

CITY OF MIDDLETOWN
 C O N N E C T I C U T
WATER & SEWER DEPARTMENT



AS-BID DRAWINGS
 FOR THE
 MATTABASSETT REGIONALIZATION PROJECT
 CONTRACT 2
 FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION

FEBRUARY 23, 2016
 CT DEEP CWF-487C
 City of Middletown Bid # 2016-011

MATTABASSETT BUILDING COMMITTEE
 COUNCILMAN PHILIP PESSINA, CHAIRMAN
 COUNCILMAN THOMAS SERRA, COUNCILMATIC REPRESENTATIVE
 COUNCILMAN SEBASTIAN N. GUILIANO, COUNCILMATIC REPRESENTATIVE
 COUNCILMAN ROBERT BLANCHARD, COUNCILMATIC REPRESENTATIVE
 DALE ALDIERI, VICE CHAIRMAN WPCA CHAIRMAN
 JOHN GIULIANO, WPCA COMMISSIONER

DANIEL T. DREW, MAYOR
WATER AND SEWER DEPARTMENT AND STAFF
 GUY P. RUSSO, DIRECTOR
 ROBERT YOUNG, DEPUTY DIRECTOR
 JOSEPH S. FAZZINO, P.E., CHIEF ENGINEER
 ELISE M. McDERMOTT, FINANCE DEPT



2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmaguire.com

JOSEPH BIBISI
 JOHN PARKER
 TINA GOMES
 MARIE HURLEY, CCPD
 DAVID BAUER

DRAWING FILE: G:\PROJECTS\14712.02-Middletown-PS-Final_Design\A040\CIVIL\CONTRACT 2\14712g-b.1 [REBID].dwg PLOTTED: Apr 29, 2016 - 12:15pm BY: Tom Covill

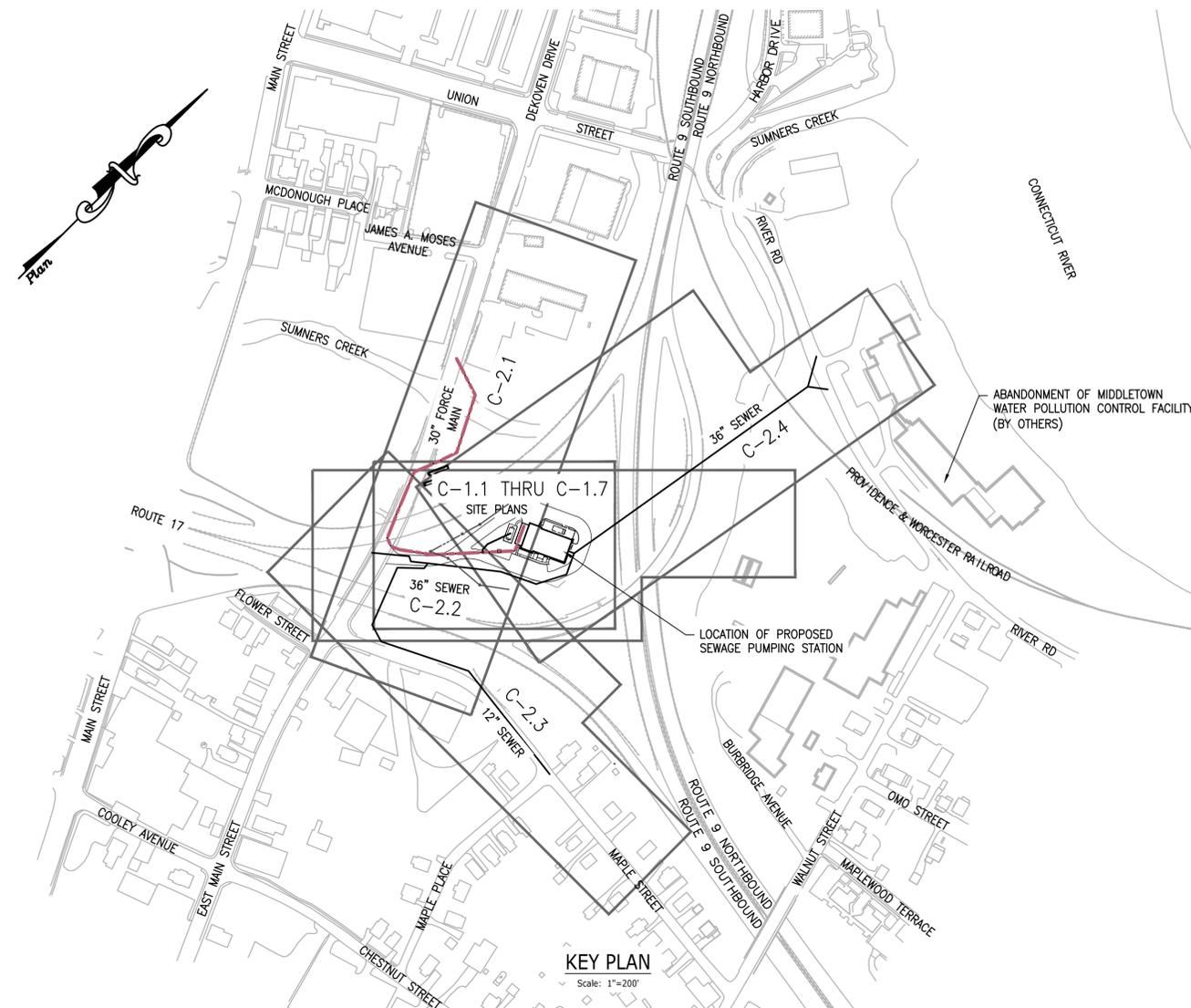
REVISIONS		
Number	Description	Date

INDEX OF DRAWINGS		
DISCIPLINE	SHEET	TITLE
GENERAL	G-0.1	COVER SHEET
	G-0.2	KEY PLAN AND INDEX OF DRAWINGS
	G-0.3	LEGEND OF SYMBOLS
	G-0.4	NOTES & SEQUENCE OF CONSTRUCTION I
	G-0.5	NOTES & SEQUENCE OF CONSTRUCTION II
	G-0.6	PROCESS FLOW DIAGRAM
	G-0.7	HYDRAULIC PROFILE
CIVIL	C-1.1	EXISTING CONDITIONS PLAN
	C-1.2	DEMOLITION PLAN
	C-1.3	PROPOSED SITE PLAN
	C-1.4	GRADING & DRAINAGE PLAN
	C-1.5	YARD PIPING PLAN
	C-1.6	LANDSCAPING PLAN
	C-1.7	EROSION & SEDIMENTATION CONTROL PLAN
	C-2.1	30" FORCE MAIN PLAN & PROFILE
	C-2.2	36" EAST MAIN STREET SEWER PLAN & PROFILE
	C-2.3	12" MAPLE STREET SEWER PLAN & PROFILE
	C-2.4	36" RIVER ROAD SEWER PLAN & PROFILE
	C-2.5	24" SURGE TANK CONNECTION TO FORCE MAIN PLAN & PROFILE
	C-5.1	SITE DRAINAGE DETAILS
	C-5.2	SEWER & FORCE MAIN DETAILS I
	C-5.3	SEWER & FORCE MAIN DETAILS II
	C-5.4	SEWER & FORCE MAIN DETAILS III
	C-5.5	PAVEMENT & SIDEWALK DETAILS
	C-5.6	SITE FIXTURE DETAILS
	C-5.7	EROSION & SEDIMENTATION CONTROL DETAILS
	C-5.8	PLANTING DETAILS FOR TREES
	C-5.9	PLANTING DETAILS FOR SHRUBS
	C-7.1	PILE LOCATION PLAN - EXISTING TREATMENT & INCINERATOR BUILDINGS
C-7.2	PILE LOCATION PLAN - EXISTING BURIED TREATMENT TANKS	
ENVIRONMENTAL ASSESSMENT	ENV-1.1	GRAVITY SEWER AND FORCE MAIN AREAS OF ENVIRONMENTAL CONCERN
	ENV-1.2	PUMP STATION SITE PHASE II ENVIRONMENTAL SITE - AREAS OF ENVIRONMENTAL CONCERN
	ENV-1.3	PUMP STATION SITE PHASE II ENVIRONMENTAL SITE - LOW LEVEL AREAS OF ENVIRONMENTAL CONCERN
	ENV-4.1	WASTE STOCKPILE AREA AND TRUCKING ROUTE
	ENV-4.2	SOIL CLASSIFICATION AREA AND TRUCKING ROUTE
	ENV-5.1	WASTE STOCKPILE AREA AND SOILS CLASSIFICATION AREA ENVIRONMENTAL DETAILS
HAZARDOUS BUILDING MATERIALS ABATEMENT	HBM-1.1	TEST PIT LOCATIONS AND ABATEMENT OF UNDERGROUND PAINTED MATERIALS
	HBM-1.2	PUMP & INCINERATOR BUILDING ASBESTOS ABATEMENT
	HBM-1.3	PUMP & INCINERATOR BUILDING PCB ABATEMENT
ARCHITECTURAL	A-0.1	CODE AND EGRESS PLAN
	A-0.2	ABBREVIATIONS
	A-1.1	GROUND LEVEL PROPOSED PLAN
	A-1.1.1	GROUND LEVEL WALL LOCATION PLAN
	A-1.2	LOWER LEVEL PROPOSED PLAN
	A-1.3	PROPOSED ROOF PLAN
	A-1.4	GROUND LEVEL CEILING PLAN
	A-2.1	SOUTH EXTERIOR ELEVATION
	A-2.2	NORTH EXTERIOR ELEVATION
	A-2.3	EAST & WEST EXTERIOR ELEVATIONS
	A-3.1	BUILDING SECTIONS I
	A-3.2	BUILDING SECTIONS II
	A-3.3	WALL SECTIONS
	A-4.1	INTERIOR ELEVATIONS I
	A-4.2	INTERIOR ELEVATIONS II
	A-5.1	COLUMN DETAILS
	A-5.2	FLOOR TO WALL CONNECTIONS
	A-5.3	FLAT ROOF TO WALL CONNECTION
	A-5.4	PITCHED ROOF TO WALL CONNECTION
	A-5.5	MISCELLANEOUS DETAILS
A-5.6	STAIR DETAILS	
A-5.7	ACCESS HATCH DETAILS	
A-5.8	TYPICAL STANDING SEAM ROOF DETAILS	
A-5.9	STAIR RAILING DETAILS	
A-5.10	DOCK LEVELER PIT DETAIL, SOLAR TUBE DETAIL	
A-6.1	DOOR SCHEDULE, WINDOW SCHEDULE, DOOR & WINDOW TYPES	
A-6.2	DOOR DETAILS	
A-6.3	INTERIOR FINISH SCHEDULE & DETAILS	
STRUCTURAL	S-0.1	STRUCTURAL NOTES
	S-0.2	ROOF LOAD DIAGRAM
	S-1.1	PILE LOCATION PLAN
	S-1.2	FOUNDATION PLAN
	S-1.3	LOWER LEVEL STRUCTURAL PLAN
	S-1.4	GROUND LEVEL FRAMING PLAN
	S-1.5	GROUND LEVEL LAYOUT PLAN
	S-1.6	MAIN ROOF FRAMING PLAN
	S-1.7	ROOF OVER-FRAMING PLAN
	S-3.1	FOUNDATION SECTIONS I
	S-3.2	FOUNDATION SECTIONS II
	S-3.3	FOUNDATION SECTIONS III
	S-3.4	FOUNDATION SECTIONS IV
	S-4.1	BRACING ELEVATIONS & DETAILS
S-5.1	TYPICAL CONCRETE DETAILS I	
S-5.2	TYPICAL CONCRETE DETAILS II	
S-5.3	TYPICAL STEEL DETAILS I	
S-5.4	TYPICAL STEEL DETAILS II	
S-5.5	TYPICAL MASONRY DETAILS	
S-5.6	STRUCTURAL CONCRETE DETAILS I	
S-5.7	STRUCTURAL CONCRETE DETAILS II	
S-5.8	STRUCTURAL CONCRETE DETAILS III	
S-5.9	STRUCTURAL CONCRETE DETAILS IV	
S-5.10	STRUCTURAL CONCRETE DETAILS V	
S-5.11	STRUCTURAL STEEL DETAILS I	
S-5.12	STRUCTURAL STEEL DETAILS II	
S-5.13	STRUCTURAL STEEL DETAILS III	
S-5.14	OVERFRAMING METAL STUD DETAILS	
S-6.1	STEEL COLUMN SCHEDULE	
S-6.2	CONCRETE BEAM SCHEDULES	
S-6.3	CONCRETE PIER / COLUMN SCHEDULES	
S-7.1	WET WEATHER PUMP PEDESTAL DETAILS	
S-7.2	DRY WEATHER PUMP PEDESTAL DETAILS	
S-7.3	PUMP PEDESTAL DETAILS	

INDEX OF DRAWINGS		
DISCIPLINE	SHEET	TITLE
STRUCTURAL (CONT.)	S-1.5	GROUND LEVEL LAYOUT PLAN
	S-1.6	MAIN ROOF FRAMING PLAN
	S-1.7	ROOF OVER-FRAMING PLAN
	S-3.1	FOUNDATION SECTIONS I
	S-3.2	FOUNDATION SECTIONS II
	S-3.3	FOUNDATION SECTIONS III
	S-3.4	FOUNDATION SECTIONS IV
	S-4.1	BRACING ELEVATIONS & DETAILS
	S-5.1	TYPICAL CONCRETE DETAILS I
	S-5.2	TYPICAL CONCRETE DETAILS II
	S-5.3	TYPICAL STEEL DETAILS I
	S-5.4	TYPICAL STEEL DETAILS II
	S-5.5	TYPICAL MASONRY DETAILS
	S-5.6	STRUCTURAL CONCRETE DETAILS I
	S-5.7	STRUCTURAL CONCRETE DETAILS II
	S-5.8	STRUCTURAL CONCRETE DETAILS III
	S-5.9	STRUCTURAL CONCRETE DETAILS IV
	S-5.10	STRUCTURAL CONCRETE DETAILS V
	S-5.11	STRUCTURAL STEEL DETAILS I
	S-5.12	STRUCTURAL STEEL DETAILS II
S-5.13	STRUCTURAL STEEL DETAILS III	
S-5.14	OVERFRAMING METAL STUD DETAILS	
S-6.1	STEEL COLUMN SCHEDULE	
S-6.2	CONCRETE BEAM SCHEDULES	
S-6.3	CONCRETE PIER / COLUMN SCHEDULES	
S-7.1	WET WEATHER PUMP PEDESTAL DETAILS	
S-7.2	DRY WEATHER PUMP PEDESTAL DETAILS	
S-7.3	PUMP PEDESTAL DETAILS	

INDEX OF DRAWINGS			
DISCIPLINE	SHEET	TITLE	
STRUCTURAL (CONT.)	S-7.4	PIPING SUPPORT DETAILS	
	S-7.5	ALUMINUM PLATE DETAILS	
	S-8.1	STAIR DETAILS	
	S-9.1	PIPE BRIDGE SYSTEM DETAILS I	
	S-9.2	PIPE BRIDGE SYSTEM DETAILS II	
	S-10.1	SURGE TANK FOUNDATION PLAN & DETAILS	
	ENVIRONMENTAL PROCESS	EP-1.1	PROCESS EQUIPMENT AND PIPING GROUND LEVEL PLAN
		EP-1.2	PROCESS EQUIPMENT AND PIPING LOWER LEVEL, PUMP ROOM AND WET WELL PLANS
		EP-3.1	PROCESS EQUIPMENT AND PIPING SECTIONS I
		EP-3.2	PROCESS EQUIPMENT AND PIPING SECTIONS II
EP-3.3		PROCESS EQUIPMENT AND PIPING SECTIONS III	
EP-5.1		PROCESS PIPING DETAILS	
EP-5.2		CHEMICAL STORAGE DETAILS	
EP-5.3		SURGE TANK DETAIL	
HVAC	H-0.1	HVAC LEGEND	
	H-1.1	HVAC DUCTWORK PLAN - GROUND LEVEL	
	H-1.2	HVAC PLAN - LOWER LEVEL	
	H-1.3	HVAC PLAN - ROOF LEVEL	
	H-1.4	HVAC PIPING PLAN - GROUND LEVEL	
	H-5.1	HVAC DETAILS	
	H-5.2	HVAC DETAILS & NOTES	
	H-5.3	HVAC CONTROLS	
	H-6.1	HVAC SCHEDULES	
	PROCESS INSTRUMENTATION	PI-0.1	PIPING AND INSTRUMENTATION LEGEND - SYMBOLS
PI-0.2		PIPING & INSTRUMENTATION LEGEND - CODE, NUMBERING, AND ABBREVIATIONS	
PI-0.3		CONTROL SYSTEM ARCHITECTURE	

INDEX OF DRAWINGS		
DISCIPLINE	SHEET	TITLE
PROCESS INSTRUMENTATION (CONT.)	PI-1.1	P&ID - HEADWORKS
	PI-1.2	P&ID - PUMPS & FORCE MAINS
	PI-1.3	P&ID - ODOR CONTROL & CHEMICAL FEED
PLUMBING	P-0.1	PLUMBING LEGEND, NOTES, & SCHEDULES
	P-1.1	GROUND LEVEL PLUMBING PLAN
	P-1.2	LOWER LEVEL PLUMBING PLAN
	P-1.3	ROOF LEVEL PLUMBING PLAN
	P-5.1	PLUMBING DETAILS
FIRE PROTECTION	FP-1.1	FIRE PROTECTION PLAN - GROUND LEVEL
ELECTRICAL	E-0.1	ELECTRICAL LEGEND AND NOTES
	E-0.2	ELECTRICAL LEGEND AND NOTES
	E-1.1	ONE-LINE DIAGRAM
	E-1.2	ELECTRICAL SITE PLAN
	E-2.1	GROUND LEVEL - ELECTRICAL POWER PLAN
	E-2.2	LOWER LEVEL, FLOW METER VAULT - ELECTRICAL POWER PLAN
	E-2.3	GROUND LEVEL - ELECTRICAL LIGHTING PLAN
	E-2.4	LOWER LEVEL - ELECTRICAL LIGHTING PLAN
	E-2.5	ROOF - ELECTRICAL POWER & LIGHTNING PROTECTION PLAN
	E-5.1	ELECTRICAL ROOM DETAILS
	E-6.1	PANEL SCHEDULES AND LIGHTING FIXTURE SCHEDULE
	E-7.1	WIRING DIAGRAMS 1
	E-7.2	WIRING DIAGRAMS 2
	E-7.3	WIRING DIAGRAMS 3
E-7.4	WIRING DIAGRAMS 4	
E-7.5	WIRING DIAGRAMS 5	
E-7.6	WIRING DIAGRAMS 6	
E-7.7	WIRING DIAGRAMS 7	
E-7.8	WIRING DIAGRAMS 8	



REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT
KEY PLAN AND INDEX OF DRAWINGS

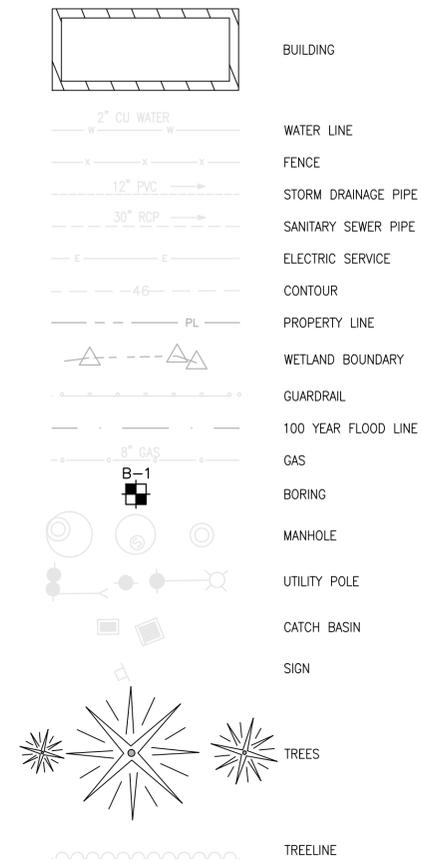
PROJECT NUMBER: 14712
 DESIGNED BY: TJC
 DRAWN BY: TJC
 DATE: FEBRUARY 23, 2016

G-0.2

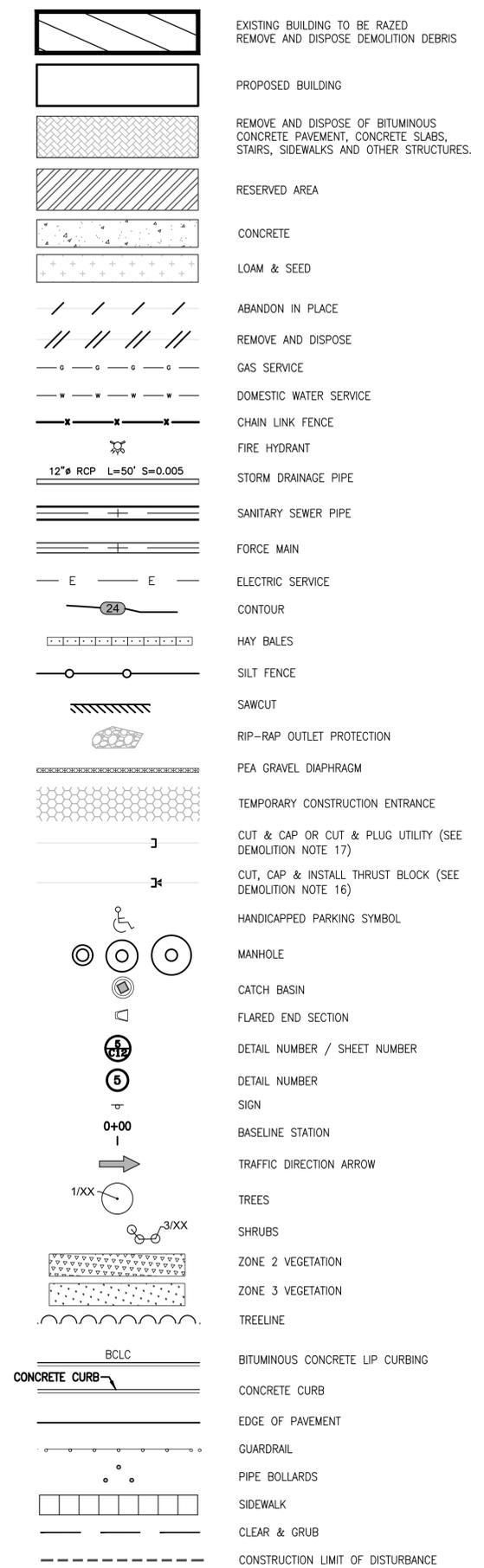
DRAWING FILE: C:\PROJECTS\14712-02-Middletown_PSP_Final_Design\ACAD\DWG\CONTRACT 2\14712-02-2 [RIBB].dwg PLOTTED: Apr 29, 2016 - 12:19pm BR: Tom Cowell

SITE LEGEND

EXISTING



PROPOSED



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmagine.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



**FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

LEGEND OF SYMBOLS

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: -
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

G-0.3

GENERAL SEQUENCE OF CONSTRUCTION

1. THE FOLLOWING SEQUENCE OF CONSTRUCTION IS INTENDED TO PRESENT A SUGGESTED SEQUENCE FOR CONSTRUCTION OF THE MAJOR COMPONENTS OF THE PUMP STATION PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A DETAILED SEQUENCE OF CONSTRUCTION AND SCHEDULE THAT WILL ACCOMMODATE THE CONTRACTORS MEANS AND METHODS WHILE MAINTAINING ALL EXISTING SANITARY SEWER FLOWS. THE CONTRACTOR MAY PROPOSE ALTERNATE APPROACHES TO THIS SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR'S ATTENTION IS FIRMLY DRAWN TO THE FACT THERE ARE EXISTING "CRITICAL" SANITARY SEWER AND SANITARY STRUCTURES THAT MUST BE PROTECTED AND MAINTAINED DURING CONSTRUCTION. THESE INCLUDE THE EXISTING SANITARY CHAMBER ADJACENT TO THE EXISTING PUMP STATION BUILDING; THE EXISTING 36 INCH SEWER INTERCEPTOR (EAST MAIN STREET SEWER) ENTERING AND LEAVING THE SANITARY CHAMBER; AND THE EXISTING 36 INCH SEWER DOWNSTREAM OF THE SANITARY CHAMBERS UP TO AND INCLUDING THE MANHOLE ON RIVER ROAD IN FRONT OF THE CITY'S WATER POLLUTION CONTROL PLANT; AND THE EXISTING 10 INCH SEWER (MAPLE STREET SEWER) THAT ENTERS THE EXISTING PUMP STATION. FLOW MUST ALSO BE MAINTAINED IN THE EXISTING 30 INCH AND 42 INCH SEWERS (RIVER ROAD SEWERS) IN RIVER ROAD THAT ENTER THE EXISTING WATER POLLUTION CONTROL PLANT. THESE FLOWS MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION UNTIL NEW GRAVITY SEWERS ARE IN PLACE AND THERE HAS BEEN A SUCCESSFUL COMMISSIONING OF THE PUMPING STATION EQUIPMENT DESIGNATED IN DIVISION 11 OF THE SPECIFICATIONS.
3. DURING CONSTRUCTION THE OWNER WILL CONTINUE TO DIVERT FLOWS TO THE EXISTING WATER POLLUTION CONTROL PLANT. UPON THE SUCCESSFUL COMMISSIONING OF THE NEW PUMPING STATION, FLOWS WILL BE DIVERTED TO THE NEW PUMP STATION. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY PLUGS AND PIPES PRIOR TO PERMANENTLY PLUGGING AND ABANDONING THE PIPES FOLLOWING SUCCESSFUL COMMISSIONING.
4. SURVEY AND STAKE THE LIMIT OF DISTURBANCE AND LOCATION OF THE SEDIMENTATION BARRIERS.
5. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES.
6. CLEAR AND GRUB TO THE LIMITS OF DISTURBANCE SHOWN ON THE SITE PLANS.
7. CONSTRUCT DOGHOUSE SMH 111 ON THE EXISTING 36 INCH EAST MAIN STREET SEWER.
8. INSTALL TEMPORARY MAPLE STREET BYPASS CHAMBER AND FORCE MAIN ON THE 10 INCH MAPLE STREET SEWER. THE TEMPORARY FORCE MAIN WILL BE TIED INTO THE EXISTING 36 INCH EAST MAIN SEWER. THIS WORK MUST BE COMPLETED PRIOR TO COMMENCING ANY DEMOLITION WORK ON THE EXISTING PUMP STATION. TEMPORARY BYPASS PUMPING SYSTEM SHALL BE DESIGNED, CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
9. INSTALL SHORING, BRACING AND PROTECTION FOR THE EXISTING PUMP STATION SANITARY CHAMBER. THIS CHAMBER MUST BE PROTECTED AND MAINTAINED UNTIL THE NEW 36 INCH EAST MAIN STREET GRAVITY SEWER IS CONNECTED TO AND FLOWING THROUGH THE NEW PUMP STATION.
10. ABATE AND REMOVE ASBESTOS, PCBs, UNIVERSAL WASTES AND LEAD CONTAINING PAINT AND BUILDING MATERIALS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
11. COMMENCE WITH SITE, BURIED TREATMENT TANKS, AND BUILDING SELECTIVE DEMOLITION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
12. COMPLETE SITE AND BUILDING DEMOLITION INCLUDING PILE AND DEEP FOUNDATION REMOVAL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
13. COMMENCE CONSTRUCTION OF THE PUMP STATION BUILDING, VALVE VAULT, SURGE TANK, AND SITE IMPROVEMENTS.
14. COMMENCE CONSTRUCTION OF THE GRAVITY SEWERS. CONSTRUCT THE 36 INCH EAST MAIN STREET SEWER FROM SMH 105 TO SMH 111.
15. CONSTRUCT THE 36 INCH RIVER ROAD SEWER FROM SMH 103 TO SMH 105.
16. CONSTRUCT THE 30 INCH FORCE MAIN EXTENSION FROM THE NEW PUMP STATION TO THE EAST MAIN STREET TIE-IN. THIS WORK MAY BE PERFORMED PRIOR TO TIE-IN TO THE ACTIVE SEWERS AND IS NOT DEPENDENT UPON THE PUMP STATION RECEIVING FLOWS. SEE 30 INCH FORCE MAIN - SUMNERS CREEK SUB-AQUEOUS CROSSING NOTES AND SPECIFICATION SECTION 02651 - SUB-AQUEOUS FORCE MAIN CROSSING.
17. COMPLETE CONSTRUCTION OF THE PUMP STATION BUILDING, SITE IMPROVEMENTS AND 30 INCH FORCE MAIN EXTENSION.
18. TIE-IN SMH 111 ON THE EXISTING 36 INCH EAST MAIN STREET SEWER AND MAKE NEW 36 INCH CONNECTION TO SMH 110. BREAK EXISTING 36 INCH SEWER AND TEMPORARILY PLUG EXISTING 36 INCH SEWER EXITING SMH 111 TO SANITARY CHAMBER. THIS WORK WILL BE PERFORMED IN THE WET WHILE MAINTAINING SEWER FLOWS. EAST MAIN STREET AND MAPLE STREET FLOWS WILL NOW BE DIRECTED TO THE NEW PUMP STATION AT SMH 105.
19. COMMENCE DEMOLITION OF THE EXISTING SANITARY CHAMBER. REMOVE TEMPORARY SHEETING AS ORDERED BY THE ENGINEER.
20. PROVIDE BYPASS PUMPING AND PIPING AND CONSTRUCT SMH 101 ON THE EXISTING 42 INCH RIVER ROAD SEWER AND MAKE NEW 36 INCH CONNECTION TO SMH 103. BREAK EXISTING 42 INCH SEWER AND TEMPORARILY PLUG EXISTING 42 INCH SEWER EXITING SMH 101 TO WWTP. 36 INCH RIVER ROAD SEWER FLOWS WILL NOW BE DIRECTED TO THE NEW PUMP STATION AT SMH 105.
21. CONSTRUCT DOGHOUSE SMH 102 ON THE EXISTING 30 INCH RIVER ROAD SEWER AND 30 INCH CONNECTION TO SMH 103. BREAK EXISTING 30 INCH SEWER AND TEMPORARILY PLUG EXISTING 30 INCH SEWER EXITING SMH 102 TO WWTP. RIVER ROAD FLOWS WILL NOW BE DIRECTED TO THE NEW PUMP STATION.
22. CONSTRUCT NEW 12 INCH MAPLE STREET SEWER FROM SMH 109 TO EXISTING SMH 114.
23. CONSTRUCT NEW 12 INCH MAPLE STREET SEWER FROM EXISTING SMH 114 TO EXISTING SMH 116. CONSTRUCTION OF THIS PORTION OF THE MAPLE STREET SEWER WILL REQUIRE BYPASS PUMPING. TEMPORARY BYPASS PUMPING SHALL BE DESIGNED, CONSTRUCTED AND MAINTAINED FUNCTIONAL BY THE CONTRACTOR.
24. CONSTRUCT NEW 12 INCH MAPLE STREET SEWER FROM EXISTING SMH 116 TO EXISTING SMH 118. THE MAPLE STREET SEWER FLOWS WILL NOW BE DIRECTED TO THE NEW PUMP STATION.
25. REMOVE OR ABANDON IN PLACE ALL TEMPORARY PLUGS AND EXISTING PIPES THAT ARE NO LONGER NEEDED OR IN SERVICE.

PROJECT PERMITS AND APPROVALS

1. THE CONTRACTOR SHALL PROVIDE NOTICE AND COMPLY WITH ALL PERMITS, LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK.
2. THE CITY OF MIDDLETOWN WATER AND SEWER DEPARTMENT HAS OBTAINED THE DEEP GENERAL PERMITS AND DEEP APPROVALS TO CONSTRUCT THE FORCE MAIN STREAM CROSSING OF SUMNERS CREEK AND THE 36 INCH SEWER WITHIN THE DOT R.O.W.
3. THE CITY OF MIDDLETOWN WATER & SEWER DEPARTMENT WILL OBTAIN THE LONG-TERM ENCROACHMENT PERMIT TO OPERATE A PIPE WITHIN THE CT DOT R.O.W. (INCLUDING P&W RR XING).
4. THE CONTRACTOR WILL OBTAIN CONSTRUCTION RELATED PERMITS, BONDS AND INSURANCES, INCLUDING: CITY DEPARTMENT OF PUBLIC WORKS ROADWAY OPEN CUT PERMIT, CT DOT TEMPORARY ACCESS OR EGRESS FOR WORKING WITHIN THE STATE R.O.W. THE OWNER WILL OBTAIN DEEP GENERAL PERMITS TO DEWATER AND HANDLE GROUNDWATER DURING CONSTRUCTION.
5. THE CONTRACTOR WILL OBTAIN ALL BUILDING DEMOLITION RELATED PERMITS, BONDS AND INSURANCES, FROM THE CITY DEPARTMENT OF PUBLIC WORKS.

EROSION AND SEDIMENTATION CONTROL NOTES

1. EROSION CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE PROVISIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES, A CONTINUOUS UNINTERRUPTED LINE OF STAKED HAY BALES AND OR SILT FENCING SHALL BE INSTALLED AT THE LIMITS OF DISTURBANCE, TO PROTECT SITE DRAINAGE STRUCTURES, AND IN GENERAL WHERE INDICATED OR SHOWN ON THE CONTRACT DRAWINGS.
3. CONTRACTOR SHALL MAINTAIN E&S MEASURES IN EFFECTIVE CONDITION UNTIL DISTURBED AREAS HAVE BEEN STABILIZED WITH VEGETATION.
4. FOLLOWING STABILIZATION OF DISTURBED AREAS, CONTRACTOR SHALL REMOVE AND DISPOSE ALL SILT FENCING AND HAY BALES. PRIOR TO REMOVAL OF THE SILT FENCING AND HAY BALES, ALL ACCUMULATED TRAPPED SEDIMENTS SHALL BE REMOVED BY THE CONTRACTOR. CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENTS AS SOON AS SEDIMENTS HAVE ACCUMULATED TO A DEPTH OF SIX (6) INCHES.
5. THE CONTRACTOR SHALL INSPECT THE E&S CONTROL MEASURES ON A WEEKLY BASIS DURING THE PERIOD OF CONSTRUCTION, THROUGH SUBSTANTIAL COMPLETION, AND AFTER STORMS OF GREATER THAN OR EQUAL TO 1" IN A 24 HOUR PERIOD. THE CONTRACTOR SHALL CHECK FOR UNDERMINING AND DETERIORATION. DAMAGED OR DETERIORATED EROSION CONTROL MEASURES SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF OBSERVATION BY THE CONTRACTOR OR WHEN NOTIFIED BY THE INSPECTOR.
6. THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION.
7. A STONE STABILIZATION PAD SHALL BE LOCATED AT THE SITE ENTRANCE TO REDUCE THE TRACKING OF MUD OR FLOWING OF SEDIMENT ONTO EAST MAIN STREET. THE CONSTRUCTION SITE ENTRANCE SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE PERIOD OF CONSTRUCTION. THE MAINTENANCE SHALL INCLUDE TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND OR AS ORDERED BY THE ENGINEER. ALL SEDIMENTS SPILLED, DROPPED, WASHED, OR TRACKED ONTO EAST MAIN STREET SHALL BE REMOVED AND CLEANED IMMEDIATELY BY THE CONTRACTOR.
8. AREAS BEYOND THE STAKED LIMITS OF DISTURBANCE SHALL BE UNDISTURBED.
9. CATCH BASIN INLETS AND PIPE OUTFALLS SHALL BE PROTECTED BY HAY BALE FILTERS OR SILT FENCE AS SHOWN ON THE CONTRACT DRAWINGS UNTIL SUCH AREAS ARE PERMANENTLY STABILIZED.
10. DENUDE SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED IN AREAS WHERE WORK IS TO CEASE FOR A PERIOD OF 14 DAYS OR GREATER AND WILL NOT RESUME WITHIN 21 DAYS OR LONGER DURING THE WINTER SEASON. AREAS EXPOSED FOR THE DESCRIBED PERIODS SHALL RECEIVE TEMPORARY VEGETATIVE COVER AND BE COMPLETELY COVERED WITH LOOSE HAY MULCH.
11. SOIL STOCKPILES AND DEPOSITION AREAS FOR CONSTRUCTION MATERIALS SHALL BE LOCATED OUTSIDE WETLAND AREAS AND ASSOCIATED WETLAND BUFFERS, AS INDICATED ON THE CONTRACT DRAWINGS, AND SHALL BE SURROUNDED BY A DOUBLE ROW OF STAKED HAY BALES.
12. STOCKPILES SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 2:1 (H:V) AND SHALL BE TEMPORARILY SEEDED AND OR STABILIZED.
13. TEMPORARY VEGETATION SHALL BE USED TO PROTECT STOCKPILES FROM WIND EROSION. STOCKPILES SHALL BE WATERED TO ESTABLISH AND MAINTAIN VEGETATIVE COVER. AVOID EXCESSIVE WATERING WHICH COULD PROMOTE EROSION. PLANTING OF GRASS SHALL BE ACCOMPLISHED BY THE CONTRACTOR AS EARLY AS POSSIBLE FOLLOWING COMPLETION OF GRADING AND CONSTRUCTION.
14. TEMPORARY TREATMENTS SHALL BE USED TO PROTECT BARE AREAS AND STOCKPILES FROM EROSION DURING CONSTRUCTION. BARE EARTH SLOPES AND SOIL STOCKPILES SHALL BE KEPT TO A MINIMUM AT ALL TIMES. TEMPORARY TREATMENTS SHALL BE INSTALLED ON ALL BARE EARTH PRIOR TO ENDING CONSTRUCTION FOR WINTER AND AS OTHERWISE NECESSARY. TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, OR FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, AND EXCELSIOR BLANKETS) THEY SHALL BE INCORPORATED INTO THE WORK AS ORDERED BY THE ENGINEER.
15. AS SOON AS WEATHER PERMITS AFTER THE COMPLETION OF FINE GRADING, ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITH PLACEMENT OF THE TOP SOIL AND SPECIFIED GRASS SEED MIXTURES, AND COVERED WITH A MAT OF LOOSE HAY.
16. THE PERMANENT SEED DESIGN MIX FOR UPLAND SOILS SHALL BE TYPE II LAWN MIXTURE IN ACCORDANCE WITH SECTION 614 OF THE PROJECT SPECIFICATIONS. THE APPLICATION RATE IS FIVE (5) LBS PER 1,000 SQUARE FEET.
17. PERMANENT SEEDING DATES SHALL BE AS FOLLOWS:
APRIL 1 - JUNE 13
AUGUST 15 - OCTOBER 15
18. THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS, BEFORE MIXING AND PLANTING WITH APPROPRIATE INOCULUM FOR EACH VARIETY
19. ALL GRASS PLANTED AREAS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE COMPLETION OF CONSTRUCTION AND FINAL ACCEPTANCE BY THE OWNER. THEREAFTER THE OWNER SHALL BEAR THE RESPONSIBILITY OF MAINTAINING THE DRAINAGE SYSTEM.

ENVIRONMENTAL GENERAL NOTES

1. THE CONTRACTOR'S ATTENTION IS DRAWN TO THE ENVIRONMENTAL DRAWINGS REFERENCING AREAS OF ENVIRONMENTAL CONCERN (AEOC).
2. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL SUBMIT FOR ENGINEER'S APPROVAL AN ENVIRONMENTAL HEALTH AND SAFETY PLAN, AN EXCAVATION AND CONTROLLED MATERIALS WORK PLAN, AND A GROUNDWATER DEWATERING AND CONTAMINATED GROUNDWATER TREATMENT PLAN.
3. THE CONTRACTOR SHALL BE MADE AWARE THAT THE ENTIRE SITE IS A GROUNDWATER AREA OF ENVIRONMENTAL CONCERN AND SHALL COMPLY WITH THE SPECIFICATION REQUIREMENTS FOR HANDLING CONTAMINATED GROUNDWATER FOUND IN SECTION 02413.
4. IN LIKE FASHION, THE CONTRACTOR SHALL COMPLY WITH ENVIRONMENTAL SPECIFICATION SECTIONS 02215 - DISPOSAL OF CONTROLLED MATERIALS, 02314 - CONTROLLED MATERIALS EXCAVATION AND 02316 - MANAGEMENT OF REUSABLE CONTROLLED MATERIAL.
5. PAYMENT FOR REMOVAL AND DISPOSAL OF CONTROLLED MATERIALS SHALL INCLUDE ONLY THAT MATERIAL NECESSARY TO EXCAVATE FOR CONSTRUCTION OF THE STRUCTURES AND PIPELINES AND SHOULD ONLY INCLUDE MATERIAL ENCOUNTERED TO WITHIN FIVE FEET OF THE FOOTPRINT OF THE STRUCTURES AND WITHIN THE LIMITS OF TRENCH EXCAVATION SHOWN ON THE DRAWINGS. ALL CONTROLLED MATERIAL EXCAVATED FROM OUTSIDE THESE LIMITS SHALL BE PROPERLY DISPOSED BY THE CONTRACTOR AT NO ADDITIONAL COST.
6. THE CONTRACTOR SHALL STRICTLY ADHERE TO ENVIRONMENTAL SPECIFICATION REQUIREMENTS PERTAINING TO ASBESTOS ABATEMENT AND LEAD AWARENESS AND UNIVERSAL WASTE RECLAMATION. ALL SUCH WORK WILL BE COMPLETED AND CERTIFIED BY THE CONTRACTOR AND REVIEWED BY THE OWNER PRIOR TO COMMENCEMENT OF BUILDING DEMOLITION.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL UNDERGROUND STORAGE TANKS, AS SHOWN ON THE DEMOLITION PLAN, INCLUDING THE TANKS AND DISPENSORS IN ACCORDANCE WITH SPECIFICATION SECTION 02072. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL SUBMIT A WORK PLAN FOR UST REMOVAL, INCLUDING TANK PULL PROCEDURE, DISPOSAL AND BACKFILLING.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF THOSE PORTIONS OF THE FORMER SLUDGE DIGESTION AND CLARIFICATION TREATMENT TANKS WITHIN THE LIMITS OF DISTURBANCE AND WHICH INTERFERE WITH THE PROPOSED PUMP STATION EXCAVATION. REMOVAL AND DISPOSAL SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS AND THESE PROJECT SPECIFICATIONS.
9. CONTRACTOR SHALL COMPLY WITH ALL STATE, FEDERAL, AND LOCAL PERMIT CONDITIONS AS NOTED IN THE SPECIFICATIONS.

GENERAL NOTES

1. LOCATIONS AND DEPTHS OF EXISTING UNDERGROUND PIPES, CONDUITS, AND STRUCTURES, AS SHOWN, ARE APPROXIMATE ONLY, BASED ON BEST AVAILABLE INFORMATION. THE GENERAL CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES. EXTREME CAUTION SHALL BE USED WHEN WORKING IN THE VICINITY OF EXISTING UTILITIES.
2. THE CONTRACTOR SHALL SUPPORT ALL UTILITY CROSSINGS ENCOUNTERED DURING INSTALLATION AND SHALL PROVIDE CONCRETE CRADLES AND ENCASEMENTS AS NEEDED OR AS DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR SHALL ADHERE TO CALL BEFORE YOU DIG NOTIFICATION REQUIREMENTS AND SHALL CONTACT CALL BEFORE YOU DIG A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION AT 1-800-922-4455.
4. EXISTING CONDITIONS SURVEY OBTAINED FROM A PLAN ENTITLED "TOPOGRAPHIC MAP OF EAST MAIN STREET PUMP STATION MIDDLETOWN, CT.", PREPARED BY UNITED INTERNATIONAL CORPORATION, DATED JUNE 4, 2013 AND SCALE 1"=30'.
5. THE GENERAL CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN AND SHEETING, SHORING AND BRACING PLAN FOR ENGINEER'S APPROVAL.
6. DUE TO THE POSSIBILITY OF IGNITION FROM ESCAPING GAS DURING CONSTRUCTION AND THE PRESENCE OF OTHER TYPES OF POTENTIALLY HAZARDOUS GASES, ETC., SMOKING AND OPEN FLAMES SHALL BE PROHIBITED IN ALL OPEN TRENCHES AND OTHER UNDERGROUND SPACES, INCLUDING THOSE SPACE DEFINED BY OSHA AS CONFINED SPACES.
7. THE CONTRACTOR SHALL SUPPLY AND UTILIZE GAS DETECTION DEVICES TO CHECK AND MONITOR ALL CONFINED SPACES BEFORE AND DURING WORKING WITHIN THESE AREAS. ALL CONTRACTOR PERSONNEL, INCLUDING SUB-CONTRACTORS AND SUB-CONSULTANTS, COMING INTO CONTACT WITH HAZARDOUS AND CONTROLLED MATERIALS SHALL POSSESS THE REQUIRED LEVEL OF HAZWOPER AND OSHA TRAINING APPROPRIATE FOR THE WORK.
8. THE CONTRACTOR SHALL DEMONSTRATE EXTREME CARE WHEN WORKING IN THE AREA OF EXISTING UTILITIES, PIPES AND DRAINAGE STRUCTURES SO AS NOT TO DAMAGE THEM.
9. THE CITY WATER AND SEWER DEPARTMENT SHALL BE IMMEDIATELY NOTIFIED OF ANY DIRECTION RECEIVED FROM PRIVATE OR PUBLIC UTILITY COMPANIES, AND STATE OR CITY EMPLOYEES WHICH COULD MATERIALLY AFFECT THE QUALITY OR COST OF WORK (INCREASE OR DECREASE).
10. IN THE EVENT AN EXISTING UTILITY MUST BE RELOCATED, TO ACCOMMODATE PROPOSED INFRASTRUCTURE, THE OWNER SHALL APPLY THE CT DEEP APPROVED REIMBURSEMENT FORMULA USED IN DETERMINING THE EQUITABLE REIMBURSEMENT TO THE MUNICIPALITY FOR THE NECESSARY RELOCATION OF UTILITIES FOUND TO BE IN CONFLICT WITH NEW INFRASTRUCTURE (DEEP UTILITY RELOCATION REIMBURSEMENT FOR CLEAN WATER FUND PROJECTS).
11. THE CONTRACTOR SHALL SUPPORT, PROTECT AND MAINTAIN EXISTING "CRITICAL" UTILITIES AND "CRITICAL" STRUCTURES, THROUGHOUT PERIOD OF CONSTRUCTION.
12. CONTROLLED OR NON-USABLE NON-CONTROLLED MATERIAL, DESIGNATED FOR REMOVAL SHALL BE PROMPTLY REMOVED AND DISPOSED OF OFF SITE. SURPLUS MATERIAL REMAINING AFTER BACKFILLING AND GRADING IS COMPLETE SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF SITE, INCLUDING CONTROLLED MATERIAL AND NON-CONTROLLED MATERIAL.
13. REFERENCE IS MADE TO THE CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS AND SPECIFICATIONS. ALL PROJECT SITE IMPROVEMENTS SHALL CONFORM TO THESE REGULATIONS AND THE SUB-REFERENCES INCORPORATED THEREIN.
14. REFERENCE IS MADE TO THE CITY OF MIDDLETOWN WATER & SEWER DEPARTMENT AND PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS AND SPECIFICATIONS. ALL PROJECT SITE IMPROVEMENTS SHALL CONFORM TO THESE REGULATIONS AND THE SUB-REFERENCES INCORPORATED THEREIN. IF THERE IS CONFLICT BETWEEN THE CITY STANDARDS AND CONNECTICUT DOT STANDARDS, THE MORE STRINGENT OF THESE SHALL APPLY.
15. CONSTRUCTION SHALL PROGRESS AT ALL TIMES IN STRICT ACCORDANCE WITH THESE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS, INFORMATION FOR BIDDERS, GENERAL CONDITIONS, SPECIAL CONDITIONS, GENERAL SPECIFICATIONS, POLLUTION CONTROL AND ENVIRONMENTAL PROTECTION, DEEP DISADVANTAGED BUSINESS ENTERPRISES AND SUBCONTRACTOR PARTICIPATION REQUIREMENTS. ANY WORK NOT MEETING THE ABOVE APPROVED STANDARDS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
16. CONSTRUCTION WILL BE SUBJECT TO INSPECTION BY THE CITY OF MIDDLETOWN, CT DEPARTMENT OF PUBLIC WORKS AND THE CITY OF MIDDLETOWN WATER AND SEWER DEPARTMENT.
17. UPON COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE BY THE CITY OF MIDDLETOWN WATER & SEWER DEPARTMENT (OWNER), BUT NO LONGER THAN THIRTY (30) DAYS AFTER SUBSTANTIAL COMPLETION OF THE WORK, AN AS-BUILT SURVEY SHALL BE PERFORMED AND PLANS PREPARED BY THE CONTRACTOR TO ACCURATELY DEPICT FINAL AS-BUILT CONDITIONS. THE SURVEY AND SEALED AS-BUILT PLAN SHALL BE PERFORMED BY A CONNECTICUT LICENSED PROFESSIONAL LAND SURVEYOR.
18. UPON COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE BY THE CITY OF MIDDLETOWN WATER & SEWER DEPARTMENT (OWNER), BUT NO LONGER THAN NINETY (90) DAYS AFTER SUBSTANTIAL COMPLETION OF THE WORK, THE CONTRACTOR SHALL FURNISH TO THE OWNER OR OWNER'S PROJECT REPRESENTATIVE, "MARK UPS" SHOWING ALL APPROVED CHANGES TO THE DESIGN OF EACH PROJECT DISCIPLINE (ELECTRICAL, HVAC, PROCESS, PLUMBING, FIRE PROTECTION, SECURITY SYSTEM, STRUCTURAL, ARCHITECTURAL). MARK UPS SHALL ACCURATELY DEPICT FINAL AS-BUILT CONDITIONS. UPON ACCEPTANCE OF THE MARK UPS, THE CONTRACTOR SHALL FURNISH ELECTRONIC DRAWINGS TO THE OWNER AND OWNER'S PROJECT REPRESENTATIVE. THE AS BUILT DRAWINGS SHALL BE SEALED BY A CONNECTICUT LICENSED PROFESSIONAL ENGINEER.
19. THE CONTRACTOR SHALL MAKE, AT HIS EXPENSE, TEST PITS, TO DETERMINE THE EXACT LOCATIONS OF UTILITIES AND STRUCTURES INCLUDING CONNECTIONS TO EXISTING UTILITIES. ANY EXPENSE AND OR DELAY OCCASIONED BY UTILITIES AND STRUCTURES INCORRECTLY SHOWN ON THE CONTRACT DOCUMENTS, OR DAMAGE THERETO, INCLUDING THOSE NOT SHOWN, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
20. THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATION IN A DRY CONDITION AT ALL TIMES.
21. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR SHALL BE LOAMED AND SEEDED OR SODDED IF SO DIRECTED, AND RETURNED TO THEIR ORIGINAL CONDITION. ALL VEGETATED OR WOODED AREAS TO BE CLEARED AND GRUBBED SHALL BE LOAMED AND SEEDED WHERE INDICATED OR SHOWN.
22. ALL EXISTING PAVEMENT SHALL BE REPLACED WITH TEMPORARY PAVEMENT AND SHALL MEET THE CITY OF MIDDLETOWN PUBLIC WORKS DEPARTMENT ROADWAY REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE TEMPORARY PAVEMENT UNTIL SUCH TIME AS PERMANENT PAVEMENT IS INSTALLED. PERMANENT PAVEMENT SHALL MEET CITY PUBLIC WORKS REQUIREMENTS AND SPECIFICATIONS.
23. ALL EXISTING CURBING, SIDEWALK AND PAVEMENT DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE SAWCUT AT THE NEXT NEAREST JOINT, REPLACED, AND RESTORED IN KIND.
24. CONTRACTOR SHALL INSTALL AND MAINTAIN SHEETING AND BRACING OR OTHER SUITABLE TRENCH PROTECTION AS NECESSARY TO PROTECT WORKMEN AND THE PUBLIC ON OR NEAR THE SITE; PREVENT INJURIOUS CAVING OR EROSION, OR LOSS OF GROUND; MAINTAIN AT ALL TIMES PEDESTRIAN AND VEHICULAR TRAFFIC AND PROTECT ADJACENT STRUCTURES.
25. CONTRACTOR SHALL INSTALL AND MAINTAIN SHEETING AND BRACING OR OTHER SUITABLE PROTECTION FOR "CRITICAL STRUCTURES" AS NECESSARY TO PROTECT WORKMEN AND THE PUBLIC ON OR NEAR THE SITE; PREVENT INJURIOUS CAVING OR EROSION, OR LOSS OF GROUND.
26. CONTRACTOR SHALL MONITOR ANY MOVEMENT OF THE SANITARY CHAMBER DURING THE PERIOD OF CONSTRUCTION.

27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MATERIAL TESTING IN COMPLIANCE WITH THE SPECIFICATIONS, AND UNLESS NOTED OTHERWISE.
28. THIS PROJECT WILL REQUIRE A STATEMENT OF SPECIAL INSPECTIONS. SPECIAL INSPECTIONS AND MATERIALS TESTING WILL BE THE RESPONSIBILITY OF THE OWNER OR OWNER'S REPRESENTATIVE, INCLUDING RETENTION OF A TESTING LABORATORY. THE CONTRACTOR WILL COORDINATE THESE INSPECTIONS WITH THE WORK PROGRESSION.
29. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL. REFERENCE SPECIFICATION SECTION 120 FOR MAINTENANCE AND PROTECTION OF TRAFFIC AND EXHIBIT C CONNODT TRAFFIC CONTROL PLANS.
30. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL CONSTRUCTION ACTIVITIES FOLLOW OSHA SAFETY RULES AND GUIDELINES
31. NECESSARY PRECAUTIONS ARE TO BE TAKEN WHEN WORKING IN THE AREA OF THE EXISTING OVERHEAD WIRES AND CL&P UTILITY POLES #3830 & #870.
32. THE CONTRACTOR WILL COMPLETE ALL WORK IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND APPROVALS BY THE CITY OF MIDDLETOWN. WHERE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS AND THE CITY APPROVALS ARISE, THE LATTER SHALL GOVERN.
33. ALL ELEVATIONS ARE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929 UNLESS OTHERWISE NOTED.
34. CONTRACTOR SHALL BE LIMITED TO WORKING WITHIN THE CONSTRUCTION LIMIT OF DISTURBANCE AREAS AS INDICATED ON THE CONTRACT PLANS OR PERMIT PLATES. IF THE CONTRACTOR SHOULD REQUIRE ADDITIONAL WORK AREA THEN HE SHALL SEEK APPROVAL FROM THE CITY OF MIDDLETOWN. ALL AFFECTED SEDIMENTATION CONTROLS SHALL BE RELOCATED AND RESET IN KIND.
35. BEST MANAGEMENT PRACTICES WILL BE UTILIZED DURING ANY ON-SITE DEWATERING ACTIVITIES WITHIN THE CONSTRUCTION LIMITS OF DISTURBANCE.
36. MEAN HIGH WATER (MHW) ELEVATION IS BASED ON DATUM OBSERVED AT MIDDLETOWN TIDAL BENCH MARK LOCATED AT HARBOR PARK.
37. HIGH TIDE LINE IS BASED ON REPORTED CTDEEP COASTAL JURISDICTION LINE (CJL)
38. THE ORDINARY HIGH WATER (OHW) LINE IS DETERMINED BY A CERTIFIED SOILS SCIENTIST
39. WHERE TEMPORARY WETLAND IMPACT AREAS EXIST, AREAS SHALL BE STABILIZED, GRADED AND RE-SEEDED WITH AN APPROVED WETLAND SEED MIX SO AS TO RESTORE THE TEMPORARILY IMPACTED WETLAND AREA.

DEMOLITION NOTES

1. THE CONTRACTOR IS DIRECTED TO SPECIFICATION SECTION 02060 SELECTIVE DEMOLITION AS WELL AS TO THE PERTINENT DRAWINGS.
2. NO ON-SITE DEMOLITION ACTIVITIES SHALL COMMENCE UNTIL ALL REQUIRED LOCAL BUILDING DEPARTMENT PERMITS, BONDS AND INSURANCES, ARE OBTAINED BY THE CONTRACTOR.
3. NO BUILDING DEMOLITION WILL BE PERMITTED UNTIL COMPLETION OF ASBESTOS ABATEMENT AND UNIVERSAL WASTE REMOVAL. COORDINATE DEMOLITION WITH PCB ABATEMENT WORK.
4. REFER TO HAZARDOUS BUILDING MATERIAL ABATEMENT DRAWINGS AND SPECIFICATIONS FOR ABATEMENT PRIOR TO DEMOLITION OF PUMP STATION BUILDING, INCINERATOR BUILDING, AND FORMER TREATMENT TANKS.
5. NO MATERIAL CRUSHING EQUIPMENT SHALL BE ALLOWED ON SITE.
6. REUSE OF BUILDING DEMOLITION DEBRIS IS STRICTLY PROHIBITED. ALL BUILDING DEMOLITION DEBRIS IS TO BE HAULED OFF SITE AND CRUSHED AT A LOCATION DETERMINED BY THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL LAWFULLY DISPOSE OF ALL DEBRIS GENERATED. ALL OF THIS WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.
7. ALL BUILDING DEBRIS SHALL BE PLACED IN APPROPRIATE CONTAINERS. NO STOCKPILING OF DEMOLITION DEBRIS WILL BE PERMITTED ON SITE. ALL DEBRIS SHALL BE PLACED IN ROLL OFF OR OTHER APPROPRIATE COVERED CONTAINERS BY THE END OF EACH DAYS ACTIVITIES AND SHALL BE REMOVED AND PROPERLY HANDLED AND DISPOSED OFF SITE BY THE CONTRACTOR. ALL OF THIS WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLETELY PROTECT ALL BUILDINGS, STRUCTURES AND UTILITIES OUTSIDE THE LIMIT OF DISTURBANCE AS WELL AS THE "CRITICAL" STRUCTURES.
9. THE CONTRACTOR SHALL REMOVE AND DISPOSE ALL NON-CRITICAL STRUCTURES AND THEIR CONTENTS, INCLUDING BUT NOT LIMITED TO PIPING, CONDUITS, FENCES, SIDEWALKS, ASPHALTIC SURFACES, GRAVEL SURFACES, LIGHT POLES, CONCRETE SLABS AND MISCELLANEOUS DEBRIS WITHIN THE LIMITS OF DISTURBANCE.
10. PROTECT ALL DESIGNATED TREES NOT SHOWN AS "REMOVE AND DISPOSE". TRIMMING OR CLEARING OF TREES NOT MARKED AS "REMOVE AND DISPOSE" WILL REQUIRE OWNER'S ARBORIST APPROVAL.
11. THE CONTRACTOR SHALL CONDUCT OPERATIONS TO AVOID DAMAGE TO TREES TO REMAIN, INCLUDING LIMITING DAMAGE TO ROOTS WITHIN THE TREE DRIP LINE. TREE PROTECTION SHALL BE INSTALLED AROUND ALL INDIVIDUAL TREES DESIGNATED TO REMAIN.
12. EARTH, TOPSOIL, DEMOLITION DEBRIS, CONTAINERS AND EQUIPMENT SHALL NOT BE PLACED OR STOCKPILED BENEATH TREES OR WITHIN THE LIMIT OF TREE DRIP LINES.
13. ADDITIONAL TREE PROTECTION SHALL BE INSTALLED BY THE CONTRACTOR IN ALL AREAS WHERE DEMOLITION, REGRADING AND OR RESTORATION OPERATIONS COULD POSE A RISK TO ADJACENT TREES DESIGNATED TO REMAIN.
14. THE CONTRACTOR SHALL REMOVE DEEP FOUNDATION PILING, CAPS, FOUNDATION MATS, ETC. BENEATH THE FORMER TREATMENT TANKS PRIOR TO CONSTRUCTING THE NEW PUMP STATION FOUNDATION. AS THE ACTUAL QUANTITY AND DEPTHS OF PILINGS FOR COMPLETE REMOVAL ARE LARGELY UNKNOWN, A SEPARATE UNIT PRICE BID ITEM IS INCLUDED FOR THIS WORK.
15. DEEP FOUNDATION PILINGS UNDERLYING FORMER BUILDINGS WHICH DO NOT INTERFERE WITH THE PROPOSED WORK MAY BE CUT AND CAPPED A MINIMUM OF THREE FEET BELOW FINAL GRADE AND BACKFILLED. IT SHALL NOT BE NECESSARY TO REMOVE THE ENTIRE PILE IF IT DOES NOT INTERFERE WITH THE PROPOSED WORK. AS THE ACTUAL QUANTITY AND DEPTHS OF PILINGS FOR PARTIAL REMOVAL ARE LARGELY UNKNOWN, A SEPARATE UNIT PRICE BID ITEM IS INCLUDED FOR THIS WORK.
16. TERMINATE UTILITIES SERVING STRUCTURES TO BE DEMOLISHED IN ACCORDANCE WITH THE NOTED INSTRUCTIONS, DETAILS AND THE SPECIFICATIONS.
17. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF GAS LINES WITH YANKEE GAS COMPANY. COORDINATE ALL VALVE OPERATIONS AND GAS LINE REMOVAL AND DEMOLITION WITH YANKEE GAS COMPANY.
18. ALL SITE UTILITIES THAT ARE NO LONGER IN SERVICE SHALL BE CUT AND CAPPED OR REMOVED IF NECESSARY. PIPE OR CONDUIT UNDER 24 INCHES IN DIAMETER SHALL BE ABANDONED OR REMOVED. PIPE 24 INCHES DIAMETER OR GREATER SHALL BE ABANDONED AND FILLED WITH CONTROLLED LOW STRENGTH MATERIAL (FLOWABLE FILL) OR REMOVED IF NEEDED TO AVOID CONFLICTS WITH PROPOSED WORK.
19. REFER TO EXISTING STRUCTURAL PILING LOCATIONS ON DETAIL SHEETS
20. REFER TO SPECIFICATION SECTION NO. 02060 SELECTIVE DEMOLITION.
21. REFER TO SPECIFICATION SECTION 02072 REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANKS.
22. REFER TO SHEET C-1.5 FOR MAPLE STREET SEWER BYPASS PUMPING LOCATION.
23. REFER TO BYPASS PUMPING SPECIFICATIONS FOR MAINTAINING FLOWS THROUGH EXISTING 10" MAPLE STREET SEWER DURING CONSTRUCTION OF 12" MAPLE STREET SEWER.



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL (860) 563-3158
www.cdrmaguire.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

NOTES & SEQUENCE OF CONSTRUCTION I

PROJECT NUMBER: 14712

DESIGNED BY: -

DRAWN BY: -

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

G-0.4

SHEET 4 OF 155

PROPOSED 30 INCH FORCE MAIN EXTENSION – SUMNERS CREEK SUB-AQUEOUS CROSSING NOTES

1. THE WORK SHALL BE CONFINED TO THE PERIOD OF TIME BETWEEN JULY 1 AND OCTOBER 31.
2. THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S REVIEW AND APPROVAL A DETAILED METHODOLOGY OF CONSTRUCTION OF THE SUB-AQUEOUS CROSSING, INCLUDING, TRENCH EXCAVATION, METHOD OF TRENCH STABILIZATION (SOE) WATERING AND HANDLING OPERATIONS, SITE ACCESS AND EGRESS, MATERIALS, ANTICIPATED HEAVY CONSTRUCTION EQUIPMENT AND PROJECT SCHEDULE, WITH SUPPORTING DOCUMENTATION INCLUDING DESIGN COMPUTATIONS SIGNED AND SEALED BY A CONNECTICUT LICENSED PROFESSIONAL ENGINEER.
3. THE INLAND FRESHWATER WETLANDS IMPACTED DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION ELEVATIONS AND REPLANTED WITH PLANTS CORRESPONDING TO THE SCRUB-SHRUB VEGETATION IN THE SURROUNDING AREA.
4. BEST MANAGEMENT PRACTICES, INCLUDING BUT NOT LIMITED TO, EROSION AND SEDIMENTATION CONTROLS, SHALL BE UTILIZED TO PROTECT THE STREAM BANKS DURING CONSTRUCTION.
5. ANY MATURE TREES INTERFERING WITH THE PROPOSED FORCE MAIN PIPELINE ALIGNMENT SHALL BE CLEARED AND GRUBBED.
6. THE CONTRACTOR SHALL ADHERE TO THE E&S CONTROLS IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS AS WELL AS ANY MORE STRINGENT REQUIREMENTS IMPOSED BY THE CITY OF MIDDLETOWN IWWA.
7. THE CONTRACTOR SHALL BE AWARE THE STRATA UNDERLYING THE STREAMBED IS COMPOSED OF LOOSE BROWN SILT AND HE SHALL UNDERTAKE APPROPRIATE MEASURES TO PREVENT TRENCH COLLAPSE
8. THE SUB-AQUEOUS CROSSING SHALL BE PERFORMED IN TWO PHASES SUCH THAT APPROXIMATELY HALF THE STREAM WIDTH IS UNDISTURBED AND ALLOWED TO BYPASS FLOW
9. EXCAVATED SOILS UNDERLYING THE STREAMBED SHALL BE HAULED TO AN OWNER DESIGNATED TEMPORARY WASTE STOCKPILE AREA LOCATED ABOVE THE 100 YEAR FLOOD ELEVATION
10. THE TOP OF ANY PROPOSED COFFERDAM SHALL BE SET AT A MAXIMUM ELEVATION OF 6.0 FEET, WHICH IS BASED ON THE CTDOT DRAINAGE MANUAL, TO BE OVERTOPPED BY A 2 YEAR STORM EVENT
11. AT THE COMPLETION OF WORK, CONTRACTOR SHALL CUT OFF AND DISPOSE OF ANY COFFERDAM TO A MINIMUM OF 6 INCHES BELOW THE FINAL STREAMBED ELEVATION, WITH THE REMAINING COFFERDAM LEFT IN PLACE IF SO ORDERED BY THE ENGINEER
12. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO REMOVE SUSPENDED SOLIDS FROM THE DEWATERED FLOWS. A ZONE OF INFLUENCE OF VISUAL IMPACT SHALL BE ESTABLISHED AS "NO INCREASE" AT A DISTANCE OF 50 FEET DOWNSTREAM OF THE WORK AREAS.
13. THE CONTRACTOR SHALL COMPLY WITH THE TERMS AND CONDITIONS IMPOSED BY CT DEEP.

PROPOSED 36 INCH RIVER ROAD GRAVITY SEWER- WETLANDS CROSSING NOTES

1. THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S REVIEW AND APPROVAL A DETAILED METHODOLOGY OF CONSTRUCTION OF THE GRAVITY SEWER PIPE AND BRIDGE CROSSING, INCLUDING, TRENCH EXCAVATION, METHOD OF TRENCH STABILIZATION, SLOPE STABILIZATION, HORIZONTAL EARTH BORING AND JACKING OPERATION, DEWATERING AND HANDLING OPERATIONS, SITE ACCESS AND EGRESS, MATERIALS, ANTICIPATED HEAVY CONSTRUCTION EQUIPMENT, AND PROJECT SCHEDULE, WITH SUPPORTING DOCUMENTATION INCLUDING DESIGN COMPUTATIONS SIGNED AND SEALED BY A CONNECTICUT LICENSED PROFESSIONAL ENGINEER.
2. THE INLAND FRESHWATER WETLANDS IMPACTED BY CONSTRUCTION IN THE VICINITY OF THE PIPE UTILITY BRIDGE SHALL BE RESTORED TO PRE-CONSTRUCTION ELEVATIONS AND REPLANTED WITH PLANTS CORRESPONDING TO THE SCRUB-SHRUB VEGETATION IN THE SURROUNDING AREA. ANY TEMPORARY FILL USED TO CREATE STABLE WORK SURFACES DURING CONSTRUCTION SHALL BE REMOVED AT THE COMPLETION OF CONSTRUCTION.
3. A TEMPORARY ANTI-TRACKING PAD CONSISTING OF CTDOT M.02.01 CRUSHED STONE SHALL BE INSTALLED FOR A MINIMUM DISTANCE OF 50 FEET FROM THE SITE ENTRANCE OFF RIVER ROAD.
4. BEST MANAGEMENT PRACTICES, INCLUDING BUT NOT LIMITED TO, EROSION AND SEDIMENTATION CONTROLS, SHALL BE UTILIZED TO PROTECT THE INLAND WETLANDS DURING CONSTRUCTION.
5. ALL MATURE TREES INTERFERING WITH THE WORK AND WITHIN THE CONSTRUCTION LIMIT OF DISTURBANCE SHALL BE CLEARED AND GRUBBED.
6. THE CONTRACTOR SHALL ERECT A TEMPORARY BRIDGE SPANNING THE INTERMITTENT DRAINAGE CHANNEL USING CRANE MATTING OR OTHER ENGINEER APPROVED MATERIALS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE ALLOWED TO PLACE ANY FILL MATERIALS WITHIN THE DRAINAGE DITCH
7. A CRANE SHALL BE FURNISHED BY THE CONTRACTOR AND UTILIZED TO TRANSFER THE UTILITY BRIDGE AND ANY OTHER EQUIPMENT AND MATERIALS HE DEEMS APPLICABLE TO AND FROM THE CONSTRUCTION AREA.
8. EXCAVATED SOILS SHALL BE HAULED TO AN OWNER DESIGNATED TEMPORARY WASTE STOCKPILE AREA LOCATED ABOVE THE 100 YEAR FLOOD ELEVATION.
9. THE CONTRACTOR SHALL PROMPTLY REMOVE EXCAVATED MATERIALS FROM THE WORK SITE.
10. THE CONTRACTOR MAY USE SHEET PILING TO REDUCE EXCAVATION OF THE TEMPORARY ACCESS ROAD AND TO STABILIZE SIDE SLOPES. THE ENGINEER WILL DETERMINE WHETHER THE SHEETING SHALL REMAIN IN PLACE AFTER THE COMPLETION OF WORK.
11. THE TEMPORARY ACCESS ROAD CUT SIDE SLOPES SHALL NOT EXCEED 1H:1V
12. THE TEMPORARY ACCESS ROAD GRADE SHALL NOT EXCEED 2H:1V
13. UNDER NO CONDITIONS SHALL FILL BE INSTALLED WITHIN AREAS BELOW THE HIGH TIDE LINE AND COASTAL JURISDICTION LINE (EL. 4.1 FEET) AS INDICATED ON THE PLANS AND PERMIT PLATES
14. ANY MATERIALS, DRILLING FLUIDS, ETC. SPILLED WITHIN THE WETLAND AREA SHALL BE IMMEDIATELY REMOVED
15. THE EXISTING 36-INCH RCP SHALL BE REMOVED WITH ALL TIMBER CRIBBING AND EXCESS CONSTRUCTION MATERIALS FOLLOWING PUMP STATION COMMISSIONING. THE BURIED PORTIONS OF THE 36-INCH RCP SHALL BE FILLED WITH AN APPROVED FLOWABLE FILL AND CAPPED IN A MANNER APPROVED BY THE ENGINEER.
16. ALL DISTURBED AREAS SHALL BE RESTORED UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES
17. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY TO COLLECT, MANAGE, TREAT AND DISPOSE OF CONTAMINATED GROUNDWATER GENERATED DURING DEWATERING OPERATIONS WITHIN THE DESIGNATED GROUNDWATER AREA OF ENVIRONMENTAL CONCERN WITHIN THE PROJECT LIMITS" (SPECIFICATION SECTION 02413 – HANDLING CONTAMINATED GROUNDWATER).
18. THE CONTRACTOR SHALL COMPLY WITH THE TERMS AND CONDITIONS IMPOSED BY CT DEEP.

PROPOSED 12 INCH GRAVITY SEWER NOTES

1. RECONSTRUCT CONCRETE INVERTS IN EXISTING SMH 114-118 THAT ARE TO BE RE-USED.
2. PLUG EXISTING 10" PVC SEWER TO BE ABANDONED AT EACH SMH 114-117.
3. REMOVE AND DISPOSE EXISTING 10" PVC DOWNSTREAM OF SMH 118 AS NECESSARY TO INSTALL PROPOSED 12" PVC SEWER.
4. CORE DRILL EXISTING SMH 114-118 AS NECESSARY FOR PROPOSED 12" PVC SEWER. INSTALL FLEXIBLE PIPE-TO-MANHOLE "BOOT" STYLE CONNECTOR, PSX, KOR-N-SEAL, OR EQUAL.
5. REMOVE AND DISPOSE EXISTING SERVICE CHIMNEY AT STA. 511+11.80 AND REPLACE WITH NEW SERVICE CHIMNEY CONNECTION TO PROPOSED 12" PVC SEWER.
6. INFORMATION ON EXISTING CHIMNEY BASED ON MAY 2000 AS-BUILT COMBINED SEWER OVERFLOW SEPARATION PROBLEM AREA NO. 5 CONTRACT NO. 14B, SHEET 25 OF 110 BY UNITED INTERNATIONAL CORPORATION.



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmagine.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

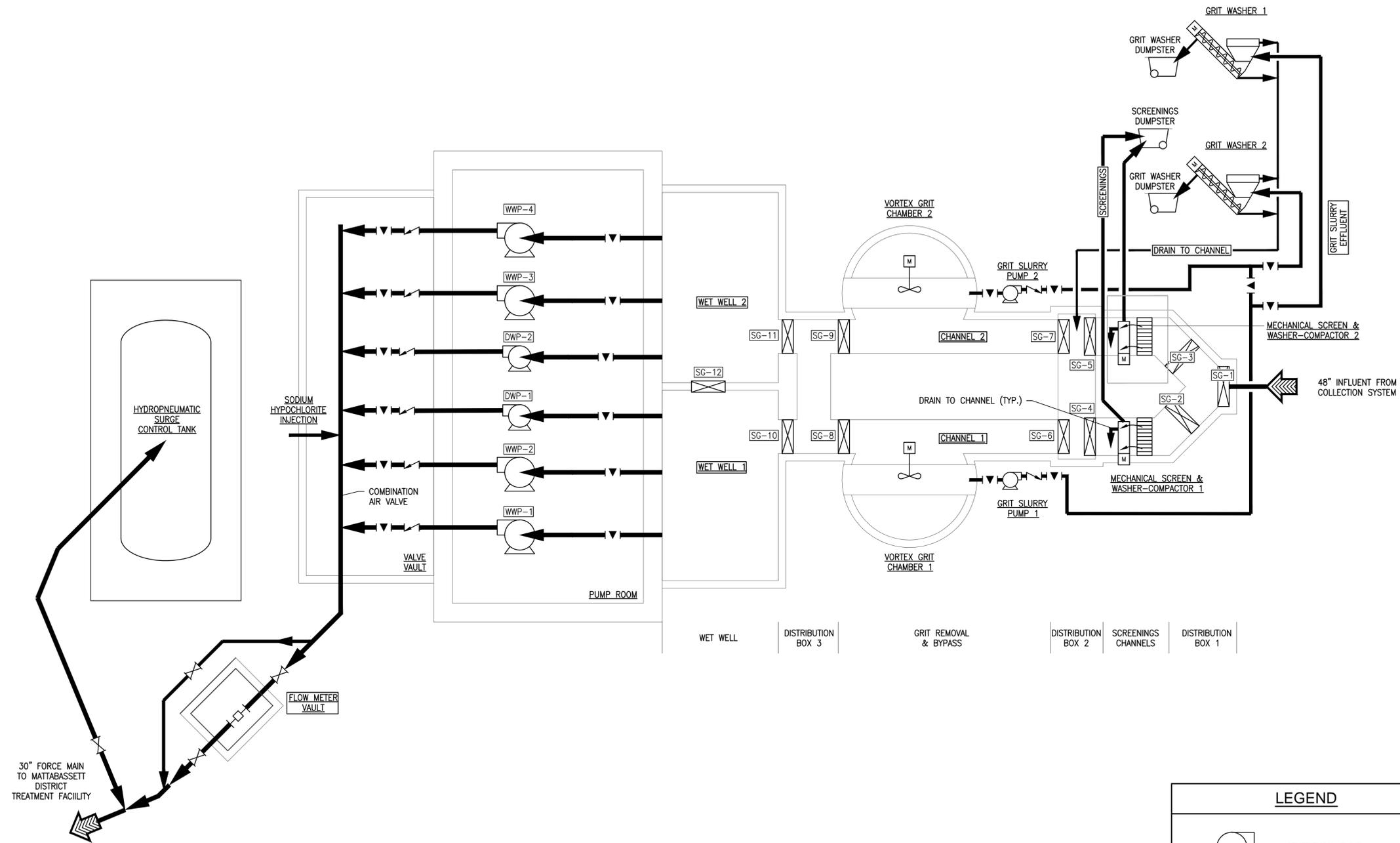
MIDDLETOWN, CT

NOTES AND SEQUENCE OF CONSTRUCTION II

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: -
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

G-0.5



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PROCESS FLOW
DIAGRAM

PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

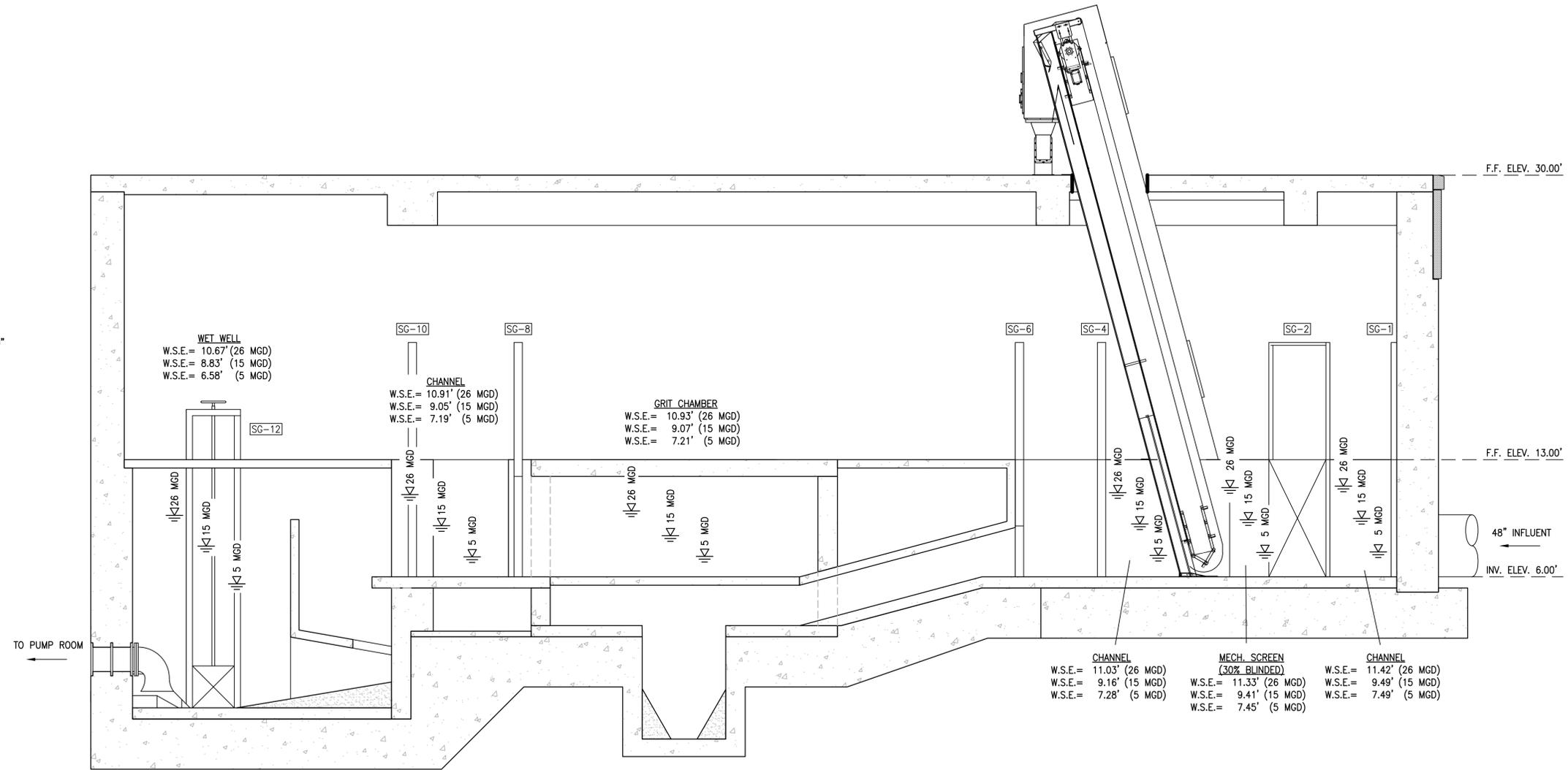
G-0.6

LEGEND	
	CENTRIFUGAL PUMP
	CHECK VALVE
	PLUG VALVE
	SLIDE GATE (MANUAL)
	MIXER

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

PUMP CONTROL ELEVATIONS

HIGH HIGH LEVEL ALARM	11'-7"
HIGH LEVEL ALARM	10'-10"
ALL WWP ON	10'-1"
LAG WWP ON	9'-4"
LEAD WWP ON	8'-7"
LAG DWP ON	7'-7"
LEAD DWP ON	6'-7"
ALL PUMPS OFF	5'-10"
LOW LEVEL ALARM	5'-4"



NOTE: ONE MECHANICAL SCREEN CHANNEL AND VORTEX GRIT UNIT IN OPERATION.



**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

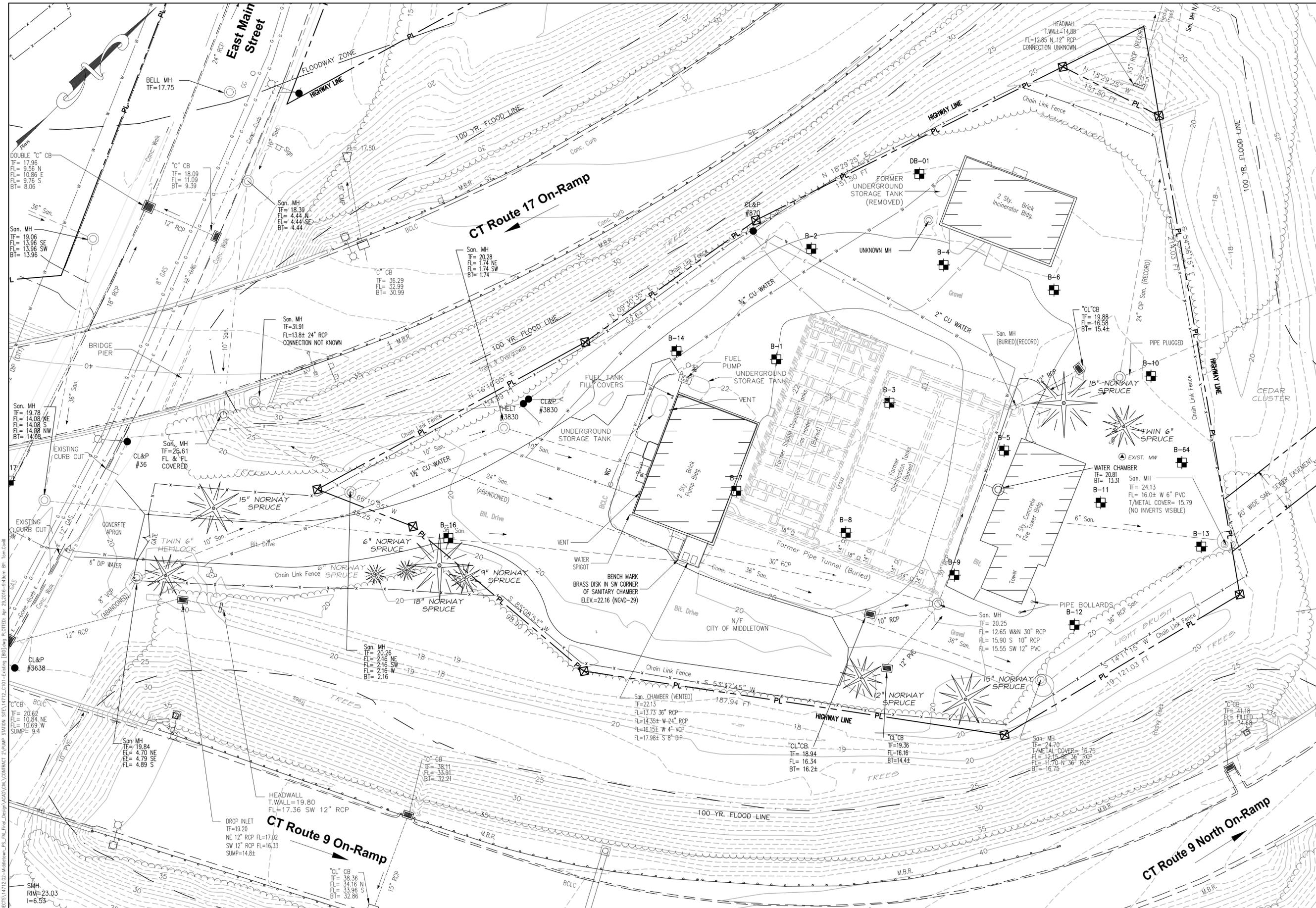
HYDRAULIC PROFILE

PROJECT NUMBER: 14712
 DESIGNED BY: -
 DRAWN BY: -
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

G-0.7

HYDRAULIC PROFILE
 VERTICAL: NOT TO SCALE
 HORIZONTAL: NOT TO SCALE



NOTE:
 1. REFER TO EXHIBIT A IN THE PROJECT SPECIFICATION FOR ALL BORING LOGS.

SCALE
 HORIZ. 1"=20'
 0 20' 40' 60'

CDR MAGUIRE
 2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmaguire.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

EXISTING
 CONDITIONS PLAN

PROJECT NUMBER: 14712
 DESIGNED BY: -
 DRAWN BY: -
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

C-1.1

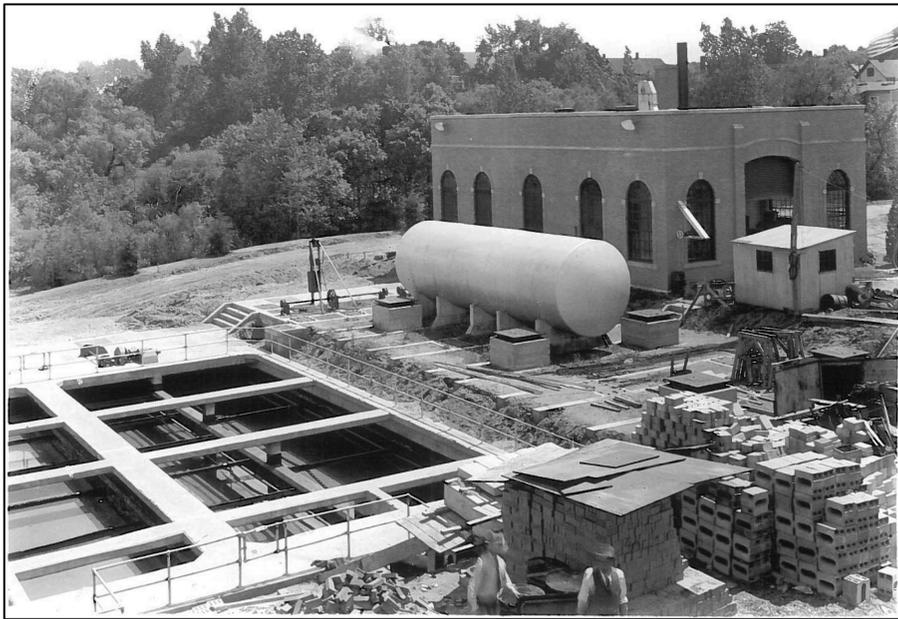
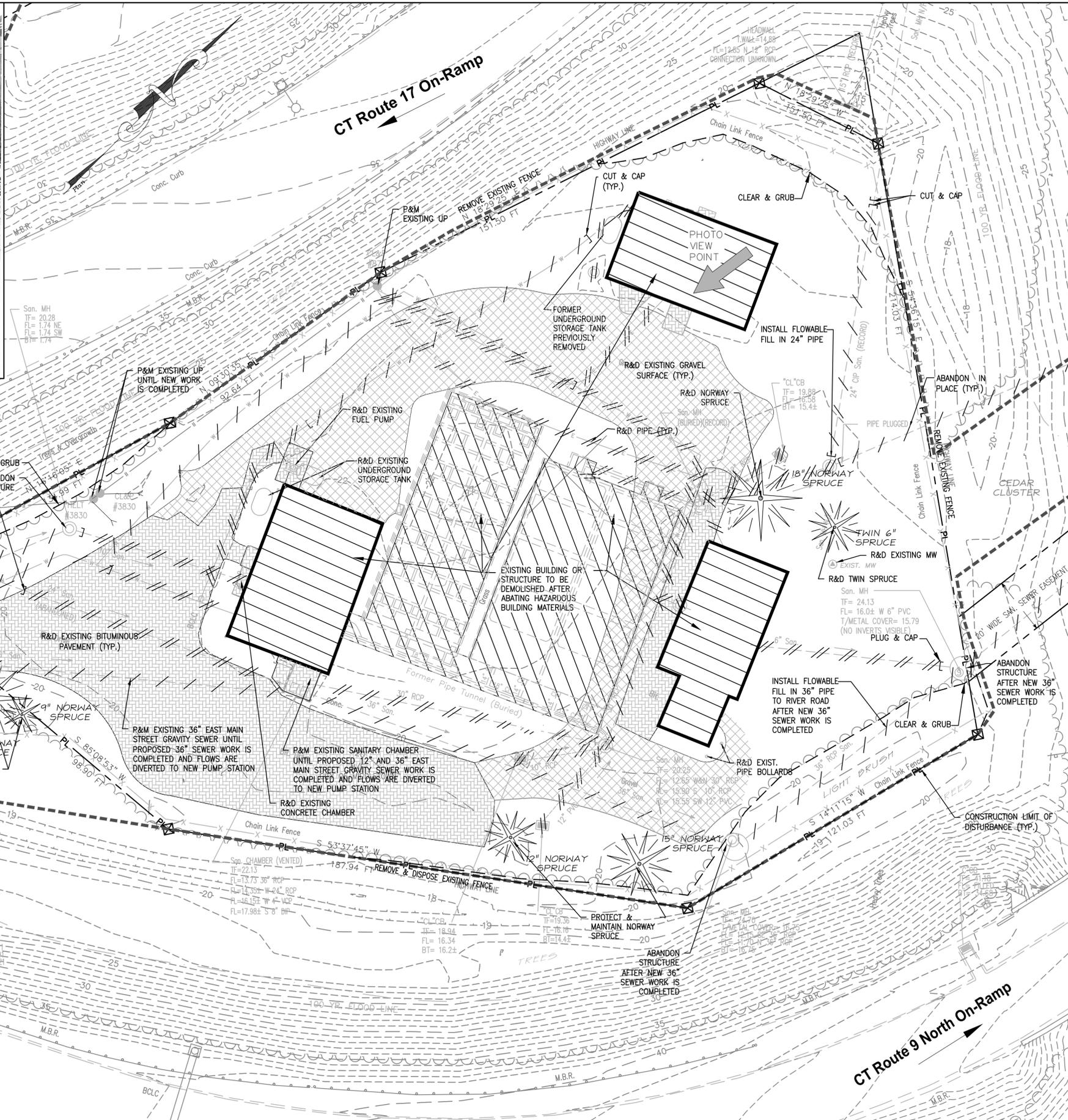
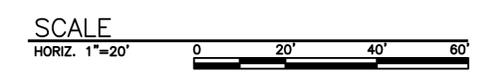


PHOTO C. 1935



DRAWING FILE: C:\PROJECTS\14712\202-additional\PS_Plan_Final_Design\ACAD\DWG\CONTRACT_2\PSUM_PUMP_STATION_SHEET_14712_C-1.2.dwg PLOTTED: Apr 28 2016 11:11 AM BY: Tom Coval

- NOTES:
1. REMOVE AND DISPOSE OF EXISTING UNDERGROUND STORAGE TANKS IN ACCORDANCE WITH SPECIFICATION 02072.
 2. ABATE EXISTING STRUCTURES IN ACCORDANCE WITH SPECIFICATION 0207, 02080, AND 02082 PRIOR TO DEMOLITION. COORDINATE DEMOLITION WITH ABATEMENT WORK OF 02085 AND 02090.
 3. REMOVE AND DISPOSE OF FORMER TREATMENT TANKS IN ACCORDANCE WITH SPECIFICATION 02060.



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

DEMOLITION PLAN

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: -
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

C-1.2

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



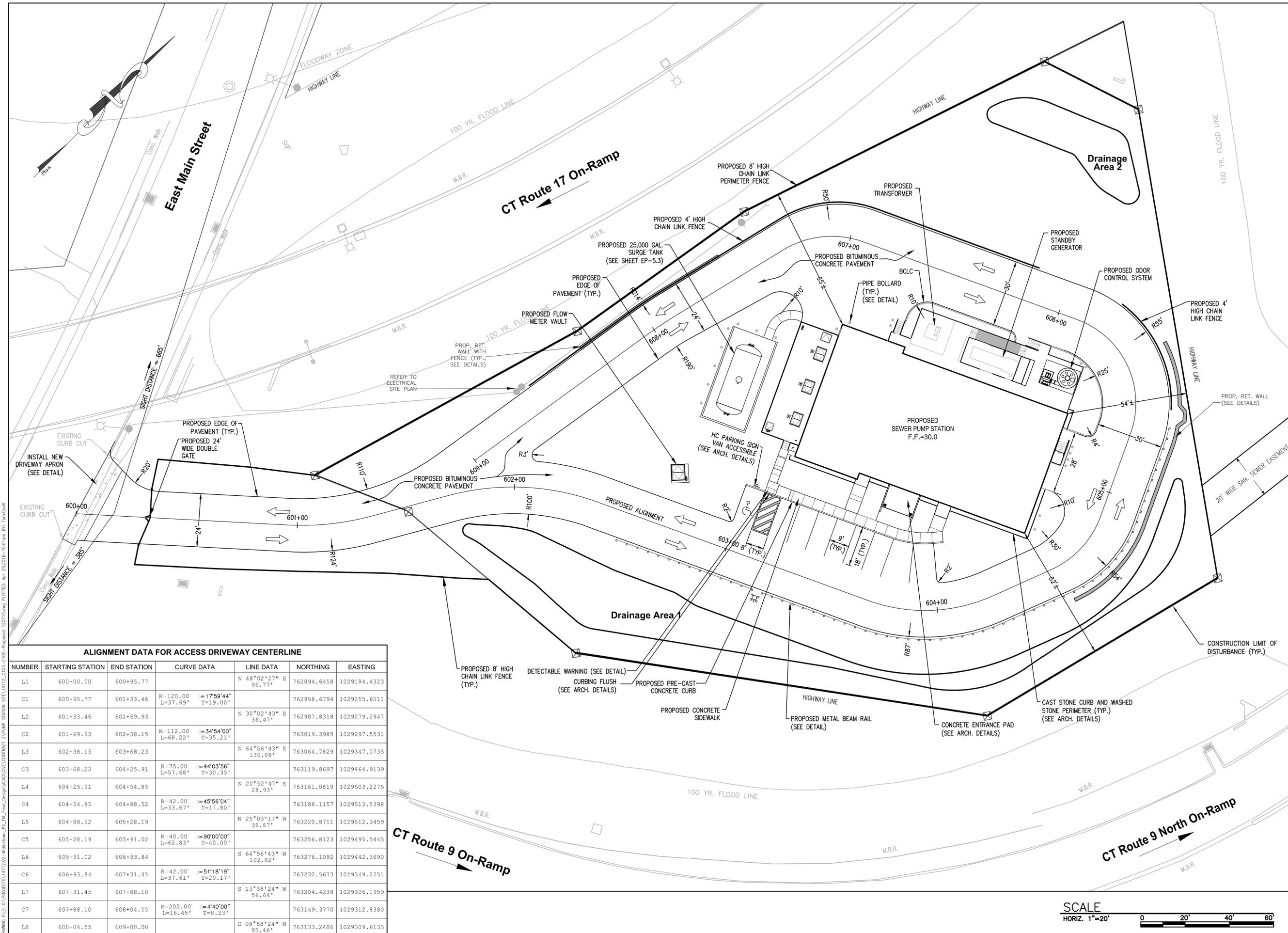
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PROPOSED SITE
PLAN

PROJECT NUMBER: 14712
DESIGNED BY: RED
DRAWN BY: RED
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-1.3



ALIGNMENT DATA FOR ACCESS DRIVEWAY CENTERLINE

NUMBER	STARTING STATION	END STATION	CURVE DATA	LINE DATA	NORTHING	EASTING
L1	600+00.00	600+95.77		N 48°02'27" E 95.77'	762894.6458	1029184.4323
C1	600+95.77	601+33.46	R=120.00' L=37.69' Δ=17°59'44" T=19.00'		762958.6794	1029255.6511
L2	601+33.46	601+69.93		N 30°02'43" E 36.47'	762987.8318	1029279.2947
C2	601+69.93	602+38.15	R=112.00' L=68.22' Δ=34°54'00" T=35.21'		763019.3985	1029297.5531
L3	602+38.15	603+68.23		N 64°56'43" E 130.08'	763064.7829	1029347.0735
C3	603+68.23	604+25.91	R=75.00' L=57.68' Δ=44°03'56" T=30.35'		763119.8697	1029464.9139
L4	604+25.91	604+54.85		N 20°52'47" E 28.93'	763161.0819	1029503.2275
C4	604+54.85	604+88.52	R=42.00' L=33.67' Δ=45°56'04" T=17.80'		763188.1157	1029513.5398
L5	604+88.52	605+28.19		N 25°03'17" W 39.67'	763220.8711	1029512.3459
C5	605+28.19	605+91.02	R=40.00' L=62.83' Δ=90°00'00" T=40.00'		763256.8123	1029495.5445
L6	605+91.02	606+93.84		S 64°56'43" W 102.82'	763276.1092	1029442.3690
C6	606+93.84	607+31.45	R=42.00' L=37.61' Δ=51°18'19" T=20.17'		763232.5673	1029349.2251
L7	607+31.45	607+88.10		S 13°38'24" W 56.64'	763204.4238	1029326.1959
C7	607+88.10	608+04.55	R=202.00' L=16.45' Δ=4°40'00" T=8.23'		763149.3770	1029312.8380
L8	608+04.55	609+00.00		S 08°58'24" W 95.46'	763133.2486	1029309.6133



DRAINAGE AREA NO. 1

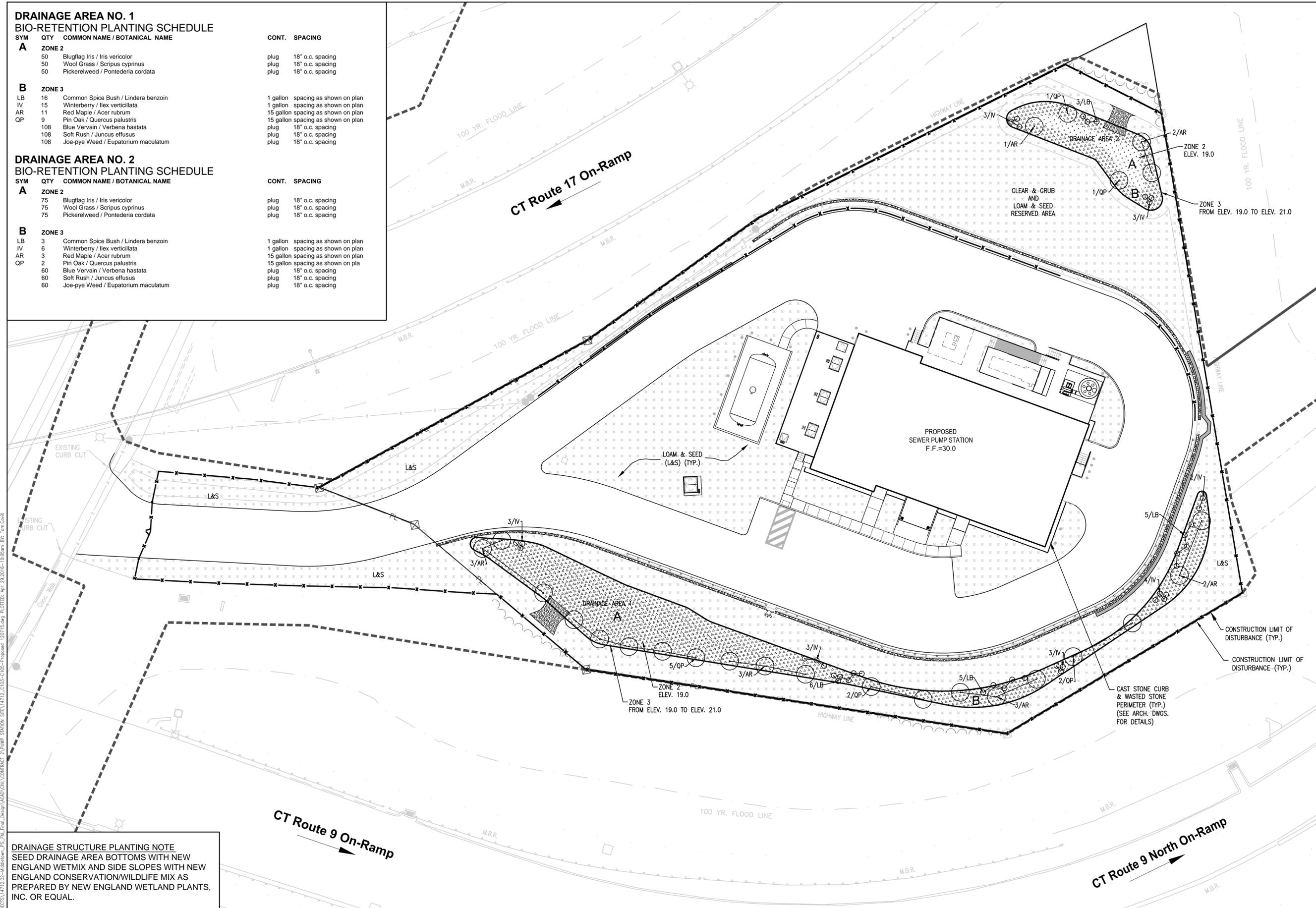
BIO-RETENTION PLANTING SCHEDULE

SYM	QTY	COMMON NAME / BOTANICAL NAME	CONT.	SPACING
A				
ZONE 2				
50		Blugflag Iris / Iris vericolor	plug	18" o.c. spacing
50		Wool Grass / Scripus cyprinus	plug	18" o.c. spacing
50		Pickrelweed / Pontederia cordata	plug	18" o.c. spacing
B				
ZONE 3				
LB	16	Common Spice Bush / Lindera benzoin	1 gallon	spacing as shown on plan
IV	15	Winterberry / Ilex verticillata	1 gallon	spacing as shown on plan
AR	11	Red Maple / Acer rubrum	15 gallon	spacing as shown on plan
QP	9	Pin Oak / Quercus palustris	15 gallon	spacing as shown on plan
108		Blue Vervain / Verbena hastata	plug	18" o.c. spacing
108		Soft Rush / Juncus effusus	plug	18" o.c. spacing
108		Joe-pye Weed / Eupatorium maculatum	plug	18" o.c. spacing

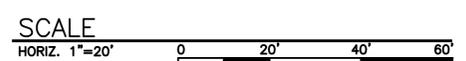
DRAINAGE AREA NO. 2

BIO-RETENTION PLANTING SCHEDULE

SYM	QTY	COMMON NAME / BOTANICAL NAME	CONT.	SPACING
A				
ZONE 2				
75		Blugflag Iris / Iris vericolor	plug	18" o.c. spacing
75		Wool Grass / Scripus cyprinus	plug	18" o.c. spacing
75		Pickrelweed / Pontederia cordata	plug	18" o.c. spacing
B				
ZONE 3				
LB	3	Common Spice Bush / Lindera benzoin	1 gallon	spacing as shown on plan
IV	6	Winterberry / Ilex verticillata	1 gallon	spacing as shown on plan
AR	3	Red Maple / Acer rubrum	15 gallon	spacing as shown on plan
QP	2	Pin Oak / Quercus palustris	15 gallon	spacing as shown on plan
60		Blue Vervain / Verbena hastata	plug	18" o.c. spacing
60		Soft Rush / Juncus effusus	plug	18" o.c. spacing
60		Joe-pye Weed / Eupatorium maculatum	plug	18" o.c. spacing



DRAINAGE STRUCTURE PLANTING NOTE
 SEED DRAINAGE AREA BOTTOMS WITH NEW ENGLAND WETMIX AND SIDE SLOPES WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX AS PREPARED BY NEW ENGLAND WETLAND PLANTS, INC. OR EQUAL.



