BID SET No. _____

TOWN OF GLASTONBURY, CONNECTICUT

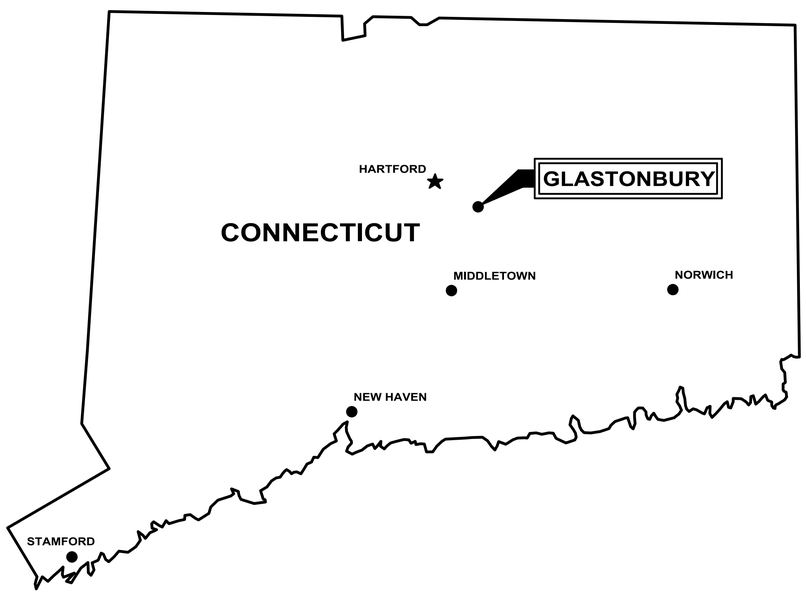
CONTRACT DRAWINGS FOR

CIDER MILL PUMP STATION UPGRADE

CONTRACT NO. GL-2019-10

FEBRUARY 2019

DRAWING INDEX



LOCATION PLAN
SCALE: 1"=2,000'

STATE OF CONNECTICUT
DENNIS A. DIETZEL
No. 25780
LICENSED PROFESSIONAL ENGINEER
2-4-19

WRIGHT-PIERCE
Engineering a Better Environment

888.621.8156 | www.wright-pierce.com

FOR REVIEW AUGUST 2018

FOR BIDDING FEBRUARY 2019

WP PROJECT No. 13773A

EXISTING SITE PLAN NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE BASED ON PREVIOUS CONSTRUCTION DESIGN PLANS, WHICH ARE AVAILABLE FOR INSPECTION AT THE ENGINEER'S OFFICE. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL RE-ALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER.
2. CONTRACTOR TO NOTE THAT, IN GENERAL, ALL EXISTING CONDITION INFORMATION ON THE DRAWINGS ARE SHOWN WITH A LIGHTER LINE WEIGHT AND WITH A SLANTED TYPE TEXT.
3. REFER TO SECTION 01050 OF THE SPECIFICATIONS FOR INFORMATION REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS.

CIVIL DEMOLITION NOTES:

1. REFER TO THE EXISTING SITE PLAN, DRAWING C-2, FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO DRAWING C-3 FOR LIMITS OF WORK.
2. REFER TO STRUCTURAL, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION REGARDING DEMOLITION AND REMOVAL.
3. REFER TO SPECIFICATION SECTION 01010, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.
4. DEMOLISH/REMOVE EXISTING PIPING AS REQUIRED FOR CONSTRUCTION OF NEW FACILITIES. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPING THAT NEEDS TO BE REMOVED TO CONSTRUCT THE NEW FACILITIES, BUT IS TO REMAIN, SHALL BE REINSTALLED/REPLACED AS NEEDED. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH NEW SITE PIPING OR FACILITIES, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED AND THE NEW ENDS OF ABANDONED PIPE CAPPED, OR PLUGGED WITH CONCRETE.
5. ALL EXISTING PIPING AND UTILITIES WHICH ARE BENEATH PROPOSED STRUCTURES, AND ARE TO BE ABANDONED, SHALL BE REMOVED TO A MINIMUM OF 5 FEET OUTSIDE OF THE STRUCTURE. PIPE AND UTILITIES BENEATH PROPOSED STRUCTURES THAT ARE TO REMAIN SHALL BE CONCRETE ENCASED, UNLESS OTHERWISE INDICATED.
6. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION FOR HIS USE. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER.
8. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.
9. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THAT ALL PROCESS FLOWS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY OR PUMPED BYPASSES AND OTHER MEANS OF MAINTAINING FLOW SHALL BE SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES OR BYPASSES WITH THE OWNER AND ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND HIS DEWATERING OPERATIONS.
11. EXISTING STRUCTURES AND EQUIPMENT TO BE DEMOLISHED MAY CONTAIN LEAD PAINT, ASBESTOS, AND/OR PCB'S. REFER TO APPENDIX B OF THE SPECIFICATIONS FOR TESTING RESULTS AND ABATEMENT REQUIREMENTS. REMOVAL OF THESE ITEMS ARE PART OF THE WORK AND SHALL BE CONDUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

CIVIL LAYOUT NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS. THE ENGINEER WILL PROVIDE TWO POINTS THAT DEFINE THE HORIZONTAL CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
2. REFER TO THE SITE MODIFICATIONS DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.
3. IN GENERAL, THE GIVEN STRUCTURE LOCATIONS ARE TO THE OUTSIDE FACE OF THE STRUCTURE FOUNDATION WALL, NOT FOOTINGS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING AND STRUCTURE DIMENSIONS. RADII SHOWN FOR ROADS ARE TO EDGE OF PAVEMENT.
4. PLACE CRUSHED STONE MOWING STRIP AROUND THOSE STRUCTURES AS INDICATED ON THE DRAWINGS. SEE DRAWING C-5 FOR DETAIL.
5. THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT HIS ACTIVITIES TO THESE AREAS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTING ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY HIS OPERATIONS. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF CONNECTICUT AT NO ADDITIONAL COST TO THE OWNER.
7. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

CIVIL SITE GRADING NOTES:

1. ALL AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED, UNLESS OTHERWISE NOTED. THE TOP 4 INCHES OF SOIL SHALL BE LOAM. REFER TO SPECIFICATION SECTION 02270 AND DRAWING C-3.
2. THE CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, EROSION CONTROL FENCE SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM, CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. REFER TO SPECIFICATION SECTION 02270.
3. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY HAY BALE FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL COLLECTED SEDIMENT, AND THAT WHICH COLLECTS IN THE STORM DRAIN SYSTEM.
4. TEST PIT AND/OR BORING LOGS FOR THE PROJECT SITE ARE INCLUDED IN APPENDIX A OF THE SPECIFICATIONS.
5. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01562.
6. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
7. ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
8. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS AND EXCESS EXCAVATED MATERIAL FROM WITHIN THE CONSTRUCTION LIMIT OF WORK, TO A SUITABLE SITE PROVIDED BY THE CONTRACTOR, IN COMPLIANCE WITH ALL STATE AND LOCAL REGULATIONS. ANY EXCESS SUITABLE MATERIAL MAY REMAIN ON SITE AT THE REQUEST OF THE OWNER.
9. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY HIS CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.
10. WHERE EXISTING PAVEMENT IS REMOVED AND REPLACED, MATCH EXISTING GRADES TO THE EXTENT POSSIBLE. COORDINATE FINE GRADING WITH THE ENGINEER.
11. ALL VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.

SITE LAYOUT NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS. THE LAYOUT PLAN SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL ELEVATION REFERENCE INFORMATION PRIOR TO USE IN CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
2. REFER TO THE SITE PIPING AND SITE GRADING DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.
3. PLACE CRUSHED STONE MOWING STRIP AROUND THOSE STRUCTURES AS INDICATED ON THE DRAWINGS. SEE DRAWING C-5 FOR DETAIL.

CIVIL SITE PIPING NOTES:

1. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED LINES SHALL BE SUITABLY RESTRAINED WITH THRUST BLOCKS OR RETAINER GLANDS (RETAINER GLANDS ALLOWED FOR DUCTILE IRON PIPE ONLY). SEE DRAWING C-4 FOR THRUST BLOCK DETAILS. PROVIDE ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE GRADES AND ALIGNMENT INDICATED ON THE DRAWINGS.
2. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING PIPING AND UTILITIES IN THE FIELD BY TEST PIT EXCAVATION PRIOR TO COMMENCING INSTALLATION OF ANY OF THE NEW PIPING AFFECTED. WHERE NEW PIPE CONNECTS TO EXISTING PIPING OR STRUCTURAL PENETRATION, CONTRACTOR SHALL VERIFY ELEVATION BY TEST PIT, AS REQUIRED, PRIOR TO INSTALLATION OF ANY OF THE ASSOCIATED/AFFECTED NEW PIPING. IDENTIFIED CONFLICTS WITH EXISTING PIPING AND UTILITIES WILL BE REVIEWED WITH THE ENGINEER PRIOR TO COMMENCING INSTALLATION. THE HORIZONTAL ALIGNMENT OF NEW PIPING MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR REVIEW AND ACCEPTANCE OF THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS AND REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
3. ALL BURIED CONNECTIONS TO STRUCTURES SHALL HAVE SLEEVE TYPE FLEXIBLE CONNECTIONS APPROXIMATELY 4 FEET FROM THE STRUCTURES. ALL SLEEVE TYPE COUPLINGS ON PRESSURE LINES SHALL BE RESTRAINED (SOLID SLEEVE). REFER TO SPECIFICATION SECTION 15088.
4. PROVIDE CAST OR DUCTILE IRON WALL CASTINGS, OR GALVANIZED STEEL PIPE SLEEVES, FOR ALL PIPE PENETRATIONS MADE THROUGH CONCRETE FOUNDATIONS, WALLS AND SLABS. ALL WALL SLEEVES AND WALL CASTINGS SHALL HAVE WATERSTOPS. SEE PROCESS, MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. NEW PENETRATIONS THROUGH EXISTING STRUCTURE WALLS SHALL BE BY CORING MACHINE AND "LINK-SEAL" TYPE SEALS, UNLESS OTHERWISE INDICATED. OPENINGS TO BE COMPATIBLE WITH REQUIRED PIPING AND STANDARD LINK SEAL SIZES. SEE DRAWING PR-1 FOR DETAILS.
5. TRENCH INSULATION SHALL BE USED WHERE DEPTH OF COVER IS LESS THAN 3.5 FEET. REFER TO DRAWING C-4 FOR TRENCH INSULATION DETAIL.
6. MANHOLES ARE 4 FEET IN DIAMETER UNLESS OTHERWISE NOTED. THE TOP OF MANHOLE FRAMES SHALL BE SET FLUSH WITH FINISH GRADE, UNLESS OTHERWISE NOTED ON DRAWINGS. PIPES WITHIN VALVE PITS (MANHOLES) SHALL BE SUPPORTED 12 INCHES ABOVE BOTTOM OF MANHOLE ON ADJUSTABLE PIPE SADDLE SUPPORTS, IN ACCORDANCE WITH SPECIFICATION SECTION 15094, UNLESS OTHERWISE INDICATED.
7. REFER TO SPECIFICATION SECTION 02200 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
8. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
9. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
10. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
11. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON THE DEMOLITION PLAN, DRAWING C-2.
12. CONTRACTOR SHALL RE-SHAPE INVERTS AS REQUIRED WHEN CONNECTING INTO EXISTING MANHOLES.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEMOLITION MATERIALS IN ACCORDANCE WITH SPECIFICATION SECTION 02050.
14. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE OWNER.
15. PIPING ON THE SITE PIPING PLAN HAS BEEN SHOWN BROKEN FOR CLARITY ONLY. PIPE BREAKS DO NOT INDICATE RELATIVE ELEVATIONS OF PIPING.
16. ELECTRICAL CONDUIT RUNS ARE INDICATED ON THE ELECTRICAL DRAWINGS.
17. WHENEVER PROPOSED STRUCTURES ARE LOCATED PARTLY WITHIN A PAVED AREA AND PARTLY IN A NON-PAVED AREA, A BITUMINOUS CONCRETE PAVED APRON 2-FEET WIDE SHALL BE SUPPLIED AROUND THE PROPOSED COVER. PAVEMENT SHALL SLOPE AWAY FROM THE COVER.

ABBREVIATIONS:

CB	CATCH BASIN
CI	CAST IRON PIPE
DI	DUCTILE IRON PIPE
FM	FORCE MAIN
GS	GALVANIZED STEEL PIPE
HYD	HYDRANT
INV	INVERT ELEVATION
OHE	OVERHEAD ELECTRICAL
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
S	SEWER
SD	STORM DRAIN
SMH	SEWER MANHOLE
SS	STAINLESS STEEL PIPE
UGE	UNDERGROUND ELECTRIC
W	WATER
XFMR	TRANSFORMER

LEGEND

EXISTING		PROPOSED
	PROPERTY/ROW LINE	
	SETBACK LINE	
	EASEMENT LINE	
	CENTERLINE	
	EDGE OF PAVEMENT	
	CURBING	
	EDGE OF GRAVEL	
	EDGE OF CONCRETE	
122	CONTOUR	123
	BUILDING	
	STONEWALL	
	TREELINE	
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	BARB WIRE FENCE	
	RETAINING WALL	
	GUARDRAIL	
8" S	SEWER	8"S
4" FM	SEWER FORCE MAIN	4"FM
4" G	GAS	4"G
4" W	WATER	8"W
15" SD	STORM DRAIN	15"SD
6" UD	UNDERDRAIN	6"UD
12" CMP	CULVERT	12" CMP
UGE	UNDERGROUND ELECTRIC	UGE
OHE	OVERHEAD ELECTRIC	OHE
	IRON PIPE/REBAR	
	DRILLHOLE	
	MONUMENT	
	SURVEY CONTROL POINT	
124.6	SPOT ELEVATION	134.5
SMH	SEWER MANHOLE	SMH
DMH	DRAINAGE MANHOLE	DMH
CB CB	CATCH BASIN	CB CB
EMH	ELECTRIC MANHOLE	EMH
TMH	TELEPHONE MANHOLE	TMH
	GATE VALVE	
	CURB STOP	
	YARD HYDRANT	
	HYDRANT	
	UTILITY POLE	
	UTILITY POLE W/ GUY	
	UTILITY POLE W/ LIGHT	
	LIGHT POLE	
	BOLLARD	
	FLAGPOLE	
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	SHRUB	
	EDGE OF WATER	
	STREAM	
	EDGE OF WETLANDS	
	FLOODPLAIN	
	WETLANDS	
	DRAINAGE FLOW	
	DRAINAGE SWALE	
	PAVEMENT MARKINGS	
	SIGN	
MB	MAILBOX	
	TEMPORARY BENCH MARK	
TP-2	TEST PIT	
B-3	TEST BORING	
P-4	TEST PROBE	
MW	MONITORING WELL	
	LIMIT OF WORK	
	SILT FENCE	
	RIPRAP	
	RAILROAD	
	MATCHLINE	
	ROCK OUTCROP	

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

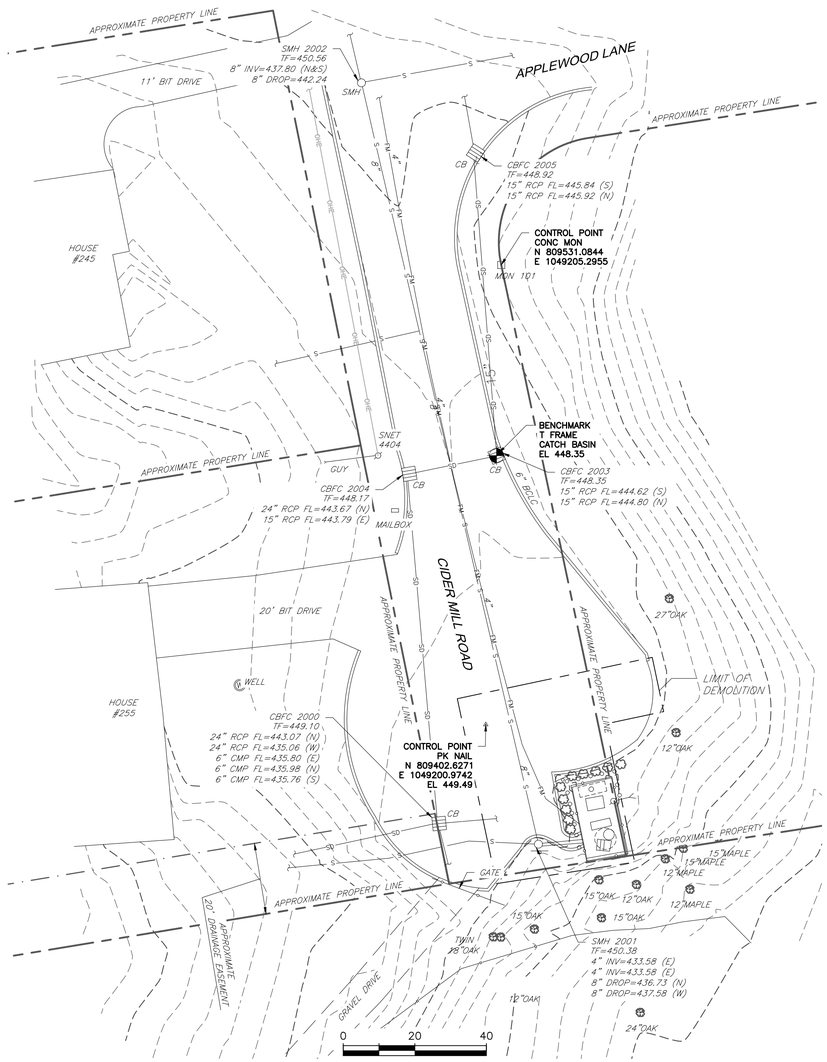
DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 09-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

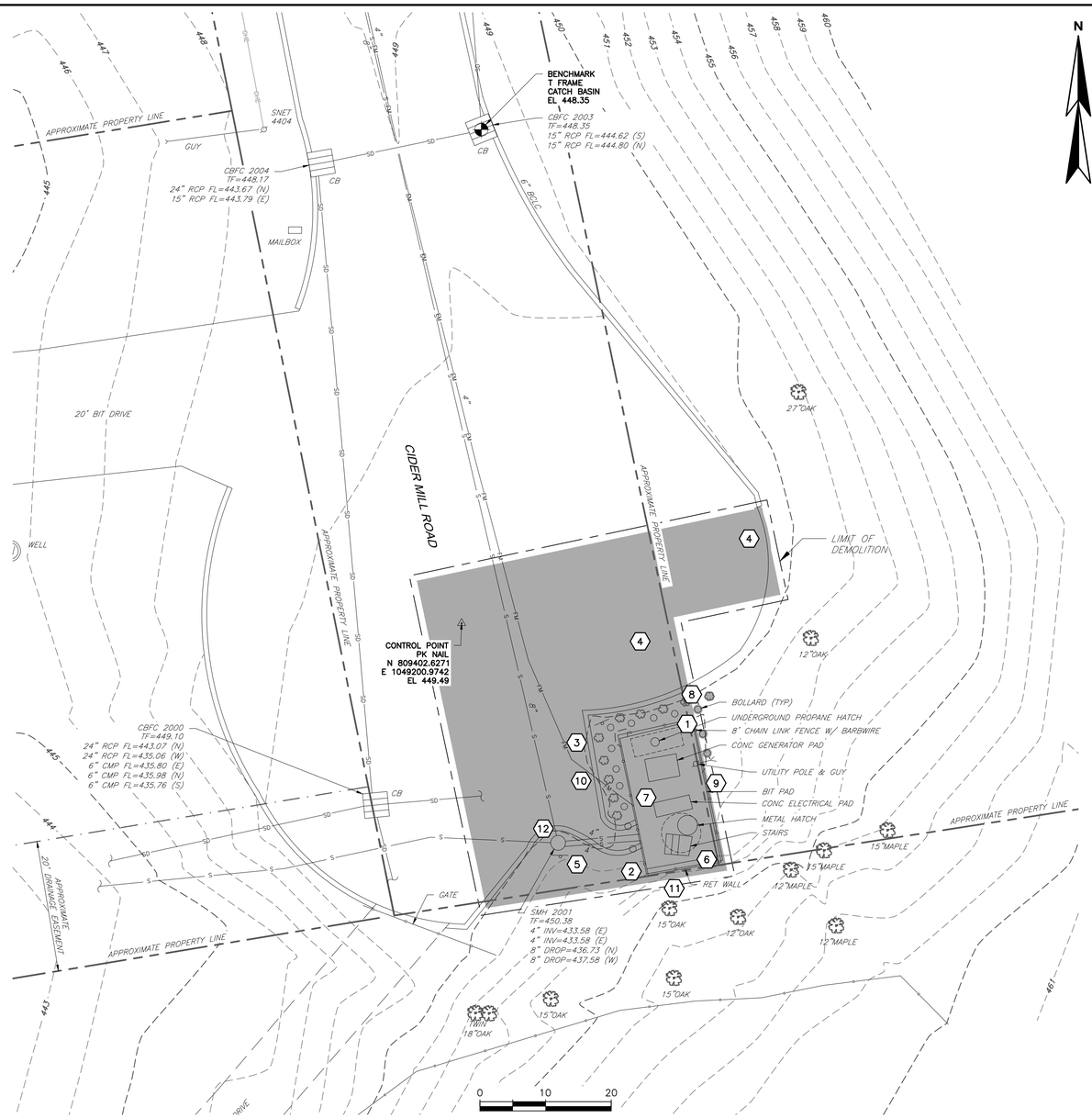
TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

GENERAL NOTES, LEGEND & ABBREVIATIONS

DRAWING
C-1



EXISTING CONDITIONS PLAN
SCALE: 1"=20'



SITE DEMOLITION PLAN
SCALE: 1"=10'

NOTES:

1. EXISTING STRUCTURES AND EQUIPMENT TO BE DEMOLISHED MAY CONTAIN LEAD PAINT, ASBESTOS, AND/OR PCB'S. REFER TO APPENDIX B OF THE SPECIFICATIONS FOR TESTING RESULTS AND ABATEMENT REQUIREMENTS. REMOVAL OF THESE ITEMS ARE PART OF THE WORK AND SHALL BE CONDUCTED IN ACCORDANCE WITH ALL LOCAL , STATE, AND FEDERAL REGULATIONS.
2. TOWN TO PROVIDE LOCAL DISPOSAL SITE FOR ALL PAVEMENT, TREES, SHRUBS, CONCRETE, AND STEEL AT NO FEE.

PHOTO 1 – PUMP STATION

PHOTO 2 – INFLUENT MANHOLE

PHOTO 3 – GENERATOR

PHOTO 4 – ACCESS HATCH

DEMOLITION NOTES:

1. REMOVE/DEMOLISH EXISTING UNDERGROUND PROPANE TANK IN ITS ENTIRETY INCLUDING, BUT NOT LIMITED TO, TANK, PIPING, ACCESS HATCH, AND OTHER ASSOCIATED APPURTENANCES IN THEIR ENTIRETY. REMOVAL OF THE TANK AND PIPING SHALL BE CONDUCTED BY A LICENSED PROPANE REMOVAL CONTRACTOR IN THE STATE OF CONNECTICUT AND BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
2. REMOVE/DEMOLISH EXISTING CHAIN LINK FENCE, INCLUDING, BUT NOT LIMITED TO, FENCE, BARBED WIRE, GATE, CONCRETE FOUNDATIONS, HARDWARE, AND ALL OTHER ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.
3. REMOVE/DEMOLISH EXISTING TREES AND SHRUBBERY IN THEIR ENTIRETY, INCLUDING STUMPS.
4. REMOVE/DEMOLISH EXISTING PAVEMENT AND TOPSOIL/SUBSOIL MATERIAL TO THE EXTENTS SHOWN. REFER TO THE PAVEMENT DETAILS ON DRAWING C-4 FOR INFORMATION REGARDING DEPTH OF MATERIAL TO BE REMOVED.
5. REMOVE/DEMOLISH EXISTING 4" SUCTION PIPING AS NECESSARY TO ALLOW FOR INSTALLATION OF NEW GRAVITY LINE.
6. REMOVE/DEMOLISH EXISTING PUMP CHAMBER, INCLUDING, BUT NOT LIMITED TO, ACCESS CHAMBER, EJECTION PUMP CHAMBER, ACCESS HATCH, PLATFORM, HARDWARE, PIPING, EQUIPMENT, AND ALL OTHER ASSOCIATED APPURTENANCES IN THEIR ENTIRETY. REFER TO PROCESS DRAWINGS FOR ADDITIONAL INFORMATION.
7. REMOVE/DEMOLISH EXISTING GENERATOR, CONCRETE PAD, AND ENCLOSURE IN ITS ENTIRETY.
8. REMOVE/DEMOLISH EXISTING BOLLARDS IN THEIR ENTIRETY.
9. REMOVE/DEMOLISH UTILITY POLE, GUY, AND ALL OTHER ASSOCIATED APPURTENANCES IN THEIR ENTIRETY. CONTRACTOR SHALL COORDINATE THE REMOVAL WITH THE UTILITY COMPANY THAT OWNS AND MAINTAINS THE POLE.
10. REMOVE/DEMOLISH 4" FORCE MAIN AS NECESSARY FOR CONNECTION OF NEW FORCE MAIN.
11. REMOVE/DEMOLISH RETAINING WALL TO ALLOW FOR REMOVAL OF EXISTING DRYWELL AND INSTALLATION OF NEW WETWELL.
12. REMOVE/DEMOLISH MANHOLE FRAME, COVER, AND RISER. REMOVE ANY EXISTING INTERIOR DROP PIPING AND FILL EXISTING MANHOLE TO NEW INV OUT AND FORM NEW INVERT CHANNELS AND BENCH. CORE HOLE AS REQUIRED TO CONNECT NEW 8" SEWER TO WETWELL AND PROVIDE FLEXIBLE WATERTIGHT BOOT.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO: 13773

STATE OF CONNECTICUT · DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION · LICENSED PROFESSIONAL ENGINEER · No. 25780 · NICOLE L. OLSEN

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

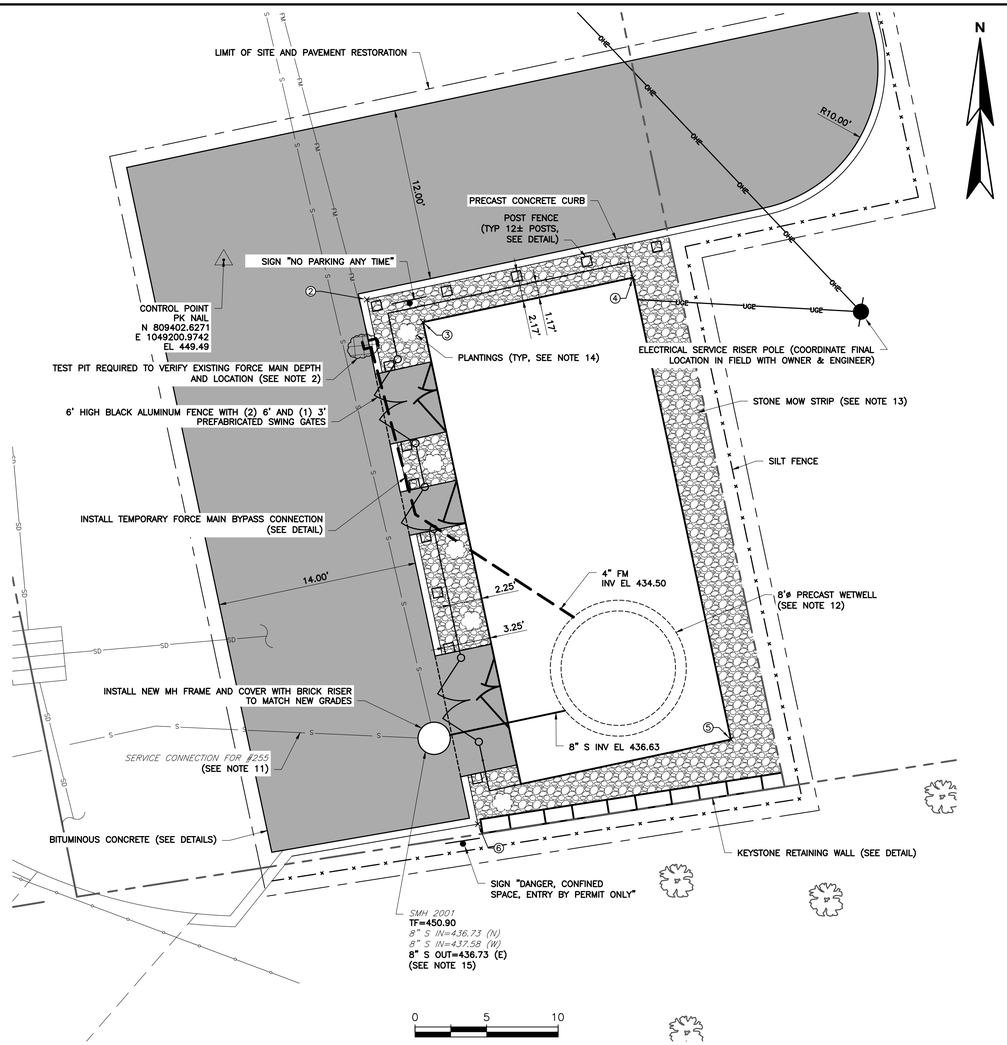
TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

EXISTING CONDITIONS & SITE DEMOLITION PLAN

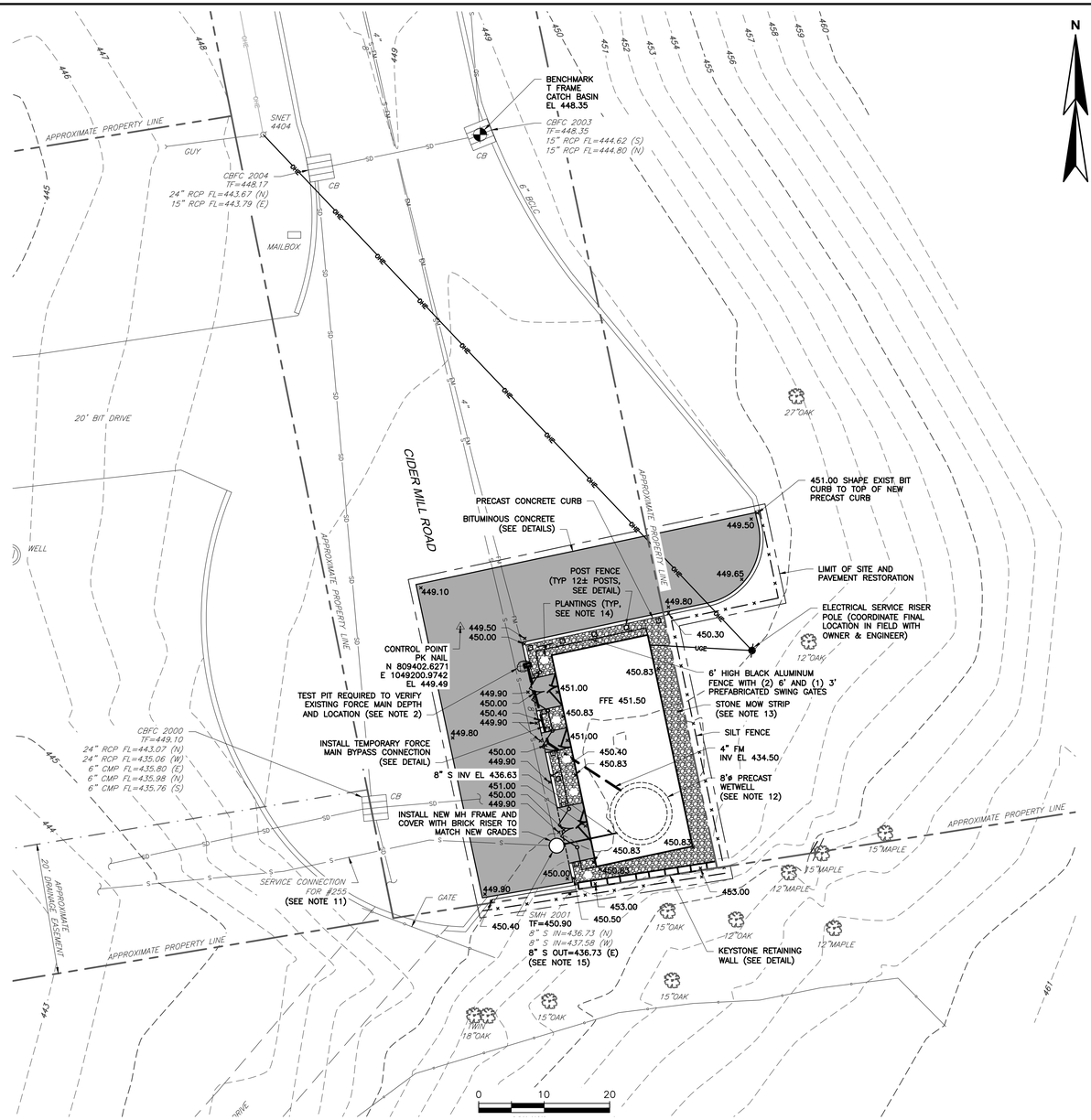
DRAWING
C-2

J:\ENG\CT\GLASTONBURY\13773-CIDERMILL-PS\DRAWINGS\CIV\13773-CS-SITEPLAN-DEMO.DWG | Site-Demo | 14:56 | ---- | 2/4/2019 12:10:51 PM | ELLIOTT.LAGNER

LAST SAVED BY: ELLIOTT.LAGNER 2/4/2019 12:05 PM



SITE LAYOUT MODIFICATIONS PLAN
SCALE: 1"=5'



SITE MODIFICATIONS PLAN
SCALE: 1"=10'

NOTES

1. REFER TO DRAWING PR-3 FOR ADDITIONAL PIPING INFORMATION.
2. CONTRACTOR TO DIG TEST PITS PRIOR TO INSTALLATION OF FORCE MAIN TO VERIFY ELEVATIONS OF EXISTING PIPING AND CONNECTION POINTS.
3. NOT ALL BURIED UTILITIES ARE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO PERFORMING ANY EXCAVATION.
4. REFER TO DRAWINGS E-3 AND E-6 FOR ELECTRICAL SITE WORK REQUIREMENTS.
5. CONTRACTOR SHALL MAINTAIN SAFE ACCESS/EGRESS FOR ALL RESIDENTS IN BUILDINGS ADJACENT TO WORK.
6. CONTRACTOR SHALL MAINTAIN SILT FENCE TO PROTECT ADJACENT PROPERTIES. EROSION AND SEDIMENT CONTROLS ARE SUBJECT TO INSPECTION BY THE TOWN OF GLASTONBURY. DEWATERING OPERATIONS SHALL BE CONDUCTED USING A DEWATERING FILTER BAG. SEE DRAWING ON C-5 FOR ADDITIONAL REQUIREMENTS.
7. REFER TO DRAWING C-5 FOR CRUSHED STONE MOW STRIP DETAIL.
8. SAWCUT AND TACKCOAT EDGE OF BITUMINOUS PAVEMENT TO PROVIDE A CLEAN, SQUARE EDGE FOR THE CONNECTION OF NEW BITUMINOUS PAVEMENT.
9. ALL DISTURBED SURFACES NOT TO RECEIVE NEW PAVEMENT, CONCRETE, OR MOW STRIPS SHALL RECEIVE A MINIMUM OF 4-INCHES OF LOAM. CONTRACTOR TO RESTORE/PLANT GRASS IN ALL DISTURBED AREAS.
10. EXISTING STRUCTURES AND EQUIPMENT TO BE DEMOLISHED MAY CONTAIN LEAD PAINT, ASBESTOS, AND/OR PCB'S. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR TESTING RESULTS AND ABATEMENT REQUIREMENTS. REMOVAL OF THESE ITEMS ARE PART OF THE WORK AND SHALL BE CONDUCTED IN ACCORDANCE WITH ALL LOCAL , STATE, AND FEDERAL REGULATIONS.

NOTES (cont.)

11. PROTECT SEWAGE FLOWS FROM BACKING UP INTO #255 CIDER MILL ROAD DURING BYPASS PUMPING OPERATIONS. INSTALL BACKWATER VALVE DURING BYPASS OPERATIONS. REFER TO SPECIFICATIONS SECTION 01515 FOR ADDITIONAL INFORMATION.
12. THE NEW WETWELL IS TO BE INSTALLED IN THE SAME LOCATION AS THE EXISTING DRYWELL. LEDGE IS PRESENT ON THE SITE. CONTRACTOR SHALL INCLUDE UP TO 10-CY OF LEDGE REMOVAL IN THE LUMP SUM BID PRICE.
13. INSTALL ¾" DECORATIVE STONE TO THE LIMITS SHOWN. COORDINATE STONE SELECTION AND COLOR WITH OWNER.
14. PROVIDE AND INSTALL PLANTINGS UNDER THE ALLOWANCE ITEM. PLANTINGS TO BE SELECTED BY OWNER.
15. REMOVE ANY EXISTING INTERIOR DROP PIPING AND FILL EXISTING MANHOLE TO NEW INV OUT AND FORM NEW INVERT CHANNELS AND BENCH. CORE HOLE AS REQUIRED TO CONNECT NEW 8" SEWER TO WETWELL AND PROVIDE FLEXIBLE WATERTIGHT BOOT.
16. ELECTRONIC FILES OF ENGINEER'S DRAWINGS WILL BE PROVIDED TO THE SUCCESSFUL CONTRACTOR AFTER CONTRACT AWARD FOR LAYOUT OF THE PROPOSED WORK. ALL LAYOUT INFORMATION PROVIDED ON THE SEALED COPIES OF THE CONTRACT DRAWINGS SHALL PREVAIL IN CASE OF DISCREPANCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE WORK BASED ON EXISTING CONTROL POINTS PROVIDED BY THE ENGINEER AND IT'S CONSULTANTS. ANY DISCREPANCIES FOUND SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
17. EXISTING CONTOURS ARE SHOWN FOR INFORMATION ONLY TO SHOW EXISTING CONDITIONS UNLESS CONNECTED TO NEW CONTOURS. NEW GRADES SHALL FOLLOW THE PROPOSED CONTOURS. ALL CONTOURS HAVE BEEN TRIMMED AT STRUCTURES ONLY.
18. FOR AREAS WHERE NEW PAVING IS SHOWN WITHOUT NEW GRADES, CONTRACTOR SHALL MATCH EXISTING GRADES.
19. METHODS OF EXCAVATION SUPPORT AND PROTECTION OF EXISTING STRUCTURES SHALL BE AT THE DISCRETION OF THE CONTRACTOR AND BE APPROVED BY THE ENGINEER UNLESS OTHERWISE NOTED.

LAYOUT POINTS

Point #	Raw Description	Northing	Easting
1	CURB	809420.3076	1049245.9628
2	CORNER CURB	809399.8576	1049210.9705
3	BUILDING CORNER	809398.2723	1049214.8989
4	BUILDING CORNER	809401.3828	1049229.5728
5	BUILDING CORNER	809369.1001	1049236.4159
6	CURB	809363.1910	1049218.7428

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

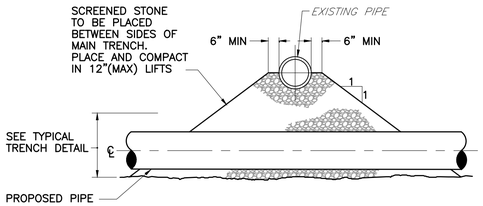
DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

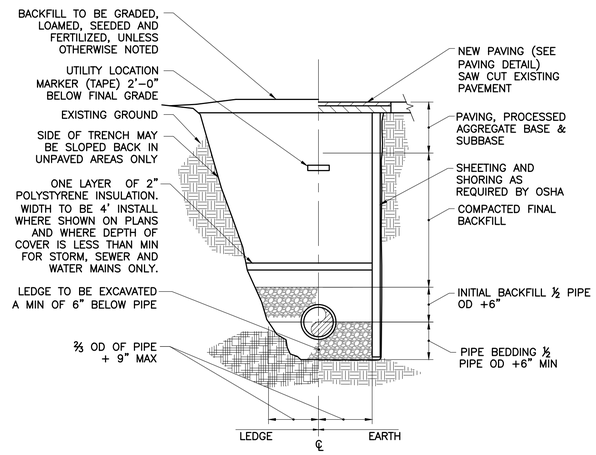
SITE MODIFICATIONS PLAN

DRAWING
C-3



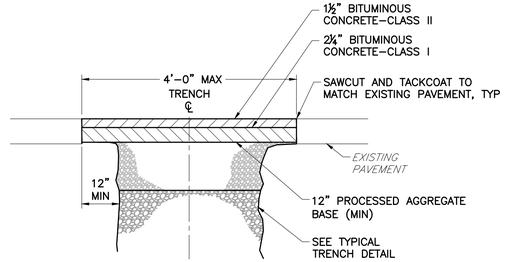
NOTE:
JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE

PIPE CROSSING
SCALE: NTS



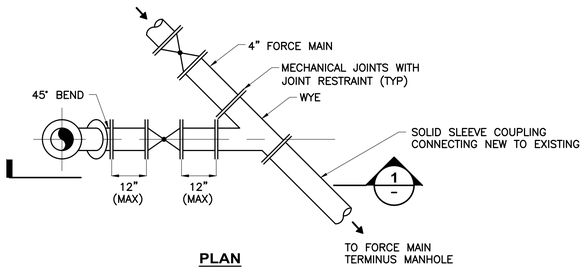
NOTES:
1. ALL EXCAVATION MUST MEET OSHA STANDARDS.
2. SEE SPECIFICATIONS FOR BEDDING AND BACKFILL REQUIREMENTS.

PIPE TRENCH
SCALE: NTS

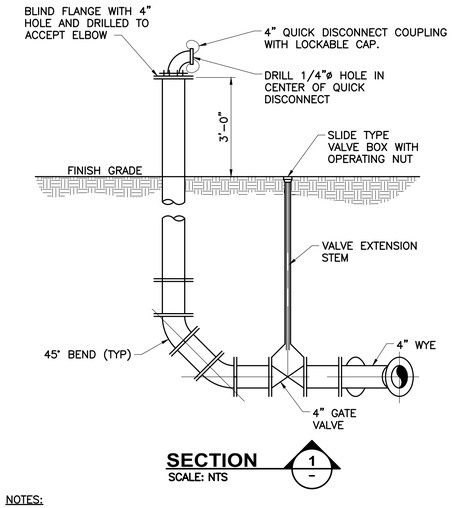


NOTE: INITIAL TRENCH PAVING MAY BE USED AS THE BASE COURSE FOR FINAL PAVING IF IN GOOD REPAIR.

FINAL TRENCH PAVING (WITHOUT OVERLAY)
SCALE: "NTS"



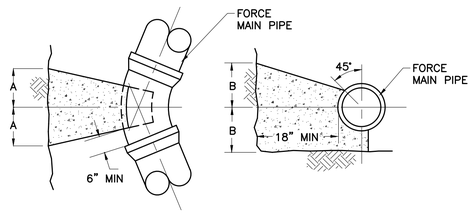
PLAN



SECTION
SCALE: NTS

NOTES:
1. CAP AND ABANDON BELOW GRADE AFTER NEW STATION IS ONLINE.

TEMPORARY FORCE MAIN BYPASS ASSEMBLY
SCALE: NTS

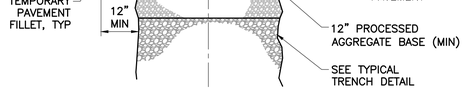


PIPE SIZE	90° BEND A	90° BEND B	45° BEND A	45° BEND B	22 1/2° BEND A	22 1/2° BEND B
2"	9"	9"	9"	9"	6"	6"
4"	18"	12"	12"	9"	9"	9"
6"	18"	12"	12"	9"	9"	9"
8"	24"	15"	15"	12"	12"	12"
10"	24"	20"	15"	15"	12"	12"
12"	24"	24"	18"	18"	15"	12"
14"	27"	27"	21"	21"	15"	15"
16"	30"	30"	24"	24"	18"	18"

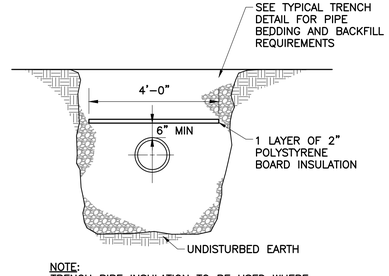
NOTES: 1. THRUST BLOCK SIZES ABOVE ARE BASED ON A SOIL BEARING CAPACITY OF 1000 PSF AND TEST PRESSURES OF 100 PSI. CONTRACTOR SHALL NOTIFY THE ENGINEER IF LOW BEARING STRENGTH SOILS ARE ENCOUNTERED.

2. RETAINER GLANDS MAY BE USED IN LIEU OF THRUST BLOCKS ON DUCTILE IRON FORCE MAINS ONLY. INSTALL IN COMPLIANCE WITH DUCTILE IRON & PIPE MANUFACTURERS STANDARDS.

