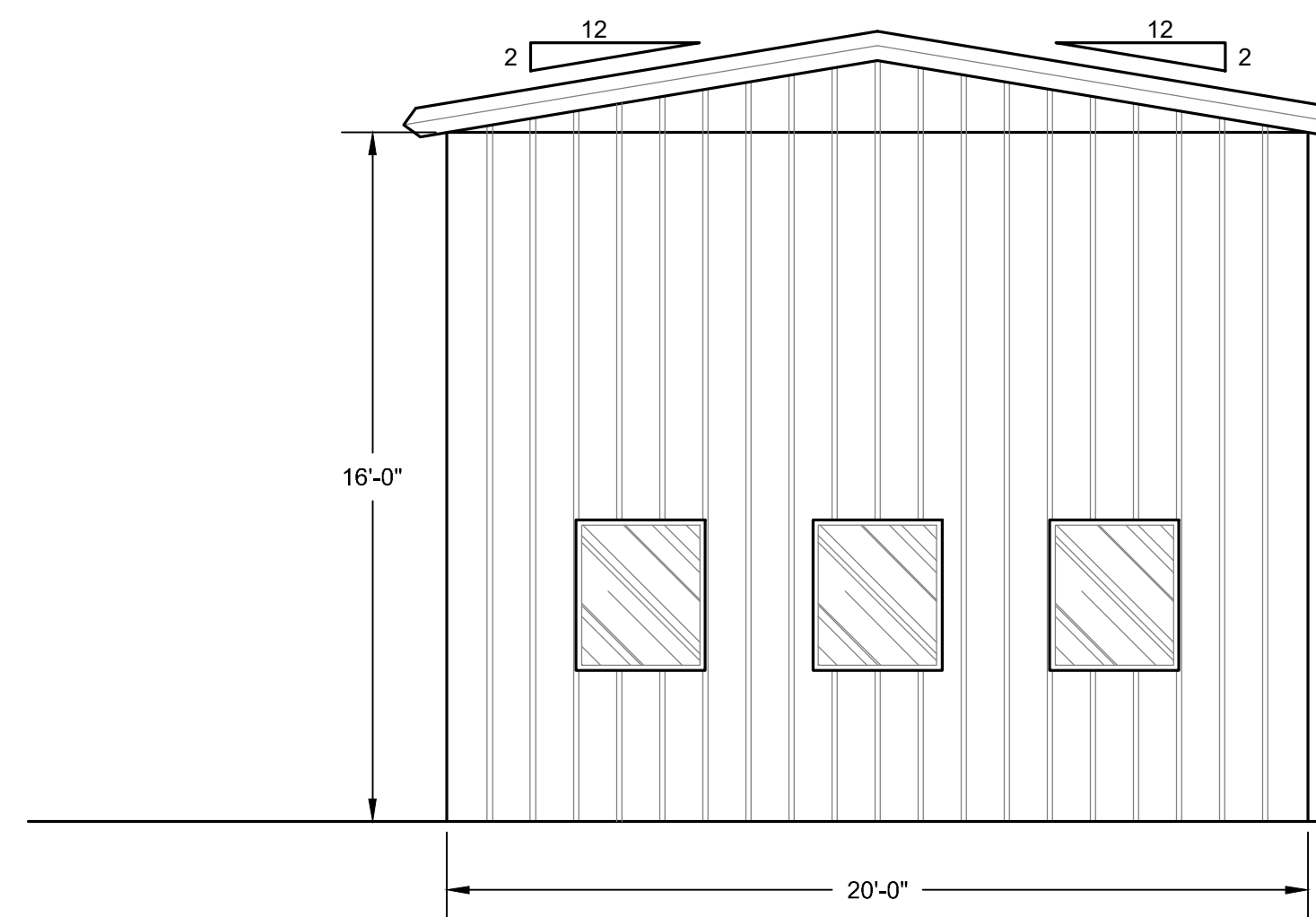


WASTEWATER SYSTEM IMPROVEMENTS
CITY OF FLIPPIN
FLIPPIN, ARKANSAS

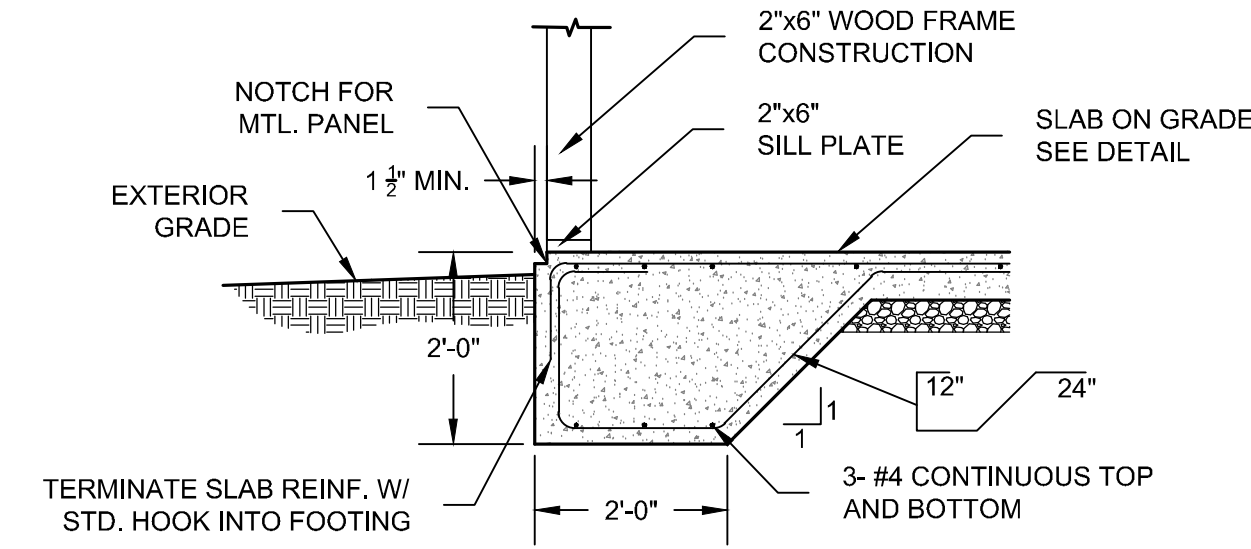
PUMP BUILDING DETAILS	
Designed	JSS
Checked	RLP
Drawn	ALA
Approved	JSS
SCALE: 1" = 30'	JOB NO:
DATE: NOVEMBER 2020	SHEET: 8



