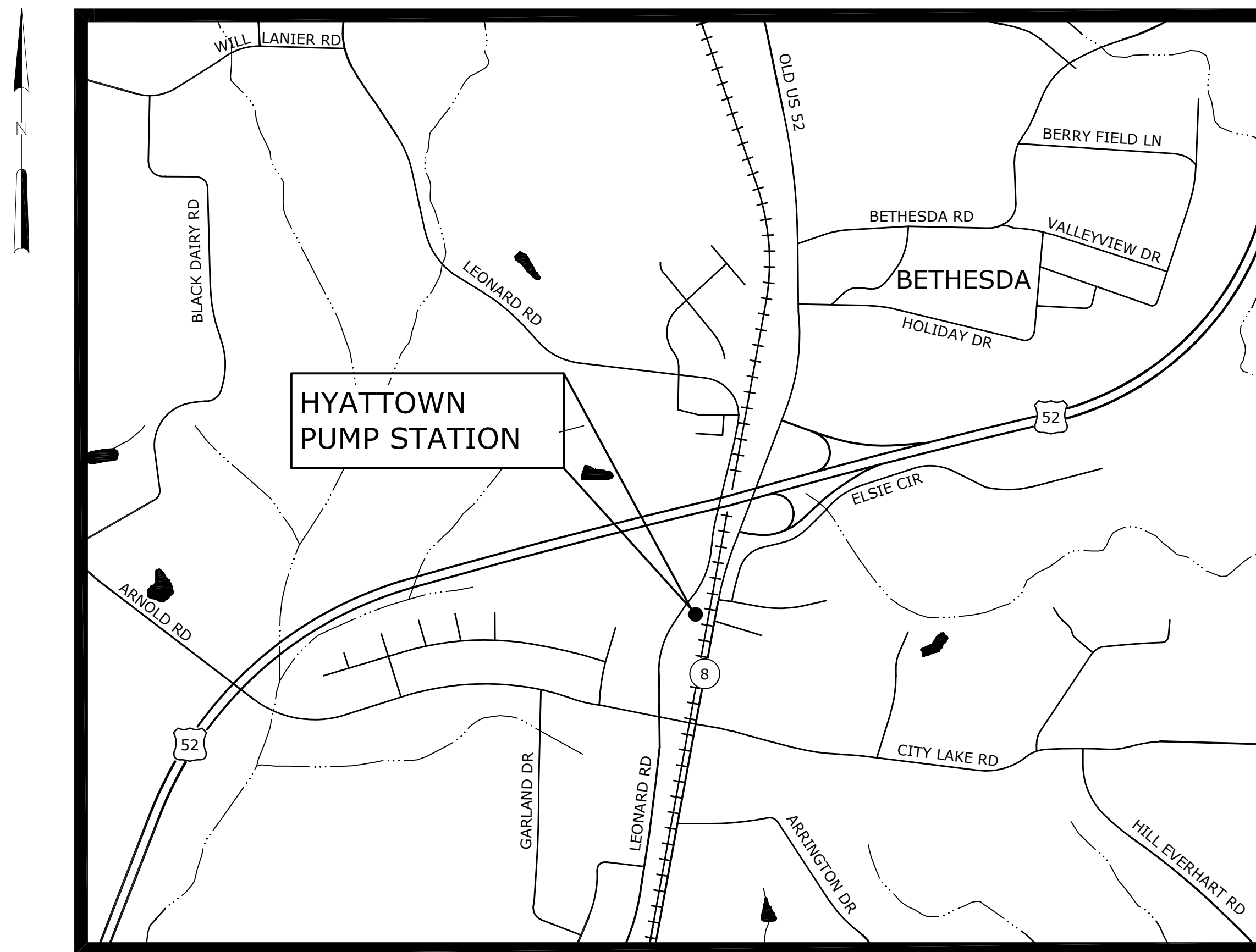




HYATTOWN PUMP STATION IMPROVEMENTS

HAZEN CONTRACT No. 30961-010
MARCH 2016

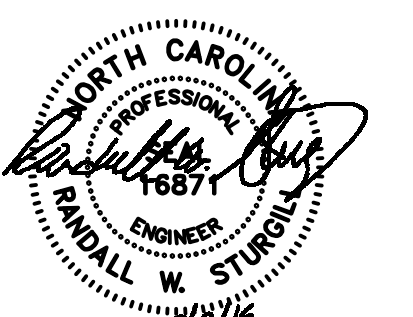
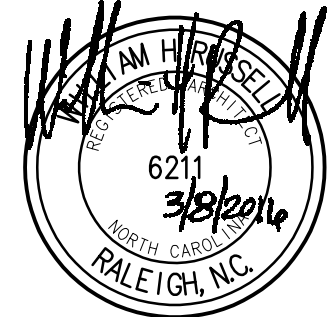
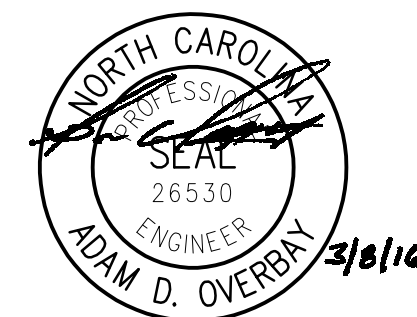
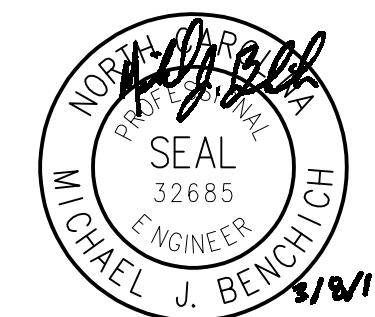


LOCATION MAP
NOT TO SCALE


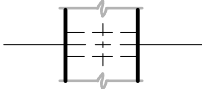


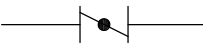

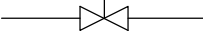
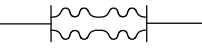
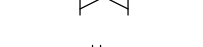
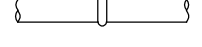
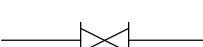


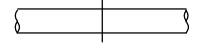

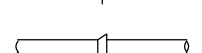
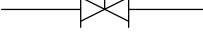

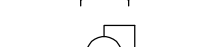

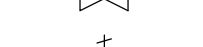
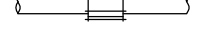

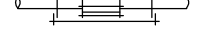



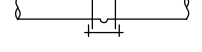
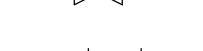
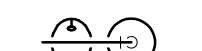
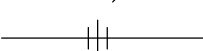
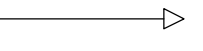






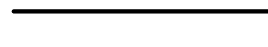
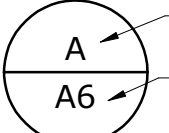

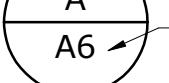
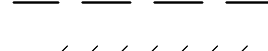
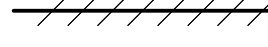
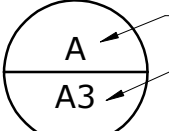
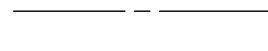
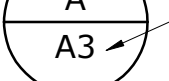

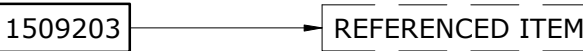
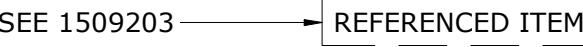
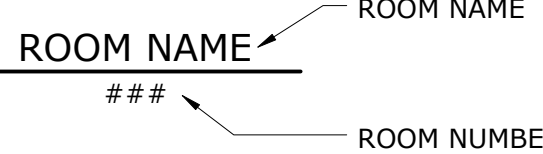
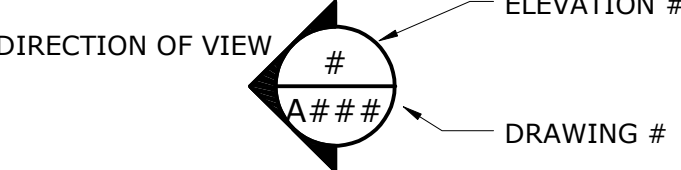
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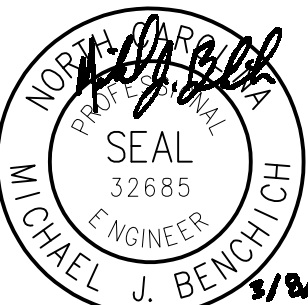
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NC 28217

**STURGILL
ENGINEERING
P.A.**
C-1210
ONE SOUTH MAIN ST.
LEXINGTON, NC 27292
(336) 238-1249 PH.
(336) 236-6393 FAX



ISSUED FOR CONSTRUCTION

INDEX OF DRAWINGS				ABBREVIATIONS				LEGEND			
GENERAL				GENERAL				VALVES, FITTINGS, ETC.			
COVER				A/C AIR CONDITIONER				ARV AIR RELIEF VALVE			
G1 INDEX OF DRAWINGS, ABBREVIATIONS AND LEGEND				ADDL ADDITIONAL				BCKV BALL CHECK VALVE			
G2 BUILDING CODE SUMMARY PUMP STATION				ADJ ADJUSTABLE, ADJACENT				BFP BACKFLOW PREVENTER			
G3 BUILDING CODE SUMMARY PUMP STATION				AFF ABOVE FINISHED FLOOR				BF BLIND FLANGE			
CIVIL				AL, ALUM ALUMINUM				BFV BUTTERFLY VALVE			
C10 OVERALL SITE PLAN AND EROSION CONTROL				ALT ALTERNATE				BV BALL VALVE			
C11 DEMOLITION SITE PLAN				APPROX APPROXIMATE				CAV COMBINATION AIR VALVE			
C12 GRADING AND STAKING PLAN				ARCH ARCHITECTURAL				CKV CHECK VALVE			
C13 YARD PIPING PLAN				BDD BACKDRAFT DAMPER				CPLG ECCENTRIC PLUG VALVE			
C14 PARTIAL PLAN AND DETAILS				BLDG BUILDING				EP COUPLING			
MECHANICAL				BOM BOTTOM OF MASONRY				FLEX FLEXIBLE			
PUMP STATION				BOT BOTTOM				FM FLOW METER			
M20 FLOOR PLAN				BRK BRICK				FTG FITTING			
M21 BELOW GRADE PLAN				C/C CENTER TO CENTER				GV GATE VALVE			
M22 SECTIONS				CL CENTERLINE				HB HOSE BIBB			
M23 SCHEMATICS				CLR CLEAR				KGV KNIFE GATE VALVE			
SURGE TANK AND METERING VAULT				CMU CONCRETE MASONRY UNIT				MJ MECHANICAL JOINT			
M30 PLANS AND SECTIONS				COL COLUMN				MOV MOTOR OPERATED VALVE			
STRUCTURAL				CONC CONCRETE				NPT NATIONAL PIPE THREAD			
PUMP STATION				CONT CONTINUOUS, CONTINUATION				PE PLAIN END			
S1 GENERAL NOTES				CONTR CONTRACTOR				PV PLUG VALVE			
S2 GENERAL NOTES				CORP CORPORATION				PRV PRESSURE REDUCING VALVE			
S20 BOTTOM PLAN				CORP CONTROL JOINT				RED REDUCE			
S21 ROOF PLAN				CU COPPER				RPZ REDUCED PRESSURE ZONE			
S22 SECTION				CY CUBIC YARD				SJ SHOULDER JOINT			
S23 SECTION				DEG DEGREE				SOV SOLENOID OPERATED VALVE			
S24 DETAILS				DIA OR Ø DIAMETER				PIPING MATERIALS			
ARCHITECTURAL				DIFF DIFFERENTIAL				CIP CAST IRON PIPE			
PUMP STATION				DIM DIMENSION				CU COPPER PIPE			
A1 SCHEDULES				DJ DISMANTLING JOINT				DIP DUCTILE IRON PIPE			
A2 DOOR DETAILS				DWG(S) DRAWING(S)				RCP REINFORCED CONCRETE PIPE			
A3 DETAILS				DWL DOWEL				IPS IRON PIPE SIZE			
A20 BOTTOM PLAN				EA EACH				PVC POLYVINYLCHLORIDE			
A21 ROOF PLAN				ECC ECCENTRIC				PROCESS PIPING			
A22 ELEVATIONS				EEW EMERGENCY EYE WASH				D DRAIN			
A23 SECTION AND DETAILS				EF EACH FACE				NPW NON-POTABLE WATER			
A24 SECTION AND DETAIL				EFF EFFLUENT				PW POTABLE WATER			
HVAC				EL ELEVATION				SPD SUMP PUMP DISCHARGE			
PUMP STATION				ELEC ELECTRICAL				V VENT			
H20 HVAC PLAN				ELP EMERGENCY LIGHTING PANEL				VTR VENT TO ROOF			
INSTRUMENTATION				EQ EQUAL							
PUMP STATION				EQPT EQUIPMENT							
I1 P&ID SYMBOLS AND LEGEND				ERH ELECTRIC WIRE ROPE HOIST							
I10 P&ID				ES EMERGENCY SHOWER OR							
ELECTRICAL				ES/EEW EMERGENCY SWITCH							
PUMP STATION				EW EYEWASH							
E1 ELECTRICAL SYMBOLS AND NOTES				EXIST/EX EXISTING							
E2 ELECTRICAL DEMOLITION PLAN				EXH EXHAUST							
E10 SITE PLAN				EXP EXPANSION							
E20 SYSTEM-ONE LINE DIAGRAM				EXT EXTERIOR							
E21 MCC1 ONE-LINE DIAGRAM				FM FORCE MAIN							
E22 MCC2 ONE-LINE DIAGRAM				FRP FIBERGLASS REINFORCED							
E23 PP1 ONE-LINE DIAGRAM				PLASTIC							
E24 PP2 ONE-LINE DIAGRAM				FS FLOW SWITCH							
E25 PSCP ONE-LINE DIAGRAM				FTG FOOTING							
E26 MISCELLANEOUS CONTROL SCHEMATIC				G GATE							
E27 LIGHTING PLAN				GA GAUGE							
E28 HVAC AND RECEPCTACLE POWER PLAN				GAL GALLON							
E29 CONDUIT ROUTING				GALV GALVANIZED							
STANDARD DETAILS				GPM GALLONS PER MINUTE							
D1 MISCELLANEOUS STANDARD DETAILS				HORIZ HORIZONTAL							
D2 MISCELLANEOUS STANDARD DETAILS				HPT HIGH POINT							
D3 MISCELLANEOUS STANDARD DETAILS				HSCP HORIZONTAL SPLIT CASE PUMP							
D4 MISCELLANEOUS STANDARD DETAILS				HUM HUMIDIFIER							
D5 MISCELLANEOUS STANDARD DETAILS				HVAC HEATING, VENTILATION AND							
D6 ELECTRICAL MISCELLANEOUS DETAILS				AIR CONDITIONING							
				HW HEADWALL							
				HWB HEATING WATER BOILER							
				HWCH HEATING WATER CABINET							
				HWR HEATER							
				HWL HIGH WATER LEVEL							
				HWP HEATING WATER PUMP							
				HWY HIGHWAY							
				HYD HYDRAULIC							
				I IRON							
				ID INSIDE DIAMETER							
				IF INSIDE FACE							
				IN INCH							
				INCL INCLUDED							
				INF INFLUENT							
				INSTR INSTRUMENT							
				INSUL INSULATION							
				INT INTERIOR							
				INV INVERT							
				IPP INSTRUMENT POWER PANEL							
				JB JUNCTION BOX							
				JCT JUNCTION							
				JT JOINT							
				L LENGTH/ANGLE							
				LA LINE AHEAD							
				LAB LABORATORY							
				LAM LAMINATED							
				LAT LATERAL							
				NA NOT APPLICABLE							
				NC NORMALLY CLOSED							
				No. NUMBER							
				NOM NOMINAL							
				NTS NOT TO SCALE							
				OC ON CENTER							
				OD OUTSIDE DIAMETER							
				OPNG OPENING							
				ORIG ORIGINAL							
				PERP PERPENDICULAR							
				PL PLATE, PLACES							
				PLC PROGRAMMABLE LOGIC							
				CONTROLLER							
				PNL PANEL							
				PRESS PRESSURE							
				PROP PROPOSED							
				PT PRESSURE TREATED							
				PVMT PAVEMENT							
				QTY QUANTITY							
				R RADIUS							
				REC RESTRAINED EXPANSION							
				COUPLING							
				REF REFERENCE							
				REMOVE							
				REQUIRED							
				RESTRAINED JOINT							
				ROOM							
				RIGHT-OF-WAY							
				SCH SCHEDULE							
				SECT SECTION							
				SF SQUARE FEET							
				SHT SHEET							
				SIM SIMILAR							
				SUMP PUMP							
				SPECIFICATION							
				SQUARE							
				SANITARY SEWER							
				STAINLESS STEEL							
				STANDARD							
				STEEL							
				STRU, STR STRUCTURAL							
				SUCTION							
				T&B TOP AND BOTTOM							
				TC TOP OF CURB							
				TEL TELEPHONE							
				TEMP TEMPERATURE, TEMPORARY							
				THICK							
				TOC TOP OF CONCRETE							
				TOD TOP OF DECK							
				TOF TOP OF FOOTING							
				TOM TOP OF MASONRY/MANHOLE							
				TOS TOP OF SLAB/ TOP OF STEEL							
				TOW TOP OF WALL							
				TOL TOLERANCE							
				TYP TYPICAL							
				UNO UNLESS NOTED OTHERWISE							
				UTIL UTILITY							
				VAC VACUUM							
				VEL VELOCITY							
				VERT VERTICAL							
				VTR VENT THROUGH ROOF							
				W/ WITH							
				WL WATER LEVEL, WATER LINE							
				W/O WITHOUT							
				WS WATER STOP							
SYMBOLS				MATERIALS							
 BALL VALVE				 WALL PENETRATION							
 BALL CHECK VALVE				 FLEXIBLE HOSE							
 BUTTERFLY VALVE				 SINGLE LINE DRAWINGS							
 CONTROL VALVE				 DOUBLE LINE DRAWINGS							
 DIAPHRAGM VALVE				 MECHANICAL COUPLING							
 FLUSHING CONNECTION				 WELDED JOINT							
 GATE VALVE				 FLANGED JOINT							
 GLOBE VALVE				 MECHANICAL, PUSH-ON OR RESTRAINED JOINT							
 MOTOR OPERATED VALVE				 HARNESSED FLANGED ADAPTER							
 PINCH VALVE				 SLEEVE TYPE COUPLING							
 PLUG VALVE				 HARNESSED SLEEVE TYPE COUPLING							
 PRESSURE REDUCING VALVE				 DISMANTLING JOINT							
 PRESSURE RELIEF VALVE				 EXPANSION JOINT							
 PRESSURE RELIEF/VACUUM BREAKER VALVE				 FIRE EXTINGUISHER							
 QUICK CONNECT COUPLING				 ES/EEW							
 SOLENOID VALVE											
 STRAINER											
 UNION											
 HOSE BIBB											
 REDUCER											
 PARTITION TYPE											
 DOOR SCHEDULE											
 LOUVER TYPE											
SECTION AND DETAIL KEYING				LINETYPES							
DRAWINGS ARE CROSS REFERENCED IN THE FOLLOWING METHOD: (A) A SECTION CUT ON DRAWING A3 IS IDENTIFIED AS FOLLOWS:				 PROPOSED ITEMS							
 SECTION LETTER				 EXISTING ITEMS							
 DRAWING WHERE SECTION IS SHOWN				 HIDDEN ITEMS							
(B) THE SECTION SHOWN ON DRAWING A6 IS IDENTIFIED AS FOLLOWS:				 DEMOLITION ITEMS							
 SECTION LETTER				 CENTER LINE							
 DRAWING FROM WHERE SECTION WAS TAKEN				 MATCH LINE							
DETAILS ARE CROSS REFERENCED IN A SIMILAR MANNER, EXCEPT DETAILS ARE IDENTIFIED BY A SQUARE WITH A NUMBER IN THE UPPER HALF.											
STANDARD DETAILS ARE REFERENCED BY A UNIQUE SEVEN DIGIT NUMBER AND ARE SHOWN ON THE CONTRACT DRAWINGS BY ONE OF TWO METHODS:											
											
OR:											
											
ROOM NAME LABEL				ELEVATION CALL OUT							
											

				PROJECT ENGINEER: M.J. BENCHICH	<div>ISSUED FOR CONSTRUCTION</div> <div></div>	<div>Hazen</div> <div>HAZEN AND SAWYER 4944 PARKWAY PLAZA BLVD, SUITE 375 CHARLOTTE, NORTH CAROLINA 28217 LICENSE NO. : C-0381</div>	<div>DAVIDSON COUNTY NORTH CAROLINA</div> <div>DAVIDSON WATER INC. HYATTOWN PUMP STATION IMPROVEMENTS</div>	<div>INDEX OF DRAWINGS, ABBREVIATIONS AND LEGEND</div>	DATE: MARCH 2016
			DESIGNED BY: M.P. KARMANOCKY	HAZEN NO.: 30961-010					
			DRAWN BY: M.P. KARMANOCKY	CONTRACT NO.: 1					
			CHECKED BY: M.J. MESSERE	DRAWING NUMBER:					
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE					
2	BUILDING PERMIT REVIEW	2-26-16	JCJ						
1	REGULATORY REVIEW	1-20-16	JCJ						
REV	ISSUED FOR	DATE	BY						

G1

Name of Project: HYATTOWN PUMP STATION IMPROVEMENTS

Address: HYATTOWN COUNTY WATER INC. Zip Code: --

Proposed Use: WATER TREATMENT

Owner or Authorized Agent: ROBERT WALTERS Phone: (336) 731-5526 E-mail: rwalters@davidsonwater.com

Owned By: ☒ City/County ☐ Private ☐ State

Code Enforcement Jurisdiction: ☐ City -- ☒ County -- ☐ State

Architect:	Hazen and Sawyer	William H. Russell	6211	(919) 833-7152	wrussell@hazenandsawyer.com
Civil:	Hazen and Sawyer	Michael Benchich	2688	(704) 357-3150	mbenchich@hazenandsawyer.com
Electrical	Sturgill Engineering	Randall Sturgill	16871	(336) 238-1249	rsturgill@sturgilleng.com
Fire Alarm:	--	--	--	--	--
Plumbing:	Hazen and Sawyer	Michael Benchich	26885	(704) 357-3150	mbenchich@hazenandsawyer.com
Mechanical:	Hazen and Sawyer	Michael Benchich	26885	(704) 357-3150	mbenchich@hazenandsawyer.com
Sprinkler-Standpipe					
Structural:	Hazen and Sawyer	Adam D. Overbay	26530	(704) 357-3150	aoverbay@hazenandsawyer.com
Retaining Walls >5':	H&S	Adam D. Overbay	26530	(704) 357-3150	aoverbay@hazenandsawyer.com
HVAC:	Sturgill Engineering	Randall Sturgill	16871	(336) 238-1249	rsturgill@sturgilleng.com

Gross Building Area:			
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
1st Floor	--	3640	3640
TOTAL	--	3640	3640

G2

C:\Users\ecarroll\Documents\30961-010-PS-A-ecarroll@hazenandsawyer.com.rvt
3/9/2016 9:21:49 AM

ENERGY SUMMARY

BUILDING IS NOT CONDITIONED

ENERGY REQUIREMENTS

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Climate Zone: ☐ 3 ☐ 4 ☐ 5

Method of Compliance:

- ☐ Prescriptive (Energy Code)
☐ Performance (Energy Code)
☐ Prescriptive (ASHRAE 90.1))
☐ Performance (ASHRAE 90.1)

THERMAL ENVELOPE

ROOF/CEILING ASSEMBLY				
description of assembly	u-value of total assembly	r-value of insulation	skylights in each assembly	
			u-value	total sq ft
--	--	--	--	--

EXTERIOR WALLS							
description of assembly	u-value of total assembly	r-value of insulation	openings (windows or doors with glazing)				door r-values
			u-value	shgc	projection factor	low e required, if applicable	
--	--	--	--	--	--	--	--

WALLS BELOW GRADE		
description of assembly	u-value of total assembly	r-value of insulation
--	--	--

FLOORS OVER UNCONDITIONED SPACE		
description of assembly	u-value of total assembly	r-value of insulation
--	--	--

FLOORS SLAB ON GRADE					
description of assembly	u-value of total assembly	r-value of insulation	horizontal requirement	vertical requirement	slab heated
--	--	--	--	--	--

MECHANICAL SUMMARY

SEE ELECTRICAL DRAWINGS

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal zone	--
Winter dry bulb	--
Summer dry bulb	--
Interior design conditions	--
Winter dry bulb	--
Summer dry bulb	--
Relative humidity	--

Building heating load	--
Building cooling load	--

Mechanical Spacing Conditioning System	--
Unitary	--
Description of unit	--
Heating efficiency	--
Cooling efficiency	--
size category of unit	--
Boiler	--
Size category. If oversized, state reason:	--
Chiller	--
Size category. If oversized, state reason:	--

List equipment efficiencies	--
-----------------------------	----

ELECTRICAL SUMMARY

SEE ELECTRICAL DRAWINGS

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:	
Energy Code:	<input type="checkbox"/> Prescriptive <input type="checkbox"/> Performance
ASHRAE 90.1:	<input type="checkbox"/> Prescriptive <input type="checkbox"/> Performance
Lighting Schedule (each fixture type):	
Lamp type required in fixture	--
Number of lamps in fixture	--
Ballast type used in the fixture	--
Number of ballasts in fixture	--
Total wattage per fixture	--
Total interior wattage specified vs allowed	--
(whole building or space by space)	--
Total exterior wattage specified vs allowed	--

Additional Prescriptive Compliance:

- ☐ 506.2.1 More Efficient Mechanical Equipment
☐ 506.2.2 Reduced Lighting Power Density
☐ 506.2.3 Energy Recovery Ventilation Systems
☐ 506.2.4 Higher Efficiency Service Water Heating
☐ 506.2.5 On-Site Supply of Renewable Energy
☐ 506.2.2 Reduced Lighting Power Density

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	W. RUSSELL
				DRAWN BY:	E. CARROLL
				CHECKED BY:	W. RUSSSELL
3	CONSTRUCTION	3-08-16	JCI	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCI		
1	REGULATORY REVIEW	1-20-16	JCI		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR CONSTRUCTION



Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

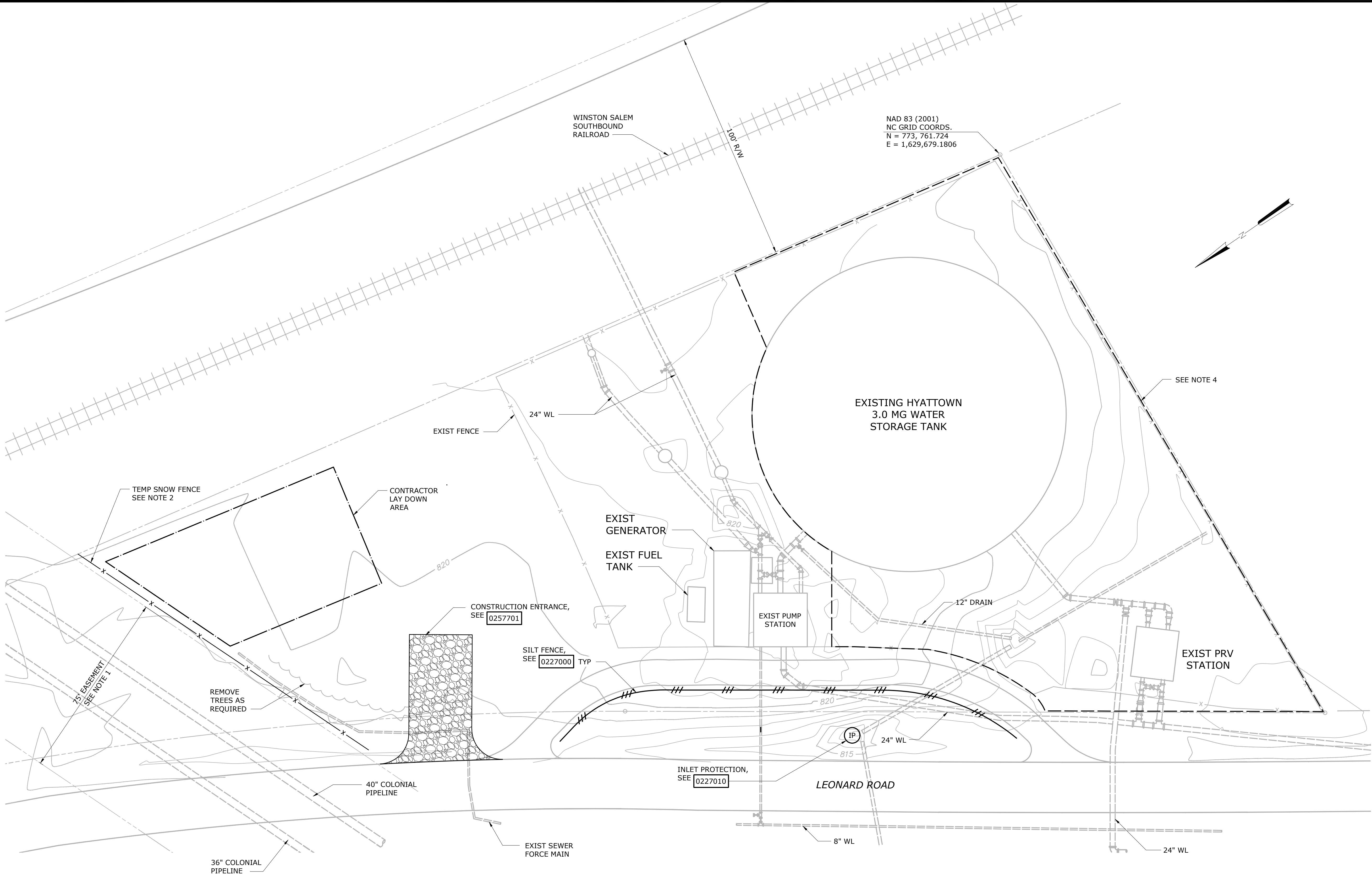
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

BUILDING CODE SUMMARY
PUMP STATION

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	G3

- NOTES:
1. CONTRACTOR STORAGE, STAGING, OR OTHER ACTIVITIES SHALL NOT BE PERMITTED WITHIN THE COLONIAL PIPELINE EASEMENT AT ANY TIME. CONTACT BRUCE SHIPMAN WITH COLONIAL PIPELINE AT 336-451-9976 TO COORDINATE EASEMENT BOUNDARY LINES.
 2. INSTALL SNOW FENCE DURING MOBILIZATION AND REMOVE UPON COMPLETION OF THE WORK.
 3. CONTRACTOR SHALL REGULARLY REMOVE DIRT AND DEBRIS ON LEONARD ROAD RESULTING FROM CONSTRUCTION ACTIVITIES.
 4. CONTRACTOR SHALL KEEP THIS AREA CLEAR OF CONSTRUCTION ACTIVITY, PERSONNEL, MATERIALS AND EQUIPEMENT EXCEPT AS REQUIRED FOR ELECTRICAL WORK TO AND AT THE PRV STATION.
 5. STABILIZE ALL CLEARED AREAS WITHIN 30 CALENDAR DAYS AFTER CLEARING OR LAND DISTURBING ACTIVITY.
 6. PROVIDE TEMPORARY SEEDING TO MINIMIZE EROSION DURING CONSTRUCTION.

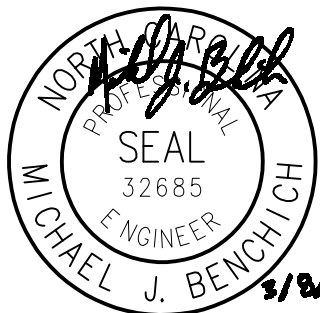


SITE PLAN
1" = 20'

3	CONSTRUCTION	3-8-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	M.J. BENCHICH
DRAWN BY:	M.P. KARMANOCKY
CHECKED BY:	M.J. MESSERE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

DAVIDSON COUNTY
NORTH CAROLINA

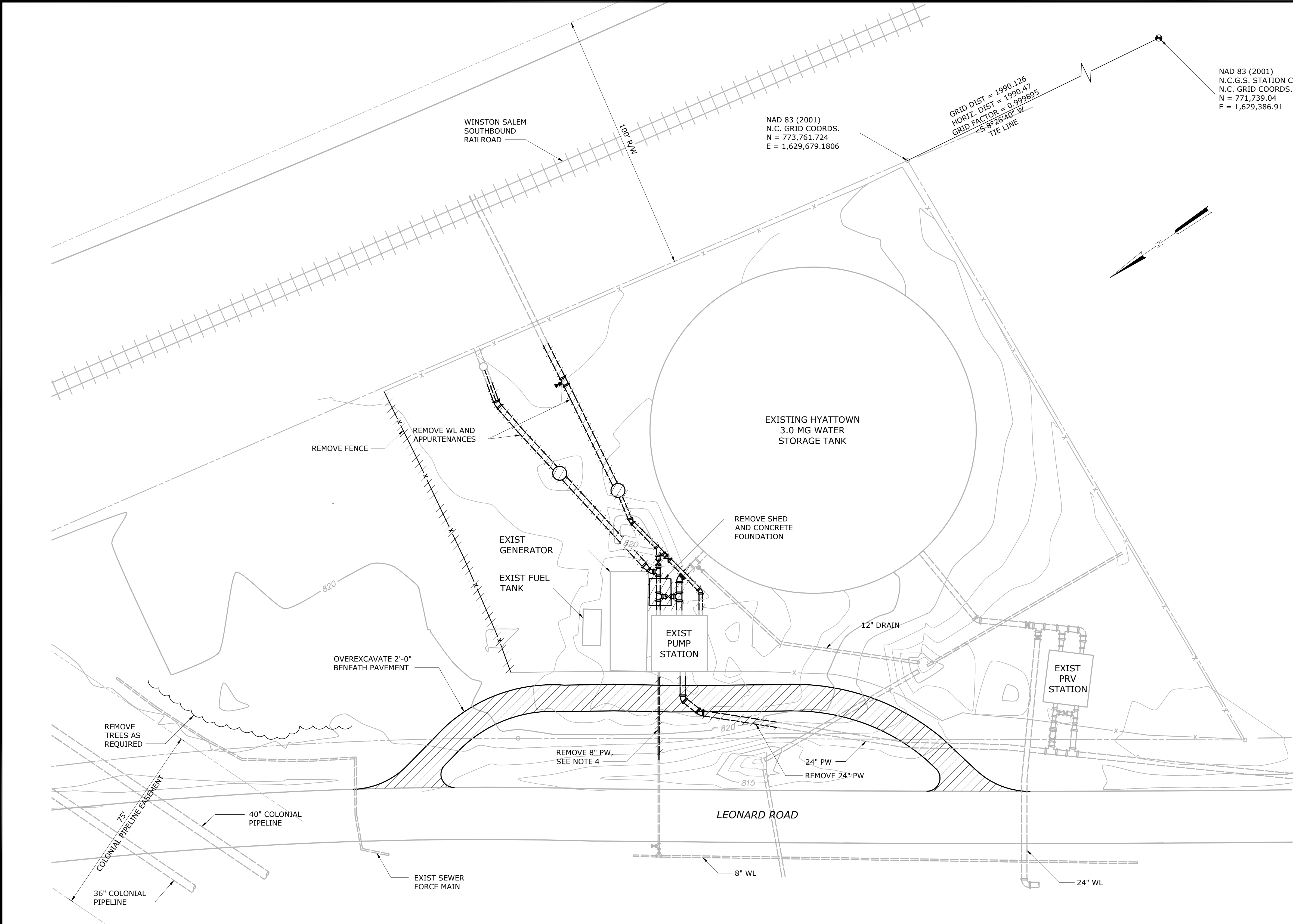
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

CIVIL
OVERALL SITE PLAN AND
EROSION CONTROL

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

C10

- NOTES:
1. LIMITS OF DEMOLITION ARE APPROXIMATE. ALL EXISTING UTILITIES MAY NOT BE SHOWN. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATED BASED ON BEST AVAILABLE DATA. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING FIRST 60 DAYS OF CONSTRUCTION.
 2. REMOVE ALL EXISTING THRUST BLOCKS AT BENDS OF DEMOLISHED PIPING.
 3. REFER TO SPECIFICATION SECTION 01520 AND 01530 FOR SEQUENCE OF WORK REQUIREMENTS.
 4. DO NOT REMOVE EXISTING 8" PW FROM SERVICE UNTIL NEW 8" PW FROM NEW PUMP STATION IS READY TO BE CONNECTED AND PUT INTO IMMEDIATE SERVICE. PROVIDE OWNER WITH TWO WEEKS ADVANCE NOTICE OF 8" PW SHUT DOWN.



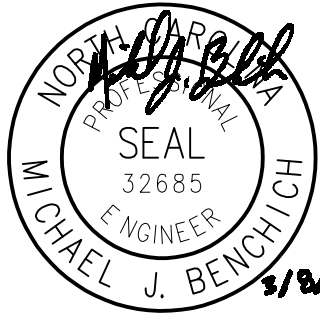
SITE PLAN
1" = 20'

3	CONSTRUCTION	3-8-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	M.J. BENCHICH
DRAWN BY:	M.P. KARMANOCKY
CHECKED BY:	M.J. MESSERE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

DAVIDSON COUNTY
NORTH CAROLINA

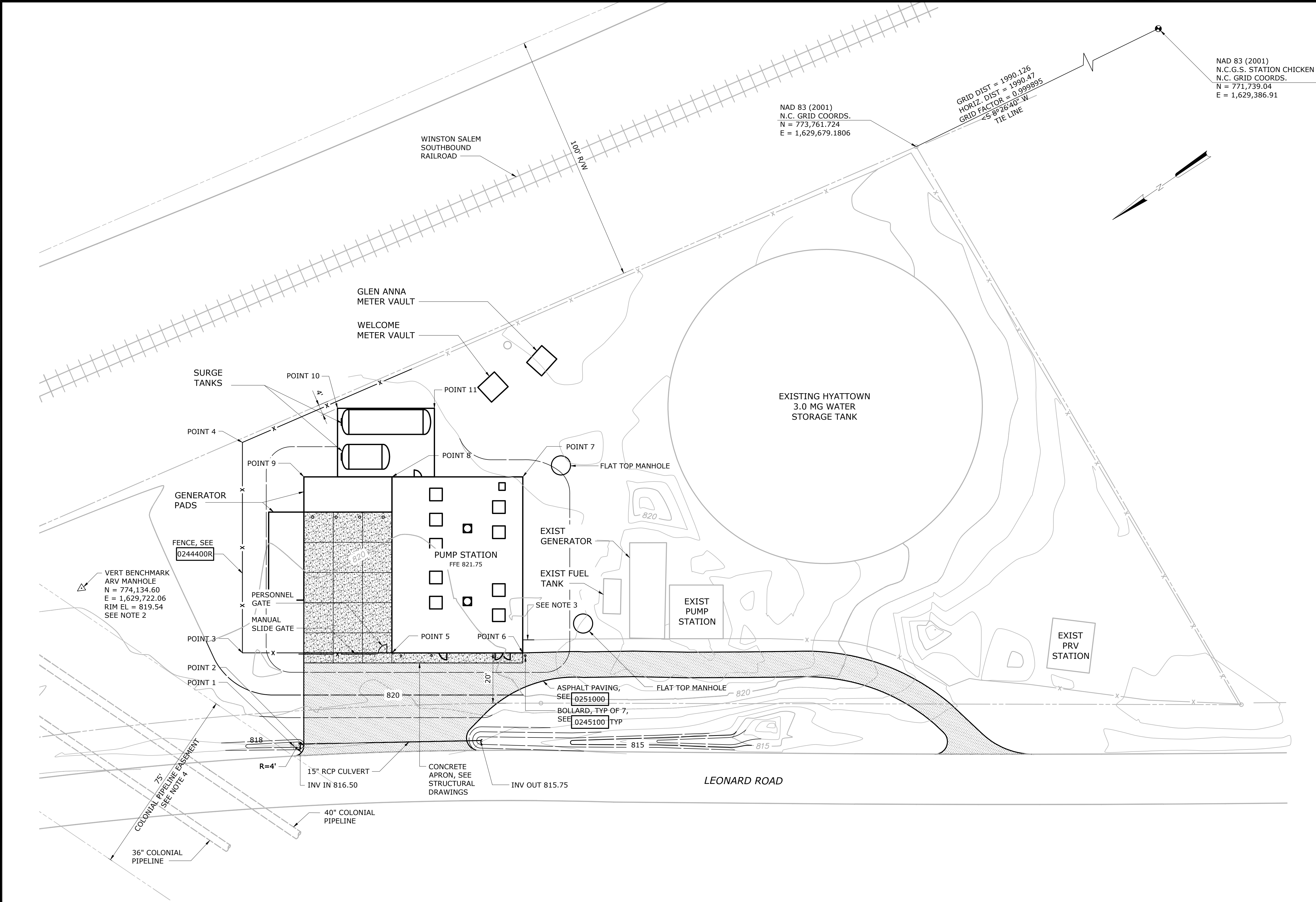
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

CIVIL
DEMOLITION SITE PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

C11

- NOTES:
- ALL EXISTING UTILITIES MAY NOT BE SHOWN. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATED FROM BEST AVAILABLE DATA. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES.
 - BASIS OF BEARING NC GRID NAD 83 (2001) ADJUSTMENT. THE PROJECT COORDINATES ARE GROUND BASED (LOCALIZED) COORDINATES DERIVED FROM REAL-TIME GPS OBSERVATIONS. THE VERTICAL DATUM IS NAVD 88. VERTICAL BENCHMARK, SHOWN ON THIS DRAWING, IS VERIFIED AGAINST NCGS STATION "WHISTLE".
 - TERMINATE FENCE AT BUILDING.
 - CONTRACTOR SHALL NOT PERFORM ANY GRADING ACTIVITIES WITHIN THE COLONIAL PIPELINE EASEMENT W/ OUT A COLONIAL PIPELINE REPRESENTATIVE PRESENT, CONTACT BRUCE SHIPMAN AT 336-451-9976 FOR COORDINATION.



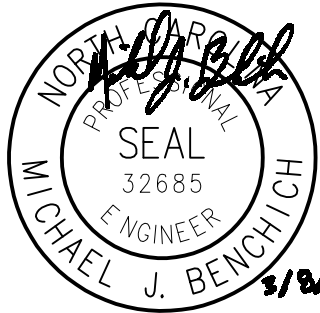
STAKING TABLE			
POINT NO.	DESCRIPTION	NORTHING	EASTING
1	CENTER OF RADIUS	774,100.52	1,629,622.63
2	POINT OF TANGENT	774,097.23	1,629,620.37
3	CORNER OF FENCE	774,096.42	1,629,664.71
4	CORNER OF FENCE	774,049.08	1,629,733.71
5	CORNER OF BLDG	774,047.43	1,629,631.09
6	CORNER OF BLDG	774,004.55	1,629,601.67
7	CORNER OF BLDG	773,964.94	1,629,659.39
8	CORNER OF BLDG	774,007.82	1,629,688.81
9	CORNER OF PAD	774,036.68	1,629,708.61
10	CORNER OF SLAB	774,010.23	1,629,723.52
11	CORNER OF SLAB	773,978.49	1,629,701.74

NOTE: COORDINATES PROVIDE FOR GENERAL ARRANGEMENT. CONTRACTOR SHALL FIELD VERIFY AND STAKE ALL STRUCTURE LOCATIONS. CONTRACTOR SHALL ADJUST EXACT COORDINATES BASED ON FINAL CONSTRUCTED DIMENSIONS AND SUBMIT ADJUSTMENTS WITH RECORD DRAWINGS.

SITE PLAN
1"=20'

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	M.J. BENCHICH
				DRAWN BY:	M.P. KARMANOCKY
				CHECKED BY:	M.J. MESSERE
4	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
3	BUILDING PERMIT COMMENTS	3-3-16	JCJ		
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

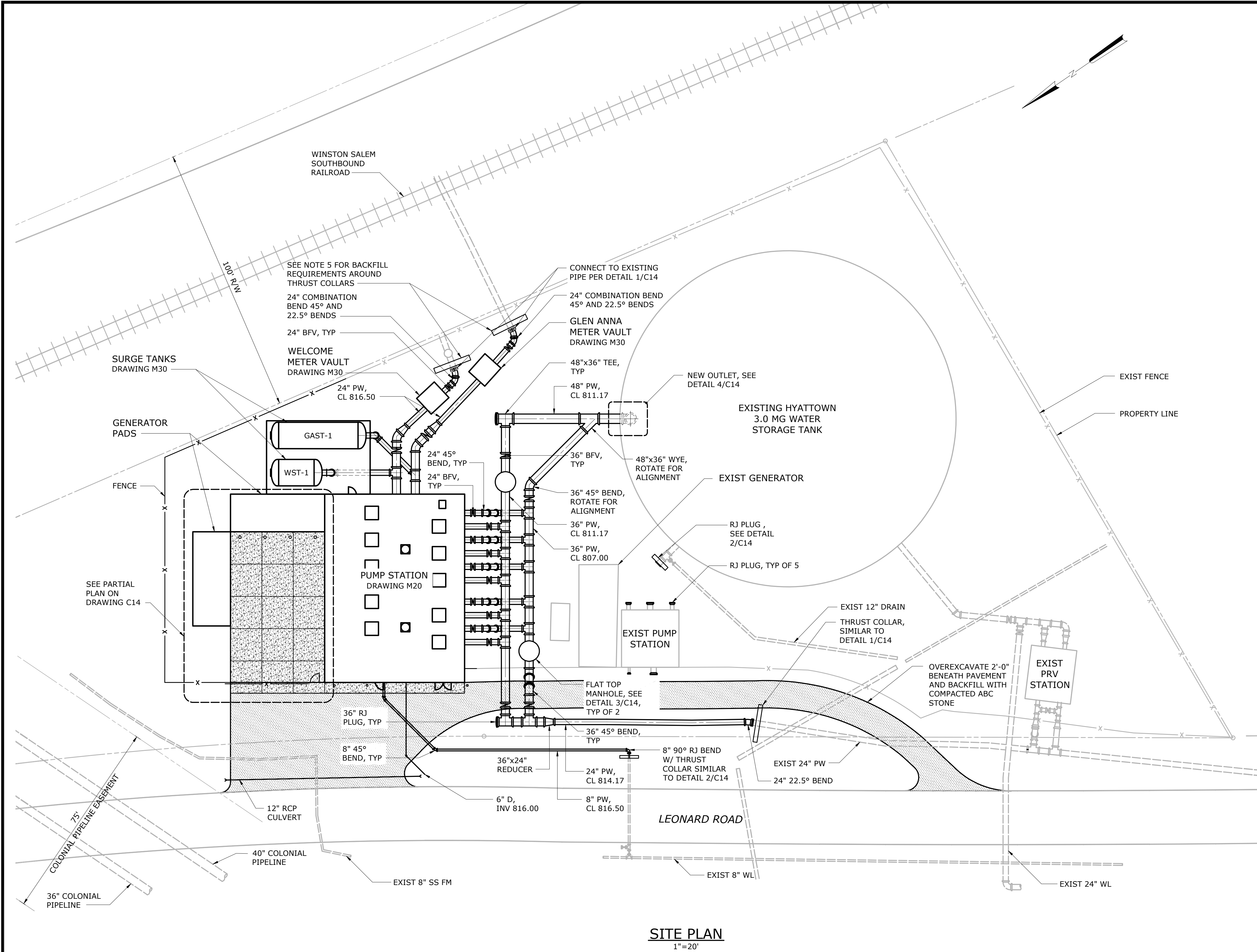
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

CIVIL
GRADING AND STAKING PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

C12



- NOTES:
1. FIELD VERIFY LOCATION OF EXISTING PIPING PRIOR TO ORDERING MATERIALS. PERFORM LOCATING SERVICES AND/OR CONSTRUCT TEST PITS DURING FIRST 60 DAYS OF CONTRACT. SCHEDULE EXCAVATIONS ACTIVITIES WITH OWNER IN ADVANCE.
 2. ALL PIPING SHALL BE RESTRAINED JOINT.
 3. DESIGN PRESSURE FOR ALL PIPING, VALVES, AND APPURTENANCES IS 250 PSI.
 4. ALL 36" AND 24" BUTTERFLY VALVES SHOWN BURIED IN THE YARD SHALL BE FURNISHED BY THE OWNER. SEE SPECIFICATION SECTION 15095 AND APPENDIX D OF THE PROJECT MANUAL FOR DETAILS.
 5. BACKFILL EXCAVATION AROUND THRUST COLLAR WITH #57 STONE A MINIMUM OF 10'-0" HORIZONTALLY FROM THE THRUST COLLAR FACE. PLACE STONE IN 2'-0" LIFTS AND COMPACT TO SEAT THE STONE INTO THE SIDES OF THE EXCAVATION. THE THRUST COLLARS REQUIRE SOIL/STONE SUPPORT TO RESTRAIN THE EXISTING PIPING. FUTURE EXCAVATION IN THE AREA WILL NECESSITATE ADDITIONAL PIPE RESTRAINT.

SITE PLAN
1"=20'

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	M. J. BENCHICH
				DRAWN BY:	M.P. KARMANOCKY
				CHECKED BY:	M.J. MESSERE
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

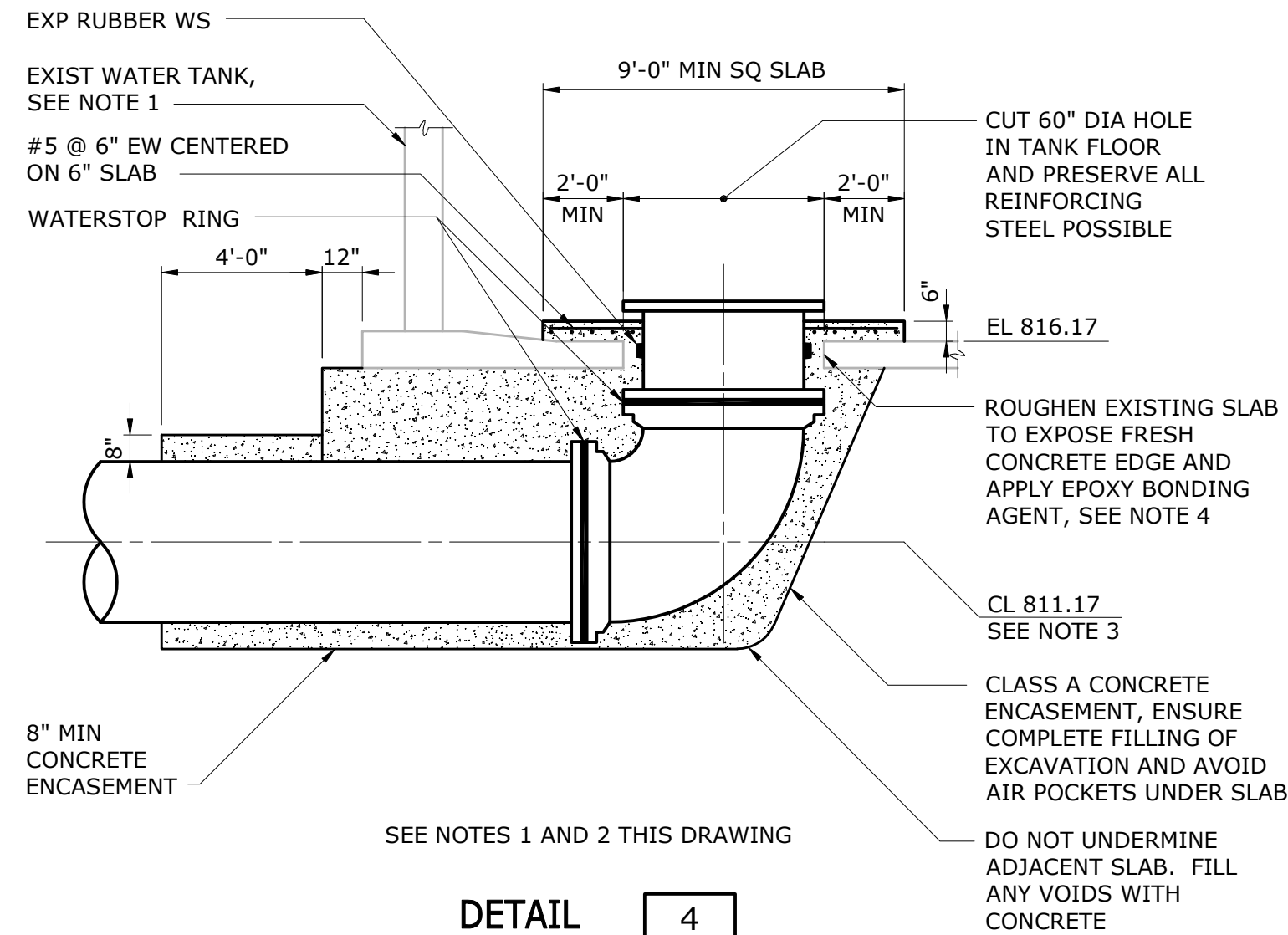
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

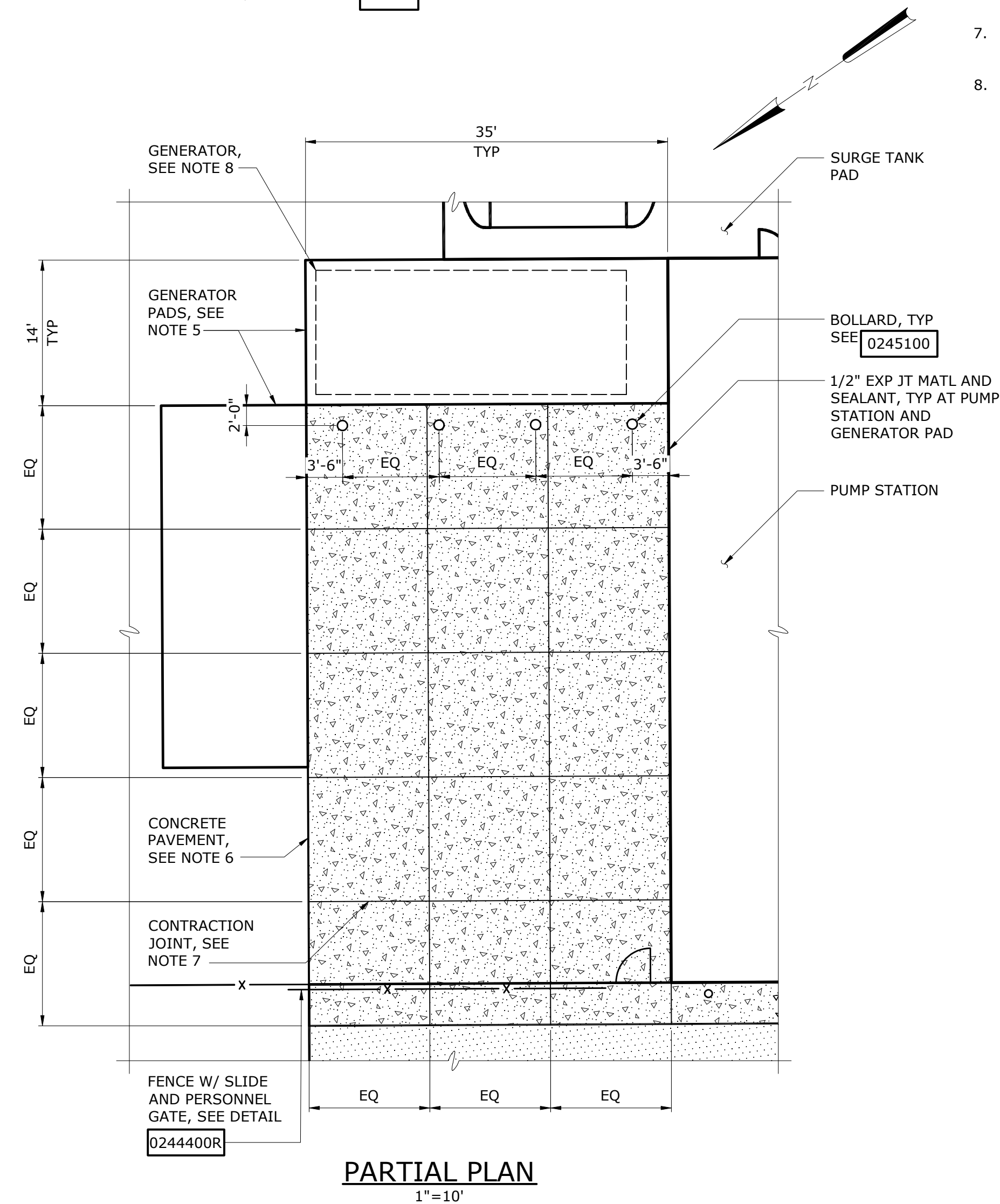
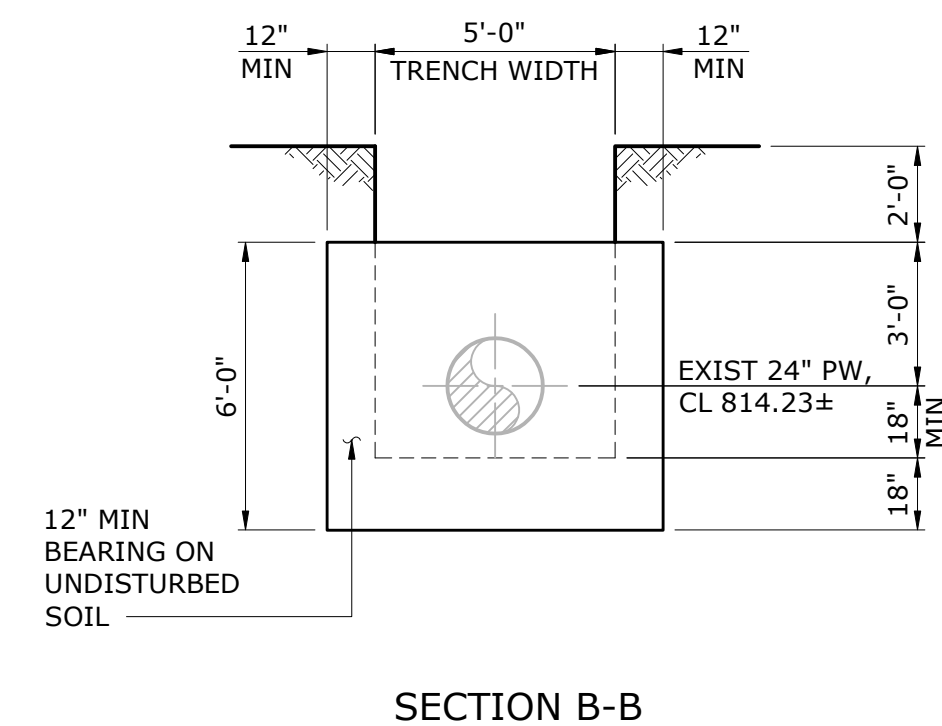
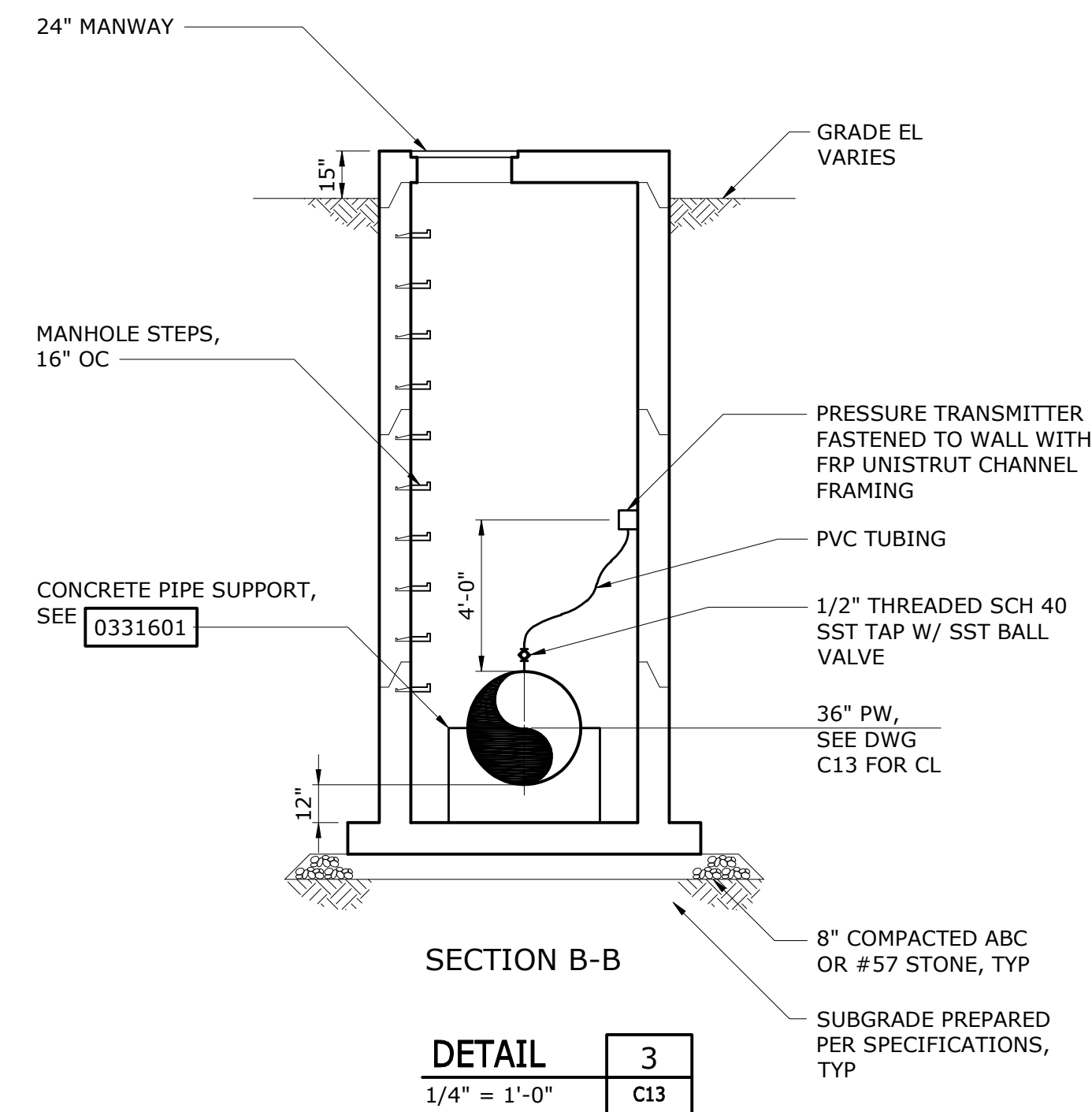
CIVIL
YARD PIPING PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

C13



- # NOTES:
1. CONTRACTOR SHALL PROVIDE EXCAVATION SUPPORT MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE. ANY DAMAGE OR LEAKAGE SHALL BE REPAIRED BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
 2. OUTLET DESIGN AND INSTALLATION SHALL BE PERFORMED BY CROM CORPORATION OR PRECON CORPORATION. OUTLET INSTALLATION SHALL INCLUDED HORIZONTAL PIPING TO A MINIMUM OF 5 FEET OUTSIDE OF THE TANK FOUNDATION. OUTLET DESIGN SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN NORTH CAROLINA.
 3. VERIFY EXISTING PIPE ELEVATIONS PRIOR TO CONSTRUCTING NEW TANK OUTLET.
 4. PRESSURE WASH EXISTING SLAB IN ALL AREAS TO BE IN CONTACT WITH NEW CONCRETE. APPLY EPOXY BONDING AGENT JUST PRIOR TO CASTING NEW SLAB.
 5. COORDINATE GENERATOR PAD GEOMETRY WITH REQUIREMENTS OF OWNER FURNISHED EQUIPMENT. GENERATOR PAD SHALL BE CONSTRUCTED SIMILAR TO SURGE TANK PAD DETAIL ON M30.
 6. CONCRETE PAVEMENT SHALL BE 6" MINIMUM THICKNESS REINFORCED WITH #5@12", EACH WAY CENTERED IN THE SLAB. PROVIDE CONTRACTION JOINTS AS SHOWN (PER STANDARD DETAIL 0325101). EVERY THIRD REINFORCING BAR SHALL CROSS CONTRACTION JOINT LOCATION IN ORDER TO PROVIDE A WEAKENED PLANE. OVER EXCAVATE 2'-0" BENEATH PAVEMENT AND BACKFILL WITH COMPACTED ABC STONE.
 7. CONTRACTION JOINTS SHALL BE EQUALLY SPACED AS SHOWN.
 8. GENERATOR PAD DIMENSIONS BASED ON GENERATOR FOOT PRINT OF 30'x12' AS PROVIDED BY OWNER.