FORCE MAIN THRUST BLOCK
SCALE: NTS



INITIAL TRENCH PAVING (WITHOUT OVERLAY)
SCALE: "NTS"



NOTE:
TRENCH PIPE INSULATION TO BE USED WHERE DEPTH OF COVER IS LESS THAN 3.5 FEET OR AS DIRECTED BY THE ENGINEER

TRENCH PIPE INSULATION
SCALE: NTS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02–19
1			
2			
3			
4			

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08–18
APPROVED BY: DAD
DATE: 09–18
PROJECT NO: 13773

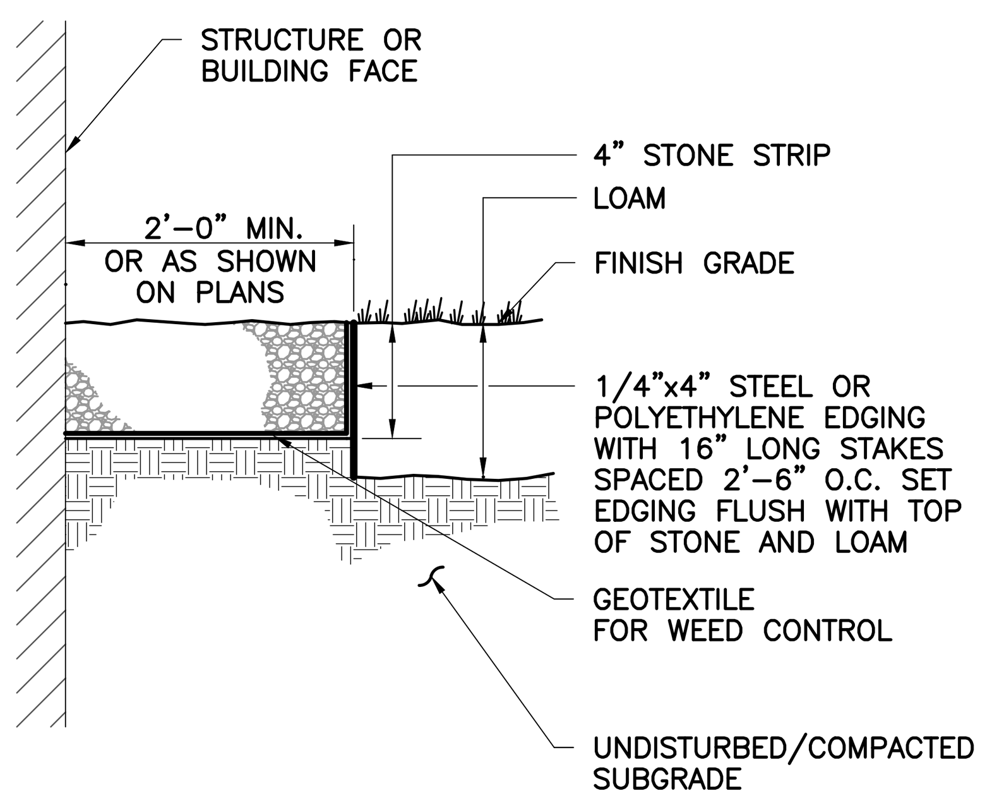
STATE OF CONNECTICUT · DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION · DESIGNED · No. 23780 · APPROVED

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

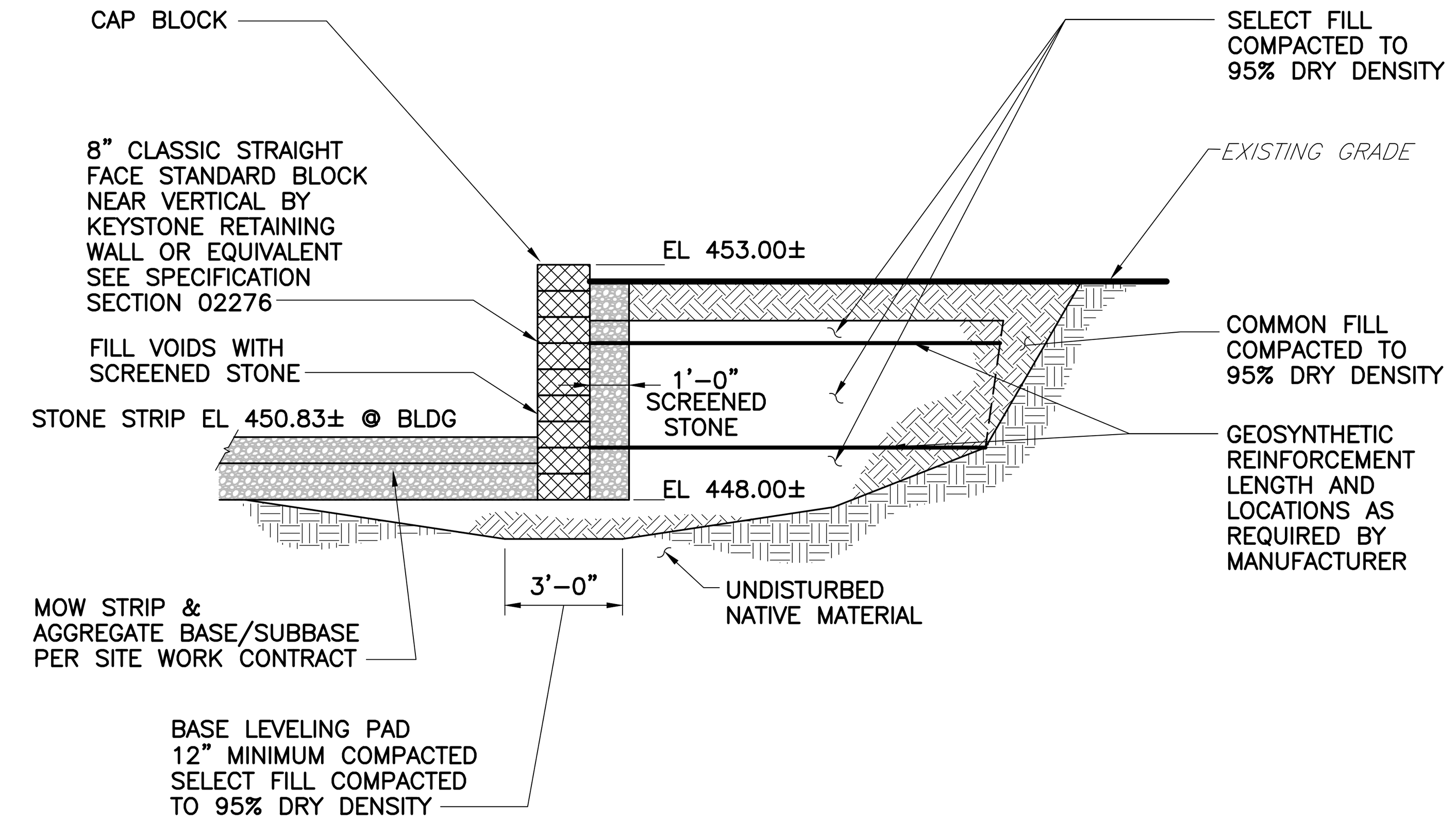
DETAILS I

DRAWING
C–4

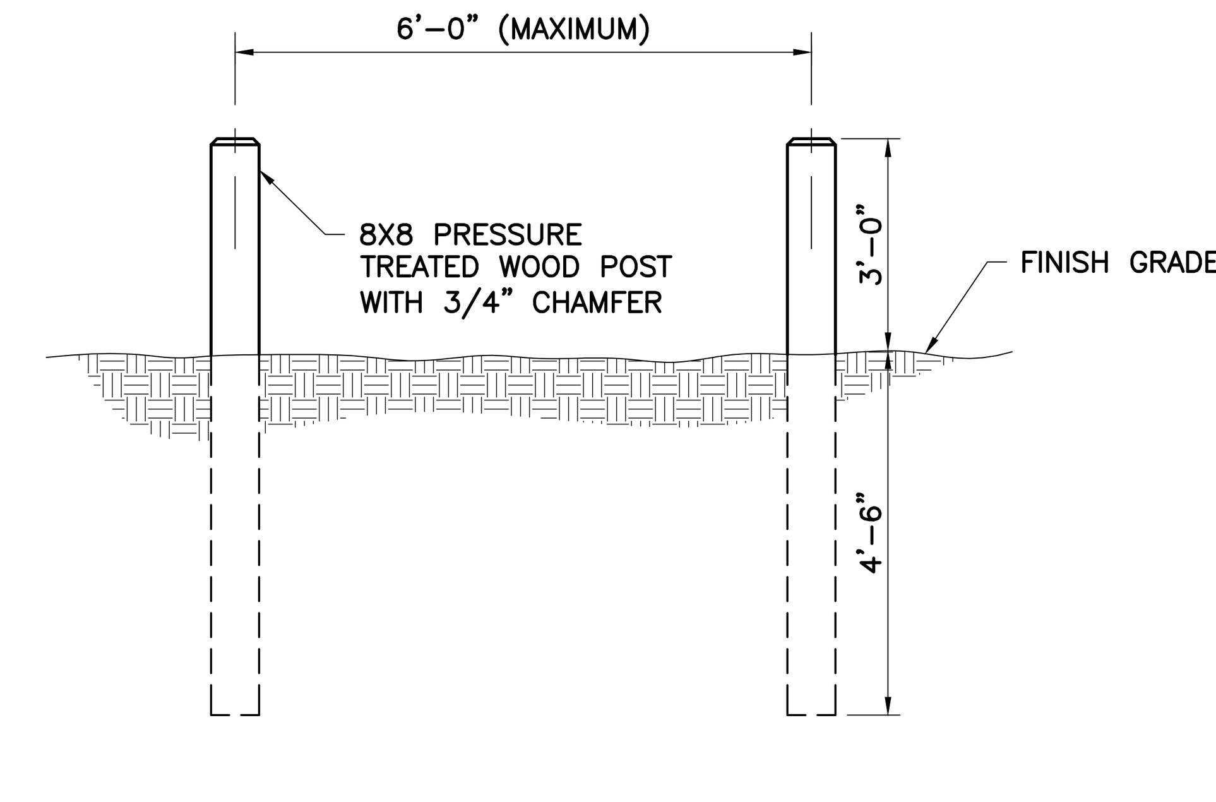


NOTES:
1. STONE SHALL BE RIVERSTONE AS SELECTED BY THE OWNER.

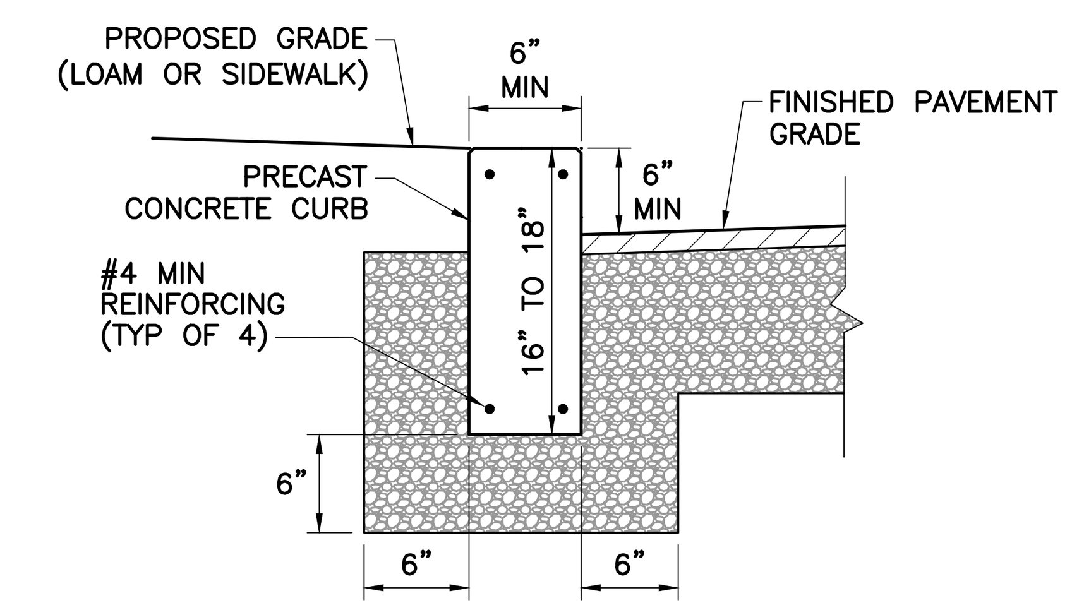
CRUSHED STONE MOWING STRIP
SCALE: NTS



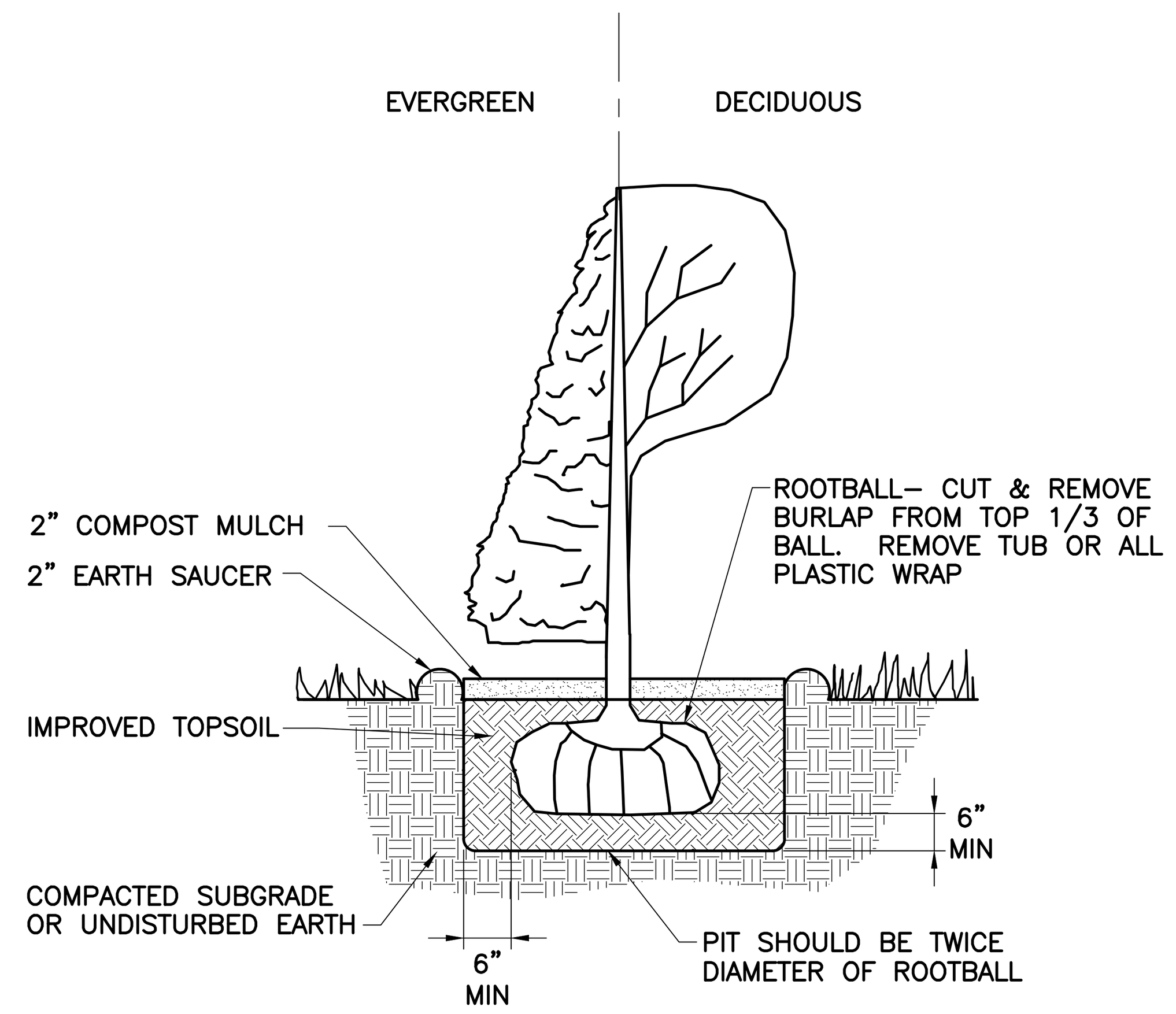
KEYSTONE RETAINING WALL
SCALE: NTS



POST FENCE
SCALE: NTS

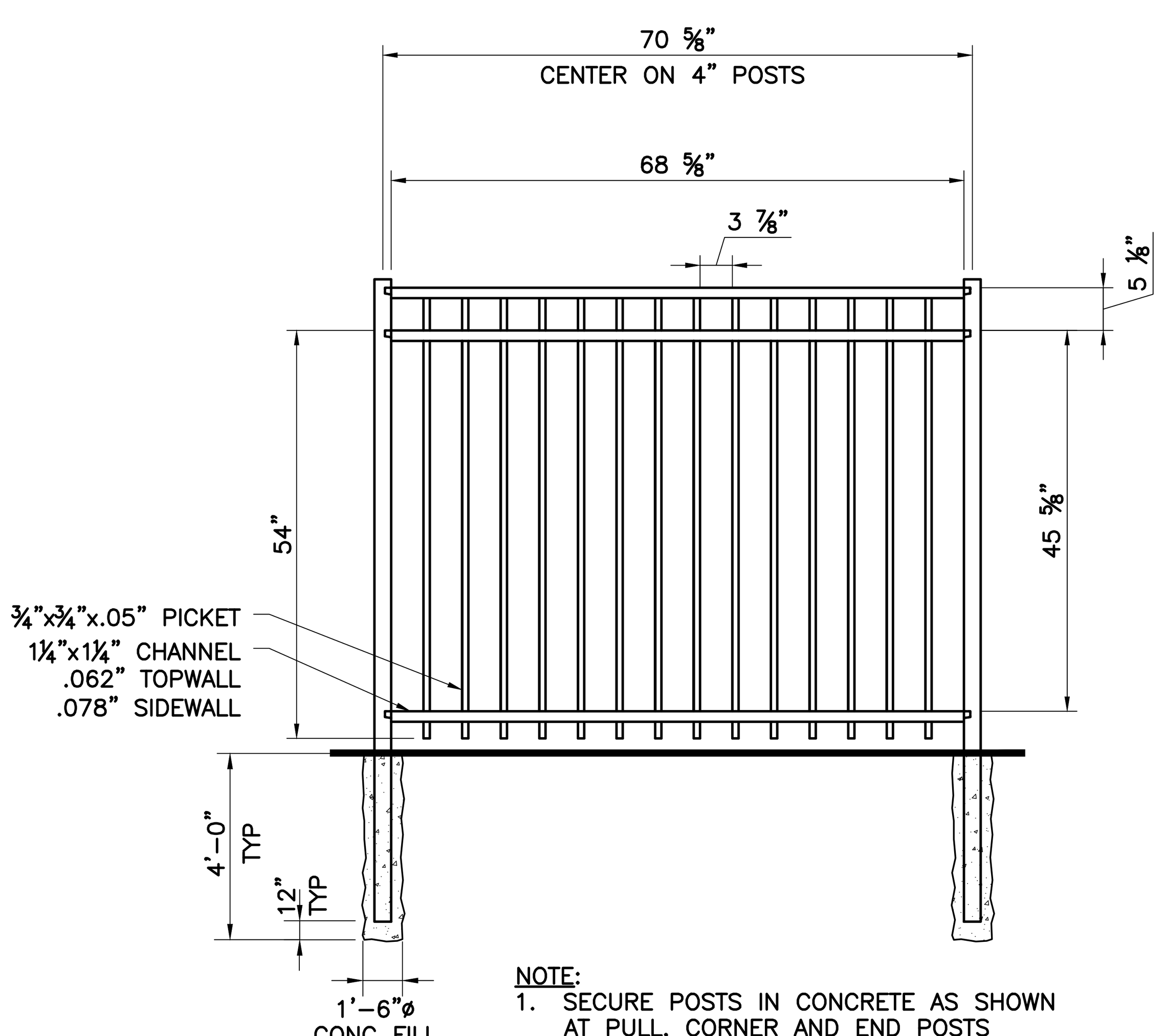


PRECAST CONCRETE CURB
SCALE: NTS



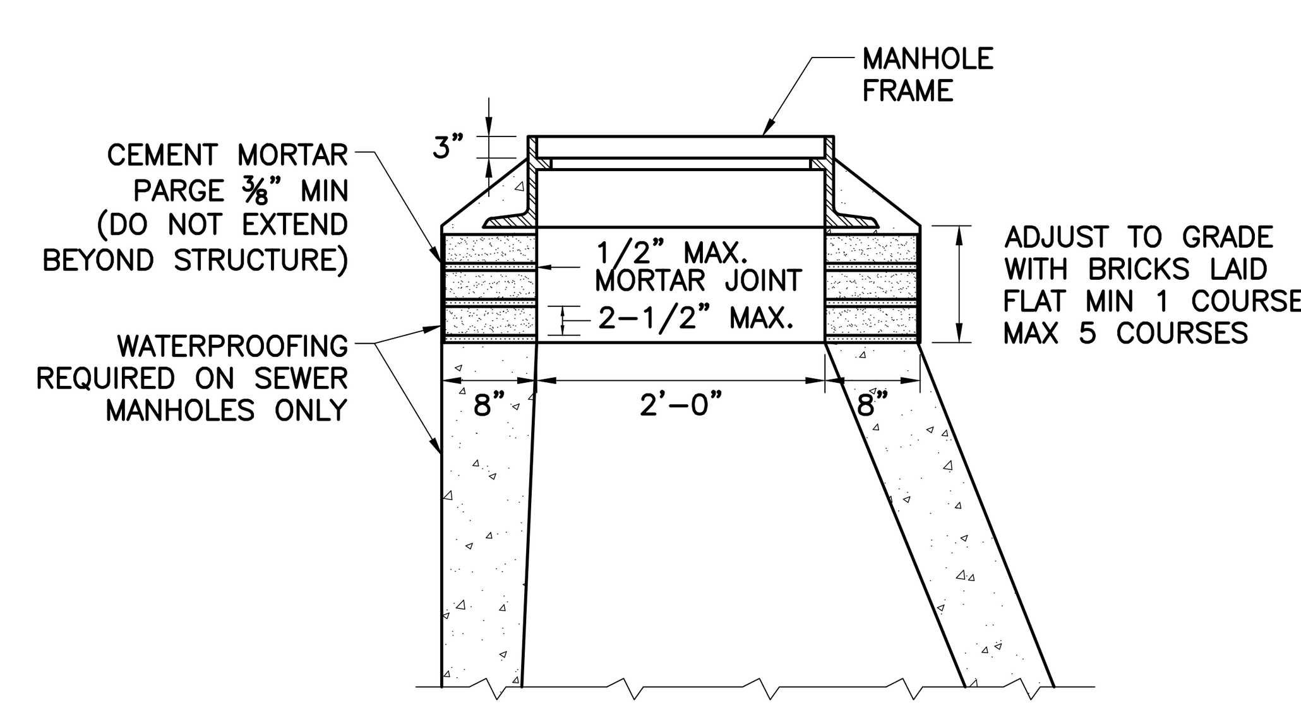
SHRUB PLANTING
SCALE: NTS

NOTE: REFER TO LANDSCAPING SPECIFICATION (SECTION 02485) FOR THE PLANTING LIST

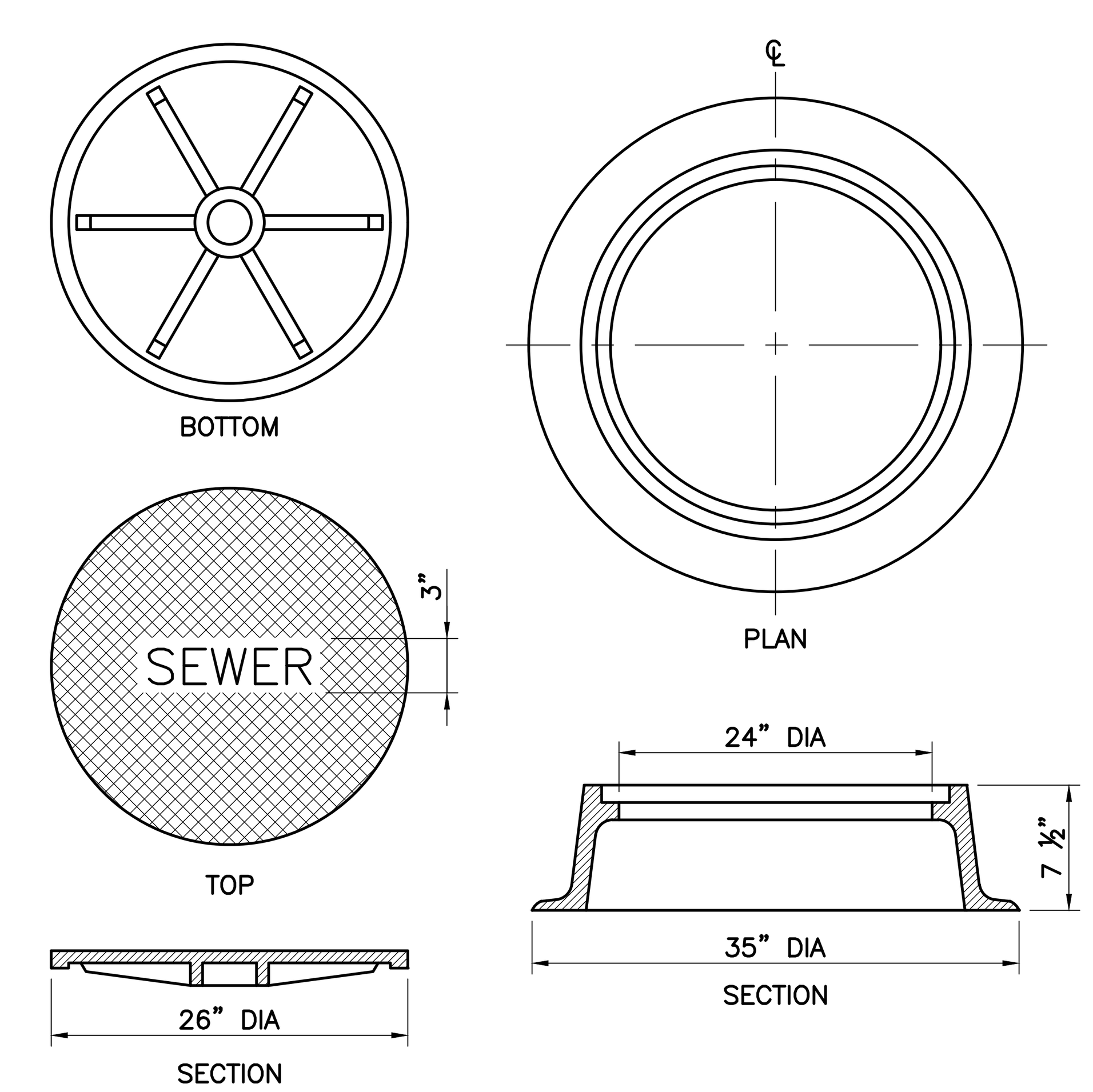


NOTE:
1. SECURE POSTS IN CONCRETE AS SHOWN AT PULL, CORNER AND END POSTS (INCLUDING GATE POSTS)
2. IF FENCE IS INSTALLED IN UNFRACTURED LEDGE, POST SHALL PENETRATE 2'-0" INTO THE LEDGE AND SHALL BE GROUTED INTO 6"ø HOLE.

ALUMINUM FENCE
SCALE: NTS



MANHOLE FRAME INSTALLATION
SCALE: NTS



MANHOLE STANDARD COVER AND FRAME
SCALE: NTS

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO. 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

DETAILS II

DRAWING
C-5

EROSION AND SEDIMENTATION CONTROL NOTES:

THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL MEASURES REQUIRED ARE SHOWN ON THE PROPOSED SITE PLAN, REFER TO DRAWING C-3. PROVIDE SILT FENCE, STONE CHECK DAMS, AND OTHER EROSION CONTROL MEASURES AS REQUIRED TO ADEQUATELY PREVENT SEDIMENT TRANSPORT AS NOTED IN THE BMP.

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE MAINTAINED IN AN UNTREATED OR UNVEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL, AREAS TO BE VEGETATED SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL.
3. SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF UPGRADIENT DRAINAGE AREAS.
4. INSTALL SILT FENCE AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE SILT FENCE DETAIL FOR PROPER INSTALLATION. SILT FENCE WILL REMAIN IN PLACE PER NOTE 5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED, AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSURE. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2 TO 1) UNLESS STABILIZED WITH PERMANENT EROSION CONTROL MEASURES.
7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT TO BE COMPLETED 30 DAYS PRIOR TO THE ANTICIPATED DATE OF THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING, UNTIL UPGRADIENT AREAS ARE STABILIZED.
8. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISH-GRADED SHALL BE COMPLETED 30 DAYS PRIOR TO THE FIRST KILLING FROST.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.
10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND REVEGETATED AS FOLLOWS:
    A. A MINIMUM OF FOUR INCHES (4") OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
    B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT DEEMED FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET USING 10-10-10 (N-P205-K20) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 4 TONS PER ACRE (180 POUNDS PER 1,000 SQUARE FEET) FOR CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL. AT A RATE OF 3 TONS PER ACRE (135 POUNDS PER 1,000 SQUARE FEET) FOR SANDY LOAM, LOAM AND SILT LOAM. AT A RATE OF 2 TONS PER ACRE (90 POUNDS PER 1,000 SQUARE FEET) FOR LOAMY SAND, AND SAND.
    C. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED WITH A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED WITH A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYE GRASS: SEEDING RATE IS 3.0 POUNDS PER 1,000 SQUARE FEET. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED.
    D. HAY MULCH AT THE RATE OF 2 TONS PER ACRE OR 90-95 POUNDS PER 1,000 SQUARE FEET OR A HYDRO-APPLICATION OF CELLULOSE FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER WILL BE USED ON HAY MULCH FOR WIND CONTROL.
11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE WORK AREA IS STABILIZED.
12. WETLANDS (EXCEPTING THOSE WHICH ARE TO BE FILLED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS) WILL BE PROTECTED WITH SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
13. IN GENERAL, AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS SHALL HAVE A MAXIMUM PERIOD OF EXPOSURE OF NOT MORE THAN 15 DAYS.
14. FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IN ALL AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STORMS.

EROSION CONTROL DURING WINTER CONSTRUCTION:

1. WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHOULD BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY PRIOR TO ANY PRECIPITATION EVENT.
4. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 100 POUNDS PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED, AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
5. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED, AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE 200%-300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AN THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT EXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALL DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
6. A) BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE EITHER WOOD CELLULOSE FIBER OR BE ANCHORED WITH MULCH NETTING OR CHEMICAL TACK.

   B) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3%, FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.

   C) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1, THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
7. AFTER NOVEMBER 1, THE CONTRACTOR SHALL APPLY DORMANT SEEDING OR MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
8. DURING WINTER CONSTRUCTION PERIODS, ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

MULCH ANCHORING:

ANCHOR MULCH WITH: MULCH NETTING (AS PER MANUFACTURER); ASPHALT EMULSION (0.05 GALLONS PER SQUARE YARD); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); OR BE WOOD CELLULOSE FIBER (2,000 POUNDS PER ACRE). WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

MULCH AND MULCH ANCHORING

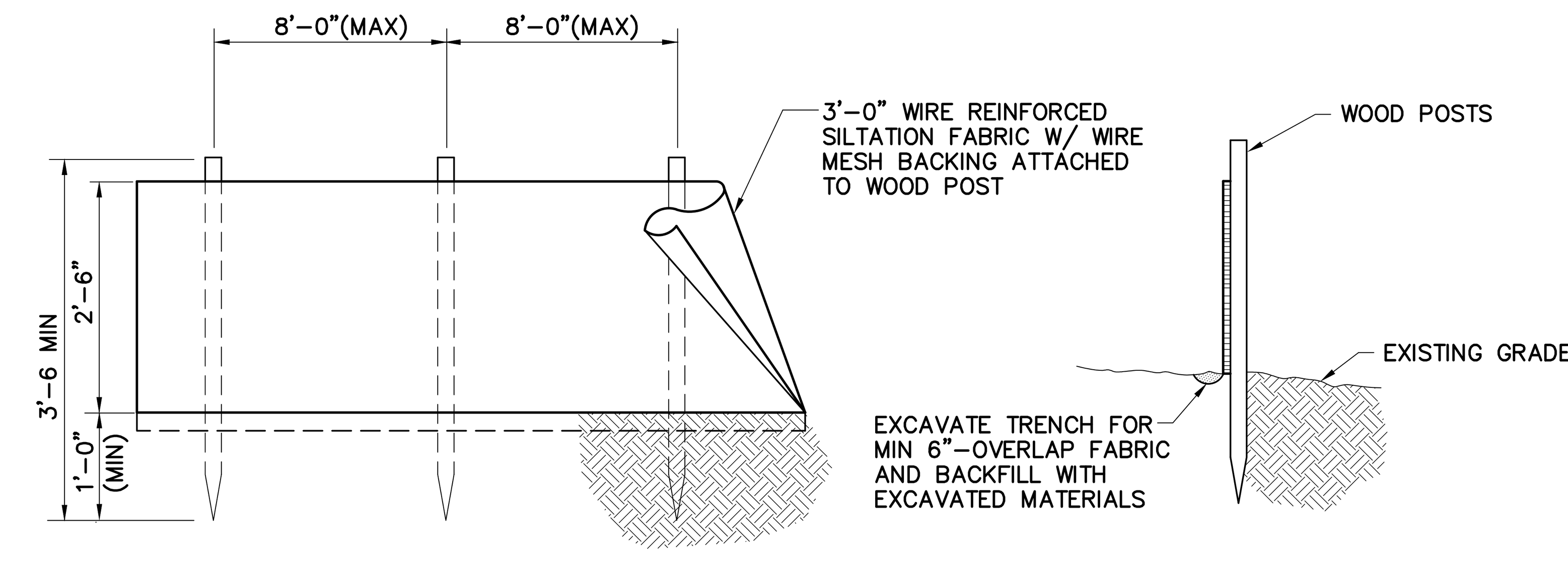
LOCATION	MULCH	RATE (1000 S.F.)
PROTECTED AREA	STRAW OR HAY *	100 POUNDS
WINDY AREAS	STRAW OR HAY (ANCHORED) *	100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES (GREATER THAN 3:1)	JUTE MESH, EXCELSIOR MAT, OR EQUIV.	AS REQUIRED

* A HYDRO-APPLICATION OF CELLULOSE FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SHALL BE USED ON HAY MULCH FOR WIND CONTROL.

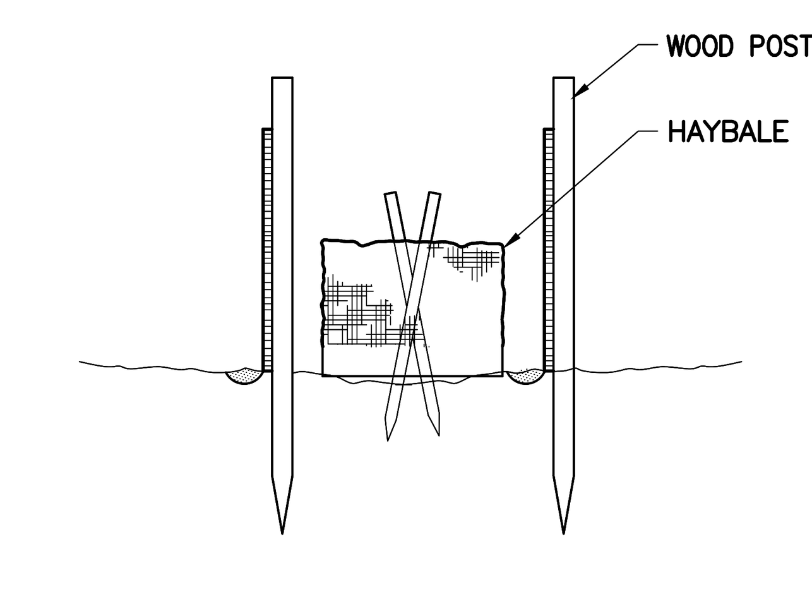
ADDITIONAL TEMPORARY SEED MIXTURE (OR PERIODS LESS THAN 12 MONTHS)

DATES	SEED	RATE
3/1 - 6/15 8/15 - 9/15	OATS	86 LBS/ACRE
3/1 - 6/15 8/1 - 10/15	ANNUAL RYE GRASS	40 LBS/ACRE
4/15 - 7/1 (8/15 - 10/15)	WINTER RYE	120 LBS/ACRE
5/15 - 7/15	MILLET	20 LBS/ACRE

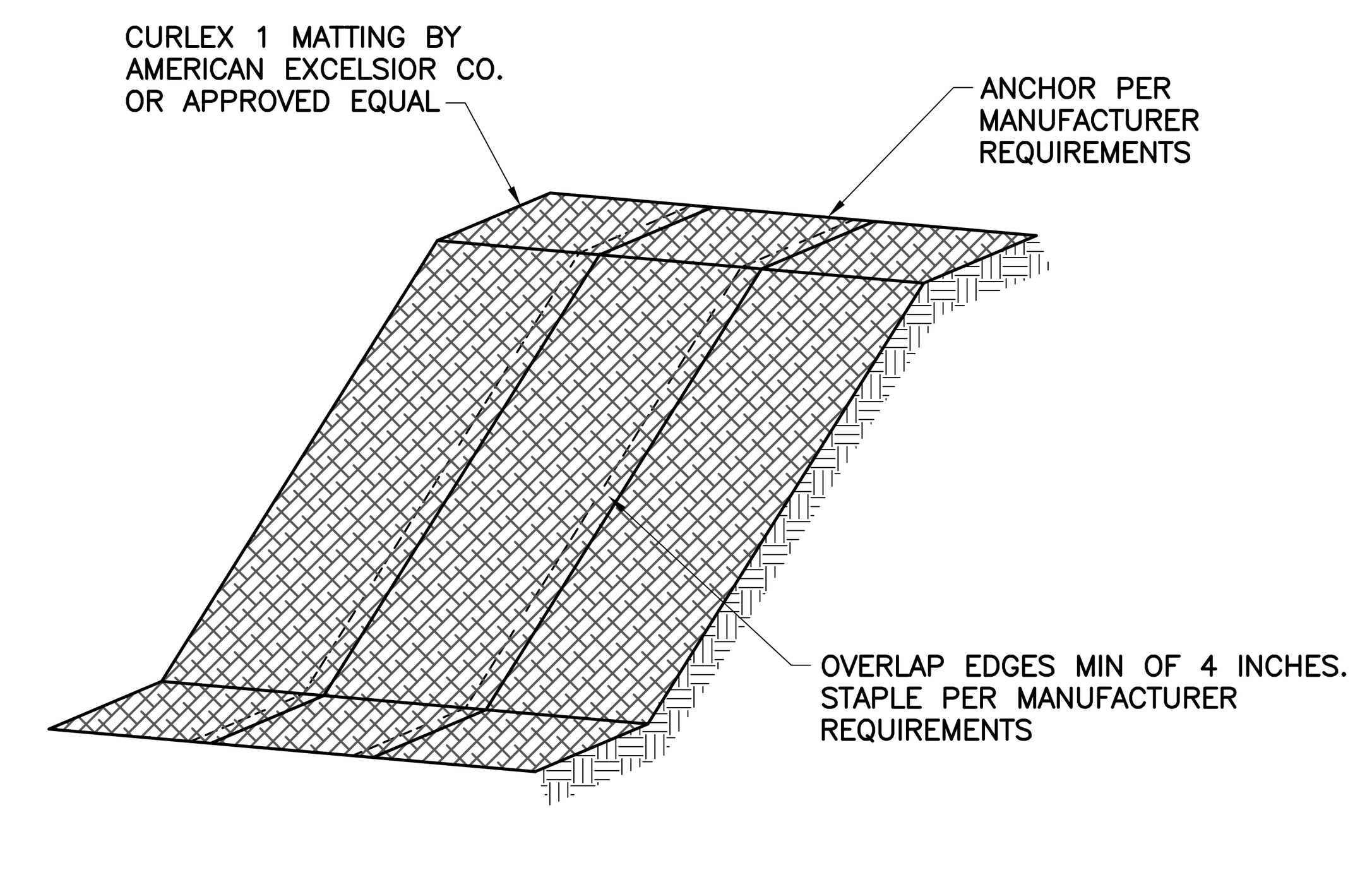
* SEED RATE ONLY



SILT FENCE INSTALLATION DETAIL
SCALE: NTS

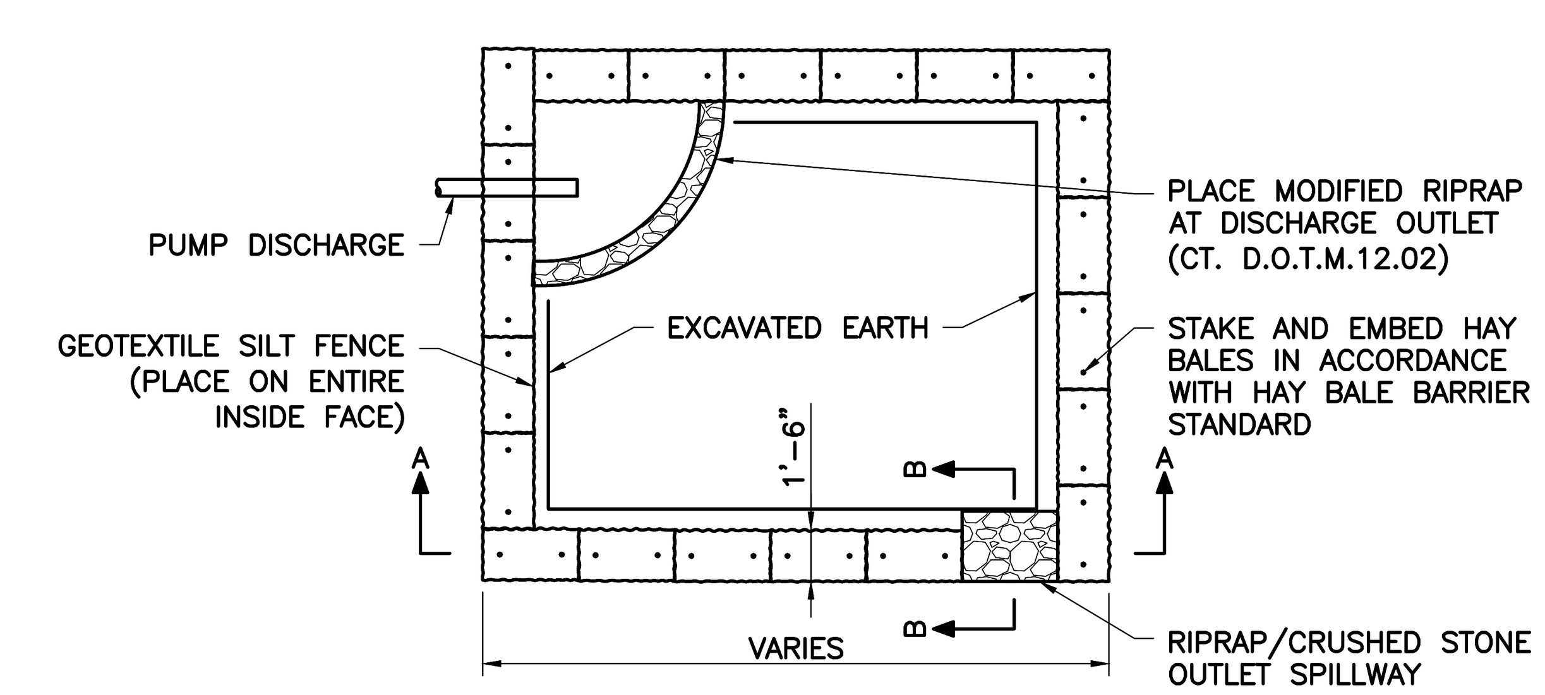


COMBINATION SILT FENCE AND HAY BALE BARRIER
SCALE: NTS

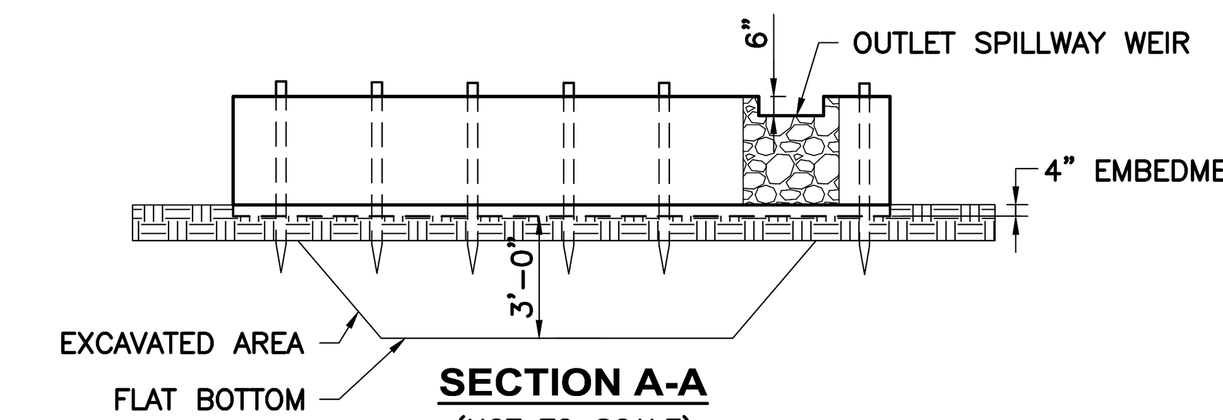


INSTALL ON SLOPES 3:1 OR GREATER

EROSION CONTROL MATTING - SLOPES
SCALE: "NTS"

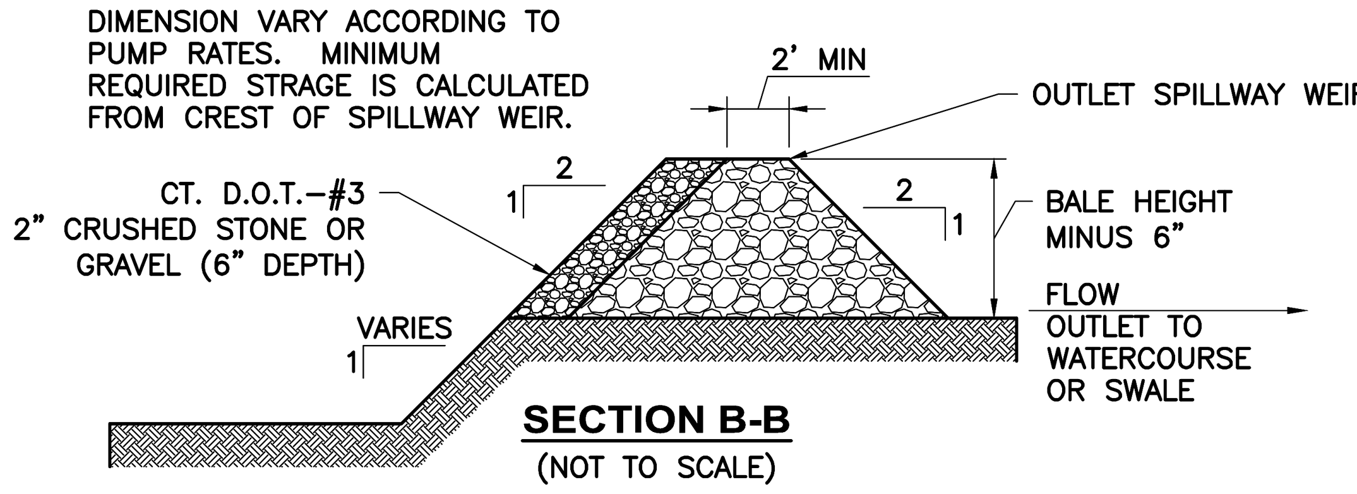


PLAN
(NOT TO SCALE)



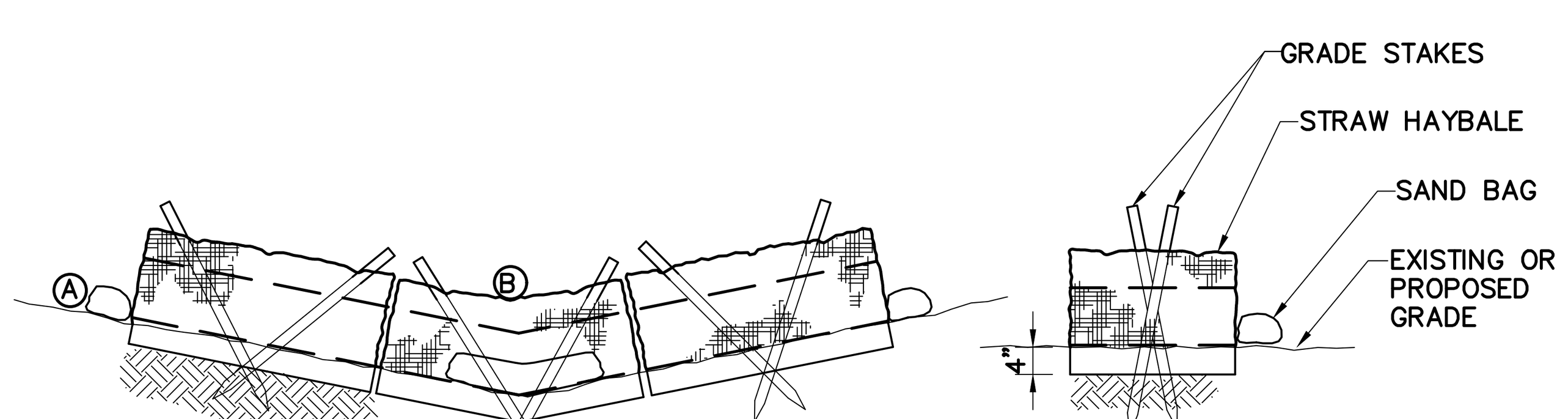
SECTION A-A
(NOT TO SCALE)

NOTES:
DIMENSION VARY ACCORDING TO PUMP RATES. MINIMUM REQUIRED STRAGE IS CALCULATED FROM CREST OF SPILLWAY WEIR.