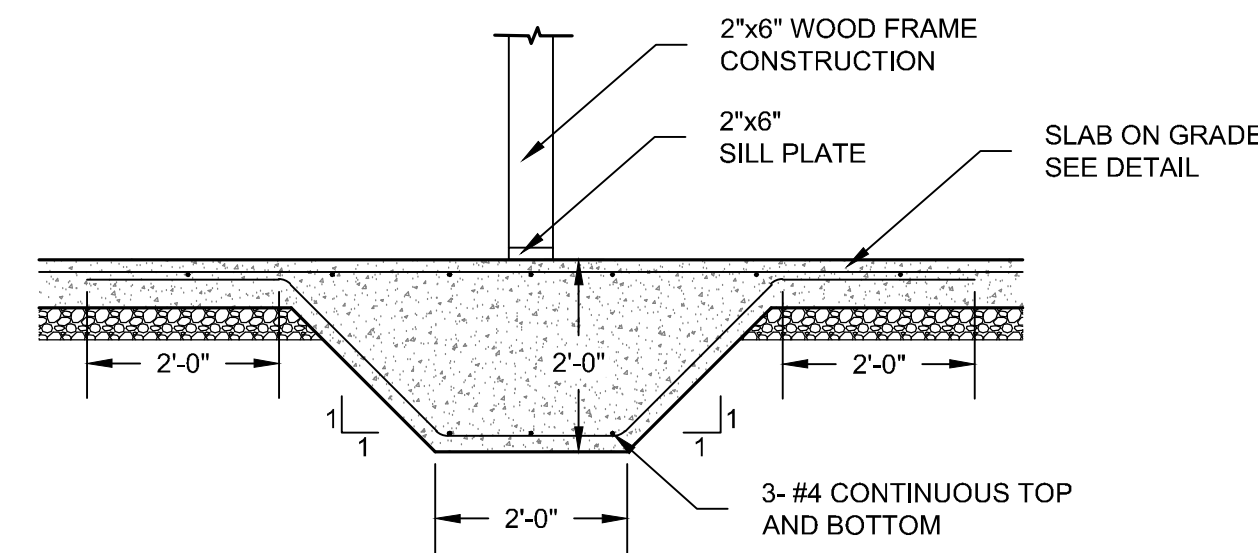
EAST VIEW



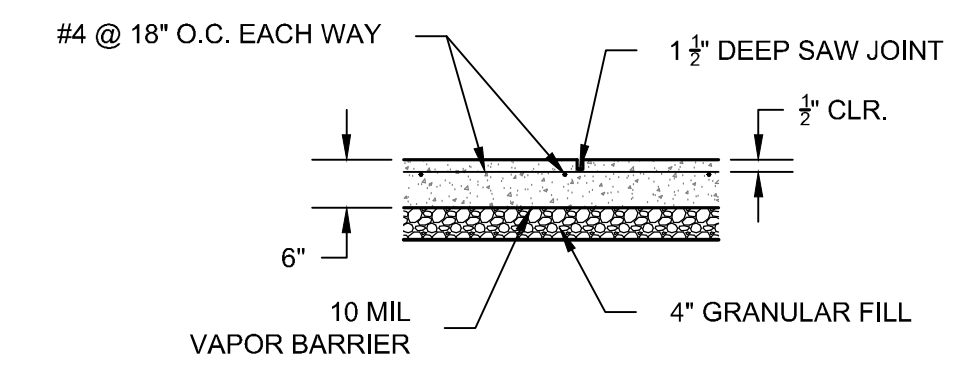
WEST VIEW



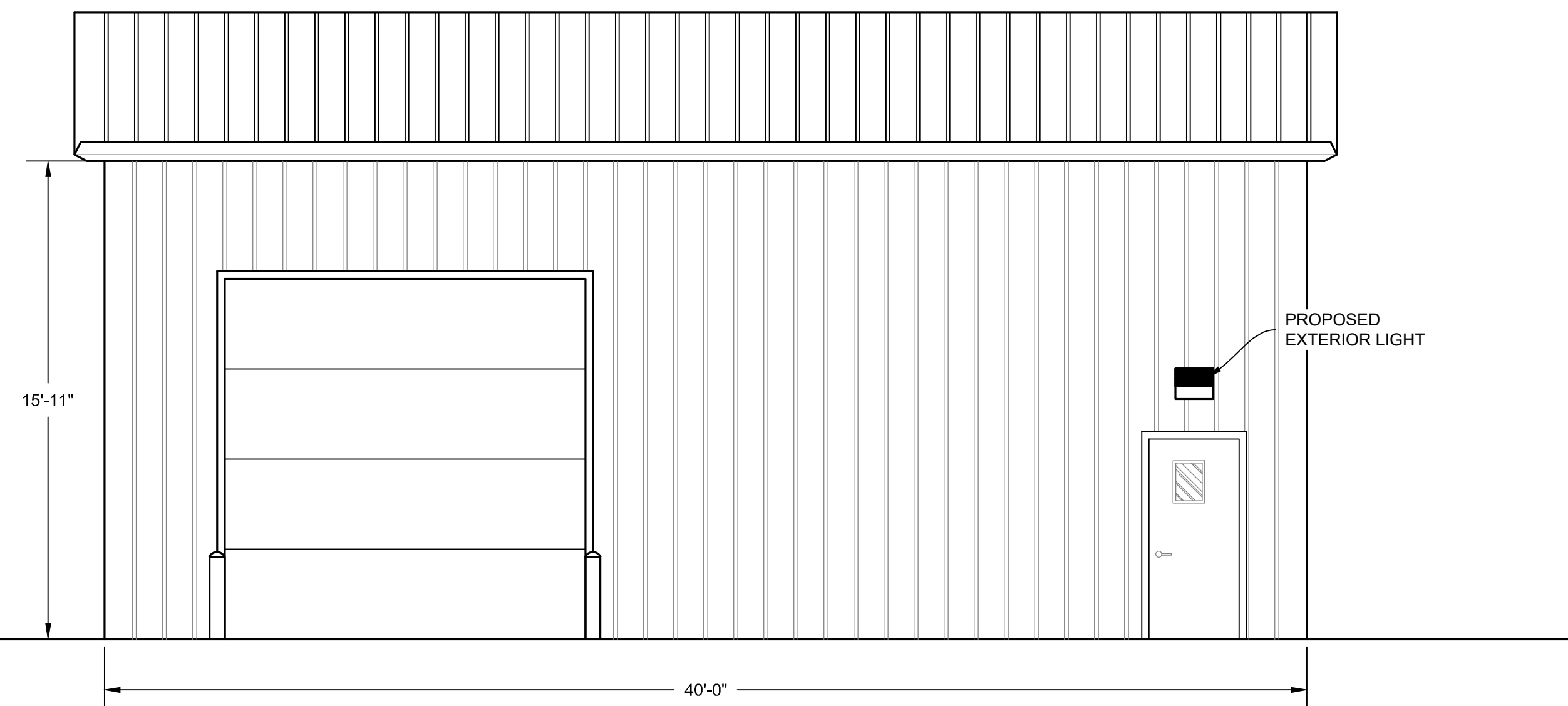
FOOTING SECTION DETAIL
 N.T.S.



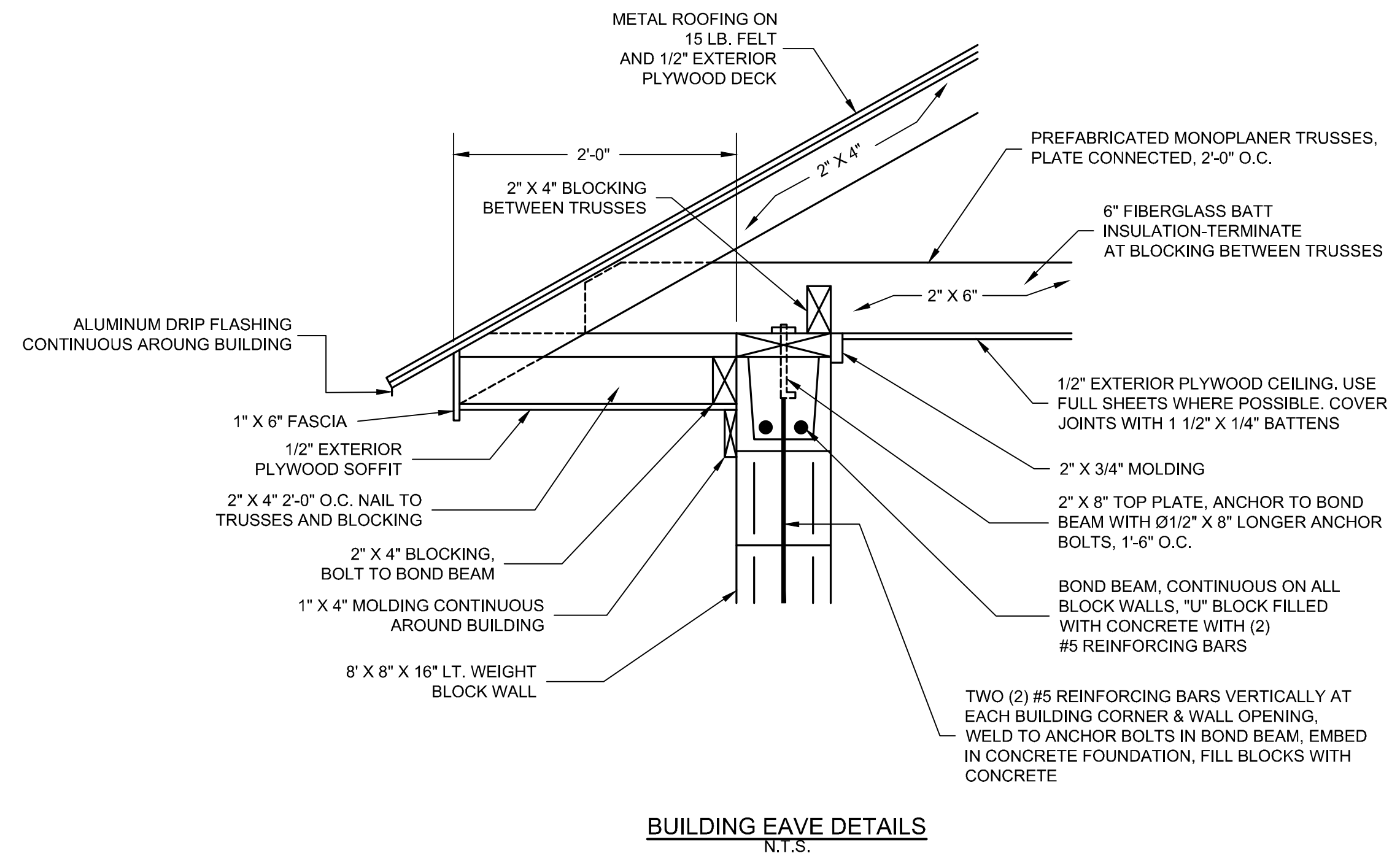
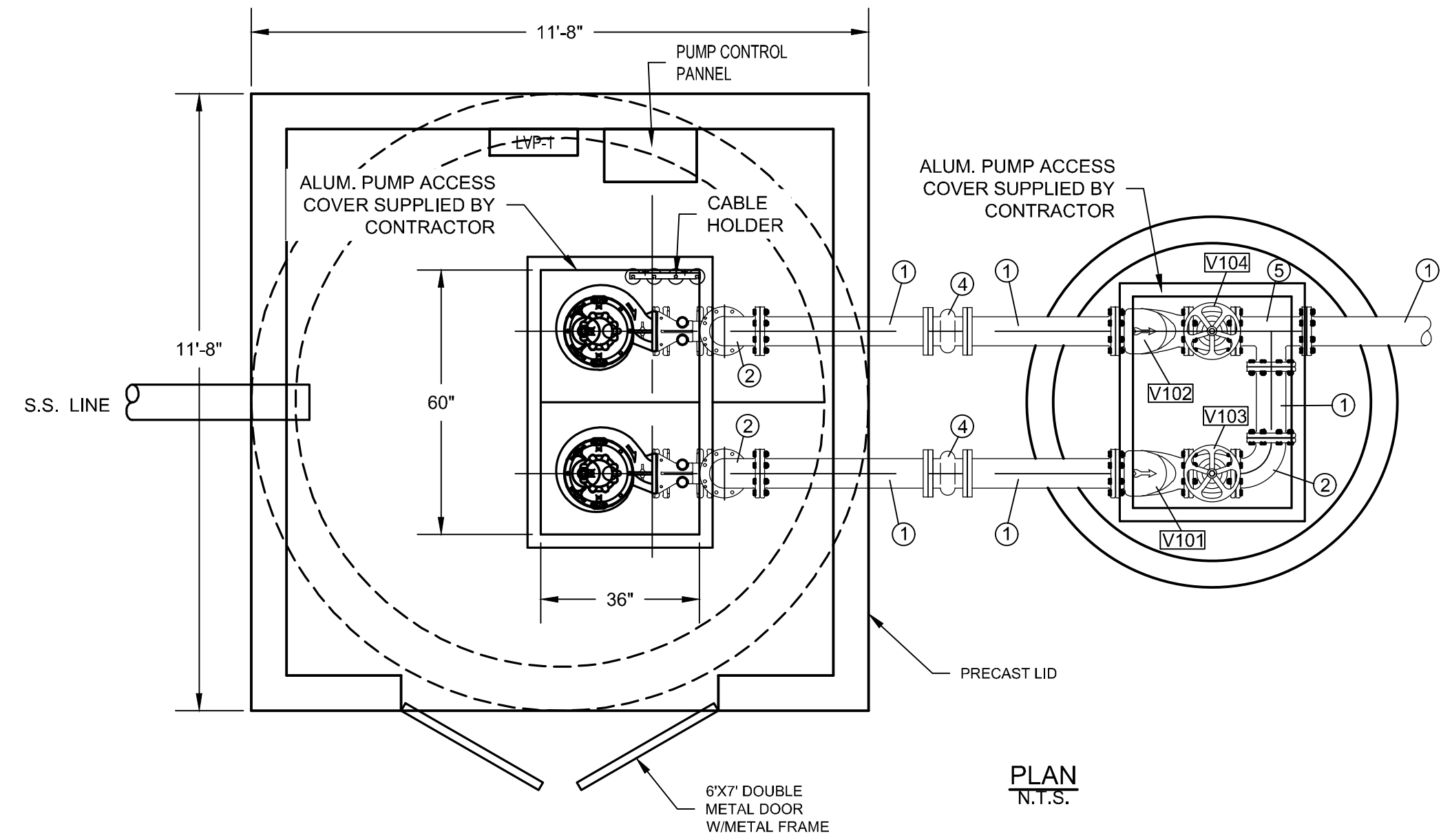
WALL BEAM SECTION DETAIL
 N.T.S.