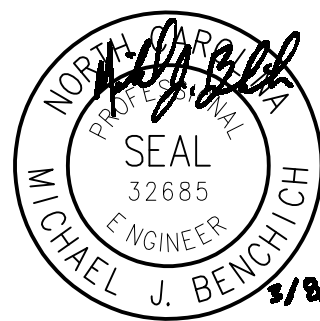
THRUST COLLAR	
DETAIL	1
1/4" = 1'-0"	C13

DETAIL	3
1/4" = 1'-0"	C13

THRUST COLLAR	
DETAIL	2
1/4" = 1'-0"	C13

				PROJECT ENGINEER:	M.J. BENCHICK
				DESIGNED BY:	M.J. BENCHICK
				DRAWN BY:	M.P. KARMANOCKY
				CHECKED BY:	M.J. MESSERE
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

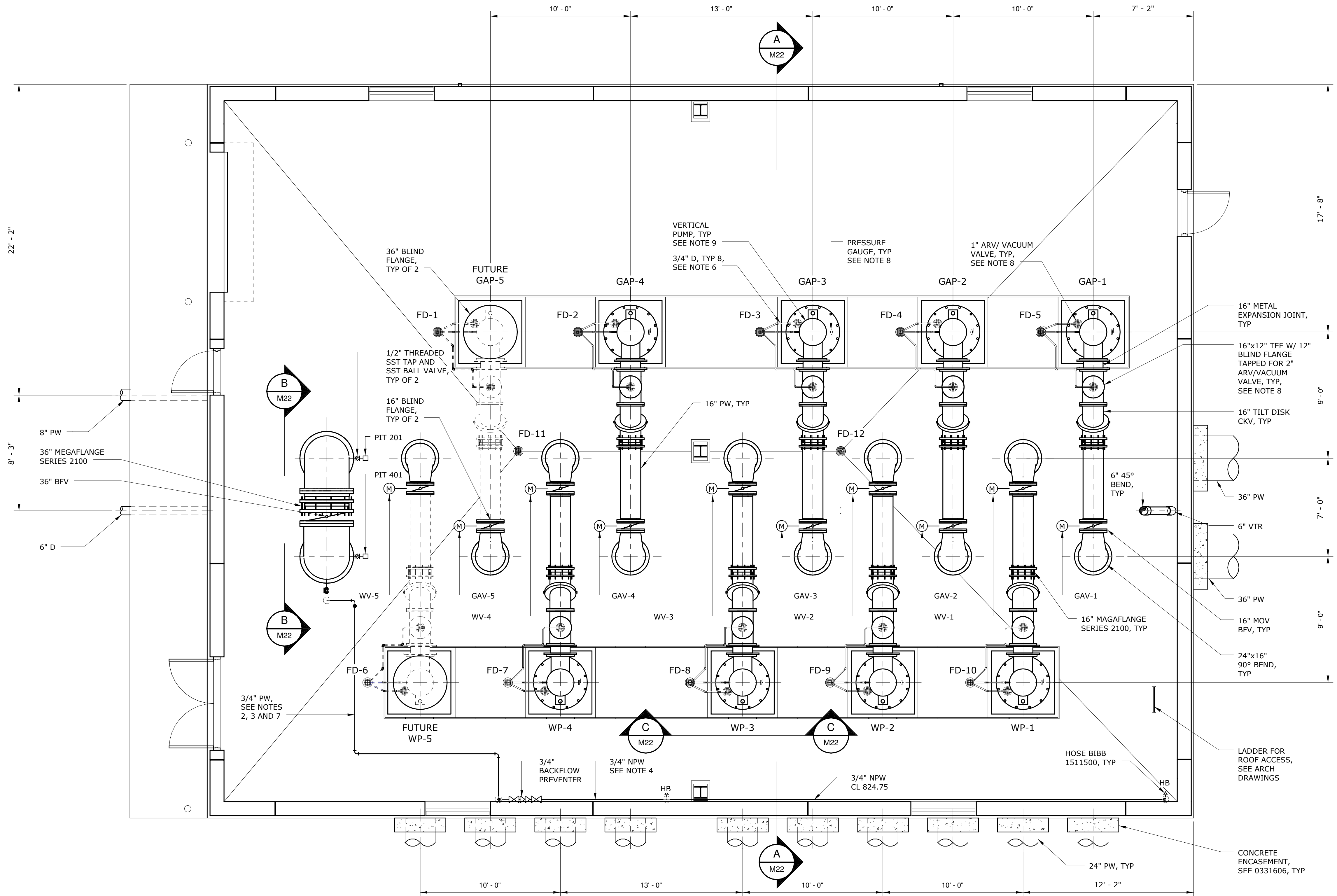
CIVIL
PARTIAL PLAN AND DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

C14

NOTES:

- 1 SEE SHEET M23 FOR DRAIN & VENT RISER DIAGRAM.
- 2 SEE SHEET M23 FOR WATER SUPPLY SCHEMATIC.
- 3 SUPPORT PW PIPE FROM CEILING PER DETAIL 1509402.
- 4 SUPPORT PW PIPE FROM WALL PER DETAIL 1509402.
- 5 FLOOR DRAINS PER DETAIL 1542102.
- 6 DRAIN LINES FROM STUFFING BOX LEAKAGE PORT AND AIR RELEASE VALVES. SEE SECTION C, DRAWING M22.
- 7 FIELD ROUTE 3/4" PW AS REQUIRED TO AVOID ROUTING PIPE OVER ELECTRICAL PANELS AND TRANSFORMER. SEE ELECTRICAL DRAWINGS TO COORDINATE.
- 8 INSTALL AIR RELEASE/ VACUUM VALVES AND PRESSURE GAUGES FURNISHED BY OWNER.
- 9 VERTICAL PUMP FURNISHED BY OWNER. REFER TO SPECIFICATON SECTION 11101 AND APPENDIX A OF THE PROJECT MANUAL.



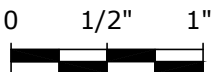
BOTTOM PLAN

1/4" = 1'-0"

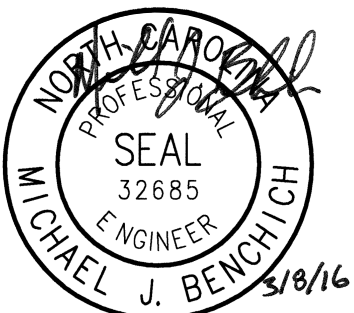
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REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	3-8-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	M.J. BENCHICH
DRAWN BY:	M.P. KARMANOCKY
CHECKED BY:	M.J. MESSERE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

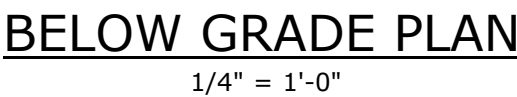
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
MECHANICAL
FLOOR PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

M20

- 1 SLOPE HORIZONTAL DRAIN PIPING 1/8" PER FOOT MINIMUM OR AS OTHERWISE REQUIRED BY DAVIDSON COUNTY BUILDING INSPECTORS.
- 2 ALL PIPING BELOW FLOOR SHALL BE CONCRETE ENCASED PER DETAIL 0331606. EXCAVATION SHALL BE FILLED WITH #57 STONE OR FLOWABLE FILL.



				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	M.J. BENCHICH
				DRAWN BY:	M.P. KARMANOCKY
3	CONSTRUCTION	3-8-16	JCJ	CHECKED BY:	M.J. MESSERE
2	BUILDING PERMIT REVIEW	2-26-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

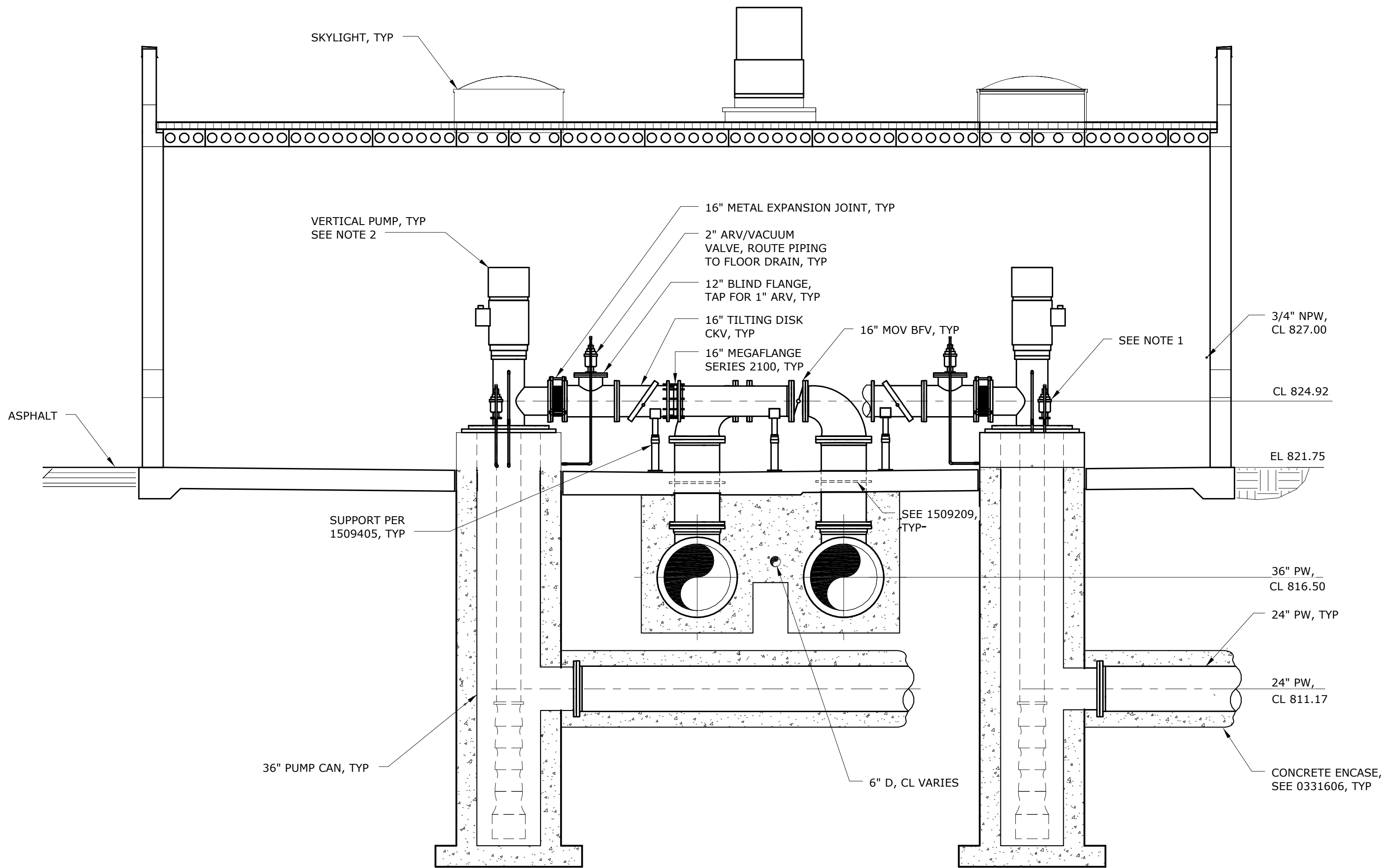
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
MECHANICAL
BELOW GRADE PLAN

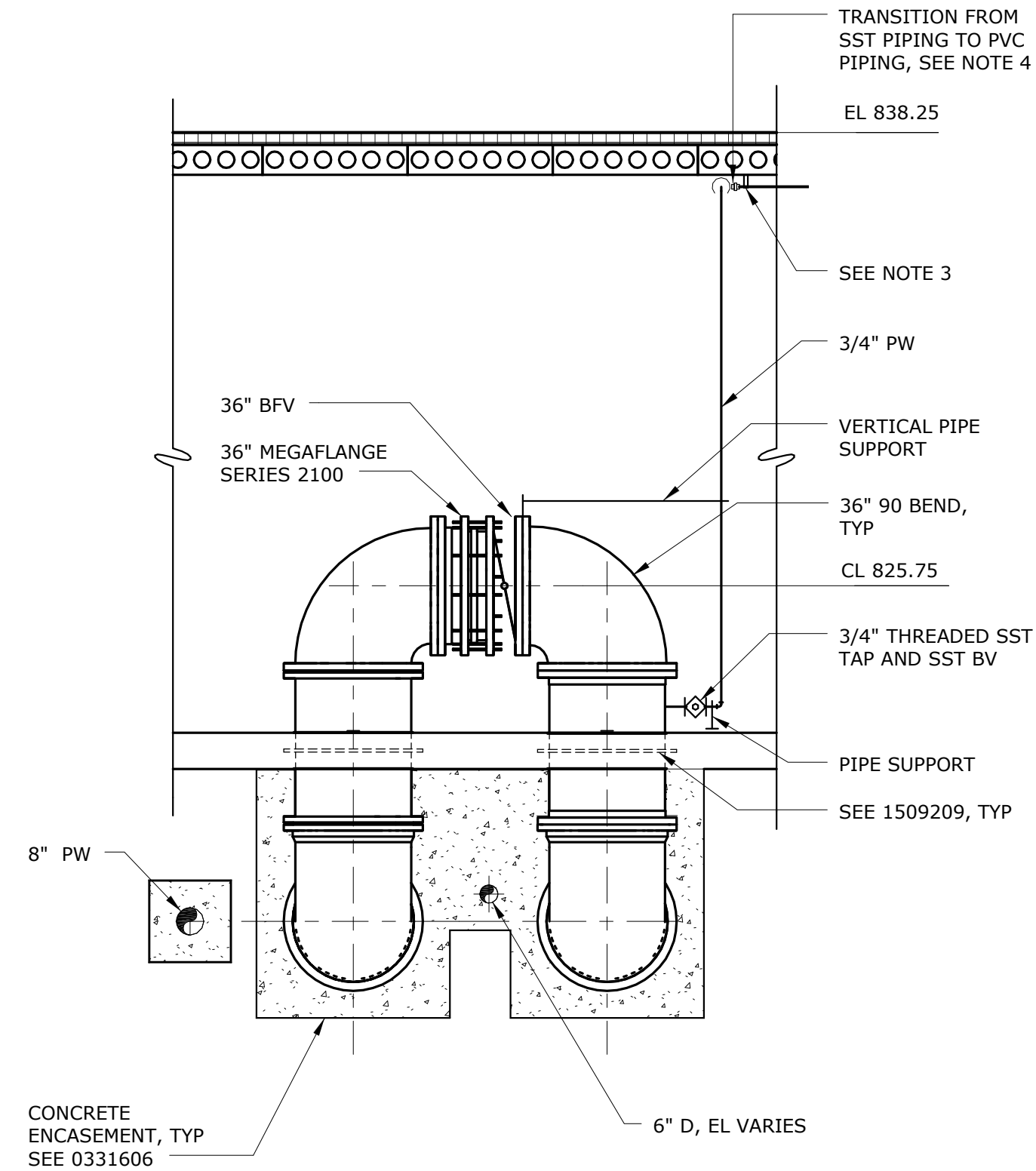
DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

M21

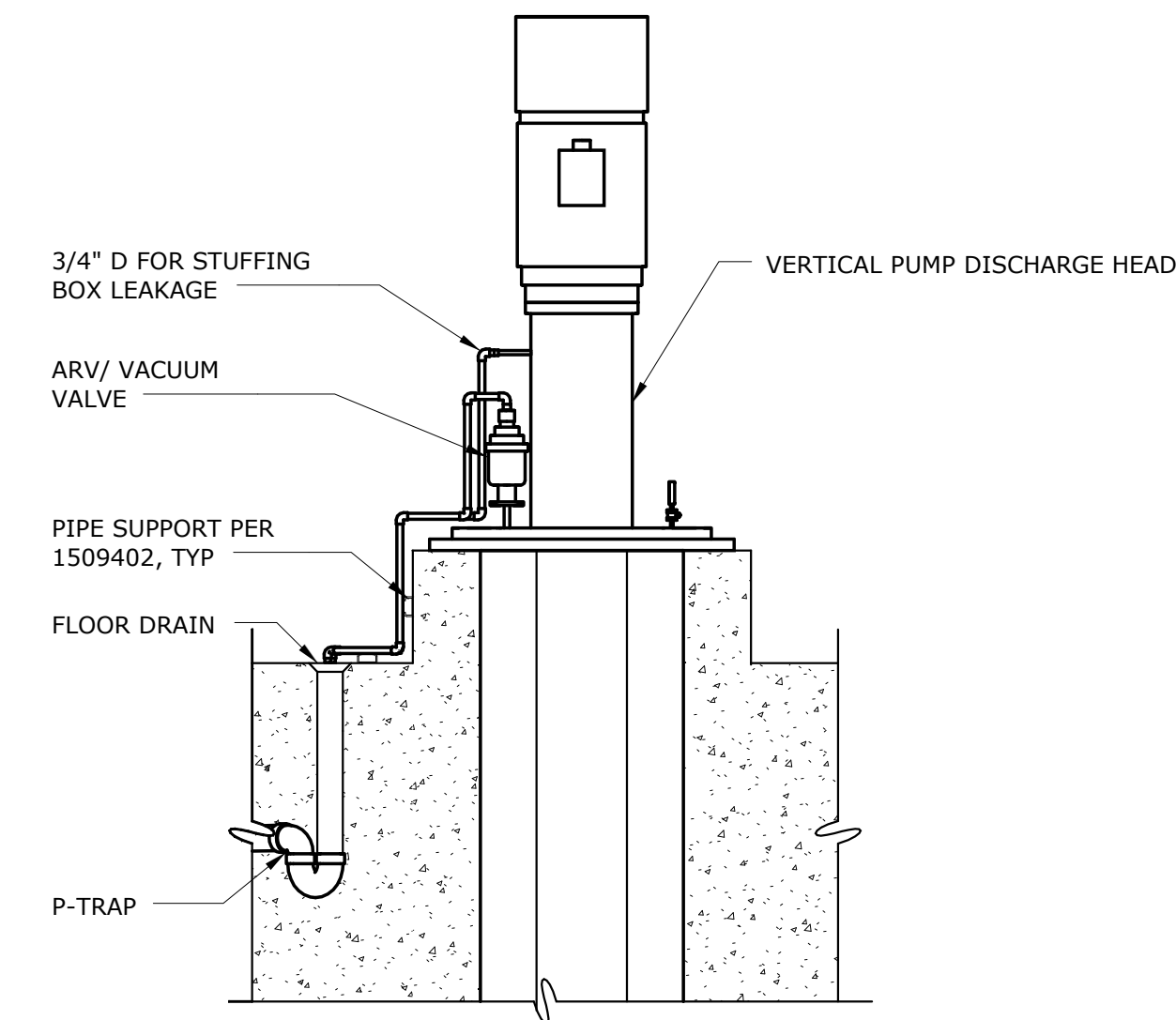
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SECTION A
1/4" = 1'-0" M20



SECTION B
1/4" = 1'-0" M20



SECTION C
3/8" = 1'-0" M20

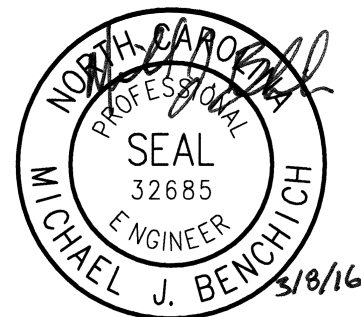
NOTES:

- 1 FURNISH AND INSTALL DEVICES AND INSTRUMENTATION ON DISCHARGE HEAD AND BASE AS INDICATED IN SPECIFICATION SECTION 11101 AND APPENDIX A OF PROJECT MANUAL.
- 2 ALL VERTICAL PUMPS ARE TO BE FURNISHED BY OWNER. COORDINATE INSTALLATION WITH PUMP MANUFACTURER.
- 3 SUPPORT FROM CEILING PER DETAIL 1509402.
- 4 3/4" PW PIPING SHALL BE SCHEDULE 40 SST FROM THREADED TAP TO FIRST PIPE SUPPORT ON CEILING. 3/4" PW PIPING SHALL BE SCH 80 PVC OTHERWISE.

3	CONSTRUCTION	3-8-16	JCJ	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ	
1	REGULATORY REVIEW	1-20-16	JCJ	
REV	ISSUED FOR	DATE	BY	

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	M.J. BENCHICH
DRAWN BY:	M.P. KARMANOCKY
CHECKED BY:	M.J. MESSERE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

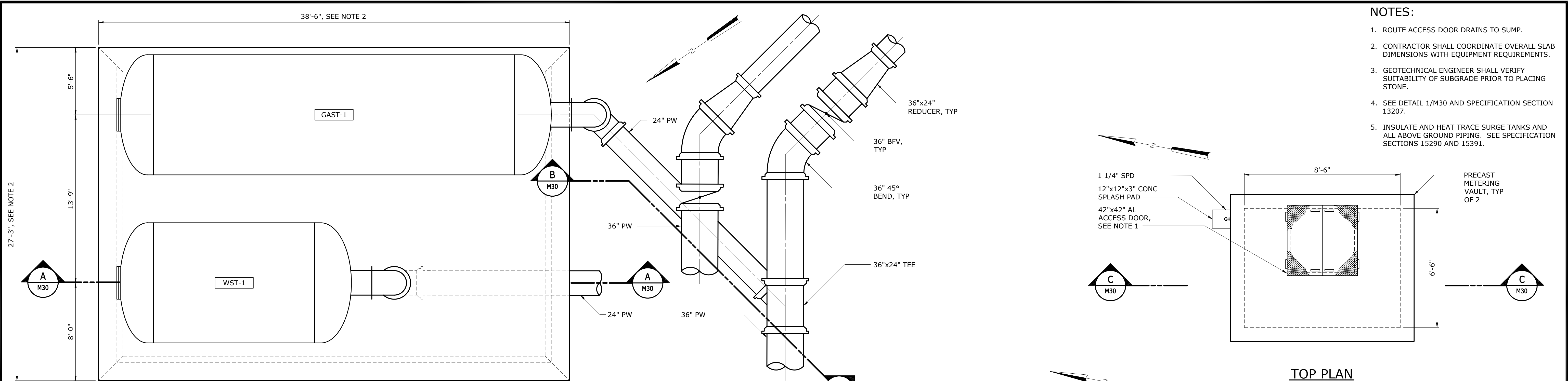
PUMP STATION
MECHANICAL
SECTIONS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	M22

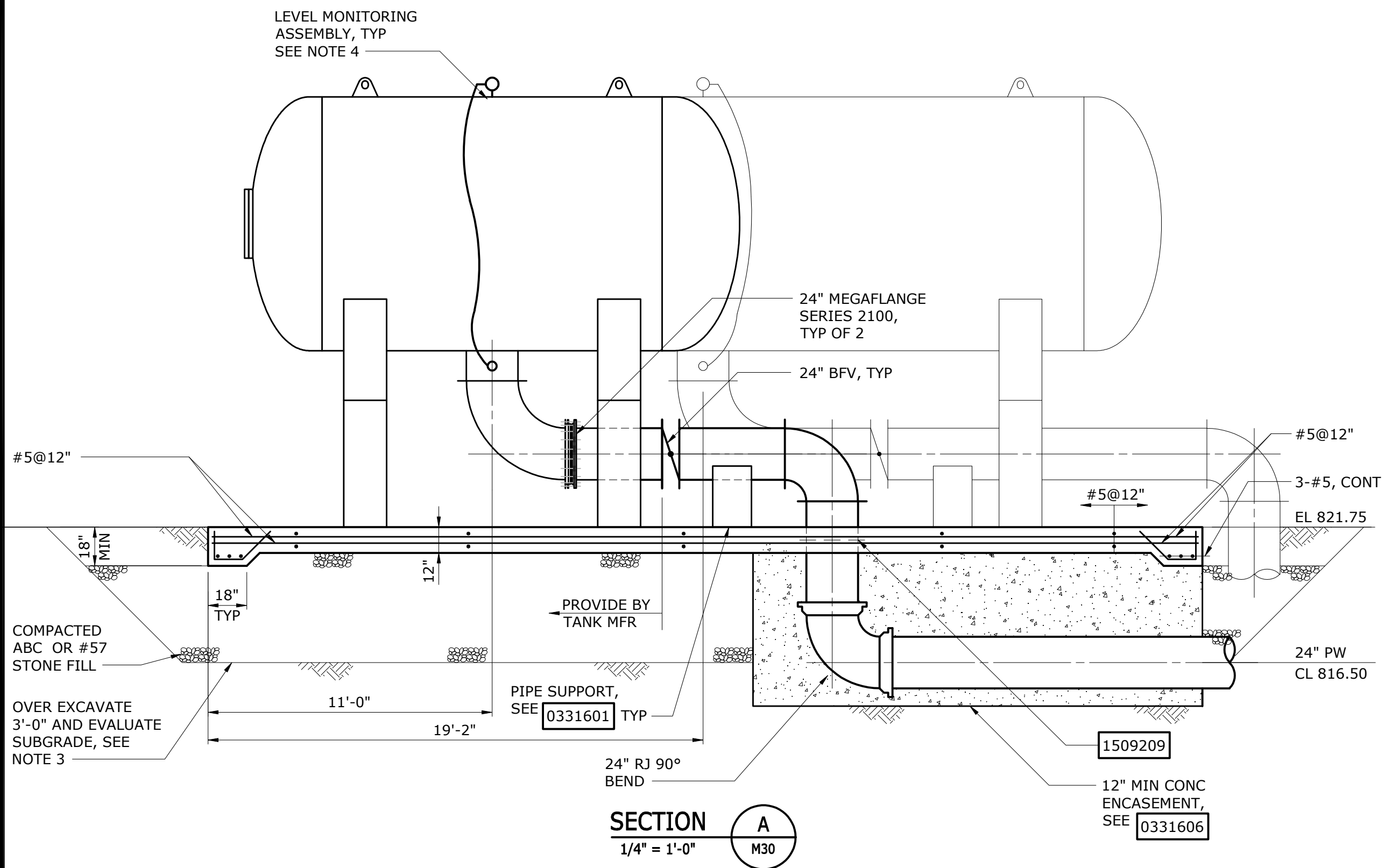
- 1 ROUTE NPW PIPING AROUND LOUVERS AS
REQUIRED.
- 2 BEND AWAY FROM WALL NEAR CEILING AS
REQUIRED TO CENTER RISER PIPE
THROUGH CEILING PENETRATION.



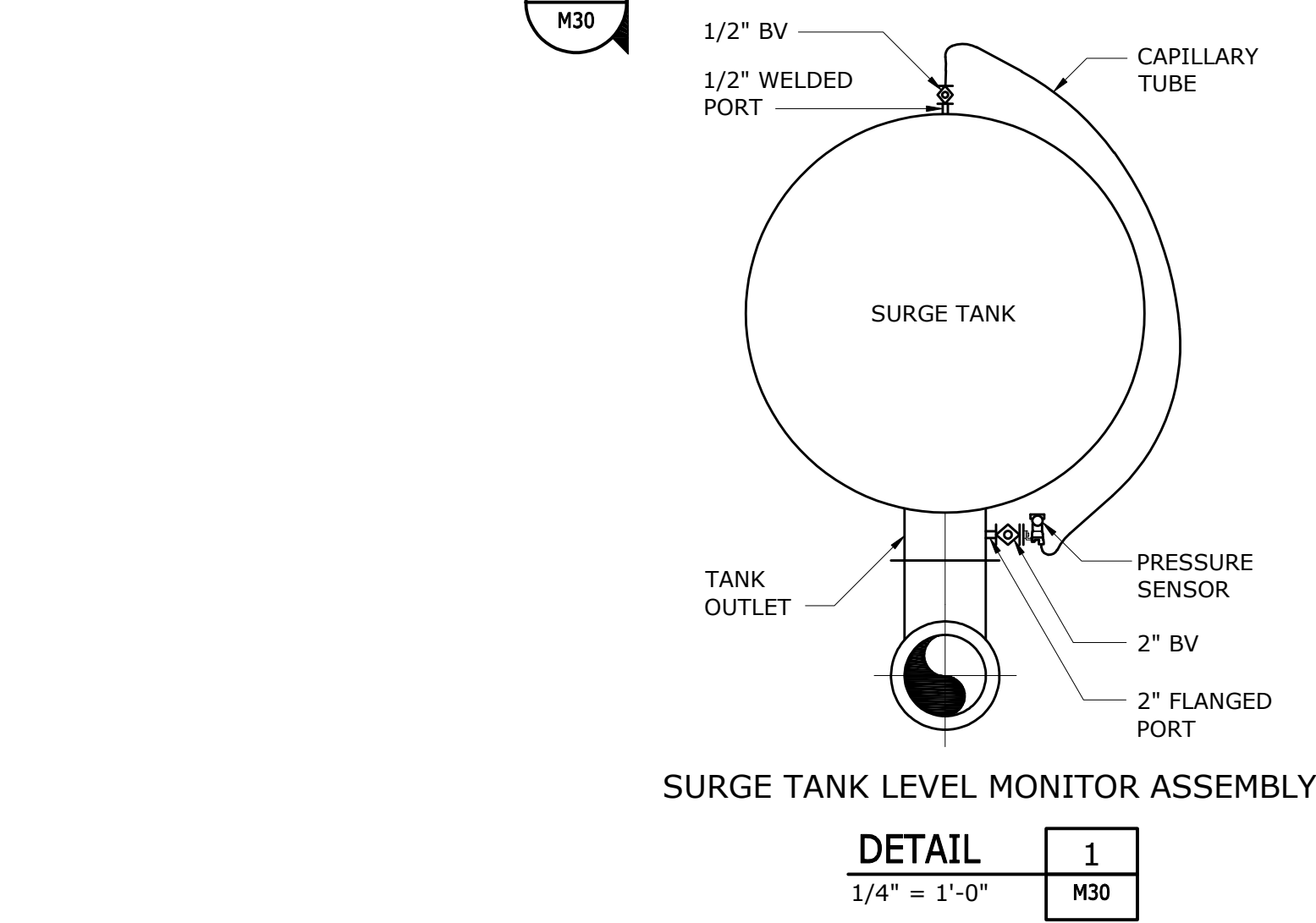
					PROJECT ENGINEER:	M.J. BENCHICH			DAVIDSON COUNTY NORTH CAROLINA	PUMP STATION MECHANICAL SCHEMATICS	DATE:	MARCH 2016
				DESIGNED BY:	M.J. BENCHICH	HAZEN NO.:					30961-010	
				DRAWN BY:	W. MAXWELL	CONTRACT NO.:			1			
				CHECKED BY:	M.J. MESSERE	DRAWING NUMBER:			M23			
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE		0 1/2" 1"						
2	BUILDING PERMIT REVIEW	2-26-16	JCJ									
1	REGULATORY REVIEW	1-20-16	JCJ									
REV	ISSUED FOR	DATE	BY									



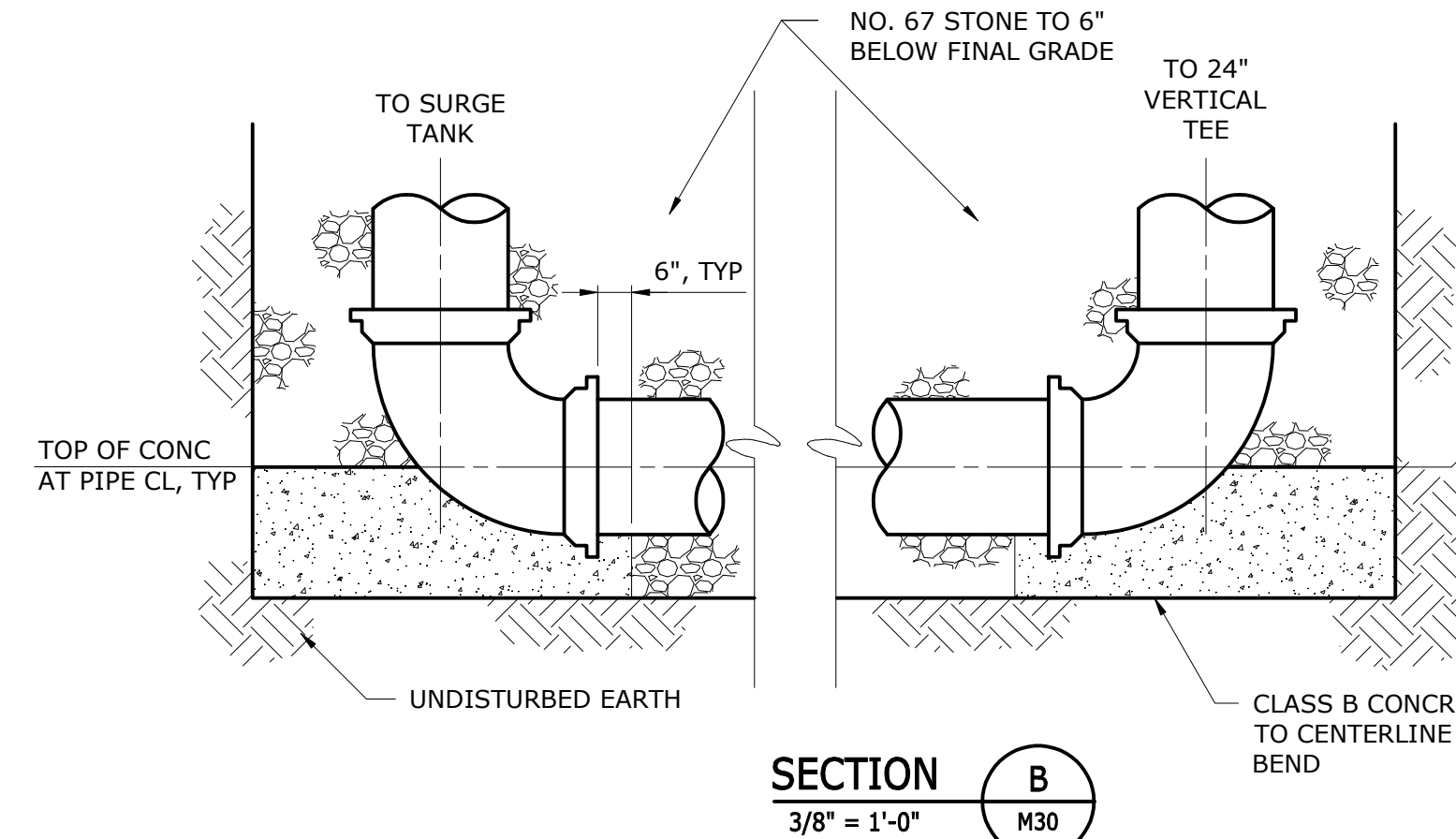
PLAN
1/4" = 1'-0"



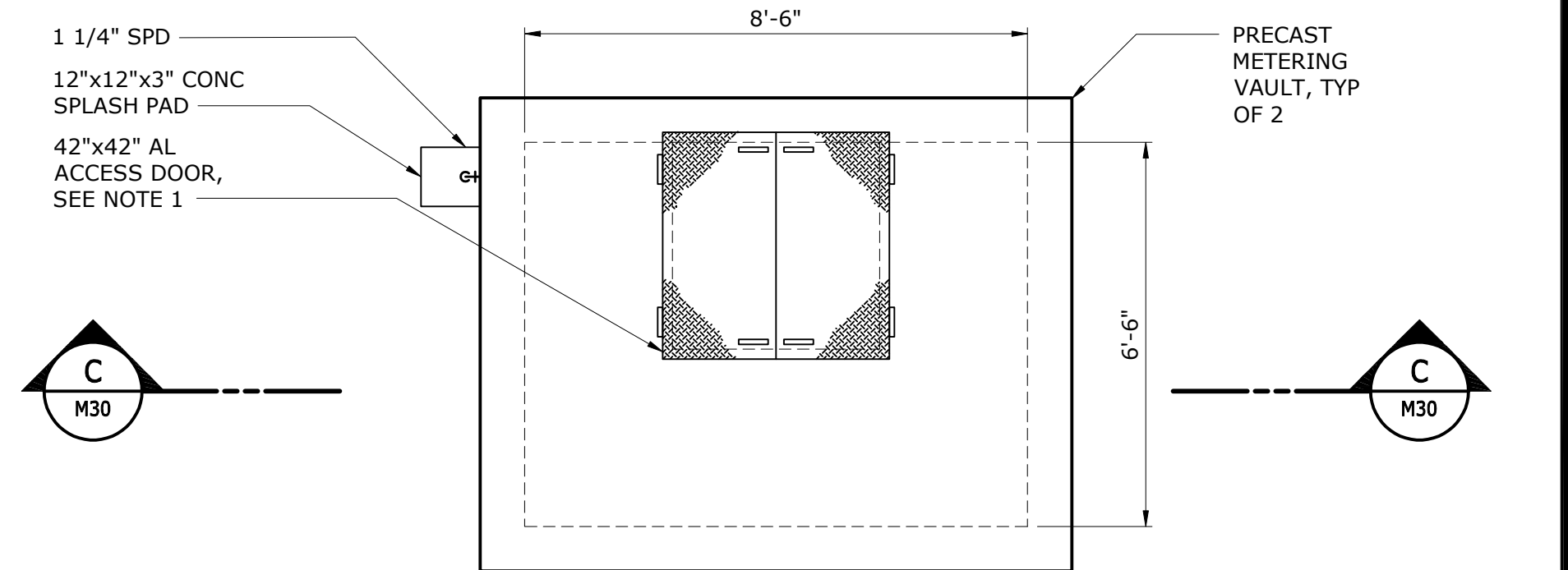
SECTION A
1/4" = 1'-0"



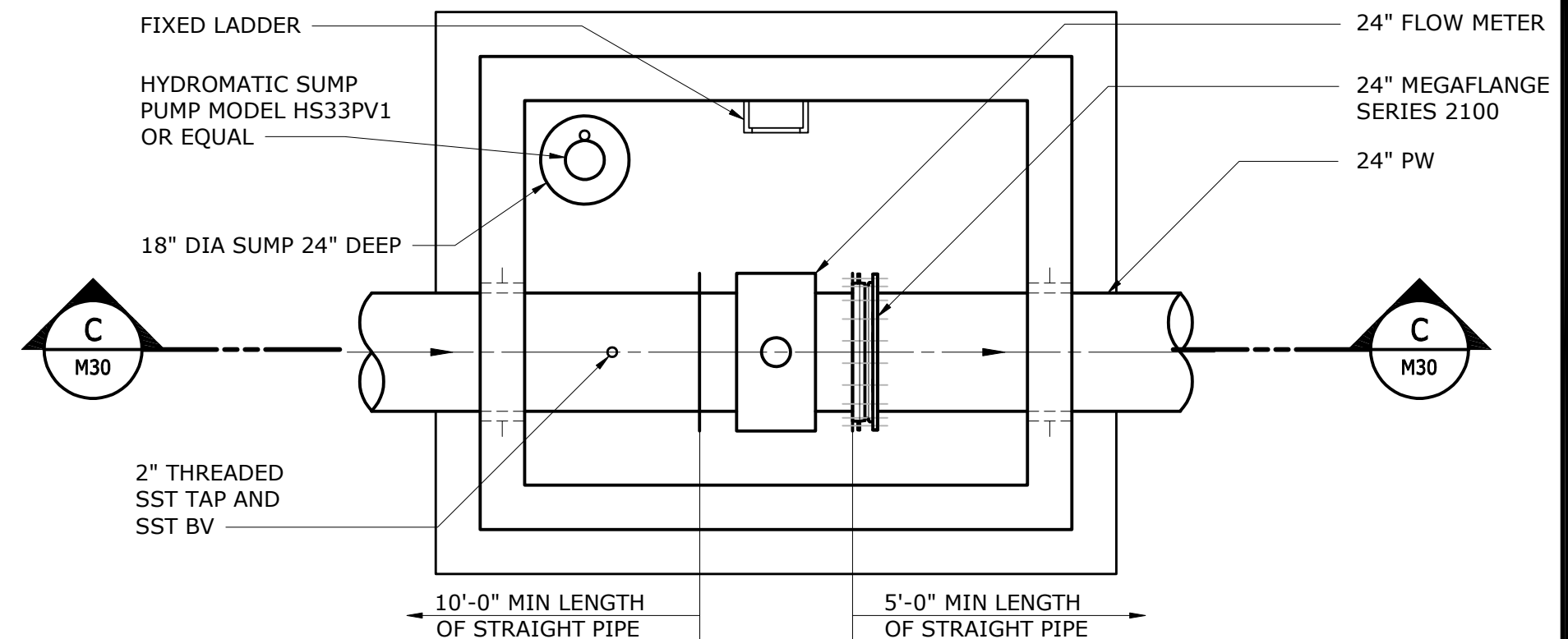
DETAIL 1
1/4" = 1'-0"



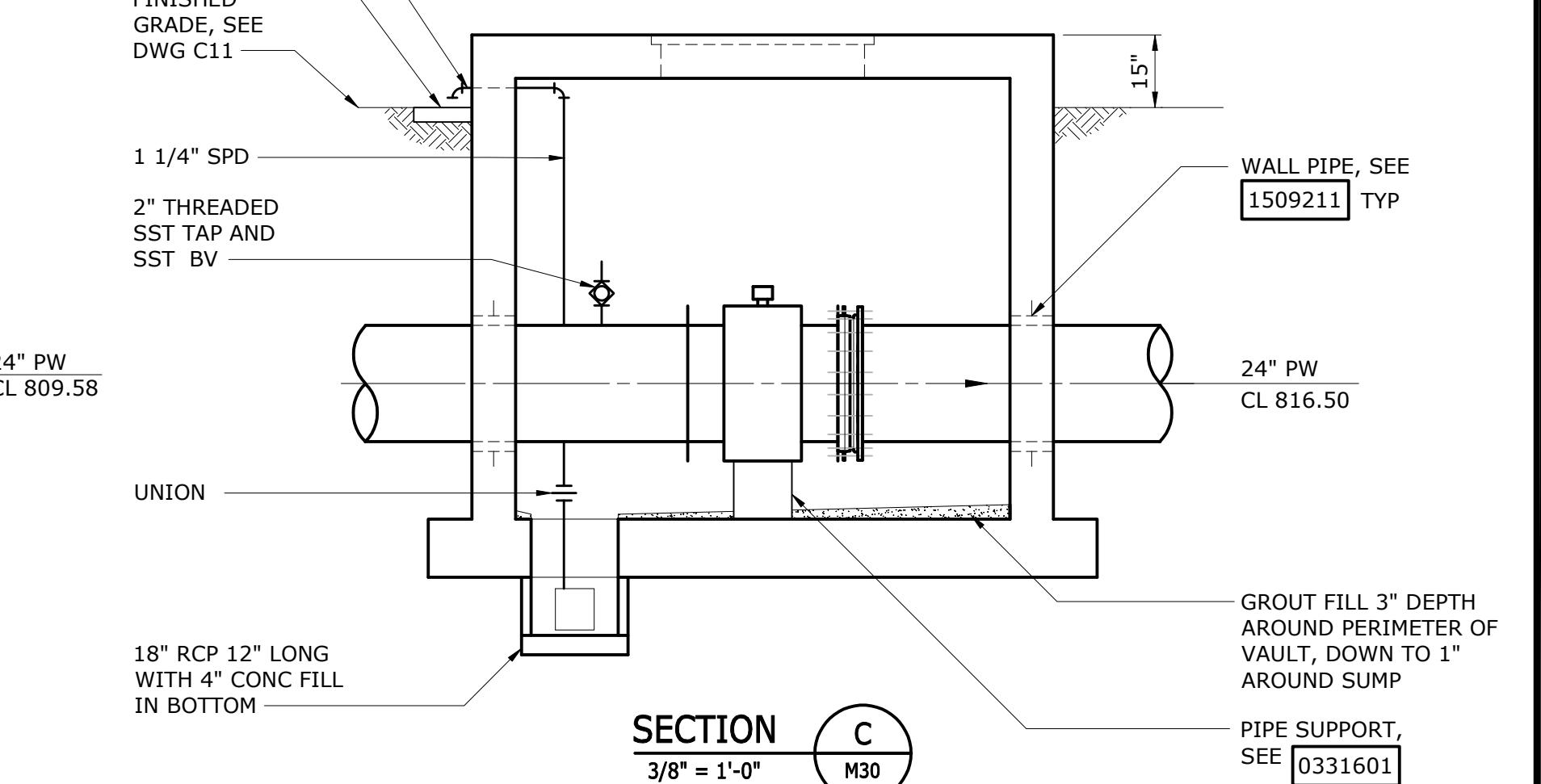
SECTION B
3/8" = 1'-0"



TOP PLAN
3/8" = 1'-0"



BOTTOM PLAN
3/8" = 1'-0"



SECTION C
3/8" = 1'-0"

- NOTES:
1. ROUTE ACCESS DOOR DRAINS TO SUMP.
 2. CONTRACTOR SHALL COORDINATE OVERALL SLAB DIMENSIONS WITH EQUIPMENT REQUIREMENTS.
 3. GEOTECHNICAL ENGINEER SHALL VERIFY SUITABILITY OF SUBGRADE PRIOR TO PLACING STONE.
 4. SEE DETAIL 1/M30 AND SPECIFICATION SECTION 13207.
 5. INSULATE AND HEAT TRACE SURGE TANKS AND ALL ABOVE GROUND PIPING. SEE SPECIFICATION SECTIONS 15290 AND 15391.

PROJECT ENGINEER: M.J. BENCHICH				ISSUED FOR CONSTRUCTION				DAVIDSON COUNTY NORTH CAROLINA				SURGE TANK AND METERING VAULT MECHANICAL PLANS AND SECTIONS				DATE: MARCH 2016
DESIGNED BY: M.J. BENCHICH								DAVIDSON WATER INC. HYATTOWN PUMP STATION IMPROVEMENTS								HAZEN NO.: 30961-010
DRAWN BY: M.P. KARMANOCKY																CONTRACT NO.: 1
CHECKED BY: M.J. MESSERE																DRAWING NUMBER: M30
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE																
REV ISSUED FOR																
DATE																
BY																

GENERAL STRUCTURAL NOTES

- G-1 THESE NOTES ARE GENERAL AND SUPPLEMENT THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
- G-2 STANDARD DETAILS SHALL BE USED WHEN REFERRED TO OR WHEN NO MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS.
- G-3 DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE [STATE] BUILDING CODE. THE DESIGN LOADS AND OTHER DESIGN VALUES GIVEN IN NOTES G-4 THROUGH G-7 WERE USED FOR DESIGN OF STRUCTURES UNLESS NOTED OTHERWISE ON THE DRAWINGS
- G-4 LIVE LOADS:

STRUCTURE \ LEVEL	ROOF	BOTTOM / GROUND FLOOR
PUMP STATION	30 PSF	300 PSF

- ALL STAIRWAYS, LANDINGS AND PLATFORMS ARE DESIGNED FOR A LIVE LOAD = 100 PSF UNLESS NOTED OTHERWISE.

G-5 SNOW LOAD:

GROUND SNOW LOAD (Pg) = 15 PSF
FLAT-ROOF SNOW LOAD (Pf) = 18 PSF
SNOW EXPOSURE FACTOR (Ce) = 0.9
SNOW LOAD IMPORTANCE FACTOR (Is) = 1.2
THERMAL FACTOR (Ct) = 1.0
ROOF PLANKS SHALL BE DESIGNED FOR THE EFFECTS OF DRIFTING SNOW AS REQUIRED BY THE NORTH CAROLINA BUILDING CODE. IT SHALL ALSO BE PERMISSIBLE TO DESIGN ALL PLANKS FOR A UNIFORM EQUIVALENT TO THE MAXIMUM ROOF SNOW LOAD OF 48 PSF.

G-6 WIND DESIGN CRITERIA:

BASIC WIND SPEED = 90 MPH
WIND IMPORTANCE FACTOR (Iw) = 1.15
WIND EXPOSURE = C

STRUCTURE \ PARAMETER	PRESSURE COEFFICIENT GCpi	WIND DESIGN PRESSURE	COMPONENTS AND CLADDING	LATERAL LOAD RESISTING SYSTEM
PUMP STATION	+/- 0.18	20 PSF	27 PSF	MASONRY SHEAR WALL

G-7 SEISMIC LOAD:

OCCUPANCY CATEGORY = IV
SEISMIC IMPORTANCE FACTOR (Ie) = 1.50
SITE CLASS = D
MAPPED SPECTRAL RESPONSE ACCELERATIONS (Ss/S1) = 0.241/0.090
SPECTRAL RESPONSE ACCELERATIONS (SMS/SM1) = 0.386/0.215
SPECTRAL RESPONSE COEFFICIENTS (SDS/SD1) = 0.257/0.143
SEISMIC DESIGN CATEGORY = D

STRUCTURE \ PARAMETER	BASIC STRUCTURAL SYSTEM	DESIGN BASE SHEAR	SEISMIC RESPONSE COEFFICIENT Cs	RESPONSE MODIFICATION COEFFICIENT R	ANALYSIS PROCEDURE
PUMP STATION	MASONRY SHEAR WALL	43.5 KIPS	0.0771	5.0	EQUIVALENT LATERAL FORCE

- G-8 ALL DIMENSIONS INDICATED (*) SHALL BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
- G-9 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD AS REQUIRED FOR NEW WORK.
- G-10 IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED.
- G-11 EQUIPMENT ANCHOR BOLT SIZES, TYPES, EMBEDMENT AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
- G-12 STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.
- G-13 STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- G-14 IF CONTRACTOR DESIRES TO TEMPORARILY PLACE OR MOVE LOADS ON OR ADJACENT TO EXISTING STRUCTURES OR UTILITIES DURING CONSTRUCTION PROCESS. CONTRACTOR IS EXCLUSIVELY RESPONSIBLE FOR MAINTAINING STRUCTURAL INTEGRITY AND AVOIDING OVERSTRESSING AND DAMAGING EXISTING STRUCTURES AND UTILITIES. CONTRACTOR SHALL SUBMIT STRUCTURAL CALCULATIONS AND DRAWINGS VERIFYING PROPOSED CONSTRUCTION INCLUDING APPLICATION OF TEMPORARY CONSTRUCTION LOADS WILL NOT OVERSTRESS OR DAMAGE EXISTING STRUCTURES AND UTILITIES. DRAWINGS AND CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF NORTH CAROLINA.
- G-15 NO BACKFILL SHALL BE PLACED AGAINST ANY SUBSTRUCTURE WALLS UNLESS ALL ADJACENT SUPPORTING ELEMENTS HAVE ACHIEVED DESIGN STRENGTH, OR WALLS HAVE BEEN PROPERLY BRACED, AND IN ANY CASE NOT SOONER THAN 28 DAYS AFTER THE PLACING OF CONCRETE UNLESS APPROVED BY THE ENGINEER. SUPPORTING ELEMENTS SHALL INCLUDE ADJACENT WALLS, SLABS, BEAMS AND COLUMNS.

STRUCTURAL METALS

- M-1 DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN, LATEST EDITION.
- M-2 STEEL MATERIAL:
A) STRUCTURAL HSS: ASTM A500, GRADE C (46/50 KSI) OR A1085 (50 KSI)
B) STRUCTURAL PIPE: ASTM A53, GRADE B (35 KSI)
C) PLATES, BARS AND ANGLES: ASTM A36 UNO (36 KSI)
D) STRUCTURAL W SHAPES: ASTM A992 (50 KSI)
E) STRUCTURAL S, M, C & MC SHAPES: ASTM A36 (36 KSI)
F) STRUCTURAL HP ASTM A572 GRADE 50 (50 KSI)
G) RODS ASTM F1554 GRADE 36 (36 KSI)
- M-3 PROVIDE MINIMUM 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS WITH SNUG TIGHTENED TYPE N CONNECTIONS FOR STRUCTURAL STEEL UNLESS NOTED OTHERWISE. HOLES FOR BOLTS SHALL BE STANDARD SIZE UNLESS NOTED OTHERWISE.
- M-4 PROVIDE TYPICAL STEEL BEAM CONNECTIONS FOR A CAPACITY OF NOT LESS THAN THE TOTAL UNIFORM LOAD CAPACITY TABULATED IN THE AISC TABLES FOR ALLOWABLE LOADS OF BEAMS UNLESS NOTED OTHERWISE.
- M-5 DO NOT PAINT STEEL SURFACES WHICH ARE TO BE WELDED OR ARE TO BE ENCASED IN CONCRETE.
- M-6 ALL STAINLESS STEEL FABRICATIONS EXPOSED TO UNDERWATER SERVICE SHALL BE TYPE 316. ALL OTHER STAINLESS STEEL FABRICATIONS SHALL BE TYPE 304 UNLESS NOTED OTHERWISE.
- M-7 ALUMINUM SHALL BE ALLOY 6061-T6 UNLESS NOTED OTHERWISE.
- M-8 ALL BOLTS, ANCHOR BOLTS, AND CONCRETE ANCHORS CONNECTING ALUMINUM SHALL BE STAINLESS STEEL TYPE 316 FOR UNDERWATER APPLICATIONS AND TYPE 304 FOR ALL OTHER APPLICATIONS.
- M-9 DETAIL, FABRICATE, AND ERECT ALUMINUM IN ACCORDANCE WITH THE LATEST EDITION OF THE ALUMINUM ASSOCIATION ALUMINUM DESIGN MANUAL.
- M-10 ALUMINUM SHALL BE ISOLATED FROM CONTACT WITH CONCRETE AND DISSIMILAR METALS.
- M-11 ALL GROOVE AND BUTT WELDS SHALL BE FULL PENETRATION.
- M-12 FILLET WELD SIZES SHALL NOT BE LESS THAN THE MINIMUM SIZE REQUIRED BY AISC CODE FOR PLATE SIZES TO BE CONNECTED AND SHALL BE APPLIED TO THE ENTIRE JOINT CONTACT LENGTH, AND NOT LESS THAN 3/16".
- M-13 BOTTOM SURFACES OF BASE PLATES SHALL BE GROUTED TO ENSURE FULL BEARING CONTACT WITH CONCRETE SLAB.
- M-14 WHENEVER ONE MEMBER IS FASTENED TO ANOTHER WITH FASTENINGS (BOLTS, WELDS, ETC.) SET AT A UNIFORM SPACING, THERE SHALL BE A MINIMUM OF TWO FASTENINGS PER PIECE CONNECTED AND THE FIRST AND LAST FASTENINGS SHALL BE LOCATED NOT TO EXCEED 0.25 OF FASTENER SPACING FROM EACH END.
- M-15 BOLTED CONNECTIONS FOR STRUCTURAL STEEL SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC (SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS).
- M-16 STRUCTURAL WELDED JOINTS SHALL CONFORM TO THE PROVISIONS OF AWS D1.1, STRUCTURAL WELDING CODE BY AMERICAN WELDING SOCIETY. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.

NONSTRUCTURAL COMPONENT ANCHORAGE

- A-1 ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS SHALL BE DESIGNED AND INSTALLED TO RESIST THE CONTROLLING CONDITION OF OPERATIONAL FORCES OR SEISMIC FORCES IN ACCORDANCE WITH THE GOVERNING BUILDING CODE. SEISMIC FORCES SHALL ALSO BE AS PER ASCE 7. COMPONENT SEISMIC ATTACHMENTS SHALL BE BOLTED, WELDED, OR OTHERWISE POSITIVELY FASTENED WITHOUT CONSIDERATION OF FRICTIONAL RESISTANCE PRODUCED BY THE EFFECTS OF GRAVITY. A CONTINUOUS LOAD PATH OF SUFFICIENT STRENGTH AND STIFFNESS BETWEEN THE COMPONENT AND THE SUPPORTING STRUCTURE SHALL BE PROVIDED. CONNECTIONS FOR BOTH ORTHOGONAL DIRECTIONS (TRANSVERSE AND LONGITUDINAL) SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER CURRENTLY REGISTERED IN THE STATE OF NORTH CAROLINA.
- A-2 COMPONENT REACTION FORCES AT THE POINT OF ATTACHMENT TO THE STRUCTURE SHALL BE SUBMITTED TO AND COORDINATED WITH THE ENGINEER FOR CONFIRMATION SUPPORTING STRUCTURE CAN WITHSTAND REACTION FORCES.
- A-3 CONTRACTOR SHALL PROVIDE SPECIAL SEISMIC CERTIFICATION (SSC) FROM MANUFACTURER OF EQUIPMENT FOR ALL SYSTEMS DEEMED NECESSARY BY SPECIFICATIONS. SPECIAL SEISMIC CERTIFICATION SHALL BE IN COMPLIANCE WITH ASCE 7.

FOUNDATIONS

- F-1 CONCRETE (CAST-IN-PLACE) NOTES APPLY TO FOUNDATIONS.

F-2 ALLOWABLE SOIL BEARING PRESSURE

STRUCTURE \ PARAMETER	ALLOWABLE SOIL BEARING PRESSURE
PUMP STATION	2500 PSF

- F-3 MINIMUM DEPTH FROM ADJACENT FINISHED GRADE TO BOTTOM OF FOUNDATION = 18 INCHES.

PRECAST CONCRETE

- PC-1 PRECAST PLANKS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA. PLANKS SHALL PROVIDE OPENINGS TO ALLOW VENT PIPES, STRUCTURAL STEEL BRACING AND COLUMNS TO PASS THROUGH. PLANK INTERIOR ENDS SHALL BE GROUT FILLED TO PROVIDE A SMOOTH FINISH.
- PC-2 PRECAST VAULTS AND MANHOLES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA. STRUCTURAL DRAWINGS SHALL INDICATE DESIGN IS IN COMPLIANCE WITH THE NORTH CAROLINA BUILDING CODE.

CONCRETE (CAST-IN-PLACE)

- C-1 DESIGN OF CONCRETE ELEMENTS INCLUDING WALLS, FORMED SLABS, BEAMS, AND COLUMNS IS IN ACCORDANCE WITH ACI 318 (CODE REQUIREMENTS FOR STRUCTURAL CONCRETE) AND 350 (CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES).
- C-2 FOR CONCRETE MIX DESIGN SEE SPECIFICATION SECTION 03300.
- C-3 CONCRETE STRENGTH CLASSES (28-DAY COMPRESSIVE STRENGTH):
A) CLASS A1 CONCRETE (4,500 PSI): NORMAL WEIGHT CONCRETE SHALL BE USED IN ALL STRUCTURES, SIDEWALKS, PAVEMENTS, EXCEPT WHERE NOTED OTHERWISE IN CONTRACT DOCUMENTS. ALL CONCRETE SHALL BE CLASS A1 CONCRETE UNLESS ANOTHER CLASS IS SPECIFICALLY CALLED FOR ON CONTRACT DOCUMENTS OR SPECIFIED HEREIN.
B) CLASS A2 CONCRETE (4,500 PSI): NORMAL WEIGHT CONCRETE TO BE USED FOR INTERIOR SLABS WHERE A CONCRETE HARDENER IS REQUIRED FOR APPLICATION AFTER PLACEMENT OF SLABS OR WHERE A STEEL TROWEL FINISH IS REQUIRED.
C) CLASS A3 CONCRETE (4,500 PSI): NORMAL WEIGHT STRUCTURAL CONCRETE TO BE USED WHERE SPECIFICALLY CALLED FOR ON CONTRACT DRAWINGS OR WHERE SPECIFICALLY REQUESTED BY CONTRACTOR AND APPROVED BY ENGINEER. CLASS A3 CONCRETE SHALL BE SIMILAR TO CLASS A1 EXCEPT CLASS A3 CONCRETE SHALL CONTAIN A MANDATORY ADDITION OF HIGH RANGE WATER REDUCER TO AID IN PLACEMENT OF CONCRETE.
D) CLASS A4 CONCRETE (4,500 PSI): NORMAL WEIGHT STRUCTURAL CONCRETE TO BE USED WHERE SPECIFICALLY CALLED FOR ON CONTRACT DRAWINGS OR AREAS WHERE SPECIFICALLY REQUESTED BY CONTRACTOR AND APPROVED ENGINEER. CLASS A4 CONCRETE IS IDENTICAL TO CLASS A1 CONCRETE EXCEPT THAT COARSE AGGREGATE SHALL BE SIZE #8M IN ACCORDANCE WITH ASTM C33. CLASS A4 CONCRETE MAY ALSO REQUIRE A MANDATORY ADDITION OF HIGH RANGE WATER REDUCER TO AID IN PLACEMENT OF CONCRETE.
E) CLASS A6 CONCRETE (4,500 PSI): NORMAL WEIGHT STRUCTURAL CONCRETE USED WHERE CONCRETE IS PLACED UNDER PRESSURE (PUMPED). CLASS A6 CONCRETE SHALL BE USED ONLY WHERE SPECIFICALLY APPROVED BY ENGINEER.
F) CLASS B CONCRETE (3,000 PSI): NORMAL WEIGHT STRUCTURAL CONCRETE USED FOR DUCT BANK ENCASEMENTS, CATCH BASINS, FENCE AND GUARD POST EMBEDMENT, CONCRETE FILL AND OTHER AREAS WHERE SPECIFICALLY NOTED ON CONTRACT DRAWINGS.
- C-4 ALL BAR REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60. WHERE REINFORCEMENT IS TO BE WELDED IN ACCORDANCE WITH AWS D1.4, ASTM A706 GRADE 60 SHALL BE USED. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- C-5 CONCRETE COVER FOR REINFORCING (UNLESS NOTED OTHERWISE ON THE DRAWINGS):
A) CONCRETE DEPOSITED DIRECTLY AGAINST SOIL: 3"
B) CONCRETE EXPOSED TO WEATHER (#5 OR SMALLER): 1 1/2"
CONCRETE EXPOSED TO WEATHER (#6 OR LARGER): 2"
C) SLABS: 1 1/2"
AT SURFACES CONTACTING FLUID: 2"
D) BEAMS AND COLUMNS (TO MAIN REINFORCEMENT): 2"
BEAMS AND COLUMNS (TO COLUMN TIES OR STIRRUPS): 1 1/2"
E) WALLS 12" OR MORE: 2"
WALLS LESS THAN 12" (#5 OR SMALLER): 1 1/2"
WALLS LESS THAN 12" (#6 OR LARGER): 2"
F) FOR SURFACES EXPOSED TO FLUID IN BEAMS, COLUMNS AND WALLS: ADD 1/2" TO ABOVE VALUES
- C-6 SPLICES SHALL BE CLASS "B" CONFORMING TO THE PROVISIONS OF ACI 318 UNLESS NOTED OTHERWISE. SPLICE LENGTH FOR TWO DIFFERENT SIZED BARS TO BE LAP SPLICED TOGETHER SHALL BE THE LENGTH OF THE LARGER BAR UNLESS NOTED OTHERWISE.
- C-7 CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS NOT SHOWN SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER PRIOR TO SUBMITTING REBAR SHOP DRAWINGS. VERTICAL CONSTRUCTION JOINTS IN WALLS AND HORIZONTAL JOINTS IN SLABS SHALL BE PROVIDED AT A SPACING NOT GREATER THAN 45 FEET ON CENTER. EXPOSED WALLS WITH FLUID OR EARTH ON THE OPPOSITE SIDE, THE SPACING BETWEEN VERTICAL AND HORIZONTAL JOINTS SHALL BE A MAXIMUM OF 25 FEET.
- C-8 WHERE HORIZONTAL CONSTRUCTION JOINTS, LOCATED ABOVE THE FOUNDATION SLAB, EXTEND BEYOND WHERE NEEDED, THEY SHALL BE TERMINATED AT A VERTICAL CONSTRUCTION JOINT APPROVED BY THE ENGINEER.
- C-9 ALL JOINTS WHICH ARE IN MEMBERS IN CONTACT WITH LIQUID OR BELOW GRADE SHALL HAVE A WATERSTOP. CONSTRUCTION JOINTS SHALL HAVE A 6" PVC RIBBED WATERSTOP. EXPANSION JOINTS SHALL HAVE A 9" PVC CENTER BULB RIBBED WATERSTOP. IN VERTICAL JOINTS, WATERSTOPS SHALL TERMINATE NO LESS THAN 18" ABOVE THE MAXIMUM WATER SURFACE OR 18" ABOVE GRADE, WHICHEVER IS HIGHER.
- C-10 SLABS WITH SLOPING SURFACES SHALL HAVE THE INDICATED SLAB THICKNESS MAINTAINED AS THE MINIMUM. SLAB BOTTOMS CAN EITHER SLOPE WITH THE TOP SURFACE OR BE LEVEL. REINFORCEMENT IN SLABS WITH SLOPING SURFACES SHALL BE PLACED AT THE REQUIRED CLEARANCE FROM THE SLAB SURFACE.
- C-11 ALL EXPOSED CORNERS SHALL HAVE A 3/4" CHAMFER OR A 1/2" RADIUS TOOLED CORNER.
- C-12 EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DOCUMENTS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.
- C-13 REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY METAL PIPE, PIPE FLANGE, METAL CONDUIT, OR OTHER METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2" SHALL BE PROVIDED.
- C-14 DOWELS, ANCHOR BOLTS, PIPES, WATERSTOPS AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- C-15 CONDUITS AND OTHER SIMILAR ITEMS EMBEDDED IN OR PENETRATING THROUGH CONCRETE SHALL BE SPACED ON CENTER NOT LESS THAN 3 TIMES THEIR OUTSIDE DIMENSION, BUT NOT LESS THAN 2 1/2" CLEAR. WHEN SUCH ITEMS ARE EMBEDDED IN WALLS OR SLABS, THEY SHALL NOT OCCUPY MORE THAN 1/3 OF THE MEMBER THICKNESS.
- C-16 AT ALL TYPICAL CURBS, EQUIPMENT PADS, AND PIPE SUPPORT PIERS, REINFORCING DOWELS SHOWN MAY BE REPLACED WITH MATCHING DOWELS SET IN EPOXY IN DRILLED HOLES AS SPECIFIED. DOWELS LOCATED CLOSER THAN 3" FROM ANY EDGE OF CONCRETE SHALL NOT BE REPLACED WITH DRILLED DOWELS.
- C-17 DRILLED ADHESIVE DOWELS (WHERE DOWELS ARE SHOWN TO BE PLACED INTO HARDENED CONCRETE):
A) THE HOLE DIAMETER SHALL BE NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE REINFORCING BAR AT THE DEFORMATIONS.
B) THE DEPTH OF EMBEDMENT SHALL BE 12 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
C) ADJUST THE DOWEL LOCATIONS AS NEEDED TO AVOID DRILLING THROUGH ANY REINFORCING BARS. IF THE LOCATION NEEDS TO BE MODIFIED, CONTACT THE ENGINEER. CONTRACTOR SHALL USE NON-DESTRUCTIVE MEANS TO FIELD LOCATE REINFORCEMENT PRIOR TO DRILLING HOLES FOR DOWELS.
- C-18 CLEAR DISTANCE FROM ANCHOR BOLTS TO ANY CONCRETE EDGE SHALL BE 4" MINIMUM UNLESS NOTED OTHERWISE.
- C-19 CONCRETE COMPRESSIVE STRENGTH TESTS SHALL BE AVAILABLE ON THE JOB SITE FOR REVIEW BY THE ENGINEER.