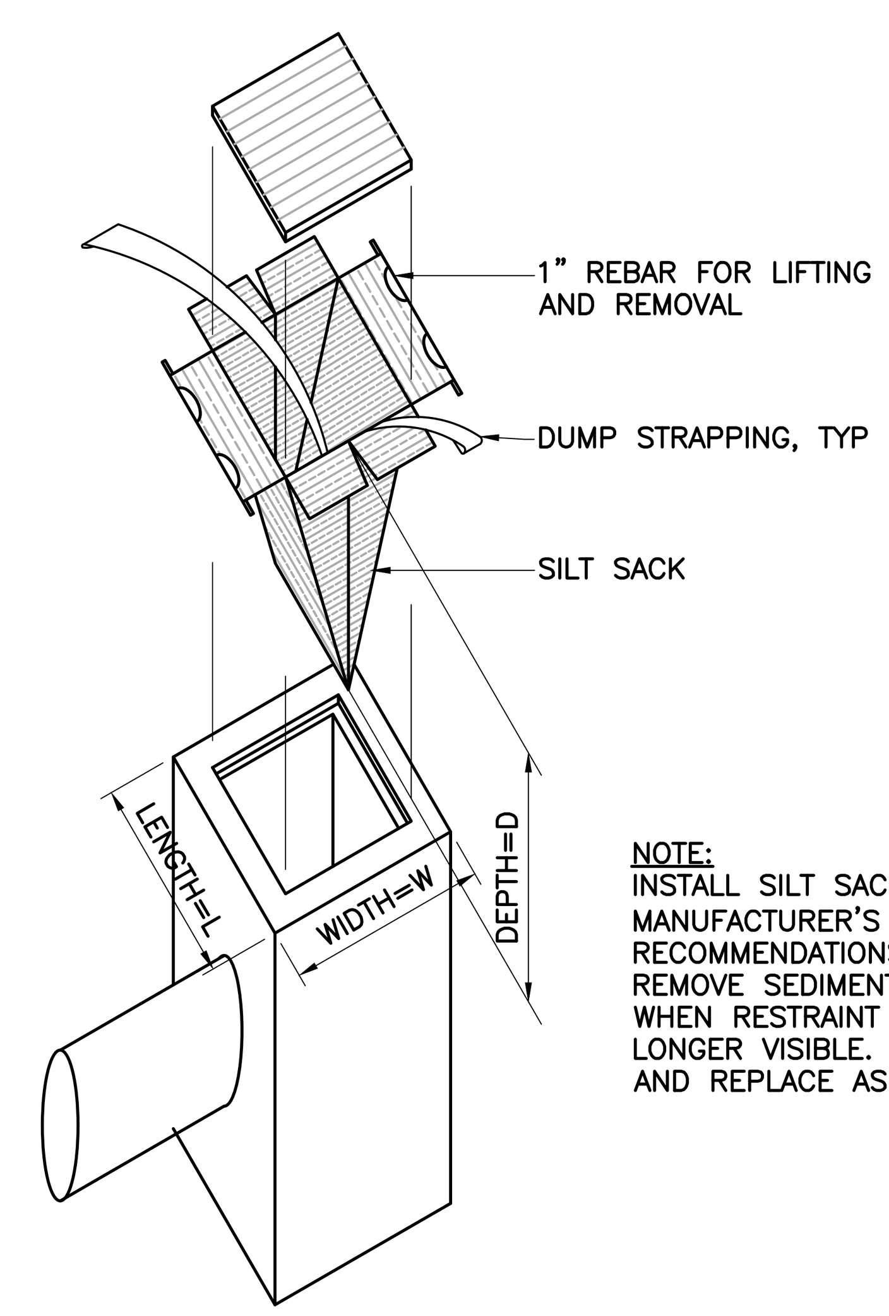
SECTION B-B
(NOT TO SCALE)

TYPE II SEDIMENTATION BASIN DETAIL
SCALE: NTS



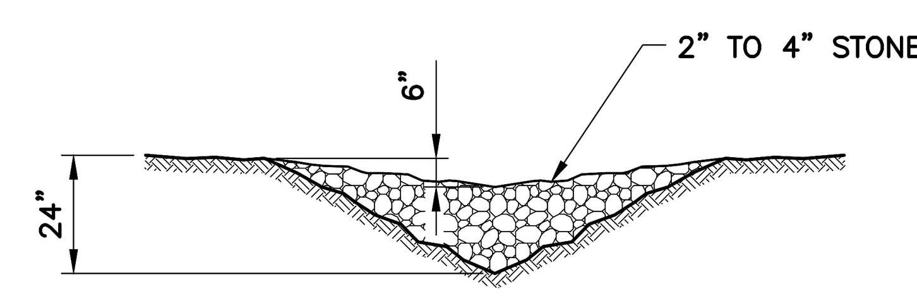
EROSION CHECK TO BE STRAW HAYBALES SECURED TO THE GROUND WITH TWO 4' LONG GRADE STAKES FOR EACH BALE. SAND BAG AS REQUIRED, PLACE SUFFICIENT BALES TO ESTABLISH ELEVATIONS AT (A) AT LEAST 6 INCHES ABOVE OVERFLOW AT (B)

STRAW HAY BALE CHECK DAM
SCALE: NTS



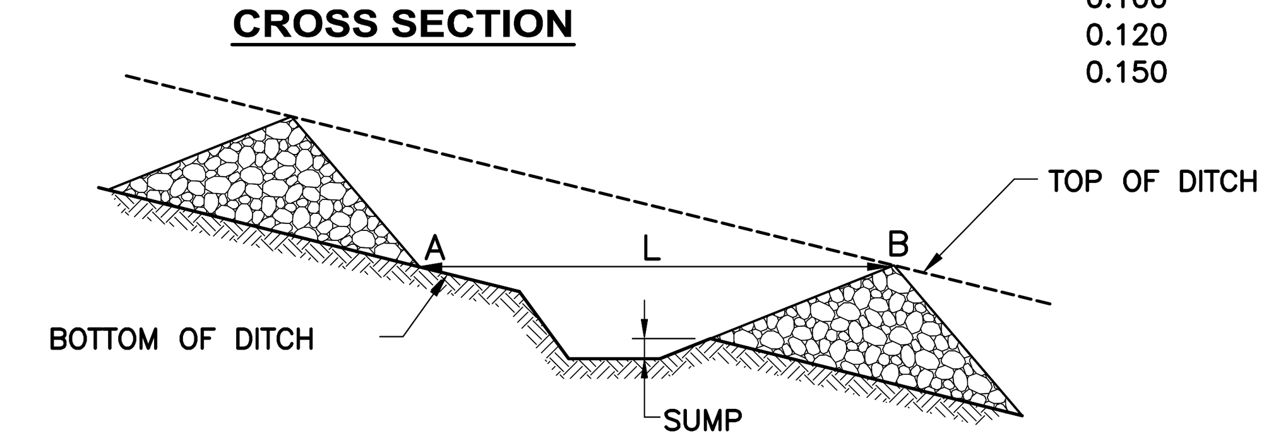
NOTE:
INSTALL SILT SACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILT SACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.

SILT SACK CATCH BASIN INLET
SCALE: NTS



CROSS SECTION

DITCH SLOPE (FT/FT)	L (FT)
0.020	100
0.030	66
0.040	50
0.050	40
0.080	25
0.100	20
0.120	17
0.150	13



PROFILE

STONE CHECK DAM DETAIL
SCALE: NTS

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO. 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

EROSION CONTROL NOTES & DETAILS

DRAWING
C-6

STRUCTURAL NOTES:

GENERAL NOTES:

1. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. ** INDICATES THAT THE GENERAL CONTRACTOR SHALL COORDINATE EXACT DIMENSION AND/OR ELEVATION BASED ON EQUIPMENT SUPPLIED. ALL CHANGES SHALL BE REVIEWED WITH NO EXCEPTIONS TAKEN BY THE ENGINEER.
3. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS, SHOP DRAWINGS (REVIEWED WITH NO EXCEPTIONS TAKEN), AND SPECIFICATIONS.
4. SEE CIVIL, PROCESS, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR PIPES, PIPE SLEEVES, CONDUITS, AND OTHER ITEMS TO BE EMBEDDED OR PASSED THROUGH THE CONCRETE.
5. STRUCTURAL WORK MAY BE SHOWN ON DRAWINGS OTHER THAN "S" DRAWINGS.
6. THE CONTRACTOR SHALL COORDINATE PREPARED OPENING SIZES AND LOCATIONS WITH THE VARIOUS CONSTRUCTION TRADES AND EQUIPMENT MANUFACTURERS. MANY SLEEVE SIZES AND PREPARED OPENING SIZES ARE LARGER THAN THE NOMINAL DIMENSION IN ORDER TO ACCOMMODATE THE EQUIPMENT.
7. THE DETAILS, STRUCTURAL NOTES, ABBREVIATIONS AND LEGEND SHOWN ON DRAWINGS S-1 AND S-3 SHOULD BE USED WHOLLY OR IN PART WHERE THEY APPLY EXCEPT WHERE MODIFIED BY THE DETAILED DRAWINGS OR SPECIFICATIONS.

CONCRETE NOTES:

1. REFERENCE SPECIFICATIONS – 03300
2. CONCRETE DESIGN IS IN CONFORMANCE WITH:
   ACI 318-11 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
3. MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS:
   STRUCTURAL CONCRETE – f'c = 4,500 PSI
   OTHER CONCRETE – SEE SPECIFICATIONS
4. MAXIMUM W/CM = 0.42 FOR f'c = 4,500 PSI CONCRETE; MINIMUM W/CM = 0.39.
5. REINFORCEMENT SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615 GRADE 60 DEFORMED BARS.
6. REINFORCEMENT FABRICATION SHALL BE IN ACCORDANCE WITH THE CRSI CODE OF STANDARD PRACTICE.
7. REINFORCEMENT SHALL HAVE THE FOLLOWING CLEAR CONCRETE COVER UNLESS OTHERWISE NOTED:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 INCHES
   ALL OTHER CONCRETE SURFACES: 2 INCHES
8. CONSTRUCTION JOINTS SHALL NOT BE PLACED AT LOCATIONS OTHER THAN SHOWN ON THE DRAWINGS UNLESS REVIEWED WITH NO EXCEPTIONS TAKEN BY THE ENGINEER.
9. SEE ALL INDIVIDUAL DISCIPLINE DRAWINGS FOR ALL REQUIRED EQUIPMENT PADS AND PROVIDE A MINIMUM 4 INCH THICK REINFORCED CONCRETE PAD BELOW ALL EQUIPMENT, PIPE SUPPORTS, STANCHIONS, CONTROL PANELS, ETC., UNLESS OTHERWISE NOTED. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE AS REQUIRED BY THE EQUIPMENT MANUFACTURER.
10. ALL CONCRETE PENETRATIONS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. SEE ALL INDIVIDUAL DISCIPLINE DRAWINGS FOR ALL REQUIRED CONCRETE PENETRATIONS, INCLUDING PIPE AND DUCT PENETRATIONS,
11. CHAMFER ALL EXPOSED CORNERS AND EDGES.
12. 90 DEGREE BENDS IN REINFORCING BARS SHALL BE ACI STANDARD LENGTH, UNLESS SHOWN OTHERWISE, SUCH AS WHERE SPLICE LENGTH IS REQUIRED.
13. ALL PIPING INSTALLED BELOW STRUCTURAL SLABS ON SOIL SHALL BE ENCASED IN CONCRETE.
14. INDEPENDENT TESTING LABORATORY WILL PREPARE AND TEST CONCRETE CYLINDER SAMPLES.

FOUNDATION NOTES:

1. PROVIDE MINIMUM 6" COMPACTED ⅜" CRUSHED STONE LEVELING LAYER BENEATH WETWELL BASE SLAB.
2. BACKFILL EXCAVATION WITH COMPACTED ⅜" CRUSHED STONE TO WITHIN 4 FEET OF FINAL GRADE (BOTTOM OF FROST WALL FOOTINGS).
3. BACKFILL FROST WALLS WITH COMPACTED SELECT FILL WITHIN 3 FEET, HORIZONTALLY, FROM WALLS. BACKFILL BOTH SIDES AT THE SAME TIME TO PREVENT UNBALANCED LOAD ON WALLS. BACKFILLING SHALL NOT COMMENCE UNTIL THE WALLS HAVE BEEN IN PLACE A MINIMUM OF 7 DAYS.
4. PROVIDE MINIMUM 6" COMPACTED ⅜" CRUSHED STONE LEVELING LAYER BENEATH RIGID INSULATION BENEATH BUILDING FLOOR SLABS.
5. FOUNDATION DESIGN, SUBGRADE AND FILL DETAILS ARE BASED ON A MAXIMUM NET ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF.
6. IF UNSUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY THE ENGINEER, REMOVE AN ADDITIONAL 18 INCHES BELOW THE SUBGRADE LEVEL AND REPLACE WITH COMPACTED SELECT FILL.
7. ALL CONCRETE STRUCTURES SHALL BE COVERED, INSULATED AND HEATED AS REQUIRED TO PREVENT FROST PENETRATION BENEATH THE STRUCTURES UNTIL SUBSTANTIAL COMPLETION.
8. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 3.5 FEET MINIMUM BELOW FINISH GRADE UNLESS OTHERWISE INDICATED.

STRUCTURAL DESIGN CRITERIA:

GEOTECHNICAL:

MINIMUM FROST DEPTH = 3.5 FEET

LIVE LOADS:

DESIGN IS IN ACCORDANCE WITH:

2016 CONNECTICUT STATE BUILDING CODE (2012 INTERNATIONAL BUILDING CODE WITH AMENDMENTS)

ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

OCCUPANCY RISK CATEGORY III

WIND LOADS

DESIGN WIND SPEED (V_{ULT}) = 135 MPH
IMPORTANCE FACTOR (Iw) = 1.00
EXPOSURE CATEGORY C
INTERNAL PRESSURE COEFFICIENT (GCpi) = ±0.18
TOPOGRAPHIC FACTOR (Kzt) = 1.0

SNOW LOADS

GROUND SNOW LOAD (Pg) = 30 PSF
IMPORTANCE FACTOR (Is) = 1.10
EXPOSURE CATEGORY = C
EXPOSURE FACTOR (Ce) = 1.0
THERMAL FACTOR (Ct) = 1.0
SLOPE FACTOR (Cs) = 1.0

SEISMIC LOADS

EQUIVALENT LATERAL FORCE ANALYSIS
IMPORTANCE FACTOR (Ie) = 1.25
SITE CLASSIFICATION D
SEISMIC DESIGN CATEGORY B
0.2s SPECTRAL RESPONSE ACCELERATION (Ss) = 0.180
1.0s SPECTRAL RESPONSE ACCELERATION (S1) = 0.063

FLOOR LIVE LOADS

AS INDICATED ON THE DRAWINGS

ROOF LIVE LOADS

AS INDICATED ON THE DRAWINGS

ABBREVIATIONS:

ADDITIONAL, ALTERNATE	ADD ALT
ALUMINUM	ALUM, AL
AND	&
ANGLE	L
AT	@
BACK TO BACK	b/b
BAR DIAMETER	db
BOTTOM	BOT, B
BOTTOM OF FOOTING	BOF
BOTTOM OF FOUNDATION	BOF
CENTER	CTR
CLEAR	CL
CONCRETE	CONC
CONTINUOUS	CONT
CONSTRUCTION JOINT	CNJ
DETAIL	DET
DIAMETER	DIA, ø
DOWEL BAR SPLICERS	DBS
DOWEL INSERT	DI
DOWELS	DWLS
EACH	EA
EACH END	EE
EACH FACE	EF
EACH SIDE	ES
EACH WAY	EW
ELECTRICAL	ELEC
ELEVATION	ELEV, EL
EQUAL	EQ
EXPANSION	EXP
EXTERIOR	EXT
FEET	FT
FOOTING	FTG
FOUNDATION	FND
GALVANIZED	GALV
GAUGE	GA
GRATING	GRTG
HIGH POINT	HP
HORIZONTAL	HORZ, HOR
INSIDE DIAMETER	ID
INSIDE FACE	IF
INSULATION	INSUL
LOW POINT	LP
MANUFACTURER	MFR
MAXIMUM	MAX
MECHANICAL	MECH
MINIMUM	MIN
MOUNTED	MTD
NOT TO SCALE	NTS
ON CENTER	OC
OPENING	OPNG
OUTSIDE DIAMETER	OD
OUTSIDE FACE	OF
PER	/
PERIMETER	PERIM
PLATE	PL
POUND	#
POUNDS PER SQUARE FOOT	PSF
PROCESS	PROC
REINFORCEMENT	REINF
REQUIRED	REQ'D
RISERS	R
ROUGH OPENING	RO
SCHEDULE	SCHED, SCH
SECTION	SECT
SHEET	SHT
SIMILAR	SIM
SPACE(ING)	SP
SPECIFICATION	SPEC
SQUARE	SQ
STAINLESS STEEL	SS
STANDARD	STD
STRUCTURAL	STRUCT
SYMMETRICAL	SYM
THICKNESS	THK
TOP	T
TOP & BOTTOM	T & B
TOP OF	T/
TOP OF CONCRETE	T/CONC, TOC
TOP OF FOOTING	TOF
TOP OF FOUNDATION	TOF
TREADS	TR, T
TYPICAL	TYP
UNLESS OTHERWISE NOTED	UON
WELDED WIRE FABRIC	WWF
WIDE	W
WITH	W/
WITHOUT	W/O

MINIMUM REINFORCING BAR SPLICE LENGTHS (IN.) fy=60,000 f'c=4,500		
BAR SIZE	TOP BARS	OTHER BARS
4	19	14
5	24	18
6	28	21
7	41	31
8	46	35
9	58	44
10	71	54
11	85	65

NOTES:
1. THIS TABLE IS BASED ON NORMAL WEIGHT CONCRETE, UNCOATED BARS.
2. TOP BARS = HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
3. FOR f'c OTHER THAN 4,500 PSI, MULTIPLY THE VALUES IN THE TABLE BY THE SQUARE ROOT OF 4,500 DIVIDED BY THE SQUARE ROOT OF f'c.

LEGEND

PLAN
- EXISTING STRUCTURE
- STRUCTURE
- GUARD
- GRATING
- HIDDEN OBJECT

SECTION
- EXISTING CAST-IN-PLACE CONCRETE
- CAST-IN-PLACE CONCRETE
- PRECAST CONCRETE
- FINISH GRADE
- FILL
- GRATING

TEXT
- CONCRETE WALL — EXISTING STRUCTURE
- CONCRETE WALL — PROPOSED WORK
- 2'-0" — DIMENSION OF EXISTING STRUCTURE
- 2'-0" — DIMENSION OF PROPOSED STRUCTURE

SYMBOLS
- ▲ CONCRETE EQUIPMENT PAD
- ◔, ○ PIPE

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

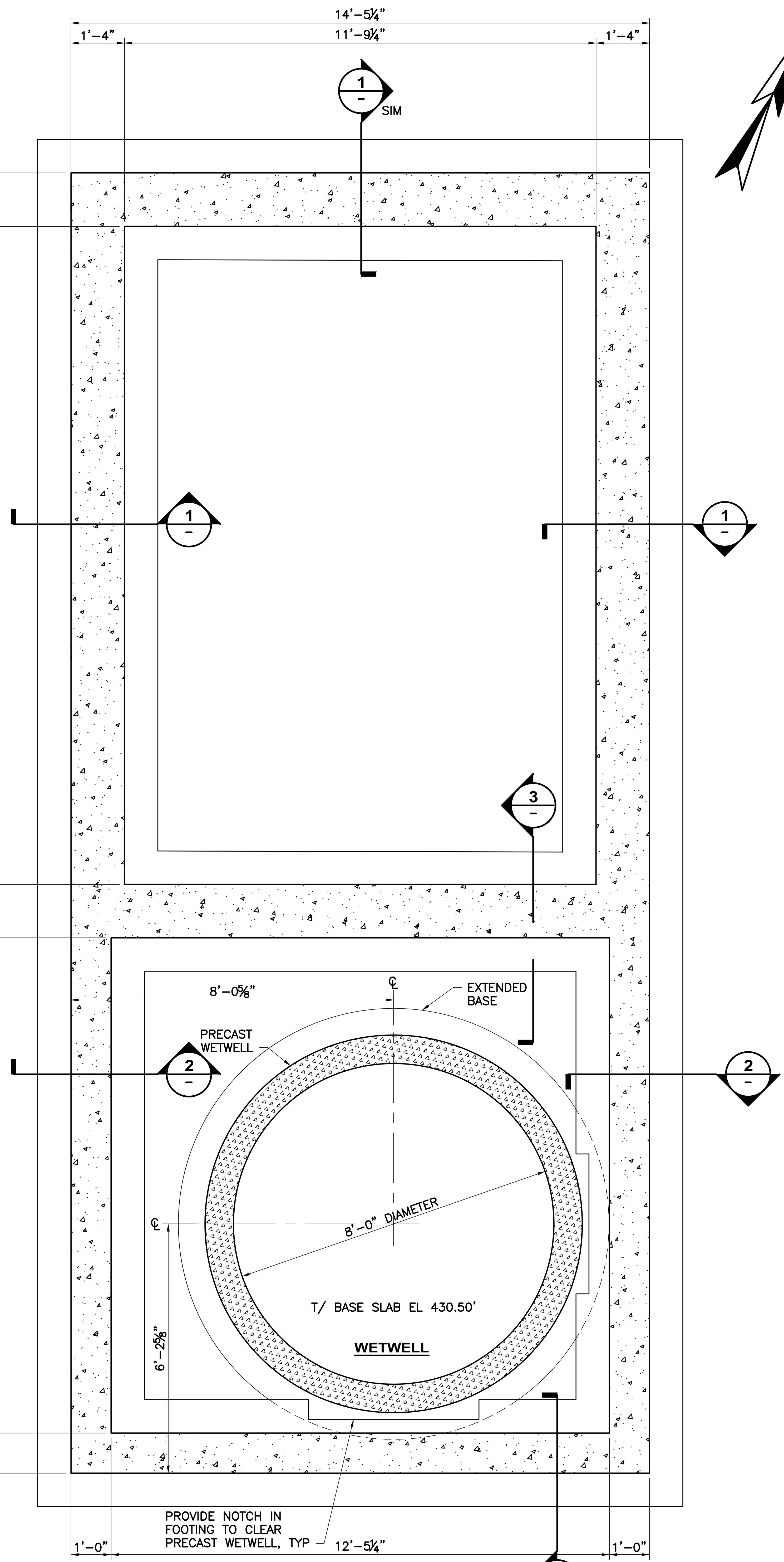
DESIGNED BY: MWC
CAD COORD.: BACS
CAD: RAO
CHECKED BY: JJP
DATE: 09-18
APPROVED BY: MWC
DATE: 09-18
PROJECT NO.: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

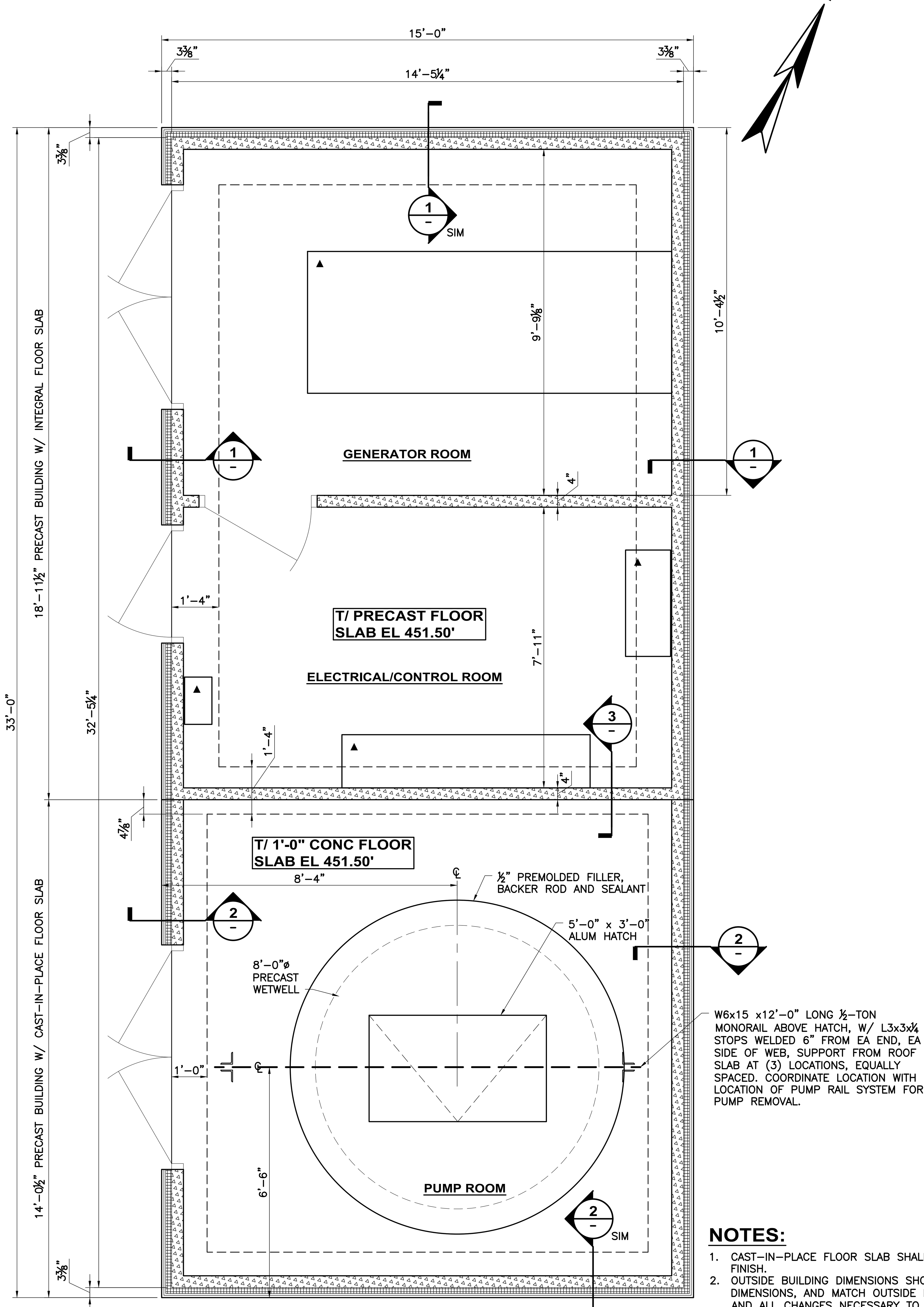
STRUCTURAL NOTES, ABBREVIATIONS AND LEGEND

DRAWING
S-1



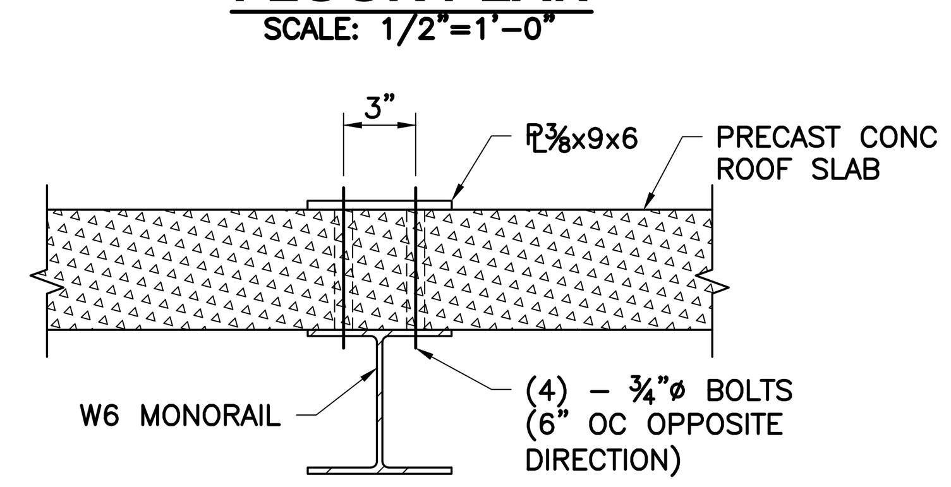
FOUNDATION PLAN

SCALE: 1/2"=1'-0"



FLOOR PLAN

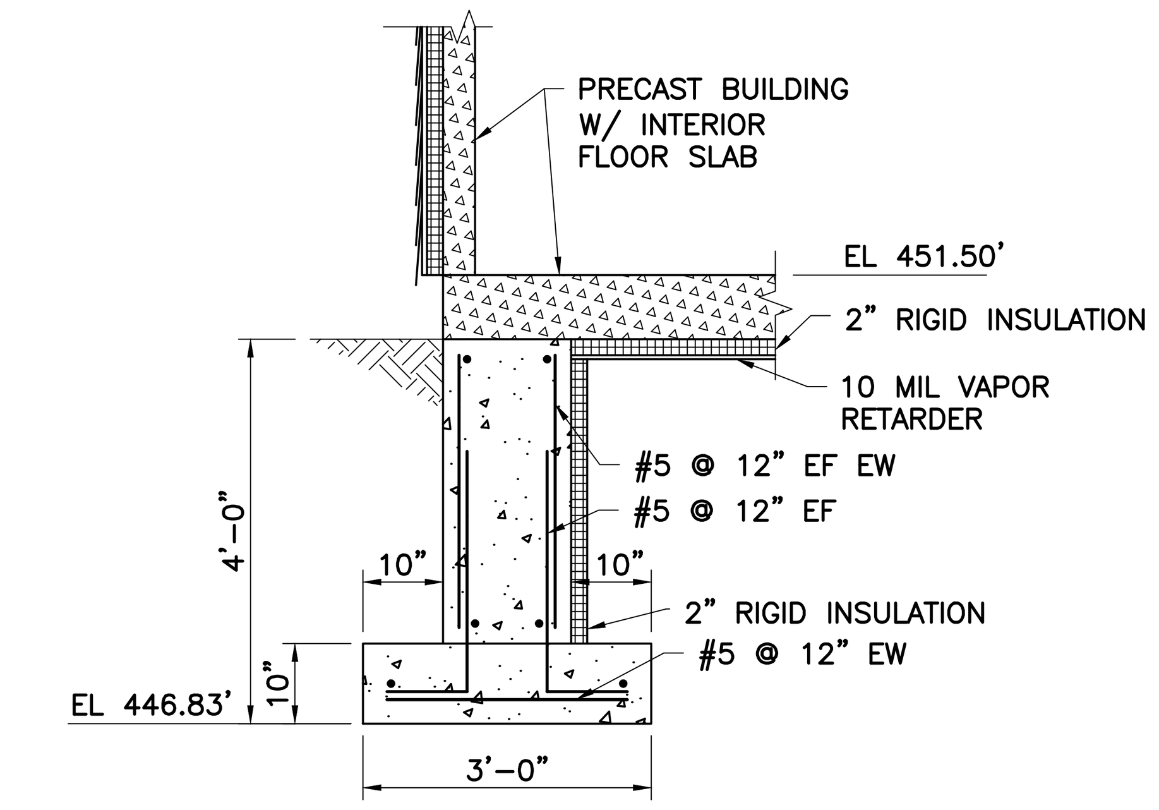
SCALE: 1/2"=1'-0"



NOTES:
1. ALL STEEL HOT DIPPED GALVANIZED.
2. (3) REQUIRED.

MONORAIL ANCHORAGE DETAIL

SCALE: 1 1/2"=1'-0"

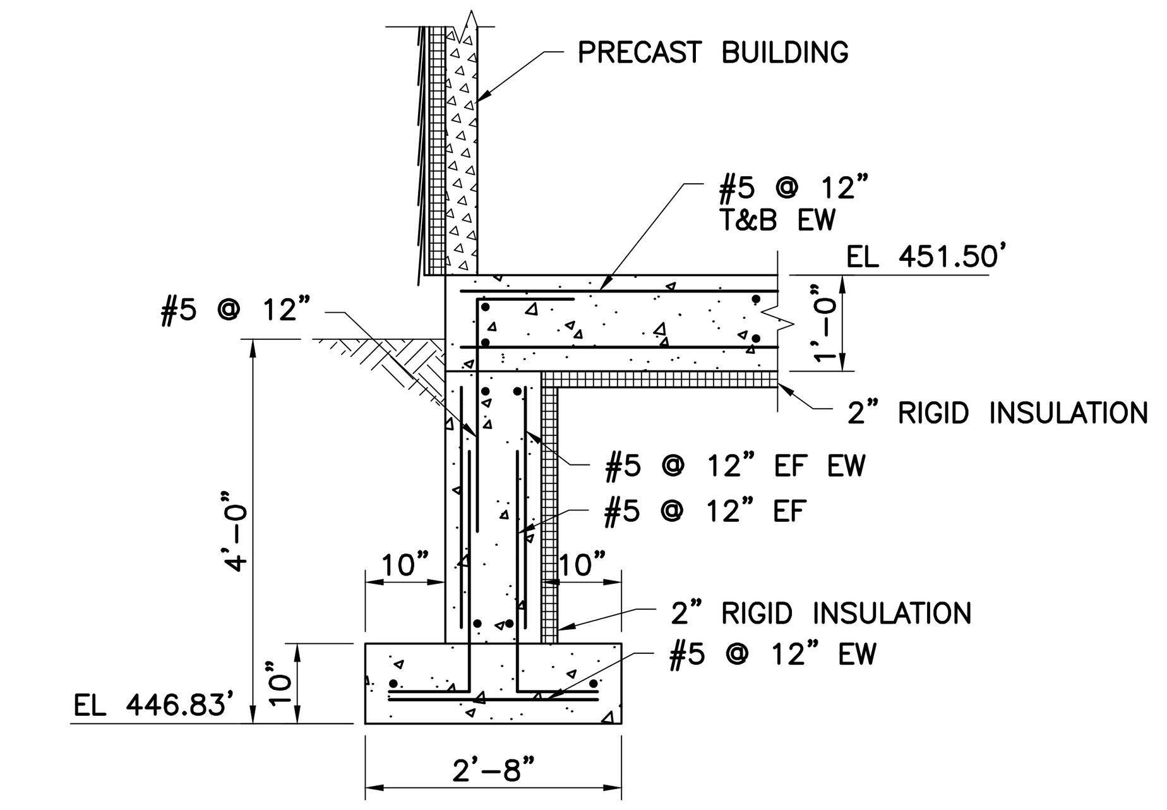


NOTES:

1. COORDINATE TOP OF FOUNDATION WALL ELEVATION WITH THICKNESS OF PRECAST FLOOR SLAB.

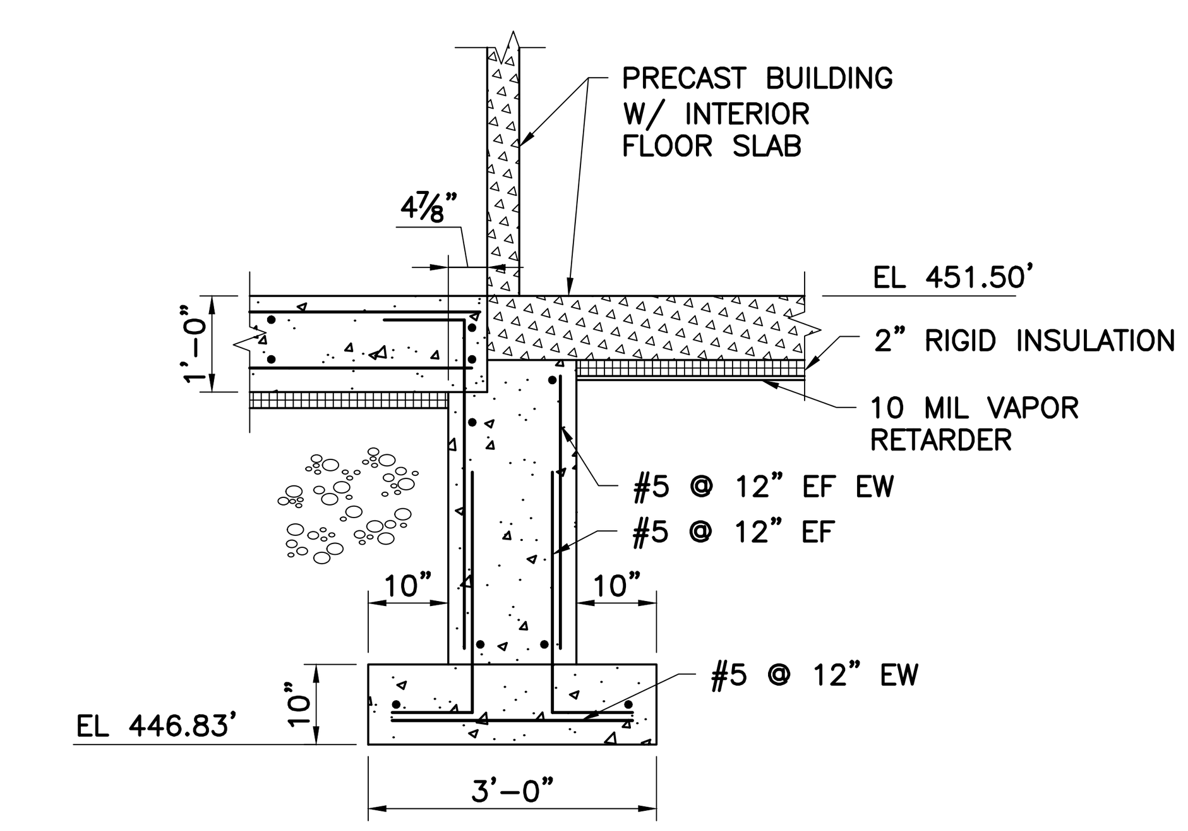
SECTION 1

SCALE: 1/2"=1'-0"



SECTION 2

SCALE: 1/2"=1'-0"



SECTION 3

SCALE: 1/2"=1'-0"

NOTES:

1. CAST-IN-PLACE FLOOR SLAB SHALL RECEIVE A LIGHT TROWEL FINISH. EXTERIOR SLAB SHALL RECEIVE A BROOM FINISH.
2. OUTSIDE BUILDING DIMENSIONS SHOWN ARE NOMINAL DIMENSIONS. OUTSIDE FOUNDATION WALL DIMENSIONS ARE TRUE DIMENSIONS, AND MATCH OUTSIDE DIMENSIONS OF PRECAST (EXCLUDING INSULATION AND EXTERIOR FINISHES). ANY AND ALL CHANGES NECESSARY TO ACCOMMODATE A PRECAST BUILDING WITH DIFFERENT DIMENSIONS SHALL BE REVIEWED WITH NO EXCEPTIONS TAKEN BY THE ENGINEER AND SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
3. PRECAST BUILDING TO BE PROVIDED AND ERECTED IN TWO SEPARATE SECTIONS AS SHOWN. BUILDING SECTIONS TO BE ERECTED SEPARATELY ON THE PREPARED FOUNDATION, AND THEN STRUCTURALLY CONNECTED PER THE REQUIREMENTS OF THE BUILDING MFR.
4. PRECAST FLOOR SLAB SHALL BE DESIGNED AS A STRUCTURAL SLAB SUPPORTED AT THE FOUNDATION WALLS, AND TO WITHSTAND THE LARGER OF THE FORCES RESULTING FROM A 300 PSF FLOOR LIVE LOAD APPLIED TO THE ENTIRE FLOOR AREA, OR THE LOAD OF THE GENERATOR.
5. PRECAST ROOF SLAB TO BE DESIGNED TO SUPPORT CONCENTRATED LIVE LOAD OF 1500 LBS (FROM MONORAIL BEAM).
6. FOR THE WETWELL PORTION OF THE PRECAST BUILDING:
   - IN TOP OF TOP SLAB, IN LINE WITH INSIDE FACE OF PRECAST BUILDING WALLS, PROVIDE 1¼" DEEP x 6" SQUARE RECESSES, MAX 6'-0" OC, FOR INSTALLATION OF BUILDING ANCHORS.
   - PRECAST BUILDING MANUFACTURER TO PROVIDE AND INSTALL STEEL L'S WELDED TO STEEL EMBEDMENTS AT BASE OF PRECAST BUILDING WALLS AND BOLTED TO SLAB WITH EXPANSION BOLTS. MANUFACTURER TO FILL RECESSED ANCHORAGES WITH NON-SHRINK GROUT UPON COMPLETION OF ANCHOR INSTALLATION.
7. FOR THE GENERATOR/ELECTRICAL/CONTROL ROOMS PORTION OF THE PRECAST BUILDING:
   - PRECAST BUILDING MANUFACTURER TO DRILL & EPOXY GROUT #6x1'-0", 5" DEEP, INTO TOP OF FOUNDATION WALL AT EA INTERIOR BLDG CORNER W/ HILTI-HIT HY 200A.
8. GC TO COORDINATE REQUIREMENTS FOR BUILDING ANCHORAGE, WHICH MAY VARY, WITH PRECAST BUILDING MANUFACTURER.
9. FOR GENERAL STRUCTURAL NOTES, SEE DRAWING S-1. FOR TYPICAL STRUCTURAL DETAILS, SEE DRAWING S-3.

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

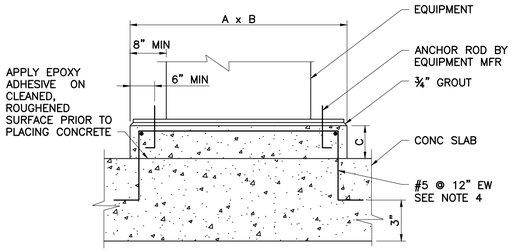
DESIGNED BY: MWC
CAD COORD: BACS
CAD: RAO
CHECKED BY: JJP
DATE: 08-18
APPROVED BY: MWC
DATE: 09-18
PROJECT NO. 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

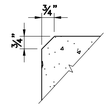
PUMP STATION
MODIFICATIONS PLAN AND SECTIONS

DRAWING
S-2



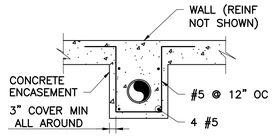
NOTES:
1. PROVIDE A MINIMUM 4" THICK REINFORCED CONCRETE PAD BELOW ALL EQUIPMENT, PIPE SUPPORTS, STANCHIONS, CONTROL PANELS, TANKS, ETC. UNLESS OTHERWISE NOTED.
2. A, B AND C DIMENSIONS SHALL BE DETERMINED BY THE GENERAL CONTRACTOR BASED ON EQUIPMENT SUPPLIED (OR AS INDICATED ON THE PROCESS DRAWINGS).
3. CONCRETE PAD SHALL ATTAIN A COMPRESSIVE STRENGTH OF 4000 PSI PRIOR TO STARTUP OF EQUIPMENT.
4. FOR CONCRETE PADS PLACED ON EXISTING CONCRETE, DRILL ¾"ø HOLES AND ADHERE W/ HS EPOXY.
5. ANCHOR ROD SHALL BE EMBEDDED A MINIMUM OF 12" INTO CONCRETE.
6. IF DIMENSION C IS LESS THAN 8", THEN ANCHOR ROD SHALL BE EMBEDDED 4" MINIMUM IN SUPPORTING SLAB.

EQUIPMENT PAD
NTS

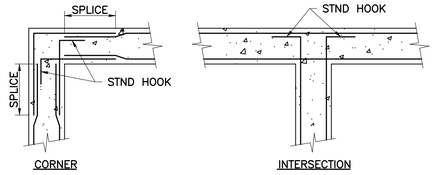


CHAMFER ALL EXPOSED CORNERS AND EDGES, EXCEPT THOSE DIRECTLY BELOW FACE OF PRECAST WALL

CHAMFER
NTS



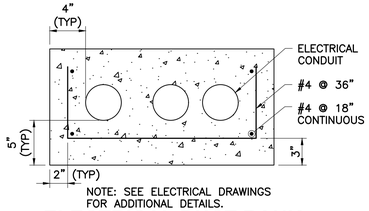
CONCRETE PIPE ENCASEMENT
NTS



NOTES:

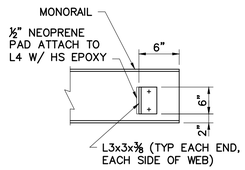
1. DETAILS APPLY UNLESS NOTED OTHERWISE.
2. VERTICAL REINFORCING NOT SHOWN.
3. FOR SIZE AND SPACING OF REINFORCING, SEE APPLICABLE SECTIONS.