SLAB SECTION DETAIL
 N.T.S.



SOUTH VIEW



SITE PREPARATION AND GRADING

- SITE PREPARATION AND FOUNDATION SUBGRADE PREPARATION SHALL BE IN STRICT ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS AND WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER'S REPORT FOR THIS PROJECT.
- IT IS IMPORTANT THAT POSITIVE DRAINAGE BE ESTABLISHED DURING CONSTRUCTION SUCH THAT WATER WILL NOT POND AROUND THE CONSTRUCTION SITE DURING AND FOLLOWING THE CONSTRUCTION PERIOD. ALL GRADES MUST BE ADJUSTED TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE STRUCTURES. WHERE PAVING OR FLAT-WORK ABUTS THE STRUCTURES, CARE SHALL BE TAKEN THAT THE JOINT IS PROPERLY SEALED AND MAINTAINED.

EXCAVATIONS AND SLOPES:

- AFTER OPENING, FOOTINGS SHALL BE INSPECTED AND CONCRETE PLACED AS SOON AS POSSIBLE TO AVOID EXPOSURE OF THE FOOTING BOTTOMS TO WETTING AND DRYING CONDITIONS. IF IT IS REQUIRED THAT FOOTING EXCAVATIONS BE LEFT OPEN FOR MORE THAN ONE DAY, THEY SHALL BE PROTECTED TO REDUCE EVAPORATION OR ENTRY OF SOIL MOISTURE.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING AND CONSTRUCTING STABLE TEMPORARY EXCAVATIONS AND SHALL SHORE, SLOPE, OR BENCH THE SIDES OF ALL EXCAVATIONS AS REQUIRED TO MAINTAIN STABILITY OF BOTH THE EXCAVATION SIDES AND BOTTOM. ALL EXCAVATIONS SHALL COMPLY WITH THE APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS INCLUDING THE CURRENT OSHA EXCAVATION AND TRENCH SAFETY STANDARDS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCING OF CONSTRUCTION OPERATIONS. THIS INFORMATION IS PROVIDED ONLY AS A SERVICE AND UNDER NO CIRCUMSTANCES SHOULD THE INFORMATION PROVIDED BE INTERPRETED TO MEAN THAT THE ENGINEER IS ASSUMING RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY OR THE CONTRACTOR'S ACTIVITIES; SUCH RESPONSIBILITY IS NOT BEING IMPLIED AND SHOULD NOT BE SO INTERPRETED.

FOUNDATION NOTES:

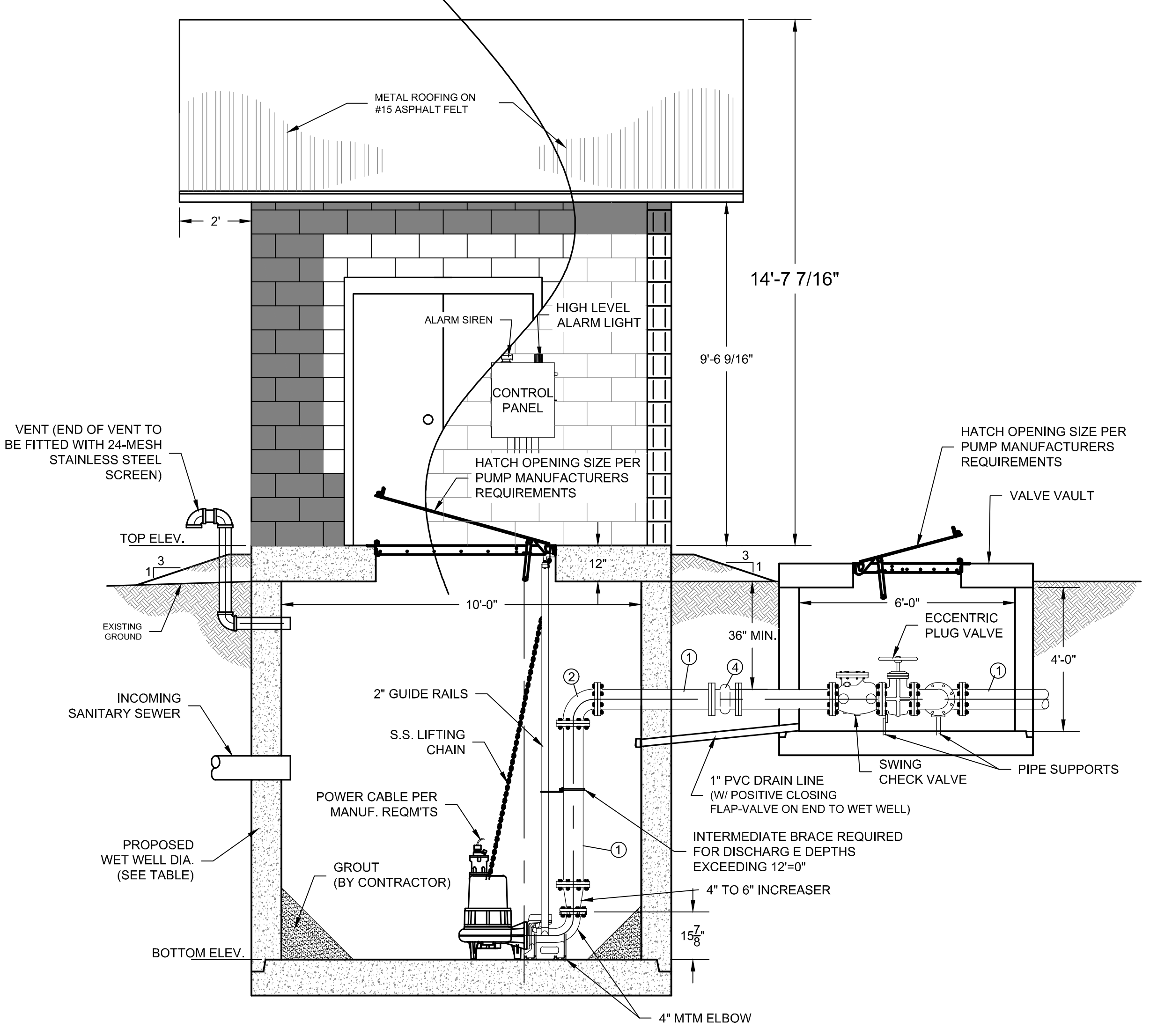
- THE MONOLITHIC FOUNDATION SLAB WAS DESIGNED IN ACCORDANCE WITH STANDARD ENGINEERING PRACTICES FOR DESIGN AND CONSTRUCTION OF SLABS-ON-GRADE. THE DESIGN ASSUMES THAT THE SITE HAS BEEN PREPARED IN ACCORDANCE WITH THE SITE GRADING AND PREPARATION SPECIFICATIONS CONTAINED ELSEWHERE IN THESE DOCUMENTS, AND HAS RENDERED THE SOILS INTO A STABLE CONDITION (L800 DEFLECTION).
- MOISTURE CONTROL, BEFORE AND AFTER CONSTRUCTION, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL INCLUDE SAND OR GRAVEL FILL, VAPOR BARRIER, ETC. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING CODES AND LOCAL PRACTICES.
- NEITHER CALCIUM CHLORIDE OR ANY OTHER ADMIXTURE THAT IS CORROSIVE TO FERROUS METALS SHALL BE USED IN THE FOUNDATION SLAB.