					PROJECT ENGINEER: M.J.BENCHICH
					DESIGNED BY: A.D. OVERBAY
					DRAWN BY: E.M. CARROLL
					CHECKED BY: C.T. PHILLIPS
3	CONSTRUCTION	3-8-16	JCJ		IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
STRUCTURAL
GENERAL NOTES

DATE: MARCH 2016

HAZEN NO.: 30961-010

CONTRACT NO.: 1

DRAWING
NUMBER:

S1

MASONRY

- M-1MASONRY MORTAR SHALL BE ASTM C 270 TYPE "S" AND MASONRY GROUT SHALL CONFORM TO REQUIREMENTS OF ASTM C 476.
- M-2CONCRETE MASONRY UNIT NET AREA COMPRESSIVE STRENGTH SHALL BE 3000 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C 140. COMPLETE TEST REPORTS SHALL BE SUBMITTED TO THE BUILDING INSPECTOR.
- M-3MASONRY TRUSS TYPE REINFORCEMENT SHALL CONFORM TO ASTM A 951 AND REINFORCEMENT STEEL SHALL CONFORM TO REQUIREMENTS OF ASTM A 615 FOR GRADE 60 BILLET STEEL.
- M-4MASONRY REINFORCEMENT BAR SPLICES SHALL BE CONTACT SPLICES. UNLESS NOTED OTHERWISE, LENGTH OF SPLICE FOR SINGLE BARS IN CENTER OF CELLS OF 8" OR LARGER CMU SHALL BE A MINIMUM OF 25 INCHES FOR #4 BARS AND 32 INCHES FOR #5 BARS. LENGTH OF SPLICE FOR OTHER CONDITIONS SHALL BE AS SHOWN ON THE DRAWINGS
- M-5BOND BEAM REINFORCEMENT SHALL BE PROVIDED WITH STD 90° HOOKS AT ALL WALL INTERSECTIONS. WHERE BOND BEAM REINFORCEMENT IS INTERRUPTED BY OPENINGS REINFORCEMENT SHALL BE PROVIDED WITH STD 180° HOOKS AT ENDS. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
- M-6DOWELS SHALL BE EITHER CAST INTO WALL OR INSTALLED WITH A DOWEL ADHESIVE SYSTEM. IF CAST, DOWELS SHALL BE EMBEDDED IN STEM WALL OR FOUNDATION SLAB A MINIMUM 9" AND SHALL HAVE A STD 90° HOOK. IF INSTALLED WITH A DOWEL ADHESIVE SYSTEM DOWELS SHALL BE STRAIGHT BARS EMBEDDED A MINIMUM OF 10" INTO STEM WALL. DOWEL ADHESIVE SHALL BE QUALIFIED FOR USE UNDER SEISMIC LOADING IN BOTH CRACKED AND UNCRACKED CONDITIONS FOR ALL SEISMIC DESIGN CATEGORIES IN ACCORDANCE WITH SPECIFICATION 03200. INSTALLATION OF ALL DOWELS SHALL BE PER MANUFACTURERS RECOMMENDATIONS. AS A MINIMUM THE FOLLOWING INSTALLATION REQUIREMENTS SHALL BE MET:

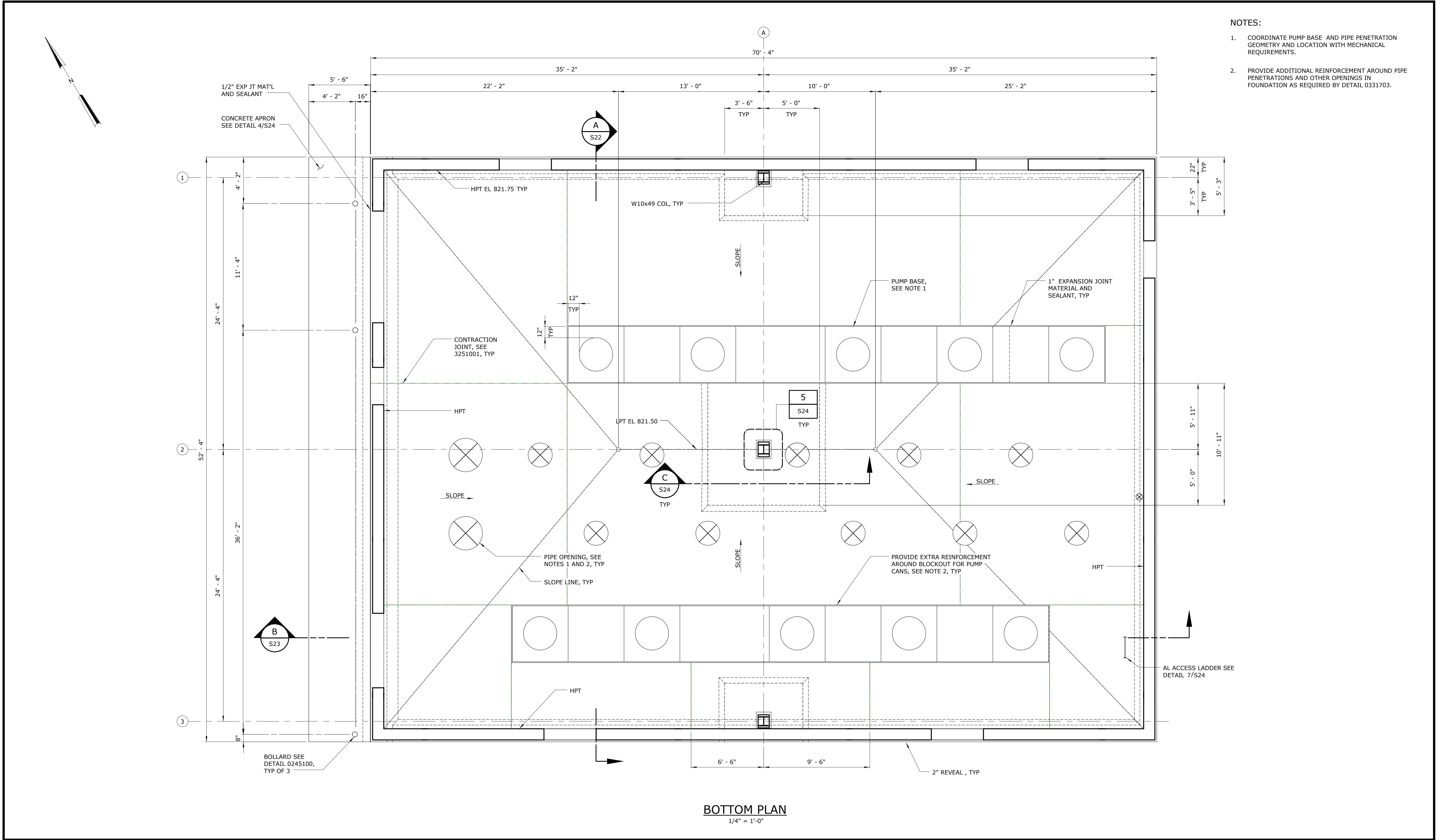
A) HOLES SHOULD BE DRILLED WITH CARBIDE BIT UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
B) ALL HOLES SHALL BE CLEANED USING COMPRESSED AIR AND A PROPERLY SIZED NYLON OR WIRE BRUSH.
C) ADHESIVE SHALL BE INJECTED USING A DISPENSER, STATIC MIXING NOZZLE AND A PISTON PLUG TO MINIMIZE THE FORMATION OF AIR POCKETS PROVIDED BY THE MANUFACTURER. IF DEPTH OF HOLE IS DEEPER THAN THE STATIC MIXING NOZZLE A PLASTIC EXTENSION TUBE SUPPLIED BY THE MANUFACTURER SHALL BE USED FOR PLACING ADHESIVE.

SPECIAL INSPECTIONS

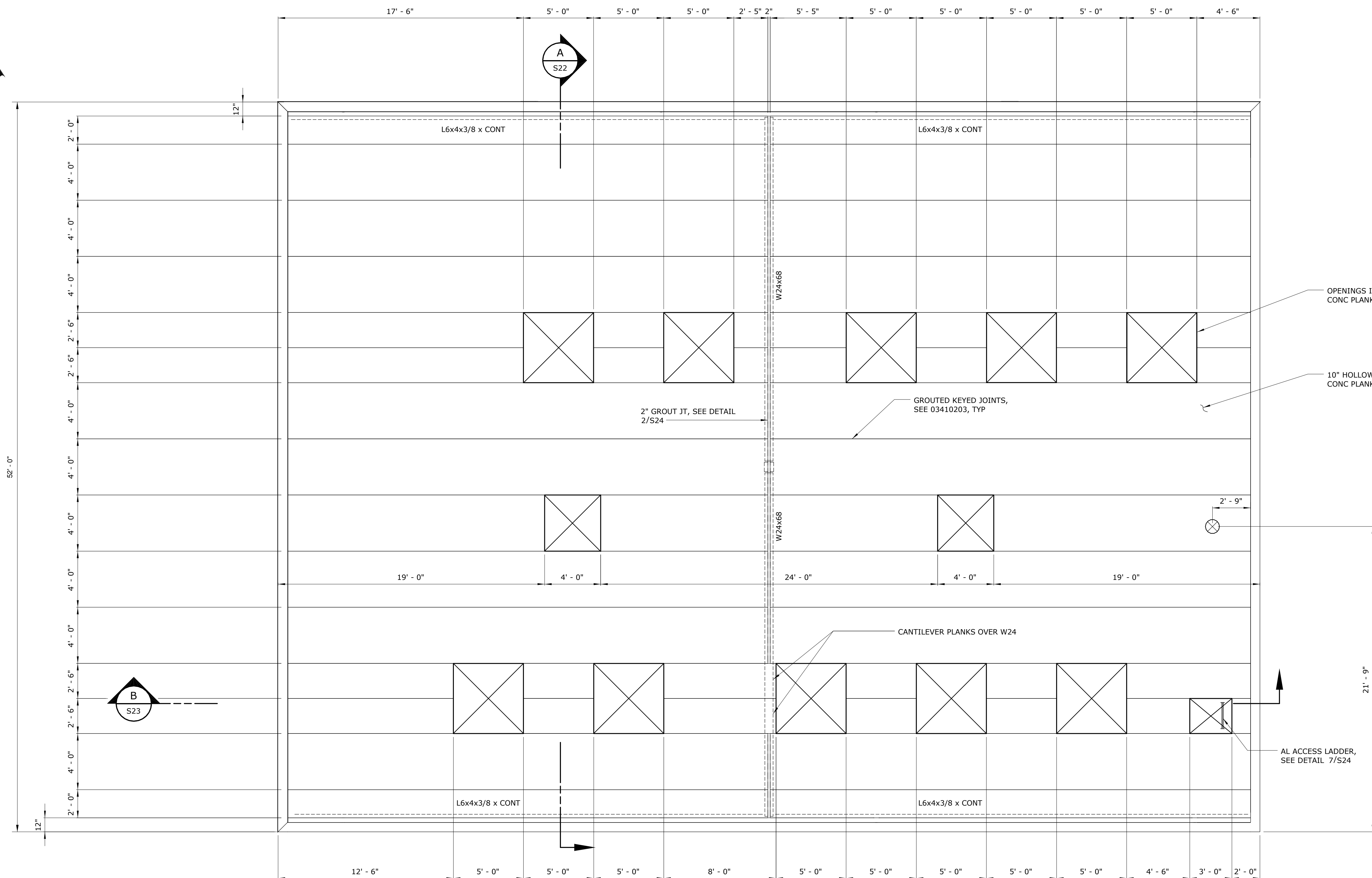
- SI-1SPECIAL PERIODIC AND CONTINUOUS INSPECTIONS SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE.

				PROJECT ENGINEER:	M.J.BENCHICH	ISSUED FOR CONSTRUCTION		 <div>HAZEN AND SAWYER 4944 PARKWAY PLAZA BLVD, SUITE 375 CHARLOTTE, NORTH CAROLINA 28217 LICENSE NO.: C-0381</div>	DAVIDSON COUNTY NORTH CAROLINA	PUMP STATION STRUCTURAL GENERAL NOTES	DATE:	MARCH 2016							
				DESIGNED BY:	A.D. OVERBAY						HAZEN NO.:	30961-010							
				DRAWN BY:	E.M. CARROLL						CONTRACT NO.:	1							
3	CONSTRUCTION	3-8-16	JCJ	CHECKED BY:	C.T. PHILLIPS				DAVIDSON WATER INC. HYATTOWN PUMP STATION IMPROVEMENTS		DRAWING NUMBER:	S2							
2	BUILDING PERMIT REVIEW	2-26-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE															
1	REGULATORY REVIEW	1-20-16	JCJ																
REV	ISSUED FOR	DATE	BY																

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- NOTES:**
1. PRECAST CONCRETE HOLLOWCORE PLANK MANUFACTURER SHALL DESIGN AND PROVIDE STEEL BRACKET MEMBERS TO SUPPORT PLANKS AT ROOF OPENINGS AND TO TRANSFER LOADS TO ADJACENT PLANKS. COORDINATE FINAL PLANK OPENING LOCATION AND GEOMETRY WITH MECHANICAL REQUIREMENTS.
 2. 16x43x3/8 ANGLE SHALL BE ATTACHED TO CMU AND HOLLOWCORE PLANK WITH 3/4"Ø ADHESIVE ANCHORS @ 2'-0" OC. ANCHORS SHALL BE INSTALLED IN FULLY GROUDED CELLS WITH 6 3/4" EMBEDMENT.

— OPENINGS IN 10" HOLLOWCORE
CONC PLANKS SEE NOTE 1, TYP

— 10" HOLLOW-CORE
CONC PLANKS

— GROUTED KEYED JOINTS,
SEE 03410203, TYP

2" GROUT JT, SEE DETAIL
2/S24

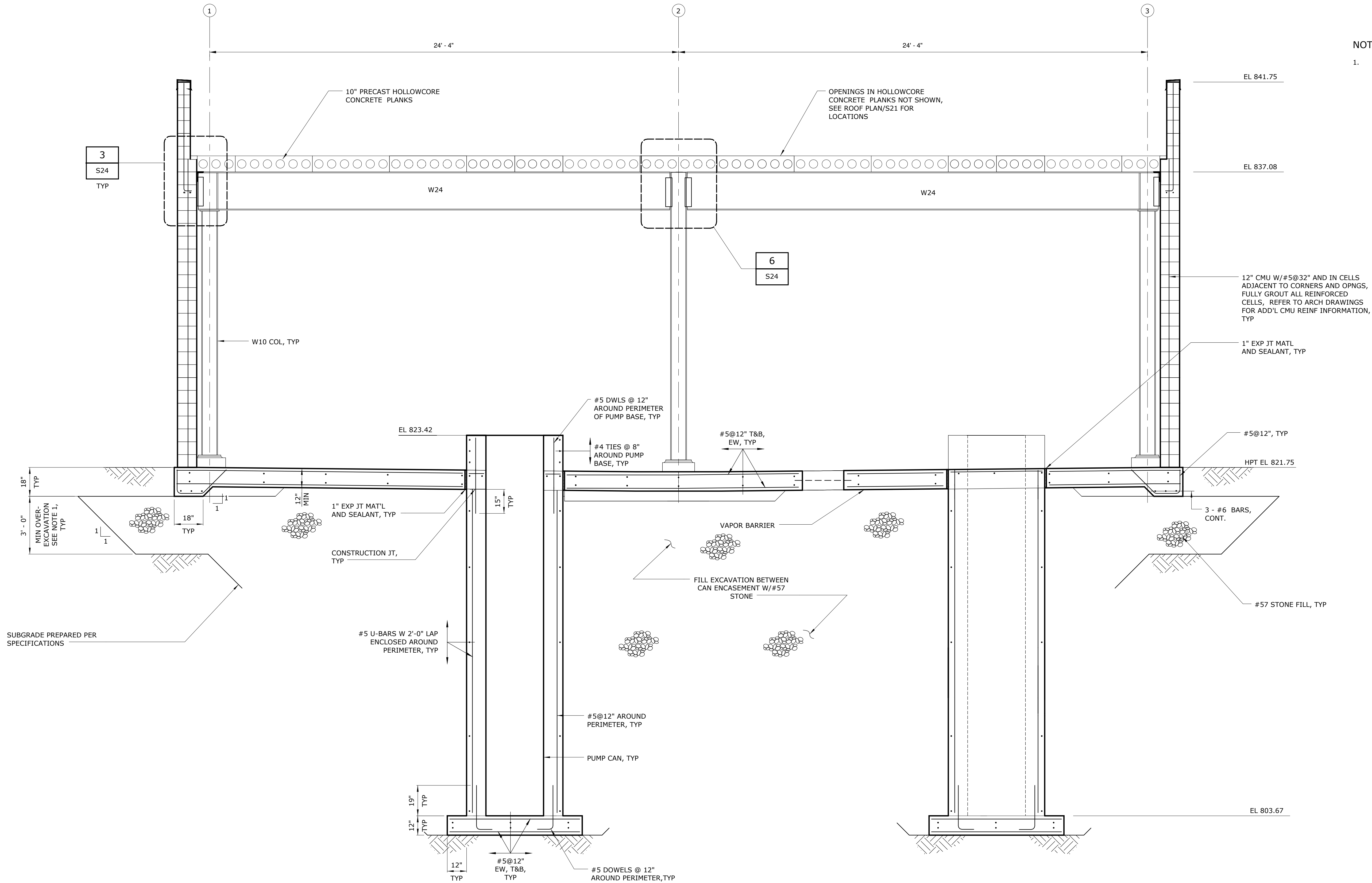
— CANTILEVER PLANKS OVER W24

— AL ACCESS LADDER,
SEE DETAIL 7/S24

ROOF PLAN
1/4" = 1'-0"

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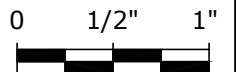
NOTE:

1. 3'-0" MINIMUM OVEREXCAVATION IS REQUIRED TO 5'-0" OUTSIDE THE ENTIRE FOOTPRINT OF THE STRUCTURE. FILL EXCAVATION WITH #57 STONE. GEOTECHNICAL ENGINEER SHALL VERIFY SUITABILITY OF SUBGRADE PRIOR TO PLACING STONE.

SECTION A
3/8" = 1'-0" S20

3	CONSTRUCTION	3-8-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	M.J.BENCHICH
DESIGNED BY:	A.D. OVERBAY
DRAWN BY:	E.M. CARROLL
CHECKED BY:	C.T. PHILLIPS
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

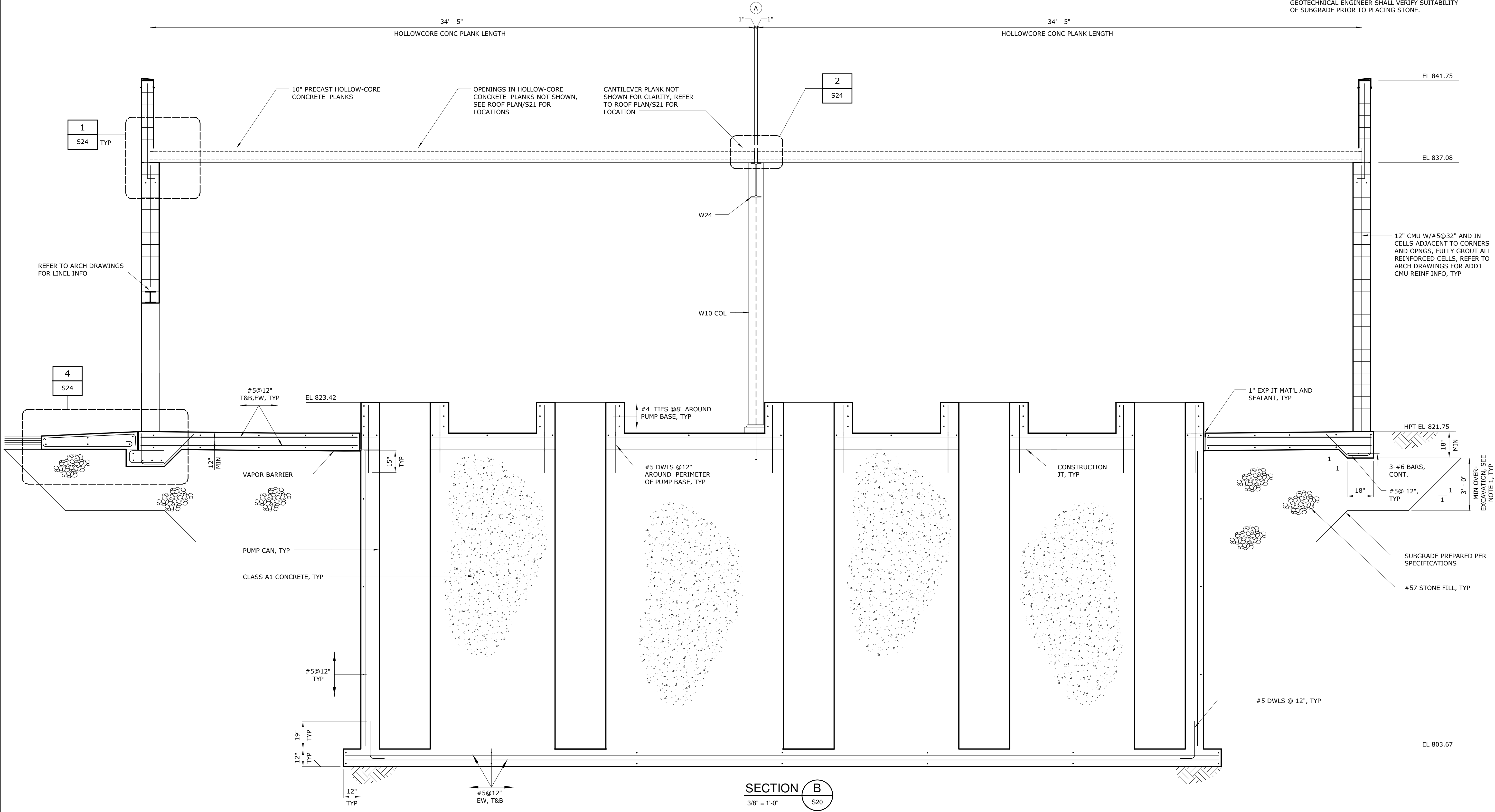
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
STRUCTURAL
SECTION

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

S22

NOTE:
1. 3'-0" MINIMUM OVEREXCAVATION IS REQUIRED TO 5'-0" OUTSIDE THE ENTIRE FOOTPRINT OF THE STRUCTURE. FILL EXCAVATION WITH #57 STONE. GEOTECHNICAL ENGINEER SHALL VERIFY SUITABILITY OF SUBGRADE PRIOR TO PLACING STONE.



3	CONSTRUCTION	3-8-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	M.J.BENCHICH
DESIGNED BY:	A.D. OVERBAY
DRAWN BY:	E.M. CARROLL
CHECKED BY:	C.T. PHILLIPS
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR CONSTRUCTION

Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

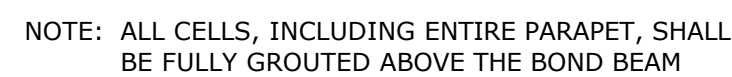
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
STRUCTURAL
SECTION

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	S23

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3/4" BP CENTERED
ON COL. ON 1" MIN
NON-SHRINK GROUT

EL 822.00

W10 COL

4-3/4" Ø ASTM F1554
HEADED ANCHOR BOLTS

3-#3 TIES

10" MIN

8-#5 DWLS EQ SPACED
AROUND PEDESTAL
PERIMETER

SLAB REINF NOT SHOWN

SECTION B-B

NOTE: CONNECTION IS SIMILAR EACH END OF FRAME

Technical drawing of a column-to-beam connection. The drawing shows a cross-section of a W10x49 column and a W24 BM beam. The column is centered on the beam. The connection is secured with 4-3/4" Ø A325 BOLTS. The beam has a depth of 1 1/2" and a flange thickness of 1". The column has a web thickness of 1/4". The connection is labeled with dimensions and components: 1 1/2" TYP, 1", 5", W10x49 COLUMN, W24 BM, 3/4" X 12" X 12" PL CENTERED ON COL, 4-3/4" Ø A325 BOLTS, and ADJ CMU (NOT SHOWN) PROVIDE 1" +/- CLEARANCE.

W10 COL

#5@12"
T&B, EW

SLAB STEEL SHALL BE CONT OVER THICKENED PORTION

18"
MIN
12"
MIN

#6@8" EW

1 1

NOTE: EXTEND SLAB FULL WIDTH OF BUILDING. FOOTING LUG AT
SLAB SHALL BE 2'-0" DEEP AS SHOWN (18" ELSEWHERE).

[illegible]

Technical drawing showing a cross-section of a roof access door detail. The drawing illustrates the connection between a precast hollowcore roof plank and a 2" SCH 80 pipe rail. The roof plank is shown with a sloped top surface and a bottom surface. The pipe rail is shown with a 1/4" slope. The connection is secured with 2-5/8" Ø SST adhesive anchor w/5" min embed. The drawing also shows a 3/8" x 6" x 6" AL base plate or cast AL base flange. The drawing includes dimensions: 8" for the height of the pipe rail, 1/4" for the slope, and 18" for the grout in plank voids. The drawing is labeled with various components and dimensions.


Labels and dimensions:

- ROOF ACCESS DOOR NOT SHOWN, SEE ARCH DRAWINGS
- PRECAST HOLLOWCORE ROOF PLANK
- 3/8" x 6" x 6" AL BASE PL OR CAST AL BASE FLANGE
- 1/4"
- 2-5/8" Ø SST ADHESIVE ANCH W/5" MIN EMBED
- PROVIDE 18" MIN GROUT IN PLANK VOIDS
- 2" SCH 80 PIPE RAIL
- 8"
- SEE 0551500, SIM

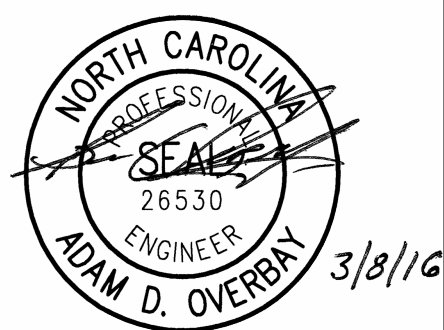
NOTES:

1. LADDER UP SHALL BE PROVIDED WITH LADDER (NOT SHOWN).
2. SUPPORTS BRACKETS SHALL BE PROVIDED SIMILAR TO 0551500 EXCEPT THAT SUPPORT SHALL BE FABRICATED (AT A MINIMUM) OF 3/8" x 4" ALUMINUM PLATE AND SHALL EXTEND TO THE ADJACENT WALL.
3. LADDER SHALL BE ATTACHED TO FLOOR WITH WELDED PLATE OR BASE FLANGE AS SHOWN AT TOP OF LADDER.

3	CONSTRUCTION	3-8-16	JCJ		
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

PROJECT ENGINEER:	M.J.BENCHICH
DESIGNED BY:	A.D. OVERBAY
DRAWN BY:	E.M. CARROLL
CHECKED BY:	C.T. PHILLIPS
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	<div style="display: flex; align-items: center;"> 0 1/2" 1"  </div>

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

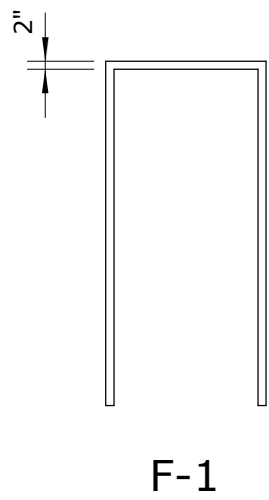
PUMP STATION STRUCTURAL SECTION AND DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	S24

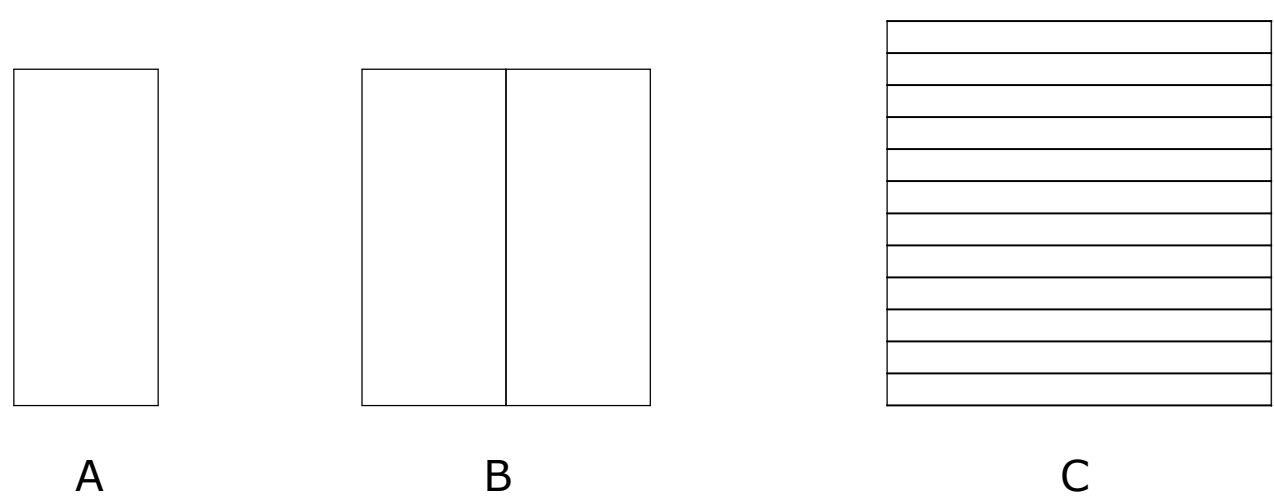
ROOM SCHEDULE																	
ROOM	DESCRIPTION	FLOOR		BASE		WALL-NORTH		WALL-EAST		WALL-SOUTH		WALL-WEST		CEILING			REMARKS
		SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	HEIGHT	
1	PUMP ROOM	CONCRETE	SEALER	CONCRETE	SEALER	CONCRETE	SEALER	CONCRETE	SEALER	CONCRETE	SEALER	CONCRETE	SEALER	CONCRETE	SEALER	15'-4"	

DOOR SCHEDULE																	
NO.	FRAME		TYPE	DOOR			DETAILS				GLAZING	SECURITY WIRING	FIRE LABEL	FINISH	HARDWARE NUMBER	THRESHOLD	REMARKS
	TYPE	MATERIAL		MATERIAL	WIDTH	HEIGHT	THICKNESS	HEAD	JAMB	SILL							
1A	F-1	FRP	B	FRP	(2) 3'-2"	7' - 2"	0' - 1 3/4"	2	2	2	--	-	-	PT	2	AL	
1B	F-1	FRP	A	FRP	3' - 0"	7' - 2"	0' - 1 3/4"	3	3	3	--	-	-	PT	1	AL	
1C	MFR	SS	C	SS	10' - 0"	11' - 4"	0' - 0 3/4"	1	1	1	--	-	-	--	-	-	
1D	F-1	FRP	A	FRP	3' - 0"	7' - 2"	0' - 1 3/4"	3	3	3	--	-	-	PT	1	AL	
DOOR & WINDOW LEGEND							DOOR SCHEDULE NOTES:										
AL							1.										
FRP							--										
PT							-										
MFR							-										
SS							-										

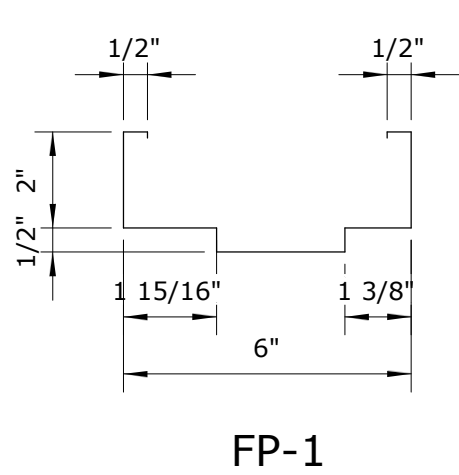
FRAME TYPES 1/4" = 1'-0"



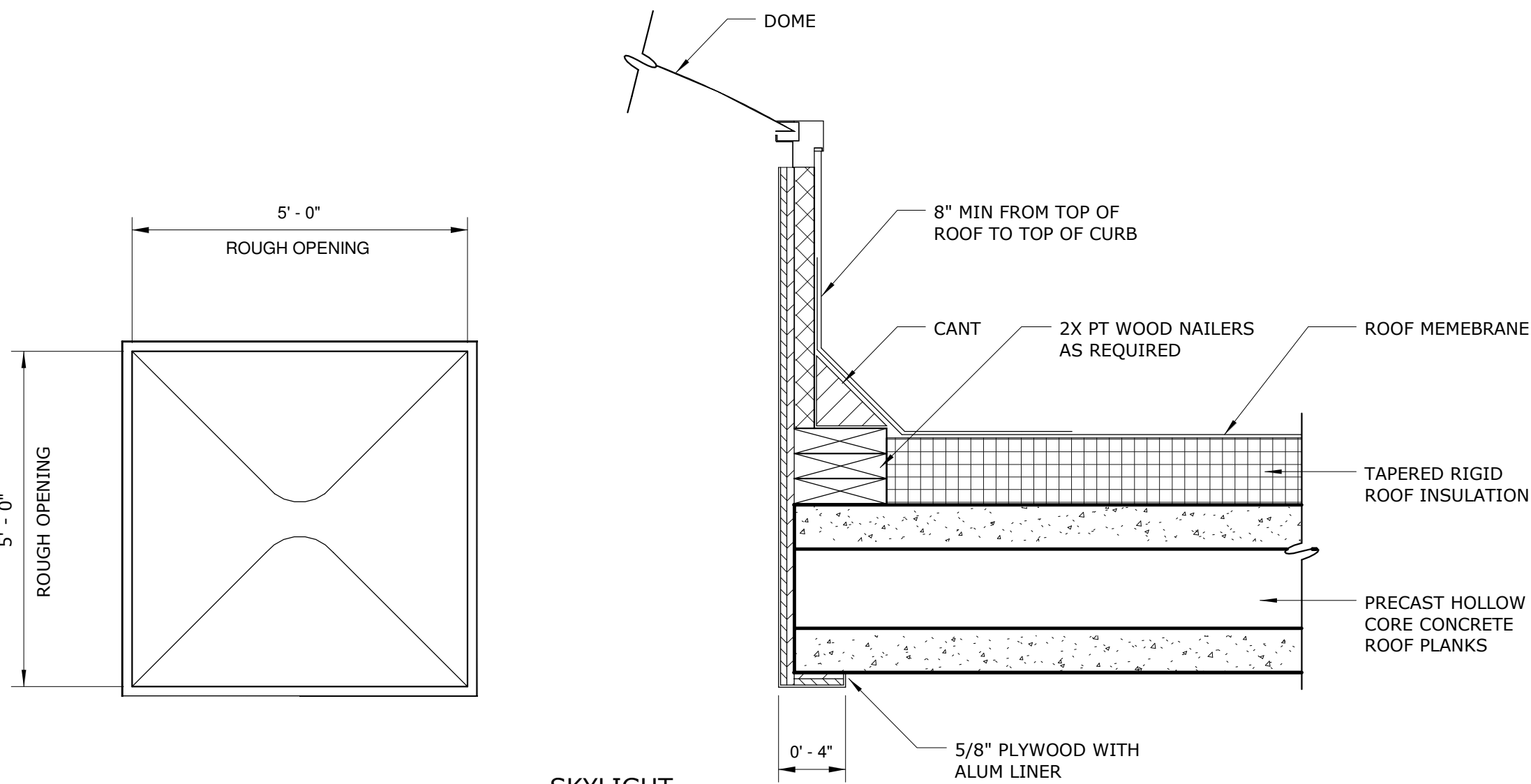
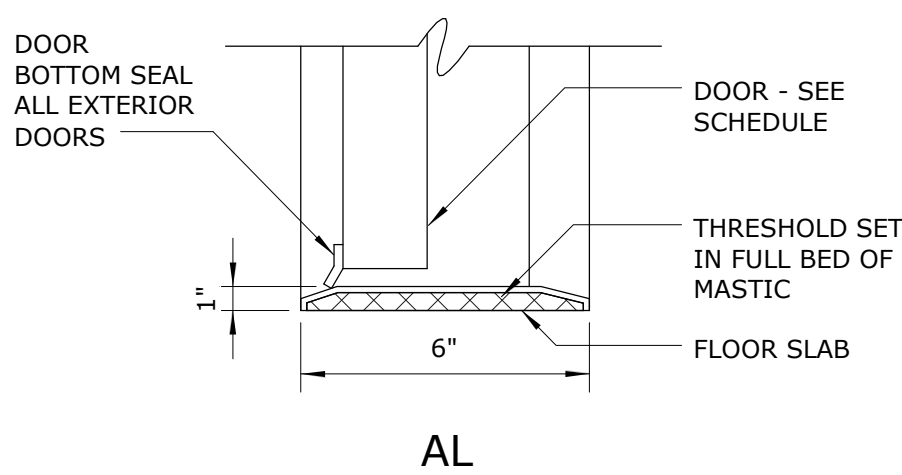
DOOR TYPES 1/4" = 1'-0"



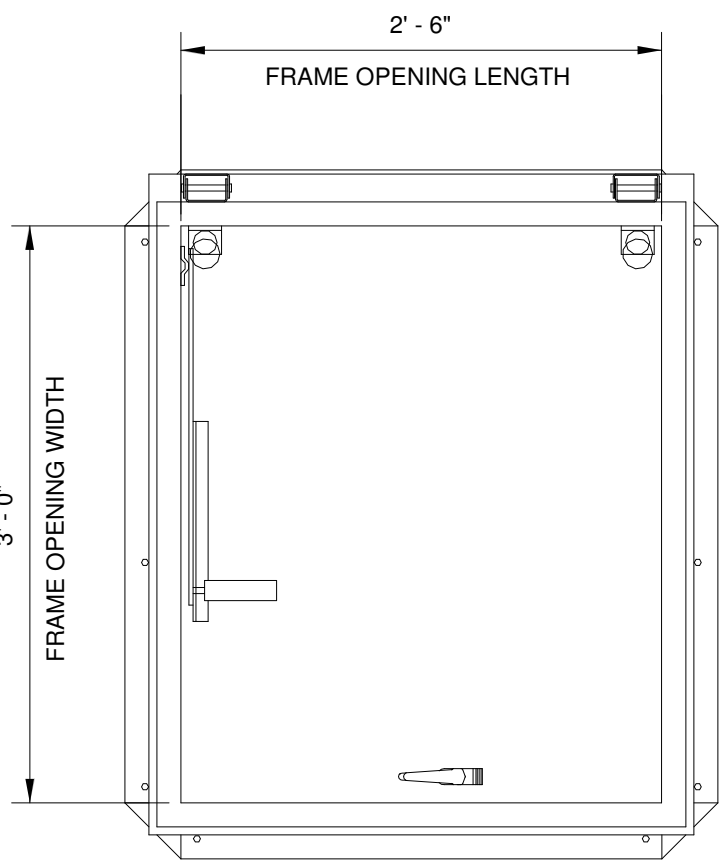
FRAME PROFILES 3" = 1'-0"



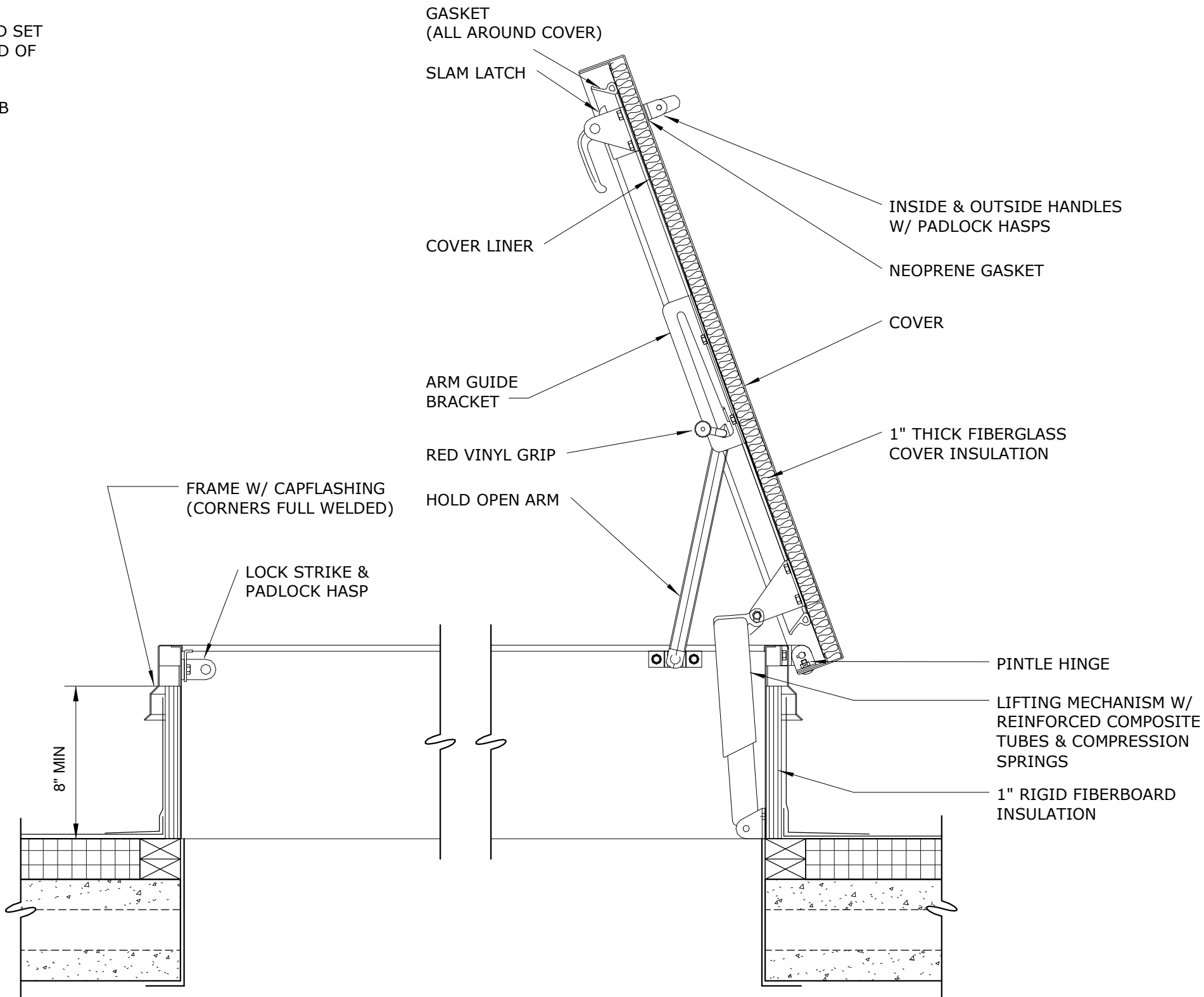
THRESHOLD TYPES 3" = 1'-0"



SKYLIGHT
DETAIL 1
1/2" = 1'-0"



ROOF SCUTTLE - TYPE S



SECTION VIEW

DETAIL 2
1" = 1'-0"

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	W. RUSSELL
				DRAWN BY:	E. CARROLL
				CHECKED BY:	W. RUSSSELL
3	CONSTRUCTION	3-08-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen
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NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

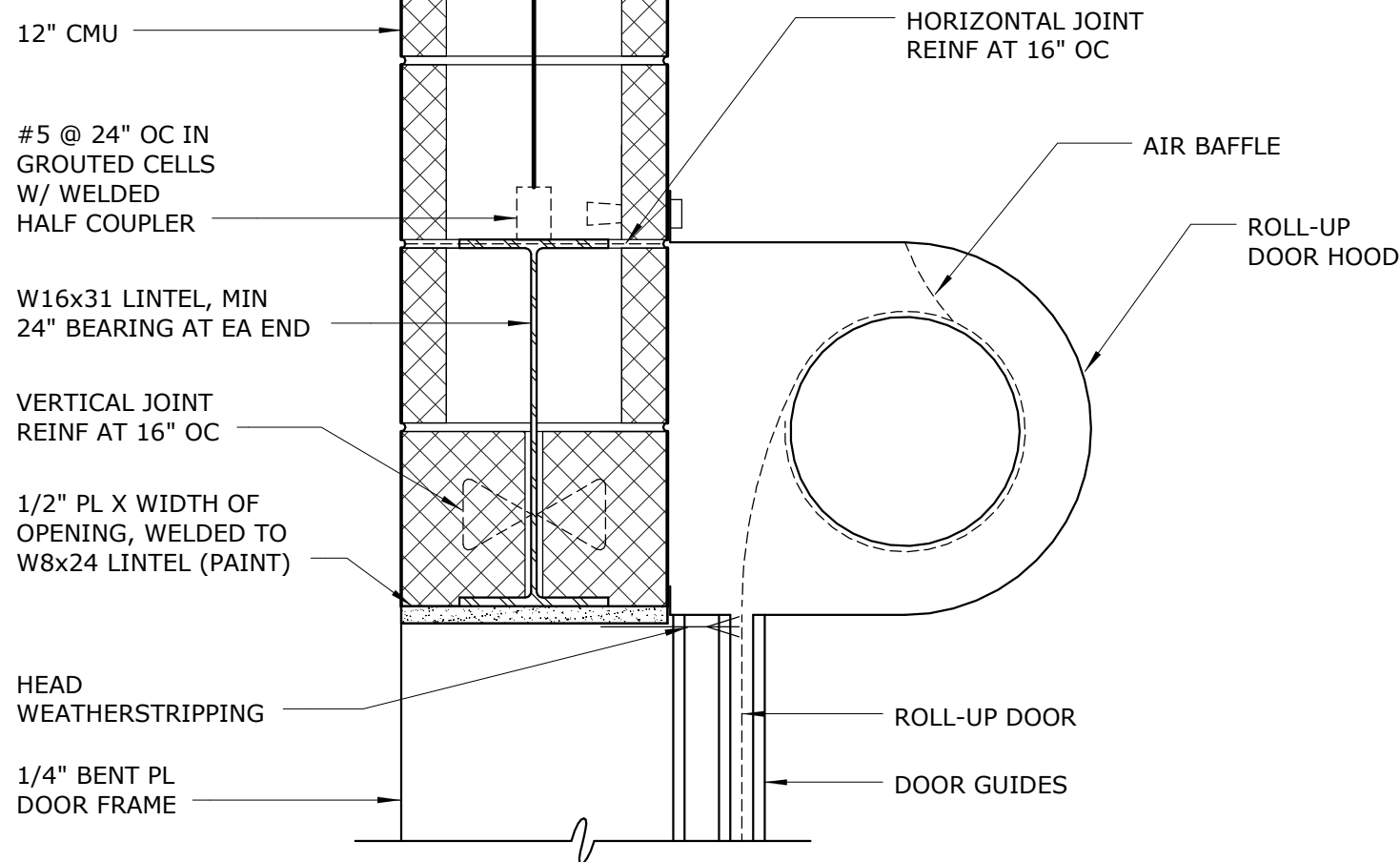
PUMP STATION
ARCHITECTURAL
SCHEDULES

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A1

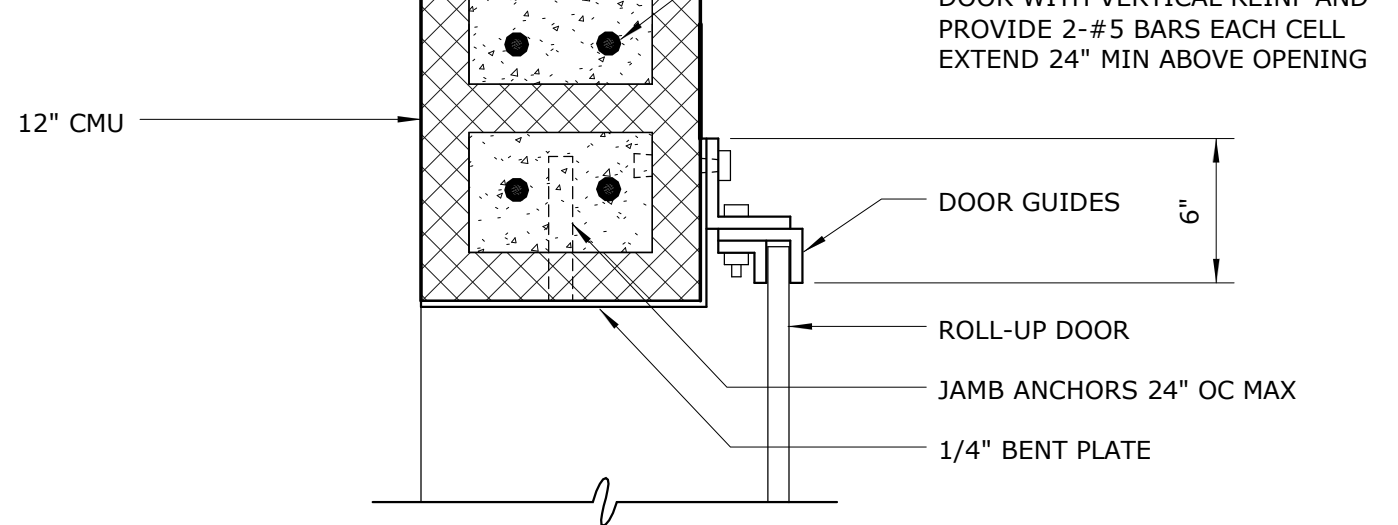
NOTES:

1. WHERE CMU IS INDICATED IN DETAIL, SEE ELEVATIONS FOR FINISH TYPE AND COLOR.

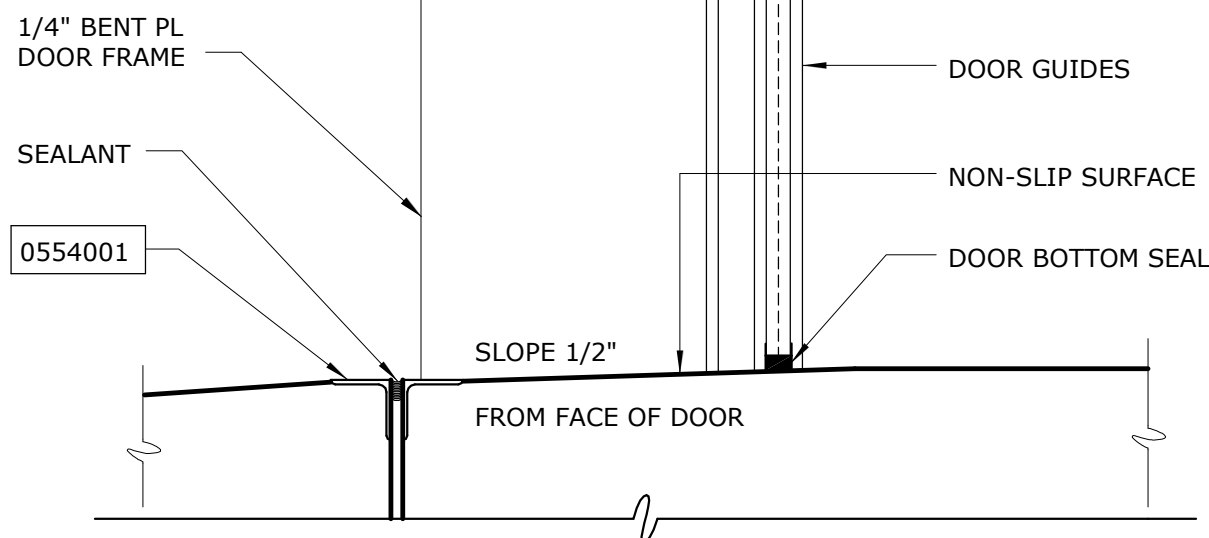
HEAD



JAMB



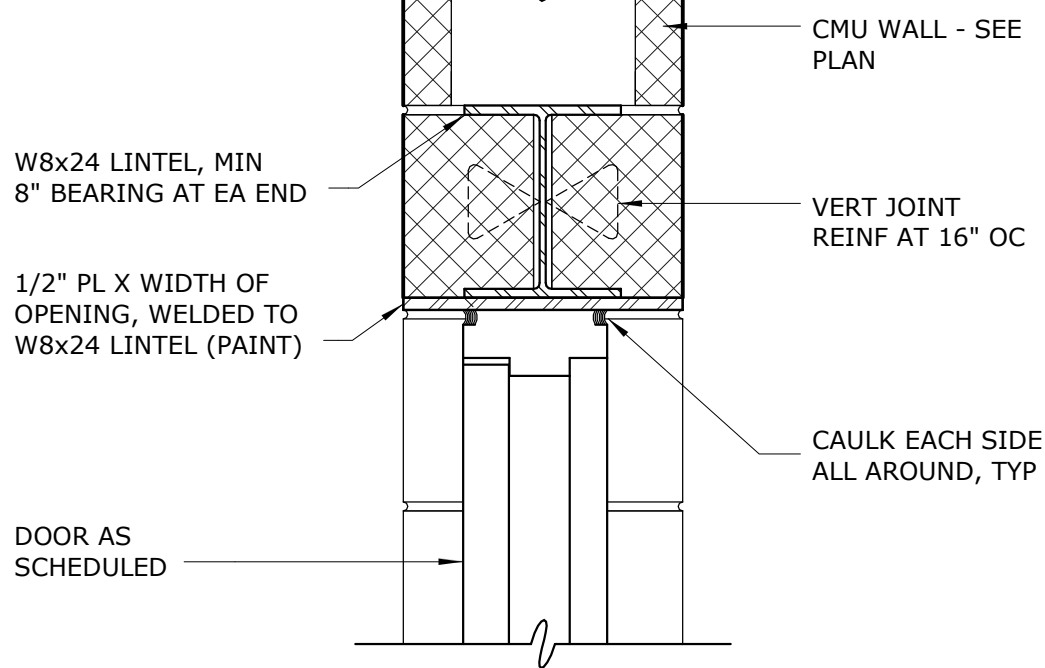
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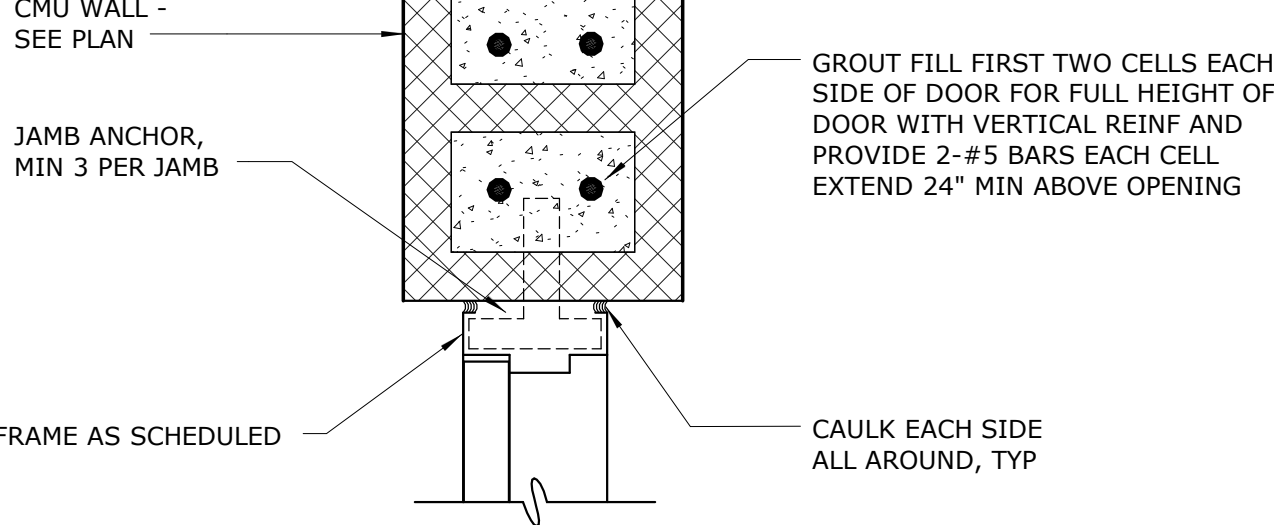
ROLL UP DOOR

DETAIL	1
1 1/2" = 1'-0"	A1

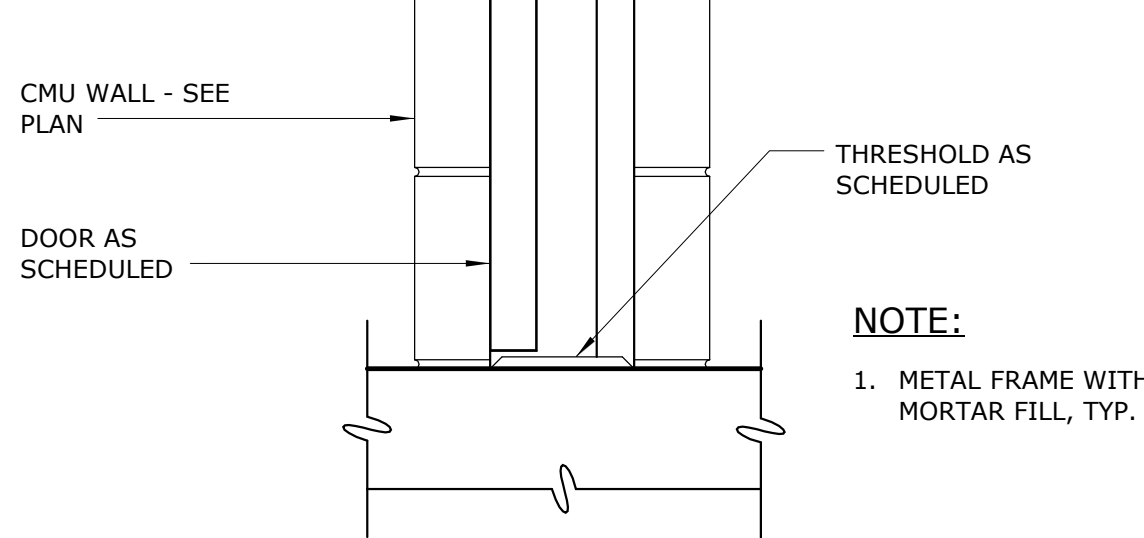
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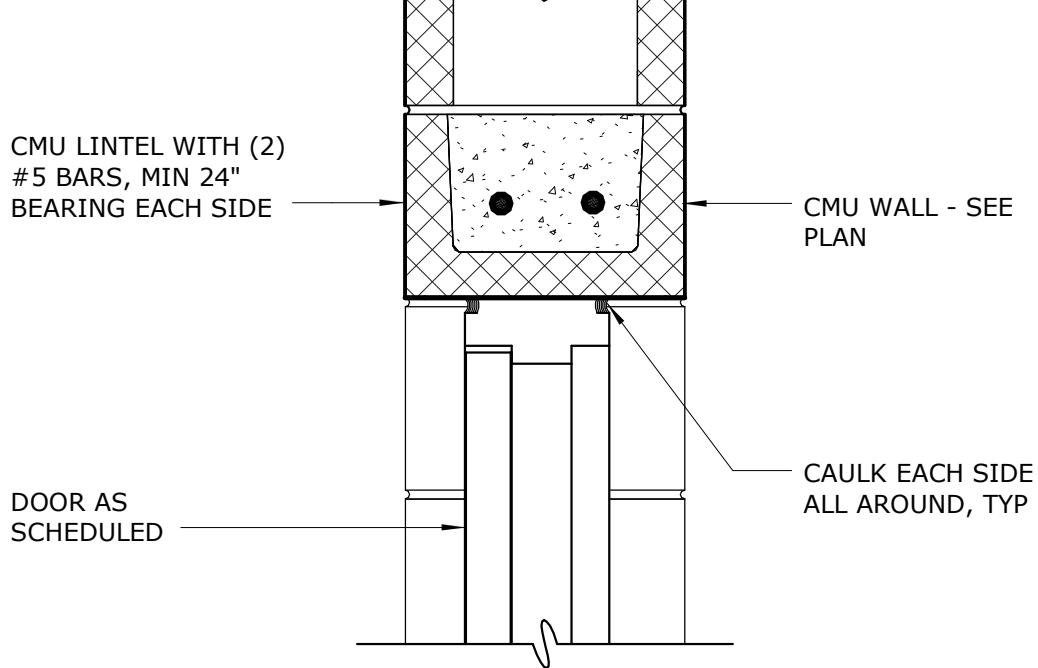
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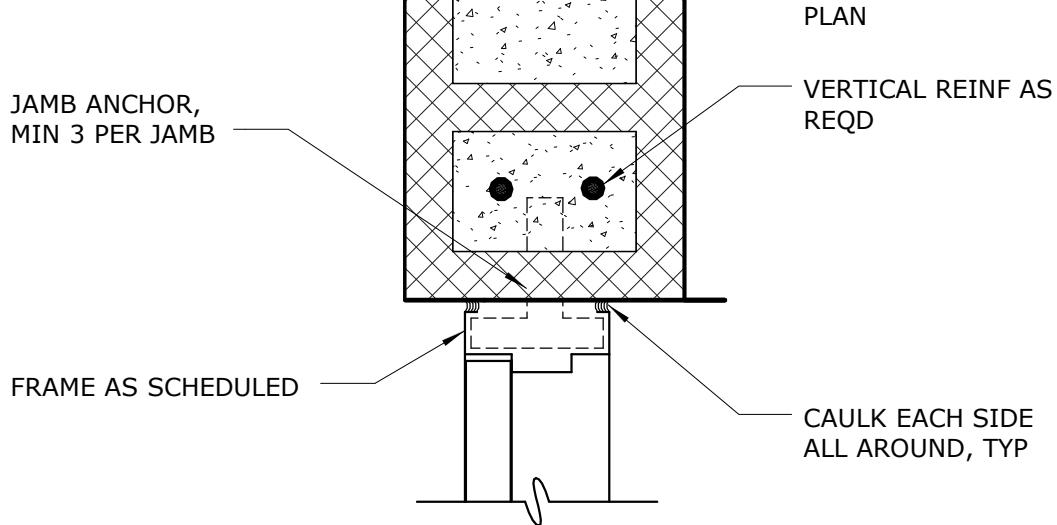
DOUBLE DOOR DETAIL