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



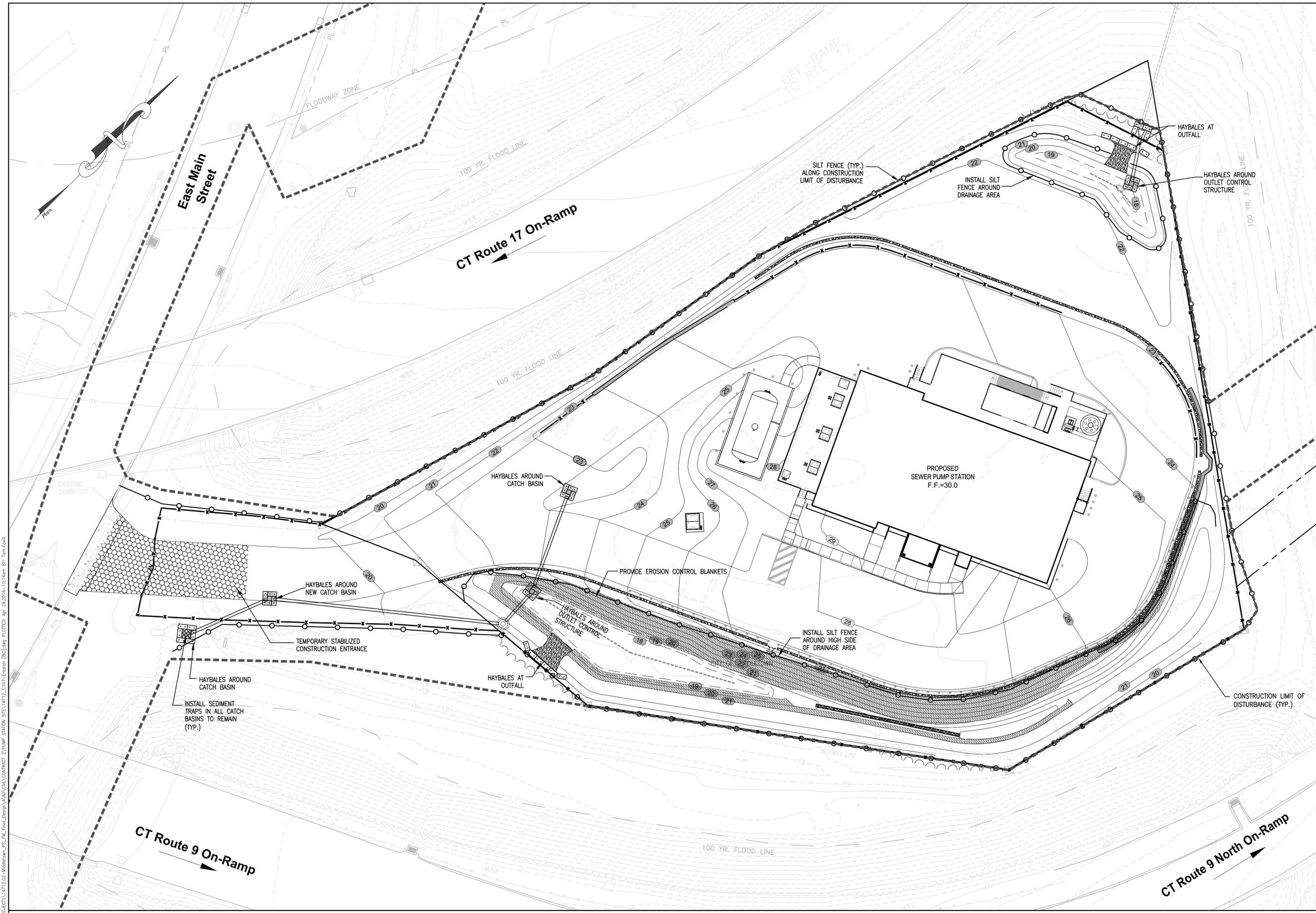
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

LANDSCAPING PLAN

PROJECT NUMBER: 14712
 DESIGNED BY: RED
 DRAWN BY: RED
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-1.6



DRAWING FILE: G:\PROJECTS\14712\2016-Middletown_P5_Final_Design\A040\DWG\CONTRACT 2\PMSP STATION SITE\14712-C107-Erosion [B0].dwg PLOTTED: Apr 29 2016 10:14:44 AM BY: Tom.Covall

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

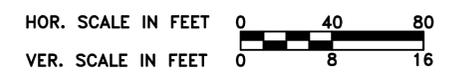
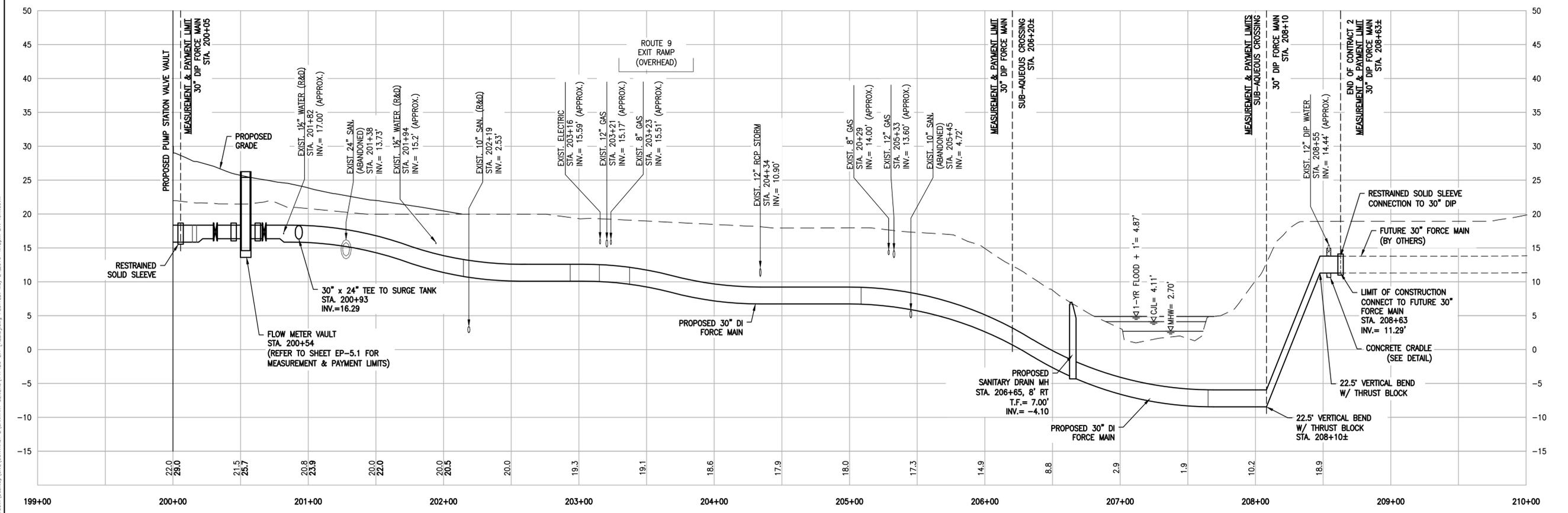
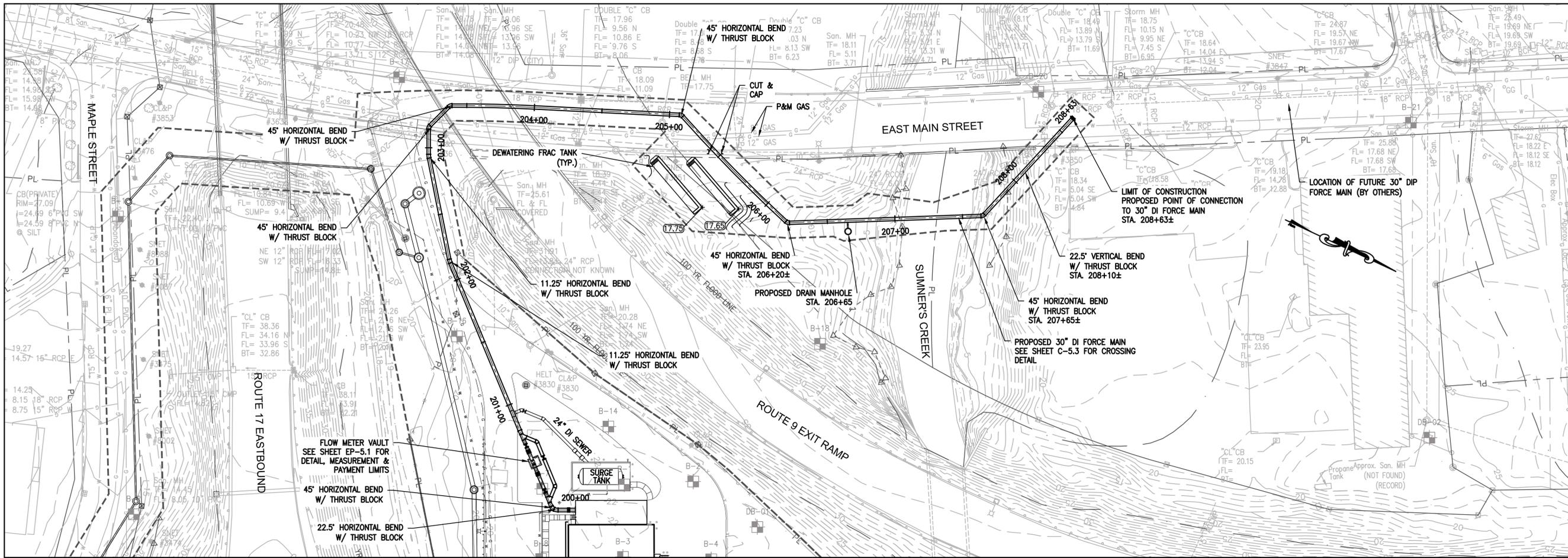
**EROSION &
 SEDIMENTATION
 CONTROL PLAN**

PROJECT NUMBER: 14712
 DESIGNED BY: RED
 DRAWN BY: RED
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-1.7





CDR MAGUIRE
 2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL: (860) 563-3158
 www.cdrmaguire.com

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

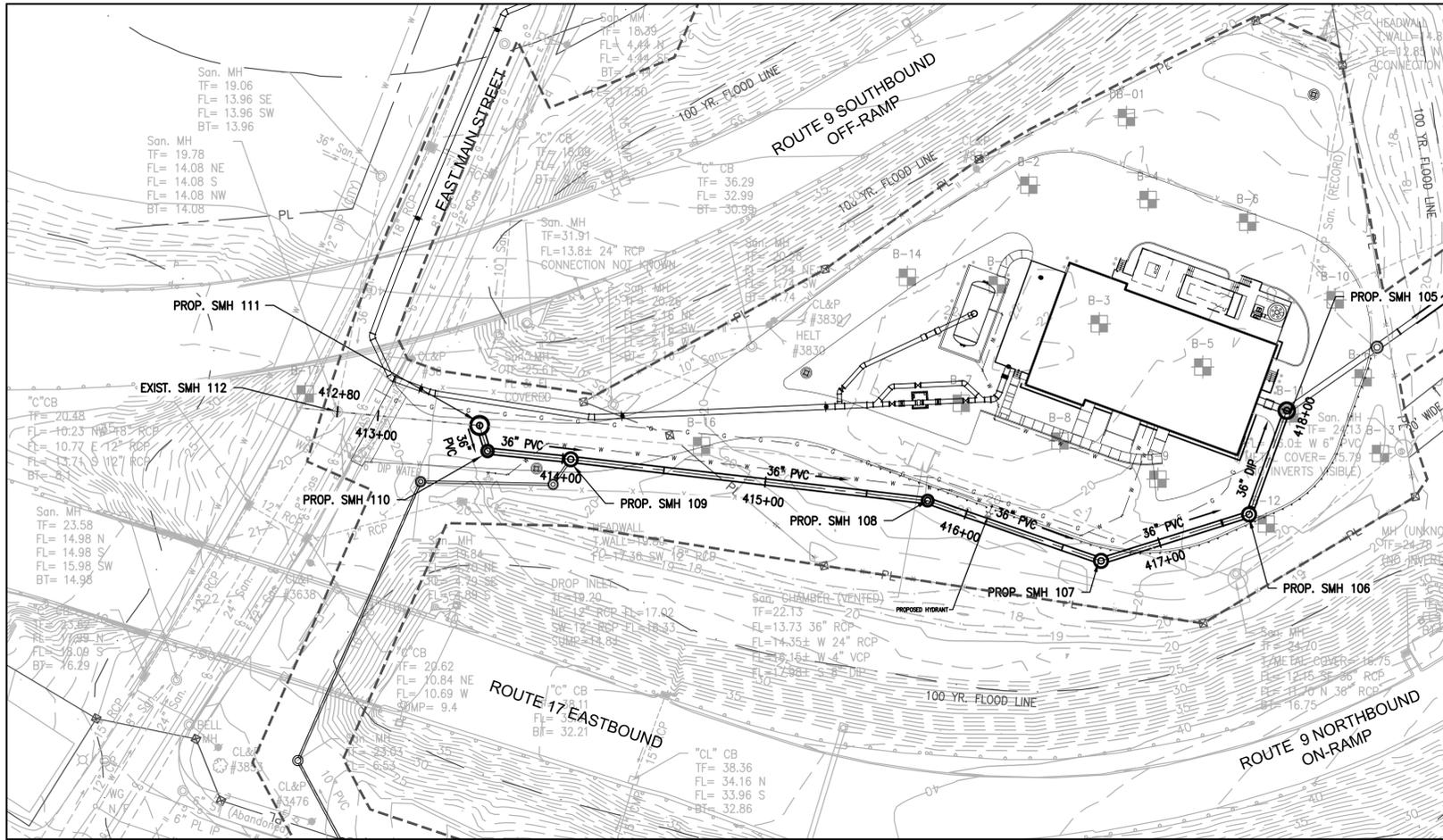


FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

**30" FORCE MAIN
 PLAN & PROFILE**

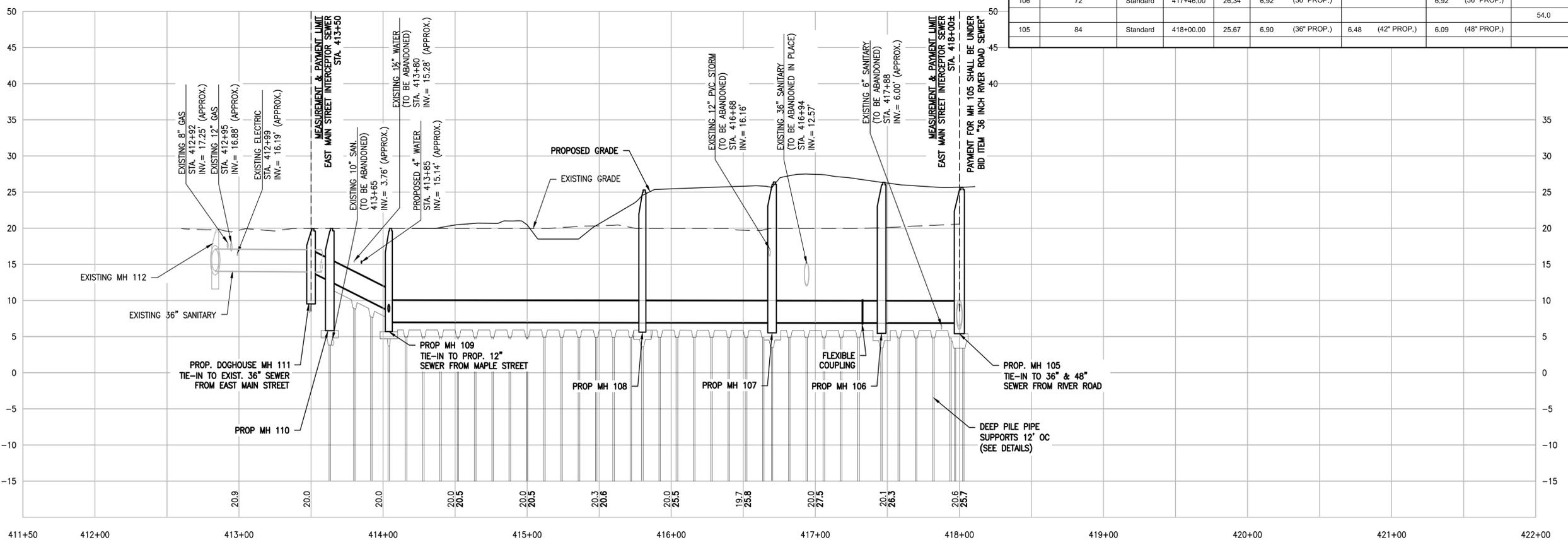
PROJECT NUMBER: 14712
 DESIGNED BY: TJC
 DRAWN BY: TJC
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:
C-2.1



GRAVITY SEWER FROM EAST MAIN STREET

SANITARY MANHOLE STRUCTURE No.	Diameter (in.)	Style	STATION	T.F.	INV. IN	INV. IN	INV. OUT	LENGTH (FT)	SLOPE (FT/FT)
112	Existing	Existing	412+80.00	19.78	14.08 (36" EXIST.)	14.08 (24" EXIST.)	14.08 (36" EXIST.)	70.0	0.00138
111	96	DOG HOUSE	413+50.00	19.95	13.98 (36" EXIST.)		13.98 (36" PROP.)	13.0	0.10000
110	72	Standard	413+63.00	19.90	12.88 (36" PROP.)		12.88 (36" PROP.)	41.0	0.10000
109	72	Standard	414+04.00	19.97	8.58 (36" PROP.)	8.42 (12" PROP.)	7.08 (36" PROP.)	176.0	0.00046
108	60	Standard	415+80.00	25.29	7.00 (36" PROP.)		7.00 (36" PROP.)	90.0	0.00046
107	72	Standard	416+70.00	26.40	6.96 (36" PROP.)		6.96 (36" PROP.)	76.0	0.00046
106	72	Standard	417+46.00	26.34	6.92 (36" PROP.)		6.92 (36" PROP.)	54.0	0.00046
105	84	Standard	418+00.00	25.67	6.90 (36" PROP.)	6.48 (42" PROP.)	6.09 (48" PROP.)		



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

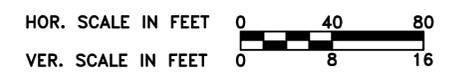


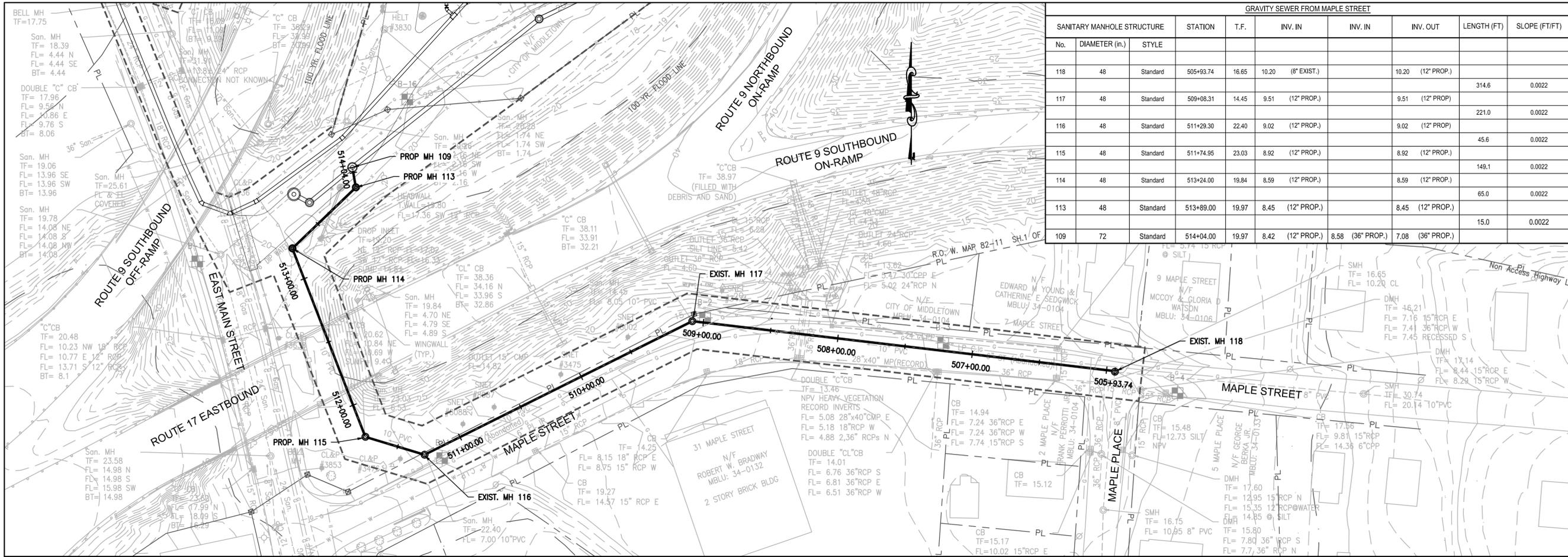
**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

**36" EAST MAIN
 STREET SEWER
 PLAN & PROFILE**

PROJECT NUMBER: 14712
 DESIGNED BY: TJC
 DRAWN BY: TJC
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

C-2.2

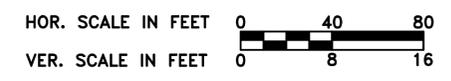
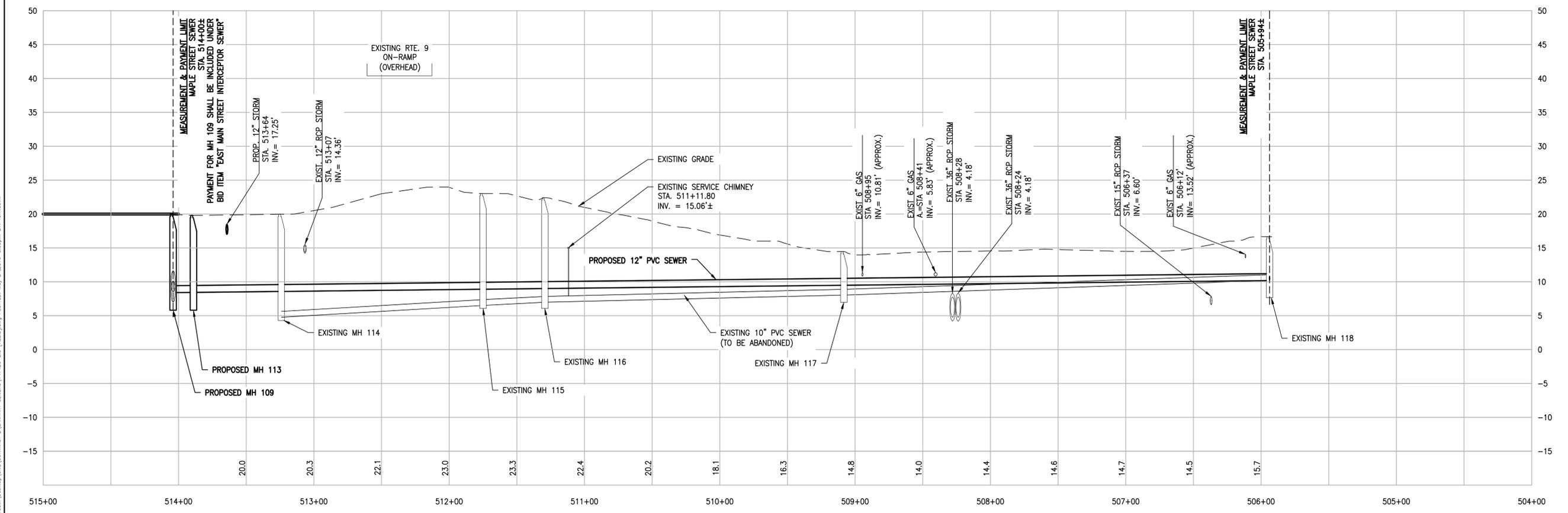




GRAVITY SEWER FROM MAPLE STREET								
SANITARY MANHOLE STRUCTURE No.	DIAMETER (in.)	STYLE	STATION	T.F.	INV. IN	INV. OUT	LENGTH (FT)	SLOPE (FT/FT)
118	48	Standard	505+93.74	16.65	10.20 (8" EXIST.)	10.20 (12" PROP.)	314.6	0.0022
117	48	Standard	509+08.31	14.45	9.51 (12" PROP.)	9.51 (12" PROP.)	221.0	0.0022
116	48	Standard	511+29.30	22.40	9.02 (12" PROP.)	9.02 (12" PROP.)	45.6	0.0022
115	48	Standard	511+74.95	23.03	8.92 (12" PROP.)	8.92 (12" PROP.)	149.1	0.0022
114	48	Standard	513+24.00	19.84	8.59 (12" PROP.)	8.59 (12" PROP.)	65.0	0.0022
113	48	Standard	513+89.00	19.97	8.45 (12" PROP.)	8.45 (12" PROP.)	15.0	0.0022
109	72	Standard	514+04.00	19.97	8.42 (12" PROP.)	8.58 (36" PROP.) 7.08 (36" PROP.)		

2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

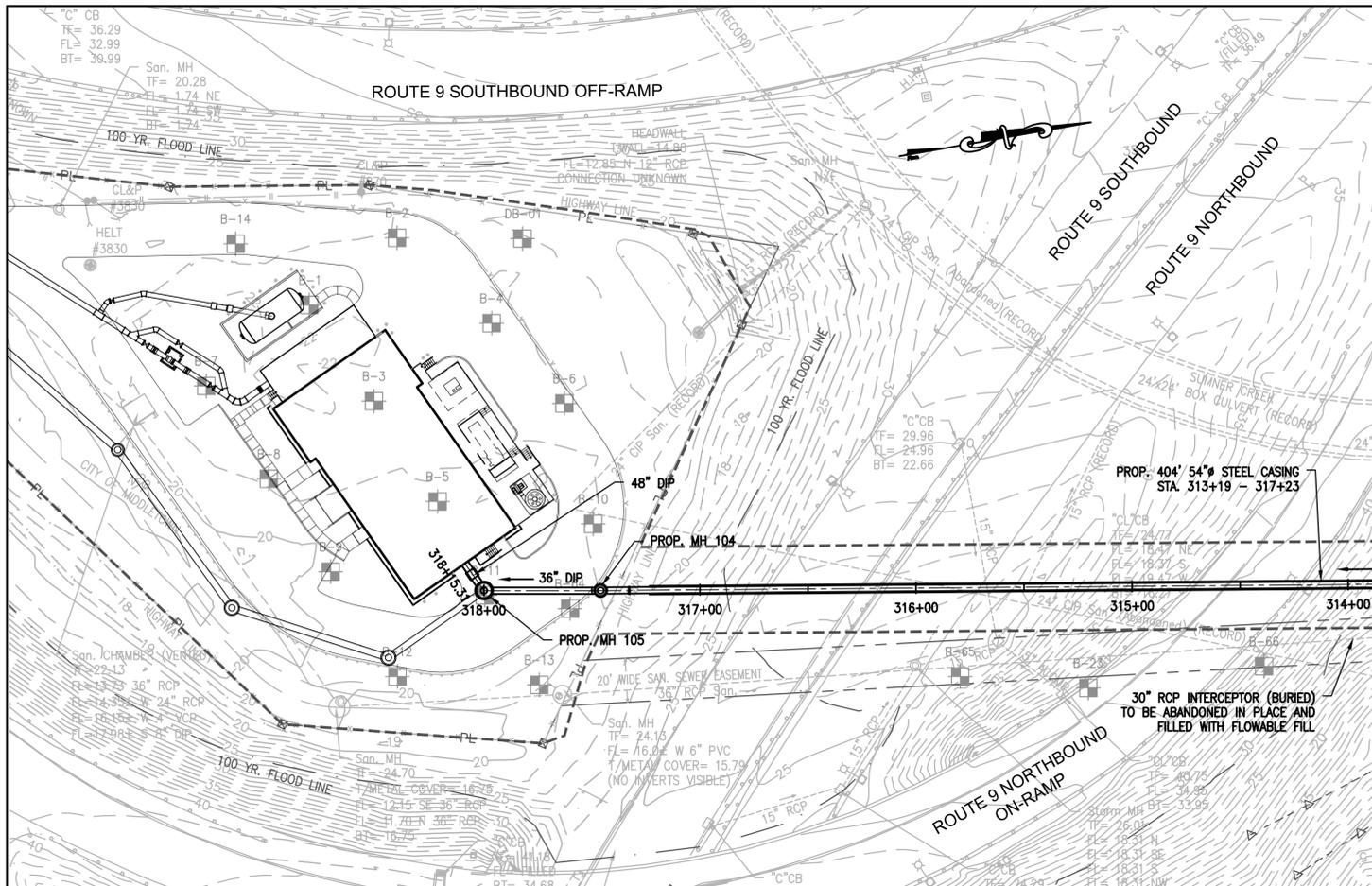
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



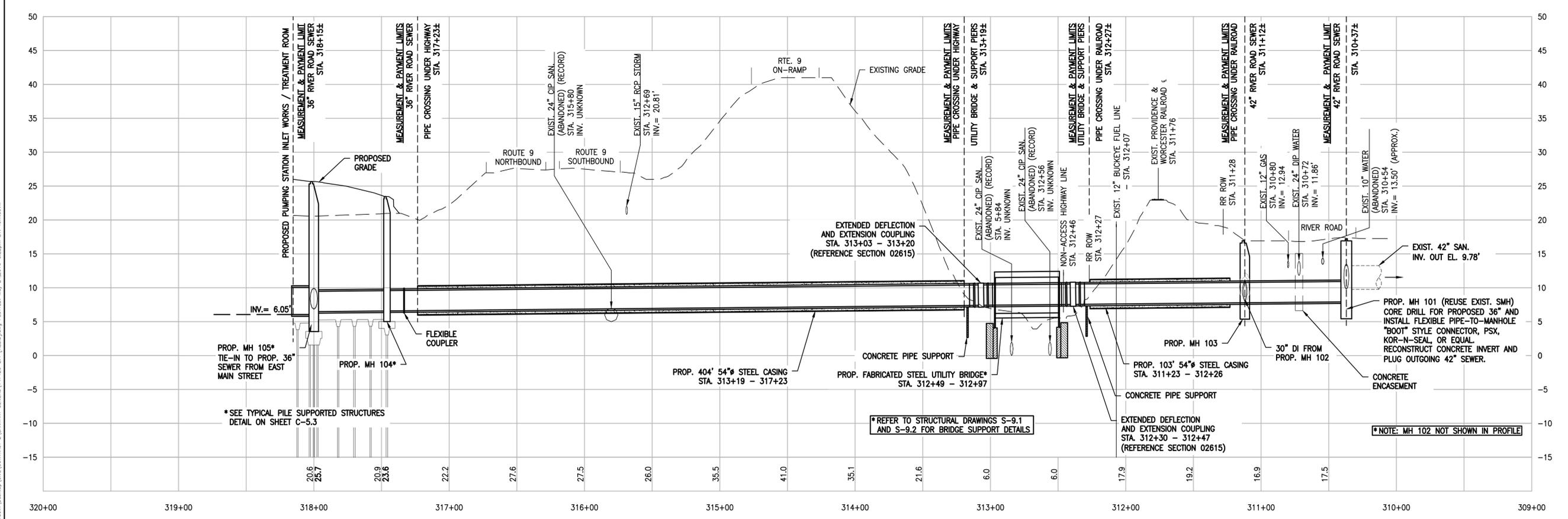
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT
12" MAPLE STREET
SEWER
PLAN & PROFILE

PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

C-2.3



GRAVITY SEWER FROM RIVER ROAD										
SANITARY MANHOLE STRUCTURE	STATION	OFFSET	T.F.	INV. IN	INV. IN	INV. OUT	LENGTH (FT)	SLOPE (FT/FT)		
No.	Diameter (in.)	Style								
101	96	Standard	310+37.00	0.00	17.25	9.90 (42" EXIST.)	7.93	(42" PROP.)	75.0	0.0019
103	84	Standard	311+12.00	0.00	16.94	7.79 (42" PROP.)	8.29	(30" PROP.)	634.0	0.0019
104	72	Standard	317+46.00	0.00	23.45	6.58 (42" PROP.)		(42" PROP.)	54.0	0.0019
105	84	Standard	318+00.00	0.00	25.67	6.48 (42" PROP.)	6.90	(36" PROP.)		6.09 (48" PROP.)
102	84	DOG HOUSE	311+05.51	47.45 L	17.44	8.70 (30" EXIST)	8.70	(30" EXIST)	48.3	0.0085
103	84	Standard	311+12.00	0.00	16.94	8.29 (30" PROP.)	7.79	(42" PROP.)		



CDR MAGUIRE
 2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmaguire.com

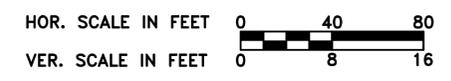
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

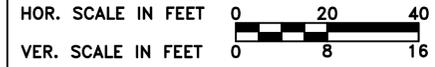
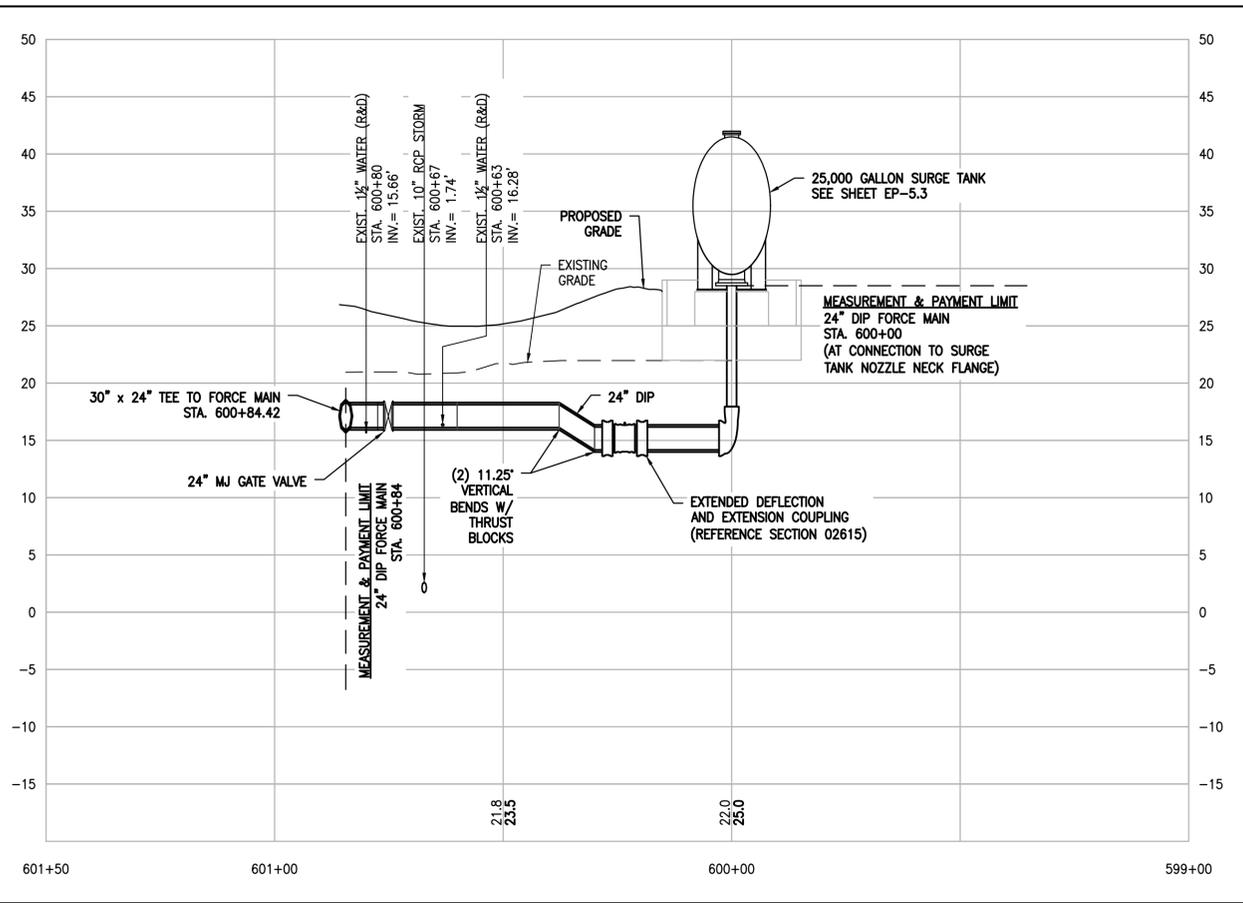
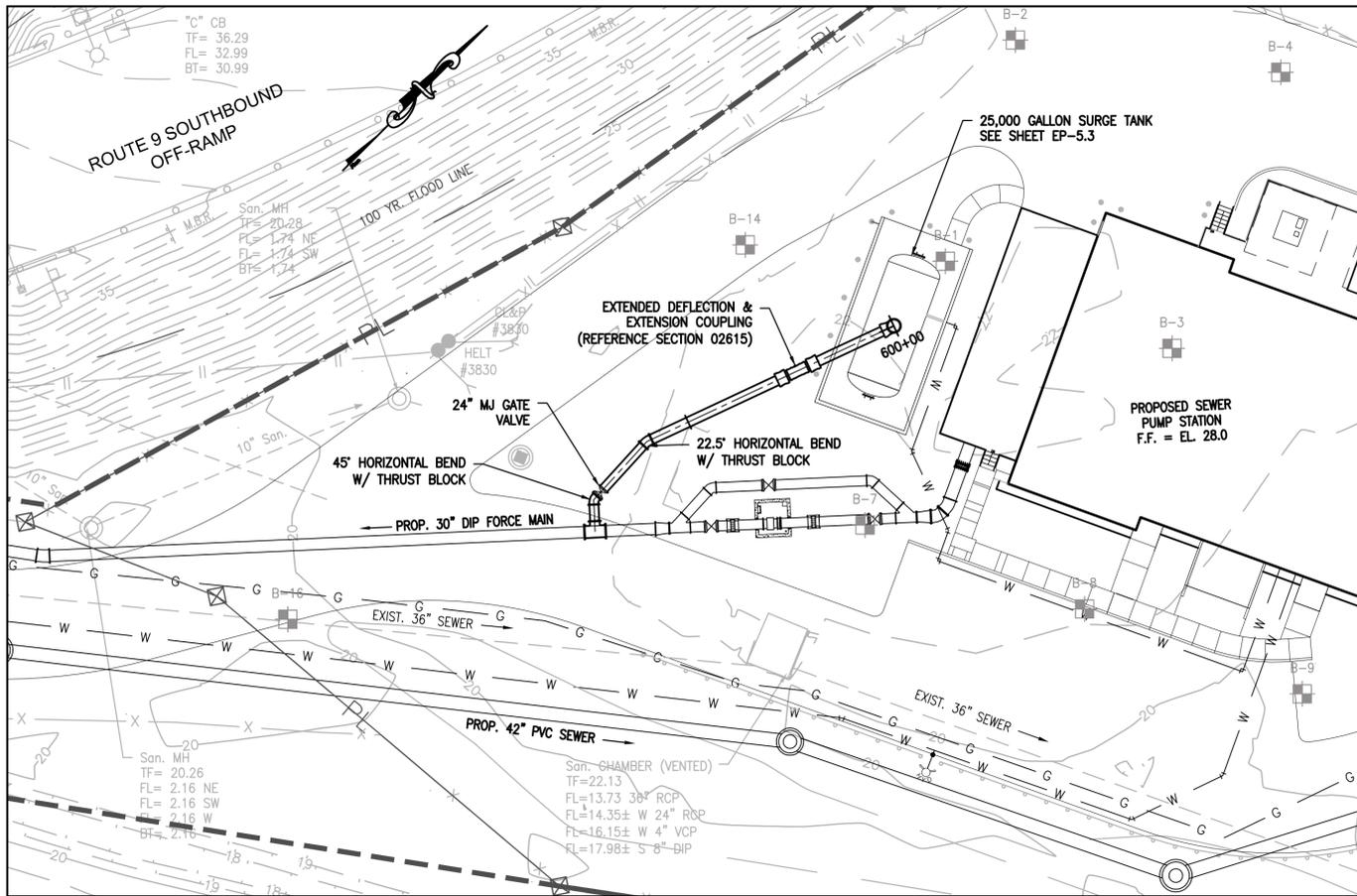


FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT
 36" RIVER ROAD
 SEWER
 PLAN & PROFILE

PROJECT NUMBER: 14712
 DESIGNED BY: TJC
 DRAWN BY: TJC
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

C-2.4





DRAWING FILE: C:\Users\Tom\OneDrive\OneDrive\CONTRACT 7\SANITARY SEWERS\14712-C-2.5 [REBID].dwg PLOTTED: May 24, 2016 - 4:44pm BY: Tom Covill

2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL: (860) 563-3158
www.cdrmaguire.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

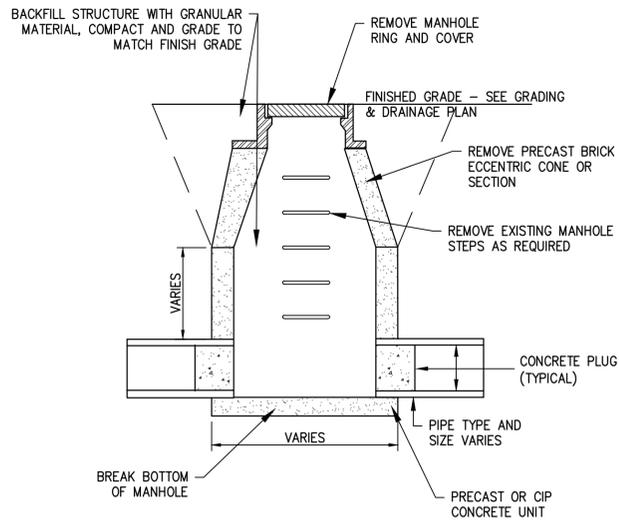


FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

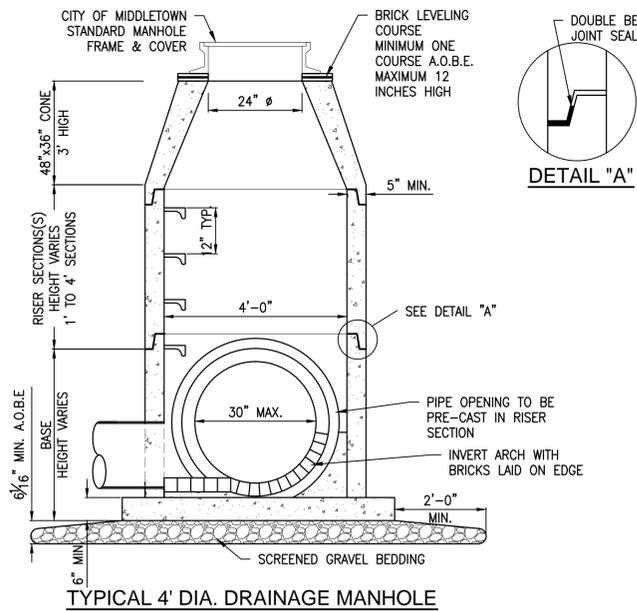
24" SURGE TANK
CONNECTION TO
FORCE MAIN
PLAN & PROFILE

PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

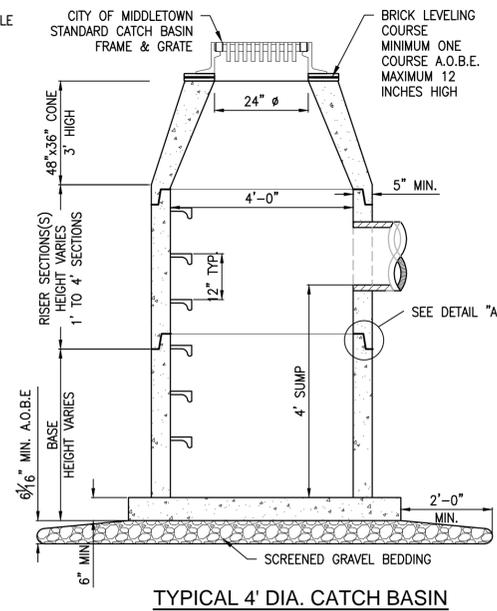
SHEET NUMBER:
C-2.5



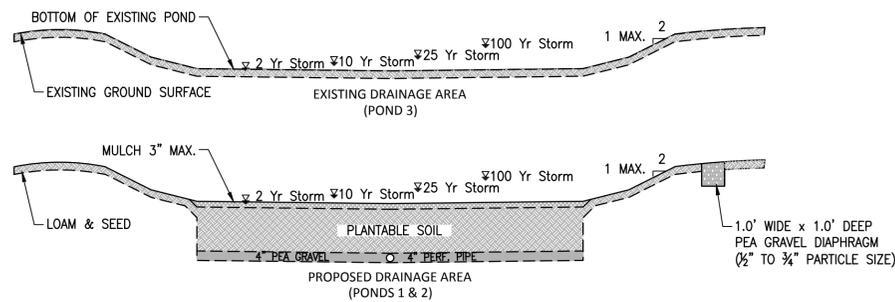
1 ABANDONMENT OF STORM & SANITARY SEWER STRUCTURE
C-5.1 N.T.S.



5 TYPICAL DRAIN MANHOLE / CATCH BASIN / OUTLET CONTROL STRUCTURE
C-5.1 N.T.S.



- NOTES:
- MANHOLE TO BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
 - MANHOLE JOINTS SHALL RECEIVE NON-SHRINK GROUT INTERIOR. JOINT SEALANT IS BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION SS-S-0021(210-A).
 - INSERT RUBBER PLUG INTO LIFTING HOLES FROM OUTSIDE & FILL WITH NON-SHRINK MORTAR INSIDE & OUTSIDE.
 - REINFORCING STEEL WELDED WIRE FABRIC CONFORMS TO LATEST ASTM SPECIFICATION A185.
 - REINFORCING STEEL DEFORMED BARS CONFORM TO LATEST ASTM SPECIFICATION A615.
 - CONCRETE COMPRESSIVE STRENGTH - 5,000 PSI @ 28 DAYS.
 - BRICK RISER COLLAR TO BE PARGED & RECEIVE TWO COATS BITUMINOUS WATERPROOFING MATERIAL.
 - OUTSIDE OF MANHOLE SHALL RECEIVE TWO COATS BITUMINOUS WATERPROOFING MATERIAL.
 - MANHOLE STEPS TO BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC MODEL #PS2-PF-SL OR CAST ALUMINUM ALLOY 6061 DROP FRONT DESIGN
 - TOP STEP TO BE 18" MAX. BELOW TOP OF FRAME.



2 TYPICAL DRAINAGE AREA CROSS-SECTIONS
C-5.1 N.T.S.

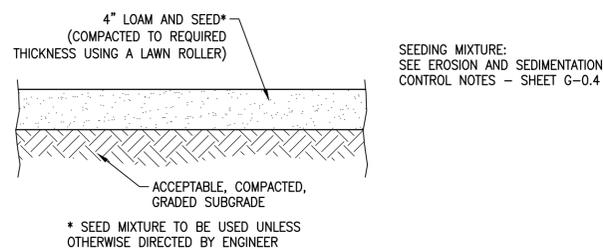
	POND 1	POND 2	POND 3
BOT. OF PLANTABLE SOIL ELEV.	18.75	18.00	N/A
TOP OF PLANTABLE SOIL ELEV.	19.75	19.75	N/A
BOT. OF POND ELEV.	20.00	20.00	13.00
TOP OF POND ELEV.	21.00	21.00	20.00
SPILLWAY ELEV./OVERFLOW	20.75	20.75	N/A

STORM FREQUENCY	2-YEAR	10-YEAR	25-YEAR
POND 1 STORM ELEVATION	20.00	20.34	20.43
POND 2 STORM ELEVATION	19.24	19.78	19.82
POND 3 STORM ELEVATION	13.33	13.72	14.02

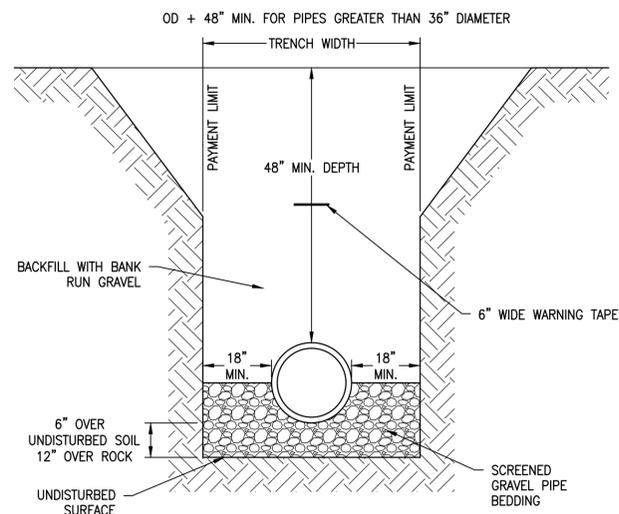
BIORETENTION CONSTRUCTION NOTES

- DRAINAGE AREAS 1 & 2 ARE TO BE CONSTRUCTED AND MAINTAINED AS BIORETENTION PONDS IN ACCORDANCE WITH THE CONNECTICUT STORMWATER MANUAL, PREPARED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.
- THE PLANTABLE SOIL WITHIN THE BOTTOM OF THE BIORETENTION PONDS SHALL HAVE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE OR BE A LOAM/SAND MIX.
- THE SOIL SHALL HAVE THE FOLLOWING CHARACTERISTICS.

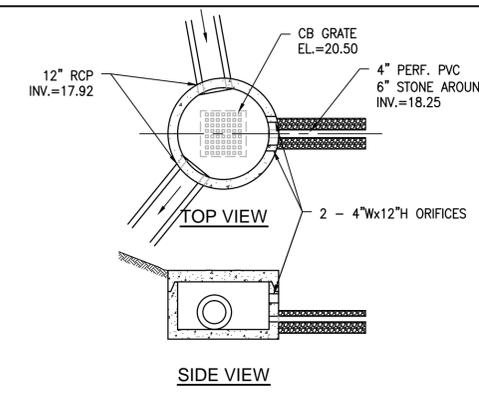
COMPOST	2% TO 7%
TOP SOIL	8% TO 10%
SAND	85% TO 88%
- THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER, BRUSH/SEEDS FROM NOXIOUS WEEDS.
- SOIL TO BE PLACED IN 12" LIFTS, LOOSELY COMPACTED. THE SOIL MAY BE TAMPED LIGHTLY WITH THE BUCKET OF A BACKHOE.
- A MULCH LAYER SHALL BE INSTALLED WITHIN THE BIORETENTION PONDS CONSISTING OF AGED HARDWOOD, UNIFORM IN COLOR AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE DEPTH SHALL NOT EXCEED 3 INCHES IN DEPTH.
- GRASS WITHIN THE BIORETENTION PONDS SHALL BE MAINTAINED AT A HEIGHT OF 4" TO 6" WITH MANDATORY CUTTING BEING REQUIRED IF THE GRASS EXCEEDS 10".
- SEDIMENT BUILD-UP WITHIN THE BOTTOM OF THE SWALE SHALL BE REMOVED WHEN IT REACHES 25% OF THE REQUIRED WATER QUALITY VOLUME WHICH IS A DEPTH OF 2 INCHES.
- ACCUMULATED SEDIMENTS WITHIN THE BIORETENTION PONDS SHALL BE REMOVED WHEN THEY REACH A DEPTH OF 4 INCHES.
- IN THE AREA OF THE BIORETENTION PONDS, ONE TREE SHALL BE PLANTED FOR EVERY 250 SF OF AREA, 15 FT ON CENTER. SHRUBS SHALL BE PLANTED 5 FT TO 10 FT ON CENTER AND HERBACEOUS VEGETATION SHALL BE 2.5 FT ON CENTER IN ACCORDANCE WITH THE "CONNECTICUT STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" PUBLIC REVIEW DRAFT MAY 2009.
- CHOICE OF THE TREES, SHRUBS AND HERBACEOUS VEGETATION TO BE INSTALLED SHALL BE IN ACCORDANCE WITH THE ABOVE REFERENCED MANUAL.
- DO NOT BLOCK MAINTENANCE ACCESS WITH TREES AND SHRUBS.
- PEA GRAVEL SHALL HAVE A PARTICLE SIZE RANGING FROM 1/2" TO 3/4".
- THE RIP RAP SPILLWAY SHALL EXTEND DOWN TO BOTTOM ON THE INTERIOR OF THE BIORETENTION PONDS AND EXISTING GRADE ON THE EXTERIOR OF THE BIORETENTION PONDS.
- SIX INCHES OF MODIFIED RIP RAP (CONN. DOT ITEM NO. 0703012) SHALL BE INSTALLED OVER SIX INCHES OF NO. 6 CRUSHED STONE OR GRAVEL (CONN. DOT ITEM NO. 0728032) ON THE RIP RAP SPILLWAYS.



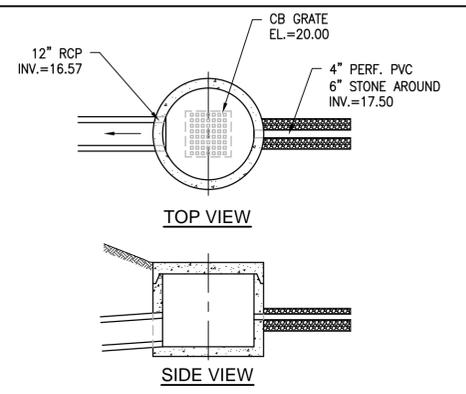
3 LOAM & SEED DETAIL
C-5.1 N.T.S.



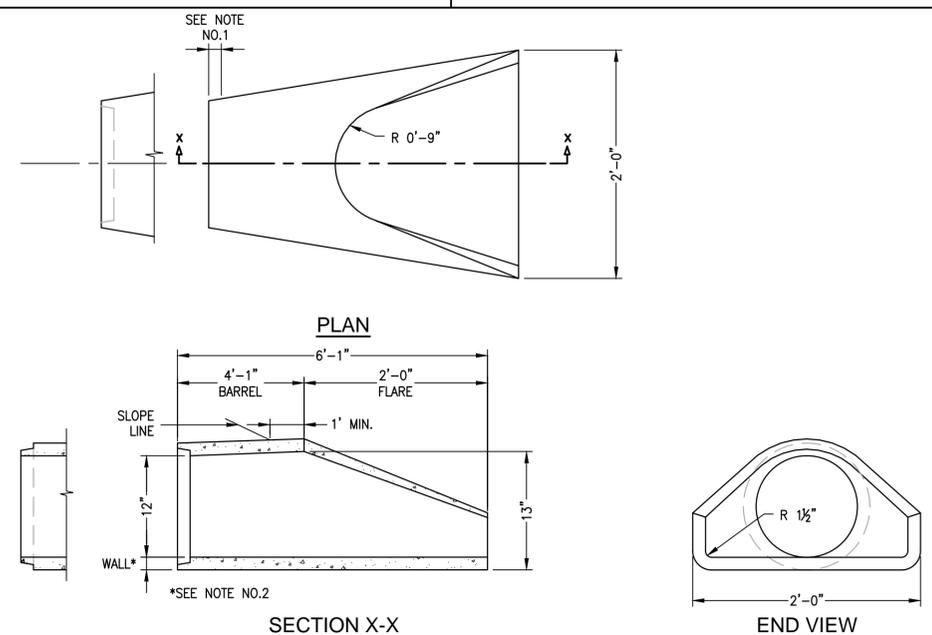
4 TYPICAL DRAINAGE TRENCH CROSS-SECTION
C-5.1 N.T.S.



6 OUTLET CONTROL STRUCTURE 1
C-5.1 N.T.S.



7 OUTLET CONTROL STRUCTURE 2
C-5.1 N.T.S.



- NOTES:
- JOINTS SHALL BE TONGUE AND GROOVE OR BELL AND SPIGOT AS REQUIRED TO CONFORM TO PIPE INSTALLED.
 - WALL THICKNESS SHALL CONFORM TO PIPE THICKNESS.

8 REINFORCED CONCRETE CULVERT END
C-5.1 N.T.S.



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



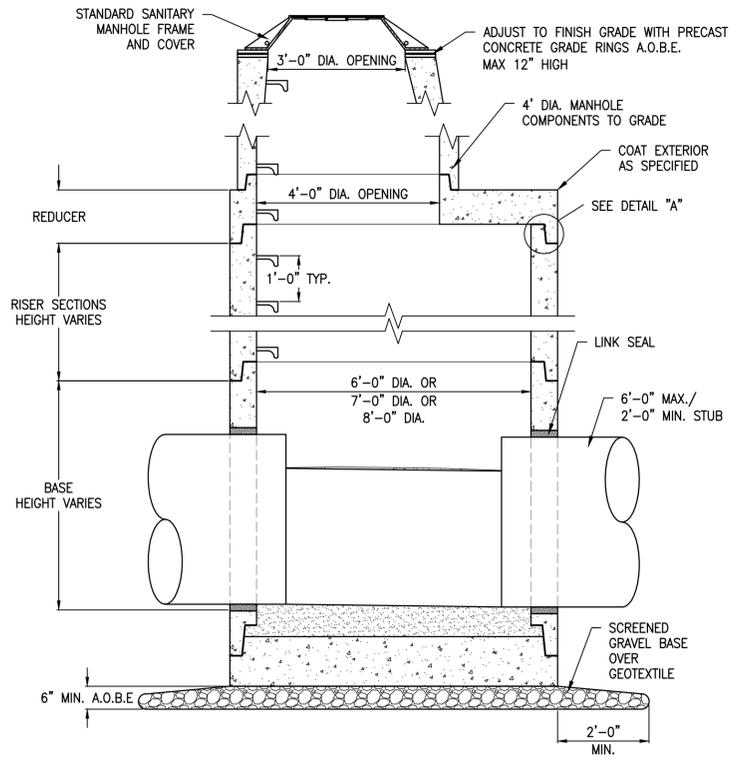
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

SITE DRAINAGE
DETAILS

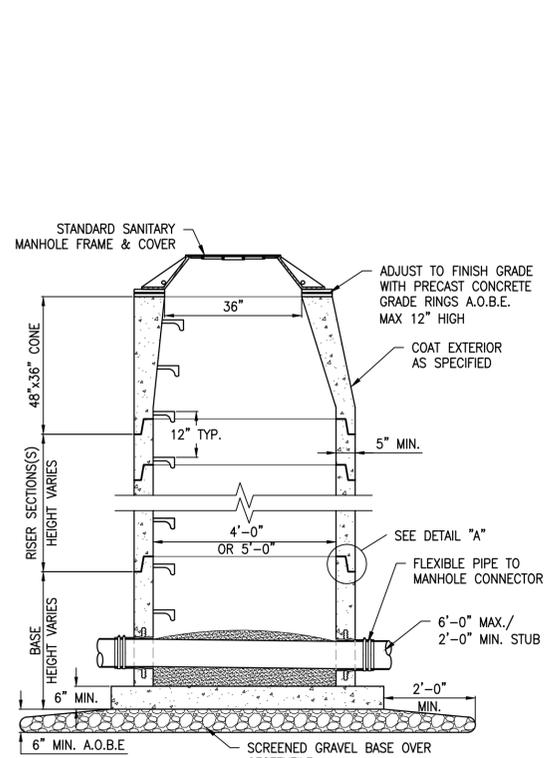
PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

C-5.1

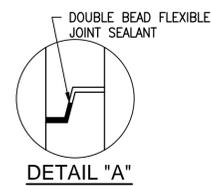
DRAWING FILE: C:\PROJECTS\14712-02-Middletown_PSP_Final_Design\A000\DWG\CONTRACT_2\DWG\M5147126-51.dwg PLOTTED: Apr 29 2016 - 11:46am By: Tom Covalt



TYPICAL MANHOLE FOR SEWERS 42" DIA. AND LARGER



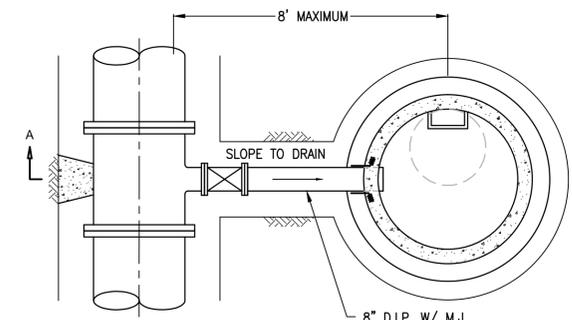
TYPICAL MANHOLE FOR SEWERS UP TO 36" DIA.



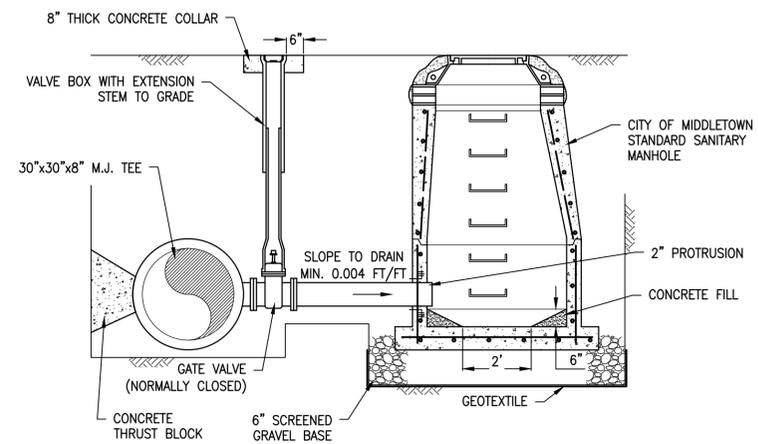
DETAIL "A"

NOTES:

1. ALL PRECAST MANHOLES SHALL COME EQUIPPED WITH MANHOLE STEPS AS SHOWN. ARRANGE STEPS UNIFORMLY UNDER FRAME AND COVER OPENING TO PROVIDE SAFE ACCESS TAKING INTO CONSIDERATION PIPING CONFIGURATIONS AT EACH LOCATION PER APPROVED SHOP DRAWINGS. MANHOLE STEPS SHALL NOT BE STAGGERED.
2. IN UNDEVELOPED LOCATIONS, TOP OF MANHOLE COVER ELEVATION SHALL BE 6" ABOVE EXISTING GROUND AND BERMED AS INDICATED OR AS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
3. UNUSED KNOCKOUTS SHALL BE FILLED WITH NON-SHRINK GROUT.
4. ALL MANHOLES SHALL HAVE A C.I. MANHOLE FRAME AND COVER LETTERED "SANITARY SEWER".
5. WHERE SHALLOW INSTALLATION DOES NOT PERMIT THE USE OF A CONE-TYPE SECTION, A REINFORCED PRECAST CONCRETE FLAT TOP SLAB SHALL BE INSTALLED.
6. PRECAST MANHOLES SHALL BE FABRICATED IN ACCORDANCE WITH ASTM C478.
7. MANHOLES SHALL BE VACUUM TESTED PER ASTM C1244 PRIOR TO BACKFILLING.



PLAN AT INVERT



SECTION A

NOTES:

1. SEE "TYPICAL SANITARY MANHOLE DETAILS" FOR ADDITIONAL INFORMATION.
2. ALL PIPING TO BE MECHANICAL JOINT W/ RETAINER GLANDS.
3. 30" FORCE MAIN REQUIRES 30"x8" TEE, 8" PIPE, AND 8" GATE VALVE.
4. INSTALL MANHOLE ON SIDE OF FORCE MAIN INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.

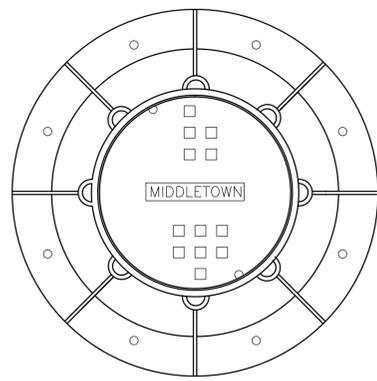
1 TYPICAL SANITARY MANHOLE DETAILS
C-5.2 N.T.S.

2 FORCE MAIN DRAIN MANHOLE
C-5.2 N.T.S.

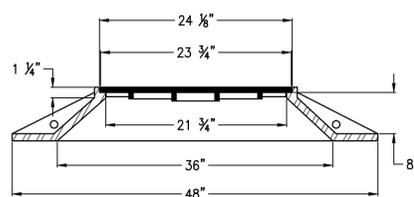
NOTE:
CAMPBELL FOUNDRY CO
HARRISON, NJ
PATTERN NO. 1221
DWG NO. B8535

LEBARON FOUNDRY CO
BROCKTON, MA
PATTERN NO. L11055
DWG NO. LJ 1055

LAPERLE FOUNDRY CO
ST OURS, QUEBEC
PATTERN NO. 3521
DWG NO. A 3521



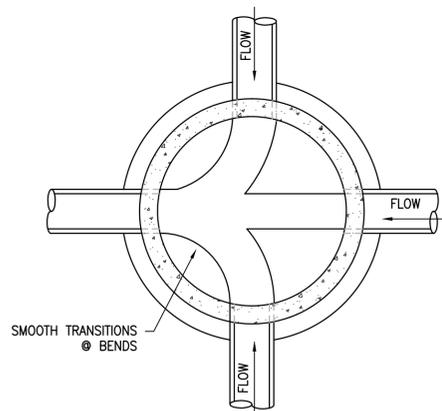
PLAN



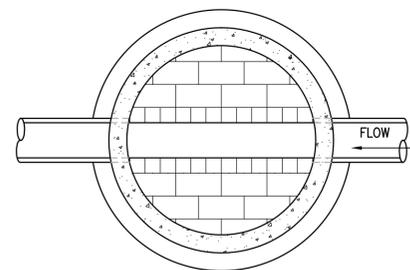
FRAME

NOTE:
MATERIAL CONSISTS OF GRAY CAST IRON CONFORMING TO ASTM SPEC A48-76 CLASS 30B.

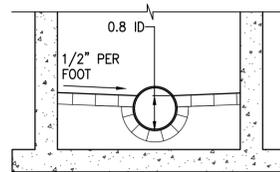
3 STANDARD SANITARY MANHOLE FRAME & COVER
C-5.2 N.T.S.



PLAN



PLAN

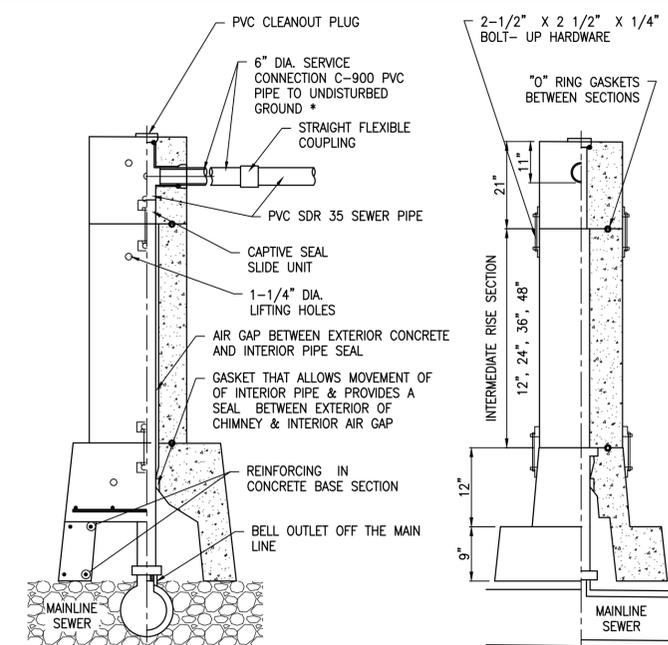


SECTION

NOTES:

- MANHOLE INVERTS AND BENCHES SHALL BE PRECAST OR FORMED IN THE FIELD WITH CONCRETE FOR ALL MANHOLES WITH PIPES 24" OR GREATER IN DIAMETER.
- MANHOLE INVERTS & BENCHES SHALL BE RED BRICK FORMED IN THE FIELD FOR ALL SANITARY MANHOLES WITH PIPES 18" OR FEWER IN DIAMETER.

4 TYPICAL SANITARY MANHOLE INVERT DETAIL
C-5.2 N.T.S.



END ELEV.

SIDE ELEV.

* NOTE: C-900 PIPE TO BE INCLUDED IN THE PRICE BID FOR "SERVICE CONNECTION CHIMNEY."

5 TYPICAL PRECAST CHIMNEY DETAIL
C-5.2 N.T.S.

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



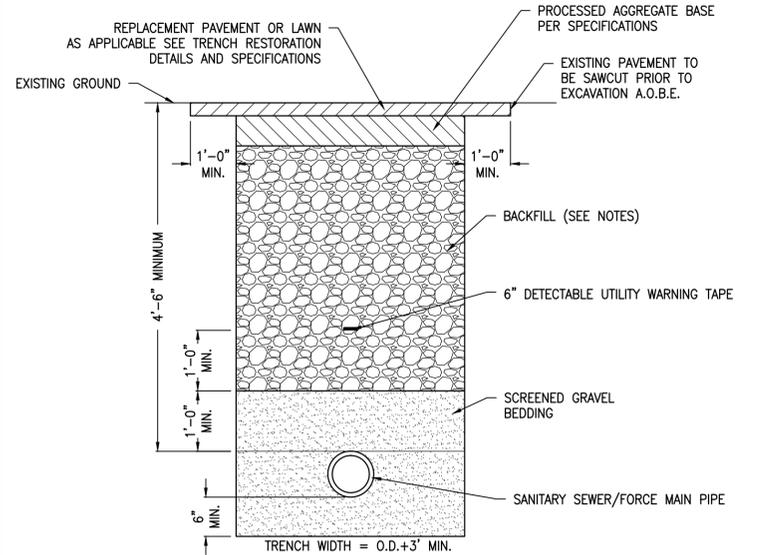
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

SEWER & FORCE
MAIN DETAILS I

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

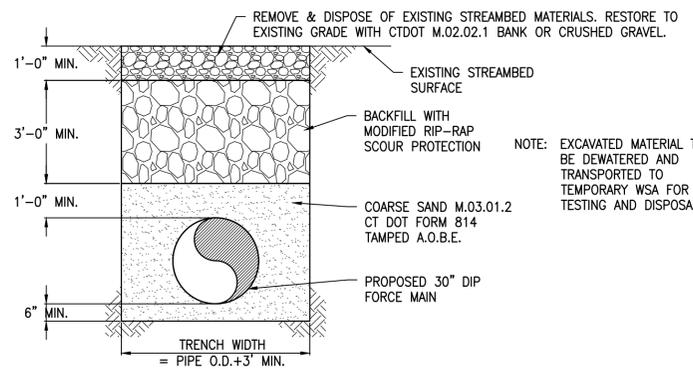
SHEET NUMBER:

C-5.2



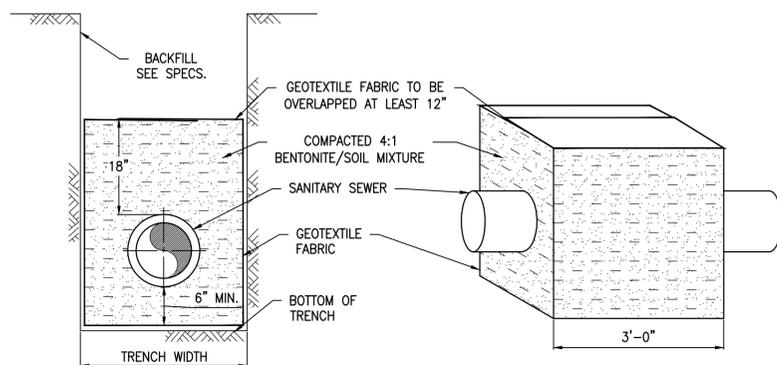
- NOTES:**
- IN PAVED AREAS OR AREAS TO BE PAVED OR THE SHOULDER OF A PAVED ROADWAY, BACKFILL MATERIAL SHALL BE BANK-RUN GRAVEL M.02.06 GRADATION C, FORM 816, AS APPROVED BY THE ENGINEER. PROCESSED AGGREGATE CAN BE USED IN LIEU OF BANK-RUN GRAVEL. IN ALL OTHER AREAS, SUITABLE EXCAVATED MATERIAL MAY BE RE-USED IF APPROVED BY THE ENGINEER.
 - SCREENED GRAVEL BEDDING SHALL BE WRAPPED IN GEOTEXTILE FABRIC (12" MIN. OVERLAP)

1 TYPICAL SANITARY SEWER/FORCE MAIN TRENCH CROSS-SECTION
C-5.3 N.T.S.



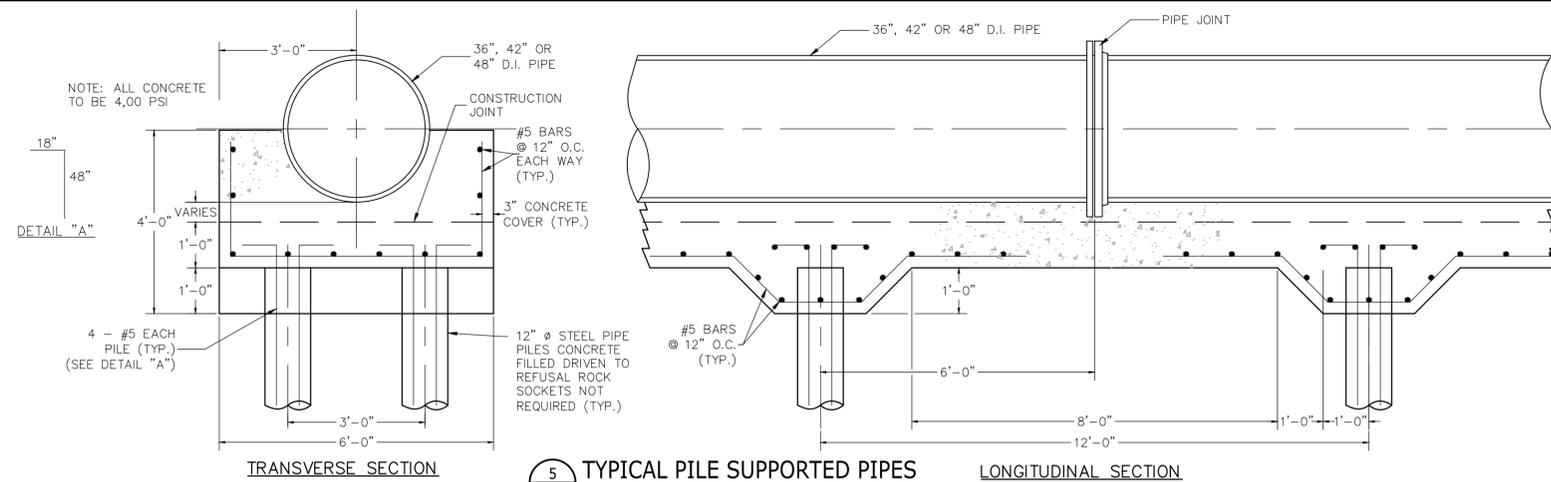
NOTE: EXCAVATED MATERIAL TO BE DEWATERED AND TRANSPORTED TO TEMPORARY WSA FOR TESTING AND DISPOSAL.

2 FORCE MAIN TRENCH EXCAVATION FOR SUB-AQUEOUS CROSSINGS
C-5.3 N.T.S.



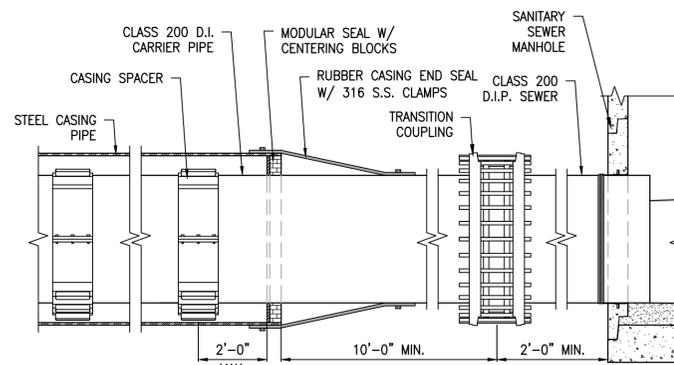
NOTE: PROVIDE TRENCH DAMS 33' ON-CENTER WHEREVER TRENCH GRADE IS 8% AND GREATER

3 TYPICAL TRENCH DAM
C-5.3 N.T.S.

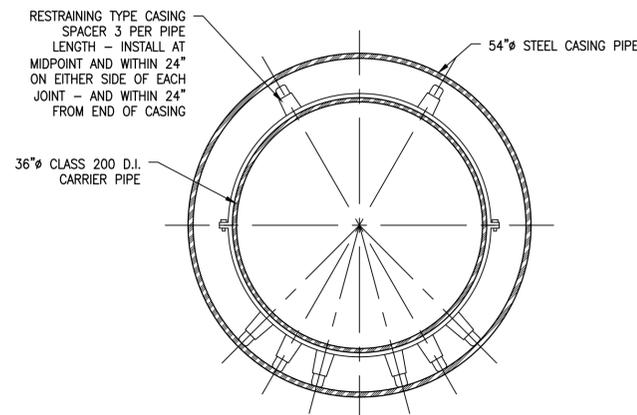


5 TYPICAL PILE SUPPORTED PIPES
C-5.3 N.T.S.

LONGITUDINAL SECTION

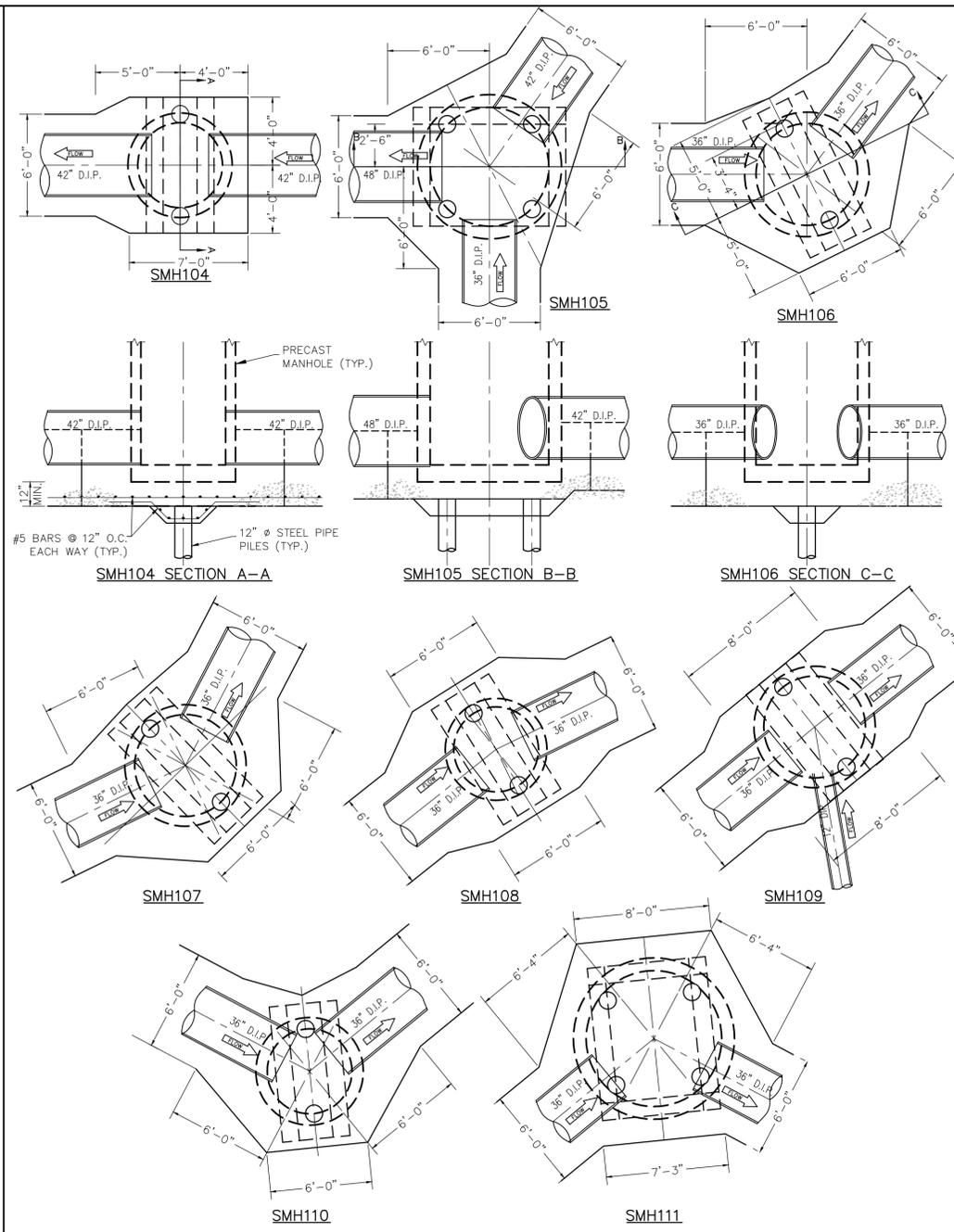


END SEAL & SPACING



TYPICAL SECTION

4 CASING PIPE DETAIL
C-5.3 N.T.S.



NOTE: ALL CONCRETE SHALL BE 4,000 PSI

6 TYPICAL PILE SUPPORTED STRUCTURES
C-5.3 N.T.S.

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

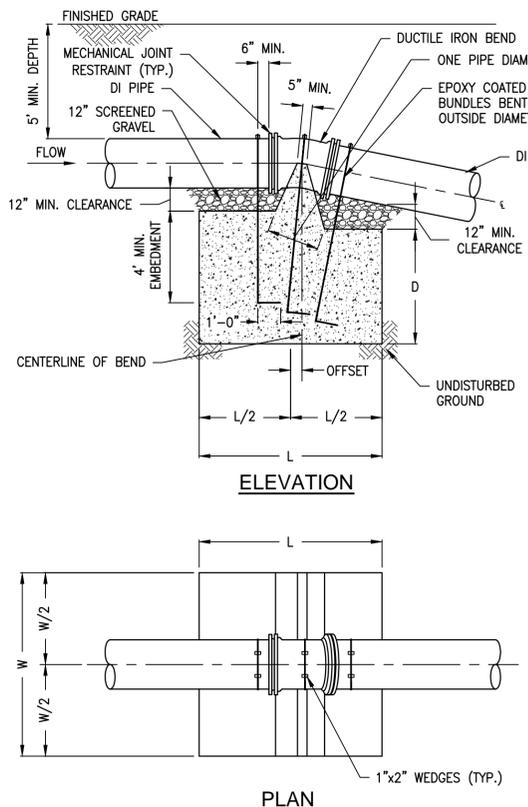


FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

SEWER & FORCE
MAIN DETAILS II

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

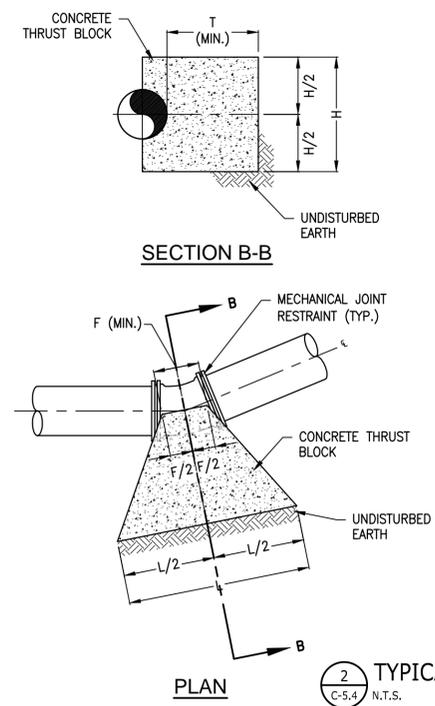
C-5.3



PIPE BEND	PIPE SIZE	
	24"	30"
L	8'-0"	9'-0"
W	8'-0"	9'-0"
D	5'-0"	7'-0"
OFFSET	0'-6"	0'-6"
REBAR	2 BUNDLES OF 3-#5 BARS EACH PLUS 1 BUNDLE OF 2-#5 BARS	4 BUNDLES OF 3-#5 BARS EACH
L	10'-0"	11'-0"
W	10'-0"	11'-0"
D	7'-6"	9'-0"
OFFSET	1'-0"	1'-0"
REBAR	2 BUNDLES OF 3-#5 BARS EACH PLUS 2 BUNDLES OF 2-#5 BARS EACH	4 BUNDLES OF 3-#5 BARS EACH

- NOTES:**
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.
 2. WHERE (4) REINFORCING BAR BUNDLES ARE USED, SYMMETRICALLY PLACE (2) BAR BUNDLES ON BEND AND OTHER (2) AS SHOWN.
 3. CONCRETE STRENGTH $f'_c=3,000$ PSI AT 28 DAYS

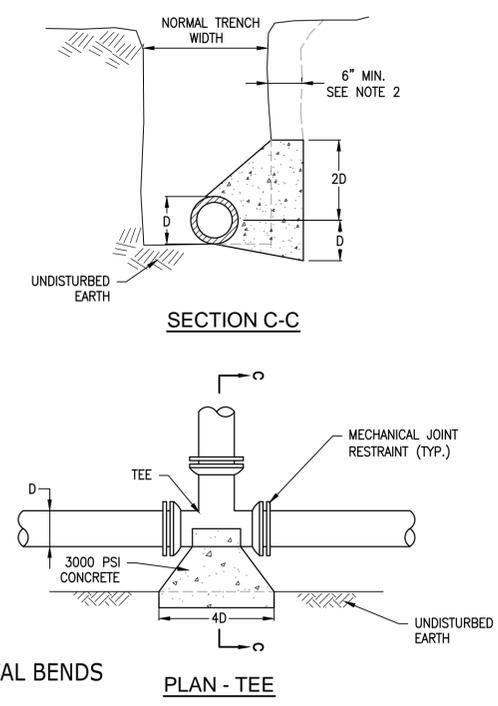
1 TYPICAL ANCHORAGE FOR VERTICAL DOWNWARD BENDS
 C-5.4 N.T.S.



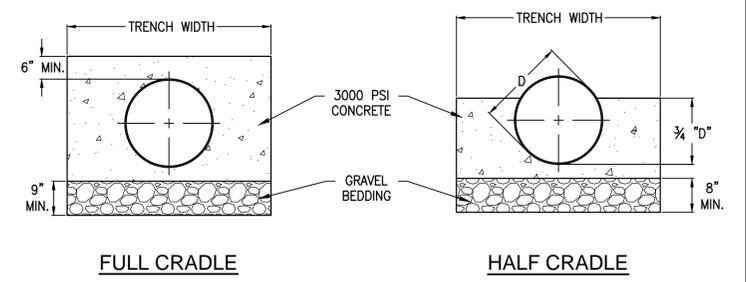
PIPE BEND	PIPE SIZE	
	24"	30"
L	5'-0"	6'-0"
H	5'-0"	5'-0"
F	2'-0"	2'-0"
T	3'-0"	3'-0"
L	8'-0"	9'-0"
H	5'-0"	6'-0"
F	2'-0"	2'-0"
T	4'-0"	4'-0"
L	12'-0"	12'-0"
H	6'-0"	7'-0"
F	2'-0"	2'-0"
T	5'-0"	5'-0"

- NOTES:**
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.
 2. CONCRETE STRENGTH $f'_c=3,000$ PSI AT 28 DAYS

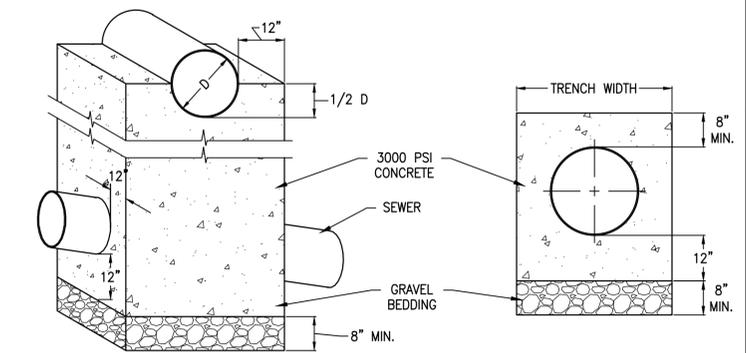
2 TYPICAL THRUST BLOCK FOR HORIZONTAL BENDS
 C-5.4 N.T.S.



3 TYPICAL THRUST BLOCK FOR HORIZONTAL BENDS AT TEE
 C-5.4 N.T.S.



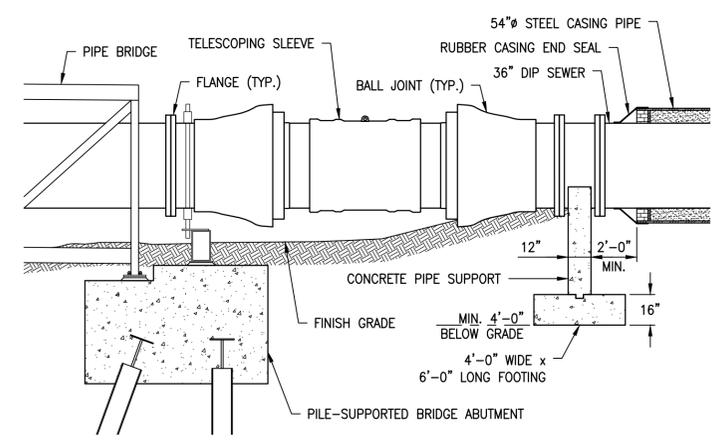
4 FULL CRADLE AND HALF CRADLE
 C-5.4 N.T.S.



5 CROSSING PIPE CRADLE AND PIPE ENCASEMENT
 C-5.4 N.T.S.

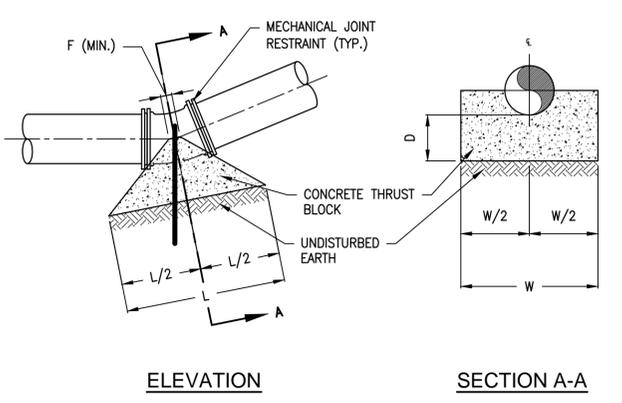
- NOTES:** CONCRETE SHALL BE MIN. 3000 PSI @ 28 DAYS. PROVIDE CONCRETE CRADLE WHERE PROPOSED SEWER CROSSES UNDER EXISTING UTILITY PIPELINES WITH LESS THAN 18" VERTICAL CLEARANCE

3 CONCRETE CRADLE AND ENCASEMENT DETAILS
 C-5.4 N.T.S.



NOTE: SEE STRUCTURAL DRAWINGS FOR PIPE BRIDGE, BRIDGE ABUTMENT, AND PIPE SUPPORT DETAILS.

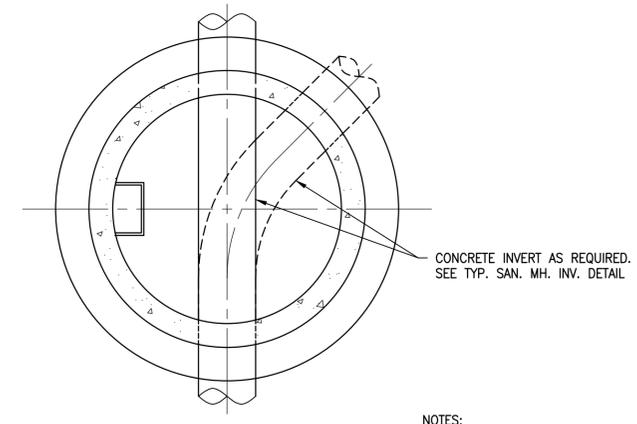
4 EXTENDED DEFLECTION AND EXTENSION COUPLING DETAIL AT PIPE UTILITY BRIDGE
 C-5.4 N.T.S.



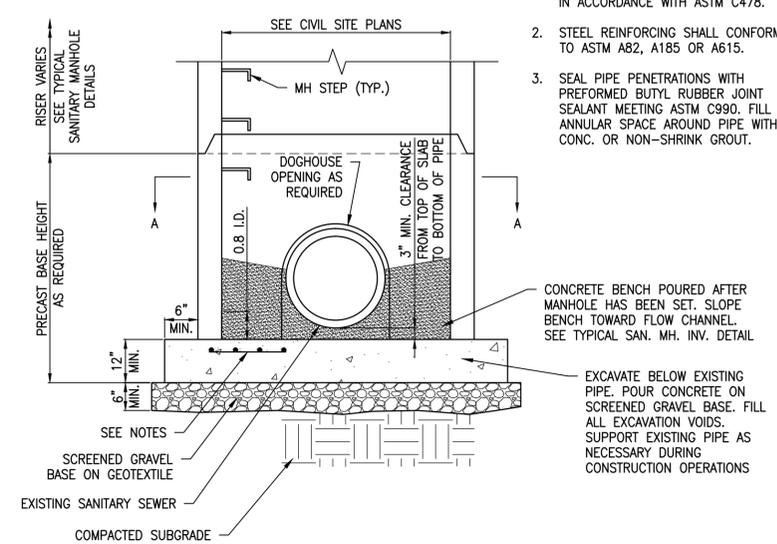
PIPE BEND	PIPE SIZE	
	24"	30"
L	4'-0"	5'-0"
W	4'-0"	5'-0"
D	2'-0"	2'-0"
F	0'-6"	0'-6"

- NOTES:**
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.
 2. CONCRETE STRENGTH $f'_c=3,000$ PSI AT 28 DAYS

5 TYPICAL THRUST BLOCK FOR VERTICAL UPWARD BENDS
 C-5.4 N.T.S.



- NOTES:**
1. PRECAST BASE SECTION SHALL BE IN ACCORDANCE WITH ASTM C478.
 2. STEEL REINFORCING SHALL CONFORM TO ASTM A82, A185 OR A615.
 3. SEAL PIPE PENETRATIONS WITH PREFORMED BUTYL RUBBER JOINT SEALANT MEETING ASTM C990. FILL ANNULAR SPACE AROUND PIPE WITH CONC. OR NON-SHRINK GROUT.



6 TYPICAL SANITARY PRECAST DOG HOUSE MANHOLE DETAIL
 C-5.4 N.T.S.



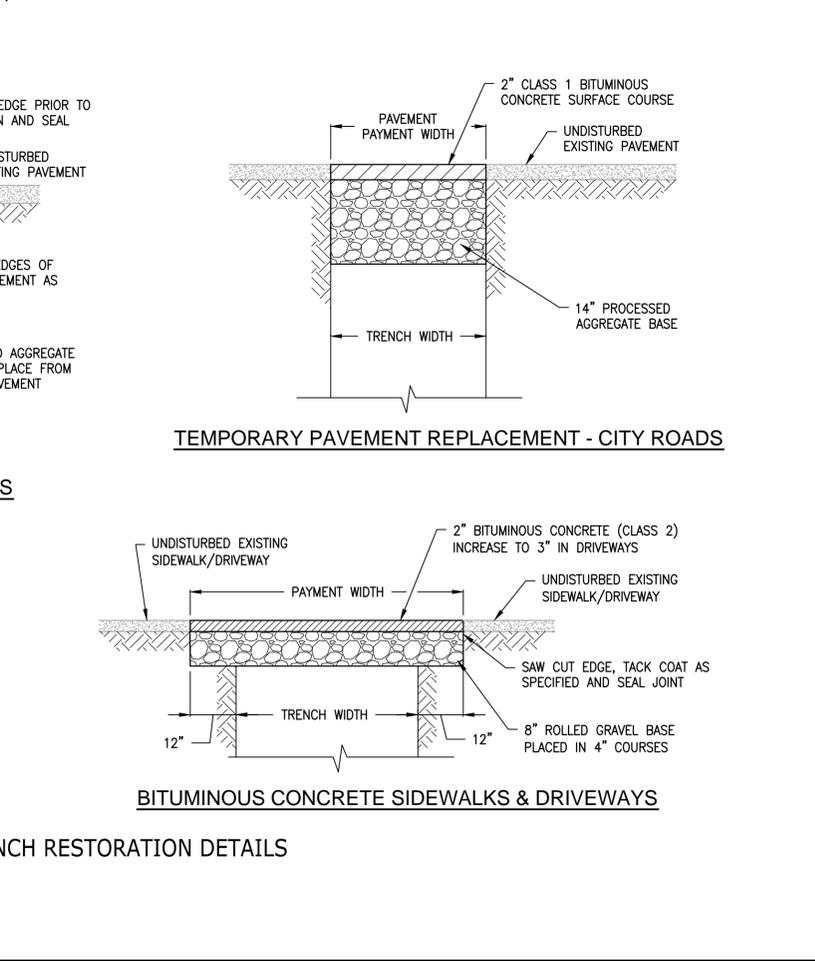
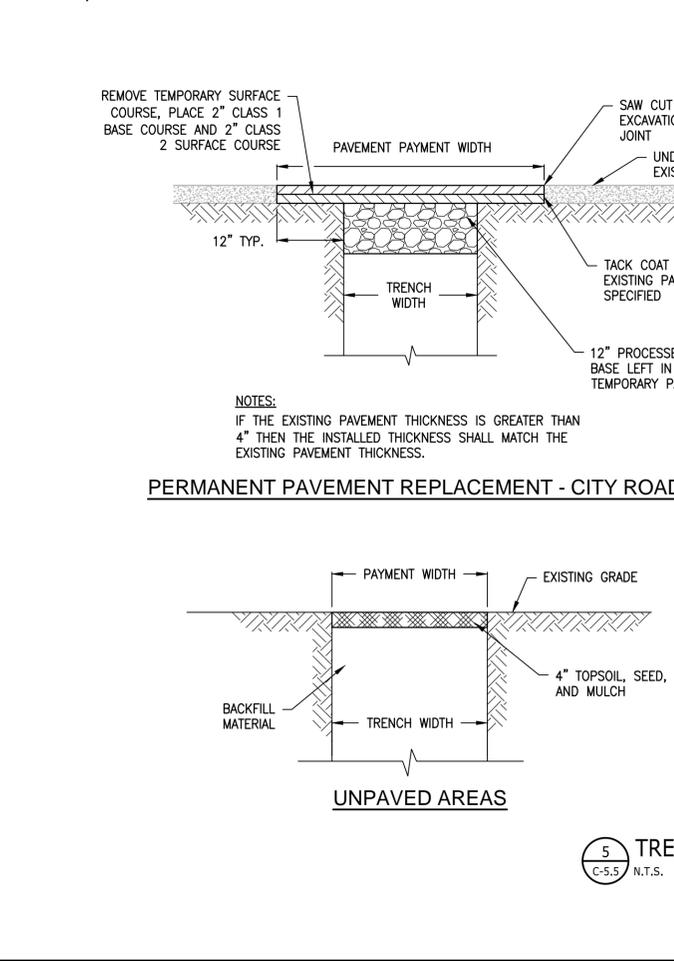
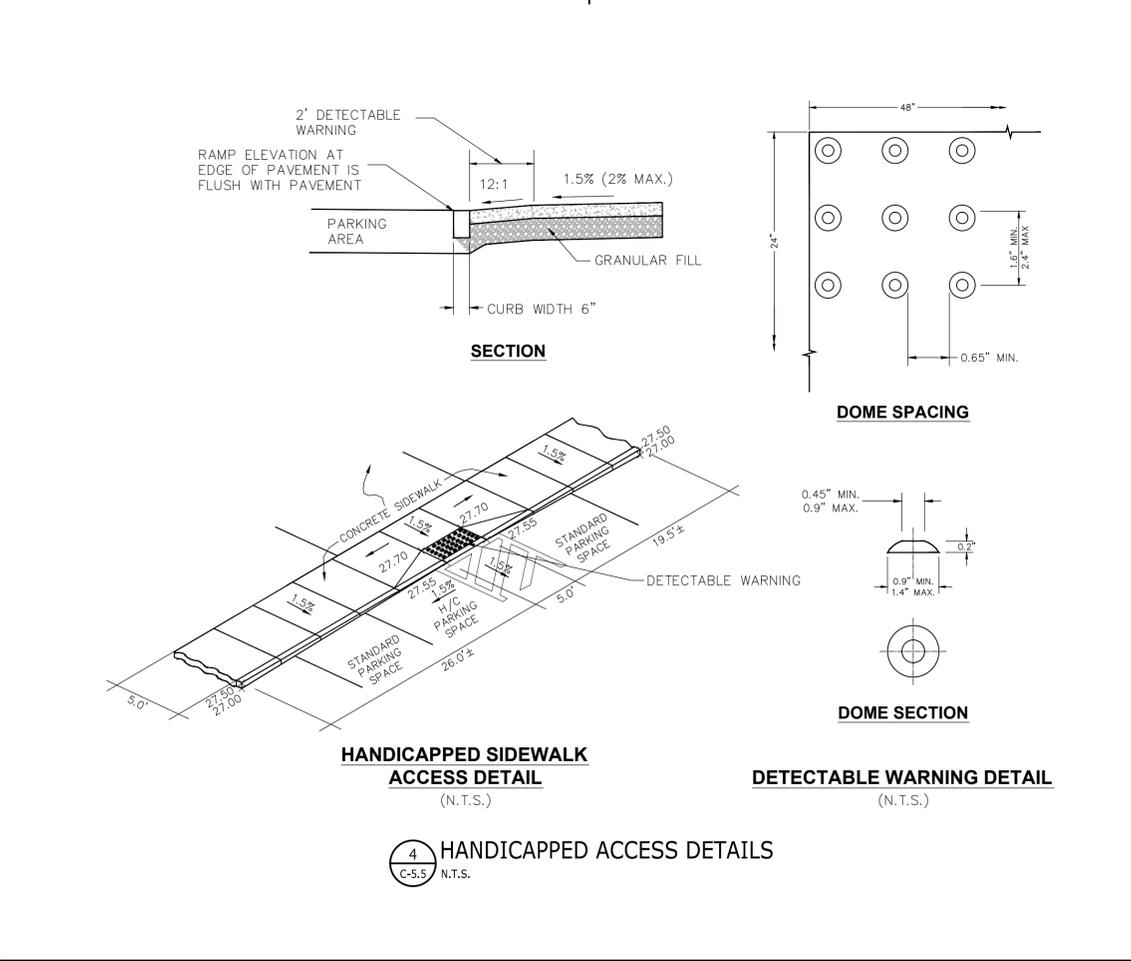
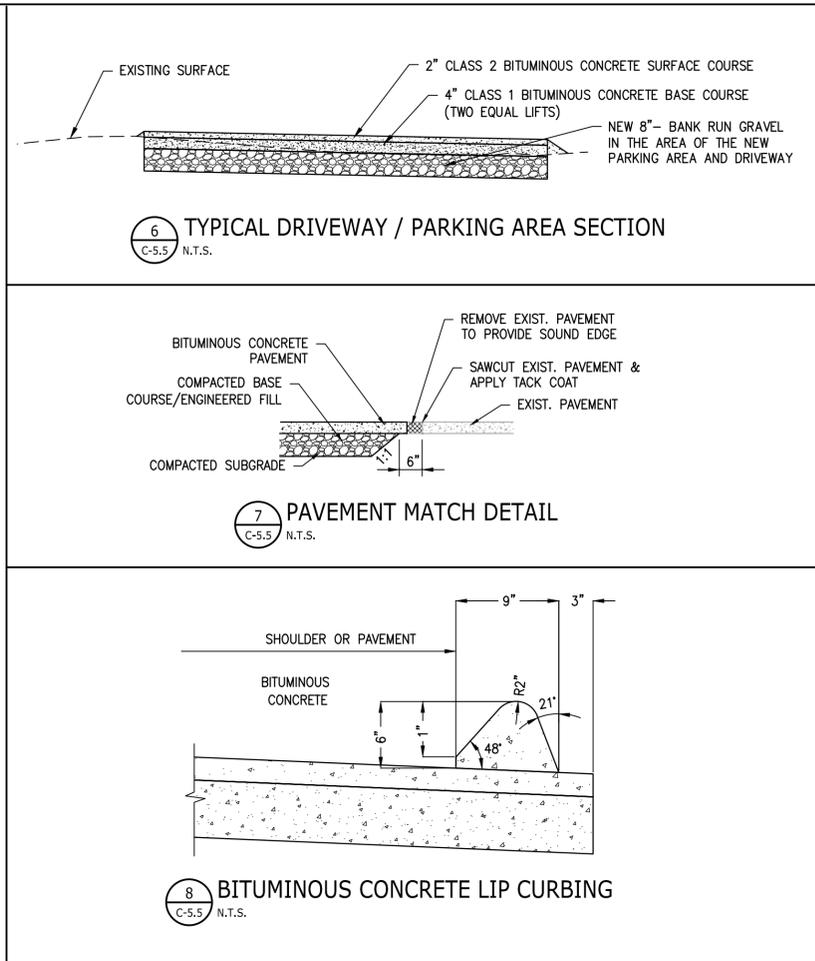
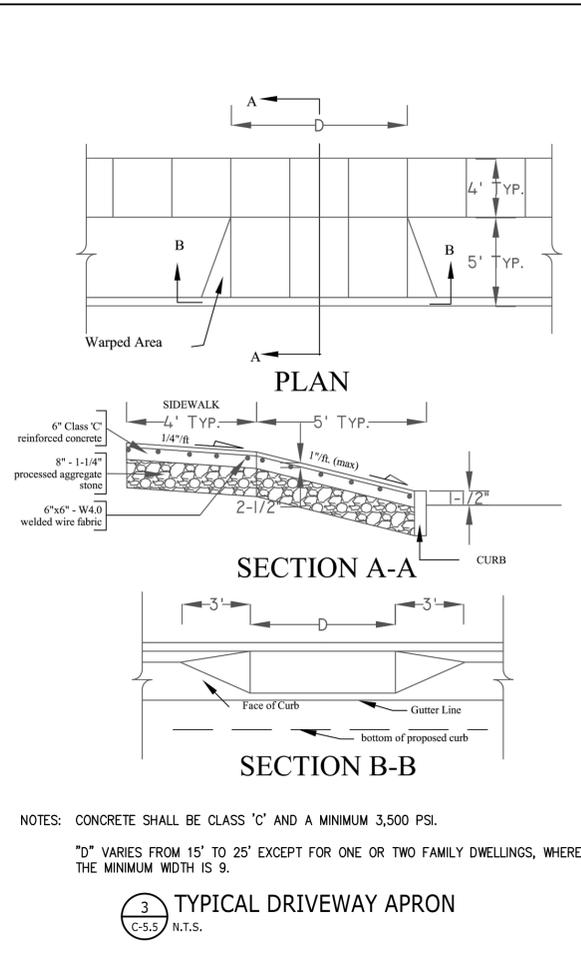
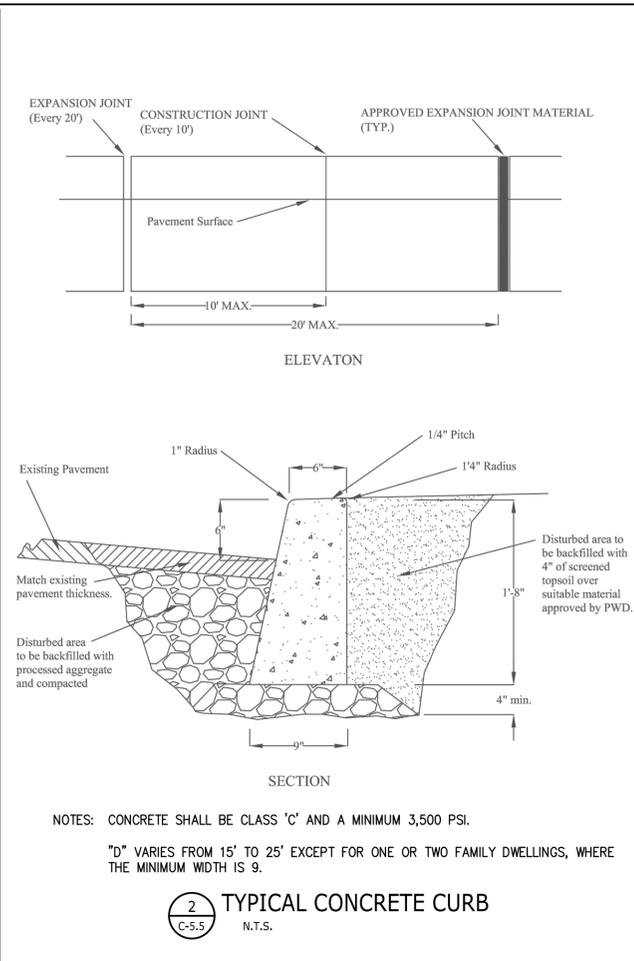
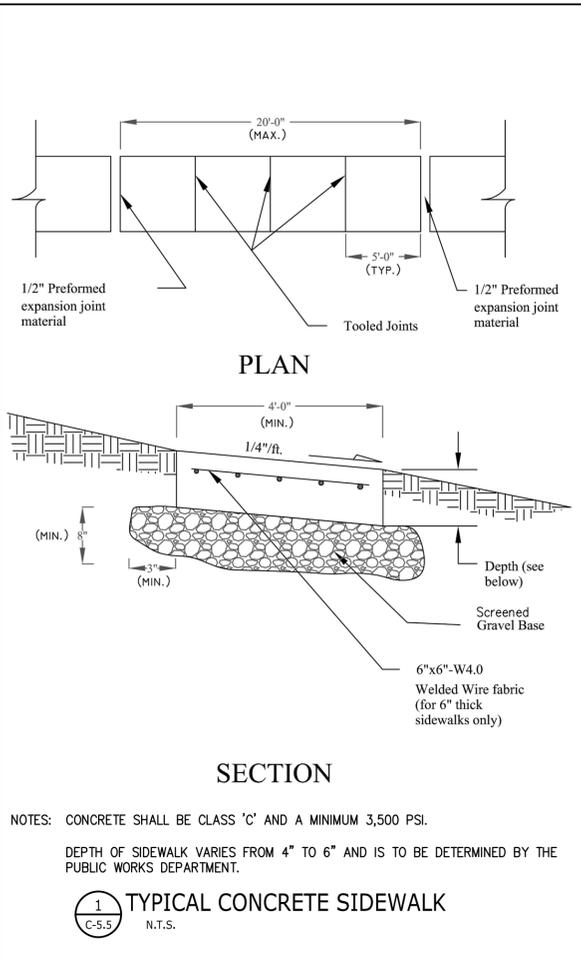
**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

**SEWER & FORCE
 MAIN DETAILS III**

PROJECT NUMBER: 14712
 DESIGNED BY: -
 DRAWN BY: TJC
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

C-5.4

DRAWING FILE: C:\PROJECTS\14712-02-Middletown_Pe_Plan_Final_Design\ACAD\DWG\CONTRACT 2\DETAILS\14712-54 [B]01.dwg PLOTTED: Apr 29 2016 - 11:48am BY: Tom Covelli



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

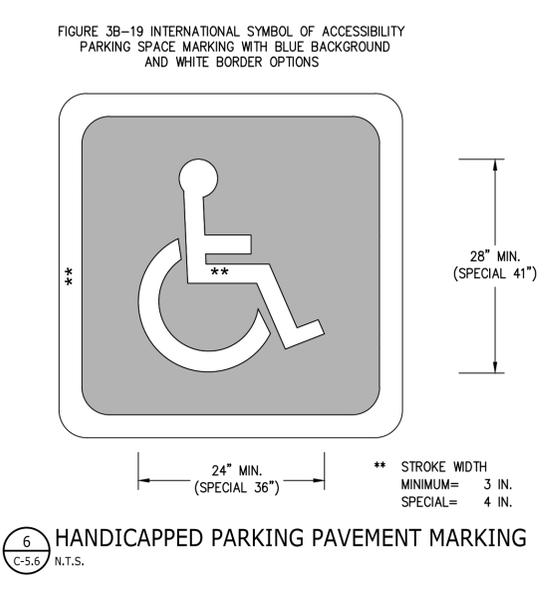
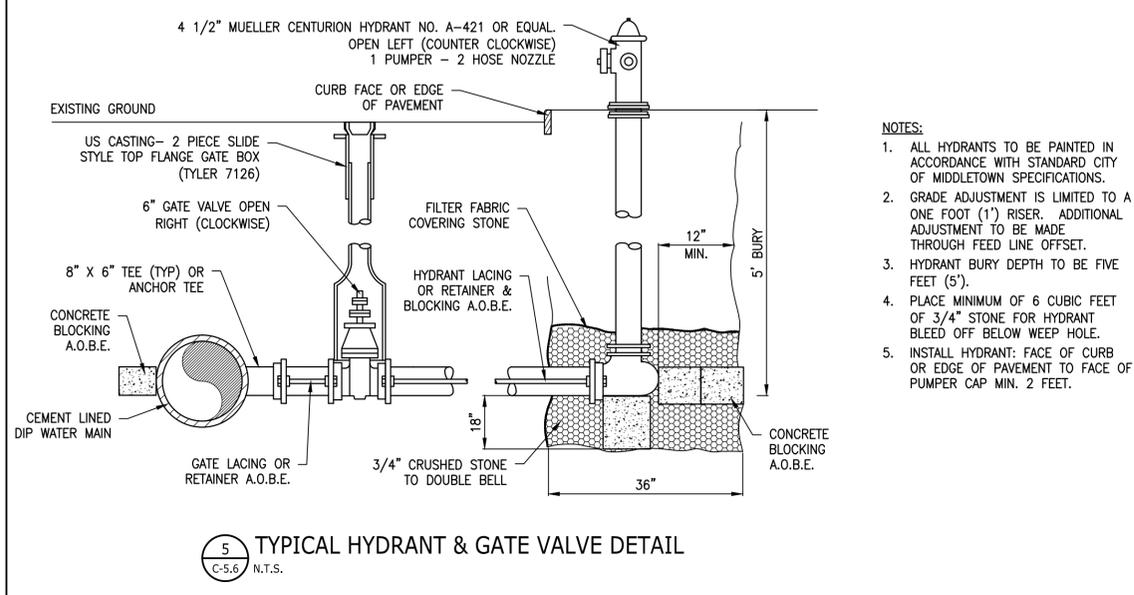
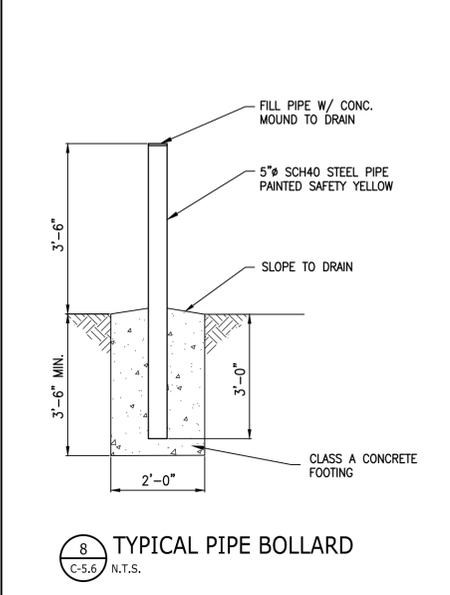
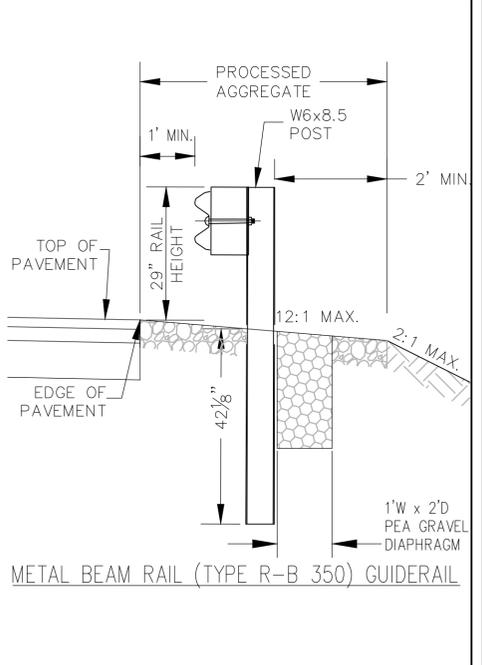
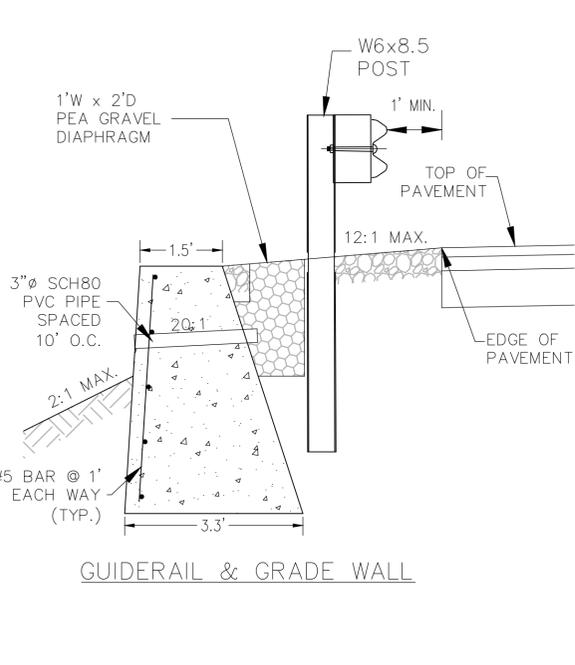
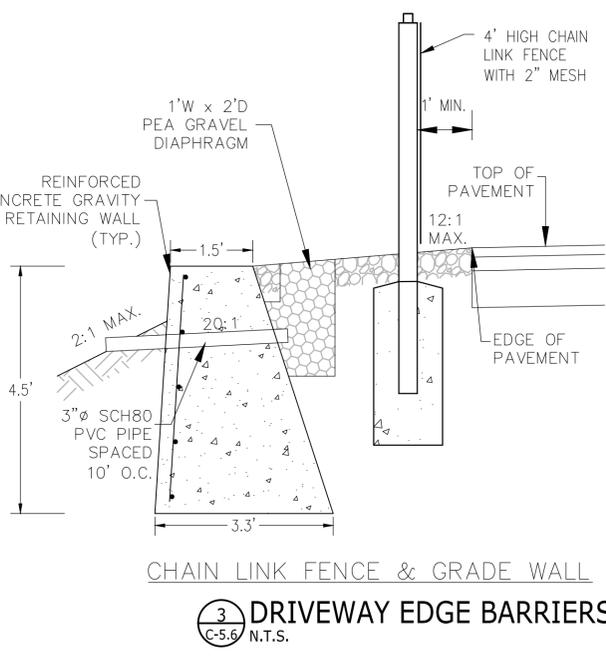
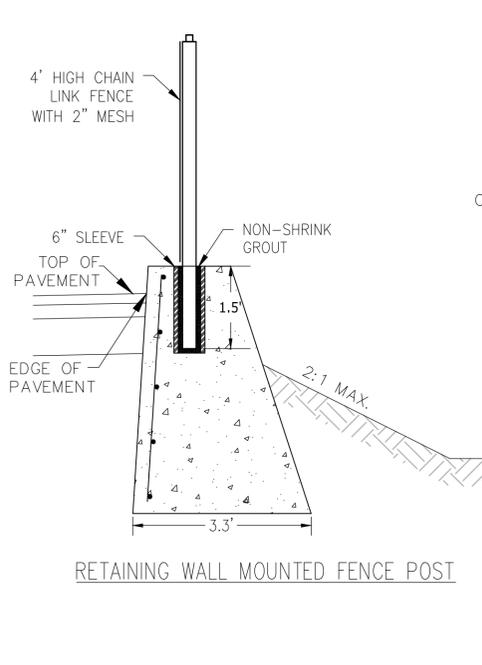
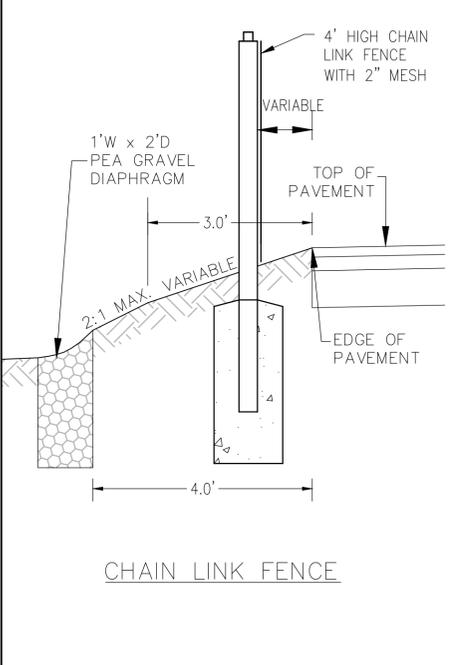
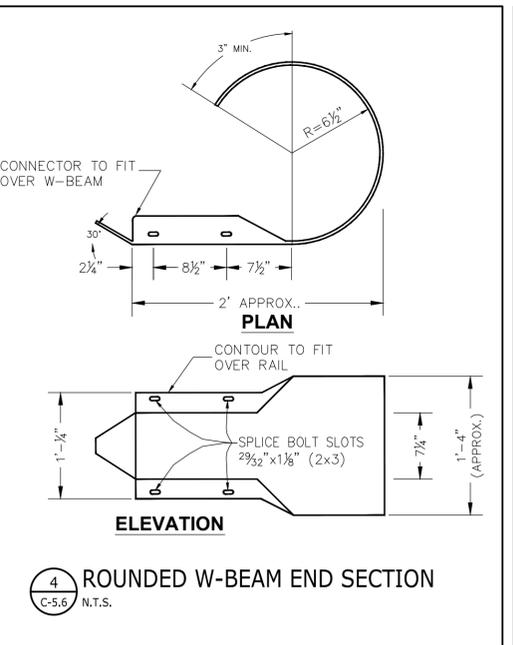
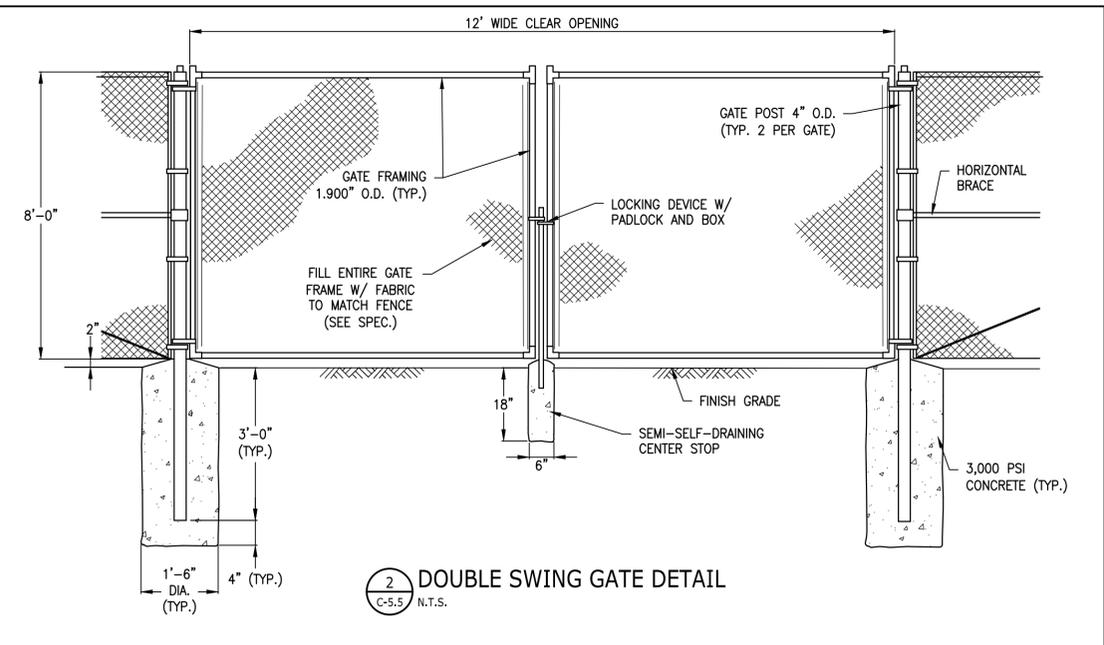
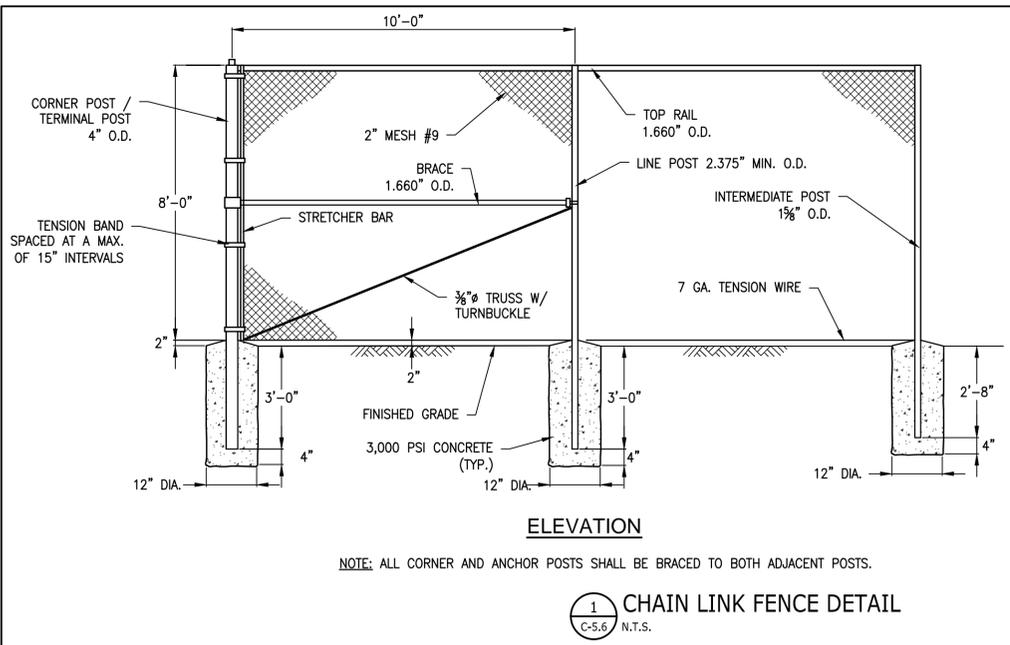


FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PAVEMENT & SIDEWALK DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:
C-5.5



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



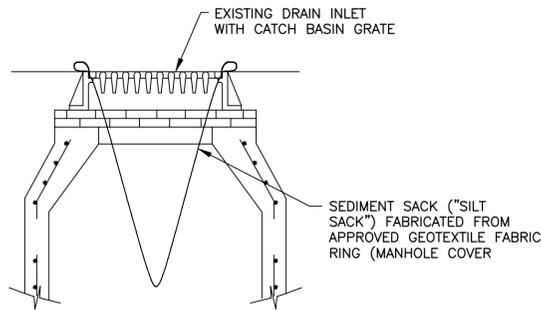
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

SITE FIXTURE
DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

C-5.6

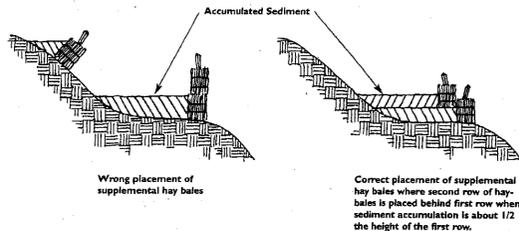
DRAWING FILE: C:\PROJECTS\14712-02-Middletown_Pe_Fin_Final_Design\A040\DWG\CONTRACT_2\DETAILS\14712-5.6 [B]01.dwg PLOTTED: Apr 29 2016 - 11:48am BY: Tom Covill



CONSTRUCTION SPECIFICATIONS

1. SEDIMENT SACKS SHALL BE FABRICATED FROM APPROVED GEOTEXTILE.
2. SEDIMENT SACKS SHALL BE INSTALLED BENEATH THE EXISTING GRATE PRIOR TO ANY LAND DISTURBING ACTIVITIES. SACKS SHALL BE REINFORCED TO SUPPORT THE WEIGHT OF RETAINED SEDIMENT AND WATER. SACKS SHALL BE PROVIDED WITH A POSITIVE MEANS TO PREVENT SLIPPING BETWEEN THE FRAME AND GRATE. SACKS SHALL BE PROVIDED WITH LIFTING LOOPS OR OTHER MEANS FOR REMOVAL AND CLEANING.
3. INSPECTION SHALL BE FREQUENT. CLEANING, REPAIR AND/OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. REMOVED SEDIMENT SHALL BE DISPOSED OF OFF SITE.
5. THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR ANY DAMAGE CAUSED BY FAILURE TO MAINTAIN AND/OR REMOVE SEDIMENTS, ALL AT NO ADDITIONAL COST TO THE GOVERNMENT.
6. SEDIMENT SACKS SHALL BE REMOVED AND DISPOSED OF AS SOON AS GRASS IS ESTABLISHED AND PAVEMENT IS PLACED.