WALL REINFORCEMENT DETAILS
NTS

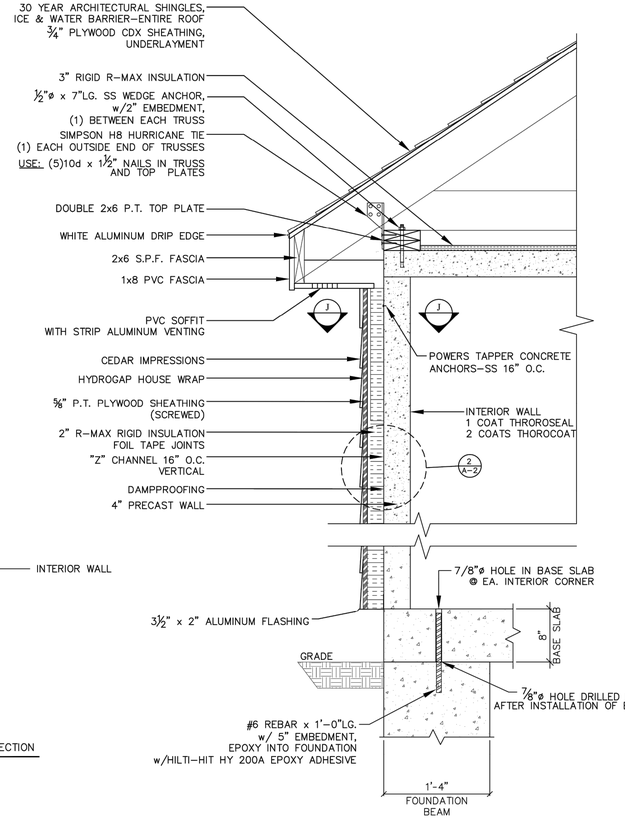


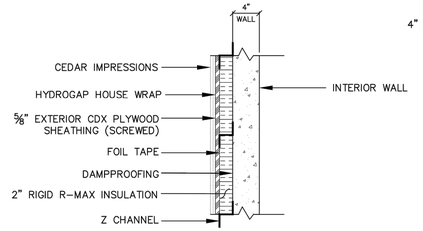
NOTE: SEE ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS.

ELECTRICAL DUCT BANK REINFORCING STEEL
NTS

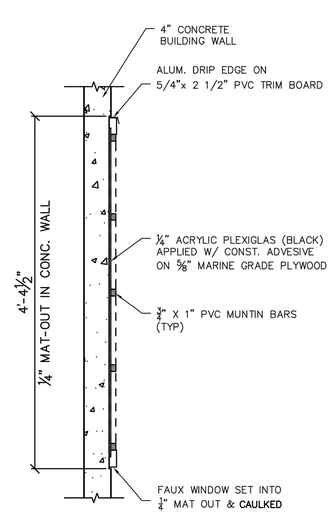


MONORAIL END STOP
NTS

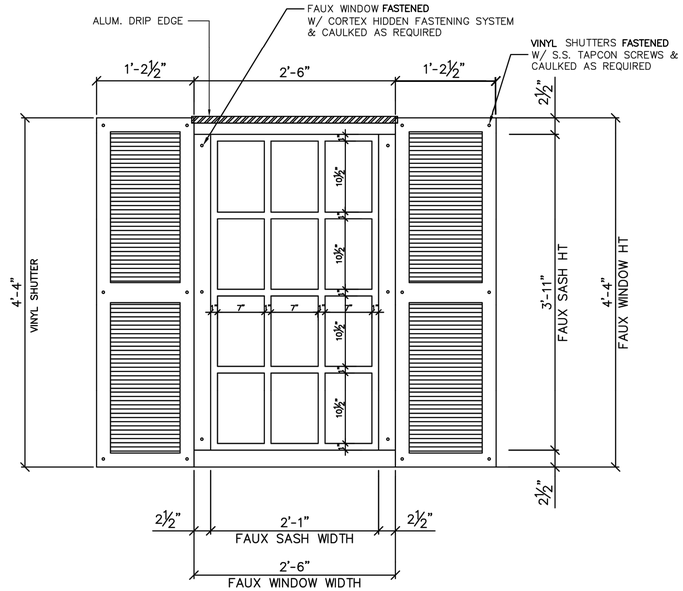




PLAN VIEW OF WALL SECTION
N.T.S.



FAUX WINDOW VERT. SECTION



FAUX WINDOW DETAIL

TYPICAL PREFABRICATED BUILDING DETAILS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02–19

DESIGNED BY: MWC
CAD COORD: BACS
CAD: RAO
CHECKED BY: JJP
DATE: 08–18
APPROVED BY: MWC
DATE: 09–18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

TYPICAL STRUCTURAL DETAILS

DRAWING
S–3

PROCESS GENERAL NOTES:

1. ALL EQUIPMENT AND PIPING LAYOUT DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH EQUIPMENT SUPPLIED, AND/OR EXISTING CONDITIONS. SOME INFORMATION ASSOCIATED WITH EXISTING STRUCTURES, PIPING AND EQUIPMENT LOCATIONS, ELEVATIONS AND SIZES, WERE TAKEN FROM THE RECORD DRAWINGS FOR THE TOWN OF GLASTONBURY, CT SANITARY SEWERS, FORCE MAINS, EJECTOR STATION, AND APPURTENANT WORK, CONTRACT NO. 77-1, DATED MAY, 1977. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES, EQUIPMENT OR PIPING THAT MAY BE AFFECTED. IN SOME SPECIFIC INSTANCES, WHERE SPECIAL ATTENTION MAY BE REQUIRED BY THE CONTRACTOR, SOME DIMENSIONS, ELEVATIONS, ETC. HAVE BEEN NOTED WITH AN " * ". THIS DOES NOT HOWEVER, LIMIT THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ALL NECESSARY INFORMATION FOR CONSTRUCTION.
2. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DIMENSIONS, LAYOUT OR ELEVATION CHANGES REQUIRED TO SUIT THE SPECIFIC EQUIPMENT BEING PROVIDED UNDER THIS CONTRACT. WHEN SUCH EQUIPMENT REQUIRES PADS, PIERS, CURBING, ETC., THAT DIFFERS FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL COORDINATE THE STEEL REINFORCING SHOP DRAWINGS ACCORDINGLY.
3. ALL BURIED CONNECTIONS TO STRUCTURES, INCLUDING BUT NOT LIMITED TO SEWER FORCE MAIN AND GRAVITY PIPING SHALL HAVE SLEEVE TYPE FLEXIBLE CONNECTIONS APPROXIMATELY 4-FEET FROM THE STRUCTURES. ALL SLEEVE TYPE COUPLINGS ON PRESSURE LINES SHALL BE RESTRAINED (SOLID SLEEVE TYPE). REFER TO SPECIFICATION SECTION 15088.
4. ALL PIPING (EXCLUDING BUILDING DRAINS/SEWER) INSTALLED BELOW SLABS SHALL BE ENCASED IN CONCRETE. PROCESS DRAWINGS DO NOT SHOW CONCRETE ENCASEMENT FOR CLARITY. SEE STRUCTURAL DRAWINGS FOR DETAILS.
5. PROVIDE CAST OR DUCTILE IRON WALL CASTINGS, OR GALVANIZED STEEL PIPE SLEEVES, FOR ALL PIPE PENETRATIONS MADE THROUGH CONCRETE FOUNDATIONS, WALLS AND SLABS, UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WALL SLEEVES AND WALL CASTINGS SHALL HAVE SEALING/ANCHORING COLLARS. SEE PROCESS, MECHANICAL, PLUMBING AND STRUCTURAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. NEW PENETRATIONS THROUGH EXISTING STRUCTURE WALLS SHALL BE BY CORING MACHINE AND LINK TYPE COMPRESSION SEALS, UNLESS OTHERWISE INDICATED. OPENINGS TO BE COMPATIBLE WITH REQUIRED PIPING AND STANDARD LINK SEAL SIZES. FOR ADDITIONAL INFORMATION, REFER TO SPECIFICATION SECTION 15092.
6. FOR PIPING MATERIAL, SEE THE PIPE SCHEDULE IN SPECIFICATION SECTION 15050.
7. ALL LIQUID TYPE FLOW ELEMENTS SHALL BE LOCATED A MINIMUM OF TEN PIPE DIAMETERS DOWNSTREAM AND FIVE DIAMETERS UPSTREAM OF ANY HYDRAULIC DISTURBANCE, EXCEPT IN SITUATIONS WHERE DIMENSIONAL CONSTRAINTS PRECLUDE THESE SEPARATION DISTANCES. IN THESE CASES THE ENGINEER WILL REVIEW THE LAYOUT AND PROVIDE REVISED MINIMUM SEPARATION DISTANCES.
8. PROVIDE DRIP PANS, WITH CENTRAL COLLECTION POINT AND DRAIN TO FLOOR, FOR ELECTRICAL AND INSTRUMENTATION EQUIPMENT LOCATED BENEATH LIQUID CARRYING PIPES.
9. INSTALL CORPORATION COCKS ON ALL BUILDING AND STRUCTURE INTERIOR PIPING HIGH POINTS TO PREVENT AIR BINDING. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT NUMBER AND LOCATIONS OF THESE CORPORATION COCKS BASED UPON INFORMATION DEPICTED ON DRAWINGS AND ACTUAL FIELD ROUTING OF PIPING. REVIEW LOCATIONS WITH ENGINEER BEFORE INSTALLATION. THESE MANUAL AIR RELEASES SHALL INCLUDE A ½-INCH BRASS CORPORATION COCK WITH ½-INCH COPPER TUBING ADEQUATELY SUPPORTED, EXTENDING TO A LOCAL AREA DRAIN. ROUTING OF TUBING AND SELECTED DRAIN TO BE REVIEWED WITH, AND ACCEPTED BY, ENGINEER.
10. PIPES 3-INCH IN DIAMETER AND UNDER SHALL HAVE UNIONS INSTALLED ADJACENT TO EQUIPMENT AND TANKS, UNLESS OTHERWISE NOTED ON DRAWINGS. FLANGES ARE ACCEPTABLE ON 3-INCH DIAMETER PIPING.
11. ALL PIPES SHALL BE ADEQUATELY RESTRAINED AND SUPPORTED IN ACCORDANCE WITH SPECIFICATION SECTION 15094.
12. AFTER INSTALLATION, ALL PIPELINES SHALL BE PRESSURE TESTED FOR TIGHTNESS IN ACCORDANCE WITH SPECIFICATION SECTIONS 15050. ALL LEAKS SHALL BE CORRECTED AND RETESTED UNTIL PRESSURE TEST IS SATISFACTORY COMPLETED.
13. ALL PIPING SHALL BE CLEANED, TO THE SATISFACTION OF THE ENGINEER, BEFORE TESTING.
14. PROVIDE 4-INCH HIGH (MIN.) REINFORCED CONCRETE PAD UNDER ALL EQUIPMENT, CONTROL PANELS, PIPE AND EQUIPMENT SUPPORTS, TANKS, ETC. UNLESS OTHERWISE INDICATED.
15. REFER TO THIS DRAWING FOR A LISTING OF COMMONLY USED ABBREVIATIONS.
16. ALL REDUCERS SHALL BE CONCENTRIC TYPE UNLESS DESIGNATED AS ECCENTRIC (ECC) ON THE DRAWINGS. ECCENTRIC REDUCERS SHALL BE INSTALLED WITH FLAT SIDE UP.
17. ALL PENETRATIONS BETWEEN CLASS 1, DIVISION 1 AREAS AND UNCLASSIFIED AREAS SHALL BE GAS TIGHT.
18. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ADAPTERS, FITTINGS AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE INSTALLATION. THE USE OF UNI-FLANGES WILL NOT BE ALLOWED UNLESS INDICATED ON THE DRAWINGS.
19. ALL STAINLESS STEEL FASTENERS FOR PIPING, EQUIPMENT, SUPPORTS, ETC., SHALL BE HAND TIGHTENED IN ORDER TO LIMIT THE POTENTIAL FOR GALLING.
20. CONTRACTOR TO NOTE THAT ALL EXISTING INFORMATION ON THE DRAWINGS IS SHOWN WITH A LIGHTER LINE WEIGHT AND INDICATED WITH A SLANTED TYPE TEXT. THE EXCEPTION IS WHEN SCANNED IMAGES ARE UTILIZED FROM THE PREVIOUS CONSTRUCTION PROJECTS NOTED IN GENERAL NOTE NO. 1, ABOVE. WHEN REVIEWING DRAWINGS NOTED AS "SCANNED" UNDER DRAWING TITLE, THE CONTRACTOR SHALL IGNORE ANY REFERENCE TO PREVIOUS CONTRACT WORK. SCANNED IMAGES ARE NOT TO SCALE, HOWEVER AN APPROXIMATE SCALE MAY BE GIVEN FOR CONVENIENCE.
21. CONTRACTOR SHALL COORDINATE INSTRUMENTATION MOUNTING DETAILS WITH THE INSTRUMENTATION SUPPLIER AND THE ELECTRICAL CONTRACTOR. REFER TO DETAILS ON THE INSTRUMENTATION DRAWINGS, AND/OR EQUIPMENT MANUFACTURER MOUNT DETAILS AND REQUIREMENTS.
22. PHOTO # D-# **PHOTO** TITLE # D-#

    PHOTO TAGS, AS SHOWN ON THE PLAN, INDICATES THE LOCATION AND DIRECTION FROM WHICH THE PHOTO WAS TAKEN.
23. ALL LUBRICATION FITTINGS SHALL BE BROUGHT TO LOCATIONS THAT ARE READILY ACCESSIBLE TO OPERATORS. REFER TO SPECIFICATION 11000 FOR ADDITIONAL REQUIREMENTS.
24. EXISTING STRUCTURES AND EQUIPMENT TO BE DEMOLISHED MAY CONTAIN LEAD PAINT, ASBESTOS, AND/OR PCB'S. REFER TO APPENDIX A OF THE SPECIFICATIONS FOR TESTING RESULTS AND ABATEMENT REQUIREMENTS. REMOVAL OF THESE ITEMS ARE PART OF THE WORK AND SHALL BE CONDUCTED IN ACCORDANCE WITH ALL LOCAL , STATE, AND FEDERAL REGULATIONS.

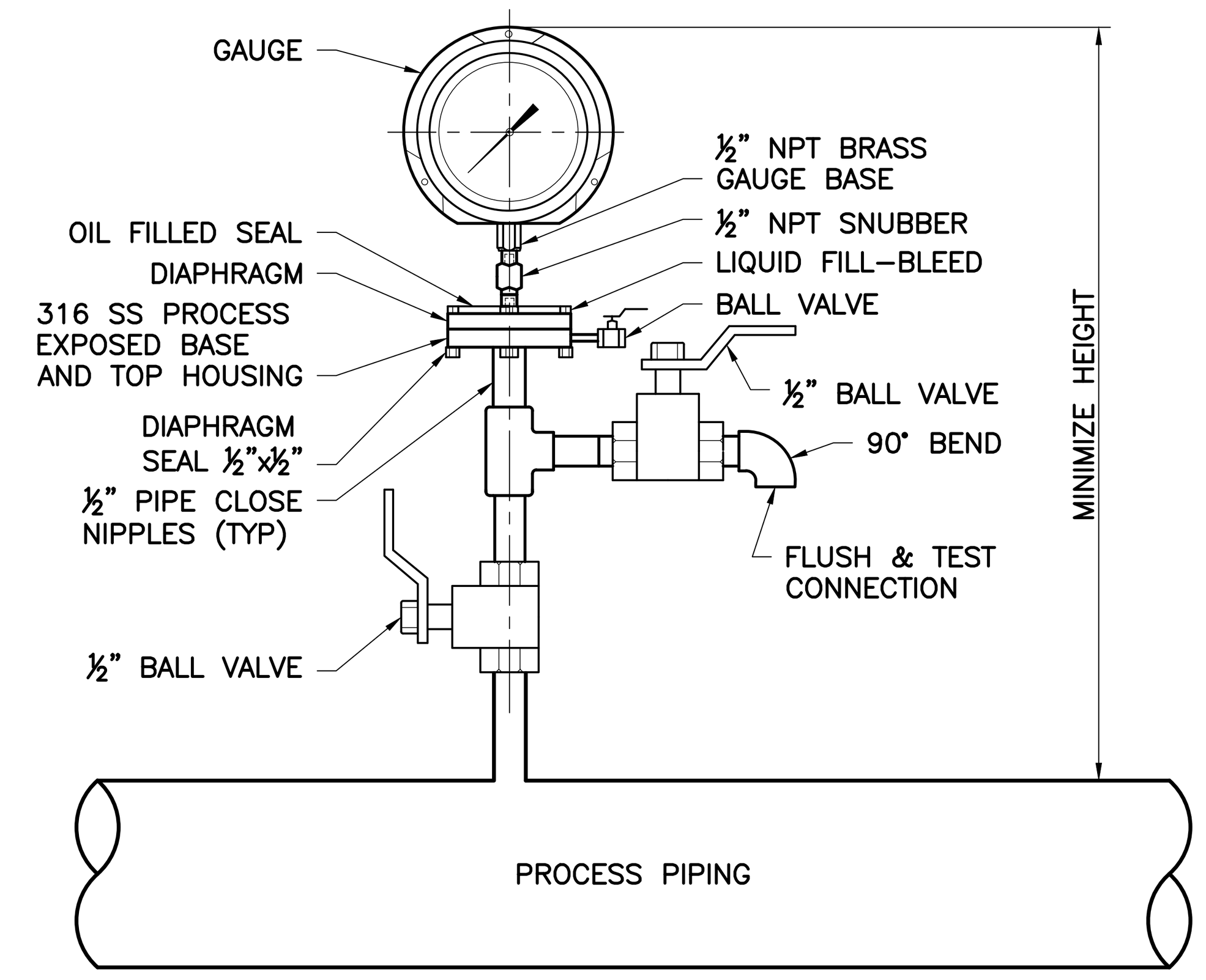
PROCESS DEMOLITION GENERAL NOTES:

1. REFER TO INDIVIDUAL DRAWINGS FOR SPECIFIC DEMOLITION NOTES.
2. (thin line) INDICATES EXISTING PIPING/EQUIPMENT TO REMAIN FOR RE-USE.

   (shaded bar) INDICATES EXISTING PIPING/EQUIPMENT TO BE DEMOLISHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. THE OWNER RESERVES THE RIGHT TO RETAIN PIPING, EQUIPMENT AND/OR MATERIALS ON SITE FOR THEIR USE AS SPECIFIED IN SECTION 02050. SUCH MATERIAL TO BE RETAINED SHALL BE PLACED IN A ON-SITE STORAGE AREA, REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO THE OWNER AND ENGINEER. RETAINED EQUIPMENT SHALL BE REMOVED IN SUCH A WAY AS NECESSARY TO MAINTAIN ITS FUNCTIONAL AND PHYSICAL INTEGRITY.
4. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AND LOCATION OF UTILITIES FOUND AS PART OF THE PROJECT RECORD DOCUMENTS, AS SPECIFIED IN SECTION 01720.
5. REFER TO THE DEMOLITION SPECIFICATION SECTION 02050, SUMMARY OF WORK SPECIFICATION SECTION 01010, AND SITE DEMOLITION DRAWING C-2 FOR ADDITIONAL INFORMATION REGARDING DEMOLITION REQUIREMENTS AND CONSTRUCTION SEQUENCING.
6. REFER TO DRAWING C-2 FOR ADDITIONAL INFORMATION REGARDING EXISTING UTILITIES. THE SIZES, LOCATIONS, AND MATERIALS OF CONSTRUCTION INDICATED ARE FROM THE BEST AVAILABLE INFORMATION AND MAY NOT BE COMPLETE OR ACCURATE. ALL SIZES, LOCATIONS, AND MATERIALS OF CONSTRUCTION SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD AS REQUIRED. ALL EXISTING UTILITIES THAT ARE TO REMAIN, AND ARE DAMAGED BY THE CONTRACTORS ACTIVITIES, SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
7. SEVERING THE EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTING, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. THE METHOD OF CAPPING SHALL BE REVIEWED WITH, AND ACCEPTABLE TO, THE ENGINEER.
8. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE MUST BE COORDINATED WITH THE OWNER AND ENGINEER BEFOREHAND.
9. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THAT ALL FLOWS, FLOW METERING AND LEVEL CONTROLS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY, PUMPED BYPASSES OR OTHER MEANS OF FLOW MAINTENANCE SHALL BE REVIEWED WITH, AND ACCEPTABLE TO, THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES WITH THE OWNER AND ENGINEER. CONTRACTOR SHALL VERIFY WITH OWNER/ENGINEER ALL VALVES, GATES, EQUIPMENT, ETC. ARE FUNCTIONAL PRIOR TO ASSUMING UTILIZATION FOR FLOW ISOLATION.
10. WHERE PIPING OR CONDUIT THAT IS TO BE REMOVED PASSES THROUGH THE WALL OF THE STRUCTURE, IT SHALL BE CUT OFF AS NEAR TO THE WALL AS PRACTICAL AND PROPERLY SEALED ON EACH SIDE OF THE WALL, OR AS SHOWN ON THE DRAWINGS. SEAL METHOD SHALL BE SUBJECT TO REVIEW AND ACCEPTANCE OF THE ENGINEER.
11. ALL WALL AND/OR FLOOR PENETRATIONS REMAINING AFTER THE REMOVAL OF PIPING OR CONDUIT ARE TO BE PATCHED AND FINISHED FLUSH TO MATCH EXISTING SURFACES.

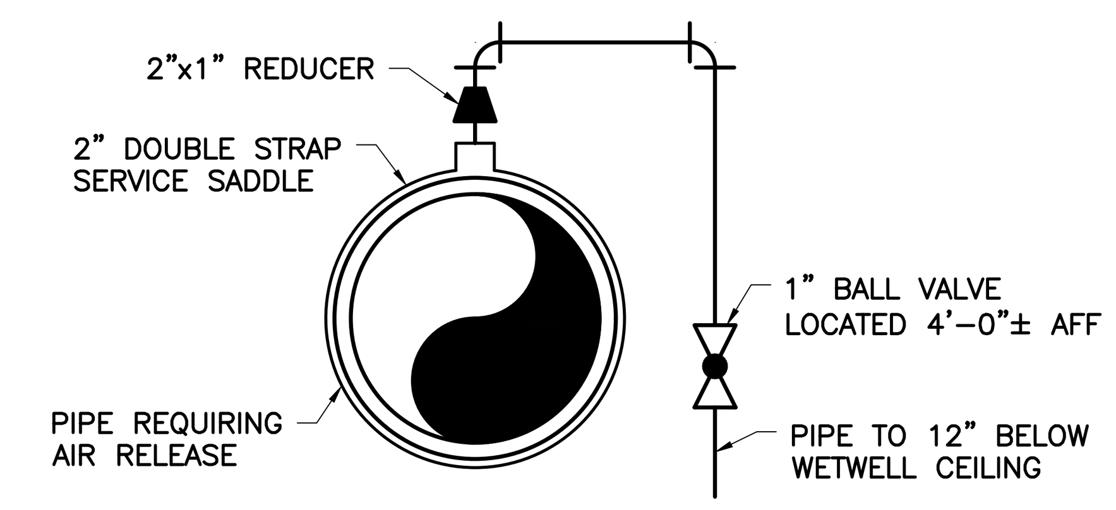
ABBREVIATIONS:

&	AND
@	AT
ø	DIAMETER
℄	CENTER LINE
APPROX	APPROXIMATELY
ARC	ARCHITECTURAL
BF	BLIND FLANGE
CI	CAST IRON
CONC	CONCRETE
DI	DUCTILE IRON
ECC	ECCENTRIC
EL	ELEVATION
ELL	ELBOW
EW	EACH WAY
FFE	FINISH FLOOR ELEVATION
FG	FINISH GRADE
FM	FORCE MAIN/FLOW METER
HW	HIGH WATER
INV	INVERT
LR	LONG RADIUS
LW	LOW WATER
MIN	MINIMUM
MJ	MECHANICAL JOINT
NO	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
RC	REINFORCED CONCRETE
RECIRC	RECIRCULATING
RED	REDUCER
REQ'D	REQUIRED
SCH	SCHEDULE
SP	SEWAGE PUMP
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STR	STRUCTURAL
T&B	TOP AND BOTTOM
VC	VITRIFIED CLAY

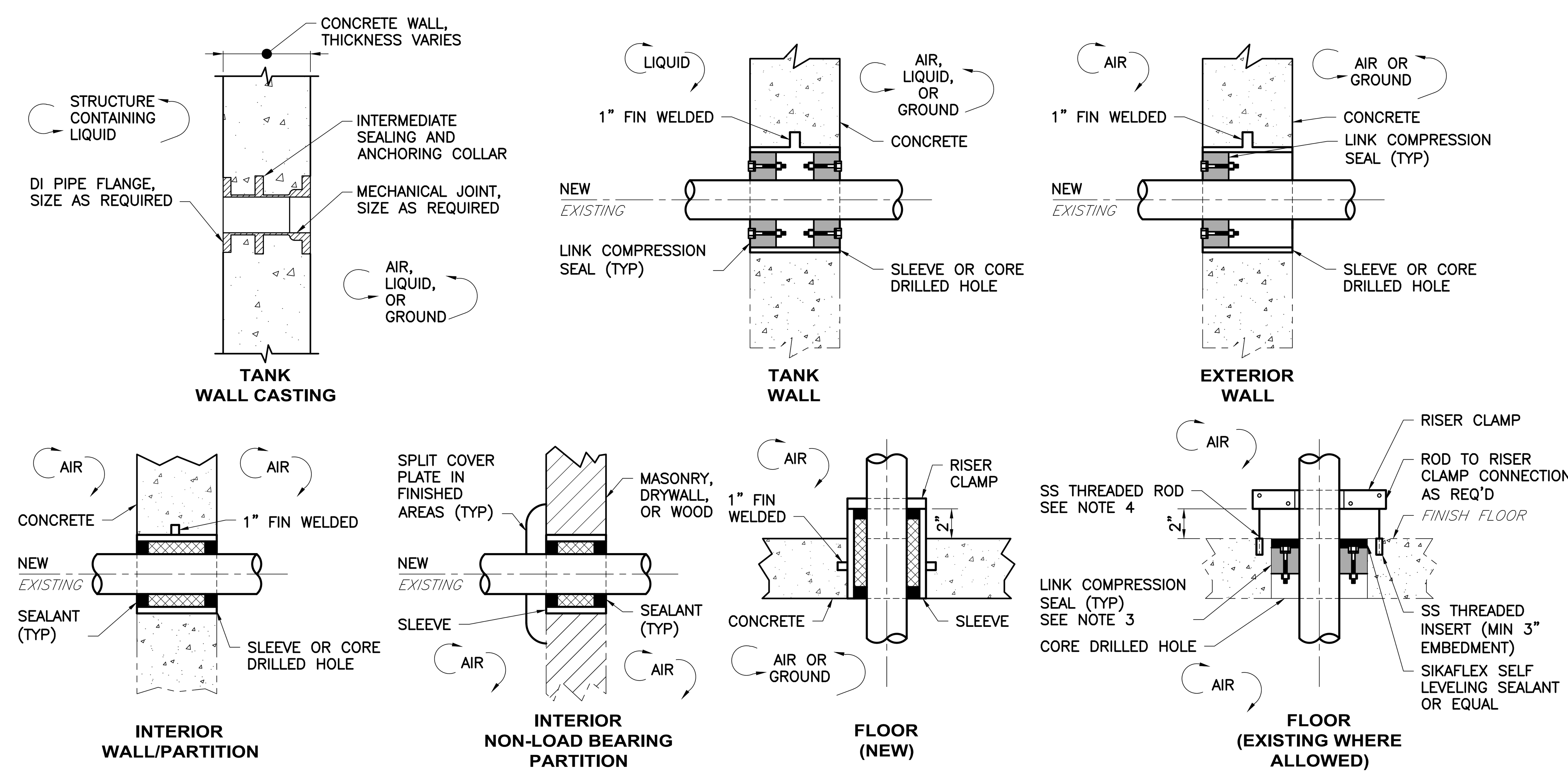


GAUGE ASSEMBLY
SCALE: NTS

NOTE:
PROVIDE ONE SUCTION GAUGE ASSEMBLY AND ONE DISCHARGE GAUGE ASSEMBLY PER PROCESS PUMP UNLESS OTHERWISE SPECIFIED. GAUGES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 11000 AND 11310.



MANUAL AIR RELEASE DETAIL
SCALE: NTS



CONSTRUCTION PIPING PENETRATION DETAILS
SCALE: NTS

NOTES:
1. REFER TO SPECIFICATION SECTION 15092 FOR REQUIREMENTS AND INFORMATION.
2. WALL CASTING CONNECTION SHOWN IS FLG TO MJ. PROVIDE TYPE OF WALL CASTING AS REQUIRED.
3. SET TOP OF LINK TYPE SEAL APPROXIMATE ½" TO ¼" BELOW FINISH FLOOR.
4. LINK SEAL SHALL NOT BE USED TO SUPPORT PIPE. THREADED ROD SHALL BE SIZED AS REQUIRED TO SUPPORT PIPE BOTH VERTICALLY AND HORIZONTALLY.

LAST SAVED BY: ELLIOTT.LAGNER 2/4/2019 12:06 PM
J:\ENG\CT\GLASTONBURY\13773-CIDERMILL-PS\DRAWINGS\PRO\13773-PRS-PROCESSNOTES.DWG | Notes & Details | 1:10.1236 | ---- | 2/4/2019 12:13:52 PM | ELLIOTT.LAGNER

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19
1			
2			
3			
4			

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO: 13773

STATE OF CONNECTICUT DENNIS A. DIEVERT JR. No. 25780 LICENSED PROFESSIONAL ENGINEER 9-7-18

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

GENERAL NOTES & DETAILS

DRAWING
PR-1

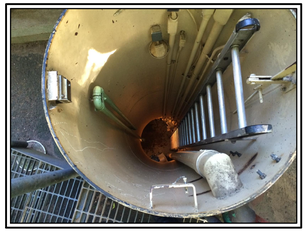


PHOTO ACCESS HATCH 1 –

PHOTO PUMP CHAMBER 5 –

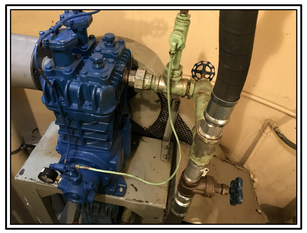


PHOTO PUMP CHAMBER 2 –

PHOTO PUMP STATION 6 –

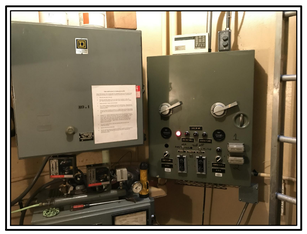


PHOTO PUMP CHAMBER 3 –

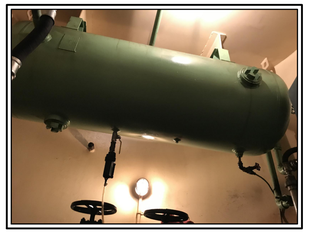
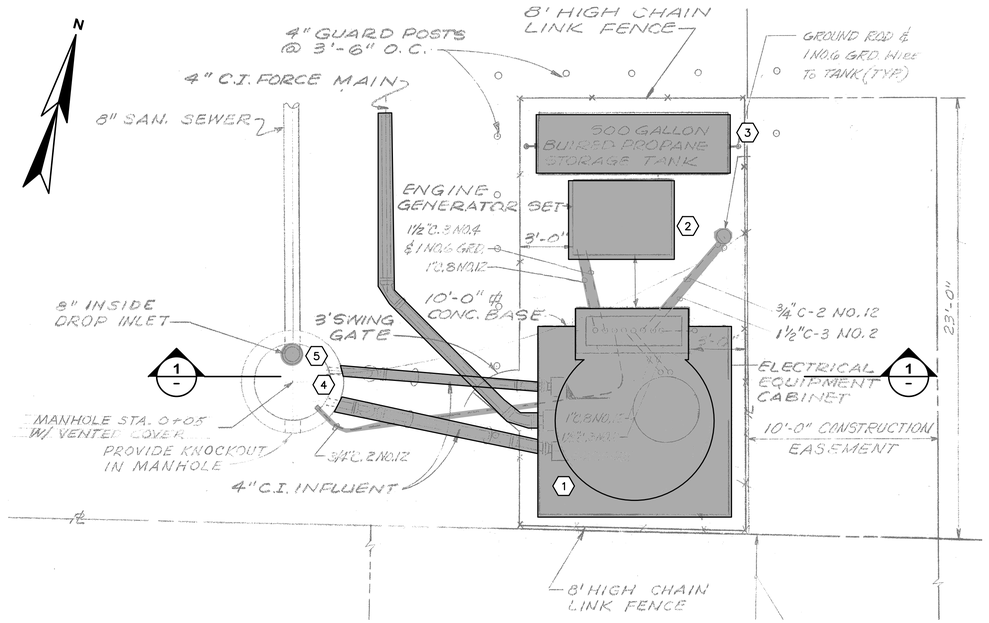


PHOTO PUMP CHAMBER 7 –

PHOTO PUMP CHAMBER 4 –

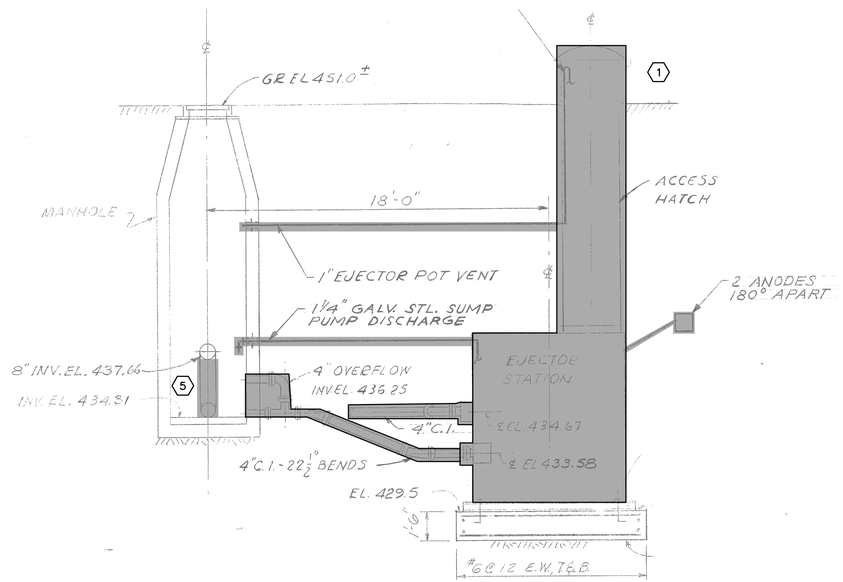
DEMOLITION NOTES:

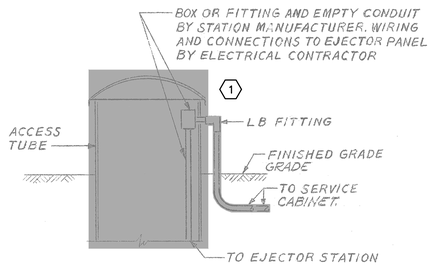
1. REMOVE/DEMOLISH ALL COMPONENTS WITHIN EXISTING PUMP CHAMBER, INCLUDING BUT NOT LIMITED TO, ACCESS CHAMBER, ACCESS HATCH, HARDWARE, PIPING, EQUIPMENT, AND ALL OTHER ASSOCIATED APPURTENANCES IN THEIR ENTIRETY, INCLUDING BUT NOT LIMITED TO, PUMPS, WIRING, ELECTRICAL COMPONENTS, AND ASSOCIATED PIPING, FITTINGS, VALVES, AND SUPPORTS TO THE LIMITS SHOWN. REFER TO PHOTOS 1 THROUGH 7 ON THIS DRAWING. PHOTOS MAY NOT INCLUDE EVERYTHING LOCATED IN PUMP CHAMBER. COORDINATE WITH DIVISION 16–ELECTRICAL FOR ALL ELECTRICAL DEMOLITION AS SHOWN ON THE ELECTRICAL DRAWINGS.
2. REMOVE/DEMOLISH EXISTING GENERATOR AND ELECTRICAL ENCLOSURE IN ITS ENTIRETY.
3. REMOVE/DEMOLISH EXISTING UNDERGROUND PROPANE TANK, INCLUDING, BUT NOT LIMITED TO, UNDERGROUND PROPANE TANK, ACCESS HATCH, VENT PIPING, AND ALL OTHER ASSOCIATED APPURTENANCES IN THEIR ENTIRETY. BACKFILL AND COMPACT AS NECESSARY.
4. CAP/PLUG ALL DEMOLISHED PENETRATIONS WATERTIGHT. REFER TO PROCESS DEMOLITION GENERAL NOTES FOR ADDITIONAL INFORMATION.
5. REMOVE ANY EXISTING INTERIOR DROP PIPING AND FILL EXISTING MANHOLE TO NEW INV OUT AND FORM NEW INVERT CHANNELS AND BENCH. CORE HOLE AS REQUIRED TO CONNECT NEW 8" SEWER TO WETWELL AND PROVIDE FLEXIBLE WATERTIGHT BOOT.



DEMOLITION PLAN

SCALE: SCANNED
(APPROX: ¼"=1'–0")





ACCESS TUBE DEMOLITION DETAIL

SCALE: NTS

SECTION 1 –

SCALE: SCANNED
(APPROX: ¼"=1'–0")

NOTES:

1. FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS REFER TO DRAWING PR–1.
2. CONTRACTOR TO NOTE A SCANNED IMAGE OF THE EXISTING DRAWINGS HAS BEEN USED FOR DEMOLITION. EXISTING INFORMATION HAS BEEN FADED BACK FOR CLARITY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BIDDING AND/OR COMMENCING CONSTRUCTION. FOR INFORMATION PERTAINING TO EXISTING DRAWINGS, REFER TO THE GENERAL NOTES ON DRAWING PR–1.
3. EXISTING STRUCTURES AND EQUIPMENT TO BE DEMOLISHED MAY CONTAIN LEAD PAINT, ASBESTOS, AND/OR PCB'S. REFER TO APPENDIX B OF THE SPECIFICATIONS FOR TESTING RESULTS AND ABATEMENT REQUIREMENTS. REMOVAL OF THESE ITEMS ARE PART OF THE WORK AND SHALL BE CONDUCTED IN ACCORDANCE WITH ALL LOCAL , STATE, AND FEDERAL REGULATIONS.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02–19

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 09–18
APPROVED BY: DAD
DATE: 09–18
PROJECT NO: 13773

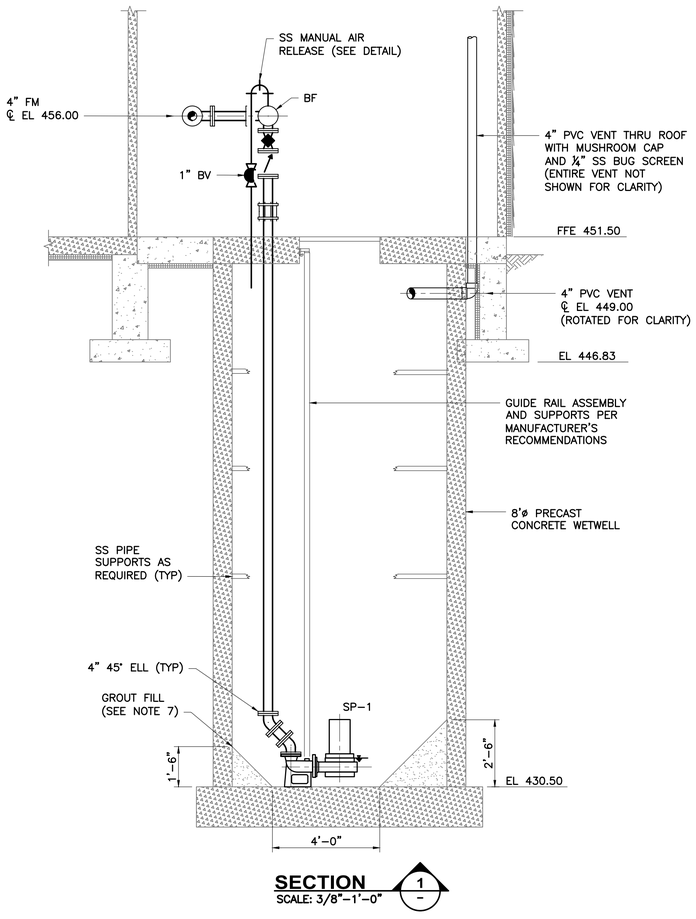
STATE OF CONNECTICUT DEPARTMENT OF CONSUMER PROTECTION LICENSED PROFESSIONAL ENGINEER No. 25780

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

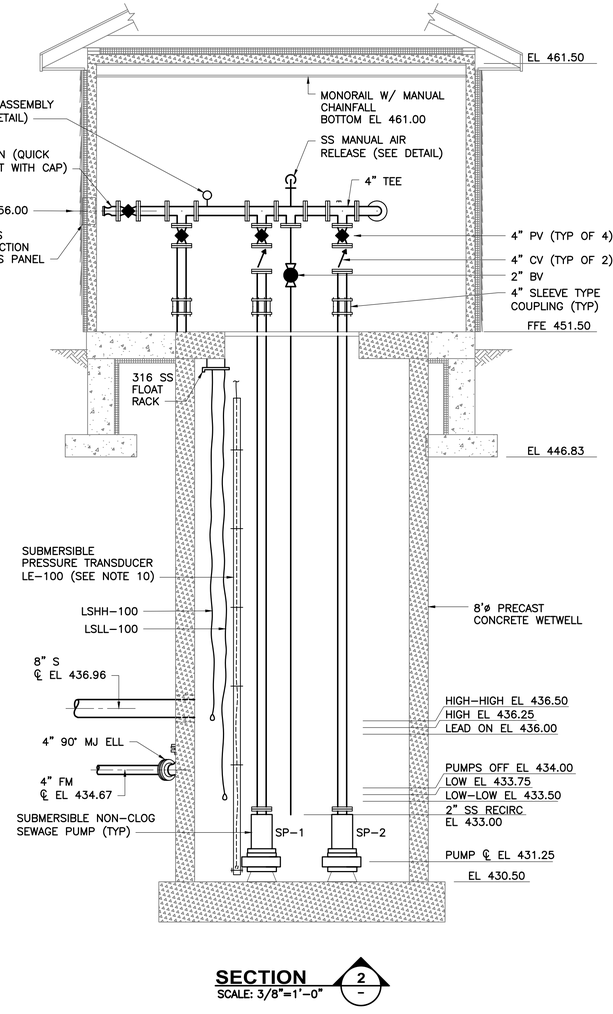
TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

DEMOLITION PLAN & SECTIONS

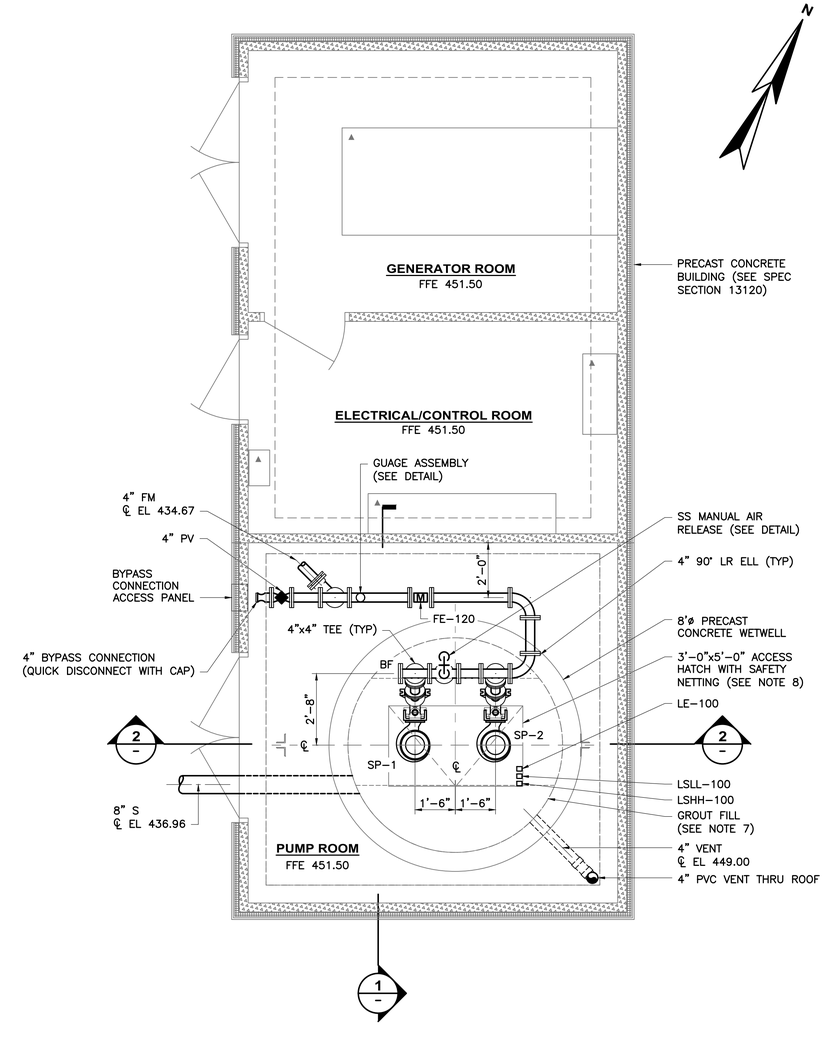
DRAWING
PR–2



SECTION 1
SCALE: 3/8"=1'-0"



SECTION 2
SCALE: 3/8"=1'-0"



FIRST FLOOR PLAN
SCALE: 3/8" = 1'-0"

NOTES:

1. FOR ELECTRICAL INFORMATION, REFER TO THE ELECTRICAL DRAWINGS. FOR INSTRUMENTATION INFORMATION, REFER TO THE INSTRUMENTATION DRAWINGS.
2. RESTRAIN PIPING TO PREVENT LATERAL MOVEMENT IN WETWELL. REFER TO SPECIFICATIONS SECTION 15094.
3. REFER TO THE CIVIL DRAWINGS FOR FINISH GRADES, LOCATION, AND ORIENTATION OF BUILDING AND WETWELL.
4. FOR GENERAL PROCESS NOTES, REFER TO DRAWING PR-1. FOR GENERAL CIVIL NOTES, REFER TO DRAWING C-1.
5. PROVIDE A SOLID SLEEVE TYPE COUPLING FOR THE NEW 4" FORCE MAIN (MAXIMUM) 4'-0" FROM THE NEW STRUCTURE.
6. ALL WETWELL PENETRATIONS SHALL BE SEALED WITH LINK-TYPE SEALS. REFER TO DETAIL ON DRAWING PR-1.
7. COORDINATE LOCATION AND LIMITS OF GROUT FILL WITH PUMP MANUFACTURER AND ENGINEER.
8. CONTRACTOR TO LOCATE HATCH TO ENSURE PERSONNEL ACCESS MEETS OSHA REQUIREMENTS AS WELL AS ALLOWING FOR SUFFICIENT CLEARANCE TO OPERATE PLUG VALVES.
9. ALL HARDWARE IN WETWELL SHALL BE 316-SS.
10. FOR TRANSDUCERS GREATER THAN 2-INCHES IN DIAMETER, PROVIDE A 12-INCH LONG SECTION OF 316 STAINLESS STEEL PIPE, .75 TO 1-INCH DIAMETER WITH NPT THREADS TO MOUNT TO THE TRANSDUCER. THE TRANSDUCER AND PIPE SHALL BE SUSPENDED USING A STAINLESS STEEL PVC COATED CABLE WITH STAINLESS CLAMPS AND BOLTS WITH FRICTION NUTS. PROVIDE A STAINLESS STEEL FLOAT RACK FOR MOUNTING THE FLOAT SWITCHES AND TRANSDUCER CABLE. THE TRANSDUCER SHALL BE MOUNTED 6-INCHES FROM THE BOTTOM OF THE WETWELL. FINAL LOCATION SHALL BE DETERMINED BY ENGINEER IN THE FIELD AND LOCATED SUCH THAT IT CAN BE EASILY RETRIEVED/CLEANED WITHOUT ENTERING THE WETWELL. SUBMERSIBLE PRESSURE TRANSDUCERS THAT ARE 2-INCHES DIAMETER OR SMALLER SHALL BE INSTALLED IN A STILLING WELL. STILLING WELL SHALL BE CONSTRUCTED OF 3 TO 4-INCH PVC AND SUSPENDED FROM THE WALL OF THE WETWELL BY STAINLESS STEEL PIPE CLAMPS.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: NLO
CAD COORD: BACS
CAD: BACS
CHECKED BY: DAD
DATE: 08-18
APPROVED BY: DAD
DATE: 09-18
PROJECT NO: 13773

STATE OF CONNECTICUT
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
LICENSED PROFESSIONAL ENGINEER
No. 25780

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

MODIFICATIONS PLAN & SECTIONS

DRAWING
PR-3

LAST SAVED BY: RODNEY.GREENE 2/4/2019 12:06 PM

J:\ENG\CT\GLASTONBURY\13773-CIDERMILL-PS\DRAWINGS\MEC\13773-MS-PUMPSTATIONMODS.DWG | M-1 | 1:10.1236 | ---- | 2/4/2019 12:14:12 PM | ELLIOTT.LAGNER

DESIGN CRITERIA

OUTSIDE DESIGN TEMPERATURE

WINTER (ASHRAE 99.6%)	6.4°F
SUMMER (ASHRAE 0.4%)	90.5°F DB/73.4°F WB

INSIDE DESIGN TEMPERATURE WINTER/SUMMER

ELECTRICAL ROOM	50°F/85°F
GENERATOR ROOM	50°F/AMBIENT
WETWELL	50°F/AMBIENT

VENTILATION RATES

ELECTRICAL ROOM	N/A
GENERATOR ROOM	N/A
WETWELL	12 ACH

ABBREVIATIONS

ACH	AIR CHANGES PER HOUR
AD	ACCESS DOOR
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
ATC	AUTOMATIC TEMPERATURE CONTROL
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE
D	DAMPER
DCFE	DRY CHEMICAL FIRE EXTINGUISHER
DIA, ø	DIAMETER
DN	DOWN
E	EXHAUST
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EL	ELEVATION
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
°F	DEGREES FAHRENHEIT
FC	FLEXIBLE CONNECTION
FFE	FINISH FLOOR ELEVATION
HP	HORSEPOWER
INV EL	INVERT ELEVATION
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MBH	BTUH x 1000
MFR	MANUFACTURER
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
N/A	NOT APPLICABLE
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
PD	PRESSURE DROP
R	RETURN
RAD	RADIUS
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
TSTAT	THERMOSTAT
TYP	TYPICAL
W/	WITH
WMS	WIRE MESH SCREEN

MECHANICAL GENERAL NOTES

1. ALL EQUIPMENT AND PIPING LAYOUT DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH EQUIPMENT SUPPLIED, AND/OR EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES, EQUIPMENT OR PIPING THAT MAY BE AFFECTED.