DETAIL	2
1 1/2" = 1'-0"	A1

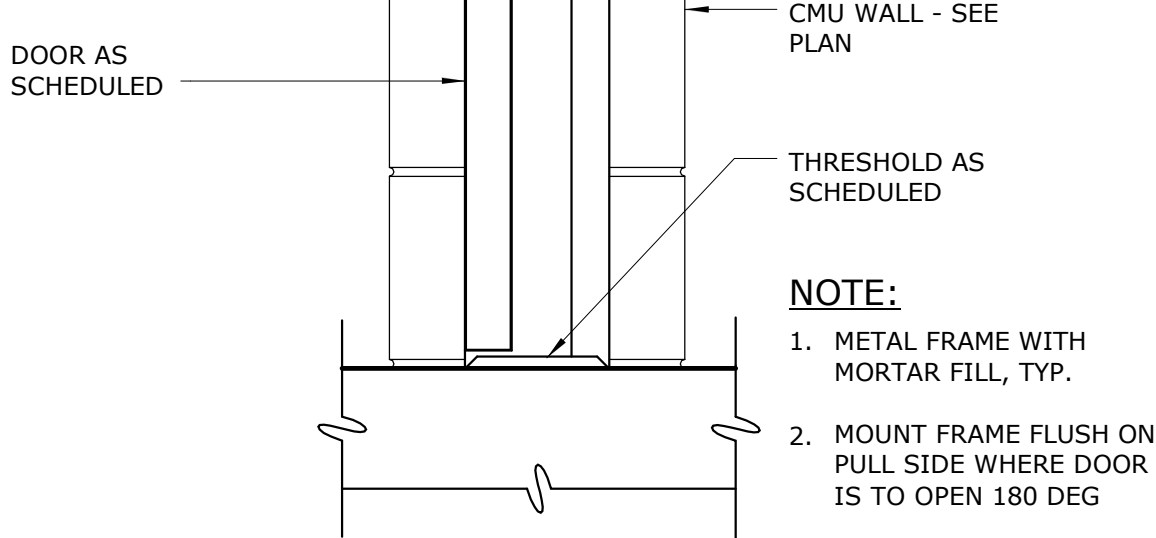
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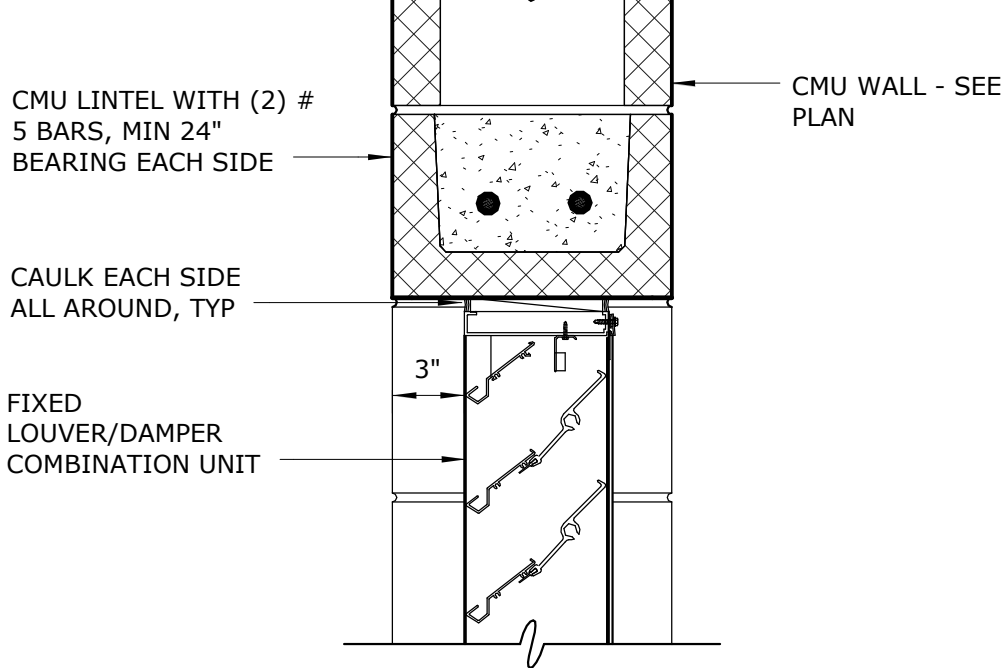
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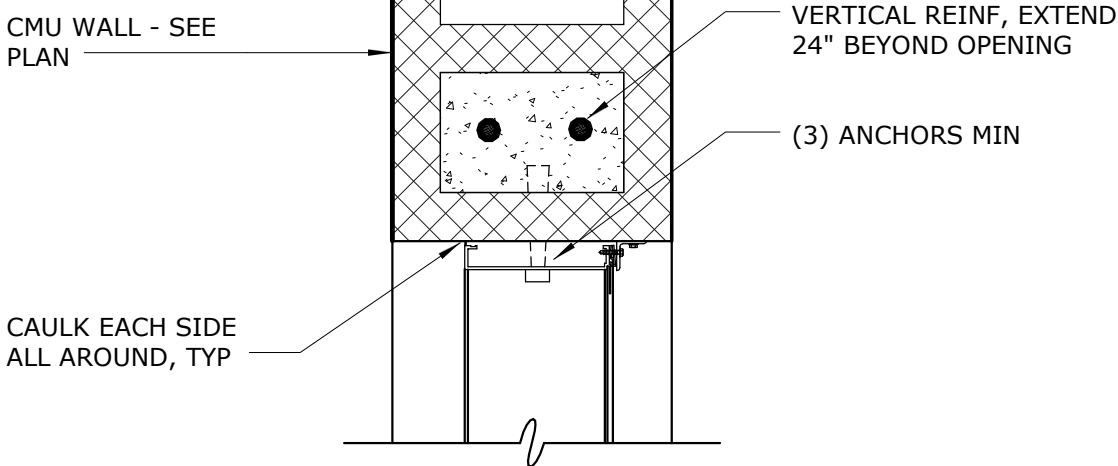
SINGLE DOOR DETAILS

DETAIL	3
1 1/2" = 1'-0"	A1

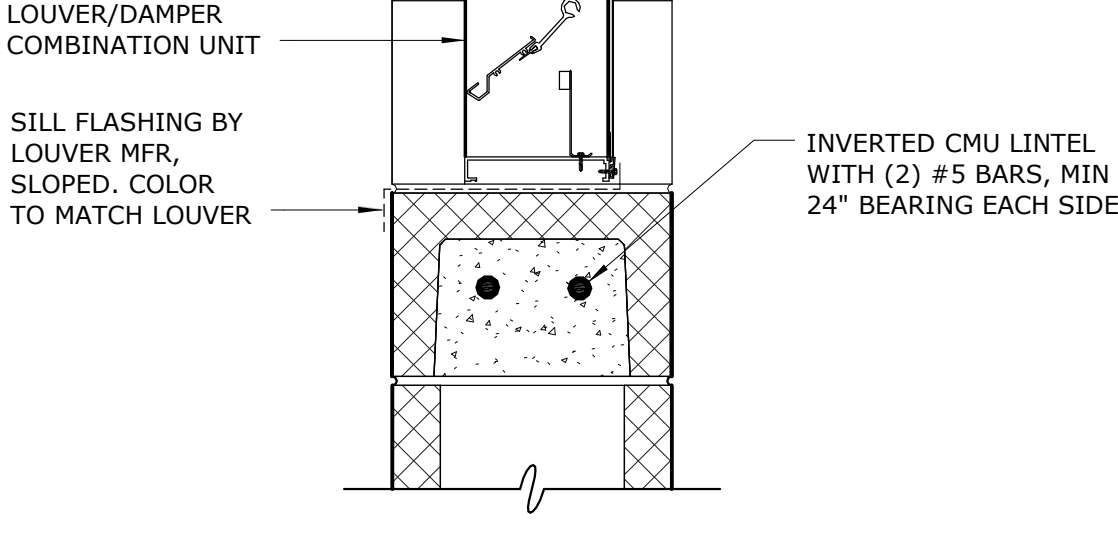
HEAD



JAMB



SILL



LOUVER DETAILS

DETAIL	4
1 1/2" = 1'-0"	A1

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3/9/2016 9:21:38 AM

REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	3-08-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	W. RUSSELL
DRAWN BY:	E. CARROLL
CHECKED BY:	W. RUSSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR
CONSTRUCTION



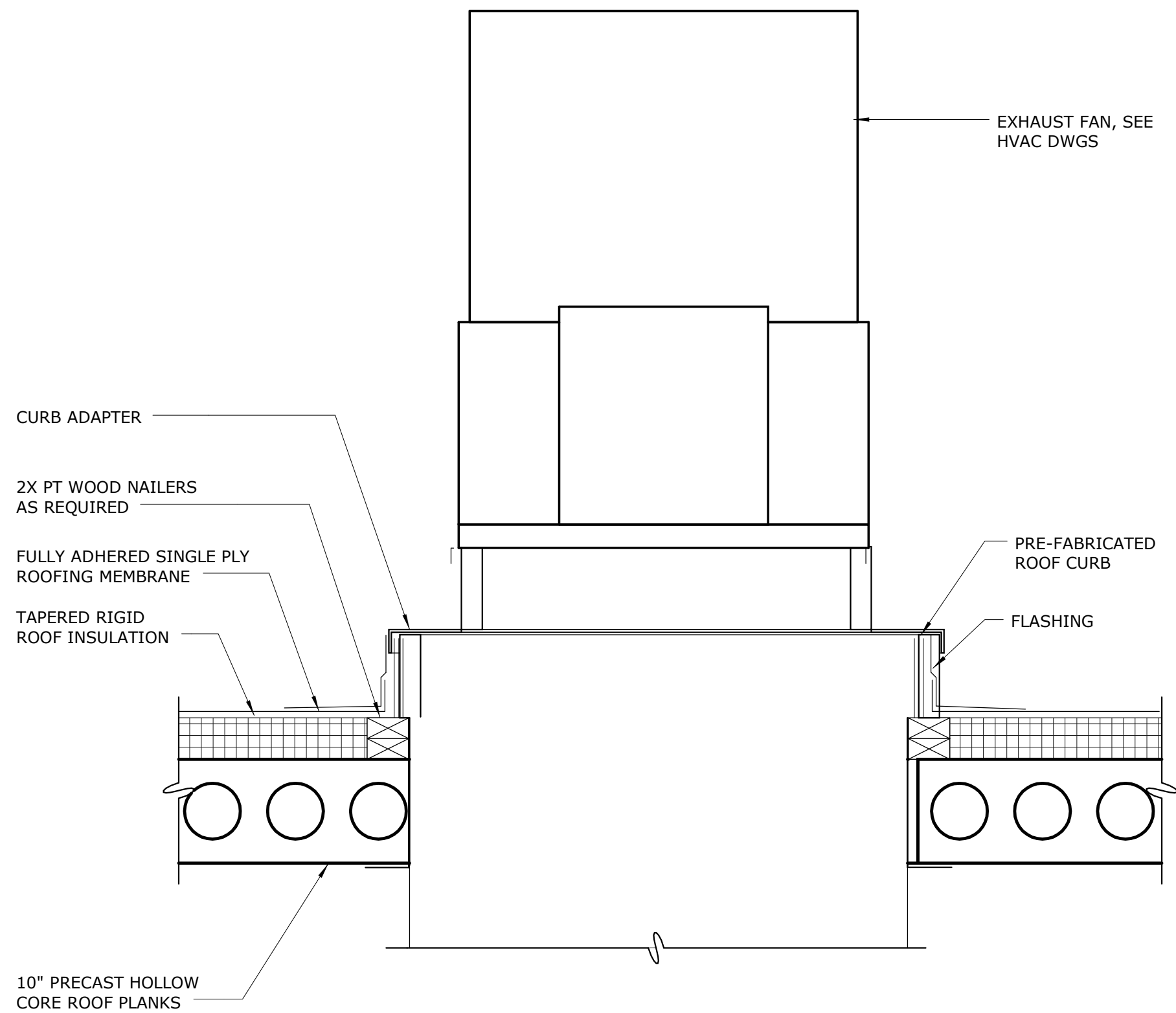
Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

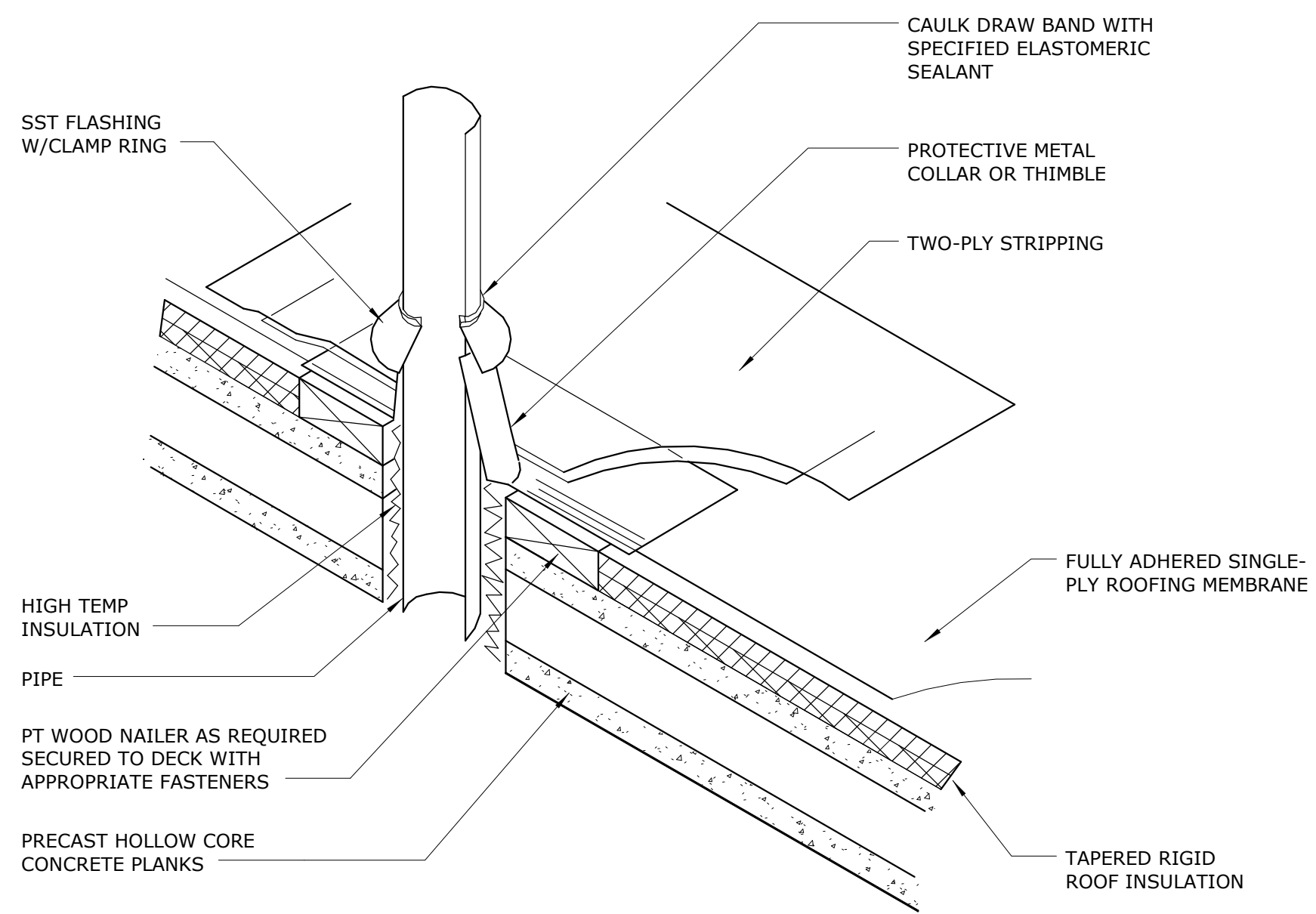
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
ARCHITECTURAL
DOOR DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	



EXHAUST FAN
DETAIL 1
1" = 1'-0" A21



RISER VENT
DETAIL 2
NTS A21

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3/9/2016 9:21:39 AM

3	CONSTRUCTION	3-08-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	W. RUSSELL
DRAWN BY:	E. CARROLL
CHECKED BY:	W. RUSSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR CONSTRUCTION

Hazen

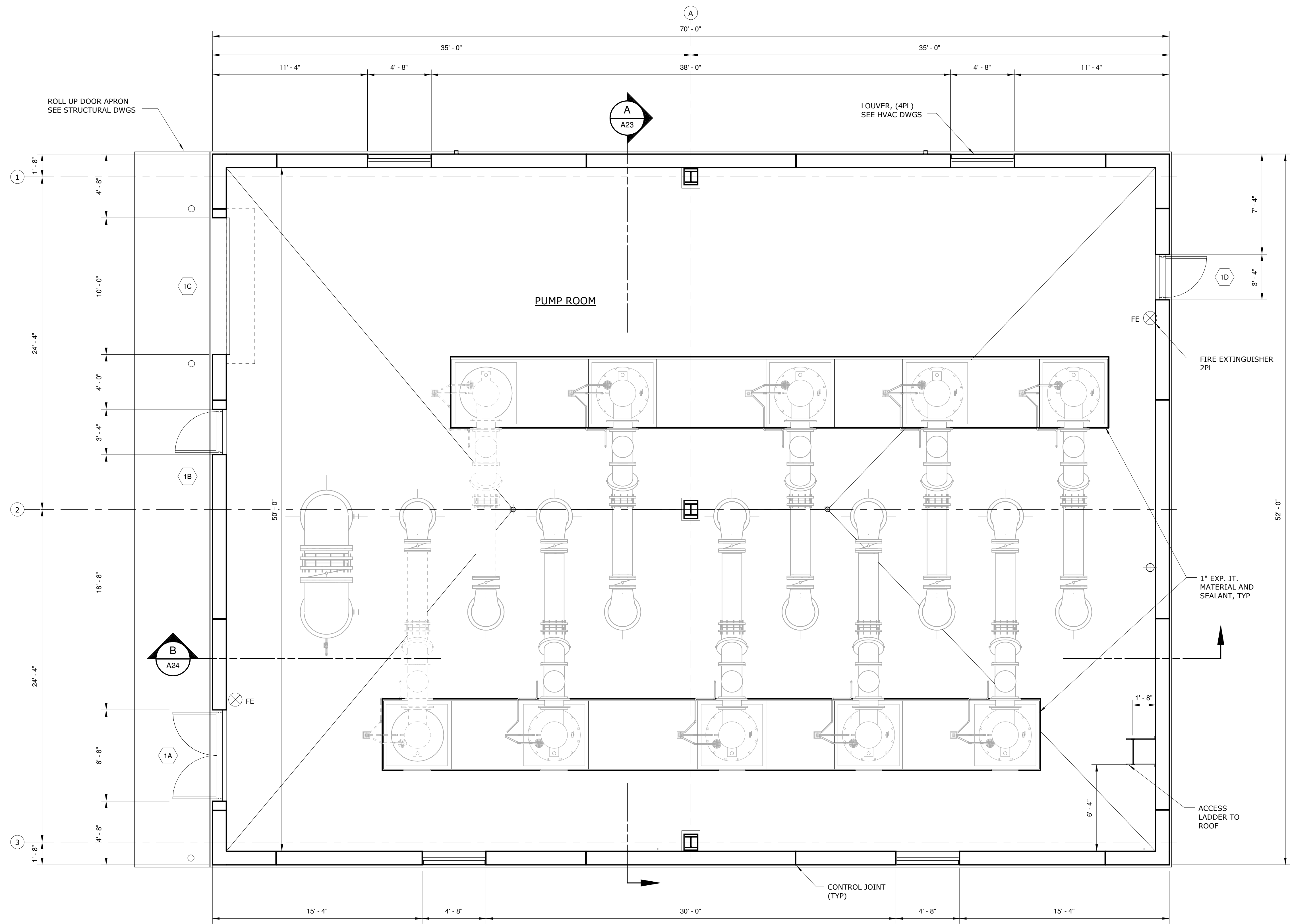
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
ARCHITECTURAL
DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A3



BOTTOM PLAN
1/4" = 1'-0"

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3/9/2016 9:21:41 AM

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	W. RUSSELL
				DRAWN BY:	E. CARROLL
				CHECKED BY:	W. RUSSSELL
3	CONSTRUCTION	3-08-16	JCI	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCI		
1	REGULATORY REVIEW	1-20-16	JCI		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
ARCHITECTURAL
BOTTOM PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A20

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3/9/2016 9:21:42 AM

3	CONSTRUCTION	3-08-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	W. RUSSELL
DRAWN BY:	E. CARROLL
CHECKED BY:	W. RUSSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1" [Scale Bar]

ISSUED FOR
CONSTRUCTION



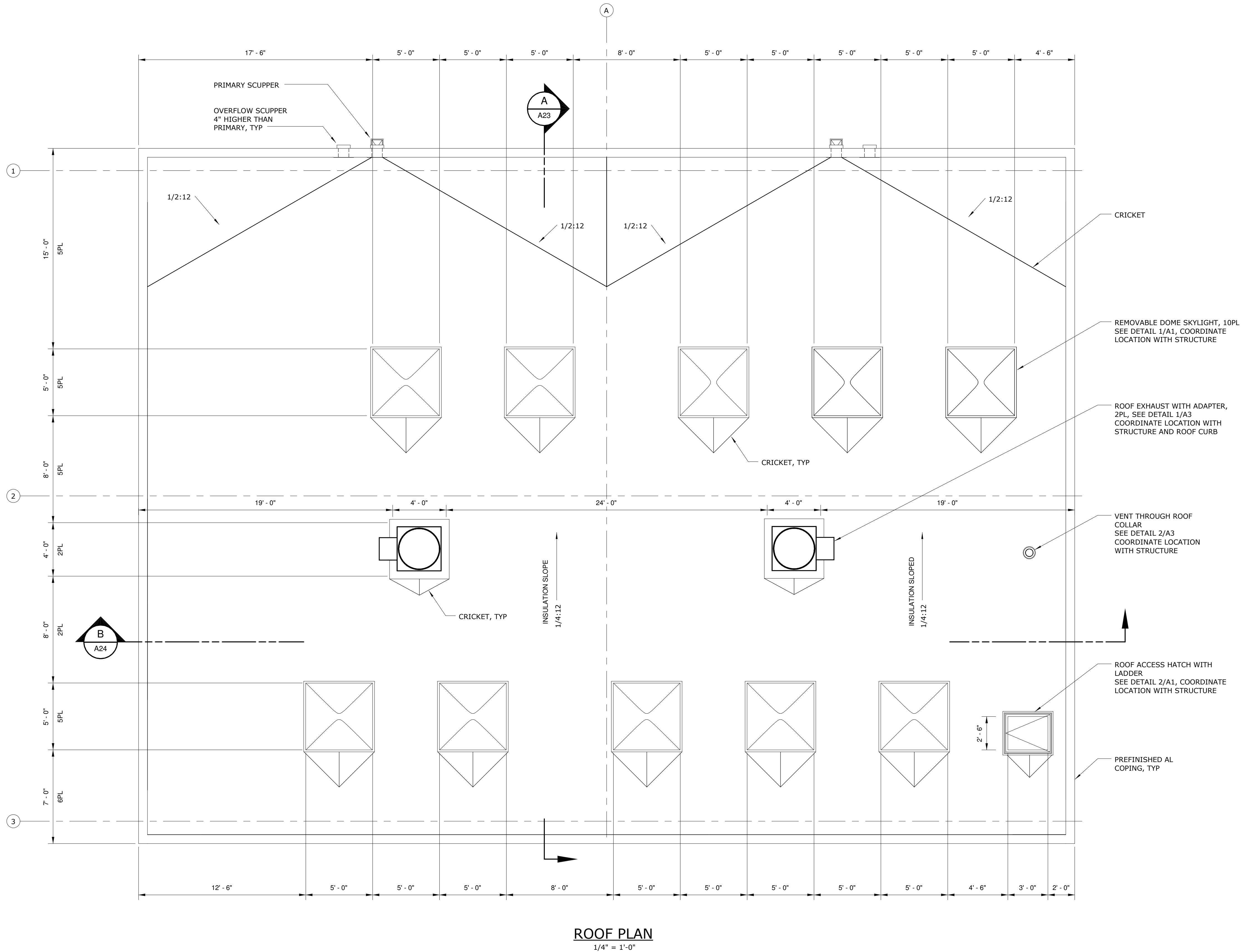
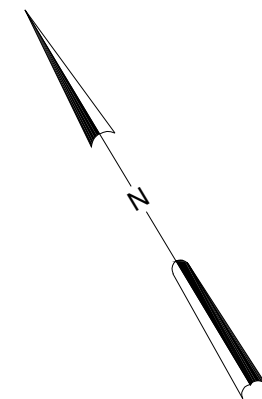
Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
ARCHITECTURAL
ROOF PLAN

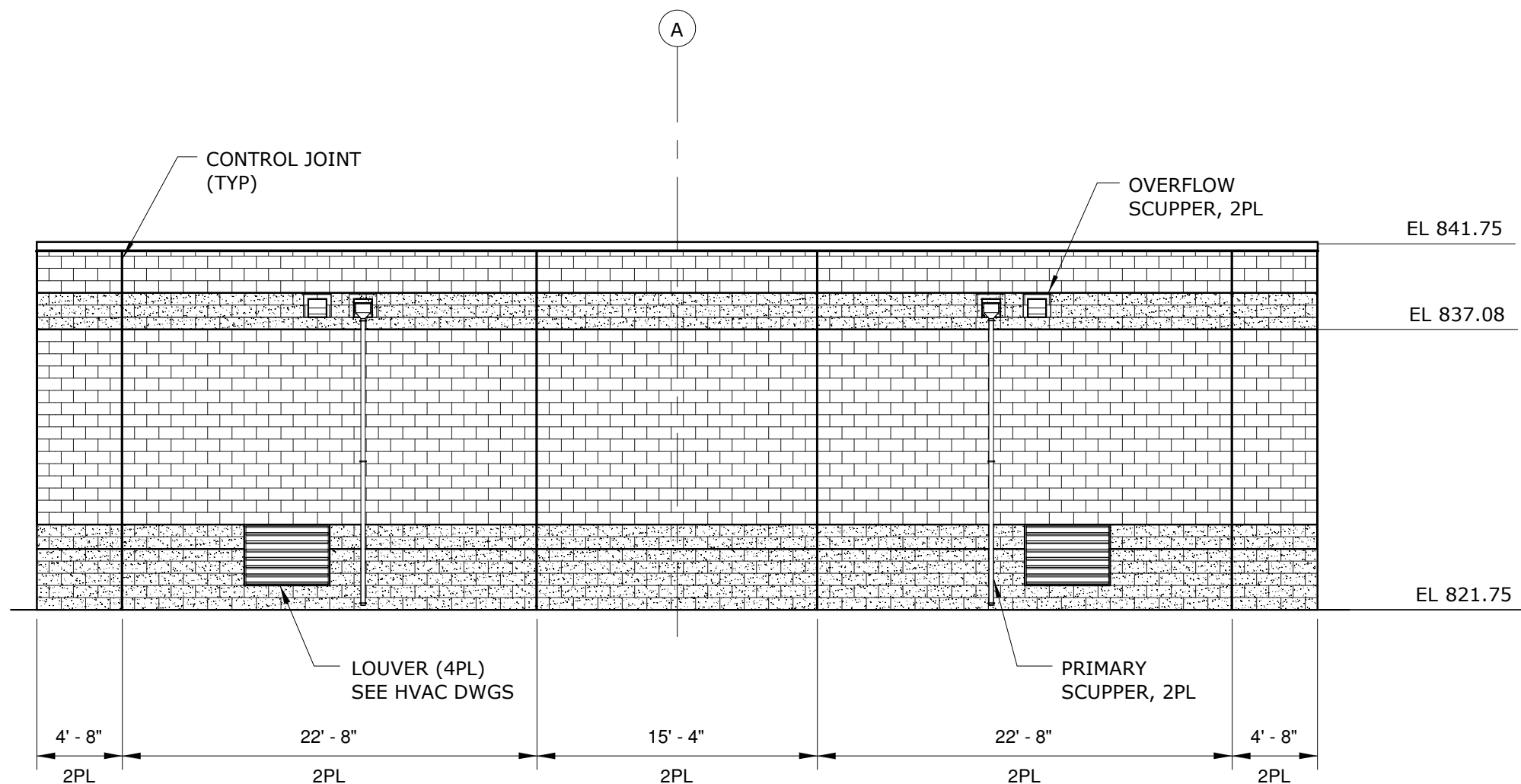
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HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A21



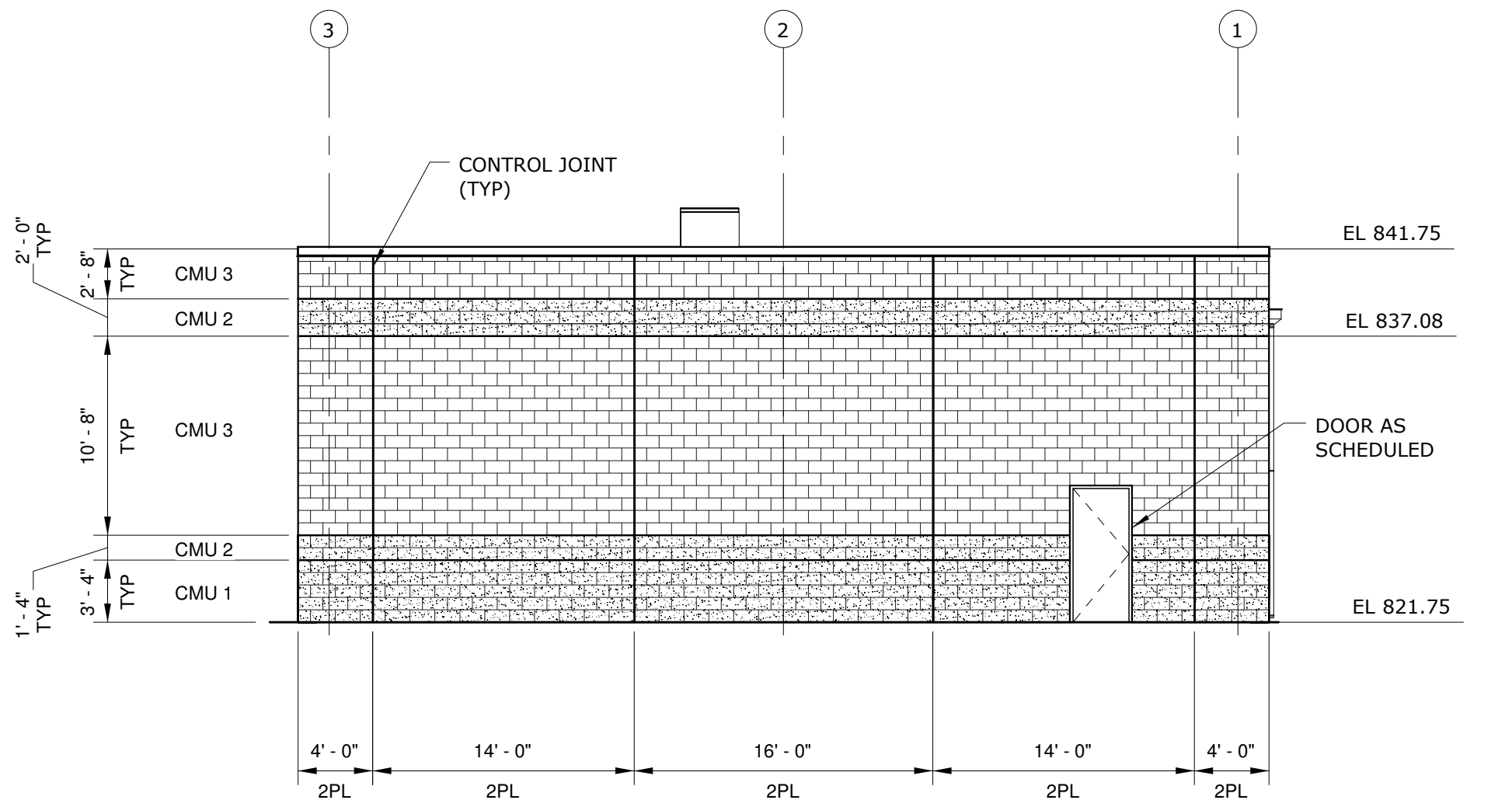
ROOF PLAN
1/4" = 1'-0"

NOTES:

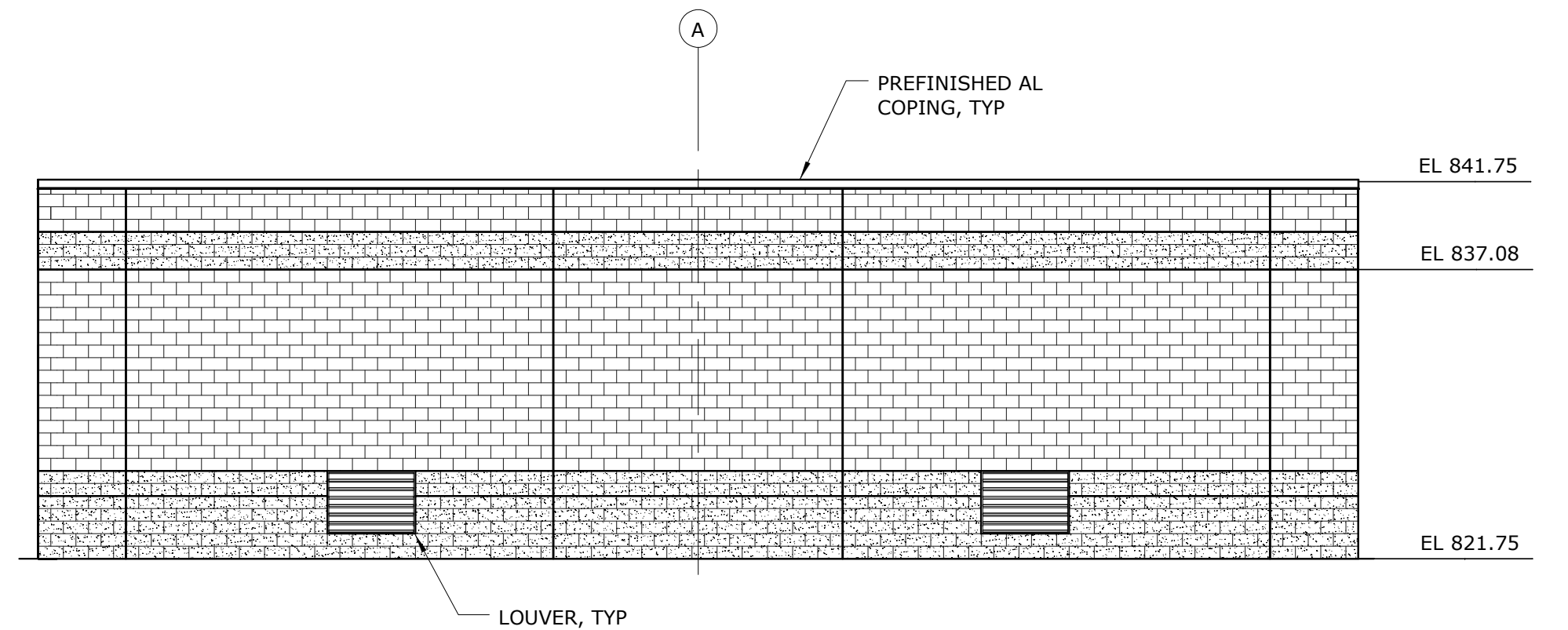
1. CMU COLOR SHALL BE SELECTED BY OWNER. SUGGESTED COLORS ARE AS FOLLOWS:
- | | |
|-------|-----------------------|
| CMU 1 | SPLIT FACE LIGHT GRAY |
| CMU 2 | SPLIT FACE DARK GRAY |
| CMU 3 | SMOOTH YELLOW TAN |
2. DOOR, LOUVER, DOWNSPOUT AND METAL COPING CAP COLOR SHALL BE AS SELECTED BY OWNER. SUGGESTED FINISH IS FLUORPOLYMER DARK GRAY COATING.



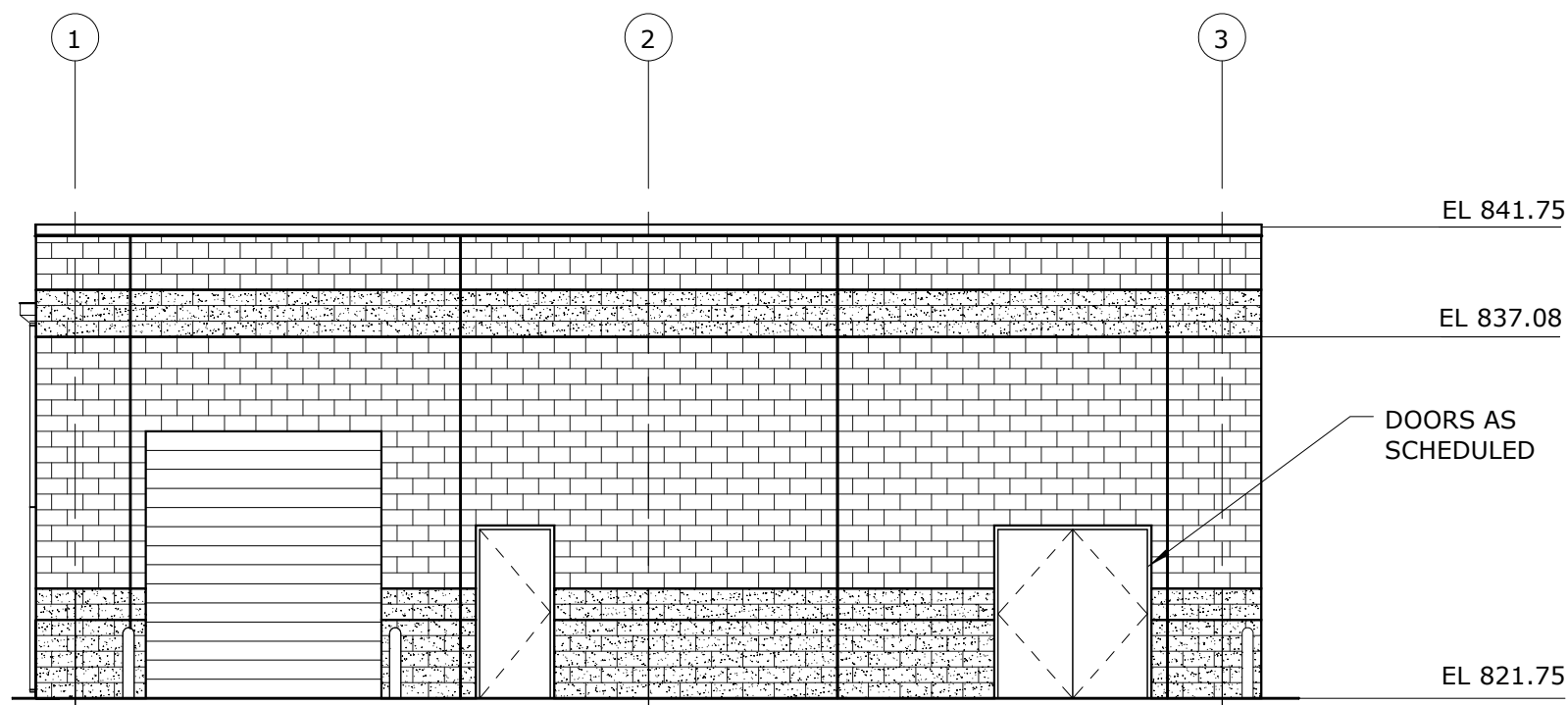
NORTH ELEVATION
1/8" = 1'-0"



EAST ELEVATION
1/8" = 1'-0"



SOUTH ELEVATION
1/8" = 1'-0"



WEST ELEVATION
1/8" = 1'-0"

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3/9/2016 9:21:43 AM

REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	3-08-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	W. RUSSELL
DRAWN BY:	E. CARROLL
CHECKED BY:	W. RUSSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR
CONSTRUCTION



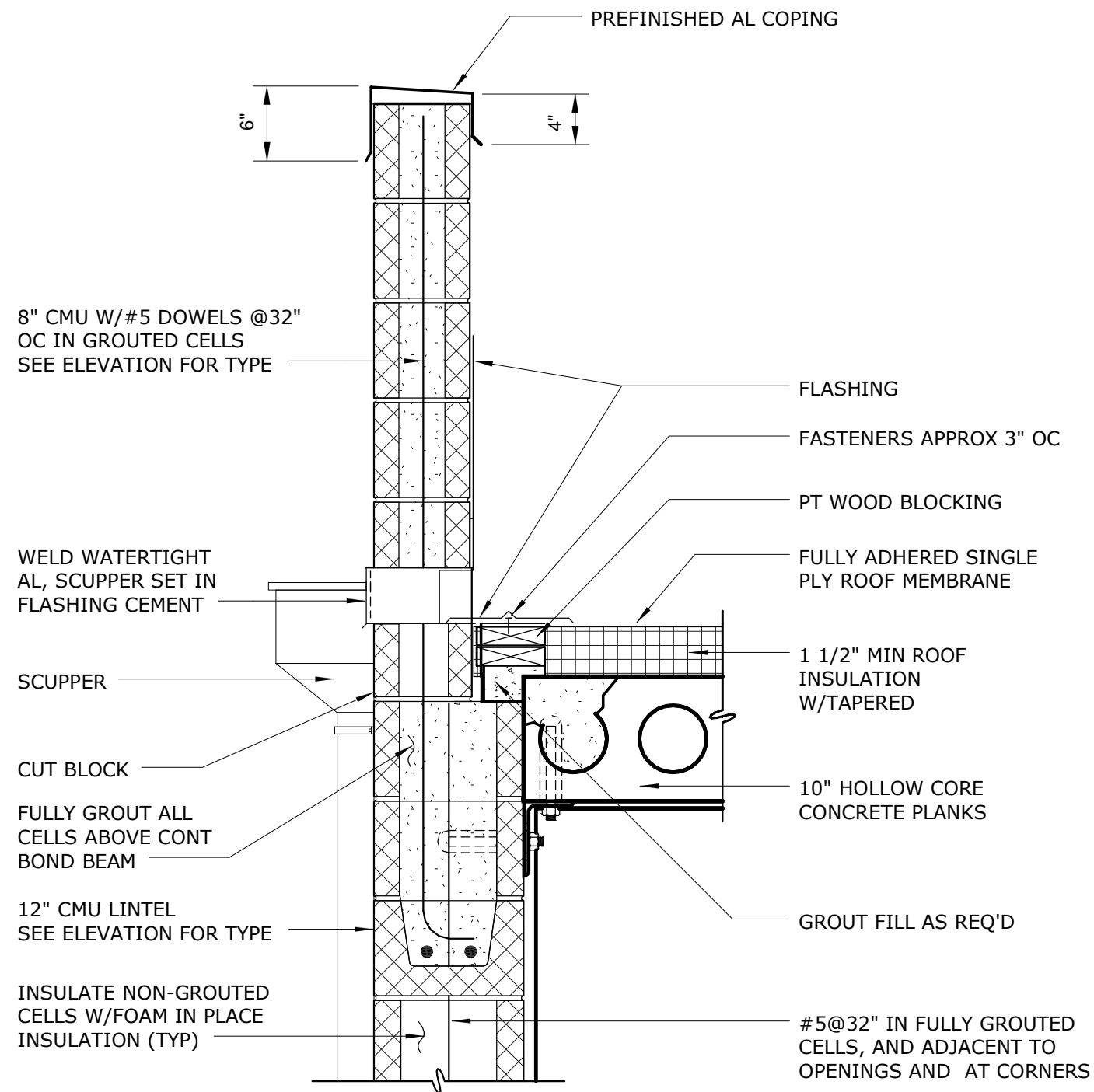
Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

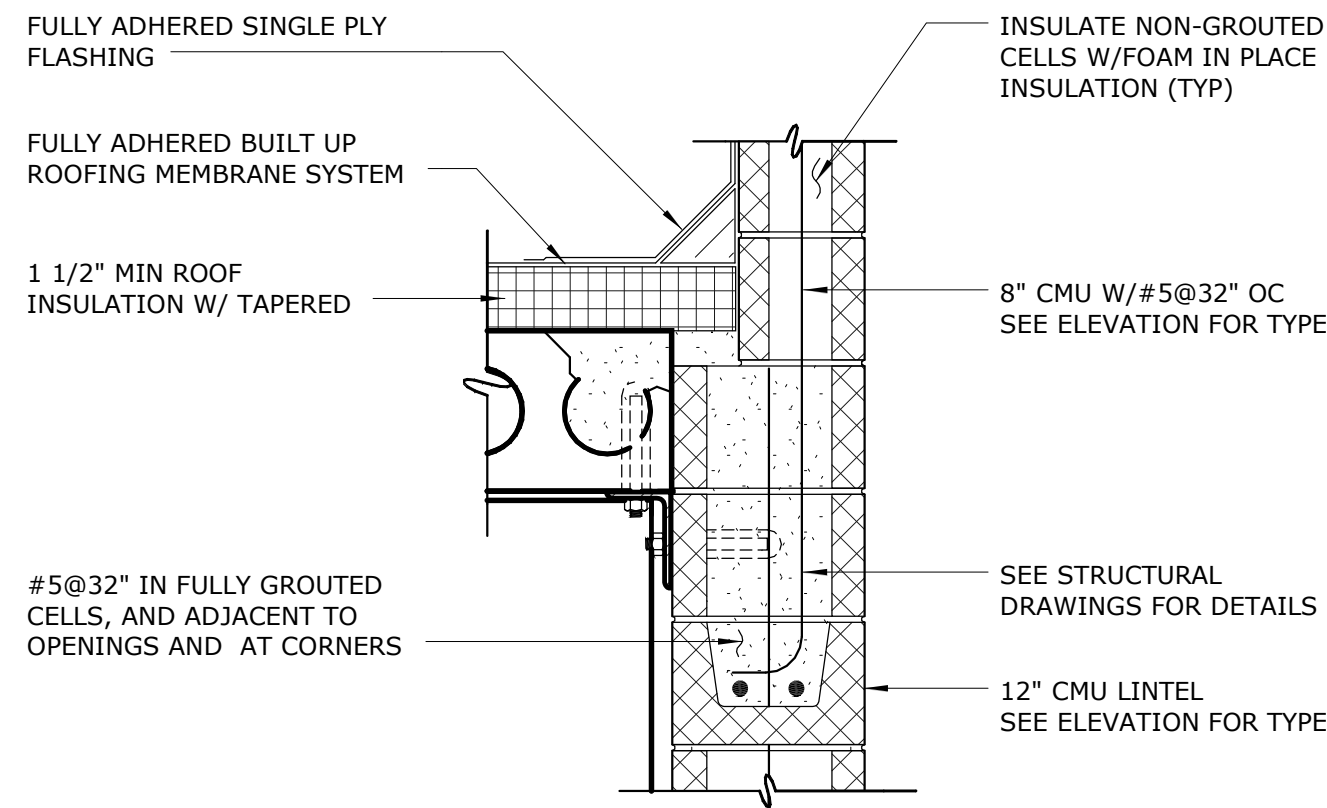
PUMP STATION
ARCHITECTURAL
ELEVATIONS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A22



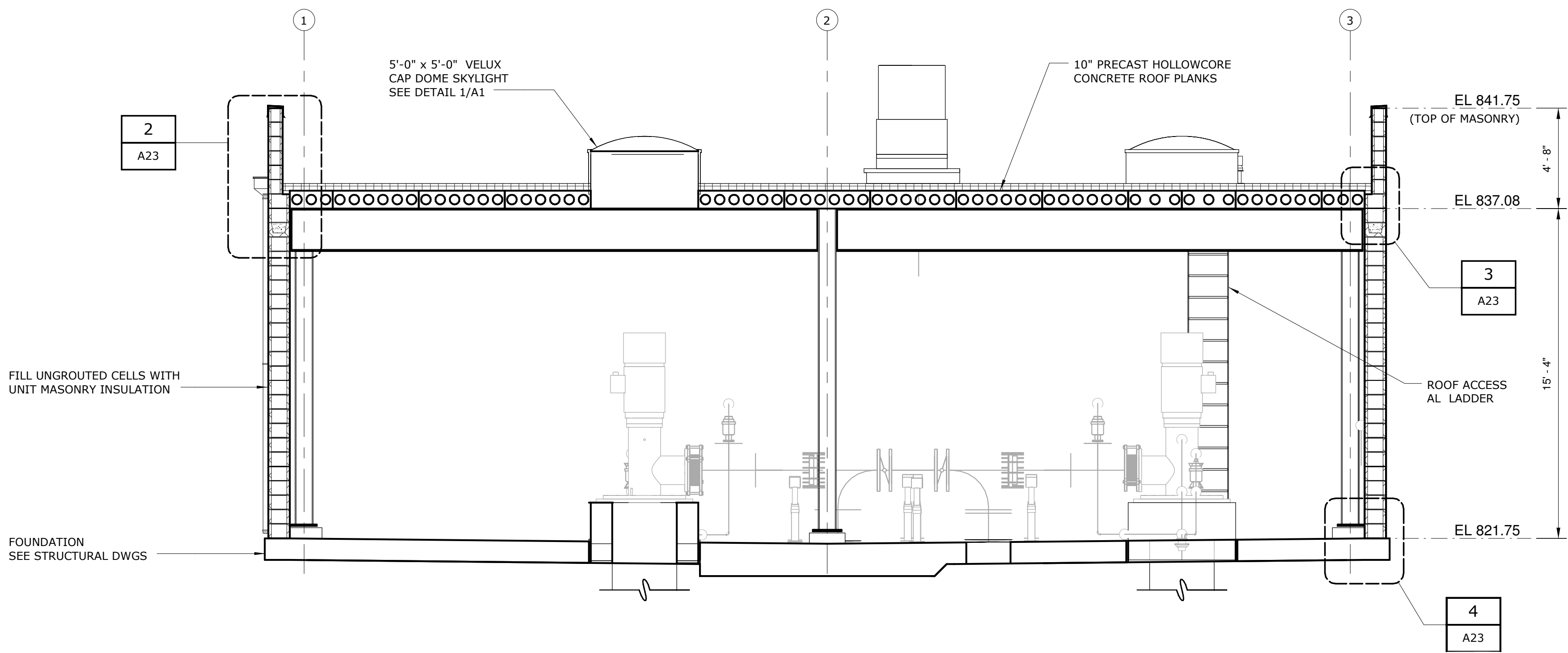
SCUPPER THRU PARAPET

DETAIL	2
1" = 1'-0"	A23

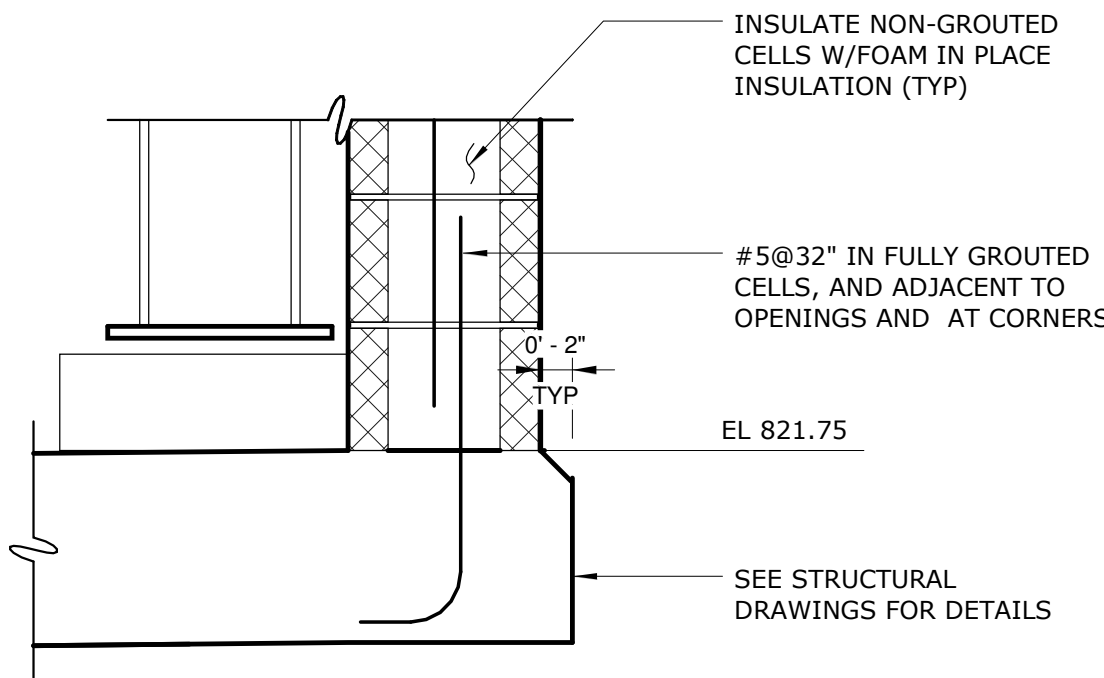


CMU WALL AT HOLLOW-CORE ROOF PLANKS

DETAIL	3
1" = 1'-0"	A23



SECTION A
1/4" = 1'-0"



CMU WALL AT FOUNDATION

DETAIL	4
1" = 1'-0"	A23

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3/9/2016 9:21:45 AM

REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	3-08-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	W. RUSSELL
DRAWN BY:	E. CARROLL
CHECKED BY:	W. RUSSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR
CONSTRUCTION



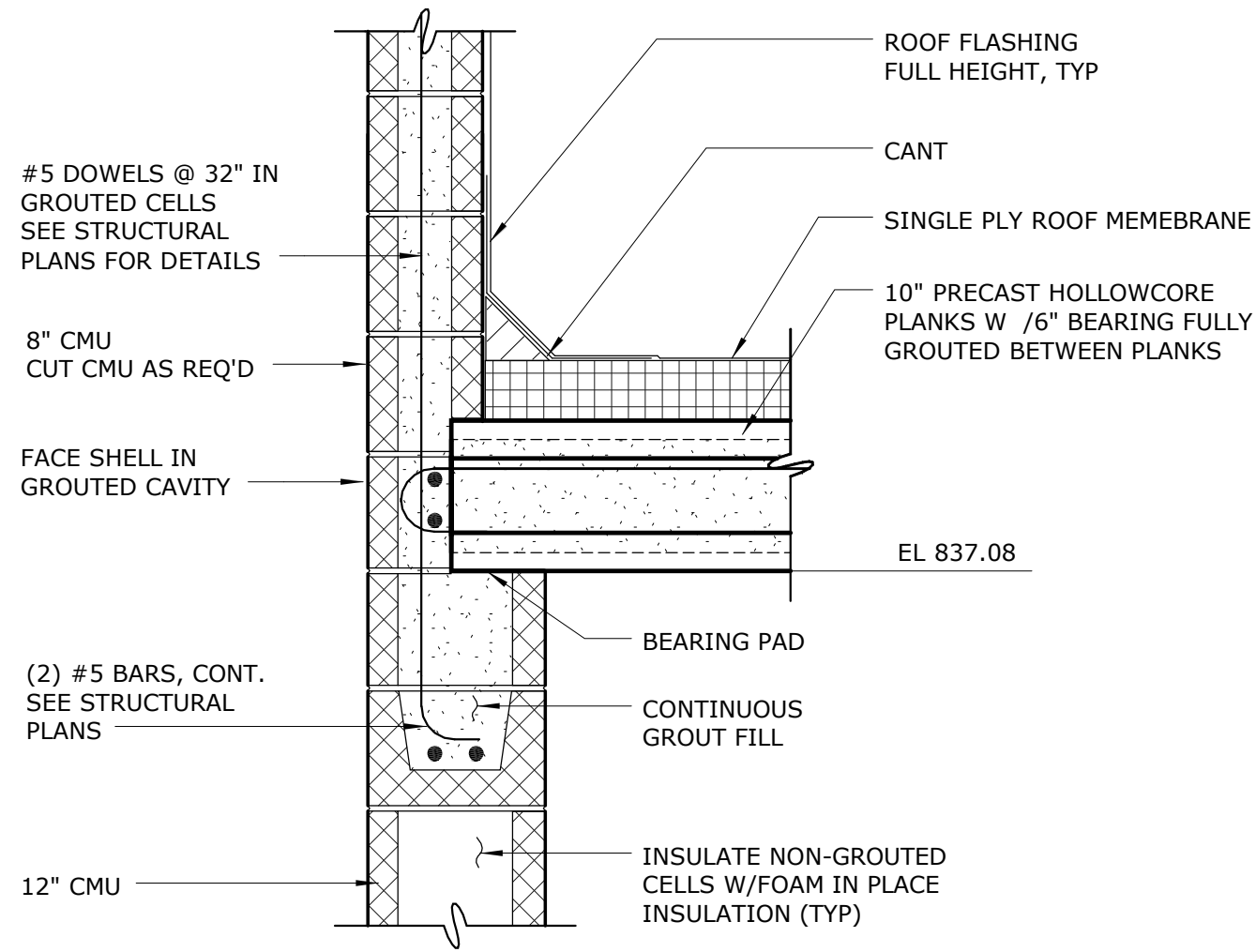
Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

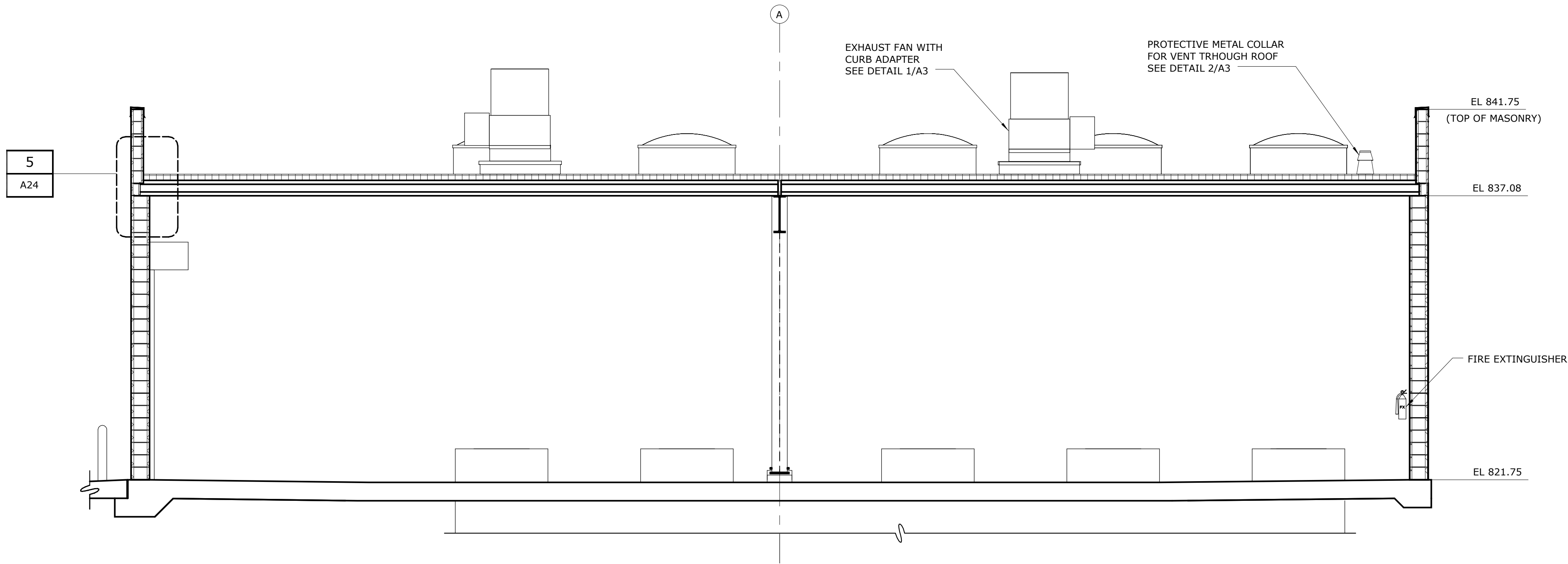
PUMP STATION
ARCHITECTURAL
SECTION AND DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A23



DETAIL 5
1" = 1'-0" A24

NOTES:
1. WHERE CMU IS INDICATED IN DETAIL, SEE ELEVATIONS FOR FINISH TYPE AND COLOR.