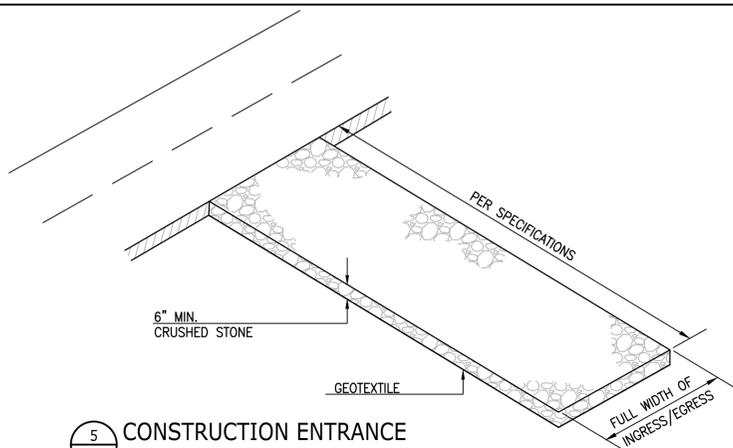
1 SEDIMENT SACK INSTALLATION DETAIL
C-5.7 N.T.S.



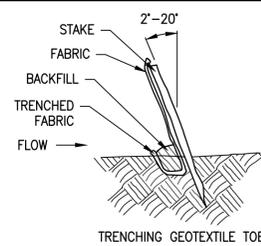
3 ADDING HAY BALE BACKUP BARRIER
C-5.7 N.T.S.

PROBLEM	CAUSE	CORRECTION
UNDERCUTTING	INADEQUATE TRENCHING	RESET BALES PROPERLY OR FOR SMALL FAILURES BACKFILL DOWNSLOPE RILLS, FILL & COMPACT UNDER FAILING BALE, FILL JOINTS WITH HAY, BACKFILL UP SLOPE SIDE OF BALE WITH 4" WEDGE OF WOOD CHIPS OR COMPACTED SOIL.
	SPACES BETWEEN BALES	SAME AS ABOVE, AND INSTALL PERPENDICULAR WINGS TO BREAK FLOW LINE SUCH THAT BOTTOM END OF WING IS HIGHER THAN TOP OF BARRIER.
	BARRIER NOT ON THE CONTOUR, RUNOFF FLOWING ALONG UPSLOPE SIDE OF BARRIER	SAME AS ABOVE, AND INSTALL PERPENDICULAR WINGS TO BREAK FLOW LINE SUCH THAT BOTTOM END OF WING IS HIGHER THAN TOP OF BARRIER.
RILLING AROUND END	NOT EXTENDING END OF HAY BALE BARRIER FAR ENOUGH UPSLOPE	EXTEND HAY BALE BARRIER FAR ENOUGH UPSLOPE SO THAT BOTTOM OF LAST BALE IS HIGHER THAN TOP OF LOWEST BALE.
HAY BALES MOVED	WATERSHED TOO LARGE	CHANGE TO STONE BARRIER.
	FLOWS TOO CONCENTRATED	CHANGE TO GEOTEXTILE SILT FENCE OR STONE BARRIER.
	INADEQUATELY STAKED	FILL AND COMPACT ANY RILLS AT HAY BALE BARRIER, REINSTALL HAY, FILL JOINTS, BACKFILL AND COMPACT, INCREASE STAKING DEPTHS.

HAY BALE BARRIER TROUBLE SHOOTING GUIDE



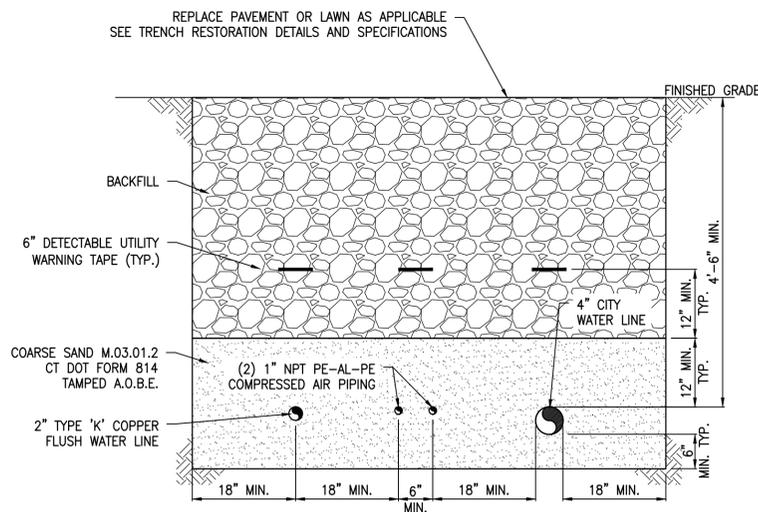
5 CONSTRUCTION ENTRANCE
C-5.7 N.T.S.



SEDIMENT CONTROL FENCE NOTES:

- 1) SEDIMENTATION FENCE SHOULD BE PLACED SO THAT IT LEANS TOWARD THE SOURCE OF SEDIMENT.
- 2) MAXIMUM SPACING FOR WOODEN STAKES IS 6'-0".
- 3) WOOD STAKES SHALL HAVE A MINIMUM CROSS-SECTION SIZE OF 1.5" X 1.5" AND A MINIMUM LENGTH OF 4 FT.
- 4) WOODEN STAKES SHALL BE DRIVEN TO A MINIMUM OF 1 FT. INTO THE GROUND.
- 5) 6" OF GEOTEXTILE SHALL BE BURIED BY TRENCHING AND AT LEAST 2.5 FT. IN HEIGHT OF GEOTEXTILE SHALL BE EXPOSED.
- 6) FABRIC SHALL BE JOINED ONLY AT A SUPPORT POST WITH A MINIMUM OF 6" OVERLAP AND SECURELY SEALED.
- 7) UPON RE-ESTABLISHMENT OF GROUND COVER IN DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, OR UPON FINAL INSPECTION, FENCE, AND ANY SEDIMENT SHALL BE REMOVED. AT NO TIME WILL THE FENCE REMAIN IN PLACE AFTER PROJECT COMPLETION, UNLESS OTHERWISE DIRECTED.
- 8) SEDIMENTATION FENCE SHALL NOT BE USED IN A WATER COURSE.
- 9) ONLY SEDIMENTATION FENCE FROM THE CTDOT APPROVED PRODUCT LIST SHALL BE USED.
- 10) CLEAN OUT ACCUMULATED SEDIMENT WHEN ONE-HALF (1/2) OF THE ORIGINAL HEIGHT OF THE SEDIMENTATION FENCE, AS INSTALLED, BECOMES FILLED WITH SEDIMENT OR AS DIRECTED BY THE ENGINEER. COST FOR THIS WORK SHALL BE INCLUDED IN THE PRICE OF THE SEDIMENTATION FENCE.

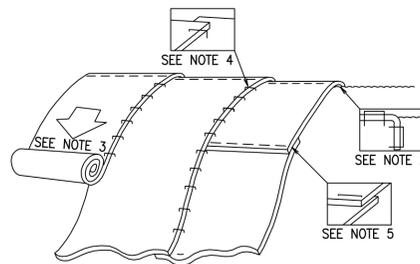
2 SEDIMENTATION CONTROL FENCE
C-5.7 N.T.S.



NOTES:

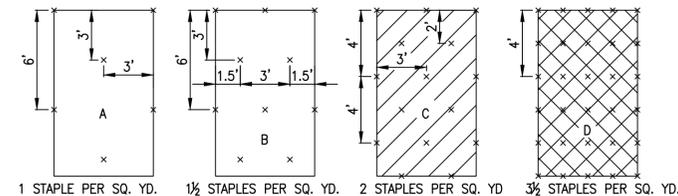
1. IN PAVED AREAS OR AREAS TO BE PAVED BACKFILL MATERIAL SHALL BE BANK-RUN GRAVEL M.02.06 GRADATION C, FORM 816, AS APPROVED BY THE ENGINEER. PROCESSED AGGREGATE CAN BE USED IN LIEU OF BANK-RUN GRAVEL IN ALL OTHER AREAS. SUITABLE EXCAVATED MATERIAL MAY BE RE-USED IF APPROVED BY THE ENGINEER.
2. COARSE SAND BEDDING SHALL BE WRAPPED IN GEOTEXTILE FABRIC (12" MIN. OVERLAP)

7 BURIAL OF FLUSH WATER, CITY WATER & COMPRESSED AIR LINES
C-5.7 N.T.S.



STAPLE PATTERNS WILL VARY DEPENDING UPON SLOPE LENGTH, SLOPE GRADE, SOIL TYPE, AVERAGE ANNUAL RAINFALL AND MANUFACTURER'S RECOMMENDATIONS.

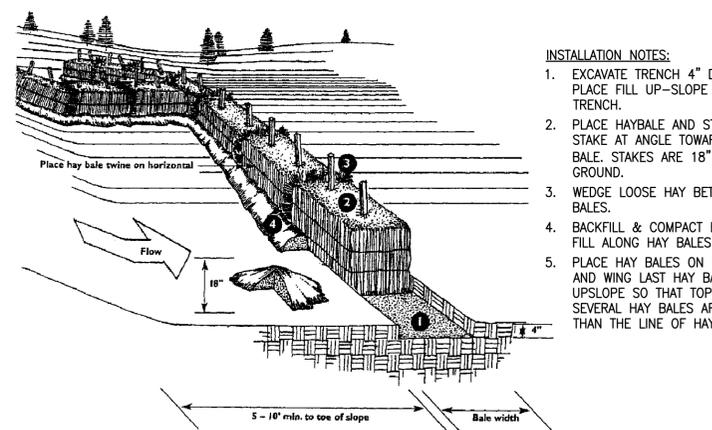
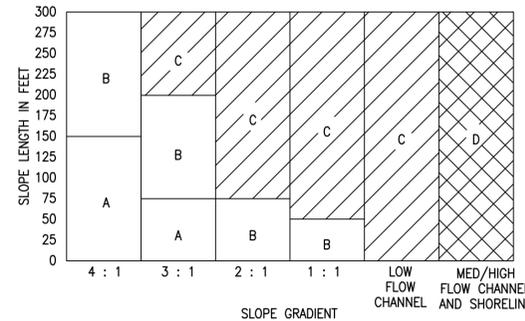
THE FOLLOWING ARE GENERAL STAPLE RECOMMENDATIONS BASED ON LENGTH OF SLOPE AND SLOPE GRADE. SPECIFIC PATTERN PLACEMENT OF STAPLES ARE ILLUSTRATIONS A, B, C AND D. INCREASED STAPLE RATES MAY BE NECESSARY DEPENDING UPON CONDITIONS. FOR SITE SPECIFIC RECOMMENDATIONS, CONTACT MANUFACTURER'S REPRESENTATIVE.



EROSION CONTROL MATTING NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKET ENDS OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA. APPROXIMATELY 12" APART.

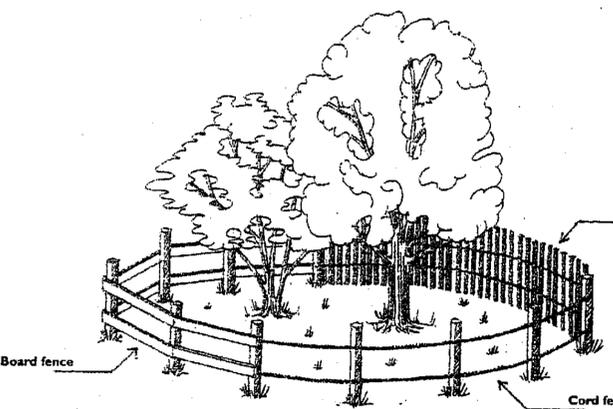
8 EROSION CONTROL MATTING
C-5.7 N.T.S.



4 PLACEMENT & CONSTRUCTION OF A HAY BALE BARRIER
C-5.7 N.T.S.

INSTALLATION NOTES:

1. EXCAVATE TRENCH 4" DEEP AND PLACE FILL UP-SLOPE OF TRENCH.
2. PLACE HAYBALE AND STAKE FIRST STAKE AT ANGLE TOWARDS FIRST BALE. STAKES ARE 18" MIN. INTO GROUND.
3. WEDGE LOOSE HAY BETWEEN BALES.
4. BACKFILL & COMPACT EXCAVATED FILL ALONG HAY BALES.
5. PLACE HAY BALES ON CONTOURS AND WING LAST HAY BALES UPSLOPE SO THAT TOP OF LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAYBALES



6 MECHANICAL TREE PROTECTION
C-5.7 N.T.S.

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

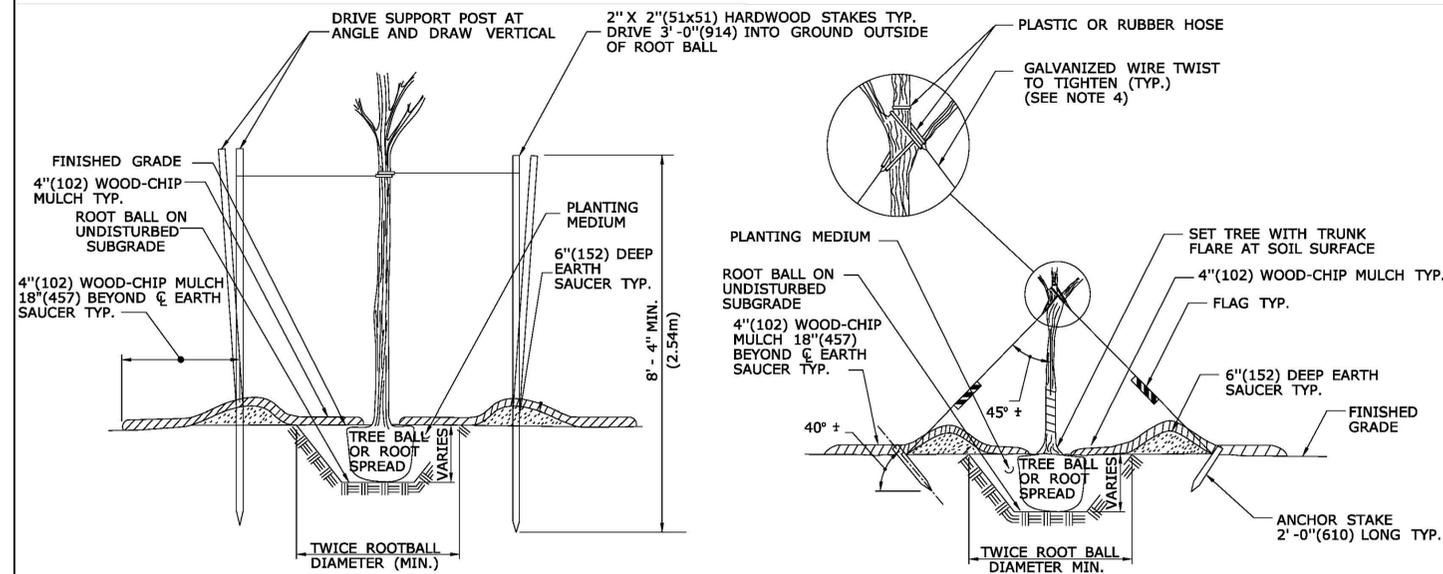
EROSION & SEDIMENTATION CONTROL DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: RED
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-5.7

DRAWING FILE: C:\PROJECTS\14712.02-Middletown_PS_Final_Design\ACAD\DWG\CORRECT 2\DETAILED\14712.02-58 [B] DWG PLOTTED: Apr 29 2016 - 11:51 AM BY: Tom Cowell

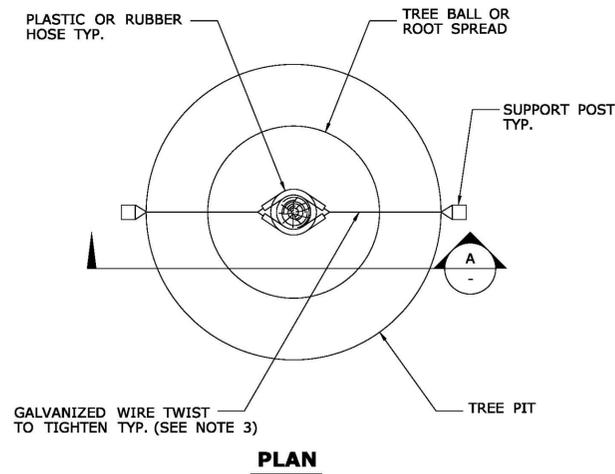


SECTION A

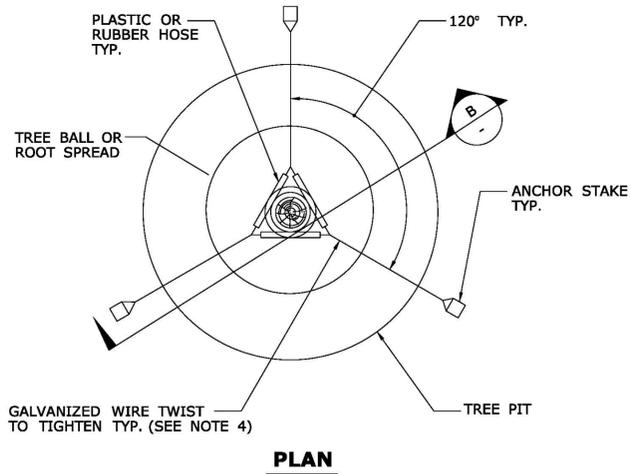
SECTION B

NOTE:
USE 3 POSTS FOR STAKING DECIDUOUS TREES 3"(76) CALIPER OR GREATER AND EVERGREEN TREES 8'(2.4m) HIGH OR GREATER. USE 2 POSTS FOR STAKING DECIDUOUS TREES LESS THAN 3"(76) CALIPER AND EVERGREEN TREES LESS THAN 8'(2.4m) HIGH.

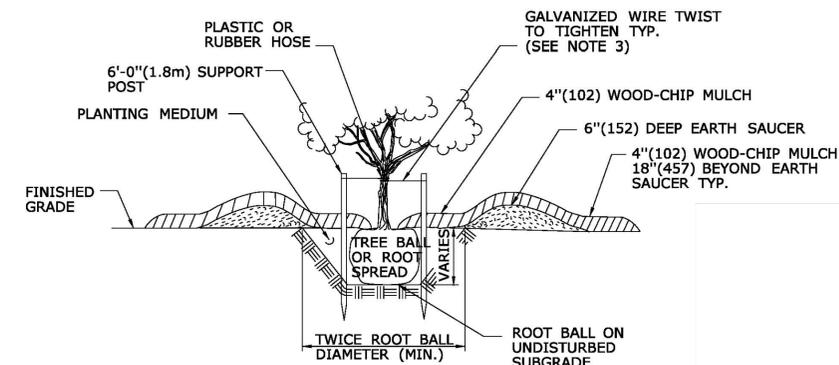
GUYING PLAN



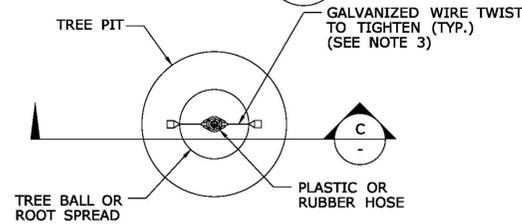
STAKING PLAN



PLAN

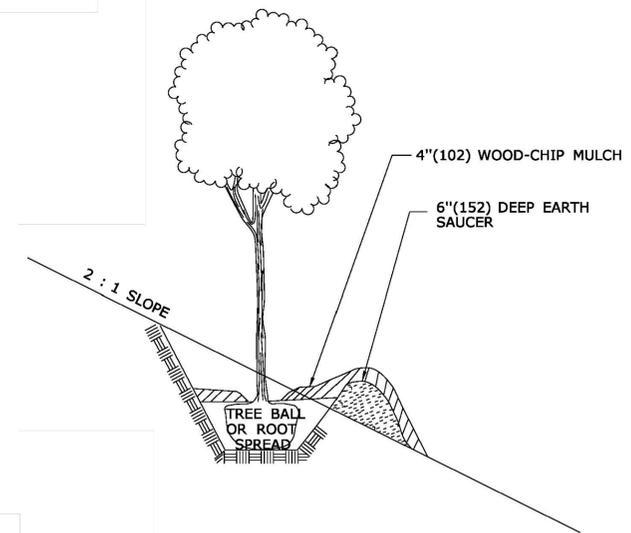


SECTION C



PLAN

STAKING PLAN FOR LOW BRANCHING DECIDUOUS AND EVERGREEN TREES FROM 5'(1.5m) TO 8'(2.4m) HIGH.



GRADING PLAN FOR TREES ON SLOPES

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

EXAMPLES OF MINIMUM SIZE OF ROOT BALL FOR NURSERY GROWN PLANTS.

CALIPER* INCHES(mm)	BALL DIAMETER INCHES(mm)	PLANTING PIT SIZE INCHES(mm)
-	8(203)	16(406)
-	10(254)	20(508)
1/2(12.5)	12(304)	24(610)
3/4(19)	14(356)	28(711)
1(25)	16(406)	32(813)
1 1/2(38)	20(508)	40(1016)
2(50)	24(610)	48(1219)
2 1/2(65)	28(711)	56(1422)
3(75)	32(813)	64(1626)
3 1/2(90)	38(965)	76(1930)
4(100)	42(1166)	84(2134)
5(125)	54(1372)	108(2743)
6(150)**	-	-

* THE CALIPER OF THE TRUNK IS MEASURED 6"(152) ABOVE THE GROUND UP TO AND INCLUDING 4"(102) SIZES AND 12"(305) ABOVE THE GROUND FOR LARGER SIZES OR AS SPECIFIED IN THE MOST RECENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

** TREES GREATER THAN OR EQUAL TO 6"(152) CALIPER SHALL HAVE A ROOT BALL DIAMETER EQUAL TO 10"(254) PER INCH(25mm) OF TRUNK CALIPER (A 7"(178) CALIPER TREE SHOULD HAVE A ROOT BALL DIAMETER EQUAL TO 70"(1778)).

GENERAL NOTES:

1. THE PLANTING PIT SIZE SHALL BE TWICE THE DIAMETER OF THE ROOT BALL IN WIDTH AND 2"(51) LESS THAN THE HEIGHT OF THE ROOT BALL.
2. ALL EXTERIOR PACKAGING MATERIAL APPLIED TO PLANTS SHALL BE REMOVED AFTER THE PLANT IS LOCATED IN THE PLANTING PIT. CUT AND REMOVE TWINE, BURLAP OR WIRE BASKETS FROM THE TOP 2/3RDS OF THE ROOT BALL.
3. USE DOUBLE STRAND NO. 12 WIRE FOR DECIDUOUS TREES GREATER THAN OR EQUAL TO 3"(76) CALIPER AND USE DOUBLE STRAND NO. 10 WIRE FOR EVERGREEN TREES GREATER THAN OR EQUAL TO 8"(203) CALIPER.
4. TREE TRUNK WRAPPING MATERIAL SHALL BE USED AS DIRECTED BY THE ENGINEER.
5. PLANTING PITS FOR INDIVIDUAL SHRUBS ON SLOPES SHALL BE THREE TIMES THE DIAMETER OF THE ROOT BALL IN WIDTH.

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

PLANTING DETAILS FOR TREES

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: -
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-5.8

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PLANTING DETAILS FOR SHRUBS

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: -
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-5.9

GENERAL NOTES:

1. THE PLANTING PIT SIZE SHALL BE TWICE THE DIAMETER OF THE ROOT BALL IN WIDTH AND 2"(51) LESS THAN THE HEIGHT OF THE ROOT BALL.
2. ALL EXTERIOR PACKAGING MATERIAL APPLIED TO PLANTS SHALL BE REMOVED AFTER THE PLANT IS LOCATED IN THE PLANTING PIT. CUT AND REMOVE TWINE, BURLAP OR WIRE BASKETS FROM THE TOP 2/3RDS (17) OF THE ROOT BALL.
3. USE DOUBLE STRAND NO. 12 WIRE FOR DECIDUOUS TREES GREATER THAN OR EQUAL TO 3"(76) CALIPER AND USE DOUBLE STRAND NO. 10 WIRE FOR EVERGREEN TREES GREATER THAN OR EQUAL TO 8"(203) CALIPER.
4. TREE TRUNK WRAPPING MATERIAL SHALL BE USED AS DIRECTED BY THE ENGINEER.
5. PLANTING PITS FOR INDIVIDUAL SHRUBS ON SLOPES SHALL BE THREE TIMES THE DIAMETER OF THE ROOT BALL IN WIDTH.

*** UNLESS OTHERWISE DIRECTED, WOOD-CHIP MULCH SHALL BE PLACED TO A LIMIT OF 18"(457) BEYOND THE CENTER OF THE OUTERMOST SHRUBS IN SHRUB BED.

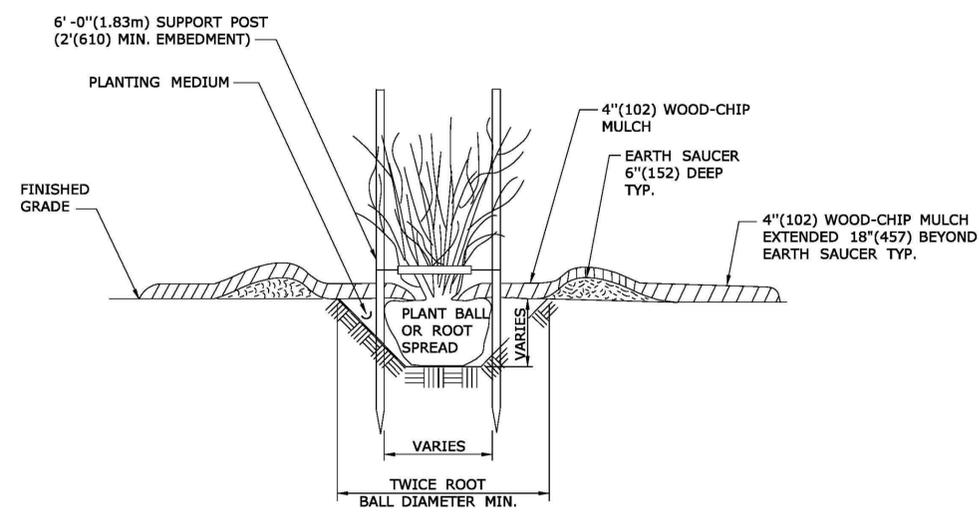
ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

EXAMPLES OF MINIMUM CONTAINER SIZES FOR NURSERY GROWN PLANTS

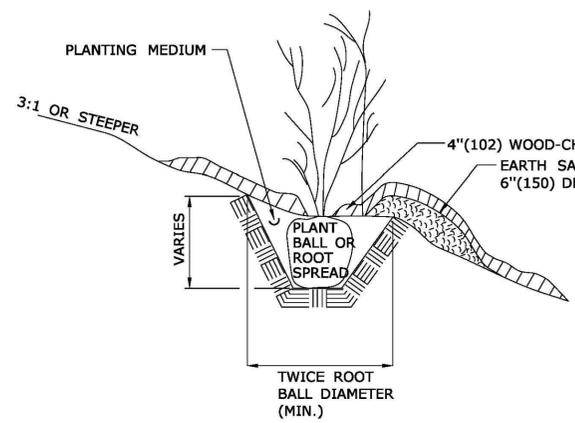
CALIPER* INCHES(mm)	HEIGHT** FEET(mm)	CONTAINER SIZE GALLONS(LITERS)
-	1(305)	0.7-1.1(2.6-4.2)
-	2(610)	0.7-1.1(2.6-4.2)
-	3(914)	0.7-1.1(2.6-4.2)
-	4(1219)	1.4-2.0(5.3-7.6)
-	5(1524)	3.4-4.2(12.9-15.9)
-	6(1829)	4.7-5.4(17.8-20.4)
1(25)	7(2134)	5.8-7.8(21.9-29.5)
-	8(2438)	9.0-11.5*34.1-43.5)
1½(38)	-	12.0-16.0(45.4-60.6)
2(51)	-	25.0-29.7(94.6-112.4)
2½(64)	-	25.0-29.7(94.6-112.4)

* THE CALIPER IS MEASURED 4"(102) ABOVE GROUND LEVEL.
** ONLY DECIDUOUS SHRUBS ARE INCLUDED IN THIS TABLE. EVERGREEN SHRUBS ARE MEASURED BY HEIGHT BUT, CONTAINER SIZE DEPENDS ON BOTH SIZE AND SHAPE AND ARE GENERALLY 1 TO 2 SIZES LARGER THAN DECIDUOUS PLANTS.

TABLE FOR SHRUBS

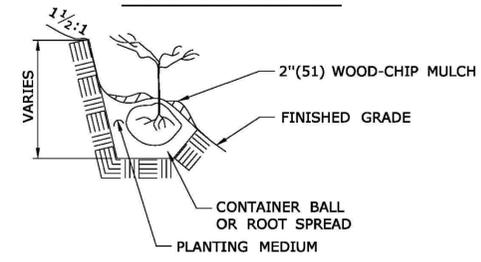


SECTION A



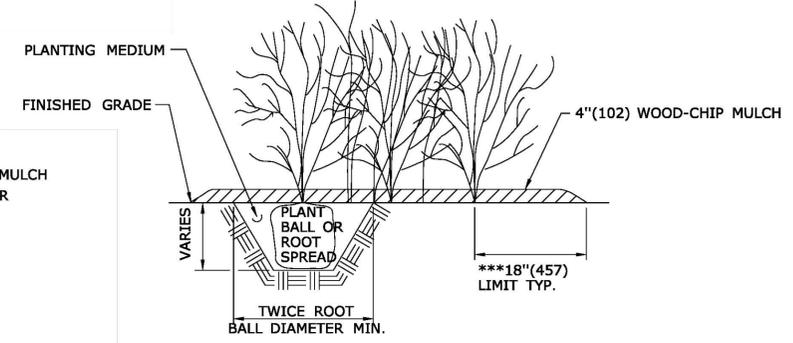
SECTION

PLANTING FOR SHRUBS IN INDIVIDUAL PITS ON SLOPES

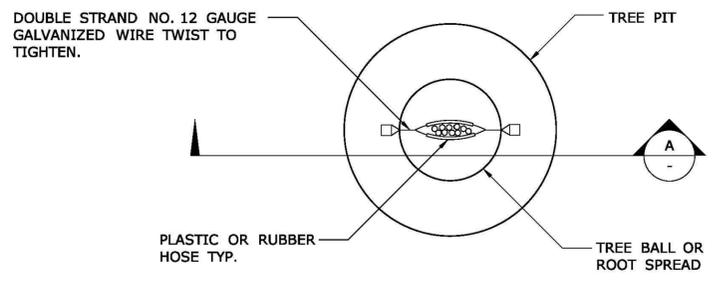


NOTE: PLACE PLANTS AT THE SAME DEPTH THAT THE SEEDLING WAS GROWN IN THE NURSERY.

PLANTING FOR SEEDLINGS, VINES AND GROUND COVER PLANTS IN PITS ON SLOPES



PLANTING FOR SHRUBS IN BEDS



PLAN

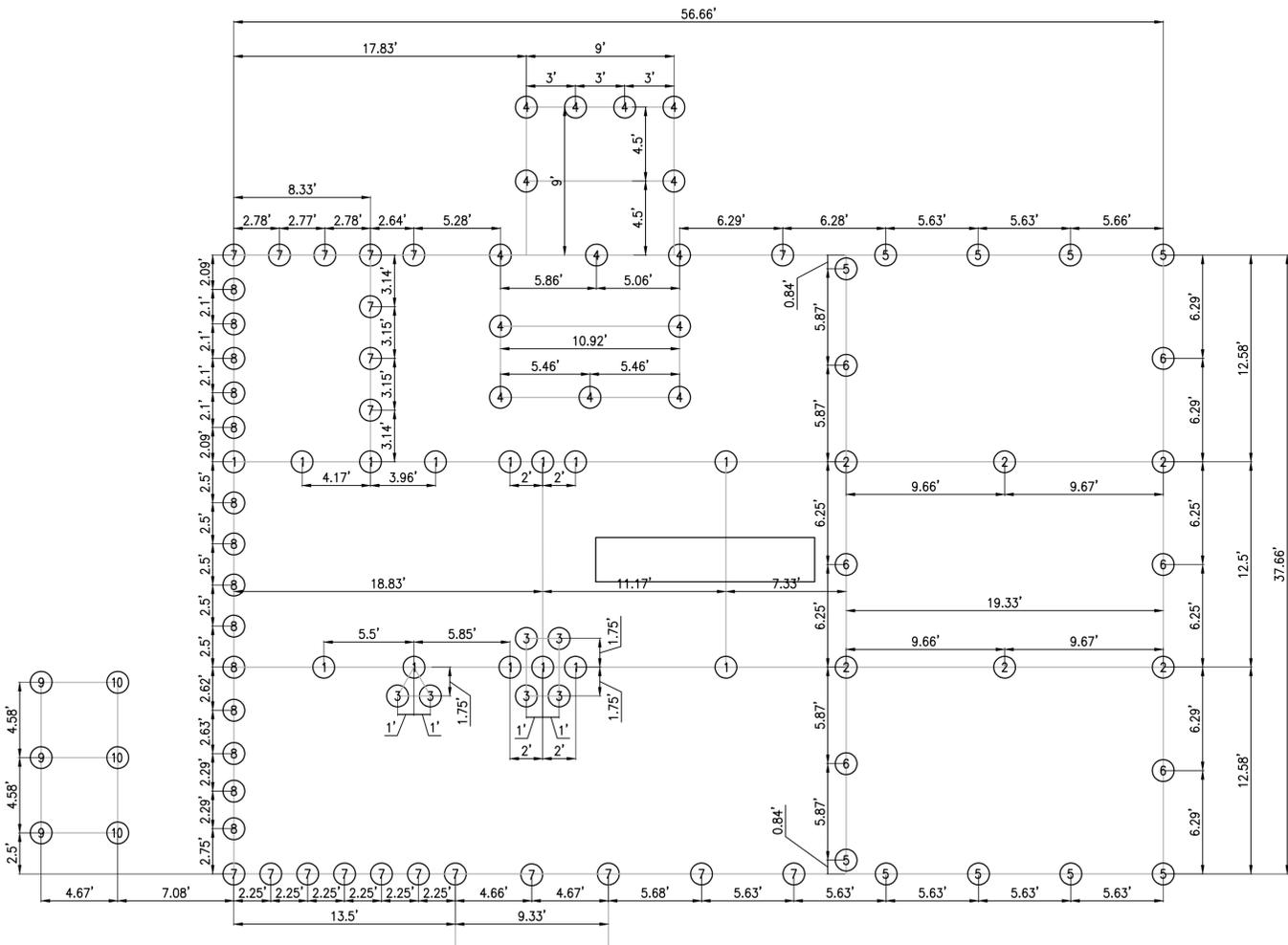
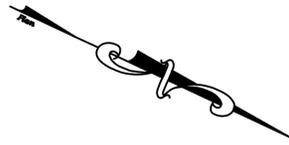
STAKING FOR MULTI-STEMMED DECIDUOUS TREES FROM 5'(1.5m) TO 10'(3.0m) HIGH

DRAWING FILE: G:\PROJECTS\14712-02-Middletown_PS_Final_Design\A000\DWG\CONTRACT_2\DETAILS\14712-59 [B]01.dwg PLOTTED: Apr 29 2016 - 11:50am BY: Tom Cowell

REVISIONS

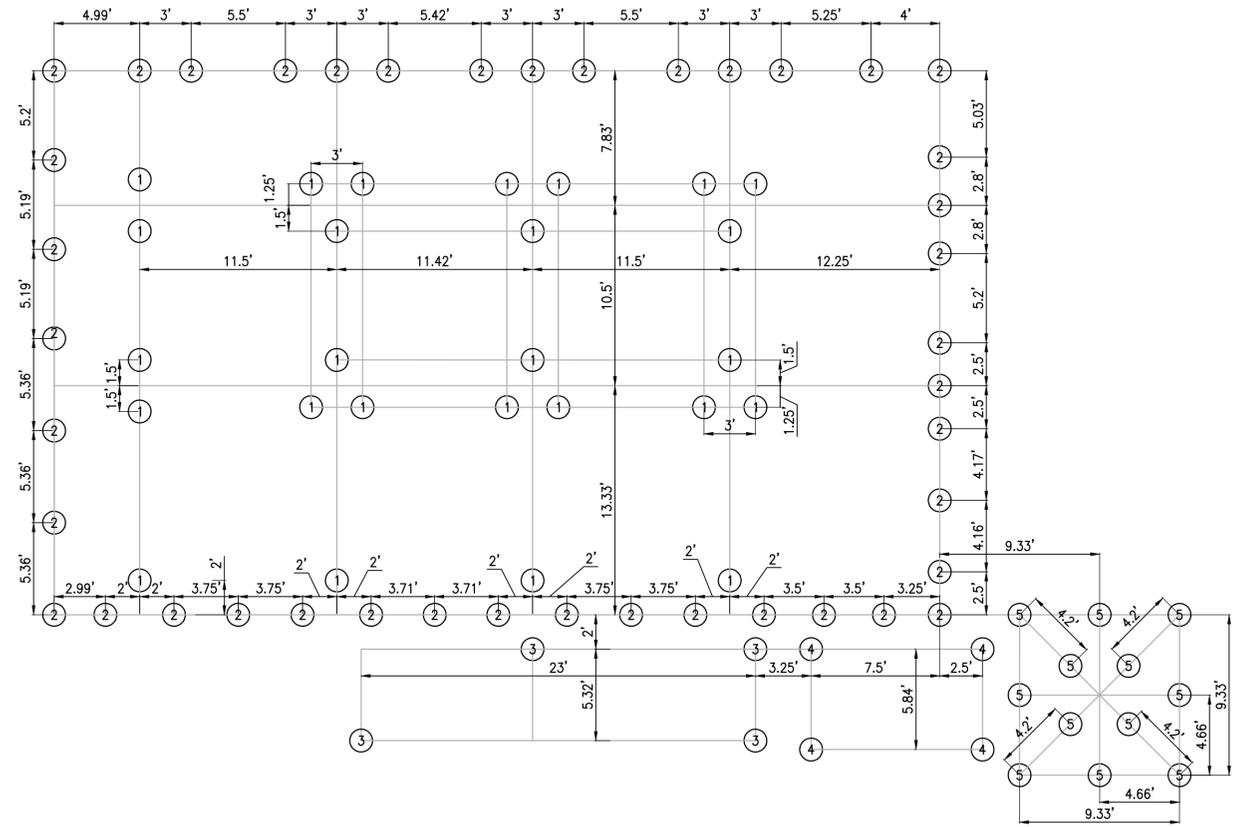
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

PILE CUT-OFF ELEVATIONS (CITY OF MIDDLETOWN DATUM)	
ID NO.	ELEVATION
1	18.67'
2	17.67'
3	20.50'
4	11.25'
5	19.50'
6	20.53'
7	20.58'
8	21.33'
9	28.84'
10	28.49'



PILE LOCATION PLAN - EXISTING TREATMENT BUILDING
Scale: 3/16" = 1'-0"

PILE CUT-OFF ELEVATIONS (CITY OF MIDDLETOWN DATUM)	
ID NO.	ELEVATION
1	18.50'
2	19.00'
3	22.67'
4	19.67'
5	19.50'



PILE LOCATION PLAN - EXISTING INCINERATOR BUILDING
Scale: 3/16" = 1'-0"

NOTES:

- CITY OF MIDDLETOWN DATUM IS APPROXIMATELY 15' HIGHER THAN NGVD 1929.
- REFER TO ARCHIVED SEWAGE TREATMENT WORKS, CITY OF MIDDLETOWN, PILE LAYOUT PLAN, JUNE, 1936, AVAILABLE ON PROJECT CD.
- REFER TO ARCHIVED SEWAGE TREATMENT WORKS, CITY OF MIDDLETOWN, PILE LAYOUT-TREATMENT BUILDING PLAN, JUNE, 1936, AVAILABLE ON PROJECT CD.



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

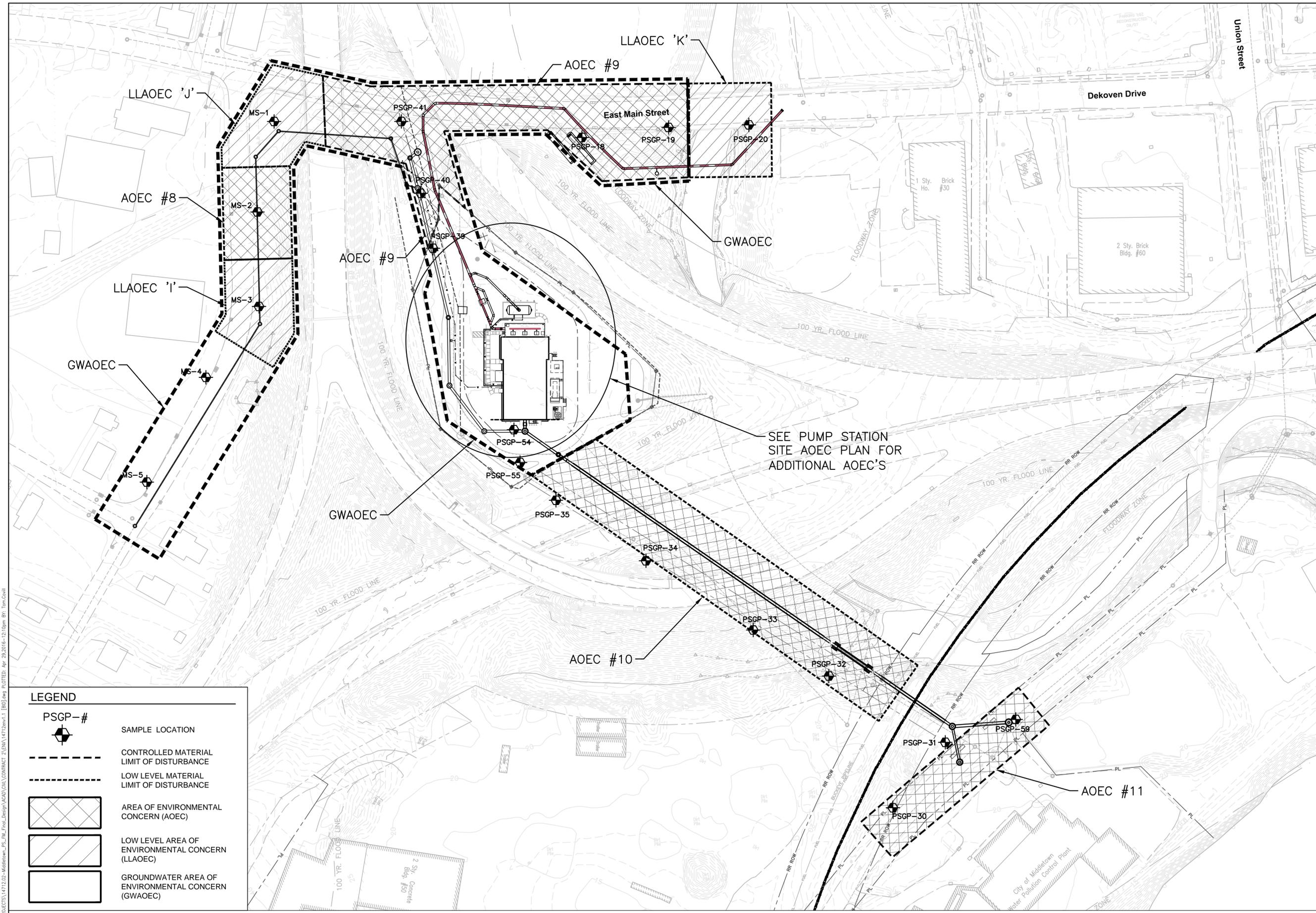
PILE LOCATION PLAN
EXISTING TREATMENT &
INCINERATOR BUILDINGS

PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

C-7.1

DRAWING FILE: G:\PROJECTS\14712.02-Middletown_P5_Final_Design\A040\DWG\CONTRACT_2\DWG\14712env1.1 [B] (env) PLOTTED: Apr 29, 2016 - 12:10pm BY: Tom Covelli



LEGEND

- PSGP-#  SAMPLE LOCATION
-  CONTROLLED MATERIAL LIMIT OF DISTURBANCE
-  LOW LEVEL MATERIAL LIMIT OF DISTURBANCE
-  AREA OF ENVIRONMENTAL CONCERN (AOEC)
-  LOW LEVEL AREA OF ENVIRONMENTAL CONCERN (LLAOEC)
-  GROUNDWATER AREA OF ENVIRONMENTAL CONCERN (GWAOEC)




2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



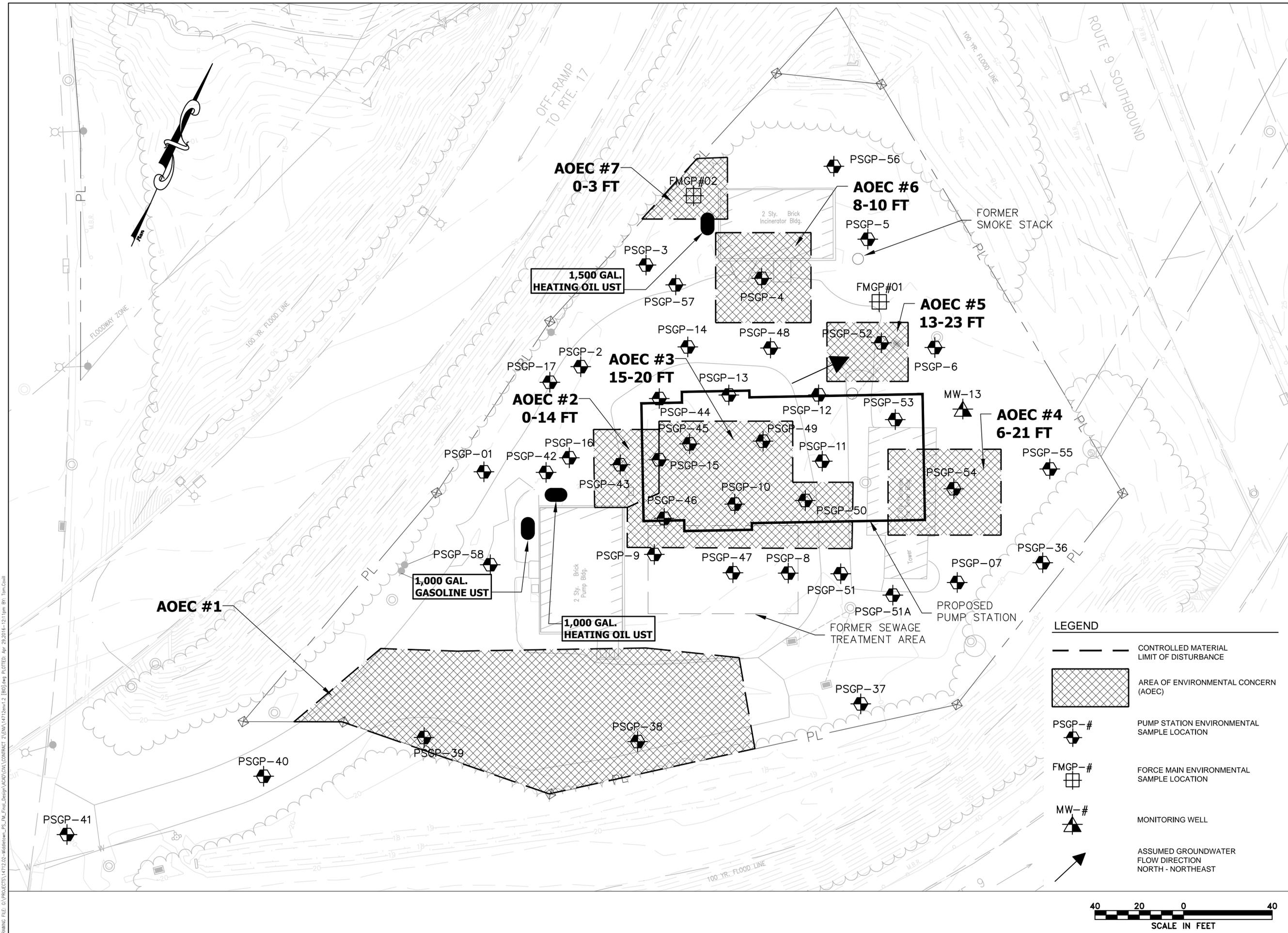
**FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

**GRAVITY SEWER &
FORCE MAIN
AREAS OF
ENVIRONMENTAL
CONCERN PLAN**

PROJECT NUMBER: 14712
DESIGNED BY: DRS
DRAWN BY: CAD
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

ENV-1.1



REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

PUMP STATION SITE PHASE II ENVIRONMENTAL SITE ASSESSMENT AREAS OF ENVIRONMENTAL CONCERN

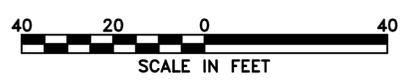
PROJECT NUMBER: 14712
 DESIGNED BY: DRS
 DRAWN BY: CAD
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

ENV-1.2

LEGEND

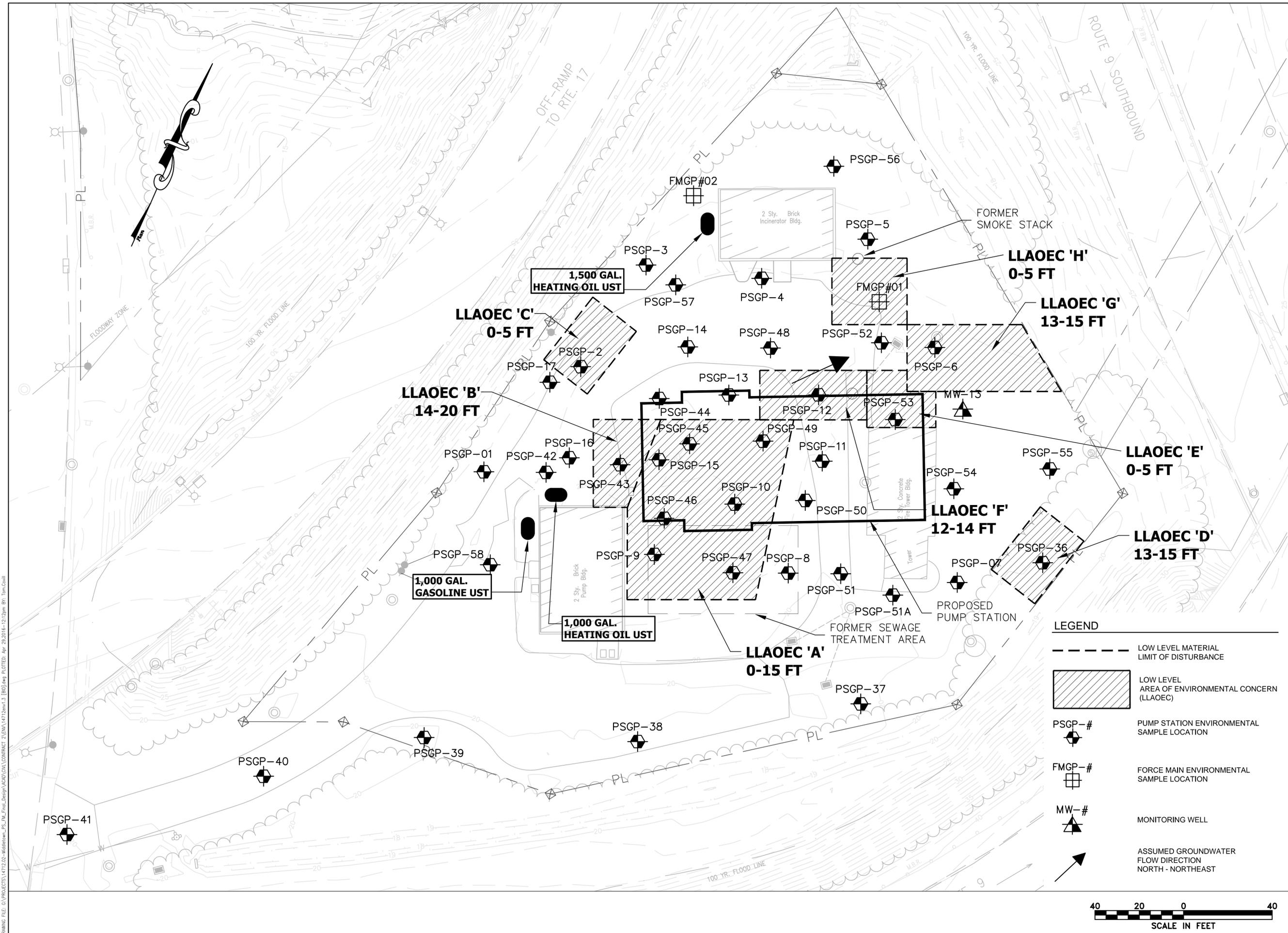
- CONTROLLED MATERIAL LIMIT OF DISTURBANCE
- AREA OF ENVIRONMENTAL CONCERN (AOEC)
- PSGP-# PUMP STATION ENVIRONMENTAL SAMPLE LOCATION
- FMGP-# FORCE MAIN ENVIRONMENTAL SAMPLE LOCATION
- MW-# MONITORING WELL
- ASSUMED GROUNDWATER FLOW DIRECTION NORTH - NORTHEAST



DRAWING FILE: G:\PROJECTS\14712-02-Middletown_PS_Final_Design\ACAD\DWG\CONTRACT 2\DWG\14712env1.2 [B]0.dwg PLOTTED: Apr 29 2016 - 12:11pm BY: Tom Covelli

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



LEGEND

- LOW LEVEL MATERIAL LIMIT OF DISTURBANCE
- LOW LEVEL AREA OF ENVIRONMENTAL CONCERN (LLAOEC)
- PUMP STATION ENVIRONMENTAL SAMPLE LOCATION
- FORCE MAIN ENVIRONMENTAL SAMPLE LOCATION
- MONITORING WELL
- ASSUMED GROUNDWATER FLOW DIRECTION NORTH - NORTHEAST



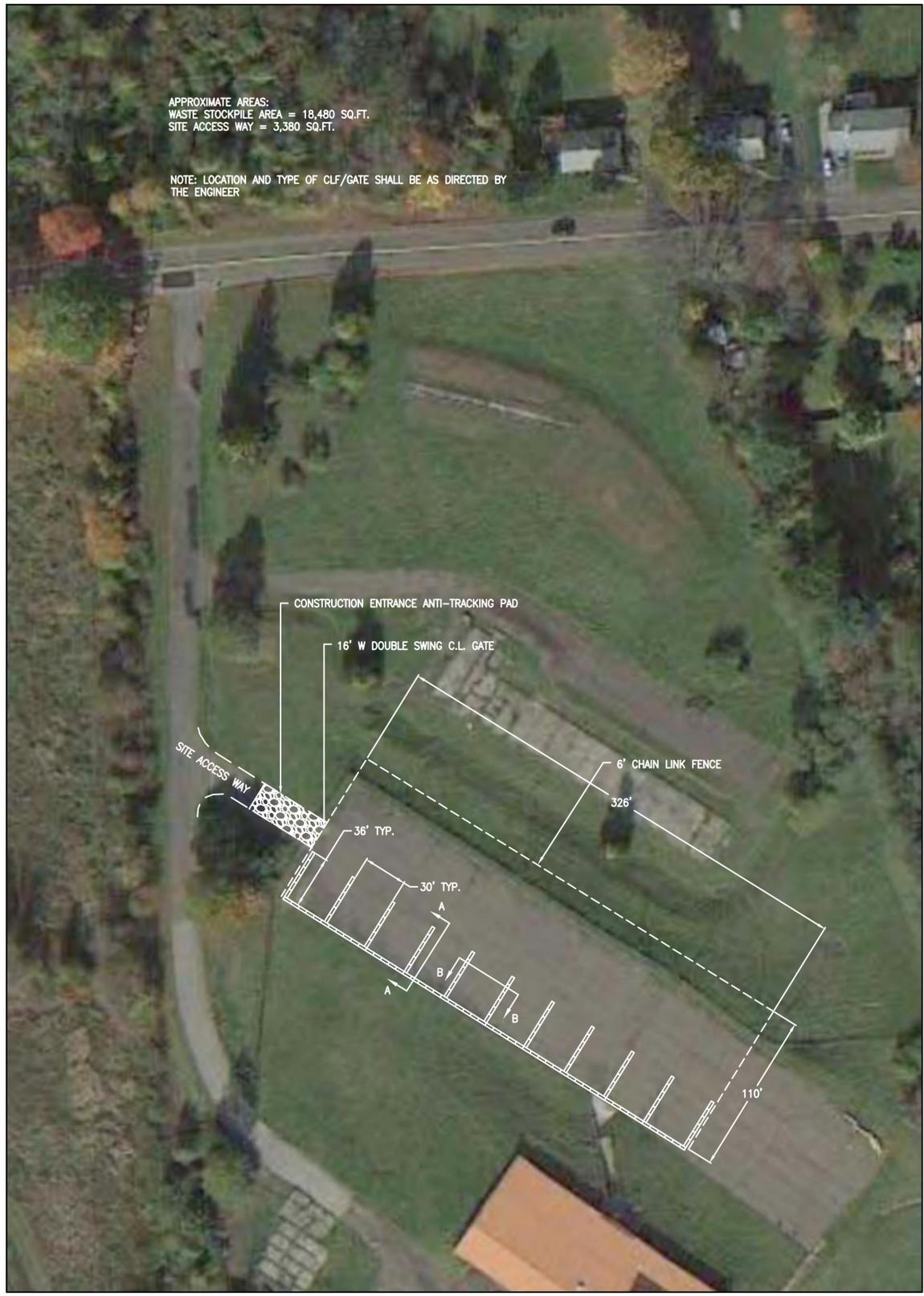
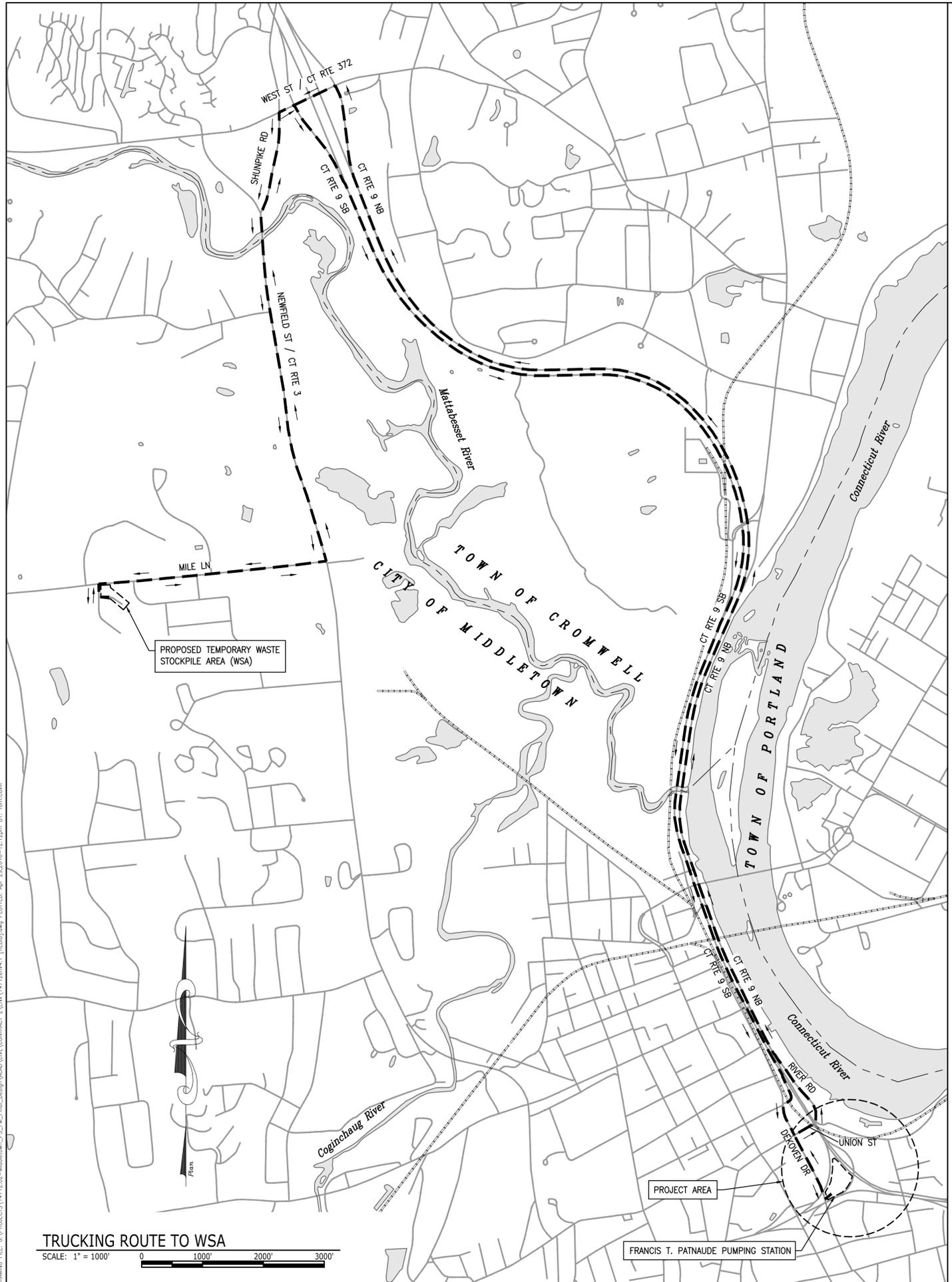
FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT
PUMP STATION SITE PHASE II ENVIRONMENTAL SITE ASSESSMENT LOW LEVEL AREAS OF ENVIRONMENTAL CONCERN

PROJECT NUMBER: 14712
DESIGNED BY: DRS
DRAWN BY: CAD
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

ENV-1.3

DRAWING FILE: G:\PROJECTS\14712-02-Middletown_PSP_Final_Design\ACAD\DWG\CONTRACT 2\DWG\14712env1.3 (B)1.dwg PLOTTED: Apr 28 2016 - 12:12pm BY: Tom Covelli



WASTE STOCKPILE AREA (WSA)
SCALE: 1" = 50'

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



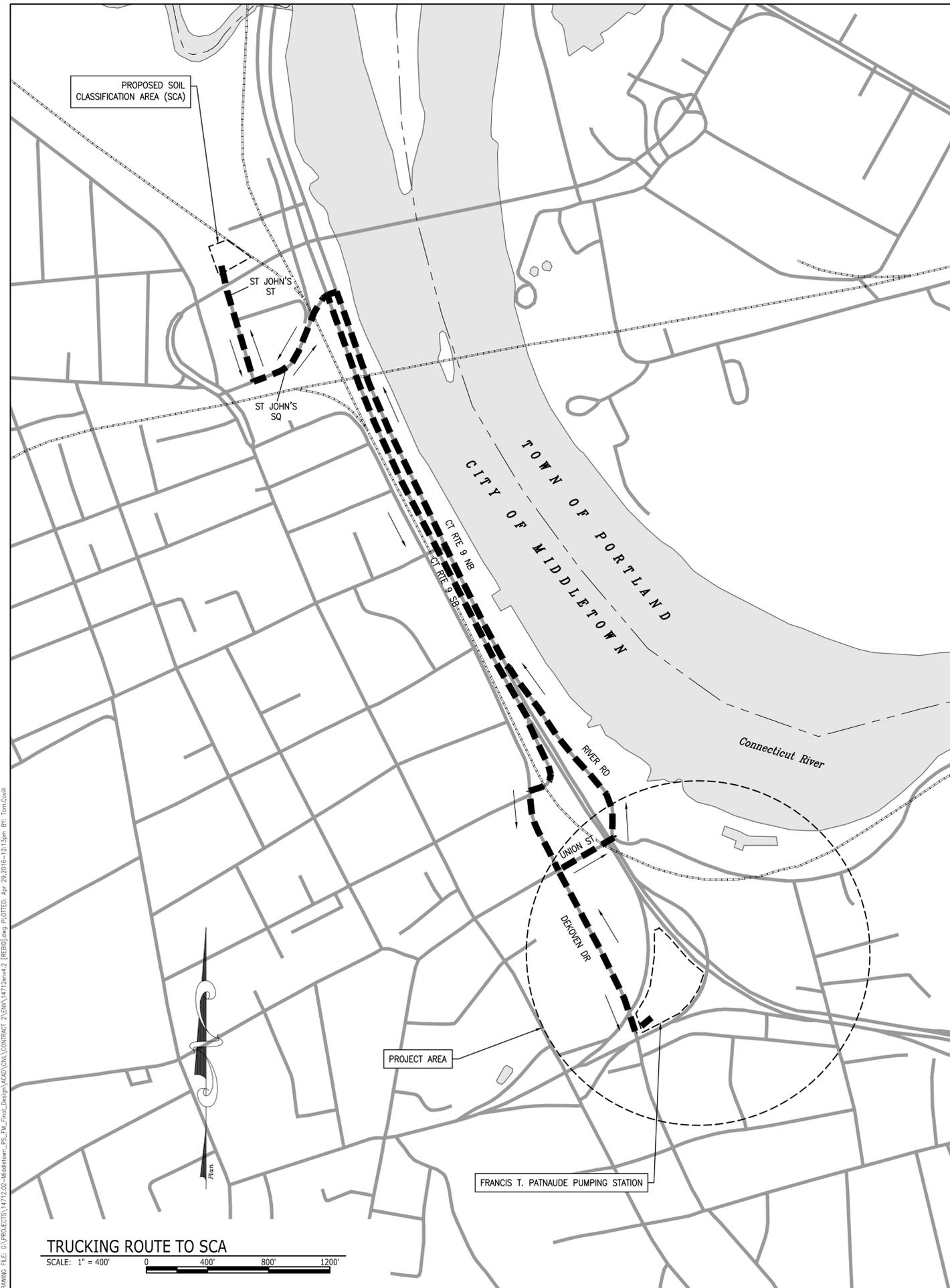
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

WASTE STOCKPILE
AREA AND
TRUCKING ROUTE

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

ENV-4.1



SOIL CLASSIFICATION AREA (SCA)
SCALE: 1" = 50'

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

SOIL
CLASSIFICATION
AREA AND
TRUCKING ROUTE

PROJECT NUMBER: 14712
DESIGNED BY: -
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

ENV-4.2

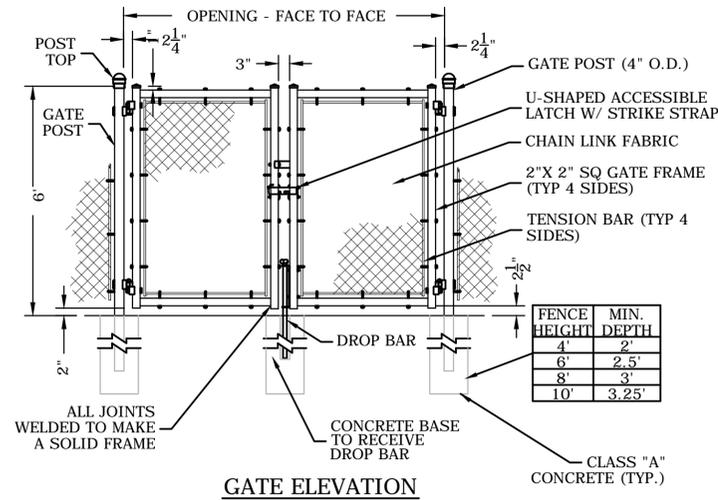
GENERAL NOTES:

1. ANY CONTROLLED MATERIALS THAT RE NOT IMMEDIATELY REUSED SHALL BE TRANSPORTED TO THE WASTE STOCKPILE AREA (WSA).
2. ANY NONCONTROLLED MATERIALS SHALL BE TRANSPORTED TO THE SOILS CLASSIFICATION AREA (SCA).
3. NO CONTROLLED MATERIALS SHALL BE BROUGHT TO THE SOILS CLASSIFICATION AREA.
4. THE CONTRACTOR MAY USE THE WSC FOR STAGING AND STORING OF NONCONTROLLED MATERIALS, BUT SHALL KEEP THESE MATERIALS SEPARATED FROM THE CONTROLLED MATERIALS.
5. WSA AND SCA INSTALLATION AND ALL REQUIRED MATERIAL ARE AS INDICATED ON THE WPLANS.
6. ANTI-TRACKING PAD (CONSTRUCTION ENTRANCE) SHALL BE INSTALLED IN ACCORDANCE WITH "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, 2002-SECTION 5-12."
7. WHERE FEASIBLE A MINIMUM OF 5' IMMEDIATELY OUTSIDE THE PERIMETER OF THE WSA AND SCA SHALL REMAIN CLEAR AND FREE OF ANY OBJECT TO PROVIDE ACCESS FOR MAINTENANCE.
8. HEIGHT OF THE CONCRETE BLOCKS AND STOCK PILED MATERIAL MAY VARY BASED ON THE SIZE AND CAPACITY OF THE WSA.
9. THE WSA SURFACE SHALL BE SUFFICIENTLY IMPERVIOUS TO PREVENT OR MIMIMIZE THE TRANSFER OR INFILTRATION OF CONTAMINANTS FROM THE STOCKPILES TO THE GROUND. THE WSA SURFACE WILL VARY BASED ON SPECIFICS AND MAY BE CONSTRUCTED ON SUPERPAVE PAVEMENT SURFACE AS SHOWN ON THE WSA DETAILS.

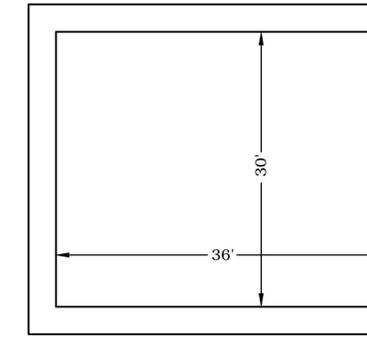
NOTES:

- A. THE CONTRACTOR SHALL CONSTRUCT A MINIMUM OF FOUR (4) WASTE STOCKPILE AREA (WSA) BINS HAVING A CAPACITY OF 250 CUBIC YARDS EACH.
- B. DIMENSIONS SHOWN HERE ARE INTERIOR AND APPROXIMATE SUGGESTED DIMENSIONS.

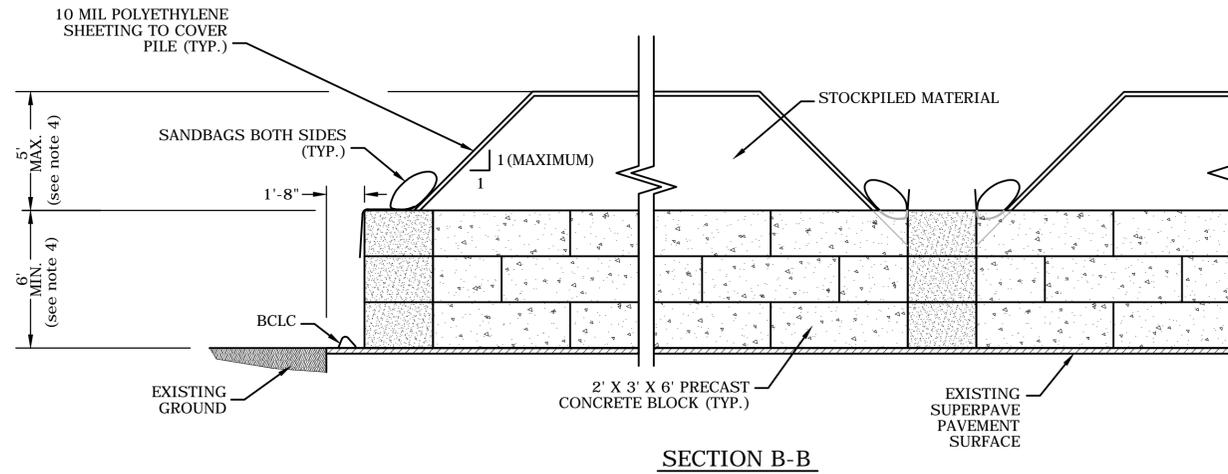
NOTE:
GATES SHOULD HAVE THE ABILITY TO SWING 180 DEGREES.



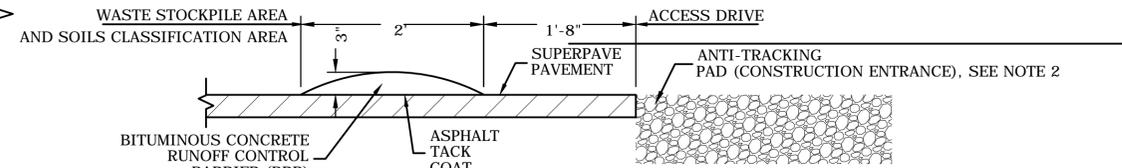
1 TYPICAL DOUBLE SWING GATES



4 WASTE STOCKPILE AREA AND SOILS CLASSIFICATION AREA BIN LAYOUT



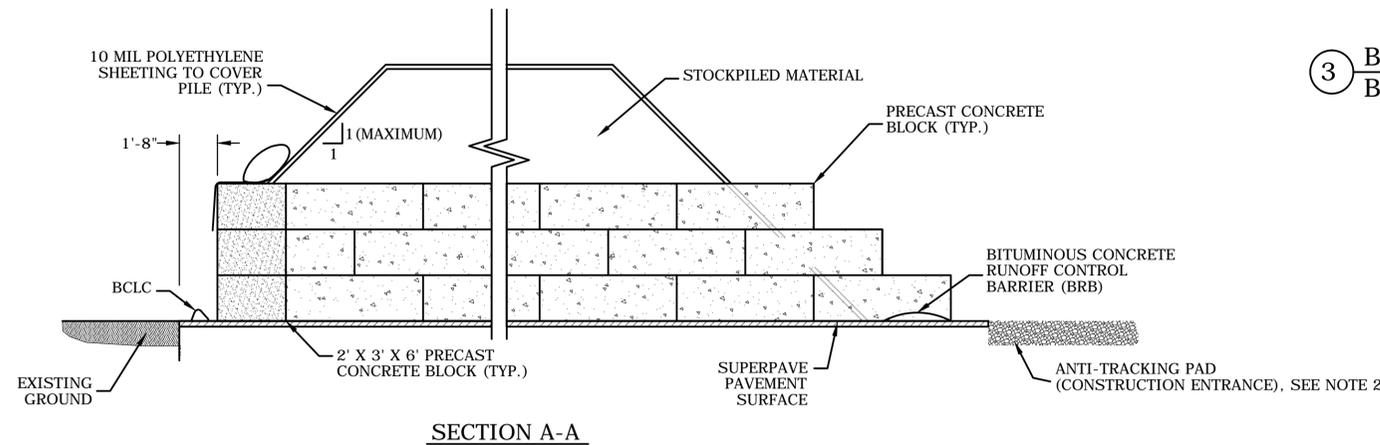
SECTION B-B



NOTE:

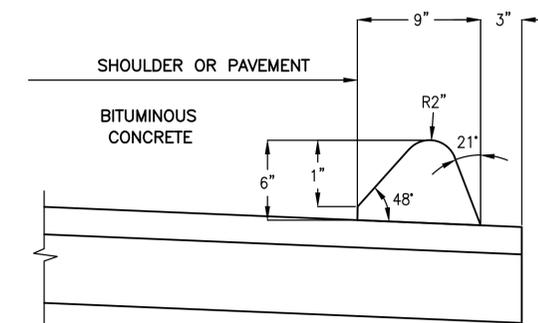
- A. INSTALLATION OF BRB SHALL BE ON PAVEMENT ONLY AND IS BASED ON FIELD CONDITIONS OR AS DETERMINED BY THE ENGINEER.

3 BITUMINOUS RUNOFF CONTROL BARRIER (BRB) DETAIL



SECTION A-A

2 WASTE STOCKPILE AREA (WSA) AND SOILS CLASSIFICATION AREA (SCA) DETAIL



5 BITUMINOUS CONCRETE LIP CURBING

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

WASTE STOCKPILE AREA AND SOILS CLASSIFICATION AREA ENVIRONMENTAL DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: DRS
DRAWN BY: CAD
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

ENV-5.1

REVISIONS

Number	Description	Date



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

**PUMP&INCINERATOR
BUILDING ASBESTOS
ABATEMENT**

PROJECT NUMBER: 14712

DESIGNED BY:

DRAWN BY: CSL

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

HBM-1.2

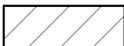
SHEET OF 155

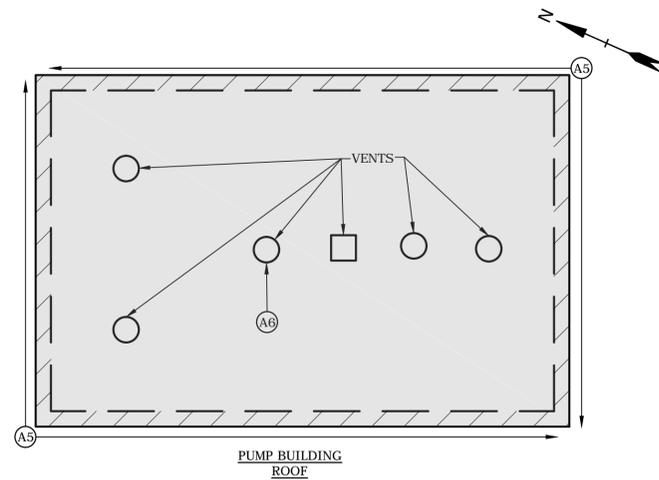
GENERAL NOTES:

1. THE DRAWING IS INTENDED TO REPRESENT GENERAL LOCATIONS OF ASBESTOS CONTAINING MATERIALS ONLY. FOR ESTIMATES OF QUANTITIES, REFER TO ASBESTOS ABATEMENT SPECIFICATION 02080. THE CONTRACTOR MUST FIELD VERIFY THE QUANTITIES OF MATERIALS BEFORE SUBMITTING THE BID.
2. PAINTS ASSOCIATED WITH SOME BUILDING COMPONENTS WERE FOUND TO CONTAIN LEAD AND PCBs. REFER TO SECTIONS 02085 - PCB CONTAMINATED BUILDING MATERIALS AND UNDERGROUND STRUCTURES ABATEMENT AND SECTION 02090 - LEAD PAINT AWARENESS, AS WELL AS DRAWINGS HBM1.1 AND HBM1.3.
3. LOCATIONS/DESCRIPTIONS OF OBSERVED HAZARDOUS BUILDING AND UNDERGROUND MATERIALS REFLECT THOSE FOUND IN THE PRE-DEMOLITION HAZARDOUS BUILDING MATERIALS INSPECTION REPORT BY EAGLE ENVIRONMENTAL DATED MAY 2, 2013 AND THE SUPPLEMENTAL HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT BY TIGHE&BOND DATED FEBRUARY 5, 2016.
4. INTERIOR AC TO BE REMOVED UNDER FULL-CONTAINMENT PROCEDURES PRIOR TO BUILDING DEMOLITION ACTIVITIES.
5. WINDOWS TO BE REMOVED INTACT AS EXTERIOR ABATEMENT PRIOR TO BUILDING DEMOLITION ACTIVITIES.
6. ROOFING TO BE REMOVED UNDER A DEMO-SEGREGATE SCENARIO AT THE ON-SET OF BUILDING DEMOLITION ACTIVITIES.

ASBESTOS ABATEMENT KEY

AC - ASBESTOS CONTAINING

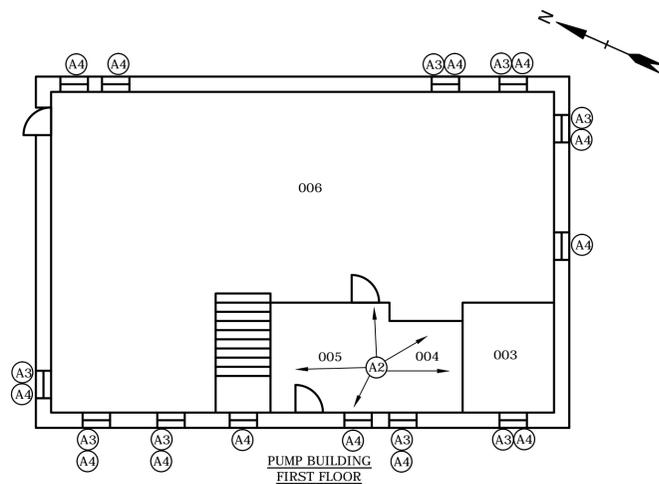
-  REMOVE AND DISPOSE OF ALL AC ROOF MATERIALS DOWN TO THE DECKING INCLUDING BUT NOT LIMITED TO BUILT UP ROOFING AND INSULATION.
-  REMOVE AND DISPOSE OF ALL AC BOILER-INSULATION.
-  REMOVE AND DISPOSE OF ALL AC WALL PANEL ADHESIVE.
-  REMOVE AND DISPOSE OF ALL WINDOW UNITS WITH AC CAULK.
-  REMOVE AND DISPOSE OF ALL WINDOW UNITS WITH AC GLAZING.
-  REMOVE AND DISPOSE OF ALL AC ROOF JOINT SEALANT.
-  REMOVE AND DISPOSE OF ALL AC ROOF VENT FLASHING.
-  REMOVE AND DISPOSE OF ALL AC SILVER/GRAY ROOF FLASHING MATERIAL.



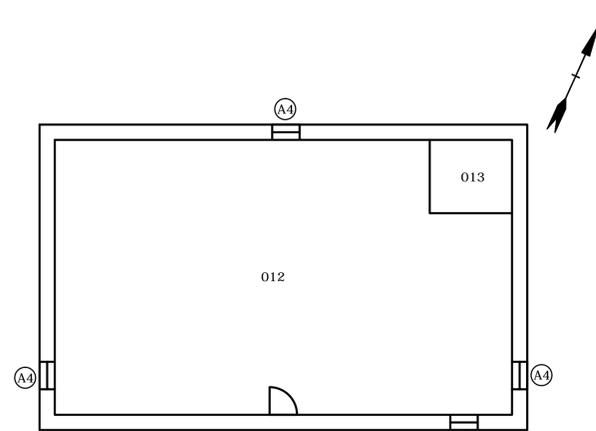
PUMP BUILDING
ROOF



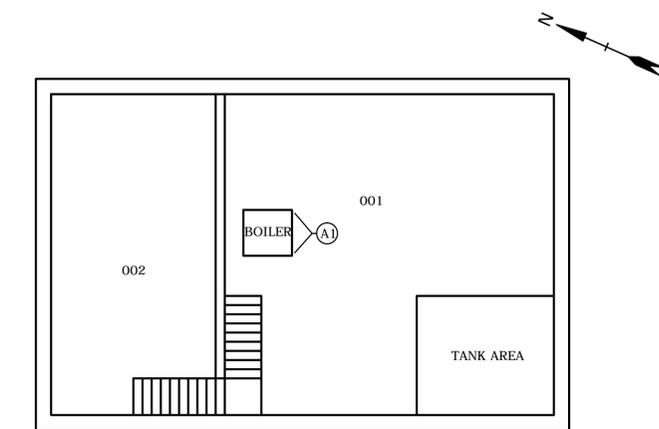
INCINERATOR BUILDING
ROOF



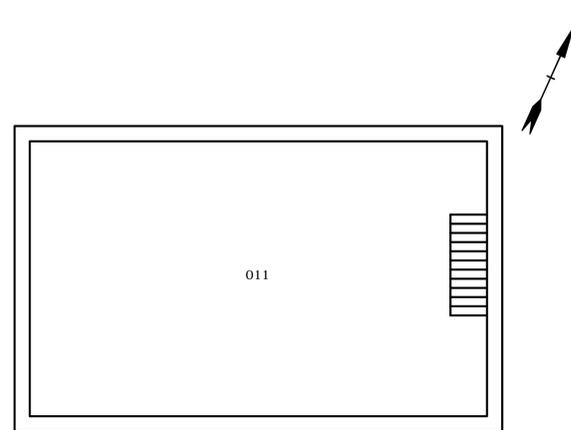
PUMP BUILDING
FIRST FLOOR



INCINERATOR BUILDING
FIRST FLOOR



PUMP BUILDING
BASEMENT



INCINERATOR BUILDING
BASEMENT

NOT TO SCALE

REVISIONS

Number	Description	Date



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

**PUMP & INCINERATOR
BUILDING PCB
ABATEMENT**

PROJECT NUMBER: 14712

DESIGNED BY: AJV

DRAWN BY: CSL

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

HBM-1.3

SHEET 39 OF 155

GENERAL NOTES:

1. THE DRAWING IS INTENDED TO REPRESENT GENERAL LOCATIONS OF PCB CONTAMINATED BUILDING MATERIALS ONLY. FOR ESTIMATES OF QUANTITIES, REFER TO PCB ABATEMENT SPECIFICATION 02085. THE CONTRACTOR MUST FIELD VERIFY THE QUANTITIES OF MATERIALS BEFORE SUBMITTING THE BID.
2. PAINTS ASSOCIATED WITH SOME BUILDING COMPONENTS WERE FOUND TO CONTAIN LEAD. REFER TO SECTION 02090 - LEAD PAINT AWARENESS, AS WELL AS DRAWING HBM1.1.
3. LOCATIONS/DESCRIPTIONS OF OBSERVED HAZARDOUS BUILDING AND UNDERGROUND MATERIALS REFLECT THOSE FOUND IN THE PRE-DEMOLITION HAZARDOUS BUILDING MATERIALS INSPECTION REPORT BY EAGLE ENVIRONMENTAL DATED MAY 2, 2013 AND THE SUPPLEMENTAL HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT BY TIGHE & BOND DATED FEBRUARY 25, 2016.
4. WINDOWS TO BE REMOVED INTACT AS EXTERIOR ABATEMENT PRIOR TO BUILDING DEMOLITION ACTIVITIES. WINDOWS ALSO CONTAIN ASBESTOS CAULKING AND GLAZING. REFER TO SECTION 02080 - ASBESTOS ABATEMENT AS WELL AS DRAWINGS HBM 1.2.
5. CONCRETE SUBSTRATES CONTAINING PCB PAINT TO BE REMOVED UNDER A DEMO-SEGREGATE SCENARIO AT THE DURING BUILDING DEMOLITION ACTIVITIES.
6. PORTIONS OF THE PUMP BUILDING BASEMENT WALLS MAY REMAIN IN PLACE. ABATEMENT CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR TO DETERMINE WHICH WALLS, PORTIONS OF WALLS, PROCESS CHAMBERS, OR TANK AREAS ARE TO REMAIN IN PLACE. ABATEMENT CONTRACTOR WILL REMOVE PCB CONTAINING PAINT (VIA SCARIFICATION/GRINDING) FROM WALLS, PROCESS CHAMBERS, OR TANK AREAS TO REMAIN.

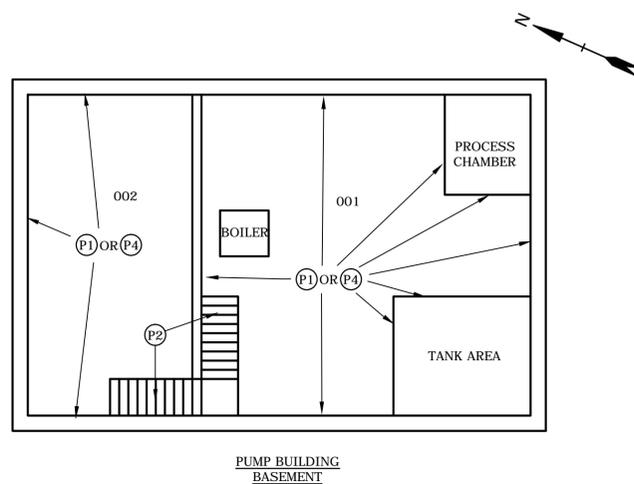
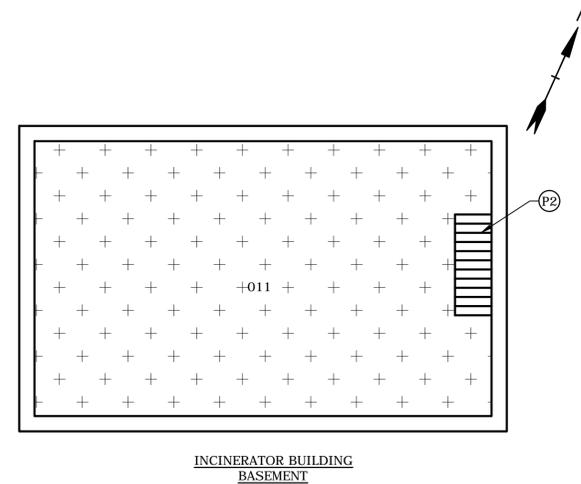
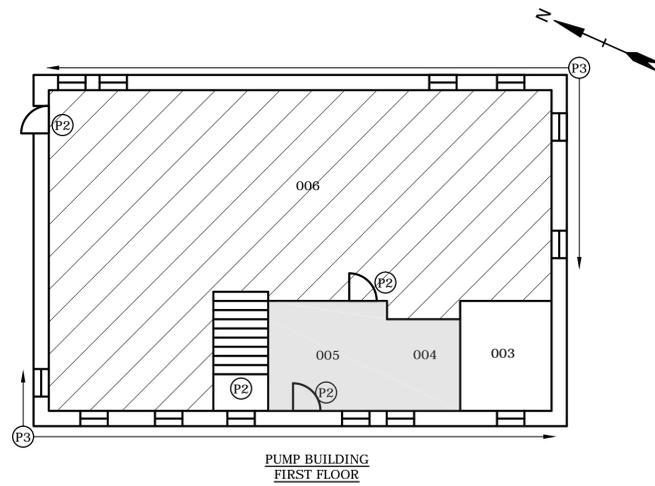
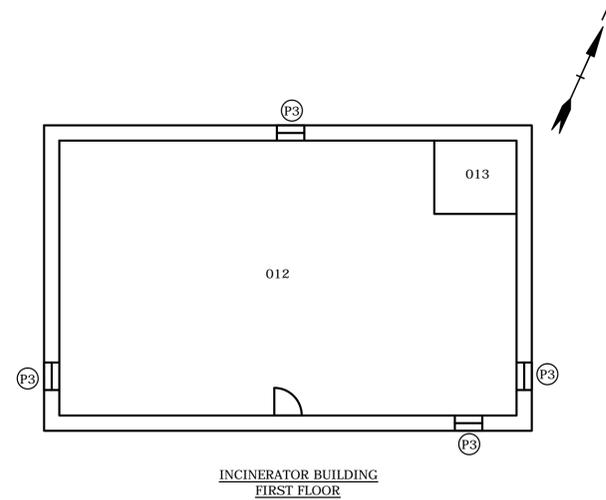
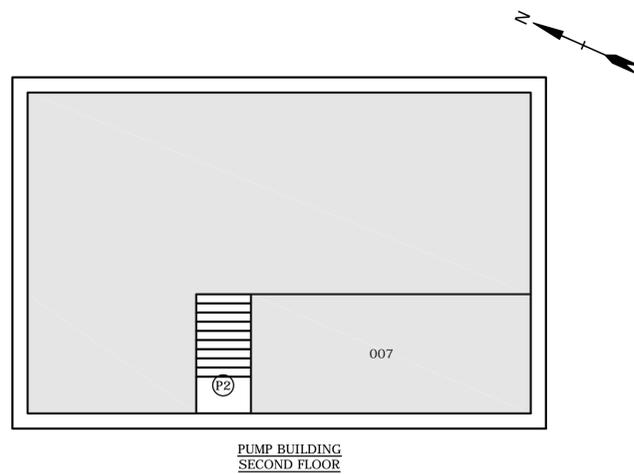
PCB ABATEMENT KEY

PCB = POLYCHLORINATED BIPHENYL
PPM = PARTS PER MILLION
CMU = CONCRETE MASONRY UNIT

- (P1) REMOVE AND DISPOSE OF WHITE PAINTED INTERIOR CONCRETE AND CMU WALLS AND CEILINGS AS CT REGULATED PCB WASTE < 50 PPM.
 - (P2) REMOVE AND DISPOSE OF ALL PAINTED DOORS, DOOR FRAMES, AND STAIR SYSTEMS INCLUDING BUT NOT LIMITED TO THE STRINGERS, CARRIAGE, BRACKETS, RISERS, BLOCKING, STEPS, AND HANDRAILS AS CT REGULATED PCB WASTE < 50PPM.
 - (P3) REMOVE AND DISPOSE OF ALL WINDOW SYSTEMS INCLUDING BUT NOT LIMITED TO SASHES, CASINGS, SILLS, JAMBS, MUNTINS, AND HARDWARE AS CT REGULATED PCB WASTE < 50 PPM.
 - (P4) REMOVE AND DISPOSE OF PCB CONTAINING WHITE PAINT FROM BASEMENT WALLS SLATED TO REMAIN IN PLACE. REMOVAL TO BE CONDUCTED VIA SCARIFICATION/GRINDING USING FULL-CONTAINMENT PROCEDURES.
-  REMOVE AND DISPOSE OF ALL RED PAINTED CONCRETE FLOORS AS CT REGULATED PCB WASTE < 50 PPM.
 -  REMOVE AND DISPOSE OF PAINTSED PLASTER CEILING AS CT REGULATED PCB WASTE < 50 PPM.
 -  REMOVE AND DISPOSE OF PAINTED CONCRETE CEILING AS CT REGULATED PCB WASTE < 50 PPM.

NOTE:

REMOVE AND DISPOSE OF ALL STRUCTURAL STEEL WITH PCB PAINT/PRIMER THROUGHOUT THE BUILDING AS CT REGULATED PCB WASTE < 50 PPM.



NOT TO SCALE

COMPLIANCE WITH CONNECTICUT STATE BUILDING CODES:

Section 304, 306 & 307 Use Group Classifications: Business & F-1

Table 302.3.2 3-Hour separation wall required between Business & F-1 occupancies.
Proposed: UL # U907
2-Hour separation wall required between Electrical Room #114 and Maintenance Room #115 & Stair #1. Proposed: UL # U906

Section 714: Structural Beam above the 3-hour fire separation walls shall be rated for 3-hrs.
Proposed: UL # P 750 (Min. 1-3/16" Thick Spray Applied Fire Resistive Material)
Structural Beam above the 2-hour fire separation walls shall be rated for 2-hrs.
Proposed: UL # P 750 (Min. 13/16" Thick Spray Applied Fire Resistive Material)
Structural Beam above the 1-hour fire separation walls shall be rated for 1-hrs.
Proposed: UL # P 750 (Min. 7/16" Thick Spray Applied Fire Resistive Material)
Application shall meet 2003 IBC Section 714 & UL #P 750 requirements

Section 721.5.1.3 Columns G 2.9, 8F, 8B and 8D (3-HR rated fire separation wall)
Proposed UL # X632 (Min. 0.381" Thick Mastic coating)
Columns 2.9 B, 2.9C and 2.9 E (2-HR rated fire separation wall)
Proposed UL # X632 (Min. 0.257" Thick Mastic coating)
Columns 2.9 H and 8 H (1-HR rated fire separation wall)
Proposed UL # X632 (Min. 0.071" Thick Mastic coating)
Application shall meet 2003 IBC Section 721.5.1.3 & UL # X632 requirements

Table 601 & 602 Fire Resistance Ratings for Building Elements
Construction Type: 2 B

	Allowed	Proposed
Structural frame	0 hr	0 hr
Exterior bearing & non-bearing walls	0 hr	0 hr
Interior Bearing & non-bearing walls	0 hr	0 hr
Floor construction	0 hr	0 hr
Roof Construction	0 hr	0 hr

Table 602 waives the exterior wall rating requirements when >30' to the nearest building (fire separation distance)

Table 503 Allowable Height and Area Limitations
Allowed Area / height for Use Group B : 23,000 sf/ 4 stories
Proposed Area / height for Use Group B: 1,775 sf/ 1 story

Allowed Area / height for Use Group F-1 : 15,500 sf/ 2 stories
Proposed Area / height for Use Group F-1: 11,684 sf/ 2 stories

Table 715.4 Rating of doors/shutters in the 1-Hr rated separation wall:
Required & provided 3/4 hr rated door and frame.
Rating of doors/shutters in the 2-Hr rated separation wall:
Required & provided 1 1/2 hr rated door and frame.
Rating of doors/shutters in the 3-Hr rated fire wall:
Required & provided 3 hr rated door and frame.

Table 803.5 Interior Finish Requirements : Allowable & provided

Group	Interior Finish Requirements		
	Exits	Corridors	Rooms
Group B (Non-Sprinklered)	A	B	C
Group F-1 (Non-Sprinklered)	B	C	C

Section 903.2.3: Exempts the requirement to provide automatic sprinkler system for Group F-1 Occupancy since the F-1 Occupancy is not located more than 3 stories above grade, does not exceed 12,000 sq. ft. on any one level and the combined area of all Group F-1 occupancy, including mezzanines, does not exceed 24,000 sq. ft.

Section 903.3.1.1.1 Exempt locations 4. - Automatic sprinklers shall not be required for Group F-1 occupancy areas that are of noncombustible construction with wholly noncombustible contents.

Table 1004.1.1 Occupant Load :
Group B = 18 persons [Total Occupancy= 1775 sf/100gross]
Group F-1 = 114 persons [Total Occupancy=11,350 sf/100gross]

Note: 1-hr rated wall assembly & 3/4-hr rated door provided at Stairs 1 and 2.
1-hr rated wall assembly & 3/4-hr rated door provided for walls in F-1 Occupancy between Mechanical Room 103 and Screening & Grit Room 105,
Electrical Room 114 and Maintenance Room 11

Table 1014.1 Exit and Exit Access Doorways

Group	Allowable:	Provided :
Group F-1 (Lower Level)	2	2
Group B (Ground Level)	1	2
Group F-1 (Ground Level)		
Mechanical Room	1	2
Screening & Grit Room-105	1	2
Electrical Room 114	1	2
Maintenance room -115	1	4

Table 1015.1 Exit Access Travel Distance

Group	Allowable:	Provided :
Group F-1(Lower Level)	200 ft	125 ft
Group B	200 ft	75 ft
Group F-1	200 ft	80 ft

Table 1016.1 Ex-4 Corridor Fire resistance rating for 'B' Group Occupancy is not required, since the occupant load is less than 50 persons.

Applicable Codes: 2003 International Building Code
2003 International Mechanical Code
2003 International Plumbing Code
2009 International Energy Conservation Code
CT State Amendments-2005, 2009 and 2011
2003 ICC/ANSI A117.1 Accessibility Code
2005 National Electric Code NFPA 70-2005

4 CODE REVIEW SUMMARY

SCALE: NTS

GUARD RAILS AT ROOF LEVEL PER IBC 2003 SECTION-1012.5 MECHANICAL EQUIPMENT

IBC 2003 SECTION-1012.2 OPENING LIMITATIONS EXCEPTION-2 GUARD RAILS AT ELEVATED WALKING SURFACES FOR ACCESS TO AND USE OF ELECTRICAL, MECHANICAL OR PLUMBING SYSTEMS OR EQUIPMENT, GUARDS SHALL HAVE BALUSTERS SUCH THAT A SPHERE WITH A DIAMETER OF 21 INCHES CANNOT PASS THROUGH ANY OPENING.

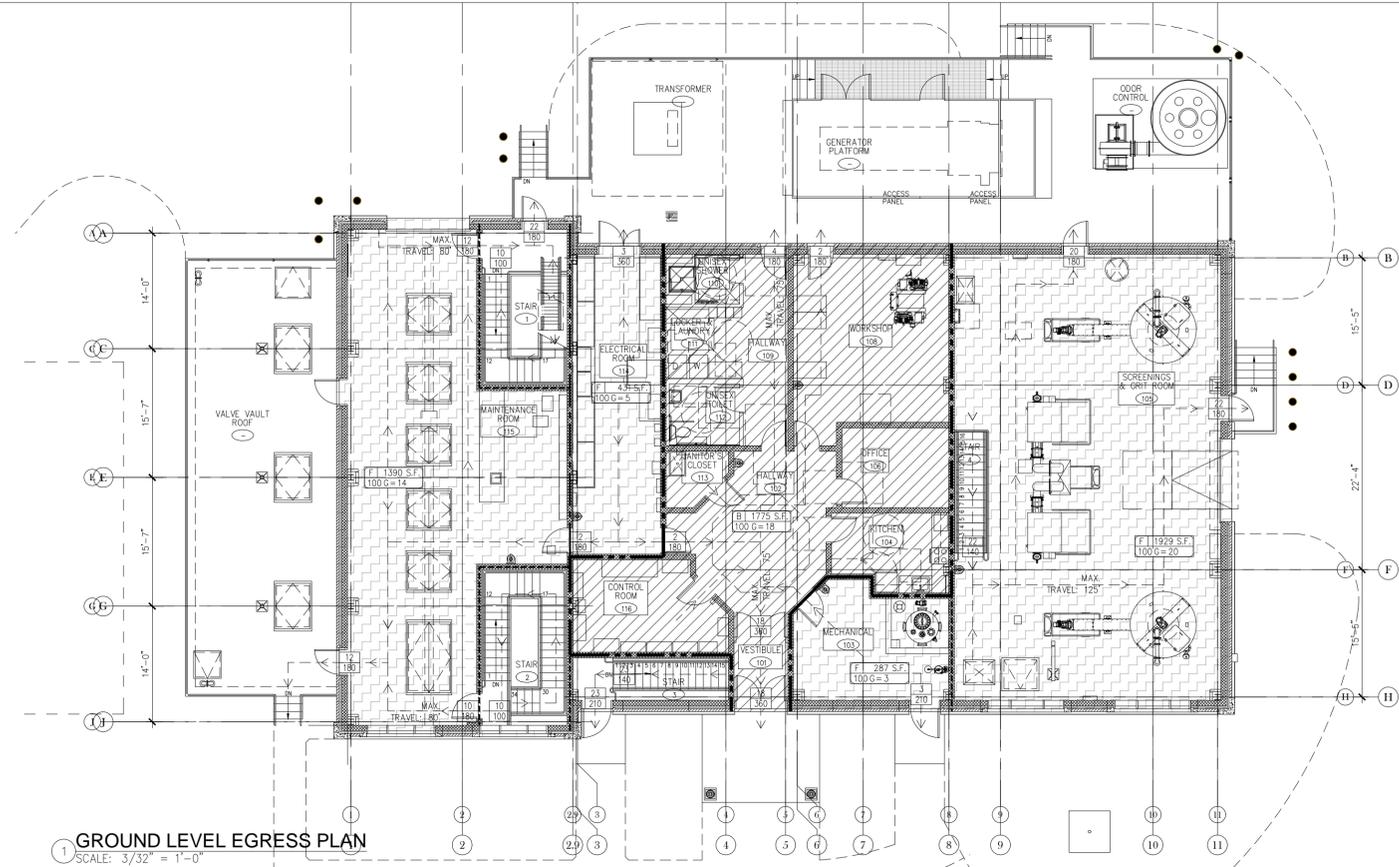
6 GUARD RAILS CODE SECTIONS

SCALE: NTS

PROCESS CHEMICAL SYSTEMS
1. Sodium Hypochlorite (NaOCl)
Product as delivered: 15% solution in water
Delivered by tanker truck; fitted piping transfers to bulk storage tank.
Characteristics of Chemical: Corrosive agent; class 1 oxidizer
Bulk storage of 15% solution in closed tank: 545 gallons
Fed by piping from tank into force main.