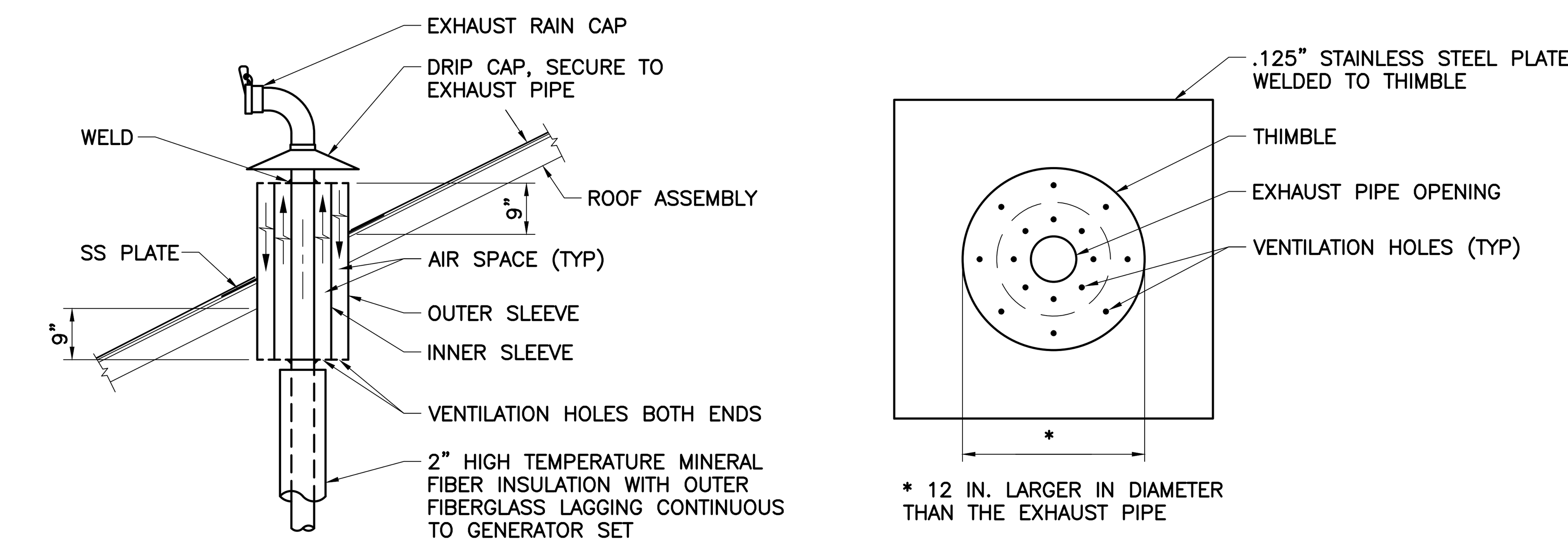
2. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DIMENSIONS, LAYOUT OR ELEVATION CHANGES REQUIRED TO SUIT THE SPECIFIC EQUIPMENT BEING PROVIDED UNDER THIS CONTRACT. WHEN SUCH EQUIPMENT REQUIRES PADS, PIERS, CURBING, ETC., THAT DIFFERS FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL COORDINATE THE STEEL REINFORCING SHOP DRAWINGS ACCORDINGLY.

3. ALL DUCTWORK AND DEVICES SHALL BE FABRICATED, REINFORCED AND INSTALLED IN ACCORDANCE WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION) DOCUMENT "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE". SEAL ALL DUCT JOINTS TO SEAL CLASS "B".

4. ALL PIPES SHALL BE ADEQUATELY RESTRAINED AND SUPPORTED IN ACCORDANCE WITH SPECIFICATION SECTION 15094.

5. DO NOT SCALE DISTANCES OR DIMENSIONS FROM THE DRAWINGS. WRITTEN DIMENSIONS SHALL PREVAIL. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

6. ALL PIPING SYSTEMS SHALL BE PRESSURE TESTED FOR TIGHTNESS IN ACCORDANCE WITH SPECIFICATION SECTION 15050. ALL LEAKS SHALL BE CORRECTED AND RETESTED UNTIL PRESSURE TEST IS SATISFACTORY PRIOR TO THE INSTALLATION OF PIPE INSULATION.



NOTES:
1. 304 STAINLESS STEEL INSULATED WALL THIMBLE – REFER TO SPECIFICATION SECTION 15070.
2. INSTALL BLOCKING BETWEEN TRUSSES 1" AWAY FROM THIMBLE ON BOTH SIDES.

ROOF VENTILATED THIMBLE DETAIL
NTS

ELECTRIC UNIT HEATER SCHEDULE

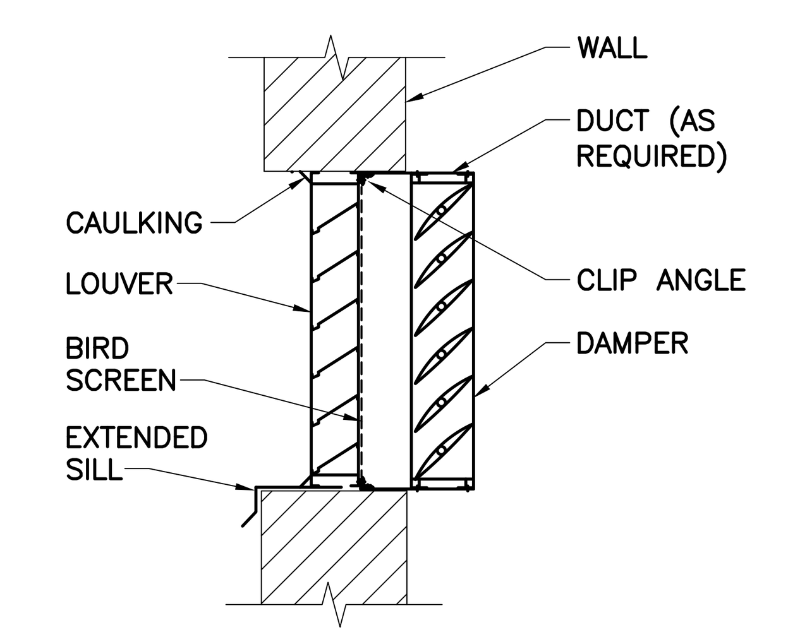
UNIT NO.	LOCATION	kW	CFM	AIR THROW	AIR TEMP RISE	VOLTS	PHASE	NEMA	REMARKS	NOTES
EUH–1	GENERATOR ROOM	2	510	–	12.3	208	1	12	INDEECO 926U02000CA OR EQUIVALENT	1
EUH–2	WETWELL	7	1050	–	21.0	208	1	7	INDEECO 236–F01T–0072C OR EQUIVALENT	2,3

NOTES:
1. PROVIDE WITH DISCONNECT SWITCH, PILOT LIGHT, WALL MOUNTED THERMOSTAT, AND TWO–STAGE CONTROL.
2. PROVIDE WITH DISCONNECT SWITCH, PILOT LIGHT, AND INTEGRAL THERMOSTAT.
3. DIRTY DUTY, CORROSION RESISTANT, EXPLOSION PROOF UNIT HEATER.

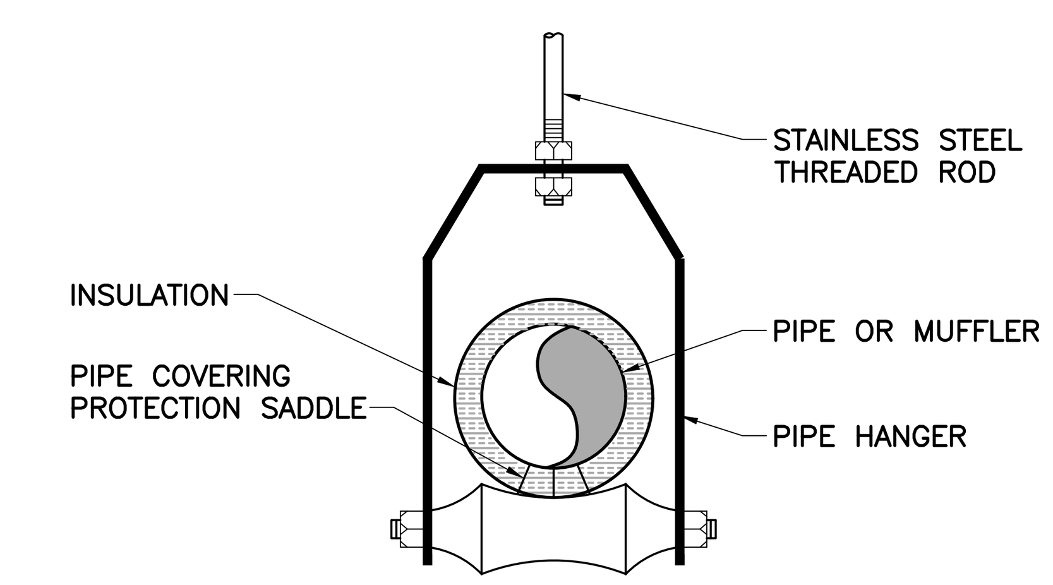
LOUVER AND DAMPER SCHEDULE

UNIT NO.	LOCATION SERVED	DIMENSIONS (IN)			MIN. FREE AREA SQFT.	TYPE	REMARKS	NOTES
		WIDTH	HEIGHT	DEPTH				
L–1	GENERATOR ROOM	60	72	6	16.62	INTAKE LOUVER	GREENHECK EDJ–601 OR EQUIVALENT	–
L–2	GENERATOR ROOM	48	72	6	13.49	EXHAUST LOUVER	GREENHECK EDJ–601 OR EQUIVALENT	–
L–3	WETWELL	18	18	6	0.92	INTAKE LOUVER	GREENHECK EDJ–601 OR EQUIVALENT	–
D–1	GENERATOR ROOM	60	72	5	–	PARALLEL BLADE	GREENHECK VCD–23 OR EQUIVALENT	1,2
D–2	GENERATOR ROOM	48	72	5	–	PARALLEL BLADE	GREENHECK VCD–23 OR EQUIVALENT	1,2
D–3	WETWELL	18	18	5	–	PARALLEL BLADE	GREENHECK VCD–43 OR EQUIVALENT	3

NOTES:
1. PROVIDE NEMA 12 CONTROL ACTUATOR.
2. PROVIDE WITH DAMPER ACTUATORS AND OPEN CLOSE INDICATOR ASSEMBLY. WIRING AND CONTROLS BY ELECTRICAL CONTRACTOR.
3. PROVIDE NEMA 7 CONTROL ACTUATOR.



LOUVER & DAMPER DETAIL
NTS



INSULATED EXHAUST SUPPORT DETAIL
NTS

FAN SCHEDULE

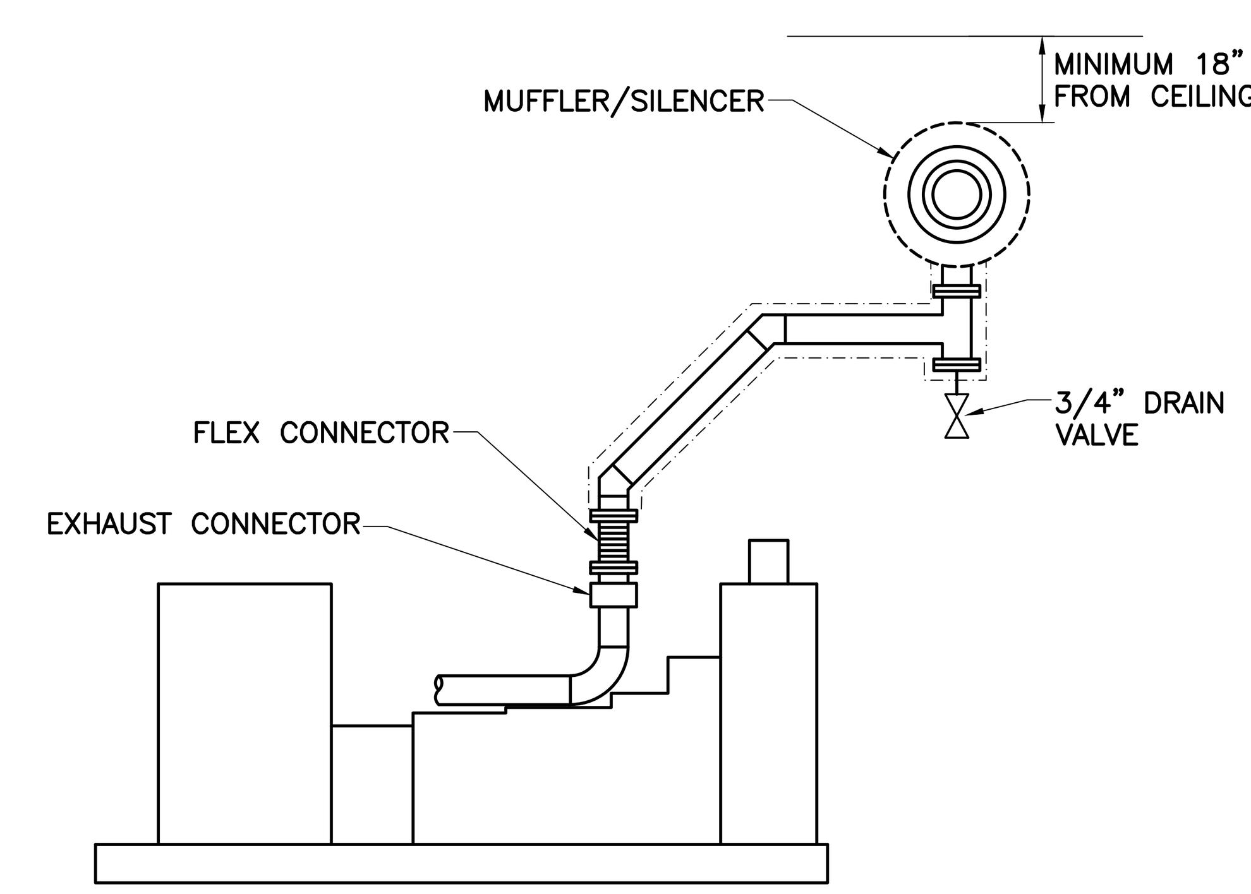
UNIT NO.	LOCATION SERVED	CFM	T.S.P. IN WC	FAN RPM	DRIVE TYPE	TYPE	MOTOR DATA			NEMA	REMARKS	NOTES
							HP	VOLTS	PHASE			
EF–1	WETWELL	350	0.45	1603	DIRECT	SIDEWALL CENTRIFUGAL	1/4	120	1	7	GREENHECK CWB–099–4 OR EQUIVALENT	1

NOTES:
1. PROVIDE WITH GRAVITY BACKDRAFT DAMPER, WALL GRILLE, EXPLOSION PROOF MOTOR, SPARK RESISTANT CONSTRUCTION, HI–PRO POLYESTER COATING (FAN AND DAMPER), STAINLESS STEEL FASTENERS, STAINLESS STEEL SHAFT, HOOD HASPS, ALUMINUM BIRDSCREEN, AND ALUMINUM RUB RING.

AIR COOLED DX HEAT PUMP SCHEDULE

UNIT NO.	LOCATION SERVED	REFRIGERANT	TOTAL MBH		SEER	COMPRESSOR		CONDENSER					REMARKS	NOTES
			COOL	HEAT		RLA	LRA	CFM	VOLTS	PHASE	MCA	MOCP		
HP–1	ELECTRICAL/CONTROL ROOM	R–410A	12.0	14.4	23.1	6.6	8.2	1229	208–230	1	9	15	MITSUBISHI MUZ–GL12NA–U1 OR EQUIVALENT	1,2

NOTES:
1. LOW AMBIENT OPERATION.
2. PROVIDE BRACKETS FOR WALL MOUNTING. COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR.



GENSET EXHAUST SCHEMATIC
NTS

DUCTLESS SPLIT SYSTEM FAN COIL UNIT SCHEDULE

UNIT NO.	LOCATION	REFRIGERANT	DX COOLING						DX HEATING			MOUNTING TYPE	SEER	CFM	VOLTS	PHASE	FLA	MCA	REMARKS	NOTES
			TC MBH	SC MBH	EAT DB	EAT WB	LAT DB	LAT WB	MBH	EAT	LAT									
DS–1	ELECTRICAL/CONTROL ROOM	R–410A	12	11	80	67	58	57	14.4	68	101	WALL	23.1	399	208–230	1	0.76	1	MITSUBISHI MSZ–GL12NA–U1 OR EQUIVALENT	1

NOTES:
1. USE MANUFACTURER RECOMMENDED REFRIGERANT TUBING. INSULATE SUCTION & LIQUID LINES. PROVIDE PVC JACKETS.

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02–19

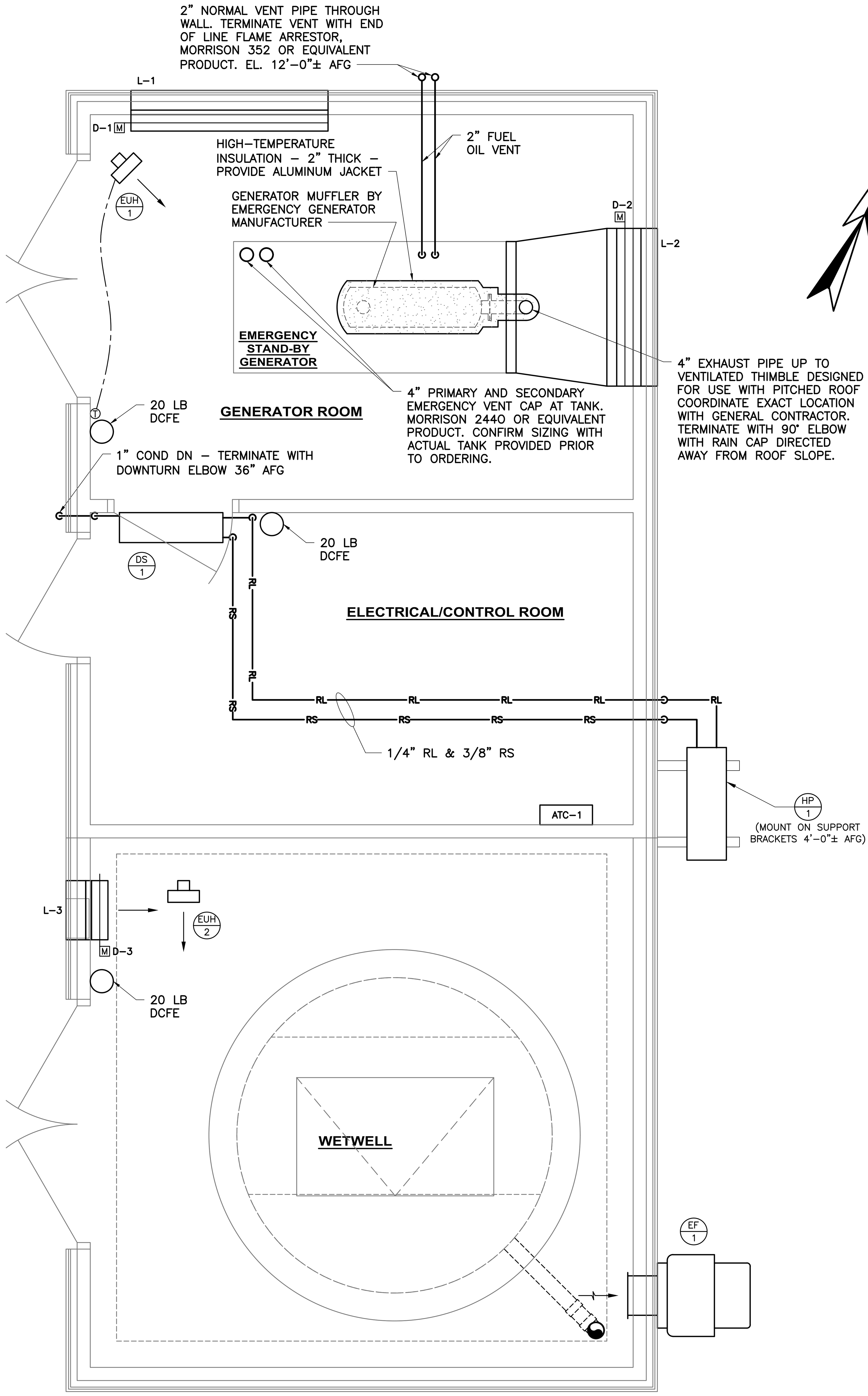
DESIGNED BY: RTG
CAD COORD: BACS
CAD: RTG
CHECKED BY: NSB
DATE: 08–18
APPROVED BY: NSB
DATE: 09–18
PROJECT NO. 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

MECHANICAL NOTES, ABBREVIATIONS, DESIGN CONDITIONS, SCHEDULES, & DETAILS

DRAWING
M–1



CIDER MILL PUMP STATION MODIFICATION PLAN

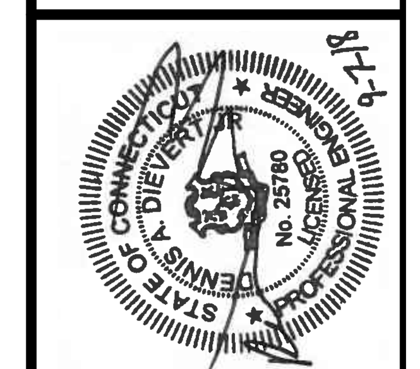
SCALE: 1/2" = 1'-0"

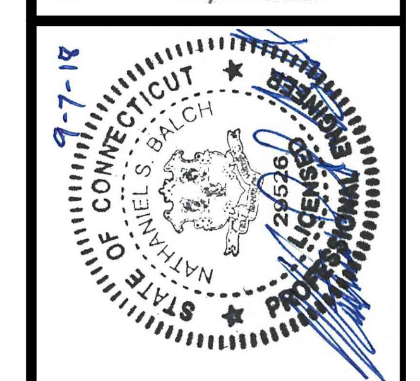
LEGEND

- PIPE TURNING DOWN
- PIPE TURNING UP
- PIPE TEE DOWN
- PIPE TEE UP
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- T — THERMOSTAT
- ATC-# — AUTOMATIC TEMPERATURE CONTROL PANEL
- EQ # — EQUIPMENT DESIGNATION PER SCHEDULE / EQUIPMENT SEQUENCE NUMBER
- INSULATED DUCTWORK
- UNIT HEATER (UH)
- M — MOTOR OPERATED DAMPER (MOD)

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: RTG
CAD COORD: BACS
CAD: RTG
CHECKED BY: NSB
DATE: 08-18
APPROVED BY: NSB
DATE: 09-18
PROJECT NO. 13773





WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

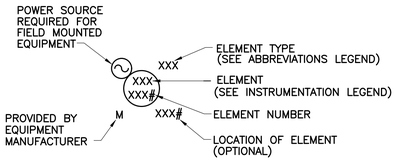
MECHANICAL PLAN & LEGEND

DRAWING
M-2

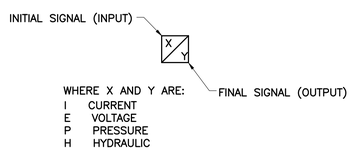
INSTRUMENTATION SYMBOL LEGEND

PROPOSED	DESCRIPTION	EXISTING	DESCRIPTION
	PROCESS FLOW		
	ELECTRICAL POWER OR PROCESS CONNECTION		ELECTRICAL POWER OR PROCESS CONNECTION
	ELECTRICAL SIGNAL		ELECTRICAL SIGNAL
	DATA LINK		DATA LINK
I/O	PLC INPUT/OUTPUT	I/O	PLC INPUT/OUTPUT
	PNEUMATIC SIGNAL		PNEUMATIC SIGNAL
	HYDRAULIC SIGNAL		HYDRAULIC SIGNAL
I/O	DISCRETE OUTPUT SIGNAL	I/O	DISCRETE OUTPUT SIGNAL
I/O	ANALOG OUTPUT SIGNAL	I/O	ANALOG OUTPUT SIGNAL
I/O	DISCRETE INPUT SIGNAL	I/O	DISCRETE INPUT SIGNAL
I/O	ANALOG INPUT SIGNAL	I/O	ANALOG INPUT SIGNAL
I XX# (INTERLOCK I.D. NUMBER)	HARDWIRE INTERLOCK	I XX# (INTERLOCK I.D. NUMBER)	INTERLOCK
	PROGRAMMABLE LOGIC CONTROLLER		PROGRAMMABLE LOGIC CONTROLLER
	OPERATOR TERMINAL INTERFACE		OPERATOR TERMINAL INTERFACE
	CONTROLLER		CONTROLLER
	LOCAL(FIELD MOUNTED)		LOCAL(FIELD MOUNTED)
	FRONT PANEL MOUNTED		FRONT PANEL MOUNTED
	REAR PANEL MOUNTED		REAR PANEL MOUNTED
	INTEGRAL EQUIPMENT		INTEGRAL EQUIPMENT
X/Y	SIGNAL SPLITTER CONVERTER/ BOOSTER (SEE BELOW)	X/Y	SIGNAL SPLITTER CONVERTER/ BOOSTER (SEE BELOW)
M	MOTOR	M	MOTOR
	ALARM/ STATUS LIGHT		ALARM/ STATUS LIGHT

TYPICAL INSTRUMENTATION SYMBOL



TYPICAL SIGNAL CONVERTER SYMBOL



* ALSO USED AS A MODIFIER AFTER FIRST LETTER (i.e. PDIT: PRESSURE DIFFERENTIAL INDICATING TRANSMITTER)

** ALSO USED AS A MODIFIER AFTER LAST LETTER (i.e. LSHH: LEVEL SWITCH HIGH HIGH)

INSTRUMENTATION LEGEND

FIRST LETTER		SUCCEEDING LETTER	
1		2	3
A	ANALYSIS	ALARM	--
B	--	--	--
C	CONTROL	CONTROL	CONTROL
D	DIFFERENTIAL*	DETECT	--
E	--	ELEMENT	--
F	FLOW	--	--
G	GAS	GLASS	GLASS
H	HAND (MANUAL)	--	HIGH**
I	CURRENT	INDICATE	INDICATE
J	POWER	--	--
K	TIME*	--	--
L	LEVEL	LIGHT	LOW**
M	MOTOR	--	INTERMEDIATE
P	PRESSURE	--	--
Q	QUANTITY OR TOTALIZE*	QUANTITY	--
R	RADIATION	RECORD	RECORD
S	SPEED OR FREQUENCY	SWITCH	SIGNAL
T	TEMPERATURE	TRANSMIT	TRANSMIT
V	VIBRATION	VALVE	VALVE
W	TORQUE, WEIGHT, FORCE	--	--
X	--	--	--
Y	STATUS	RELAY, COMPUTE, OR CONVERT	RELAY, COMPUTE, OR CONVERT
Z	POSITION	--	--

ABBREVIATIONS LEGEND

ADM	ADMITTANCE
CAP	CAPACITANCE
CL	CHLORINE
CP	CONTROL PANEL
DO	DISSOLVED OXYGEN
ESTOP	EMERGENCY STOP
FOR	FORWARD-OFF-REVERSE
FSR	FORWARD-STOP-REVERSE
FRSA	FORWARD-STOP-REVERSE-AUTO
HOA	HAND-OFF-AUTO
I	CURRENT
INF	INFLUENT
ISB	INTRINSIC SAFETY BARRIER
ISR	INTRINSIC SAFETY RELAY
LOE	LOSS OF ECHO
LOR	LOCAL-OFF-REMOTE
MES	MANAGED ETHERNET SWITCH
MCC	MOTOR CONTROL CENTER
OCR	OPEN-CLOSE-REMOTE
OIT	OPERATOR INTERFACE TERMINAL
OPT	OPERATOR TERMINAL
PLC	PROGRAMMABLE LOGIC CONTROLLER
RESET	ALARM RESET
ROL	RAISE OFF LOWER
ROR	RUN-OFF-REMOTE
SCR	SPEED CONTROL RECTIFIER
TURB	TURBIDITY
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
ULT	ULTRASONIC
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE

EQUIPMENT SYMBOL LEGEND

PROPOSED	DESCRIPTION	EXISTING
	PUMP	
	CHEMICAL FEED PUMP	
	GRINDER	
	PRESSURE SAFETY VALVE	
	POSITIVE DISPLACEMENT BLOWER	
	CENTRIFUGAL BLOWER	
	FLOAT SWITCH	
	CAPACITANCE OR ADMITTANCE TYPE PROBE	
	PADDLE OR LEVER TYPE PROBE	
	GENERAL VALVE	
P	PINCH VALVE	P
	BALL VALVE	
	PLUG VALVE	
	BUTTERFLY VALVE	
	NEEDLE VALVE	
	CHECK VALVE	
	KNIFE GATE VALVE	
	SLUICE GATE	
	TURBINE METER	
	ORIFICE FLOW METER	
	VENTURI	
	ULTRASONIC TRANSDUCER	

CONTROL LOOPS

LOOP NO.	DESCRIPTION	DWG. NO.
100	WET WELL LEVEL	I-2
110, 111	SUBMERSIBLE PUMPS	I-2
120	FLOW METERING	I-2
180	GENERATOR MONITORING	I-2
190	BUILDING TEMPERATURE MONITORING	I-2

EQUIPMENT SYMBOL LEGEND CONT'D

PROPOSED	DESCRIPTION	EXISTING
	WEIR	
	FLUME	
	PITOT TUBE	
	AVERAGING PITOT TUBE	
M	MAGNETIC FLOW METER	M
	SONIC FLOW METER	
	PRESSURE TRANSDUCER	
	HORN	
	BACKPRESSURE REGULATOR	
	PRESSURE REDUCING REGULATOR	
	DIAPHRAGM SEAL	
	SPRING OR WEIGHT RELIEF VALVE	
	DIAPHRAGM	
M	MOTOR OPERATED	M
S	SOLENOID	S
	PNEUMATIC/ HYDRAULIC CYLINDER	
	HAND ACTUATOR	
	BUBBLE LIQUID LEVEL ELEMENT	

INDICATOR LIGHT COLOR LEGEND

RUN	RED
STOP	GREEN
WARNING	AMBER
ALARM	RED
POWER	WHITE

NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PROVIDE SIGNAL REPEATERS/CONVERTERS/BOOSTERS AS REQUIRED BASED UPON EQUIPMENT SELECTED BY INSTRUMENTATION SUPPLIER, DISTANCE AND LOCATION.
3. PROVIDE DRIP SHIELDS TO PROTECT ALL PANELS LOCATED UNDERNEATH PIPES OR OTHER LIQUID-CONTAINING STRUCTURES.
4. REFERENCE PROCESS AND ELECTRICAL DRAWINGS FOR LOCATION OF PANELS AND FIELD INSTRUMENTATION.
5. REFER TO SPECIFICATION SECTION 13440 AND 13441 FOR ADDITIONAL INFORMATION REGARDING INSTRUMENTATION.
6. THE CONTRACTOR WILL PROVIDE AND INSTALL 10% SPARE INSTRUMENTATION WIRES WITH A LIMIT OF TWO SPARES PER CONDUIT UP TO THE LIMIT OF CONDUIT FILL AS SPECIFIED BY NEC.
7. CONTRACTOR TO COORDINATE NEEDED VOLTAGE BASED UPON EQUIPMENT SUPPLIED.
8. ALL FLOOR MOUNTED CONTROL PANELS SHALL BE INSTALLED ON 4" HIGH CONCRETE EQUIPMENT PADS.
9. WHERE INPUT AND OUTPUT SIGNALS TO A PLC IS REQUIRED, PROVIDE PROPER TYPE AND QUANTITY OF INPUT/OUTPUT MODULES (I/O).
10. CONTRACTOR SHALL COORDINATE THE TYPE OF ANALOG SIGNAL PROVIDED BY THE EQUIPMENT OR FIELD DEVICES WITH THE PROPER TYPE PLC I/O.
11. ALL ANALOG SIGNALS WILL BE 4-20 mA DC, UNLESS OTHERWISE INDICATED OR REQUIRED.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

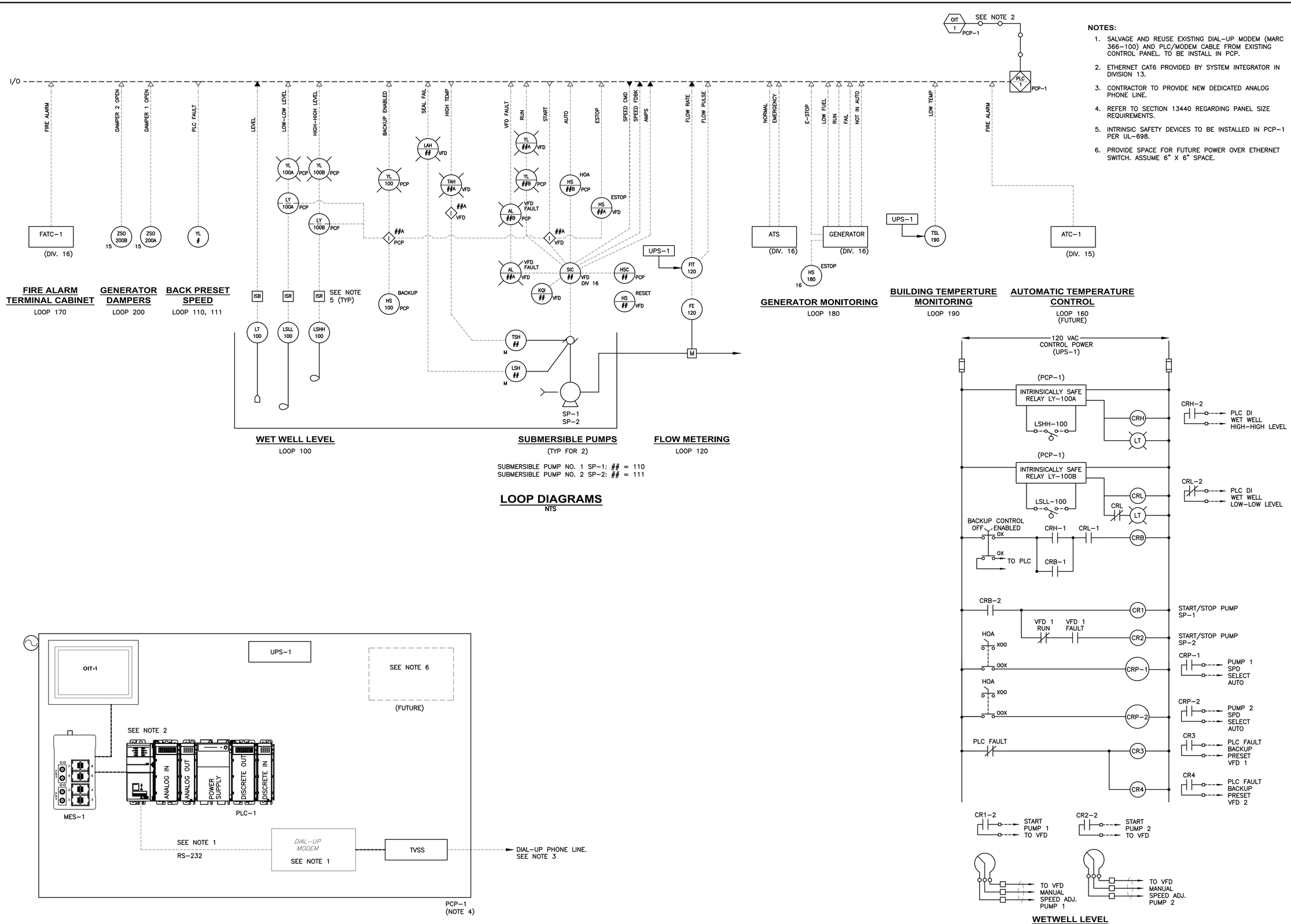
DESIGNED BY: JP
CAD COORD: BACS
CAD: SJM
CHECKED BY: PJD
DATE: 08-18
APPROVED BY: JP
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

INSTRUMENTATION NOTES, LEGENDS AND ABBREVIATIONS

DRAWING
I-1



SUBMERSIBLE PUMP NO. 1 SP-1: ## = 110
SUBMERSIBLE PUMP NO. 2 SP-2: ## = 111

LOOP DIAGRAMS
NTS

NOTES:

1. SALVAGE AND REUSE EXISTING DIAL-UP MODEM (MARC 366-100) AND PLC/MODEM CABLE FROM EXISTING CONTROL PANEL. TO BE INSTALL IN PCP.
2. ETHERNET CAT6 PROVIDED BY SYSTEM INTEGRATOR IN DIVISION 13.
3. CONTRACTOR TO PROVIDE NEW DEDICATED ANALOG PHONE LINE.
4. REFER TO SECTION 13440 REGARDING PANEL SIZE REQUIREMENTS.
5. INTRINSIC SAFETY DEVICES TO BE INSTALLED IN PCP-1 PER UL-698.
6. PROVIDE SPACE FOR FUTURE POWER OVER ETHERNET SWITCH. ASSUME 6" X 6" SPACE.

NETWORK DIAGRAM
NTS

WETWELL LEVEL BACKUP AND INTERLOCKS
(PUMP CONTROL PANEL)
(PCP-1)

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: JP
CAD COORD: BACS
CAD: SJM
CHECKED BY: PJD
DATE: 09-18
APPROVED BY: JP
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

INSTRUMETATION LOOP DIAGRAMS

DRAWING
I-2

POWER

	DESCRIPTION
200/3	UNFUSED SAFETY SWITCH, RATING AS NOTED POLES AMPERES
30/15/3	FUSED SAFETY SWITCH, RATING AS NOTED POLES FUSE AMPERE RATING SWITCH AMPERE RATING
1	MAGNETIC MOTOR STARTER, RATING AS NOTED NEMA SIZE
	COMBINATION TYPE MAGNETIC MOTOR STARTER, RATING AS NOTED
	PUSHBUTTON OR SELECTOR SWITCH STATION
	MAINTAINED RED MUSHROOM-HEAD EMERGENCY STOP P.B.
	SOLENOID
R	RELAY
MOD	MOTOR OPERATED DAMPER
C	LIGHTING OR POWER CONTACTOR
CB	ENCLOSED CIRCUIT BREAKER
T	THERMOSTAT C — COOLING ONLY F — FREEZESTAT D — DUCT-MOUNTED
	UTILITY METER
	PANELBOARD, SURFACE MTD.
	PANELBOARD, FLUSH MTD.
	EQUIPMENT, TERMINAL, OR CONTROL CABINET
	MOTOR
T	TRANSFORMER
	PAD MOUNTED TRANSFORMER
EWH	ELECTRIC WATER HEATER
H	ELECTRICAL HANDHOLE
J J	JUNCTION BOX
PS	PRESSURE SWITCH
E	ELECTRIC ACTUATED VALVE
P	PHOTOELECTRIC CELL
MS	MANUAL MOTOR STARTER
FI	FIROMATIC SWITCH
EMH (P) (C/S)	ELECTRICAL MANHOLE = POWER = CONTROL/SIGNAL

GROUNDING

	DESCRIPTION
	GROUND ROD
	EXOTHERMIC WELD CONNECTION
	BOLTED CONNECTION
G	BARE COPPER CONDUCTOR RUN EXPOSED
G	BARE COPPER CONDUCTOR EMBEDDED IN CONCRETE OR BURIED

NOTE:
1. ALL SYMBOL LISTS SHALL BE CONSIDERED AS APPLICABLE TO ALL ELECTRICAL DRAWINGS FOR THIS PROJECT. SYMBOLS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION IN THE DESIGN.