SECTION B
1/4" = 1'-0" A20

REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	3-08-16	JCJ
2	BUILDING PERMIT REVIEW	2-26-16	JCJ
1	REGULATORY REVIEW	1-20-16	JCJ

PROJECT ENGINEER:	M.J. BENCHICH
DESIGNED BY:	W. RUSSELL
DRAWN BY:	E. CARROLL
CHECKED BY:	W. RUSSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

ISSUED FOR CONSTRUCTION



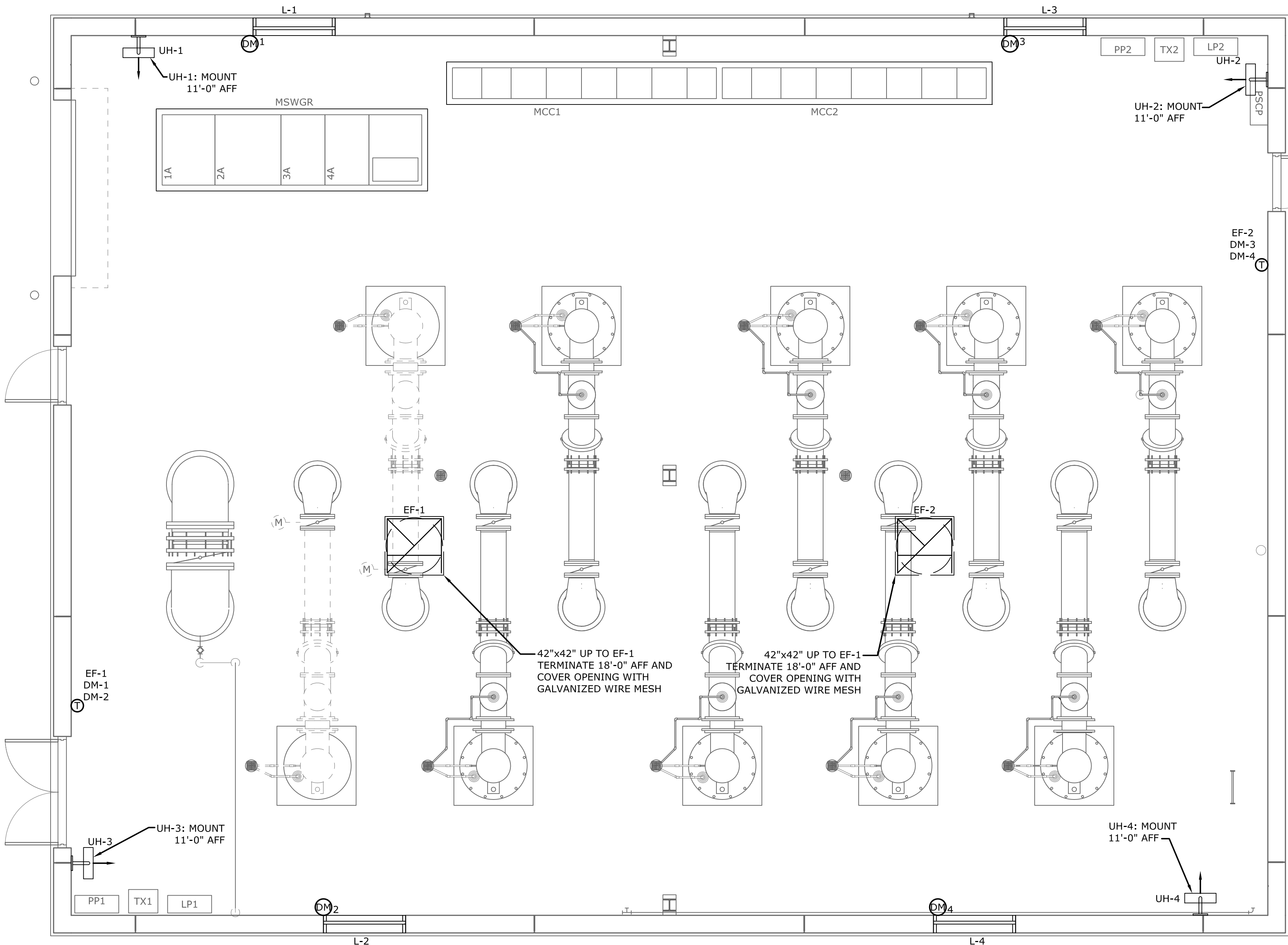
Hazen
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO.: C-0381

DAVIDSON COUNTY
NORTH CAROLINA

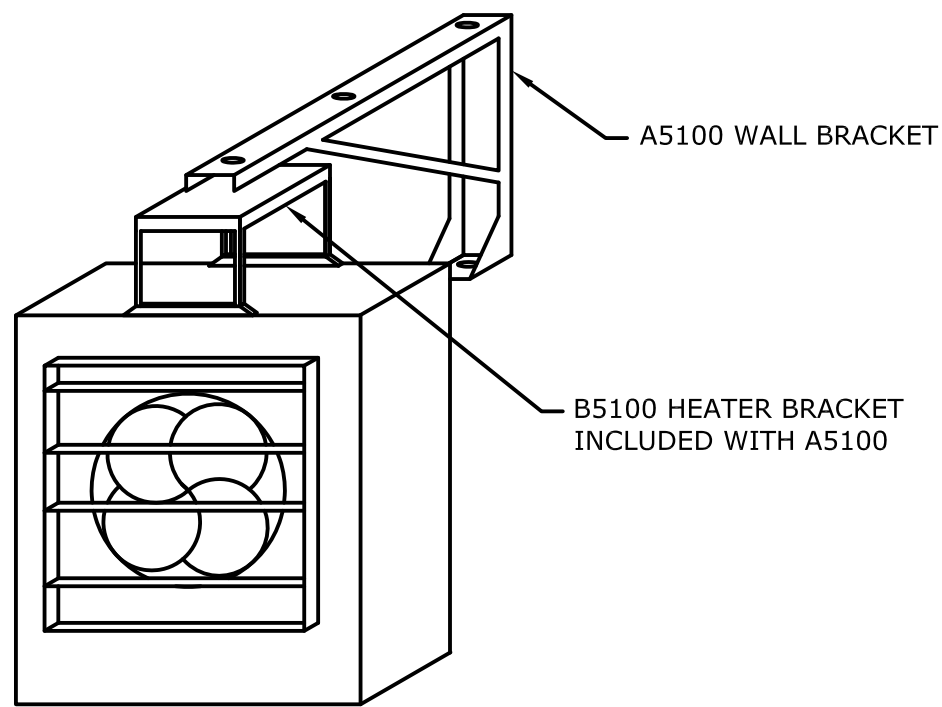
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
ARCHITECTURAL
SECTION AND DETAIL

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	A24



PUMP STATION HVAC PLAN
SCALE 1/4" = 1'-0"



UNIT HEATER MOUNTING DETAIL
NOT TO SCALE

LOUVER/DAMPER SCHEDULE														
LOUVER TAG	DAMPER TAG	MFR	LOUVER MODEL	WIDE (IN)	HIGH (IN)	FREE AREA (SF)	FRAME TYPE	BIRD SCREEN	FILTER RACK	FINISH	END SWITCH	NUMBER OF ACTUATORS	ACTUATOR POWER VOLTS/PH	INTERLOCK
L-1	DM-1	RUSKIN	ELC6375DAX	54	48	8.55	STANDARD	YES	YES	MILL	NO	1	120/1	EF-1
L-2	DM-2	RUSKIN	ELC6375DAX	54	48	8.55	STANDARD	YES	YES	MILL	NO	1	120/1	EF-1
L-3	DM-3	RUSKIN	ELC6375DAX	54	48	8.55	STANDARD	YES	YES	MILL	NO	1	120/1	EF-2
L-4	DM-4	RUSKIN	ELC6375DAX	54	48	8.55	STANDARD	YES	YES	MILL	NO	1	120/1	EF-2

- NOTES:
- ALL LOUVERS SHALL BE PROVIDED IN SINGLE SECTIONS.
 - ALL DAMPERS SHALL BE PROVIDED IN TWO SECTIONS.
 - COORDINATE POWER REQUIREMENTS WITH EC.

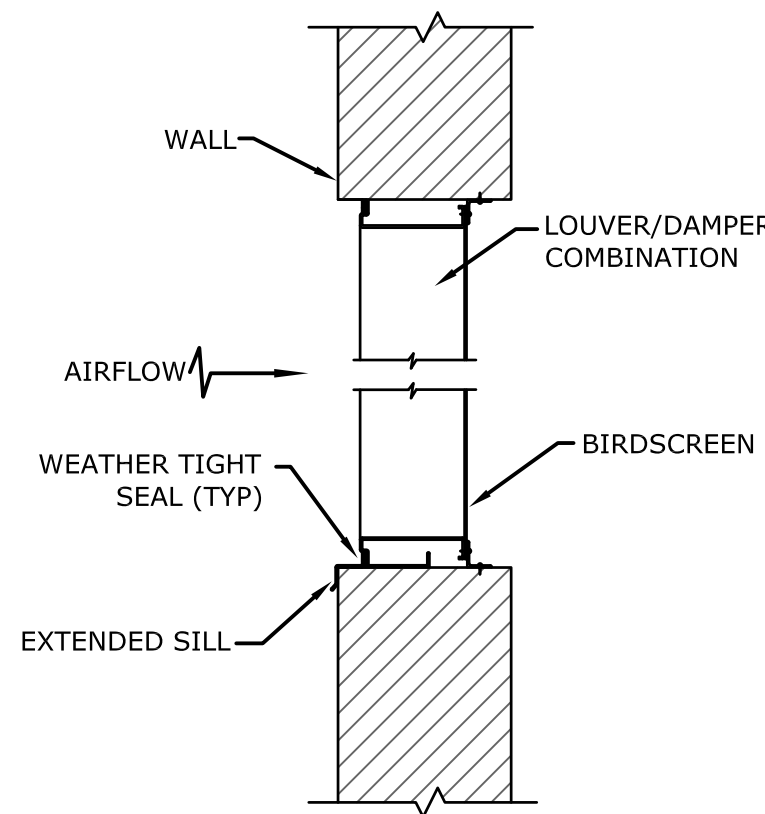
FAN SCHEDULE										
TAG	MFR	MODEL	CFM	SP in WC	FAN RPM	HP	MAX SONES	POWER V/PH/HZ	WEIGHT lb	
EF-1	GREENHECK	RBUMO-3H36-30	15349	.500	1131	3	44	480/3/60	346	
EF-2	GREENHECK	RBUMO-3H36-30	15349	.500	1131	3	44	480/3/60	346	

- NOTES:
- FANS SHALL BE GREENHECK, COOK, PENN OR APPROVED EQUAL.
 - PROVIDE FAN WITH STEEL BUTTERFLY DAMPER, INLET GUARD, EXTERNAL WIRING PIGTAIL, 12" HIGH INSULATED ROOF CURB, EXTENDED LUBRICATION LINES, BEARINGS WITH GREASE FITTINGS, TIE DOWN POINTS (SET OF 4), TWO GROOVE PULLEY AND BELT SYSTEM, NEMA 4 DISCONNECT, AND ENERGY EFFICIENT MOTOR. CONTROLLED BY THERMOSTAT.
 - CONTROLLED BY THERMOSTAT.
 - PROVIDE HI-PRO POLYESTER DARK GRAY FINISH.

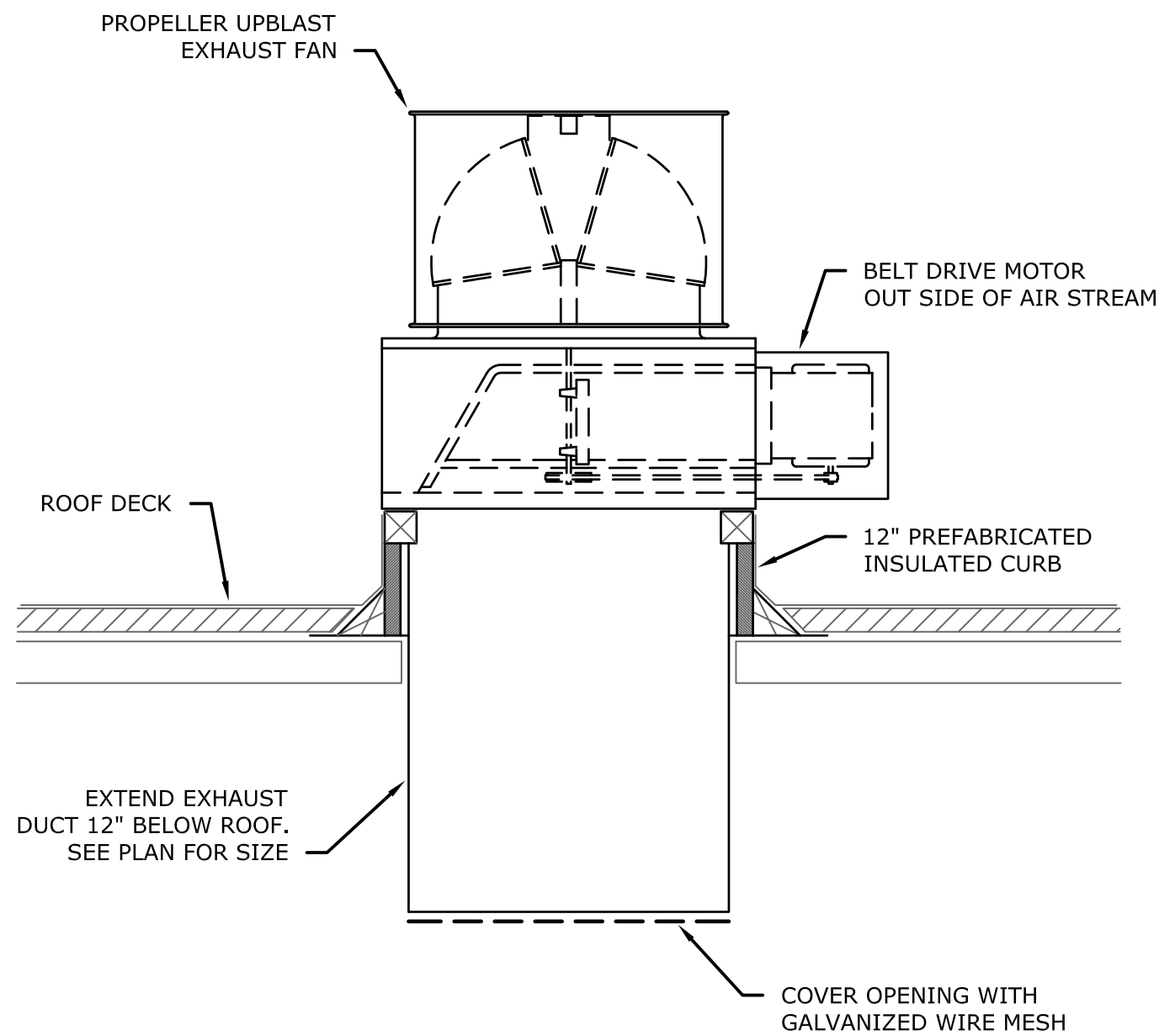
UNIT HEATER SCHEDULE						
TAG	MFR	MODEL	KW	POWER V/PH/HZ	MCA	MOCP
UH-1	MARKEL	P3P5110CA1N	10	480/3/60	15	20
UH-2	MARKEL	P3P5110CA1N	10	480/3/60	15	20
UH-3	MARKEL	P3P5110CA1N	10	480/3/60	15	20
UH-4	MARKEL	P3P5110CA1N	10	480/3/60	15	20

- NOTES:
- UNIT HEATERS SHALL BE MARKEL, CHROMALOX, TRANE OR APPROVED EQUAL.
 - PROVIDE UNIT HEATERS WITH BUILT-IN THERMOSTAT, POWER DISCONNECT SWITCH, AND WALL MOUNTING BRACKET.

- MECHANICAL NOTES
- DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING CONFIGURATION, etc.
 - MECHANICAL CONTRACTOR SHALL BALANCE SYSTEM TO CFM's INDICATED ON THE PLANS AND PROVIDE ENGINEER WITH COMPLETE BALANCE SHEET REPORT (NEBB AR AABC CERTIFICATION).
 - LOCATE ALL THERMOSTATS AND SWITCHES 4'-0" ABOVE FINISHED FLOOR.
 - ALL CUTTING, PATCHING OF SLAB, ROOF OR OTHER BUILDING COMPONENTS TO BE BY THE INSTALLING CONTRACTOR.



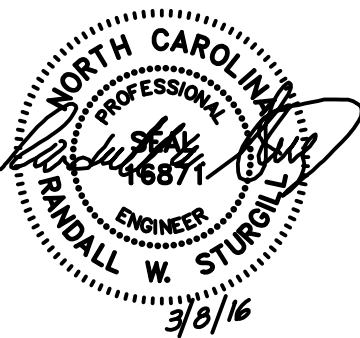
LOUVER DETAIL
NOT TO SCALE



EXHAUST FAN DETAIL
NOT TO SCALE

				PROJECT ENGINEER:	R. W. STURGILL
				DESIGNED BY:	R. W. STURGILL
				DRAWN BY:	R. W. LAWSON
				CHECKED BY:	-
3	CONSTRUCTION	3-8-16	RWS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	RWS		
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



**STURGILL
ENGINEERING
PA**
C-1210
ONE SOUTH MAIN ST.
LEXINGTON, NC 27229
(336) 238-1249 PH.
(336) 236-6393 FAX

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

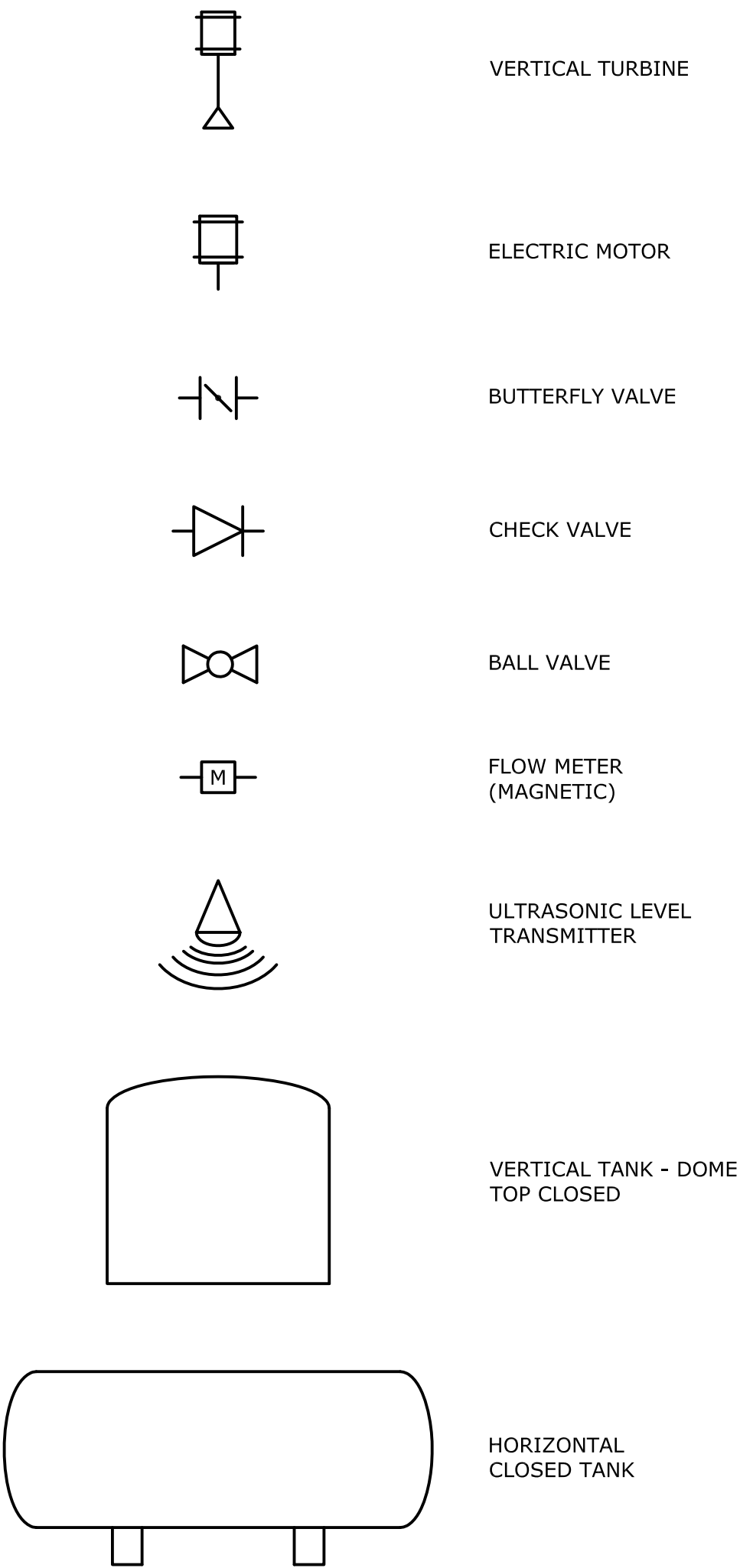
PUMP STATION
HVAC PLAN

DATE: MARCH 2016
HAZEN NO.: 30961-010
CONTRACT NO.: 1
DRAWING NUMBER:
H20

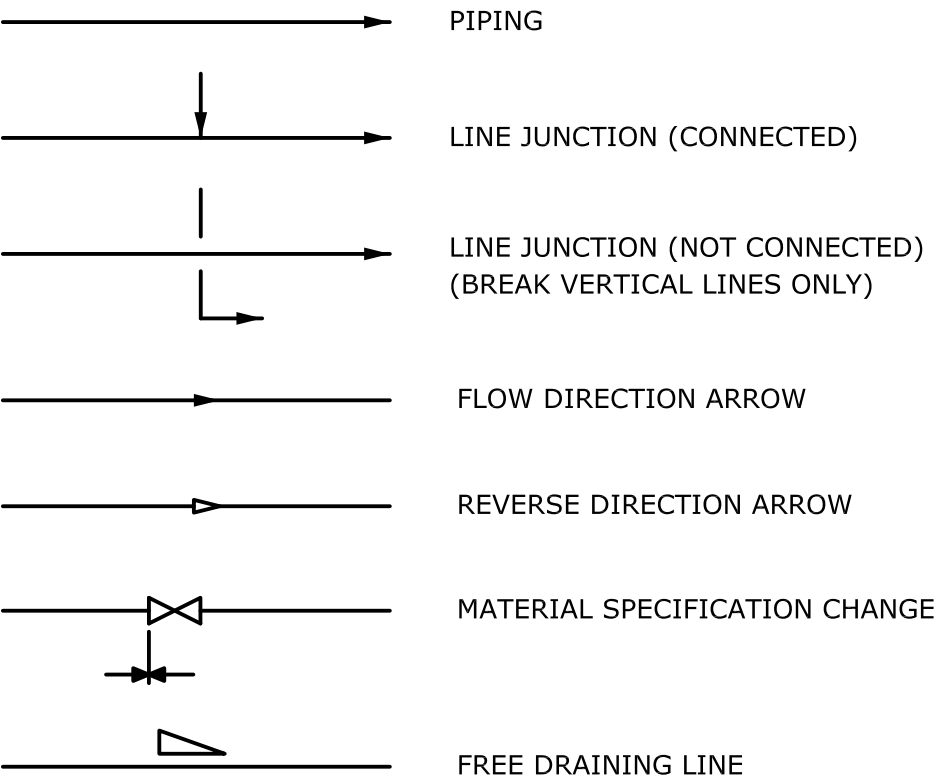
INSTRUMENT IDENTIFICATION LETTERS					
LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM OR PLC/DCS DISCRETE INPUT		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	BYPASS
C	CONDUCTIVITY (ELECTRICAL)			CONTROLLER	CLOSE
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			DRIVE (VFD)
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS		
H	HAND SWITCH (SELECTOR SWITCH)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE OR PLC/DCS ANALOG INPUT		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		NOTIFY OR PLC/DCS DISCRETE INPUT	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY		INTEGRATE OR TOTALIZE		
R	RADIATION	REMOTE CONTROL	RECORD OR PRINT		
S	SOLENOID, SPEED, OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	PLC COMMAND		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION, DIMENSION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT MODIFIER /ABBREVIATIONS	
GENERAL INSTRUMENT SYMBOLS (SEE TABLE)	AUTO : AUTO STATUS DOB : DRIVE/OFF/BY-PASS/ DRIVE : VARIABLE FREQUENCY DRIVE STATUS BYPASS : ACROSS-THE-LINE STARTER OR REDUCED VOLTAGE STARTER STATUS FAIL : FAIL STATUS HOA : HAND/OFF/AUTO LOR : LOCAL/OFF/REMOTE MA : MANUAL/AUTO OPEN : OPEN COMMAND CLOSE : CLOSE COMMAND OFF : EQUIPMENT OFF ON : EQUIPMENT ON REMOTE: REMOTE STATUS RS : REMOTE START RUN : RUN STATUS
	AAH AAL LAH ALARMS IN PLC LAL LALL, LAHH
INSTRUMENT NUMBERING CONVENTION	CLR : CHLORINE RESIDUALS CL~2 : CL~2 GAS LEAK DETECTOR MAG : MAGNETIC FLOWMETER NH~3 : AMMONIA ORP : OXIDATION-REDUCTION POTENTIAL TD : THERMAL DISPERSION pH : pH RF : RF (ADMITTANCE) SCD : STREAMING CURRENT DETECTOR SCR : SILICON-CONTROLLED RECTIFIER TURB : TURBIDITY VAC : VACUUM VFD : VARIABLE FREQUENCY DRIVE US : ULTRASONIC VEN : VENTURI

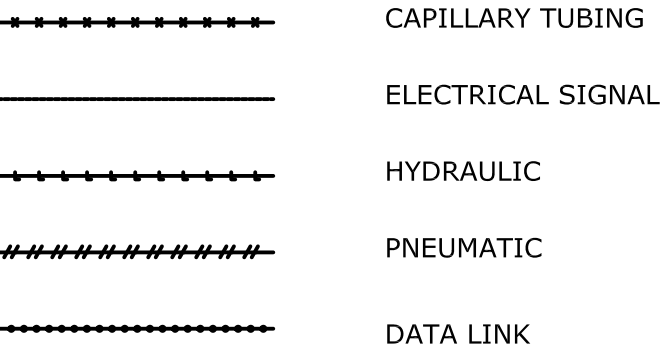
SYMBOLS



Flows and Process Line Designations

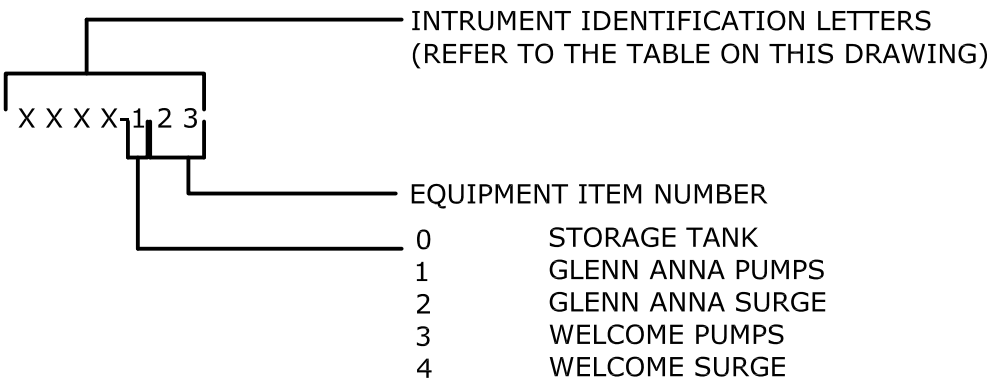


Instrumentation and Control Line Related Designations



GENERAL INSTRUMENT SYMBOLS		
FIELD MOUNTED	COMMON HOUSING	PANEL MOUNTED
INTERNAL SOFTWARE FUNCTION	COMPUTER FUNCTION (INDICATOR/CONTROLLER)	PANEL-MOUNTED PILOT LIGHT OR ANNUNCIATOR
INTERLOCK		
INSTRUMENT LINE SYMBOLS		
	ELECTRICAL SIGNAL (HARDWIRED)	
	SERIAL CONNECTIONS	
	PNEUMATIC SIGNAL OR AIR PIPING	
	PROCESS PIPES OR CHANNELS	

INSTRUMENT NUMBERING CONVENTION



				PROJECT ENGINEER:	R. W. STURGILL
				DESIGNED BY:	R. W. STURGILL
				DRAWN BY:	R. W. LAWSON
				CHECKED BY:	-
3	CONSTRUCTION	3-8-16	RWS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	RWS		
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR CONSTRUCTION

STURGILL ENGINEERING PA

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LEXINGTON, NC 27292
(336) 238-1249 PH.
(336) 236-6393 FAX

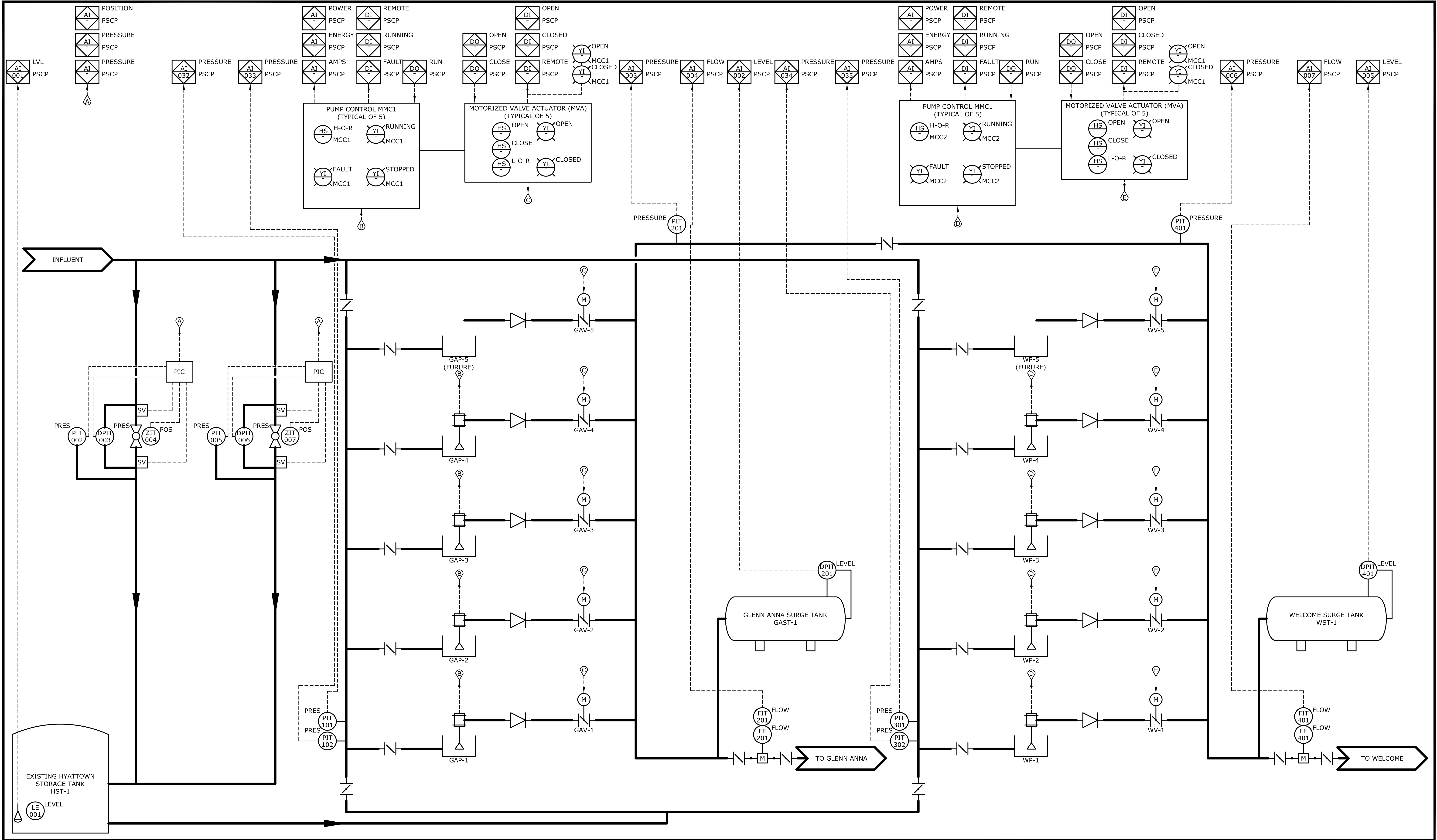
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

P&ID SYMBOLS
AND LEGEND

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	11

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				PROJECT ENGINEER:	R. W. STURGILL
				DESIGNED BY:	R. W. STURGILL
				DRAWN BY:	R. W. LAWSON
				CHECKED BY:	-
3	CONSTRUCTION	3-8-16	RWS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
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REV	ISSUED FOR	DATE	BY		

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NORTH CAROLINA

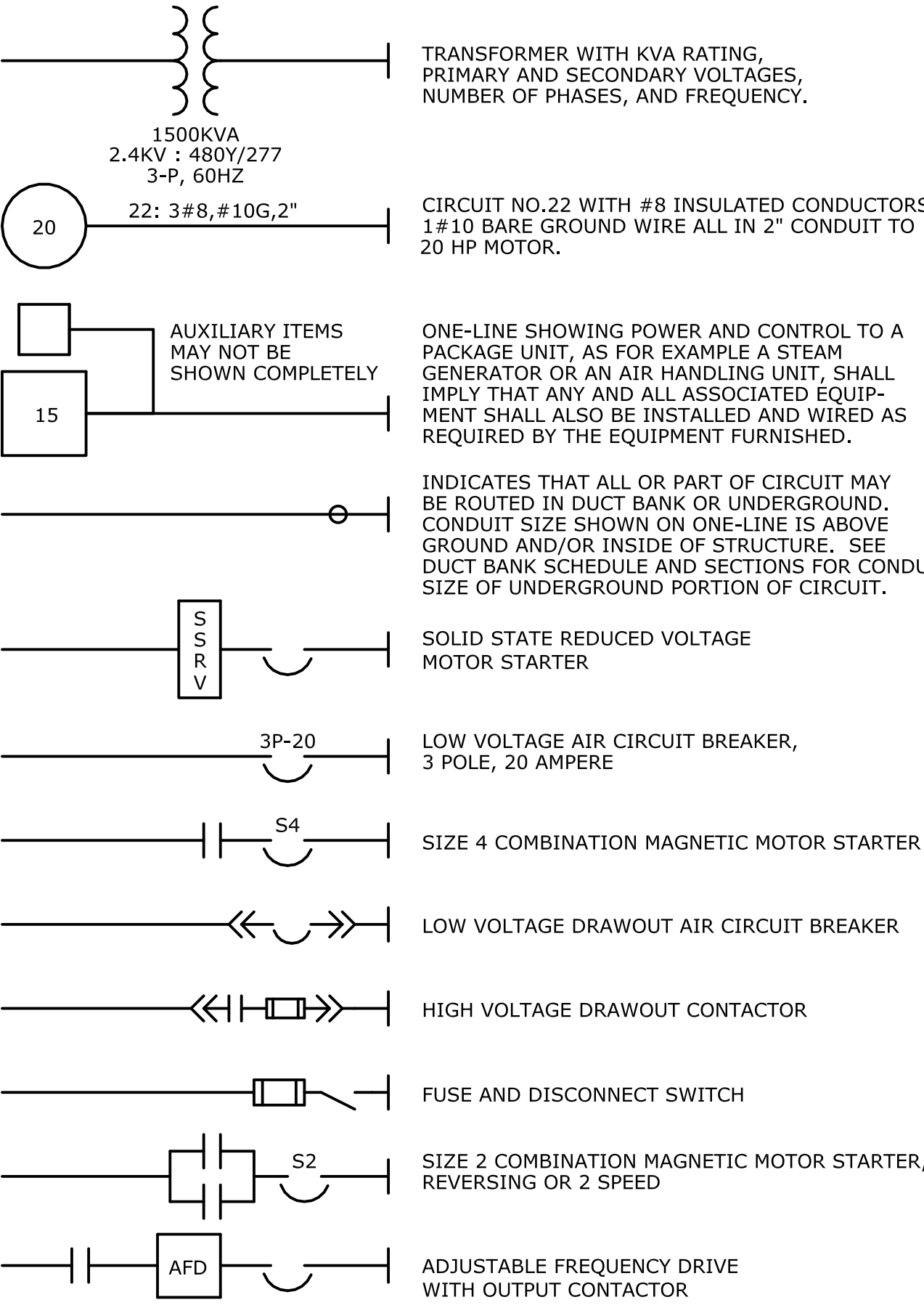
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

P&ID

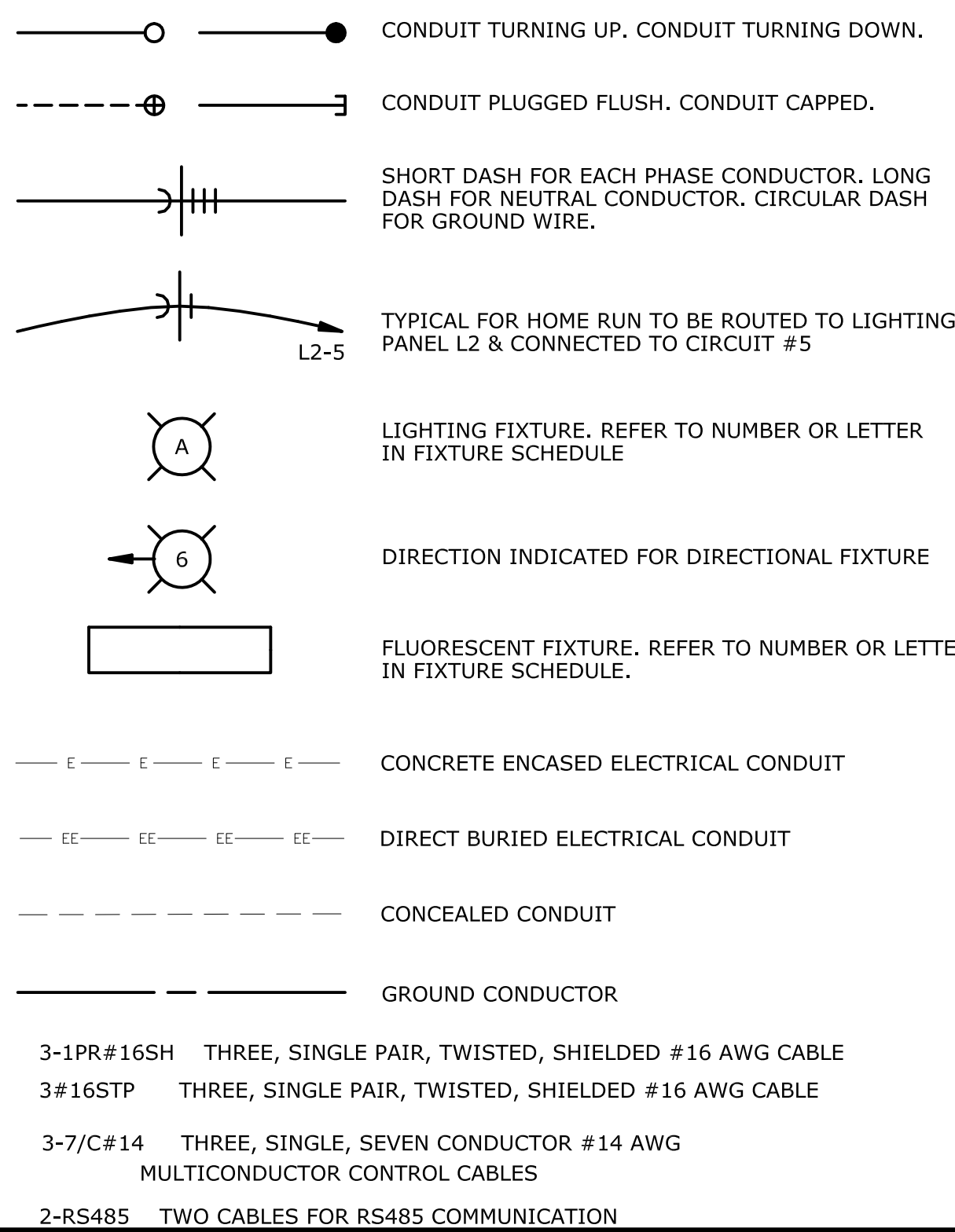
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CONTRACT NO.:	1
DRAWING NUMBER:	110

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ONE-LINE DIAGRAM LEGEND



CONDUIT & WIRING INSTALLATION LEGEND

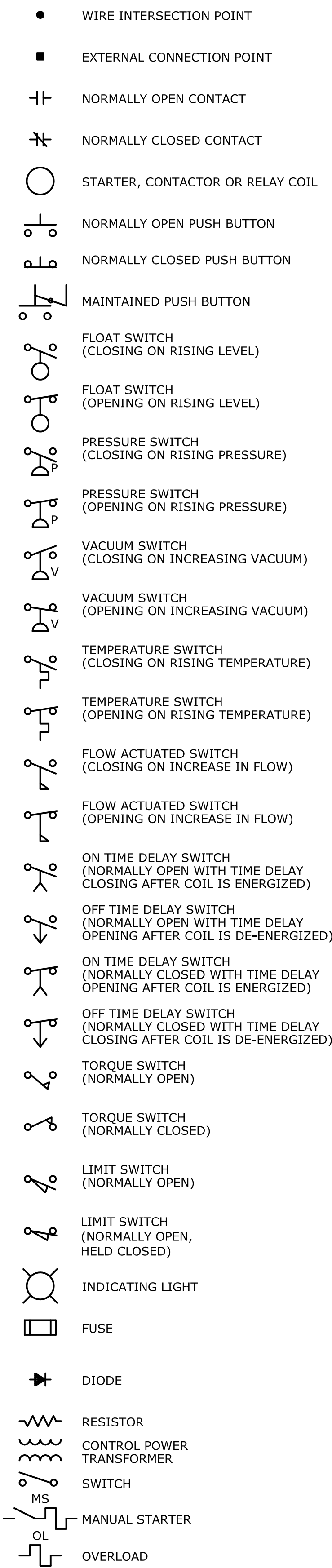


ABBREVIATIONS

A	AMBER, AMPERE, ALARM
AC	ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
AFD	ADJUSTABLE FREQUENCY DRIVE
AM	AMMETER
ANN	ANNUNCIATOR
AR	ALARM RELAY
AS	AMMETER SWITCH
AWG	AMERICAN WIRE GAGE
BC	BATTERY CHARGER
BR	BRAKE
BT	BEARING TEMPERATURE
C	CLOSE, COUNTER OR CONTACTOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CB"A"	CIRCUIT BREAKER AUXILIARY CONTACT (OPEN WHEN BREAKER IS OPEN AND CLOSED WHEN BREAKER IS CLOSED OR TRIPPED)
CB"B"	CIRCUIT BREAKER AUXILIARY CONTACT (CLOSED WHEN BREAKER IS OPEN AND OPEN WHEN BREAKER IS CLOSED OR TRIPPED)
CKT	CIRCUIT
COS	CABLE OPERATED SWITCH
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CURRENT OR CONTROL RELAY
CS	CONTROL STATION
CT	CYCLE TIMER OR CURRENT TRANSFORMER
CTC	CYCLE TIMER CLUTCH
CTM	CYCLE TIMER MOTOR
2/C	2 CONDUCTOR
4"C	4" CONDUIT
DC	DIRECT CURRENT
DBR	DEAD BUS RELAY
DM	DAMPER MOTOR OR DEMAND METER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DPR	DIFFERENTIAL PRESSURE REGULATOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DS	DISCONNECT SWITCH
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EHH	ELECTRICAL HAND HOLE
EL	ELEVATION OR EMERGENCY LIGHT
EMH	ELECTRICAL MANHOLE
ES	END SWITCH OR EMERGENCY STOP
ETI	ELAPSED TIME INDICATOR
ETM	ELAPSED TIME METER
FCS	FREQUENCY CONTROL SWITCH
FIT	FLOW INDIATING TRANSMITTER
FQ	FLOW TOTALIZER
FQI	FLOW TOTALIZING INDICATOR
G	GREEN OR GROUND
GD	GROUND DETECTOR
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
#8G	#8 GROUND WIRE
H	HIGH OR HUMIDISTAT
HC	HOT CIRCUIT
HH	HANDHOLE
HMT	HIGH MOTOR TEMPERATURE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HP	HORSEPOWER
HWCO	HIGH WATER CUTOFF
HZ	HERTZ (CYCLE)
I/O	INPUT/OUTPUT
IPCP	INFLUENT PUMP CONTROL PANEL
J	JUNCTION BOX
JB	JUNCTION BOX
K	KEY INTERLOCK
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVAR
KW	KILOWATT
KWH	KILOWATT HOUR
L	LOW, LEVEL
LA	LIGHTNING ARRESTER
LC	LIGHTING CONTACTOR
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LOR	LOCAL-OFF-REMOTE
LS	LIMIT OR LEVEL SWITCH
LSI	LONG, SHORT, & INSTANTANEOUS TRIP UNIT
LSIG	LONG, SHORT, INST., & GROUND FAULT TRIP UNIT
LWCO	LOW WATER CUTOFF

M	MAGNETIC MOTOR STARTER
MA	MILLIAMPERE
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MIL
MD	MOISTURE DETECTOR
MF	MAGNETIC FLOW METER
MH	MANHOLE OR MOUNTING HEIGHT
MOV	MOTOR OPERATED VALVE
MS	MANUAL MOTOR STARTER
MSH	MOTOR SPACE HEATER
MV	MILLIVOLT
MVA	MEGA VOLT AMPERE
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN, NUMBER
O	OPEN
OIT	OPERATOR INTERFACE TERMINAL
OL	OVERLOAD
P	PRIMARY
PB	PUSH BUTTON OR PULL BOX
PC	PROGRAMMABLE CONTROLLER
PDP	POWER DISTRIBUTION PANEL
PF	PROPELLER FAN
PFM	POWER FACTOR METER
PH	PHASE, CHEMICAL TERM
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER, PROGRAM TIMER
2P	2 POLE
R	RED, RAISE, RELAY OR REVERSE
RECP	RECEPTACLE
RES	RESISTOR
RT	REPEATING TIMER
RTD	RESISTANCE TYPE TEMP DETECTOR
RTU	REMOTE TERMINAL UNIT
RVAT	REDUCED VOLTAGE AUTO-TRANSFORMER TYPE
S2	SIZE 2 STARTER
SB/I	SIGNAL BOOSTER/ISOLATOR
SCP	SYSTEM CONTROL PANEL
SH	SPACE HEATER
SN	SOLID NEUTRAL
SMS	RUN-PERM-CHECK-OFF SELECTOR SWITCH
SP	SURGE PROTECTOR
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SS	SELECTOR SWITCH
SSRV	SOLID STATE REDUCED VOLTAGE
SSM	SOLID STATE METER
STP	SHIELDED TWISTED PAIR
SV	SOLENOID VALVE
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
T	THERMOSTAT, TIMER, OR TOTALIZER
TACH	TACHOMETER
TB	TERMINAL BLOCK
TC	TIMER CLUTCH
TD	TIME DELAY RELAY
TEMP	TEMPERATURE
TM	TIMER MOTOR
TQ	TORQUE
TS	TORQUE OR TEMPERATURE SWITCH
TTB	TELEPHONE TERMINAL BOX
UG	UNDERGROUND
UV	UNDER VOLTAGE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPERE
VCS	VOLTAGE CONTROL SWITCH
VFR	VOLTAGE/FREQUENCY RELAY
VM	VOLTMETER
VS	VOLTMETER SWITCH
W	WHITE OR WATTS
WH	WATTHOUR METER
WM	WATT METER
WP	WEATHERPROOF
X	AUXILIARY RELAY
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Y	YELLOW
Z	AUXILIARY RELAY
ZS	POSITION SWITCH

SCHEMATIC SYMBOLS



LIMIT SWITCH (NORMALLY CLOSED)

LIMIT SWITCH (NORMALLY CLOSED, HELD OPEN)

DIFFERENTIAL PRESSURE SWITCH (NORMALLY OPEN, CLOSING ON INCREASING DIFF.)

DIFFERENTIAL PRESSURE SWITCH (NORMALLY CLOSED, OPENING ON INCREASING DIFF.)

SWITCH & OUTLET SYMBOLS

S	SINGLE POLE SWITCH	⊕	DUPLEX RECEPTACLE 120 VOLT
S2	TWO POLE SWITCH	⊖	CLOCK RECEPTACLE
S3	THREE-WAY SWITCH	⊕⊖	RANGE RECEPTACLE
S4	FOUR-WAY SWITCH	⊕⊖⊗	TWISTLOCK RECEPTACLE
SM	MOMENTARY SWITCH	⊕⊖⊗30	240V, 1-PH RECEPTACLE, TYPICAL AMPERE RATING NOTED
SWP	WEATHERPROOF SWITCH	⊕⊖⊗60	480V, 3-PH WELDING RECEPTACLE, TYPICAL AMPERE RATING NOTED
SP	SWITCH WITH PILOT LIGHT	⊕⊖⊗	COMBINATION 120V, 240 VOLT SPECIAL RECEPTACLE FOR LABORATORY EQUIPMENT
SK	KEY OPERATED SWITCH	⊕⊖⊗	DUPLEX FLOOR OUTLET
SH	HAZARDOUS AREA SWITCH	⬤	TELEPHONE OUTLET
SD	DIMMER SWITCH	⬤	TELEPHONE FLOOR OUTLET
		⊕⊖⊗CX	COAXIAL CABLE OUTLET

MISCELLANEOUS SYMBOLS

⊕	BELL	⊕	DISCONNECT SWITCH
⬤	HORN	⊕⊖⊗	COMBINATION STARTER
⬤	BUZZER	⬤	POWER PANEL
⬤	UNIT HEATER	⬤	LIGHTING PANEL
⬤	THERMOSTAT	⬤	MISCELLANEOUS PANEL
⬤	JUNCTION BOX	⬤	LIGHTING CONTACTOR
⬤	GROUND ROD		
⬤	GROUND CONNECTION		

GENERAL NOTES

- SOLID LINES (——) INDICATE NEW WORK OR EQUIPMENT.
- SCREENED LINES (——) INDICATE EXISTING WORK OR EQUIPMENT.
- DASHED LINES (——) INDICATE FUTURE WORK OR EQUIPMENT.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- UNDERGROUND DUCT BANKS PASSING UNDER ROADS SHALL BE CONCRETE ENCASED A MINIMUM OF 5' PAST EACH EDGE OF THE ROAD.
- CONTRACTOR SHALL FIELD ROUTE UNDERGROUND DUCT BANK TO AVOID EXISTING EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ANY NEW CONDUITS. THIS INCLUDES CONDUITS ON ONE-LINES AND HOMERUNS ON PLANS. CABLE AND CONDUIT MAY NOT ALWAYS BE SHOWN ON PLAN SHEETS.
- SEE SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION AND OUTAGE RESTRICTIONS.
- SEE SPECIFICATIONS FOR BREAKDOWN OF ITEMS IN THE BASE BID AND ALTERNATES.
- HATCHED AREAS ON ONE-LINES AND ELEVATIONS INDICATE EQUIPMENT TO BE REMOVED BY THE CONTRACTOR.

3	CONSTRUCTION	3-8-16	RWS	CHECKED BY:	-
2	BUILDING PERMIT REVIEW	2-26-16	RWS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

PROJECT ENGINEER: R. W. STURGILL

DESIGNED BY: R. W. STURGILL

DRAWN BY: R. W. LAWSON

ISSUED FOR CONSTRUCTION

STURGILL ENGINEERING PA

C-1210

ONE SOUTH MAIN ST. LEXINGTON, NC 27292 (336) 238-1249 PH. (336) 236-6393 FAX

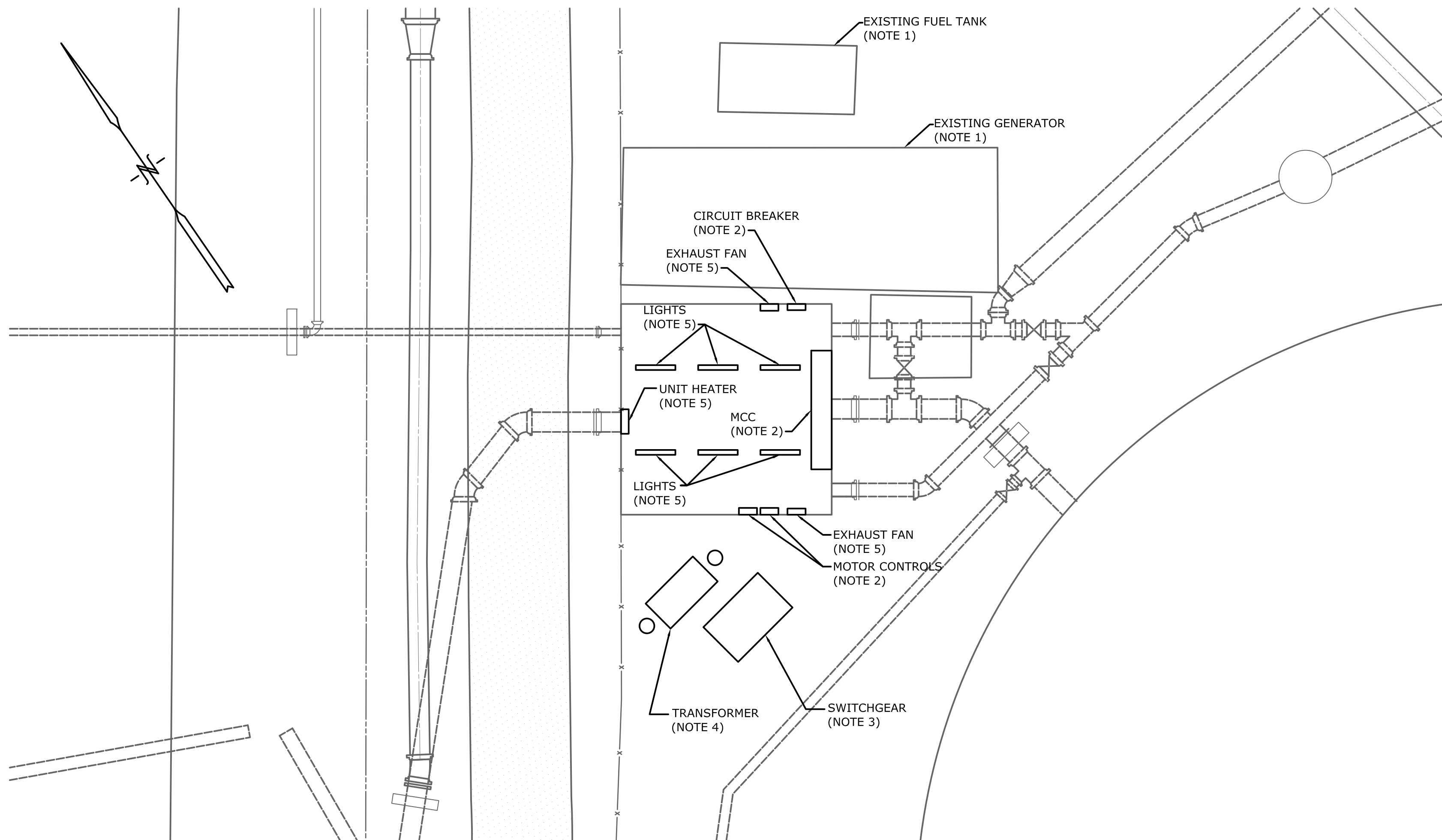
DAVIDSON COUNTY NORTH CAROLINA

DAVIDSON WATER INC. HYATTOWN PUMP STATION IMPROVEMENTS

ELECTRICAL SYMBOLS AND NOTES

E1

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

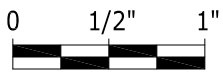


ELECTRICAL DEMOLITION PLAN
SCALE 1" = 100'

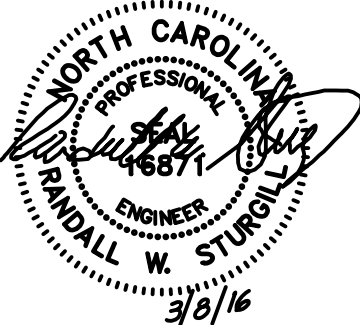
- NOTES:
- ENGINE GENERATOR & FUEL TANK REMOVED BY OWNER.
 - EQUIPMENT TO BE REMOVED BY OWNER.
 - SWITCHGEAR, PAD, AND ASSOCIATED CABLE AND CONDUIT DEMOLISHED BY CONTRACTOR. CUT CONDUIT BELOW GRADE.
 - TRANSFORMER AND STRUCTURE REMOVED BY DUKE ENERGY. CONDUITS BY CONTRACTOR.
 - CONTRACTOR TO REFEED EXHAUST FAN, LOUVERS, RECEPTACLES, UNIT HEATER, AND LIGHTS FROM NEW PANEL.

3	CONSTRUCTION	3-8-16	RWS
2	BUILDING PERMIT REVIEW	2-26-16	RWS
1	REGULATORY REVIEW	1-20-16	RWS
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. W. STURGILL
DESIGNED BY:	R. W. STURGILL
DRAWN BY:	R. W. LAWSON
CHECKED BY:	-
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



ISSUED FOR
CONSTRUCTION



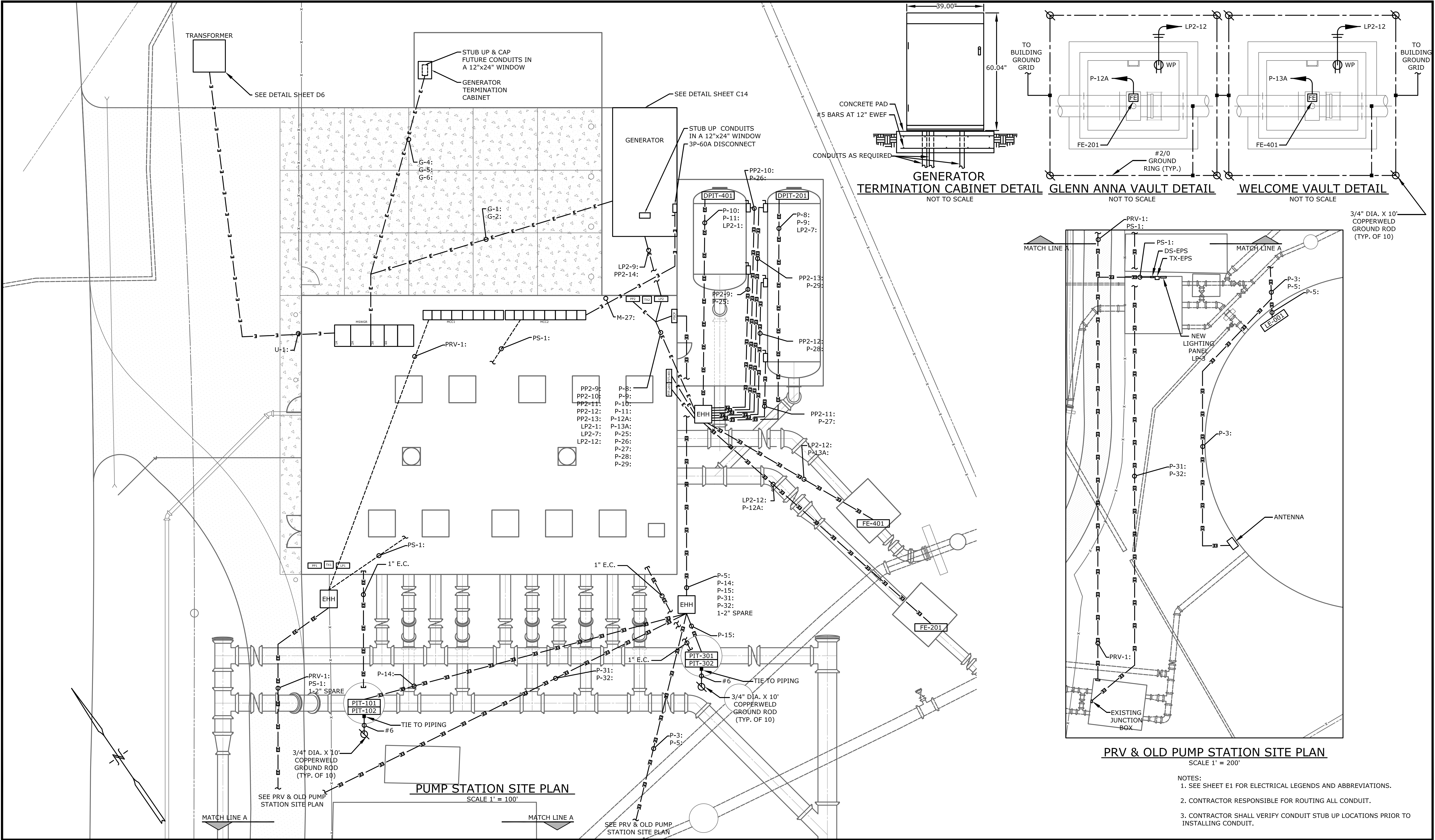
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NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

ELECTRICAL DEMOLITION
PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	E2



PRV & OLD PUMP STATION SITE PLAN
SCALE 1" = 200'

- NOTES:
- 1. SEE SHEET E1 FOR ELECTRICAL LEGENDS AND ABBREVIATIONS.
 - 2. CONTRACTOR RESPONSIBLE FOR ROUTING ALL CONDUIT.
 - 3. CONTRACTOR SHALL VERIFY CONDUIT STUB UP LOCATIONS PRIOR TO INSTALLING CONDUIT.

				PROJECT ENGINEER:	R. W. STURGILL
				DESIGNED BY:	R. W. STURGILL
				DRAWN BY:	R. W. LAWSON
				CHECKED BY:	-
3	CONSTRUCTION	3-8-16	RWS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	RWS		
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR CONSTRUCTION

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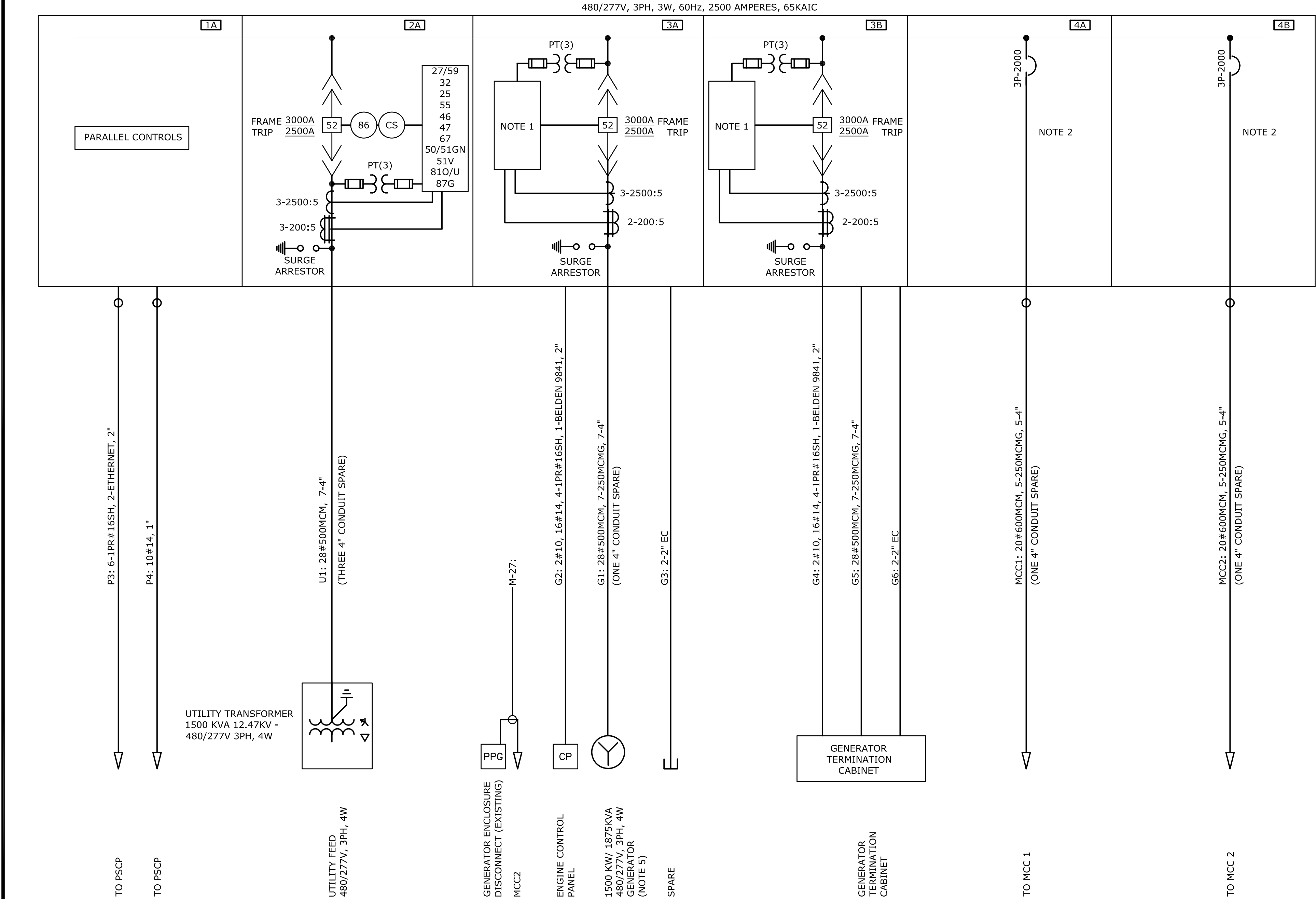
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
SITE PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	E10

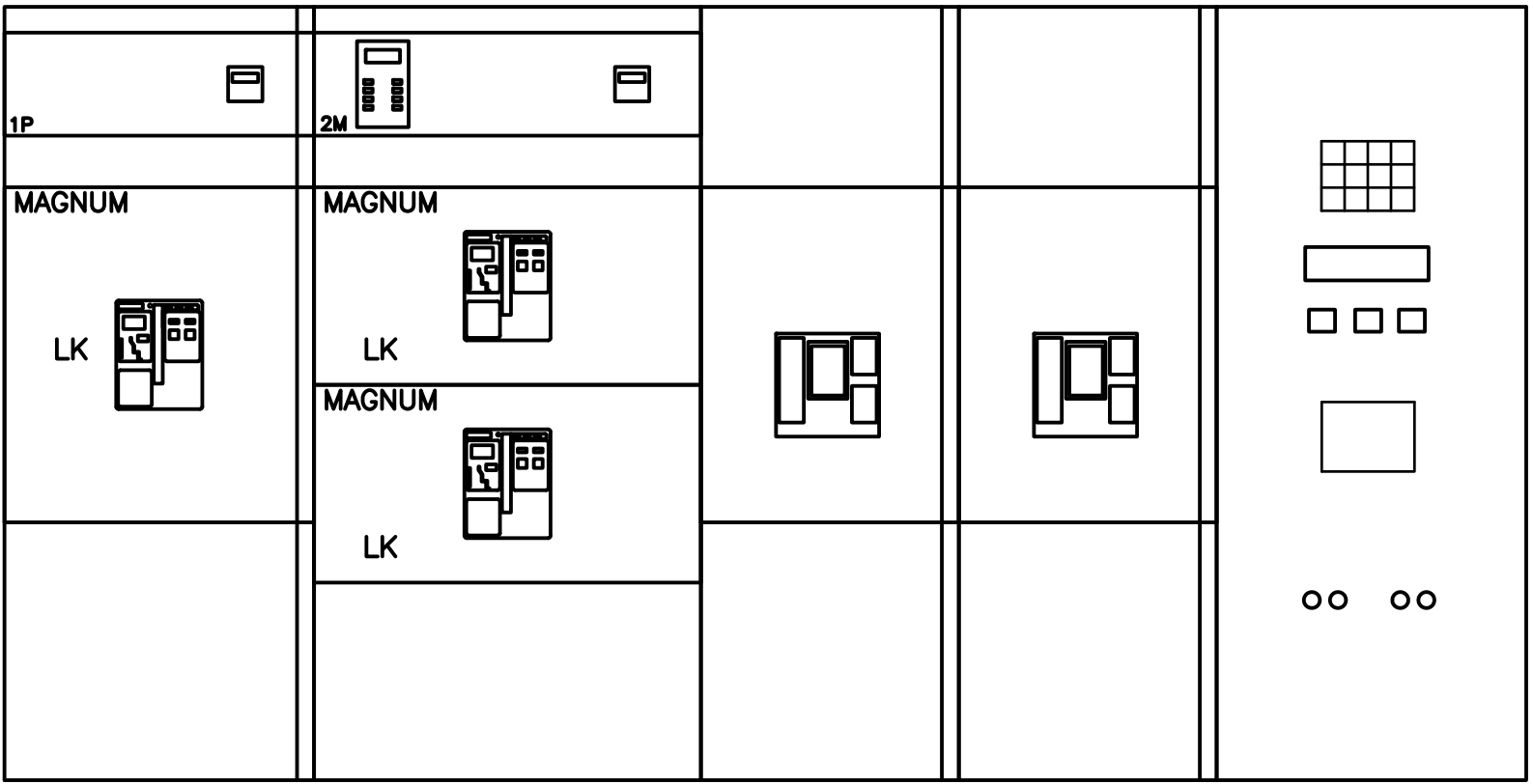
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MAIN SWITCHGEAR, MSWGR ONE-LINE DIAGRAM
NOT TO SCALE

NOTES:

1. MSWGR FURNISHED UNDER SEPARATE CONTRACT, INSTALLED UNDER THIS CONTRACT.
2. MCC1 AND MCC2 FURNISHED UNDER SEPARATE CONTRACT, INSTALLED UNDER THIS CONTRACT.
3. MSWGR FURNISHED UNDER SEPARATE CONTRACT AND INSTALLED UNDER THIS CONTRACT.
4. UTILITY TRANSFORMER PROVIDED BY DUKE ENERGY. PAD GROUNDING & SECONDARY CABLE & CONDUIT UNDER THIS CONTRACT.
5. GENERATOR SYSTEM FURNISHED BY OWNER, CONTRACTOR SHALL PROVIDE GENERATOR PAD, CABLE AND CONDUIT AS INDICATED.
6. CONTRACTOR RESPONSIBLE FOR ALL CABLE TERMINATIONS.
7. GENERATOR TERMINATION CABINET CONDUITS SHALL STUB UP IN A 12" X 24" AREA.



REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	3-8-16	RWS
2	BUILDING PERMIT REVIEW	2-26-16	RWS
1	REGULATORY REVIEW	1-20-16	RWS

PROJECT ENGINEER:	R. W. STURGILL
DESIGNED BY:	R. W. STURGILL
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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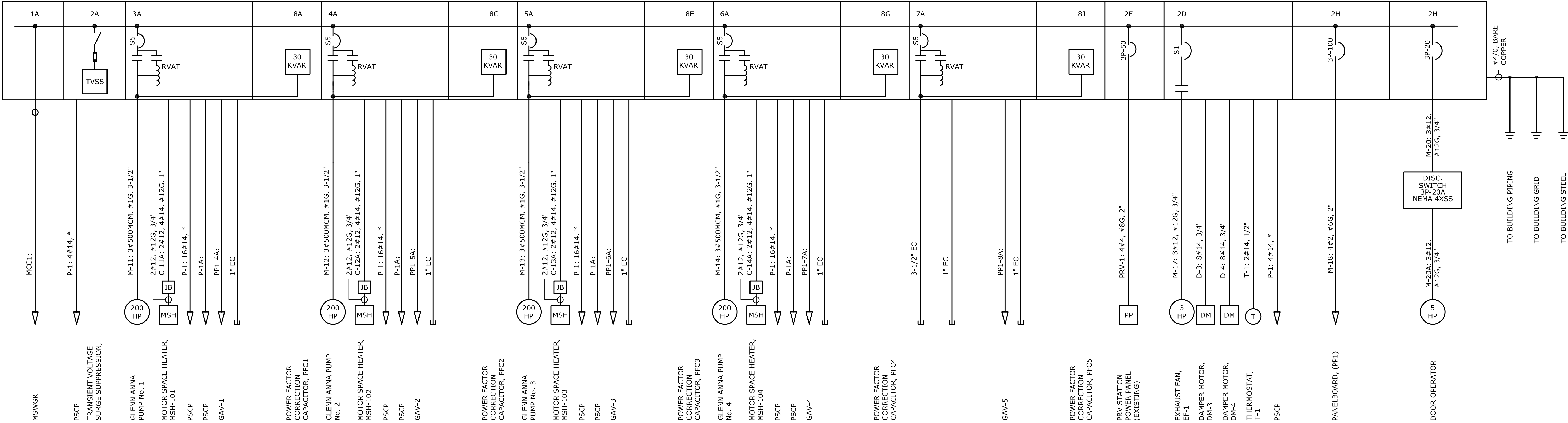
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NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

SYSTEM
ONE-LINE
DIAGRAM

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	E20

480/277VAC, 3PH, 4W, 2000A, 65KAIC



MCC1 ONE-LINE DIAGRAM
NOT TO SCALE

	1A	2A	3A	4A	5A	6A	7A	8A
	B	B	B	B	B	B	B	B
	C	C	C	C	C	C	C	8C
	D	2D	D	D	D	D	D	D
	E	E	E	E	E	E	E	8E
	F	2F	F	F	F	F	F	F
	G	G	G	G	G	G	G	8G
	H	2H	H	H	H	H	H	H
	J	J	J	J	J	J	J	8J
	K	2K	K	K	K	K	K	K
	L	L	L	L	L	L	L	8L
	M	2M	M	M	M	M	M	M

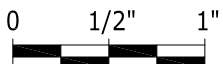
MCC1 FRONT ELEVATION
NOT TO SCALE

- NOTES:
- CONTRACTOR RESPONSIBLE FOR ROUTING ALL CONDUITS.
 - CONTRACTOR SHALL VERIFY EQUIPMENT STUB-UP PRIOR TO INSTALLATION.
 - ** DENOTES CONDUCTORS COMBINED IN SINGLE CONDUIT.
 - MCC1 FURNISHED UNDER SEPARATE CONTRACT & INSTALLED UNDER THIS CONTRACT.

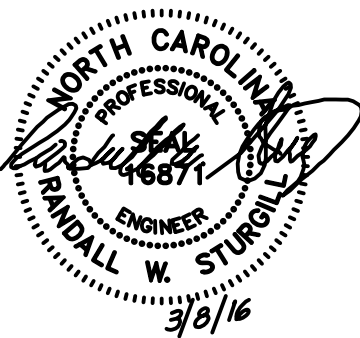
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3	CONSTRUCTION	3-8-16	RWS		
2	BUILDING PERMIT REVIEW	2-26-16	RWS		
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

PROJECT ENGINEER:	R. W. STURGILL
DESIGNED BY:	R. W. STURGILL
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



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CONSTRUCTION



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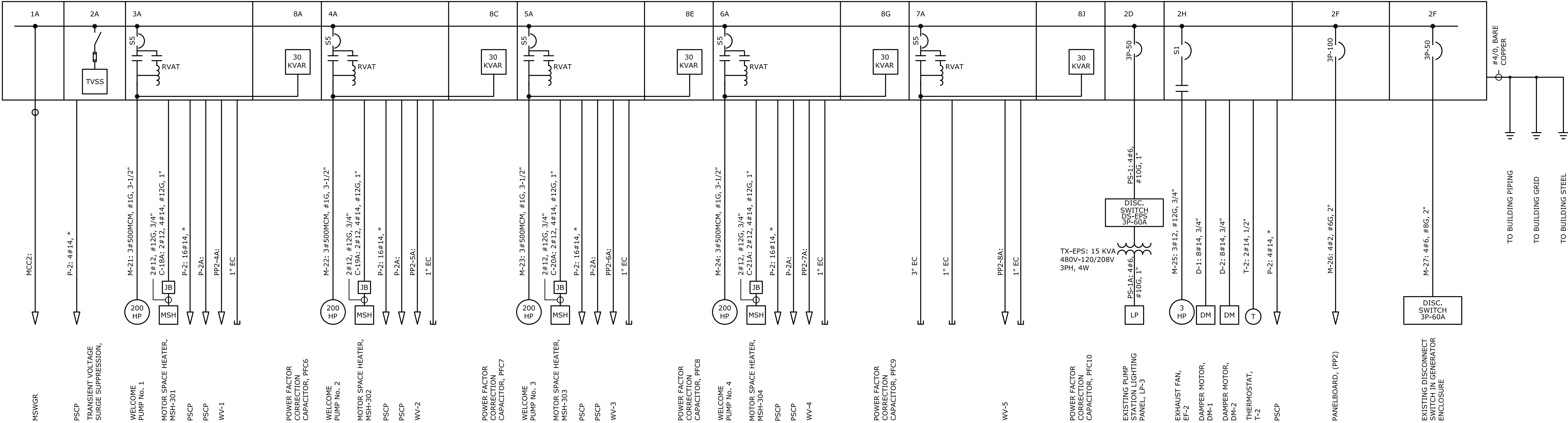
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HYATTOWN PUMP STATION IMPROVEMENTS

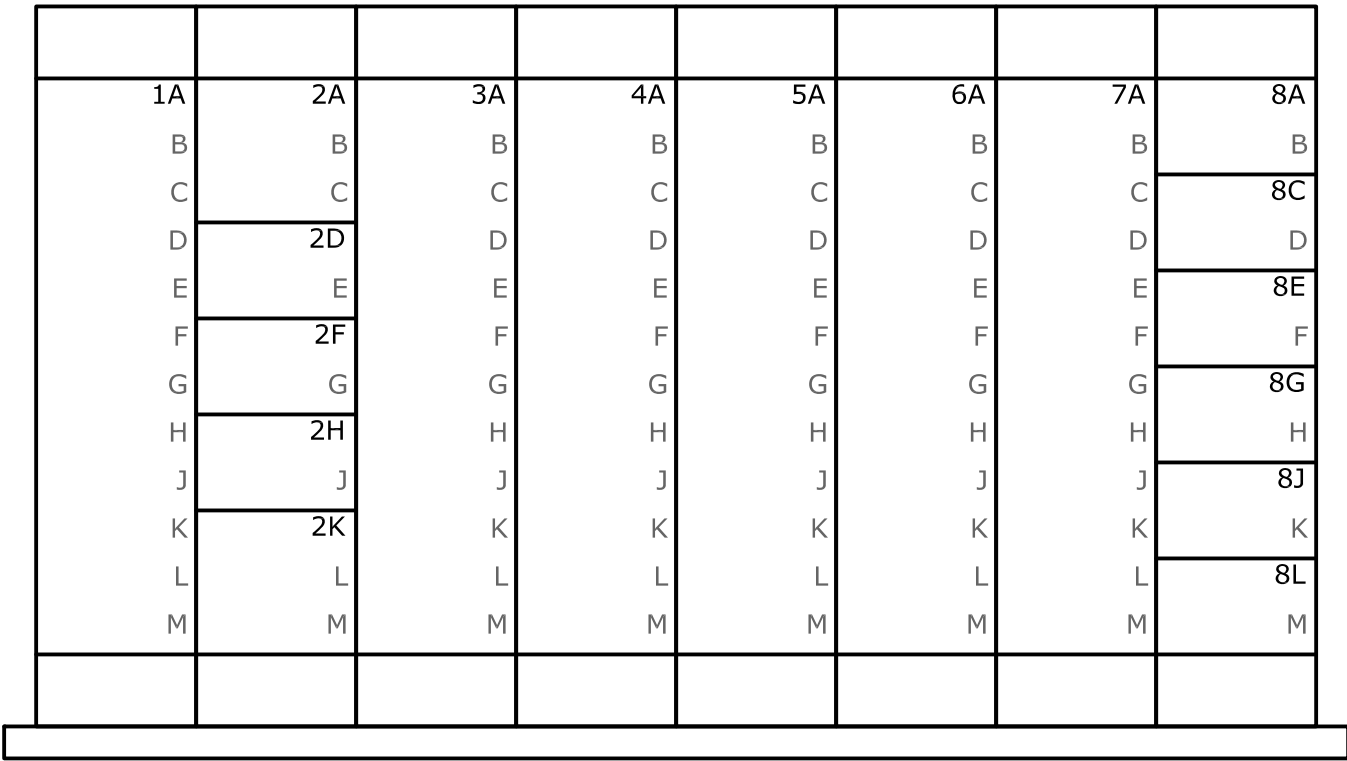
MCC1
ONE-LINE
DIAGRAM

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

480/277VAC, 3PH, 4W, 2000A, 65KAIC



MCC2 ONE-LINE DIAGRAM
NOT TO SCALE



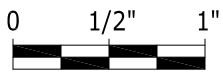
MCC2 FRONT ELEVATION
NOT TO SCALE

- NOTES:
- CONTRACTOR RESPONSIBLE FOR ROUTING ALL CONDUITS.
 - CONTRACTOR SHALL VERIFY EQUIPMENT STUB-UP PRIOR TO INSTALLATION.
 - "**" DENOTES CONDUCTORS COMBINED IN SINGLE CONDUIT.
 - MCC2 FURNISHED UNDER SEPARATE CONTRACT & INSTALLED UNDER THIS CONTRACT.

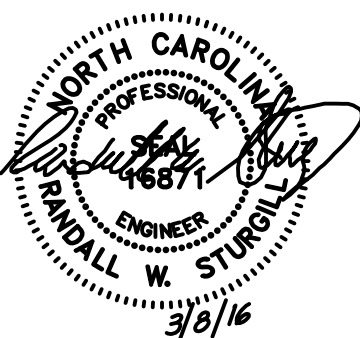
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3	CONSTRUCTION	3-8-16	RWS	
2	BUILDING PERMIT REVIEW	2-26-16	RWS	
1	REGULATORY REVIEW	1-20-16	RWS	
REV	ISSUED FOR	DATE	BY	

PROJECT ENGINEER:	R. W. STURGILL
DESIGNED BY:	R. W. STURGILL
DRAWN BY:	R. W. LAWSON
CHECKED BY:	-
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



ISSUED FOR
CONSTRUCTION



STURGILL ENGINEERING PA
C-1210
ONE SOUTH MAIN ST.
LEXINGTON, NC 27229
(336) 238-1249 PH.
(336) 236-6393 FAX

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

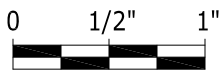
MCC2
ONE-LINE
DIAGRAM

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

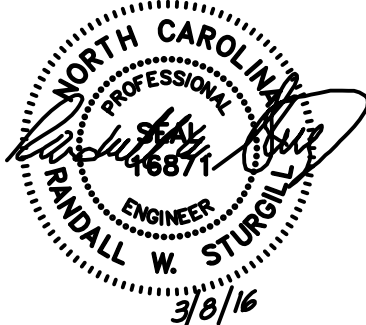
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3	CONSTRUCTION	3-8-16	RWS
2	BUILDING PERMIT REVIEW	2-26-16	RWS
1	REGULATORY REVIEW	1-20-16	RWS
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. W. STURGILL
DESIGNED BY:	R. W. STURGILL
DRAWN BY:	R. W. LAWSON
CHECKED BY:	-
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



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ENGINEERING
PA

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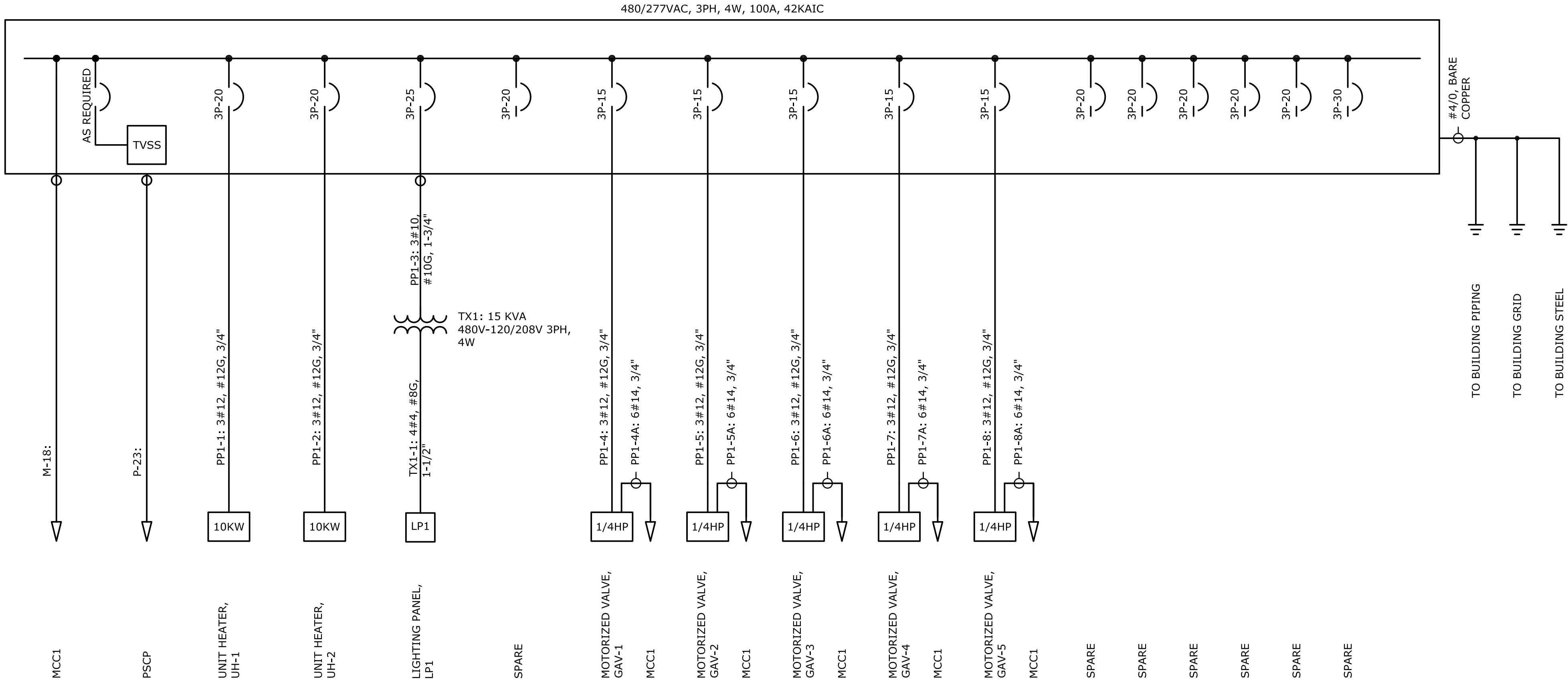
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PP1
ONE-LINE
DIAGRAM

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

E23



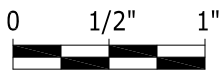
PP1 ONE-LINE DIAGRAM
NOT TO SCALE

- NOTES:
1. CONTRACTOR RESPONSIBLE FOR ROUTING ALL CONDUITS.
 2. CONTRACTOR SHALL VERIFY EQUIPMENT STUB-UP PRIOR TO INSTALLATION.
 3. "*" DENOTES CONDUCTORS COMBINED IN SINGLE CONDUIT.

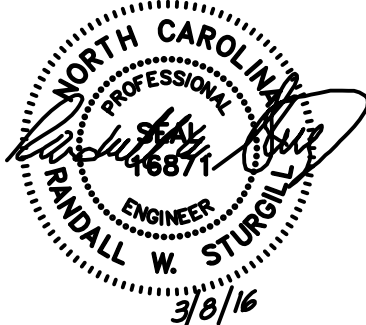
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3	CONSTRUCTION	3-8-16	RWS
2	BUILDING PERMIT REVIEW	2-26-16	RWS
1	REGULATORY REVIEW	1-20-16	RWS
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. W. STURGILL
DESIGNED BY:	R. W. STURGILL
DRAWN BY:	R. W. LAWSON
CHECKED BY:	-
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



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C-1210

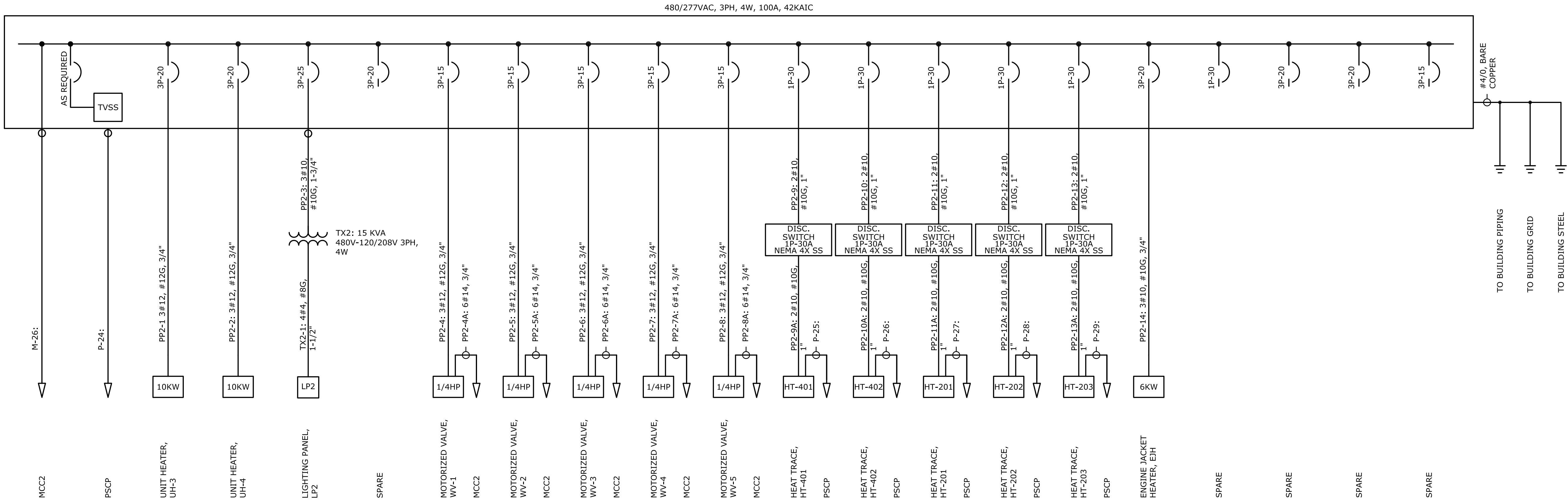
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PP2
ONE-LINE
DIAGRAM

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

E24

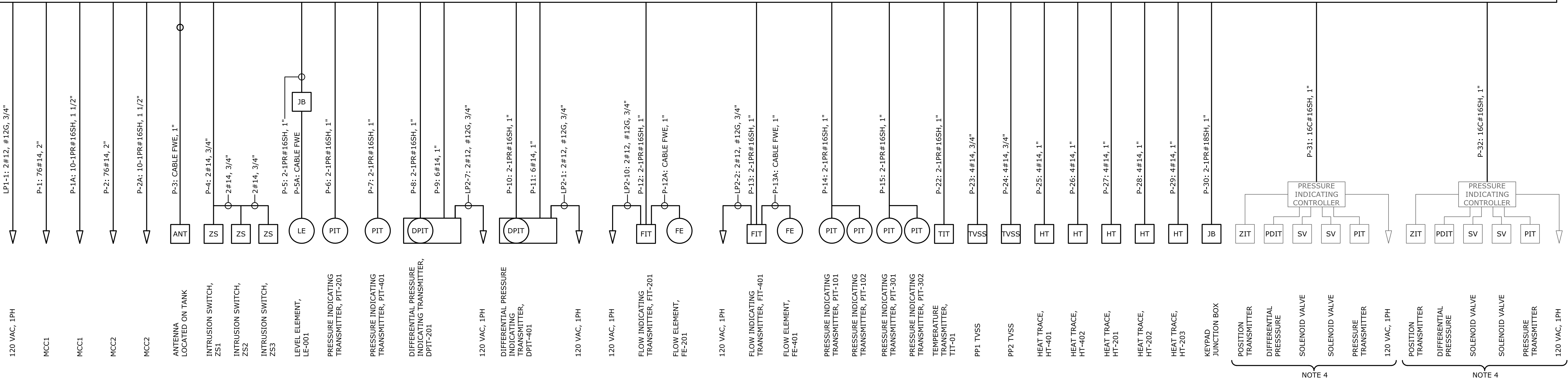


PP2 ONE-LINE DIAGRAM
NOT TO SCALE

- NOTES:
- CONTRACTOR RESPONSIBLE FOR ROUTING ALL CONDUITS.
 - CONTRACTOR SHALL VERIFY EQUIPMENT STUB-UP PRIOR TO INSTALLATION.
 - "**" DENOTES CONDUCTORS COMBINED IN SINGLE CONDUIT.

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PUMP STATION CONTROL PANEL, PSCP



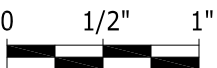
PSCP ONE-LINE DIAGRAM
NOT TO SCALE

NOTES:

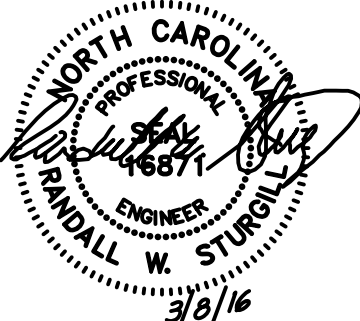
1. CONTRACTOR RESPONSIBLE FOR ROUTING ALL CONDUITS.
2. CONTRACTOR SHALL VERIFY EQUIPMENT STUB-UP PRIOR TO INSTALLATION.
3. "*" DENOTES CONDUCTORS COMBINED IN SINGLE CONDUIT.
4. EXISTING PRV EQUIPMENT LOCATED IN PRV STATION.

3	CONSTRUCTION	3-8-16	RWS
2	BUILDING PERMIT REVIEW	2-26-16	RWS
1	REGULATORY REVIEW	1-20-16	RWS
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. W. STURGILL
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



ISSUED FOR
CONSTRUCTION



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ONE SOUTH MAIN ST.
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(336) 238-1249 PH.
(336) 236-6393 FAX

DAVIDSON COUNTY
NORTH CAROLINA

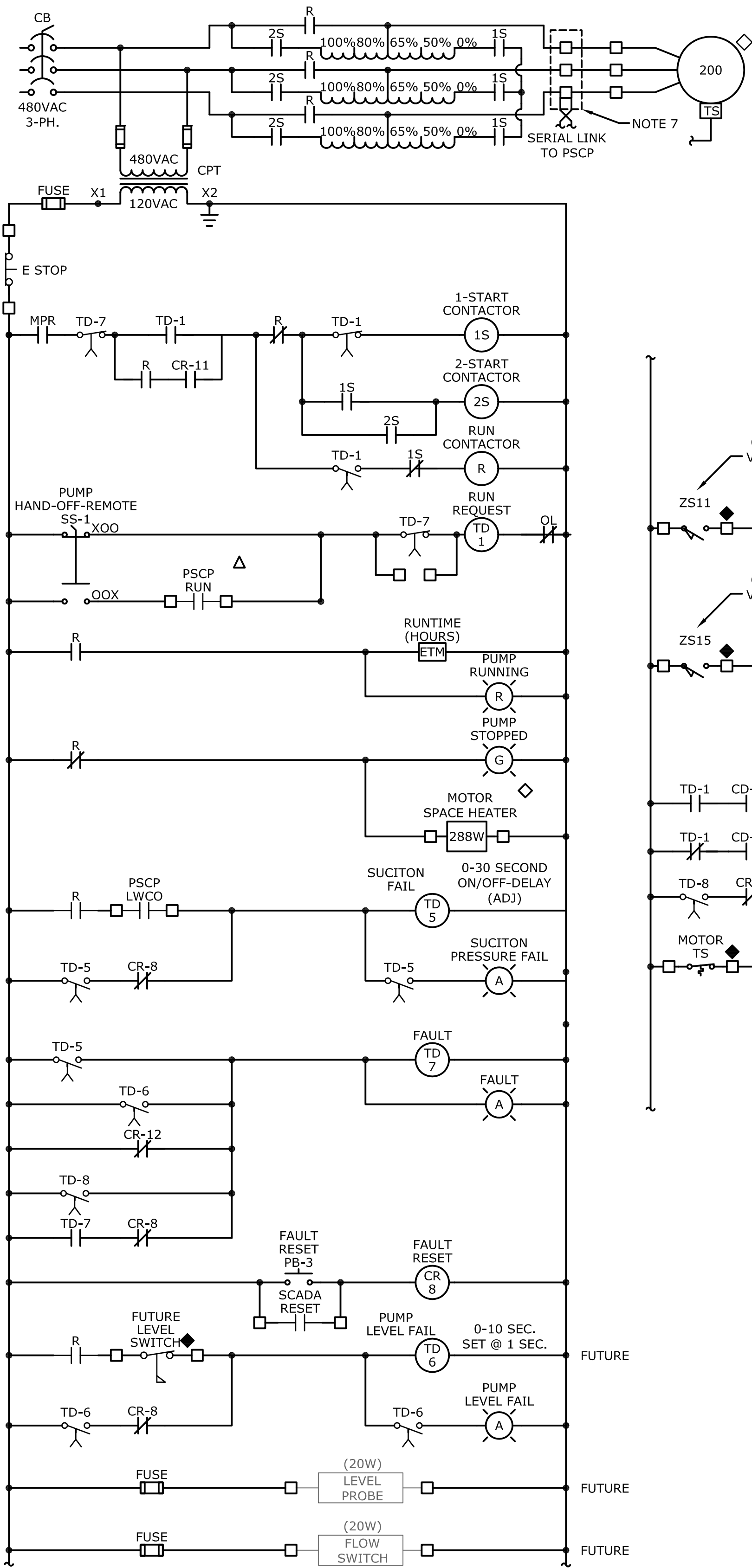
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PSCP
ONE-LINE
DIAGRAM

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

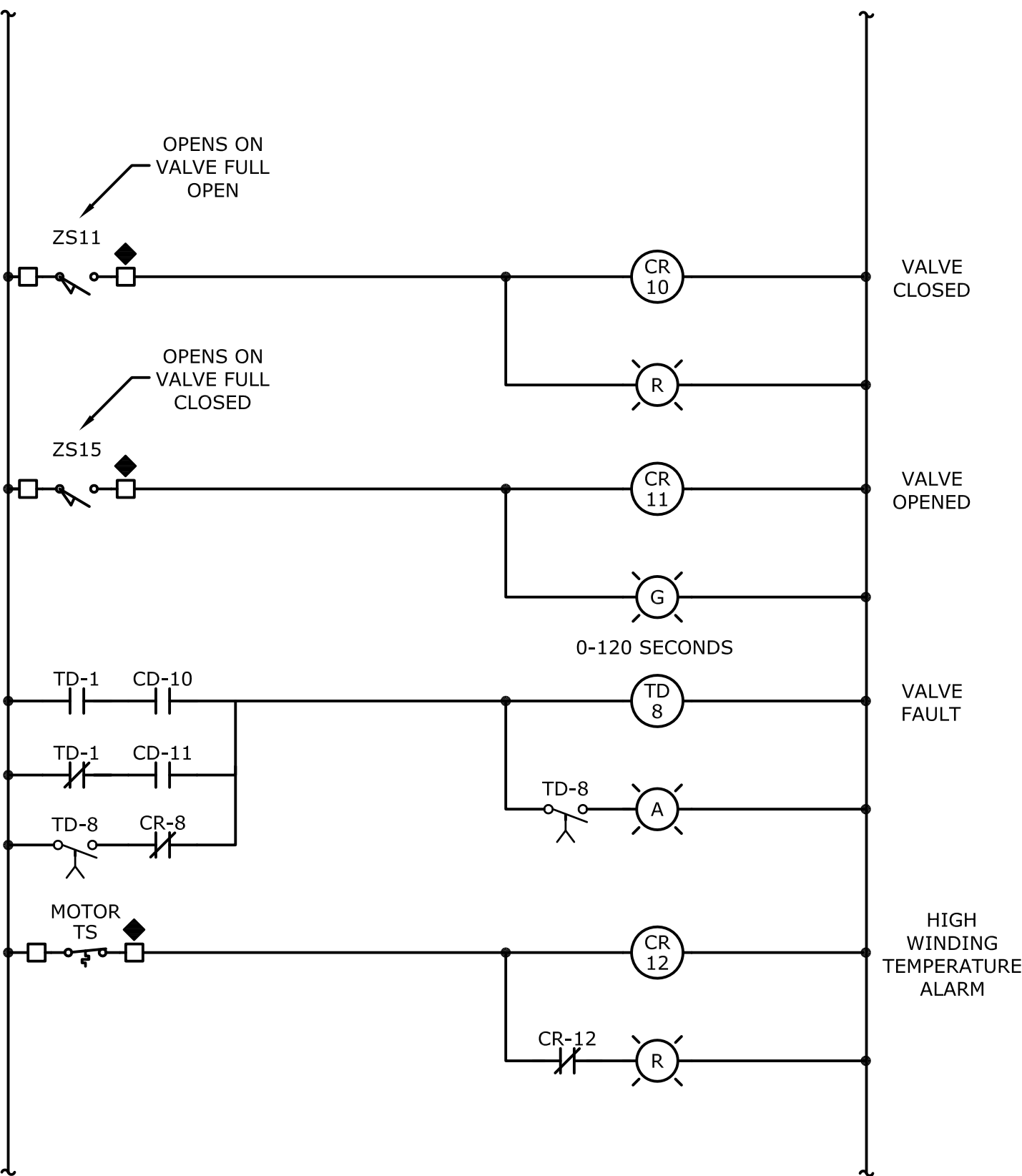
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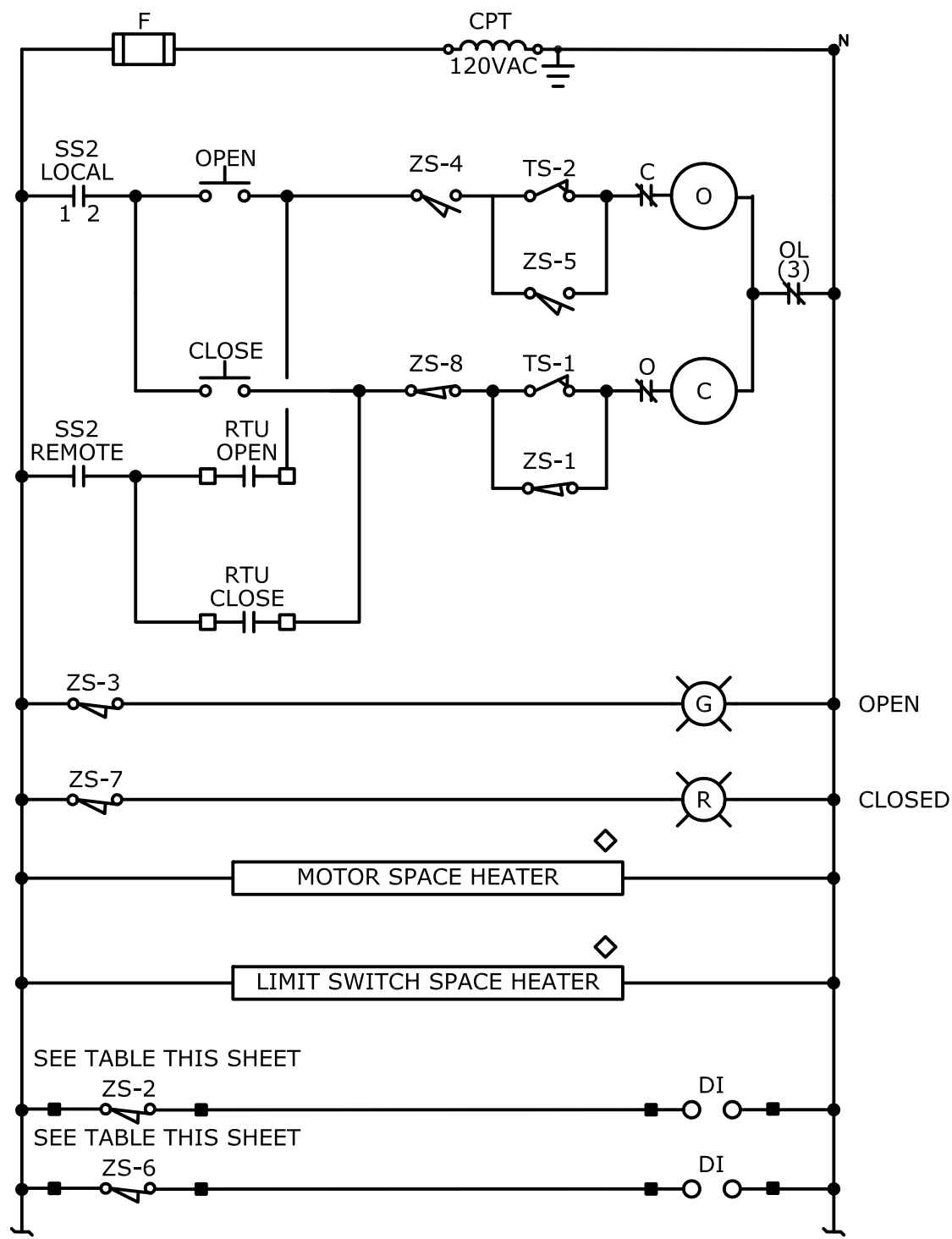


PUMP CONTROL SCHEMATIC (TYP. OF 10)
NOT TO SCALE TYPICAL FOR ALL WATER PUMPS (NOTE 6)

SYM	LOCATION LEGEND
◇	LOCATED AT DRIVEN EQUIPMENT
◆	REMOTE FROM STARTER AND DRIVEN EQUIPMENT
△	LOCATED IN REMOTE PUMP STATION CONTROL PANEL(PSCP)



CONTACTS SHALL BE PROVIDED FOR CONNECTION TO PUMP STATION CP (PSCP)
PUMP HAND-OFF-REMOTE SS-1
PUMP RUNNING R
PUMP FLOW FAIL TD-5
PUMP LEVEL FAIL TD-6
PUMP FAULT TD-7
FAULT RESET CR-8
VALVE FAULT TD-8
HIGH WINDING TEMP CR-12
VALVE CLOSED CR-10
VALVE OPEN CR-11

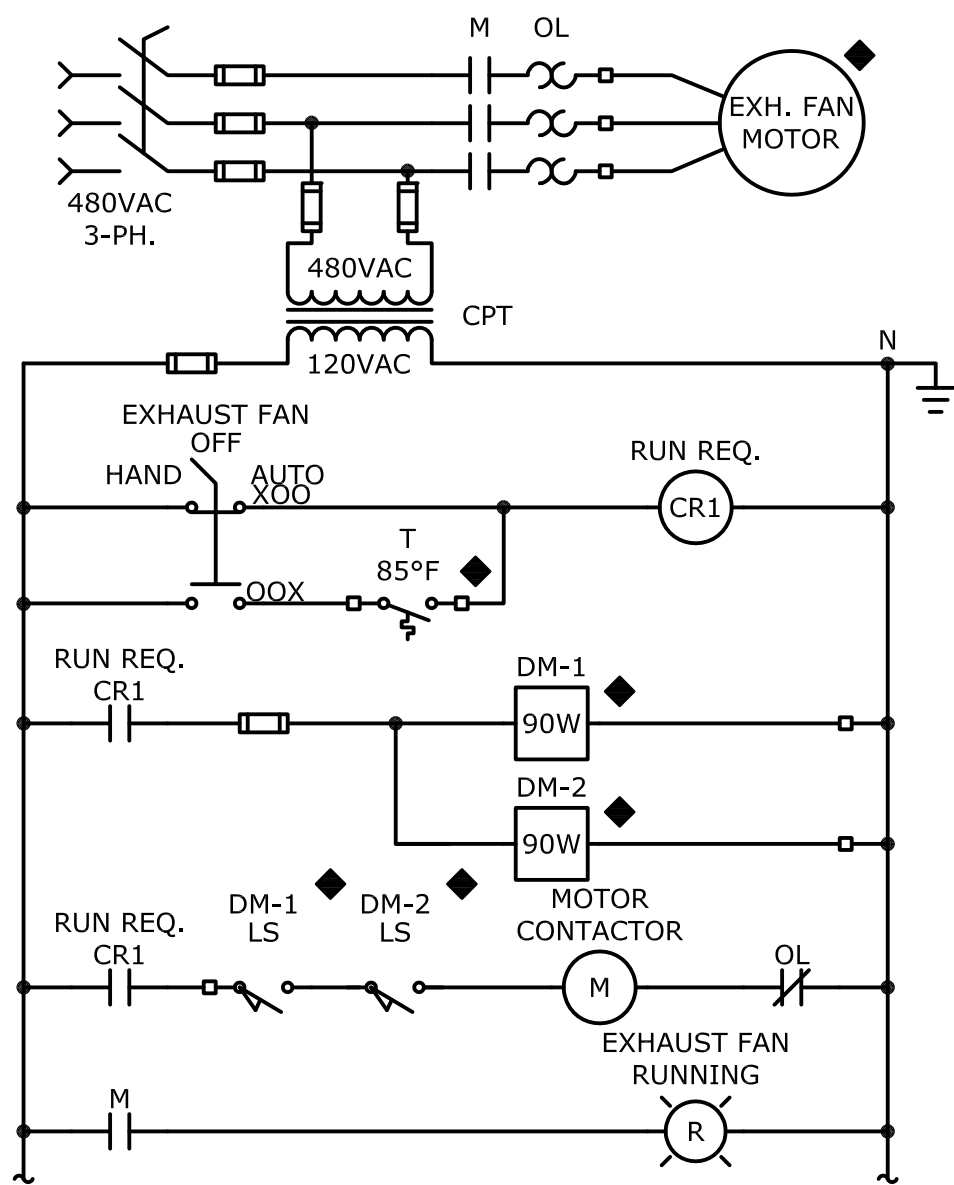


ELECTRIC VALVE CONTROL
NOT TO SCALE

R O T O R C O N T A C T	CONTACT	LIMIT SWITCH ZS		FUNCTION
		POSITION	POSITION	
		FULL OPEN	FULL CLOSED	
ZS	1			TORQUE SW. BYPASS
	2			REMOTE INDICATION
	3			INDICATING LIGHTS
	4			OPEN LIMIT
ZS	5			TORQUE SW. BYPASS
	6			REMOTE INDICATION
	7			INDICATING LIGHTS
	8			CLOSE LIMIT
ZS	9			REMOTE INDICATION
	10			REMOTE INDICATION
	11			SPARE
	12			SPARE
ZS	13			REMOTE INDICATION
	14			REMOTE INDICATION
	15			SPARE
	16			SPARE

TORQUE SWITCH LEGEND
TS-1 - CLOSING TORQUE SWITCH STOPS VALVE IF MECHANICAL OVERLOAD OCCURS DURING CLOSING CYCLE
TS-2 - OPENING TORQUE SWITCH STOPS VALVE IF MECHANICAL OVERLOAD OCCURS DURING OPENING CYCLE

LIMIT SWITCH CONTACTS
VALVE SWITCH IN FULL OPEN POSITION



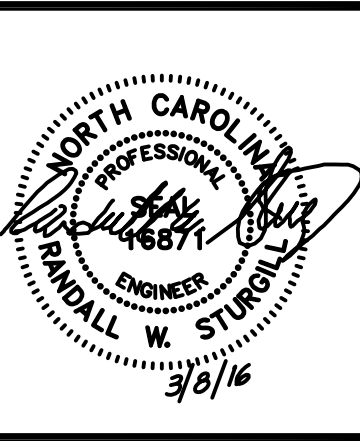
EF AND DAMPER CONTROL
NOT TO SCALE (NOTE 6)

NOTES:

- SEE SHEET E001 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
- UNLESS OTHERWISE NOTED, DEVICES INDICATED ON THIS DRAWING SHALL BE SUPPLIED AS AN INTEGRAL PART OF THE PUMP DRIVE (VFD, RVAT, CONTACTORS, CONTROLS, ETC.) DEVICES LOCATED REMOTELY SHALL BE IDENTIFIED BY A LOCATION SYMBOL AS DEFINED IN THE DEVICE LOCATION LEGEND.
- RELAY AND TIMER DESIGNATIONS APPLY TO THE INDIVIDUAL SCHEMATIC ONLY.
- CONTROL SETTINGS, ALARM LIMITS, TIMER SETTINGS AND ADJUSTABLE PARAMETERS ARE INTENDED TO BE FOR THE INITIAL START-UP. ADJUSTABLE SETTINGS SHALL BE TESTED AND CHANGED BY THE CONTRACTOR, IF REQUIRED FOR PROPER OPERATION.
- MOTOR STARTER SCHEMATICS INDICATE GENERAL CONTROLS AND SEQUENCING. EQUIPMENT SUPPLIER SHALL ADAPT THE SPECIFIC PACKAGE TO PROVIDE A FULLY FUNCTIONAL SYSTEM.
- CONTROL SCHEMATICS ARE A DIAGRAMMATIC REPRESENTATION TO INDICATE THE MINIMUM ACCEPTABLE CONTROL FUNCTIONS. ACTUAL CONTROL LOGIC WILL DEPEND ON DRIVE MANUFACTURER'S CONTROL. PUMP CONTROLS FURNISHED WITH MCC. INDICATED FOR REFERENCE ONLY. CONTRACTOR SHALL TERMINATE CABLES PER MANUFACTURERS DRAWINGS.
- MOTOR PROTECTION RELAY, MPR SHALL PROVIDE MOTOR PROTECTION FOR OVERLOAD, LOSS-OF-PHASE AND PHASE REVERSAL. IN ADDITION, SHALL PROVIDE KW, KWHR AMPS TO PSCP VIA MODBUS LINK.

				PROJECT ENGINEER:	R. W. STURGILL
				DESIGNED BY:	R. W. STURGILL
				DRAWN BY:	R. W. LAWSON
				CHECKED BY:	-
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
3	CONSTRUCTION	3-8-16	RWS		
2	BUILDING PERMIT REVIEW	2-26-16	RWS		
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



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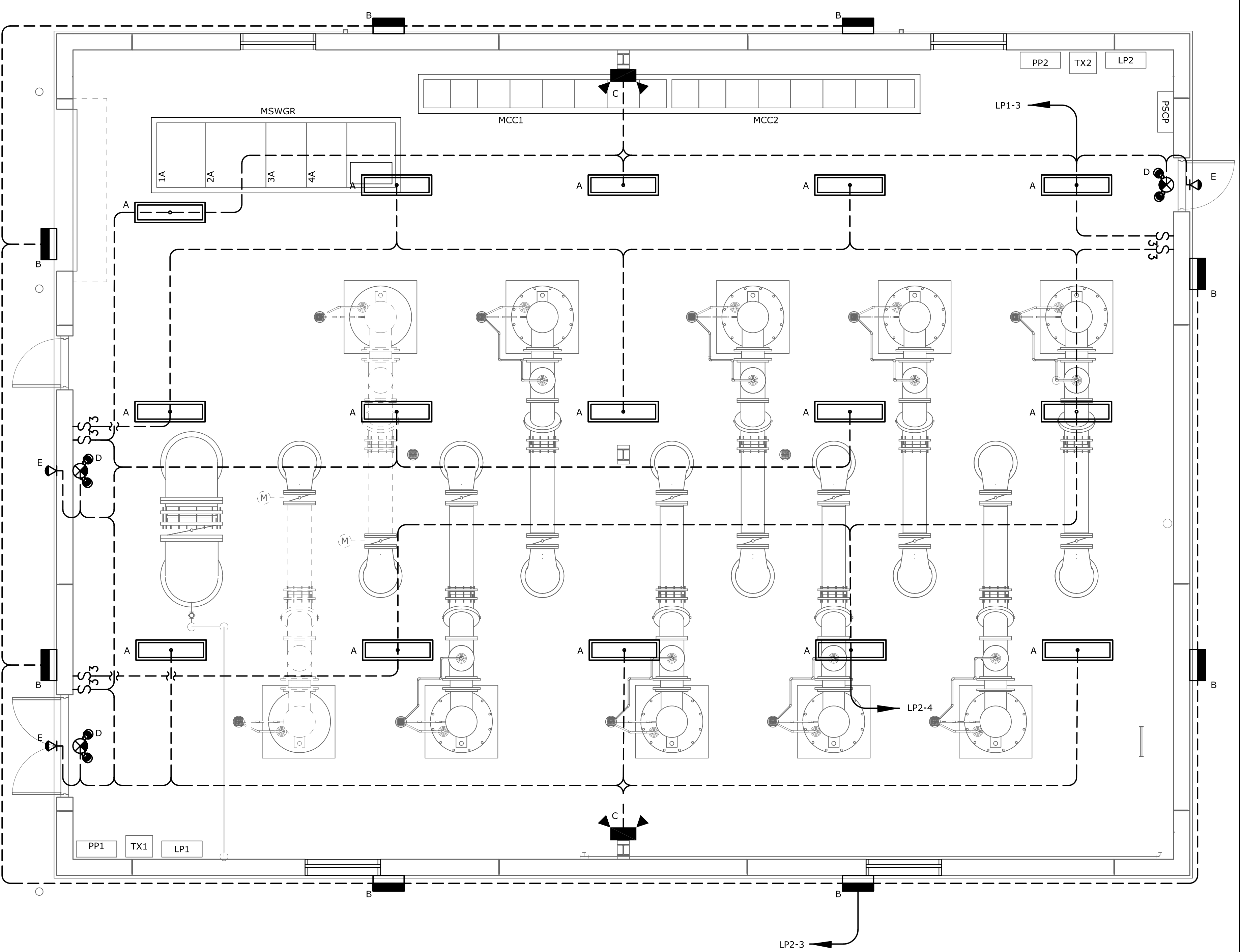
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

MISCELLANEOUS
CONTROL SCHEMATIC

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	E26

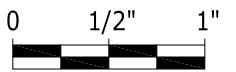
LIGHTING FIXTURE SCHEDULE					
SYMBOL	LAMP	TOTAL POWER PER FIXTURE	MOUNTING	DESCRIPTION	MANUFACTURER'S PART NUMBER
	BALLAST				
<div>A</div>	ONE (1) 275 W LED	275 WATTS	SUSPEND FROM CEILING 14" A.F.F	52" LED FIXTURE FIBERGLASS ENCLOSED WITH ACRYLIC PRISMATIC DIFFUSER. DAMP LABEL LISTED, 120VAC.	COLUMBIA LXEW4-35V-FAW-EU METALUX VT4LED-LD4-28-DRF-120-L840-ED-3-WL-U OR APPROVED EQUIVALENT.
	-				
<div>B</div>	EIGHTEEN (18) 2.7W LED	45 WATTS	SURFACE MOUNT ON WALL	COMPACT LED WALL PACK, WET LOCATION LISTED, 120VAC.	HUBBELL LNC2-18LU-4K-4-1-PC OR EQUIVALENT.
<div>C</div>	TWO (2) 3W LED	6 WATTS	WALL MOUNT 8" AFF	EMERGENCY LIGHT, DAMP LABEL LISTED 120VAC, w/BATTERY PACK.	DUAL LITE LZ15-032 OR EQUIVALENT.
<div>D</div> <div>E</div>	LED EXIT	11 WATTS	WALL OR CEILING MOUNT ABOVE DOOR	LED EXIT SIGN; WHITE WITH RED LETTERS, 120VAC. WITH BATTERY PACK AND MATCHING OUTDOOR REMOTE HEADS.	DUAL LITE HCXURW-RC12-03L WITH 0CRDZ0605 REMOTE HEAD OR EQUIVALENT.
	REMOTE HEADS				



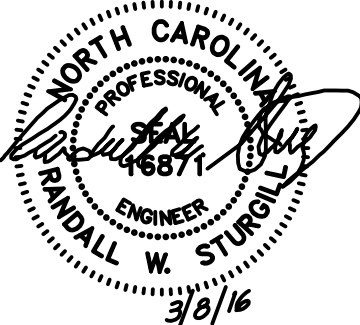
PUMP STATION LIGHTING PLAN
SCALE 1/4" = 1'-0"

3	CONSTRUCTION	3-8-16	RWS
2	BUILDING PERMIT REVIEW	2-26-16	RWS
1	REGULATORY REVIEW	1-20-16	RWS
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. W. STURGILL
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ISSUED FOR
CONSTRUCTION



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DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

PUMP STATION
LIGHTING PLAN

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

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PLOT DATE: 2016/03/08 3:05:06 PM BY: BLAWSON

PANEL:LP1
LOCATION: PUMP ROOM
FED FROM: SWITCHBOARD "PP1"

VOLTAGE: 208Y/120 VOLT, 3PH, 4W, 60 Hz

MAINS 125 AMP 125 MLO

AMP MAIN BREAKER

100%

LOC

SHUNT

MOUNTING:

UNITIZED

FLUSH

☒ SURFACE

MINIMUM AIC RATING: 42 KA

			BRANCH CIRCUIT								BRANCH CIRCUIT					DEVICE			
NOTES	COND SIZE	WIRE SIZE	AMP TRIP	POLES	DESIGNATION	VOLT-AMPS	NO.	PHASE LOAD (VOLT-AMPS)			NO.	VOLT-AMPS	DESIGNATION	POLES	AMP TRIP	WIRE SIZE	COND SIZE	NOTES	
								A	B	C									
	1/2	10	20	1	PSCP	180	1	1080			2	900	RECEPTACLES	1	20	12	1/2		
	1/2	10	20	1	INTERIOR LIGHTING	2250	3		2250		4	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	5			0	6	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	7	0			8	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	9		0		10	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	11			0	12	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	13	0			14	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	15		0		16	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	17			0	18	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	19	0			20	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	21		0		22	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	23			0	24	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	25	0			26	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	27		0		28	0	SPARE	1	20	-	-		
	-	-	20	1	SPARE	0	29			0	30	0	SPARE	1	20	-	-		
TOTALS PER PHASE								1080	2250	0	TOTAL CONNECTED LOAD (VA)					3,330			
TOTALS AMPS PER PHASE								9	19	0	AT 120 VOLTS								

NOTES:

PANEL:LP2
LOCATION: PUMP ROOM
FED FROM: SWITCHBOARD "PP2"

VOLTAGE: 208Y/120 VOLT, 3PH, 4W, 60 Hz

MAINS 125 AMP 125 MLO

AMP MAIN BREAKER

100%

LOC

SHUNT

MOUNTING:

UNITIZED

FLUSH

☒ SURFACE

MINIMUM AIC RATING: 42 KA

			BRANCH CIRCUIT								BRANCH CIRCUIT					DEVICE			
NOTES	COND SIZE	WIRE SIZE	AMP TRIP	POLES	DESIGNATION	VOLT-AMPS	NO.	PHASE LOAD (VOLT-AMPS)			NO.	VOLT-AMPS	DESIGNATION	POLES	AMP TRIP	WIRE SIZE	COND SIZE	NOTES	
								A	B	C									
	1/2	10	20	1	DPIT-401	180	1	360			2	180	FIT-401	1	20	12	1/2		
	1/2	10	20	1	EXTERIOR LIGHTING	360	3		2285		4	1925	INTERIOR LIGHTING	1	20	12	1/2		
	1/2	10	20	1	RECEPTACLES	720	5			1080	6	360	ROOFTOP RECEPTACLES	1	20	12	1/2		
	1/2	10	20	1	DPIT-201	180	7	180			8	0	SPARE	1	20	-	-		
	1/2	12	20	1	GENERATOR BATTERY CHARGER	500	9		680		10	180	FIT-201	1	20	12	1/2		
-	-	-	20	1	SPARE	0	11			360	12	360	FLOW METER VAULT RECPT	1	20	12	1/2		
-	-	-	20	1	SPARE	0	13	0			14	0	SPARE	1	20	-	-		
-	-	-	20	1	SPARE	0	15	0			16	0	SPARE	1	20	-	-		
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-	-	-	20	1	SPARE	0	25	0			26	0	SPARE	1	20	-	-		
-	-	-	20	1	SPARE	0	27	0			28	0	SPARE	1	20	-	-		
-	-	-	20	1	SPARE	0	29	0			30	0	SPARE	1	20	-	-		
TOTALS PER PHASE								540	2965	1440	TOTAL CONNECTED LOAD (VA)								4,945
TOTALS AMPS PER PHASE								5	25	12	AT 120 VOLTS								

NOTES:

PANEL:LP3
LOCATION: EXISTING PUMP STATION
FED FROM: TX-EPS

VOLTAGE: 208Y/120 VOLT, 3PH, 4W, 60 Hz

MAINS 125 AMP 125 MLO

AMP MAIN BREAKER

100%

LOC

SHUNT

MOUNTING:

UNITIZED

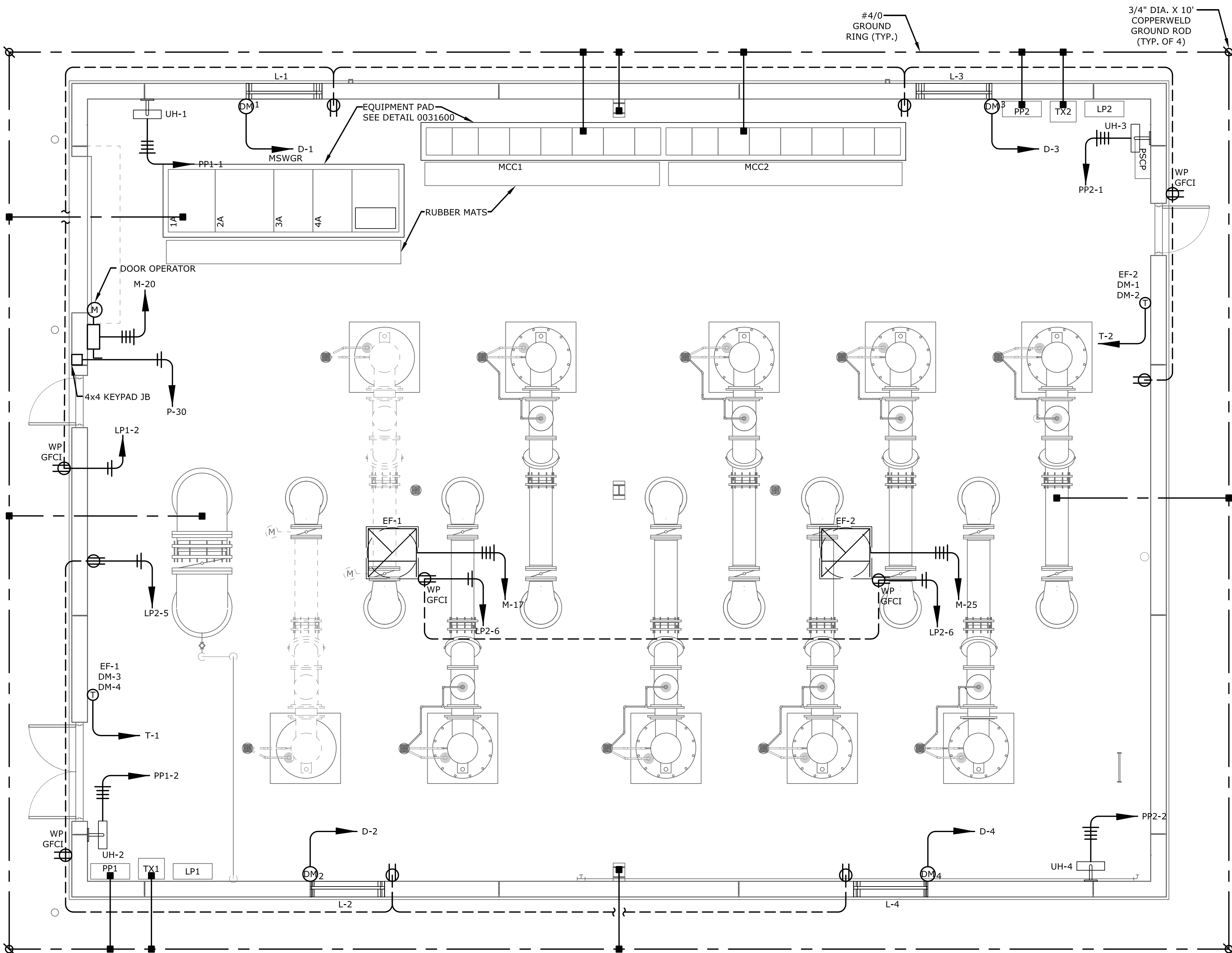
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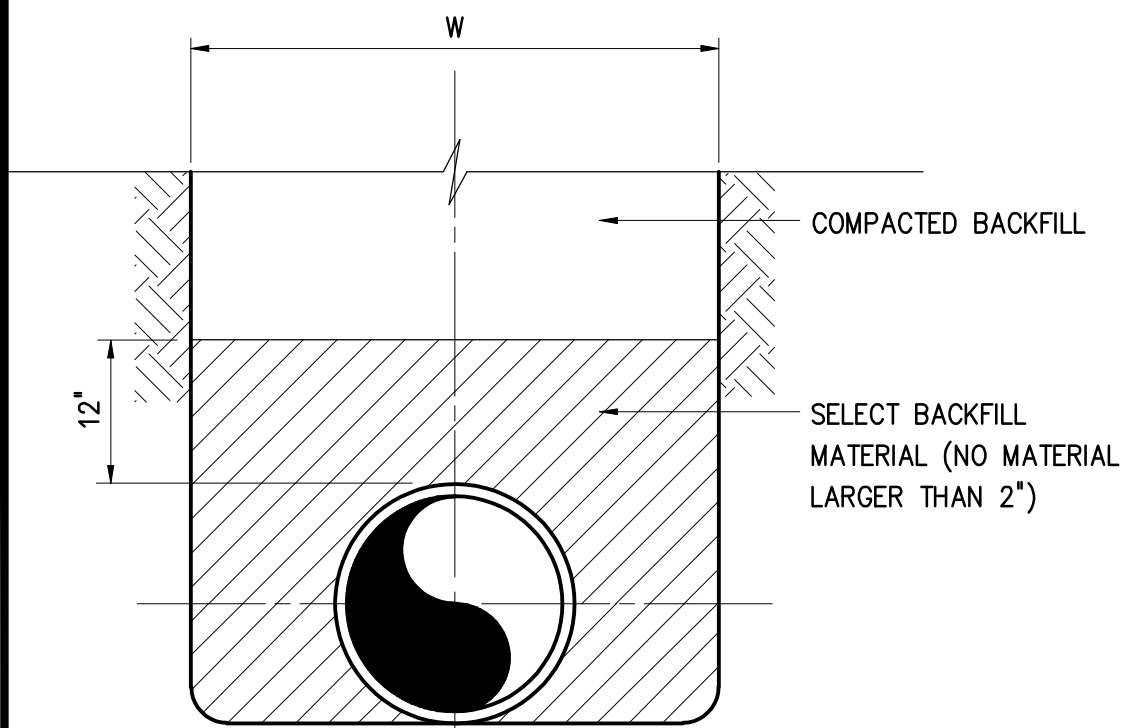
☒ SURFACE