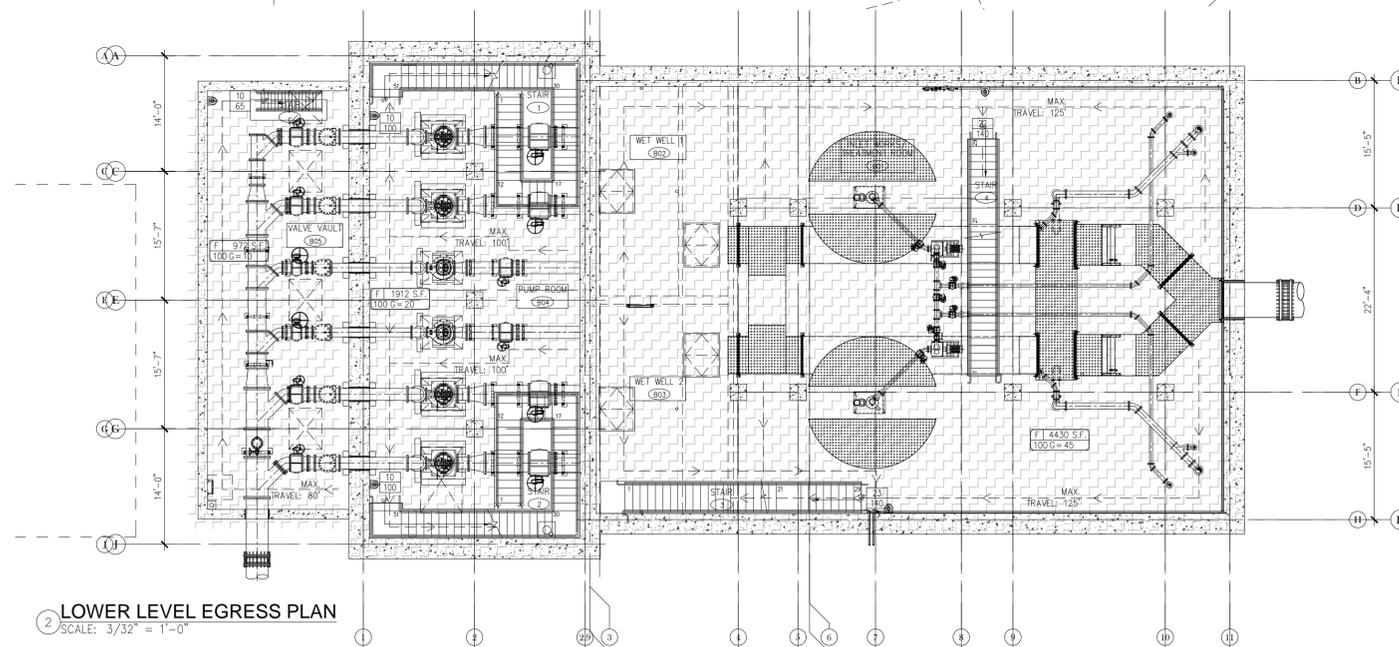
5 PROCESS CHEMICALS SUMMARY

SCALE: NTS



1 GROUND LEVEL EGRESS PLAN

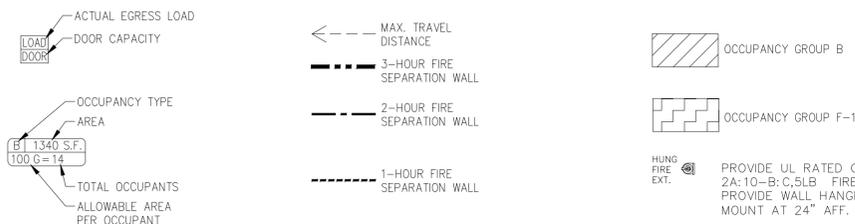
SCALE: 3/32" = 1'-0"



2 LOWER LEVEL EGRESS PLAN

SCALE: 3/32" = 1'-0"

SYMBOLS LEGEND



NOTE: 1. OCCUPANT LOAD PER 3" DOOR [(REFER SECTION 1005.1) 0.2" PER OCCUPANT]=180 PERSONS
2. OCCUPANT LOAD PER 3" STAIR WIDTH [(REFER SECTION 1005.1) 0.3" PER OCCUPANT]=120 PERSONS
3. STAIR WIDTH BASED ON SECTION 1009.1 EXCEPTION 1

PROVIDE UL RATED CLASS 2A-10-B-C-5LB FIRE EXTINGUISHER PROVIDE WALL HANGING BRACKET MOUNT AT 24" AFF. REFER SPECS.



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

CODE & EGRESS PLAN

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: SA
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

A-0.1

LIST OF ABBREVIATIONS

A	AMPERES	D.F.	DRINKING FOUNTAIN	GRC	GALVANIZED RIGID TUBING	O.I.	ORNAMENTAL IRON	SQ. IN.	SQUARE INCHES
A.B.	ANCHOR BOLT	D.G.	DECOMPOSED GRANITE	GS	GALVANIZED STEEL	O.R.	OUTSIDE RADIUS	SR	SUPPLY REGISTER
A.F.F.	ABOVE FINISHED FLOOR	DHU	DOOR HEATER UNIT	GV	GATE VALVE	OAI	OUTSIDE AIR INTAKE	ST	STORM SEWER
A.F.G.	ABOVE FINISHED GRADE	D.S.	DOWN SPOUT	GWB	GYPSON WALLBOARD	OH	OVER HEAD	ST	SWITCH (THERMAL RATED FOR MOTORS)
A/C, AC	AIR CONDITIONING	D/W	DISHWASHER	GYP.	GYPSON	OL	OVERLOAD	ST	STEEL
ABC	AGGREGATE BASE COURSE	DBL.	DOUBLE	H.B.	HOSE BIBB	OPNG.	OPENING	STA	STATION
ABS	ACRYLONITRILE-BUTADIENE-STYRENE	DEMO	DEMOLITION	H.C.	HOLLOW CORE	OPPO.	OPPOSITE	STC	SOUND TRANSMISSION CLASS
ABV.	ABOVE	DIA. or Ø	DIAMETER	H.M.	HOLLOW METAL	OVRFL	OVERFLOW	STD	STANDARD
ACB	ASBESTOS-CEMENT BOARD	DIAG.	DIAGONAL	H/C	HANDICAPPED	P	CIRCULATING PUMP	STR. or STR'L	STRUCTURAL
ACOU.	ACOUSTIC	DI	DUCTILE IRON	HDBD.	HARDBOARD	PA	PROCESS AIR	STRUCT.	STRUCTURAL
ACD	AUTOMATIC CONTROL DAMPER	DIGL	DUCTILE IRON GLASS LINED	HDW	HARDWARE	P.C.	PRECAST CONCRETE	STY	STORY
ACT	ACOUSTICAL CEILING TILE	DIM.	DIMENSION	HGT.	HEIGHT	PC	PERSONAL COMPUTER	SUSP.	SUSPENDED
ADD.	ADDITION or ADDENDUM	DIP	DUCTILE IRON PIPE	HOR.	HORIZONTAL	PD	PRESSURE DROP	SW	SWITCH
ADD'L.	ADDITIONAL	DISC SW	DISCONNECT SWITCH	HRV	HEAT RECOVERY VENTILATOR	P.L. or P	PROPERTY LINE	SYM	SYMMETRICAL
AFD	ADJUSTABLE FREQUENCY DRIVE	DL	DEAD LOAD	HTR	HEATER	P.LAM.	PLASTIC LAMINATE	SYS.	SYSTEM
AG	ABOVE GRADE	DN.	DOWN	HVAC	"HEATING, VENTILATING & AIR CONDITIONING"	PERF.	PERFORATED	T & G	TONGUE AND GROOVE
AHU	AIR HANDLER UNIT	DR	DOOR	HW	HOT WATER	PERP. or ⊥	PERPENDICULAR	T.B.	THROUGH BOLT
AIC	AMPERE INTERRUPTING CAPACITY	DVR	DIGITAL VIDEO RECORDER	HWC	HOT WATER HEATING COIL	PH or Ø	PHASE	T.M.B.	TELEPHONE MOUNTING BOARD
AL. or ALUM.	ALUMINUM	DWG	DRAWING	HWR	HOT WATER RETURN	PL	PLASTER	T.B.D.	TO BE DETERMINED
ALT.	ALTERNATE	DWP	DRY WEATHER PUMP	HWS	HOT WATER SUPPLY	PL. or P	PLATE	T.O.B.	TOP OF BEAM
ANL	ANNEALED	E	EAST	HYD.	HYDRAULIC	PL	PROPERTY LINE	T.O.C.	TOP OF CURB
APPROX	APPROXIMATELY	E.A.	EXPANSION ANCHOR	I.C.	INTERCOM OUTLET	PLAS.	PLASTIC	T.O.F.	TOP OF FOOTING
AS	AIR SEPERATOR	E.A.	EXHAUST AIR	I.D.	INSIDE DIAMETER	PLC	PROGRAMMABLE LOGIC CONTROLLER	T.O.J.	TOP OF JOIST
ASPH.	ASPHALT	EAT	ENTERING AIR TEMPERATURE	I.F.	INSIDE FACE	PLN	PANEL	T.O.M.	TOP OF MASONRY
ATS	AUTOMATIC TRANSFER SWITCH	ECH	ELECTRIC CONVECTION HEATER	ID	IDENTIFICATION	PLUMB.	PLUMBING	T.O.S.	TOP OF SLAB
AVG	AVERAGE	ECUH	ELECTRIC CABINET UNIT HEATER	IG	ISOLATED GROUND	PLYWD.	PLYWOOD	T.O.W., TW	TOP OF WALL ELEVATION
AWG	AMERICAN WIRE GAUGE	E.F.	EXHAUST FAN	IMC	INTERMEDIATE METALLIC CONDUIT	P & M	PROTECT & MAINTAIN	TOD	TOP OF DUCT
B	BOILER	EFFL	EFFLUENT	IMPG	IMPREGNATED	P.O.C.	POINT OF CONNECTION	TF	FRAME ELEVATION
BDD	BACK DRAFT DAMPER	E.J.	EXPANSION JOINT	IN.	INCH	PORC.	PORCELAIN	TF	TEFLON
B.M.	BENCH MARK	E.N.	END NAILING	INCL.	"INCLUDE, INCLUSIVE"	PP	POLYPROPYLENE	T.S.	TUBE STEEL
B.N.	BOUNDARY NAILING	E.W.	EACH WAY	INSUL.	INSULATION	PSF	POUNDS PER SQUARE FOOT	T.V.	TELEVISION OUTLET
B.O.	BOTTOM OF	EA.	EACH	INFLT	INFLUENT	PSI	POUNDS PER SQUARE INCH	TEL.	TELEPHONE
BOD	BOTTOM OF DUCT	EG	EXHAUST GRILLE	INT.	INTERIOR	PREFAB.	PREFABRICATED	TH.	THRESHOLD
B.O.F.	BOTTOM OF FOOTING	EHC	ELECTRIC HEATING COIL	J-BOX	JUNCTION BOX	PRMT	PERMEATE	THD.	THREADED
B.U.	BUILT UP	ELEV., ELEV.	ELEVATION	JCT	JUNCTION	PT	PRESSURE TREATED	THK.	THICK
B/C	BACK OF CURB	ELECT.	"ELECTRIC, ELECTRICAL"	JST.	JOIST	PTD	PAINTED	THRU	THROUGH
BD.	BOARD	ELEV.	ELEVATOR	JT.	JOINT	PTN.	PARTITION	TLT.	TOILET
BLDG	BUILDING	EMC	ELECTRICAL METALLIC CONDUIT	K-D	KNOCK DOWN	PVC	POLYVINYLCHLORIDE	TS	TEMPERATURE SWITCH
BLK.	BLOCK	EMT	ELECTRICAL METALLIC TUBING	KD	KILN DRIED	PW	PLANT WATER	TSP	TWISTED, SHIELDED PAIR
BLKG.	BLOCKING	ENT	ELECTRICAL NON-METALLIC TUBING	KO	KNOCK OUT	PWR.	POWER	TRANS.	TRANSFORMER
BM.	BEAM	EQ.	EQUAL	L	LENGTH	Q.T.	QUARRY TILE	TYP.	TYPICAL
BR	BRASS	EQUIP.	EQUIPMENT	L	LOUVER	QTY.	QUANTITY	U.O.N.	UNLESS OTHERWISE NOTED
B.R.	BACKER ROD	ER	EXHAUST REGISTER	LCP	LOCAL CONTROL PANEL	R	RADIUS	UD	UNDERCUT DOOR
BRG.	BEARING	ES	EMERGENCY STOP	L.E.D.	LIGHT EMITTING DIODE	R.D.L.	ROOF DRAIN LEADER	UG	UNDER GROUND
BRZ	BRONZE	EST.	ESTIMATE	L.F.T.	LINEAR FEET	R.D.O.	ROOF DRAIN OVERFLOW	UH	HYDRONIC UNIT HEATER
B.S.	BOTH SIDES	ET	EXPANSION TANK	LAM	LAMINATE	R.O.	ROUGH OPENING	UH	UNIT HEATER, HYDRONIC OR GAS FIRED
BT	BOTTOM ELEVATION	EUH	ELECTRIC UNIT HEATER	LAT.	LATERAL	R.O.W. or R/W	RIGHT OF WAY	UP	UTILITY PLAN
BW	GROUND ELEVATION AT BOTTOM OF WALL	EVAP.	EVAPORATIVE COOLER	LAV	LAVATORY	RA	RETURN AIR	UPS	UNINTERRUPTABLE POWER SUPPLY
BYPAS	BYPASS	EWC	ELECTRIC DRINKING COOLER	LD.	LEAD	RAS	RETURN ACTIVATED SLUDGE	UR	URINAL
C	CONDUIT	EXC	EXCAVATE	LIN.	LINEAR	RCP	REINFORCED CONCRETE PIPE	USD	UNDER SIDE OF DECK
C	CONDENSATE	EXH.	EXHAUST	LINO.	LINOLEUM	R & D	REMOVE & DISPOSE	VAV	VARIABLE AIR VOLUME
CA	COMPRESSED AIR	EXIST. or E	EXISTING	LT.	LIGHT	RECYC	RECYCLE	V.B.	VAPOR BARRIER
C.A.P.	CONCRETE ASBESTOS PIPE	EXP	EXPLOSION-PROOF	LT	LEFT	REF	REFRIGERATOR	VD	VOLUME DAMPER
CB	CATCH BASIN	EXT.	EXTERIOR	LTG.	LIGHTING	REF.	REFERENCE	V.I.F.	VERIFY IN FIELD
CB	CIRCUIT BREAKER	F.A.	FIRE ALARM	LVL	LAMINATED VENEER LUMBER	REINF.	REINFORCED	V.M.	VENDING MACHINE
C.D.	CONSTRUCTION DOCUMENTS	F.C.	FAN COIL	M	MOTORIZED	REQ'D.	REQUIRED	VCT	VINYL COMPOSITION TILE
CDS	CHEMICAL DOSING	FAC.	FACTORY	M.B.	MACHINE BOLT	RET.	RETURN	VERT.	VERTICAL
CFM	CUBIC FEET PER MINUTE	F.C.O.	FLOOR CLEAN OUT	M.H.	MANHOLE	REV.	REVISION	W	WATER
C.I.P.	CAST IN PLACE	F.D.	FLOOR DRAIN	M.I.	MALLEABLE IRON	RG	RETURN GRILLE	W/C	WATER CLOSET
CJ	CAST IRON	F.E.	FIRE EXTINGUISHER	M.O.	MASONRY OPENING	RGS	RIGID GALVANIZED STEEL CONDUIT	WAS	WASTE ACTIVATED SLUDGE
C.J.	CONTROL JOINT	F.F.	FINISH FLOOR	MAG	MAGNETITE BALLAST	RH	RUBBER HOSE	WDW	WINDOW
CL&P	CONNECTICUT LIGHT & POWER	FL. or INV	INVERT	MAR.	MARBLE	RM	ROOM	WCT	WAINSCOT
C.O.	CLEAN OUT	F.N.	FIELD NAILING	MAS.	MASONRY	RMV.	REMOVE	WG	WATER GAUGE
COORD.	COORDINATE	F.O.	FACE OF	MAT'L	MATERIAL	RNS	RINSE	WP	WEATHER PROOF
COND	CONDENSING UNIT	F.O.B.	FLAT ON BOTTOM	MAX.	MAXIMUM	RR	RETURN REGISTER	WT.	WEIGHT
C.T.	CERAMIC TILE	F.O.T.	FLAT ON TOP	MCC	MOTOR CONTROL CENTER	RTU	ROOF TOP AIR CONDITIONING UNIT	W/	WITH
CAB	CABINET	F.S.	FLOOR SINK	MECH.	MECHANICAL	RTU	REMOTE THERMAL UNIT	W/O	WITHOUT
CAM.	CAMBER	F/G	FIBERGLASS	MED.	MEDIUM	RVNR	REDUCED VOLTAGE NON-REVERSING	WD.	WOOD
CCTV	CLOSED CIRCUIT TELEVISION	FAB.	FABRICATE	MFG.	MANUFACTURING	S	SLOPE	W.I.	WROUGHT IRON
CEM.	CEMENT	FACP	FIRE ALARM CONTROL PANEL	MFR.	MANUFACTURER	S & E	SEDIMENTATION & EROSION	WMS	1/2" WIRE MESH SCREEN
CFR	CERAMIC	FCU	FAN COIL UNIT	MH	MANHOLE	3/C SH	3-CONDUCTOR SHIELDED CABLE	WS	WASTE SLUDGE
CFM	CUBIC FEET PER MINUTE	FDC	FIRE DEPARTMENT CONNECTION	MIN.	MINIMUM	S.C.	SOLID CORE	WWP	WET WEATHER PUMP
CH or C	CHANNEL	FDN.	FOUNDATION	MISC.	MISCELLANEOUS	S.D.	SMOKE DETECTOR	WWTF	WASTE WATER TREATMENT FACILITY
CKT.	CIRCUIT	FHC	FIRE HOSE CABINET	MOD	MODULAR	S.O.V.	SHUT OFF VALVE	YD.	YARD
CKT. BKR.	CIRCUIT BREAKER	FIN.	FINISH	MOPD	MOTOR OPERATED DAMPER	S/L	SKYLIGHT	#	ITEM IDENTIFICATION NUMBER
CL. or C	CENTERLINE	FL	FLOOR	MLO	MAIN LUGS ONLY	S/S,S.S.,SS	STAINLESS STEEL	∠	ANGLE
CLG.	CEILING	FLG.	FLOORING	MOV	MOTOR OPERATED VALVE	SA	SUPPLY AIR		
CLKG.	CAULKING	FLUOR.	FLUORESCENT	MR	MOISTURE RESISTANT	SAN.	SANITARY		
CLD.	CLOSET	FP	FIRE PROOF	MTD	MOUNTED	SC	SELF CLOSING		
CLR.	CLEAR	FPM	FEET PER MINUTE	MTL.	METAL	SCHED.	SCHEDULE		
CMU	CONCRETE MASONRY UNIT	F.P.S.C.	FIRE PROOF SELF CLOSING	MJA	MAKE-UP AIR UNIT	SCH 40	SCHEDULE 40 PVC CONDUIT		
CNTRD.	CENTERED	FRP	FIBERGLASS	MUL	MULLION	SCUM	SCUM		
COL.	COLUMN	FT	FIN TUBE RADIATION	MUTCD	MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES	SEAL'T	SEALANT		
COMB.	COMBINATION	FTG.	FOOTING	N	NORTH	SECT.	SECTION		
CONC.	CONCRETE	FURN.	FURNISH	N.I.C.	NOT IN CONTRACT	SEPT	SEPTAGE		
CONST.	CONSTRUCTION	FVNR	FULL VOLTAGE NON-REVERSING	N.T.S.	NOT TO SCALE	SES	SERVICE ENTRANCE SECTION		
CONT.	CONTINUOUS	G	GROUND	NEUT	NEUTRAL	SF	SUPPLY FAN		
CONTR.	CONTRACTOR	G.I.	GALVANIZED IRON	NCM	NON-CORROSIVE METAL	SG	SUPPLY GRILLE		
CP	CONTROL PANEL	GA	GAUGE	NFC	NOT FOR CONSTRUCTION	SH	SHEET		
CP-1	CIRCULATION PUMP (1/50 HP)	GALV.	GALVANIZED	NLR.	NAILER	SHT'G.	SHEATHING		
CPT	CONTROL POWER TRANSFORMER 480 VOLTS-120/240VOLTS, UNLESS OTHERWISE INDICATED	GAR.	GARAGE	NO.	NUMBER	SIM.	SIMILAR		
CPVC	CHLORINATED POLYVINYL CHLORIDE	GC	GENERAL CONTRACTOR	NOM.	NOMINAL	SMH	SANITARY MANHOLE		
CS	CARBON STEEL (BLACK STEEL)	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	O.C.	ODOR CONTROL SYSTEM	SOL	SOLENOID VALVE		
CTE	CONNECT TO EXISTING	GFH	GAS-FIRED UNIT HEATER	O.C.	ON CENTER	SPA.	SPACE		
CUH	HYDRONIC CABINET UNIT HEATER	GFI	GROUND FAULT INTERRUPTER	O.D.	OUTSIDE DIAMETER	SPD	SURGE PROTECTION DEVICE		
CU	COPPER	GL	GLASS	O.H.	OVER HANG	SPD	STATIC PRESSURE DROP		
D	DRAINAGE	GLB	GLUE LAMINATED BEAM	OA	OUTSIDE AIR	SPECS	SPECIFICATIONS		
d	PENNY	GM	GRADE MARK	OC	ODOR CONTROL	SPKR.	SPEAKER		
		GMP	GALLONS PER MINUTE	ODP	OPEN DRIP PROOF	SQ. FT.	SQUARE FEET		



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

ABBREVIATIONS

PROJECT NUMBER: 14712

DESIGNED BY: PSP

DRAWN BY: LRE

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

A-0.2

SHEET 41 OF 155



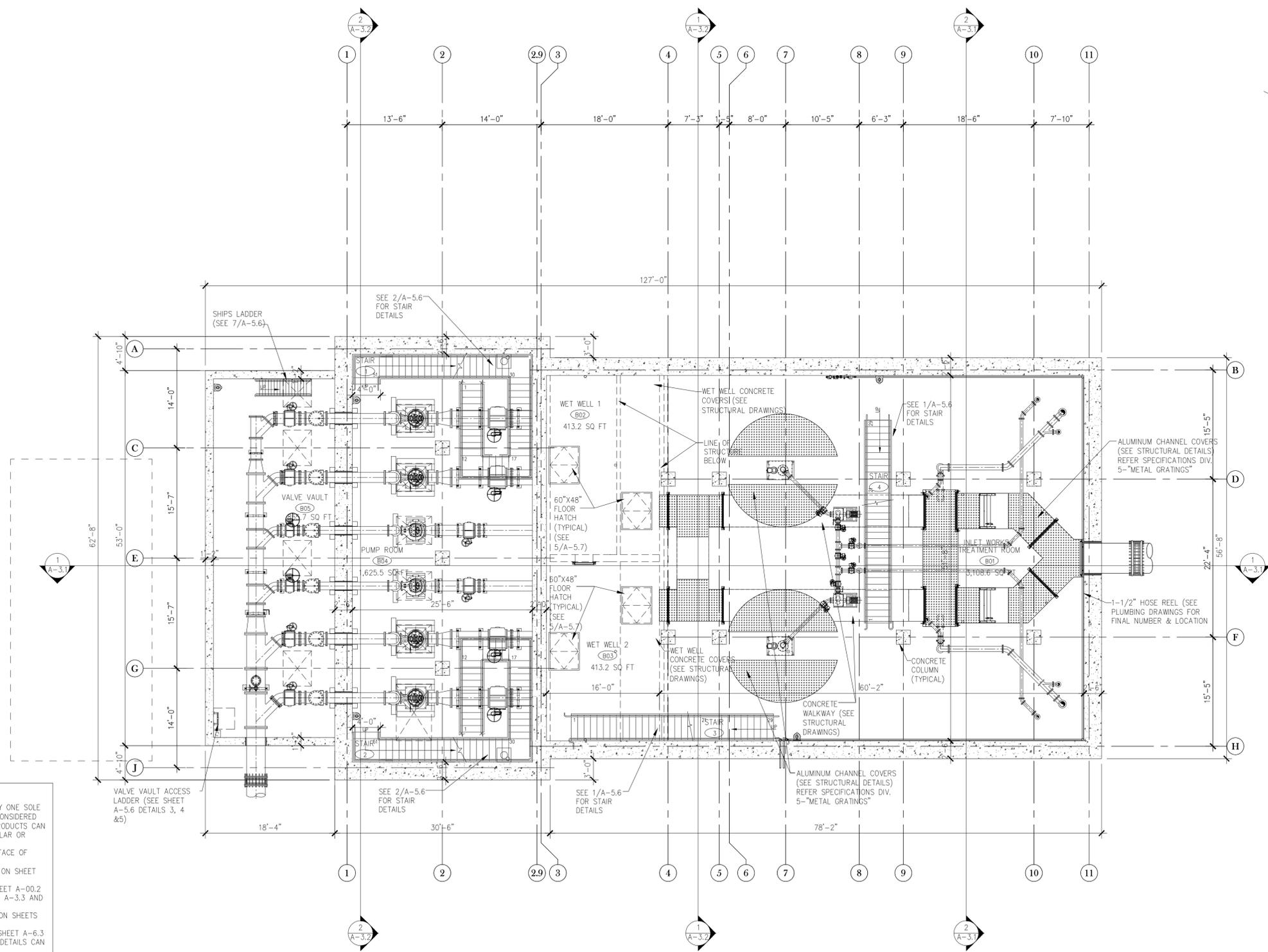
2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

- GENERAL FLOOR PLAN NOTES:
1. ANY NOTES, KEYS, TAGS THAT SPECIFY ONE SOLE PRODUCT/MANUFACTURER SHALL BE CONSIDERED THE BASIS OF DESIGN AND SIMILAR PRODUCTS CAN BE SUBMITTED FOR APPROVAL AS SIMILAR OR EQUAL.
 2. ALL DIMENSIONS ARE SHOWN TO THE FACE OF MASONRY/STUD.
 3. WALL TYPE SCHEDULE CAN BE FOUND ON SHEET A-1.1
 4. ABBREVIATIONS CAN BE FOUND ON SHEET A-00.2
 5. SECTIONS CAN BE FOUND ON A-3.1 - A-3.3 AND DETAILS ON A-5.1 - A-5.10
 6. INTERIOR ELEVATIONS CAN BE FOUND ON SHEETS A-4.1 - A-4.2
 7. FINISH SCHEDULE CAN BE FOUND ON SHEET A-6.3 & DOOR AND WINDOW SCHEDULE AND DETAILS CAN BE FOUND ON SHEETS A-6.1 & A-6.2
 8. COORDINATE ALL WALL, FLOOR, AND ROOF FRAMING/OPENINGS WITH PLUMBING, HVAC, PROCESS, ELECTRICAL, AND STRUCTURAL DRAWINGS.
 9. COORDINATE BLOCKING INSTALLATIONS FOR BATHROOMS AND OTHER AREAS WHERE HANDRAILS AND OR CASE WORK WOULD BE ATTACHED TO WALLS.
 10. ALL BATHROOMS, LAUNDRY ROOM, AND JANITORS CLOSET SHALL BE OUTFITTED WITH 5/8" WR GWB.
 11. SEE MECHANICAL PROCESS DRAWINGS FOR ALL FINAL PROCESS EQUIPMENT LOCATIONS.
 12. CONTRACTORS TO COORDINATE ALL CONCRETE SLEEVE LOCATIONS WITH ALL TRADES.



0' 2' 6' 14'
 1 LOWER LEVEL PLAN
 SCALE: 1/8" = 1'-0"



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

LOWER LEVEL
PROPOSED PLAN

PROJECT NUMBER: 14712
 DESIGNED BY: PSP
 DRAWN BY: LRE
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

A-1.2

DRAWING FILE: N:\Projects\A1.0009_Middletown Pump Station\Contract Documents\A-1.2 (Lower-Level) (MCD).dwg PLOTTED: May 05, 2016 4:27pm By: sptanar



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

PROPOSED
ROOF PLAN

PROJECT NUMBER: 14712

DESIGNED BY: LRE

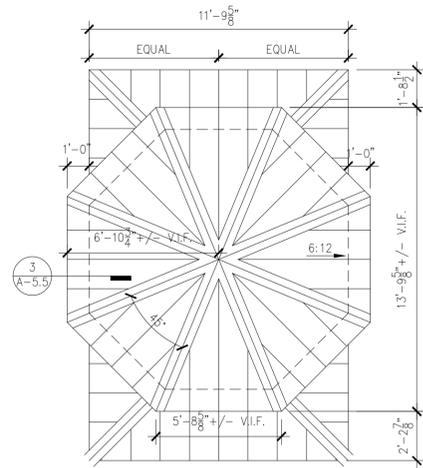
DRAWN BY: LRE

DATE: FEBRUARY 23, 2016

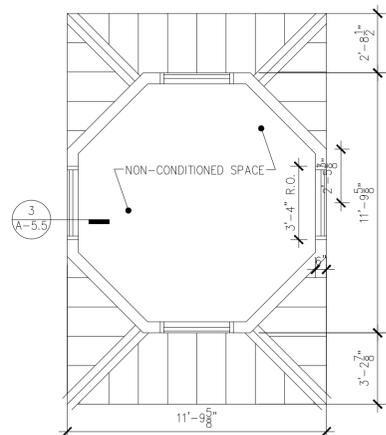
SHEET NUMBER:

A-1.3

SHEET 45 OF 155



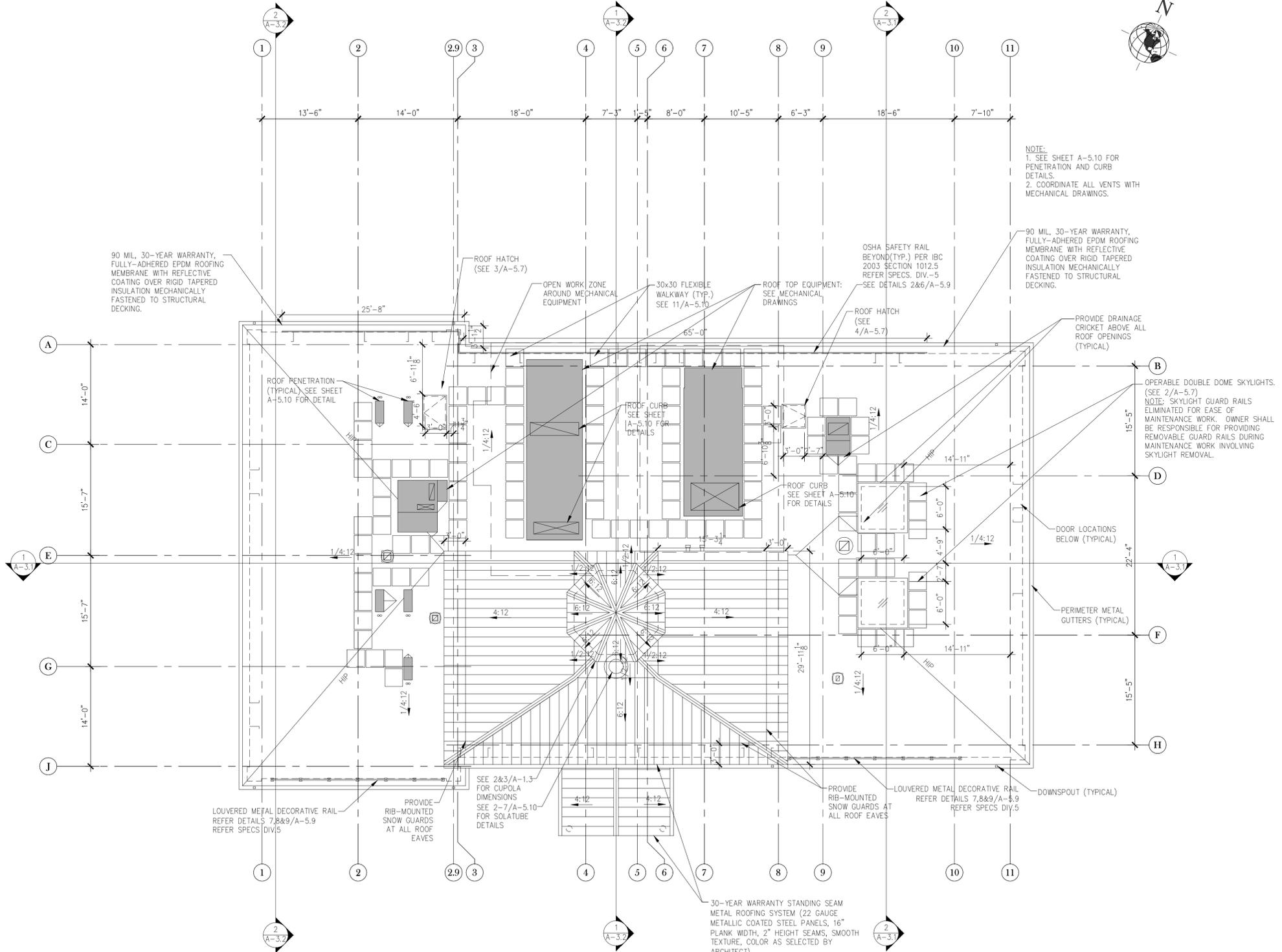
3 CUPOLA ROOF DIMENSIONS
SCALE: 1/4" = 1'-0"



2 CUPOLA PLAN DIMENSIONS
SCALE: 1/4" = 1'-0"

GENERAL FLOOR PLAN NOTES:

- ANY NOTES, KEYS, TAGS THAT SPECIFY ONE SOLE PRODUCT/MANUFACTURER SHALL BE CONSIDERED THE BASIS OF DESIGN AND SIMILAR PRODUCTS CAN BE SUBMITTED FOR APPROVAL AS SIMILAR OR EQUAL.
- ALL DIMENSIONS ARE SHOWN TO THE FACE OF MASONRY/STUD.
- WALL TYPE SCHEDULE CAN BE FOUND ON SHEET A-1.1
- ABBREVIATIONS CAN BE FOUND ON SHEET A-00.2
- SECTIONS CAN BE FOUND ON A-3.1 - A-3.3 AND DETAILS ON A-5.1 - A-5.10
- INTERIOR ELEVATIONS CAN BE FOUND ON SHEETS A-4.1 - A-4.2
- FINISH SCHEDULE CAN BE FOUND ON SHEET A-6.3 & DOOR AND WINDOW SCHEDULE AND DETAILS CAN BE FOUND ON SHEETS A-6.1 & A-6.2
- COORDINATE ALL WALL, FLOOR, AND ROOF FRAMING/OPENINGS WITH PLUMBING, HVAC, PROCESS, ELECTRICAL, AND STRUCTURAL DRAWINGS
- COORDINATE BLOCKING INSTALLATIONS FOR BATHROOMS AND OTHER AREAS WHERE HANDRAILS AND OR CASE WORK WOULD BE ATTACHED TO WALLS.
- ALL BATHROOMS, LAUNDRY ROOM, AND JANITORS CLOSET SHALL BE OUTFITTED WITH 3/8" WR GWB.
- SEE MECHANICAL PROCESS DRAWINGS FOR ALL FINAL PROCESS EQUIPMENT LOCATIONS.
- CONTRACTOR TO COORDINATE ALL CONCRETE SLEEVE LOCATIONS WITH ALL TRADES.



- NOTE:
- SEE SHEET A-5.10 FOR PENETRATION AND CURB DETAILS.
 - COORDINATE ALL VENTS WITH MECHANICAL DRAWINGS.

90 MIL, 30-YEAR WARRANTY, FULLY-ADHERED EPDM ROOFING MEMBRANE WITH REFLECTIVE COATING OVER RIGID TAPERED INSULATION MECHANICALLY FASTENED TO STRUCTURAL DECKING.

ROOF HATCH (SEE 3/A-5.7)

OPEN WORK ZONE AROUND MECHANICAL EQUIPMENT

30x30 FLEXIBLE WALKWAY (TYP.) SEE 11/A-5.10

ROOF TOP EQUIPMENT: SEE MECHANICAL DRAWINGS

OSHA SAFETY RAIL BEYOND (TYP.) PER IBC 2003 SECTION 1012.5 REFER SPECS. DIV.-5 SEE DETAILS 2&6/A-5.9

90 MIL, 30-YEAR WARRANTY, FULLY-ADHERED EPDM ROOFING MEMBRANE WITH REFLECTIVE COATING OVER RIGID TAPERED INSULATION MECHANICALLY FASTENED TO STRUCTURAL DECKING.

PROVIDE DRAINAGE CRICKET ABOVE ALL ROOF OPENINGS (TYPICAL)

OPERABLE DOUBLE DOME SKYLIGHTS. (SEE 2/A-5.7)
NOTE: SKYLIGHT GUARD RAILS ELIMINATED FOR EASE OF MAINTENANCE WORK. OWNER SHALL BE RESPONSIBLE FOR PROVIDING REMOVABLE GUARD RAILS DURING MAINTENANCE WORK INVOLVING SKYLIGHT REMOVAL.

DOOR LOCATIONS BELOW (TYPICAL)

PERIMETER METAL GUTTERS (TYPICAL)

DOWNSPOUT (TYPICAL)

SEE 2&3/A-1.3 FOR CUPOLA DIMENSIONS SEE 2-7/A-5.10 FOR SOLATUBE DETAILS

PROVIDE RIB-MOUNTED SNOW GUARDS AT ALL ROOF EAVES

30-YEAR WARRANTY STANDING SEAM METAL ROOFING SYSTEM (22 GAUGE METALLIC COATED STEEL PANELS, 16" PLANK WIDTH, 2" HEIGHT SEAMS, SMOOTH TEXTURE, COLOR AS SELECTED BY ARCHITECT)



1 ROOF PLAN
SCALE: 1/8" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

GROUND LEVEL
CEILING PLAN

PROJECT NUMBER: 14712

DESIGNED BY: PSP

DRAWN BY: LRE

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

A-1.4

SHEET 46 OF 155

RCP KEYNOTE LEGEND:

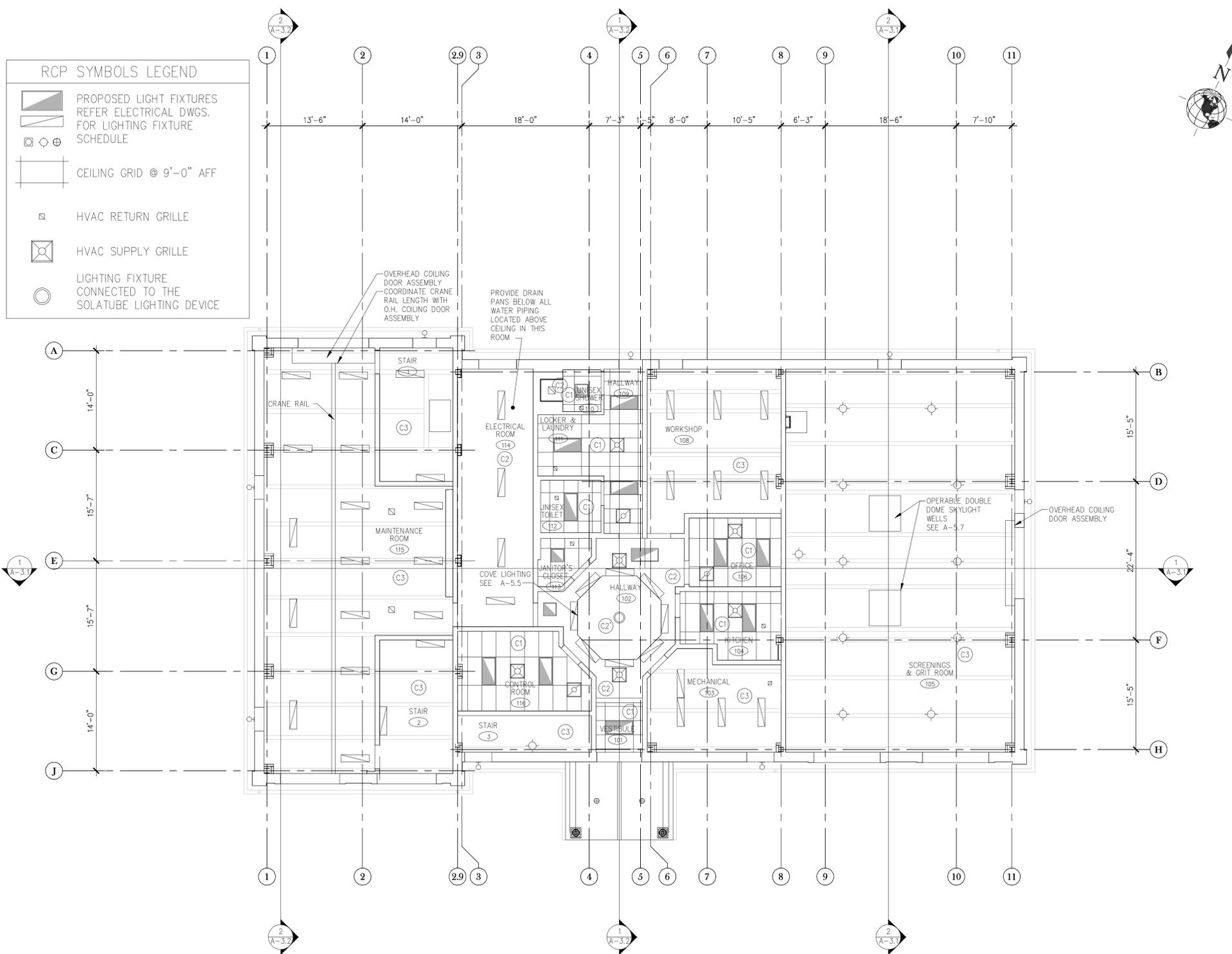
- (C1) ARMSTRONG 2'x4" DUNE LAY-IN TILES.
ARMSTRONG PRELUDE 15/16" GRID.
- (C2) 5/8" GWB CEILING LEVEL OVER LIGHT GAUGE METAL
FRAMED STRUCTURE @ 9'-0" AFF.
- (C2') 5/8" GWB CEILING LEVEL OVER LIGHT GAUGE METAL
FRAMED STRUCTURE @ 11'-5" +/- AFF.
- (C3) EXPOSED STRUCTURE PRIMED AND PAINTED

NOTE:

- SEE OTHER DISCIPLINES DRAWINGS FOR LOCATIONS OF CEILING MOUNTED EQUIPMENT, DIFFUSERS, LIGHTING, AND SPRINKLERS. COORDINATE LOCATIONS OF ALL ABOVE NOTED ITEMS AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO MATERIAL PURCHASES AND INSTALLATIONS.
- COORDINATE LOCATIONS OF ALL RECESSED FIXTURES WITH STRUCTURAL DRAWINGS AND FRAMING CREW TO ENSURE STRUCTURE DOES NOT INHIBIT PLACEMENT PER REFLECTED CEILING PLAN. BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO MATERIAL PURCHASES AND INSTALLATIONS.

GENERAL PROPOSED NOTES:

- LIGHTING LAYOUTS, AS SHOWN, ARE SCHEMATIC IN NATURE. REFER TO ELECTRICAL DRAWINGS FOR ACTUAL LIGHTING TYPES, LAYOUTS, QUANTITIES, AND CONNECTION REQUIREMENTS.
- ROOMS SHOWN TO RECEIVE ACT GRID SHALL RECEIVE MOISTURE RESISTANT SYSTEMS.
- MECHANICAL, FIRE PROTECTION, PLUMBING, AND STRUCTURAL SYSTEMS ARE NOT DEPICTED. COORDINATE WITH RESPECTIVE DISCIPLINES DRAWINGS FOR SCOPE OF WORK AT THE CEILING AREAS.



1 GROUND LEVEL REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



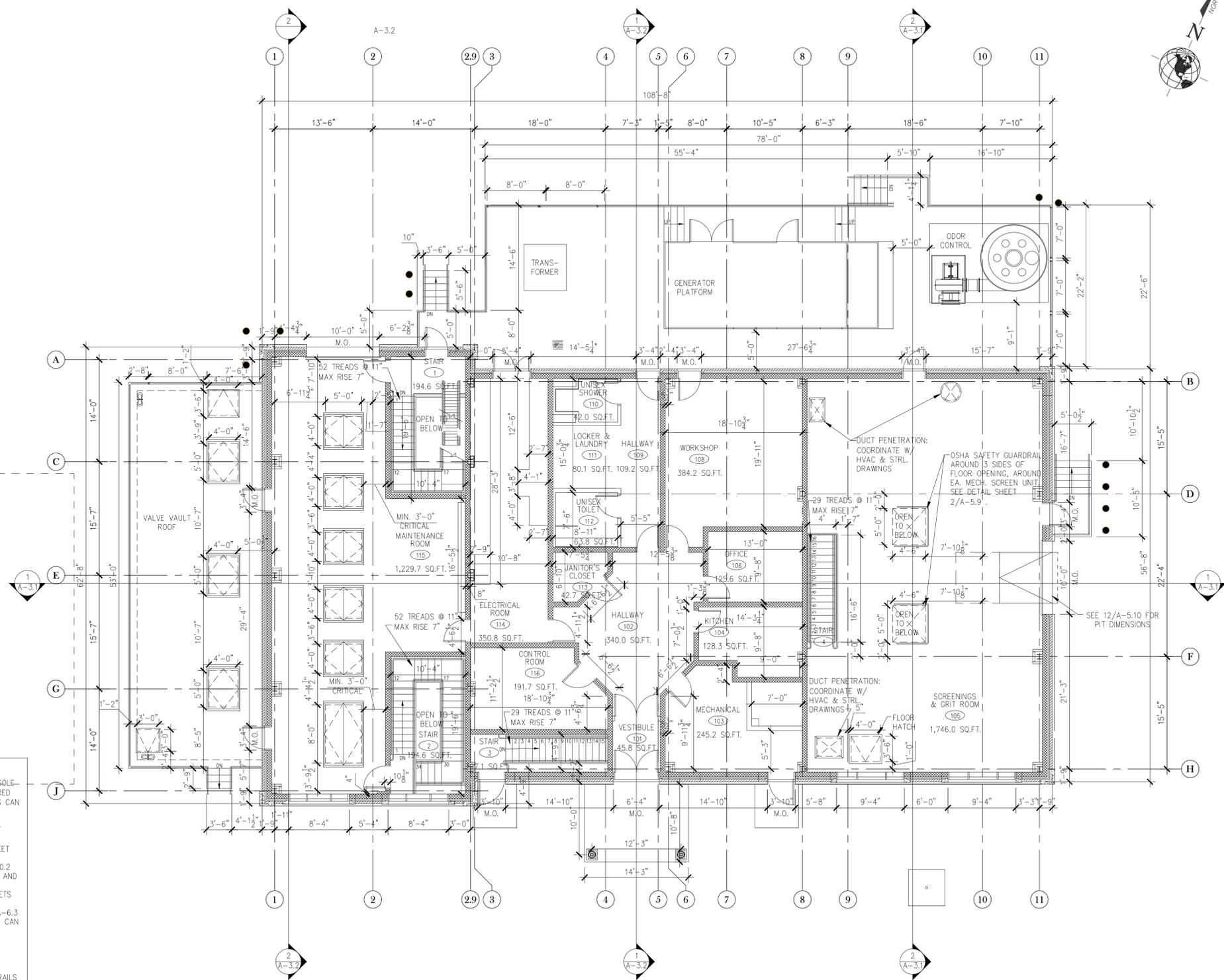
**FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION**

MIDDLETOWN, CT

**GROUND LEVEL
WALL LOCATION
PLAN**

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016

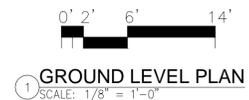
SHEET NUMBER:
A-1.12



- GENERAL FLOOR PLAN NOTES:**
- ANY NOTES, KEYS, TAGS THAT SPECIFY ONE SOLE PRODUCT/MANUFACTURER SHALL BE CONSIDERED THE BASIS OF DESIGN AND SIMILAR PRODUCTS CAN BE SUBMITTED FOR APPROVAL AS SIMILAR OR EQUAL.
 - ALL DIMENSIONS ARE SHOWN TO THE FACE OF MASONRY/STUD.
 - WALL TYPE SCHEDULE CAN BE FOUND ON SHEET A-1.1
 - ABBREVIATIONS CAN BE FOUND ON SHEET A-0.2 SECTIONS CAN BE FOUND ON A-3.1 - A-3.3 AND DETAILS ON A-5.1 - A-5.10
 - INTERIOR ELEVATIONS CAN BE FOUND ON SHEETS A-4.1 - A-4.2
 - FINISH SCHEDULE CAN BE FOUND ON SHEET A-6.3 & DOOR AND WINDOW SCHEDULE AND DETAILS CAN BE FOUND ON SHEETS A-6.1 & A-6.2
 - COORDINATE ALL WALL, FLOOR, AND ROOF FRAMING/OPENINGS WITH PLUMBING, HVAC, ELECTRICAL, AND STRUCTURAL DRAWINGS
 - COORDINATE BLOCKING INSTALLATIONS FOR BATHROOMS AND OTHER AREAS WHERE HANDRAILS AND OR CASE WORK WOULD BE ATTACHED TO WALLS.
 - ALL BATHROOMS, LAUNDRY ROOM, AND JANITORS CLOSET SHALL BE OUTFITTED WITH 3/8" WR CWB.
 - SEE MECHANICAL PROCESS DRAWINGS FOR ALL FINAL PROCESS EQUIPMENT & PIPING LOCATIONS.
 - CONTRACTORS TO COORDINATE ALL CONCRETE SLEEVE LOCATIONS WITH ALL TRENCHES.

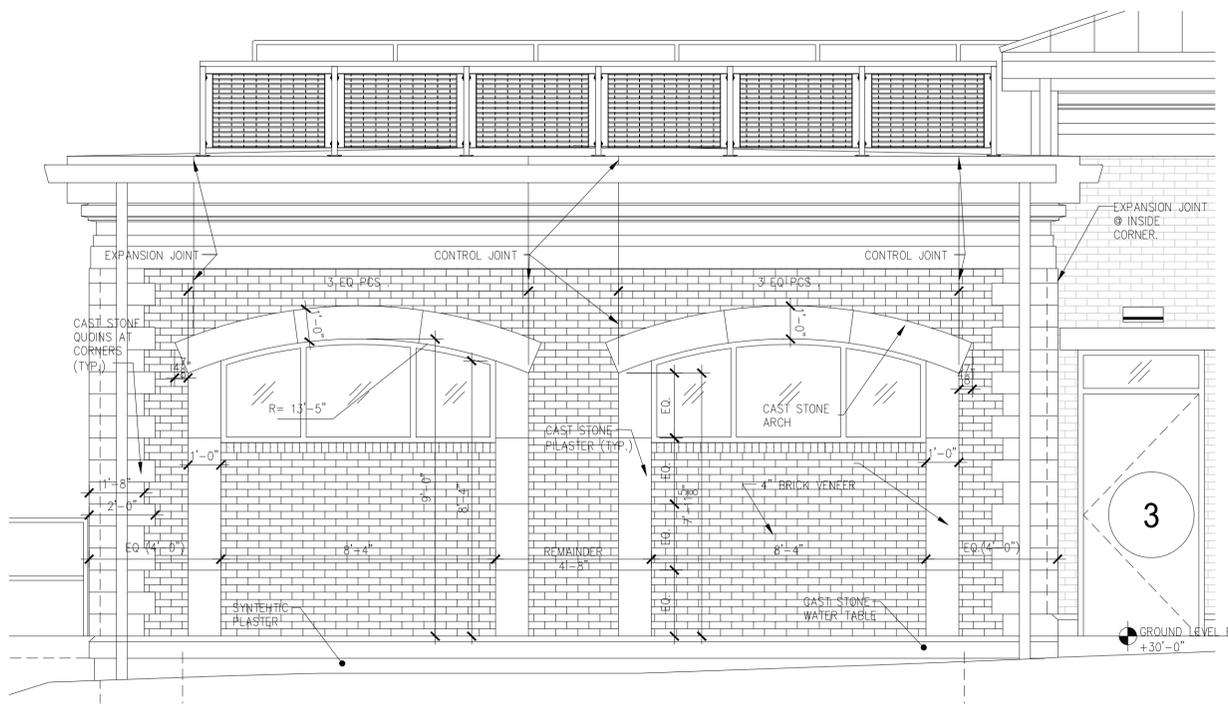
GROUND LEVEL NET SQUARE FOOTAGE:
5,555.6 SF

SEE SHEET A-1.1 FOR FULLY NOTATED FLOOR PLAN

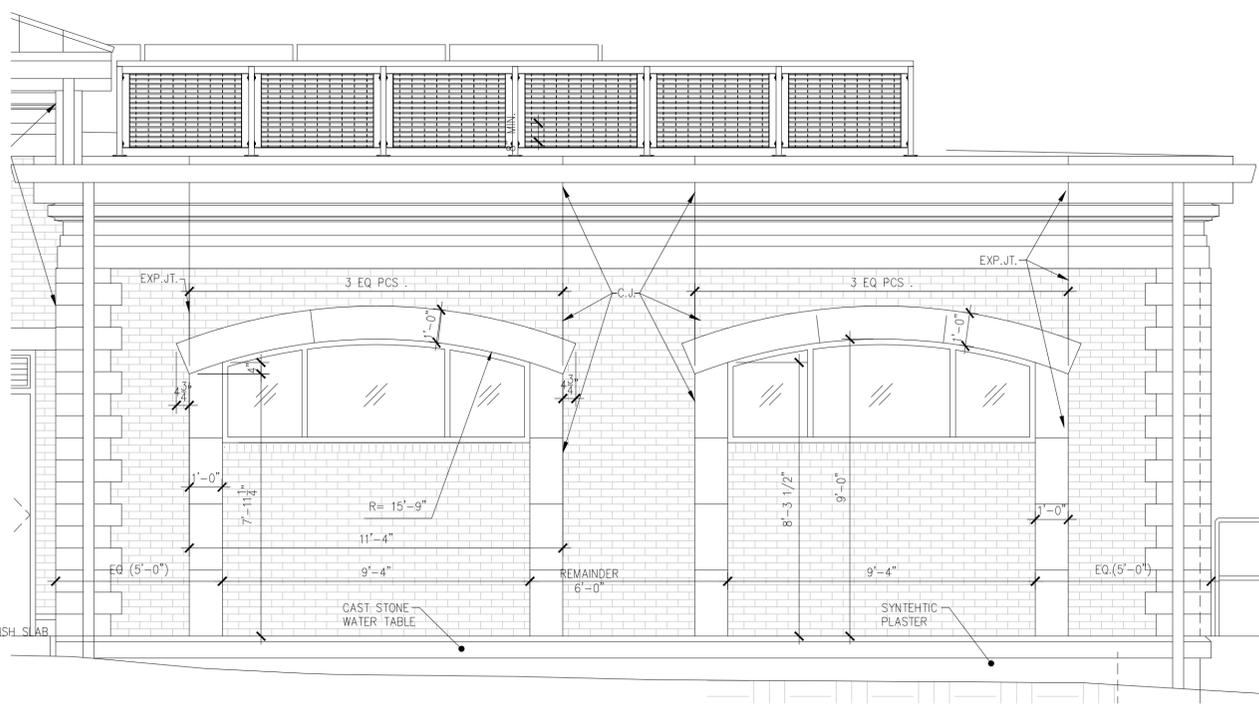


REVISIONS

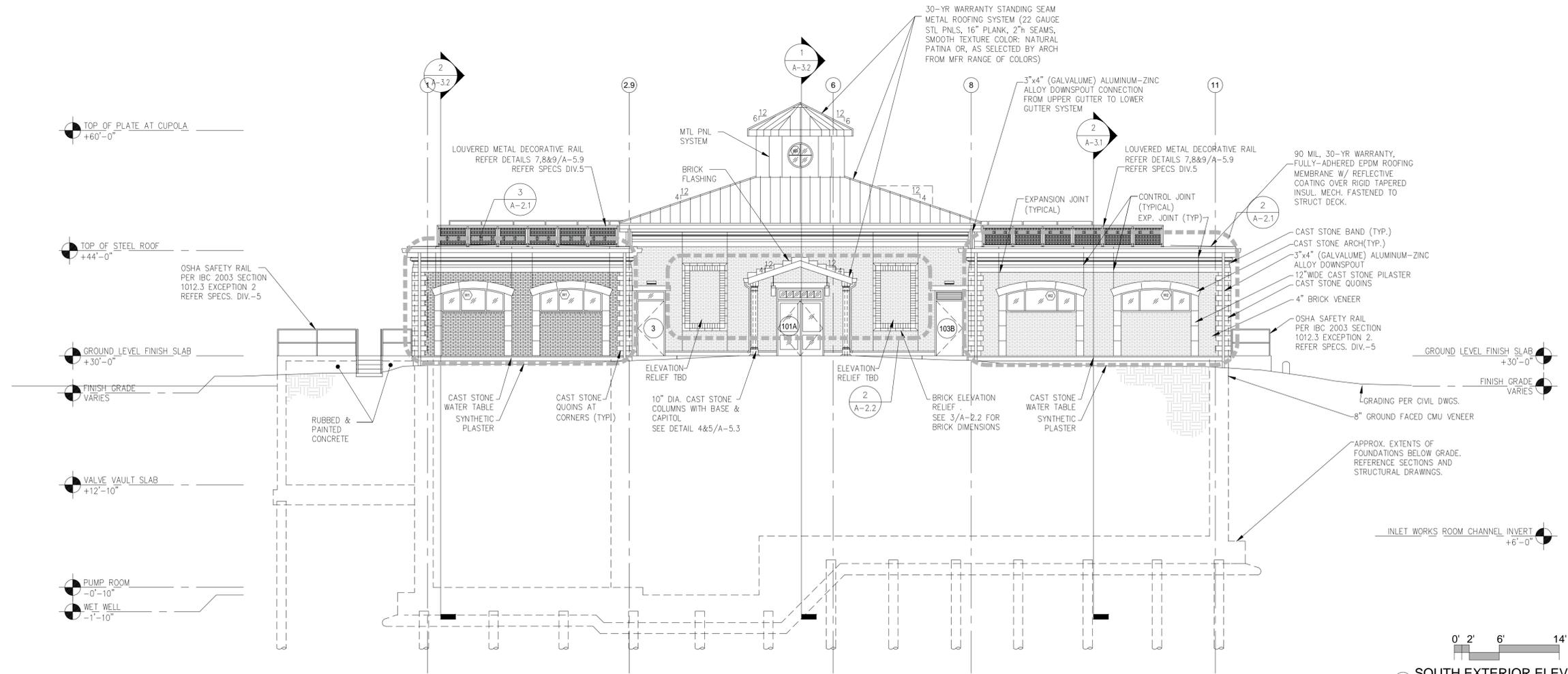
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



3 PARTIAL SOUTH EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



2 PARTIAL SOUTH EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



1 SOUTH EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-2.1...2.4.dwg PLOTTED: May 06, 2016 4:43:28pm BY: sotlwar



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

SOUTH EXTERIOR
ELEVATION

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-2.1

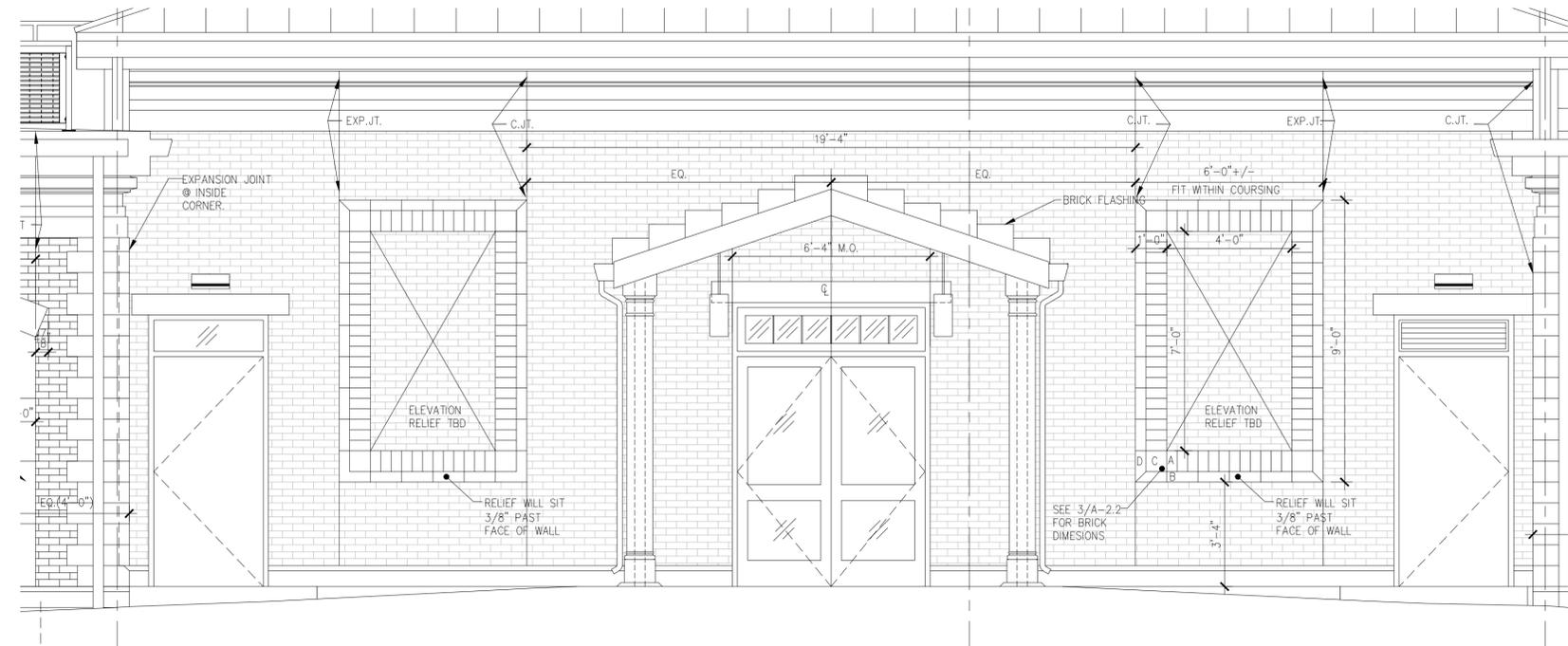


2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



REVISIONS

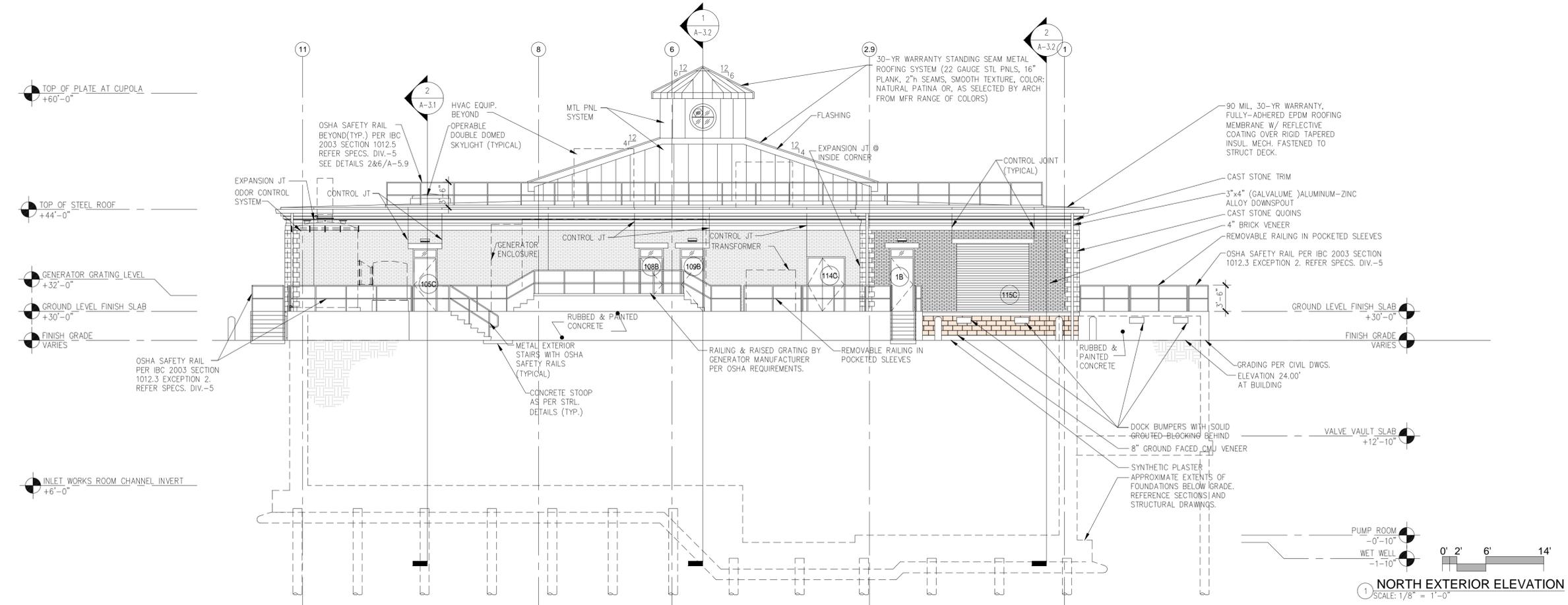
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



TYPE	DESCRIPTION
A	4x8
B	4x12
C	8x8
D	4x12 W/ CHAMFERED EDGE

3 TYPICAL BRICK DIMENSIONS
SCALE: 3/8" = 1'-0"

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



1 NORTH EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-2.1..._2.4.dwg PLOTTED: May 06, 2016 4:43:28pm BY: sotlawa



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT
NORTH EXTERIOR
ELEVATION

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-2.2



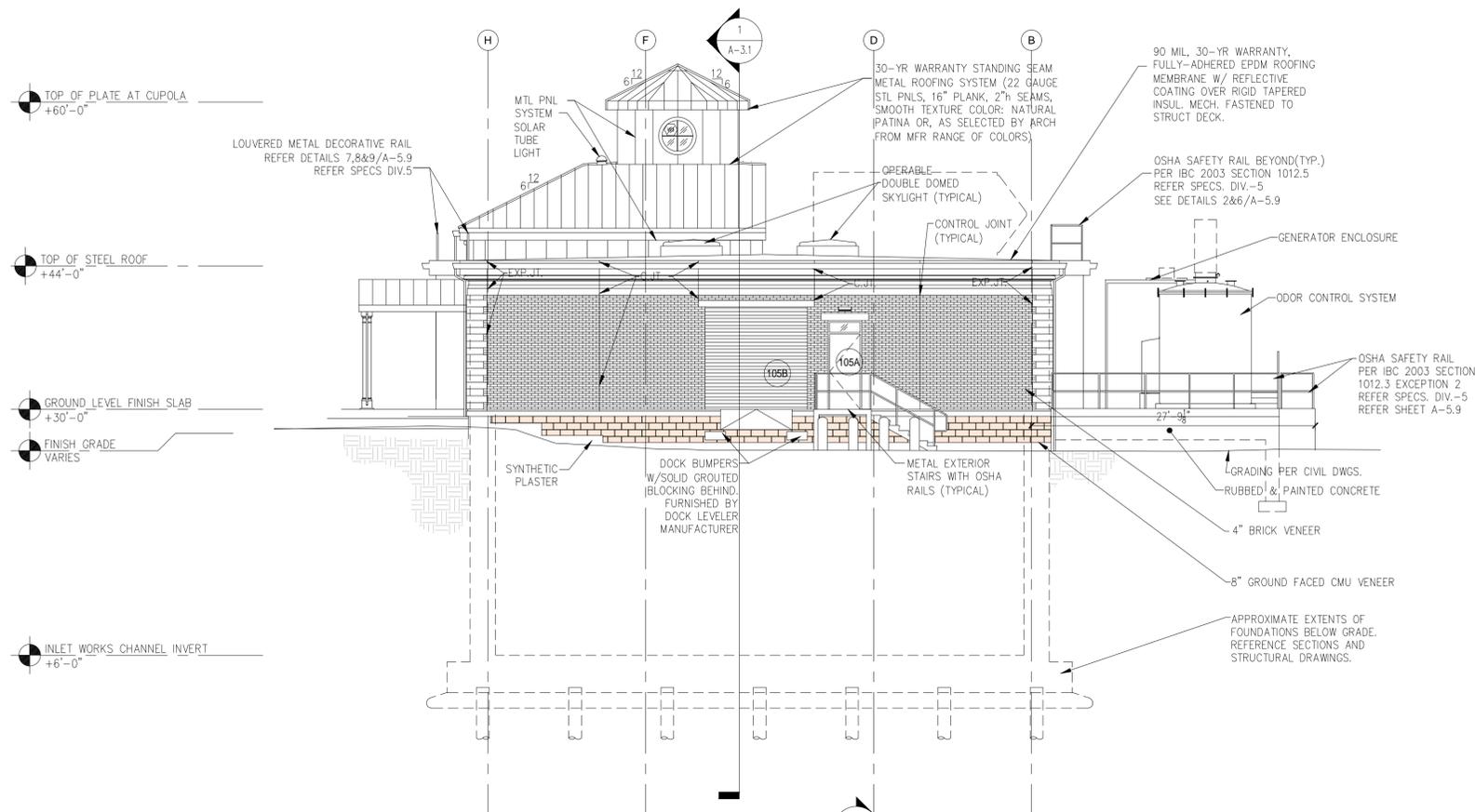
2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513-5707
P: 203-468-2441
www.landmarkarch.com

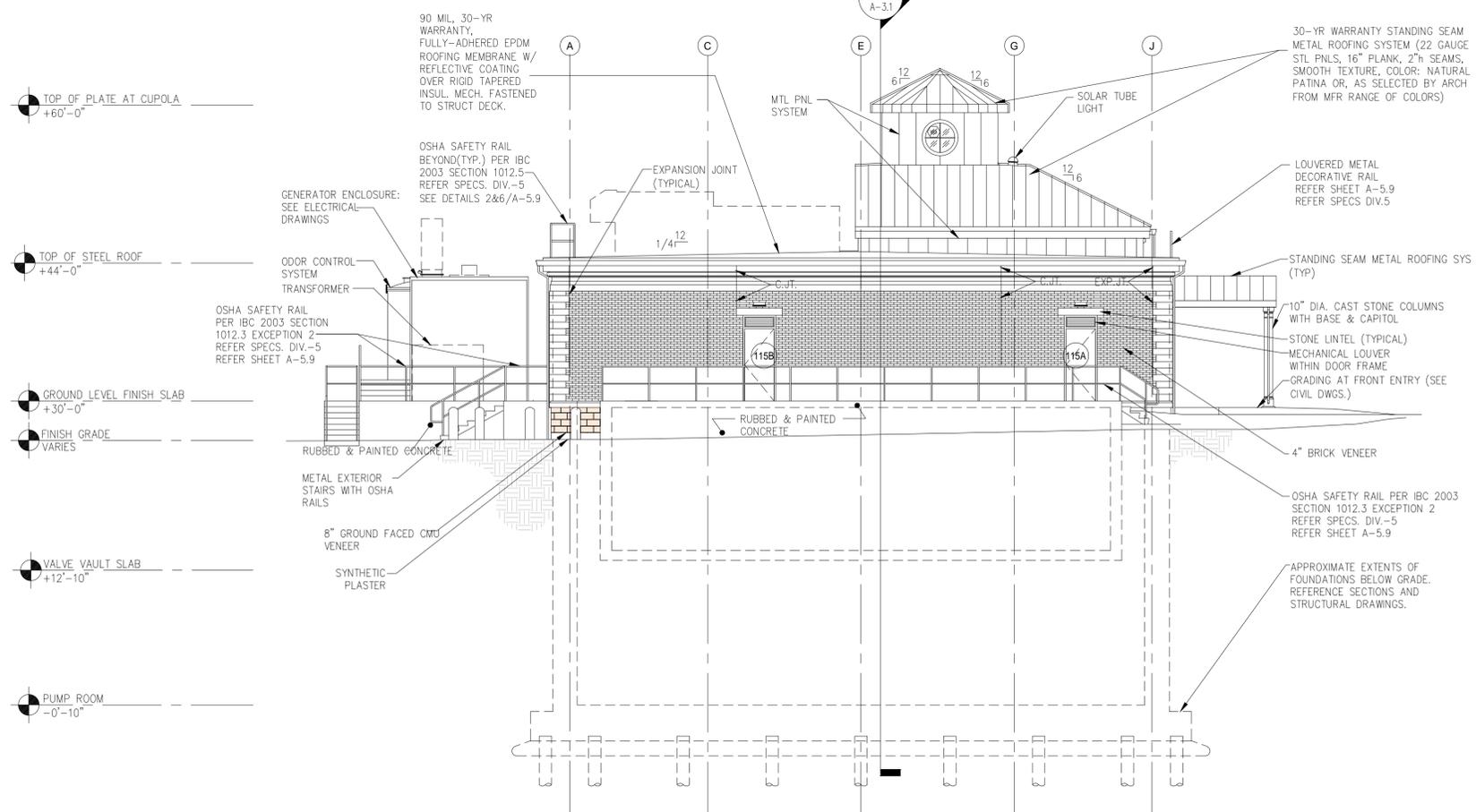
REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



0' 2' 6' 14'

2 EAST EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"



0' 2' 6' 14'

1 WEST EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

EAST & WEST
EXTERIOR
ELEVATIONS

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

A-2.3

SHEET 49 OF 155

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-2.1..._2.4.dwg PLOTTED: May 06, 2016 4:43pm BY: sstavar



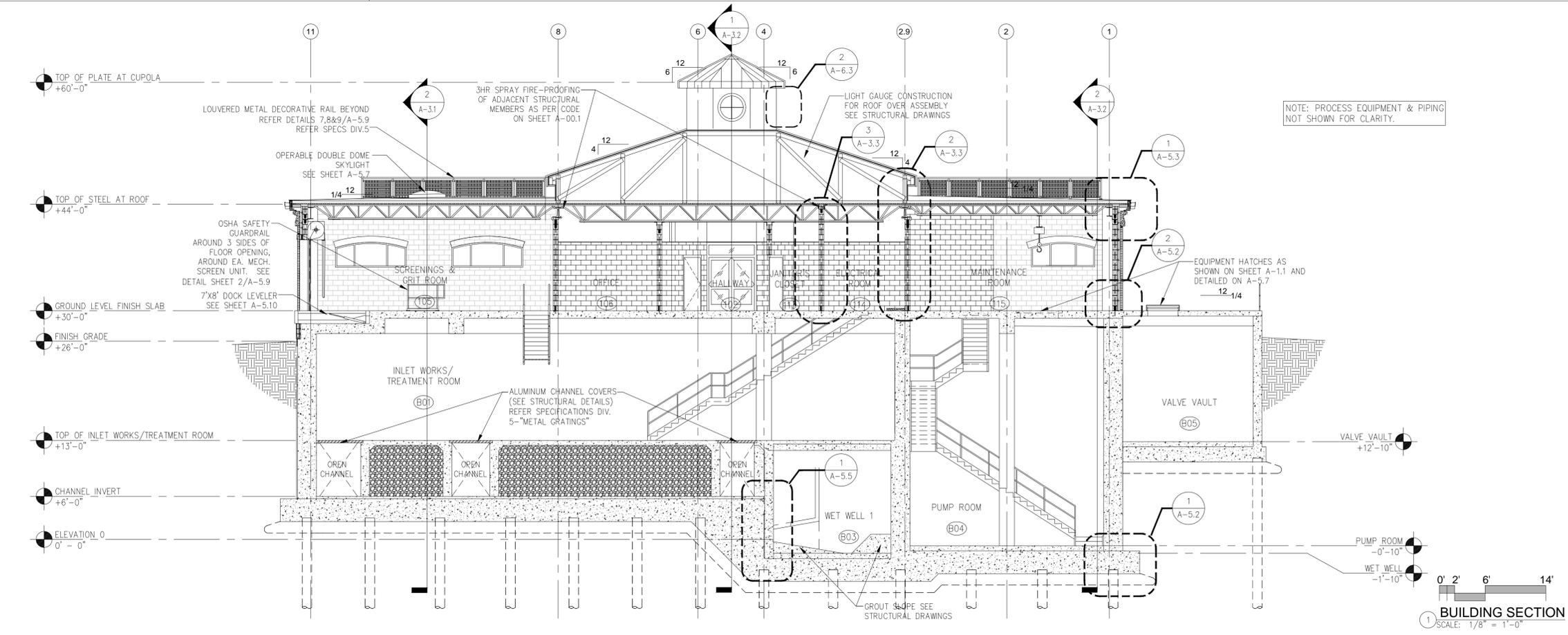
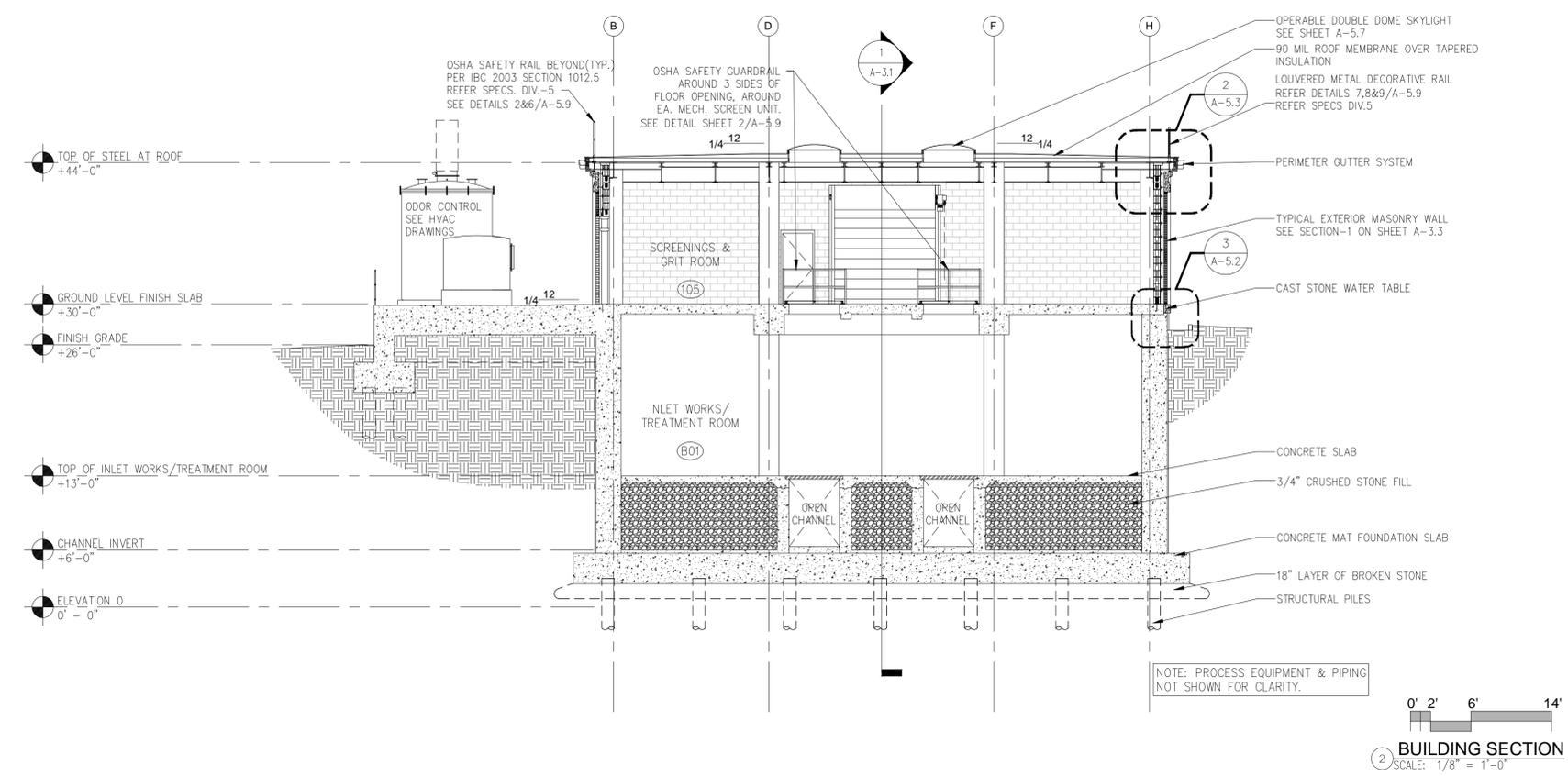
2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513-5707
P: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-3.1_1_3.4 (Sections).dwg PLOTTED: May 05, 2016 - 4:35pm BY: sattower



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

BUILDING SECTIONS
I

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-3.1

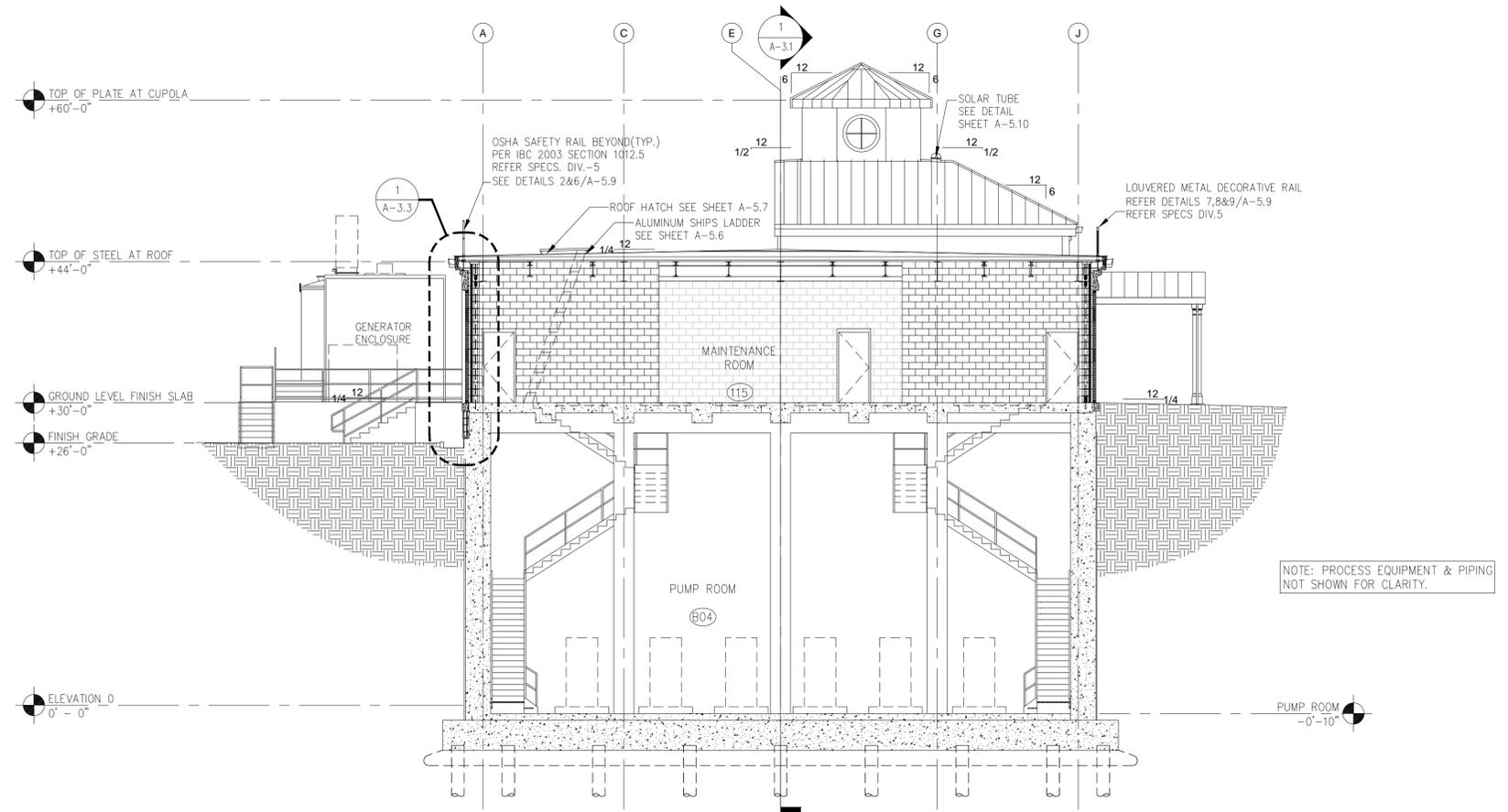


2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

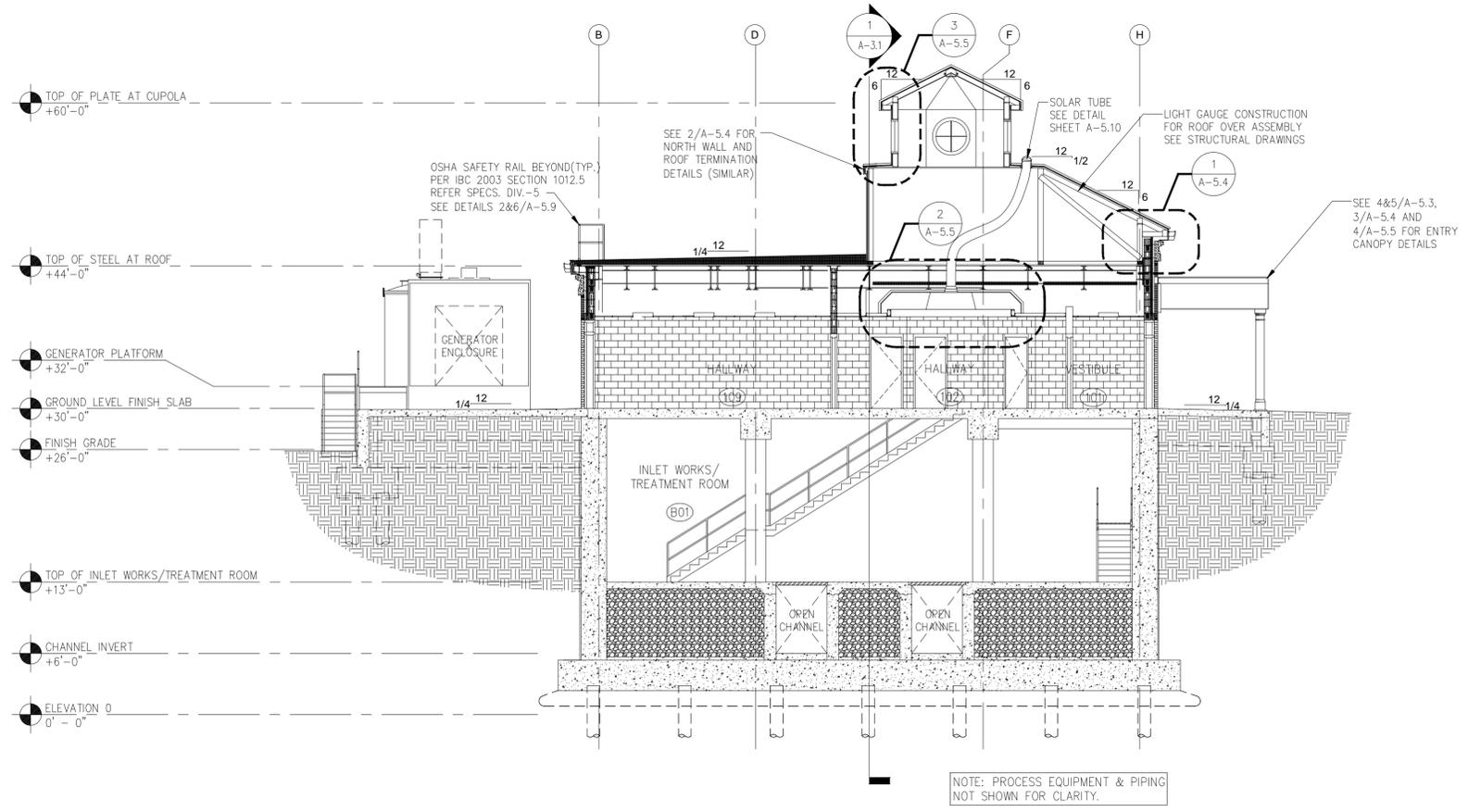


REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



0' 2' 6' 14' BUILDING SECTION
SCALE: 1/8" = 1'-0"



0' 2' 6' 14' BUILDING SECTION
SCALE: 1/8" = 1'-0"

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-3.1..._3.4 (Sections).dwg PLOTTED: May 05, 2016 - 4:36pm BY: sattower



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

BUILDING SECTIONS
II

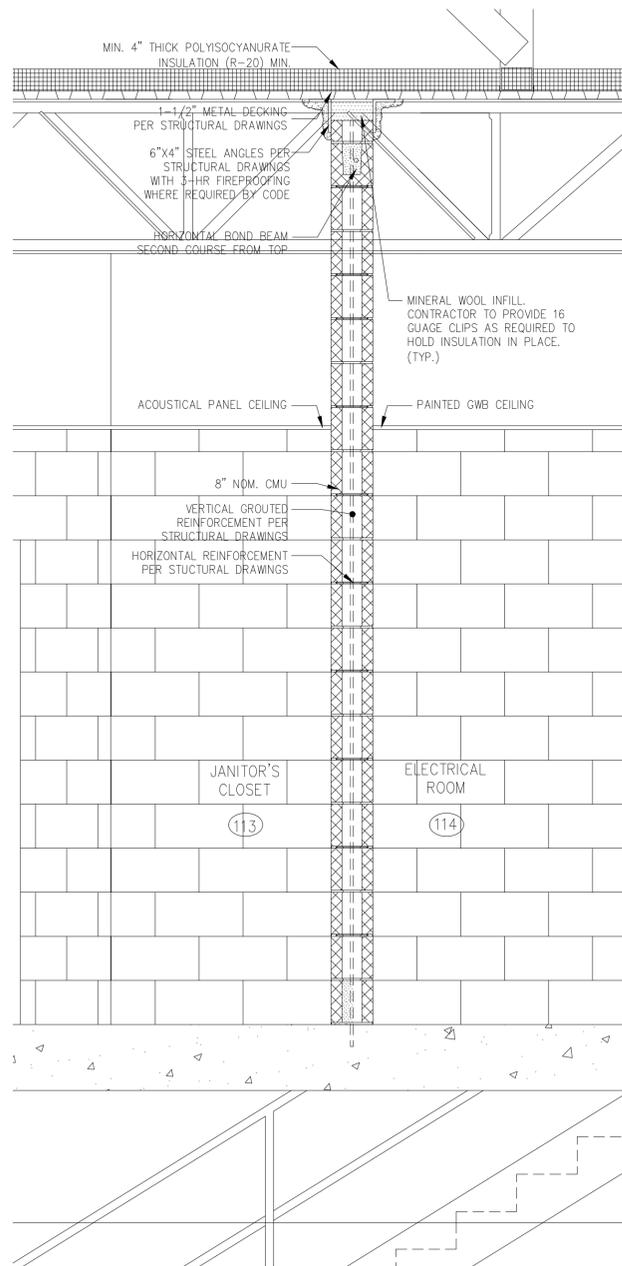
PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

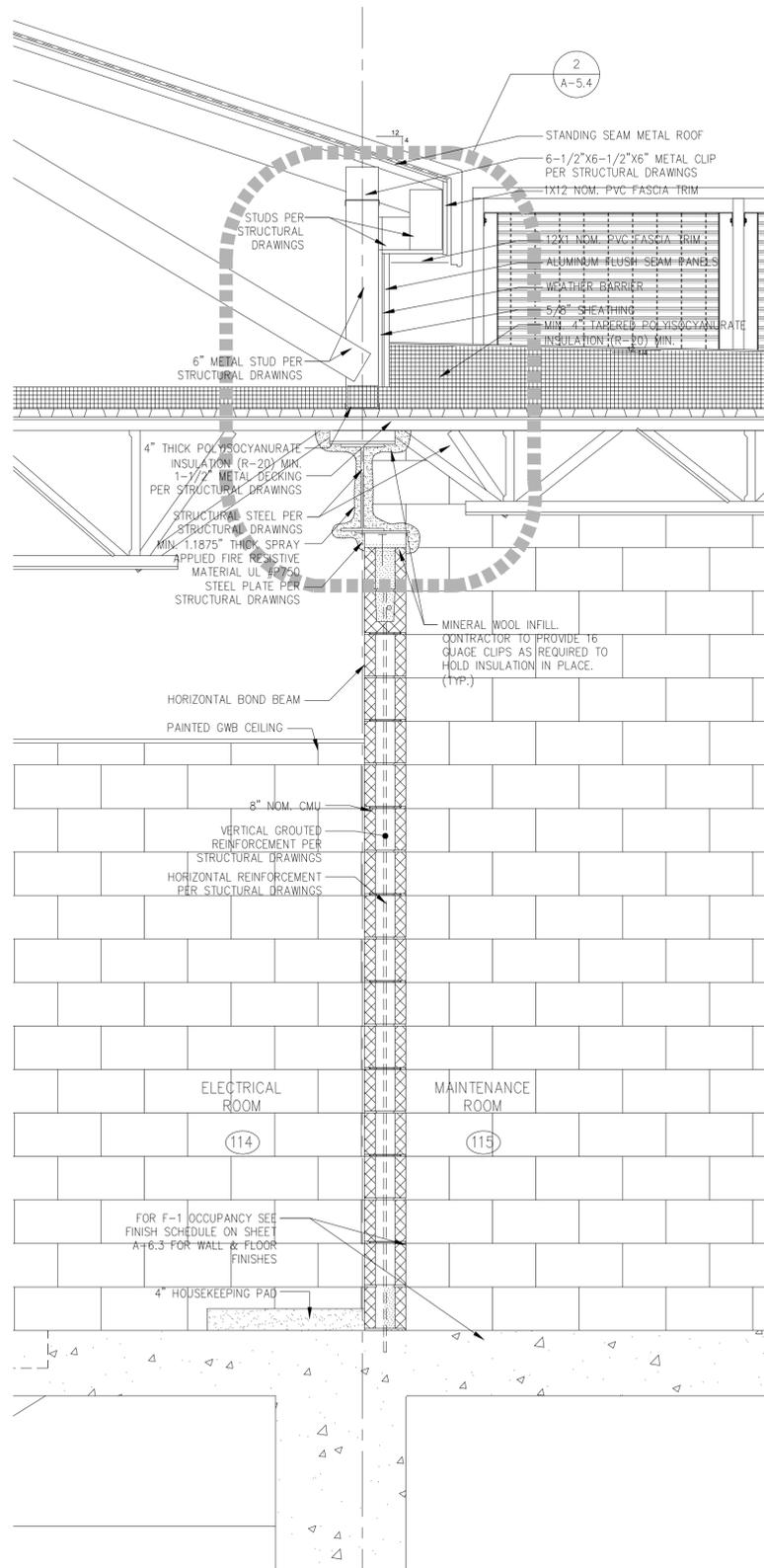
A-3.2

SHEET 51 OF 155

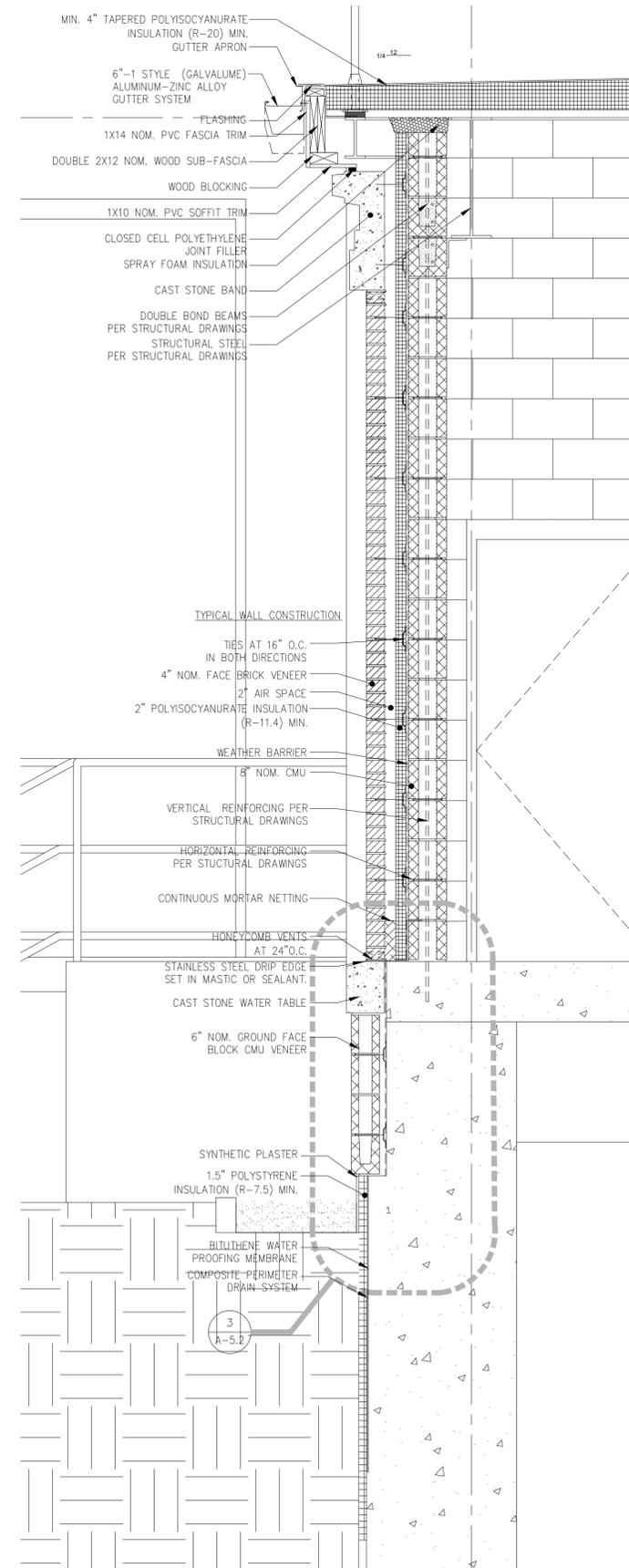
DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-3.1..._3.4 (Sections).dwg PLOTTED: May 05, 2016 - 4:37pm BY: settower



3 WALL SECTION
SCALE: 3/4" = 1'-0"



2 WALL SECTION
SCALE: 3/4" = 1'-0"



1 WALL SECTION
SCALE: 3/4" = 1'-0"



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL: (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513-5707
P: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

WALL SECTIONS

PROJECT NUMBER: 14712

DESIGNED BY: PSP

DRAWN BY: PM

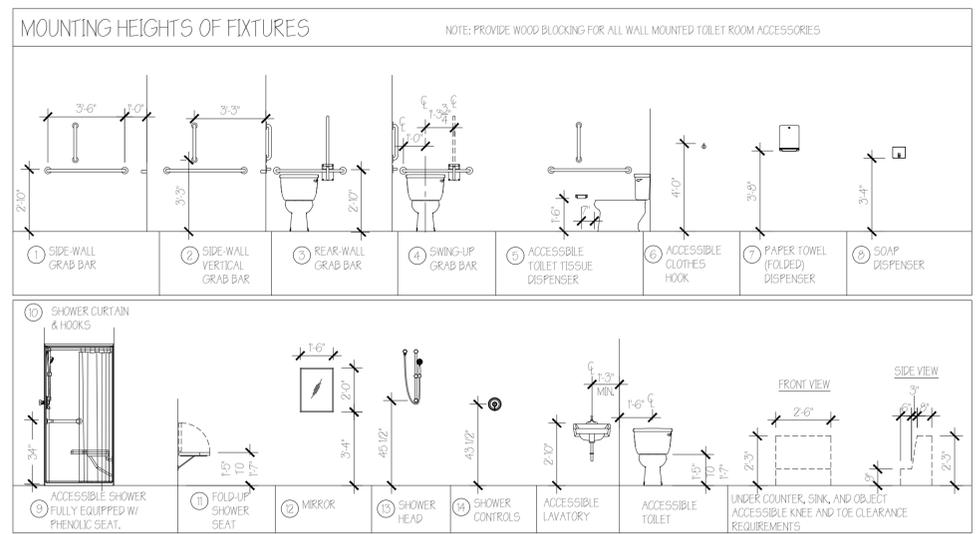
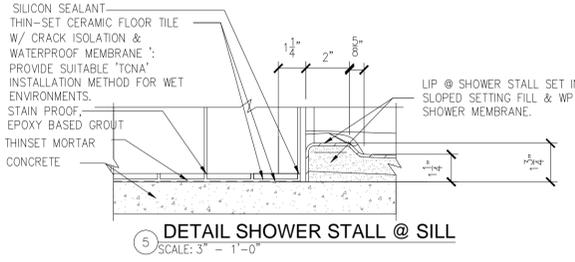
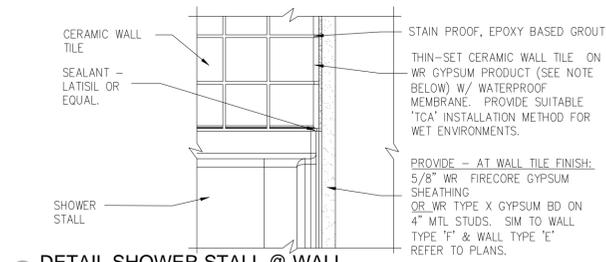
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

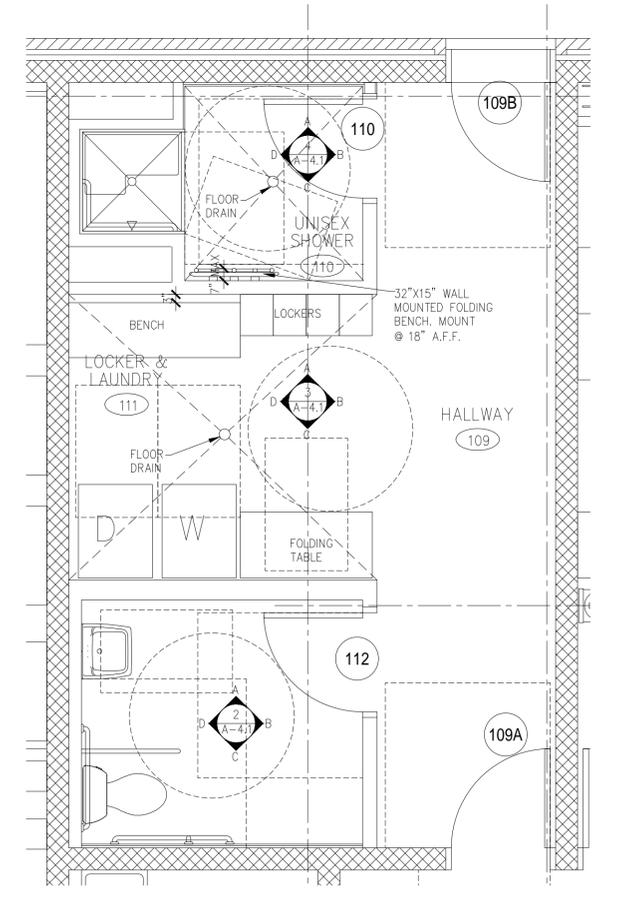
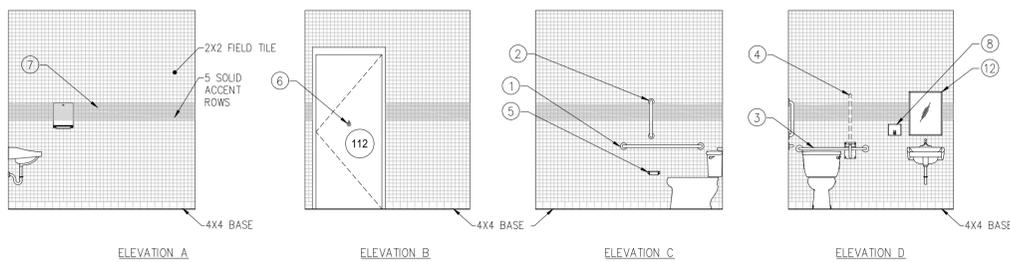
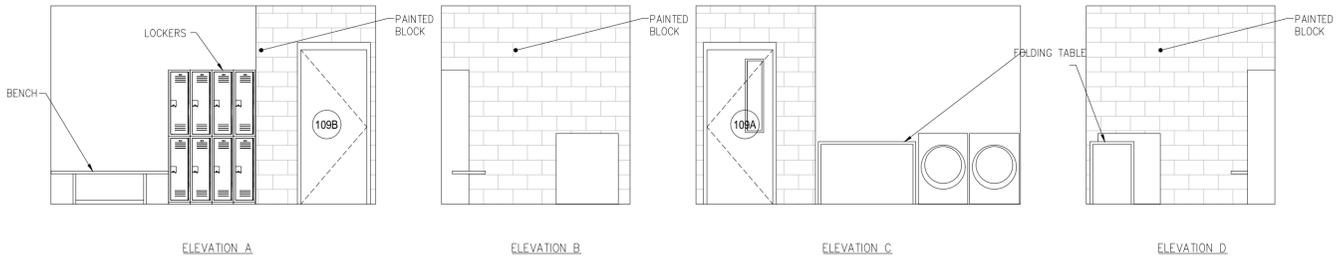
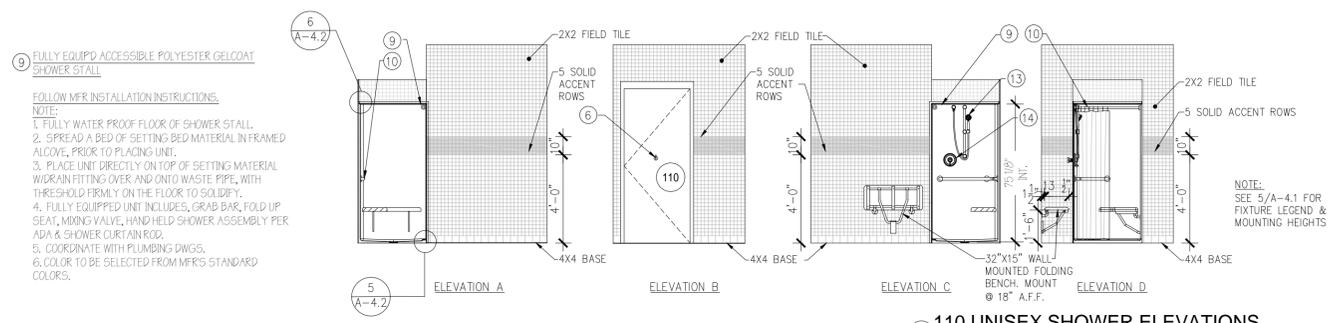
A-3.3

SHEET 52 OF 155

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-4.1..._4.2.dwg PLOTTED: May 06, 2016 4:43pm BY: asitawar



5 FIXTURE MOUNTING HEIGHTS
SCALE: 1/4" = 1'-0"



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

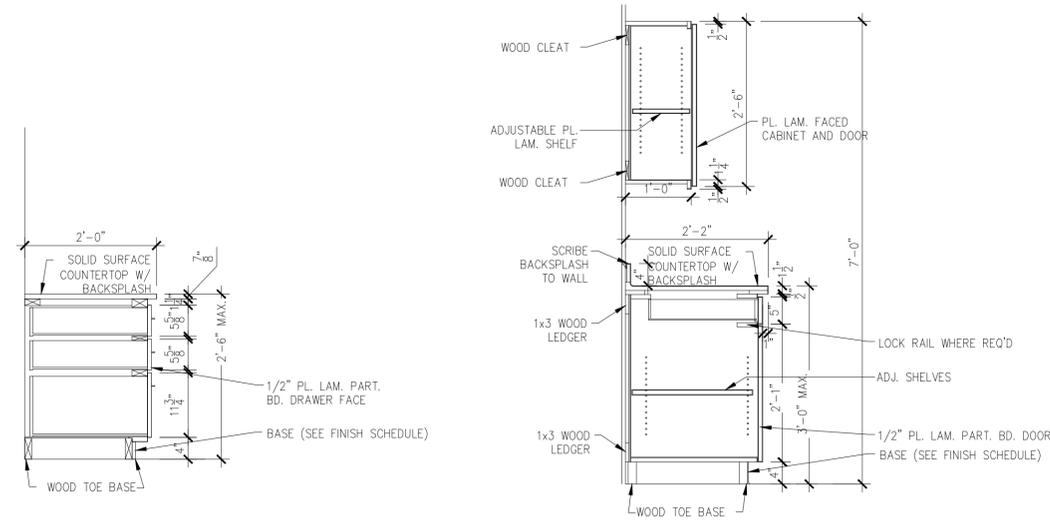
INTERIOR ELEVATIONS I

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-4.1

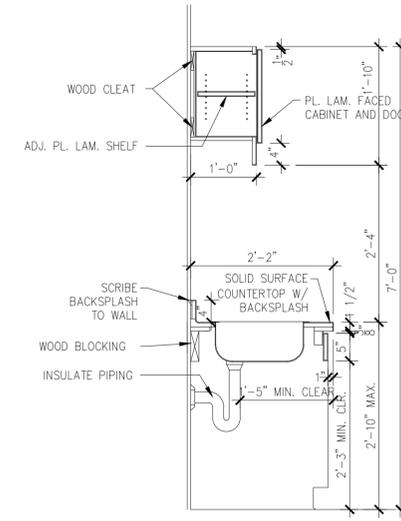
REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



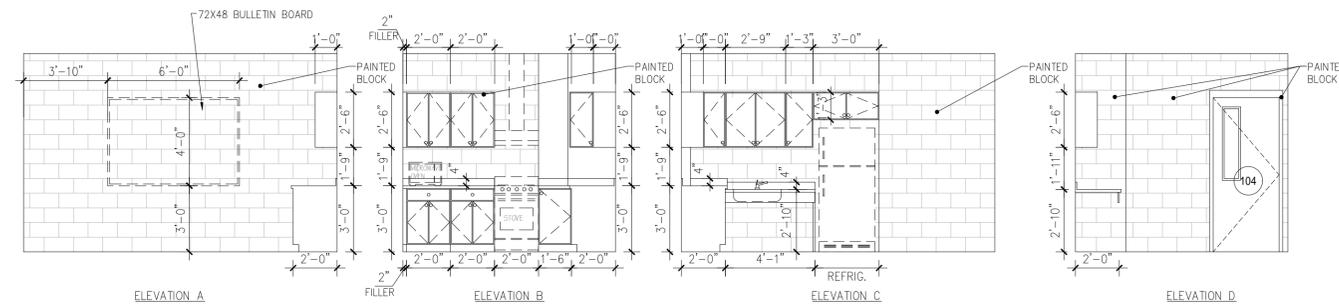
7 SECTION THROUGH TYPICAL DRAWER BASE CABINET
SCALE: 3/4" = 1'-0"

6 SECTION THROUGH TYPICAL CABINET
SCALE: 3/4" = 1'-0"

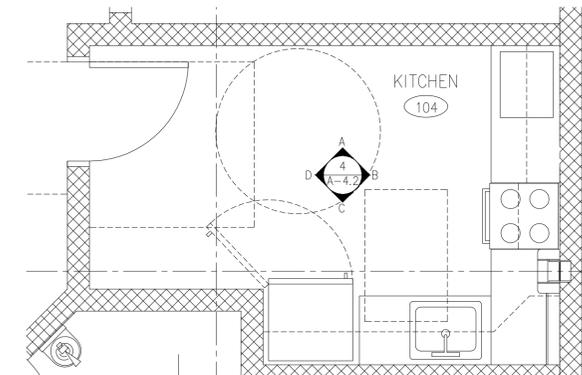


5 SECTION THROUGH ADA SINK
SCALE: 3/4" = 1'-0"

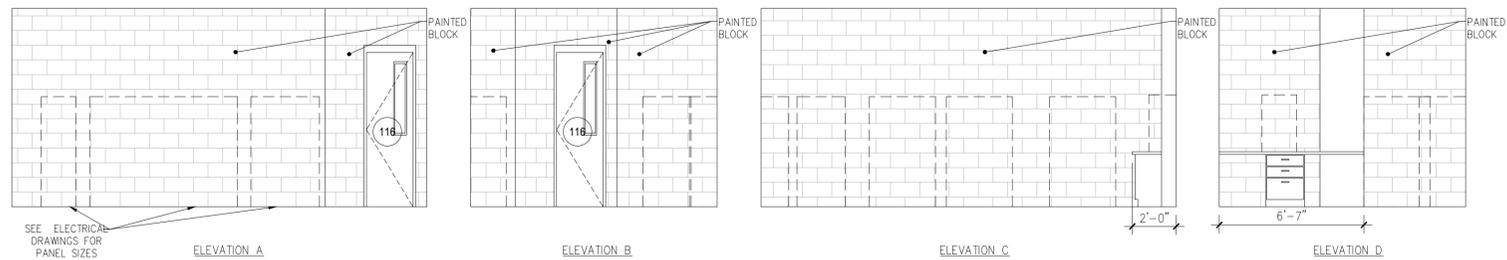
NOTES:
1. COORDINATE SINK DEPTH WITH PLUMBING ENGINEER TO ENSURE COMPLIANCE WITH ADA CLEARANCES (KNEE SPACE).
2. PROVIDE MINIMUM 30" COUNTER CENTERED ON SINK TO COMPLY WITH ADA FRONTAL APPROACH REQUIREMENTS.