SINGLE LINE DIAGRAM

	DESCRIPTION
	SAFETY DISCONNECT SWITCH
	TRANSFORMER
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER
100AF 70AT	CIRCUIT BREAKER FRAME SIZE TRIP AMPS
	SURGE CAPACITOR
	LIGHTNING ARRESTER
	COMBINATION MOTOR STARTER AND BREAKER
	AUTOTRANSFORMER-TYPE MOTOR STARTER
	REVERSING MOTOR STARTER
	TWO-SPEED TWO-WINDING MOTOR STARTER
	REDUCED VOLTAGE SOLID-STATE MOTOR STARTER
	DELTA CONNECTION
	WYE CONNECTION
	GROUND CONNECTION
5	MOTOR (HP AS SHOWN)
	GENERATOR
N E	TRANSFER SWITCH
ES	EMERGENCY STOP MUSHROOM SWITCH (RED)
SPD	SURGE PROTECTION DEVICE
A	METER A — AMMETER V — VOLTMETER W — WATTMETER WH — WATT HOURMETER KWH — KILOWATT HOUR VAR — VAR METER HZ — FREQUENCY METER PF — POWER FACTOR METER

LIGHTING FIXTURES

	DESCRIPTION
Ma,#3	FLUORESCENT FIXTURE, 2x4 SURFACE TROFFER TYPE FIXTURE (M) SWITCH (a) CIRCUIT (3)
	FLUORESCENT FIXTURE, STRIP, OPEN REFLECTOR, ENCLOSED OR WRAPAROUND TYPE
	INCANDESCENT WALL MOUNTED FIXTURE
	INCANDESCENT CEILING FIXTURE
	INCANDESCENT LIGHT WITH GLOBE AND GUARD
	H.I.D. WALL MOUNTED FIXTURE
	H.I.D. CEILING FIXTURE
	EXIT SIGN, CEILING MOUNTED ARROW INDICATES EGRESS DIRECTION SHADING INDICATES SIGN FACE
	EXIT SIGN, WALL MOUNTED SHADING INDICATES SIGN FACE
	EMERGENCY LIGHTING BATTERY UNIT WITH 2 LAMP HEADS
	REMOTE EMERGENCY LIGHTING 1 OR 2 LAMP HEADS
	POLE MOUNTED SITE LIGHT

SCHEMATIC DIAGRAM

	DESCRIPTION
MS	MANUAL MOTOR STARTER, O/L, RIL FRACTIONAL H.P.
CR	CONTROL RELAY
M	MOTOR CONTACTOR
	CONTACT NORMALLY OPEN
	CONTACT NORMALLY CLOSED
	OVERLOAD HEATER ELEMENT
	SINGLE POLE SINGLE THROW SWITCH
	SELECTOR SWITCH
	START PUSHBUTTON, MOMENTARY CONTACT
	STOP PUSHBUTTON, MOMENTARY CONTACT
	RED MUSHROOM-HEAD MAINTAINED-TYPE EMERGENCY STOP PUSHBUTTON
	LIMIT SWITCH
	TEMPERATURE SWITCH
	FLOAT SWITCH
	PRESSURE SWITCH
	TIMED CONTACT
R	PILOT LIGHT, LETTER INDICATES COLOR G — GREEN R — RED A — AMBER
	FUSE
	CONNECTION POINT FOR EXTERNAL DEVICE
	INTERNAL CONNECTION POINT

FIRE ALARM SYSTEM

	DESCRIPTION
F	MANUAL PULL STATION
F	AUDIO/VISUAL ALARM STATION (ADA COMPLIANT)
L	VISUAL ALARM (ADA COMPLIANT)
S	SMOKE DETECTOR
H 135°	HEAT DETECTOR TEMP RATING
SD	DUCT-MOUNTED SMOKE DETECTOR, REMOTE ALARM & TEST
FACP	FIRE ALARM SYSTEM CONTROL PANEL
TS	SPRINKLER SYSTEM TAMPER SWITCH
FAA	FIRE ALARM ANNUNCIATOR
FS	SPRINKLER SYSTEM FLOW SWITCH
FRPS	FIRE ALARM REMOTE POWER SUPPLY
MM	FIRE ALARM SYSTEM "MONITOR MODULE"
FIM	FAULT ISOLATING MODULE
TS	REMOTE TEST STATION
ILCP	INTEGRAL LIGHTNING CIRCUIT PROTECTOR

TELEPHONE/PAGING/INTERCOM SYSTEM

	DESCRIPTION
S	PAGING SPEAKER, CEILING MTD.
	PAGING HORN, WALL MTD.
	TELEPHONE OUTLET RJ11
TD	TELEPHONE RJ11/DATA RJ45
W	WALL MOUNTED
HS	PAGING HANDSET, WALL MOUNTED

WIRING DEVICES

	DESCRIPTION
	20 AMPERE, 120 VOLT DUPLEX RECEPTACLE
	GFI 20 AMPERE, 120 VOLT DUPLEX RECEPTACLE
+48"	INDICATES INCHES AFF MOUNTING HEIGHT
WP	WEATHERPROOF
IG	ISOLATED GROUND
CTR	COUNTER TOP
	20 AMPERE, 120 VOLT QUAD RECEPTACLE
	20 AMPERE, 120 VOLT SINGLE RECEPTACLE
	CLOCK OUTLET
30	SINGLE SPECIAL PURPOSE RECEPTACLE INDICATES AMPERE SIZE
	PLUGMOLD
S	SINGLE POLE WALL SWITCH
DP	DOUBLE POLE SWITCH
3	THREE WAY SWITCH
4	FOUR WAY SWITCH
P	NEON PILOT LIGHT
WP	WEATHERPROOF
K	KEY OPERATED
EP	EXPLOSION PROOF
D	DIMMER SWITCH
T	MOTOR RATED
EM	EMERGENCY SHUT-OFF

WIRING

	DESCRIPTION
	WIRING, CONCEALED IN FINISHED AREAS, EXPOSED WHERE PERMITTED BY SPECIFICATIONS
- - - - -	WIRING INSTALLED IN OR BELOW FLOOR SLAB
EBU-XX	HOME RUN TO DEVICE (EBU, ATC, ETC.)
P101	HOME RUN (NO. REFERS TO CONDUIT AND WIRE SCHEDULE)
DC	DC WIRING
3C#12 W/GND, .75"C	CONDUIT AND WIRE
	CONDUIT DOWN
	CONDUIT UP
#XX	INDICATES THE CIRCUIT # OF THE RESPECTIVE PANELBOARD REFERENCED. SEE GENERAL NOTES 6 AND 26 FOR CONDUIT AND WIRING REQUIREMENTS

SECURITY SYSTEM

	DESCRIPTION
SACP	SECURITY ALARM CONTROL PANEL
K WP	SECURITY SYSTEM FUNCTION KEYPAD WEATHERPROOF
D OH	DOOR CONTACT OVERHEAD DOOR TYPE
W	GLASS BREAK CONTACT, GLASS MOUNTED TYPE
IR A	INFRARED INTRUDER SENSOR
G A	AREA GLASS BREAK DETECTOR

NEMA CLASSIFICATIONS FOR ELECTRICAL EQUIPMENT AND ENCLOSURES

(UNLESS OTHERWISE NOTED – SEE NOTE BELOW)

ROOM NO.	ROOM NAME	NEMA RATING
PUMP STATION		
	GENERATOR ROOM	12
	ELECTRICAL/CONTROL ROOM	12
	PUMP ROOM	7, (CL I, DIV 1 GR C&D)
WETWELL		7, (CL I, DIV 1, GR C&D)
GENERAL OUTDOOR		4X

NOTE:

THE AREAS NOTED SHALL BE RATED AS INDICATED, EXCEPT THAT EQUIPMENT SUCH AS MOTOR CONTROL CENTERS, SWITCHBOARDS, AND TRANSFORMERS SHALL BE RATED AS SPECIFIED. PANELBOARDS AND TRANSFORMERS SHALL BE, AT A MINIMUM, RATED NEMA 12 IF NOT SPECIFIED.

** CONDUIT INSTALLATION SCHEDULE

AREA NEMA RATING PER E-1	CONDUIT REQUIRED IN EXPOSED AREAS	CONDUIT REQUIRED IN NON EXPOSED AREAS	CONDUITS EMERGING FROM GRADE OR SLAB 12" AFF
12	ALUMINUM	EMT	RGS PVC COATED
3R	ALUMINUM	RGS	RGS PVC COATED
4	ALUMINUM	RGS	RGS PVC COATED
4X	ALUMINUM	RGS	RGS PVC COATED
4X CORROSIVE	RGS PVC COATED	RGS	RGS PVC COATED
7	RGS PVC COATED	RGS	RGS PVC COATED
* IN CONCRETE SLAB	N/A	PVC SCHEDULE 40	RGS PVC COATED
* BELOW GRADE DUCT ENCASED IN CONCRETE	N/A	PVC SCHEDULE 40	RGS PVC COATED
* BELOW GRADE DUCT NON ENCASED	N/A	PVC SCHEDULE 80	RGS PVC COATED

** SEE SPECIFICATIONS FOR FURTHER INFORMATION
* SIGNAL CONDUITS BELOW GRADE SHALL BE RGS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

STATE OF CONNECTICUT DENNIS A. SCHULTZ No. 25190 REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL LEGEND AND NEMA SCHEDULE

DRAWING
E-1

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
ACR	CONTROL RELAY "A" (TYP)
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AI	ANALOG INPUT (PLC)
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AO	ANALOG OUTPUT (PLC)
ASYM	ASYMMETRICAL
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
BKR	BREAKER
BOS	BOTTOM OF STEEL
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCF	CARBON CANISTER FILTER
CI	CONTROL INTERLOCK
CKT	CIRCUIT
CP	CONTROL PANEL
CR	CONTROL RELAY
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER
DB	DIRECT BURIED
DBH	DIESEL BLOCK HEATER
DC	DIRECT CURRENT
DI	DIGITAL INPUT (PLC)
DISC	DISCONNECT
DN	DOWN
DO	DIGITAL OUTPUT (PLC)
EBU	EMERGENCY BATTERY UNIT
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EH	ELECTRICALLY HELD
EHH	ELECTRICAL HANDHOLE
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EO	ELECTRICALLY OPERATED
EP	EXPLOSION PROOF CL I DIV 1 GR D
EPR	ETHYLENE PROPYLENE RUBBER
EQUIP	EQUIPMENT
ES	EMERGENCY STOP
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXTERIOR
EXIT	EXISTING
F	FIELD
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FC	FOOTCANDLE
FE	FLOW ELEMENT
FIT	FLOW INDICATOR TRANSMITTER
FLUOR	FLUORESCENT
FNR	FORWARD NEUTRAL REVERSE
FS	FLOW SWITCH
FTR	FIN TUBE RADIATOR
FU	FUSE
FWE	FURNISHED WITH EQUIPMENT
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
GF	GROUND FAULT
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HIT	HIGH INTENSITY TUNGSTEN
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING VENTILATING AIR CONDITIONING
HWV	HOT WATER VALVE
HZ	HERTZ
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
ISR	INTRINSICALLY SAFE RELAY
JB	JUNCTION BOX
K	KILO
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
L	LOCAL
LA	LIGHTNING ARRESTER
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LE	LEVEL ELEMENT
LI	LEVEL INDICATOR
LIT	LEVEL INDICATOR TRANSMITTER
LP	LIGHTING PANEL
LPS	LOW PRESSURE SODIUM
LSW	LIGHT SWITCH
LS	LEVEL SWITCH L=LOW, H=HIGH, LL=LOW LOW, HH=HIGH HIGH
LT	LEVEL TRANSMITTER
LTG	LIGHTING
LV	LOW VOLTAGE
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MI	MINERAL INSULATED
MH	MANHOLE
MLO	MAIN LUG ONLY
MO	MECHANICALLY OPERATED
MOD	MOTOR OPERATED DAMPER
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MVA	MEGAVOLT-AMPERE
MV	MEDIUM VOLTAGE
NC	NORMALLY CLOSED
NEG	NEGATIVE
NEU	NEUTRAL
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OEM	FURNISHED BY MANUFACTURER
OH	OVERHEAD
OL	OVERLOAD
OOA	ON-OFF-AUTOMATIC
OSY	OUTSIDE STEM AND YOKE VALVE (FA SYSTEM)
P	POLE
PB	PUSHBUTTON
PC	PERSONAL COMPUTER
PE	PRESSURE ELEMENT
PF	POWER FACTOR
PH	PHASE
PIT	PRESSURE INDICATOR TRANSMITTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PT	PRESSURE TRANSMITTER
PVC	POLYVINYL CHLORIDE
QI	LOAD KW INDICATOR
R	REMOTE
RGS	RIGID GALVANIZED STEEL CONDUIT
RIL	RED INDICATING LIGHT (TYP) B=BLUE, G=GREEN, A=AMBER
RSC	RIGID STEEL CONDUIT
RTD	RESISTANCE TEMPERATURE DETECTOR
RVSS	REDUCED VOLTAGE SOLID STATE
S	SURFACE
SEC	SECONDARY
SF	SUPPLY FAN
SHLD	SHIELDED CABLE
SI	SPEED INDICATOR
SN	SOLID NEUTRAL
SP	SPARE
SPD	SURGE PROTECTIVE DEVICE
SS	SURGE SUPPRESSOR
STP	SHIELDED TWISTED PAIR
STT	SHIELDED TWISTED TRIPLET
SV3	3 WAY VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
T	TRANSFORMER
TB	TERMINAL BLOCKS
TOS	TOP OF STEEL
TS	THERMOSTAT
TC	COOLING THERMOSTAT
TD	TEL DIALER
TDR	TIME DELAY RELAY
TE	TEMPERATURE ELEMENT
TEL	TELEPHONE
TF	FREEZE STAT
TH	HUMIDISTAT
TIT	TEMPERATURE INDICATING TRANSMITTER
TL	TEMPERATURE LOW
TOA	THERMOSTAT OUTSIDE AIR
TRANSF	TRANSFORMER
TS	THERMOSTAT
TS	TEMPERATURE SWITCH
TWS	TWISTED SHIELDED CABLE
UG	UNDERGROUND
UH	UNIT HEATER
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT-AMPERE
VAR	VOLT-AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VPS	VACUUM PRESSURE SWITCH
W	WIRE
WH	WATT HOUR
WM	WATT METER
WP	WEATHERPROOF
XLP	CROSS LINKED POLYETHYLENE
XFMR	TRANSFORMER
ZSC	LIMIT SWITCH CLOSED
ZSO	LIMIT SWITCH OPEN

NOTE:

1. ALL GENERAL NOTES, AND ABBREVIATIONS SHALL BE CONSIDERED AS APPLICABLE TO ALL ELECTRICAL DRAWINGS FOR THIS PROJECT. ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION IN THE DESIGN.

GENERAL DEMOLITION NOTES:

1. THE EXISTING ELECTRICAL DRAWINGS FOR THIS PROJECT ARE BASED ON INFORMATION PRESENTED IN THE AS-BUILT CONTRACT DRAWINGS PROVIDED FOR THIS PROJECT. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. FIELD VERIFY ALL CONDITIONS AFFECTING THE WORK PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. PROTECT ALL EXISTING ITEMS AND EQUIPMENT ADJACENT TO THE WORK AREA. ALL EXISTING ITEMS, EQUIPMENT AND MATERIALS DAMAGED OR AFFECTED BY THE WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
4. THE EXISTING PUMP STATION WILL REMAIN IN OPERATION DURING THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR WILL COORDINATE THE DEMOLITION AND CONSTRUCTION WITH THE OWNER'S REQUIREMENTS TO MAINTAIN PUMP STATION OPERATION. REFER TO THE SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.
5. PROVIDE ALL TEMPORARY BRACING REQUIRED AND SUPPORT ALL ITEMS AND EQUIPMENT MOUNTED TO THE WALLS WHICH ARE DESIGNATED TO BE REMOVED. REINSTALL ALL ITEMS AFTER THE NEW WALLS ARE COMPLETED.
6. PATCH, REPAIR AND REFINISH ALL EXISTING SURFACES AFFECTED BY THE WORK, TO THE SATISFACTION OF THE ENGINEER.
7. REMOVE, REINSTALL OR REPLACE ALL MISCELLANEOUS ITEMS MOUNTED TO THE WALLS DESIGNATED TO BE REMOVED OR RENOVATED.
8. ALL ITEMS SHOWN ON THE PLANS WITH SHADING ARE TO BE REMOVED AND DISPOSED OF, UNLESS OTHERWISE INDICATED. THIS SHALL INCLUDE ALL ASSOCIATED CONDUIT, WIRING, BOXES, DEVICES, CONTROLS, ETC. FOR A COMPLETE DEMOLITION, UNLESS OTHERWISE NOTED. THE OWNER RESERVES THE RIGHT TO RETAIN ANY EQUIPMENT OR MATERIALS. THE CONTRACTOR WILL STORE ON SITE AND PROTECT SUCH ITEMS IN A MANNER ACCEPTABLE TO THE OWNER AND ENGINEER. ALSO REFER TO THE STRUCTURAL, MECHANICAL, PROCESS AND ELECTRICAL DRAWINGS FOR A COMPLETE REQUIREMENT OF DEMOLITION WORK FOR THIS PROJECT.
9. ALL ELECTRICAL EQUIPMENT TO REMAIN WHICH IS FED FROM PANELBOARDS OR EQUIPMENT DESIGNATED AS BEING REMOVED OR RELOCATED, SHALL REMAIN AND BE REWIRED FROM NEW OR RELOCATED PANELBOARDS OR EQUIPMENT AS NOTED ON THE MODIFIED DRAWINGS OR AS REQUIRED BY THE INTENDED OVERALL DEMOLITION OF THIS WORK. REMOVE EXISTING CONDUIT AND WIRING FROM THE APPLICABLE EXISTING PANELBOARD OR EQUIPMENT BACK TO THE CIRCUITS NEAREST PULLBOX, CONTROLLING DEVICE OR FIXTURE LOCATED OUTSIDE THE AREA BEING DEMOLISHED AND RE-FEED AS NOTED ON THE MODIFIED DRAWINGS. RE-FEED THE EXISTING EQUIPMENT WITH NEW CONDUIT AND WIRING FOR A COMPLETE INSTALLATION. SPLICING OF WIRING SHALL NOT BE ALLOWED.
10. THE EXISTING PANELBOARD CIRCUIT DESCRIPTIONS SHOWN WERE TAKEN FROM EXISTING PANELBOARD DIRECTORIES OBTAINED IN THE FIELD AND/OR BY EXISTING RECORD DRAWING PANELBOARD SCHEDULES. THE ACCURACY OF THESE DESCRIPTIONS HAS NOT BEEN FIELD VERIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL CIRCUITRY, AS APPLICABLE FOR THIS PROJECT, ASSOCIATED WITH THE PANEL, AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

GENERAL NOTES

1. ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE CURRENT NATIONAL ELECTRICAL CODE.
2. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURES. CONDUITS SHALL BE CONCEALED IN WALLS, AND ABOVE ANY SUSPENDED CEILINGS WHERE APPLICABLE. EXPOSED CEILING CONDUITS SHALL BE PERMITTED WHERE SUSPENDED CEILINGS ARE NOT USED. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS. INSTALL CONDUITS CONCEALED WHEREVER AND WHENEVER POSSIBLE. ANY CONDUITS NOT INSTALLED IN THIS MANNER SHALL BE REMOVED AND RE-INSTALLED AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. CONDUITS SHALL BE PROPERLY TERMINATED WITH NEAT CONNECTIONS TO ALL ASSOCIATED EQUIPMENT.
4. CONTROL AND INSTRUMENTATION CONDUIT SIZES AND NUMBER OF CONDUCTORS ARE TO BE DETERMINED FROM SCHEMATIC DIAGRAMS, INSTRUMENTATION DIAGRAMS, AND/OR SPECIFICATIONS, IF NOT DIRECTLY SHOWN ON POWER PLANS. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL AND INSTRUMENTATION EQUIPMENT. MODIFICATIONS REVIEWED BY THE ENGINEER WITH NO EXCEPTIONS TAKEN, MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. EACH CONTROL AND INSTRUMENTATION CONDUIT SHALL ALSO CONTAIN 10 PER CENT SPARE CONDUCTORS, WITH A MINIMUM OF TWO SPARES, UP TO THE LIMIT OF CONDUIT FILL AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE. INSTRUMENTATION SHIELDED CABLES SHALL BE INSTALLED IN RGS CONDUIT. SEPARATE FROM OTHER POWER WIRING.
5. EACH CONDUIT TO CARRY GROUND WIRE(S) ACCORDING TO SPECIFICATION #16450, IN ADDITION TO NUMBER OF CONDUCTORS SHOWN ON DRAWINGS OR PER NOTE 4 ABOVE. ALL GROUNDING MUST CONFORM TO ARTICLE 250 OF CURRENT NATIONAL ELECTRICAL CODE.
6. MINIMUM CONDUIT SIZE SHALL BE 3/4" TRADE SIZE, UNLESS OTHERWISE NOTED ON THE ELECTRICAL DRAWINGS. GENERAL LIGHTING, RECEPTACLE AND HVAC POWER CIRCUITS MAY BE 1/2" TRADE SIZE CONDUIT INSTALLED PER NEC. MINIMUM POWER WIRING SHALL BE 2C#12 AWG WITH GROUND AND 2C#14 AWG FOR CONTROL. MINIMUM INSTRUMENTATION CABLE SHALL BE 2/C#16 AWG TWS AND 3C#16 AWG TWS FOR SPEED POTENTIOMETERS AND RTD'S. PROVIDE CONDUIT AND WIRING AS INDICATED.
7. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO FINISHED FLOOR SHALL NOT EXCEED 6'-6".
8. ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INSIDE OF EXTERIOR WALLS ABOVE GRADE, OR IN OTHER LOCATIONS CONSIDERED AS DAMP, SHALL BE MOUNTED TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
9. ELECTRICAL EQUIPMENT LOCATIONS ARE APPROXIMATE ONLY. COORDINATE EQUIPMENT LOCATIONS AND REQUIREMENTS WITH ALL TRADES BEING PROVIDED AS PART OF THE WORK OF THIS CONTRACT. CONTRACTOR SHALL COORDINATE MANUFACTURERS EQUIPMENT REQUIREMENTS WITH SPACE AVAILABLE. FINAL CONTROL PANEL LOCATIONS SHALL BE FIELD COORDINATED.
10. ALL FIELD CONTROL CONDUCTORS WILL TERMINATE AT INDIVIDUAL TERMINAL BLOCKS WITHIN THE CONTROL ENCLOSURE. SERIES AND PARALLEL CONNECTION OF FIELD CONTROL CONDUCTORS WILL BE MADE ONLY AT CONTROL PANEL OR MOTOR CONTROL CENTER TERMINAL BLOCKS.
11. GROUND ALL CONDUCTOR SHIELDS AT PANEL ONLY – DO NOT GROUND SHIELDS AT BOTH ENDS.
12. AT THE FOLLOWING LOCATIONS, UNLESS OTHERWISE NOTED, PULL, JUNCTION, TERMINAL, SWITCH, AND OUTLET BOXES SHALL BE CAST IRON WHERE STEEL CONDUIT IS TERMINATED; OR SHALL BE CAST ALUMINUM WHERE ALUMINUM CONDUIT IS TERMINATED:
    - A – AT LOCATIONS WHERE VAPOR-TIGHT LIGHTING FIXTURES AND/OR WATERTIGHT RECEPTACLES ARE INDICATED.
    - B – AT LOCATIONS ON OR IN ALL OUTSIDE WALLS.
    - C – OUTDOORS.
    - D – AS SPECIFIED.
    - E – REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
13. NAMEPLATES SHALL CONFORM STRICTLY TO INSTRUCTIONS IN THE ELECTRICAL SPECIFICATIONS AND ON THE DRAWINGS. THE FOLLOWING SHALL HAVE NAMEPLATES:
    - A – ALL MAIN BREAKERS AND TIE BREAKERS.
    - B – ALL COMPARTMENTS OF MOTOR CONTROL CENTERS EXCLUDING UNUSED COMPARTMENTS.
    - C – ALL LOCAL CONTROL STATIONS AT OR NEAR EQUIPMENT.
    - D – ALL PANELBOARDS.
    - E – GANGED LIGHT SWITCHES.
    - F – ALL ELECTRICAL EQUIPMENT AND DEVICES.
    - G – REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
14. PIPE SLEEVES FOR CONDUITS PASSING FROM NON-HAZARDOUS AREAS TO HAZARDOUS AREAS SHALL HAVE CAULKING APPLIED TO MAKE THE INSTALLATION GAS TIGHT. ALL CONDUITS SHALL BE PROVIDED WITH SEALING FITTINGS REQUIRED FOR THE INSTALLATION AND SHALL BE PROVIDED WITH SEALANT REQUIRED FOR SUCH FITTINGS AT BOTH ENDS FROM ONE RATED SPACE TO THE OTHER SPACE FOR A GAS TIGHT INSTALLATION.
15. COORDINATE ELECTRICAL DEVICES WITH EQUIPMENT BEING SUPPLIED UNDER OTHER DIVISIONS.
16. COORDINATE ELECTRICAL DEVICES WITH THE RESPECTIVE INSTALLATION AND THE REQUIREMENTS OF THIS CONTRACT.
17. CONTRACTOR SHALL PROVIDE ALL DISCONNECTS AND SERVICE RECEPTACLES FOR HVAC AS REQUIRED BY NEC.
18. CONTRACTOR SHALL PROVIDE ALL CONDUIT, WIRING, EQUIPMENT, AND CONTROL DEVICES AS INDICATED BY SCHEMATICS, SINGLE LINE DIAGRAMS, SCHEDULES, PLANS, SPECIFICATIONS, AND VENDOR DOCUMENTATION TO PROVIDE A COMPLETE WORKING SYSTEM. SINCE NOT ALL HOME RUNS ARE SHOWN ON PLANS, THE CONTRACTOR SHALL REFERENCE ALL SINGLE LINE AND SCHEMATIC DIAGRAMS, SCHEDULES, AND VENDOR DOCUMENTATION TO DETERMINE CONDUIT AND WIRING REQUIREMENTS.
19. PROVIDE CONDUIT FREEZE EXPANSION FITTINGS FOR ALL EXTERIOR CONDUIT SYSTEMS.
20. EXACT NUMBER, LOCATION, HORSEPOWER, VOLTAGE, AND PHASE OF ALL MOTORS AND DEVICES ASSOCIATED WITH THE ODOR CONTROL SYSTEM, CHEMICAL FEED SYSTEM, GRIT, SCREENING AND PLANT WATER, AND OTHER EQUIPMENT SYSTEMS AS APPLICABLE, PROVIDED UNDER THIS CONTRACT SHALL BE COORDINATED WITH THE ACTUAL EQUIPMENT SUPPLIER. CONDUIT AND WIRING TO BE PROVIDED SHALL BE ADJUSTED ACCORDINGLY AT NO ADDITIONAL COST TO THE OWNER.
21. PROVIDE CONCRETE HOUSEKEEPING PADS (4" HIGH) UNDER FLOOR MOUNTED ELECTRICAL AND INSTRUMENTATION EQUIPMENT. PROVIDE SUBMITTAL SKETCH FOR ENGINEER REVIEW.
22. COORDINATE ELECTRICAL EMBEDMENTS WITH STRUCTURAL.
23. CONTRACTOR SHALL PROVIDE A COMPLETE WORKING OPERATING SYSTEM IN ACCORDANCE WITH ALL DRAWINGS, SPECIFICATIONS, CODES AND STANDARDS.
24. THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL OF THE ELECTRICAL DRAWINGS AND CONDUIT AND WIRE SCHEDULES RELATIVE TO THE CONDUIT AND WIRE TO BE PROVIDED ON THIS PROJECT. THE INTENT OF THE CONTRACT DOCUMENTS IS TO PROVIDE DETAILED INFORMATION OF SPECIFIC INDIVIDUAL RUNS OF CONDUIT AND WIRE TO SPECIFIC EQUIPMENT. THE ELECTRICAL SUBCONTRACTOR IS DIRECTED TO COMBINE CONDUIT AND WIRE RUNS AS MUCH AS POSSIBLE, AS DEFINED IN SPECIFICATION SECTION FOR CONTROL AND SIGNAL RUNS ONLY. ALL POWER FEEDERS AND CONDUIT RUNS SHALL NOT BE ALLOWED TO BE COMBINED UNLESS OTHERWISE SHOWN OR NOTED. ELECTRICAL SUBCONTRACTOR IS DIRECTED TO USE THE MOST COST-EFFECTIVE CONDUIT AND WIRE RUNS CONSISTENT WITH THESE REQUIREMENTS.
25. 120V CIRCUITS EXCEEDING 100 FEET IN LENGTH SHALL BE NO 10 AWG WIRING, MINIMUM.
27. POWER CONDUITS FOR THREE PHASE AND SINGLE PHASE CIRCUITS (DESIGNATED WITH "P" NUMBERS) ARE SHOWN ON POWER PLANS, WITH CONDUIT SIZES AND WIRING INFORMATION INDICATED IN THE CONDUIT AND WIRE SCHEDULES.
28. CONTROL AND INSTRUMENTATION SIGNAL CONDUITS (DESIGNATED WITH "C" AND "S" NUMBERS OR, ALTERNATIVELY, INDICATED BY WAY OF A LEGEND) ARE SHOWN ON CONTROL AND INSTRUMENTATION WIRING DIAGRAMS, WITH CONDUIT SIZES AND WIRING INFORMATION INDICATED EITHER IN THE LEGEND OR IN CONDUIT AND WIRE SCHEDULES. THE CONTRACTOR SHALL NOTE THAT THE MAJORITY OF CONTROL AND INSTRUMENTATION SIGNAL CONDUITS AND WIRING REQUIRED FOR THIS CONTRACT IS INDICATED IN THE AFOREMENTIONED LEGEND AND DOES NOT APPEAR IN THE CONDUIT AND WIRE SCHEDULES. FOR INSTRUMENTS REQUIRING 120V POWER SUPPLIES, THIS INFORMATION IS ALSO SHOWN ON THE CONTROL AND INSTRUMENTATION WIRING DIAGRAMS.
29. CONTRACTOR SHALL LABEL EACH RESPECTIVE DISTRIBUTION PANEL, SWITCHBOARD OR MCC AND ANY ADDITIONAL ELECTRICAL EQUIPMENT AND CONTROL PANELS WITH THE FEEDER POWER CIRCUIT NAME AND LOCATION PER NEC REQUIREMENTS.
30. ALL PRIMARY FEEDER DISCONNECTS SERVING REMOTELY LOCATED TRANSFORMERS SHALL BE LOCKABLE. CONTRACTOR SHALL LABEL PRIMARY DISCONNECT LOCATION AT THE TRANSFORMER SERVED PER NEC REQUIREMENTS.

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

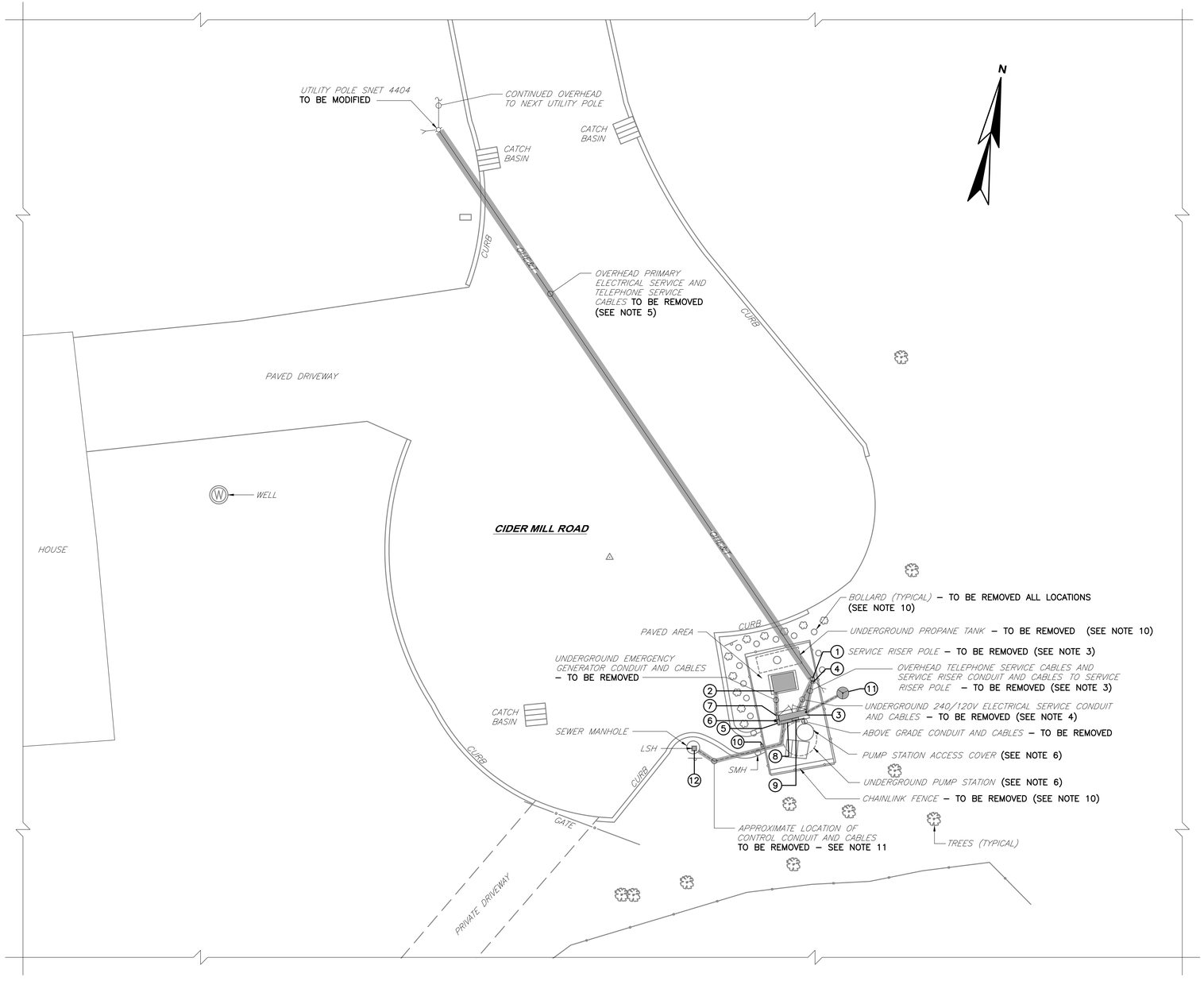
DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO. 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL ABBREVIATIONS AND NOTES

DRAWING
E-2



(1)
SEE NOTES THIS DRAWING

ELECTRICAL SITE PLAN DEMOLITION
SCALE: 1"=10'

EQUIPMENT LEGEND:

(1) *UTILITY COMPANY SERVICE RISER POLE* – TO BE REMOVED (SEE NOTE 3)

(2) *EMERGENCY STAND-BY GENERATOR* – TO BE REMOVED

(3) *ELECTRICAL EQUIPMENT ENCLOSURE* – TO BE REMOVED

(4) *POLE MOUNTED LIGHT FIXTURE* – TO BE REMOVED (SEE NOTE 8)

(5) *KILOWATT HOUR METER AND METER SOCKET* – TO BE REMOVED

(6) *PORTABLE EMERGENCY GENERATOR RECEPTACLE* – TO BE REMOVED

(7) *AUTOMATIC TRANSFER SWITCH* – TO BE REMOVED

(8) *SCADA CONTROL PANEL* – TO BE REMOVED (SEE NOTE 7)

(9) *CONTROL PULLBOX* – TO BE REMOVED

(10) *SECURITY PANEL* – TO BE REMOVED

(11) *GROUNDING SYSTEM* – TO BE REMOVED – SEE NOTE 9

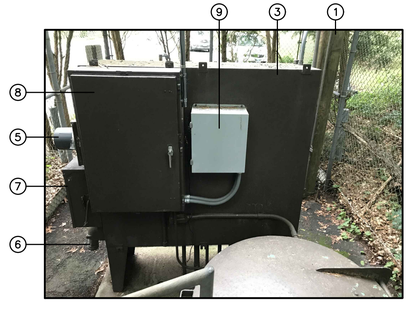
(12) *HIGH LEVEL FLOAT SWITCH LSH* – TO BE REMOVED (SEE NOTE 11)

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E-1 AND E-2.
2. FOR ELECTRICAL DEMOLITION REQUIREMENTS AT THE PUMP STATION REFER TO THE UNDERGROUND PUMP STATION DEMOLITION DRAWING.
3. DISCONNECT AND REMOVE THE EXISTING SERVICE RISER POLE, RISER CONDUITS, CABLES AND OVERHEAD AND UNDERGROUND CABLES, CONDUITS, ETC., AS REQUIRED FOR A COMPLETE DEMOLITION OF THE EXISTING ELECTRICAL AND TELEPHONE SERVICES TO THE PUMP STATION DISTRIBUTION EQUIPMENT. REFER TO THE DEMOLITION DRAWINGS FOR ADDITIONAL REQUIREMENTS. THE RESPECTIVE UTILITY COMPANY SHALL PROVIDE ALL CONNECTIONS AND MODIFICATIONS AS REQUIRED.
4. THE EXISTING UNDERGROUND SECONDARY ELECTRICAL SERVICE SHALL BE DISCONNECTED AND REMOVED FOR A COMPLETE DEMOLITION. THE CONTRACTOR SHALL DISCONNECT AND REMOVE THE EXISTING UNDERGROUND ELECTRICAL SERVICE CABLES, CONDUIT AND DUCT BANK IN THEIR ENTIRETY FOR A COMPLETE DEMOLITION.
5. THE EXISTING OVERHEAD ELECTRICAL AND TELEPHONE SERVICE CABLES SHALL BE DISCONNECTED, REMOVED AND REPLACED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANY FOR THE INSTALLATION OF THE NEW SERVICES TO THE PUMP STATION.
6. THE EXISTING UNDERGROUND PUMP STATION SHALL BE DISCONNECTED, DEMOLISHED AND REMOVED AS INDICATED. PROVIDE A COMPLETE ELECTRICAL DEMOLITION OF ALL ELECTRICAL REQUIREMENTS INCLUDING ALL ASSOCIATED EXISTING UNDERGROUND CONDUITS, CABLES, PULL BOXES ETC., FOR A COMPLETE DEMOLITION. REFER TO THE MODIFICATION DRAWINGS FOR ADDITIONAL REQUIREMENTS.
7. THE DIVISION 13 INSTRUMENTATION SYSTEM SUPPLIER SHALL DISCONNECT, REMOVE, RELOCATE AND RE-INSTALL THE EXISTING TELEPHONE MODEM EQUIPMENT AND ACCESSORIES FROM THE EXISTING SCADA CONTROL PANEL TO THE NEW PUMP CONTROL PANEL PCP-1 LOCATED WITHIN THE NEW ELECTRICAL/CONTROL ROOM. REFER TO THE INSTRUMENTATION DRAWINGS AND DIVISION 13 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL ELECTRICALLY DISCONNECT AND REMOVE THE EXISTING SCADA CONTROL PANEL AND SHALL COORDINATE WITH DIVISION 13 THE WORK NOTED. UPON COMPLETION, THE EXISTING SCADA CONTROL PANEL SHALL BE TURNED OVER TO THE OWNER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING FINAL STREET LIGHTING REQUIREMENTS WITH THE UTILITY COMPANY BASED ON THE STREET LIGHTING REQUIREMENTS OF THE EXISTING ROADWAY AND SUBDIVISION. PROVIDE ALL DISCONNECTIONS AND REMOVALS OF THIS EQUIPMENT AND ASSOCIATED ELECTRICAL REQUIREMENTS. REFER TO THE MODIFICATION DRAWINGS FOR ADDITIONAL REQUIREMENTS.
9. DISCONNECT AND REMOVE THE COMPLETE GROUNDING SYSTEM FOR A COMPLETE DEMOLITION. REFER TO THE MODIFICATION DRAWINGS FOR ADDITIONAL REQUIREMENTS.
10. REFER TO THE CIVIL DEMOLITION DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
11. DISCONNECT AND REMOVE IN ITS ENTIRETY THE COMPLETE UNDERGROUND CONTROL CONDUIT, WIRING, CABLES AND FLOAT SWITCH SYSTEM FOR A COMPLETE ELECTRICAL DEMOLITION.

DEMOLITION NOTES:

(1) ELECTRICAL EQUIPMENT INDICATED WITH SHADING SHALL BE DISCONNECTED AND REMOVED IN ITS ENTIRETY FOR A COMPLETE DEMOLITION, EXCEPT AS NOTED. REFER TO NOTE 1 THIS DRAWING. THIS EXISTING PUMP STATION WILL REQUIRE A COMPLETE ELECTRICAL DEMOLITION. ALL EXISTING ELECTRICAL CONDITIONS HAVE NOT BEEN SHOWN FOR CLARITY PURPOSES, BUT ARE REQUIRED TO BE REMOVED FOR A COMPLETE ELECTRICAL DEMOLITION.



PHOTOGRAPH #1
INSTRUMENTATION CONTROL PANEL

PHOTOGRAPH #2
PUMP STATION

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

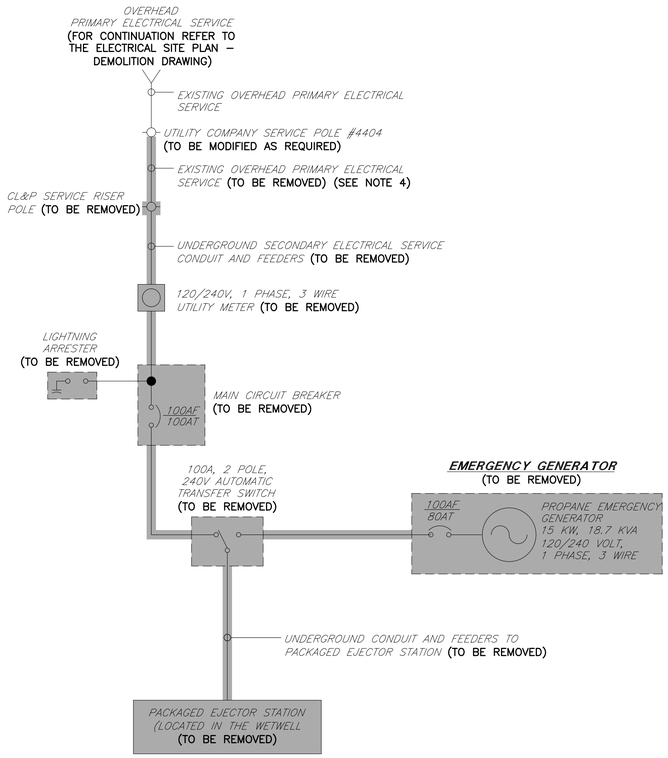
STATE OF CONNECTICUT * DENNIS W. LAGNER * No. 23790 * REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL SITE PLAN – DEMOLITION

DRAWING
E-3



1
SEE NOTES THIS DRAWING

SINGLE LINE DIAGRAM - DEMOLITION
NTS

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E–1 AND E–2.
2. INFORMATION CONTAINED ON THIS DRAWING HAS BEEN OBTAINED IN PART FROM EXISTING PUMP STATION ELECTRICAL DRAWINGS AND SHOP DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION AND CIRCUITRY AFFECTING HIS WORK BEFORE COMMENCING THE WORK.
3. THE CONTRACTOR SHALL DISCONNECT AND REMOVE ALL EXISTING CONDUIT AND CABLES INDICATED WHICH PRESENTLY FEED THE EXISTING ELECTRICAL SERVICE EQUIPMENT AND UNDERGROUND PACKAGED EJECTOR STATION FOR A COMPLETE ELECTRICAL DEMOLITION UNLESS OTHERWISE NOTED. REFER TO THE DEMOLITION DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. THE UTILITY COMPANY SHALL DISCONNECT, REMOVE AND REPLACE THE EXISTING OVERHEAD PRIMARY ELECTRICAL SERVICE AND SHALL PROVIDE A NEW OVERHEAD PRIMARY SERVICE AND A NEW SERVICE RISER POLE AS SHOWN ON THE DRAWINGS. REFER TO THE MODIFICATION DRAWINGS FOR NEW WORK REQUIRED FOR THIS CONTRACT AND THE PROPOSED PUMP STATION.

DEMOLITION NOTES:

1 ELECTRICAL EQUIPMENT INDICATED WITH SHADING SHALL BE DISCONNECTED AND REMOVED IN ITS ENTIRETY FOR A COMPLETE DEMOLITION. REFER TO NOTES 1 AND 3 THIS DRAWING.

PHOTOGRAPH #1
STANCHION MOUNTED EQUIPMENT

PHOTOGRAPH #2
INSTRUMENTATION CONTROL PANEL

PHOTOGRAPH #3
ELECTRICAL DISTRIBUTION CONTROL PANEL

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02–19

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 09–18
APPROVED BY: DWL
DATE: 09–18
PROJECT NO: 13773

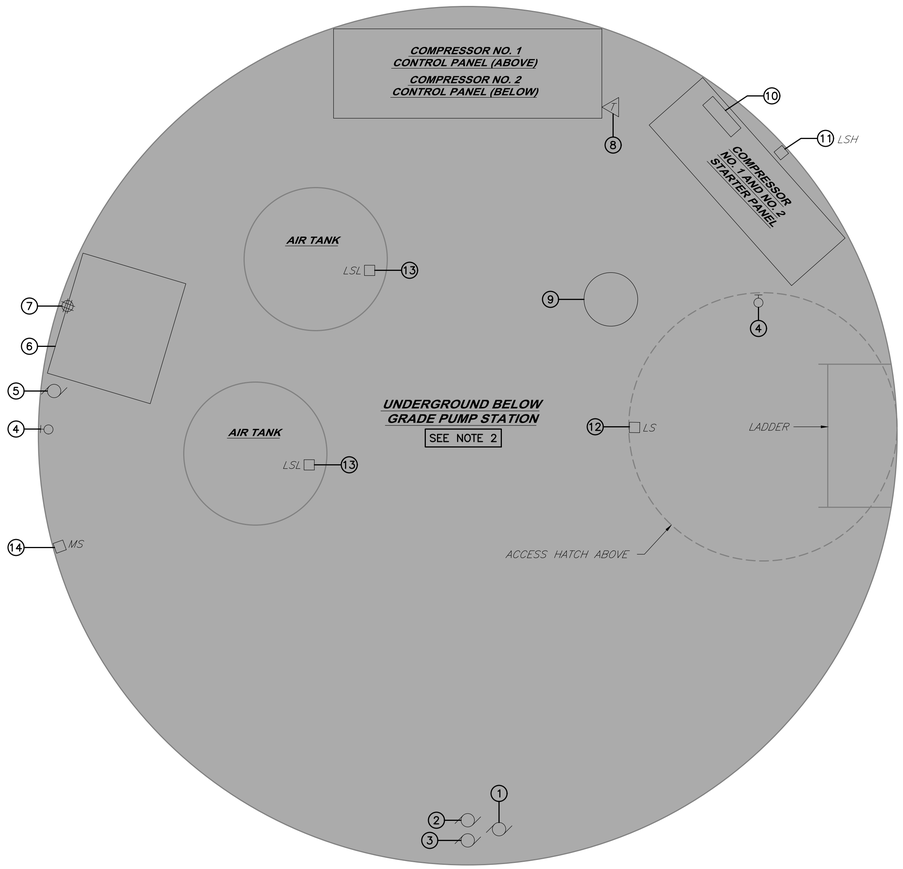
WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
EXISTING SINGLE LINE DIAGRAM – DEMOLITION

DRAWING
E–4

J:\ENG\CT\GLASTONBURY\13773–CIDERMILL–PS\DRAWINGS\ELE\E–4 13733–ES–SINGLELINEDEMO.DWG | E–4 | 1:10.1236 | ---- | 2/4/2019 12:14:51 PM | ELLIOTT.LAGNER
LAST SAVED BY: ELLIOTT.LAGNER 2/4/2019 12:06 PM



1

SEE NOTES THIS DRAWING

UNDERGROUND PUMP STATION DEMOLITION

SCALE: 1-1/2"=1'-0"

N

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E-1 AND E-2.
2. THE EXISTING UNDERGROUND PUMP STATION AND EQUIPMENT, DEVICES, ETC., SHOWN SHALL BE DISCONNECTED, DEMOLISHED AND REMOVED INCLUDING ALL ASSOCIATED EXISTING UNDERGROUND CONDUITS, CABLES, PULL BOXES ETC., FOR A COMPLETE DEMOLITION. REFER TO THE DEMOLITION AND MODIFICATION DRAWINGS FOR ADDITIONAL REQUIREMENTS. ALL EXISTING EQUIPMENT AND DEVICES MAY NOT BE SHOWN FOR CLARITY PURPOSES BUT SHALL BE INCLUDED AS PART OF THE DEMOLITION REQUIREMENTS FOR THIS CONTRACT.