MINIMUM AIC RATING: 42 KA

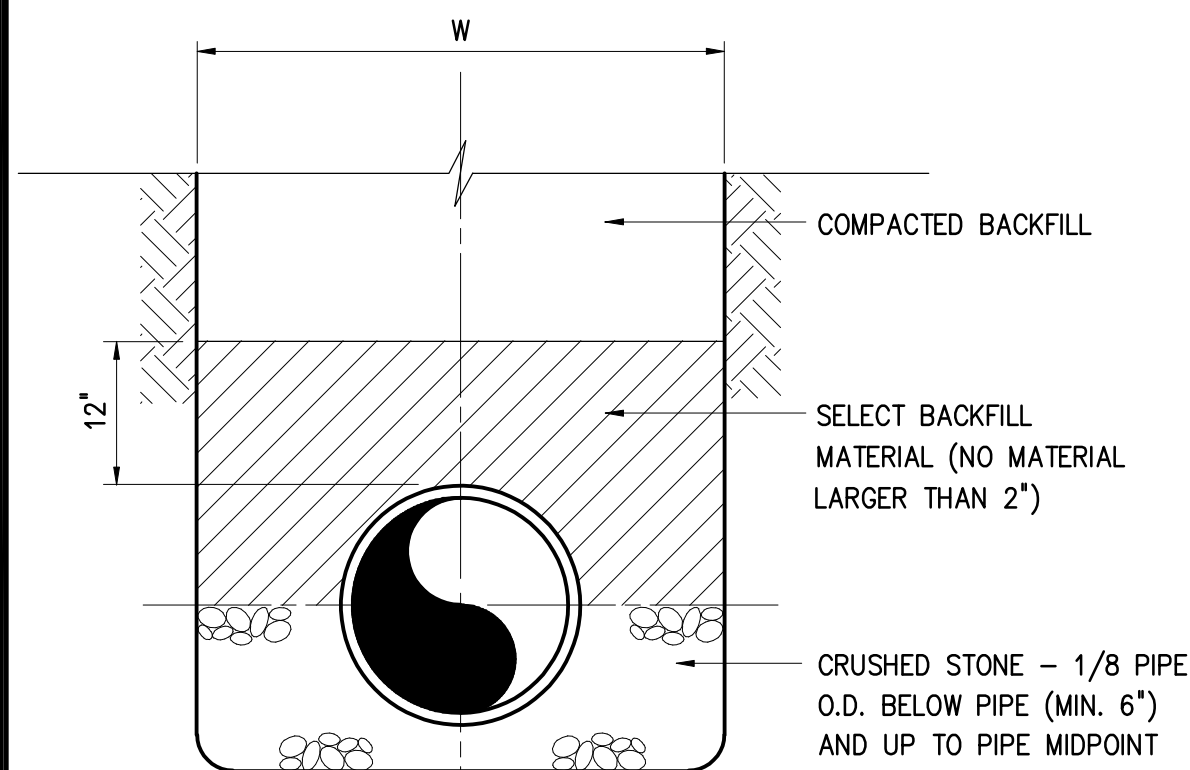
				DEVICES										BRANCH CIRCUIT										DEVICES			
NOTES	COND SIZE	WIRE SIZE	AMP TRIP	POLES	DESIGNATION	VOLT-AMPS	NO.	PHASE LOAD (VOLT-AMPS)			NO.	VOLT-AMPS	DESIGNATION	POLES	AMP TRIP	WIRE SIZE	COND SIZE	NOTES									
								A	B	C																	
	3/4	12	20	1	EXHAUST FAN 1	600	1	1200			2	600	EXHAUST FAN 2	1	20	12	3/4										
	3/4	12	20	1	LIGHTS	600	3	1680			4	1080	RECEPTACLES	1	20	12	3/4										
	1	10	30	2	UNIT HEATER	1250	5			1250	6	0	SPARE	1	20	-	-										
						1250	7	1250			8	0	SPARE	1	20	-	-										
	-	-	20	2	SPARE	0	9		0		10	0	SPARE	1	20	-	-										
						0	11		0		12	0	SPARE	1	20	-	-										
-	-	-	20	1	SPARE	0	13	0			14	0	SPARE	1	20	-	-										
-	-	-	20	1	SPARE	0	15		0		16	0	SPARE	1	20	-	-										
-	-	-	20	1	SPARE	0	17		0		18	0	SPARE	1	20	-	-										
TOTALS PER PHASE								2450	1680	1250	TOTAL CONNECTED LOAD (VA)								5,380								
TOTALS AMPS PER PHASE								20	14	10	AT 120 VOLTS																

NOTES:

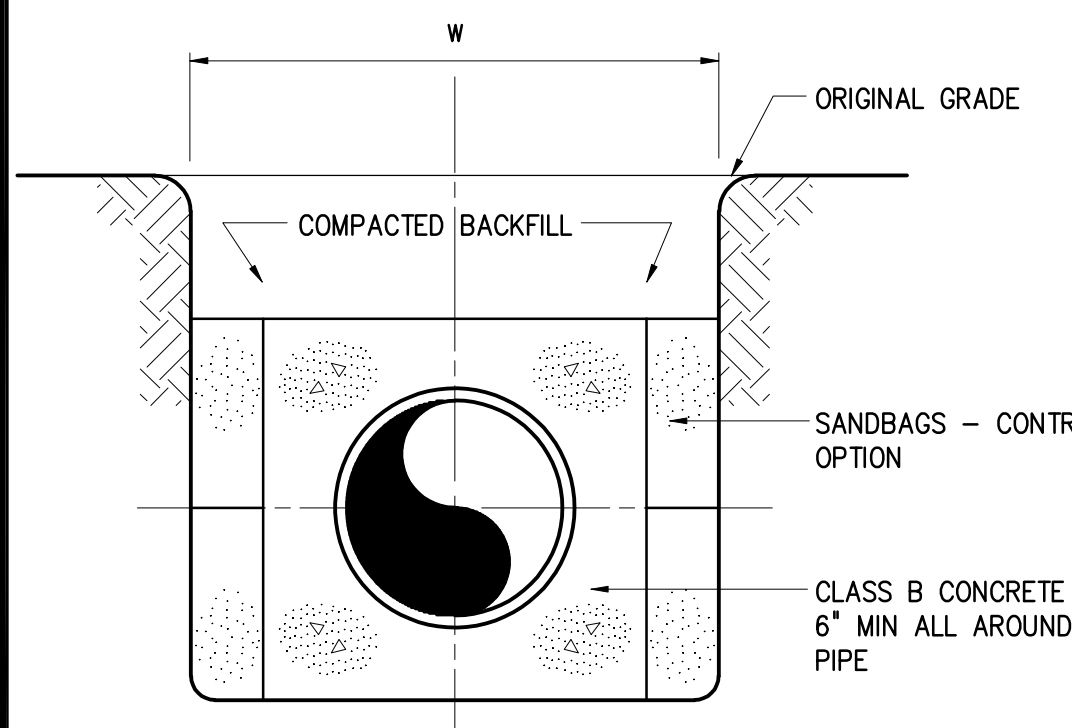




TYPE A
IN EARTH
0222100



TYPE B
0222102

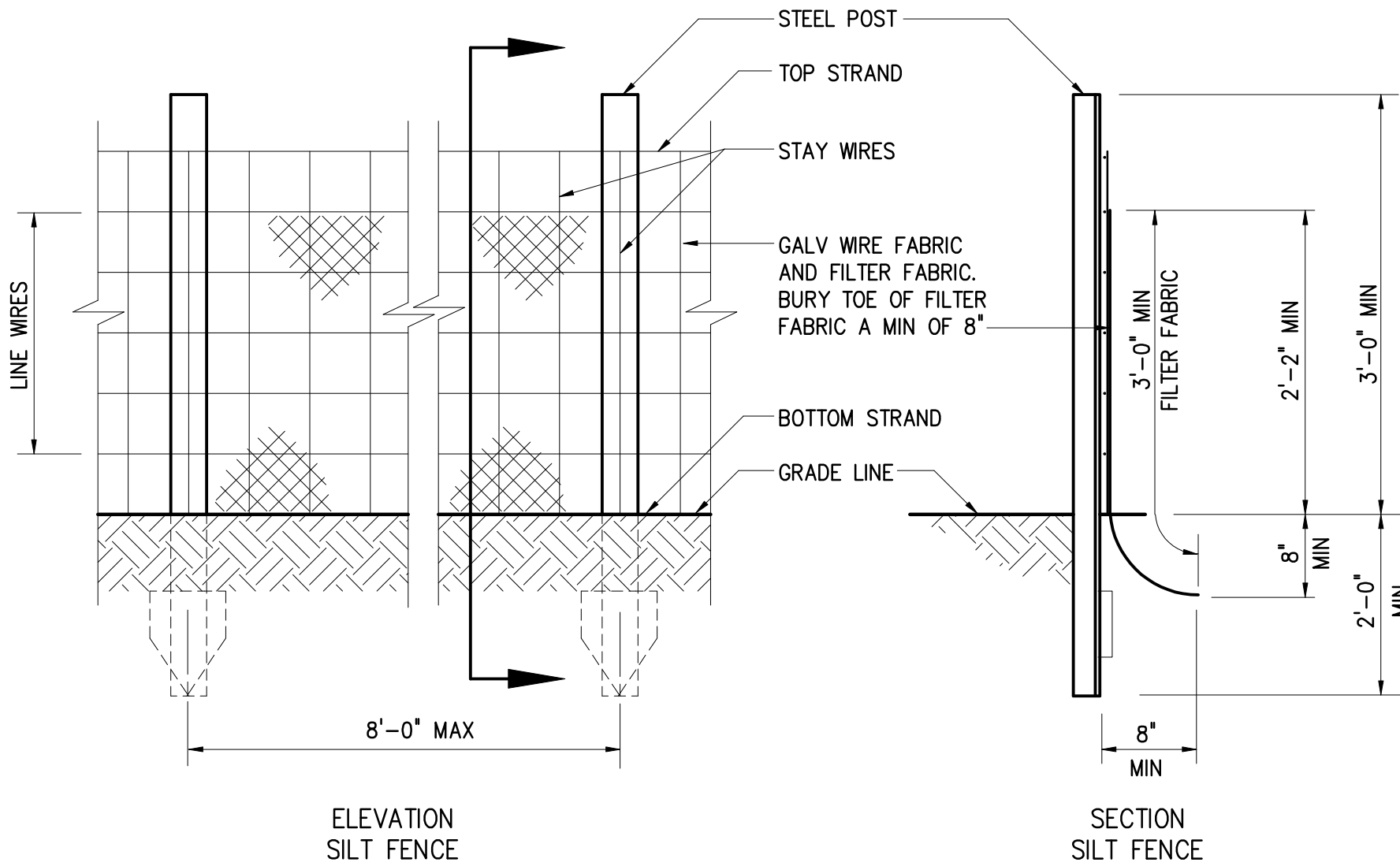


CONCRETE ENCASEMENT
(SEE NOTE 1)
0222104
PIPE BEDDING

TRENCH EXCAVATION LIMITS		
INTERNAL DIAMETER OF PIPE	W	
	MAX	W=MIN
4'-6"	3'-9"	2'-0"
8'-10"	3'-9"	2'-2"
12"	3'-9"	O.D.+2'
14'-16"	4'-2"	O.D.+2'
18"	4'-4"	O.D.+2'
20'-21"	4'-8"	O.D.+2'
24"	4'-11"	O.D.+2'
27"	5'-9"	O.D.+2'
30"	6'-7"	O.D.+2'
36"	7'-4"	O.D.+2'
42"	8'-2"	O.D.+2'
48"	8'-9"	O.D.+2'
54"	9'-4"	O.D.+2'
60"	9'-10"	O.D.+2'
72"	11'-0"	O.D.+2'
78"	11'-8"	O.D.+2'
84"	12'-0"	O.D.+2'
90"	12'-6"	O.D.+2'
96"	13'-0"	O.D.+2'
108"	14'-0"	O.D.+2'
DEPTH OF CUT	S	
	MAXIMUM PAVEMENT REPLACEMENT WIDTH	
0-6'	S=W+4'	
>6-8'	S=W+8'	
>8-10'	S=W+12'	
>10-12'	S=W+16'	
>12-14'	S=W+20'	
>14-16'	S=W+24'	
>16-18'	S=W+28'	
>18'	S=W+32'	

W = TRENCH WIDTH AT BOTTOM OF PIPE. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

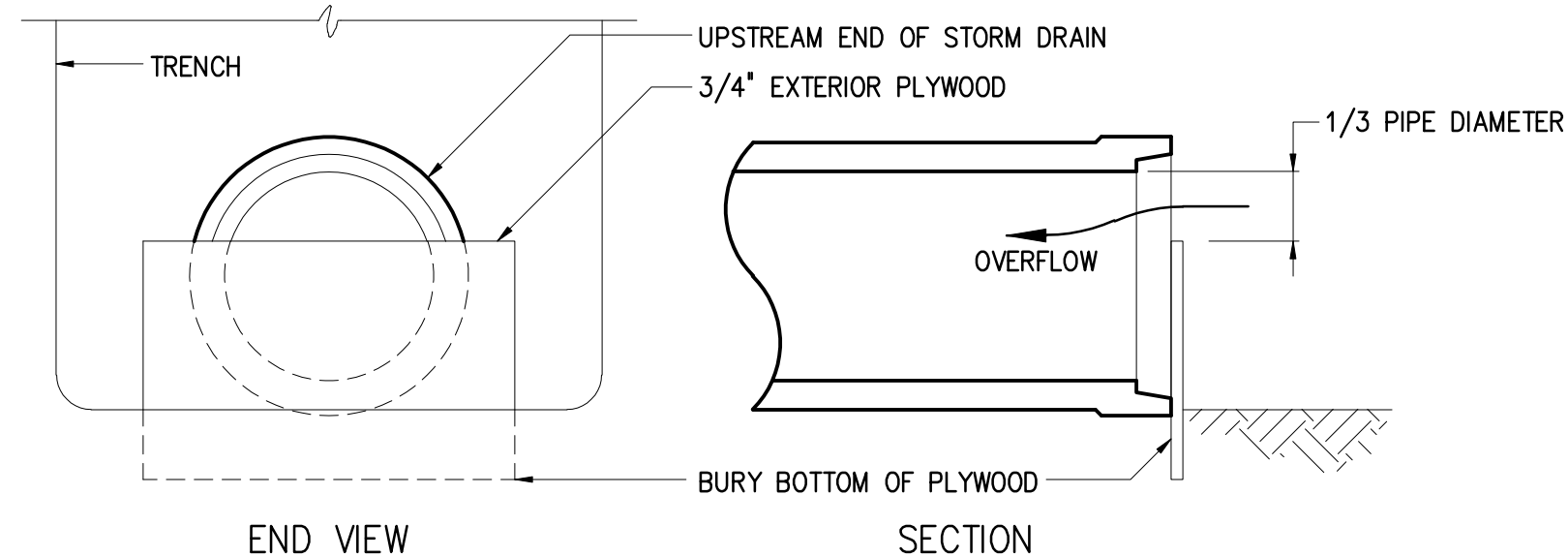
0222100



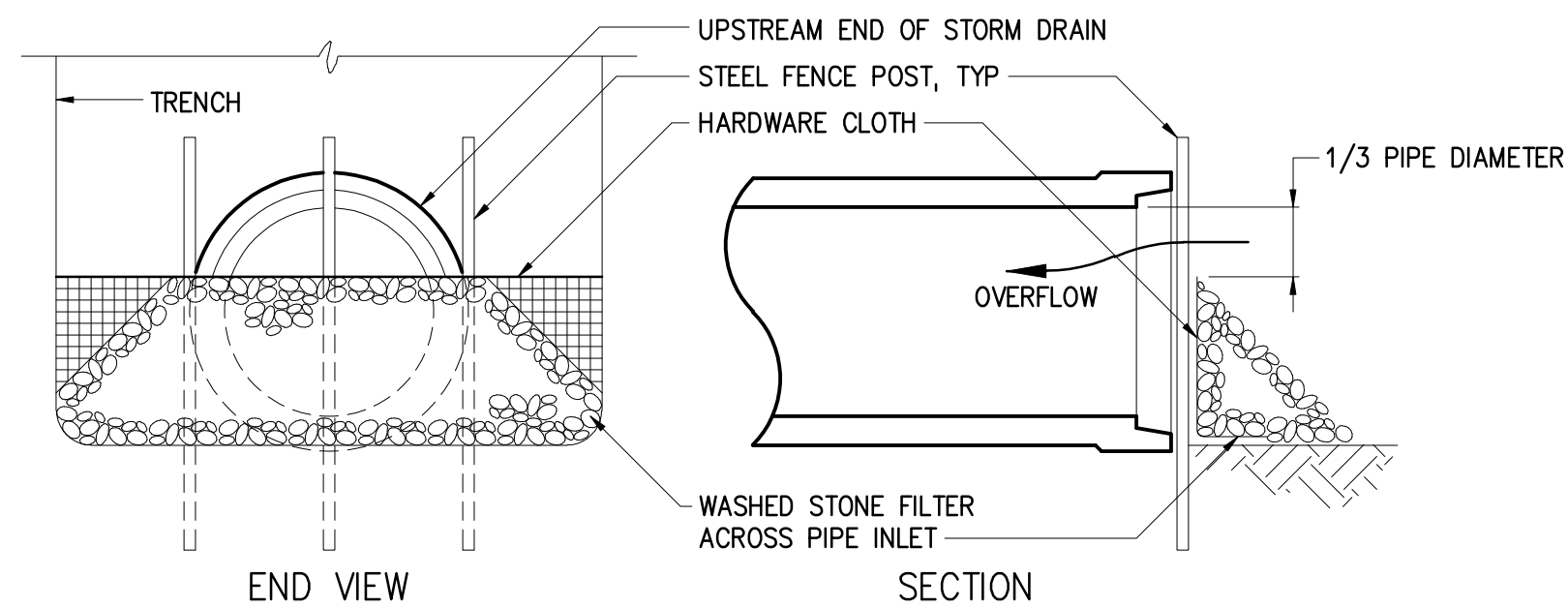
ELEVATION
SILT FENCE

- NOTE:
- EXTRA STRENGTH FILTER FABRIC (AS APPROVED BY ENGINEER) WITH 6'-0" POST SPACING DOES NOT REQUIRE MESH SUPPORT FENCE.
 - FILTER FABRIC SHALL BE WIRED DIRECTLY TO POST.

0227000

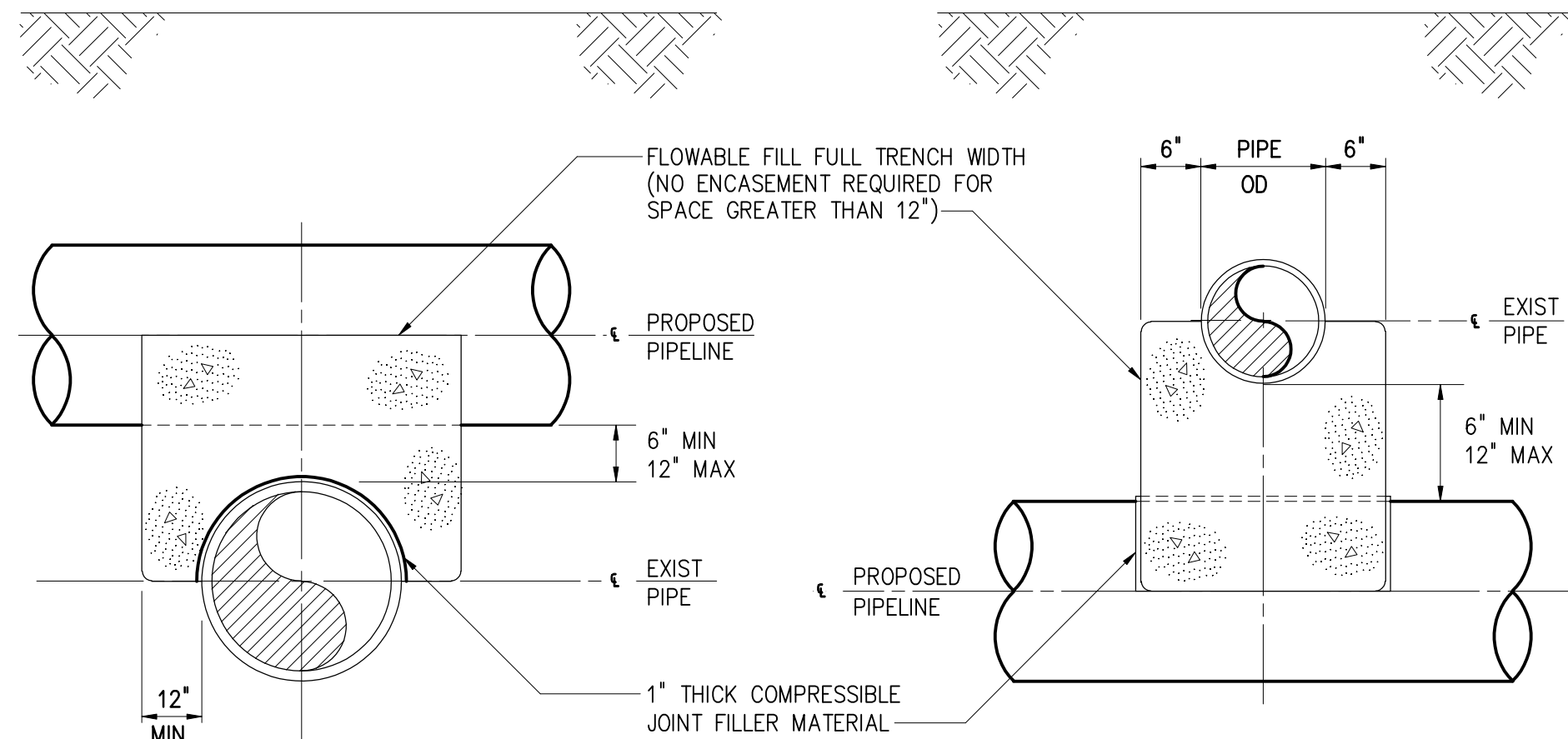


PLYWOOD INLET PROTECTION



STONE FILTER INLET PROTECTION

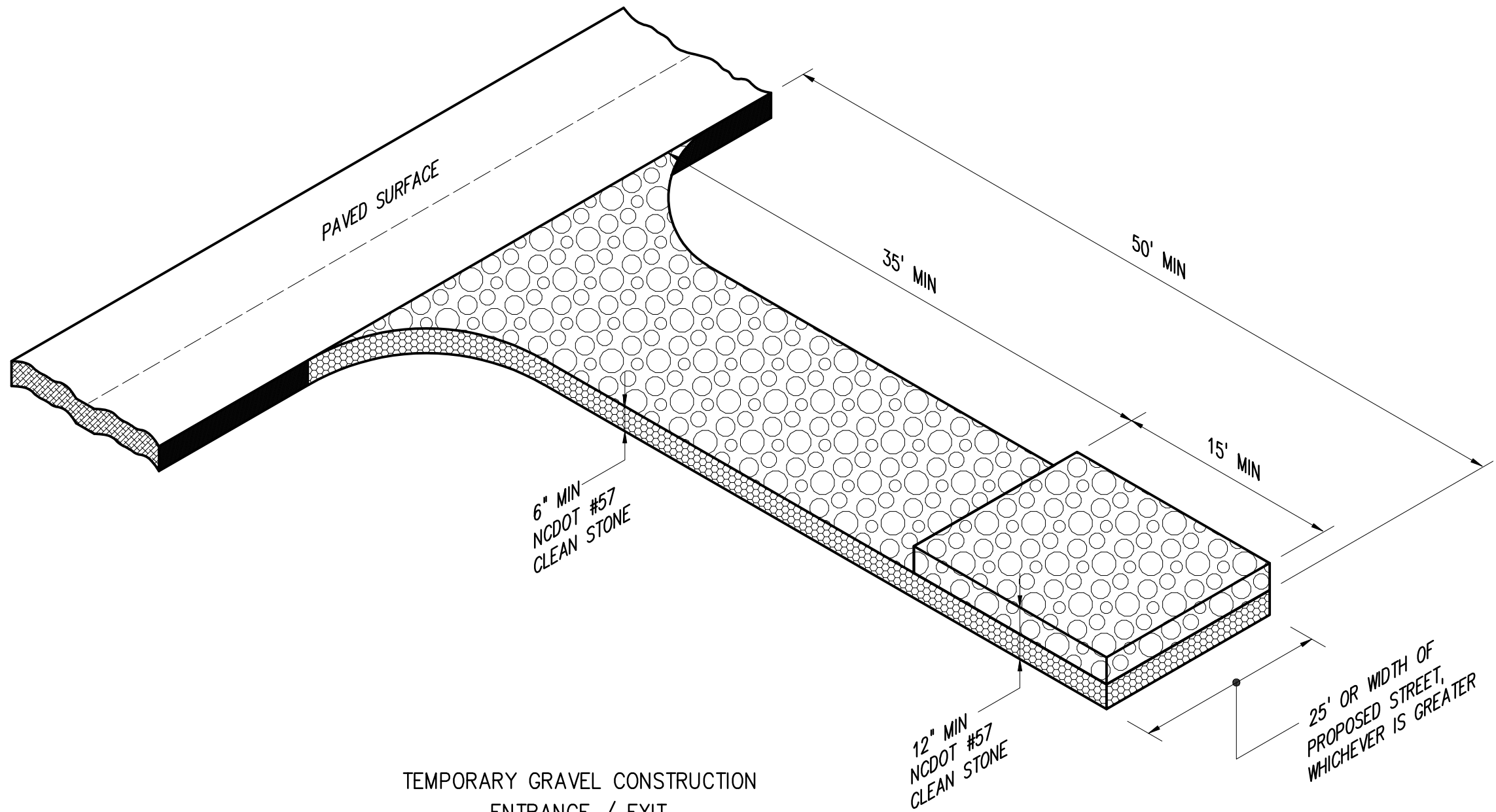
0227010



PROPOSED PIPELINE OVER EXIST PIPE


PROPOSED PIPELINE UNDER EXIST PIPE

0222118



TEMPORARY GRAVEL CONSTRUCTION
ENTRANCE / EXIT

0257701

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	HAZEN
				DRAWN BY:	HAZEN
				CHECKED BY:	HAZEN
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION

HAZEN AND SAWYER
32685
ENGINEER
MICHAEL J. BENCHICH
3/8/16

Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

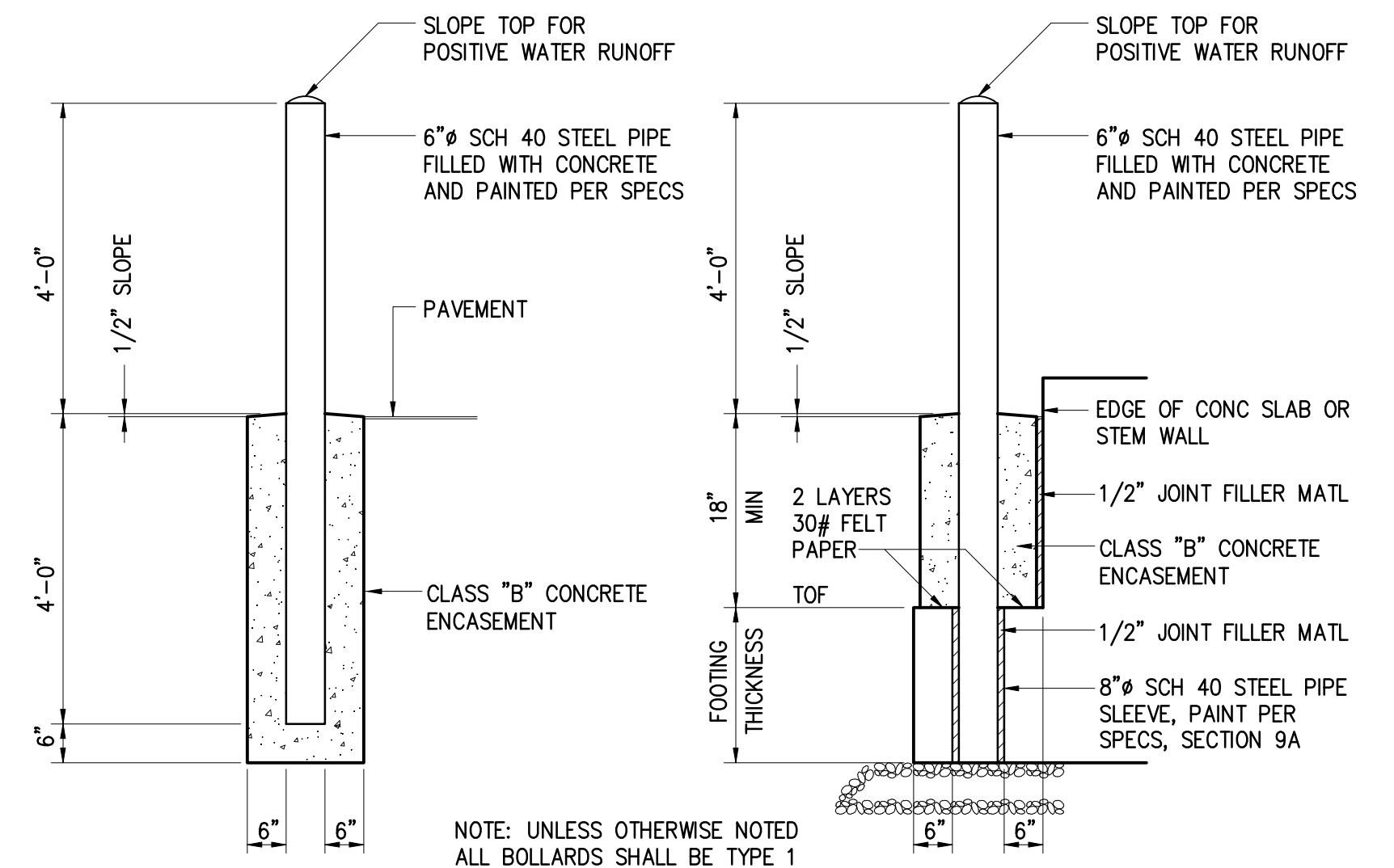
DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

MISCELLANEOUS
STANDARD DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

D1



BOLLARD TYPE 2

NOTE: UNLESS OTHERWISE NOTED
ALL BOLLARDS SHALL BE TYPE 1

PERSONNEL GATE

NOTES: 1. PROVIDE LATCHING DEVICES TO HOLD GATES IN OPEN POSITION.

2. IF ROCK IS ENCOUNTERED WHEN SETTING POSTS, DRILL HOLES 4 INCHES LARGER IN DIAMETER THAN POSTS AND BACKFILL TO GRADE WITH CLASS "B" CONCRETE.

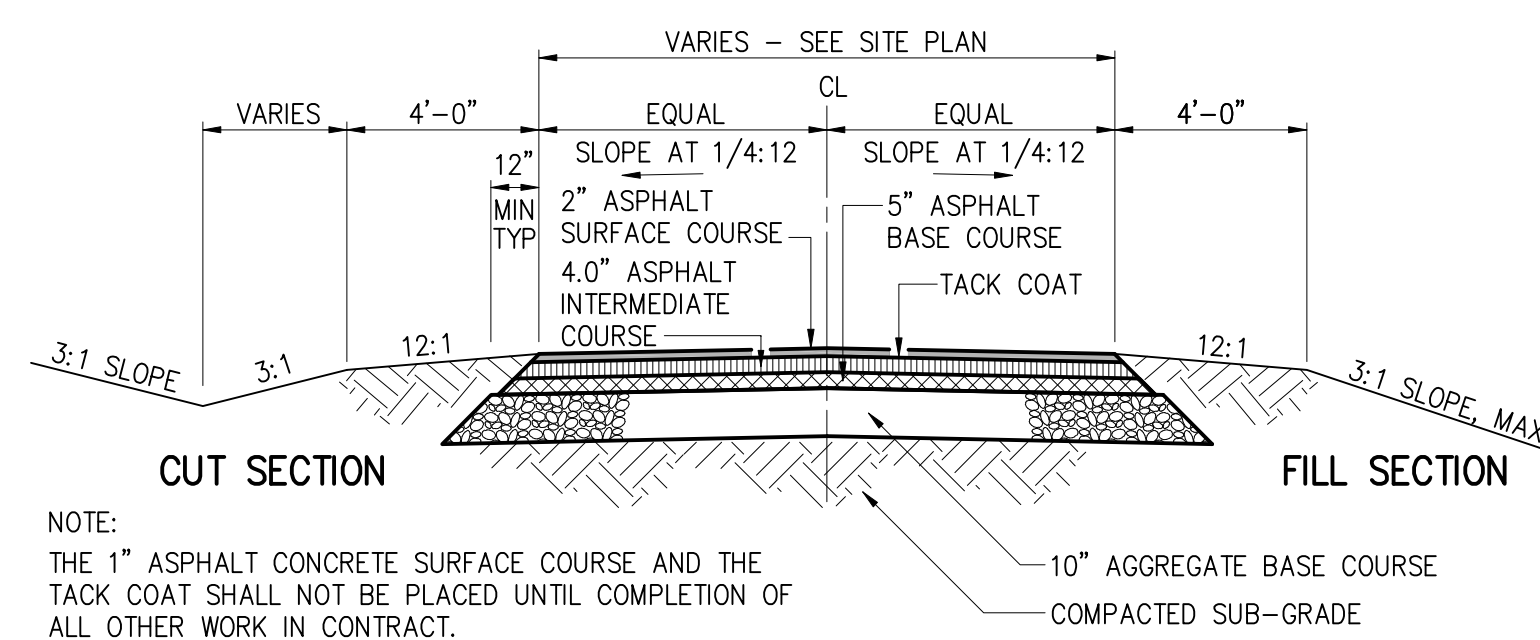
0244400R



0245000

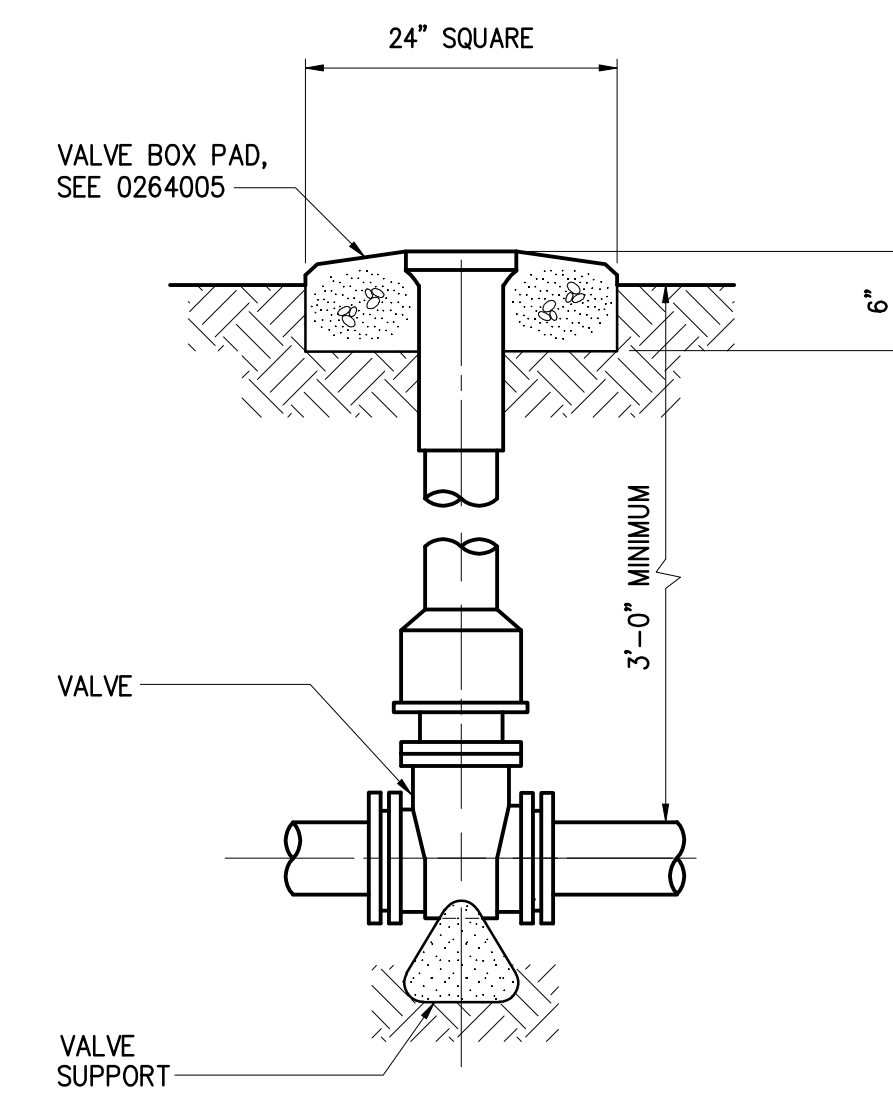


0251300



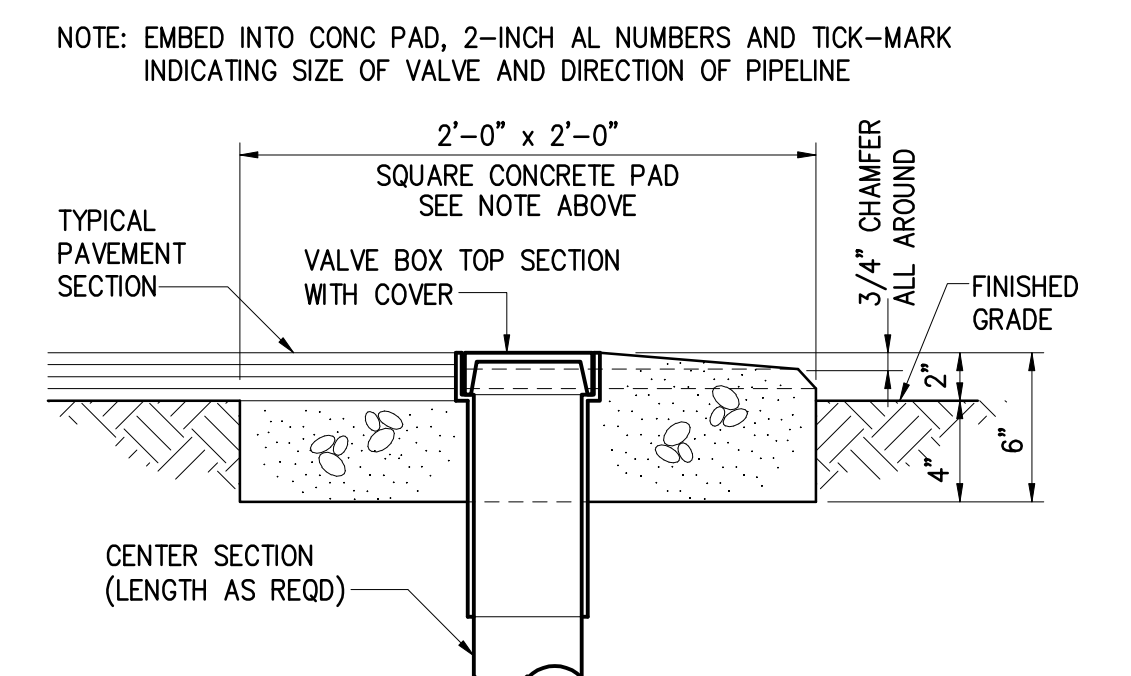
TYPICAL ROADWAY SECTION

0251000




VALVE BOX

0264000

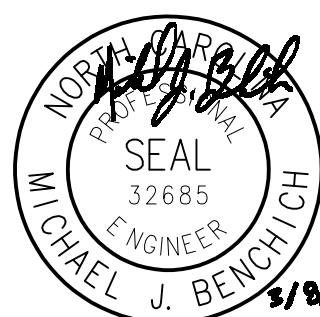


VALVE BOX PAD

0264005

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	HAZEN
				DRAWN BY:	HAZEN
				CHECKED BY:	HAZEN
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen

HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

MISCELLANEOUS STANDARD DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

D2

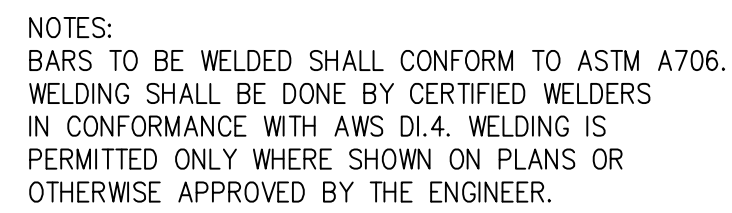


Diagram illustrating the placement of a waterstop and joint sealer in a concrete wall joint. The diagram shows a cross-section of a wall with a vertical joint. A horizontal line represents the joint sealer, labeled "JOINT SEALER (BOTH SIDES OF JOINT)". A vertical line represents the waterstop, labeled "WATERSTOP WHERE REQUIRED, SEE SPECIFICATIONS AND GENERAL CONCRETE NOTES". The waterstop is shown as a vertical bar with a circular cross-section, labeled "1/2 THICKNESS OF JOINT". The joint sealer is shown as a horizontal bar with a circular cross-section, labeled "NON-LIQUID BOND BREAKER BETWEEN JOINT SEAL AND EXPANSION MATERIAL". The diagram also shows the placement of the waterstop relative to the joint sealer, with the waterstop placed on one side of the joint sealer. The diagram is labeled "SEE PLANS" at the top.

1" WIDE x 1" DEEP JT FORMED BY AN APPROVED JOINT INSERT, TYP EACH WALL FACE

JOINT SEALER, TYP EA FACE

1"

1/2"

EXTEND EVERY OTHER HORIZ BAR ACROSS JOINT AS SHOWN, TYP EACH FACE

HORIZ REINF, TYP

3/8"x6" WATERSTOP

ROD BREAKER

2"

SPLICE LENGTH

VERT REINF

Diagram illustrating the cross-section of a concrete wall or slab with a keyway. The diagram shows two horizontal reinforcement bars (top and bottom) with vertical stirrups. A central keyway is indicated by a vertical line and a double-headed arrow. The width of the keyway is labeled "CLASS 'B' SPLICE + 2\"". The total thickness of the wall is labeled "T".

Annotations:

- CLASS "B" SPLICE + 2"
- WATERSTOP WHERE REQUIRED, SEE SPECIFICATIONS AND GENERAL CONCRETE NOTES.
- FOR TYPICAL KEYWAY, SEE 0331702
- FOR SLAB OR WALL THICKNESS AND REINFORCING, SEE DESIGN DRAWINGS.

Technical drawing showing two views of a wall section: "SEE PLAN" and "EL SEE PLAN".

SEE PLAN:

- Opening width: W^*
- Opening height: H
- Reinforcement: #4 ALL AROUND, #4@12" ALL AROUND, SLAB REINF SEE PLAN, TYP.

EL SEE PLAN:

- Opening width: W^{**}
- Opening height: H
- Reinforcement: #2-#3 CONT, #3@12", HOOK REINF @, OPENING IN SLAB.

NOTE: W* DENOTES CURBS LESS THAN 8"
W** DENOTES CURBS EQUAL TO OR GREATER THAN 8"
DOWELS MAY BE CAST IN OR ANCHORED WITH DOWEL
ADHESIVE SYSTEM WITH A 6" MINIMUM EMBEDMENT.

NOTES

- 1 JOINTS SHALL BE FORMED BY AN APPROVED JOINT INSERT. SAWCUTTING OF JOINTS WILL NOT BE ALLOWED.
- 2 DEPTH SHALL BE $1\frac{1}{2}"$ IN REINF CONC
DEPTH SHALL BE $\frac{1}{3}$ OF CONCRETE THICK-
NESS IN UNREINFORCED CONCRETE PAVEMENT.

Diagram illustrating the placement of a waterstop in a wall. The waterstop is positioned 1/3 of the way from each side of the wall, with a 2" gap from the bottom.

31004

ADDITIONAL DIAGONAL BARS, REQUIRED IN LIQUID RETAINING WALLS ONLY, ALTERNATE WITH HORIZONTAL BARS AND SIZE PER CHART.

VERTICAL BARS

HORIZONTAL BARS

CLASS B

TENSION SPLICE, TYP

0\"
TYP

ADDITIONAL DIAGONAL BARS, SEE CHART FOR SIZE

CORNER BARS, SAME SIZE AND SPACING AS HORIZONTAL BARS, TYP

31005

ADDITIONAL DIAGONAL BARS, REQUIRED IN LIQUID RETAINING WALLS ONLY, ALTERNATE WITH HORIZONTAL BARS AND SIZE PER CHART.

VERTICAL BARS

HORIZONTAL BARS

CLASS B

TENSION SPLICE, TYP

0\"
TYP

ADDITIONAL DIAGONAL BARS, SEE CHART FOR SIZE, TYP

CORNER BARS, SAME SIZE AND SPACING AS HORIZONTAL BARS

STANDARD 90° HOOK

0\"
TYP

* = STD 90° HOOK LENGTH

TYPE I
NTS

TYPE II
NTS

NOTE: TIE IN ALL PIPES & CONDUITS

NOTE: TIE IN ALL PIPES & CONDUITS
BELOW GROUND FLOOR SLAB WHEN
PILE FOUNDATION IS UTILIZED.
USE TYPE 1.

ALL PIPING AND CONDUITS BELOW SLABS ON EARTH TO BE ENCASED
BY GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.

Diagram illustrating the cross-section of a concrete base for a pump or equipment base, showing reinforcement details and dimensions.

Dimensions and Requirements:

- AS REQUIRED:** Overall length of the base.
- 3" MIN:** Minimum width of the base.
- 2" MIN:** Minimum thickness of the concrete base.
- 1" GROUT (SEE SPECIFICATIONS):** Grout layer between the pump or equipment base and the concrete base.
- 6" MINIMUM, IF OVER 24", ADDL STEEL REQUIRED:** Minimum height of the concrete base, with additional steel required if the height exceeds 24 inches.
- 8" MIN, SEE NOTE:** Minimum height of the concrete base, with additional steel required if the height exceeds 8 inches.
- REQUIRED COVER + 1" MAX:** Maximum required cover for the reinforcement.

Reinforcement Details:

- PUMP OR EQUIP BASE:** The base to be supported.
- CONC BASE:** The concrete base.
- CL ANCHOR BOLTS:** Anchor bolts for the concrete base.
- #4@12 EW:** Reinforcement bars (Elongated Wire) spaced at 12 inches.
- CONC FLOOR:** The concrete floor.
- #5 DOWELS @12" ALL AROUND, SEE NOTE:** Reinforcement bars (Dowels) spaced at 12 inches, all around the base.
- DOWEL ADHESIVE:** Adhesive applied to the dowels.

NOTE:

NOTE: DOWEL ADHESIVE
DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED
WITH DOWEL ADHESIVE AT CONTRACTORS OPTION. WHERE
FLOOR IS 8" THICK OR LESS, USE #4 DOWELS EMBEDDED
TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.

PIPE OD

APPROVED ADHESIVE
ON BOTH CONTACT
SURFACES OF PAD

1/4" MIN NEOPRENE PAD,
DUROMETER 40 TO 50
MATERIAL HARDNESS,
SEE NOTE 2

#3@12", TIES

REQUIRED
COVER + 1"
MAX

CONC FLOOR

#5 DOWELS @12" EF
SEE NOTE 1

ROTATE HOOK 90° FROM SHOWN SO THAT
HOOK IS PARALLEL TO PIPE, TYP

DOWEL ADHESIVE

6" MIN
SEE NOTE 3

120°

#4 EF, TYP

VARIES
(12" WIDE)

8" MIN,
SEE NOTE 1

NOTES:

1. DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED WITH DOWEL ADHESIVE AT CONTRACTORS OPTION. WHERE FLOOR IS 8" THICK OR LESS, USE #4 DOWELS EMBEDDED TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.
2. ENGINEER SHALL VERIFY THICKNESS OF PAD WILL ACCOMMODATE DESIGN MOVEMENT, PARTICULARLY FOR OUTSIDE AERIAL PIPE.
3. COORDINATE SUPPORT WIDTH WITH PIPE STRAP ANCHORAGE REQUIREMENTS. PROVIDE 6" MINIMUM, FROM CENTER OF PIPE STRAP ANCHOR ROD TO EDGE OF CONCRETE.

NOTES:

1. THIS DETAIL APPLIES FOR OPENINGS 8" ϕ AND LARGER. FOR SMALLER OPENINGS, BEND BARS OR ADJUST SPACING OF REINFORCEMENT TO AVOID OPENING.
2. PLACE EXTRA BARS OF THE SAME SIZE AS THE INTERRUPTED BARS AT EACH SIDE OF OPENING. QUANTITY OF EXTRA BARS AT EACH SIDE SHALL EQUAL HALF THE QUANTITY OF INTERRUPTED BARS EXCEPT WHERE NOTED OTHERWISE.
3. PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING WITH SIZE EQUAL TO MAIN REINFORCEMENT, TYPICAL EACH FACE.
4. WHERE INVERT OF OPENING IN WALL IS LESS THAN 44 BAR DIAMETERS FROM TOP OF SLAB, EXTRA REINFORCEMENT ON EACH SIDE SHALL INCLUDE DOWELS EMBEDDED INTO SLAB WITH STANDARD 90 DEGREE HOOKS TO SPLICE WITH EXTRA VERTICAL REINFORCEMENT. DOWELS SHALL ALSO STILL BE PROVIDED BELOW OPENING.
5. WHERE INVERT OF OPENING IN WALL OR SLAB IS CLOSER THAN 44 BAR DIAMETERS TO EDGE OF SLAB OR BOTTOM OF WALL, EXTRA DIAGONAL BARS MAY BE TERMINATED TWO INCHES FROM EDGE OF SLAB OR BOTTOM OF WALL. DOWELS DO NOT HAVE TO BE PROVIDED TO SPLICE WITH DIAGONAL BARS.



				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	HAZEN
				DRAWN BY:	HAZEN
3	CONSTRUCTION	3-8-16	JCJ	CHECKED BY:	HAZEN
2	BUILDING PERMIT REVIEW	2-26-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

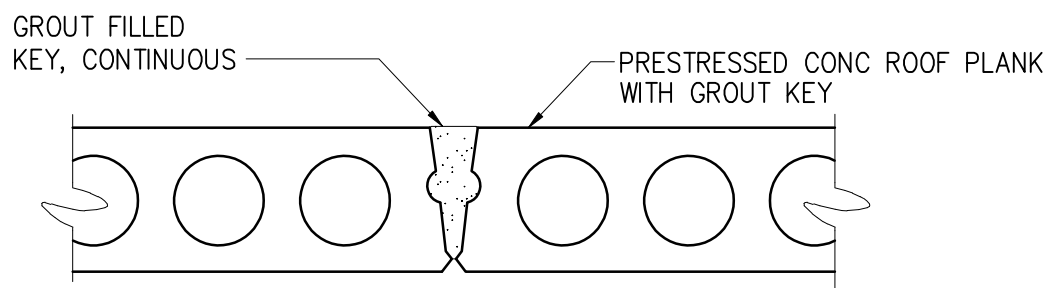
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	

D3

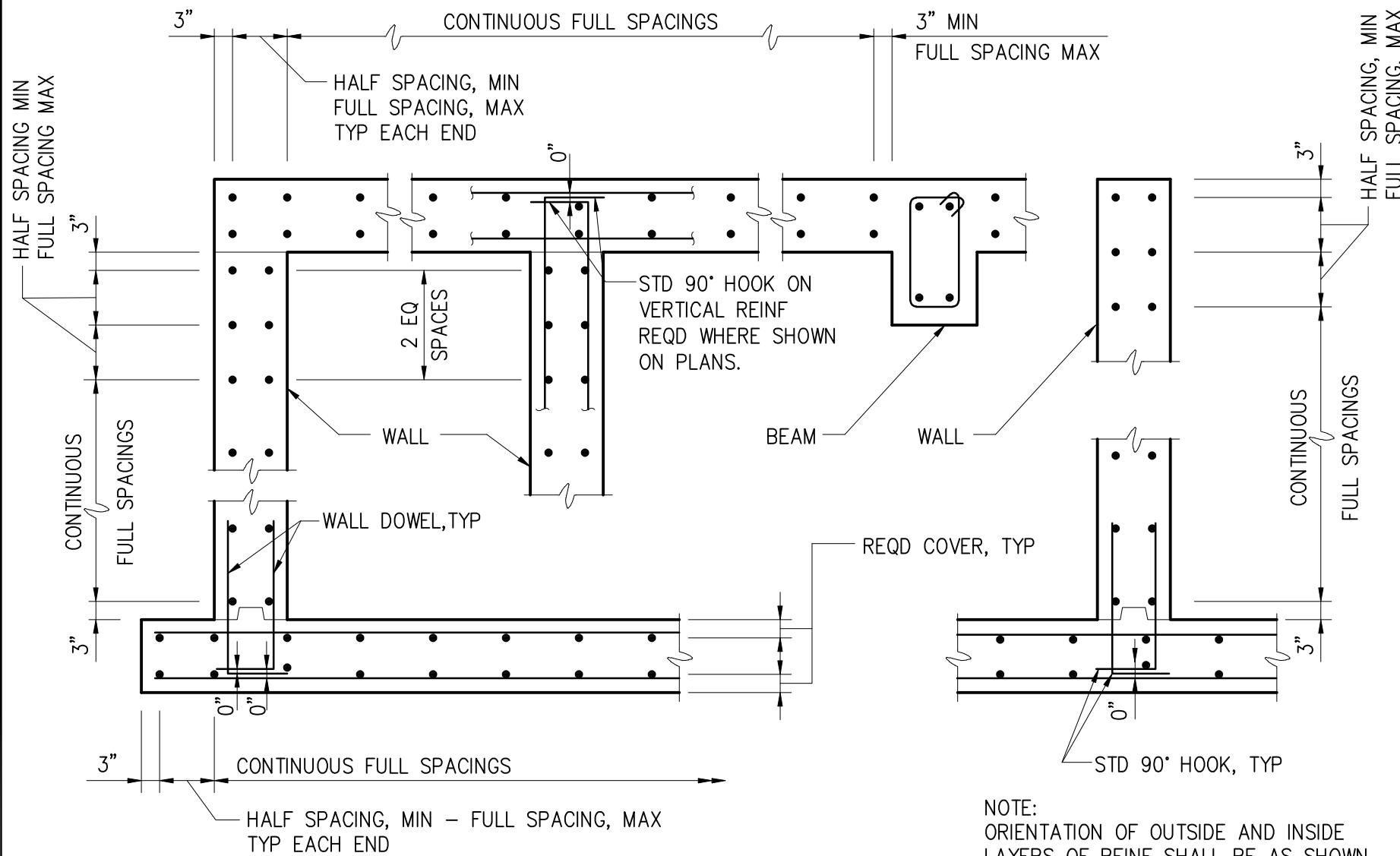
BASIC DEVELOPMENT LENGTH AND SPLICE LENGTH FOR BARS IN TENSION									
** BASED ON MATERIALS AND CONDITIONS AS FOLLOWS: fy = 60,000 psi fc' = 4000 psi OR GREATER UNCOATED BARS NORMAL WEIGHT CONCRETE CLEAR COVER ≥ 1.5 INCHES									
BASIC DEVELOPMENT LENGTH ld					BAR SIZE	CLASS B SPLICE LENGTH 1.3 x ld			
CLEAR SPACING ≥ 3"		CLEAR SPACING < 3"				CLEAR SPACING ≥ 3"		CLEAR SPACING < 3"	
BASIC	TOP *	BASIC	TOP *			BASIC	TOP *	BASIC	TOP *
1'-0"	1'-0"	1'-0"	1'-4"	# 3	1'-0"	1'-3"	1'-4"	1'-8"	
1'-0"	1'-3"	1'-7"	2'-1"	# 4	1'-3"	1'-8"	2'-1"	2'-9"	
1'-3"	1'-7"	2'-4"	3'-0"	# 5	1'-7"	2'-0"	3'-0"	3'-11"	
1'-6"	1'-11"	3'-1"	4'-0"	# 6	1'-11"	2'-5"	4'-0"	5'-2"	
2'-5"	3'-1"	4'-11"	6'-4"	# 7	3'-1"	4'-0"	6'-4"	8'-3"	
3'-0"	3'-11"	6'-0"	7'-9"	# 8	3'-11"	5'-1"	7'-9"	10'-1"	
3'-8"	4'-9"	6'-9"	8'-9"	# 9	4'-9"	6'-3"	8'-9"	11'-4"	
4'-6"	5'-10"	7'-7"	9'-10"	# 10	5'-10"	7'-7"	9'-10"	12'-9"	
5'-5"	7'-0"	8'-5"	10'-11"	# 11	7'-0"	9'-1"	10'-11"	14'-2"	
* TOP REINFORCEMENT IS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.									
** FOR MATERIALS OR CONDITIONS DIFFERENT FROM THOSE STATED, LENGTHS SHOWN IN CHART SHALL BE MODIFIED TO CONFORM TO THE PROVISIONS OF ACI 318, SECTION 12.2.									

0321004



PRECAST PLANK CONNECTION

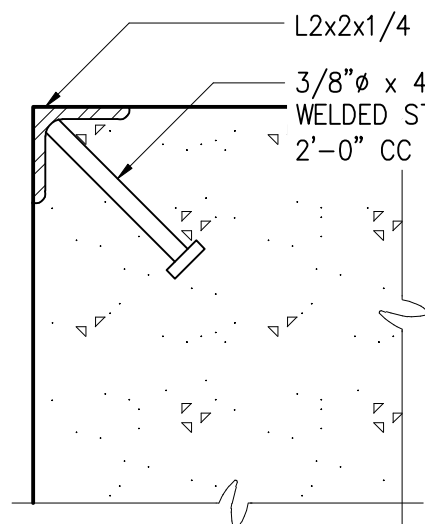
0341203



SECTION - WALLS AND SLABS

TYPICAL BAR PLACEMENT

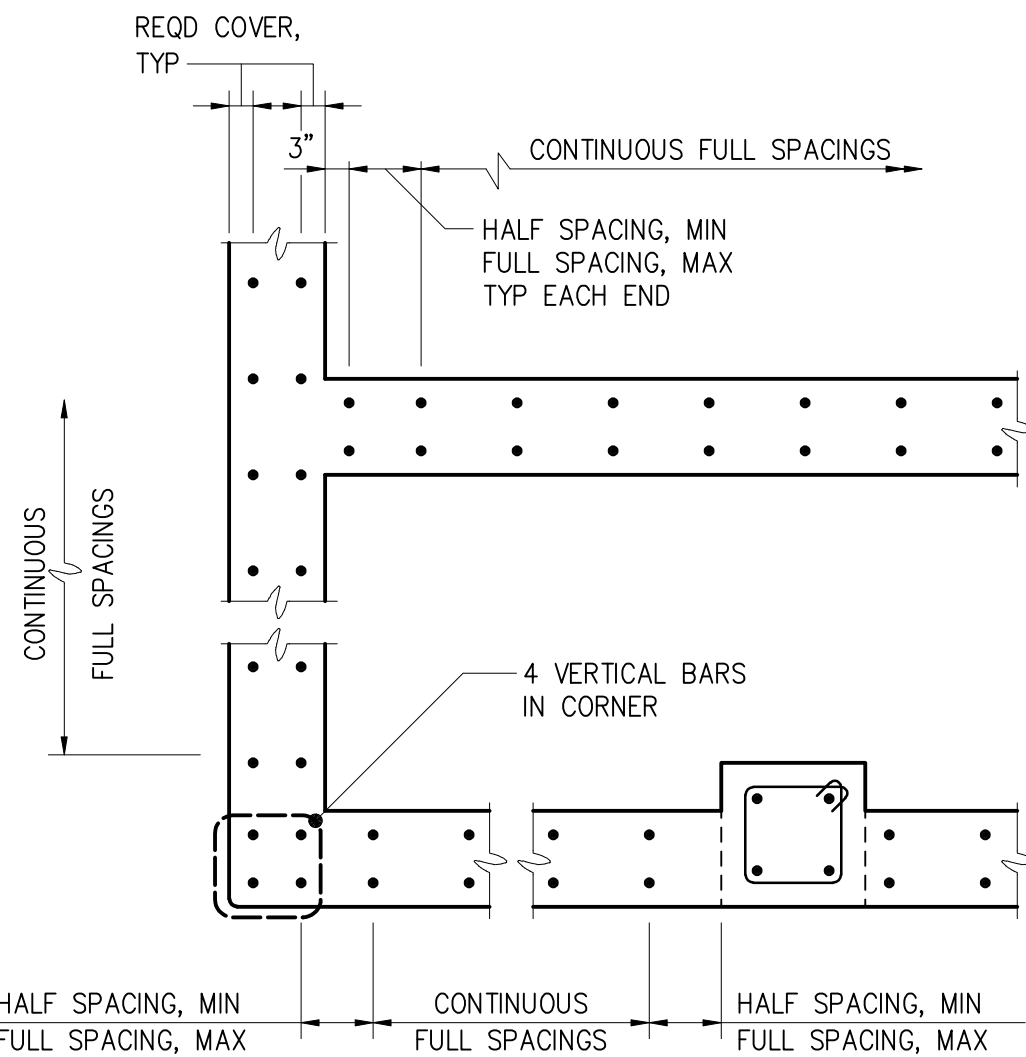
0331704



NOTE:
CORNER GUARD REQUIRED ONLY
WHERE SHOWN ON PLANS

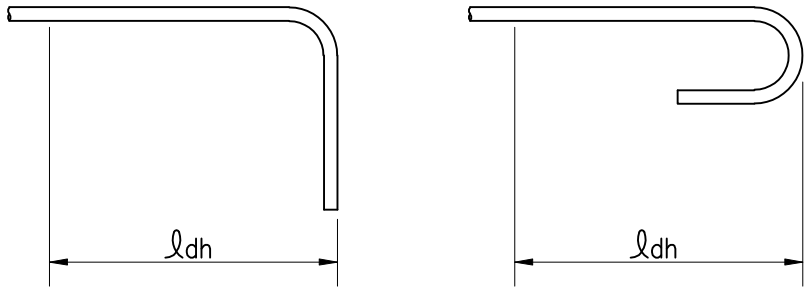
CORNER GUARD

0554001



PLAN - WALLS

DEVELOPMENT LENGTH OF STANDARD HOOKS FOR BARS IN TENSION		
fy = 60,000 psi fc' = 4000 psi OR GREATER		
BAR SIZE	DEVELOPMENT LENGTH, ld	
	BASIC	W/ CONC COVER *
#3	8"	6"
#4	10"	7"
#5	1'-0"	9"
#6	1'-3"	11"
#7	1'-5"	1'-0"
#8	1'-7"	1'-2"
#9	1'-10"	1'-4"
#10	2'-1"	1'-6"
#11	2'-3"	1'-7"
* SIDE COVER NORMAL TO PLANE OF HOOK AT LEAST 2 1/2"; AND FOR 90° HOOK, END COVER BEYOND OUTSIDE END OF HOOK AT LEAST 2".		

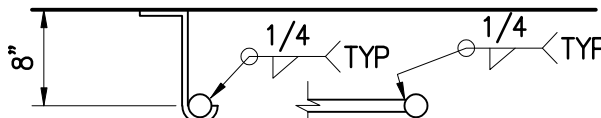


0321003

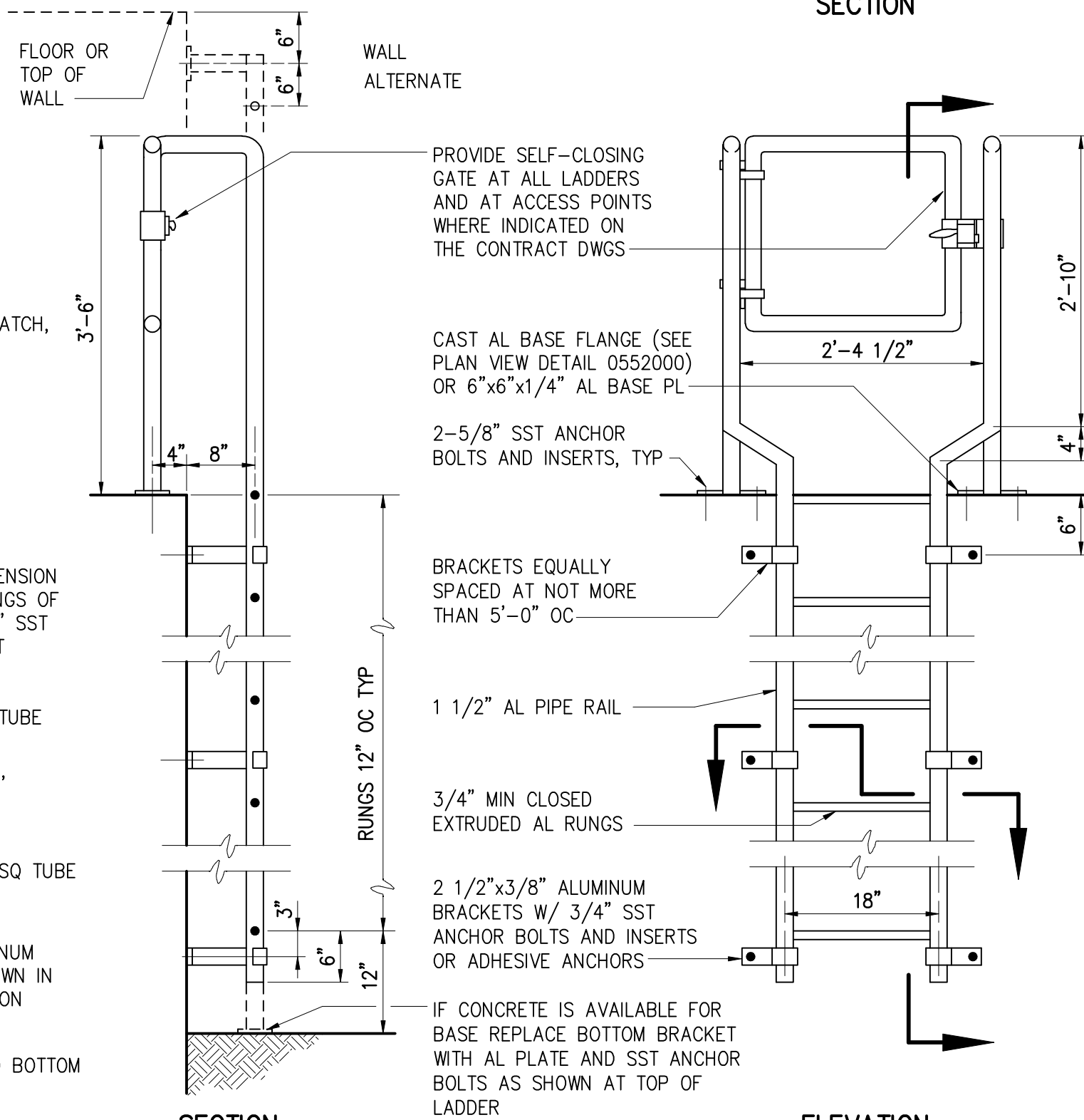
GENERAL CONCRETE NOTES:

- CONCRETE PROTECTION FOR REINFORCING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS:
A - CONCRETE DEPOSITED DIRECTLY AGAINST SOIL - 3"
B - CONCRETE EXPOSED TO WEATHER (#5 OR SMALLER) - 1 1/2"
(#6 OR LARGER) - 2"
C - SLABS - 1 1/2"
AT SURFACES CONTACTING WATER OR SEWAGE - 2"
D - BEAMS AND COLUMNS (TO MAIN REINFORCEMENT) - 2"
(TO COLUMN TIES OR STIRRUPS) - 1 1/2"
SURFACES EXPOSED TO SEAWATER - 4"
E - WALLS 12" OR MORE - 2"
WALLS LESS THAN 12" (#5 OR SMALLER) - 1 1/2"
(#6 OR LARGER) - 2"
SURFACES EXPOSED TO SEAWATER - 3"
F - FOR SURFACES EXPOSED TO WATER OR SEWAGE OR AREAS EXPOSED TO HIGH HUMIDITY IN BEAMS, COLUMNS, WALLS AND SLABS ADD 1/2" TO ABOVE.
- SPLICES SHALL BE CLASS "B" CONFORMING TO THE PROVISIONS OF ACI 318 UNLESS NOTED OTHERWISE.
- ALL EMBEDDED ITEMS SHALL BE INSTALLED AND SECURED IN PLACE BEFORE CONCRETE PLACEMENT. CONSULT ELECTRICAL, MECHANICAL AND HVAC DRAWINGS FOR PIPING, EMBEDDED ITEMS AND OPENINGS.
- ALL JOINTS IN WATER BEARING STRUCTURES SHALL HAVE A WATERSTOP. ALL JOINTS BELOW GRADE IN WALLS OR SLABS WHICH ENCLOSE AN ACCESSIBLE AREA SHALL HAVE WATERSTOPS.
- CONSTRUCTION JOINTS NOT SHOWN SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER PRIOR TO SUBMITTING REBAR SHOP DRAWINGS.
- PROVIDE VERTICAL CONSTRUCTION JOINTS IN WALLS AND HORIZONTAL JOINTS IN SLABS NOT GREATER THAN 45'-0" ON CENTER.
- NO BACKFILL SHALL BE PLACED AGAINST ANY SUBSTRUCTURE WALLS UNLESS ADJACENT FLOOR SLABS HAVE TAKEN THEIR FINAL SET, OR WALLS HAVE BEEN PROPERLY BRACED, AND IN ANY CASE NOT SOONER THAN 28 DAYS AFTER THE PLACING OF CONCRETE UNLESS APPROVED BY THE ENGINEER.