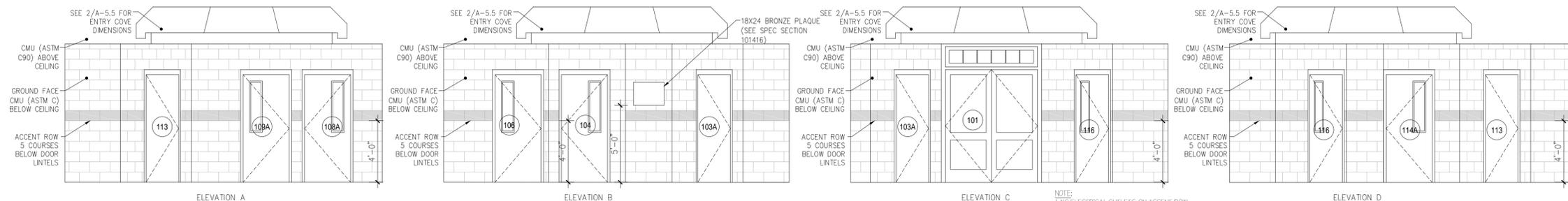
4 104 KITCHEN ELEVATIONS
SCALE: 1/4" = 1'-0"



3 ENLARGED KITCHEN (104) PLAN
SCALE: 3/8" = 1'-0"



2 116 CONTROL ROOM
SCALE: 1/4" = 1'-0"



1 102 HALLWAY
SCALE: 1/4" = 1'-0"

NOTE:
1. NO ELECTRICAL OUTLETS ON ACCENT ROW.
2. ALL ELECTRICAL OUTLETS BELOW ACCENT ROW.
3. COORDINATE WITH ELECTRICAL DWGS.



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

INTERIOR
ELEVATIONS II

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-4.2

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

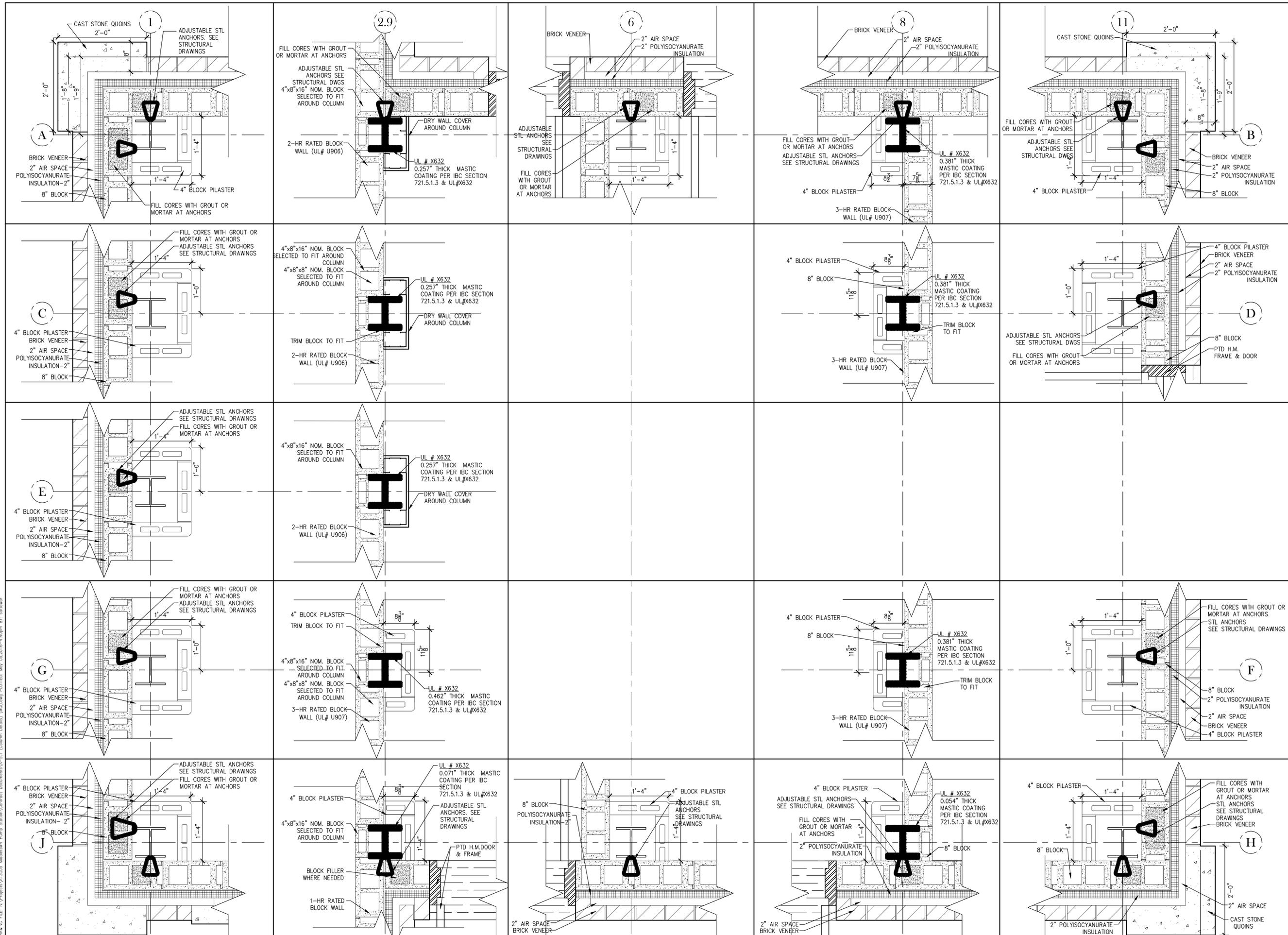
MIDDLETOWN, CT

COLUMN DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016

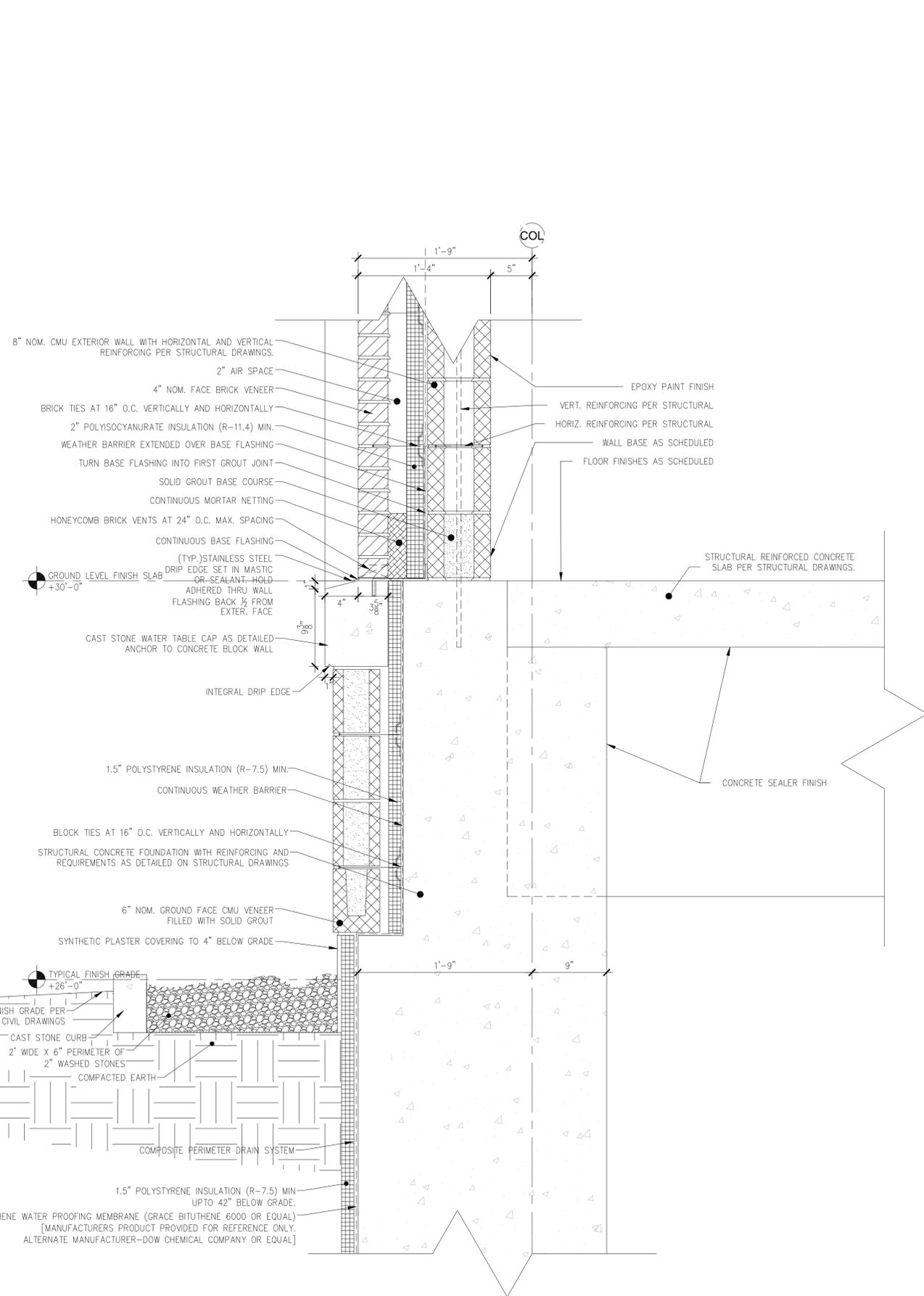
SHEET NUMBER:

A-5.1

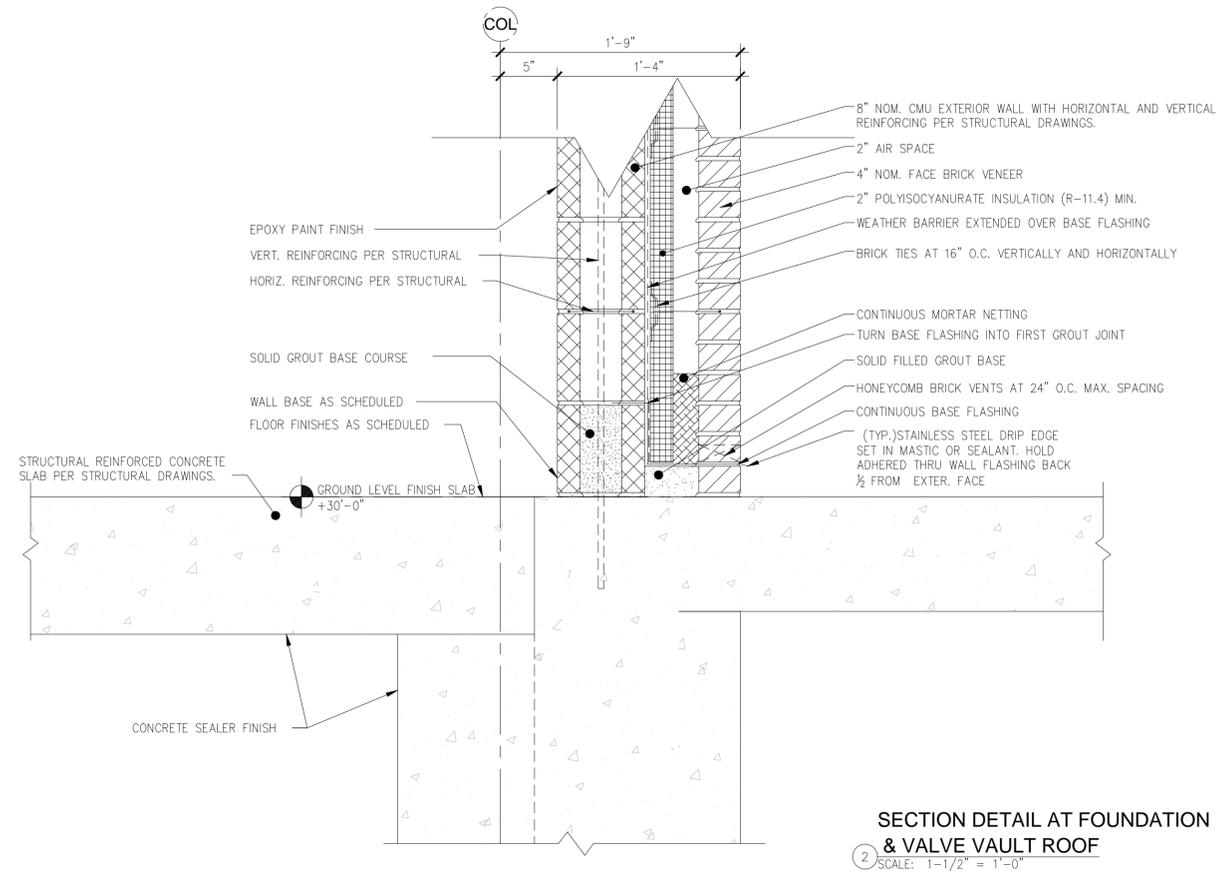


DRAWING FILE: N:\Projects\1471205 - Middletown Pump Station\Contract Documents\A-5.1 - Column Details.dwg PLOTTED: May 05, 2016 - 4:40pm BY: salfawar

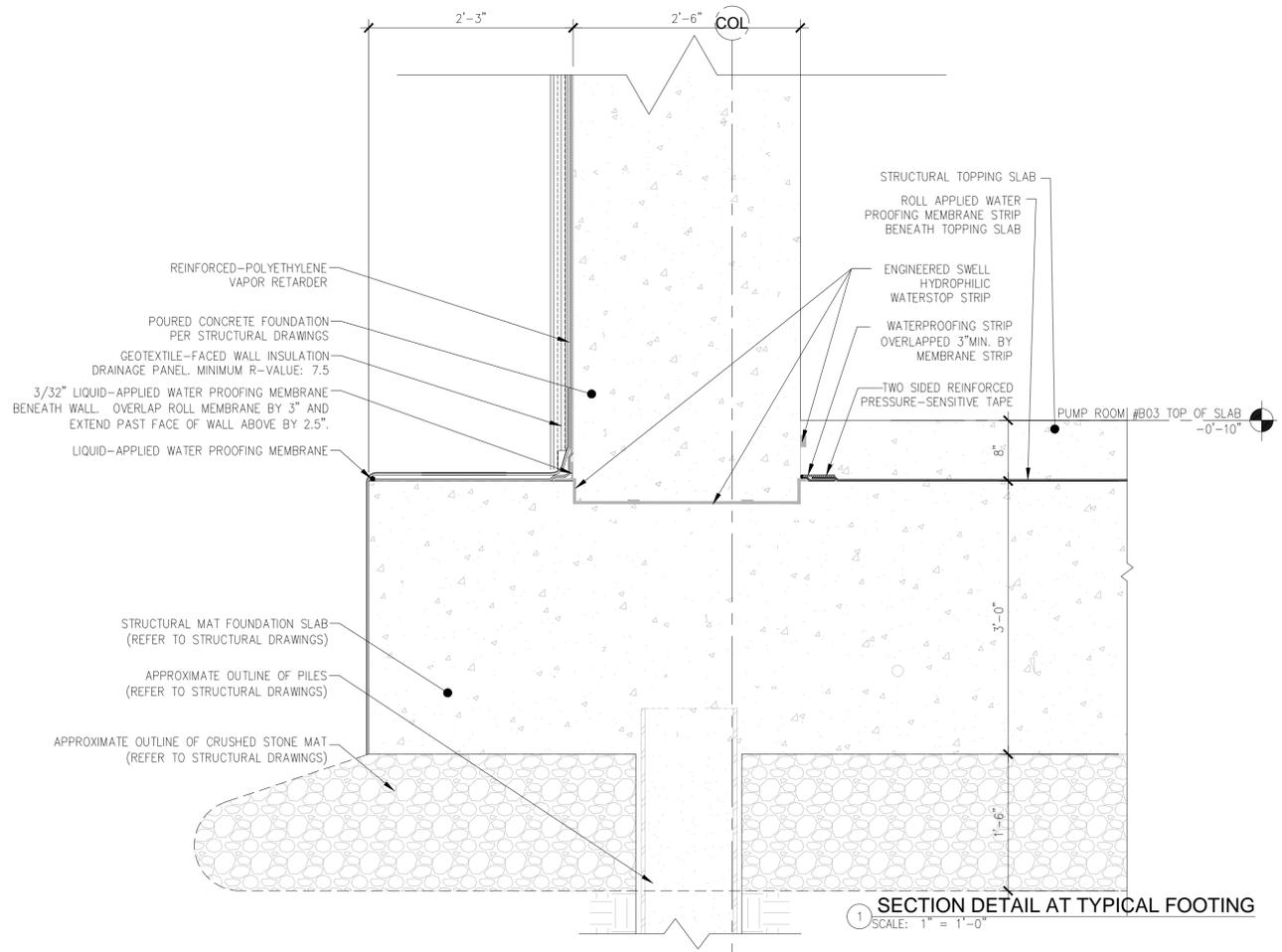
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



3 SECTION DETAIL AT TYPICAL FINISH FLOOR
SCALE: 1-1/2" = 1'-0"



2 SECTION DETAIL AT FOUNDATION & VALVE VAULT ROOF
SCALE: 1-1/2" = 1'-0"



1 SECTION DETAIL AT TYPICAL FOOTING
SCALE: 1" = 1'-0"

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-5.2.dwg PLOTTED: May 05, 2016 4:44 pm BY: settawar



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

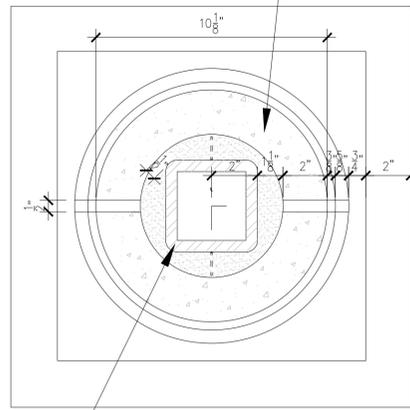
FLOOR TO WALL
CONNECTIONS

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

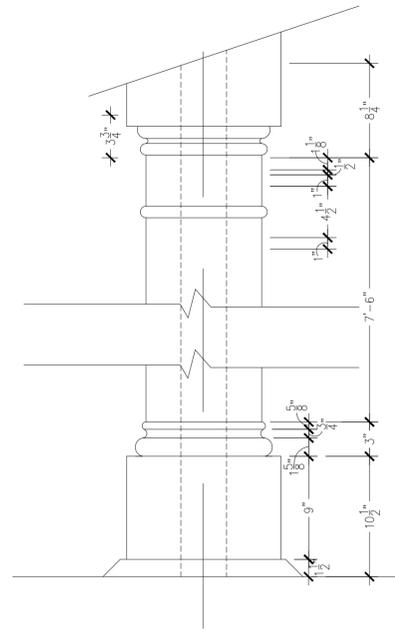
A-5.2

LIGHT WEIGHT CAST STONE COLUMN INSTALLED/ANCHORED PER MANUFACTURER'S INSTRUCTIONS

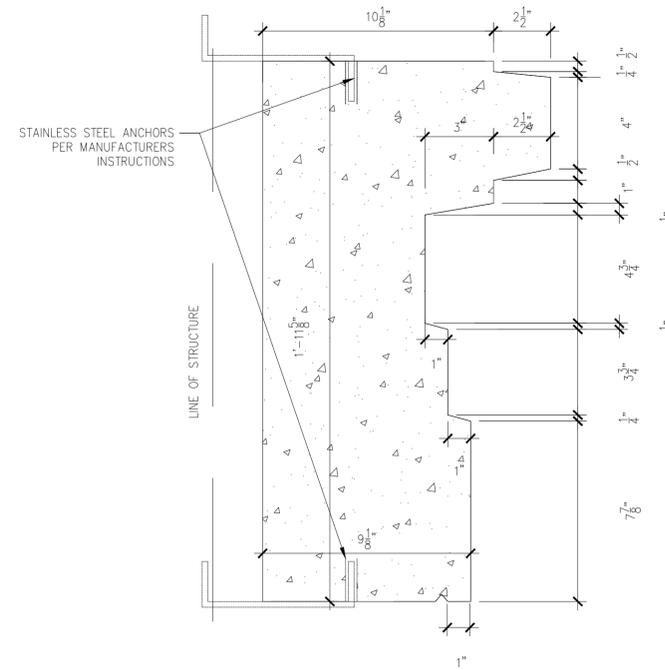


STEEL COLUMN REFER STRUCTURAL DWGS.

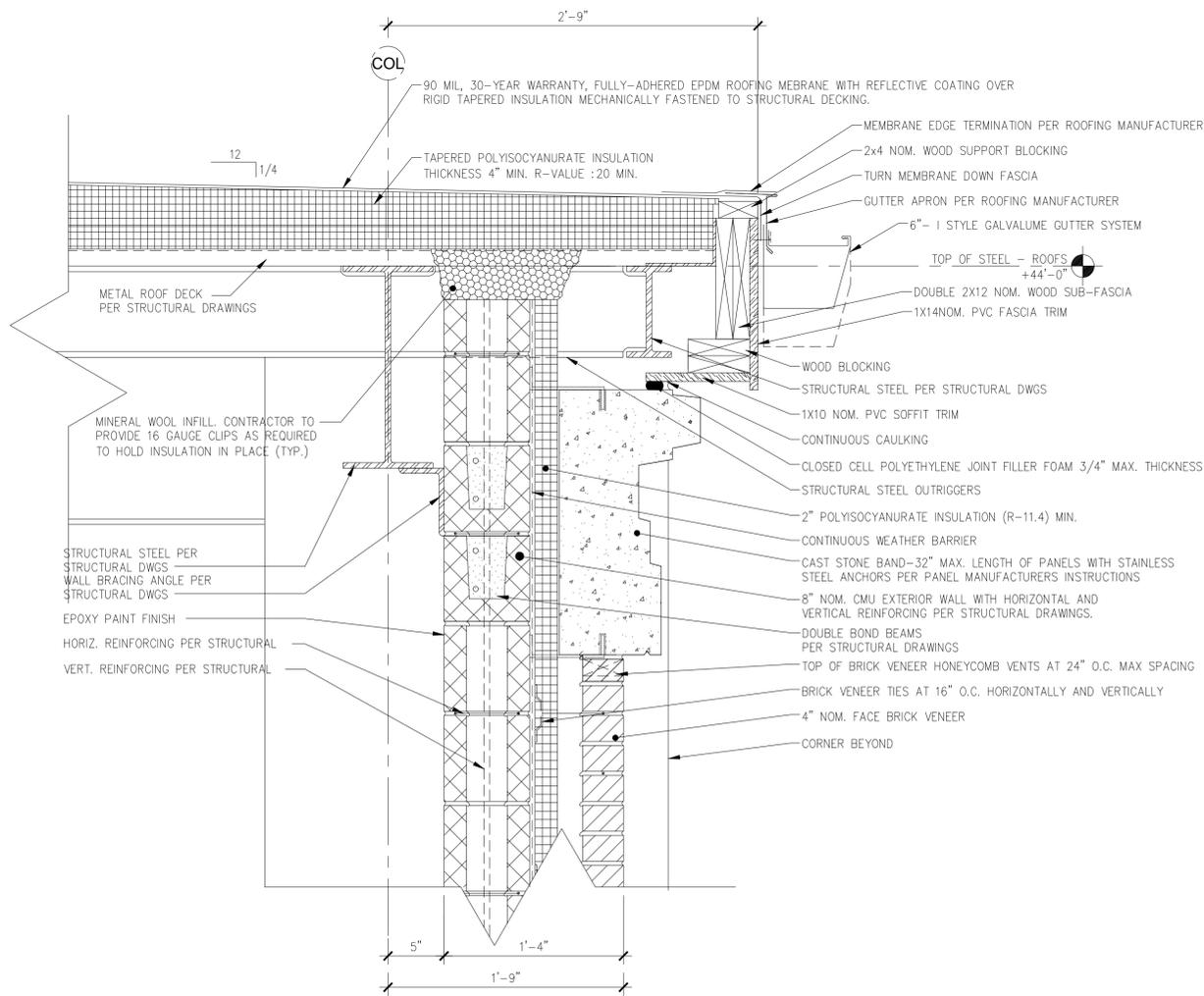
5 TYPICAL CAST STONE COLUMN PLAN DETAIL
SCALE: 3" = 1'-0"



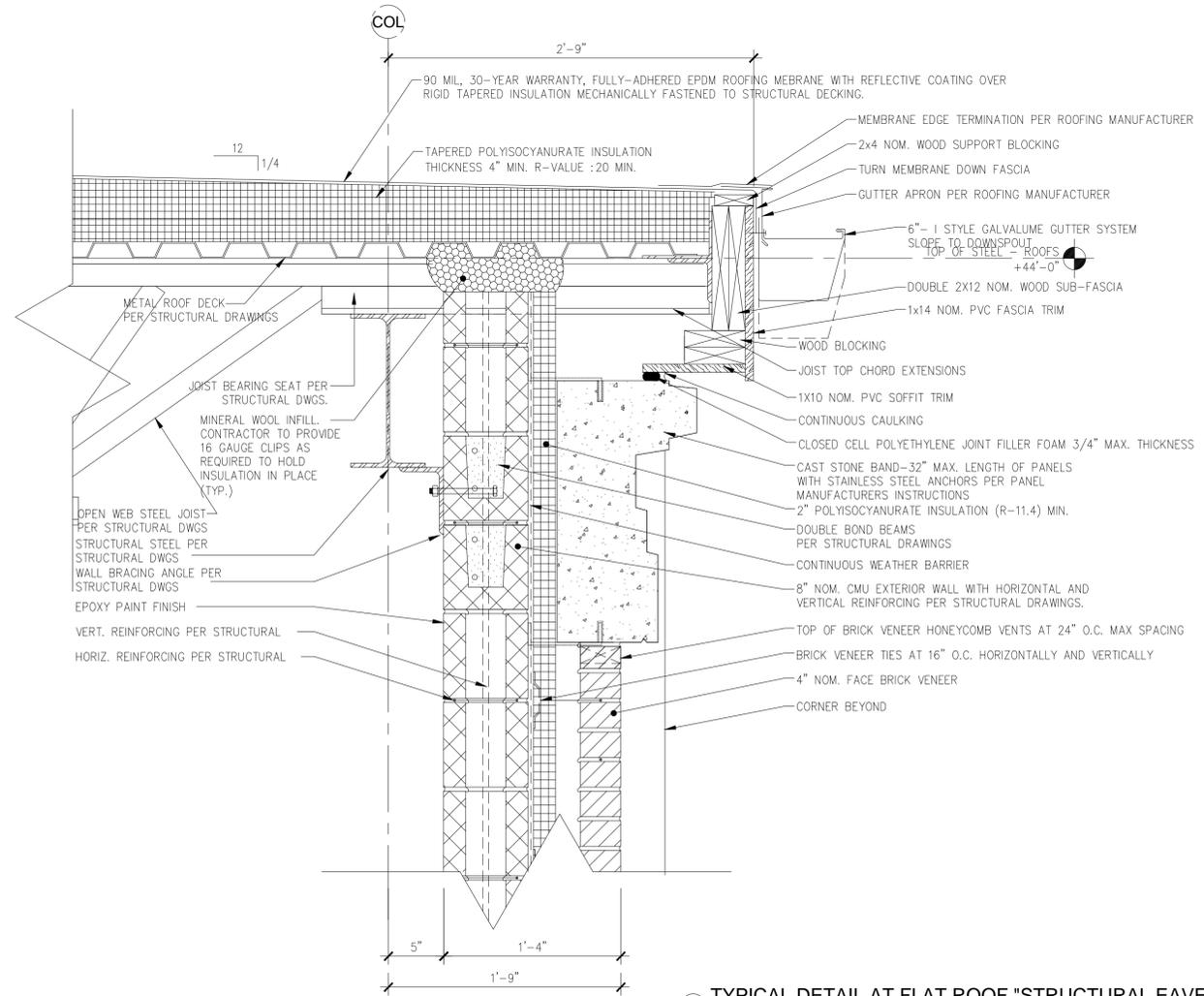
4 TYPICAL CAST STONE COLUMN DETAIL
SCALE: 1-1/2" = 1'-0"



3 TYPICAL CAST STONE BAND DETAIL
SCALE: 3" = 1'-0"



2 TYPICAL DETAIL AT FLAT ROOF "STRUCTURAL RAKE"
SCALE: 1-1/2" = 1'-0"



1 TYPICAL DETAIL AT FLAT ROOF "STRUCTURAL EAVE"
SCALE: 1-1/2" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

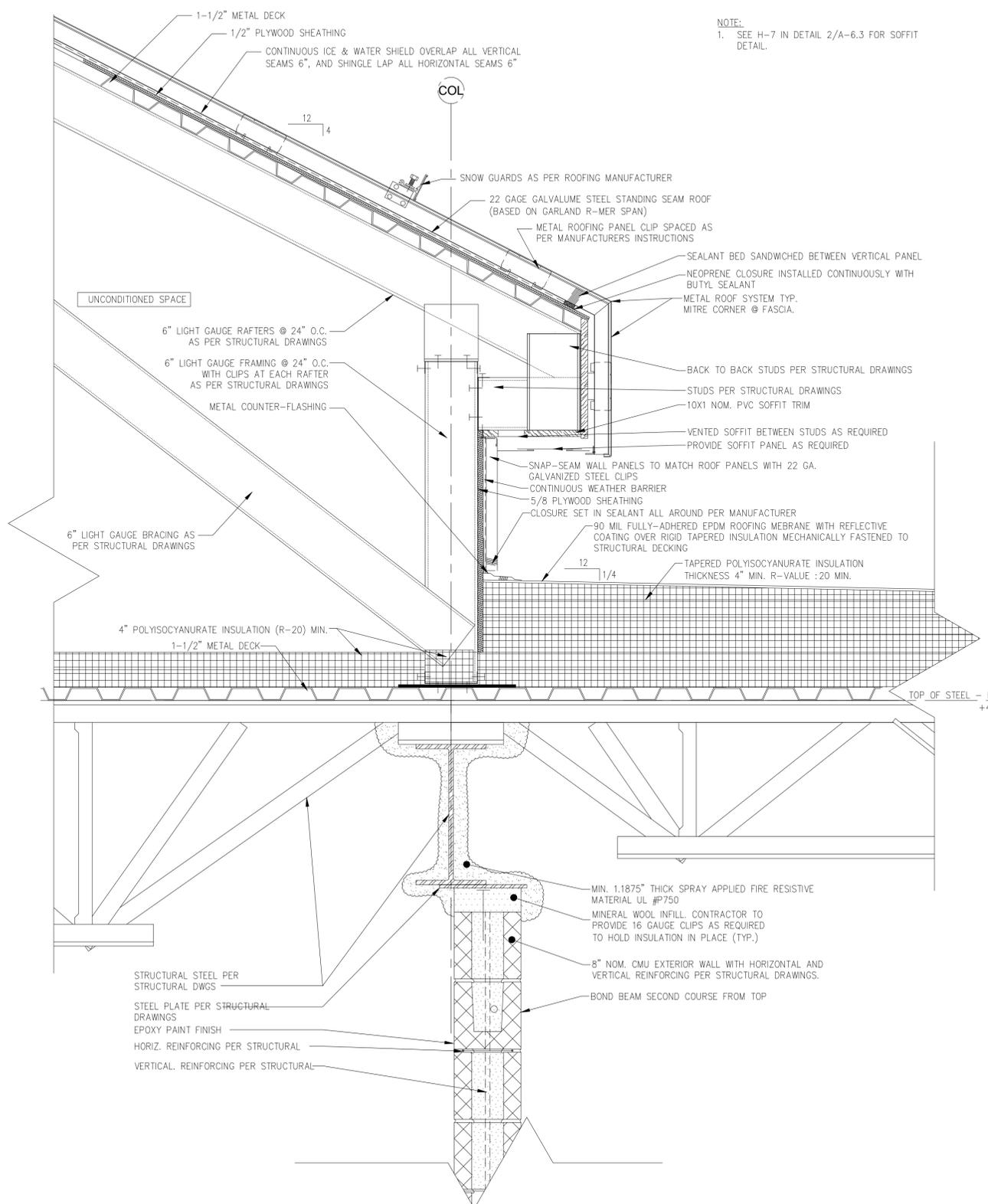
FLAT ROOF TO
WALL CONNECTION

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016

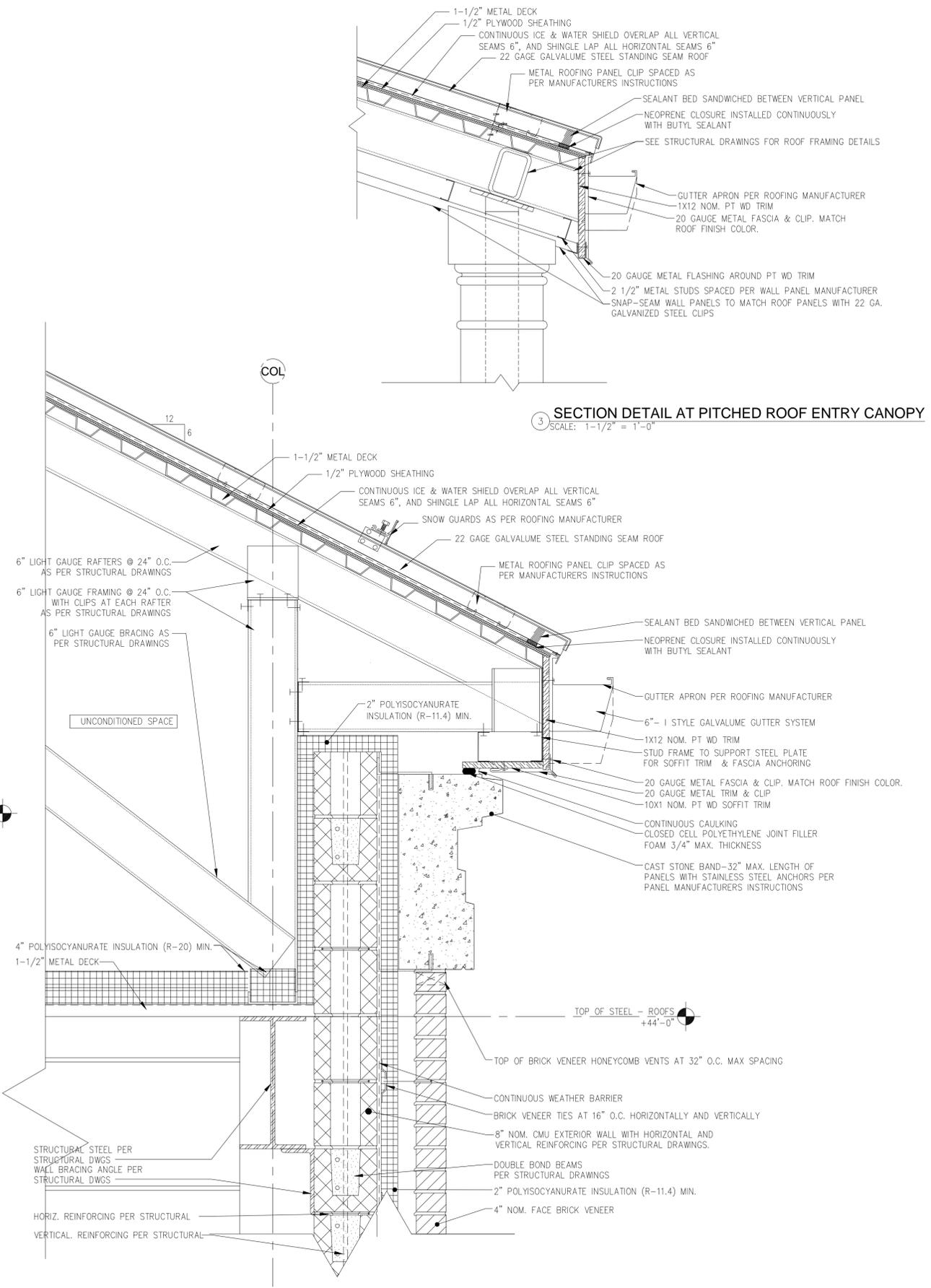
SHEET NUMBER:

A-5.3

DRAWING FILE: N:\Projects\13005 Middletown Pump Station\Contract Documents\A-5.2.dwg PLOTTED: May 05, 2016 10:44:44pm BY: sattlewar



SECTION DETAIL AT PITCHED ROOF "FLASHED EAVE"
SCALE: 1-1/2" = 1'-0"



SECTION DETAIL AT PITCHED ROOF "DECORATIVE EAVE"
SCALE: 1-1/2" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

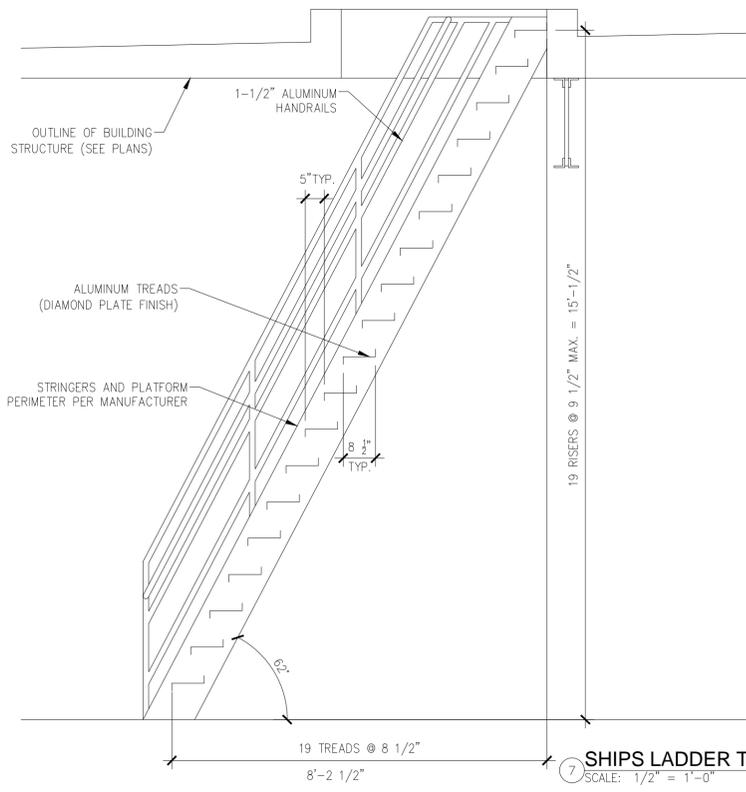


FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

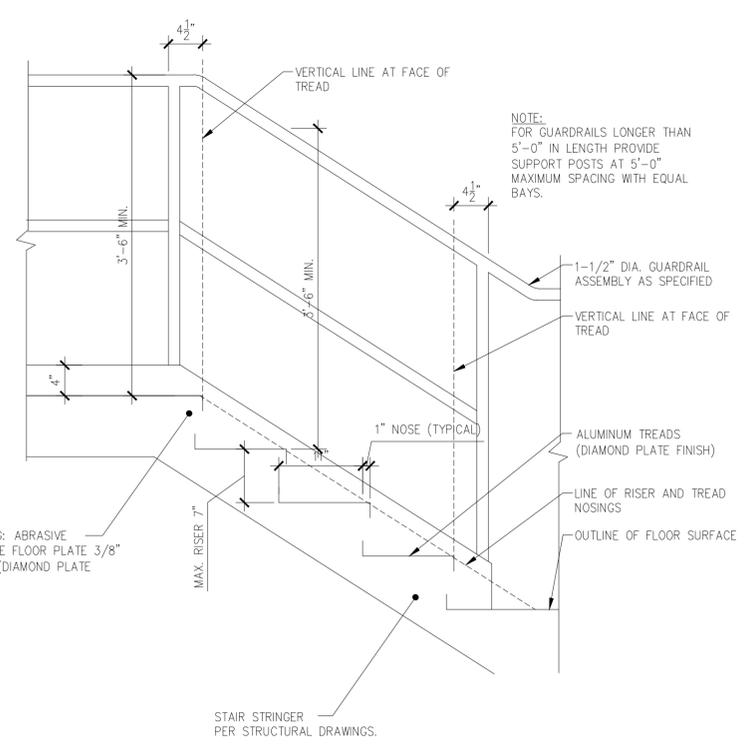
PITCHED ROOF TO WALL CONNECTION

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

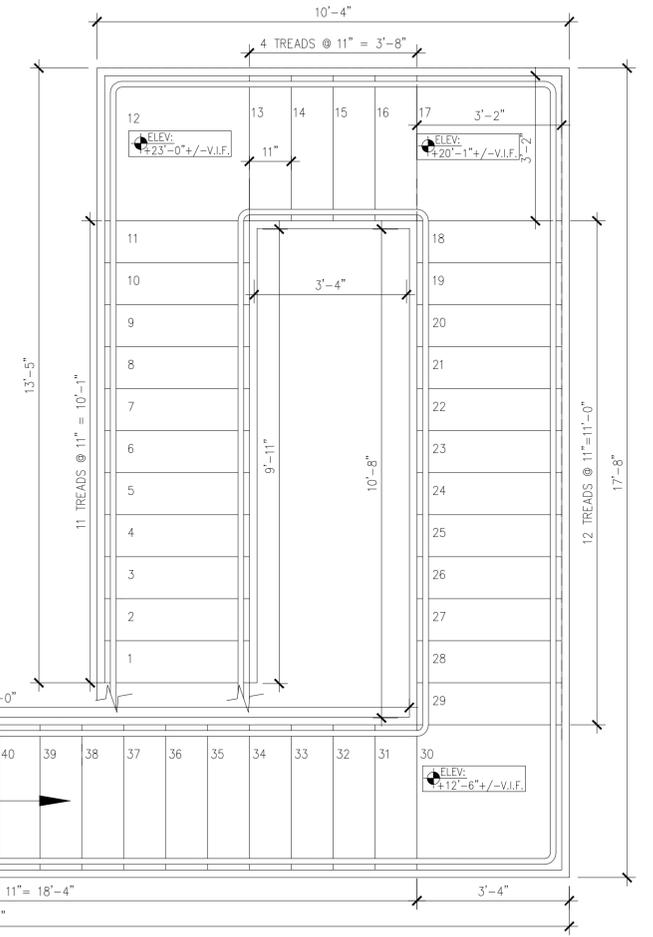
A-5.4



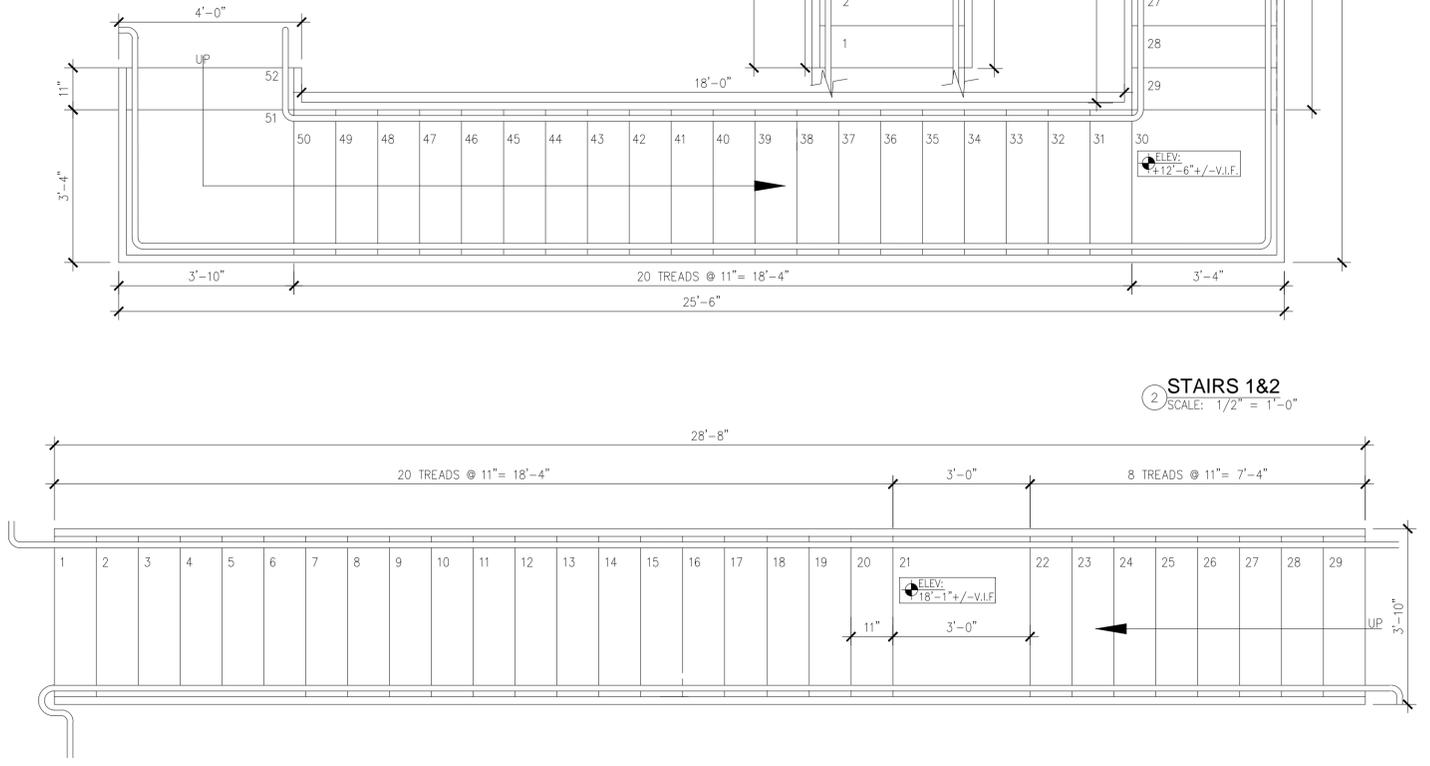
7 SHIPS LADDER TYPICAL
SCALE: 1/2" = 1'-0"



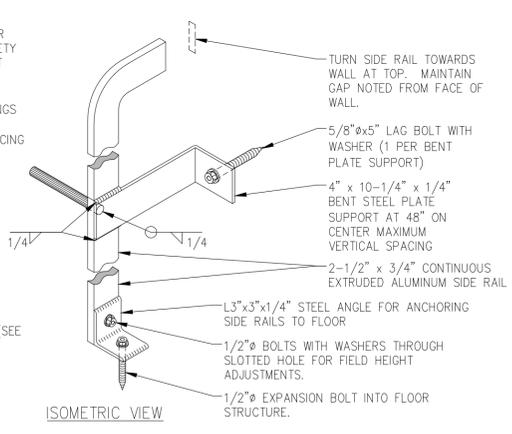
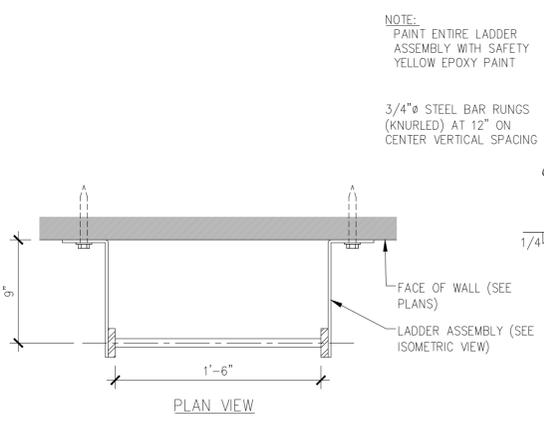
6 TYPICAL INTERIOR STAIR AND HANDRAIL DETAIL
SCALE: 1" = 1'-0"



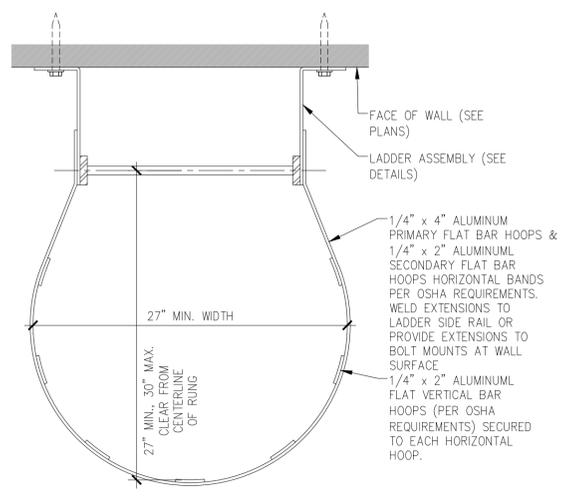
2 STAIRS 1&2
SCALE: 1/2" = 1'-0"



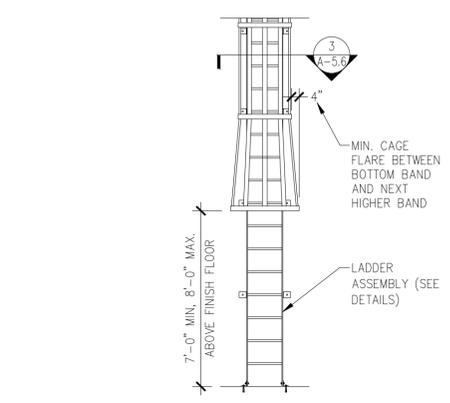
1 STAIRS 3&4
SCALE: 1/2" = 1'-0"



4 DETAIL AT ATTIC ACCESS LADDER
SCALE: 1-1/2" = 1'-0"



5 DETAIL AT ACCESS LADDER SAFETY CAGE
SCALE: 1-1/2" = 1'-0"



3 ELEVATION DETAIL AT ACCESS LADDER SAFETY CAGE
SCALE: 1/4" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STAIR DETAILS

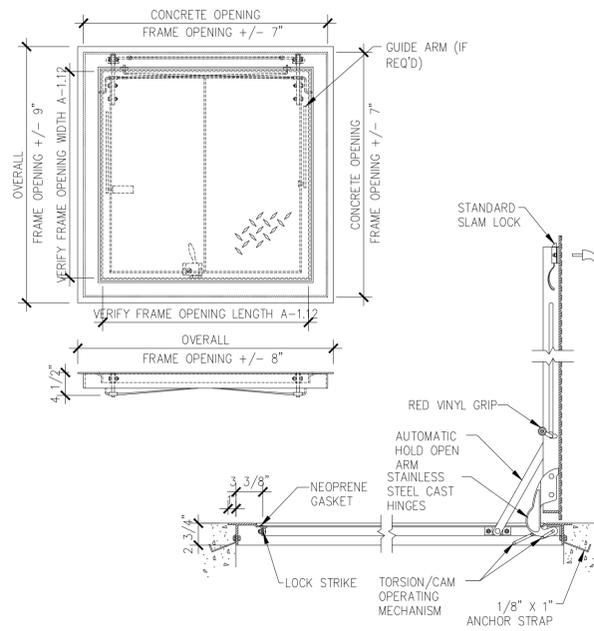
PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: LRE
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-5.6

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-5.2... (Details).dwg PLOTTED: May 05, 2016 4:47pm BY: sattawar

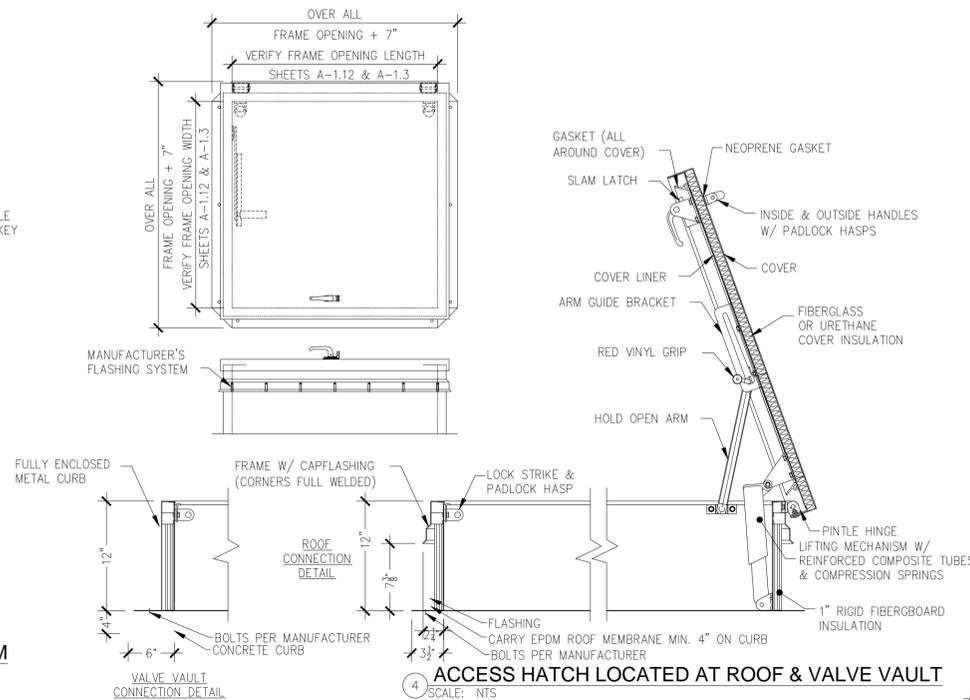
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

NOTE:
1. COORDINATE ALL ACCESS DOORS WITH SPECIFICATION SECTION 08310

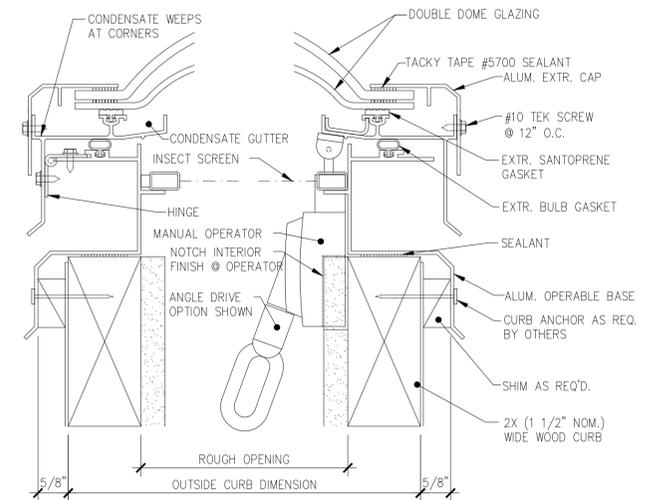


6 FLOOR HATCH LOCATED AT SCREENINGS & GRIT ROOM
SCALE: NTS

NOTE:
1. COORDINATE ALL ACCESS DOORS WITH SPECIFICATION SECTION 08310

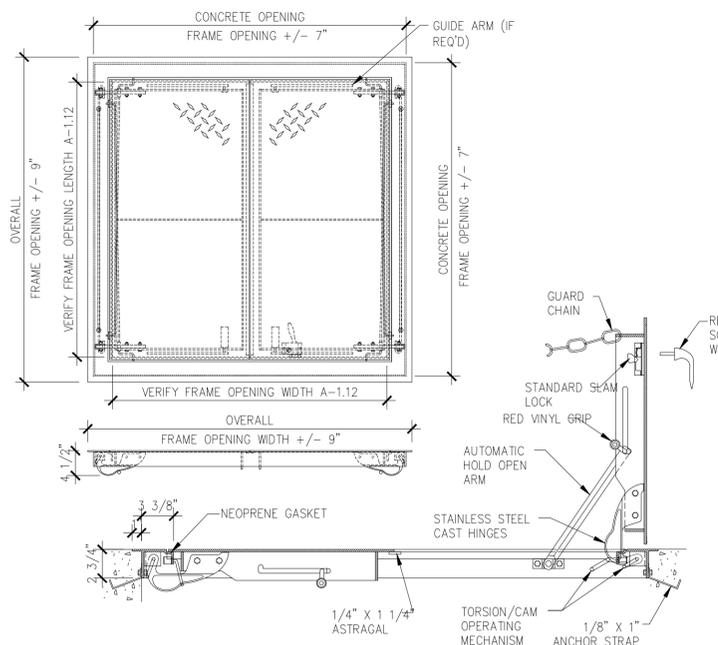


4 ACCESS HATCH LOCATED AT ROOF & VALVE VAULT
SCALE: NTS



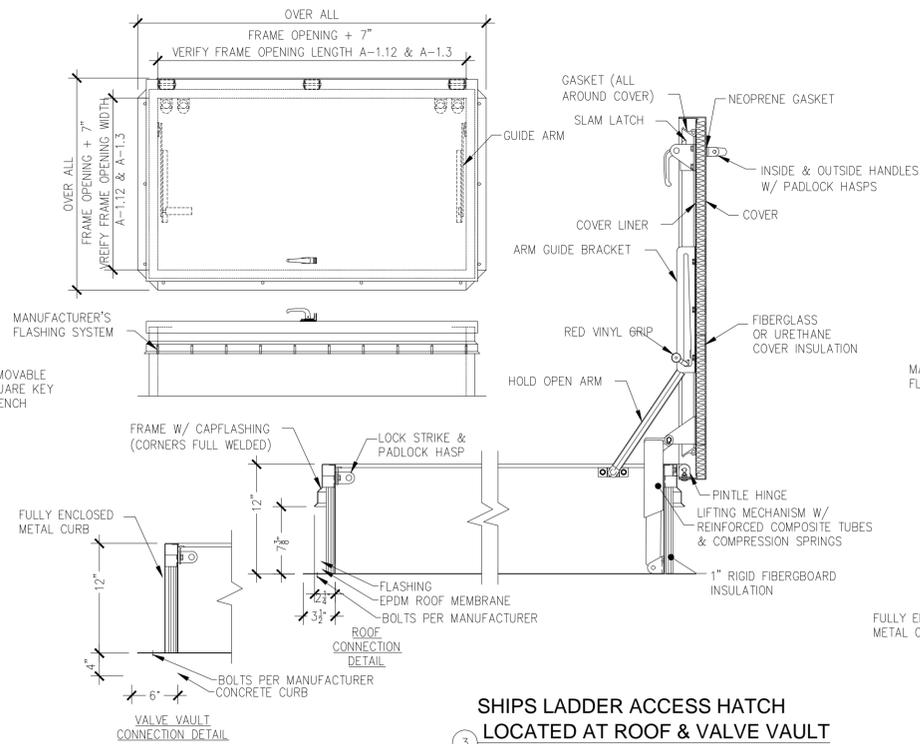
2 SECTION AT OPERABLE DOUBLE DOME SKYLIGHT
SCALE: NTS

NOTE:
1. COORDINATE ALL ACCESS DOORS WITH SPECIFICATION SECTION 08310



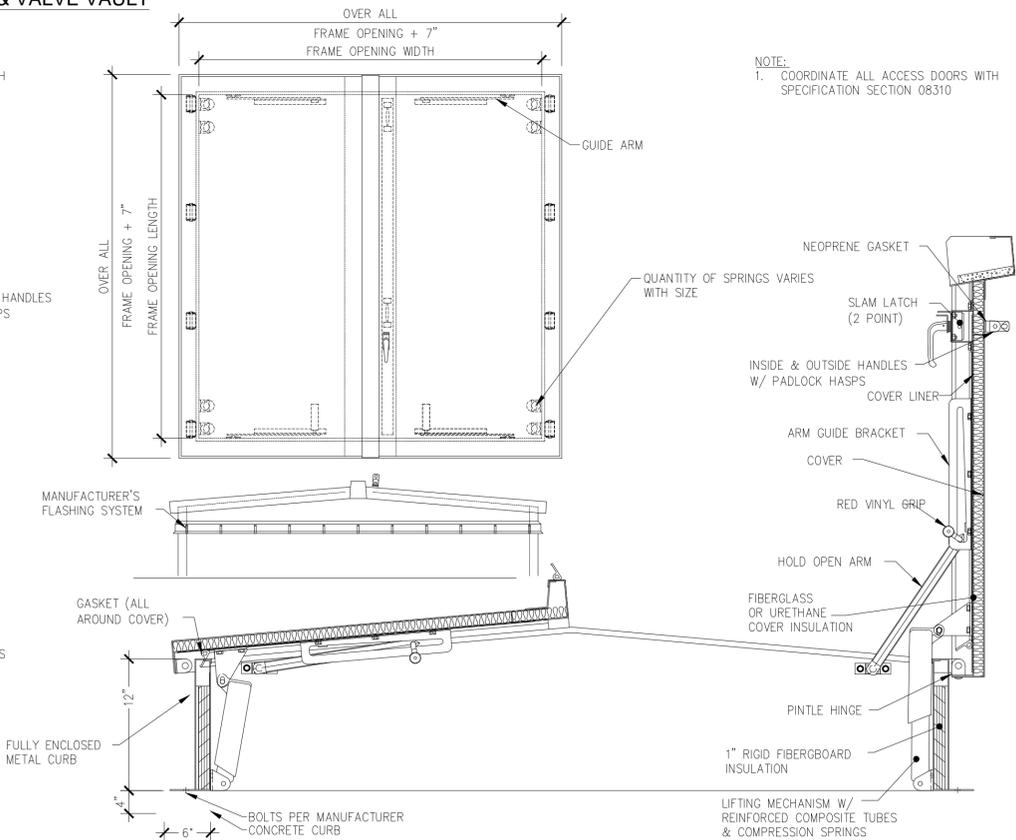
5 EQUIPMENT ACCESS HATCH LOCATED AT MAINTENANCE ROOM & WET WELL HATCH
SCALE: NTS

NOTE:
1. COORDINATE ALL ACCESS DOORS WITH SPECIFICATION SECTION 08310



3 SHIPS LADDER ACCESS HATCH LOCATED AT ROOF & VALVE VAULT
SCALE: NTS

NOTE:
1. COORDINATE ALL ACCESS DOORS WITH SPECIFICATION SECTION 08310



1 EXTERIOR EQUIPMENT ACCESS HATCH LOCATED AT VALVE VAULT
SCALE: NTS



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

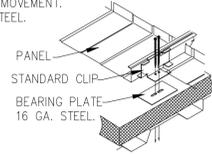
ACCESS HATCH DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

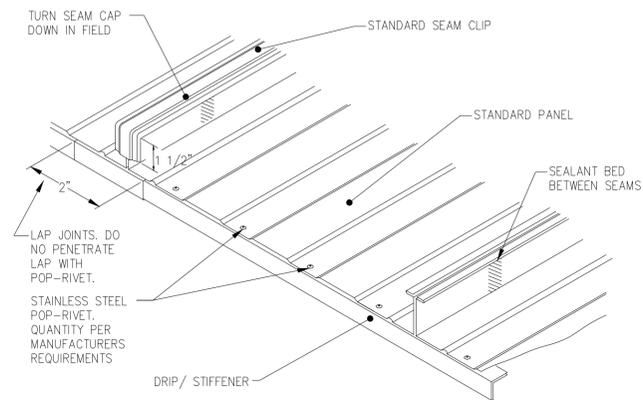
A-5.7

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

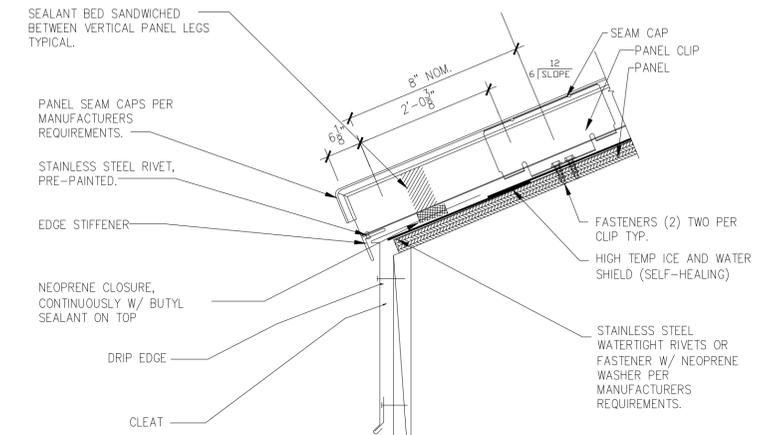
STANDARD PANEL CLIP
 • ONE-PIECE DESIGN ALLOWING UNLIMITED THERMAL MOVEMENT.
 • 16 GA. STAINLESS STEEL.



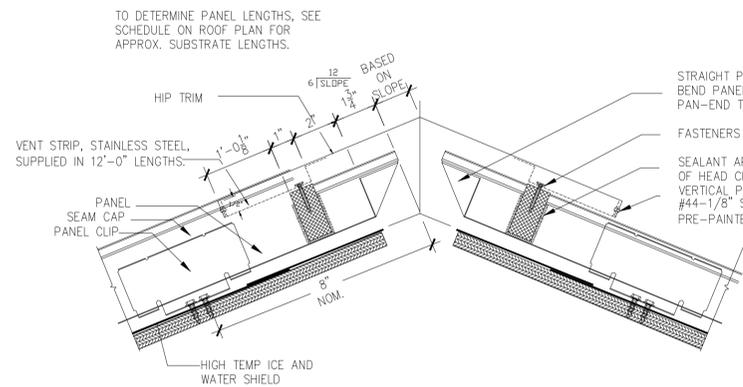
6 BEARING PLATE, PANEL AND CLIP
SCALE: NTS



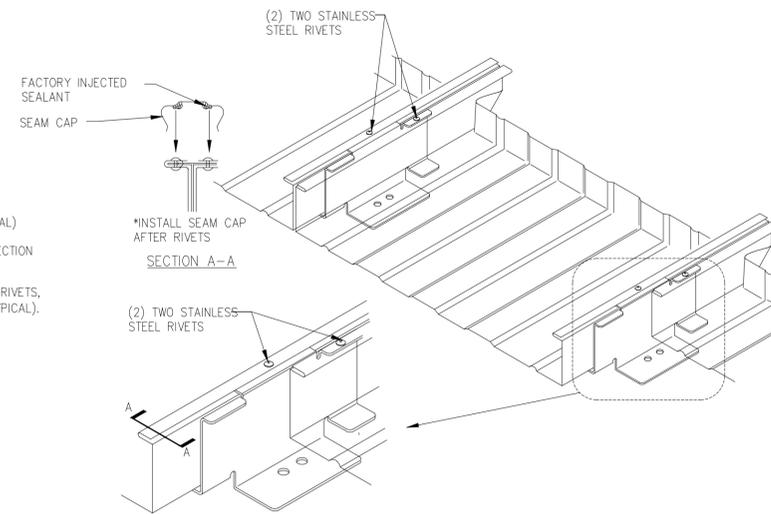
4 STANDARD SEAM-END CLOSURE
SCALE: NTS



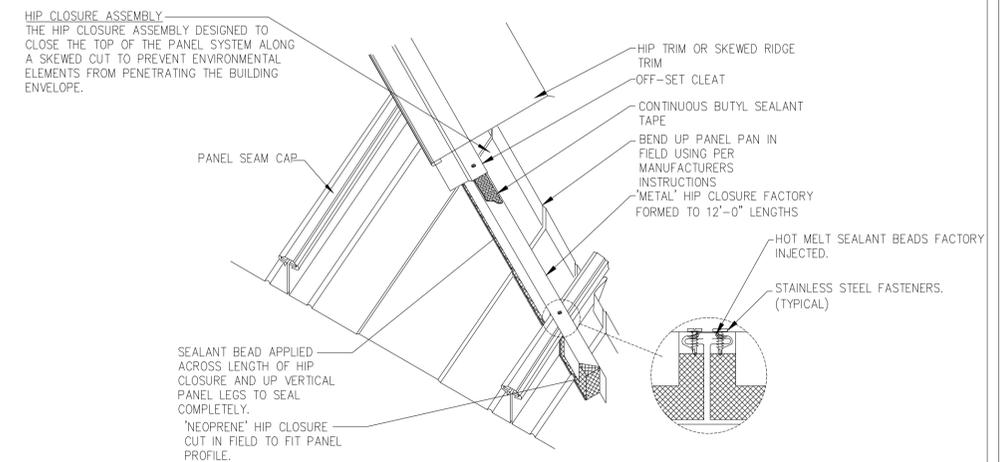
2 EAVE DETAIL
SCALE: NTS



5 FIXED VENT AT HIP
SCALE: NTS



3 FIXED PANEL DETAIL
SCALE: NTS



1 HIP DETAIL
SCALE: N.T.S.

DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-5.7_-5.10(Details).dwg PLOTTED: May 05, 2016 4:49pm BY: sattwar



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

TYPICAL STANDING
SEAM ROOF
DETAILS

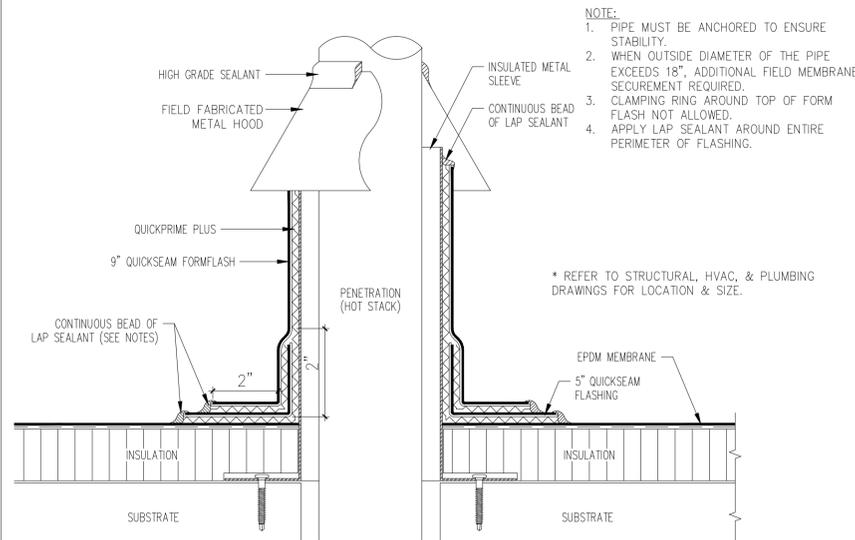
PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

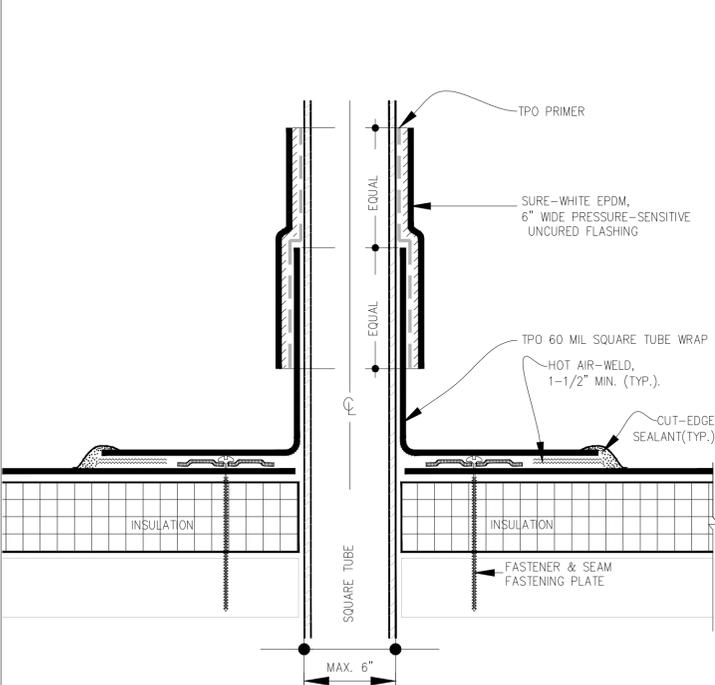
A-5.8

REVISIONS

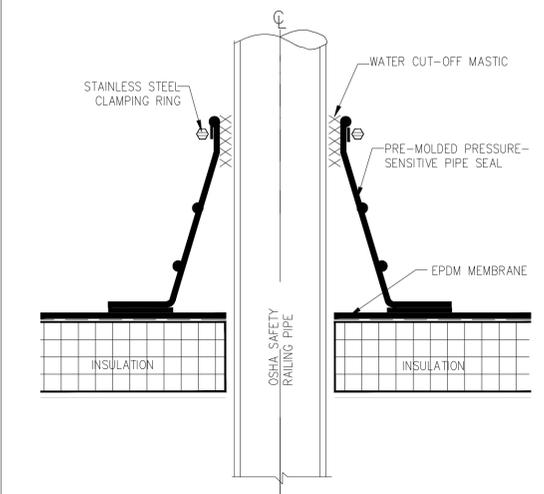
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



11 TYPICAL PENETRATION (HOT STACK) WITH PIPE FLASHING DETAIL
 SCALE: 6" = 1'-0"



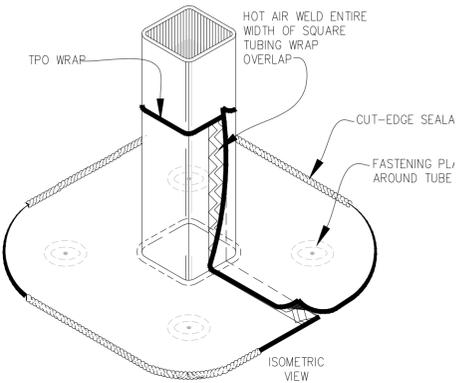
10 TYPICAL PENETRATION (LOUVER RAILING) WITH PIPE FLASHING DETAIL
 SCALE: 6" = 1'-0"



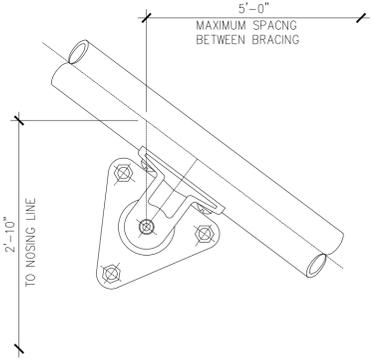
6 TYPICAL PENETRATION (OSHA SAFETY RAILING) WITH PIPE FLASHING DETAIL
 SCALE: 6" = 1'-0"

- NOTE:
1. PIPE MUST BE ANCHORED TO ENSURE STABILITY.
 2. WHEN OUTSIDE DIAMETER OF THE PIPE EXCEEDS 18", ADDITIONAL FIELD MEMBRANE SECUREMENT REQUIRED.
 3. CLAMPING RING AROUND TOP OF FORM FLASH NOT ALLOWED.
 4. APPLY LAP SEALANT AROUND ENTIRE PERIMETER OF FLASHING.

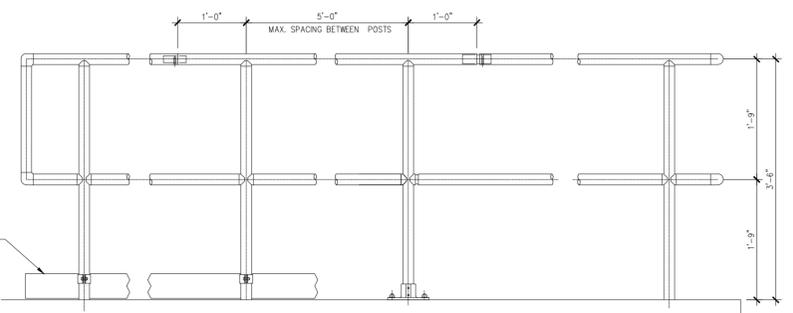
* REFER TO STRUCTURAL, HVAC, & PLUMBING DRAWINGS FOR LOCATION & SIZE.



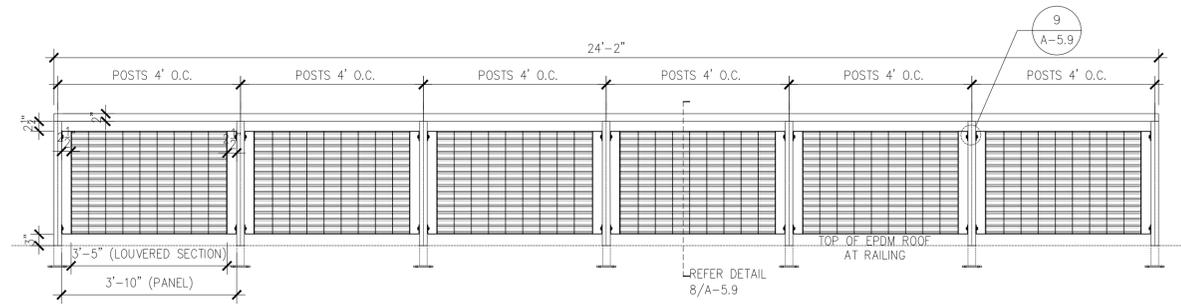
- NOTES:
1. INSTALL A MINIMUM OF 4 SEAM FASTENING PLATES FOR TUBE SIDE DIMENSIONS UP TO 6".
 2. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEM.
 3. APPROXIMATELY 1/8" DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED TPO MEMBRANE. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, THERMOPLASTIC "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SQUARE TUBE WRAP.



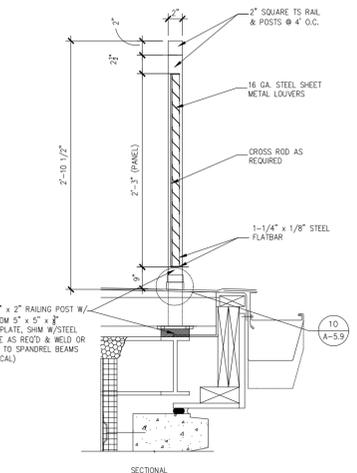
5 TYPICAL WALL RAILING DETAILS
 SCALE: NTS



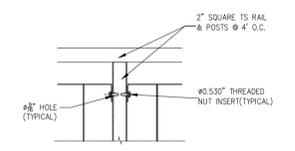
2 TYPICAL OSHA RAILINGS DIMENSIONS
 SCALE: NTS



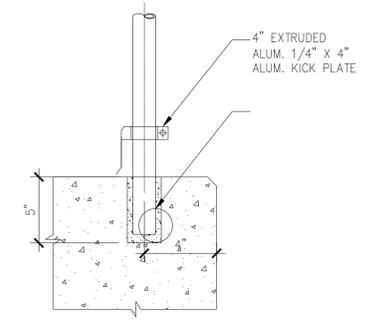
7 TYPICAL DECORATIVE LOUVERED RAILINGS DIMENSIONS
 SCALE: NTS



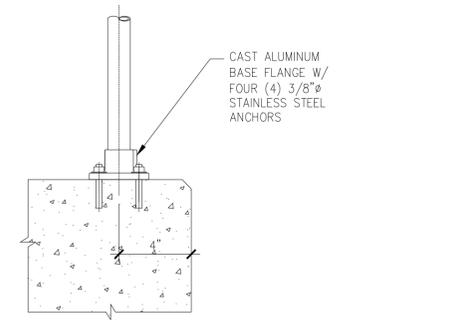
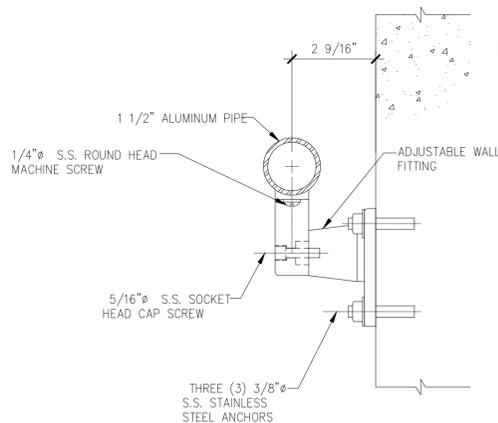
8 SECTION DETAIL
 SCALE: NTS



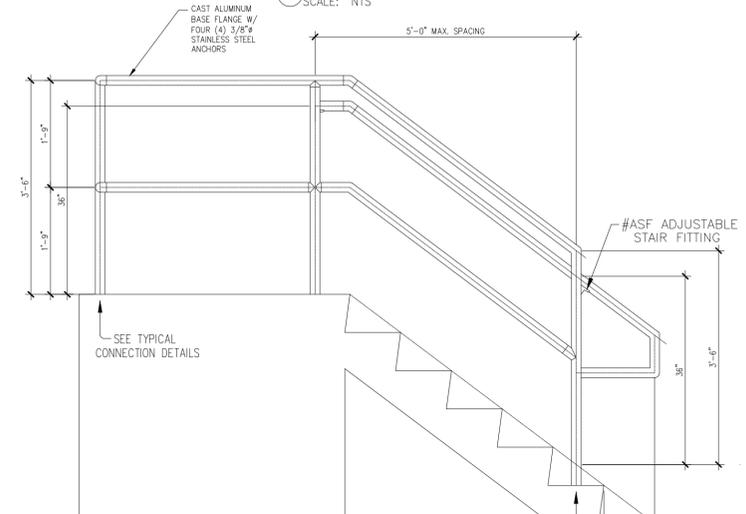
9 TYPICAL CONNECTION DETAIL
 SCALE: NTS



4 TYPICAL CONCRETE CONNECTION WITH KICK PLATE
 SCALE: NTS



3 REMOVABLE RAILING CONNECTION DETAIL
 SCALE: NTS



1 TYPICAL EXTERIOR STAIR RAILING DIMENSIONS
 SCALE: NTS

DRAWING FILE: N:\Projects\13005 Middletown Pump Station\Contract Documents\A-5.7_-5.10(Details).dwg PLOTTED: May 05, 2016 4:49pm BY: satoraw



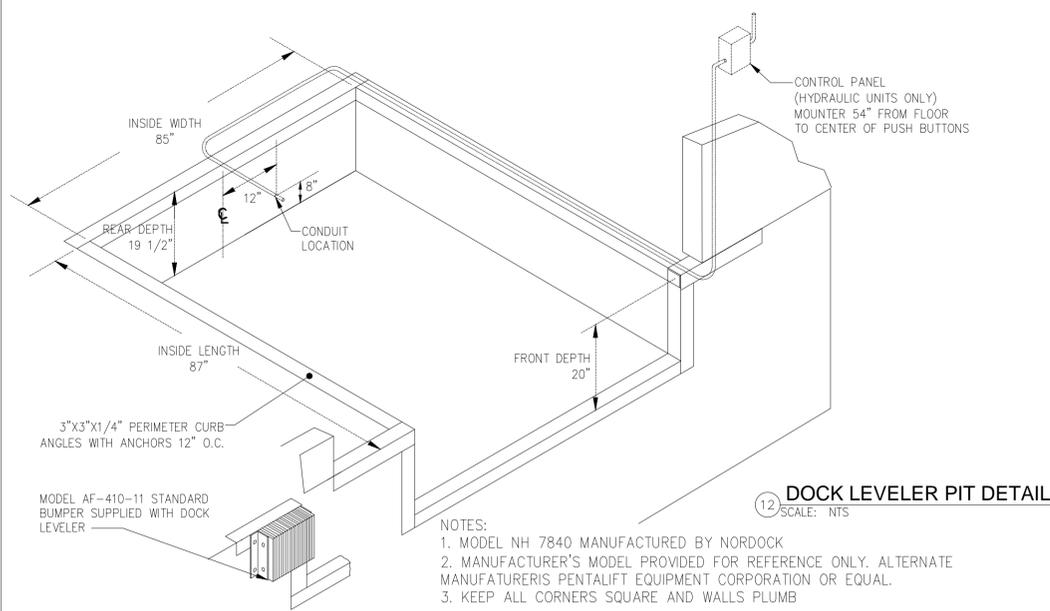
FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

RAILING DETAILS

PROJECT NUMBER: 14712
 DESIGNED BY: PSP
 DRAWN BY: PM
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

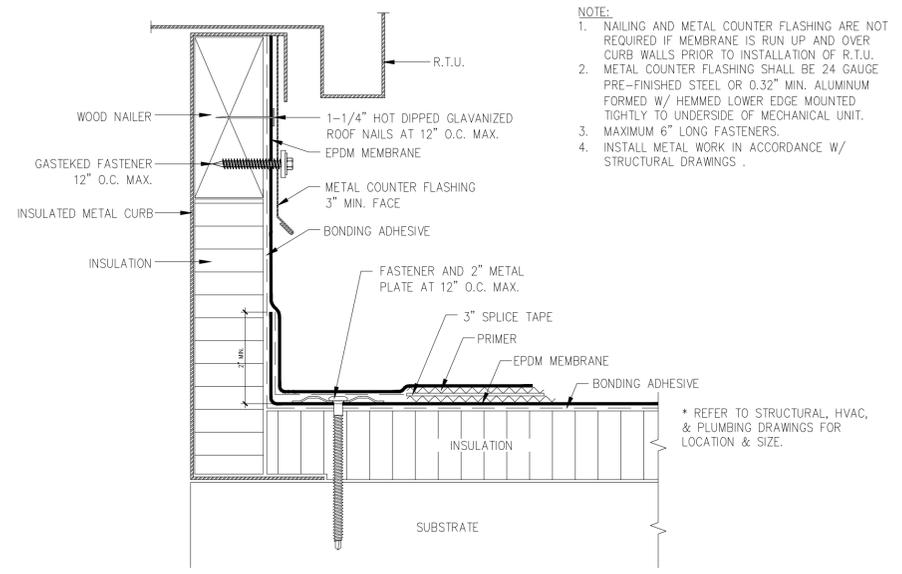
A-5.9

DRAWING FILE: N:\Projects\13005 Middletown Pump Station\Contract Documents\A-5.7_-_S-10(Details).dwg PLOTTED: May 05, 2016 4:45pm BY: sstwater



12 DOCK LEVELER PIT DETAIL
SCALE: NTS

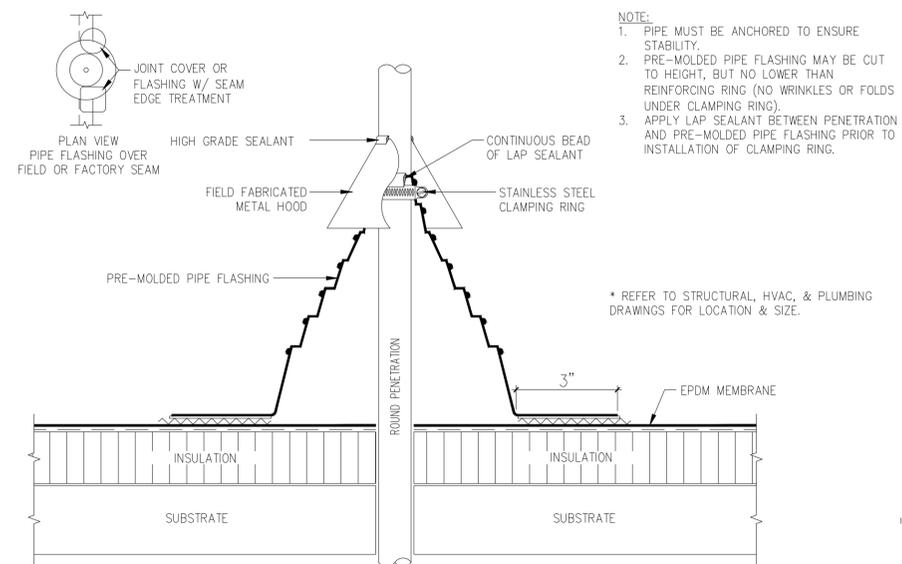
- NOTES:
 1. MODEL NH 7840 MANUFACTURED BY NORDOCK
 2. MANUFACTURER'S MODEL PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S PENTALIFT EQUIPMENT CORPORATION OR EQUAL.
 3. KEEP ALL CORNERS SQUARE AND WALLS PLUMB



10 TYPICAL TERMINATION AT RTU WITH SPLICE TAPE & COUNTERFLASHING DETAIL
SCALE: 6" = 1'-0"

- NOTE:
 1. NAILING AND METAL COUNTER FLASHING ARE NOT REQUIRED IF MEMBRANE IS RUN UP AND OVER CURB WALLS PRIOR TO INSTALLATION OF R.T.U.
 2. METAL COUNTER FLASHING SHALL BE 24 GAUGE PRE-FINISHED STEEL OR 0.32" MIN. ALUMINUM FORMED W/ HEMMED LOWER EDGE MOUNTED TIGHTLY TO UNDERSIDE OF MECHANICAL UNIT.
 3. MAXIMUM 6" LONG FASTENERS.
 4. INSTALL METAL WORK IN ACCORDANCE W/ STRUCTURAL DRAWINGS.

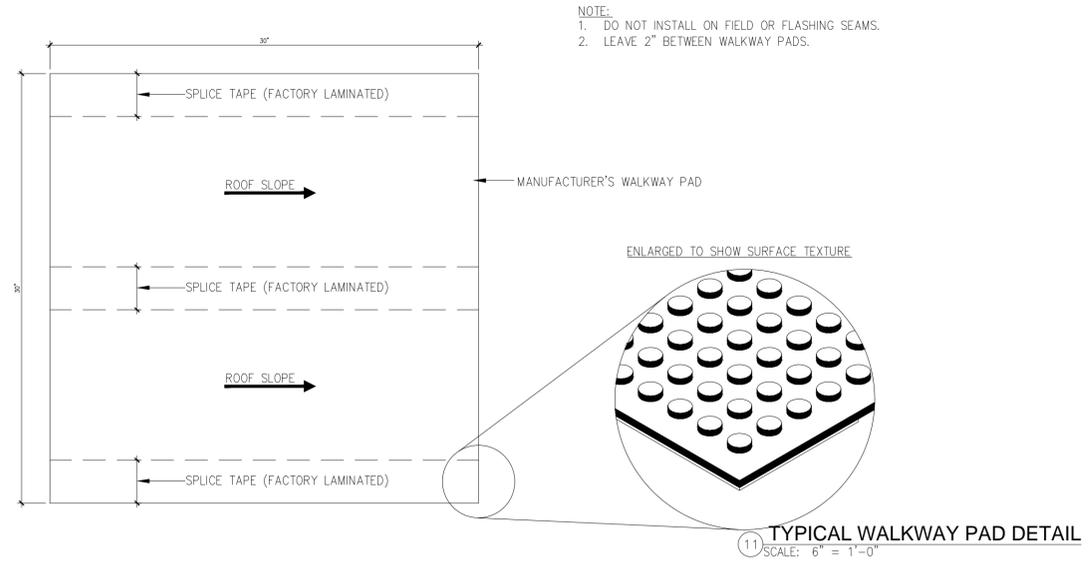
* REFER TO STRUCTURAL, HVAC, & PLUMBING DRAWINGS FOR LOCATION & SIZE.



9 TYPICAL PENETRATION WITH PIPE FLASHING DETAIL
SCALE: 6" = 1'-0"

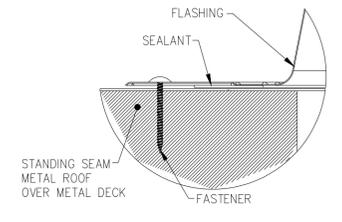
- NOTE:
 1. PIPE MUST BE ANCHORED TO ENSURE STABILITY.
 2. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING).
 3. APPLY LAP SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING.

* REFER TO STRUCTURAL, HVAC, & PLUMBING DRAWINGS FOR LOCATION & SIZE.

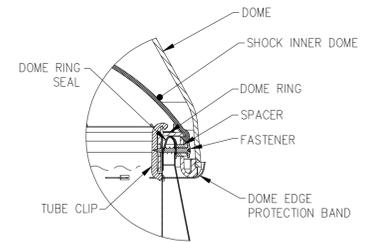


11 TYPICAL WALKWAY PAD DETAIL
SCALE: 6" = 1'-0"

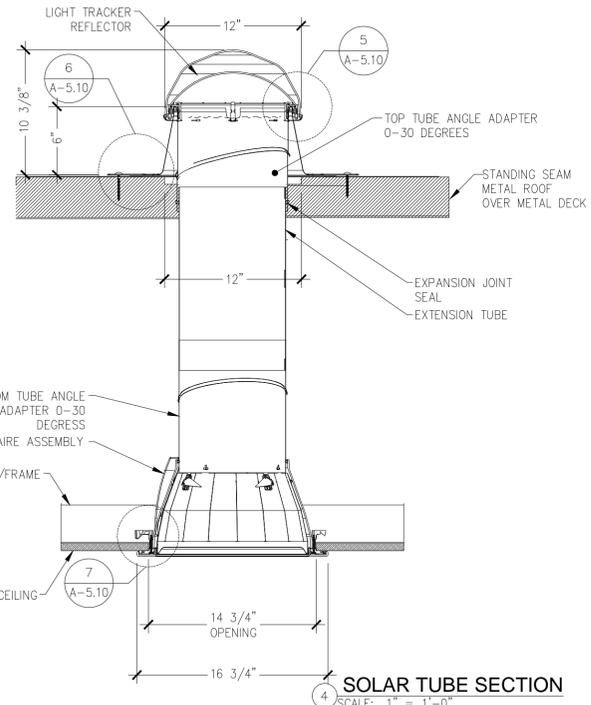
- NOTE:
 1. DO NOT INSTALL ON FIELD OR FLASHING SEAMS.
 2. LEAVE 2" BETWEEN WALKWAY PADS.



6 SOLAR TUBE ROOF FASTENER DETAIL
SCALE: NTS

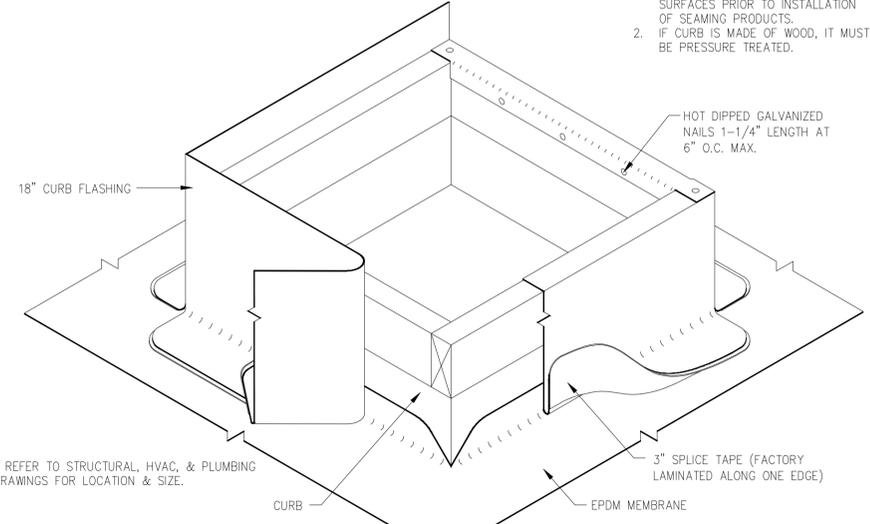


5 SOLAR TUBE DOME FASTENER DETAIL
SCALE: NTS



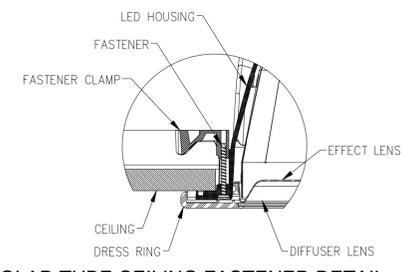
4 SOLAR TUBE SECTION
SCALE: 1" = 1'-0"

- NOTE:
 1. CLEAN AND PRIME EPDM MATING SURFACES PRIOR TO INSTALLATION OF SEAMING PRODUCTS.
 2. IF CURB IS MADE OF WOOD, IT MUST BE PRESSURE TREATED.

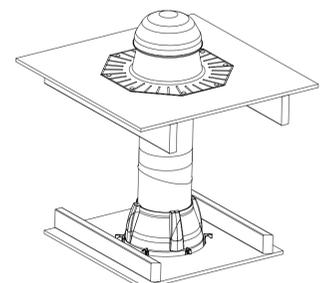


8 TYPICAL CURB FLASHING DETAIL
SCALE: 6" = 1'-0"

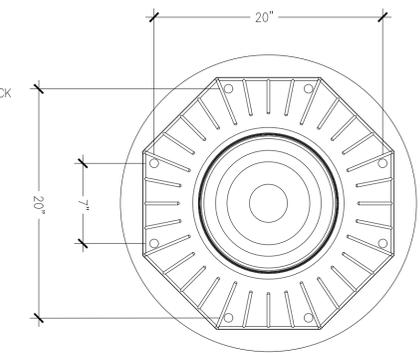
REFER TO STRUCTURAL, HVAC, & PLUMBING DRAWINGS FOR LOCATION & SIZE.



7 SOLAR TUBE CEILING FASTENER DETAIL
SCALE: NTS

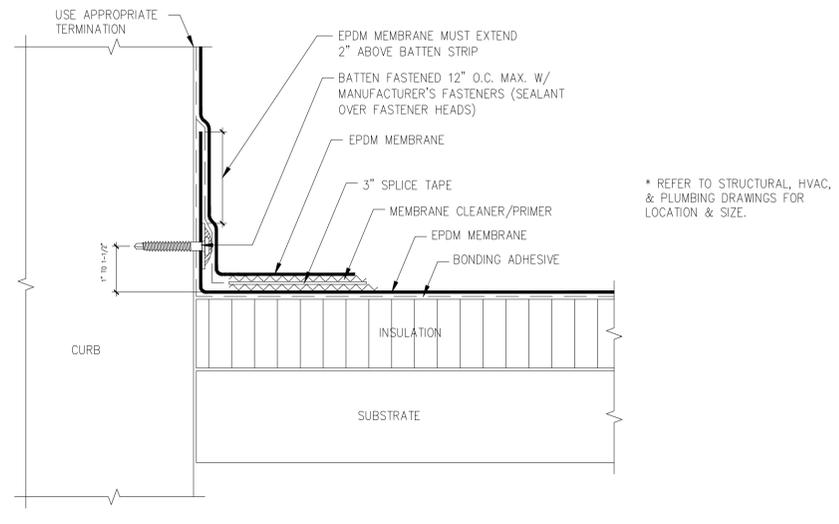


3 SOLAR TUBE AXONOMETRIC
SCALE: NTS



2 SOLAR TUBE TOP VIEW
SCALE: NTS

- NOTES:
 1. ALL TUBE JOINTS & SEAMS TAPED WITH 2" FOIL TAPE (NOT SHOWN).
 2. 6" MIN CLEARANCE SHOULD BE MAINTAINED FROM ALL DAY-LIGHTING DEVICE COMPONENTS AND OTHER PLENUM COMPONENTS.
 3. FASTENERS SHALL NOT EXCEED 24" O.C.



1 TYPICAL BASE TIE-IN WITH BATTEN FASTENED TO CURB DETAIL
SCALE: 6" = 1'-0"

* REFER TO STRUCTURAL, HVAC, & PLUMBING DRAWINGS FOR LOCATION & SIZE.

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION MIDDLETOWN, CT

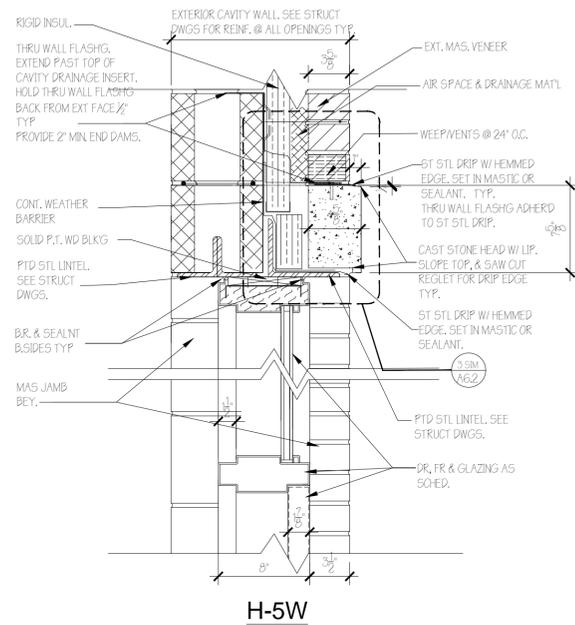
DOCK LEVELER PIT DETAIL SOLAR TUBE DETAILS

PROJECT NUMBER: 14712
 DESIGNED BY: PSP
 DRAWN BY: PM
 DATE: FEBRUARY 23, 2016

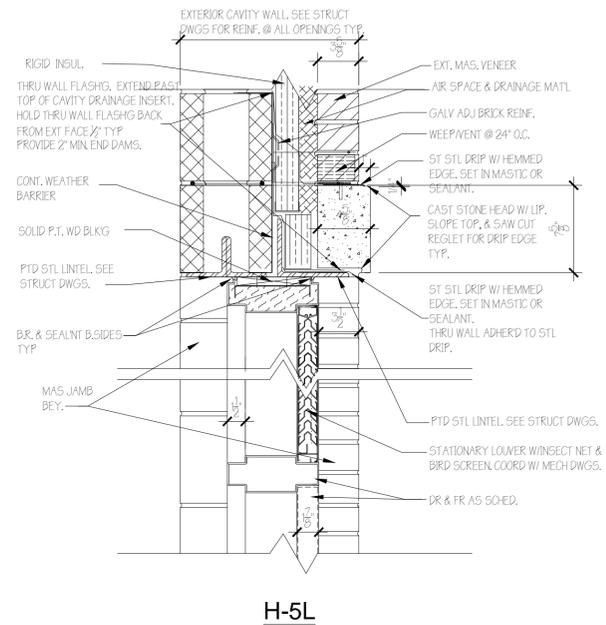
SHEET NUMBER:

A-5.10

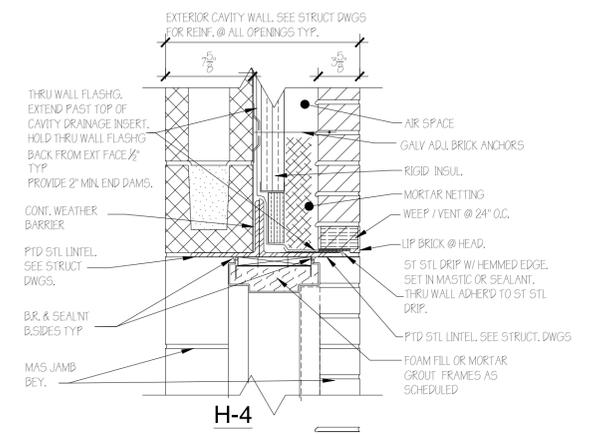
DRAWING FILE: N:\Projects\A13005 Middletown Pump Station\Contract Documents\A-6.1_1_6.1.dwg PLOTTED: May 05, 2016 4:45 pm BR: settawar



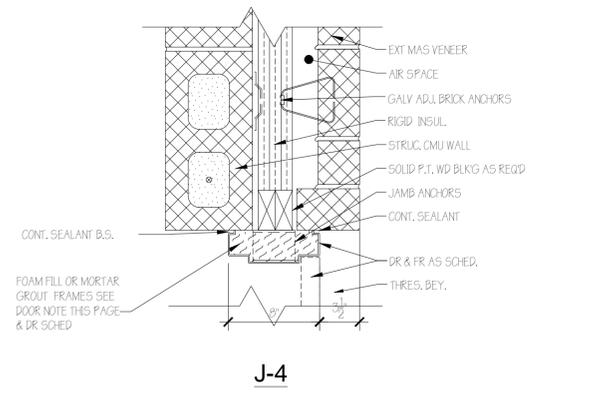
H-5W



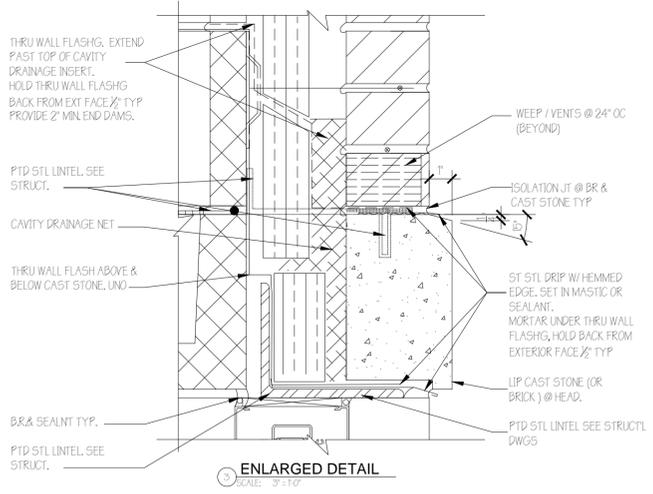
H-5L



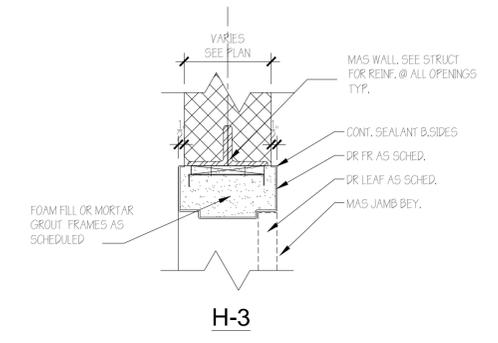
H-4



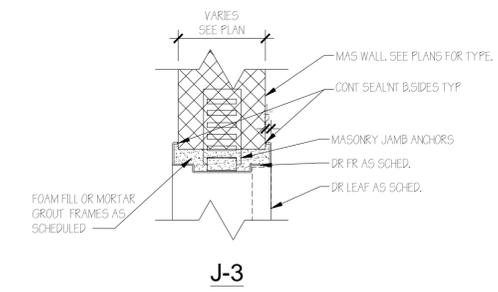
J-4



ENLARGED DETAIL



H-3

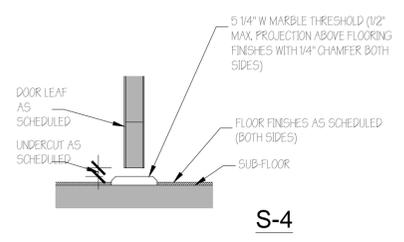


J-3

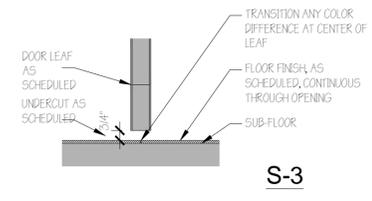
DOOR NOTE:
 FOAM FILL HM FR(S) @ DRS:
 10BB, 10GB, 11C.
 MORTAR GROUT HM FR(S) @
 DRS:
 1A, 1B, 2, 3, 103A, 103B, 105A,
 105C, 11A, 11B, 11C.

**EXPANSION & CONTROL JT
 NOTE:**
 1. REFER TO STRUCTURAL
 DWGS FOR EXPANSION AND
 CONTROL JOINTS.
 2. REFER TO BIA TECH
 BULLETIN 10A FOR ADDITIONAL
 INFORMATION.
 3. SEE ELEVATIONS FOR
 LOCATIONS.