DEMOLITION NOTES:

1. ELECTRICAL EQUIPMENT INDICATED WITH SHADING SHALL BE DISCONNECTED AND REMOVED IN ITS ENTIRETY FOR A COMPLETE DEMOLITION, EXCEPT AS NOTED. REFER TO NOTES 1 AND 2 THIS DRAWING.

EQUIPMENT LEGEND:

1. *EXHAUST FAN MOTOR* TO BE REMOVED
2. *AIR COMPRESSOR #1* TO BE REMOVED
3. *AIR COMPRESSOR #2* TO BE REMOVED
4. *WALL MOUNTED LIGHT FIXTURE* TO BE REMOVED
5. *SUMP PUMP MOTOR* TO BE REMOVED
6. *DEHUMIDIFIER* TO BE REMOVED
7. *QUAD RECEPTACLE* TO BE REMOVED
8. *TELEPHONE* TO BE REMOVED
9. *CEILING MOUNTED LIGHT FIXTURE* TO BE REMOVED
10. *KEY PAD* TO BE REMOVED
11. *PUMP STATION LEVEL SWITCH* TO BE REMOVED
12. *PUMP STATION HATCH LEVEL SWITCH* TO BE REMOVED
13. *AIR COMPRESSOR LOW AIR LEVEL SWITCH* TO BE REMOVED
14. *MANUAL MOTOR STARTER* TO BE REMOVED

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

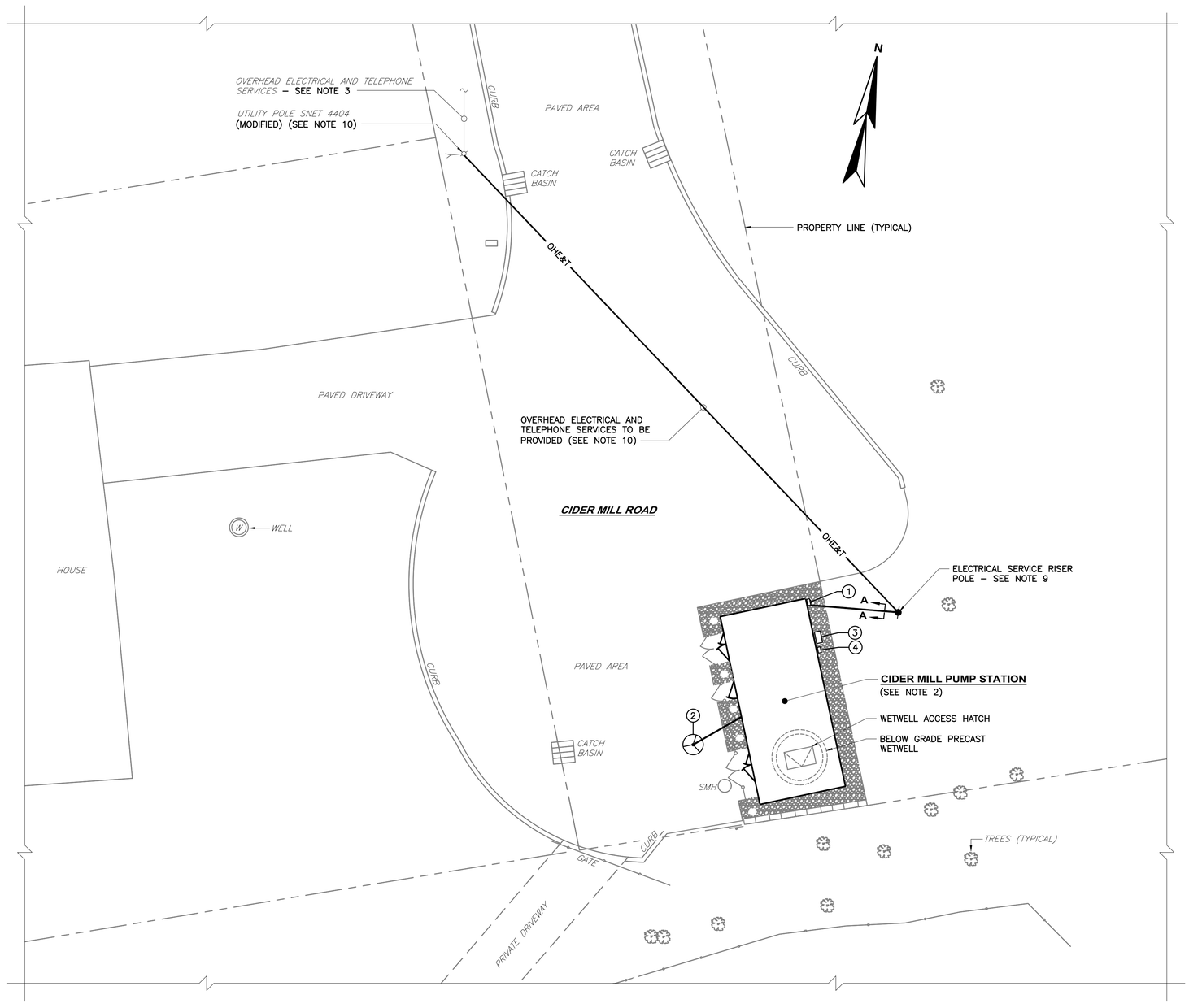
DESIGNED BY: AJD
CAD COORD.: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO.: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
UNDERGROUND PUMP STATION - DEMOLITION

DRAWING
E-5



SEE NOTES THIS DRAWING

ELECTRICAL SITE PLAN MODIFICATIONS

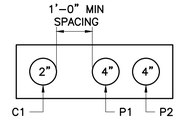
SCALE: 1"=10'

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E–1 AND E–2.
2. FOR ELECTRICAL REQUIREMENTS TO THE PUMP STATION REFER TO THE POWER, LIGHTING AND SYSTEMS PLAN DRAWING AND ALL OTHER RELATED DRAWINGS FOR THIS CONTRACT.
3. THE EXISTING OVERHEAD ELECTRICAL AND TELEPHONE SERVICE SHALL REMAIN AND SHALL BE MODIFIED AS REQUIRED FOR THE INSTALLATION OF THE NEW SERVICES TO THE PUMP STATION.
4. THE ELECTRICAL SUBCONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE EXISTING EQUIPMENT OPERATIONAL AT ALL TIMES DURING THE SEQUENCE OF CONSTRUCTION AND FOR THE DURATION OF THIS PROJECT AND UNTIL FINAL ACCEPTANCE OF THE NEW EQUIPMENT UPGRADE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. FOR INFORMATION REGARDING CONDUIT AND WIRING REQUIREMENTS, REFER TO GENERAL NOTES 27 AND 28 ON DRAWING E–2.
6. 120V CIRCUITS EXCEEDING 100 FEET IN LENGTH SHALL BE NO 10 AWG WIRING.
7. FOR CONDUIT AND WIRING SCHEDULES REFER TO THE CONDUIT AND WIRING SCHEDULE DRAWINGS.
8. REFER TO TYPICAL MAIN ELECTRICAL SERVICE GROUNDING DETAIL FOR SPECIFIC GROUNDING REQUIREMENTS. COORDINATE FINAL INSTALLATION TO AVOID CONFLICTS WITH THE UNDERGROUND PROCESS PIPING AND OTHER UNDERGROUND UTILITIES.
9. THE POWER COMPANY SHALL PROVIDE A NEW ELECTRICAL SERVICE RISER POLE AS SHOWN ON THE DRAWINGS FOR A NEW ELECTRICAL AND TELEPHONE SERVICE UPGRADE TO THE PUMP STATION. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT AND WIRING AND SERVICE CONDUIT AND CABLE RISERS AS REQUIRED AT THIS NEW POLE FOR A COMPLETELY NEW ELECTRICAL AND TELEPHONE SERVICE TO THE PUMP STATION. COORDINATE ALL ELECTRICAL AND TELEPHONE REQUIREMENTS WITH THE RESPECTIVE UTILITY COMPANIES FOR A COMPLETE ELECTRICAL AND TELEPHONE SERVICE INSTALLATION. REFER TO THE UTILITY SERVICE RISER POLE DETAIL ON THE ELECTRICAL DETAIL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
10. THE RESPECTIVE UTILITY COMPANY SHALL PROVIDE ALL REQUIRED POWER AND TELEPHONE OVERHEAD SERVICES AS INDICATED AND ALL MODIFICATIONS AS REQUIRED AT UTILITY POLE NO. 4404 FOR NEW RESPECTIVE SERVICES TO THE PUMP STATION AS SHOWN ON THE DRAWINGS.
11. PROVIDE NEW KILOWATT HOUR METER SOCKET AND COORDINATE FINAL METER LOCATION WITH THE POWER COMPANY. THE METER IS TO BE PROVIDED BY THE POWER COMPANY. THE METER SOCKET IS TO BE PROVIDED BY THE CONTRACTOR PER THE REQUIREMENTS OF THE POWER COMPANY.
12. FOR ADDITIONAL ELECTRICAL REQUIREMENTS REFER TO THE POWER PLAN ON THE POWER, LIGHTING AND SYSTEMS PLAN DRAWING AND ALL OTHER RELATED DRAWINGS FOR THIS CONTRACT.

EQUIPMENT LEGEND:

1. KILOWATT HOUR METER AND METER SOCKET – SEE NOTE 11
2. SERVICE ENTRANCE GROUNDING SYSTEM – SEE NOTE 8
3. PORTABLE GENERATOR CABLE CONNECTION PANEL PGCCP–1 – SEE NOTE 12
4. PORTABLE GENERATOR MAIN CIRCUIT BREAKER PGMCB–1 – SEE NOTE 12



SECTION A-A

DUCT BANK SECTIONS

NTS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02–19

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 09–18
APPROVED BY: DWL
DATE: 09–18
PROJECT NO: 13773

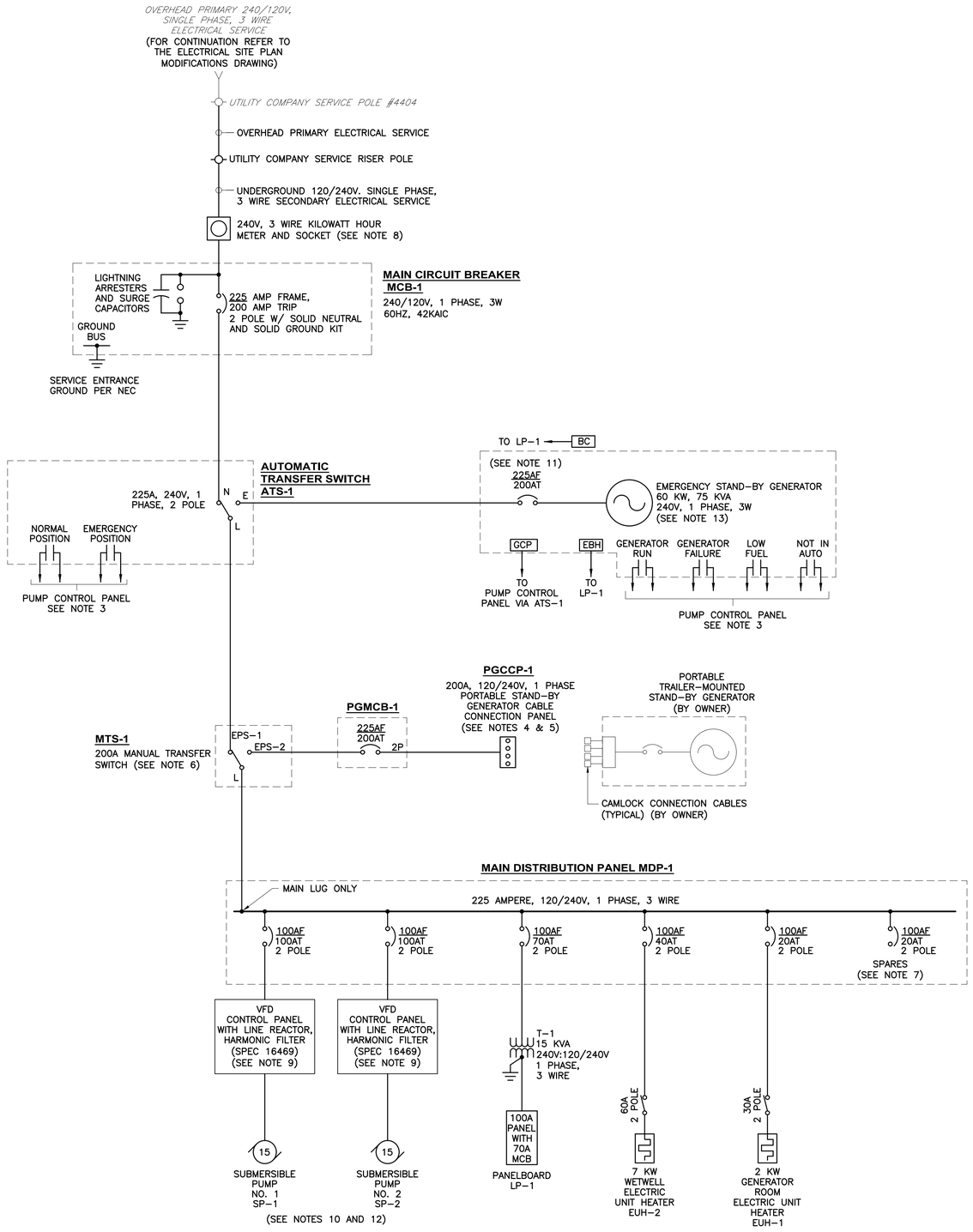
STATE OF CONNECTICUT · DENNIS W. LAGNER · No. 25790 · REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL SITE PLAN – MODIFICATIONS

DRAWING
E–6



POWER DISTRIBUITION
SINGLE LINE DIAGRAM - MODIFICATIONS
NTS

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E-1 AND E-2.
2. FOR CONDUIT AND WIRING SCHEDULES, SEE RESPECTIVE DRAWINGS.
3. AUXILIARY DRY CONTACTS SHOWN TO BE SENT TO THE PUMP CONTROL PANEL (PCP-1) SHALL BE PROVIDED AND COORDINATED BY THE RESPECTIVE EQUIPMENT SUPPLIERS.
4. WALL MOUNTED, DEAD FRONT, PORTABLE GENERATOR CABLE CONNECTION PANEL (NEMA 4X). REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE A PORTABLE GENERATOR CABLE CONNECTION PANEL FOR CONNECTION TO THE OWNER'S EXISTING PORTABLE GENERATOR. CONNECTIONS SHALL BE FROM INDIVIDUAL CABLES FOR EACH PHASE AND NEUTRAL WITHIN THE PANEL. THE CONTRACTOR SHALL COORDINATE ANY SPECIAL CONFIGURATIONS TO MEET ALL REQUIREMENTS OF THE OWNERS EXISTING PORTABLE GENERATOR. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE MANUAL TRANSFER SWITCH WITH LAMACOID PLASTIC NAME NAMEPLATE MOUNTED ON FRONT OF THE ENCLOSURE TO READ "DO NOT OPERATE SWITCH UNDER LOAD – ACTIVATE ONLY WITH ALL POWER SOURCES DE-ENERGIZED". THE TRANSFER SWITCH SHALL BE RATED 200A, 120/240V, 1 PHASE, 3 POLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7. PROVIDE (4) SPARE, 20 AMPERE, TWO POLE CIRCUIT BREAKERS.
8. PROVIDE A NEW KILOWATT HOUR METER AND METER SOCKET AND COORDINATE THE FINAL METER LOCATION WITH THE POWER COMPANY. THE METER IS TO BE PROVIDED BY THE POWER COMPANY. THE METER SOCKET IS TO BE PROVIDED BY THE CONTRACTOR PER THE REQUIREMENTS OF THE POWER COMPANY. REFER TO THE MODIFICATION DRAWINGS FOR ADDITIONAL REQUIREMENTS.
9. THE RESPECTIVE VFD CONTROL PANELS SHALL BE OVERSIZED TO PROVIDE FOR SINGLE TO THREE PHASE CONVERSION OF POWER TO THE RESPECTIVE SUBMERSIBLE PUMP MOTORS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
10. THE RESPECTIVE SUBMERSIBLE PUMP MOTORS SHALL BE RATED FOR 240 VOLT, 3 PHASE, 60 HERTZ OPERATION VIA PHASE CONVERSION BY THE RESPECTIVE VFD CONTROL PANEL EQUIPMENT.
11. THE GENERATOR SUPPLIER SHALL PROVIDE A FIXED TRIP CIRCUIT BREAKER AT THE GENERATOR RATED NOT TO EXCEED THE FRAME SIZE AND TRIP SIZE RATING SHOWN ON THE DRAWINGS FOR SYSTEM COORDINATION AND LIMITED OUTPUT RATING. THE GENERATOR SIZING IS FOR LOAD STARTING REQUIREMENTS BASED ON PHASE CONVERSION VIA THE VFD EQUIPMENT.
12. THE DESIGN OF THE PUMP STATION WILL BE BASED ON A LEAD – STANDBY OPERATION OF THE TWO (2) SUBMERSIBLE PUMPS. THERE WILL NEVER BE ANY TIME THAT TWO (2) PUMPS WILL OPERATE AT THE SAME TIME. THE ELECTRICAL SERVICE AND EQUIPMENT DESIGN IS REFLECTIVE OF THIS CAPACITY AND OPERATION.
13. THE EMERGENCY (STAND-BY) GENERATOR HAS BEEN SIZED TO OPERATE ONLY ONE (1) OF THE SUBMERSIBLE PUMPS AT A TIME PLUS THE PUMP STATION BASE LOAD. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

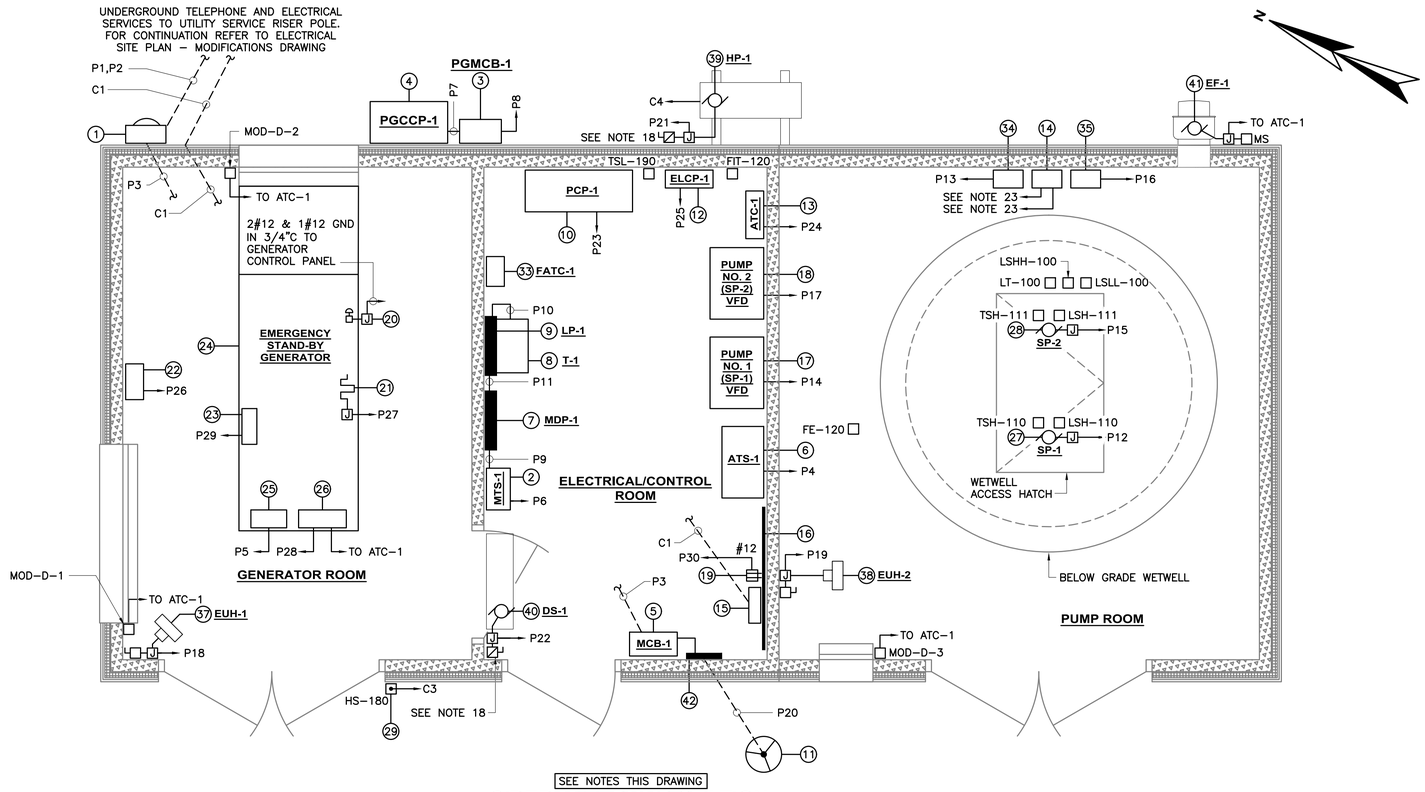
DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

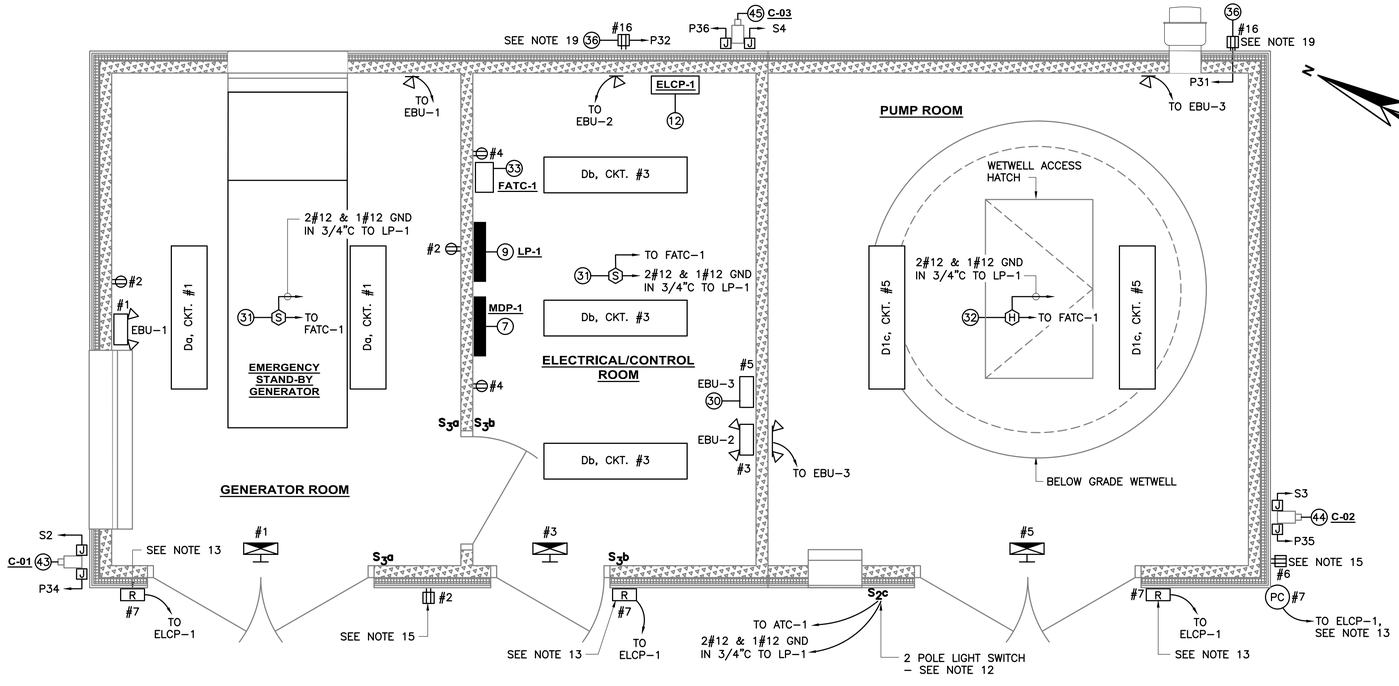
CIDER MILL PUMP STATION
SINGLE LINE DIAGRAM – MODIFICATIONS

DRAWING
E-7



CIDER MILL PUMP STATION POWER PLAN

SCALE: 1/2" = 1'-0"



CIDER MILL PUMP STATION LIGHTING AND SYSTEMS PLAN

SCALE: 1/2" = 1'-0"

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E–1 AND E–2.
2. FOR INFORMATION REGARDING CONDUIT AND WIRING REQUIREMENTS, REFER TO GENERAL NOTES 27 AND 28 ON DRAWING E–2.
3. 120V CIRCUITS EXCEEDING 100 FEET IN LENGTH SHALL BE NO 10 AWG WIRING.
4. CIRCUIT NUMBERS INDICATED ON THIS DRAWING REFER TO PANELBOARD LP–1 LOCATED IN THE ELECTRICAL/CONTROL ROOM. UNLESS OTHERWISE NOTED, ALL 120V CIRCUITS SHOWN SHALL BE PROVIDED WITH 2#12 AWG & 1#12 GND IN 3/4" CONDUIT. FOR PANELBOARD SCHEDULE REFER TO THE ELECTRICAL LIGHTING DETAILS DRAWING.
5. FOR CONDUIT AND WIRING SCHEDULES REFER TO THE ELECTRICAL LIGHTING DETAILS DRAWING.
6. REFER TO TYPICAL MAIN ELECTRICAL SERVICE GROUNDING DETAIL FOR SPECIFIC GROUNDING REQUIREMENTS.
7. THE TELEPHONE COMPANY SHALL PROVIDE A NEW NEMA 12 TELEPHONE INTERFACE PANEL WITH TERMINAL STRIPS, SIZED AS REQUIRED, TO INCORPORATE NEW TELEPHONE CIRCUITS AND FOR THE NEW INCOMING TELEPHONE SERVICE. TERMINATION OF THE NEW INCOMING TELEPHONE SERVICE SHALL BE BY THE TELEPHONE COMPANY AND SHALL BE LOCATED ON ONE SIDE OF THE INTERFACE PANEL TERMINAL STRIP.
8. THE ELECTRICAL CONTRACTOR (DIV 16) SHALL PROVIDE A NEW 3/4", TYPE "CDX" PLYWOOD BACKBOARD PAINTED WITH TWO COATS OF GRAY ENAMEL PAINT ON BOTH SIDES AND ON ALL EDGES. PROVIDE 1/2" MINIMUM SPACERS FOR MOUNTING OFF THE WALL. PROVIDE, INSTALL AND TERMINATE ALL CONDUIT AND WIRING INTERNAL TO THE FACILITY AS SHOWN ON THE DRAWINGS. TERMINATION OF THESE CIRCUITS SHALL BE LOCATED ON THE OPPOSITE SIDE OF THE TELEPHONE INTERFACE PANEL THAN THAT USED BY THE UTILITY CO.
9. REFER TO THE INSTRUMENTATION DRAWINGS FOR DETAILS AND ADDITIONAL REQUIREMENTS.
10. ALL CONDUITS SHALL BE INSTALLED CONCEALED BELOW OR WITHIN THE FLOOR SLAB WHEREVER POSSIBLE. ANY EXPOSED CONDUIT SHALL BE INSTALLED VIA VERTICAL DROPS FROM THE CEILING. EXPOSED HORIZONTAL RUNS SHALL BE KEPT TO SHORT NIPPLES AND ONLY AS ALLOWED AND APPROVED BY THE ENGINEER PRIOR TO ANY INSTALLATION.
11. PROVIDE A NEW EMERGENCY LIGHT BATTERY PACK AS INDICATED. THIS UNIT SHALL BE PROVIDED WITHOUT LAMPS AND SHALL BE USED TO POWER (2) REMOTE HEADS AS INDICATED. THE BATTERY UNIT SHALL BE PROPERLY SIZED TO POWER THESE LIGHTING HEADS FOR THE MINIMUM TIME AND LIGHTING LEVELS AS REQUIRED PER THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE CODES.
12. LIGHTING FIXTURES IN THE PUMP ROOM (HAZARDOUS AREA) AND VENTILATION OF THESE AREAS SHALL OPERATE VIA AN EXTERIOR, WEATHERPROOF, 2 POLE LIGHT SWITCH. FOR ADDITIONAL INFORMATION, REFER TO SCHEMATIC DRAWINGS.
13. BUILDING MOUNTED EXTERIOR LIGHT FIXTURE SHALL BE CONTROLLED BY A SINGLE PHOTOCELL WITH H–O–A CONTROLS MOUNTED IN EXTERIOR LIGHTING CONTROL PANEL (ELCP–1) LOCATED IN THE ELECTRICAL ROOM. FOR TYPICAL SCHEMATIC DIAGRAM REFER TO SCHEMATIC DRAWINGS. THE LIGHT FIXTURE SHALL BE MOUNTED TO THE SIDE OF THE DOOR AS INDICATED. FIELD LOCATE THE FIXTURE ABOVE THE DOOR SWING TO AVOID POTENTIAL DAMAGE TO THE FIXTURE.
14. UNLESS OTHERWISE NOTED, ALL FIXTURE MOUNTING HEIGHTS ARE TO THE BOTTOM OF THE FIXTURE.
15. PROVIDE 120 VOLT GFCI TYPE RECEPTACLE WITH A WEATHER–PROOF WHILE–IN–USE COVER. LOCATE THE RECEPTACLE A MINIMUM OF 4'–0" ABOVE FINISHED GRADE OR FLOOR AS APPLICABLE.
16. THE CONTRACTOR SHALL COORDINATE FINAL LOCATIONS AND INSTALLATIONS OF ALL LIGHTING FIXTURES WITH ALL CONSTRUCTION AND TRADES. COORDINATE WITH LOCATIONS OF MONORAIL, PIPING, HVAC EQUIPMENT, EXHAUST SYSTEMS AND ALL OTHER INSTALLATIONS AND EQUIPMENT. FINAL LIGHTING LOCATIONS SHALL BE ADJUSTED AND INSTALLED FOR PROPER CLEARANCES AND INSTALLATIONS.
17. PROVIDE A NEMA 12 FIRE ALARM TERMINAL CABINET AS INDICATED. REFER TO THE CONDUIT AND WIRE SCHEDULE AND INSTRUMENTATION AND CONTROL WIRING DIAGRAM DRAWING FOR ADDITIONAL REQUIREMENTS.
18. THE CONTRACTOR SHALL FURNISH AND INSTALL A FUSED DISCONNECT SWITCH AS NOTED. COORDINATE, FURNISH AND INSTALL FUSES SIZED AS REQUIRED PER THE MANUFACTURER'S REQUIREMENTS FOR THIS EQUIPMENT. LOCATE THE RECEPTACLE A MINIMUM OF 4'–0" ABOVE FINISHED GRADE OR FLOOR AS APPLICABLE.
19. PROVIDE A WEATHER–PROOF, 120V, 20 AMPERE, GFCI TYPE DUPLEX RECEPTACLE WITH A WEATHER–PROOF WHILE–IN–USE TYPE COVER NEXT TO THE MECHANICAL EQUIPMENT INDICATED.
20. REFER TO THE SERVICE GROUND SYSTEM PLAN ON THE DETAIL DRAWINGS FOR ADDITIONAL REQUIREMENTS. COORDINATE LOCATION AND CONDUCTOR ROUTING WITH THE SEWER AND FORCE MAIN PIPING TO AVOID ANY INTERFERENCES.
21. SECURITY CAMERAS INDICATED ON THE DRAWINGS SHALL BE INSTALLED IN THE FUTURE BY THE OWNER. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT, WIRING AND JUNCTION BOXES AS INDICATED ON THE DRAWINGS UNDER THIS CONTRACT FOR USE OF THIS FUTURE EQUIPMENT. COORDINATE FINAL LOCATIONS OF JUNCTION BOXES IN THE FIELD WITH THE ENGINEER PRIOR TO INSTALLATION.
22. ALL CONDUIT INSTALLATIONS SHALL BE CONCEALED WITHIN THE SLAB WHEREVER POSSIBLE. ALL EXPOSED CONDUITS SHALL BE INSTALLED VIA VERTICAL RUNS FROM ATTIC SPACE ABOVE CEILING. HORIZONTAL RUNS OF CONDUIT SHALL BE KEPT TO A MINIMUM.
23. REFER TO THE CONTROL AND INSTRUMENTATION WIRING DIAGRAM ON THE CIDER MILL PUMP STATION CONDUIT AND WIRE SCHEDULE AND INSTRUMENTATION AND CONTROL WIRING DIAGRAM DRAWING FOR CONDUIT AND WIRING REQUIREMENTS.

EQUIPMENT LEGEND

1. KILOWATT HOUR METER AND SOCKET
2. PORTABLE GENERATOR MANUAL TRANSFER SWITCH PGMTS–1
3. PORTABLE GENERATOR MAIN CIRCUIT BREAKER PGMCB–1
4. PORTABLE GENERATOR CABLE CONNECTION PANEL PGCCP–1
5. MAIN CIRCUIT BREAKER MCB–1
6. AUTOMATIC TRANSFER SWITCH ATS–1
7. MAIN DISTRIBUTION PANEL MDP–1
8. 15 KVA TRANSFORMER T–1
9. PANELBOARD LP–1
10. PUMP CONTROL PANEL PCP–1
11. SERVICE ENTRANCE GROUNDING SYSTEM – SEE NOTE 20
12. EXTERIOR LIGHTING CONTROL PANEL ELCP–1
13. AUTOMATIC TEMPERATURE CONTROL PANEL ATC–1
14. CONTROL/SIGNAL PULLBOX
15. TELEPHONE INTERFACE PANEL
16. TELEPHONE EQUIPMENT BACKBOARD – SEE NOTE 8
17. PUMP NO. 1 SP–1 VFD CONTROL PANEL
18. PUMP NO. 2 SP–2 VFD CONTROL PANEL
19. 20A, GFC TELEPHONE BACKBOARD RECEPTACLE
20. GAS FUEL SOLENOID VALVE
21. EMERGENCY STAND–BY GENERATOR ENGINE BLOCK HEATER
22. EMERGENCY STAND–BY GENERATOR BATTERY CHARGER
23. EMERGENCY STAND–BY GENERATOR BATTERIES
24. EMERGENCY STAND–BY GENERATOR GEN–1

EQUIPMENT LEGEND

25. EMERGENCY STAND–BY GENERATOR MAIN CIRCUIT BREAKER
26. EMERGENCY STAND–BY GENERATOR CONTROL PANEL
27. SUBMERSIBLE PUMP NO. 1 SP–1
28. SUBMERSIBLE PUMP NO. 2 SP–2
29. EMERGENCY STAND–BY GENERATOR EMERGENCY STOP PUSHBUTTON (HS–180)
30. EMERGENCY LIGHTING BATTERY WITHOUT LIGHTING HEADS – SEE NOTE 11
31. SMOKE DETECTOR
32. FIXED TEMPERATURE / RATE–OF–RISE TYPE HEAT DETECTOR
33. FIRE ALARM TERMINAL CABINET FATC–1 – SEE NOTE 17
34. PUMP NO. 1 SP–1 POWER PULLBOX
35. PUMP NO. 2 SP–2 POWER PULLBOX
36. HVAC MAINTENANCE RECEPTACLE
37. ELECTRIC UNIT HEATER EUH–1
38. ELECTRIC UNIT HEATER EUH–2
39. HEAT PUMP HP–1
40. DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT DS–1
41. EXHAUST FAN EF–1
42. COPPER GROUND BUS BAR
43. FUTURE SECURITY CAMERA C–01 – SEE NOTE 21
44. FUTURE SECURITY CAMERA C–02 – SEE NOTE 21
45. FUTURE SECURITY CAMERA C–03 – SEE NOTE 21

LIGHT FIXTURE MOUNTING HEIGHTS (SEE NOTES 14 AND 16)

ELECTRICAL ROOM	SURFACE MOUNT (APPROXIMATELY 10'–0" ABOVE FINISHED FLOOR)
GENERATOR ROOM	SURFACE MOUNT (APPROXIMATELY 10'–0" ABOVE FINISHED FLOOR)
PUMP ROOM	SURFACE MOUNT (APPROXIMATELY 10'–0" ABOVE FINISHED FLOOR)

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02–19

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 09–18
APPROVED BY: DWL
DATE: 09–18
PROJECT NO: 13773

STATE OF CONNECTICUT · DENNIS W. LEONARD · 25790 · REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

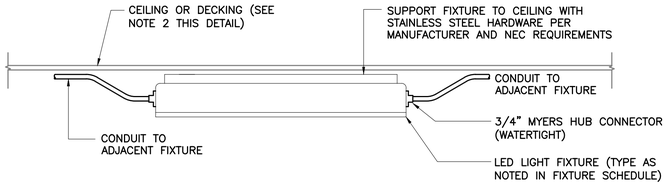
TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
POWER, LIGHTING AND SYSTEMS PLAN

DRAWING
E–8

LIGHTING FIXTURE SCHEDULE:

CODE	LIGHT SOURCE		MOUNTING	MANUFACTURER	CATALOG NUMBER	VOLTS	DESCRIPTION
	TYPE	LAMPING					
D	LED	4000 LUMENS 38W	CEILING OR PENDANT SEE DRAWINGS FOR MOUNTING HEIGHT	COOPER METALUX	4VT2-LD4-4-DR-UNV-L850-CD1-WL-TH-U	120	4 FT. ENCL. & POLYURETHANE GASKETED, LED, WET LOCATION, WITH CLEAR LOW BRIGHTNESS, ACRYLIC LENS, WIDE DISTRIBUTION AND DIMMING DRIVER, 5000K LAMP
D1	LED	7250 LUMENS 68W	CEILING OR PENDANT SEE DRAWINGS FOR MOUNTING HEIGHT	MAGNALIGHT	EPL-48-100LED	120	4 FT. LOW PROFILE, LED, CLASS I, DIVISION 1 LOCATION, WEATHERPROOF, POWDER COATED, COPPER FREE ALUMINUM CONSTRUCTION
R	LED	9W LED	WALL *	PROGRESS LIGHTING	P6078-3130K9 EAST HAVEN	120	LED, WALL MOUNTED, WET LOCATION LISTED, DIE-CAST ALUMINUM CONSTRUCTION WITH BLACK POWDER COATED FINISH WITH CLEAR SEEDED GLASS
	LED	10W, 30V	WALL 7'-0" AFF	HUBBELL DUAL-LITE	HLEBSEL1030B2G-HEXA-100	30VDC	EXPLOSION-PROOF, CLASS I, DIV. 1, GROUP D, SINGLE REMOTE HEAD EMERGENCY LIGHT WITH 3 SIDED EXIT SIGN
	HALOGEN	8W, 12V	WALL, 7'AFF	COOPER-SURE-LITES	12T-8-WWH	12VDC	SINGLE HEAD, REMOTE, WET LOCATION LISTED EMERGENCY LIGHT WITH THERMOPLASTIC LAMP HOLDERS, SEALED SWIVEL AND COATED LAMP TERMINALS
	HALOGEN	(2) 8W, 12V	WALL, 7'AFF	COOPER-SURE-LITES	UMB-17	120	EMERG. BATTERY UNIT W/2 LAMPS, UL LISTED FOR WET LOCATION, NI-CAD BATTERY, NEMA 4X ENCLOSURE
	LED		WALL, 7'AFF	COOPER-SURE-LITES	UX-70RWH-SD-LASER	120	SELF-POWERED EXIT, NI-CAD BATTERY, SUITABLE FOR USE IN WET LOCATION WITH LASER POINTER FOR TEST SWITCH ACTIVATION WITH SELF DIAGNOSTIC SYSTEM
	LED	(2) 10W, 30VDC	WALL 7'-0" AFF	HUBBELL DUAL-LITE	HLEBS-23DH-P-T-A	120	EXPLOSION-PROOF, CLASS I, DIV. 1, GROUP D, EMERGENCY BATTERY UNIT WITH LAMPS, NI-CAD BATTERY, COPPER-FREE ALUMINUM HOUSING,

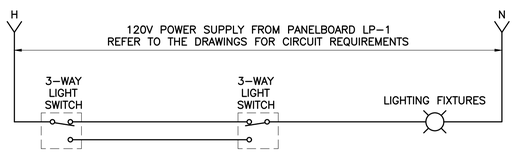


NOTES: (THIS DETAIL)

1. ANY FIXTURE NOT PROPERLY INSTALLED SHALL BE DISCONNECTED AND RE-INSTALLED PROPERLY FOR FINAL ACCEPTANCE BY THE ENGINEER. ANY ADDITIONAL COSTS SHALL BE AT THE EXPENSE OF THIS CONTRACTOR.
2. THIS DETAIL IS SHOWN DIAGRAMMATICALLY, CEILING AND CEILING JOIST ORIENTATION MAY NOT REFLECT ACTUAL FIELD CONDITIONS.
3. PROVIDE GROUNDING LUG, JUMPERS AND BUSHINGS AS REQUIRED TO BOND CONDUIT, LIGHT FIXTURE AND BOXES PER NEC REQUIREMENTS.

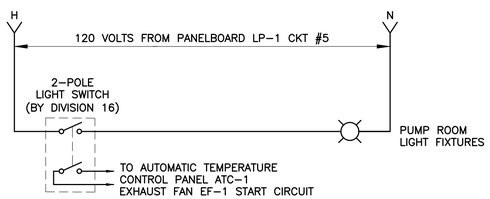
TYPICAL CEILING MOUNTED LED LIGHTING FIXTURE MOUNTING INSTALLATION DETAIL

NTS



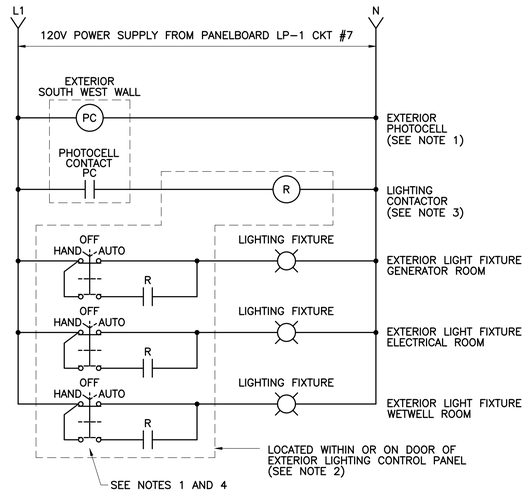
SCHEMATIC DIAGRAM 3 WAY LIGHT SWITCHING

NTS



SCHEMATIC DIAGRAM - PUMP ROOM LIGHTING AND EXHAUST FAN INTERLOCKING

NTS



SEE NOTE 5

EXTERIOR LIGHTING CONTROL PANEL ELCP-1

NTS

NOTES:

1. PROVIDE PHOTOCELL AND LIGHTING CONTACTOR AS INDICATED ON THE SCHEMATIC AND PLANS FOR CONTROL OF THE EXTERIOR LIGHTING FIXTURE. PROVIDE A 3 POSITION MAINTAINED SELECTOR SWITCH FOR EACH EXTERIOR LIGHT SHOWN ON THE DRAWINGS. WIRE THIS SWITCH SUCH THAT THE LIGHT CAN BE SWITCHED ON, OFF OR BY SWITCHING TO AUTO, WILL ALLOW THE PHOTOCELL TO CONTROL THE OPERATION OF THE LIGHT.
2. THE LIGHTING CONTACTOR AND ALL ASSOCIATED SELECTOR SWITCHES SHALL BE LOCATED WITHIN A COMMON ELECTRICAL ENCLOSURE LOCATED AS SHOWN ON THE DRAWINGS. THE ENCLOSURE'S NEMA CLASSIFICATION RATING SHALL BE AS INDICATED ON DRAWING E-1 FOR THE AREA IN WHICH ITS INSTALLED.
3. PROVIDE 277/120V LIGHTING CONTACTOR WITH SUFFICIENT NUMBER OF CONTACTS SUCH THAT EXTERIOR LIGHT IS CONTROLLED BY ITS OWN CONTACT, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. PROVIDE A MINIMUM OF TWO SPARE CONTACTS FOR FUTURE USE. SEE LIGHTING PLAN DRAWING FOR TOTAL NUMBER OF CONTACTS REQUIRED.
4. LABEL SELECTOR SWITCH SUCH THAT SWITCH IS CLEARLY IDENTIFIABLE AS TO WHICH LIGHT IT CONTROLS, IE., NORTH WALL, SOUTH WALL, ETC.
5. A COMPLETE SHOP DRAWING SUBMITTAL WITH PANEL LAYOUT DETAILS AND DIMENSIONS ALONG WITH COMPLETE WIRING DIAGRAMS SHALL BE SUBMITTED FOR FINAL APPROVAL PRIOR TO ALLOWING INSTALLATION OF THIS EQUIPMENT.