0331000



SECTION

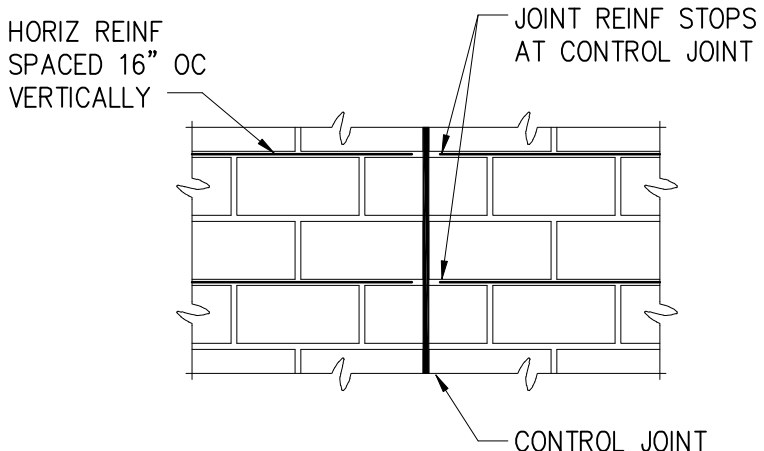


SECTION

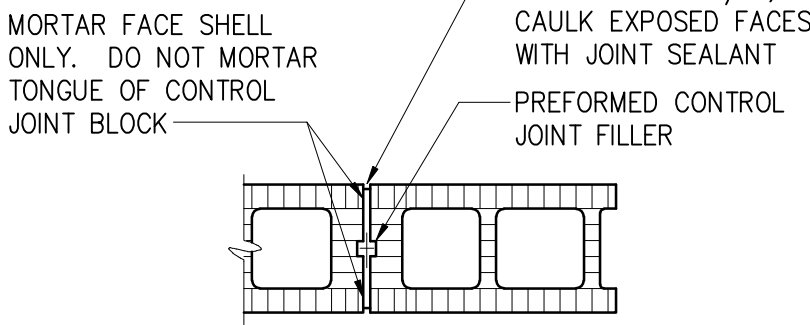
ELEVATION

ALUMINUM LADDER

0551500



ELEVATION

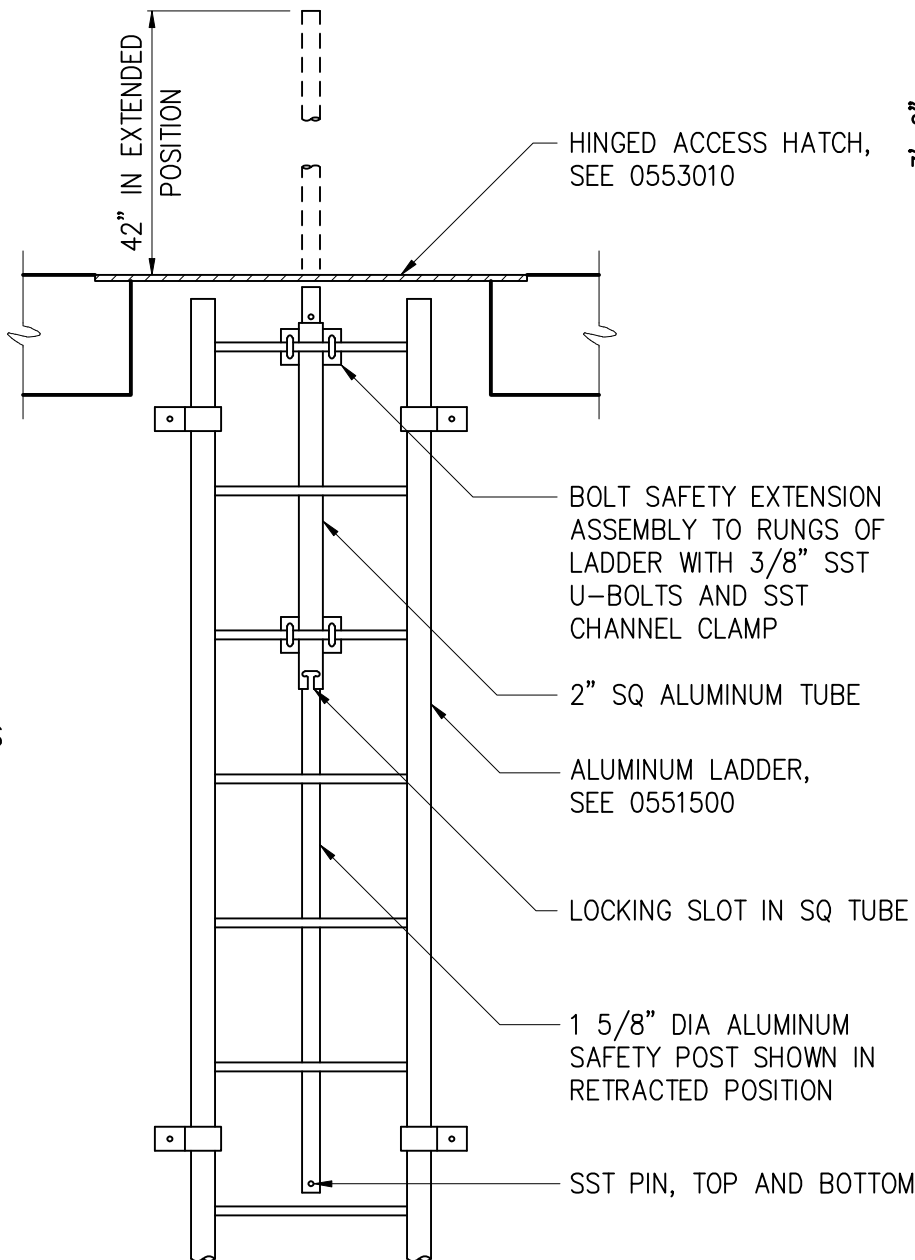


PLAN

NOTE: WIDE FLANGED PREFORMED CONTROL JOINT FILLER MAY BE USED IN LIEU OF DETAIL SHOWN

CONTROL JOINT BLOCK

0418000

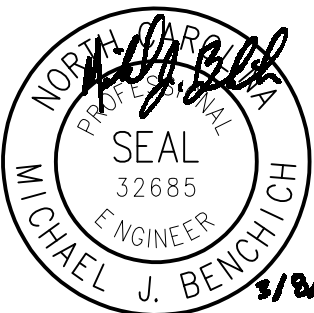


RETRACTABLE SAFETY EXTENSION

0551503

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	HAZEN
				DRAWN BY:	HAZEN
				CHECKED BY:	HAZEN
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
2	BUILDING PERMIT REVIEW	2-26-16	JCJ		
1	REGULATORY REVIEW	1-20-16	JCJ		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



Hazen

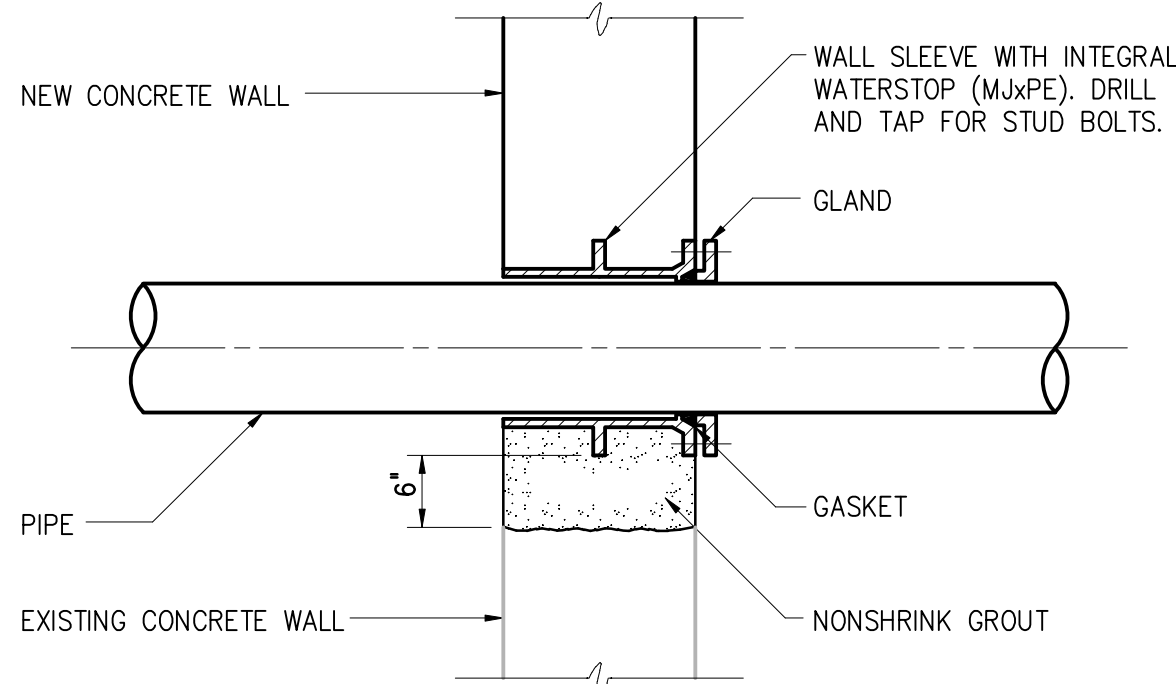
HAZEN AND SAWYER
4944 PARKWAY PLAZA BLVD, SUITE 375
CHARLOTTE, NORTH CAROLINA 28217
LICENSE NO. : C-0381

DAVIDSON COUNTY
NORTH CAROLINA

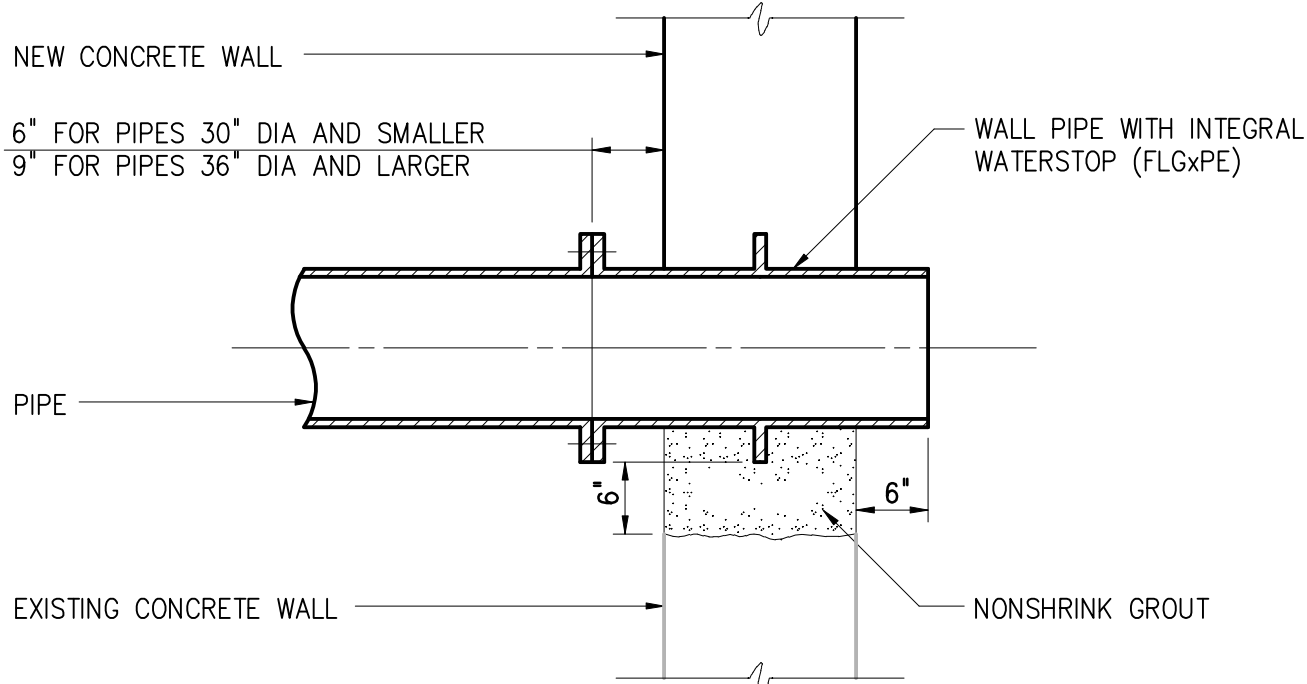
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

MICELLANEOUS
STANDARD DETAILS

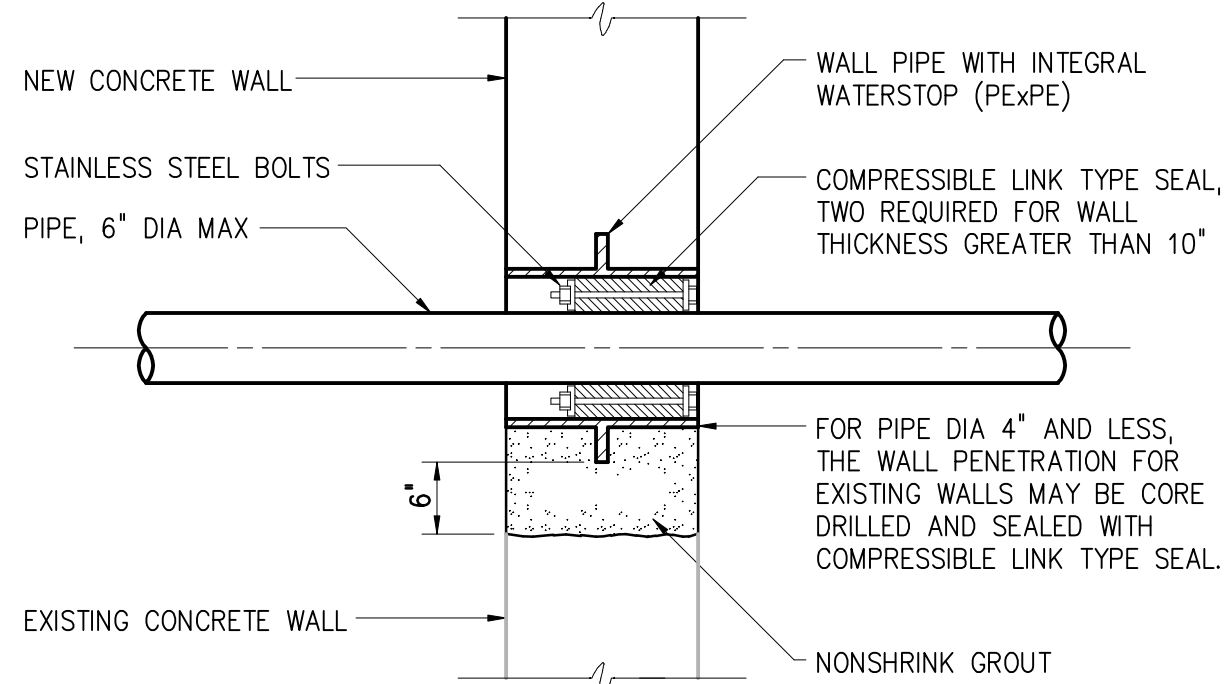
DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	D4



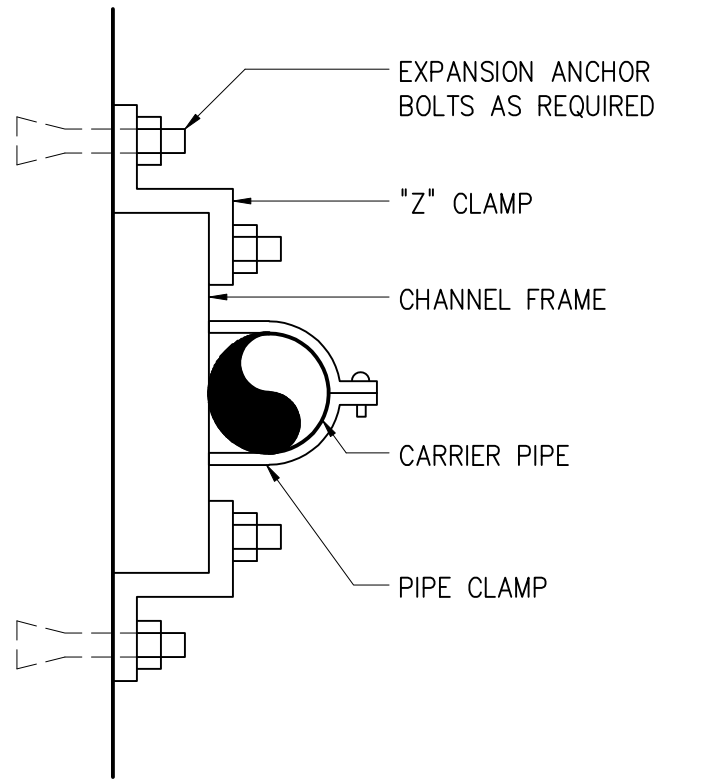
1509206



1509209

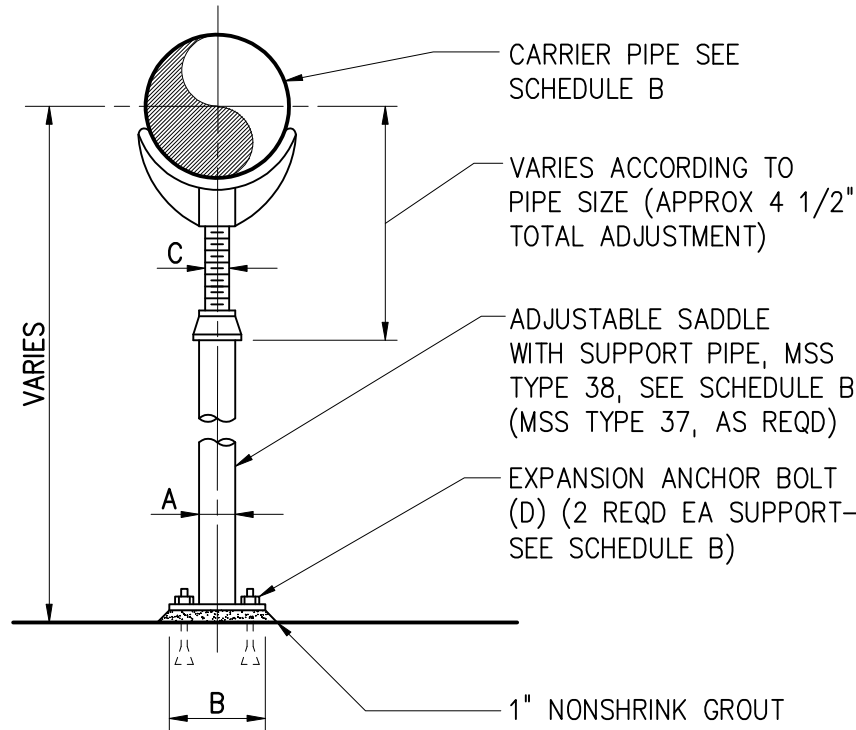


1509211



PIPE WALL SUPPORT AND SUPPORT RACK SHALL BE ASSEMBLED W/ CHANNEL FRAMES AND ACCESSORIES AS MANUFACTURED BY UNISTRUT CORP OR EQUAL

PIPE WALL SUPPORT
1509402



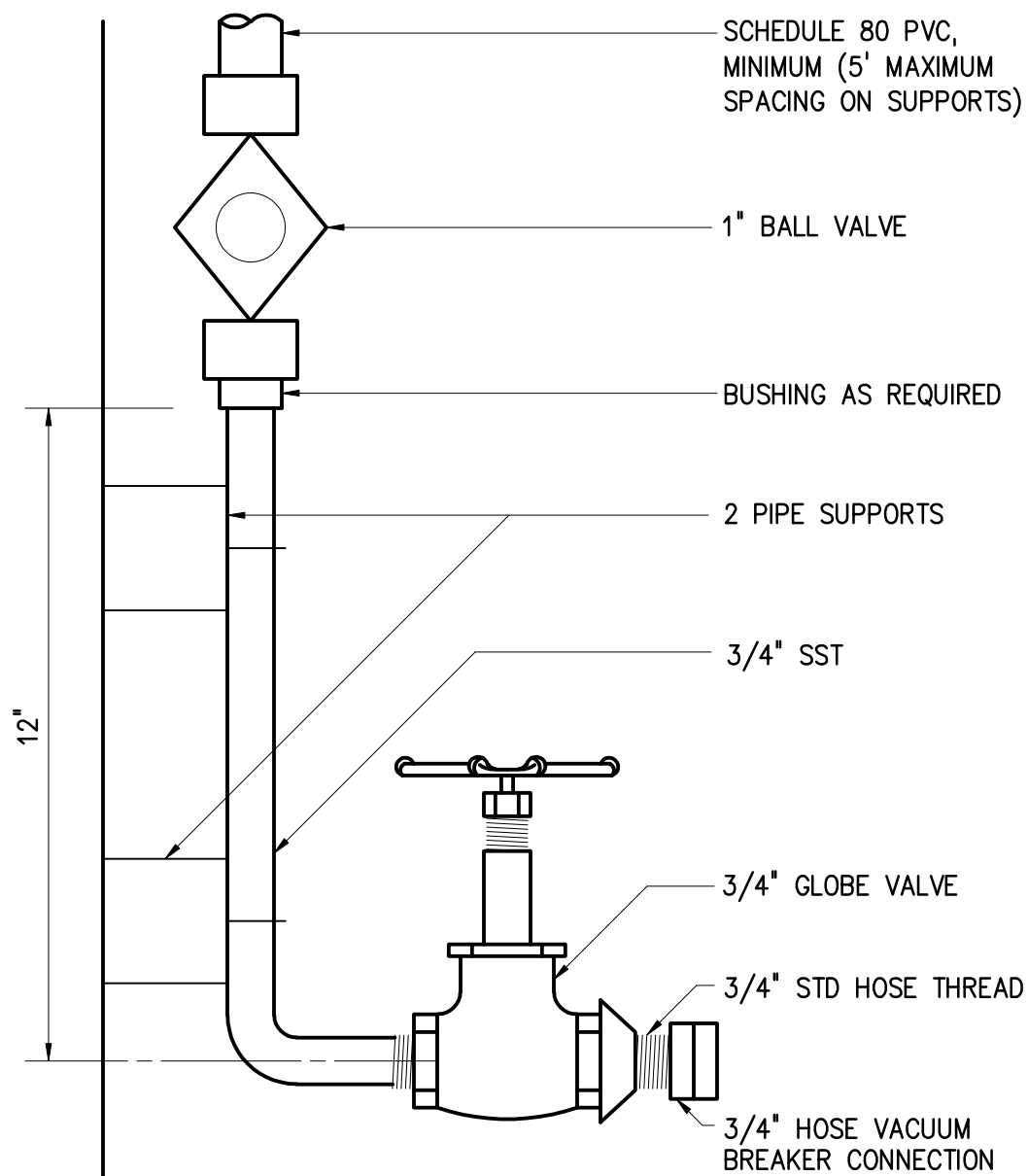
ADJUSTABLE SADDLE
1509405

SCHEDULE A				
BASE ELBOW (TEE) (DIM IN INCHES)				
PIPE SIZE	A	B	C	D DIA x LG
3	1 1/2	5	4 7/8	1/2 x 5
4	2	6	5 1/2	5/8 x 5
5-6	2 1/2	7	VARIES	5/8 x 5
8-10	4	9	VARIES	5/8 x 5
12-16	6	11	VARIES	3/4 x 6
18-24	8	13 1/2	VARIES	3/4 x 6
30	10	16	23	7/8 x 7
36	12	19	26	7/8 x 7
SCHEDULE B				
ADJUSTABLE SADDLE (DIM IN INCHES)				
PIPE SIZE	A	B	C	D DIA x LG
3	2 1/2	7	1 1/2	5/8 x 5
4-12	3	7 1/2	2 1/2	5/8 x 5
14-16	4	9	3	5/8 x 5
18-20	6	11	3 1/2	3/4 x 6
24-48	6	11	4	3/4 x 6

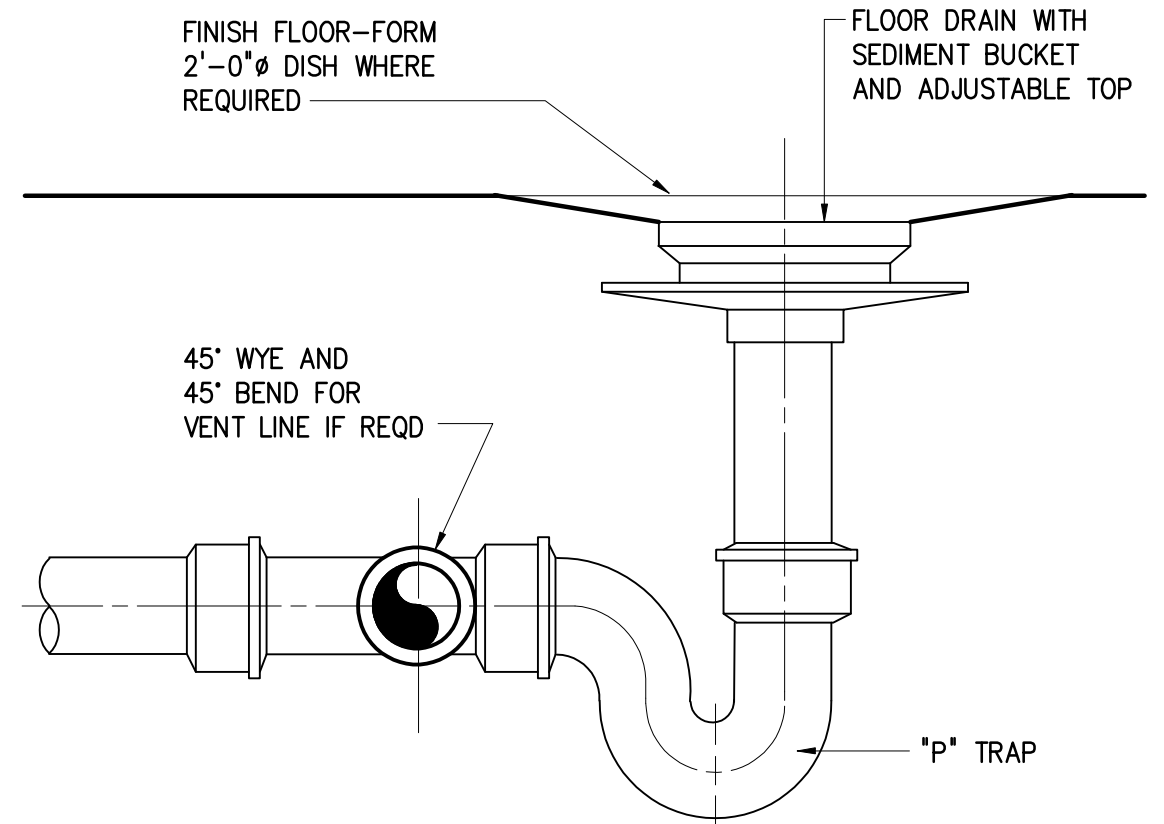
1509401

SCHEDULE C							
SUPPORT RODS AND BRACKET SPACING (FOR STANDARD WEIGHT PIPE)							
PIPE SIZE (INCHES)	BACK PLATE (INCHES)	MINIMUM ROD Ø (INCHES)		MAX SPAN IN FEET (SEE NOTE 8)			
		PROCESS PIPING	STEEL AIR PIPING	COPPER	PLASTIC	STEEL	DIP (SEE NOTE 7)
UP TO 1	SEE NOTE 4	3/8	3/8	5	5	6	-
1 1/4-2	"	3/8	3/8	8	5	10	-
2 1/2-3 1/2	"	3/8	3/8	8	5	12	6
4-5	"	1/2	3/8	-	5	14	8
6	"	5/8	3/8	-	5	15	9
8-12	"	3/4	1/2	-	5	15	9
14-16	"	7/8	1/2	-	5	15	9
18	"	1	1/2	-	5	18	10
20-24	"	1 1/4	5/8	-	5	18	10

1509412



HOSE BIBB
1511500



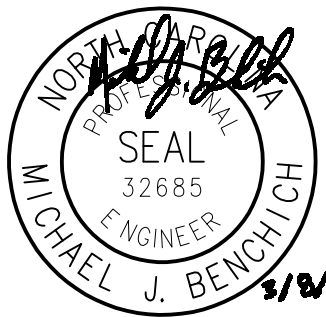
NOTE: INTERIOR FLOOR DRAIN AND CLEANOUTS TO HAVE NICKEL BRONZE TOPS. EXTERIOR FLOOR DRAINS AND CLEANOUTS TO HAVE LACQUERED CAST IRON TOPS.

FLOOR DRAIN
1542102

File: C:\30961-010-CHA\DRAWINGS\STD-DWGS\0105_Sheet By: MARGANOVICY Date: 2016/03/03 10:38 AM
PLOT DATE: 2016/03/03 10:38:56 AM BY: MARGANOVICY

				PROJECT ENGINEER:	M.J. BENCHICH
				DESIGNED BY:	HAZEN
				DRAWN BY:	HAZEN
				CHECKED BY:	HAZEN
3	CONSTRUCTION	3-8-16	JCJ	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
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REV	ISSUED FOR	DATE	BY		

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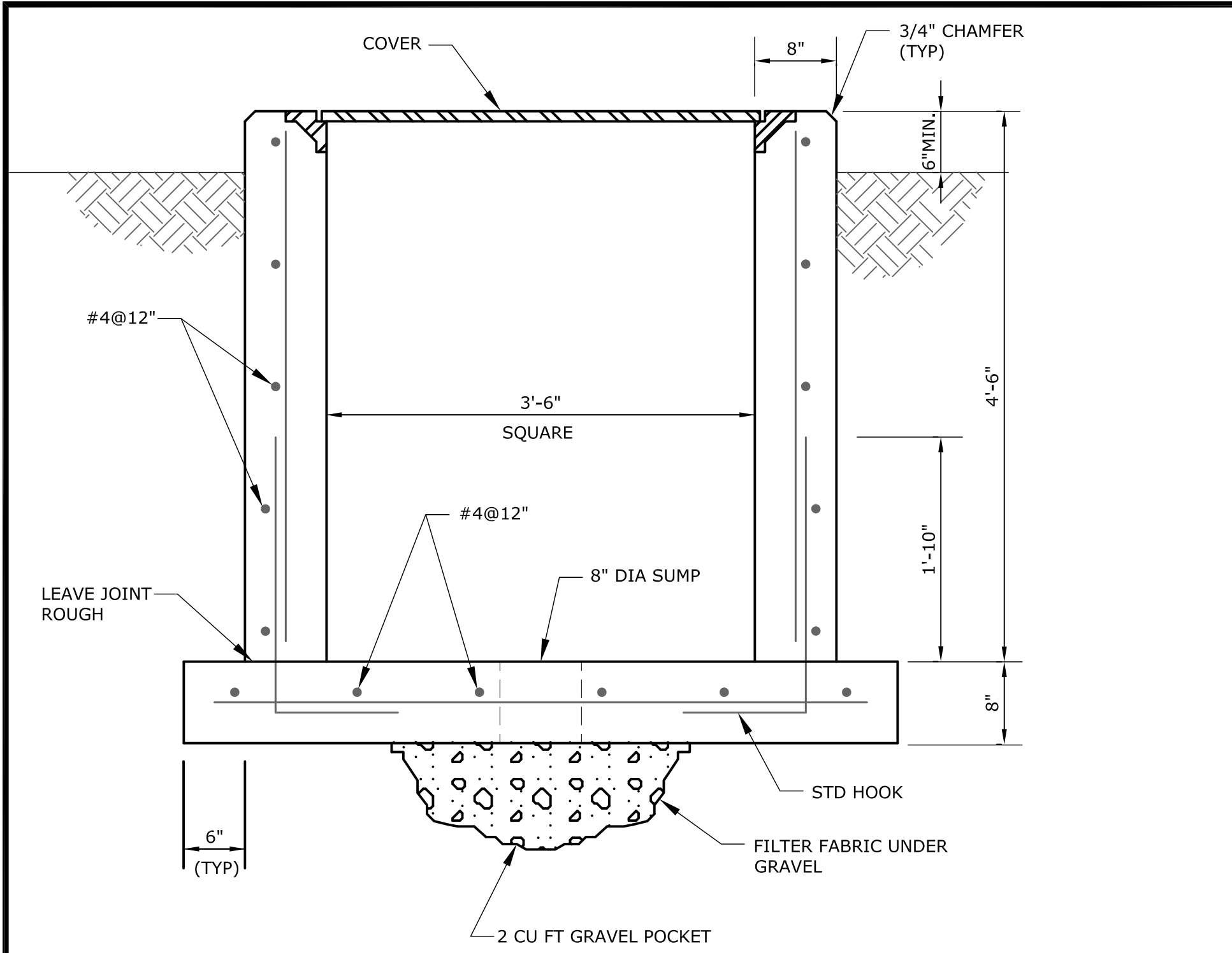
Hazen
HAZEN AND SAWYER
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DAVIDSON COUNTY
NORTH CAROLINA

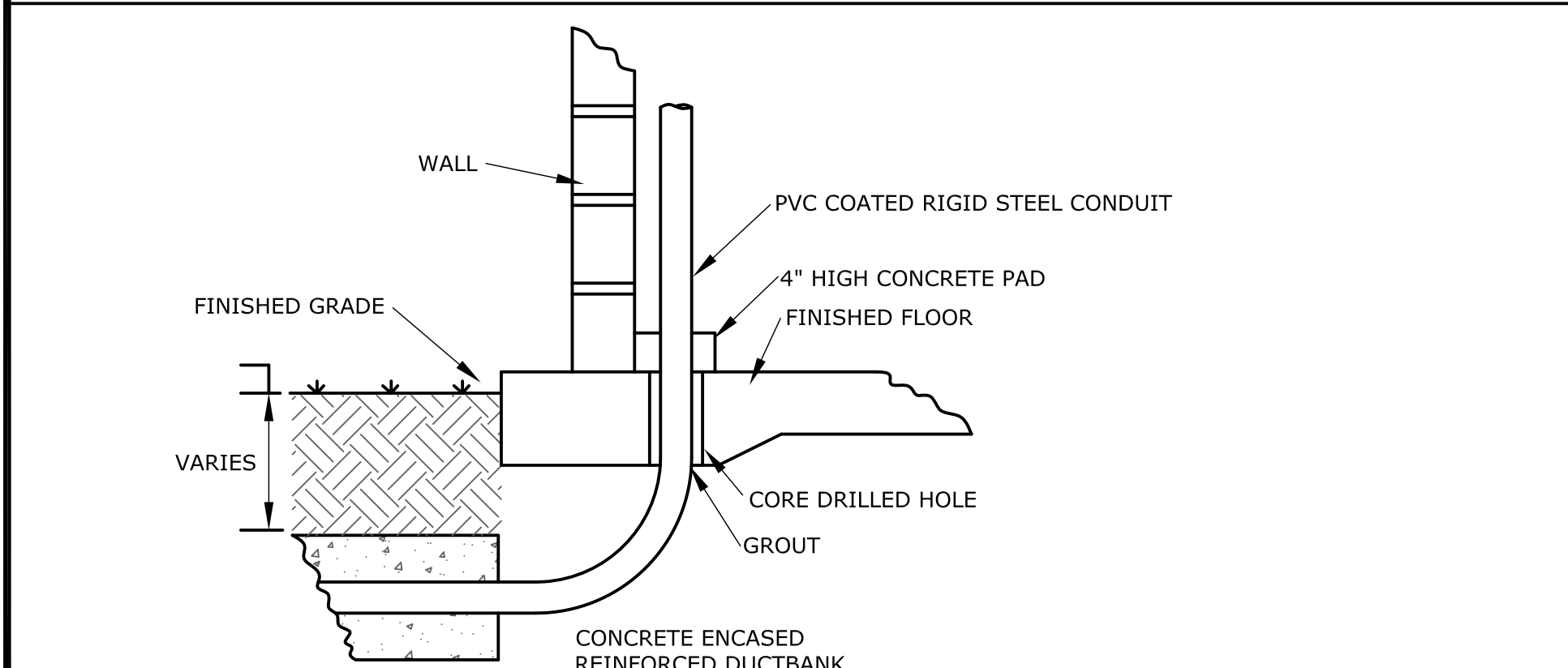
DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

MISCELLANEOUS
STANDARD DETAILS

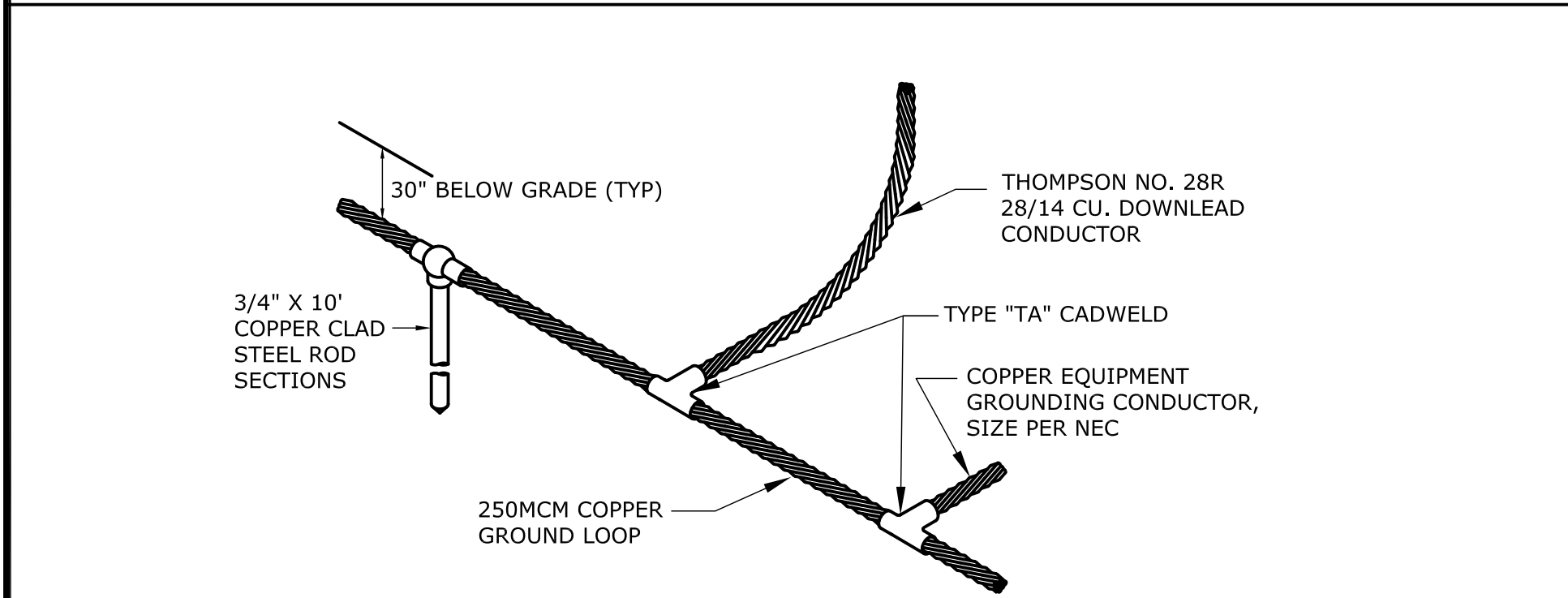
DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	D5



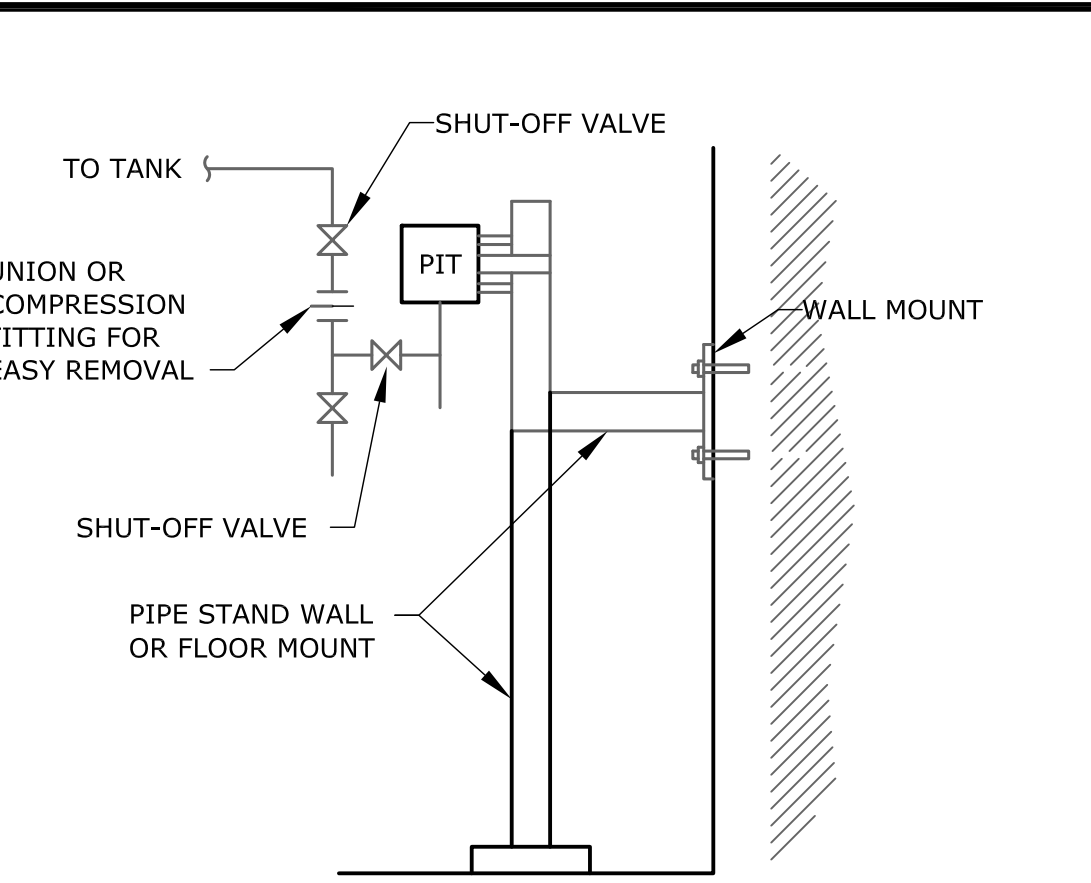
TYPICAL ELECTRICAL HANDHOLE DETAIL
NOT TO SCALE



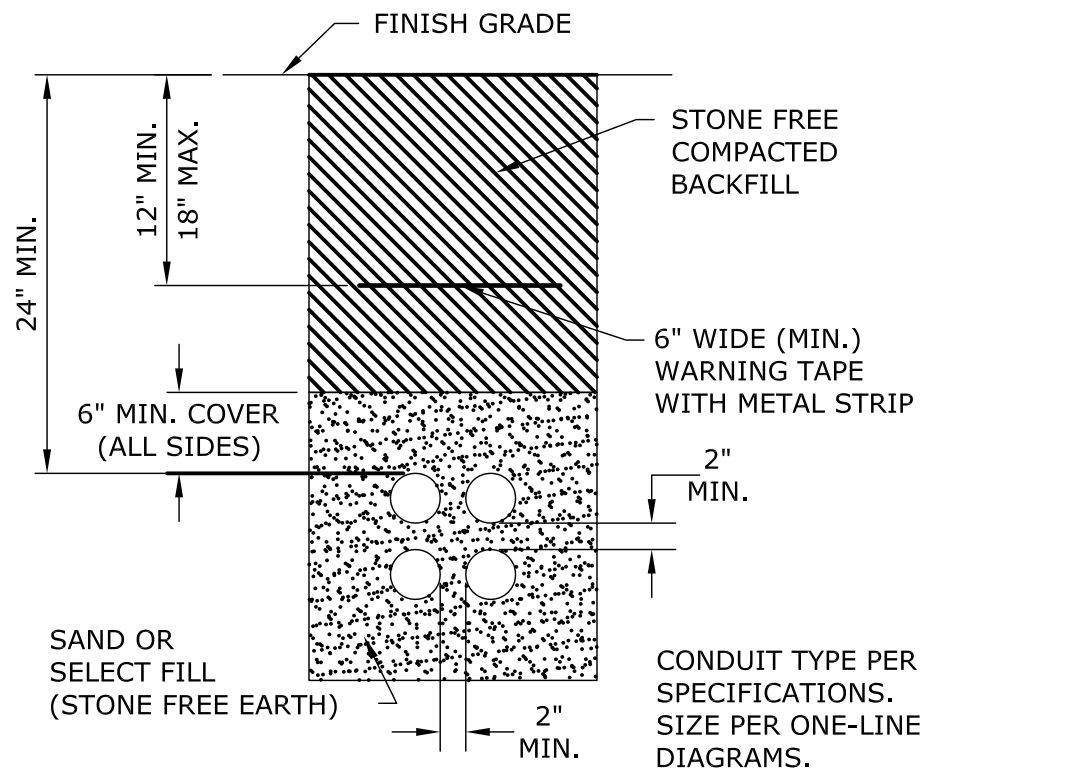
CORE DRILL DETAIL
NOT TO SCALE



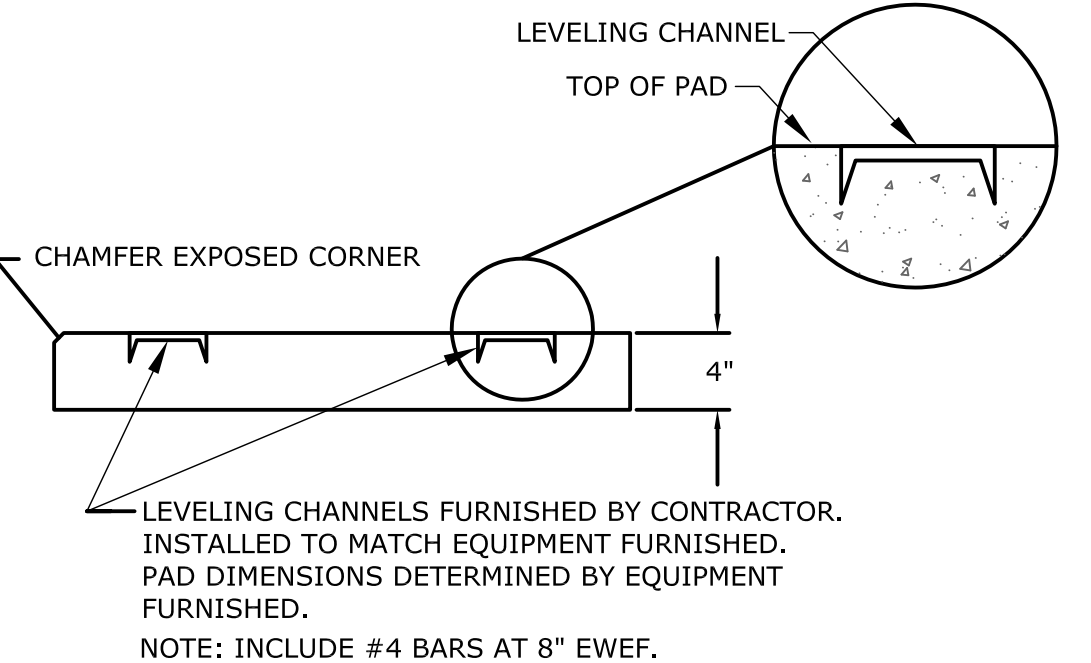
GROUND LOOP DETAIL
NOT TO SCALE



PIT MOUNTING DETAIL
NOT TO SCALE

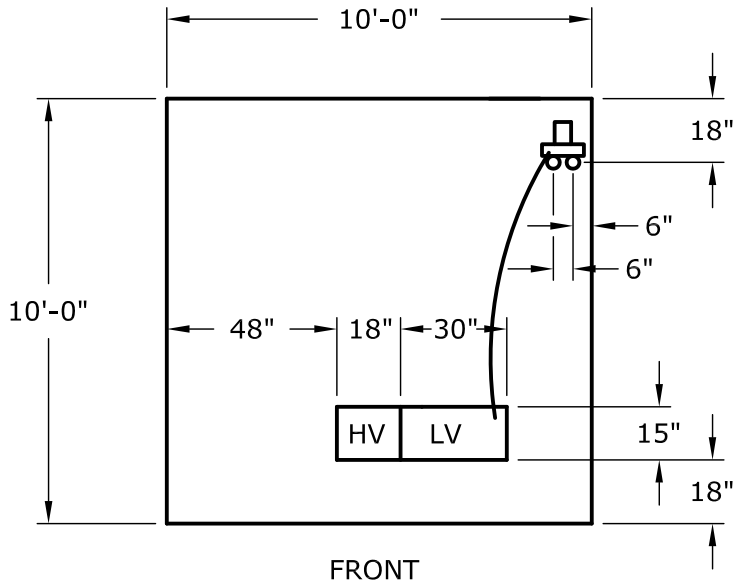


DIRECT BURIED CONDUIT DETAIL
NOT TO SCALE



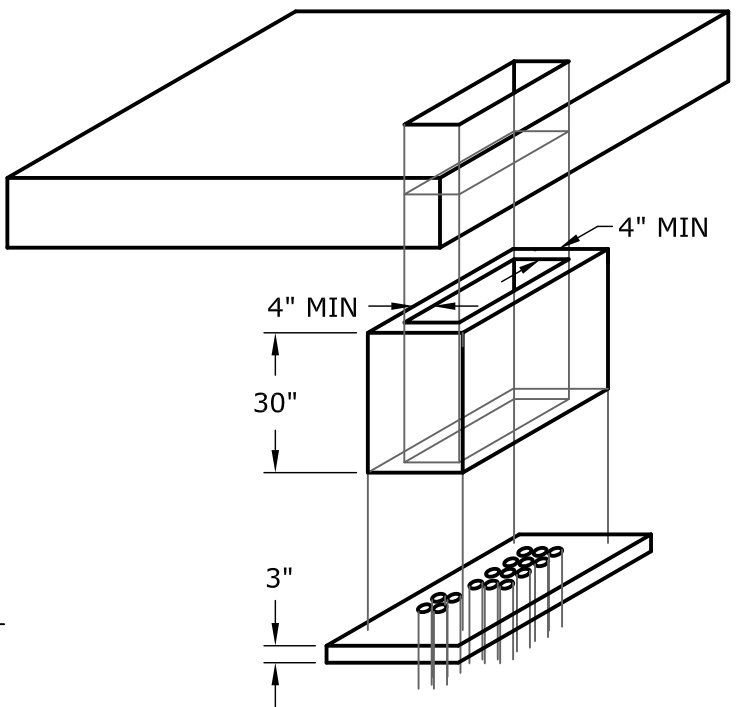
EQUIPMENT PAD DETAIL
NOT TO SCALE

- TRANSFORMER PAD NOTES:
1. COORDINATE DIMENSIONS AND REQUIREMENTS WITH DUKE ENEGERY PRIOR TO INSTALLATION.
 2. 1" CONDUIT FOR METERING, AND 2 x 4" GALVANIZED METER MOUNTING PIPES.
 3. REINFORCEMENT PER CITY OF HIGH POINT SPECIFICATIONS.
 4. TOP EDGES TO BE BEVELED 1/4". PAD TO BE SLOPED 1/4" FROM BACK TO FRONT, AND RIGHT TO LEFT.
 5. PAD TO BE A MINIMUM THICKNESS OF 8", 6" ABOVE GRADE ON HIGHEST SIDE, AND A MINIMUM OF 2" BELOW GRADE AT ALL POINTS.
 6. MINIMUM OF 10' CLEAR, LEVEL AREA MUST BE MAINTAINED IN FRONT OF PAD FOR HOTSTICK OPERATION.
 7. COORDINATE EXACT PAD REQUIREMENTS WITH THE CITY OF HIGH POINT ELECTRICAL DEPARTMENT PRIOR TO INSTALLATION.

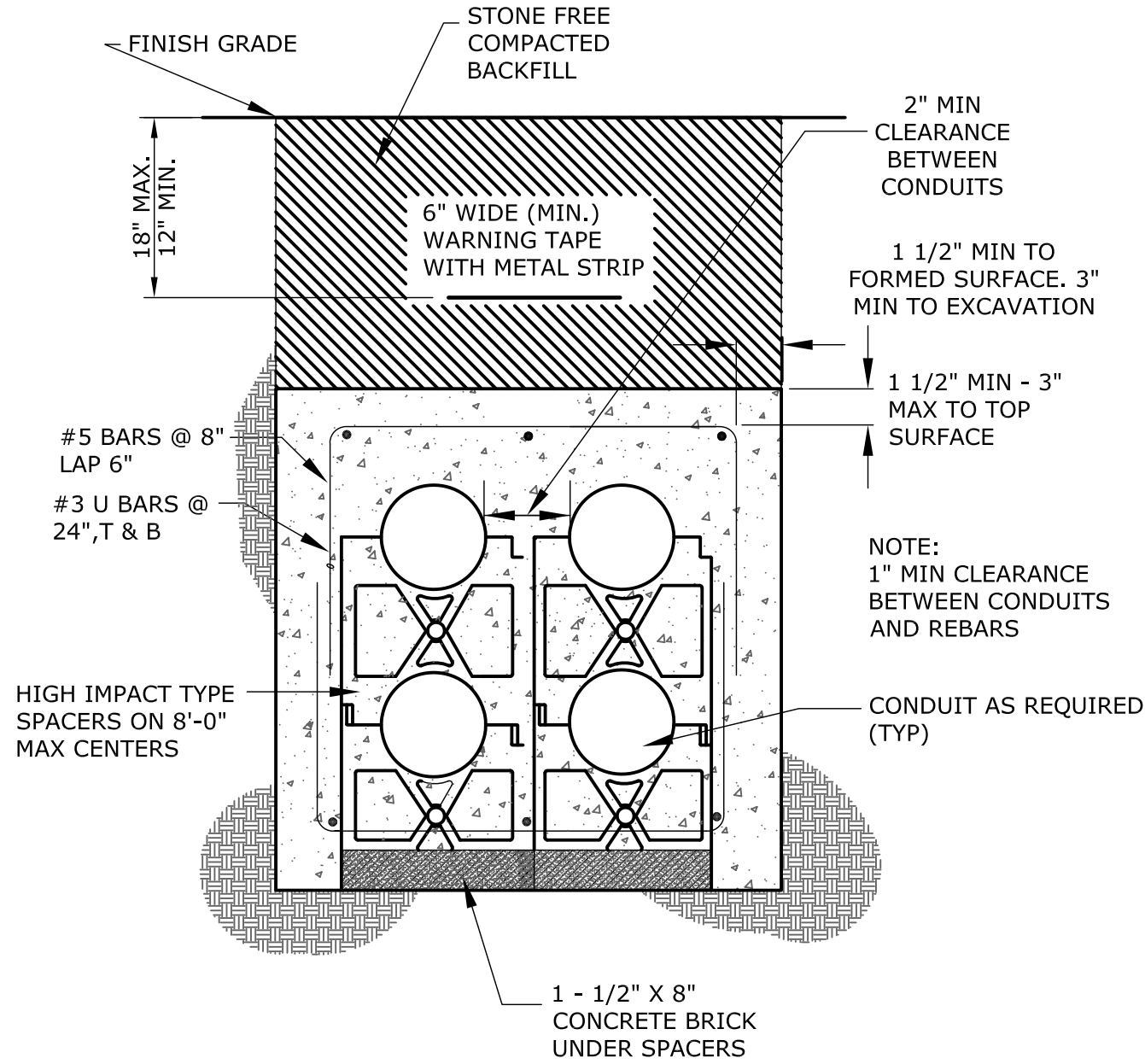


TRANSFORMER PAD DETAIL
NOT TO SCALE

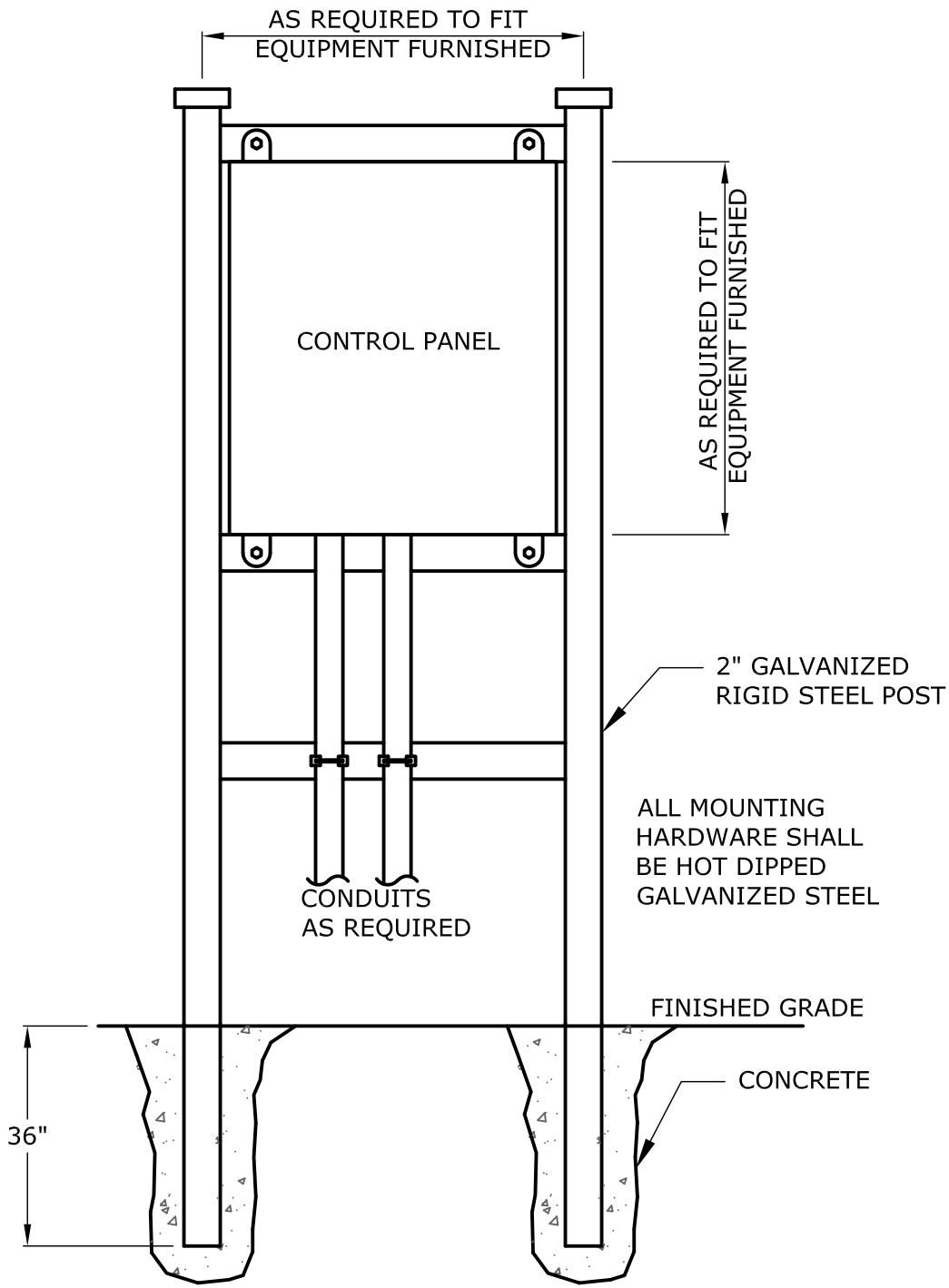
- TRANSFORMER PAD OUTSIDE DIMENSIONS:
1. SEE PIT DETAIL BELOW FOR HIGH VOLTAGE (HV) AND LOW VOLTAGE (LV) AREA.
 2. VERIFY LAYOUT AT SITE WITH DUKE ENGINEER AND OWNER.
 3. 10' AREA IN FRONT OF TRANSFORMER MUST NOT BE OBSTRUCTED.
 4. 5' AREA AROUND TRANSFORMER MUST NOT BE OBSTRUCTED (COOLING).



PIT DETAIL
NOT TO SCALE



TYP CONCRETE ENCASED CONDUIT SECTION
NOT TO SCALE



TYPICAL PANEL MOUNTING ON POST DETAIL
NOT TO SCALE

				PROJECT ENGINEER:	R. W. STURGILL
				DESIGNED BY:	R. W. STURGILL
				DRAWN BY:	R. W. LAWSON
				CHECKED BY:	-
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
3	CONSTRUCTION	3-8-16	RWS		
2	BUILDING PERMIT REVIEW	2-26-16	RWS		
1	REGULATORY REVIEW	1-20-16	RWS		
REV	ISSUED FOR	DATE	BY		

ISSUED FOR
CONSTRUCTION



**STURGILL
ENGINEERING
PA**
C-1210
ONE SOUTH MAIN ST.
LEXINGTON, NC 27292
(336) 238-1249 PH.
(336) 236-6393 FAX

DAVIDSON COUNTY
NORTH CAROLINA

DAVIDSON WATER INC.
HYATTOWN PUMP STATION IMPROVEMENTS

ELECTRICAL
MISCELLANEOUS DETAILS

DATE:	MARCH 2016
HAZEN NO.:	30961-010
CONTRACT NO.:	1
DRAWING NUMBER:	D6