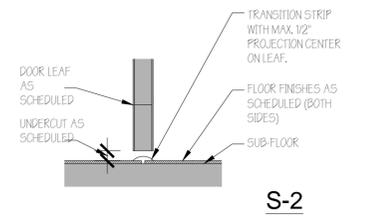
DOOR & WINDOW DETAILS
 SCALE: 1/2" = 1'-0"



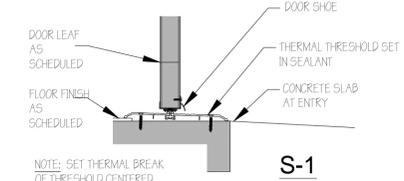
S-4



S-3



S-2



S-1

SILL - THRESHOLD DETAILS
 SCALE: 1/2" = 1'-0"

NOTE: SET THERMAL BREAK
 OF THRESHOLD CENTERED
 ON LEAF

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



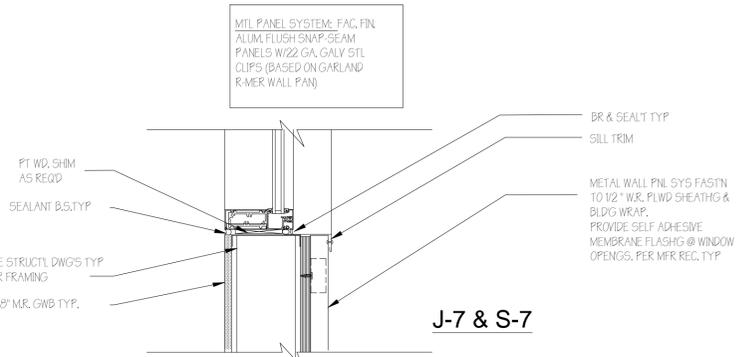
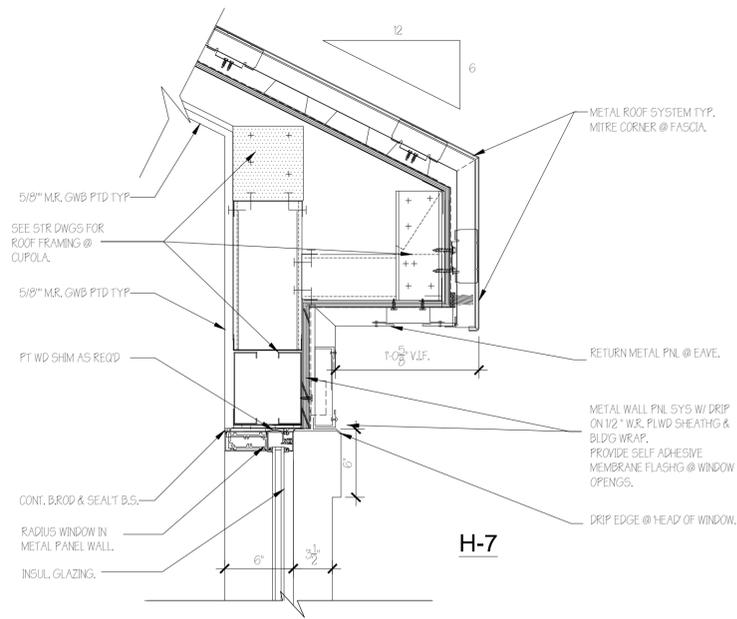
**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

DOOR DETAILS

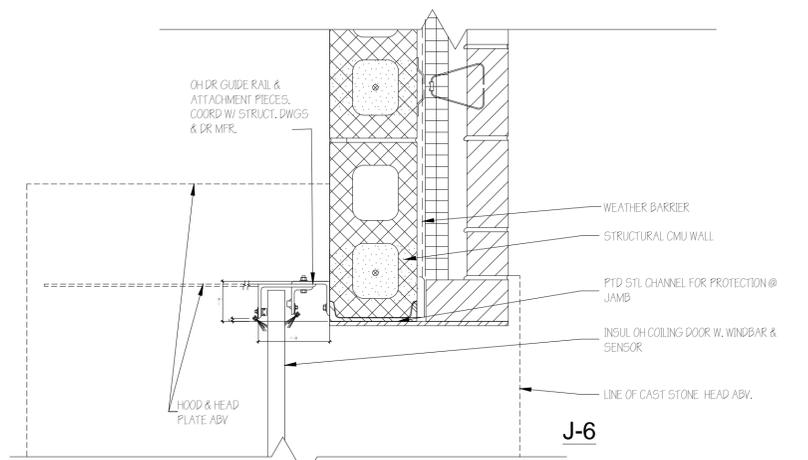
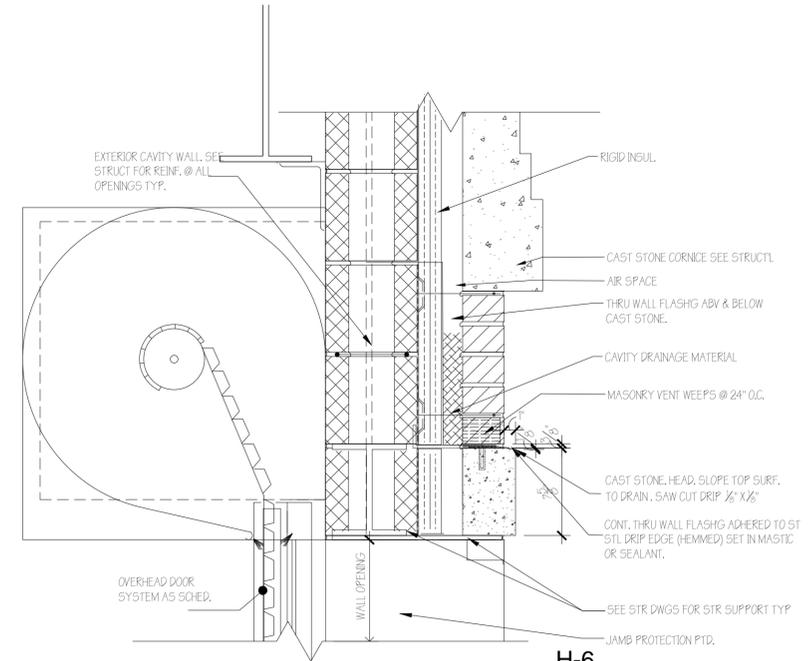
PROJECT NUMBER: 14712
 DESIGNED BY: PSP
 DRAWN BY: MJM
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

A-6.2

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



SECTION AT CUPOLA
 SCALE: 1/2" = 1'-0"



SECTION AT OVERHEAD COILING DOOR
 SCALE: 1/2" = 1'-0"

- GENERAL FINISH NOTES:
 1. REFER SPECIFICATIONS FOR INSTALLATION REQUIREMENTS, & ACCEPTED MANUFACTURERS OF ALL FINISHES (U.O.N.).
 2. SIGNAGE IS N.L.C.
 3. FINAL COLORS T.B.D.
 4. PROVIDE INTUMESCENT FIRE-PROOFING @ ALL EXPOSED STEEL (ABOVE & PART OF A RATED WALL.

INTERIOR FINISHES SCHEDULE							
RM #	ROOM NAME	FLOORING	BASE	WALLS	CLG HT	CEILING	REMARKS REFER SPECIFICATIONS FOR COATING DETAILS AND PAINT SCHEDULE
B01	INLET WORKS/TREATMT RM	PE PRIMER & NOVOLAC EPOXY, SANDED	--	HIGH SOLIDS EPOXY (2 COATS)	NA	PRIMER & EPOXY PTD STRUCT & USD.	
B02	WET WELL	PE PRIMER & NOVOLAC EPOXY	--	HIGH SOLIDS EPOXY (2 COATS)	NA	PRIMER & EPOXY PTD STRUCT & USD.	
B03	WET WELL	PE PRIMER & NOVOLAC EPOXY	--	HIGH SOLIDS EPOXY (2 COATS)	NA	PRIMER & EPOXY PTD STRUCT & USD.	
B04	PUMP ROOM	PE PRIMER & NOVOLAC EPOXY	--	HIGH SOLIDS EPOXY (2 COATS)	NA	PRIMER & EPOXY PTD STRUCT & USD.	
B05	VALVE VAULT	PE PRIMER & NOVOLAC EPOXY	--	HIGH SOLIDS EPOXY (2 COATS)	NA	PRIMER & EPOXY PTD STRUCT & USD.	
001	STAIRS	POLYAMINE PRIMER & EPOXY	NA	HIGH SOLIDS EPOXY (2 COATS)	NA	ANTI-CORR. PTD STRUCT & USD.	
002	STAIRS	POLYAMINE PRIMER & EPOXY	NA	HIGH SOLIDS EPOXY (2 COATS)	NA	ANTI-CORR. PTD STRUCT & USD.	
003	STAIRS	POLYAMINE PRIMER & EPOXY	NA	HIGH SOLIDS EPOXY (2 COATS)	NA	ANTI-CORR. PTD STRUCT & USD.	
004	STAIRS	POLYAMINE PRIMER & EPOXY	NA	HIGH SOLIDS EPOXY (2 COATS)	NA	PART OF RM #105	
101	VESTIBULE	24"x24" RESILIENT TILE	4" RESILIENT WALL BASE	POLISHED CMU W/ ONE ACCENT ROW	9'-0"	ACT	
102	HALLWAY	24"x24" RESILIENT TILE	4" RESILIENT WALL BASE	POLISHED CMU W/ ONE ACCENT ROW	9'-0"	GWB-PVA SEAL & CATAL. EPOXY	
103	MECHANICAL RM	POLYAMINE PRIMER & EPOXY	--	BLOCK FILLER & HIGH SOLIDS EPOXY	NA	ANTI-CORR. PTD STRUCT & USD.	
104	KITCHEN	24"x24" RESILIENT TILE	4" RESILIENT WALL BASE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	ACT	
105	SCREENINGS & GRIT	POLYAMINE PRIMER & EPOXY	--	BLOCK FILLER & HIGH SOLIDS EPOXY	NA	ANTI-CORR. PTD STRUCT & USD.	
106	OFFICE	24"x24" E.D. RESILIENT TILE	4" RESILIENT WALL BASE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	ACT	
107			NOT USED				
108	WORKSHOP	POLYAMINE PRIMER & EPOXY	--	BLOCK FILLER & HIGH SOLIDS EPOXY	NA	ANTI-CORR. PTD STRUCT & USD.	
109	HALLWAY	24"x24" RESILIENT TILE	4" RESILIENT WALL BASE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	ACT	
110	UNISEX SHOWER	2"x2" PORCELAIN MOSAIC TILES	4 1/2"x 4 1/2" COVE	2"x2" FIELD MOSAIC TILES W/3 ROWS -ACCENT	9'-0"	ACT W/ GWB OVER SHOWER STALL	SEE INTERIOR ELEVATIONS A-4.1 FOR SHOWER STALL.
111	LOCKER & LAUNDRY	24"x24" RESILIENT TILE	4" RESILIENT WALL BASE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	ACT	
112	UNISEX TOILET	2"x2" PORCELAIN MOSAIC TILES	4 1/2"x 4 1/2" COVE	2"x2" FIELD MOSAIC TILES W/3 ROWS -ACCENT	9'-0"	ACT	
113	JANITORS CLOSET	2"x2" PORCELAIN MOSAIC TILES	4 1/2"x 4 1/2" COVE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	ACT	GWB WALL BEHIND FLOOR SINK TO BE TILED W/2"x2" MOSAIC TILES
114	ELECTRICAL RM	24"x24" E.D. RESILIENT TILE	4" RESILIENT WALL BASE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	GWB-PVA SEAL & CATAL. EPOXY	
115	MAINTENANCE RM	POLYAMINE PRIMER & EPOXY	--	BLOCK FILLER & HIGH SOLIDS EPOXY	NA	ANTI-CORR. PTD STRUCT & USD.	
116	CONTROL RM	24"x24" E.D. RESILIENT TILE	4" RESILIENT WALL BASE	BLOCK FILLER & HIGH SOLIDS EPOXY	9'-0"	ACT	



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

**INTERIOR FINISH
 SCHEDULE &
 DETAILS**

PROJECT NUMBER: 14712
 DESIGNED BY: PSP
 DRAWN BY: MJM
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

A-6.3

GENERAL NOTES

- THE STRUCTURAL DRAWINGS AND SPECIFICATIONS, TO THE BEST OF OUR ENGINEER'S KNOWLEDGE, COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2003 WITH STATE OF CONNECTICUT AMENDMENTS.
- THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2003 WITH STATE OF CONNECTICUT AMENDMENTS AND ALL APPLICABLE FEDERAL AND STATE CODES, STANDARDS, REGULATIONS AND LAWS.
- ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR PERMIT.
- WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED.
- IN ANY CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST RIGID REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL MAKE NO DEVIATION FROM CONTRACT DOCUMENTS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND COORDINATE WITH ARCHITECTURAL DRAWINGS, DRAWINGS FROM OTHER CONSULTANTS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.
- THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE.
- JOB SAFETY AND CONSTRUCTION PROCEDURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE STRUCTURES ARE DESIGNED FOR THE FOLLOWING UNIFORMLY DISTRIBUTED LIVE LOADS:

PUBLIC ROOMS, STAIRS & CORRIDORS:	100 LBS./SQ.FT.
ROOF:	30 LBS./SQ. FT. + DRIFTING
LOWER LEVEL CONCRETE SLABS OVER WET WELL:	100 LBS./SQ.FT.
MAINTENANCE ROOM AND SCREENING ROOM:	300 LBS./SQ.FT.
MECHANICAL AND ELECTRICAL ROOMS:	300 LBS./SQ.FT.
GENERATOR PLATFORM:	150 LBS./SQ.FT.
GROUND LEVEL SLAB OVER VALVE VAULT:	300 LBS./SQ.FT.

- THE PLAN AND DETAILS HERE IN ARE BASED ON LIMITED SITE OBSERVATIONS AND EXISTING DRAWINGS. ANY DISCREPANCIES BETWEEN EXISTING FIELD CONDITIONS AND THE DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.

SEISMIC LOADS:

SEISMIC PARAMETERS
SPECTRAL ACCELERATIONS: $S_s = 0.238$, $S_1 = 0.062$
IMPORTANCE FACTOR: $I = 1.25$
SITE SOIL CLASS: "E"
SEISMIC DESIGN CATEGORY: "C"

SEISMIC RESISTING SYSTEM
STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE, "R-3"

WIND LOADS

BASIC WIND SPEED (3 SECOND GUST) = 105 MPH.
EXPOSURE: "C"
IMPORTANCE FACTOR: $I = 1.15$

SNOW LOADS

GROUND SNOW LOAD = 30 PSF & DRIFTING, PER ASCE 7-02.
IMPORTANCE FACTOR: $I = 1.10$

FOUNDATION NOTES

- FOUNDATION DESIGN PARAMETERS FROM FINAL GEOTECHNICAL ENGINEERING REPORT (REVISED) BY CDR MAGUIRE INC., DATED APRIL 2013. GEOTECHNICAL REPORT SHALL BE AVAILABLE TO CONTRACTOR FOR REVIEW.
- CONTRACTOR SHALL BE FAMILIAR WITH THE SUBSURFACE CONDITIONS AND GEOTECHNICAL REPORT BEFORE COMMENCING EXCAVATION.
- DOWELS FROM FOOTINGS INTO PIERS AND WALLS ABOVE SHALL BE THE SAME SIZE AND NUMBER AS VERTICAL REBAR IN PIERS AND WALLS, AND SHALL BE EXTENDED "LTE" INTO FOOTINGS AND "LTS" INTO PIERS AND WALLS UNLESS OTHERWISE SHOWN.
- DROP BOTTOM OF WALLS AND PIERS TO TOP OF FOOTINGS TO OBTAIN FULL EXTENT OF CONTACT, UNLESS OTHERWISE SHOWN.
- CENTERLINE OF FOOTINGS SHALL BE CENTERLINE OF WALLS, PIERS AND COLUMNS, UNLESS OTHERWISE SHOWN.
- NO BACKFILLING SHALL BE DONE AGAINST FOUNDATION AND WALLS UNTIL CONCRETE HAS ATTAINED AT LEAST 75% OF ITS DESIGN STRENGTH. BEFORE BACKFILLING, PROVIDE BRACING FOR WALLS SUSTAINING MORE THAN 3 FEET OF EARTH PRESSURE. THIS BRACING SHALL REMAIN IN PLACE UNTIL ALL SLABS AND BEAMS FRAMING INTO WALL HAVE BEEN PLACED AND SET.
- IN NO CASE SHALL BULLDOZERS OR OTHER HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 5 FEET FROM ANY FOUNDATION WALL. IF IT IS NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8 FEET TO THE WALL, THE CONTRACTOR SHALL BE THE SOLE RESPONSIBLE PARTY AND AT THEIR OWN EXPENSE SHALL PROVIDE ADEQUATE SUPPORTS OR BRACE THE WALL TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION SLOPES. WHERE NECESSARY, SHEETING AND SHORING OF EXCAVATION SHALL BE PROVIDED WITH ALL REQUIRED TIEBACKS AND BRACING.
- METHODS EMPLOYED IN ALL SHEETING AND SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT AND SUBMITTED TO ENGINEER FOR REVIEW & RECORD.
- MATERIAL FOR COMPACTED GRANULAR FILL SHALL MEET THE FOLLOWING CRITERIA: SELECT EXCAVATED GRAVEL OR STONE MATERIALS FREE OF ORGANIC MATERIAL, LOAM, TRASH, SNOW, ICE, FROZEN SOIL, AND OTHER OBJECTIONABLE MATERIAL, CONFORMING TO THE GRADATION REQUIREMENTS AS FOLLOWS:

CONNECTICUT DOT FORM 816
SECTION M.02.06
GRADING C
- ON-SITE EXCAVATED MATERIAL MAY ONLY BE SUITABLE FOR USE AS COMPACTED GRANULAR FILL IF IT CONFORMS TO THE SPECIFICATIONS NOTED AND IS APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER.
- DESIGNED GRANULAR FILL MATERIAL SHOULD BE PLACED IN UNIFORM 12" THICK LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT, IN ACCORDANCE WITH ASTM D1557-00. IN RESTRICTED AREAS WHERE ONLY HAND-OPERATED EQUIPMENT IS PERMITTED, THE MAXIMUM LOOSE LIFT SHALL BE 8".
- GRANULAR FILL COMPACTION SHALL BE CONTROLLED BY A QUALIFIED TESTING LABORATORY OR GEOTECHNICAL ENGINEER (AS PART OF SPECIAL INSPECTIONS). TAKE A MINIMUM OF ONE FIELD DENSITY TEST FOR EACH LAYER. LOCATION OF TEST SHALL BE DETERMINED BY THE TESTING AGENCY.
- PROVIDE A MINIMUM 6" THICK LAYER OF 3/4" CLEAN CRUSHED STONE WITH A LAYER OF GEO-FABRIC UNDER SLAB ON GRADE, UNLESS OTHERWISE NOTED.

SPECIAL INSPECTIONS

THE FOLLOWING CONTROLLED INSPECTIONS ARE REQUIRED TO BE PERFORMED IN ACCORDANCE WITH THE BUILDING CODE OF THE STATE OF CONNECTICUT, LATEST EDITION. SPECIAL INSPECTIONS & MATERIALS TESTING ARE THE RESPONSIBILITY OF AND RETAINED BY THE OWNER OR OWNER'S AGENT.

ITEM:	CONCRETE CONSTRUCTION STEEL CONSTRUCTION REINFORCED MASONRY CONSTRUCTION SOILS SPRAYED FIRE RESISTANT MATERIALS PILE FOUNDATION
-------	--

REINFORCED CONCRETE NOTES

- STRUCTURAL CONCRETE AND CONCRETING PRACTICES SHALL CONFORM WITH ACI-318, "AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" LATEST EDITION. DETAILS SHALL BE IN ACCORDANCE WITH ACI-315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL ACI REQUIREMENTS FOR HOT AND COLD WEATHERING CONCRETING MUST BE ADHERED TO.
- CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS:

A. SLAB ON GRADE:	4000 PSI, NORMAL WEIGHT
B. FOUNDATION WALLS:	4000 PSI, NORMAL WEIGHT
C. FOOTINGS AND PIERS:	4000 PSI, NORMAL WEIGHT
D. CONCRETE ON METAL DECK:	4000 PSI, NORMAL WEIGHT
E. ALL OTHER CONCRETE:	4000 PSI, NORMAL WEIGHT
- ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINING AGENT.
- ALL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 UNLESS REQUIRED TO BE WELDED AS SHOWN ON THE DRAWINGS. ALL REINFORCING BARS REQUIRED TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 50.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. SUPPORT WIRE FABRIC WITH CHAIRS OR LIFTS, DURING CONCRETE PLACEMENT TO INSURE PROPER POSITION IN SLAB.
- ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
- ALL REINFORCING BARS SHALL BE LAPPED AS SPECIFICALLY DETAILED ON THE DRAWINGS. SPlicing & EMBEDMENTS SHALL BE IN ACCORDANCE W/ ACI 318 WHERE NOT SPECIFICALLY INDICATED ON THE DRAWINGS, ALL REINFORCING BARS SHALL BE LAPPED USING THE TENSION SPLICE LENGTHS IN THE LAP SPLICE SCHEDULE:

LAP GRADE BEAM AND WALL TOP HORIZONTAL REINFORCEMENT AT CENTER OF SPAN.	
LAP GRADE BEAM AND WALL BOTTOM HORIZONTAL REINFORCEMENT AT SUPPORT.	
LAP INSIDE FACE WALL VERTICAL REINFORCEMENT AT SUPPORT.	
LAP OUTSIDE FACE VERTICAL WALL REINFORCEMENT AT MID-HEIGHT OF WALL.	
U.O.N. TERMINATE BARS AT DISCONTINUOUS ENDS WITH STANDARDS HOOKS.	
ALL HOOKED BARS NOT DIMENSIONED SHALL BE STANDARD HOOKS.	
- MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS:

SLABS:	3/4 IN.
WALLS:	1 IN.
COLUMNS:	1-1/2" IN.
ALL CONCRETE EXPOSED TO WEATHER OR EARTH:	2 IN.
ALL CONCRETE PLACED AGAINST EARTH:	3 IN.
ALL CONCRETE EXPOSED TO SEWAGE AND EFFLUENT	2-1/4" IN.
- PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI-318, CHAPTER 6.4. SUBMIT SHOP DRAWINGS SHOWING CONSTRUCTION JOINT DETAILS, LOCATIONS AND THE SEQUENCE OF POURS FOR THE STRUCTURAL ENGINEER'S REVIEW PRIOR TO BEGINNING WORK.
- WALL AND GRADE BEAM CONSTRUCTION JOINTS SHALL BE LOCATED TO PROVIDE A 60 FOOT MAXIMUM LENGTH OF CONCRETE PLACEMENT.
- VERTICAL CONSTRUCTION JOINTS IN GRADE BEAMS AND WALLS SHALL BE USED ONLY WITH PRIOR APPROVAL OF THE ENGINEER, SEE NOTE 9 ABOVE, AND SHALL BE LOCATED AS FOLLOWS:

FOUNDATION WALLS:	MINIMUM 8'-0" FROM ANY COLUMN LINE OR WALL OPENING.
GRADE BEAMS:	AT CENTERLINES BETWEEN SUPPORTS.
- NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN BEAMS, WALLS AND SLABS UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR APPROVED IN WRITING PRIOR TO CONSTRUCTION BY THE ENGINEER.
- NO CONCRETE TEST WILL BE ACCEPTED IF CONCRETE IS TAMPERED WITH IN ANY WAY AFTER SAID TEST IS PERFORMED. REPEAT TEST IF WATER IS ADDED AFTER INITIAL SAMPLING.
- THE CONTRACTOR SHALL PROVIDE REINFORCING STEEL ERECTOR WITH A SET OF APPROVED SHOP DRAWINGS FOR FIELD USE.
- ALL ADJOINING SURFACES NOT CAST MONOLITHICALLY SHALL BE ROUGHENED TO 1/4 INCH AMPLITUDE FOR THE ENTIRE INTERSECTING SURFACE ACCORDING TO ACI RECOMMENDATIONS AND APPLY A BONDING AGENT AS REQUIRED.
- CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, CURBS, ETC., AS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED.
- CONTRACTOR SHALL COORDINATE LOCATION OF FLOOR DRAINS, CURBS, CONCRETE PADS AND FLOOR DEPRESSIONS, ETC., WITH ARCHITECTURAL AND ALL OTHER DRAWINGS.
- CONTRACTOR SHALL COORDINATE LOCATION OF INSERTS, WELDED PLATES AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH ARCHITECTURAL AND ALL OTHER DRAWINGS.
- HORIZONTAL PIPES OR CONDUITS PLACED IN SLABS SHALL NOT BE SPACED CLOSER THAN 3 X THE DIAMETER OF CENTER, PIPE AND CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN THE SLAB WITHIN 12 INCHES OF ANY COLUMN FACE.
- CONTRACTOR SHALL USE RIGID STEEL TEMPLATES (SUPPLIED BY THE STEEL FABRICATOR) TO INSTALL ANCHOR RODS.
- ALL STEEL MEMBERS TO BE ENCASED IN CONCRETE SHALL BE WRAPPED WITH A MINIMUM W.W.F. 6 X 6 - W2.9 X W2.9 REINFORCING, UNLESS OTHERWISE NOTED.
- ALL SLABS SHALL BE FLAT AND LEVEL PER THE CONCRETE SPECIFICATIONS. THE CONCRETE CONTRACTOR SHALL INCLUDE IN THEIR BID ANY EXCESS CONCRETE REQUIRED DUE TO SUPPORT MEMBER DEFLECTION TO POUR SLABS FLAT AND LEVEL. THE CONCRETE PLACING PROCEDURE SHALL BE CONTROLLED TO MINIMIZE SUPPORT MEMBER DEFLECTION.

STRUCTURAL STEEL NOTES

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "MANUAL OF STEEL CONSTRUCTION, ASD (LATEST EDITION)".
 - ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", LATEST EDITION.
 - STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE NOTED ON THE DRAWINGS:

A. ALL ROLLED SHAPES AND CHANNELS: ASTM A-572 OR A-992, MIN. YIELD STRENGTH OF 50 KSI
B. MISCELLANEOUS ANGLES: ASTM A-36, MIN YIELD STRENGTH OF 36 KSI
C. HOLLOW STRUCTURAL STEEL SECTIONS, (TUBES AND PIPES): ASTM A500 GRADE B, MIN YIELD STRENGTH OF 42 KSI FOR PIPES AND 46 KSI FOR TUBES.
 - ALL CONNECTION MATERIAL AND BASE PLATES SHALL CONFORM TO ASTM STANDARD A-36 (36KSI).
 - ALL BOLTS SHALL CONFORM TO ASTM A325 OR A490. NUTS SHALL CONFORM TO ASTM A563 AND WASHERS SHALL CONFORM TO ASTM A-F436.
 - ALL ANCHOR BOLTS/RODS SHALL CONFORM TO ASTM F-1554 GRADE 36 WITH WELD ABILITY SUPPLEMENT S1, UNLESS OTHERWISE NOTED. SUBMIT GRADE CERTIFICATIONS FOR RECORD. STEEL SUPPLIER SHALL SUPPLY RIGID STEEL TEMPLATES FOR ANCHOR ROD INSTALLATION.
 - ALL SHOP OR FIELD BOLTED CONNECTIONS, SHALL BE BOLTED CONNECTIONS USING 3/4"Ø A325N BOLTS IN STANDARD HOLES, UNLESS SPECIFICALLY NOTED OTHERWISE.
 - OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.
 - ALL BUTT AND FULL PENETRATION WELDS SHALL BE MADE USING RUN OFF TABS WHICH SHALL BE REMOVED AND GROUND SMOOTH AFTER WELD IS COMPLETED.
- STRUCTURAL STEEL NOTES (CONTINUED)
 - ALL WELD BACK UP BARS SHALL BE REMOVED AND GROUND SMOOTH AFTER WELD IS COMPLETED, UNLESS NOTED OTHERWISE.
 - ALL WELDS INDICATED SHALL MEET THE MINIMUM WELD SIZE SPECIFIED BY THE AISC MANUAL OF STEEL DESIGN. (SINGLE PASS AS REQUIRED)
 - ALL WELDS SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCORDANCE WITH A.W.S. SPECIFICATIONS, LATEST EDITIONS. ALL WELDING ELECTRODES SHALL CONFORM TO A.W.S. A5.1 GRADE E-70. BARE ELECTRODES AND GRANULAR FLUX SHALL CONFORM TO A.W.S. A5.17, F70 A.W.S. FLUX CLASSIFICATION.
 - ALTERNATE CONNECTIONS WILL BE ACCEPTED ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF THE ACCEPTABILITY AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE SPECIFIC DETAILS SHOWN ON THE DRAWINGS. IN ANY EVENT THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS WHICH THEY PROPOSE.
 - SHOP AND FIELD CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED OR WELDED.
 - WHEN NOT SPECIFICALLY DETAILED ELSEWHERE ON THE DRAWINGS, ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS SHALL BE DETAILED AS SHOWN IN THE TYPICAL BEAM CONNECTION DETAILS.
 - ALL BEAM AND GIRDER SHALL BE CONNECTED FOR 115% OF THE REACTION DENOTED BY THE SYMBOL V ON THE PLAN. PROVIDE A MINIMUM 2 BOLT CONNECTION. IF NO REACTION IS GIVEN PROVIDE CONNECTION FOLLOWING NOTE 17 BELOW.
 - ALL BEAM AND GIRDER CONNECTIONS SHALL BE AT LEAST CAPABLE OF DEVELOPING THE UNIFORMLY DISTRIBUTED LOAD CAPACITY OF THE MEMBER USING THE REACTION FROM THE ALLOWABLE LOAD OF BEAM AS TABULATED IN THE AISC MANUAL OF STEEL CONSTRUCTION LATEST EDITION UNLESS NOTED OTHERWISE. FOR COMPOSITE BEAMS MULTIPLY THE REACTION BY THE RATIO S_{tr}/S WHERE S_{tr} = SECTION MODULUS OF THE TRANSFORMED COMPOSITE CROSS SECTION WITH RESPECT TO THE BOTTOM FLANGE, AND S = SECTION MODULUS OF THE STRUCTURAL STEEL ALONE.
 - FILLER BEAMS SHOULD BE SPACED EQUALLY BETWEEN THE SUPPORTS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - ALL HOLES AND CUTS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.
 - STEEL MEMBERS INDICATED ON THE DRAWINGS TO BE ENCASED IN CONCRETE SHALL BE UNPAINTED ON THE CONTACT SURFACES AND SHALL BE WRAPPED WITH A MINIMUM W.W.F. 6 X 6 - W2.9 X W2.9 REINFORCING UNLESS OTHERWISE NOTED.
 - THE STRUCTURAL STEEL CONTRACTOR SHALL COORDINATE THE BOTTOM OF BASE PLATE ELEVATION WITH THE TOP OF CONCRETE ELEVATION.
 - THE MAXIMUM LOAD HUNG FROM ANY BEAM FOR MEP DUCTWORK, PIPING ETC SHALL BE DISTRIBUTED TO THE BEAM'S TRIBUTARY AREA IN A WAY THAT THE ALLOWABLE DESIGN LOADS LISTED IN THE GENERAL NOTES ARE NOT EXCEEDED. THE CONTRACTOR SHALL COORDINATE THE LOADS OF ALL TRADES AND PROVIDE ADDITIONAL SUPPORT OR DISTRIBUTION FRAMING AS REQUIRED TO ACHIEVE THESE LOADS.
 - STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS, MECHANICAL DRAWINGS AND ALL DRAWINGS RELATED TO OTHER TRADES. THE GENERAL CONTRACTOR IS RESPONSIBLE TO CHECK AND COORDINATE DIMENSIONS, CLEARANCES, ETC., WITH THE WORK OF THE OTHER TRADES.
 - PROVIDE ANY TEMPORARY BRACING OR GUYS TO PROVIDE LATERAL SUPPORT OF THE STRUCTURES AND INDIVIDUAL ELEMENTS UNTIL PERMANENT FRAME IS COMPLETELY INSTALLED.
 - ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.
 - ALL TUBE & PIPE SECTIONS EXPOSED TO WEATHER SHALL HAVE OPEN ENDS CAPPED WITH 1/4" PLATE.
 - ALL STRUCTURAL STEEL TO RECEIVE SPRAY APPLIED FIRE PROTECTION SHALL BE LEFT UNCOATED.
 - FOR EXPOSED INTERIOR STRUCTURAL STEEL, REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SURFACE PREPARATION AND FINISH REQUIREMENTS.
 - STEEL FABRICATOR SHALL COORDINATE ALL HOLE LOCATIONS FOR SIMPSON TIE DOWN ANCHORS. ALL HOLES SHALL BE SHOP DRILLED THROUGH BEAM FLANGES.
 - CONTRACTORS DESIGN RESPONSIBILITY**
 - THE LISTED BELOW PROJECT ITEMS ASSOCIATED WITH FABRICATION, ERECTION AND CONTRACTORS MEANS AND METHODS AND REQUIRING STRUCTURAL DESIGN AND/OR DETAILING ARE THE RESPONSIBILITY OF THE CONTRACTOR. ITEMS NOTED WITH (CT P.E. STAMP REQ'D) SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.
 - THE CONTRACTOR SHALL RETAIN THE SERVICES OF STRUCTURAL PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT TO PERFORM THE DESIGN AND/OR DETAILING OF THE FOLLOWING ITEMS:

A. STRUCTURAL STEEL AND METAL DECK SHOP DRAWINGS (CT P.E. STAMP REQ'D)					
B. THE CONTRACTOR IS RESPONSIBLE TO DESIGN ALL CONNECTIONS NOT COMPLETELY DESIGNED ON THE CONTRACT DOCUMENTS, BASED ON THE LOADING INFORMATION GIVEN IN THE CONTRACT DOCUMENTS, (A COMPLETELY DESIGNED CONNECTION IS ONLY ONE THAT IS SPECIFICALLY DESIGNATED AS SUCH BY THE STATEMENT "COMPLETELY DESIGNED AS SUCH ON THE CONTRACT DOCUMENTS.) ALL CONNECTIONS NOT INDICATED AS "COMPLETELY DESIGNED" SHALL BE DESIGNED FOR THE FORCES AND/OR CONNECTION CRITERIA CALLED FOR IN THE CONTRACT DOCUMENTS. CONNECTION DESIGN SHALL BE PREPARED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT. THE CONNECTION DESIGN SUBMITTAL SHALL BE SUBMITTED WITH THE SHOP DRAWINGS AND SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER RESPONSIBLE FOR ITS PREPARATION.					
C. LIGHT GAUGE METAL SHOP DRAWINGS (CT P.E. STAMP REQ'D). PROVIDE COLD-FORMED METAL FRAMING CAPABLE OF WITHSTANDING DESIGN LOADS WITHIN LIMITS AND UNDER CONDITIONS INDICATED. <table><tr><td>i. DESIGN LOADS: AS FOLLOWS</td></tr><tr><td>a. DEAD LOADS: WEIGHTS OF MATERIALS AND CONSTRUCTION</td></tr><tr><td>b. LIVE LOADS: 10 PSF INTERNAL BUILDING PRESSURE ON ALL VERTICAL WALLS</td></tr><tr><td>c. SEISM LOADS: SEE THIS SHEET FOR SEISMIC DESIGN PARAMETERS</td></tr><tr><td>d. WIND LOADS: SEE THIS SHEET FOR WIND DESIGN PARAMETERS</td></tr></table>	i. DESIGN LOADS: AS FOLLOWS	a. DEAD LOADS: WEIGHTS OF MATERIALS AND CONSTRUCTION	b. LIVE LOADS: 10 PSF INTERNAL BUILDING PRESSURE ON ALL VERTICAL WALLS	c. SEISM LOADS: SEE THIS SHEET FOR SEISMIC DESIGN PARAMETERS	d. WIND LOADS: SEE THIS SHEET FOR WIND DESIGN PARAMETERS
i. DESIGN LOADS: AS FOLLOWS					
a. DEAD LOADS: WEIGHTS OF MATERIALS AND CONSTRUCTION					
b. LIVE LOADS: 10 PSF INTERNAL BUILDING PRESSURE ON ALL VERTICAL WALLS					
c. SEISM LOADS: SEE THIS SHEET FOR SEISMIC DESIGN PARAMETERS					
d. WIND LOADS: SEE THIS SHEET FOR WIND DESIGN PARAMETERS					
ii. DEFLECTION LIMITS: DESIGN FRAMING SYSTEMS TO WITHSTAND DESIGN LOADS WITHOUT DEFLECTIONS GREATER THAN THE FOLLOWING: <table><tr><td>a. INTERIOR NON LOAD-BEARING WALL FRAMING: HORIZONTAL DEFLECTION OF 1/240 OF THE WALL HEIGHT UNDER A HORIZONTAL LOAD OF 10 PSF.</td></tr><tr><td>b. EXTERIOR NON LOAD-BEARING WALL FRAMING: AT BRICK: 1/600 OF THE WALL HEIGHT AT METAL PANELS / DRYVIT: 1/360 OF THE WALL HEIGHT c. CEILING/ SOFT JOIST FRAMING: VERTICAL DEFLECTION OF 1/360 OF THE SPAN</td></tr></table>	a. INTERIOR NON LOAD-BEARING WALL FRAMING: HORIZONTAL DEFLECTION OF 1/240 OF THE WALL HEIGHT UNDER A HORIZONTAL LOAD OF 10 PSF.	b. EXTERIOR NON LOAD-BEARING WALL FRAMING: AT BRICK: 1/600 OF THE WALL HEIGHT AT METAL PANELS / DRYVIT: 1/360 OF THE WALL HEIGHT c. CEILING/ SOFT JOIST FRAMING: VERTICAL DEFLECTION OF 1/360 OF THE SPAN			
a. INTERIOR NON LOAD-BEARING WALL FRAMING: HORIZONTAL DEFLECTION OF 1/240 OF THE WALL HEIGHT UNDER A HORIZONTAL LOAD OF 10 PSF.					
b. EXTERIOR NON LOAD-BEARING WALL FRAMING: AT BRICK: 1/600 OF THE WALL HEIGHT AT METAL PANELS / DRYVIT: 1/360 OF THE WALL HEIGHT c. CEILING/ SOFT JOIST FRAMING: VERTICAL DEFLECTION OF 1/360 OF THE SPAN					
iii. DESIGN FRAMING SYSTEM TO MAINTAIN CLEARANCES AT OPENINGS, TO ALLOW FOR CONSTRUCTION TOLERANCES, AND TO ACCOMMODATE LIVE LOAD DEFLECTION OF PRIMARY BUILDING STRUCTURE AS FOLLOWS: <table><tr><td>a. UPWARD AND DOWNWARD MOVEMENT OF 1 1/2 INCHES.</td></tr></table>	a. UPWARD AND DOWNWARD MOVEMENT OF 1 1/2 INCHES.				
a. UPWARD AND DOWNWARD MOVEMENT OF 1 1/2 INCHES.					
D. CONCRETE REBAR SHOP DRAWINGS					
E. METAL STAIRS, HAND RAILS AND GUARD RAILS <ol style="list-style-type: none">SUBMIT SHOP DRAWINGS FOR APPROVAL.CONTRACTOR IS RESPONSIBLE TO DESIGN ALL METAL STAIRS, HAND RAILS AND GUARD RAILS TO MEET ALL CT CODE REQUIREMENTS. SUBMIT SIGNED & SEALED CALCULATIONS (CT P.E. STAMP REQ'D).					
F. CONCRETE FORMWORK <ol style="list-style-type: none">SHORING & BRACING CALCULATIONS AND SHOP DRAWINGS (CT P.E. STAMP REQ'D)					
G. EXCAVATION <ol style="list-style-type: none">SHEETING AND SHORINGBRACING CALCULATIONS & SHOP DRAWINGS (CT P.E. STAMP REQ'D)					
H. FINAL MICROPILE DESIGN (CT P.E. STAMP REQ'D)					
 - THE ABOVE ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

REINFORCED MASONRY NOTES

- HOLLOW CONCRETE MASONRY UNITS (CMU) SHALL MEET ASTM SPECIFICATIONS FOR C90, GRADE N, TYPE I. CONCRETE MASONRY SHALL HAVE A PRISM STRENGTH (f_m) OF A MINIMUM OF 1500 PSI. PRISM STRENGTHS SHALL BE DETERMINED FROM TESTS IN ACCORDANCE WITH ASTM E447 METHOD B, EXCEPT THAT PRISMS SHALL BE CONSTRUCTED IN STACK BOND WITH A HEIGHT TO THICKNESS RATIO BETWEEN 1.33 AND 5.0 WITH A MINIMUM OF ONE JOINT.
- MASONRY SHALL BE LAID IN RUNNING BOND. PROVIDE CONTROL JOINTS WHERE INDICATED. PROVIDE FACE SHELL BEDDING AT UN-REINFORCED CORES. PROVIDE FULL MORTAR BEDDING AT CORES TO RECEIVE STEEL REBAR.
- CLAY MASONRY UNITS SHALL MEET ASTM SPECIFICATIONS FOR C216, TYPE FBS.
- MORTAR SHALL BE ASTM C270, TYPE S FOR ALL ABOVE GRADE APPLICATIONS. TYPE M SHALL BE USED BELOW GRADE. PROVIDE FULL BEDDING BELOW GRADE AND AT ALL REINFORCED CORES ABOVE GRADE. USE FACE SHELL BEDDING AT UNGROUTED CORES. COMPRESSIVE STRENGTH OF MORTAR SHALL BE AS REQUIRED TO OBTAIN THE PRISM STRENGTH SPECIFIED ABOVE. UNDER NO CIRCUMSTANCES SHALL MORTAR BE USED AS GROUT.
- GROUT SHALL MEET ASTM SPEC. C476 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. ALL CELLS AND BOND BEAMS CONTAINING REINFORCING STEEL SHALL BE FILLED SOLID WITH GROUT.
- GROUT SHALL BE PLACED BY LOW-LIFT METHOD. MAXIMUM GROUT POUR HEIGHT SHALL BE 4 FEET.
- DEFORMED STEEL BARS SHALL MEET ASTM A 615 AND SHALL BE GRADE 60. BENT BARS SHOULD BE SHOP FABRICATED. SPLICES IN VERTICAL REINFORCING BARS SHALL NOT BE LESS THAN 48 BAR DIA. OR 24", WHICHEVER IS GREATER.
- HORIZONTAL JOINT REINFORCEMENT SHALL BE LADDER TYPE, 9 GAUGE, HOT-DIPPED GALVANIZED. PLACE JOINT REINFORCEMENT AT EVERY OTHER COURSE (16" O.C.). JOINT REINFORCEMENT SHALL BE EQUIPPED WITH ADJUSTABLE JOINT REINFORCEMENT (ADJ. BRICK TIES) TO ACCOMMODATE BRICK VENEER. SPACING OF BRICK TIES TO BE 16" O.C. HORIZONTALLY AND 16" O.C. VERTICALLY.
- BAR POSITIONERS FOR VERTICAL WALL BARS SHALL BE 9 GAUGE, GALVANIZED WIRE. PROVIDE BAR POSITIONERS FOR ALL REINFORCED CELLS.
- CMU BELOW GRADE SHALL BE NORMAL WEIGHT UNITS AND SHALL HAVE ALL CELLS FULLY GROUTED. CMU ABOVE THE FINISHED FLOOR SHALL BE NORMAL OR LIGHTWEIGHT UNITS AND SHALL BE GROUTED AT ALL REINFORCED CELLS AND WHERE INDICATED.
- WALLS SHALL BE ADEQUATELY BRACED WITH TEMPORARY SUPPORTS UNTIL THE ROOF STRUCTURE HAS BEEN PLACED, METAL DECK INSTALLED, AND PROPERLY WIND-ANCHORED.
- ALL NON-LOAD BEARING CONCRETE MASONRY AT EXTERIOR WALLS SHALL BE REINFORCED WITH #5 @ 24" O.C. VERT. ALL NON-LOAD BEARING CONCRETE MASONRY AT INTERIOR WALLS SHALL BE REINFORCED WITH #5 @ 32" O.C. VERT.
- ALL VERTICAL REINF. SHALL BE PLACED IN THE CENTER OF CMU CORES AND GROUT ALL CELLS CONTAINING REINFORCING. THE FIRST CELL AT CORNERS AND ENDS OF WALLS SHALL BE REINFORCED WITH (1) #5 AND GROUTED. AT WALL OPENINGS, PROVIDE (1) # 5 BAR EACH SIDE OF OPENING, AND EXTEND BAR A MINIMUM OF 24" ABOVE RE-ENTRANT CORNERS AT TOP OF MASONRY OPENINGS. NON-LOAD BEARING CMU WALLS ARE NOT SHOWN IN STRUCTURAL DRAWINGS. FOR MORE INFORMATION, SEE ARCH. DRAWINGS. PROVIDE SLIP CONNECTIONS AT TOP OF NON-LOAD BERING CMU WALLS.
- FOR LOCATION AND THICKNESS OF CMU WALLS, SEE ARCH. DRAWINGS.
- ELASTOMERIC JOINT SEALANTS FOR VERTICAL AND HORIZONTAL CONTROL JOINTS SHALL MEET ASTM C920 AND SHALL BE APPLIED IN ACCORDANCE WITH ASTM C962.

METAL DECK NOTES

- DESIGN OF METAL DECK SHALL BE GOVERNED BY THE "SPECIFICATIONS FOR DESIGN OF LIGHT GAGE COLD FORMED STEEL STRUCTURAL MEMBERS" AS PUBLISHED BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI) AND CONFORM TO THE "BASIC DESIGN SPECIFICATIONS" OF THE STEEL DECK INSTITUTE.
- REFER TO INDIVIDUAL DRAWING NOTES AND SPECIFICATIONS FOR COMPOSITE OR ROOF DECK TO BE USED AT EACH LEVEL. ALL METAL DECKS SHALL BE GALVANIZED. FIREPROOFING, IF REQUIRED, SHALL BE COMPATIBLE WITH GALVANIZED FINISH.
- STEEL DECK UNITS AND ACCESSORIES SHALL BE FABRICATED FROM STEEL SHEET CONFORMING TO ASTM A653 SO GRADE 33, WITH A MINIMUM YIELD POINT OF 33 ksi.
- ALL METAL DECK SHALL BE FABRICATED AND INSTALLED FOR A MINIMUM TWO SPAN CONDITION. ONE SPAN CONDITIONS ARE PROHIBITED UNLESS SPECIFICALLY CALLED FOR ON THE DRAWINGS. TEMPORARY SHORING SHALL NOT BE USED ON METAL DECK UNLESS APPROVED BY THE ENGINEER OR INDICATED ON DRAWINGS.
- METAL ROOF DECK UNITS SHALL BE FASTENED TO THE STEEL FRAMEWORK AS FOLLOWS:

A. AT ENDS OF UNITS AND AT ALL INTERMEDIATE SUPPORTS: BY PUDDLE WELDS NOT LESS THAN 3/4 INCH DIAMETER WITH 3/67 WELD PATTERN.
B. SIDE LAPS OF ADJACENT UNITS: SHALL BE FASTENED BY SIDE SEAM WELDING OR SIDELAP SCREWS SPACED PER MANUFACTURER'S ENGINEERED CALCULATIONS WITH A MAXIMUM SPACING OF 24 INCHES ON CENTER. ARCAD SEAM WELDS SHALL BE A MINIMUM OF 1-1/2 INCH BY 1/2 INCH.
- IN ADDITION TO THE ABOVE DIAPHRAGM FORCES, ROOF DECK FASTENERS SHALL BE DESIGNED FOR A NET 40 PSF UPLIFT FORCE MIN. AND AS REQUIRED BY IBC IN THE FIELD. 50 PSF UPLIFT FORCE ALONG BUILDING PERIMETER (AREA WITHIN 7 FEET OF EDGE), AND 75 PSF UPLIFT FORCE AT BUILDING CORNERS.
- THE HANGING OF ANY LOADS FROM A ROOF DECK IS STRICTLY PROHIBITED.
- DECKING CONTRACTOR SHALL COORDINATE DECK OPENING SIZES AND LOCATIONS FROM ARCHITECTURAL, MECHANICAL, AND ALL DRAWINGS RELATED TO OTHER TRADES, AND SHALL PROVIDE HEADER MEMBERS OR REINFORCEMENT AS REQUIRED BY TYPICAL DETAILS ON STRUCTURAL DRAWINGS, EVEN IF NOT SHOWN ON THE PLANS. PROPOSED OPENINGS THROUGH SLAB/ DECK SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW.

STEEL JOIST NOTES

- ALL OPEN WEB STEEL JOISTS SHALL BE LH SERIES, FABRICATED, FURNISHED AND ERECTED IN CONFORMANCE WITH THE STEEL JOIST INSTITUTE (SJI) STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, LATEST EDITION.
- ALL STEEL JOISTS SHALL BE DESIGNED IN ACCORDANCE WITH THE ABOVE REFERENCED SJI SPECIFICATIONS. IN ADDITION TO THE GRAVITY LOADS, STEEL JOISTS, JOIST BRIDGING, MUST BE DESIGNED FOR THE NET WIND UP LIFT OF 25 PSF.
- THE ENDS OF LH SERIES JOISTS SHALL BEAR A MINIMUM OF 4" OVER STEEL SUPPORTS UNLESS OTHERWISE NOTED ON DRAWINGS. SEATING ANGLES SHALL BE ADJUSTED TO PROVIDE LEVEL BEARING ON SUPPORT SURFACE.
- ALL JOIST TO STRUCTURAL STEEL CONNECTIONS SHALL BE WELDED, EXCEPT AT COLUMNS WHERE FIELD BOLTED CONNECTIONS SHALL BE USED TO PROVIDE LATERAL STABILITY DURING CONSTRUCTION. ALL LH SERIES JOISTS SHALL BE CONNECTED TO SUPPORTS WITH A MINIMUM OF TWO 1/4" x 2" LONG FILLET WELDS, OR WITH TWO 3/4" DIA. BOLTS.
- EXTEND BOTTOM CHORDS OF JOISTS AT COLUMNS.
- ALL CLIP ANGLES AND OTHER MISCELLANEOUS CONNECTIONS TO JOISTS SHALL BE SHOP WELDED.
- PROVIDE DIAGONAL BRACING BETWEEN JOISTS AS SHOWN ON STRUCTURAL DWGS. SPANNING PERPENDICULAR TO THE JOIST CHORDS. ALL BRIDGING AND BRIDGING ANCHORS SHALL BE COMPLETELY INSTALLED BEFORE ANY CONSTRUCTION LOADS ARE IMPOSED ON THE JOISTS. BRIDGING MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH SJI STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS.
- ATTACHMENTS THAT WILL IMPOSE CONCENTRATED LOADS ON THE WEB MEMBERS OF THE JOISTS SHALL NOT BE PERMITTED.
- MEMBERS THAT WILL IMPOSE CONCENTRATED LOADS ON THE BRIDGING MEMBERS SHALL NOT BE PERMITTED.
- MEANS OF ATTACHMENT OF ANY TYPE ONTO THE JOIST CHORDS SHALL BE SHOWN ON SHOP DRAWINGS. NO FILLED DRILLED HOLES THROUGH THE CHORD MEMBERS SHALL BE ALLOWED.
- REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SURFACE PREPARATION AND FINISH REQUIREMENT.



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A101
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL NOTES

PROJECT NUMBER: 14712.02

DESIGNED BY: IES

DRAWN BY: IES

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

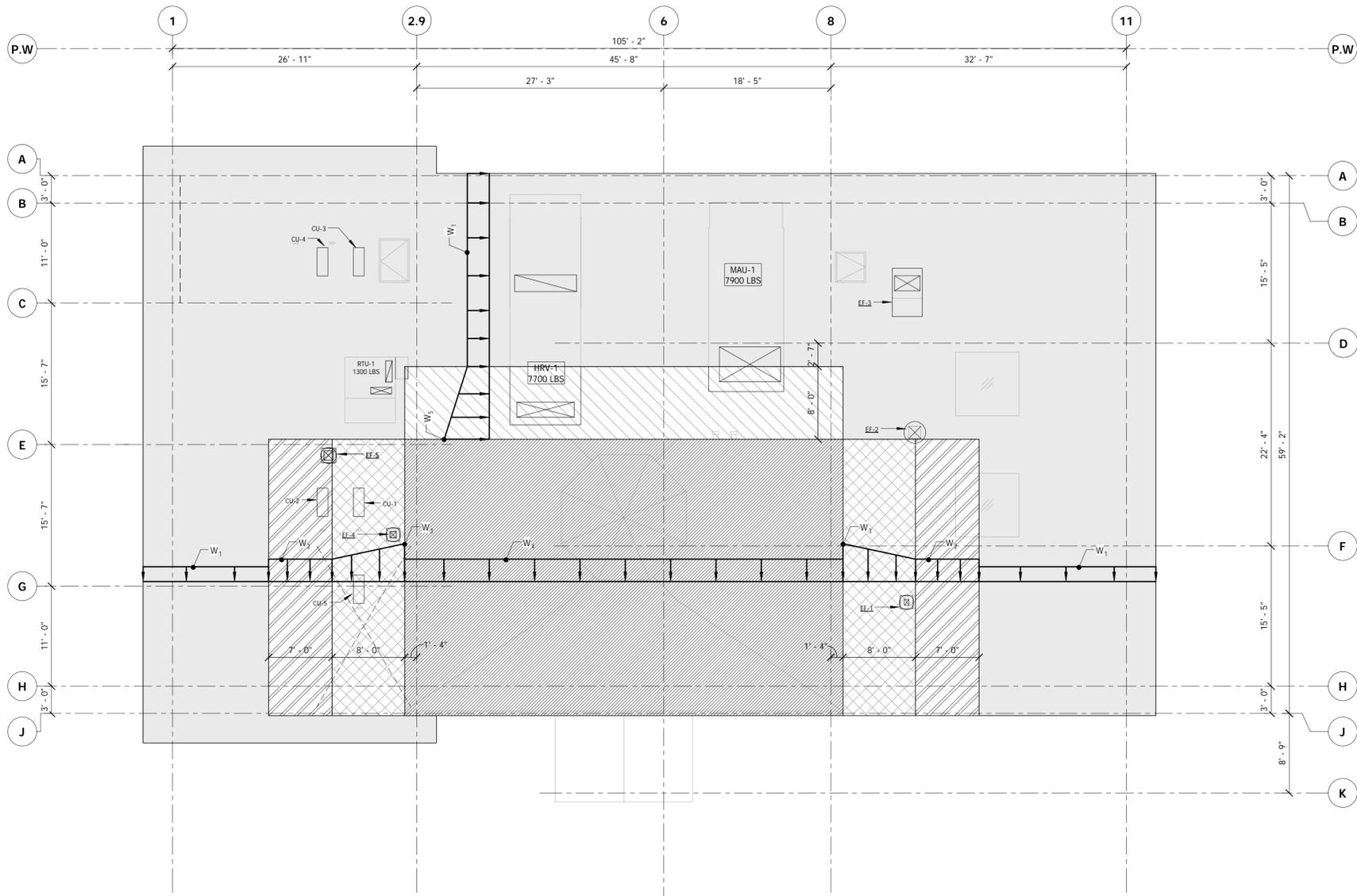
S-0.1

SHEET 68 OF 155



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



LOAD DESIGNATION	DESIGN LOADS	
	DEAD LOAD	LIVE LOAD
W ₁	34 PSF	33 PSF
W ₂	34 PSF	48 PSF
W ₃	34 PSF	75 PSF (TAPERED SEE PLAN)
W ₄	54 PSF	40 PSF
W ₅	34 PSF	60 PSF (TAPERED SEE PLAN)

NOTE: REFER TO METAL DECK NOTE #6 ON SHEET S-0.1 FOR WIND LOAD.

APPROXIMATE WEIGHT OF ROOF TOP EQUIPMENT	
RTU TYPE	APPROXIMATE WEIGHT (LBS.)
HRV-1	7700
MAU-1	7900
RTU-1	1300
EF-1	100
EF-2	170
EF-3	1150
EF-4	100
EF-5	100
EF-6	120
CU-1	170
CU-2	170
CU-3	170
CU-4	170
CU-5	100

1 ROOF LOAD DIAGRAM
 S-0.2 Scale: 1/8" = 1'-0"



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

ROOF LOAD
 DIAGRAM

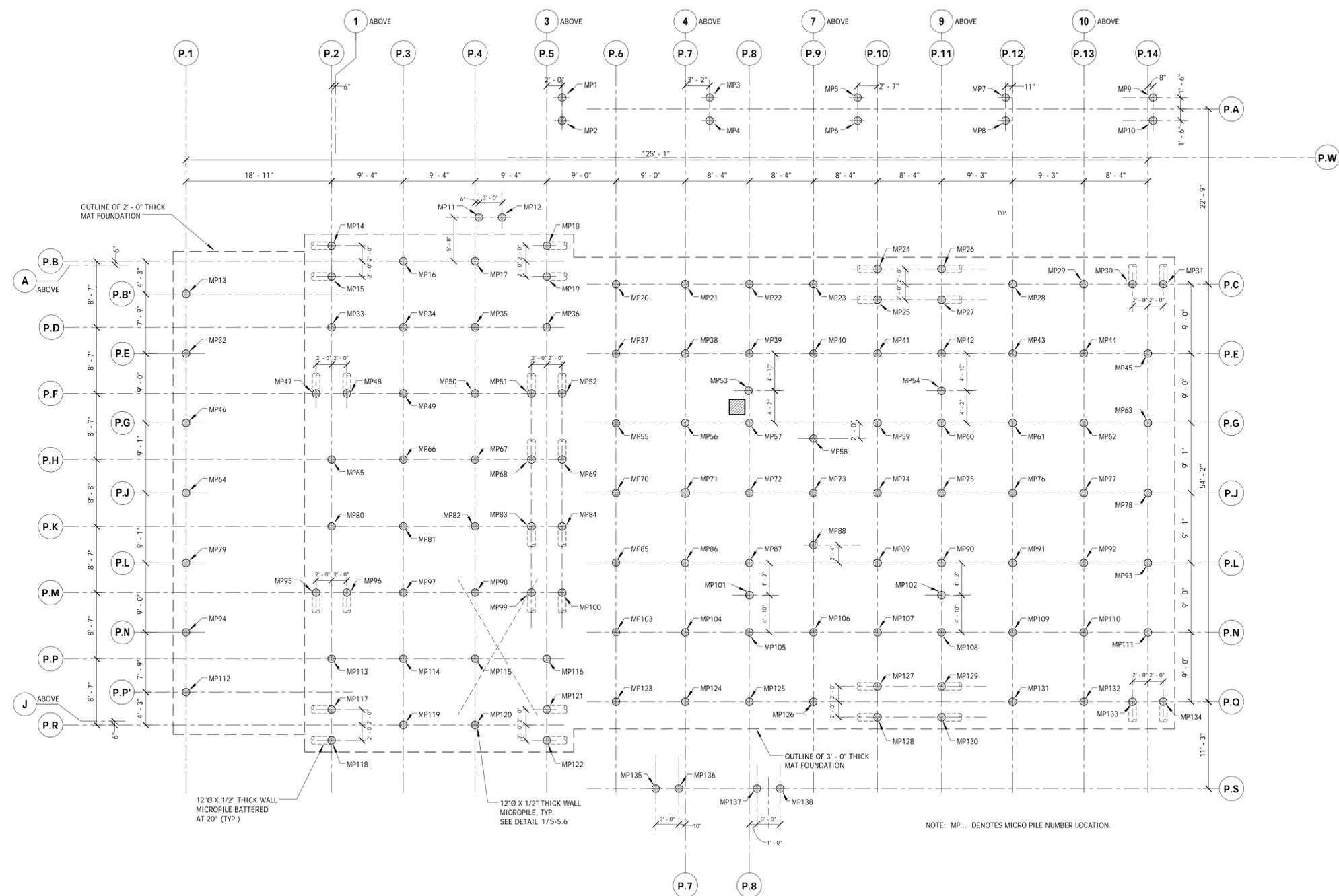
PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:
S-0.2



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



1 PILE LOCATION PLAN
 S-1.1 Scale: 1/8" = 1'-0"



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

PILE LOCATION PLAN

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:
S-1.1
 SHEET 70 OF 155

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

FOUNDATION
PLAN

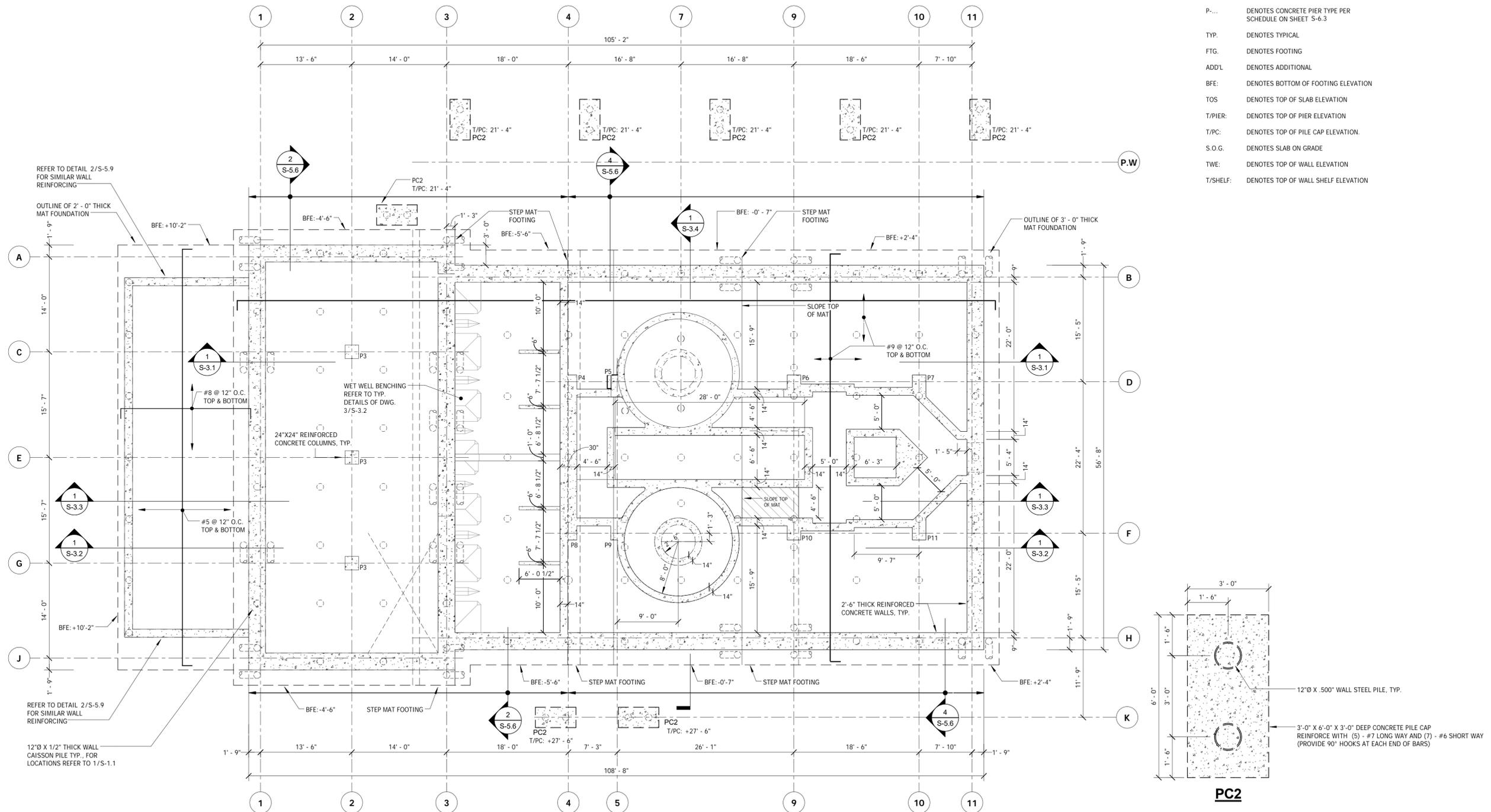
PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

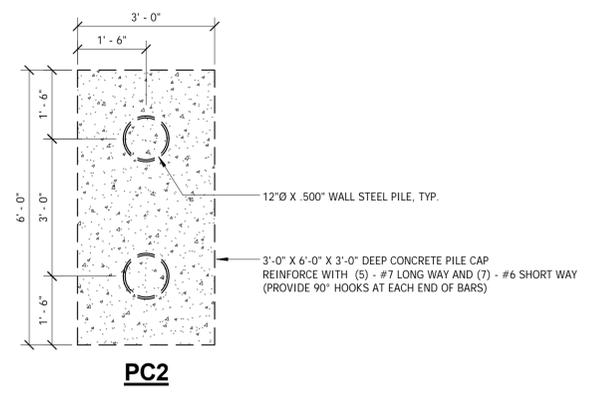
S-1.2

PLAN NOTES:

- CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL CONCRETE SLEEVES WITH ALL OTHER TRADES PRIOR TO THE PLACEMENT OF CONCRETE.
- SYMBOLS:
 - B-... DENOTES CONCRETE BEAM TYPE PER SCHEDULE ON SHEET S-6.2
 - S-... DENOTES ONE-WAY SLAB TYPE PER SCHEDULE ON SHEET S-1.4
 - PC-... DENOTES PILE CAP TYPE PER DETAIL ON SHEET S-1.2
 - P-... DENOTES CONCRETE PIER TYPE PER SCHEDULE ON SHEET S-6.3
 - TYP. DENOTES TYPICAL
 - FTG. DENOTES FOOTING
 - ADD'L DENOTES ADDITIONAL
 - BFE: DENOTES BOTTOM OF FOOTING ELEVATION
 - TOS DENOTES TOP OF SLAB ELEVATION
 - T/PIER: DENOTES TOP OF PIER ELEVATION
 - T/PC: DENOTES TOP OF PILE CAP ELEVATION.
 - S.O.G. DENOTES SLAB ON GRADE
 - TWE: DENOTES TOP OF WALL ELEVATION
 - T/SHELF: DENOTES TOP OF WALL SHELF ELEVATION



1 FOUNDATION PLAN
Scale: 1/8" = 1'-0"



2 PILE CAP DETAILS
Scale: 1/2" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



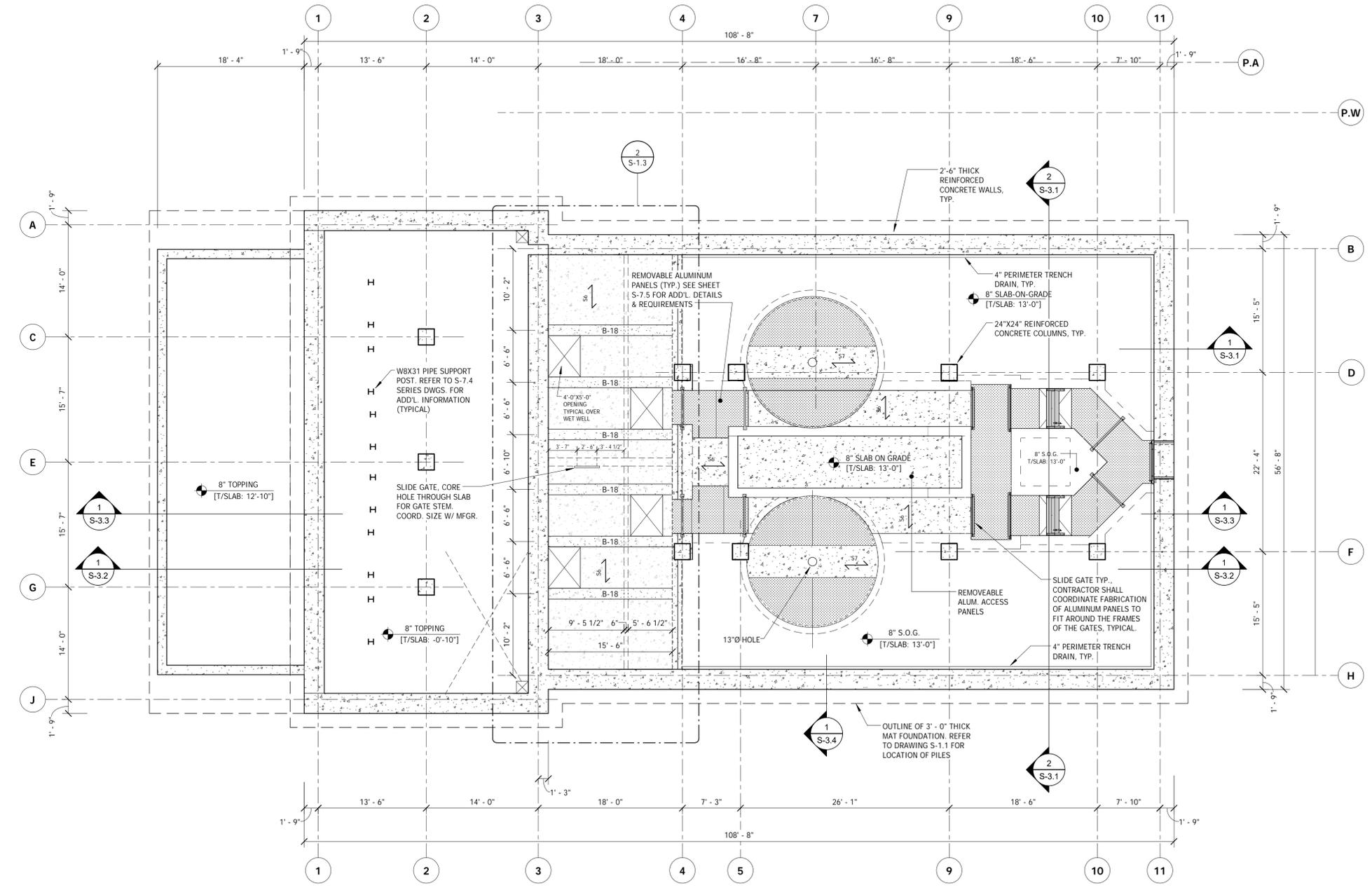
FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

LOWER LEVEL STRUCTURAL PLAN

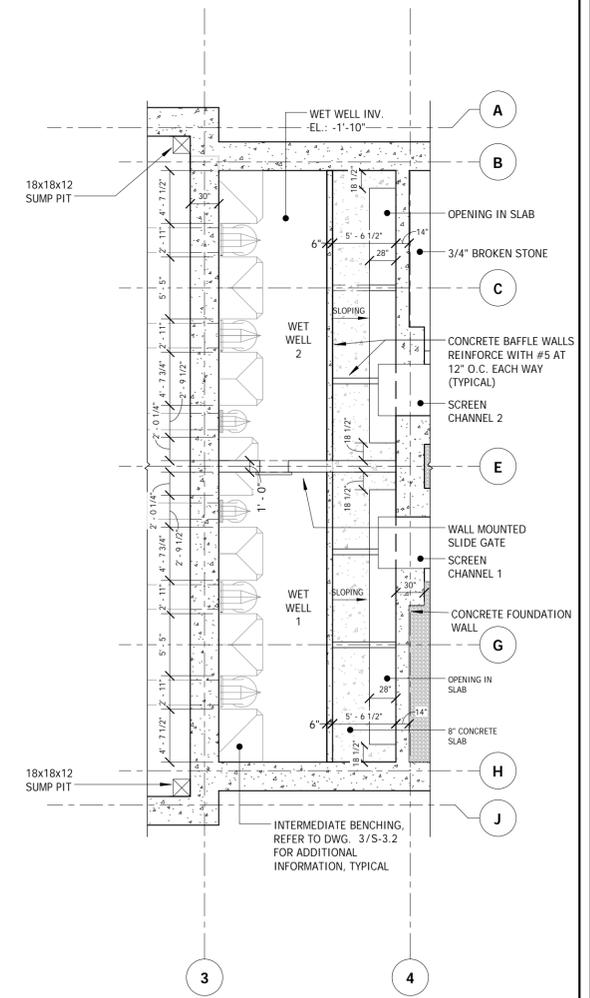
PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:
S-1.3
 SHEET 72 OF 155

- PLAN NOTES:**
- TOP OF CONCRETE SLAB ELEVATION SHALL BE 14'-0" UNLESS NOTED OTHERWISE.
 - CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL CONCRETE SLEEVES WITH ALL OTHER TRADES PRIOR TO THE PLACEMENT OF CONCRETE.
 - REFER TO S-7 SERIES DRAWINGS FOR PIPE SUPPORT/ PEDESTAL DETAILS AND PIPE PENETRATION DETAILS THROUGH FOUNDATION WALLS.
 - SYMBOLS:
 - B-... DENOTES CONCRETE BEAM TYPE PER SCHEDULE ON SHEET S-6.2
 - S-... DENOTES ONE-WAY SLAB TYPE PER SCHEDULE ON SHEET S-1.4
 - PC-... DENOTES PILE CAP TYPE PER DETAIL ON SHEET S-1.2
 - P-... DENOTES CONCRETE PIER TYPE PER SCHEDULE ON SHEET S-6.3
 - TYP. DENOTES TYPICAL
 - FTG. DENOTES FOOTING
 - ADD'L DENOTES ADDITIONAL
 - BFE: DENOTES BOTTOM OF FOOTING ELEVATION
 - TOS DENOTES TOP OF SLAB ELEVATION
 - T/PIER: DENOTES TOP OF PIER ELEVATION
 - T/PC: DENOTES TOP OF PILE CAP ELEVATION.
 - S.O.G. DENOTES SLAB ON GRADE
 - TWE: DENOTES TOP OF WALL ELEVATION
 - T/SHELF: DENOTES TOP OF WALL SHELF ELEVATION



1 LOWER LEVEL STRUCTURAL PLAN - ELEV. 14.00'
 S-1.3 Scale: 1/8" = 1'-0"



2 ENLARGED WET WELL PLAN AT ELEV. 12.00'
 S-1.3 Scale: 1/8" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

GROUND LEVEL FRAMING PLAN

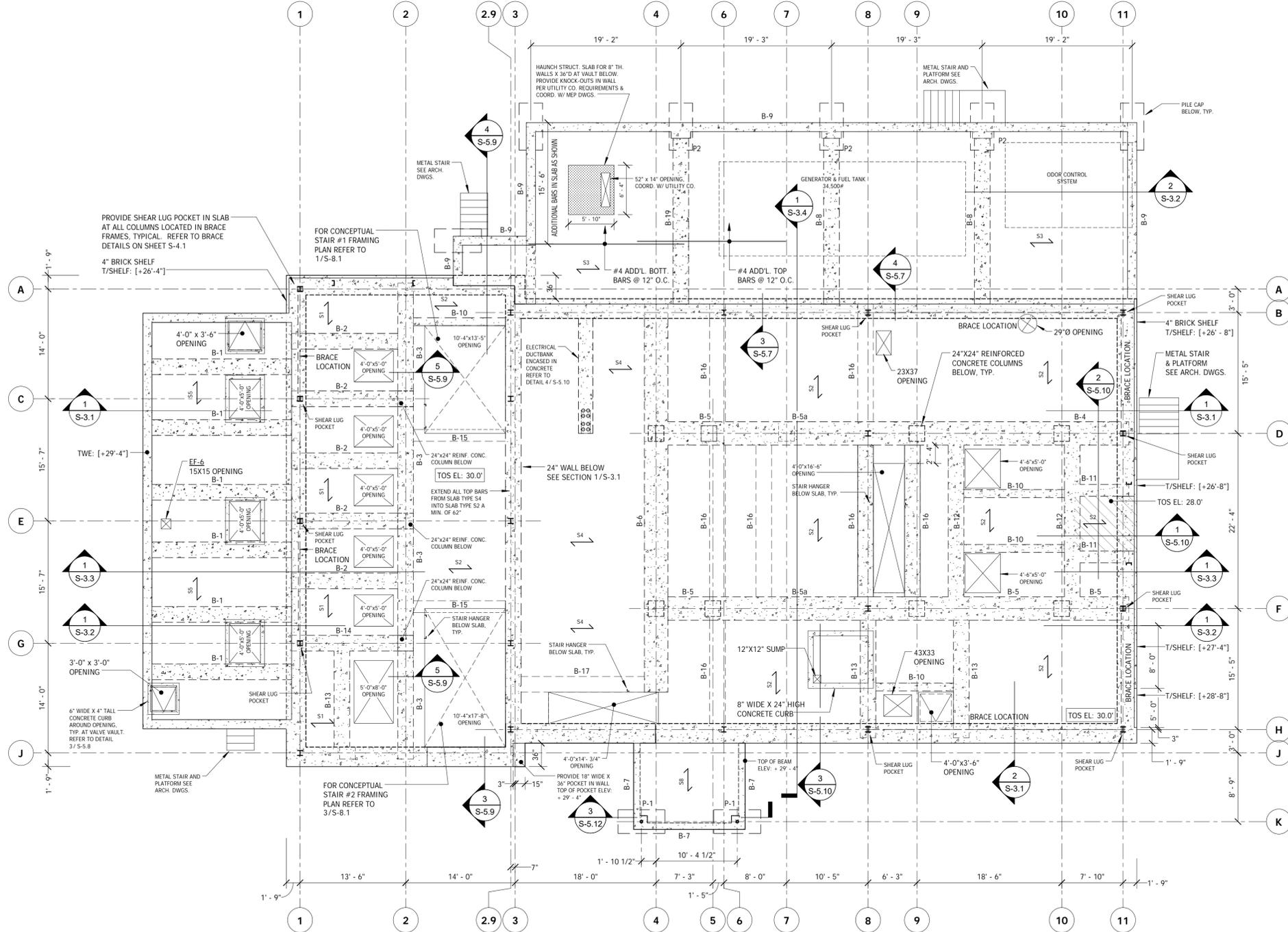
PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-1.4



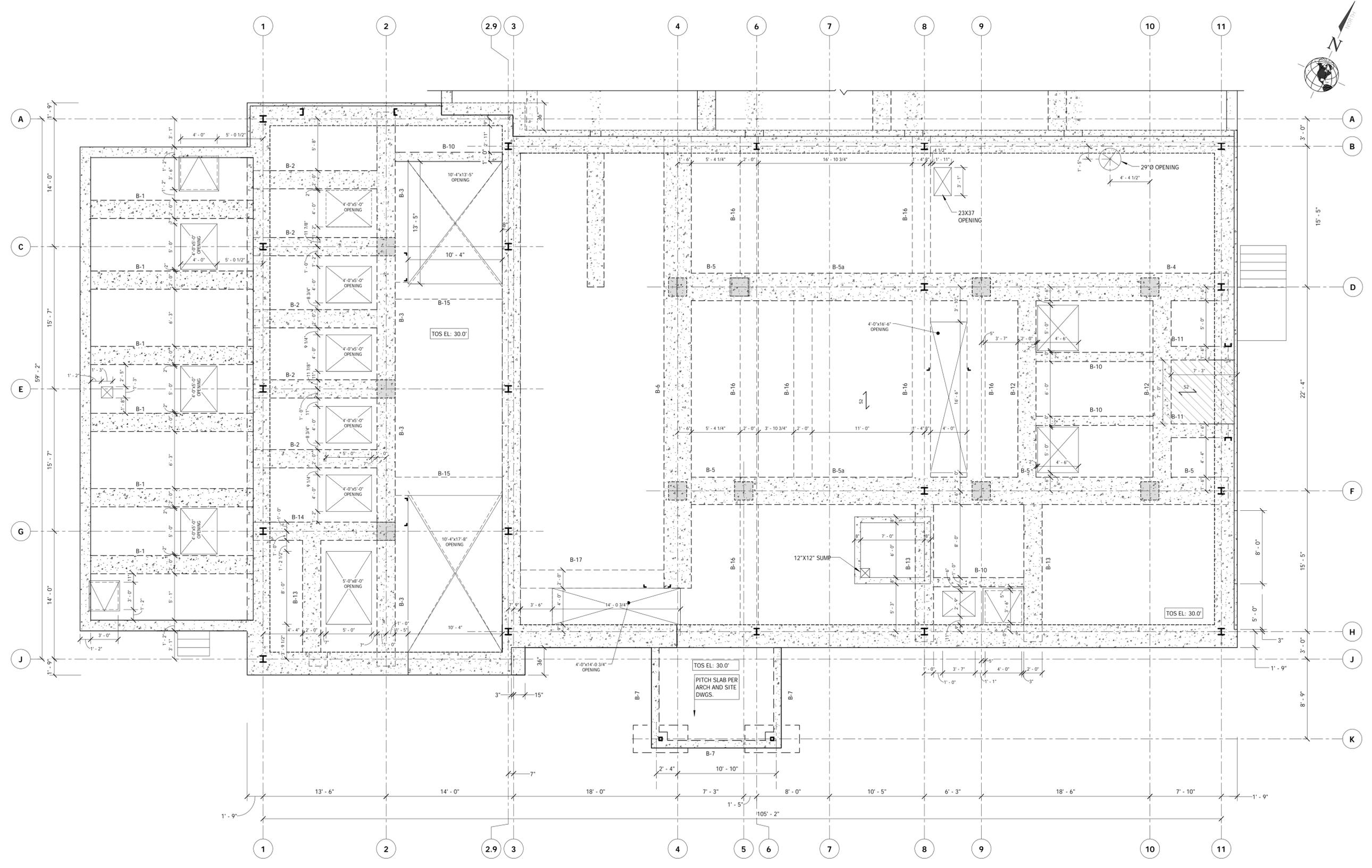
- PLAN NOTES:**
- TOP OF CONCRETE SLAB ELEVATION SHALL BE 30'-0" UNLESS NOTED OTHERWISE.
 - CONTRACTOR TO PROVIDE SLOTS IN PERIMETER WALL AS NECESSARY FOR ELECTRICAL WIRES. COORDINATE QUANTITY AND LOCATIONS WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR'S 5-5.9ER TO DETAIL.
 - CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL CONCRETE SLEEVES WITH ALL OTHER TRADES PRIOR TO THE PLACEMENT OF CONCRETE.
 - SYMBOLS:
 - B-... DENOTES CONCRETE BEAM TYPE PER SCHEDULE ON SHEET S-6.2
 - S-... DENOTES ONE-WAY SLAB TYPE PER SCHEDULE ON SHEET S-1.4
 - PC-... DENOTES PILE CAP TYPE PER DETAIL ON SHEET S-1.2
 - P-... DENOTES CONCRETE PIER TYPE PER SCHEDULE ON SHEET S-6.3
 - TYP. DENOTES TYPICAL
 - FTG. DENOTES FOOTING
 - ADD'L DENOTES ADDITIONAL
 - BFE: DENOTES BOTTOM OF FOOTING ELEVATION
 - TOS DENOTES TOP OF SLAB ELEVATION
 - T/PIER: DENOTES TOP OF PIER ELEVATION
 - S.O.G. DENOTES SLAB ON GRADE
 - TWE: DENOTES TOP OF WALL ELEVATION
 - T/SHELF: DENOTES TOP OF WALL SHELF ELEVATION



1 GROUND LEVEL FRAMING PLAN
 S-1.4 Scale: 1/8" = 1'-0"

SLAB MARK	SLAB THICKNESS AND CONC. WEIGHT	MAIN SPAN REINFORCEMENT		TRANSVERSE REINFORCEMENT		NOTES
		BOTTOM	TOP	BOTTOM	TOP	
S1	12" NWT	#6 @ 12" O.C.	#6 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	
S2	12" NWT	#8 @ 12" O.C.	#8 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	
S3	12" NWT	#7 @ 12" O.C.	#7 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	SEE PLAN FOR ADDITIONAL BARS
S4	14" NWT	#8 @ 6" O.C.	#8 @ 6" O.C.	#5 @ 12" O.C.	#5 @ 12" O.C.	
S5	8" NWT	#5 @ 12" O.C.	#5 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	
S6	6" NWT	#5 @ 12" O.C.	---	#5 @ 12" O.C.	---	PLACE BARS IN CENTER OF SLAB
S7	12" NWT	#7 @ 6" O.C.	#5 @ 12" O.C.	---	---	#3 TIES AT 12" O.C.
S8	8" NWT	#6 @ 12" O.C.	---	#4 @ 12" O.C.	---	

→ DENOTES SLAB SPAN AND DIRECTION OF MAIN SPAN REINFORCEMENT



CDR MAGUIRE
 2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmaguire.com

LANDMARK ARCHITECTS, P.C.
 DESIGN / RESTORE / BUILD
 64 Thompson Street, Suite A105
 East Haven, CT 06513
 phone: 203-468-2441
 www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

IES Innovative Engineering Services, LLC
 Consulting Engineers
 64 Thompson Street, Suite A105
 East Haven, CT 06513
 Tel: 203.467.4370 Fax: 203.468.6172
 Web: www.iesllc.biz



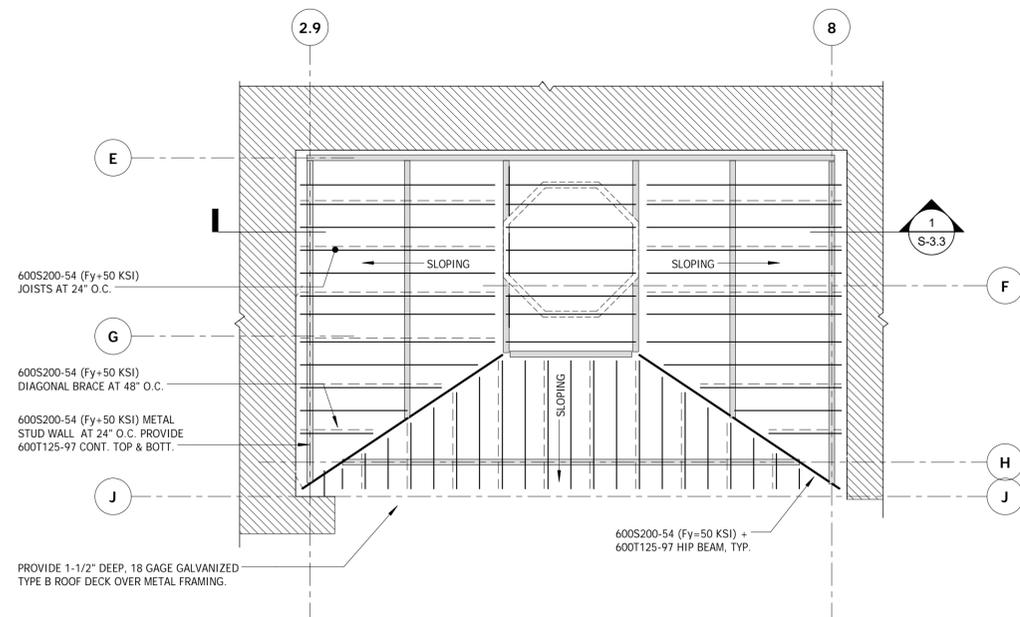
FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

GROUND LEVEL LAYOUT PLAN

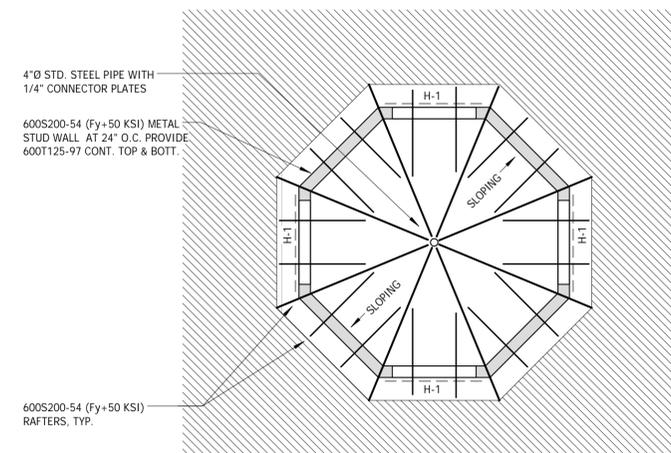
PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:
S-1.5

1 GROUND LEVEL LAYOUT PLAN
 S-1.5 Scale: 3/16" = 1'-0"

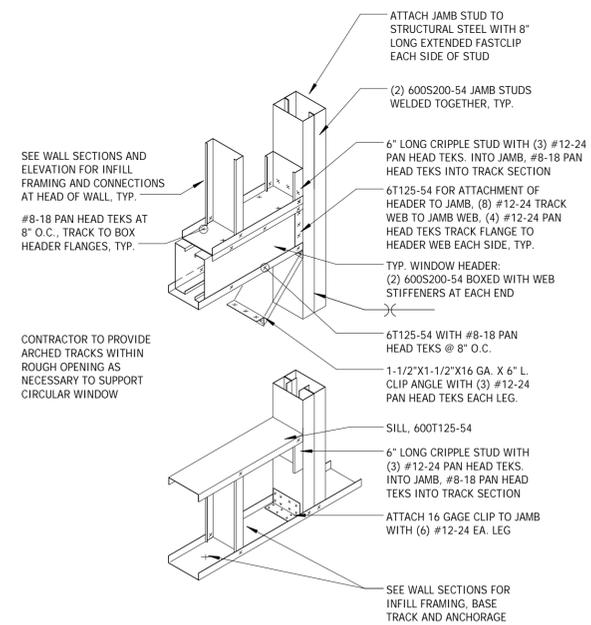


1 ROOF OVER-FRAMING PLAN
Scale: 1/8" = 1'-0"



NOTES: 1) H-1 DENOTES METAL STUD HEADER. REFER TO DETAIL 3/S-1.7 FOR ADDITIONAL INFORMATION.
2) PROVIDE 1-1/2" DEEP, 18 GAGE GALVANIZED TYPE B ROOF DECK OVER METAL FRAMING.

2 CUPOLA ROOF FRAMING PLAN
Scale: 1/4" = 1'-0"



3 TYP. CUPOLA HEADER & SILL DETAIL
Scale: 3/4" = 1'-0"



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A105
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



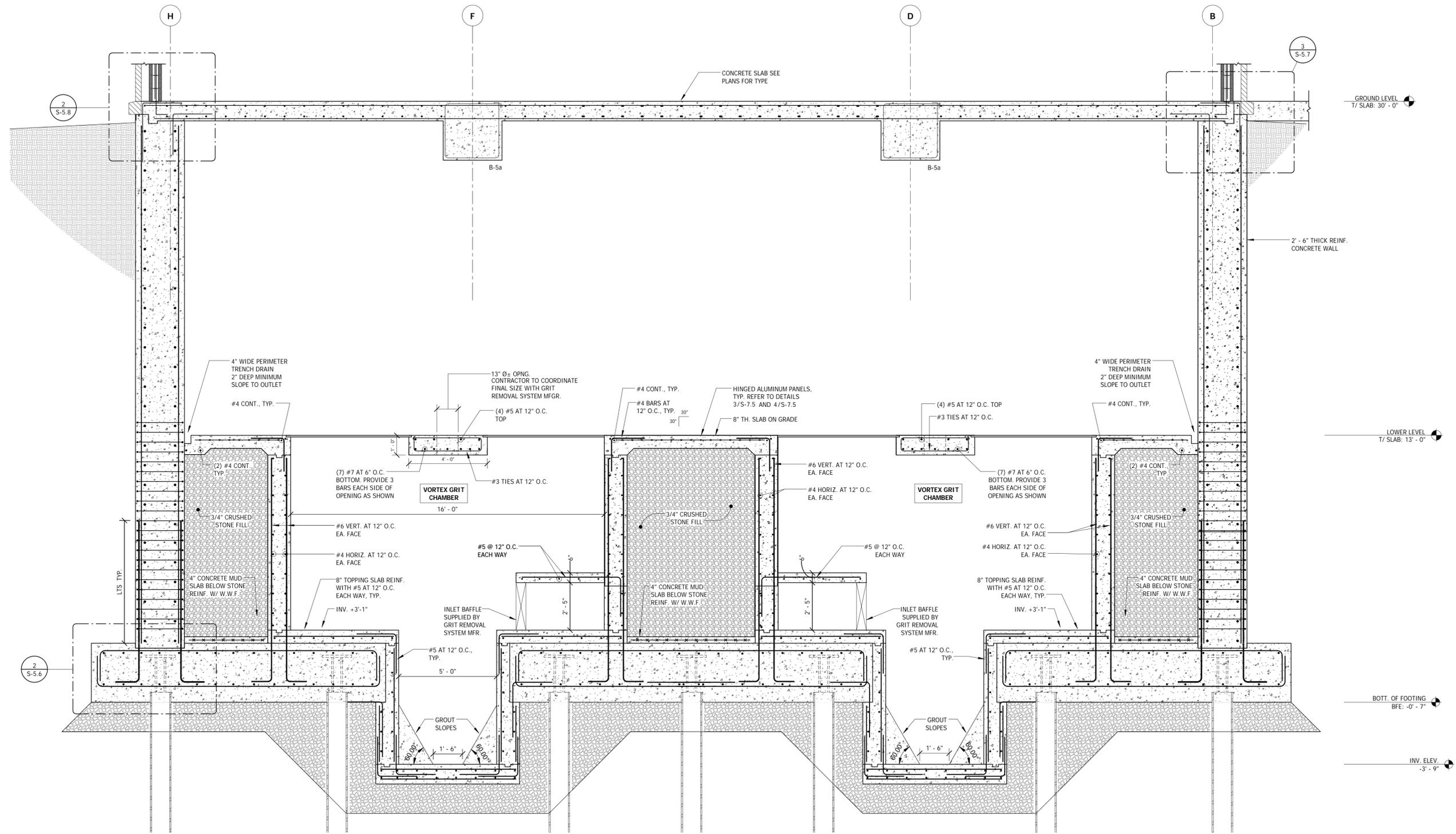
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

ROOF OVER-FRAMING PLAN

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-1.7



1 SECTION AT GRID LINE 7
S-3.4 Scale: 3/8" = 1'-0"

CDR MAGUIRE
2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

LANDMARK
ARCHITECTS, P.C.
DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

IES Innovative Engineering Services, LLC
Consulting Engineers
64 Thompson Street, Suite A101
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz

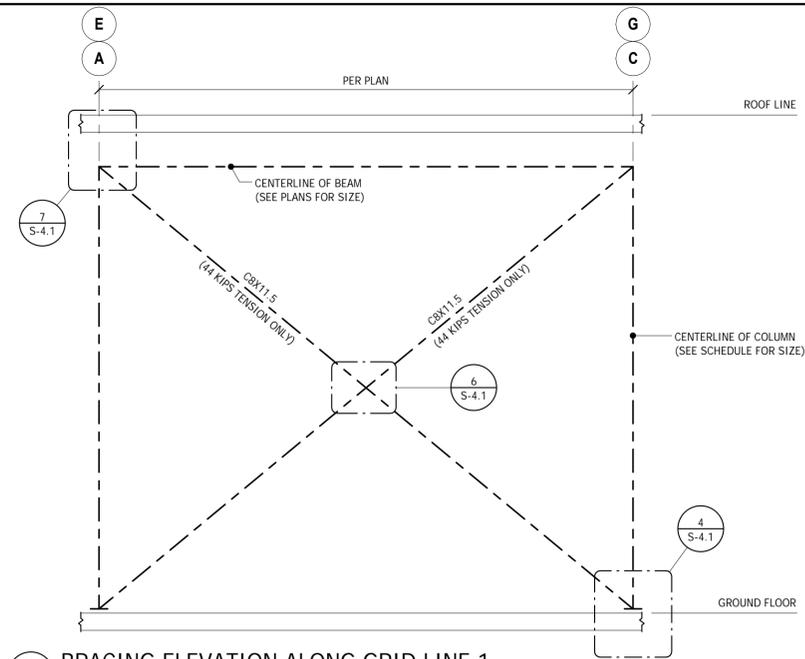


FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

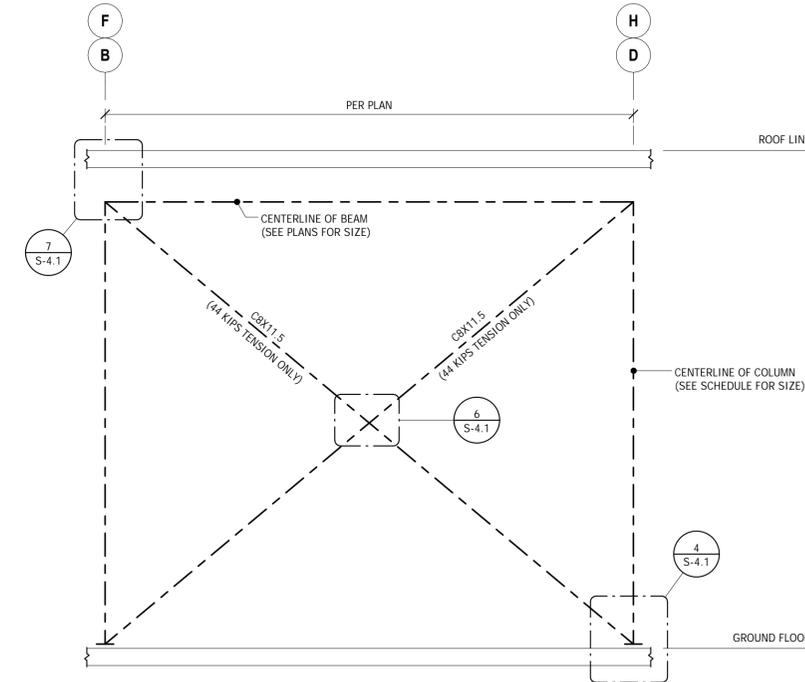
FOUNDATION SECTIONS IV

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

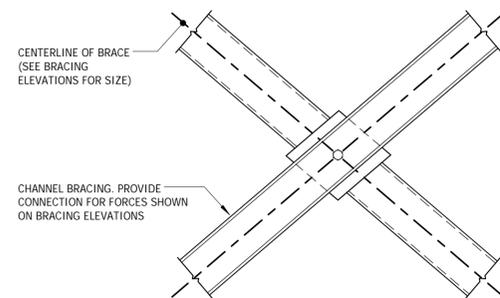
SHEET NUMBER:
S-3.4



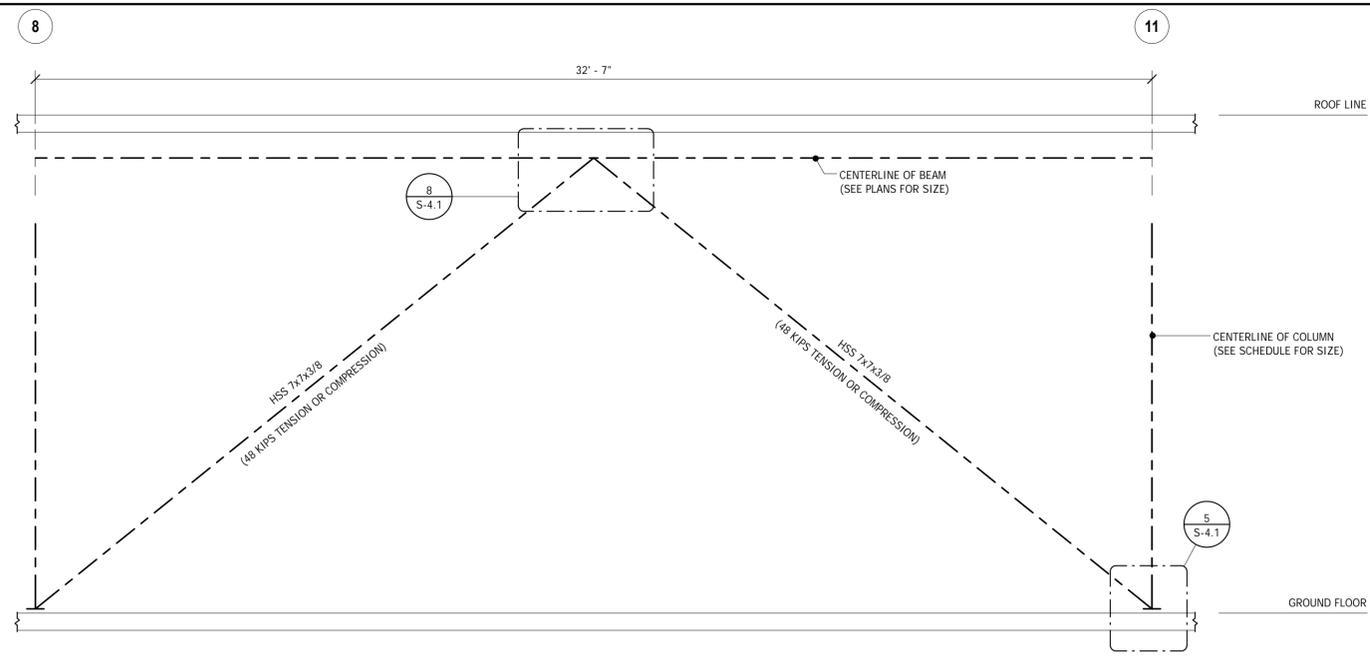
1 BRACING ELEVATION ALONG GRID LINE 1
S-4.1 Not to Scale



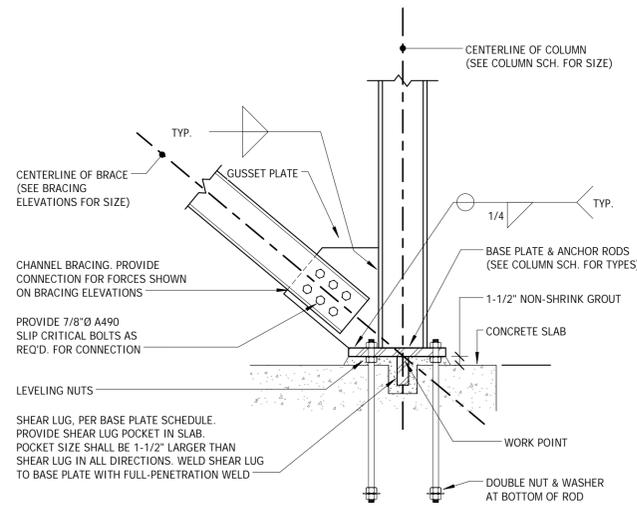
3 BRACING ELEVATIONS ALONG GRID LINE 11
S-4.1 Not to Scale



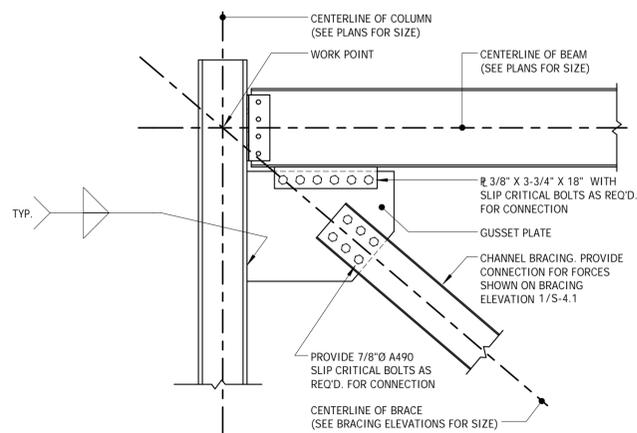
6 X-BRACE CONNECTION
S-4.1 Scale: 3/4" = 1'-0"



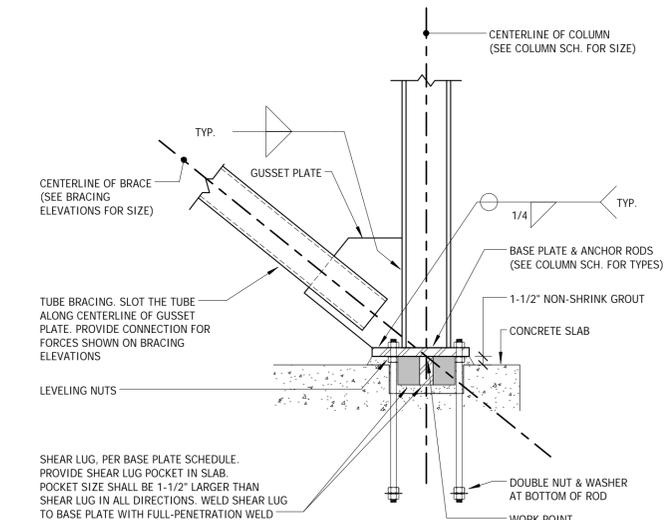
2 BRACING ELEVATION ALONG GRID LINES B & H
S-4.1 Not to Scale



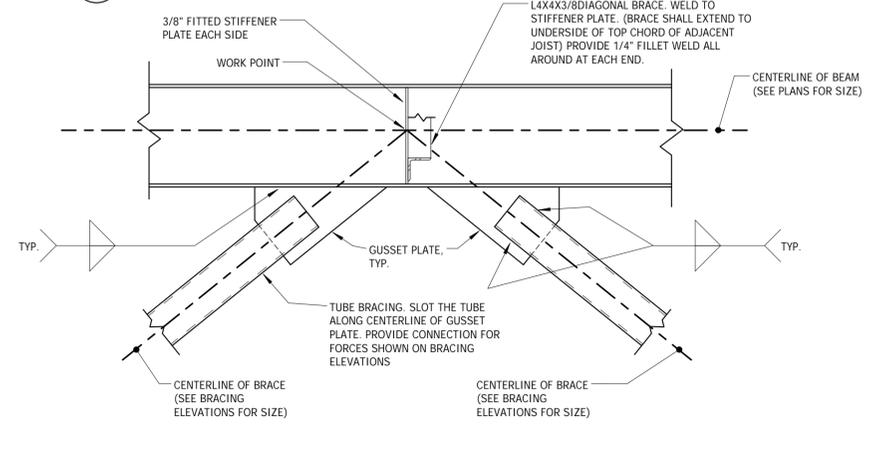
4 BRACE TO COL. BASE CONNECTION AT LINES 1+11
S-4.1 Scale: 3/4" = 1'-0"



7 SINGLE BRACE TO BEAM TOP CONNECTION AT LINES 1+11
S-4.1 Scale: 3/4" = 1'-0"



5 BRACE TO COL. BASE CONNECTION AT LINES B+H
S-4.1 Scale: 3/4" = 1'-0"



8 BRACE TO BEAM CONNECTION AT LINES B+H
S-4.1 Scale: 3/4" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

**BRACING
ELEVATIONS &
DETAILS**

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

S-4.1

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

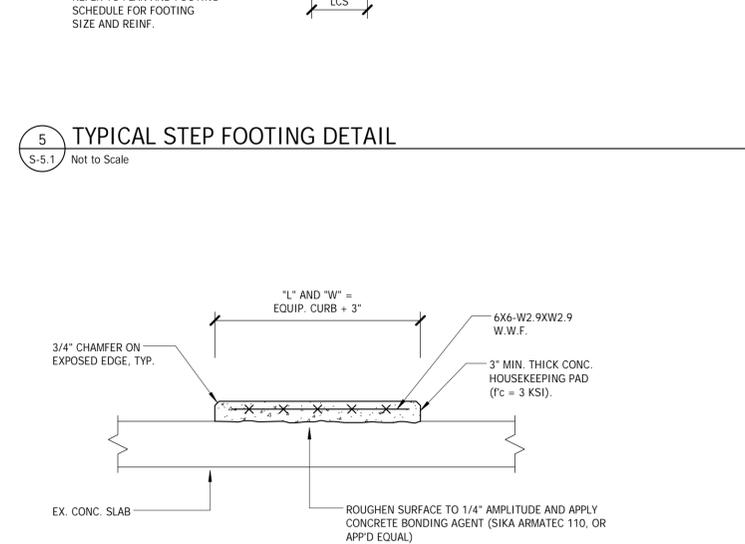
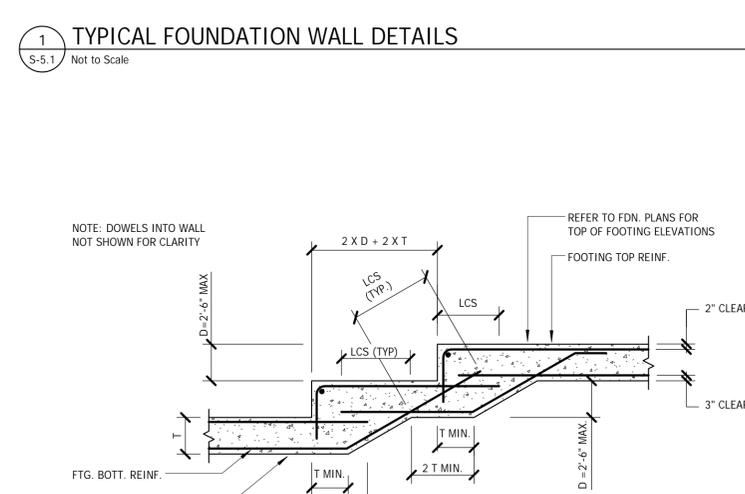
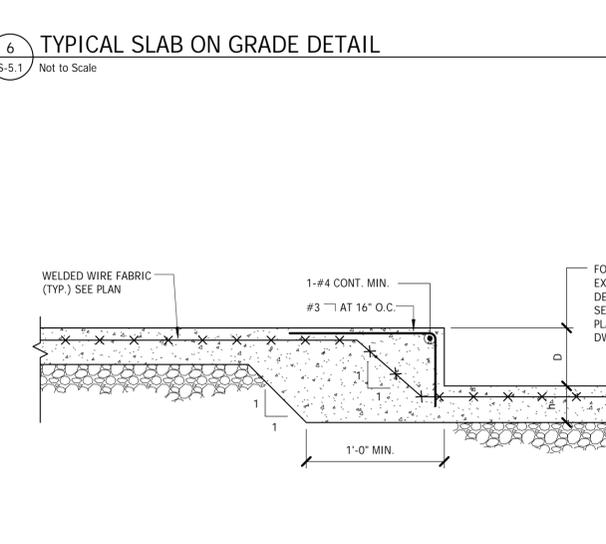
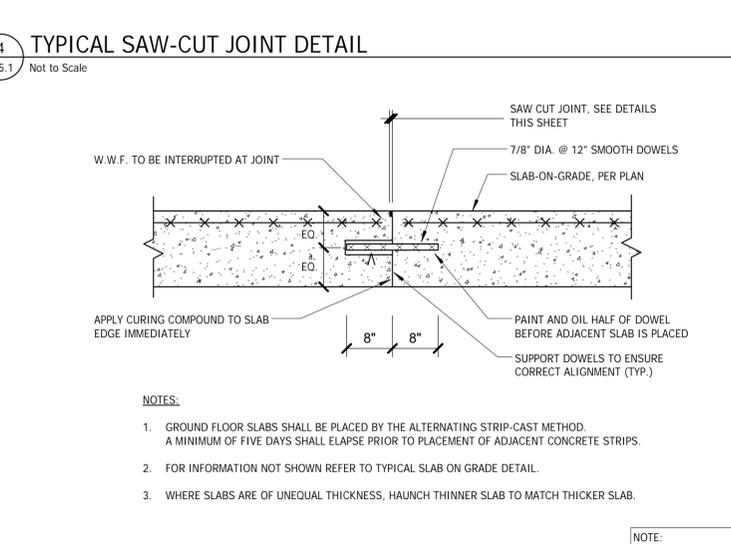
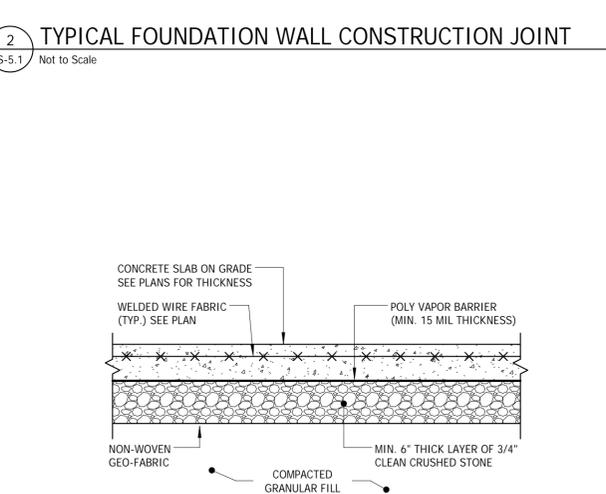
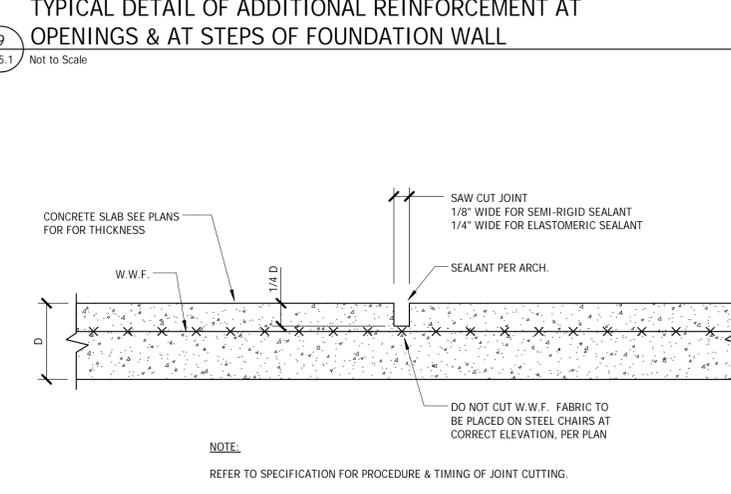
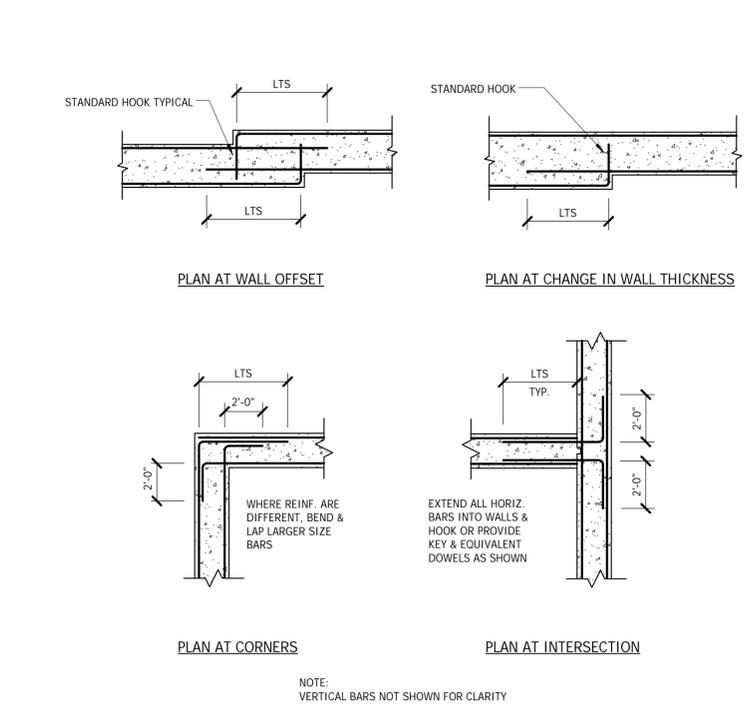
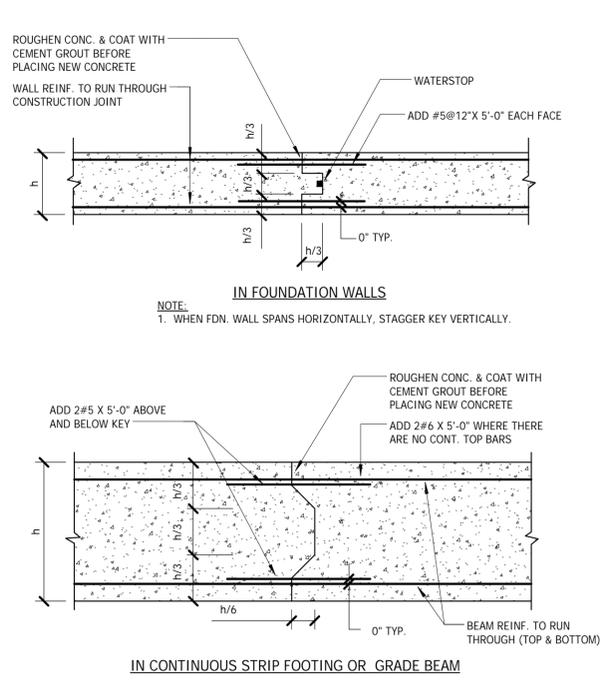
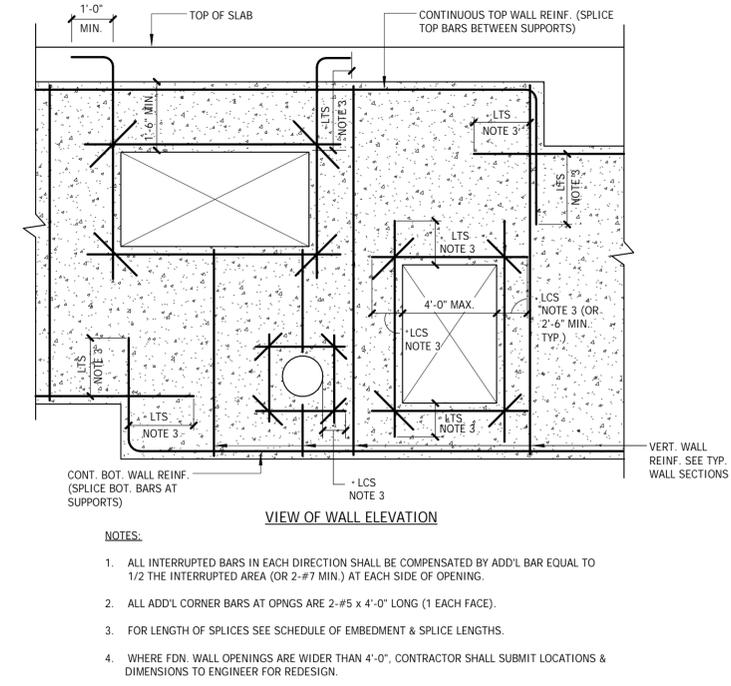


FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

TYPICAL CONCRETE DETAILS I

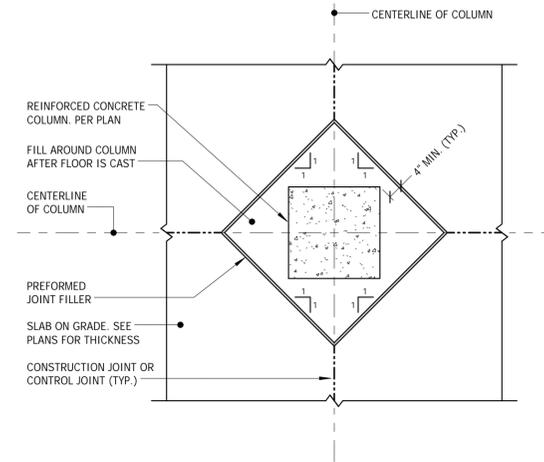
PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

S-5.1

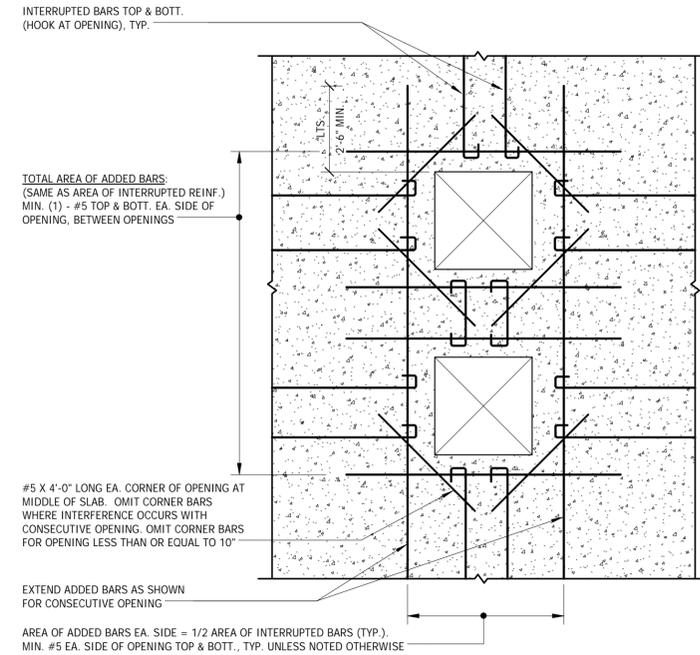


REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



1 TYPICAL COLUMN ISOLATION JOINT DETAIL
 S-5.2 Not to Scale



- NOTES:**
1. OMIT ADDED BARS WHERE OPENING IS 10" OR LESS. RUN NORMAL SLAB REINF. BY SIDE OF OPENING
 2. HOOK ADDED BARS IF OPENING IS NEAR OR AGAINST EXTERIOR BEAMS/ COLUMNS & ADDED REINFORCING CAN'T BE EXTENDED TO REQ'D. LENGTH
 3. REFER TO SHEET S-6.2 FOR REBAR SCHEDULE OF EMBEDMENT & SPLICE LENGTHS

2 TYPICAL CONCRETE SLAB OPENING REINF. DETAIL
 S-5.2 Not to Scale



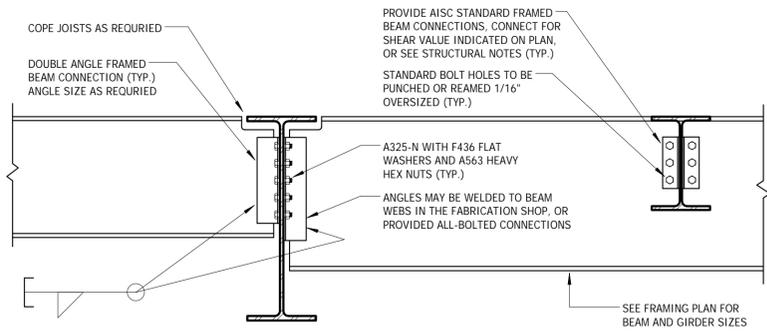
FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

TYPICAL
 CONCRETE
 DETAILS II

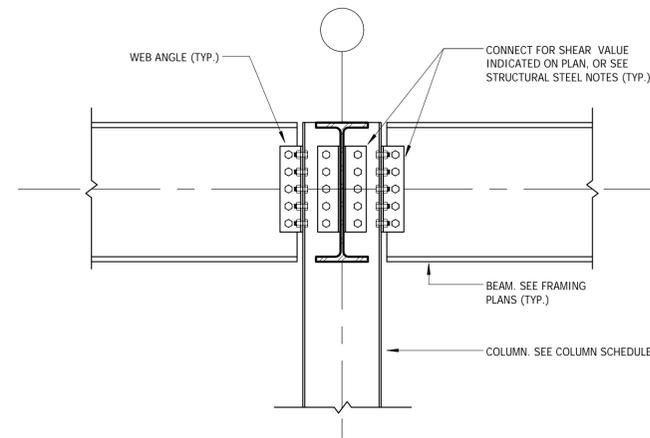
PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

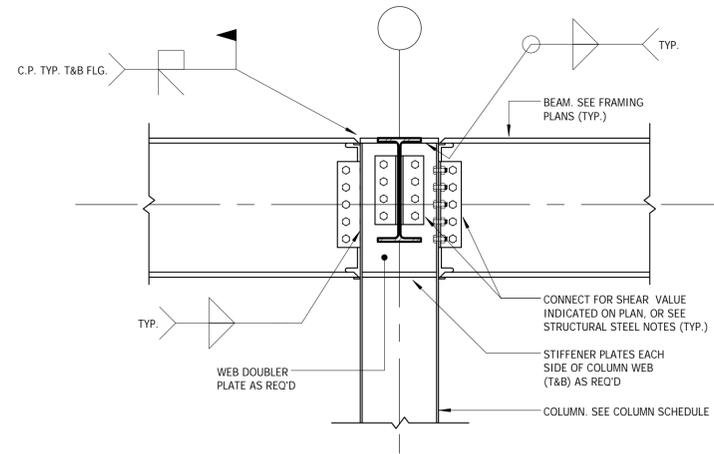
S-5.2



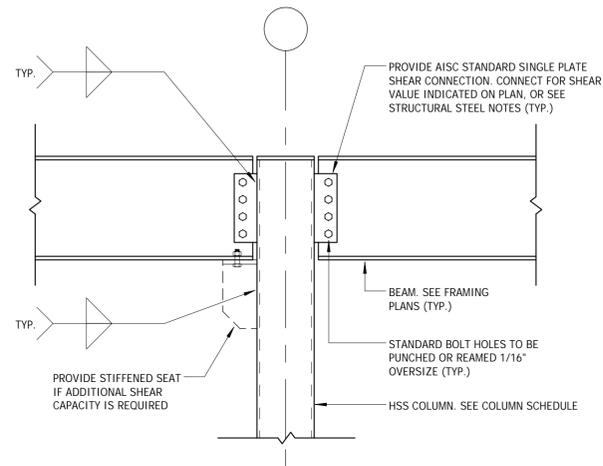
1 TYPICAL BEAM TO BEAM SHEAR CONNECTION
S-5.3 Not to Scale



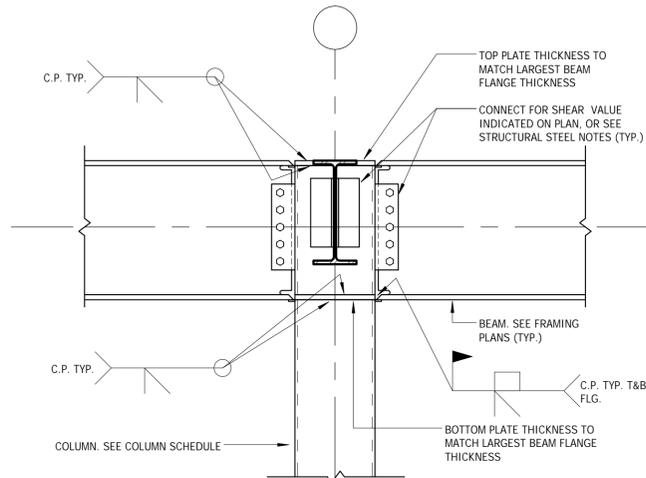
2 TYPICAL BEAM TO COLUMN SHEAR CONNECTION
S-5.3 Not to Scale



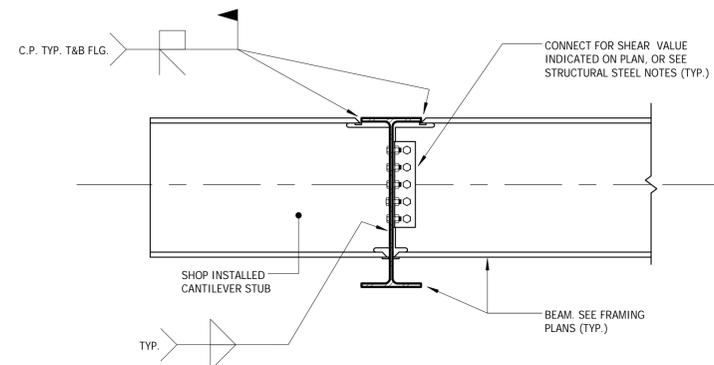
3 TYPICAL BEAM TO COLUMN MOMENT CONNECTION
S-5.3 Not to Scale



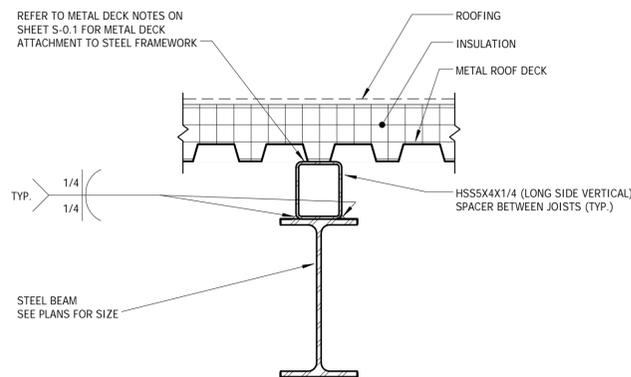
4 TYPICAL BEAM TO HSS COL. SHEAR CONNECTION
S-5.3 Not to Scale



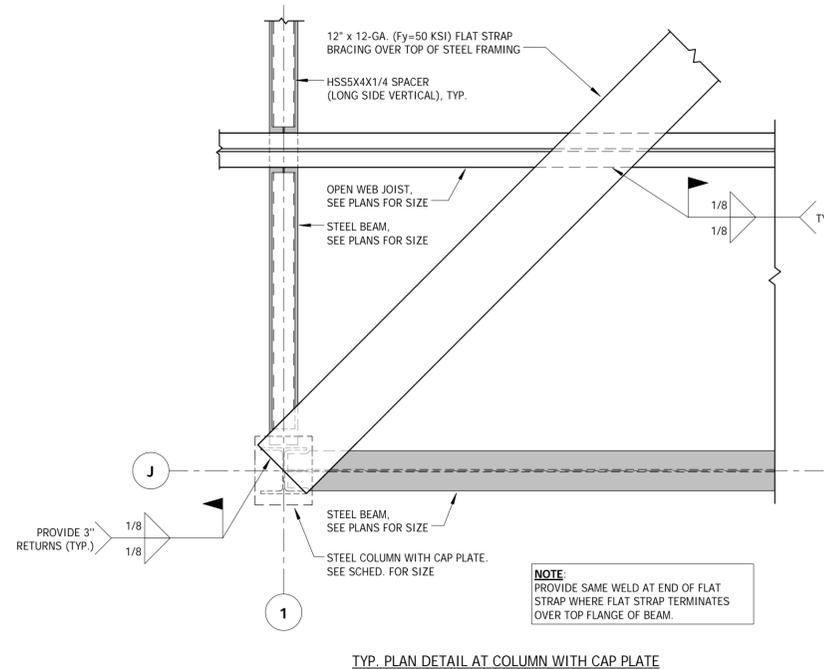
5 TYPICAL BEAM TO HSS COLUMN MOMENT CONNECTION
S-5.3 Scale: 3/4\"/>



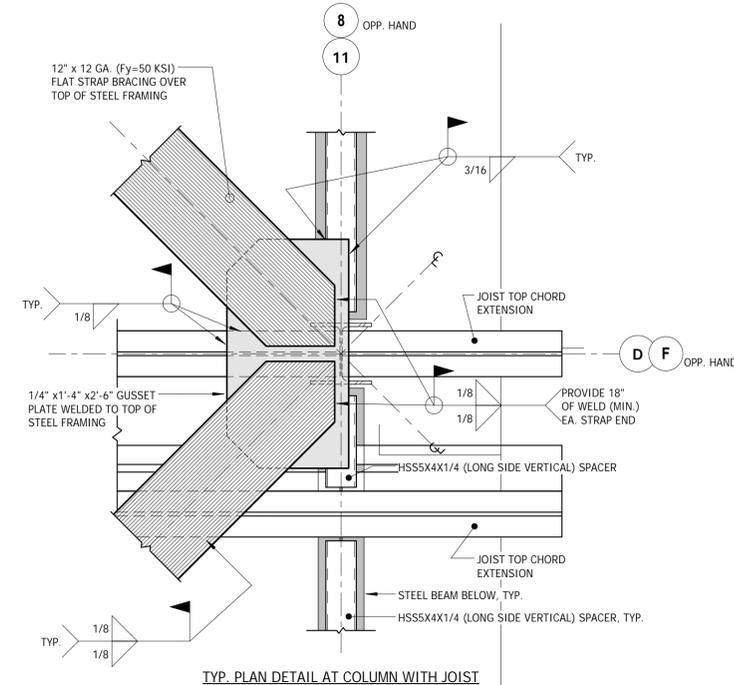
6 TYPICAL BEAM TO GIRDER CANTILEVER CONNECTION
S-5.3 Not to Scale



7 TYPICAL ROOF BEAM WITH TUBE SPACER
S-5.3 Not to Scale



8 TYP. FLAT STRAP BRACING DETAIL AT ROOF
S-5.3 Not to Scale

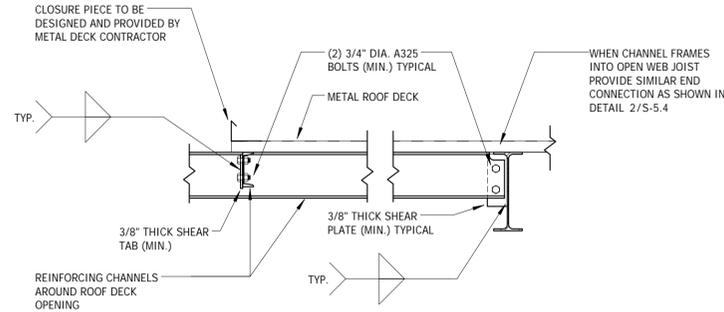


TYP. PLAN DETAIL AT COLUMN WITH JOIST

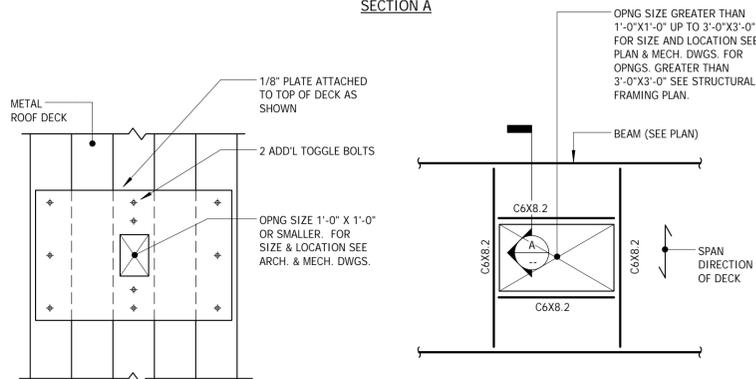
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



TYPICAL STEEL
DETAILS I



SECTION A



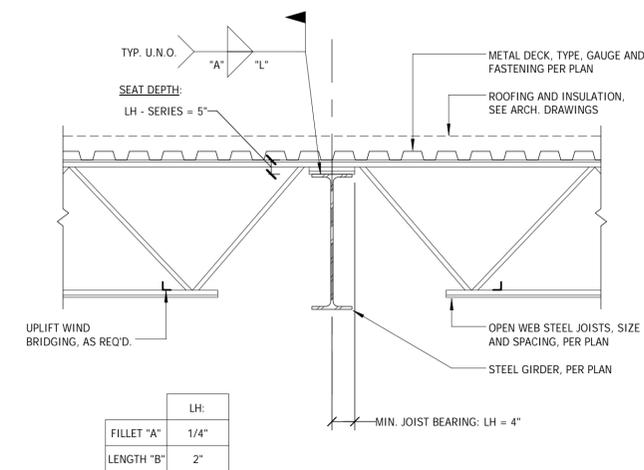
PLAN VIEW

NOTES:

1. NO REINF. REQUIRED IF OPENING IS 6" OR SMALLER PROVIDED ONLY ONE RIB IS INTERRUPTED.
2. CLUSTER OPENINGS THAT ARE SPACED LESS THAN 1'-0" SHALL BE TREATED AS ONE LARGE OPENING AND PROVIDE THE REINF. OR FRAMING AS PER DETAIL ABOVE.
3. SEE METAL DECK GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
4. ATTACH DECK (ENDS AND SIDE LAPS) TO CHANNELS. (TYP.)

1 TYPICAL REINFORCING DETAIL AT ROOF DECK OPENING

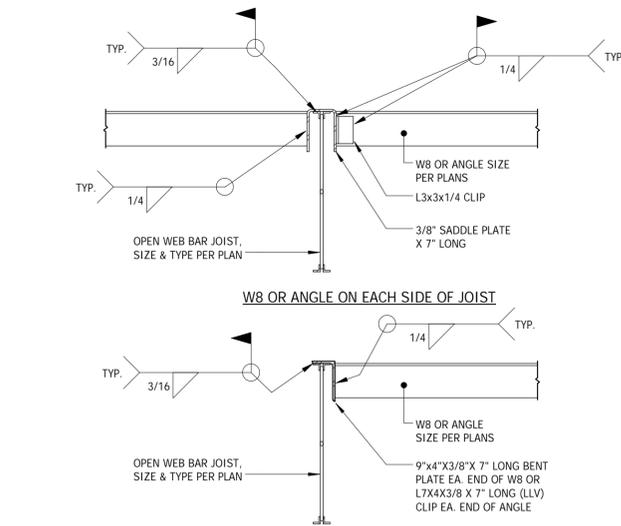
S-5.4 Not to Scale



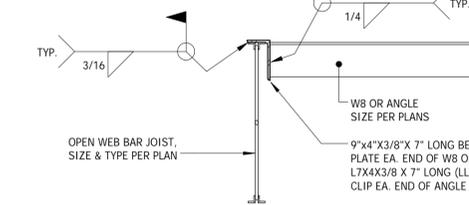
LH:	
FILLET "A"	1/4"
LENGTH "B"	2"

6 TYPICAL OPEN WEB JOIST BEARING ON STL. GIRDER

S-5.4 Scale: 3/4" = 1'-0"



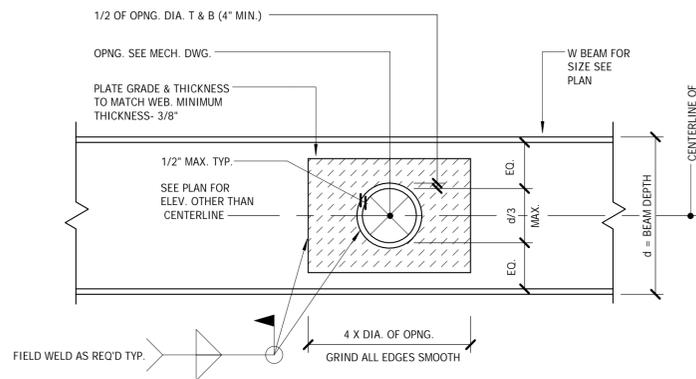
W8 OR ANGLE ON EACH SIDE OF JOIST



W8 OR ANGLE ON ONE SIDE OF JOIST

2 TYP. W8 OR ANGLE TO TOP CHORD CONNECTION DETAIL

S-5.4 Scale: 3/4" = 1'-0"

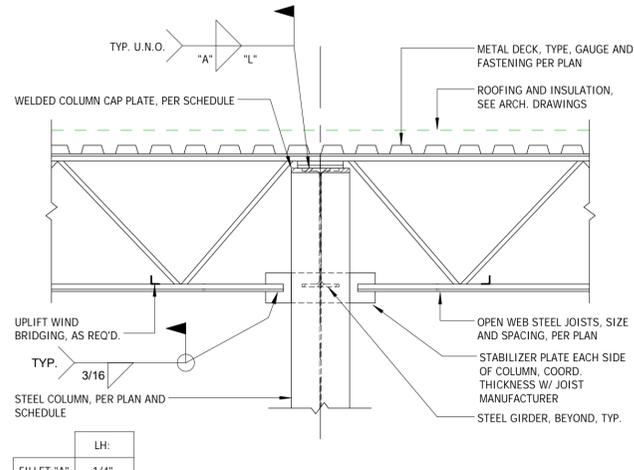


NOTES:

1. FOR SIZE OF OPENINGS SEE PLANS AND PLUMBING DRAWINGS.
2. ALL FILLET WELDS SHALL SATISFY TABLE J2.4 OF AISC ASD SPECIFICATIONS AND SHALL NOT BE LESS THAN 1/4".
3. BEAM PENETRATIONS WITHOUT ELEVATIONS INDICATED ARE TO BE LOCATED AT THE CENTER OF THE WEB OF BEAM.

4 TYP. REINFORCING DETAIL OF OPENING IN WEB OF STEEL BEAM

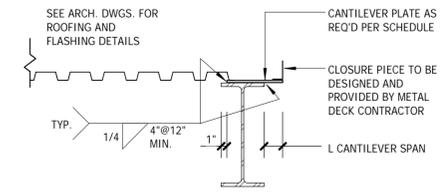
S-5.4 Scale: 3/4" = 1'-0"



LH:	
FILLET "A"	1/4"
LENGTH "B"	2"

7 TYPICAL OPEN WEB JOIST BEARING ON STL. COLUMN

S-5.4 Scale: 3/4" = 1'-0"



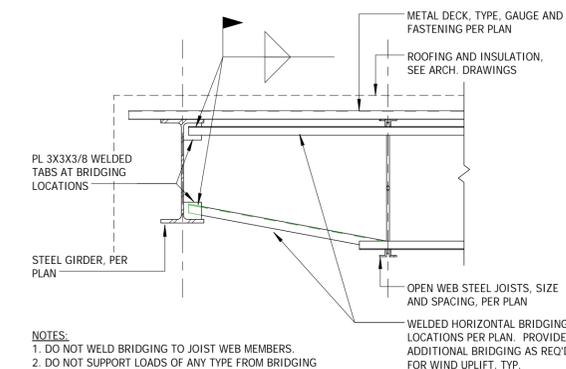
CANTILEVER SPAN 'L'	THICKNESS OF BENT PLATE OR CLOSURE
L ≤ 2'-0"	3/8"
L ≤ 1'-4"	1/4"
L ≤ 10"	10 GAGE
L ≤ 8"	12 GAGE

NOTES:

1. FOR VALUES OVER TABULATED VALUES, DECK MANUFACTURER TO PROVIDE DETAIL AND SUPPORTING CALCULATIONS FOR ENGINEERS REVIEW.
2. SEE ADDITIONAL DETAILS AT CURTAINWALL SUPPORT LOCATIONS.

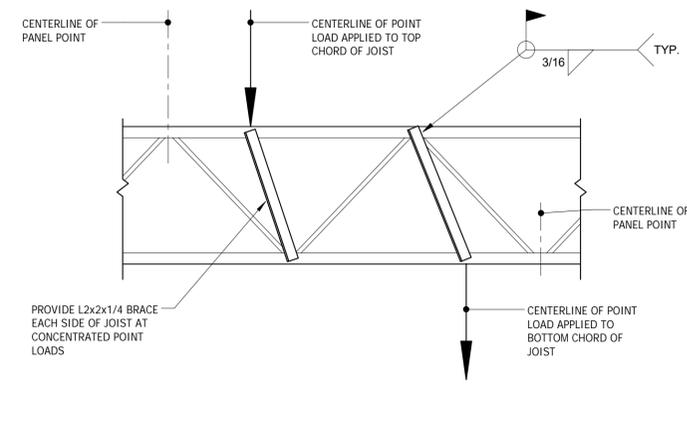
3 TYPICAL METAL ROOF DECK EDGE DETAIL

S-5.4 Not to Scale



5 TYPICAL OPEN WEB JOIST HORIZ. BRIDGING DETAIL

S-5.4 Scale: 3/4" = 1'-0"



8 TYP. OPEN WEB JOIST REINFORCEMENT AT CONCENTRATED LOADS

S-5.4 Scale: 3/4" = 1'-0"



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A101
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A101
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



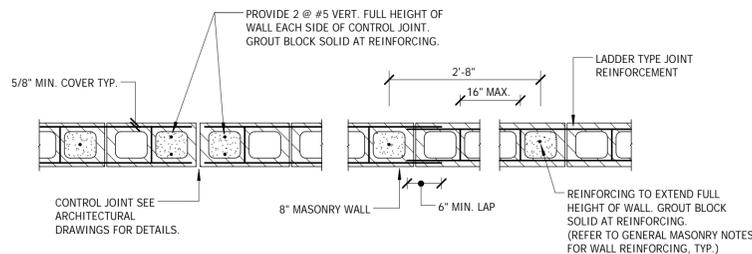
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

TYPICAL STEEL
DETAILS II

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-5.4

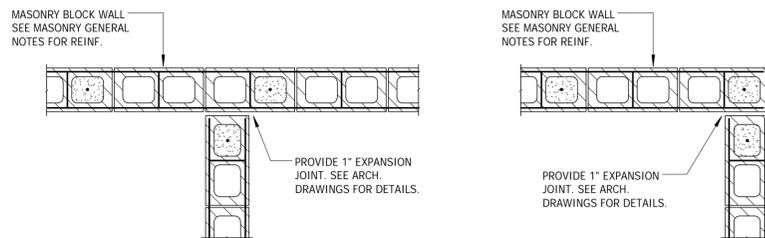


NOTES:

1. PROVIDE CONTINUOUS HORIZONTAL DURA-WALL REINFORCING AT EVERY SECOND COARSE OF BLOCK. (TYPICAL AT ALL MASONRY WALLS)
2. FOR $F_y = 60$ KSI, VERTICAL REINFORCING SHALL BE SPLICED USING THE FOLLOWING LAP LENGTHS:
 NON-EPOXY COATED BARS: LAP LENGTH = 48 x BAR DIAMETER
 EPOXY COATED BARS: LAP LENGTH = 72 x BAR DIAMETER
 WHEN DIFFERENT SIZE BARS ARE BEING LAPPED USE THE LARGER BAR DIAMETER FOR LAP SPLICE. LAP SPLICE LENGTH SHALL BE A MINIMUM OF 24".
3. GROUTING OF VERTICAL CELLS SHALL TERMINATE 1 1/2" BELOW TOP OF BLOCK FOR EACH GROUTING LIFT.

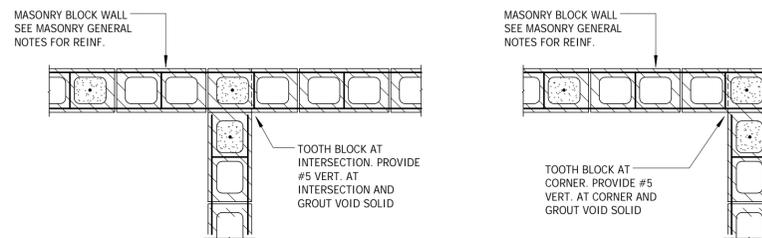
1 TYPICAL REINFORCING AT MASONRY WALL

S-5.5 Scale: 1/8" = 1'-0"



2 TYPICAL CMU CONTROL JOINT WITH RUBBER KEY

S-5.5 Scale: 1/8" = 1'-0"



TYP. FULL HEIGHT INTERIOR WALL INTERSECTION DETAIL

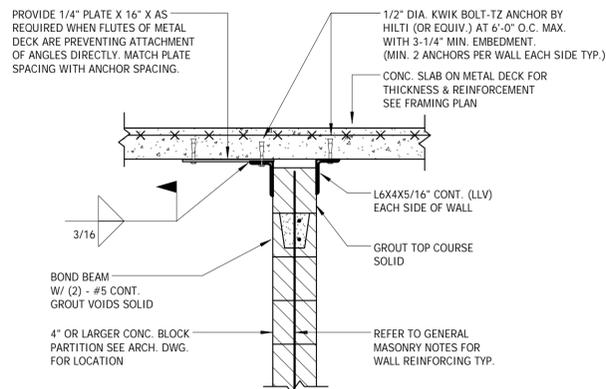
TYP. CORNER DETAIL @ INTERIOR WALLS

NOTE:

PROVIDE NO JOINT AT CANTILEVER WALL LOCATIONS. PROVIDE RUNNING BOND INTERSECTION AND LAP REINF.

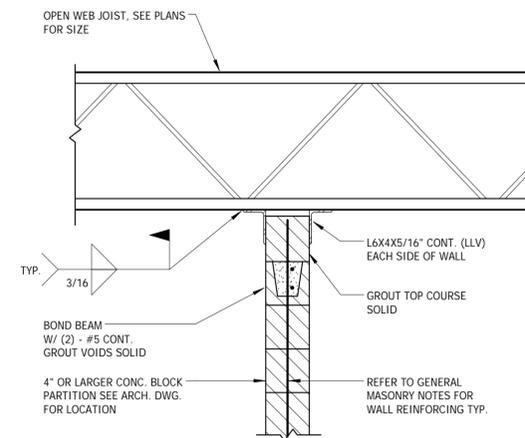
3 TYPICAL DETAIL AT FULL HEIGHT EXTERIOR MASONRY WALL INTERSECTIONS

S-5.5 Not to Scale



4 TYPICAL DETAIL AT FULL HEIGHT INTERIOR MASONRY WALL INTERSECTIONS

S-5.5 Scale: 1/8" = 1'-0"



5 TYPICAL DETAIL OF CMU WALL LATERAL SUPPORT AT CONCRETE SLAB

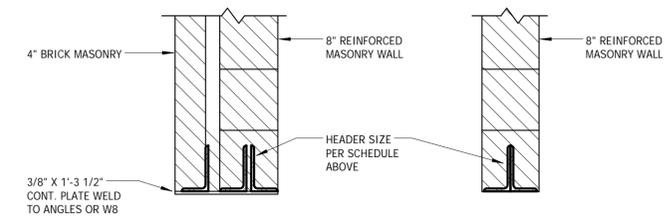
S-5.5 Scale: 3/4" = 1'-0"

S-5.5 Scale: 3/4" = 1'-0"

LOOSE LINTEL SCHEDULE	
LOOSE LINTELS SHALL CONSIST OF ONE ANGLE FOR EACH 4" OF MASONRY AS FOLLOWS	
SIZE OF MASONRY OPENING	SIZE OF ANGLE
UP TO 4'-0"	3 1/2" X 3 1/2" X 5/16"
UP TO 5'-6"	5" X 3 1/2" X 5/16"
UP TO 7'-6"	6" X 3 1/2" X 3/8"
UP TO 8'-6"	W8X28 + 3/8" PLATE (TYPE I) W8X15 + 3/8" PLATE (TYPE II)

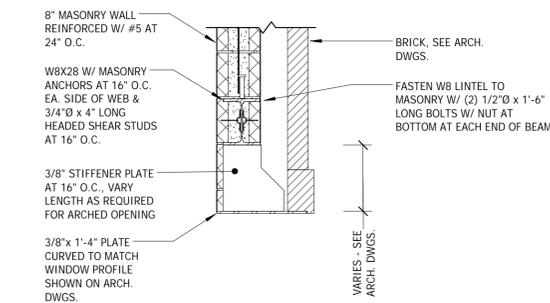
NOTES:

- 1) THE LONG LEGS OF ALL ANGLES ARE TO BE VERTICAL. LINTELS ARE TO BEAR 8" ON MASONRY AT EACH END.
- 2) REFER TO DETAIL 7/S-5.5 FOR LINTELS OVER ARCHED WINDOWS LOCATED ALONG GRID LINES H & J.
- 3) PROVIDE 3/8" X 1'-3 1/2" CONT. PLATE AT ALL EXTERIOR HEADER LOCATIONS.
- 4) REFER TO DETAIL 1/S-5.13 FOR LINTELS AT OVERHEAD DOOR WALL OPENINGS.



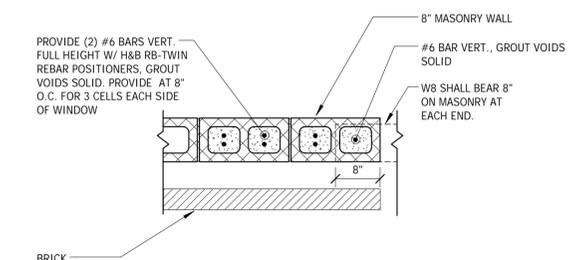
EXTERIOR HEADER DETAIL TYPE I

INTERIOR HEADER DETAIL TYPE II



7 TYP. SECTION AT ARCHED WINDOW OPENINGS

S-5.5 Scale: 3/4" = 1'-0"



8 TYP. WALL REINF. EACH SIDE OF ARCHED WINDOW OPENINGS

S-5.5 Scale: 3/4" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



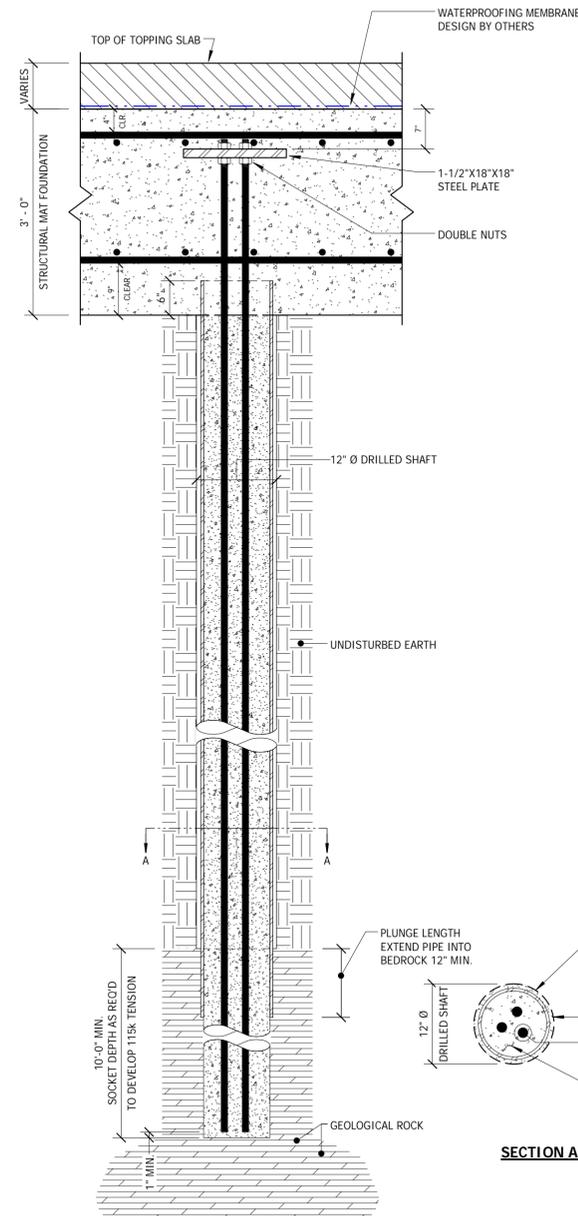
FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION MIDDLETOWN, CT

TYPICAL MASONRY DETAILS

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

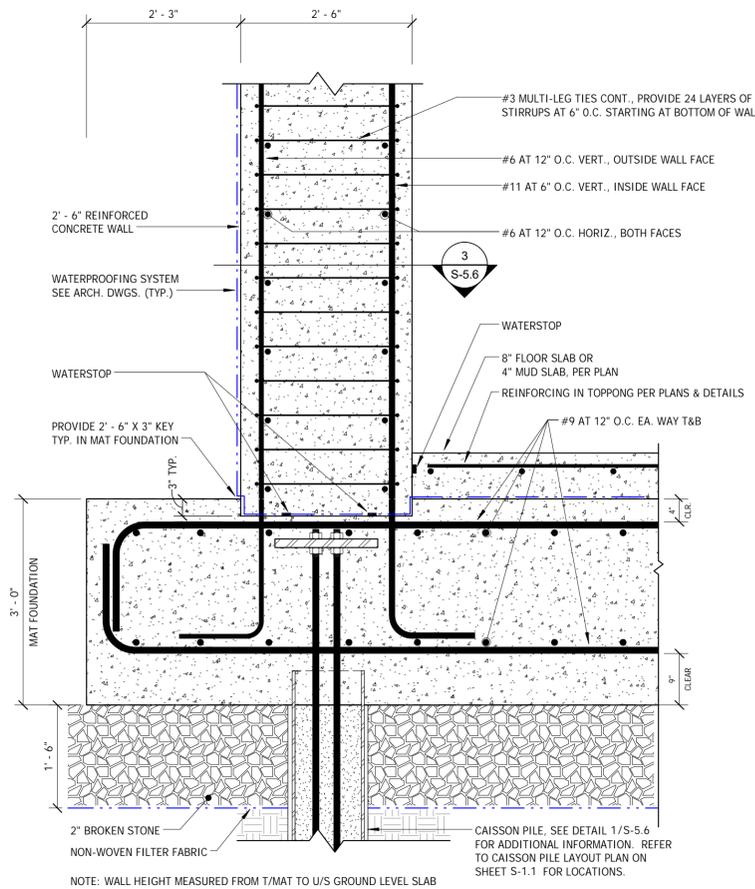
SHEET NUMBER:

S-5.5

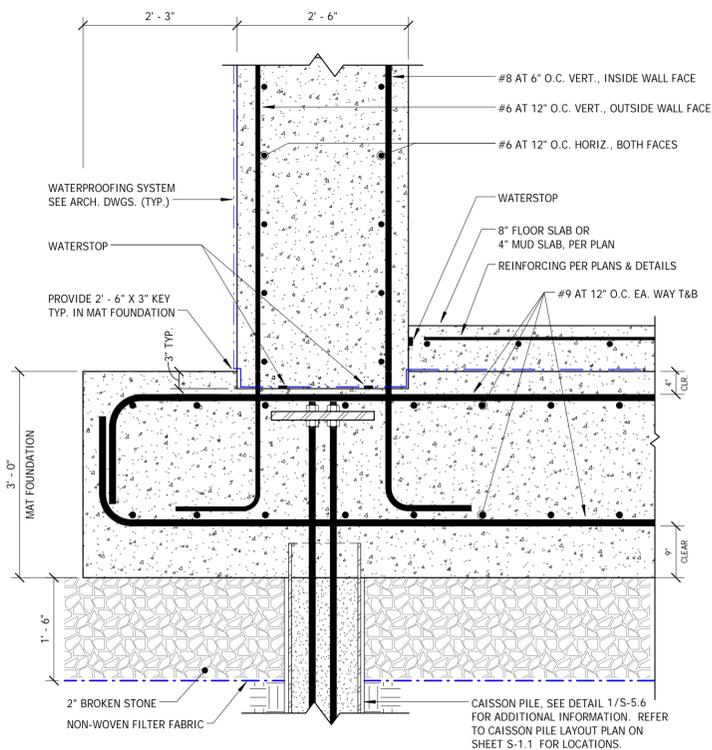


- NOTES:**
1. CONTRACTOR TO TAKE ADEQUATE PRECAUTIONS TO PREVENT EXCAVATION DEBRIS FROM ENTERING AND FILLING ANULAR SPACE AROUND SHELL.
 2. INSTALLATION PROCEDURE TO BE DETERMINED BY FOUNDATION CONTRACTOR, REVIEWED AND APPROVED BY ENGINEER, AND PROVEN BY LOAD TEST.
 3. DO NOT PRESSURE GROUT. GROUT PRESSURE NOT TO EXCEED 50 PSI.
 4. ALL MICROPILES ARE BASED ON A 175 TON CAPACITY.

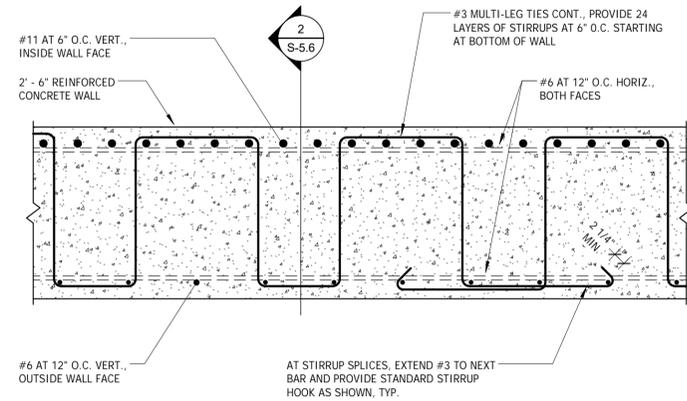
1 TYPICAL MICROPILE DETAIL
S-5.6 Scale: 3/4" = 1'-0"



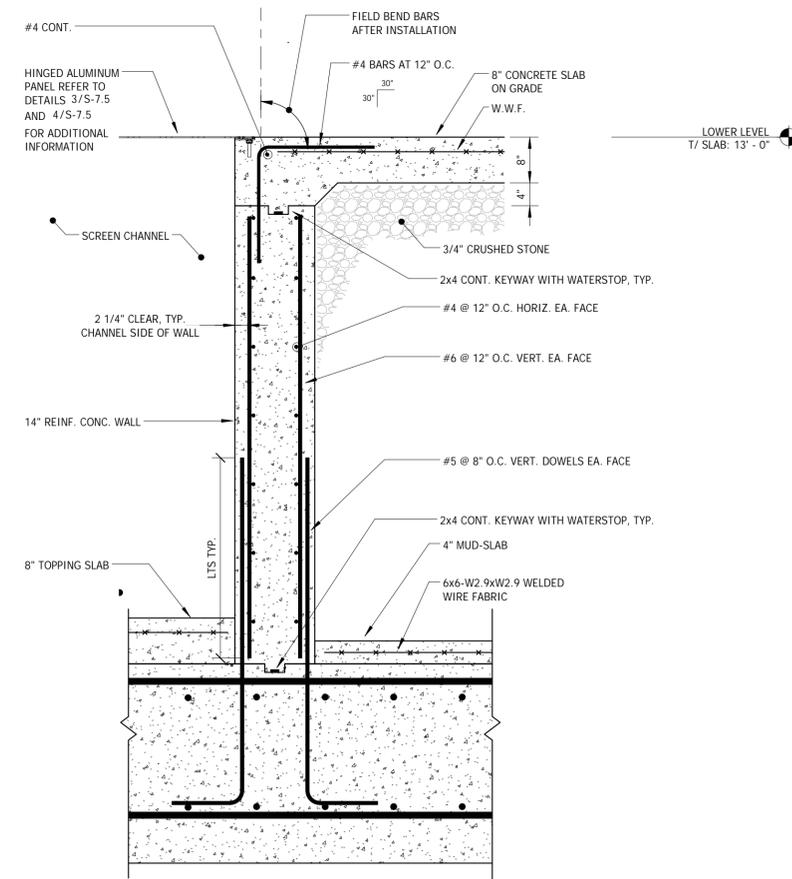
2 TYP. 30" FDN. WALL (WALL HEIGHTS 21' - 0" TO 30' - 6" MAX.)
S-5.6 Scale: 3/4" = 1'-0"



4 TYP. 30" FDN. WALL (WALL HEIGHT UP TO 21' - 0" MAX)
S-5.6 Scale: 3/4" = 1'-0"



3 PLAN VIEW OF 30" CONCRETE SHEAR WALL W/ SHEAR REINF.
S-5.6 Scale: 3/4" = 1'-0"



5 WALL SECTION AT CONCRETE CHANNEL
S-5.6 Scale: 3/4" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL
CONCRETE
DETAILS I

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-5.6

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



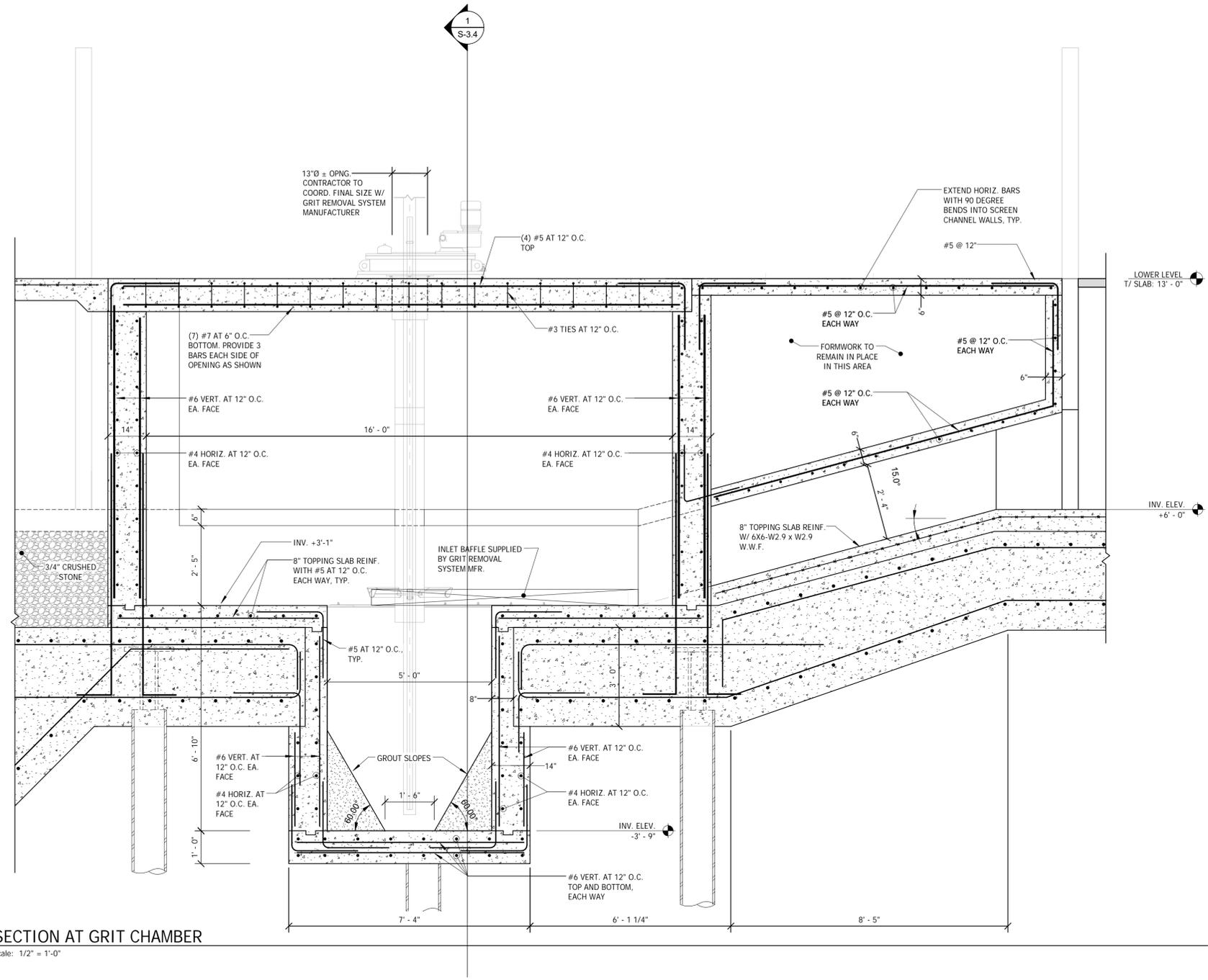
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL
CONCRETE
DETAILS III

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

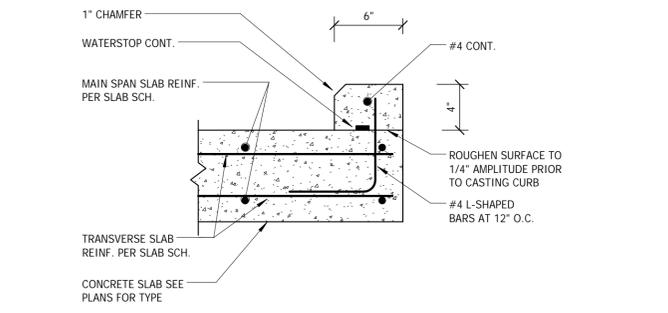
SHEET NUMBER:

S-5.8

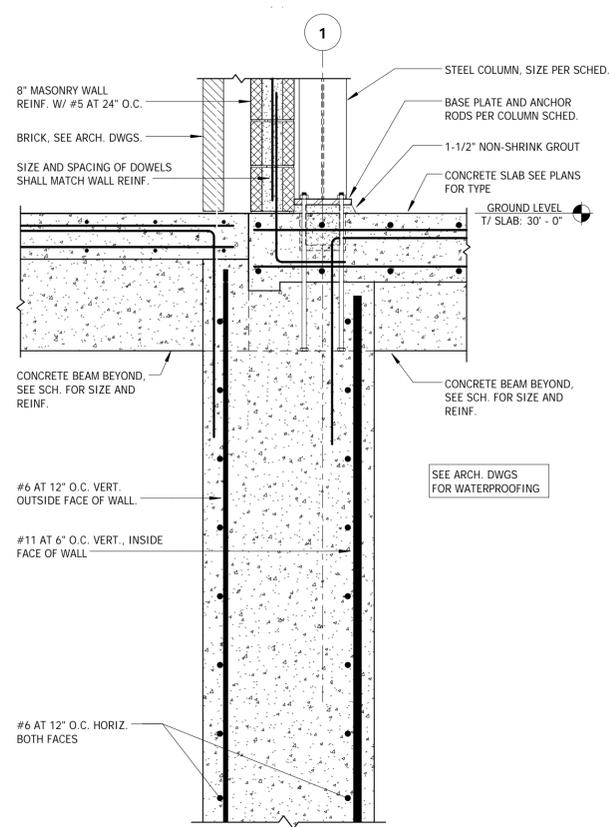


1 SECTION AT GRIT CHAMBER
S-5.8 Scale: 1/2" = 1'-0"

2 TOP OF WALL DETAIL ALONG H LINE
S-5.8 Scale: 3/4" = 1'-0"

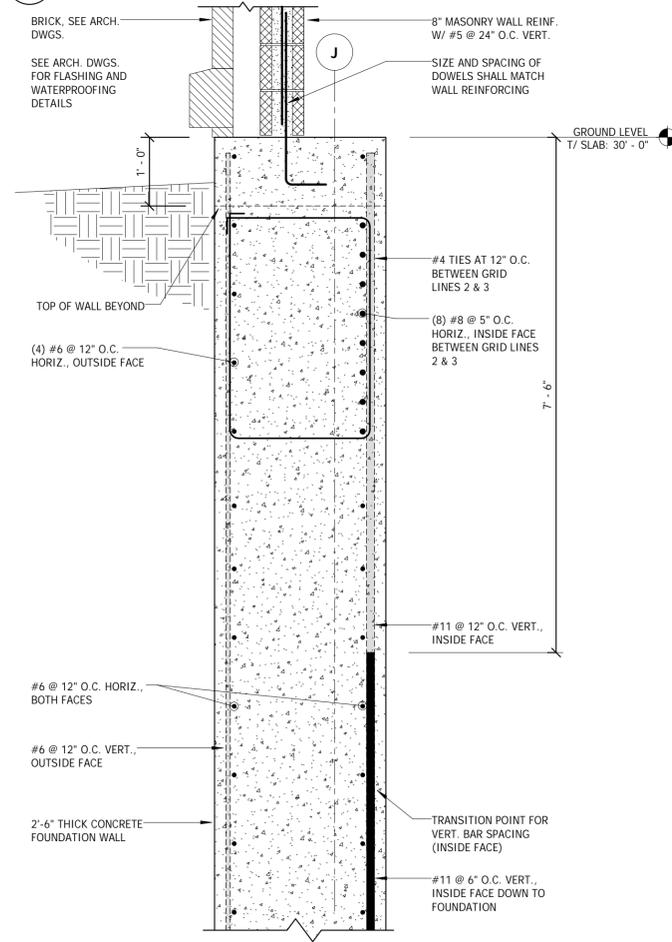


3 TYP. CONCRETE CURB AT ACCESS HATCH
S-5.8 Scale: 1 1/2" = 1'-0"



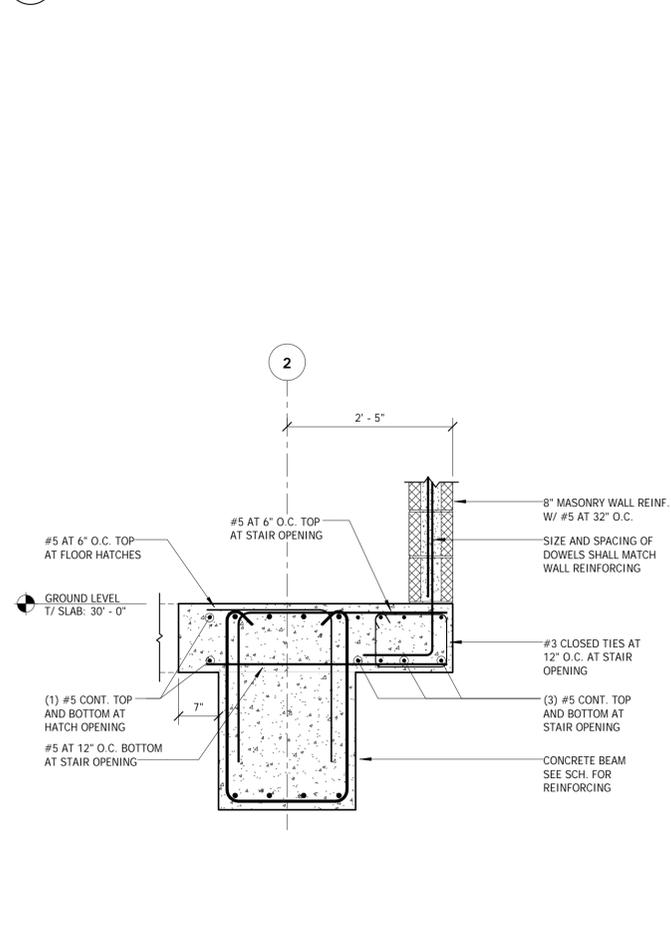
1 TOP OF WALL DETAIL AT LINE 1

S-5.9 Scale: 3/4" = 1'-0"



2 TOP OF WALL DETAIL AT VALVE VAULT EXTERIOR WALL

S-5.9 Scale: 3/4" = 1'-0"

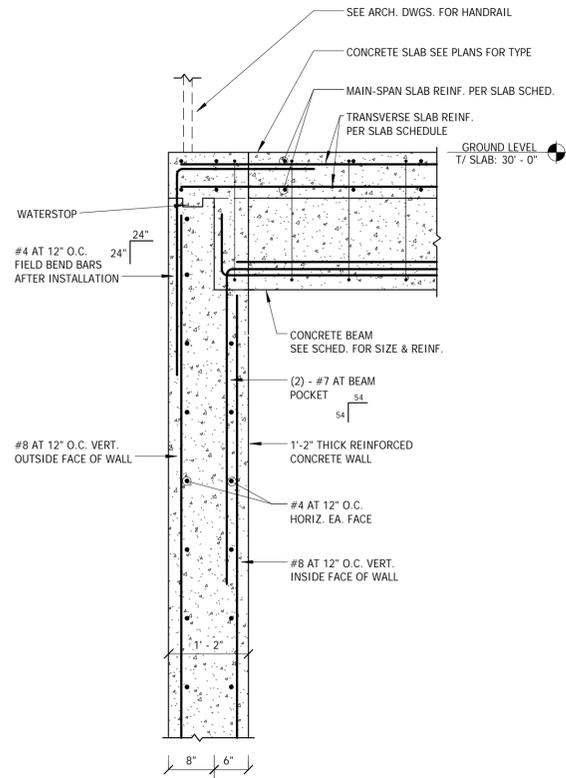


3 TOP OF WALL DETAIL AT STAIR #2

S-5.9 Scale: 3/4" = 1'-0"

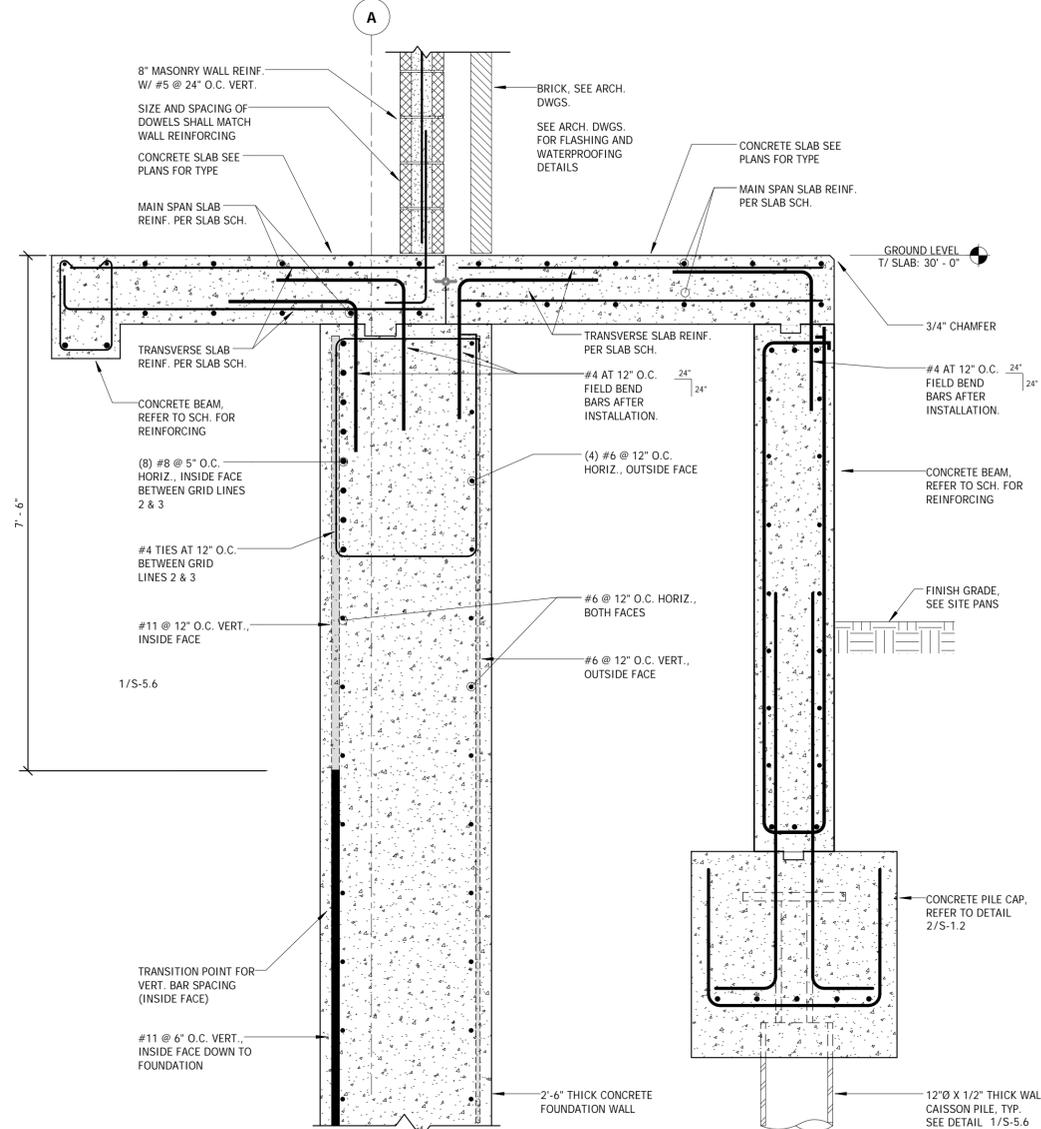
5 TYPICAL EDGE OF SLAB DETAIL AT STAIRS #1 & #2

S-5.9 Scale: 3/4" = 1'-0"



4 TOP OF WALL DETAIL AT STAIR #1

S-5.9 Scale: 3/4" = 1'-0"

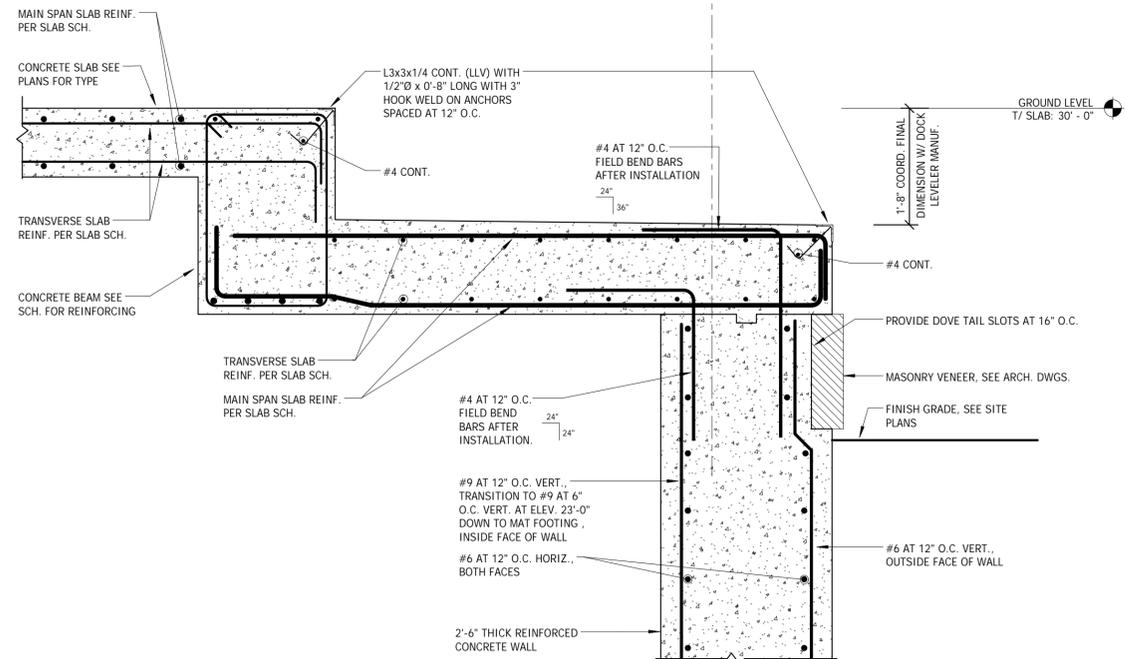


6 TYP. TOP OF WALL DETAIL WITH SLOT FOR WIRING

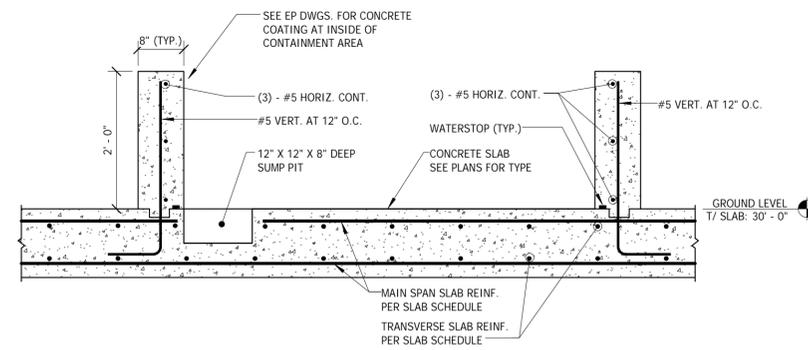
S-5.9 Scale: 3/4" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

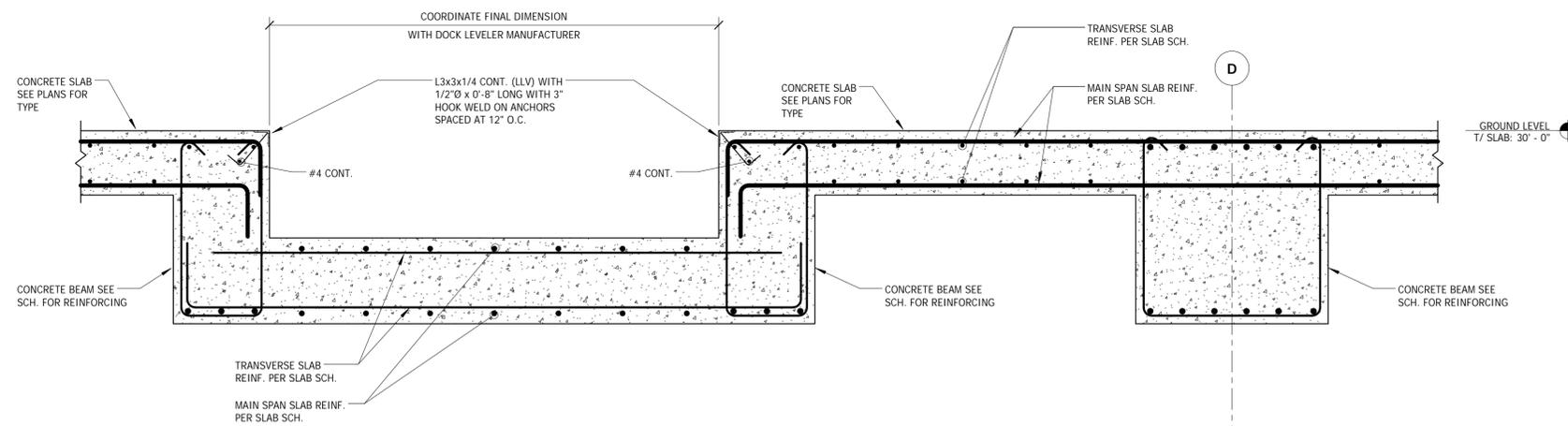




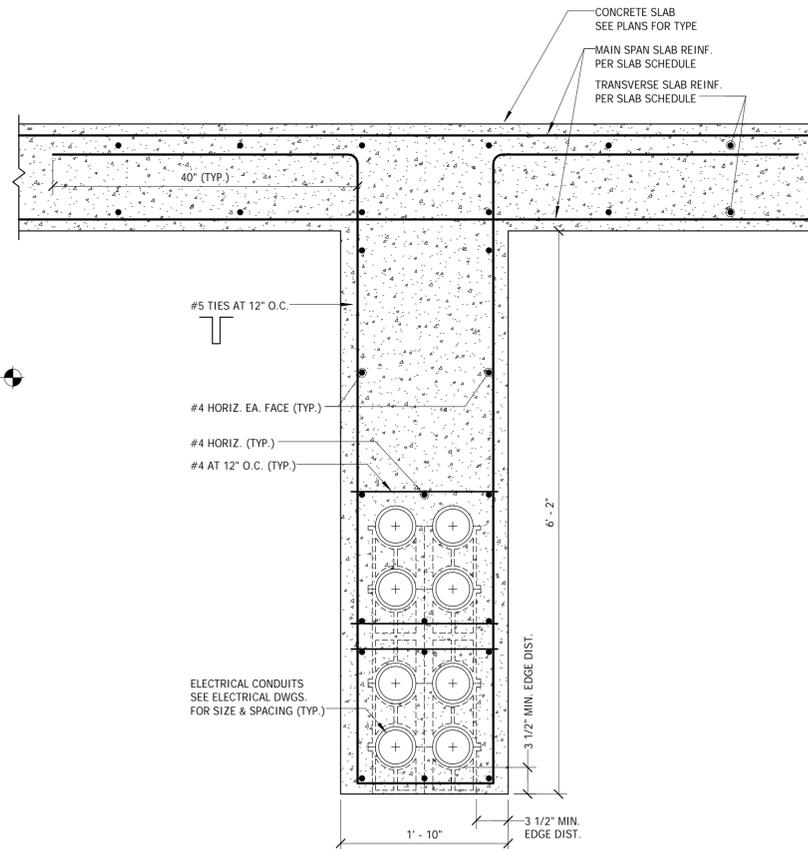
1 SECTION AT DOCK LEVELER ALONG GRID LINE 11
S-5.10 Scale: 3/4" = 1'-0"



3 SECTION AT MECHANICAL ROOM
S-5.10 Scale: 3/4" = 1'-0"



2 SECTION AT DOCK LEVELER
S-5.10 Scale: 3/4" = 1'-0"



4 SECTION AT ELECTRICAL DUCTBANK
S-5.10 Scale: 1" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



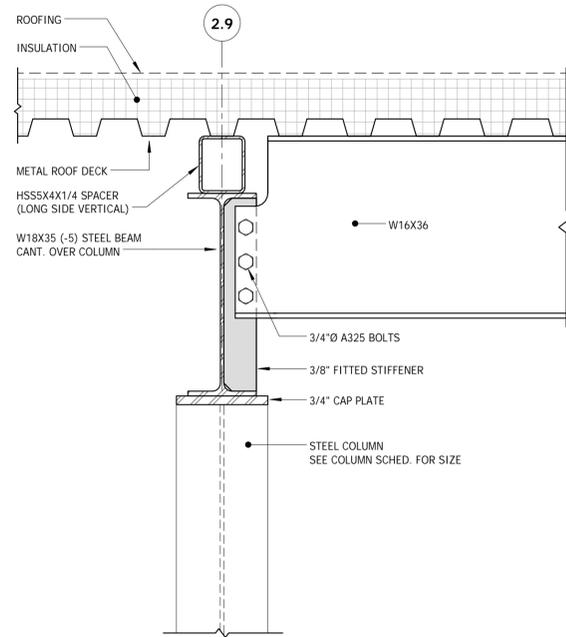
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL
CONCRETE
DETAILS V

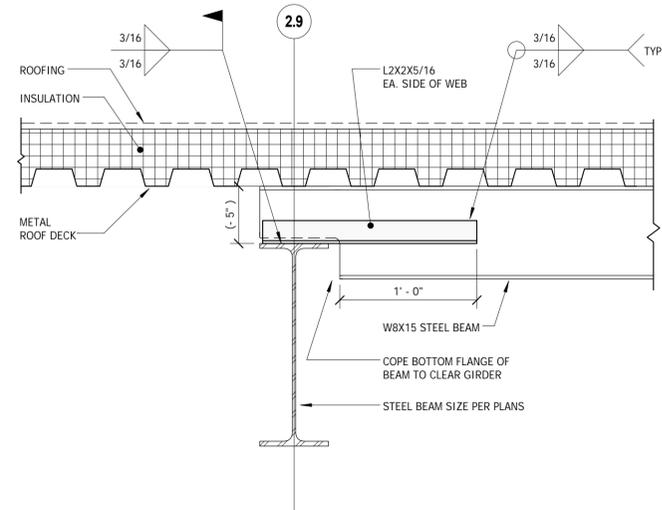
PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

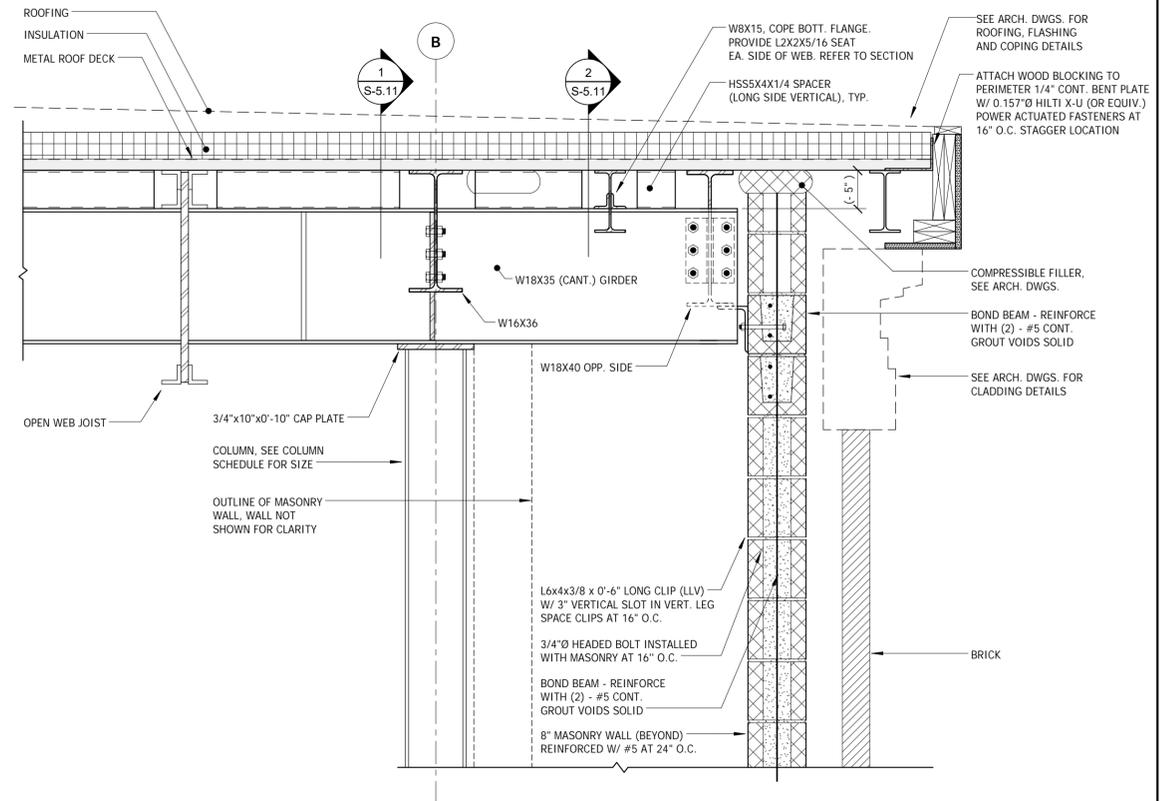
S-5.10



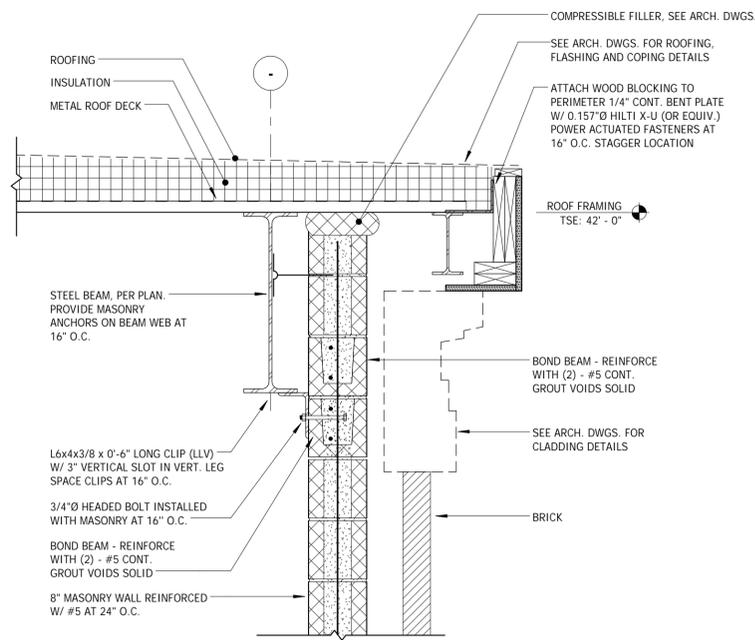
1 SECTION AT COLUMNS B-2.9 + H-2.9
S-5.11 Scale: 1 1/2" = 1'-0"



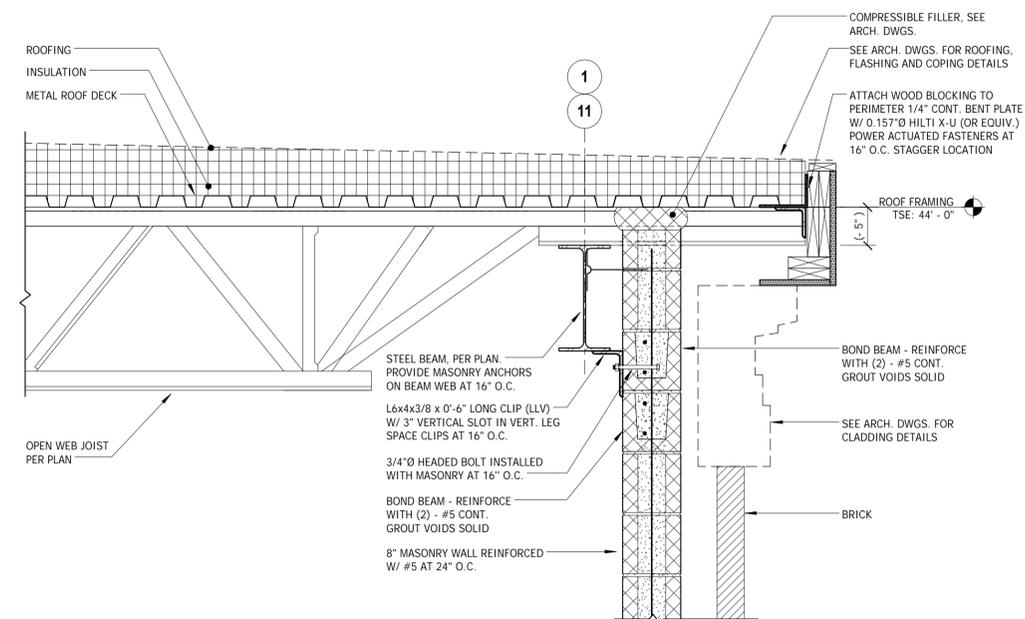
2 TYP. DETAIL OF COPED W8
S-5.11 Scale: 1 1/2" = 1'-0"



3 SECTION BEHIND GRID LINE 2.9
S-5.11 Scale: 1" = 1'-0"



5 TYP. SECTION ALONG GRID LINES A,B,H,J
S-5.11 Scale: 1" = 1'-0"



4 SECTION ALONG GRID LINES 1 & 11
S-5.11 Scale: 1" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



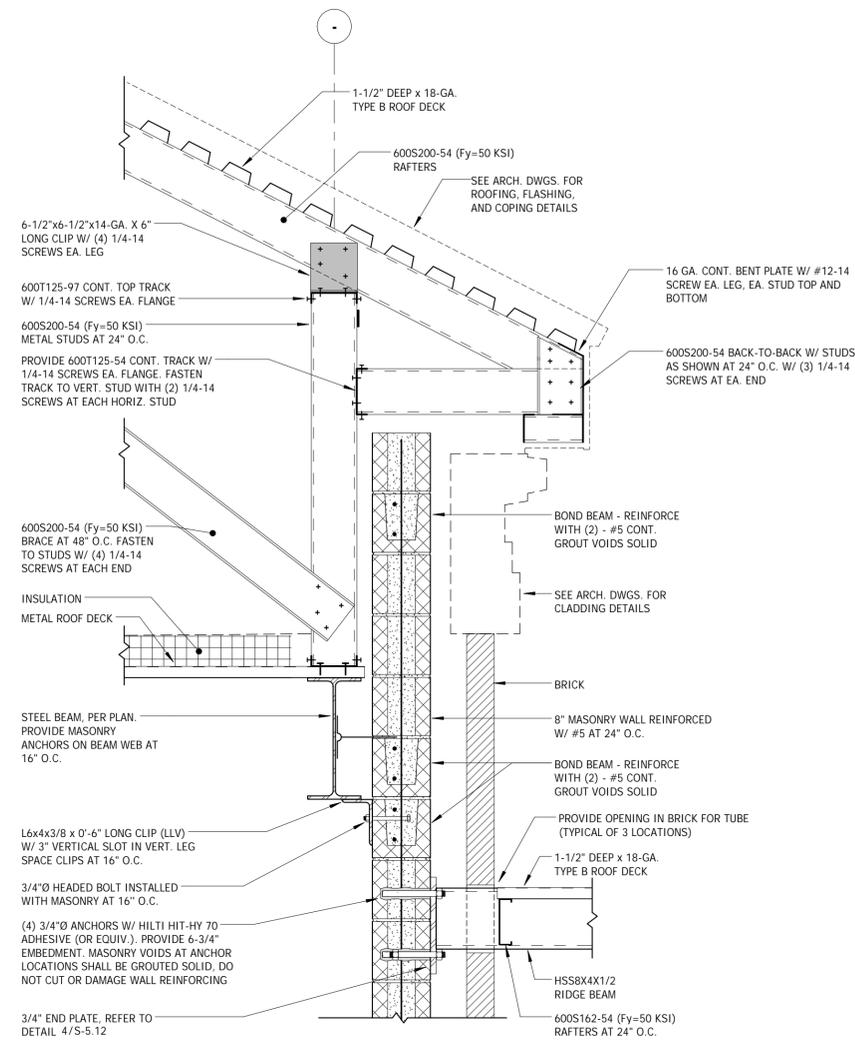
FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL
STEEL DETAILS I

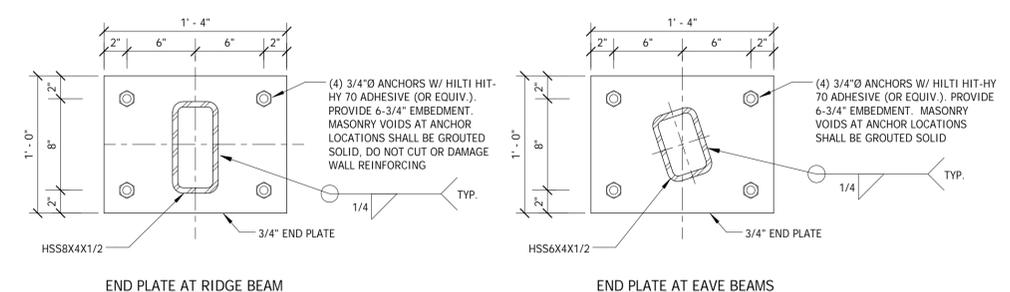
PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-5.11

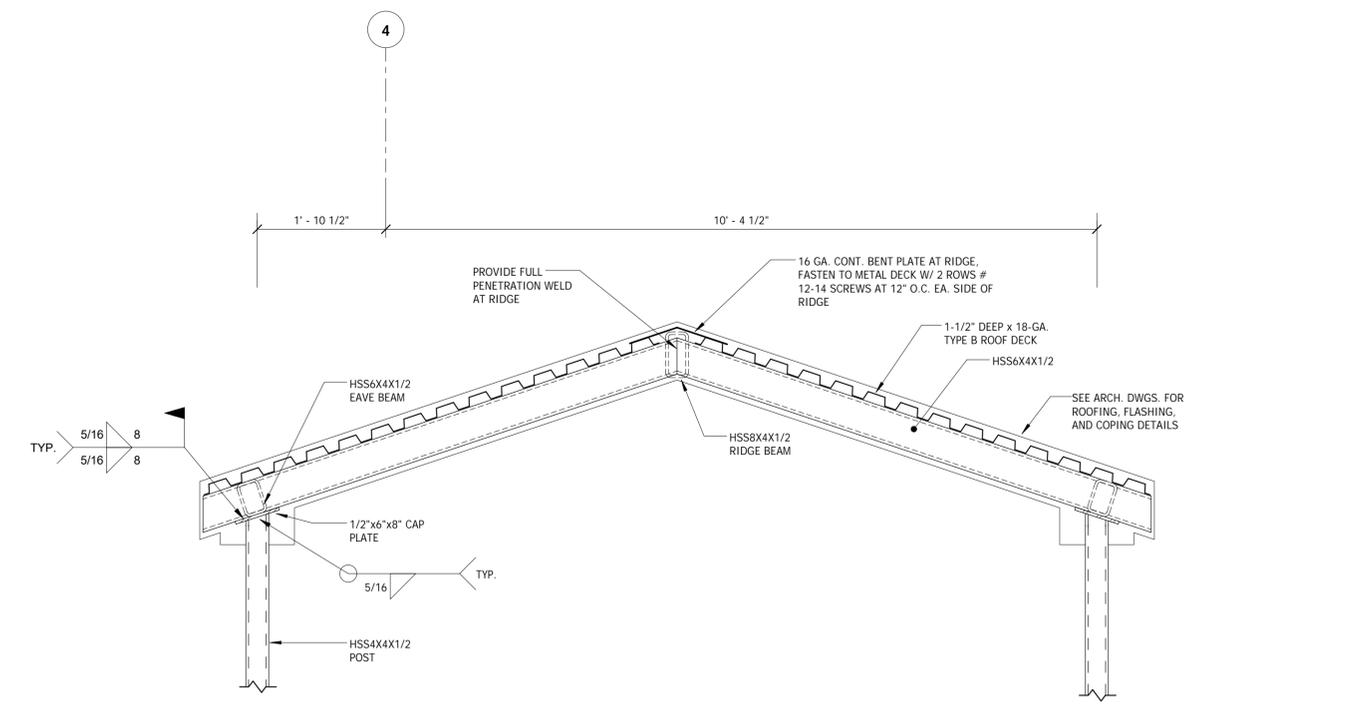


1 SECTION AT ROOF ALONG GRID LINE J
S-5.12 Scale: 1" = 1'-0"

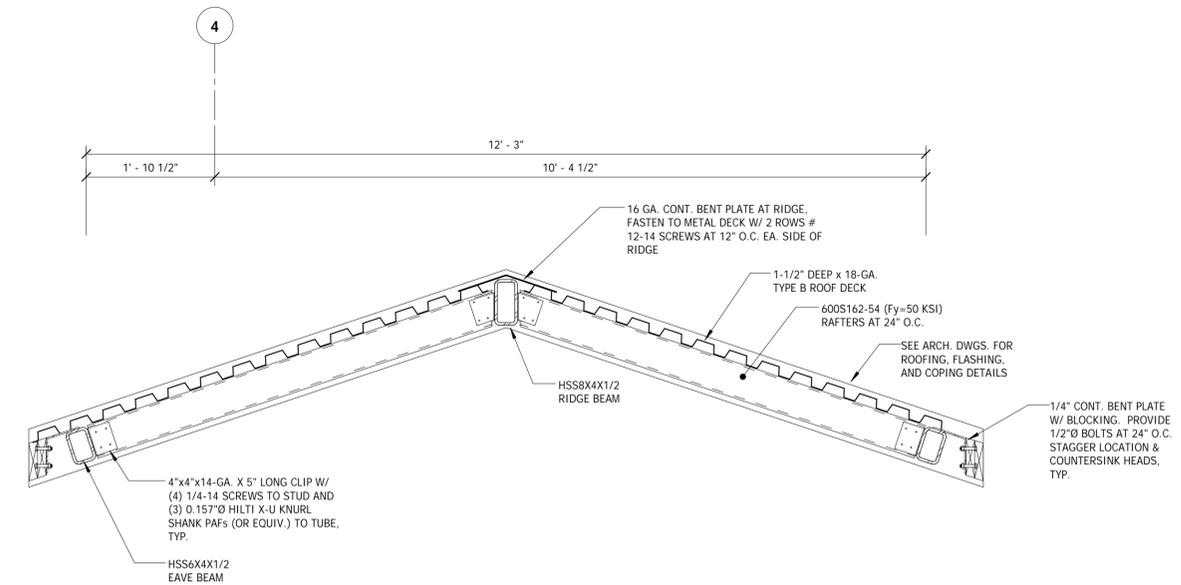


4 END PLATE DETAILS FOR CANOPY
S-5.12 Scale: 1 1/2" = 1'-0"

2 SECTION AT ENTRANCE CANOPY
S-5.12 Scale: 3/4" = 1'-0"



3 RIGID FRAME DETAIL AT ENTRANCE CANOPY
S-5.12 Scale: 3/4" = 1'-0"



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A105
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



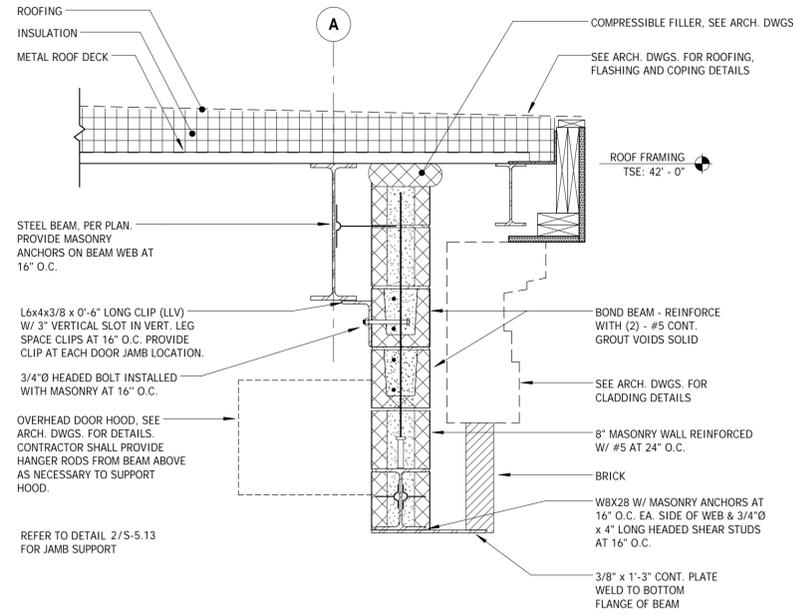
FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL STEEL DETAILS II

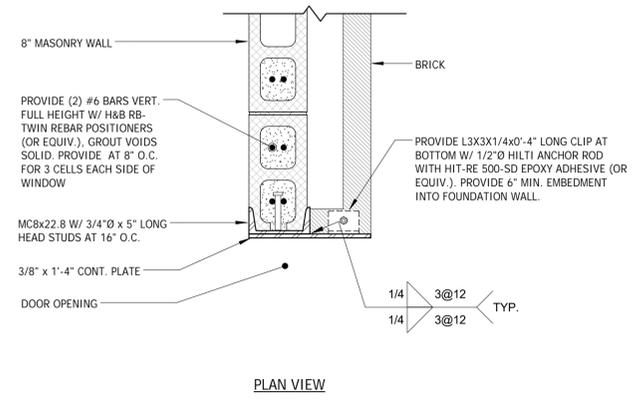
PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

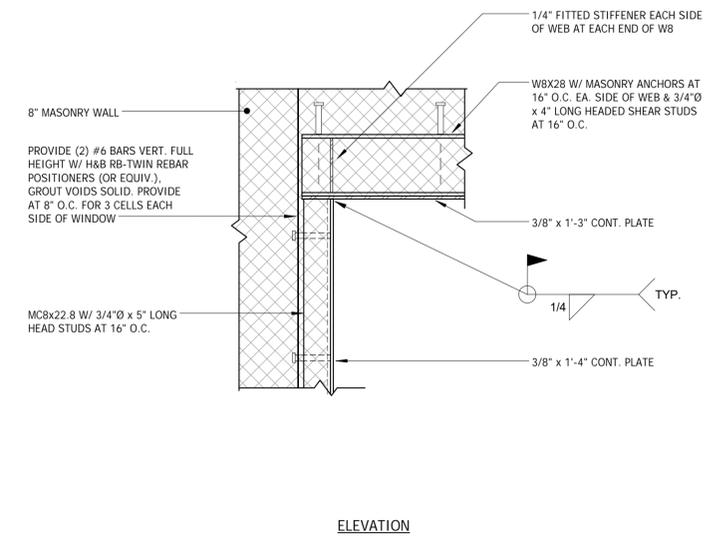
S-5.12



1 SECTION AT OVERHEAD DOOR ALONG GRID LINE A (SIM. @ GRID LINE 11)
S-5.13 Scale: 1" = 1'-0"



2 TYP. JAMB DETAIL AT OVERHEAD DOOR OPENINGS
S-5.13 Scale: 1" = 1'-0"



ELEVATION



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

IES Innovative Engineering Services, LLC
Consulting Engineers
64 Thompson Street, Suite A105
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STRUCTURAL
STEEL DETAILS III

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

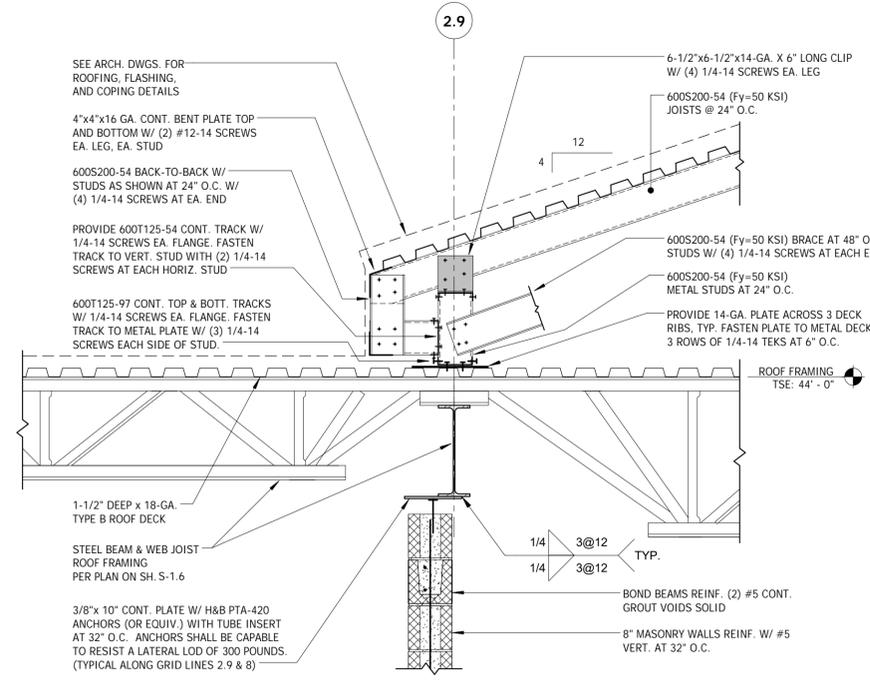
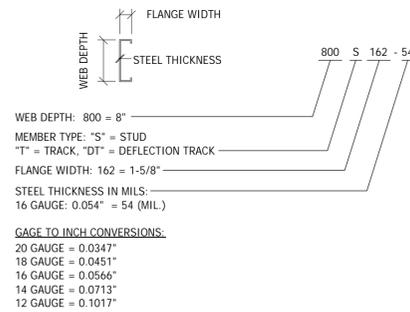
SHEET NUMBER:

S-5.13

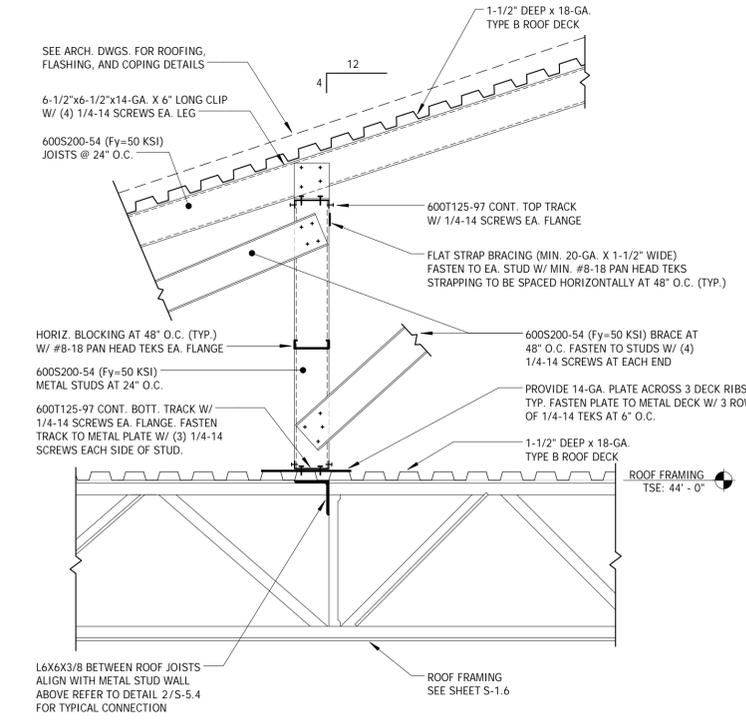
GENERAL COLD-FORMED METAL FRAMING NOTES:
INSTALLATION:

- ALL STEEL STUD AND STEEL JOIST MATERIALS ARE TO BE STUD-RITE LIGHTWEIGHT STEEL FRAMING SYSTEM AS MANUFACTURED BY MARINO / WARE INDUSTRIES CORP., NEW HYDE PARK, N.Y. 11040 OR AN APPROVED EQUIVALENT.
- TEMPORARY BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR. DO NOT REMOVE BRACING UNTIL WORK IS PERMANENTLY STABILIZED.
- CUTTING OF STEEL STUD FRAMING MEMBERS MAY BE ACCOMPLISHED WITH A SAW OR SHEAR. TORCH CUTTING IS NOT PERMITTED.
- MATERIALS:**
ALL LIGHT GAGE FRAMING MEMBERS SHALL BE MANUFACTURED FROM STEEL THAT MEETS THE REQUIREMENTS OF A.I.S.I. SPECIFICATIONS, LATEST EDITION. STEEL MEMBERS 16 GAUGE AND HEAVIER SHALL CONFORM TO ASTM A-1003, TYPE H WITH A MINIMUM YIELD STRENGTH OF 50 KSI. STEEL MEMBERS 18 GAUGE AND LIGHTER SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI.
- FRAMING COMPONENTS SHALL BE GALVANIZED PER ASTM A653, MINIMUM G90 COATING.
- CONNECTIONS:**
FASTENER PENETRATION THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN THREE EXPOSED THREADS. MINIMUM SPACING AND EDGE DISTANCE OF SCREW FASTENERS SHALL NOT BE LESS THAN 3/8".
- ALL CLIP ANGLES SHALL MATCH STUD GAGE UNLESS OTHERWISE NOTED.
- POWER ACTUATED FASTENERS (PAFs) SHALL BE HILTI 0.157"Ø X-U KNURL SHANK (OR EQUIV.).
- LOAD BEARING MEMBERS: (JOISTS, RAFTERS, AND AXIALLY LOADED STUDS)**
BOTH FLANGES OF STUDS MUST BE ATTACHED TO TRACK MEMBERS AT TOP AND BOTTOM.
- ALL AXIALLY LOADED MEMBERS SHALL BE ALIGNED VERTICALLY TO ALLOW FOR FULL TRANSFER OF LOADS DOWN TO THE FOUNDATION.
- LOAD BEARING MEMBERS SHALL BEAR SQUARELY AND TIGHTLY IN THEIR TRACKS. PROVIDE AT LEAST 10 INCHES OF UNPUNCHED STEEL AT BEARING POINTS.
- STUD LATERAL BRIDGING REQUIREMENTS FOR WALLS SUBJECT TO AXIAL LOADING - BRIDGING MAY BE PROVIDED BY ONE OF THE FOLLOWING:
 - 1 1/2" COLD ROLLED U-CHANNEL ATTACHED WITH CLIPS AND NO. 6 SCREWS (SPACING AS REQUIRED)
 - 1 1/2" x 20 GAGE FLAT STRAPPING APPLIED TO STUD FACES (SPACING AS REQUIRED)
 - SPAZZER BAR 5400 BRIDGING RUNNING THROUGH STUDS THEN TWIST LOCKING (SPACING AS REQUIRED)
- NON-LOAD BEARING MEMBERS: (CURTAINWALL)**
STUD LATERAL BRIDGING REQUIREMENTS FOR WALL SUBJECT TO WIND LOADING ONLY - BRIDGING MAY BE PROVIDED BY ONE OR MORE OF THE FOLLOWING:
 - WALL SHEATHING, SUCH AS PLYWOOD, APPLIED TO STUD FACES.
 - 1 1/2" COLD ROLLED U-CHANNEL ATTACHED WITH CLIPS AND NO. 6 SCREWS.
 - 1 1/2" x 20 GAGE FLAT STRAPPING APPLIED TO STUD FACES.
 - SPAZZER BAR 5400 BRIDGING RUNNING THROUGH STUDS THEN TWIST LOCKING.
- BRIDGING INTERVALS SHALL BE 4'-0" O.C. MAX. VERTICALLY, OR AS NOTED ON THESE PLANS.
- ALL BRIDGING, BRACING, BLOCKING, STRAPPING, AND END REINFORCEMENT REQUIRED FOR THE LIGHTWEIGHT STEEL FRAMING SYSTEM MUST BE IN PLACE PRIOR TO LOADING ROOF OR FLOOR CONSTRUCTION.

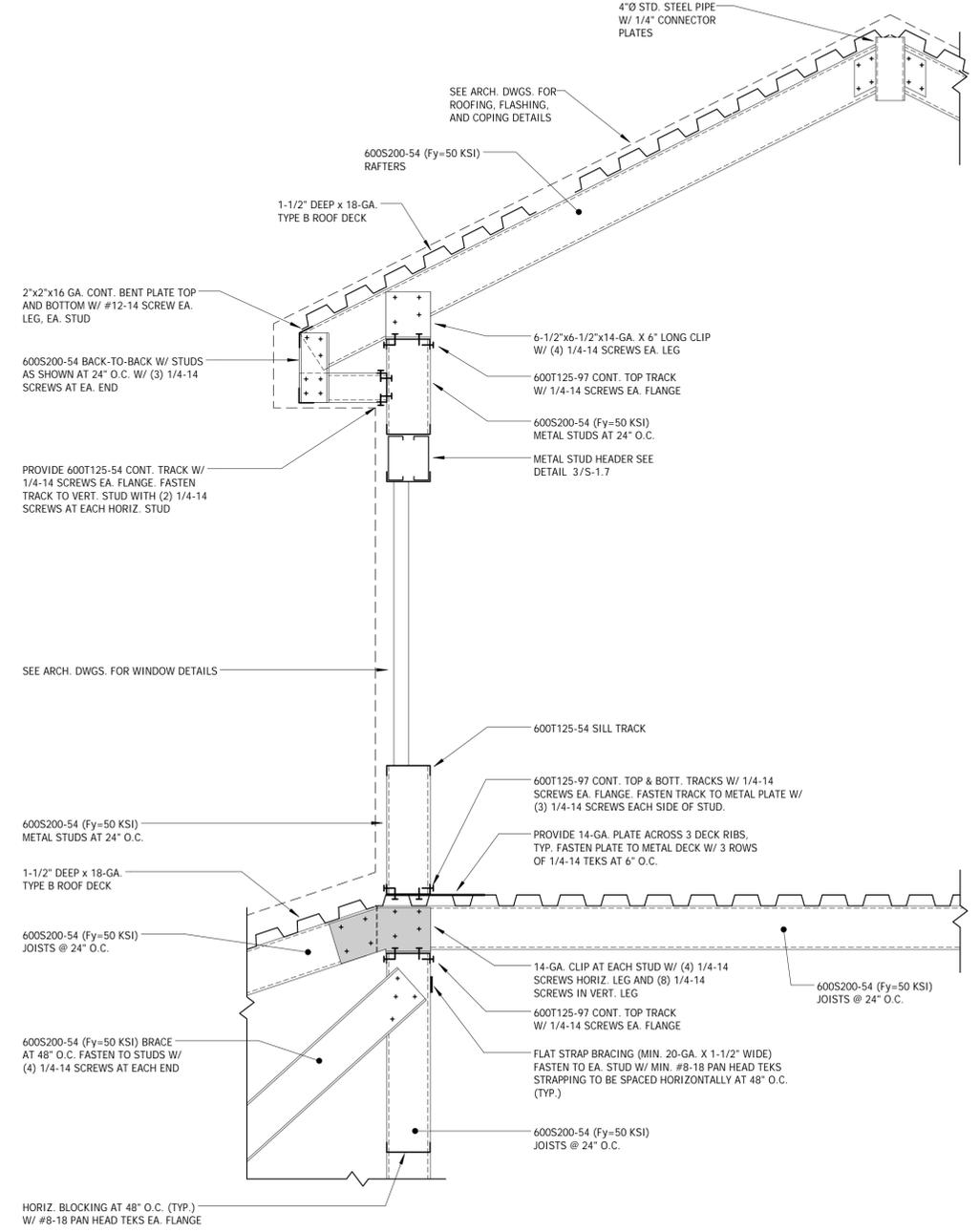
SSMA STUD NOMENCLATURE:



1 OVER FRAMING DETAIL AT EAVE
 Scale: 3/4" = 1'-0"



2 TYPICAL OVER-FRAMING DETAIL
 Scale: 3/4" = 1'-0"



3 METAL STUD FRAMING AT CUPOLA
 Scale: 1" = 1'-0"

2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmagine.com

DESIGN / RESTORE / BUILD
 64 Thompson Street, Suite A101
 East Haven, CT 06513
 phone: 203-468-2441
 www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

Innovative Engineering Services, LLC
 Consulting Engineers
 64 Thompson Street, Suite A101
 East Haven, CT 06513
 Tel: 203.467.4370 Fax: 203.468.6172
 Web: www.iesllc.biz



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

OVERFRAMING METAL STUD DETAILS

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

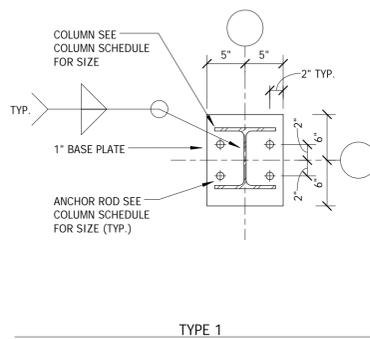
SHEET NUMBER:

S-5.14

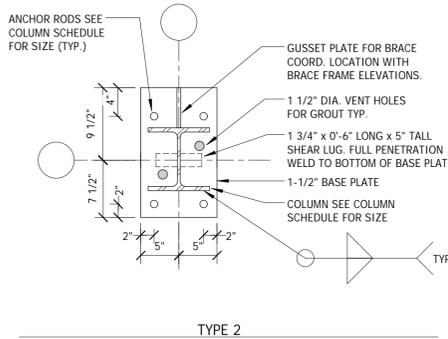
STEEL COLUMN SCHEDULE																									
LOCATION	A-1	B-2.9	B-6	B-8	B-11	C-1	C-2.9	D-8	D-11	E-1	E-2.9	F-8	F-11	G-1	G-2.9	H-2.9	H-6	H-8	H-11	J-1	K-4 (-1' - 10 1/2")	K-6 (-1' - 8 1/2")	LOCATION		
CAP PLATE	3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"				3/4"x10"x10"				3/4"x10"x10"		3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"	3/4"x10"x10"	1/2" PLATE	1/2" PLATE	CAP PLATE		
ROOF TOP OF STEEL 44'-0"																								ROOF TOP OF STEEL 44'-0"	
GROUND FLOOR LEVEL 30'-0"																									GROUND FLOOR LEVEL 30'-0"
BASE PLATE	TYPE 2	TYPE 1	TYPE 1	TYPE 3	TYPE 4	TYPE 2	TYPE 1	TYPE 1	TYPE 2	TYPE 2	TYPE 1	TYPE 1	TYPE 2	TYPE 2	TYPE 1	TYPE 1	TYPE 1	TYPE 3	TYPE 4	TYPE 1	TYPE 5	TYPE 5	BASE PLATE		
ANCHOR RODS	(4) 1"Ø x 2'-6"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 2'-6"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	(4) 1"Ø x 1'-4"	ANCHOR RODS		

NOTES:

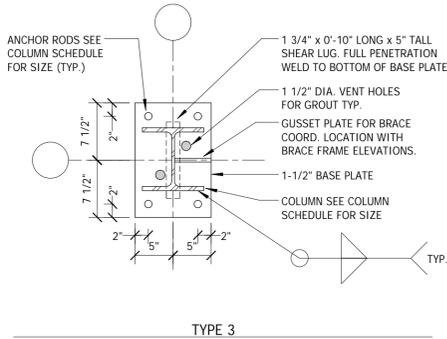
- ANCHOR RODS LOCATED WITHIN BRACE FRAMES SHALL HAVE A MINIMUM ANCHOR ROD EMBEDMENT LENGTH OF 24" INTO THE CONCRETE. ALL OTHER ANCHOR RODS SHALL HAVE A MINIMUM EMBEDMENT LENGTH OF 10" INTO THE CONCRETE.
- ALL RODS SHALL CONFORM TO ASTM F-1554 (GR. 36) UNLESS NOTED OTHERWISE.
- THE BOTTOM OF ALL ANCHOR RODS SHALL HAVE DOUBLE NUTS WITH A STANDARD WASHER.
- CONTRACTOR HAS OPTION TO POST INSTALL THREADED RODS (ASTM F-1554, GR. 36) IN LIEU OF CAST IN ANCHORS. POST INSTALLED ANCHORS SHALL USE HILTI HIT-RE 500-SD ADHESIVE, (OR EQUIVALENT). POST-INSTALLED ANCHOR SYSTEM MUST BE APPROVED FOR WIND & SEISMIC LOADING IN CRACKED CONCRETE. ANCHOR ROD EMBEDMENT LENGTH SHALL BE SAME AS SPECIFIED CAST IN PLACE EMBEDMENT. THE USE OF POST INSTALLED ANCHORS WILL REQUIRE LOAD TESTING (PULL TESTING) OF THE ANCHORS BY A QUALIFIED MATERIALS TESTING AGENCY, WITH RESULTS FURNISHED TO THE ENGINEER OF RECORD AND THE SEPCAL INSPECTOR. LOAD TESTS WILL BE REQUIRED FOR 100% OF THE RODS LOCATED WITHIN BRACE FRAMES AND 25% OF THE REMAINING ANCHOR RODS. THE ANCHORS SHALL BE TESTED TO A TENSION LOAD OF 7,500 POUNDS AT BRACE FRAMES AND TO A TENSION LOAD OF 2,000 POUNDS AT NON-BRACE FRAME LOCATIONS. TESTING REPORTS SHALL CLEARLY INDICATE THE SPECIFIC ANCHORS TESTED, TEST LOAD ACHIEVED, DURATION OF LOAD (MIN. 5 MINUTE HOLD), AND PASS/FAIL RESULTS.
- PROVIDE MASONRY ANCHORS ON ALL COLUMN SURFACES IN CONTACT WITH MASONRY WALLS. PLACE ANCHORS AT 16" O.C. VERTICAL. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.