CONCRETE NOTES:

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-83, "BUILDING CODE FOR REINFORCED CONCRETE," AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES, ACI 315."
- CONCRETE SHALL CONFORM TO CHAPTERS 4 AND 5 OF THE ACI 318-83, AND ASTM C-150.
- CONCRETE AGGREGATES SHALL CONFORM TO ASTM C33. THEIR SIZE SHALL NOT EXCEED ONE (1) INCH FOR FOUNDATIONS AND THREE QUARTERS (3/4) INCH FOR OTHER WORK.
- CONCRETE PLACEMENT SLUMP SHALL BE 4-1/2 INCH MINIMUM.
- ALL CONCRETE SHALL PRODUCE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
- SHORING, BRACING, AND ALL TEMPORARY SUPPORTS FOR REINFORCED CONCRETE SLABS, COLUMNS, BEAMS, AND ANY OTHER STRUCTURAL MEMBERS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

REINFORCING STEEL NOTES:

- REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60, EXCEPT STIRRUPS AND COLUMN TIES, WHICH MAY BE GRADE 40.
- REINFORCING STEEL SHALL BE CLEAN, FREE FROM DIRT AND FREE FROM RUST. FITTED OR SCALED REINFORCING STEEL WILL NOT BE ACCEPTABLE.
- DETAILS OF REINFORCEMENTS SHALL COMPLY WITH REQUIREMENTS OF ASTM STANDARDS REFERENCED IN ACI 318, AND WITH THE STRUCTURAL DRAWINGS.
- WIRE MESH REINFORCING IN SLABS SHALL BE 6 x 6 - W1.4 x W1.4 WWM, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.



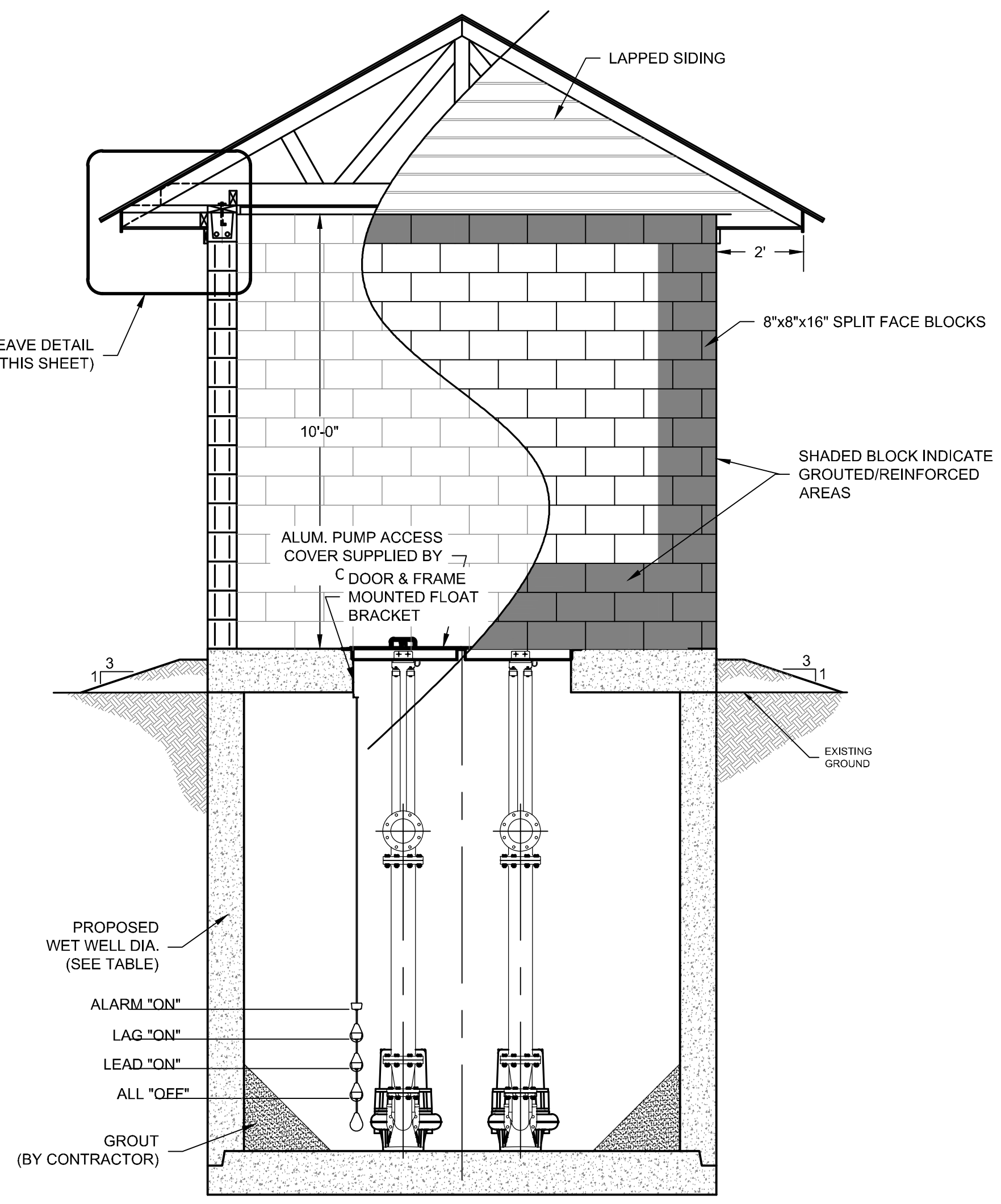
LIFT STATION DATA		
	LIFT STATION NO. 1	
1	ALARM "ON" ELEVATION	596.40
2	LAG PUMP "ON" ELEVATION	595.90
3	LEAD PUMP "ON"	595.40
4	ALL PUMPS "OFF"	593.40
5	BOTTOM SLAB ELEVATION	591.40
6	PIPE INFLUENT ELEVATION	67 596.40
7	TOP OF WETWELL	614.40
8	EXISTING GROUND	613.36
9	WET WELL (FT)	10' DIA.
10	TOTAL DYNAMIC HEAD (FT)	55.20
11	PUMP CAPACITY EACH (GPM)	500
12	MOTOR HP	20
13	PUMP RPM	1750
14	NUMBER OF PUMPS	2
15	DISCHARGE PIPING (IN)	6
HYDROMATIC MODEL #		S4K

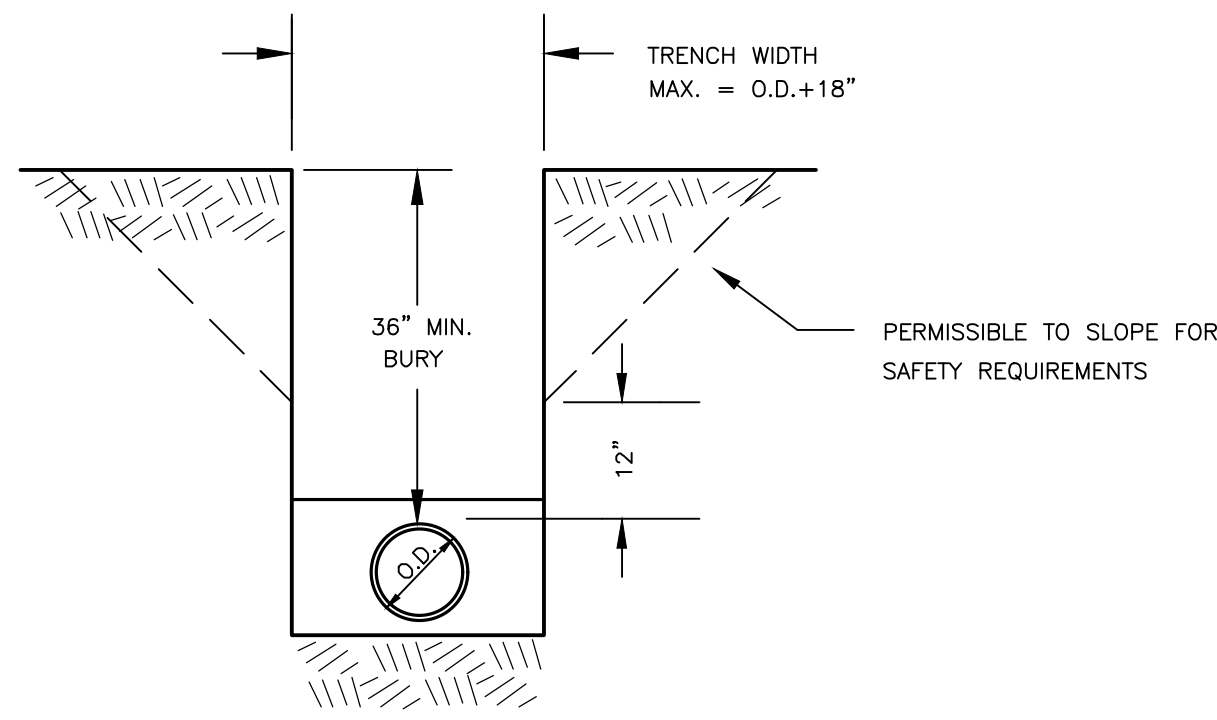
VALVE SCHEDULE	
V101-V102	6" SWING CHECK VALVE
V103-V104	6" ECCENTRIC PLUG VALVE