PANELBOARD LP-1

PANEL LOCATION: ELECTRICAL ROOM
VOLTAGE: 120/240
PHASE: 1
WIRE: 3
AIC: 10,000

FEEDER POINT: MDP-1 VIA TRANSFORMER T-1
MOUNTING: SURFACE
BUS RATING: 100 AMPS
MAIN TYPE: { MLO / X MCB 70 TRIP AMPS

CKT NO.	AMPS	NO. POLES	DESCRIPTION	PHASE LOAD (VA) A	PHASE LOAD (VA) B	DESCRIPTION	NO. POLES	AMPS	CKT NO.
1	20	1	LIGHTING, EXIT SIGN AND EMERGENCY LIGHTS – GENERATOR ROOM	100		RECEPTACLES – GENERATOR ROOM AND OUTSIDE DOOR	1	20	2
3	20	1	LIGHTING, EXIT SIGN AND EMERGENCY LIGHTS – ELECTRICAL ROOM	200	600	RECEPTACLES – ELECTRICAL ROOM	1	20	4
5	20	1	LIGHTING, EXIT SIGN AND EMERGENCY LIGHTS – PUMP ROOM	250	400	RECEPTACLES – OUTSIDE PUMP ROOM DOOR	1	20	6
7	30	1	LIGHTING – EXTERIOR LIGHTING CONTROL PANEL ELCP-1, EXTERIOR LIGHTS	200	200	EMERGENCY GENERATOR CONTROL PANEL	1	30	8
9	30	1	AUTOMATIC TEMPERATURE CONTROL PANEL ATC-1	1200	1000	EMERGENCY GENERATOR ENGINE BLOCK HEATER	1	30	10
11	20	1	EMERGENCY GENERATOR BATTERY CHARGER	800	2000	RECEPTACLE – TELEPHONE BACKBOARD	1	20	12
13	20	1	SMOKE DETECTOR – GENERATOR ROOM	100	200	PUMP CONTROL PANEL PCP-1	1	30	14
15	20	1	SMOKE DETECTOR – ELECTRICAL ROOM	100	2000	HVAC MAINTENANCE RECEPTACLES – OUTSIDE	1	20	16
17	20	1	HEAT DETECTOR – PUMP ROOM	100	400	SPARE	1	20	18
19	20	2	HEAT PUMP HP-1	60	–	DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT DS-1	2	20	20
21				600	200				22
23	20	1	FUTURE SECURITY CAMERA C-01	200	200	FUTURE SECURITY CAMERA C-02	1	20	24
25	20	1	FUTURE SECURITY CAMERA C-03	200	–	SPARE	1	20	26
27	20	1	SPARE	–	–	SPARE	1	20	28
29	20	1	SPARE	–	–	SPARE	1	20	30
31	20	1	SPARE	–	–	SPARE	1	20	32
33	20	1	SPARE	–	–	SPARE	1	20	34
35	20	1	SPARE	–	–	SPARE	1	20	36
37	20	1	SPARE	–	–	SPARE	1	20	38
39	20	1	SPARE	–	–	SPARE	1	20	40
41	20	1	SPARE	–	–	SPARE	1	20	42
			SUB-TOTAL	4110	8200				
			TOTAL	12310					

ESTIMATED DEMAND LOAD 12.3 KVA
DEMAND LINE CURRENT 51.3 AMP

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

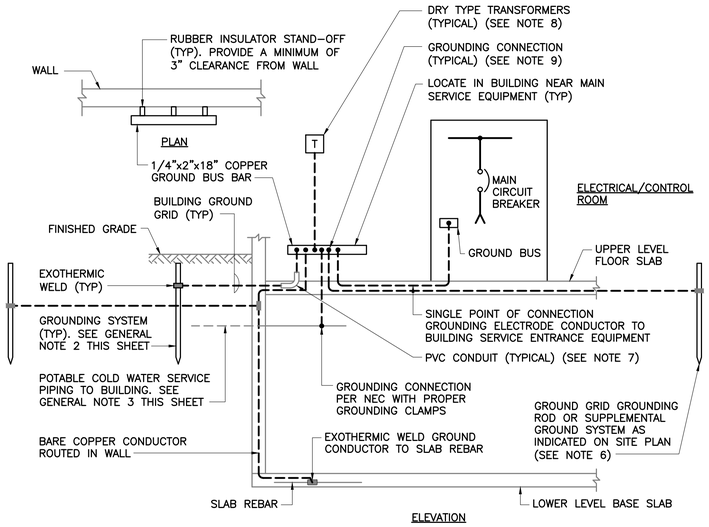
DESIGNED BY: AJD
CAD COORD.: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO.: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL LIGHTING DETAILS

DRAWING
E-9

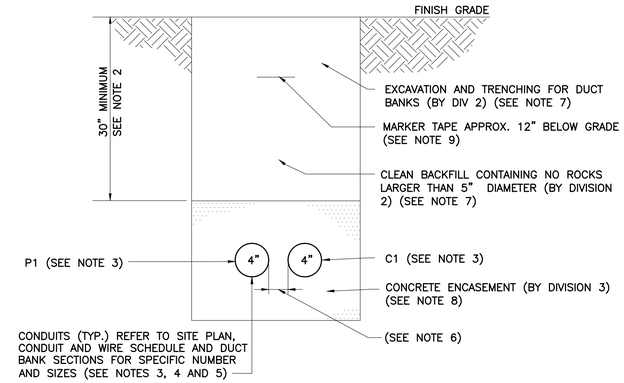


TYPICAL MAIN ELECTRICAL SERVICE GROUNDING DETAIL

NTS

GENERAL NOTES:

1. THE TRANSFORMER PAD DETAIL HAS BEEN SHOWN IN ORDER TO PROVIDE A BASIS OF BIDDING FOR THIS STRUCTURE. THE ELECTRICAL SUB-CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL FINAL SIZING AND REQUIREMENTS FOR THE APPROVED EQUIPMENT FOR THE INSTALLATION OF THE RESPECTIVE PAD OF EACH LOCATION REQUIRED. SEE NOTES O AND P INDICATED FOR THE PAD DETAIL.
2. REFER TO SITE PLAN FOR SPECIFIC LOCATIONS OF GROUNDING SYSTEM FOR EACH BUILDING.
3. THE ELECTRICAL SUB-CONTRACTOR IS RESPONSIBLE TO CONNECT TO POTABLE WATER SERVICE PIPING AT THE BUILDING FOR CONNECTION TO THE GROUNDING SYSTEM WHEN AVAILABLE.
4. EXTEND BARE COPPER GROUND CONDUCTOR AS SHOWN ON THE DRAWINGS OR #4/0 BARE COPPER CONDUCTOR IF NOT SHOWN TO THE BUILDING GROUND GRID OF GROUNDING SYSTEM AND CADWELD ALL CONNECTIONS.
5. EXTEND BARE COPPER GROUND CONDUCTOR AS SHOWN ON THE DRAWINGS OR #4/0 BARE COPPER CONDUCTOR IF NOT SHOWN TO THE MAIN ELECTRICAL SERVICE GROUND GRID OF THE GROUNDING SYSTEM AND CADWELD ALL CONNECTIONS.
6. INSTALL 3/4" x 10'-0" LONG COPPER CLAD GROUND RODS SPACED AS SHOWN ON THE DRAWINGS. IF NOT SHOWN ON THE DRAWING THEN PROVIDE EVERY 15'-0" AROUND BUILDING OR EQUIPMENT FOR THE GROUND GRID AND CADWELD (TYPICAL OF ALL LOCATIONS).
7. EXTEND OUT OF SLAB WITH PVC CONDUIT SWEEP FOR EACH GROUNDING CONNECTION TO THE COPPER GROUND BUS. FURNISH AND INSTALL BUSHINGS AT THE TOP OF EACH CONDUIT AND DUCT SEAL TO PREVENT THE ENTRANCE OF WATER AND DEBRIS.
8. ALL DRY TYPE TRANSFORMERS ARE DEFINED AS SEPARATELY DERIVED SYSTEMS AND THEREFORE SHALL BE INDIVIDUALLY AND SEPARATELY GROUNDED DIRECTLY BACK TO THE MAIN GROUND BUS VIA ONE CONTINUOUS GROUND CONDUCTOR AS SHOWN. SIZE GROUNDING CONDUCTOR PER THE NEC REQUIREMENTS FOR THE SPECIFIC TRANSFORMER SIZE.
9. FURNISH AND INSTALL BOLT THROUGH TYPE LUGS AND CONNECTIONS WITH DOUBLE CLAMP TYPE, FLAT, ROUND, COPPER CABLE CONNECTORS.



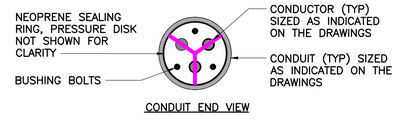
TYPICAL DUCT BANK INSTALLATION DETAIL

(REFER TO NOTES BELOW FOR ADDITIONAL REQUIREMENTS)

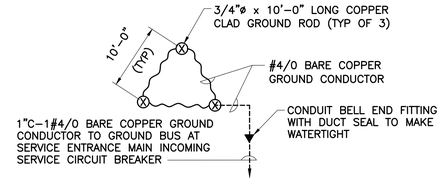
NTS

NOTES: (DUCT BANK DETAIL)

1. THIS TYPICAL DUCT BANK INSTALLATION DETAIL INDICATES THE REQUIREMENTS FOR UNDERGROUND CONDUIT INSTALLATIONS.
2. THE BURIAL DEPTH NOTED INDICATES THE TYPICAL REQUIREMENTS UNDER NORMAL CONDITIONS. THIS PROJECT INVOLVES EXISTING CONDITIONS WHICH INVOLVES EXISTING UNDERGROUND PROCESS PIPING AND OTHER EXISTING UNDERGROUND UTILITIES. THEREFORE THE CONTRACTOR IS RESPONSIBLE FOR DEEPER EXCAVATIONS AND DUCT BANK INSTALLATIONS BASED UPON THESE CONFLICTS AND ALL OTHER EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED EXCAVATIONS, BACKFILL, TRENCHING, ETC., IN ORDER TO PROVIDE DEEPER UNDERGROUND ELECTRICAL DUCT BANKS. THIS SHALL BE REQUIRED IN ORDER TO INSTALL THE PROPOSED ELECTRICAL DUCT BANKS BELOW ANY OF THE UNDERGROUND EXISTING CONDITIONS PREVIOUSLY NOTED. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED LABOR, INSTALLATIONS AND COSTS ASSOCIATED WITH THIS WORK AT ALL LOCATIONS REQUIRED FOR THIS PROJECT.
3. REFERENCES P1, C1 AND/OR S1 DENOTES CONDUIT NUMBERS. FOR CONDUIT DETAILS REFER TO THE CONDUIT AND WIRE SCHEDULES.
4. THE ELECTRICAL SITE PLAN AND PARTIAL PLANS IDENTIFIES THE VARIOUS DUCT BANK SECTIONS.
5. SEE THE SPECIFIC ELECTRICAL DUCT BANK SECTION DETAILS TO DETERMINE THE NUMBER AND TYPE OF CONDUITS IN EACH DUCT BANK.
6. THE SIZE OF THE DUCT BANK IS DETERMINED BY THE CLEAR SPACING BETWEEN CONDUITS. FOR PVC CONDUITS THE SPACING BETWEEN LIKE CONDUIT TYPES IS 3". THE SPACING BETWEEN POWER (P) AND EITHER CONTROL (C) OR SIGNAL (S) CONDUITS SHALL BE A MINIMUM OF 12". THE SPACING BETWEEN CONTROL (C) AND SIGNAL (S) CONDUITS SHALL BE 3". THE SPACING IS TO REDUCE TRANSFER OF ELECTRICAL NOISE INTERFERENCE. ALL CONDUITS SHALL HAVE A MINIMUM OF 3" EDGE CLEARANCE TO THE EDGE OF THE CONCRETE ENCASEMENT. FOR GALVANIZED CONDUIT SPACING CONTACT THE ENGINEER FOR REQUIREMENTS.
7. EXCAVATION, TRENCHING AND BACKFILLING SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 2 OF THIS CONTRACT.
8. CONCRETE ENCASEMENT AND REINFORCEMENT SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 3 OF THIS CONTRACT.
9. INSTALL MARKER TAPE THE ENTIRE LENGTH OF EACH DUCT BANK.
10. REFER TO THE ELECTRICAL CONTRACT DRAWINGS FOR SPECIFIC DUCT BANK LOCATIONS, CONDUIT AND WIRING REQUIREMENTS.

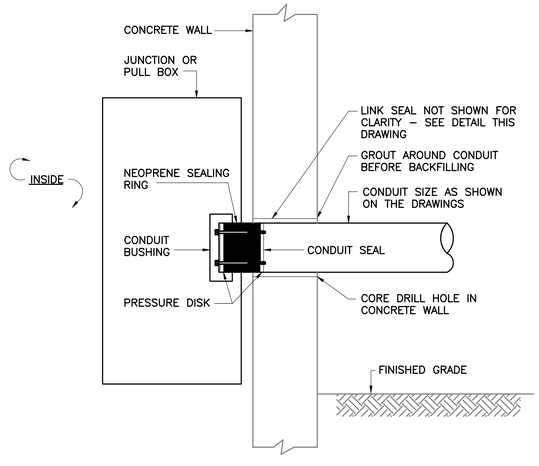


CONDUIT END VIEW



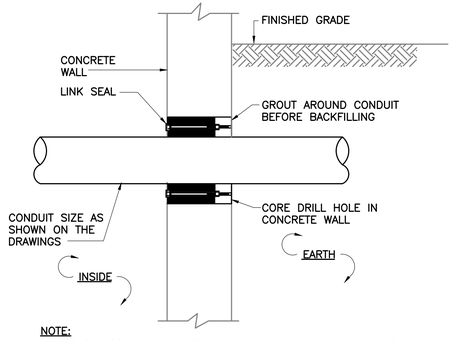
SERVICE GROUND SYSTEM PLAN

NTS



CONCRETE WALL PENETRATION INTO PULLBOX DETAIL

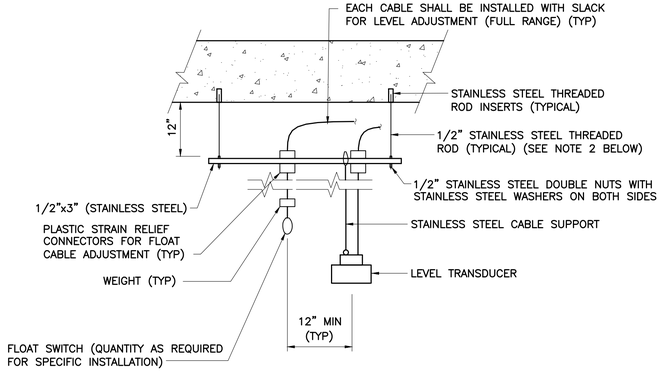
NTS



NOTE:
1. CONTRACTOR SHALL INSTALL DOUBLE-LINK SEALS WHEN LIQUID IS CONTAINED ON ONE OR BOTH SIDES OF THE WALL.

BELOW GRADE CONCRETE WALL PENETRATION

NTS



NOTES: (TYPICAL FOR WETWELL AND SIMILAR AREAS FOR FLOAT SWITCH AND FLOW TRANSDUCER INSTALLATIONS)

1. ALL EQUIPMENT, MATERIALS, INSTALLATION, ETC, SHOWN ON THIS DETAIL, SHALL BE FURNISHED AND INSTALLED BY DIVISION 16 - ELECTRICAL.
2. ALL MATERIAL AND MOUNTING HARDWARE SHALL BE PROVIDED AS 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.

TYPICAL FLOAT SWITCH AND SUBMERSIBLE LEVEL TRANSDUCER SUPPORT AND INSTALLATION DETAIL

NTS

NO.	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19

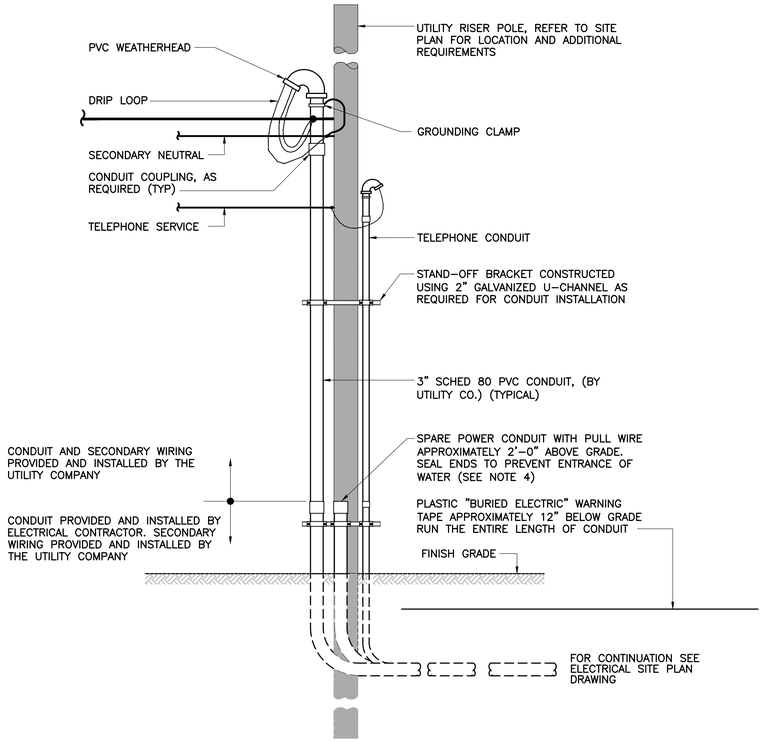
DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 09-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL DETAILS I

DRAWING
E-10

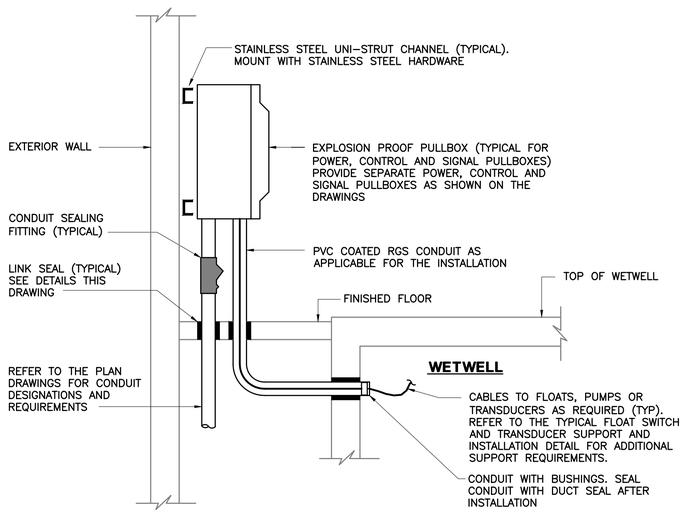


ELECTRICAL RISER POLE DETAIL

NTS

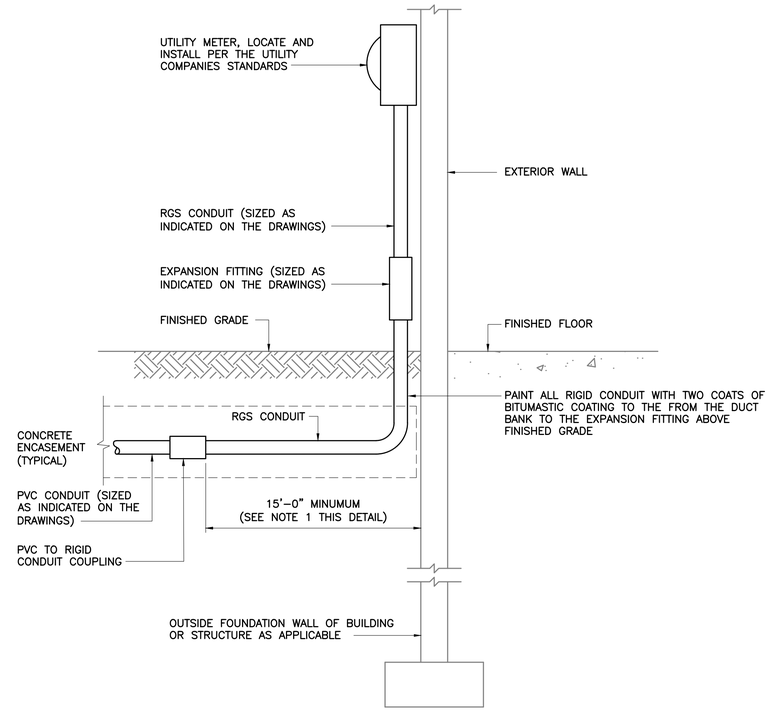
RISER POLE NOTES:

1. THE CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUIT AND ROUTING AS SHOWN ON THIS DETAIL, THE SITE PLANS AND AS NOTED ON EACH SITES SPECIFIC CONDUIT AND WIRING SCHEDULE. COORDINATE FINAL LOCATIONS OF CONTACT POLE WITH THE UTILITY COMPANY.
2. THE UTILITY COMPANY SHALL BE RESPONSIBLE FOR PROVIDING PVC CONDUIT FROM GRADE UP THE POLE INCLUDING ALL MOUNTING BRACKETS, WEATHERHEADS, GROUNDING., ETC., AS REQUIRED PER THEIR STANDARDS.
3. THE UTILITY COMPANY SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL SECONDARY WIRING FROM THE OVERHEAD UTILITY LINES TO THE UTILITY METER. REFER TO THE SITE PLAN FOR ROUTING REQUIREMENTS AND EQUIPMENT LOCATIONS.
4. CAP SPARE CONDUIT APPROXIMATELY 24" ABOVE TOP OF CONCRETE AND 24" ABOVE FINISHED GRADE (WHERE APPLICABLE). PROVIDE THREADED METAL CAP AT BOTH ENDS OF CONDUIT.



TYPICAL PULLBOX MOUNTING DETAIL

NTS



NOTES:

1. THIS DETAIL IS TYPICAL FOR ALL UNDERGROUND CONDUITS ENTERING A BUILDING OR STRUCTURE.
2. THIS DETAIL IS APPLICABLE FOR CONDUIT ENTERING ANY STRUCTURE WHETHER IT IS LOCATED ABOVE OR BELOW GRADE.

TYPICAL BUILDING OR STRUCTURE CONDUIT ENTRANCE INSTALLATION DETAIL

NTS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

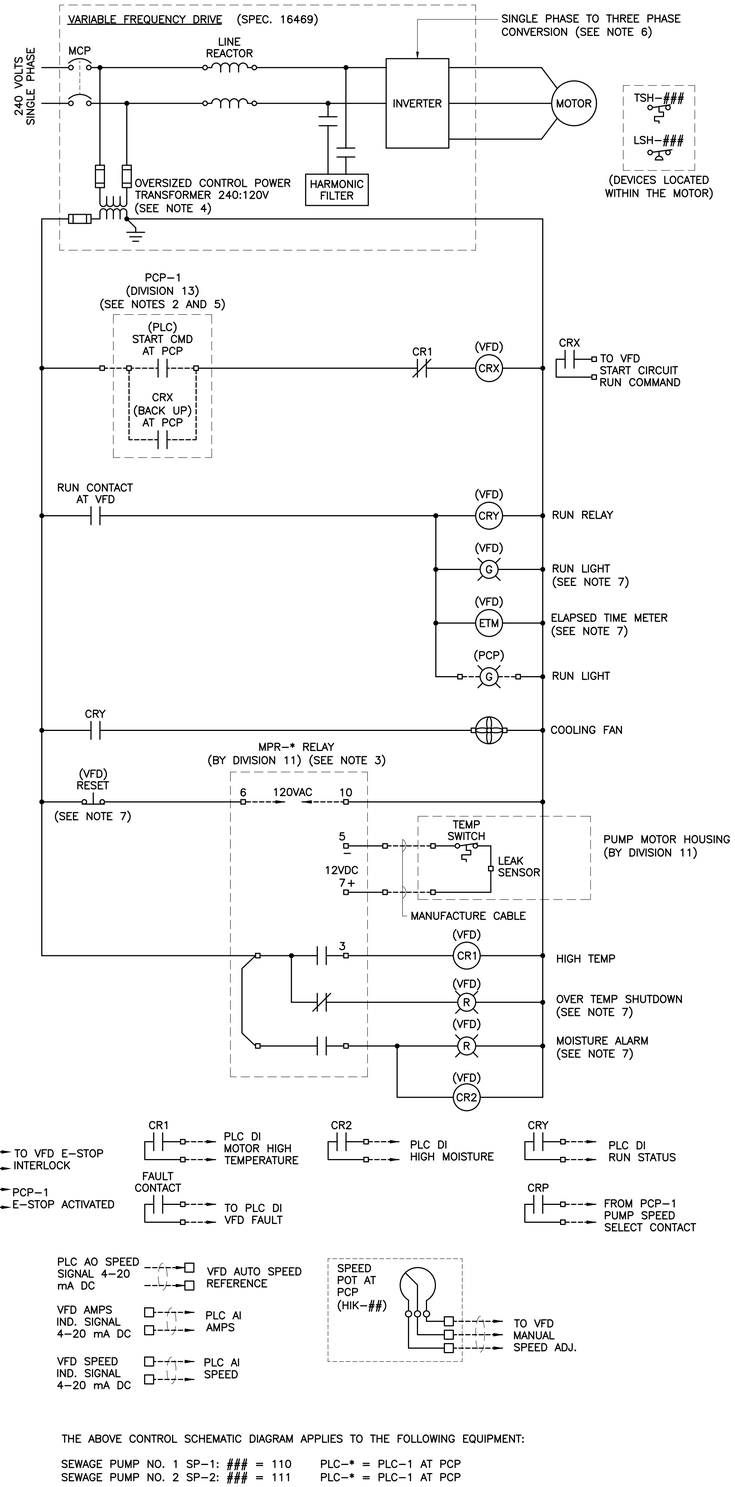
DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL DETAILS II

DRAWING
E-11



THE ABOVE CONTROL SCHEMATIC DIAGRAM APPLIES TO THE FOLLOWING EQUIPMENT:

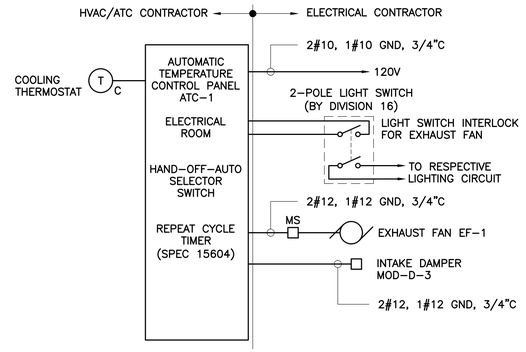
SEWAGE PUMP NO. 1 SP-1: ### = 110 PLC-* = PLC-1 AT PCP
SEWAGE PUMP NO. 2 SP-2: ### = 111 PLC-* = PLC-1 AT PCP

SUBMERSIBLE PUMPS SP-1 AND SP-2 SCHEMATIC DIAGRAM

NTS

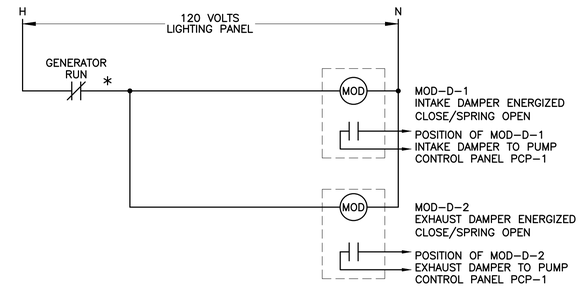
NOTES (SUMBERSIBLE PUMPS SP-1 AND SP-2):

1. THE SCHEMATIC DIAGRAM FOR THE VARIABLE FREQUENCY DRIVE (VFD) SHALL BE FURNISHED AND INSTALLED BY DIVISION 16 UNLESS OTHERWISE NOTED.
2. CONTROL WIRING SHALL BE EXTENDED OVER TO THE PUMP CONTROL PANEL FOR CONTINUATION OF THE CONTROL CIRCUIT. REFER TO THE INSTRUMENTATION DRAWINGS FOR PUMP CONTROL PANEL (PCP) REQUIREMENTS.
3. THE MPR-* RELAYS SHALL BE SUPPLIED BY DIVISION 11 TO THE GENERAL CONTRACTOR WHO WILL BE RESPONSIBLE TO FURNISH THESE RELAYS TO THE VFD SUPPLIER. THE VFD SUPPLIER SHALL INSTALL AND WIRE THESE RELAYS INTO THE RESPECTIVE VFD CONTROL PANELS FOR A COMPLETE INSTALLATION PER UL 508A.
4. THE VFD EQUIPMENT SUPPLIER SHALL PROVIDE A LARGER AND OVERSIZED CONTROL POWER TRANSFORMER IN ORDER TO HANDLE ALL RELAYS AND CONTROLS FOR THE SCHEMATIC DIAGRAM SHOWN.
5. REFER TO THE INSTRUMENTATION DRAWINGS FOR ADDITIONAL SCHEMATIC DIAGRAM INFORMATION AND FOR OPERATIONAL REQUIREMENTS.
6. THE VARIABLE FREQUENCY DRIVE EQUIPMENT HAS BEEN SIZED AND DESIGNED FOR SINGLE PHASE TO THREE PHASE CONVERSION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7. THE EQUIPMENT NOTED SHALL BE MOUNTED ON THE FRONT OF THE VFD CONTROL PANEL ALONG WITH THE VFD OPERATOR KEYPAD. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



AUTOMATIC TEMPERATURE CONTROL PANEL ATC-1 H&V WIRING DIAGRAM

NTS



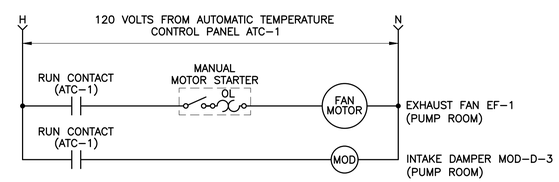
* - DENOTES CONTACT LOCATED AT THE GENERATOR CONTROL PANEL.

STAND-BY EMERGENCY GENERATOR VENTILATION SYSTEM SCHEMATIC DIAGRAM

NTS

NOTES (THIS DIAGRAM):

1. THE GENERATOR RUN CONTACT IS LOCATED WITHIN THE GENERATOR CONTROL PANEL AND SHALL BE WIRED TO AUTOMATIC TEMPERATURE CONTROL PANEL ATC-1 TO MAINTAIN GENERATOR INTAKE AND EXHAUST DAMPERS OPEN DURING GENERATOR OPERATION.
2. AIR INTAKE DAMPER MOD-D-1 FOR ROOM COOLING AIR TO OPERATE WITH THE GENERATOR AIR EXHAUST DAMPER MOD-D-2 DURING GENERATOR OPERATION.



PUMP ROOM VENTILATION SYSTEM SCHEMATIC DIAGRAM

NTS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	ISSUED FOR BIDDING	DAD	02-19
1			
2			
3			
4			

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 08-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

STATE OF CONNECTICUT DENNIS A. DIETRICH No. 23790 PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION
ELECTRICAL SCHEMATIC DIAGRAMS

DRAWING
E-12

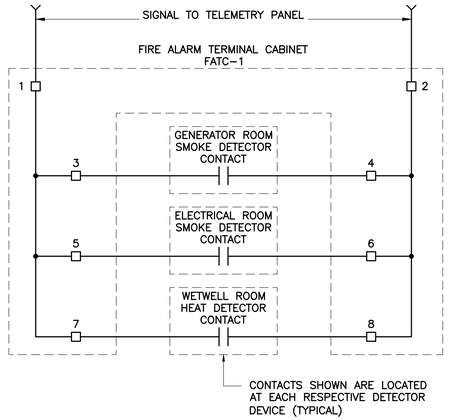
LAST SAVED BY: DANGLIDDEN 2/4/2019 12:06 PM

J:\ENG\CT\GLASTONBURY\13773-CIDERMILL-PS\DRAWINGS\ELE\E-12 13773-ES-SCHEMATICDIAGRAM.DWG | E-12 | 1:10.1236 | ---- | 2/4/2019 12:15:42 PM | ELLIOTT.LAGNER

SEE NOTES 2 AND 3

CONDUIT AND WIRE SCHEDULE

CONDUIT NO	CONDUIT SIZE	CONDUCTOR SIZE	DESTINATION FROM	DESTINATION TO	REMARKS
P1	4"	CABLE BY UTILITY COMPANY	UTILITY SERVICE RISER POLE	KILOWATT HOUR METER	SEE NOTE 5
P2	4"	SPARE	UTILITY SERVICE RISER POLE	KILOWATT HOUR METER	SEE NOTES 4,5
P3	3"	3#4/0 AND 1#2 GND	MAIN CIRCUIT BREAKER MCB-1	KILOWATT HOUR METER	
P4	3"	3#4/0 AND 1#2 GND	AUTOMATIC TRANSFER SWITCH ATS-1	MAIN CIRCUIT BREAKER MCB-1	
P5	3"	3#4/0 AND 1#2 GND	EMERGENCY STAND-BY GENERATOR	AUTOMATIC TRANSFER SWITCH ATS-1	
P6	3"	3#4/0 AND 1#2 GND	MANUAL TRANSFER SWITCH MTS-1	AUTOMATIC TRANSFER SWITCH ATS-1	
P7	3"	3#4/0 AND 1#2 GND	CABLE CONNECTION PANEL PGCCP-1	PORTABLE GENERATOR MAIN CIRCUIT BREAKER PGMCB-1	
P8	3"	3#4/0 AND 1#2 GND	PORTABLE GENERATOR MAIN CIRCUIT BREAKER PGMCB-1	MANUAL TRANSFER SWITCH MTS-1	
P9	3"	3#4/0 AND 1#2 GND	MAIN DISTRIBUTION PANEL MDP-1	MANUAL TRANSFER SWITCH MTS-1	
P10	2"	3#1 AND 1#6 GND	PANELBOARD LP-1	TRANSFORMER T-1	
P11	1-1/4"	2#3 AND 1#6 GND	TRANSFORMER T-1	MAIN DISTRIBUTION PANEL MDP-1	
P12	2-1/2"	VENDOR SUPPLIED CABLE	SUBMERSIBLE PUMP NO. 1 SP-1	PUMP NO. 1 SP-1 POWER PULLBOX	
P13	2-1/2"	3#3 AND 1#2 GND	PUMP NO. 1 SP-1 POWER PULLBOX	PUMP NO. 1 SP-1 VFD CONTROL PANEL	
P14	2"	2#1 AND 1#2 GND	PUMP NO. 1 SP-1 VFD CONTROL PANEL	MAIN DISTRIBUTION PANEL MDP-1	
P15	2-1/2"	VENDOR SUPPLIED CABLE	SUBMERSIBLE PUMP NO. 2 SP-2	PUMP NO. 2 SP-2 POWER PULLBOX	
P16	2-1/2"	3#3 AND 1#2 GND	PUMP NO. 2 SP-2 POWER PULLBOX	PUMP NO. 2 SP-2 VFD CONTROL PANEL	
P17	2"	2#1 AND 1#2 GND	PUMP NO. 2 SP-2 VFD CONTROL PANEL	MAIN DISTRIBUTION PANEL MDP-1	
P18	3/4"	2#12 AND 1#12 GND	GENERATOR ROOM ELECTRIC UNIT HEATER EUH-1	MAIN DISTRIBUTION PANEL MDP-1	
P19	1"	2#8 AND 1#10 GND	PUMP ROOM ELECTRIC UNIT HEATER EUH-2	MAIN DISTRIBUTION PANEL MDP-1	
P20	1"	1#4/0 BARE COPPER	SERVICE ENTRANCE GROUNDING SYSTEM	COPPER GROUND BUS BAR	
P21	3/4"	2#12 AND 1#12 GND	HEAT PUMP HP-1	PANELBOARD LP-1	
P22	3/4"	2#12 AND 1#12 GND	DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT DS-1	PANELBOARD LP-1	
P23	3/4"	2#10 AND 1#10 GND	PUMP CONTROL PANEL PCP-1	PANELBOARD LP-1	
P24	3/4"	2#10 AND 1#10 GND	AUTOMATIC TEMPERATURE CONTROL PANEL ATC-1	PANELBOARD LP-1	
P25	3/4"	2#10 AND 1#10 GND	EXTERIOR LIGHTING CONTROL PANEL ELCP-1	PANELBOARD LP-1	
P26	3/4"	2#12 AND 1#12 GND	EMERGENCY STAND-BY GENERATOR BATTERY CHARGER	PANELBOARD LP-1	
P27	3/4"	2#10 AND 1#10 GND	EMERGENCY STAND-BY GENERATOR BLOCK HEATER	PANELBOARD LP-1	
P28	3/4"	2#10 AND 1#10 GND	EMERGENCY STAND-BY GENERATOR CONTROL PANEL	PANELBOARD LP-1	
P29	3/4"	2#10 AND 1#10 GND	EMERGENCY STAND-BY GENERATOR BATTERY	EMERGENCY STAND-BY GENERATOR BATTERY CHARGER	
P30	3/4"	2#12 AND 1#12 GND	TELEPHONE BACKBOARD RECEPTACLE	PANELBOARD LP-1	
P31	3/4"	2#12 AND 1#12 GND	HVAC MAINTENANCE RECEPTACLE SOUTH WALL	HVAC MAINTENANCE RECEPTACLE EAST WALL	
P32	3/4"	2#12 AND 1#12 GND	HVAC MAINTENANCE RECEPTACLE EAST WALL	PANELBOARD LP-1	
P33	3/4"	2#12 AND 1#12 GND	FLOW INDICATING TRANSMITTER FIT-120A	PUMP CONTROL PANEL PCP-1	
P34	3/4"	2#12 AND 1#12 GND	FUTURE SECURITY CAMERA C-01 LOCATION	PANELBOARD LP-1	
P35	3/4"	2#12 AND 1#12 GND	FUTURE SECURITY CAMERA C-02 LOCATION	PANELBOARD LP-1	
P36	3/4"	2#12 AND 1#12 GND	FUTURE SECURITY CAMERA C-03 LOCATION	PANELBOARD LP-1	
C1	2"	CABLE BY UTILITY COMPANY	UTILITY SERVICE RISER POLE	TELEPHONE SYSTEM INTERFACE PANEL	
C2	3/4"	2 PAIR TELEPHONE CABLE	PUMP CONTROL PANEL PCP-1	TELEPHONE SYSTEM INTERFACE PANEL	
C3	3/4"	4#14	EMERGENCY STAND-BY GENERATOR E-STOP PUSHBUTTON	EMERGENCY STAND-BY GENERATOR CONTROL PANEL	
C4	3/4"	6#14	HEAT PUMP HP-1	DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT DS-1	
C5	1"	16#14	PUMP NO. 1 SP-1 VFD CONTROL PANEL	PUMP CONTROL PANEL PCP-1	
C6	1"	16#14	PUMP NO. 2 SP-2 VFD CONTROL PANEL	PUMP CONTROL PANEL PCP-1	
S1	3/4"	1 - 2/C #16 TWS	FLOW INDICATING TRANSMITTER FIT-120A	PUMP CONTROL PANEL PCP-1	
S2	3/4"	CAT 6 ETHERNET CABLE	FUTURE SECURITY CAMERA C-01 LOCATION	PUMP CONTROL PANEL PCP-1	
S3	3/4"	CAT 6 ETHERNET CABLE	FUTURE SECURITY CAMERA C-02 LOCATION	PUMP CONTROL PANEL PCP-1	
S4	3/4"	CAT 6 ETHERNET CABLE	FUTURE SECURITY CAMERA C-03 LOCATION	PUMP CONTROL PANEL PCP-1	
S5	2-1/2"	SPARE	PUMP CONTROL PANEL PCP-1	TELEPHONE INTERFACE PANEL	
S6	1-1/2"	3 - 2/C #16 TWS	PUMP NO. 1 SP-1 VFD CONTROL PANEL	PUMP CONTROL PANEL PCP-1	
S7	1-1/2"	3 - 2/C #16 TWS	PUMP NO. 2 SP-2 VFD CONTROL PANEL	PUMP CONTROL PANEL PCP-1	
S8	3/4"	1 - 3/C #16 TWS	PUMP NO. 1 SP-1 VFD CONTROL PANEL	PUMP CONTROL PANEL PCP-1	
S9	3/4"	1 - 3/C #16 TWS	PUMP NO. 2 SP-2 VFD CONTROL PANEL	PUMP CONTROL PANEL PCP-1	



TYPICAL SCHEMATIC DIAGRAM
FIRE ALARM TERMINAL CABINET FATC-1

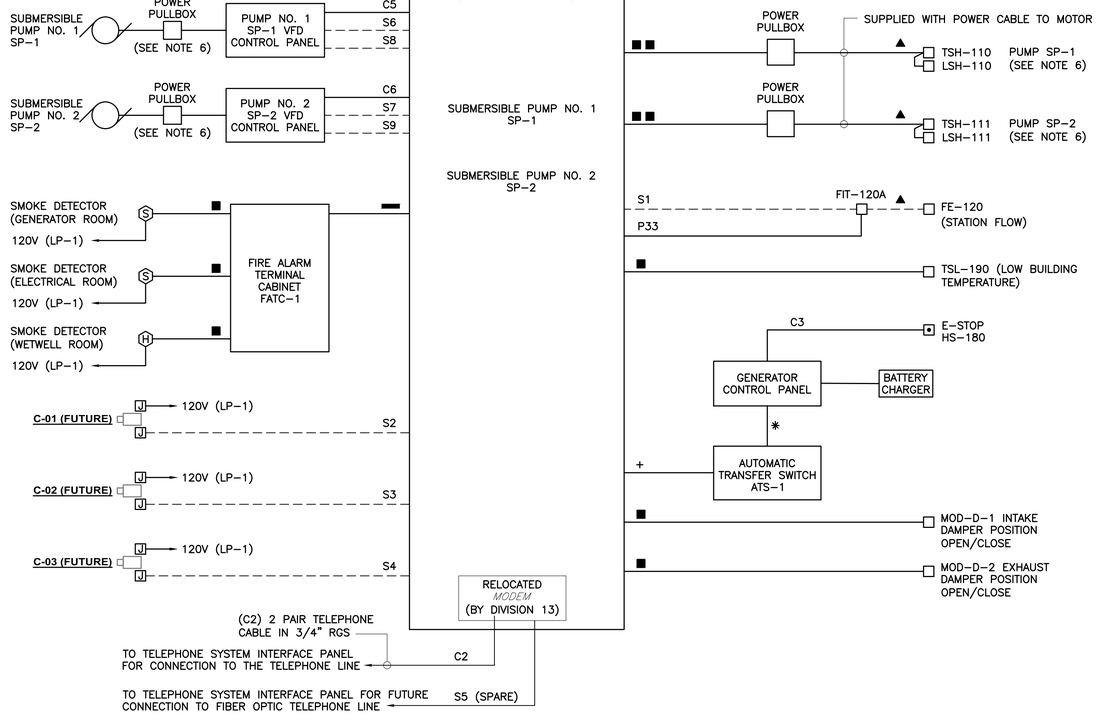
WIRING LEGEND:

1. THE FOLLOWING SYMBOLS SHOWN ON THE CONTROL AND INSTRUMENTATION DIAGRAM ARE TO BE NOTED AS FOLLOWS:

- ✱ PROVIDE 1"C, 16#14
- ▲ PROVIDE 1"C (MANUFACTURER SUPPLIED CABLE)
- ● PROVIDE 3/4"C, 2#12 & 1#12 GND
- ++ PROVIDE 3/4"C, 2#14
- ■ PROVIDE 3/4"C, 4#14
- ◆ PROVIDE 3/4"C, (1) 2/C #16 TWS
- ▬ PROVIDE 3/4"C, 12#12
- ◄ PROVIDE 3/4"C, 12#14
- \+ PROVIDE 1"C, 24#14
- X PROVIDE 1"C, (2) 2/C #16 TWS
- ▼ PROVIDE 1-1/2"C, (4) 2/C #16 TWS
- ▟ PROVIDE 3/4"C, CAT 6 ETHERNET CABLE
- ○ PROVIDE 3/4"C, (1) 3/C #16 TWS
- ●● PROVIDE 3/4"C, 3#12 AND 1#12 GND (480V)
- ■■ PROVIDE 3/4"C, 8#14
- ▟▟ PROVIDE 3/4"C, (2) CAT 6 ETHERNET CABLE
- ◆◆ PROVIDE 3/4"C, 10#14 (24V DC)
- ●● PROVIDE 3/4"C, 10#14 (120V)
- XX PROVIDE 1"C, (3) 2/C #16 TWS

NOTES:

1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL DEMOLITION NOTES AND GENERAL NOTES, REFER TO DRAWINGS E-1 AND E-2.
2. ALL INSTRUMENTATION SIGNAL CABLES (IN CONDUITS WITH "S" NUMBERS) SHALL BE INSTALLED IN RIGID GALVANIZED STEEL CONDUIT, IMC. OR PVC-COATED RIGID STEEL CONDUIT, IN ACCORDANCE WITH NEMA RATING OF THE AREA OF INSTALLATION AS INDICATED ON DRAWING E-1. REFER TO SPECIFICATION SECTION 16050 FOR FURTHER INFORMATION.
3. NOT ALL CONDUIT AND WIRING REQUIRED FOR THIS CONTRACT HAS BEEN LISTED IN THE CONDUIT AND WIRE SCHEDULE. FOR ADDITIONAL CONDUIT AND WIRE REQUIREMENTS REFER TO THE INSTRUMENTATION CONTROL AND WIRING DIAGRAM DRAWINGS, RISER DIAGRAMS AND THE MODIFICATION DRAWINGS.
4. INSTALL SPARE CONDUIT AS NOTED AND STUB UP 24 INCHES ABOVE TOP OF FINISHED GRADE AT THE SERVICE RISER POLE AND AT THE PUMP STATION. PROVIDE A PULL STRING AND THREADED METAL CAP AT EACH END TO PREVENT THE ENTRANCE OF WATER AND DEBRIS.
5. COORDINATE THE FINAL SERVICE CONDUIT SIZE WITH THE UTILITY COMPANY IN ORDER TO MEET REQUIREMENTS FOR THEIR INCOMING SERVICE AND FINAL METERING CONNECTIONS AND TERMINATIONS.
6. THE DRAWINGS HAVE SHOWN A WORST CONDITION OF TWO (2) SEPARATE POWER AND CONTROL CABLES FOR EACH SUBMERSIBLE PUMP MOTOR. THESE MAY BE FURNISHED AS A SINGLE CABLE PER PUMP WHERE IT CONTAINS BOTH POWER AND CONTROL WIRING. THE CONTRACTOR SHALL INCREASE THE OVERALL CONDUIT SIZE TO ACCOMMODATE FOR A SINGLE CABLE WHICH CONTAINS BOTH POWER AND CONTROL WIRING.



CONTROL AND INSTRUMENTATION WIRING DIAGRAM
NTS

NOTES (THIS DIAGRAM):

1. INTRINSICALLY SAFE RELAY PANELS SHALL BE PROVIDED TO MEET UL 508A REQUIREMENTS. THIS EQUIPMENT SHALL BE INSTALLED WITHIN PCP-1 PER MEETING ALL ASPECTS OF THIS REQUIREMENT AND PROVIDED WITH UL LISTING AND LABELING. IF THIS CAN NOT BE MET THEN PROVIDE SEPARATE PANELS AS SPECIFIED AND NOTED.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	ISSUED FOR BIDDING	DAD	02-19

DESIGNED BY: AJD
CAD COORD: BACS
CAD: DNG
CHECKED BY: AJD
DATE: 09-18
APPROVED BY: DWL
DATE: 09-18
PROJECT NO: 13773

STATE OF CONNECTICUT · DENNIS A. LAGNER · No. 25190 · REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

TOWN OF GLASTONBURY, CONNECTICUT
CIDER MILL PUMP STATION UPGRADE

CIDER MILL PUMP STATION CONDUIT AND WIRE SCHEDULE AND INSTRUMENTATION AND CONTROL WIRING DIAGRAM

DRAWING
E-13