PIPING SCHEDULE	
1	6" SPOOL
2	6" 90° BEND
3	6" WALL PIPE
4	6" FLEXIBLE COUPLING
5	6" X 6" X 6" TEE

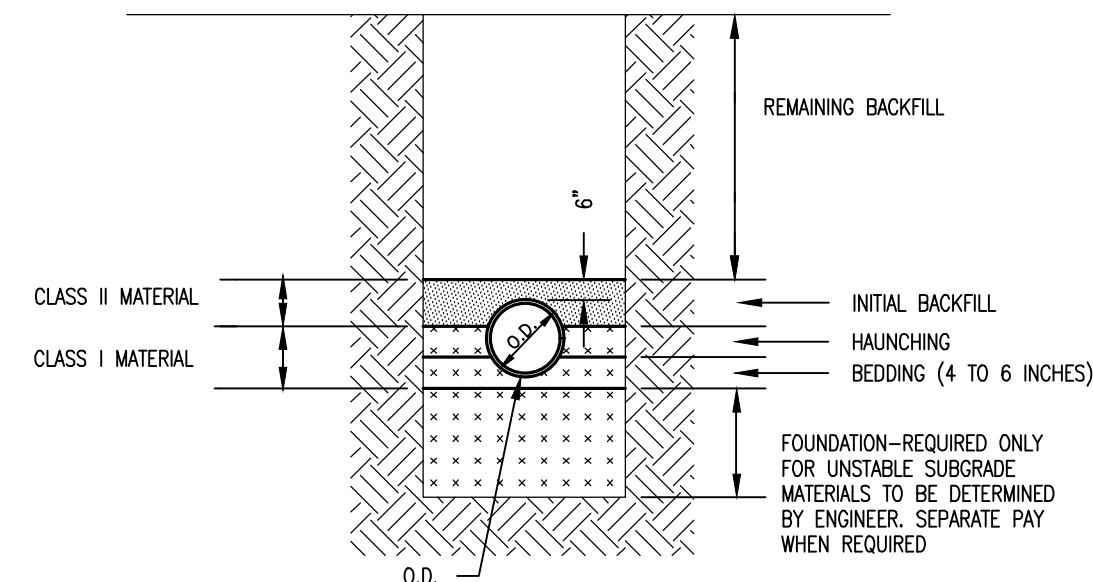
NOTES:

- CONTRACTOR SHALL MAKE TIE-IN TO EXISTING FORCE MAIN AND INSTALL A PERMANENT BY-PASS CONNECTION UTILIZING ALL NECESSARY FITTINGS, 3" GATE VALVE, AND 3" ALUMINUM CAMLOCK FOR PUMP CONNECTION (SEE DETAIL SHEET 8).
- POWER FOR PROPOSED LIFT STATION SHALL BE FROM MAIN POWER SUPPLY FOR WWTF; THEREFORE, LIFT STATION WILL BE SUPPLIED POWER FROM PROPOSED GENERATOR DURING POWER FAILURES.

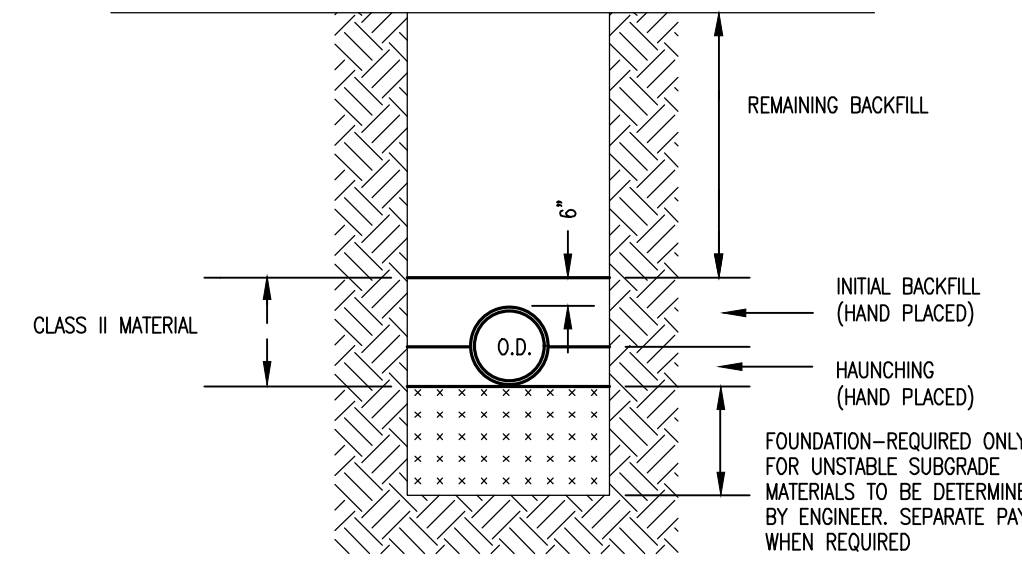




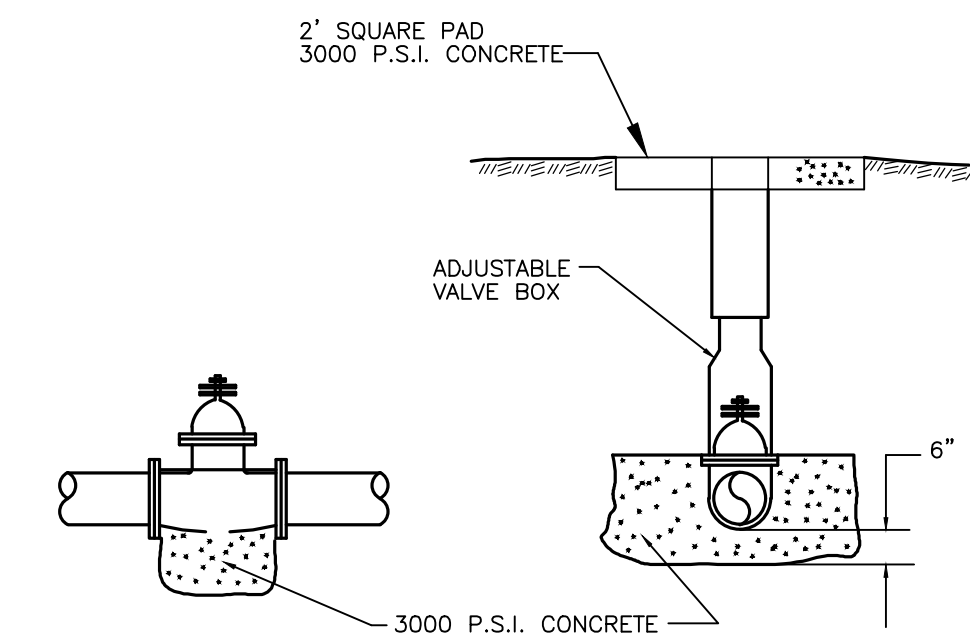
TYPICAL TRENCH SECTION
N.T.S.



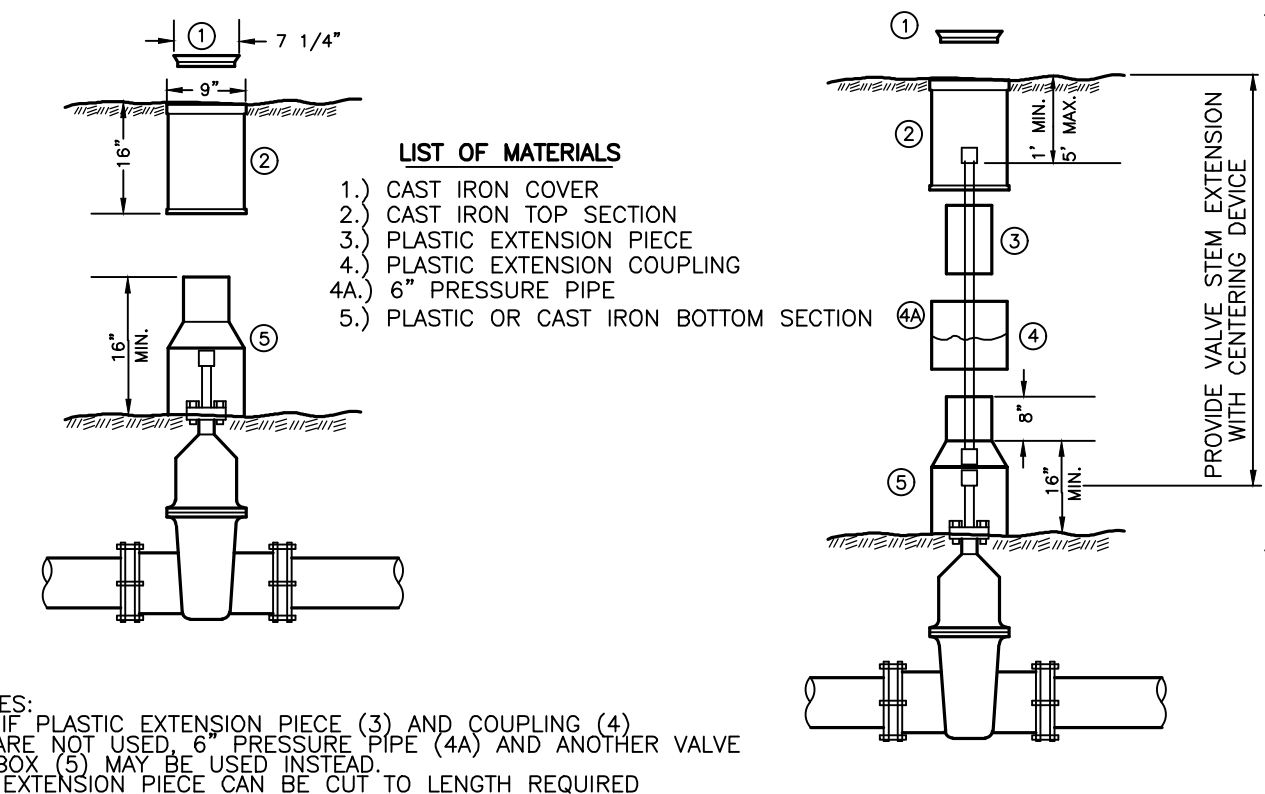
GRAVITY PVC PIPE EMBEDMENT DETAIL
N.T.S.



GRAVITY RIGID PIPE-CLASS-II-EMBEDMENT DETAIL
(TO BE USED FOR RIGID PIPE EXCEPT AS NOTED ON PLANS)
N.T.S.



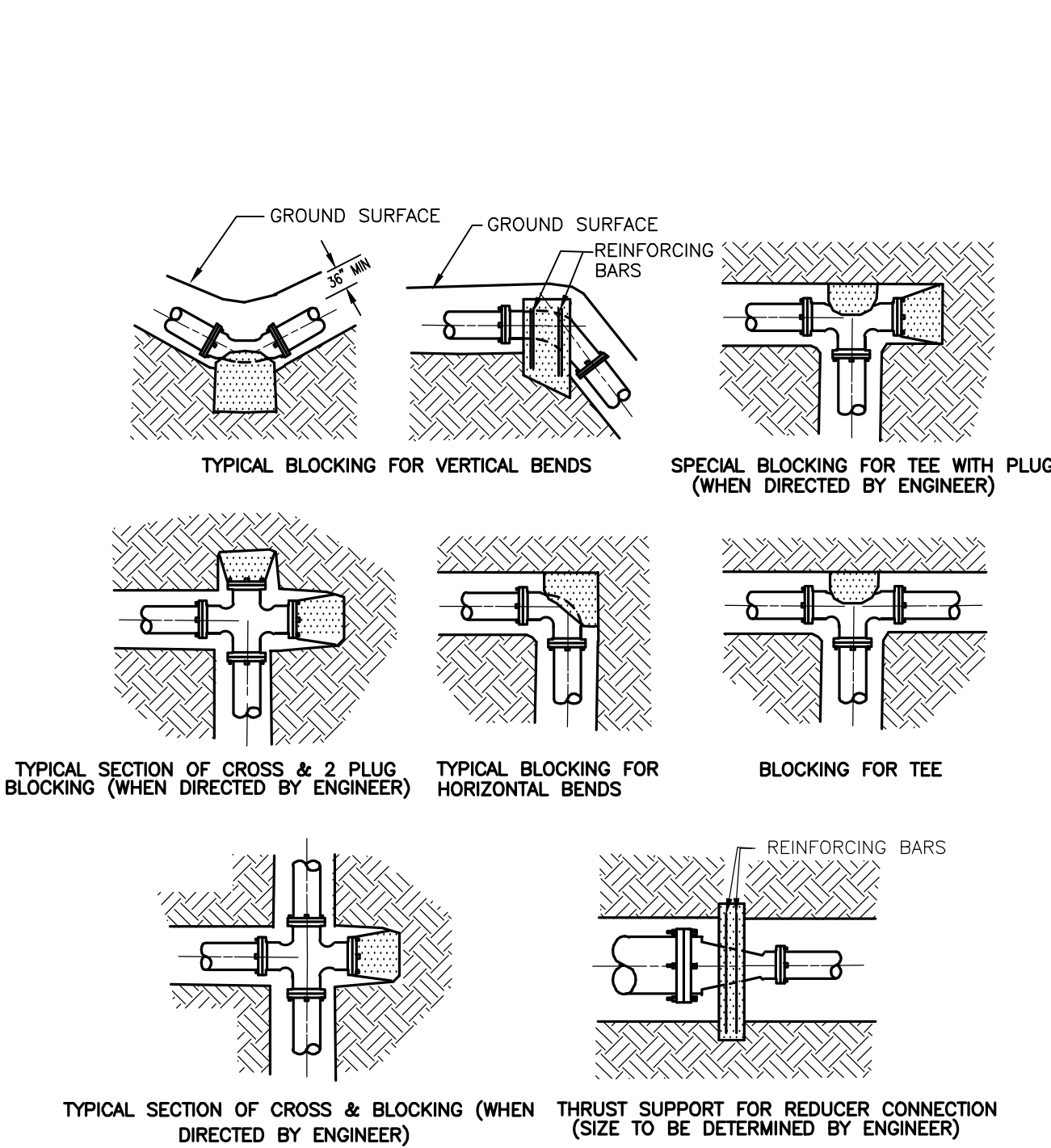
BLOCKING DETAILS FOR VALVES
N.T.S.



- LIST OF MATERIALS
- 1) CAST IRON COVER
 - 2) CAST IRON TOP SECTION
 - 3) PLASTIC EXTENSION PIECE
 - 4) PLASTIC EXTENSION COUPLING
 - 4A) 6" PRESSURE PIPE
 - 5) PLASTIC OR CAST IRON BOTTOM SECTION

NOTES:
1.) IF PLASTIC EXTENSION PIECE (3) AND COUPLING (4) ARE NOT USED, 6" PRESSURE PIPE (4A) AND ANOTHER VALVE BOX (5) MAY BE USED INSTEAD.
2.) EXTENSION PIECE CAN BE CUT TO LENGTH REQUIRED

(AS PER SPECIFICATIONS IF GREATER THAN 5)

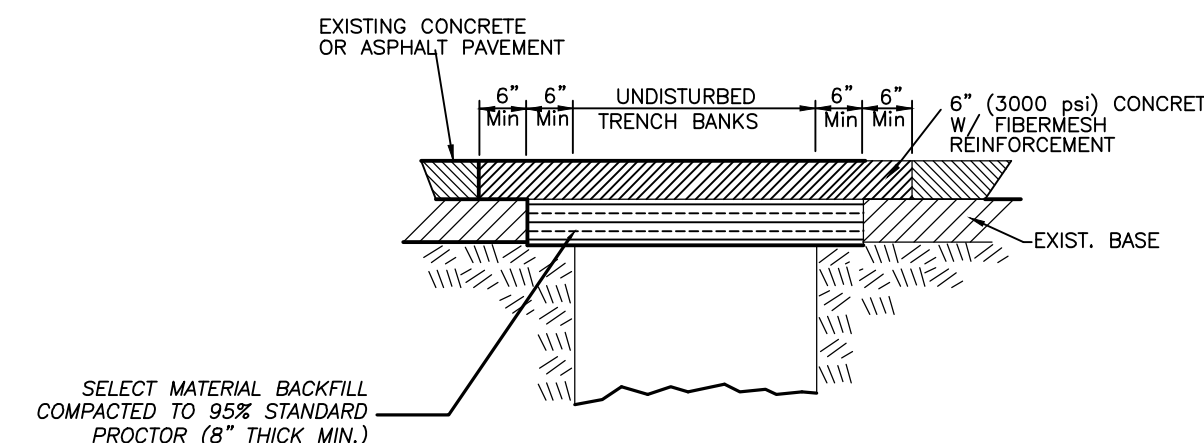


THRUST BLOCKING DETAILS
N.T.S.

NOTES ON THRUST BLOCKING

- 1) ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL AND SHALL BE CONCRETE HAVING A MINIMUM 28 DAY STRENGTH OF 3000 LBS PER SQUARE INCH.
- 2) THRUST CALCULATIONS TO BE BASED ON THRUST DUE TO WATER PRESSURE AT 100% OF TEST PRESSURE. THRUST = 2.4P SIN 1/2 φ WHERE P = AREA OF PIPE, φ = WATER PRESSURE, φ = DEFLECTION ANGLE.
- 3) VERTICAL UPLIFT BLOCKS SHALL BE DESIGNED ON THE BASIS OF 150 LBS. PER CU. FT. FOR CONCRETE AND SOIL AT 180 LBS. PER CU. FT. OVER THE AREA OF BLOCK.
- 4) VERTICAL DOWN THRUST BLOCKS SHALL BE DESIGNED ON THE BASIS OF 200 LBS. PER SQ. FT. ALLOWABLE SOIL BEARING PRESSURE. DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO ALLOWABLE BEARING VALUE.
- 5) THRUST BLOCKS ON HORIZONTAL BENDS, TEES, CROSSES, AND REDUCERS SHALL BE SIZED BASED ON 3,000 LBS. PER SQ. FT. OF BLOCKING SURFACE AREA IN CONTACT WITH UNDISTURBED SOIL. BLOCK DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.
- 6) ALL BLOCKING SHALL HAVE A MINIMUM SOIL COVER OF 1 FT.
- 7) ADDITIONAL REINFORCING MAY BE REQUIRED FOR HORIZONTAL BLOCKING TO HANDLE UNUSUAL SHEAR LOADING CONDITIONS.

PIPE SIZE	THRUST IN TONS EXERTED AT PLUGS, TEES AND BENDS FOR EACH 100 LBS. PER SQ. IN. OF TEST PRESSURE						BEARING AREA IN SQUARE FEET OF THRUST BLOCK IN CONTACT WITH UNDISTURBED SOIL					
	PLUG	TEE	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	PLUG	TEE	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
1.5"	0.09	0.09	0.13	0.07	0.03	0.02	0.059	0.059	0.083	0.045	0.023	0.012
2"	0.16	0.16	0.22	0.12	0.06	0.03	0.11	0.11	0.15	0.080	0.041	0.021
3"	0.35	0.35	0.50	0.27	0.14	0.07	0.24	0.24	0.33	0.18	0.092	0.046
4"	0.63	0.63	0.89	0.48	0.25	0.12	0.42	0.42	0.59	0.32	0.16	0.082
6"	1.41	1.41	2.00	1.08	0.55	0.28	0.94	0.94	1.33	0.72	0.37	0.19
8"	2.51	2.51	3.55	1.92	0.98	0.49	1.68	1.68	2.37	1.28	0.65	0.33
10"	3.93	3.93	5.55	3.01	1.53	0.77	2.62	2.62	3.70	2.00	1.02	0.51
12"	5.65	5.65	8.00	4.33	2.21	1.11	3.77	3.77	5.33	2.89	1.47	0.74
14"	7.70	7.70	10.89	5.89	3.00	1.51	5.13	5.13	7.26	3.93	2.00	1.01
16"	10.05	10.05	14.22	7.69	3.92	1.97	6.70	6.70	9.48	5.13	2.62	1.31
18"	12.72	12.72	17.99	9.74	4.96	2.49	8.48	8.48	12.00	6.49	3.31	1.66
20"	15.71	15.71	22.21	12.02	6.13	3.08	10.47	10.47	14.81	8.02	4.09	2.05
24"	22.62	22.62	31.99	17.31	8.83	4.43	15.08	15.08	21.33	11.54	5.88	2.96
27"	28.63	28.63	40.49	21.91	11.17	5.61	19.09	19.09	26.99	14.61	7.45	3.74
30"	35.35	35.35	49.98	27.05	13.79	6.93	23.56	23.56	33.32	18.03	9.19	4.62
36"	50.90	50.90	72.98	38.95	19.86	9.98	33.93	33.93	47.98	25.97	13.24	6.65
42"	69.27	69.27	97.97	53.02	27.03	13.58	46.18	46.18	65.31	35.25	18.02	9.05
48"	90.48	90.48	127.96	69.25	35.30	17.74	60.32	60.32	85.30	46.17	23.54	11.83
54"	114.51	114.51	161.94	87.64	44.68	22.45	76.34	76.34	107.96	58.43	29.79	14.97

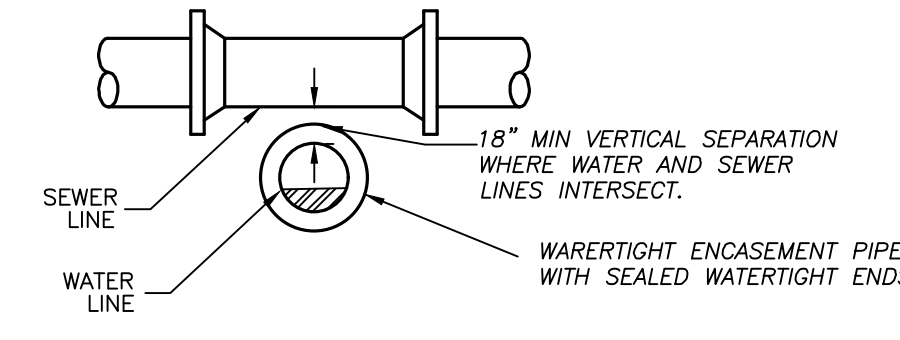


GRAVEL SURFACE REPAIR DETAIL
N.T.S.



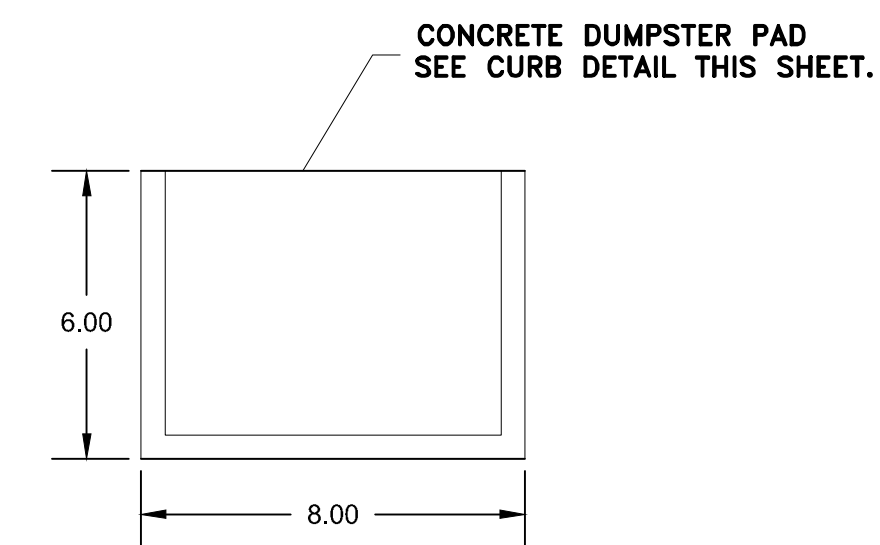
CONCRETE/ASPHALT REPAIR DETAIL
N.T.S.

NOTE: WHEN 18" OF VERTICAL SEPARATION CANNOT BE MAINTAINED, THE SEWER LINE MUST BE ENCASED IN WATERTIGHT PIPE WITH SEALED WATERTIGHT ENDS EXTENDING AT LEAST TEN FEET EITHER SIDE OF THE CROSSING. ANY JOINT IN THE ENCASEMENT PIPE IS TO BE MECHANICALLY RESTRAINED. WHEN WATER LINE PASSES BENEATH THE SEWER LINE, THE ABOVE ENCASEMENT REQUIREMENTS APPLY IN ADDITION TO A MINIMUM OF 18" OF PIPE SEPARATION.

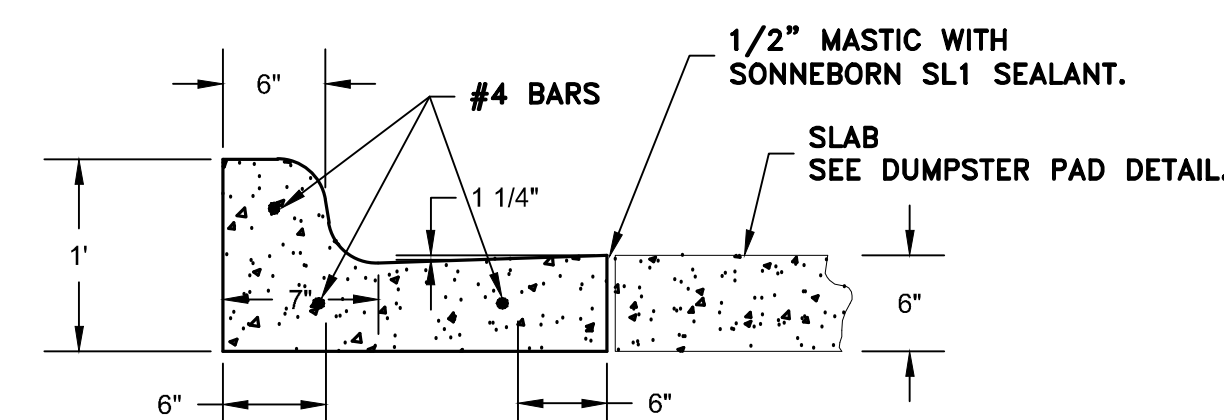


TYPICAL SEWER & WATER CROSSINGS
N.T.S.

VALVE BOX INSTALLATION
N.T.S.

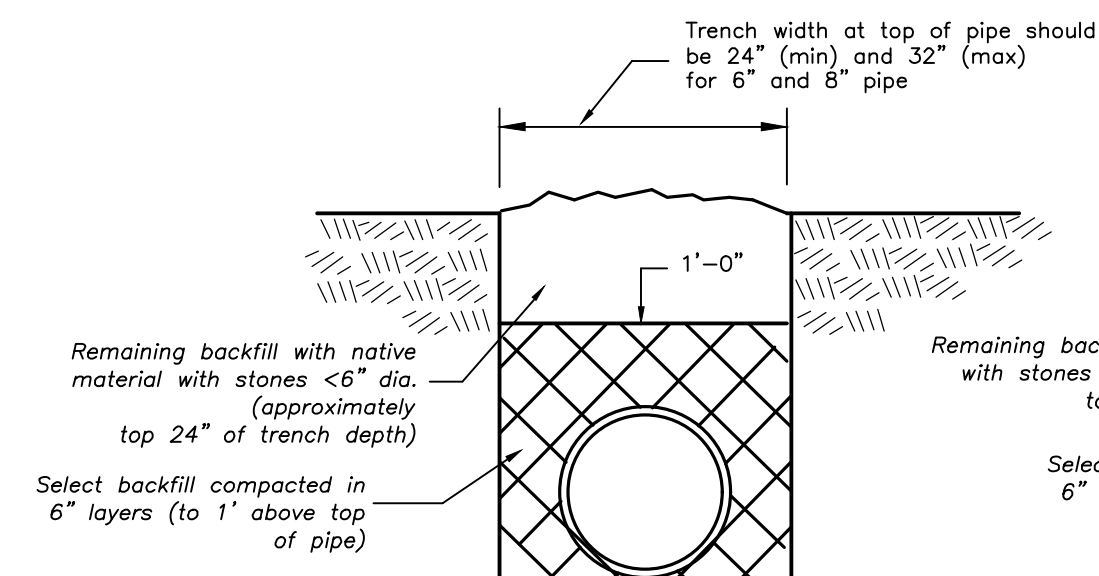


CONCRETE DUMPSTER PAD DETAIL
N.T.S.

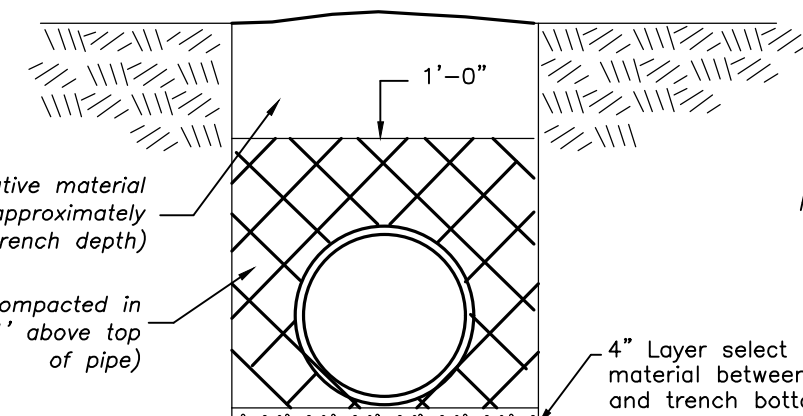


STANDARD CURB
NO SCALE

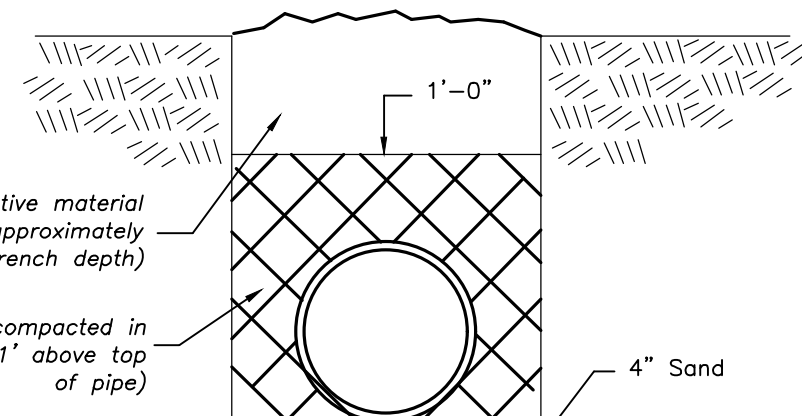
NOTE: REINFORCE PERIMETER OF GRATING WITH 1/4" BY 2" ALUMINUM PLATE, WELDED IN PLACE CONTINUOUSLY.



FORCEMAIN TYPE 1 LAYING CONDITION BEDDING
(USE UNDER NORMAL CONDITIONS)



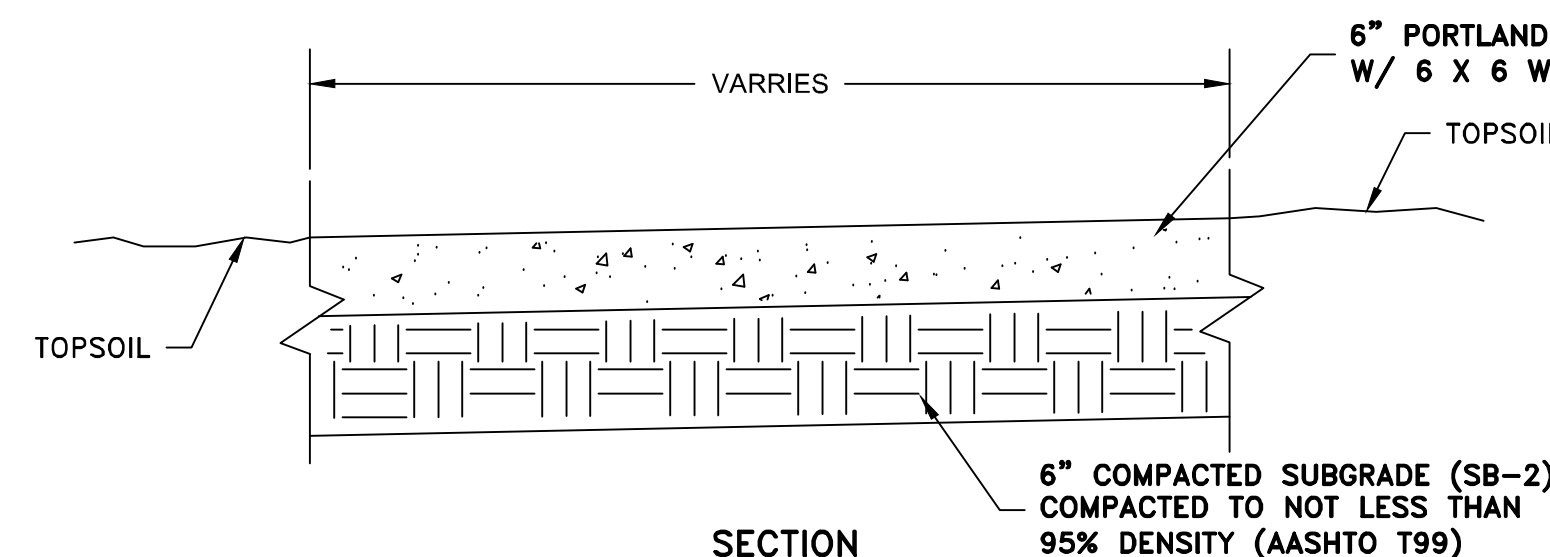
FORCEMAIN TYPE 2 LAYING CONDITION BEDDING
(USE FOR ROCKY OR HARD TRENCH BOTTOM)



FORCEMAIN TYPE 3 LAYING CONDITION BEDDING
(USE FOR SOFT OR WET TRENCH BOTTOM)

NOTE:
1. Trench bottom should be smooth and free from large stones or clods.
2. Bell holes shall be dug at each joint.

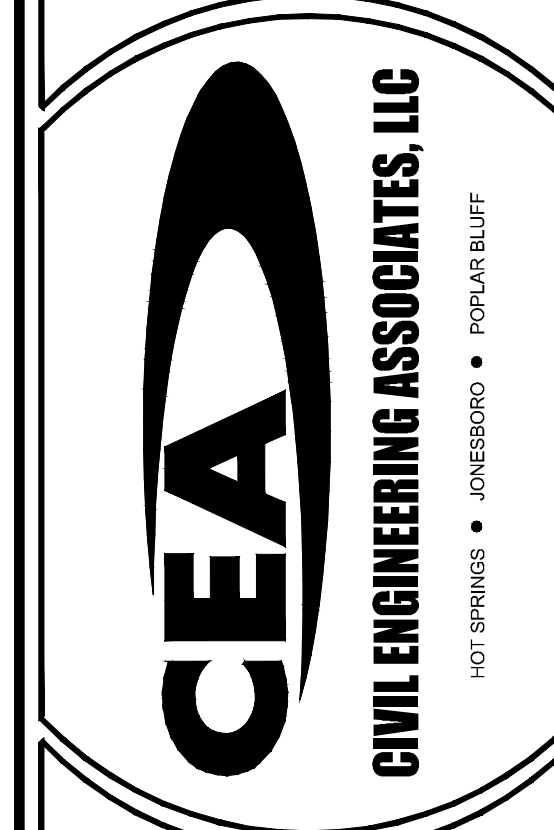
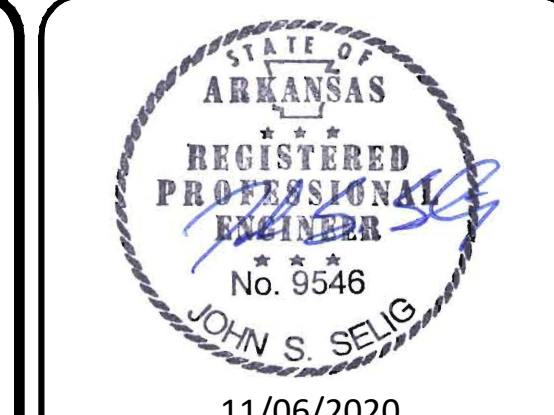
NOTE:
IF SPOIL BANK MATERIAL DOES NOT CONFORM TO SELECT MATERIAL REQUIREMENTS, A MINIMUM 4" SAND LAYER SHALL BE PLACED AROUND PIPE.



DUMPSTER PAD DETAIL
NO SCALE

SIDEWALK DETAIL NOTES:

1. CONTRACTOR SHALL INSTALL 6" X 6" WOVEN WIRE FABRIC IN SIDEWALK, EXCEPT WHERE NOTED OTHERWISE.
2. SIDEWALK SHALL BE CUT AT LEAST 20% OF THE FULL DEPTH OF THE SIDEWALK AT INTERVALS EQUAL TO WIDTH OF CONCRETE.
3. LIGHT BROOM FINISH.
4. 1/2" EXPANSION JOINT SPACING @ 60' OR NEXT TO STRUCTURE AND DRIVES.



WASTEWATER SYSTEM IMPROVEMENTS
CITY OF FLIPPIN
FLIPPIN, ARKANSAS

STANDARD
DETAILS

Designed JSS
Checked RLP
Drawn ALA
Approved JSS

SCALE: N.T.S. JOB NO:
DATE: NOVEMBER 2020 SHEET: 11