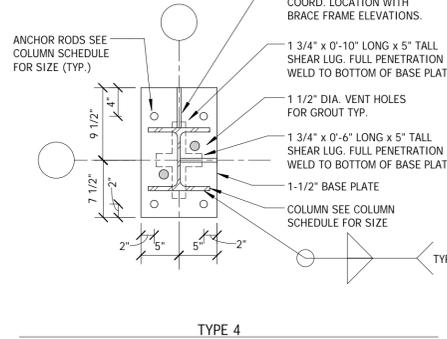
TYPE 1



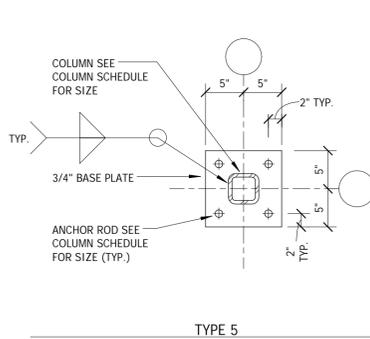
TYPE 2



TYPE 3



TYPE 4



TYPE 5

1 BASE PLATE DETAILS
Scale: 1" = 1'-0"



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



Innovative Engineering Services, LLC
Consulting Engineers
64 Thompson Street, Suite A105
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

STEEL COLUMN SCHEDULE

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-6.1

SCHEDULE OF EMBEDMENT + SPLICE LENGTH (IN INCHES)																		
BAR SIZE	COMPRESSION		TENSION (f _c = 4,000 psi)				TENSION (f _c = 6,500 psi)											
	EMBEDMENT LENGTH	LAP SPLICE LENGTH	EMBEDMENT LENGTH		LAP SPLICE LENGTH		EMBEDMENT LENGTH		LAP SPLICE LENGTH									
			TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS								
			CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1	CATEGORY SEE NOTE 1							
I	II	I	II	I	II	I	II	I	II	I	II	I	II					
#3	8	12	19	28	14	21	24	36	19	28	15	22	11	17	19	28	15	22
#4	11	15	25	37	19	28	36	48	25	37	19	29	15	22	25	38	19	29
#5	14	19	31	46	24	36	40	60	31	46	24	36	19	28	31	47	24	36
#6	17	23	37	55	28	43	48	72	37	55	29	44	22	33	38	57	29	44
#7	19	27	54	81	42	62	70	105	54	81	42	63	33	49	55	83	42	63
#8	22	30	62	92	47	71	80	120	62	92	48	73	37	56	63	94	48	73
#9	25	34	70	104	54	80	90	136	70	104	55	82	42	63	71	106	55	82
#10	28	39	78	117	60	90	102	153	78	117	61	92	47	71	80	120	61	92
#11	31	43	87	130	67	100	113	170	87	130	68	102	52	79	89	133	68	102

NOTES:

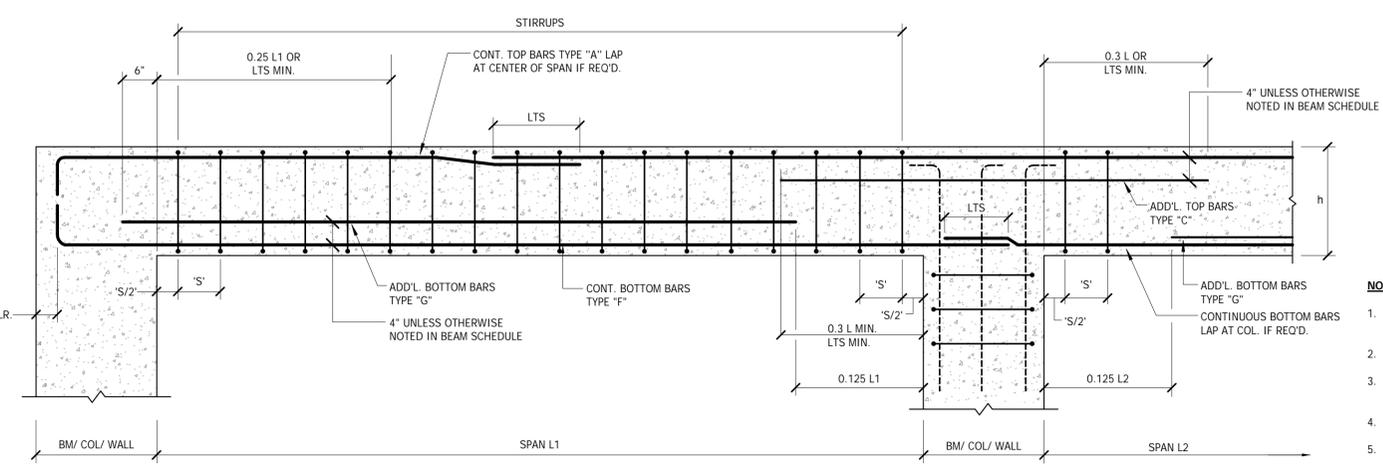
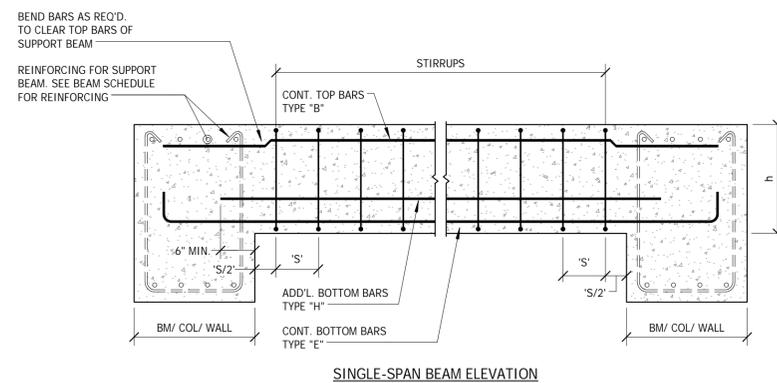
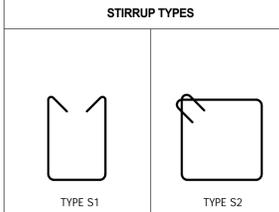
- THE SCHEDULE ABOVE INCLUDES SPLICE AND EMBEDMENT LENGTHS WHICH SATISFY THE PROJECT REQUIREMENTS AND THE FOLLOWING CRITERIA:
 f_y = 60,000 psi
 CONCRETE WEIGHT = 150 lb/cu.ft.
 TENSION EMBEDMENT AND LAP SPLICE LENGTHS ARE DIVIDED INTO TWO CATEGORIES WHICH SHALL BE APPLIED AS FOLLOWS:
CATEGORY I
 CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 4d_b, CLEAR COVER NOT LESS THAN 4d_b, AND BEAM STIRRUPS OR COLUMN TIES THROUGHOUT L_d NOT LESS THAN THE CODE MINIMUM OR
 CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 2d_b & CLEAR COVER NOT LESS THAN 4d_b.
CATEGORY II
 BARS NOT COVERED BY CATEGORY I
- USE COMPRESSION LAP SPLICE LENGTH (LCS) WHERE INDICATED SPECIFICALLY ON THE DRAWINGS OTHERWISE USE TENSION LAP SPLICE LENGTH (LTS) FOR ALL OTHER SPLICES.
- THE STANDARD LAP SPLICE LENGTH (0.0005 x F_y x d) IS USED FOR COMPRESSION SPLICES AND THE CLASS "B" SPLICE IS USED FOR TENSION SPLICES. THE CONTRACTOR MAY SUBMIT LESSER SPLICE LENGTHS FOR REVIEW AND APPROVAL AT THE SAME TIME OF PROVIDING THE FOLLOWING INFORMATION:
 A. DETAILS PREPARED AND SUBMITTED BY THE CONTRACTOR INDICATING LOCATION AND PROPOSED LAYOUT OF REBARS AND LENGTHS OF SPLICES.
 B. WHERE THE SIZE AND NUMBER OF TIES OR SPIRALS PERMITS THE REDUCTION OF LAP LENGTH, THOSE BARS SHALL BE INDICATED ON THE DETAILS.
 C. WHERE COMPUTED STRESS VALUES PERMIT THE REDUCTION OF LAP LENGTH, COMPUTATIONS SHALL BE SUBMITTED FOR REVIEW.
 D. THE APPLICABLE SECTION OF THE ACI CODE PERMITTING THE LESSER SPLICE LENGTH SHALL BE INDICATED ON THE SUBMITTED MATERIAL.
- TOP BARS ARE HORIZONTAL BARS PLACED SO THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
- WHERE BARS OF DIFFERENT SIZE ARE TO BE SPLICED, THE SPLICE LENGTH FOR ALL BARS SHALL BE THAT REQUIRED FOR THE LARGEST.
- WHEN LIGHTWEIGHT CONCRETE IS USED, THE VALUES LISTED IN THE TABLE FOR TENSION EMBEDMENT & LAP SPLICE LENGTHS SHALL BE INCREASED BY 30%.
- WHEN REINFORCING BARS ARE EPOXY-COATED, ALL VALUES IN THE TABLE ABOVE SHALL BE INCREASED BY 50%.

REINFORCED CONCRETE BEAM SCHEDULE									
MARK	SIZE		REINFORCING				STIRRUPS		
	WIDTH (b)	DEPTH (h)	NO.	SIZE	TYPE	REMARKS	SIZE	TYPE	SPACING
B-1	2' 0"	2'-0"	2	#4	B		#4	S1	10" O.C.
B-2	2' 0"	2'-0"	3	#4	B		#4	S1	10" O.C.
B-3	2' 0"	3'-0"	4	#7	F		#4	S1	12" O.C.
B-4	3' 0"	3'-0"	6	#8	A		#4	S1	10 @ 6" O.C. EA. END 12" O.C. REMAINING
B-5	3'-0"	3'-0"	5	#10	A		#4	S1	12 @ 6" O.C. EA. END 12" O.C. REMAINING
B-5a	3' 0"	3'-0"	3	#10	C		#4	S1	28 @ 3" O.C. EA. END 6" O.C. REMAINING
B-6	3'-0"	3'-0"	6	#8	A		#4	S1	12" O.C.
B-7	0'-10"	3' 0"	2	#6	B		#3	S2	12" O.C.
B-8	2' 0"	3'-0"	2	#6	B		#4	S1	12" O.C.
B-9	1' 2"	5'-8"	5	#6	D	EACH FACE	#4	S2	12" O.C.
B-10	1'-0"	1'-6"	2	#4	B		#3	S1	6" O.C.
B-11	1' 6"	3'-0"	2	#4	B		#4	S1	10" O.C.
B-12	2' 0"	3'-0"	2	#4	B		#4	S2	12" O.C.
B-13	2' 0"	2'-0"	2	#4	B		#4	S1	10" O.C.
B-14	2' 0"	2'-0"	2	#4	B		#4	S1	10" O.C.
B-15	1'-6"	1'-0"	3	#7	E		#3	S2	4" O.C.
B-16	1'-6"	1'-0"	4	#8	A		#3	S2	4" O.C.
B-17	2'-0"	1'-2"	4	#8	B		#3	S2	4" O.C.
B-18	1'-4"	1'-4"	2	#4	B		#3	S1	6" O.C.
B-19	2' 0"	3' 0"	4	#9	E		#4	S1	8" O.C.

BAR BENDING SCHEDULE					
TYPE	CLEAR SPAN - LB	BM/ COL/ WALL	CLEAR SPAN - LA	BM/ COL/ WALL	CLEAR SPAN - LB
A	EXTEND AND HOOK AT END SPAN REFER TO NOTE 2				☉ OF SPAN
B					☉ OF SPAN
C					☉ OF SPAN
D					☉ OF SPAN
E					☉ OF SPAN
F	HOOK AT END SPAN ONLY	☉ SUPPORT		☉ SUPPORT	
G					
H					

BEAM/ JOIST SCHEDULE NOTES:

- 0.30LA OR 0.30LB, WHICHEVER IS GREATER
- STANDARD ACI 90 HOOK OR ACI 180 HOOK AS REQUIRED
- 4BD OR CLASS-A LAP, WHICHEVER IS GREATER
- FOR BEAMS AT PERIMETER OF THE STRUCTURE, PROVIDE 60D LAP OR CLASS-A LAP, WHICHEVER IS GREATER
- D = BAR DIAMETER
- STIRRUP TYPES: SEE SCHEMATIC DIAGRAMS TO THE RIGHT
- PLACE FIRST STIRRUP 2" FROM FACE OF SUPPORT
- ALL BARS ARE TO BE HOOKED AT DISCONTINUOUS AND CANTILEVERED ENDS
- PROVIDE (2) - #4 CONT. BARS AT TOP OF BEAM WHERE THERE ARE NO SCHEDULED BARS TO SUPPORT STIRRUPS



NOTES:

- FOR BEAM TOP + BOTTOM BARS + STIRRUPS, SEE BEAM SCHEDULES
- L IS THE LARGER OF TWO ADJACENT SPANS L1 OR L2
- TERMINATE TOP & BOTT. REINF. (WITH 90° BENDS) AT END OF CANTILEVERS WHERE APPLICABLE.
- PROVIDE HORIZ. BARS EA. VERT. FACE
- 'S' DENOTES STIRRUP SPACING

1 TYPICAL CONCRETE BEAM REINFORCEMENT ELEVATIONS

S-6.2 Not to Scale

NOTE: REFER TO S-6.2 FOR REBAR SCHEDULE OF EMBEDMENT AND SPLICE LENGTHS



2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmaguire.com



DESIGN / RESTORE / BUILD
 64 Thompson Street, Suite A105
 East Haven, CT 06513
 phone: 203-468-2441
 www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A105
 East Haven, CT 06513
 Tel: 203.467.4370 Fax: 203.468.6172
 Web: www.iesllc.biz



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

CONCRETE BEAM SCHEDULES

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

S-6.2

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



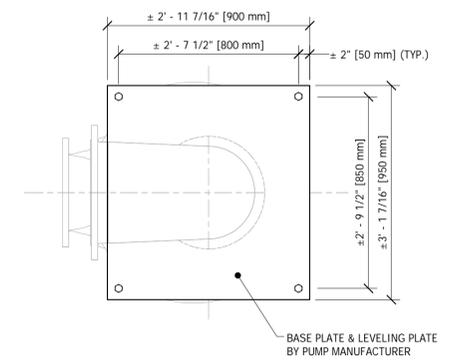
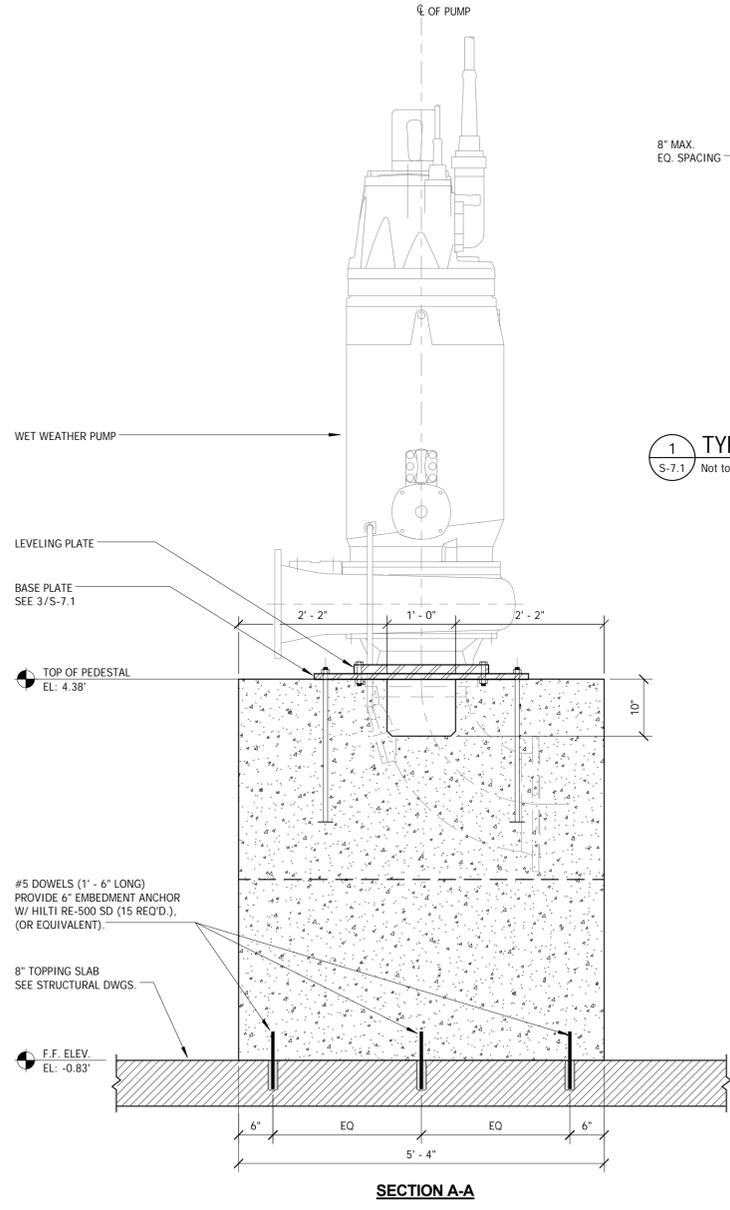
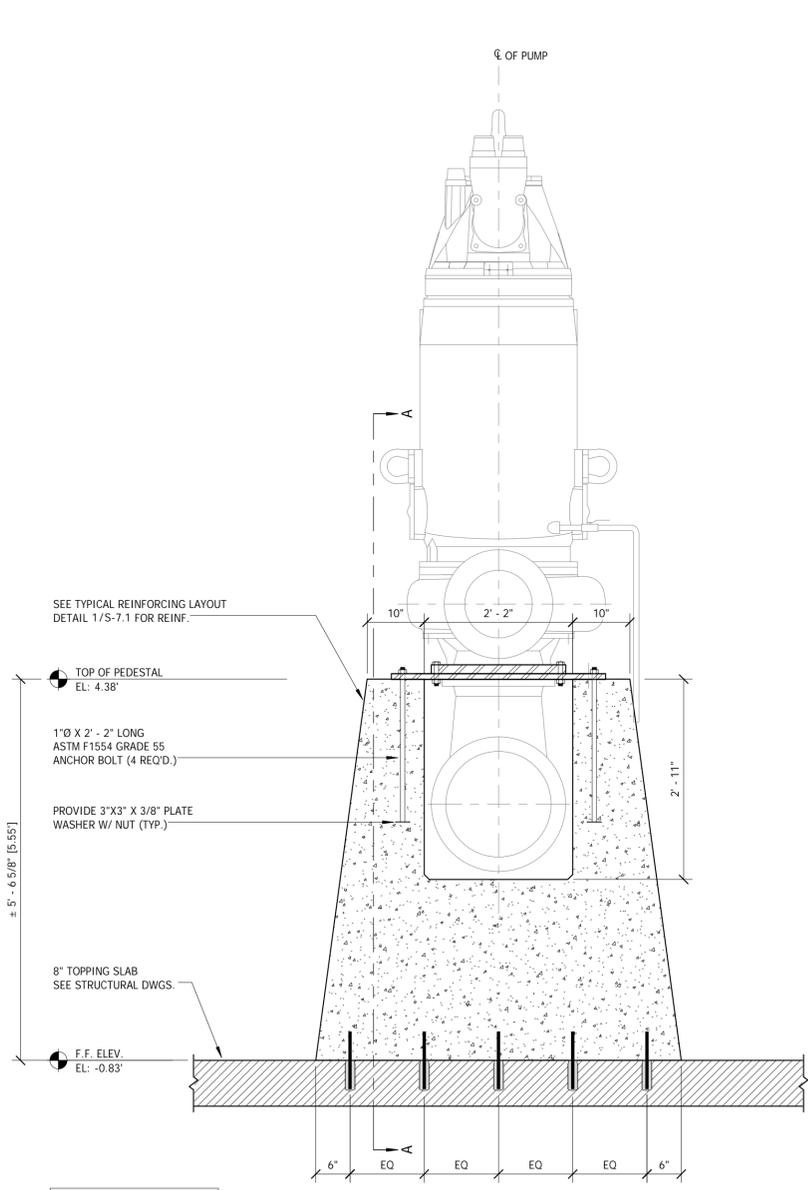
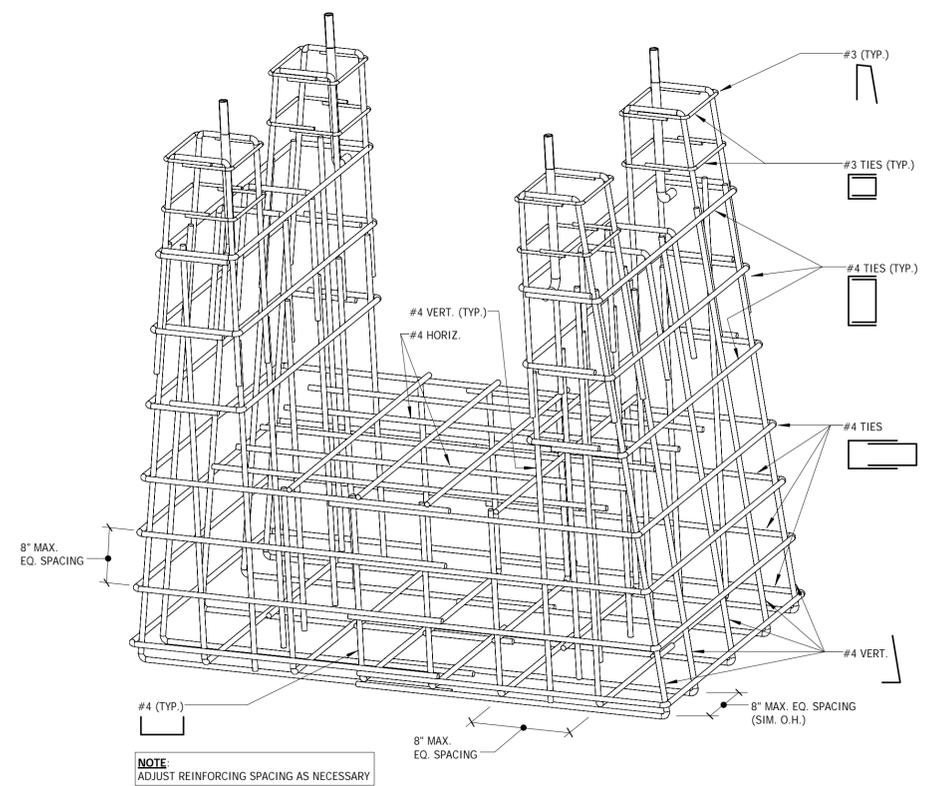
FRANCIS T. PATNAUDE INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

WET WEATHER PUMP PEDESTAL DETAILS

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-7.1

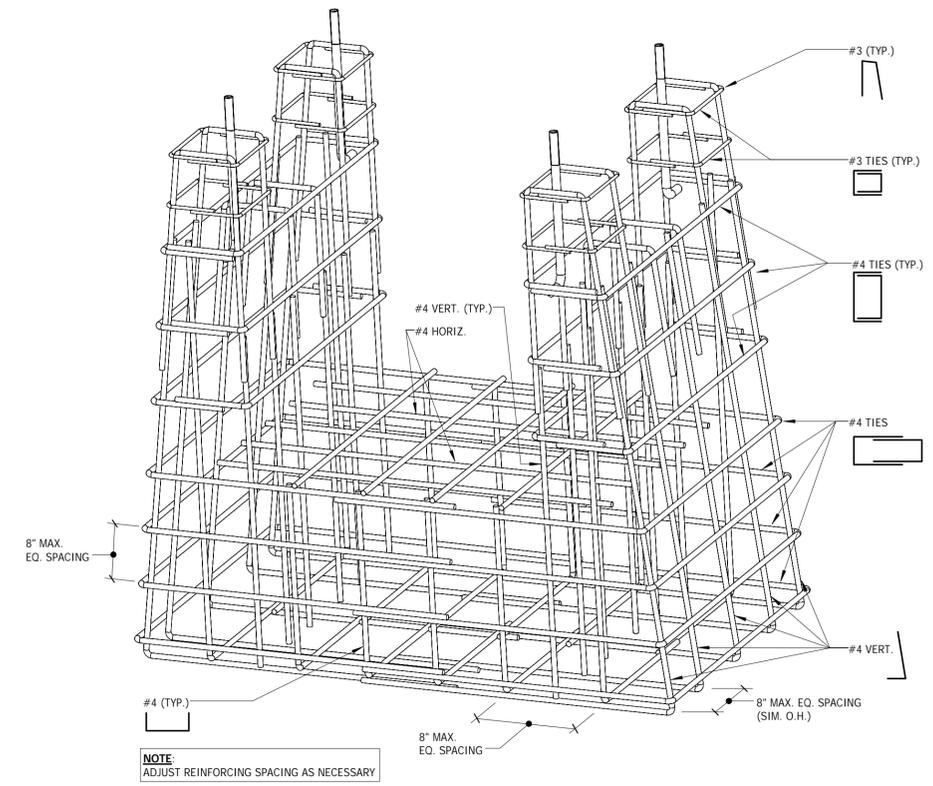


TYPICAL DETAIL FOR WWP-1, WWP-2, WWP-3 & WWP-4

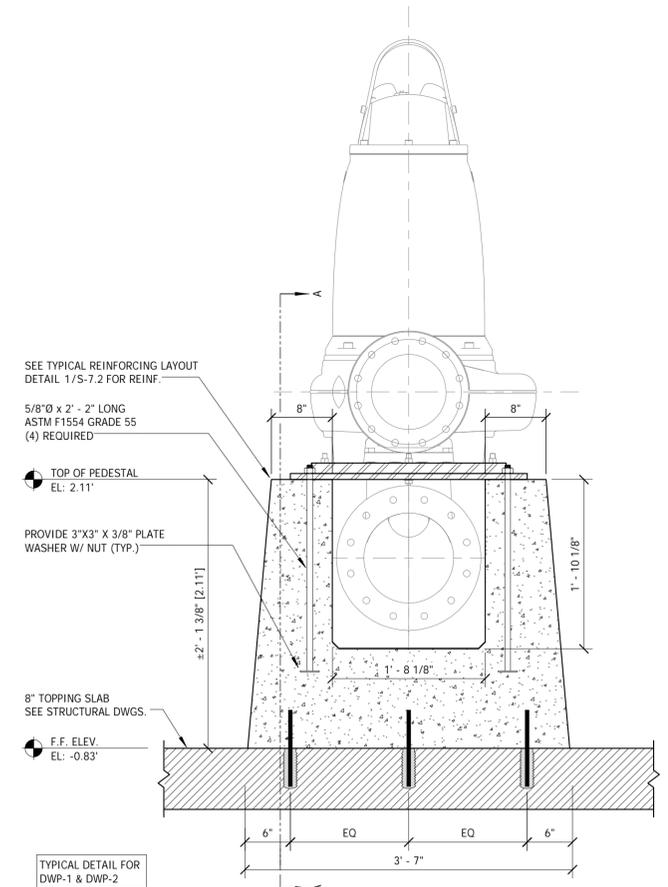
NOTE:
 FINAL PEDESTAL FOUNDATION DIMENSIONS TO BE COORDINATED BY CONTRACTOR WITH PUMP MANUFACTURER REQUIREMENTS

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

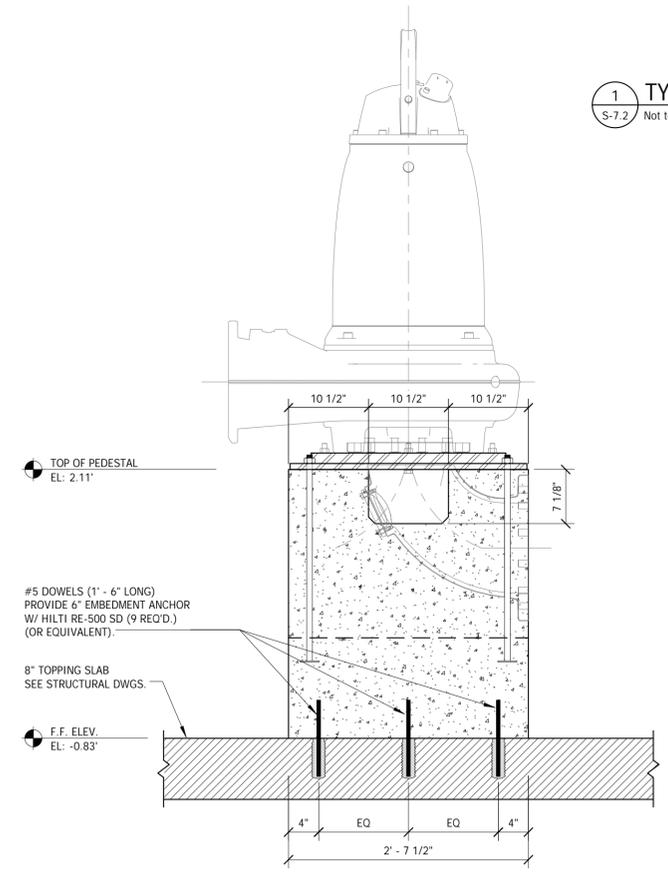


1 TYPICAL REINFORCEMENT LAYOUT
 S-7.2 Not to Scale

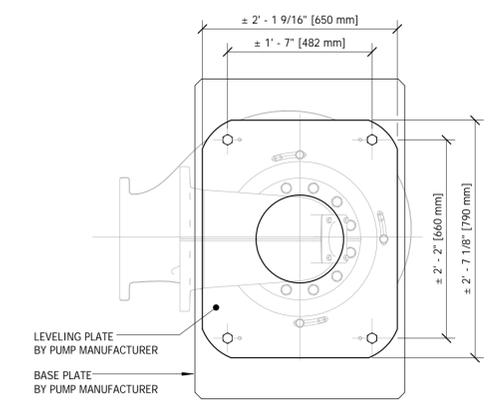


TYPICAL DETAIL FOR
 DWP-1 & DWP-2
NOTE:
 FINAL PEDESTAL FOUNDATION DIMENSIONS TO BE COORDINATED
 BY CONTRACTOR WITH PUMP MANUFACTURER REQUIREMENTS

2 DRY WEATHER PUMP PEDESTAL FOUNDATION
 S-7.2 Scale: 1" = 1'-0"



SECTION A-A



3 BASE PLATE DETAIL
 S-7.2 Scale: 1" = 1'-0"



FRANCIS T.
 PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

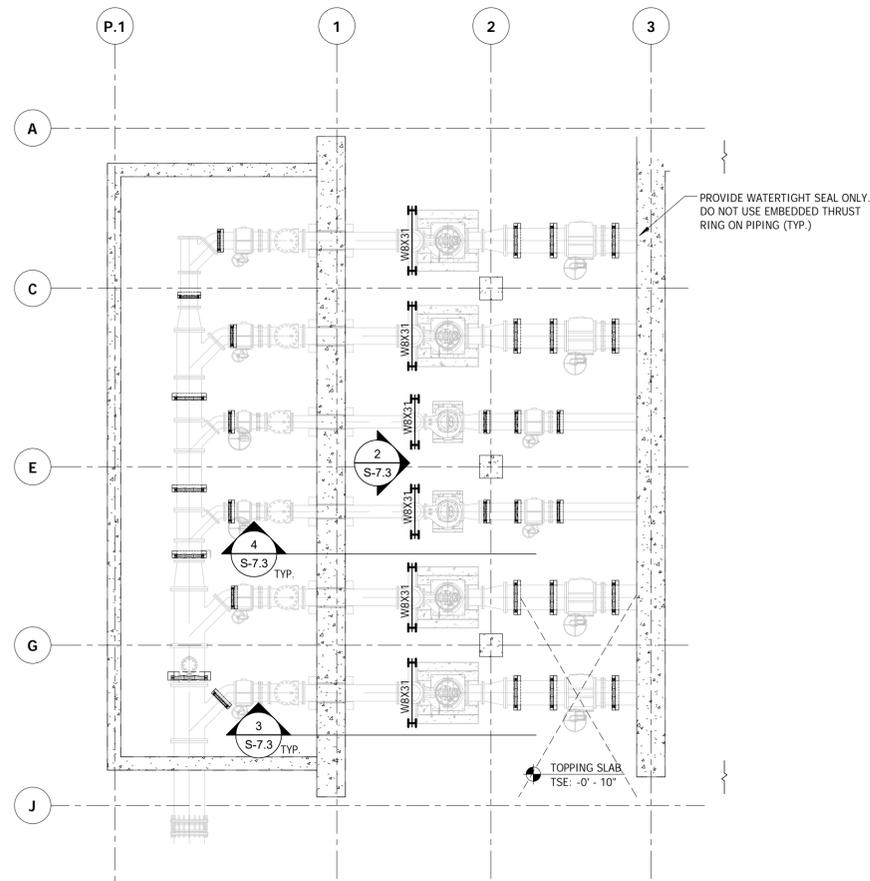
DRY WEATHER
 PUMP PEDESTAL
 DETAILS

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016

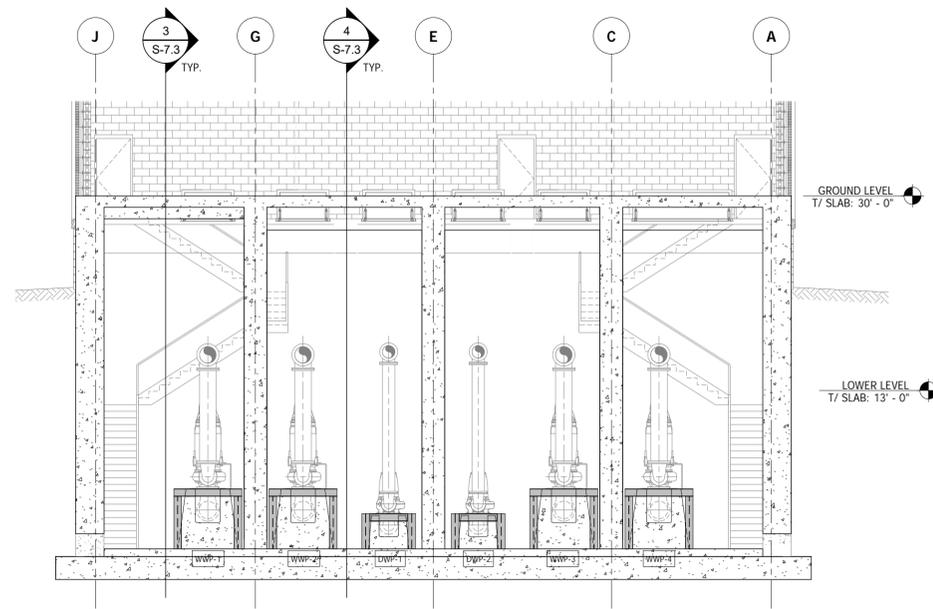
SHEET NUMBER:

S-7.2

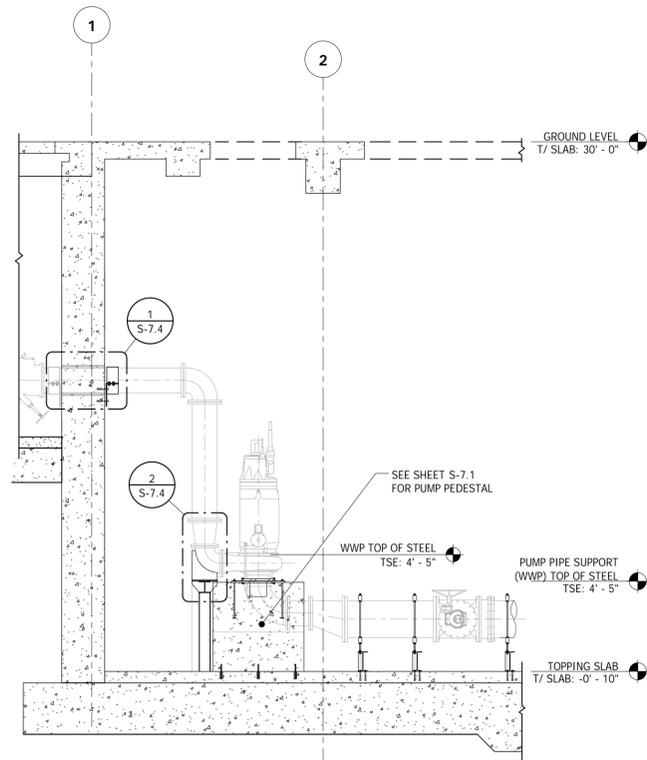
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



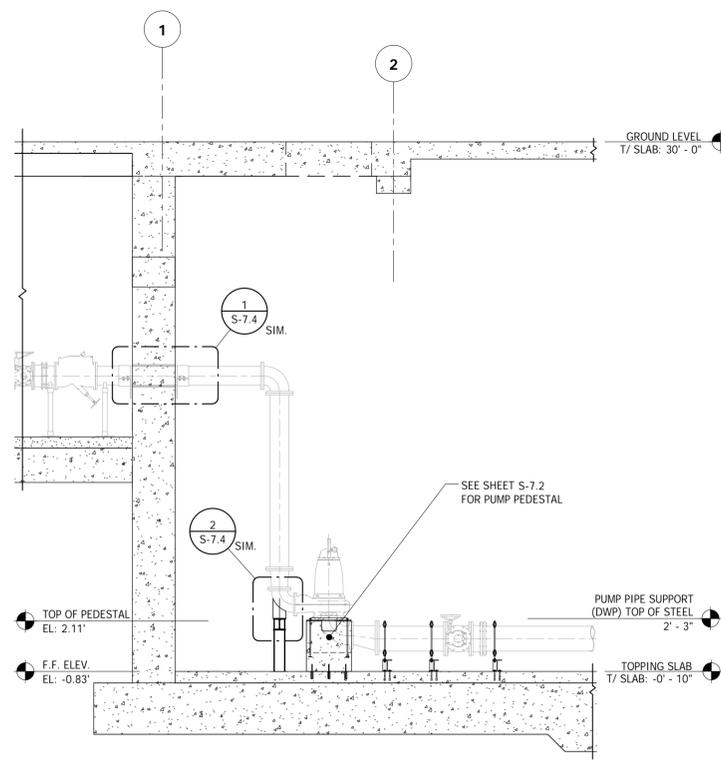
1 PUMP ROOM SUPPORT PLAN
S-7.3 Scale: 1/8" = 1'-0"



2 PUMP ROOM ELEVATION
S-7.3 Scale: 1/8" = 1'-0"



3 TYPICAL WET WEATHER PUMP SECTION (TYP. OF 4)
S-7.3 Scale: 3/16" = 1'-0"



4 TYPICAL DRY WEATHER PUMP SECTION (TYP. OF 2)
S-7.3 Scale: 3/16" = 1'-0"



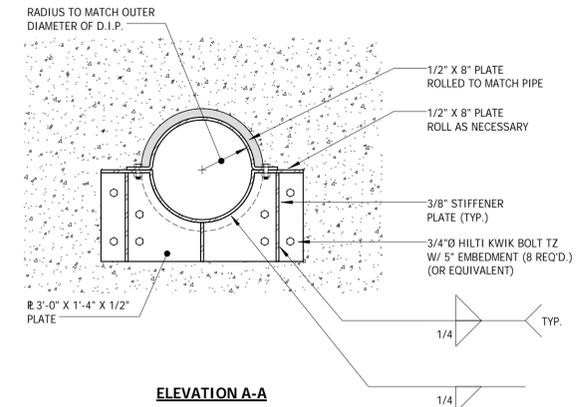
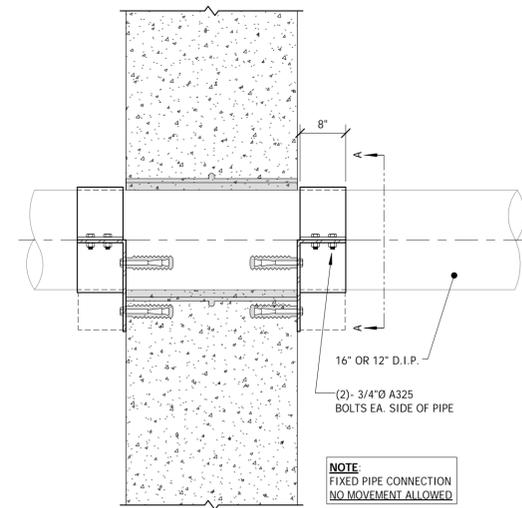
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PUMP PEDESTAL
DETAILS

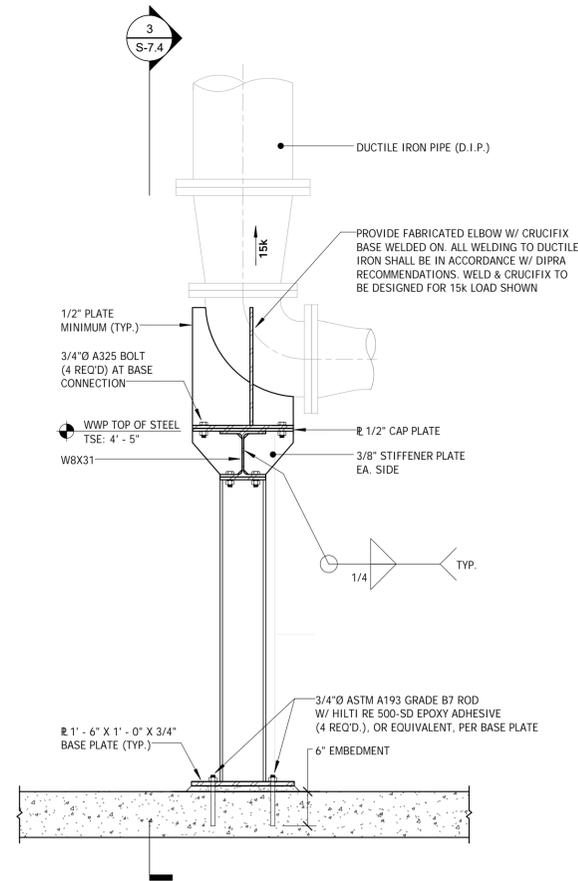
PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

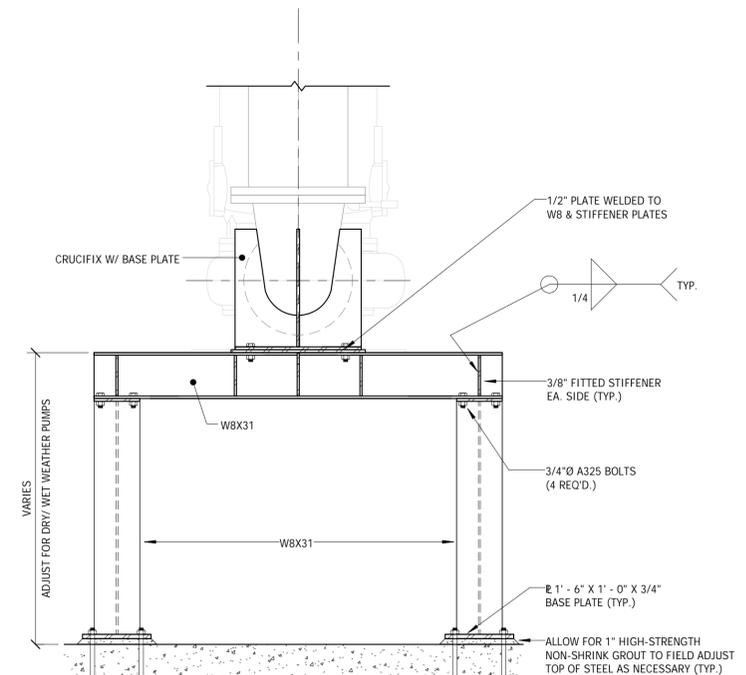
S-7.3



1 PIPE SUPPORT AT WALL DETAIL
S-7.4 Scale: 3/4" = 1'-0"



2 PIPE SUPPORT AT WET WEATHER PUMP
S-7.4 Scale: 3/4" = 1'-0"



3 PIPE SUPPORT ELEVATION AT DISCHARGE SIDE OF WWP PUMP
S-7.4 Scale: 3/4" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



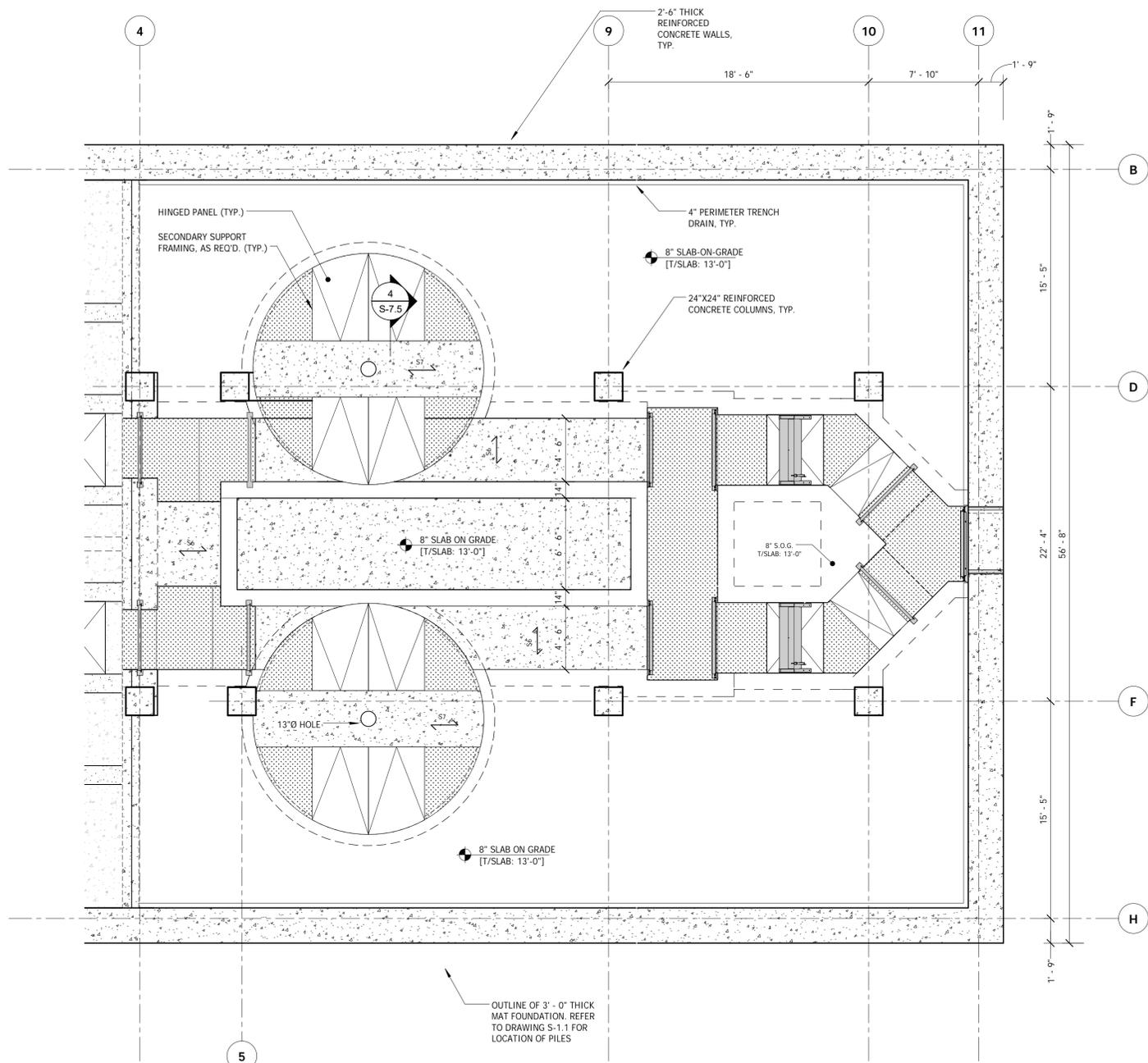
**FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

**PIPING SUPPORT
DETAILS**

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

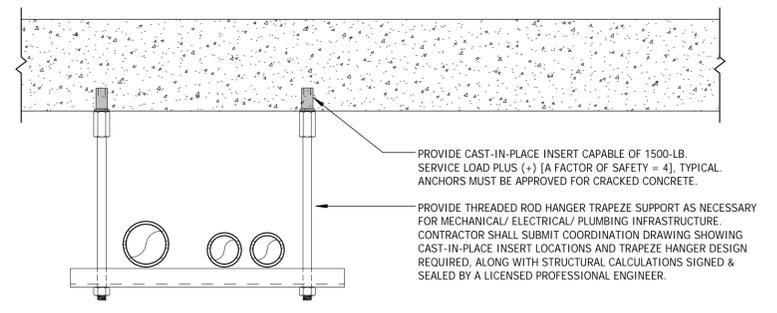
SHEET NUMBER:

S-7.4

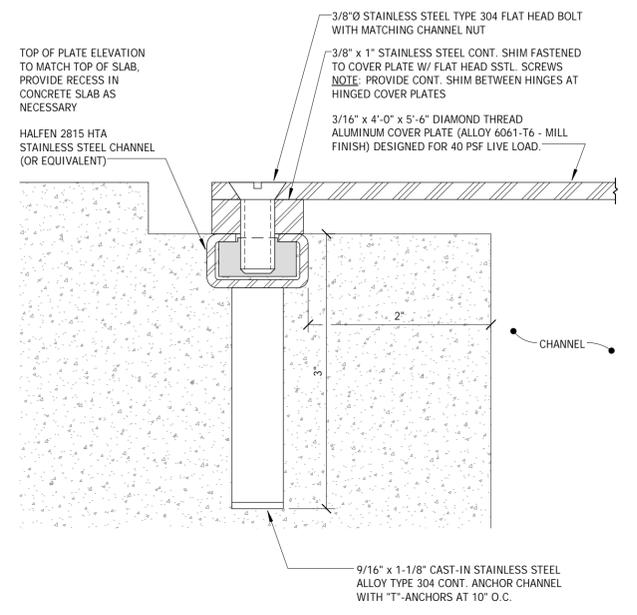


- NOTES:**
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL DESIGN & DETAILS OF ALUMINUM PANELS AT THE LOWER LEVEL. PROVIDE SHOP DRAWINGS TO THE A/E TEAM FOR REVIEW & APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE SIGNED & SEALED BY A LICENSED PROFESSIONAL ENGINEER CURRENTLY REGISTERED FOR PRACTICE IN THE STATE OF CONNECTICUT. REFER TO PROJECT SPECIFICATION SECTION 055300 "METAL GRATING" FOR ADDITIONAL REQUIREMENTS.
 2. MINIMUM DESIGN LIVE LOAD = 40 PSF
ALLOWABLE DEFLECTION = L/240 MAX.
MATERIAL: ALUMINUM THREADPLATE 6061-T6 MILL FINISH
 3. PROVIDE ADDITIONAL ALUMINUM OR STAINLESS STEEL SUPPORT FRAMING AS REQ'D. (SUCH AS ANGLES, PLATES, BARS) TO SUPPORT ALUMINUM PLATE.
 4. HINGE LOCATIONS SHOWN FOR REFERENCE. FINAL DESIGN LAYOUT TO BE COORDINATED WITH A/E TEAM PRIOR TO FABRICATION.

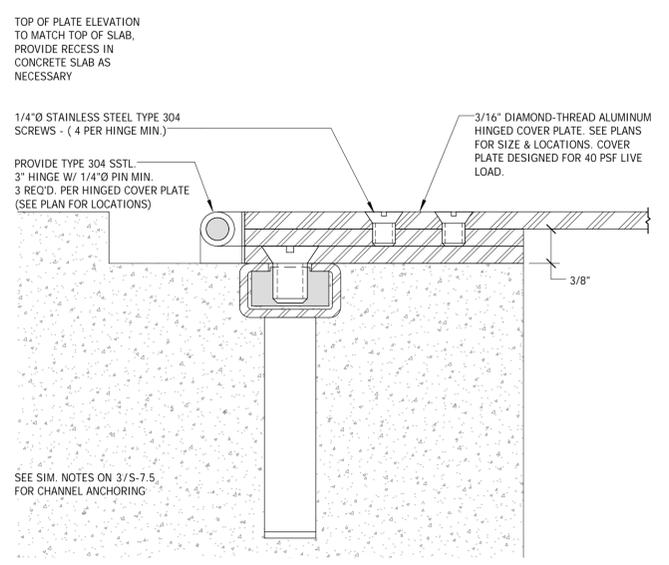
01 LOWER LEVEL/ PARTIAL PLAN AT ALUMINUM PANELS
S-7.5 Scale: 3/16" = 1'-0"



2 PIPE HANGER DETAIL
S-7.5 Scale: 1 1/2" = 1'-0"



3 DETAIL OF ALUMINUM PANEL FASTENED TO FOUNDATION (REMOVABLE SIDE)
S-7.5 Scale: 12" = 1'-0"



4 DETAIL OF ALUMINUM PANEL FASTENED TO FOUNDATION (HINGED SIDE)
S-7.5 Scale: 12" = 1'-0"



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL: (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A105
East Haven, CT 06513
Tel: 203-467-4370 Fax: 203-468-6172
Web: www.iesllc.biz

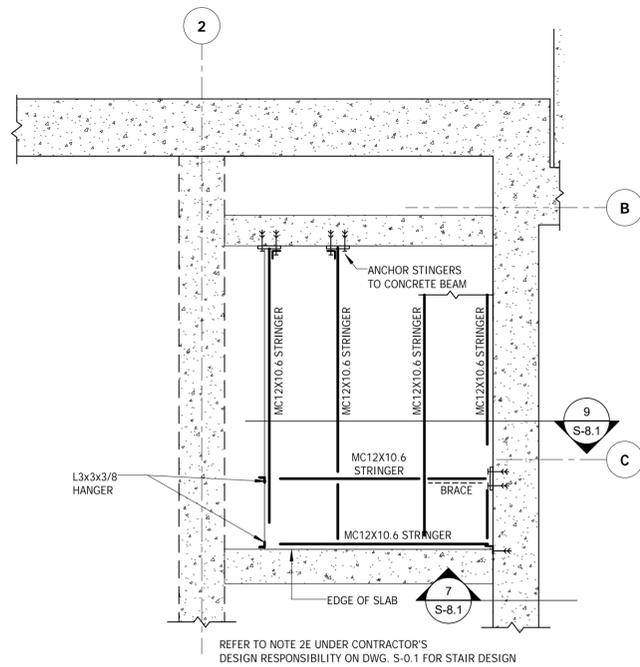


FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

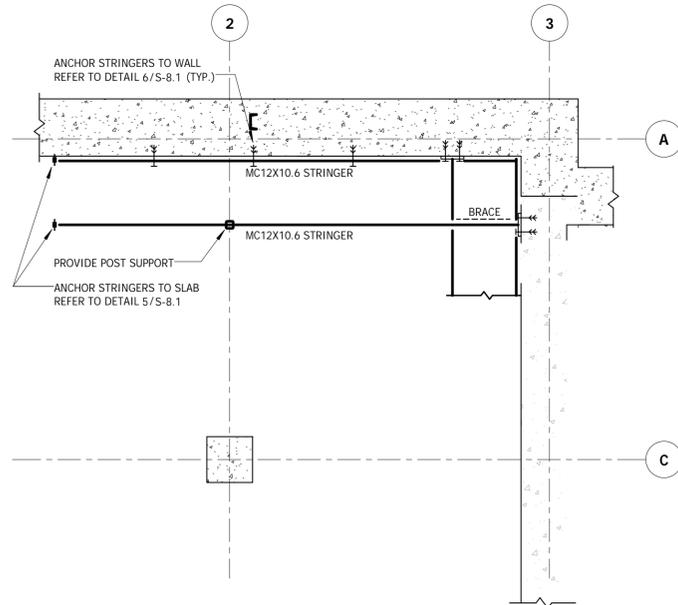
ALUMINUM PLATE
DETAILS

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

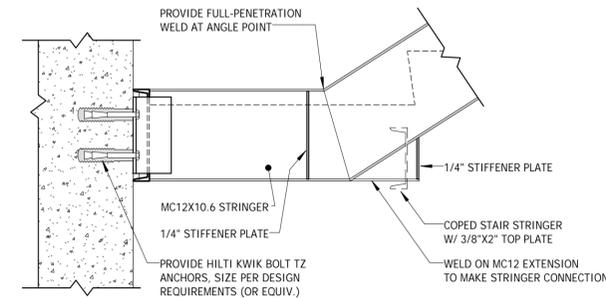
SHEET NUMBER:
S-7.5



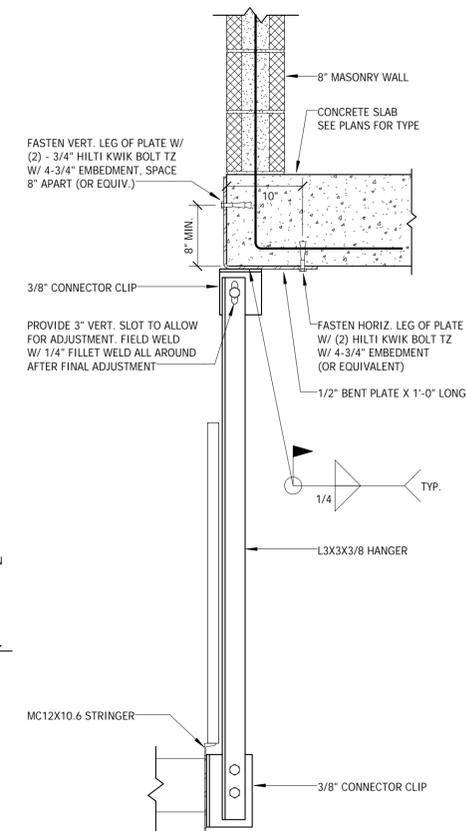
1 STAIR 1 UPPER FRAMING PARTIAL PLAN
S-8.1 Scale: 1/4" = 1'-0"



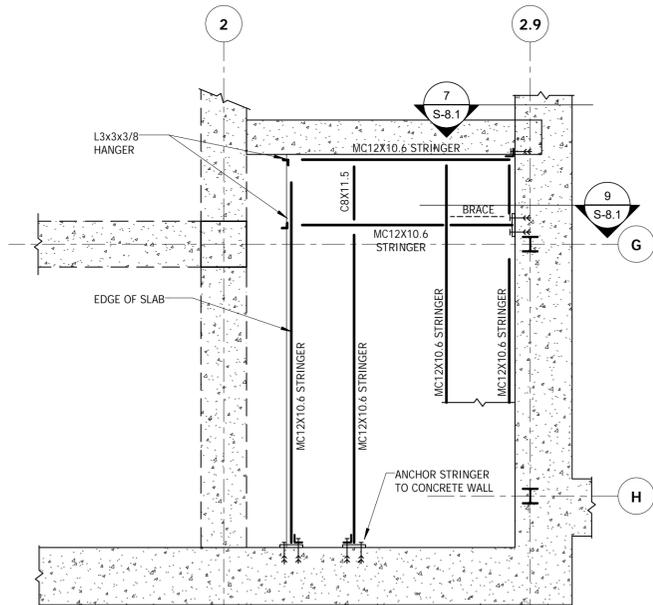
2 STAIR 1 LOWER FRAMING PARTIAL PLAN
S-8.1 Scale: 1/4" = 1'-0"



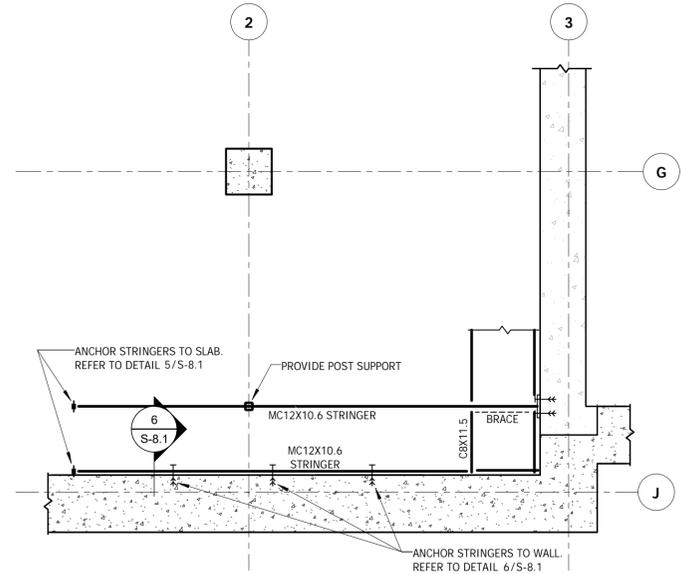
7 TYP. STAIR STRINGER TO FOUNDATION WALL DETAIL
S-8.1 Scale: 1" = 1'-0"



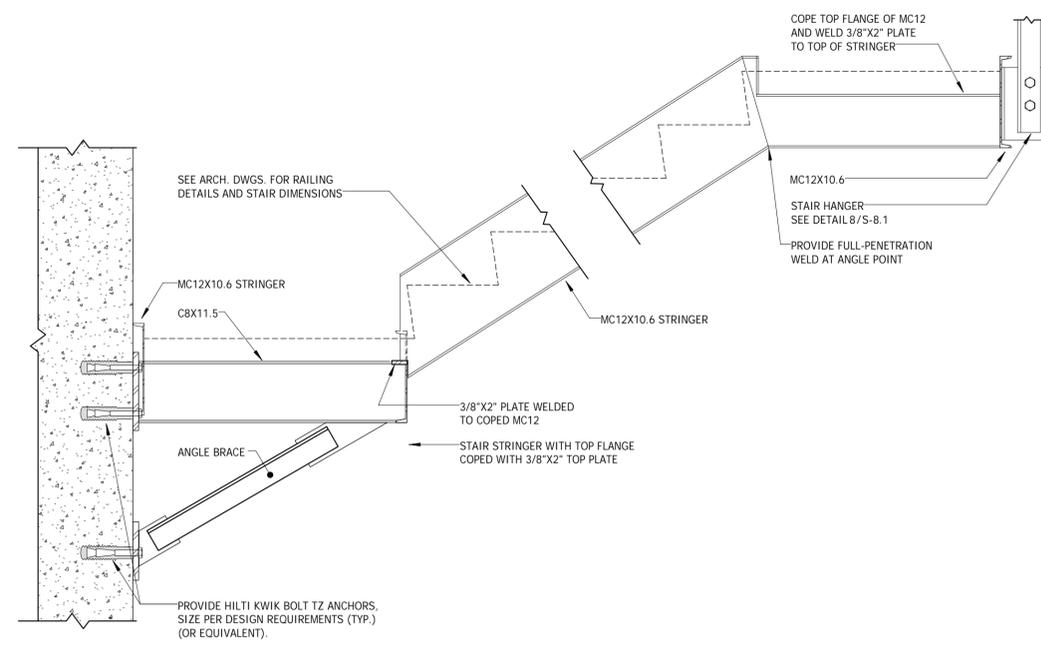
8 TYP. STAIR HANGER DETAIL
S-8.1 Scale: 1" = 1'-0"



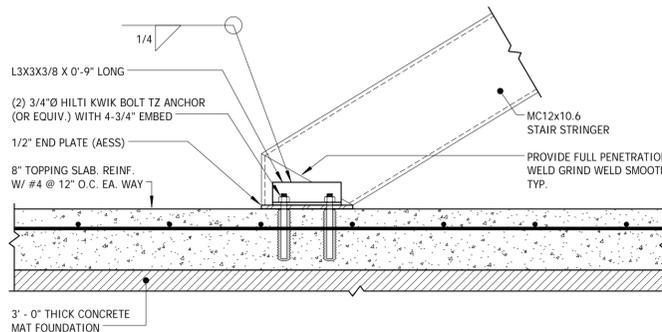
3 STAIR 2 UPPER FRAMING PARTIAL PLAN
S-8.1 Scale: 1/4" = 1'-0"



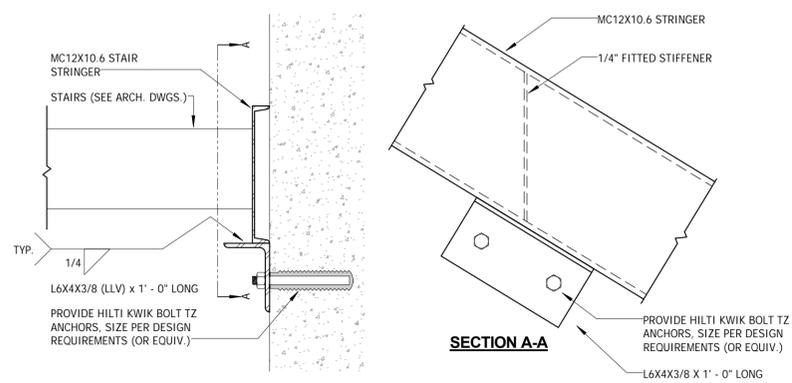
4 STAIR 2 LOWER FRAMING PARTIAL PLAN
S-8.1 Scale: 1/4" = 1'-0"



9 TYP. STAIR SUPPORT BRACKET DETAIL
S-8.1 Scale: 1" = 1'-0"



5 TYP. STAIR STRINGER BASE ANCHORAGE DETAIL
S-8.1 Scale: 1" = 1'-0"



6 TYP. SECTION AT STAIR STRINGER
S-8.1 Scale: 1 1/2" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

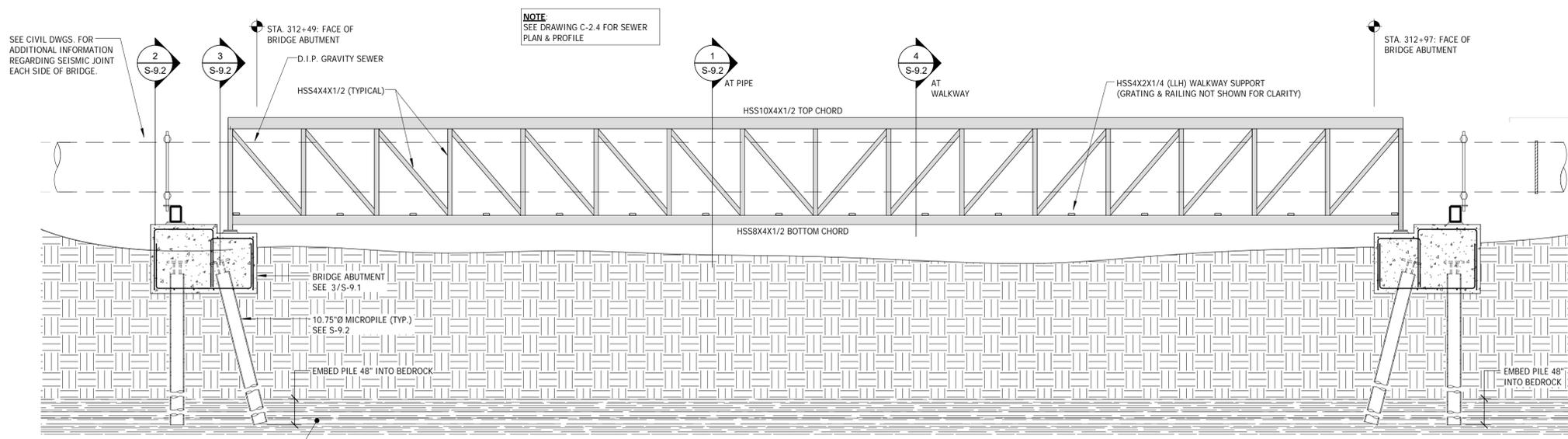


STAIR DETAILS

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-8.1



NOTE:
SEE DRAWING C-2.4 FOR SEWER PLAN & PROFILE

NOTE:
CONTRACTOR SHALL PROVIDE ALL TEMPORARY FALL PROTECTION AS NECESSARY TO INSTALL PIPING. CONTRACTOR TO SET INITIAL PIPE SLOPE AND RE-SET SLOPE ONCE PIPE HAS BEEN ACTIVATED TO REMOVE ANY DEFLECTION. CONTRACTOR TO PROVIDE FINAL FIELD VERIFICATION OF BRIDGE ABUTMENT LOCATIONS BASED ON EXISTING CONDITIONS.

PREFABRICATED PIPE BRIDGE SYSTEM

1.0 SCOPE
IN ADDITION TO THE PERFORMANCE REQUIREMENTS BELOW SPECIFICATION SECTION 05100 "STRUCTURAL STEEL" SHALL APPLY TO ALL WORK.

THE WORK CONSISTS OF FURNISHING ALL NECESSARY ENGINEERING AND DESIGN AS REQUIRED, SUPERVISION, LABOR, MATERIALS, EQUIPMENT, AND DELIVERY TO PERFORM ALL WORK NECESSARY TO FURNISH, FABRICATE, AND INSTALL A CLEAR SPAN PIPE BRIDGE SYSTEM OF GALVANIZED STEEL CONSTRUCTION AS INDICATED ON THE DRAWINGS. SCOPE INCLUDES ALL BASE PLATES, LEVELING PLATES, MOUNTING PLATES REQUIRED FOR PIPE SUPPORT, TRUSS MEMBERS INCLUDING ANY DIAGONAL BRACING REQUIRED TO MEET DEFLECTION OR STRENGTH REQUIREMENTS, AND MISCELLANEOUS LATERAL BRACING AS REQUIRED TO PREVENT BUCKLING OF PRIMARY MEMBERS.

2.0 BASIS OF DESIGN
PIPE BRIDGE SYSTEM SHALL SUPPORT A 36-INCH DIAMETER D.I.P. GRAVITY FLOW SEWER MAIN AS SHOWN ON THE DRAWINGS. THE BRIDGE SHALL BE PREFABRICATED AND MAY BE DELIVERED TO THE SITE IN SECTIONS. BASIS OF DESIGN AND FABRICATION SHALL BE CONTECH ENGINEERED SOLUTIONS, LLC "CONTINENTAL PEDESTRIAN BRIDGE SYSTEMS" OR "CAMERON BRIDGE WORKS, LLC" EQUIVALENT. PREFABRICATED BRIDGE DESIGNER AND FABRICATOR SHALL HAVE A MINIMUM OF FIVE YEARS' SUCCESSFUL EXPERIENCE IN DESIGNING AND FABRICATING PROJECTS OF SIMILAR SIZE AND CONSTRUCTION.

3.0 DESIGN CRITERIA
STEEL SIZES SHOWN ON THE DRAWINGS ARE PRELIMINARY ONLY FOR THE PURPOSES OF ESTIMATING. THE FINAL DESIGN SHALL BE PREPARED BY THE PREFABRICATED PIPE BRIDGE SUPPLIER UTILIZING THE FOLLOWING DESIGN CRITERIA:

- A. CODES AND STANDARDS:**
- IBC 2003 AS ADOPTED AND AMENDED BY THE STATE OF CONNECTICUT BUILDING.
 - ASCE 7 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), STEEL CONSTRUCTION MANUAL, CURRENT EDITION.
 - AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE", LATEST EDITION.
 - AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", LATEST EDITION.
 - AMERICAN SOCIETY FOR TESTING AND MATERIALS "ASTM STANDARDS IN BUILDING CODES", LATEST EDITION.
 - AISC "HOLLOW STRUCTURAL SECTIONS CONNECTIONS MANUAL", LATEST EDITION.
 - FOR ADDITIONAL REFERENCES AND REQUIREMENTS SEE DRAWING S-0.1 "STRUCTURAL STEEL NOTES" AND SPECIFICATION SECTION 05100.

B. DESIGN LOADS:
DESIGN LOAD SHALL BE THE MOST UNFAVORABLE LOAD ACTING AS DETERMINED BY LOAD COMBINATIONS CALCULATED ACCORDANCE WITH THE IBC 2003 AS ADOPTED AND AMENDED BY THE STATE OF CONNECTICUT BUILDING CODE AND ASCE 7.

- SEE DRAWING S-0.1 FOR SEISMIC, WIND, AND SNOW LOAD REQUIREMENTS.
- ICE LOADS SHALL BE IN ACCORDANCE WITH ASCE 7 - 02.
- BRIDGE SELF-WEIGHT.
- 36-INCH DIAMETER DUCTILE IRON PIPE FLOWING FULL = 700 LBS PER FOOT.

C. STRUCTURE CATEGORY CLASSIFICATION - III
IMPORTANCE FACTOR=1.5

- D. DESIGN LIMITATIONS:**
- VERTICAL DEFLECTION - LIMIT TOTAL DEAD LOAD PLUS FULL FLOWING PIPE LOAD DEFLECTION TO L/800
 - HORIZONTAL DEFLECTION - HORIZONTAL DEFLECTION DUE TO SEISMIC OR WIND SHALL NOT EXCEED L/500

E. CONTRACTOR'S DESIGN RESPONSIBILITY:

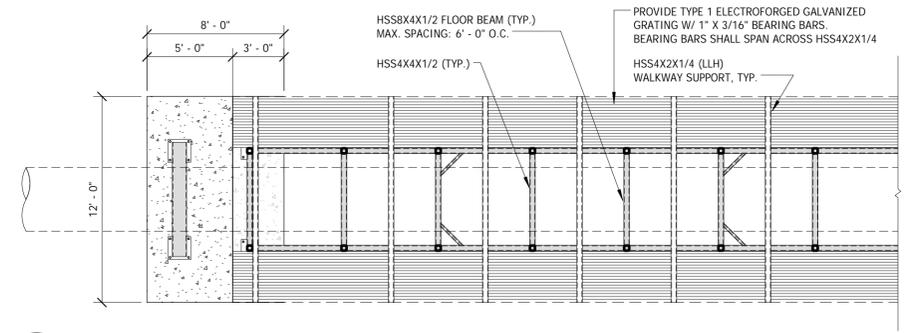
- THE PIPE BRIDGE SUPPLIER SHALL SUBMIT SHOP AND ERECTION DRAWINGS IN ACCORDANCE WITH SPECIFICATION SECTION 05100 FOR THE COMPLETE PREFABRICATED BRIDGE DESIGN INDICATED ON THE CONTRACT DOCUMENTS INCLUDING STRUCTURAL CALCULATIONS FOR THE DESIGN. THE CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT RESPONSIBLE FOR THEIR PREPARATION.

4.0 MANUFACTURER'S STANDARD WARRANTY
SEE DRAWING S-0.1 "STRUCTURAL STEEL NOTES" AND SPECIFICATION SECTION 05100. BRIDGE MEMBERS SHALL BE TUBULAR SHAPES FOR ALL PRIMARY MEMBERS AND FLOOR BEAMS. SECONDARY BRACING MAY BE CHANNELS. ALL TUBULAR SHAPES SHALL BE CAPPED OR SEALED TO PREVENT THE COLLECTION OF WATER INSIDE THE TUBES.

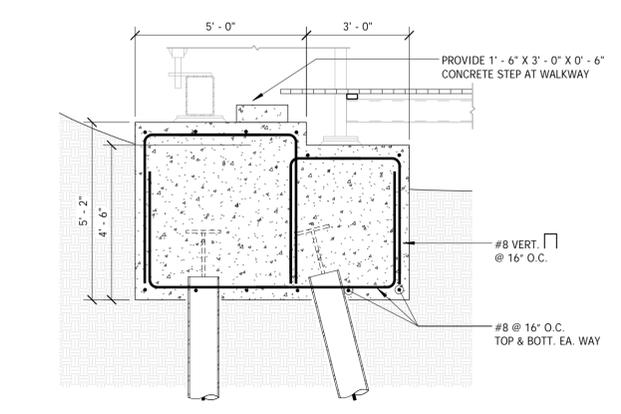
5.0 FINISH
ALL STEEL SHALL BE GALVANIZED WITH A MINIMUM G 120 COATING AND SHOP COATED IN ACCORDANCE WITH SPECIFICATION 099600 - HIGH PERFORMANCE COATINGS.

6.0 WARRANTY
PIPE BRIDGE MANUFACTURER SHALL WARRANT THE STEEL STRUCTURE TO BE FREE OF DESIGN, MATERIAL, AND WORKMANSHIP DEFECTS FOR A PERIOD OF 10 YEARS.

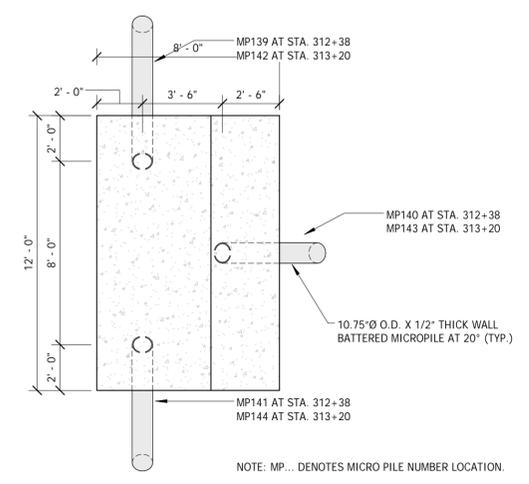
1 PIPE BRIDGE ELEVATION
Scale: 3/16" = 1'-0"



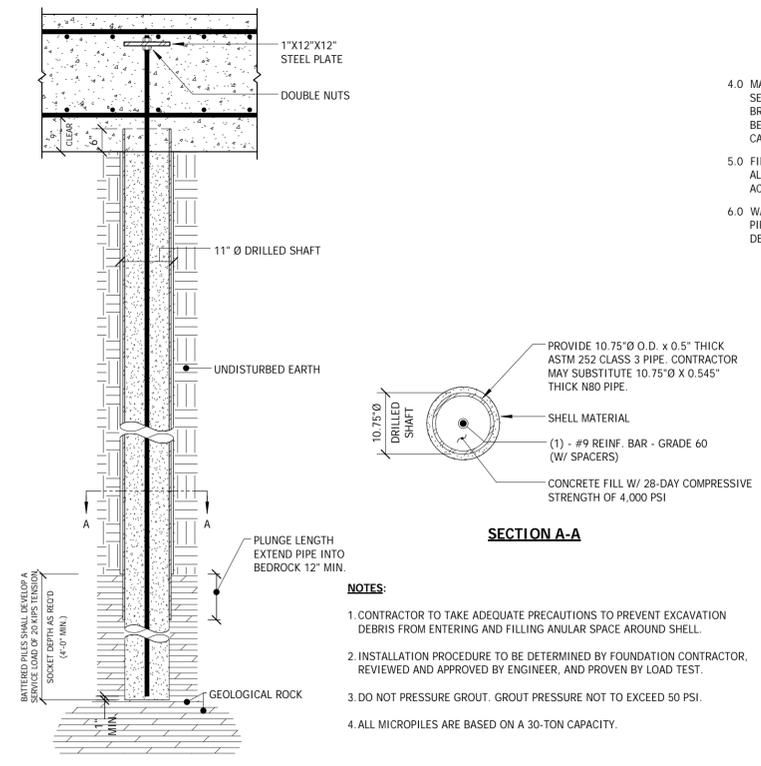
2 PIPE BRIDGE PLAN VIEW
Scale: 3/16" = 1'-0"



3 BRIDGE ABUTMENT/ PILE CAP DETAIL
Scale: 3/8" = 1'-0"



4 PILE LOCATION PLAN
Scale: 1/4" = 1'-0"



5 TYPICAL MICROPILE DETAIL AT BRIDGE ABUTMENT
Scale: 1/2" = 1'-0"

- NOTES:**
- CONTRACTOR TO TAKE ADEQUATE PRECAUTIONS TO PREVENT EXCAVATION DEBRIS FROM ENTERING AND FILLING ANULAR SPACE AROUND SHELL.
 - INSTALLATION PROCEDURE TO BE DETERMINED BY FOUNDATION CONTRACTOR, REVIEWED AND APPROVED BY ENGINEER, AND PROVEN BY LOAD TEST.
 - DO NOT PRESSURE GROUT. GROUT PRESSURE NOT TO EXCEED 50 PSI.
 - ALL MICROPILES ARE BASED ON A 30-TON CAPACITY.



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



DESIGN / RESTORE / BUILD
64 Thompson Street, Suite A105
East Haven, CT 06513
phone: 203-468-2441
www.landmarkarch.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



64 Thompson Street, Suite A105
East Haven, CT 06513
Tel: 203.467.4370 Fax: 203.468.6172
Web: www.iesllc.biz



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PIPE BRIDGE SYSTEM DETAILS
I

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-9.1

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



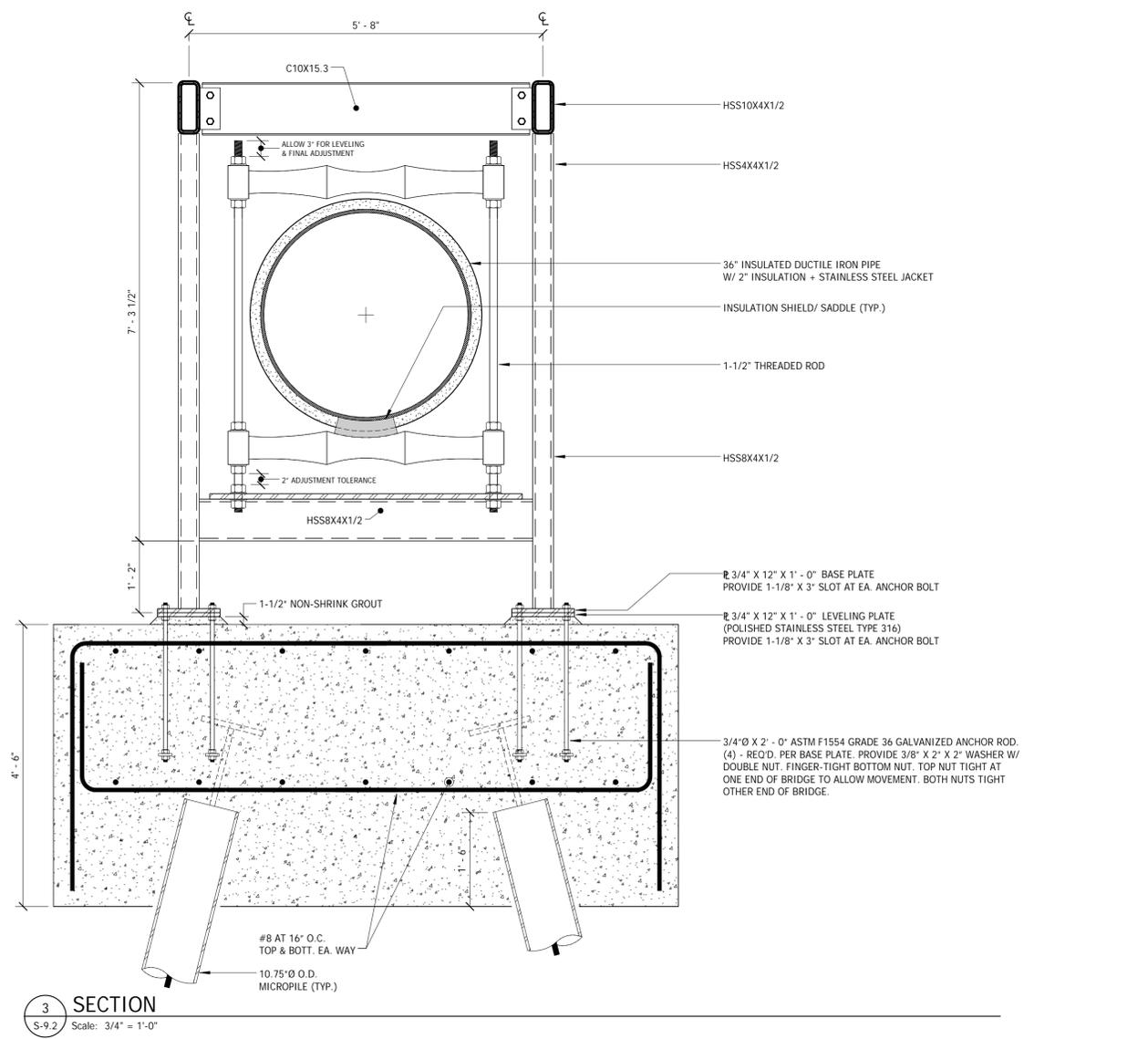
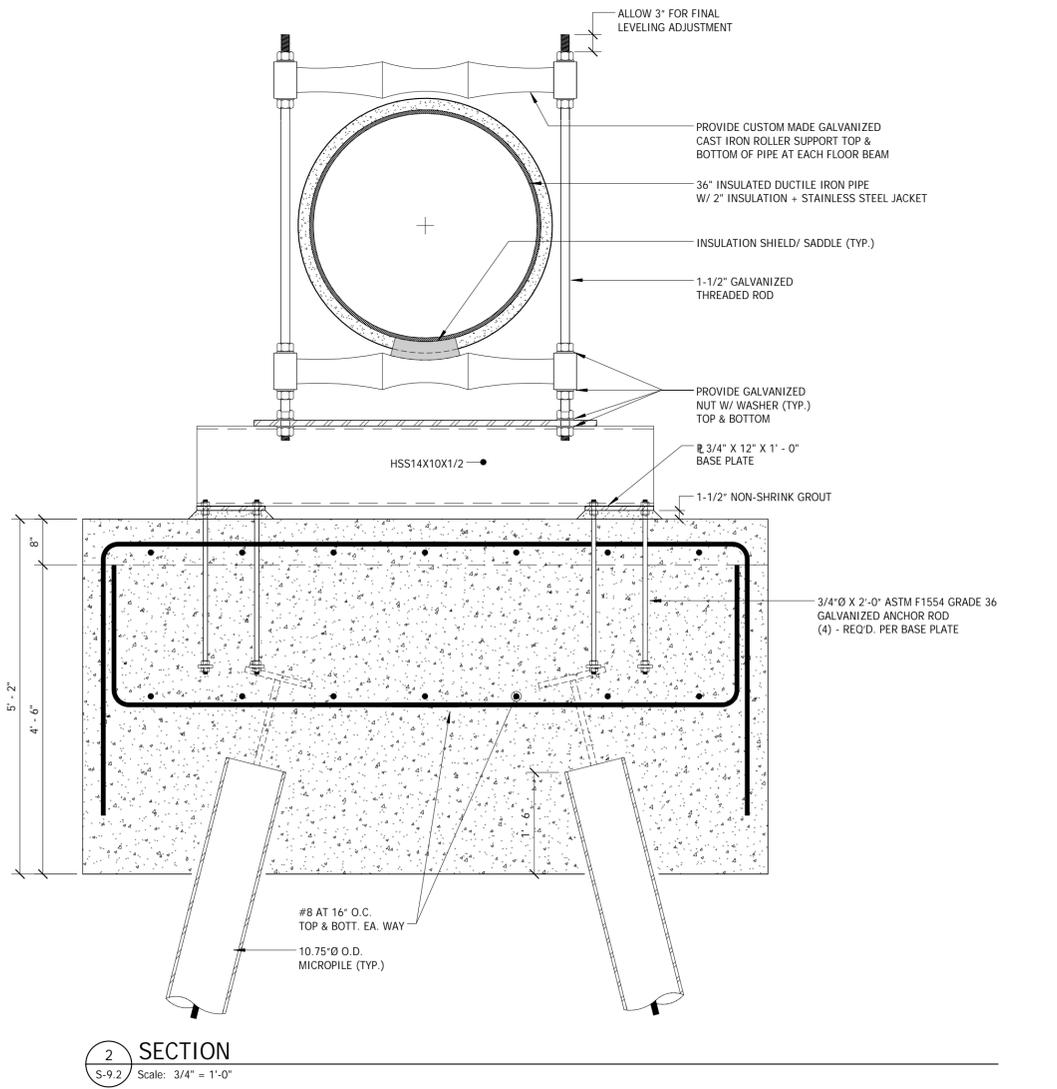
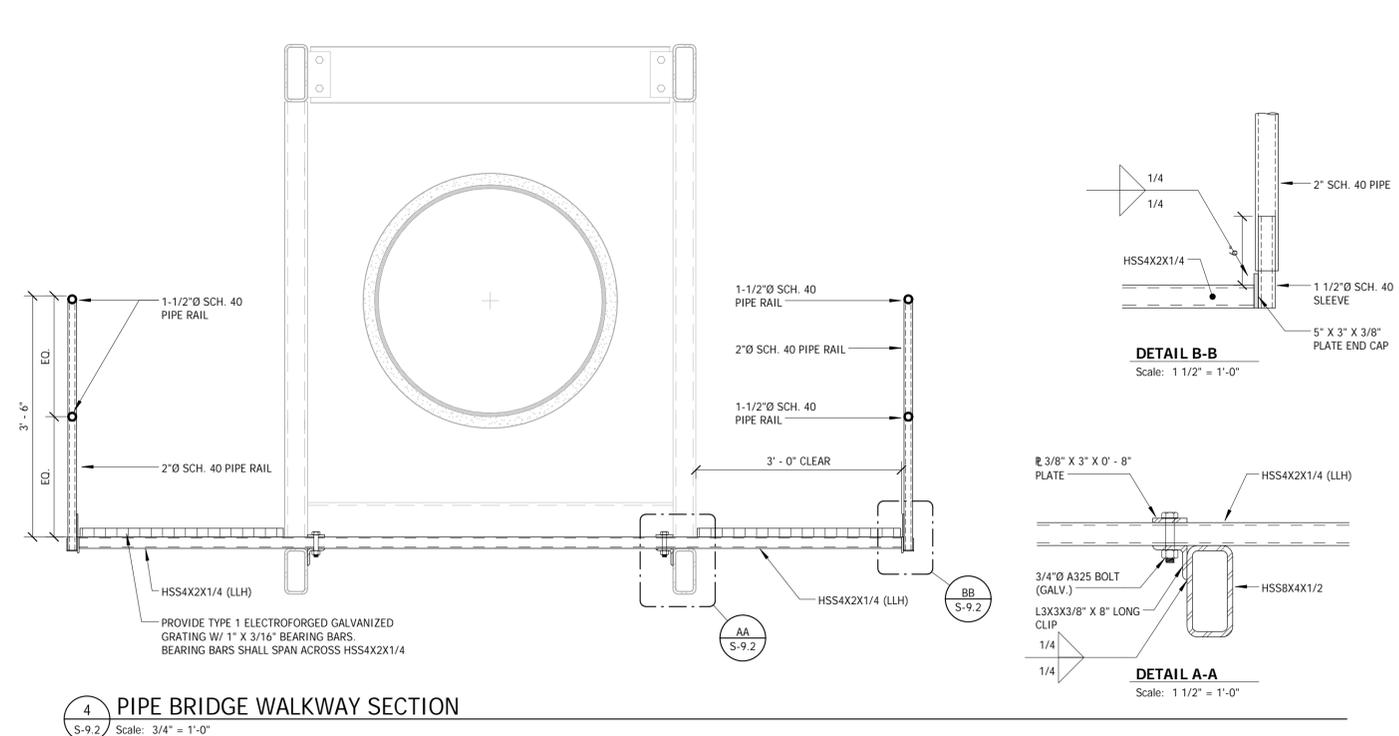
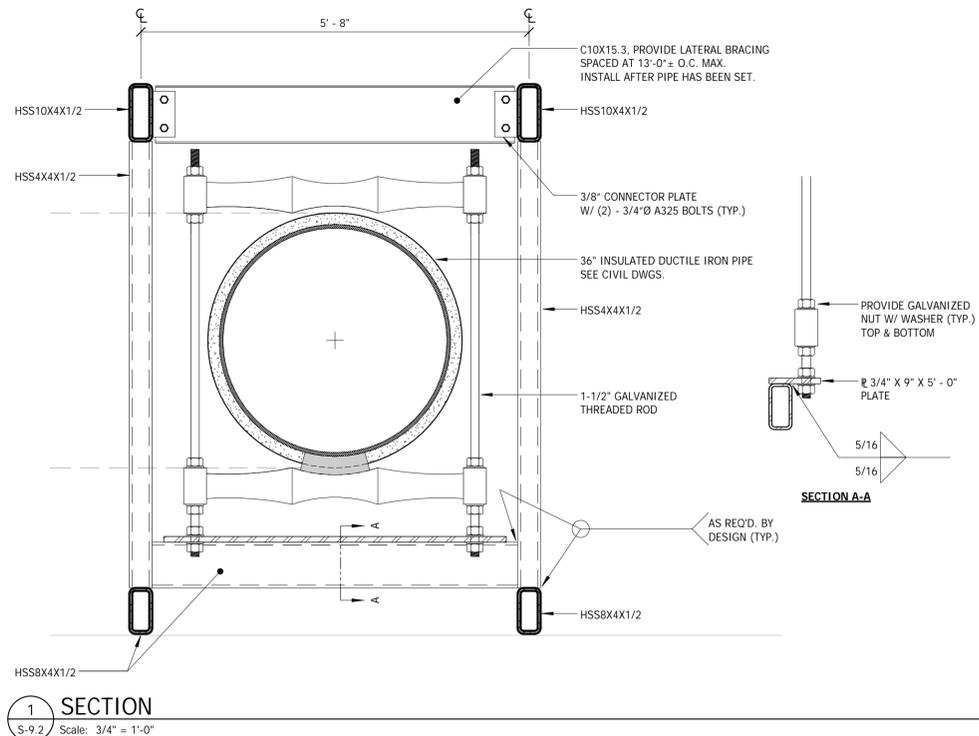
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

PIPE BRIDGE
SYSTEM DETAILS
II

PROJECT NUMBER: 14712.02
DESIGNED BY: IES
DRAWN BY: IES
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

S-9.2



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

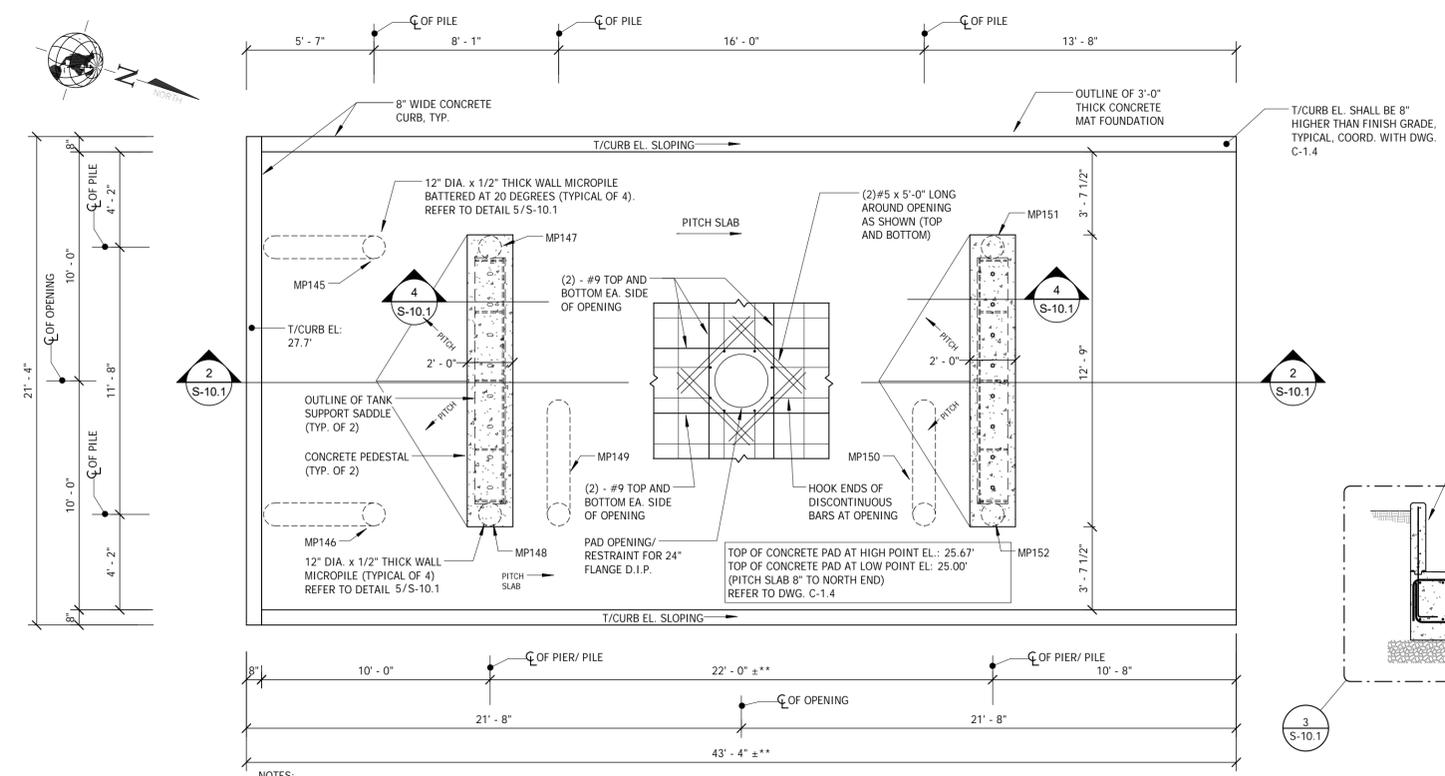


FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

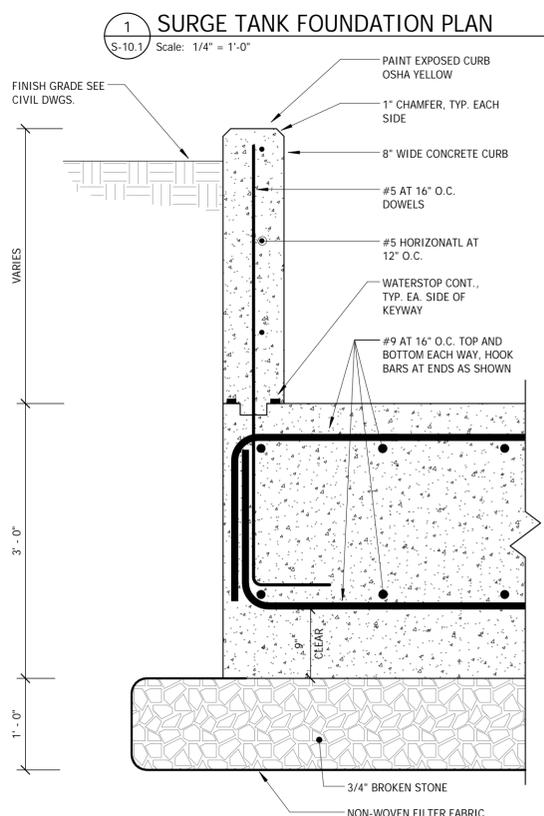
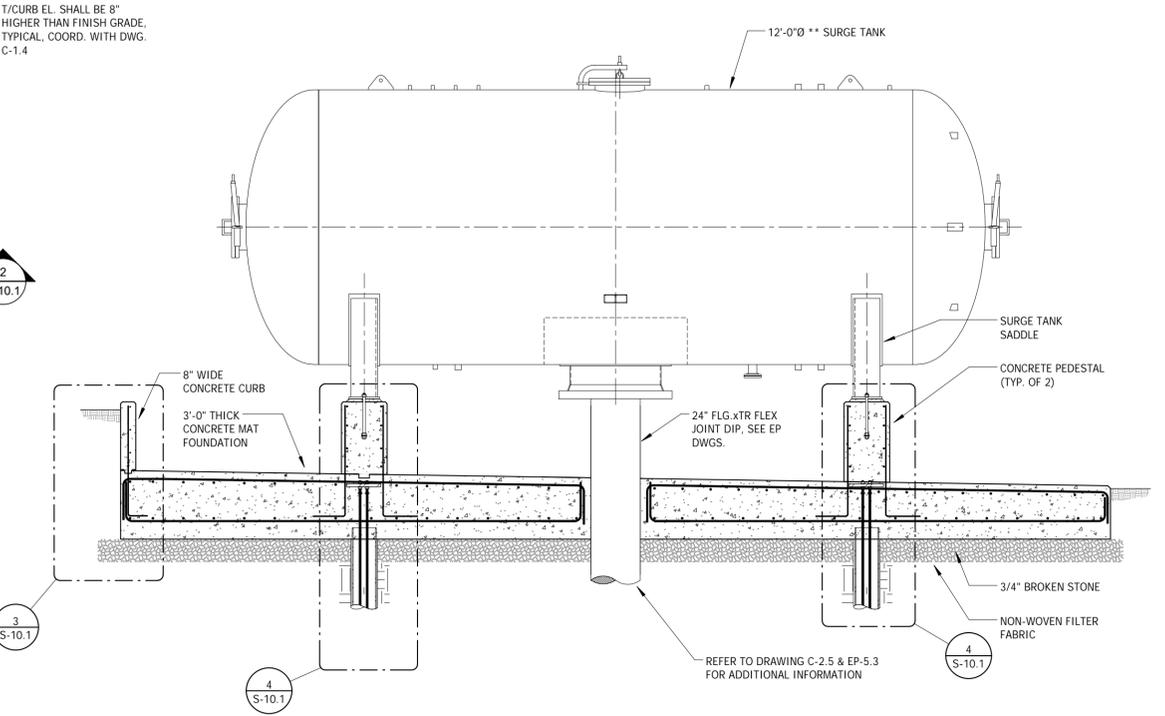
**SURGE TANK
 FOUNDATION
 PLAN & DETAILS**

PROJECT NUMBER: 14712.02
 DESIGNED BY: IES
 DRAWN BY: IES
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

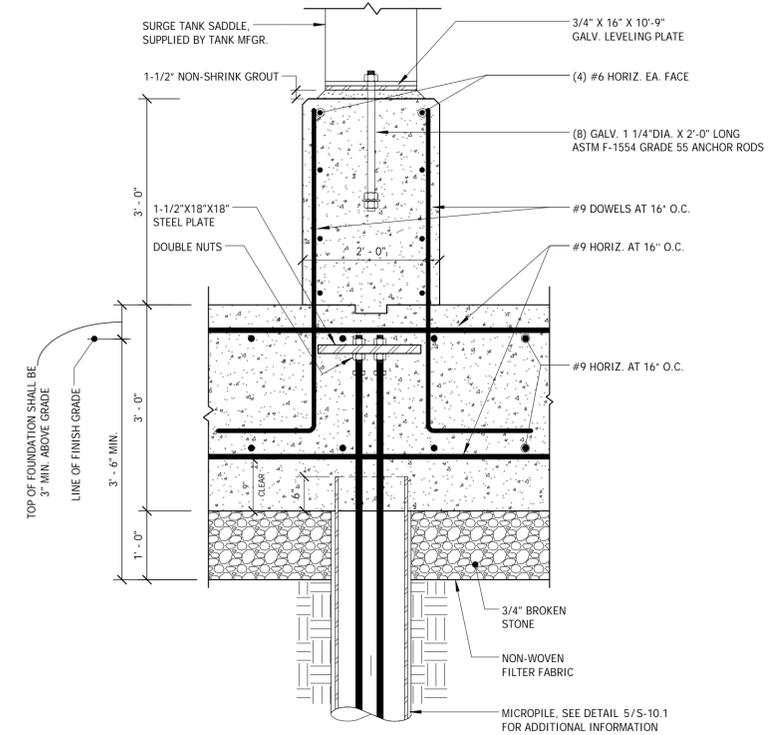
S-10.1



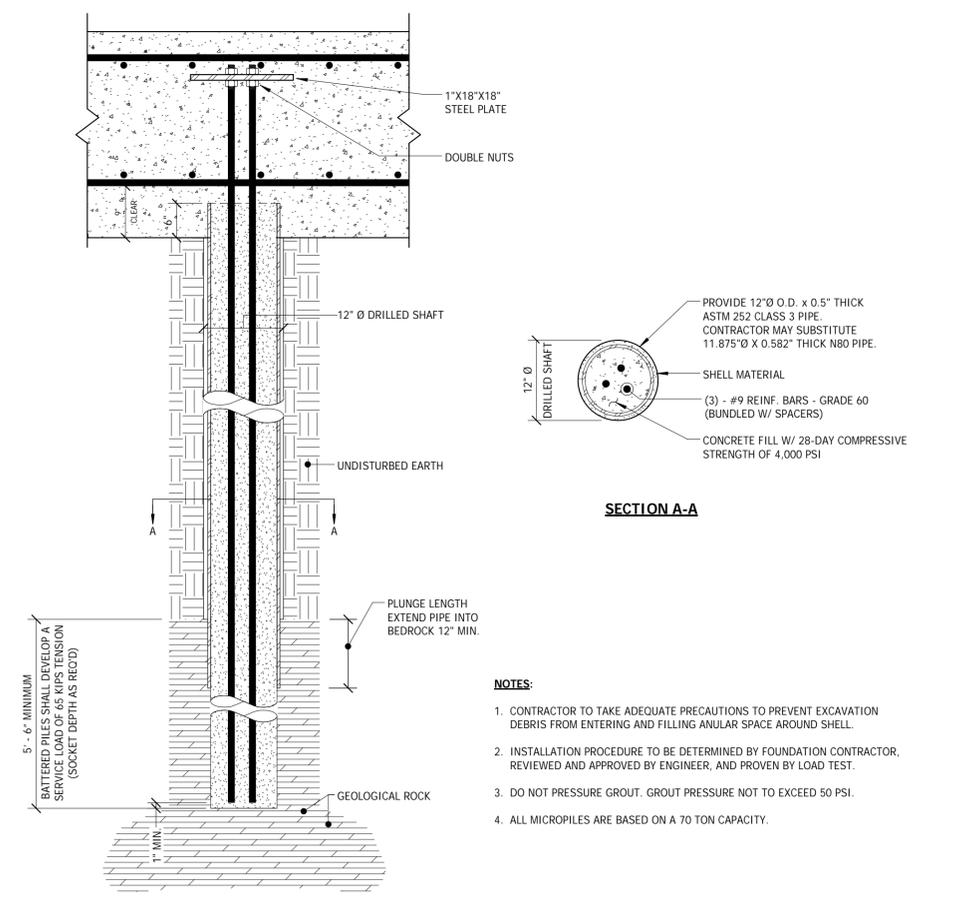
2 SECTION AT SURGE TANK
 S-10.1 Scale: 1/4" = 1'-0"



3 TYP. CONCRETE CURB AT SURGE TANK PAD
 S-10.1 Scale: 1" = 1'-0"



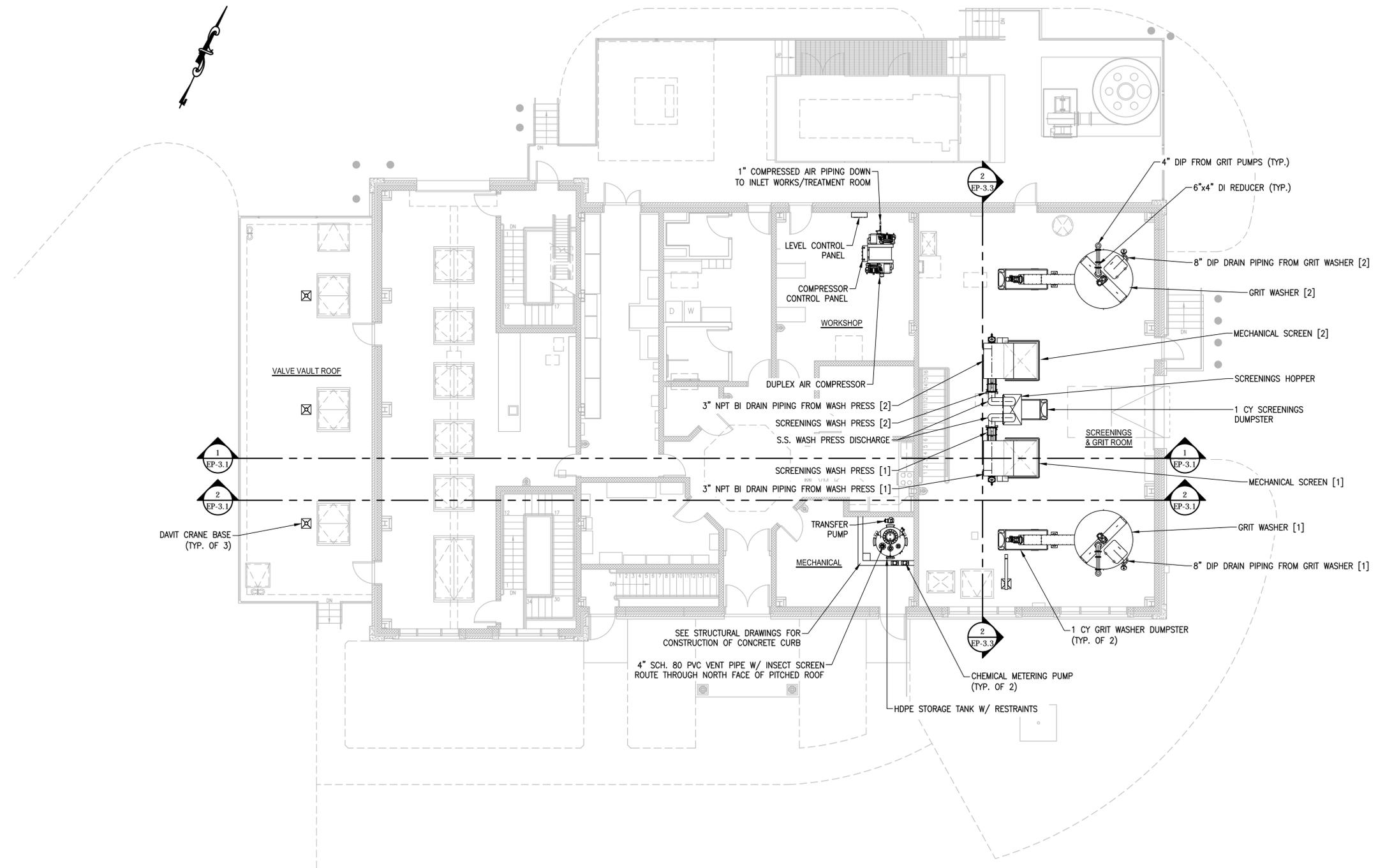
4 SECTION AT SURGE TANK CONCRETE PEDESTAL
 S-10.1 Scale: 3/4" = 1'-0"



5 TYPICAL MICROPILE DETAIL AT SURGE TANK
 S-10.1 Scale: 3/4" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



GROUND LEVEL PLAN

Scale: 1/8" = 1'-0"

DRAWING FILE: C:\PROJECTS\14712.02-Middletown_P5_Final_Design\ACAD\WATER\PROCESS\BRW\W0516-16-11.dwg PLOTTED: May 05, 2016 7:06pm BY: Tom.Covall



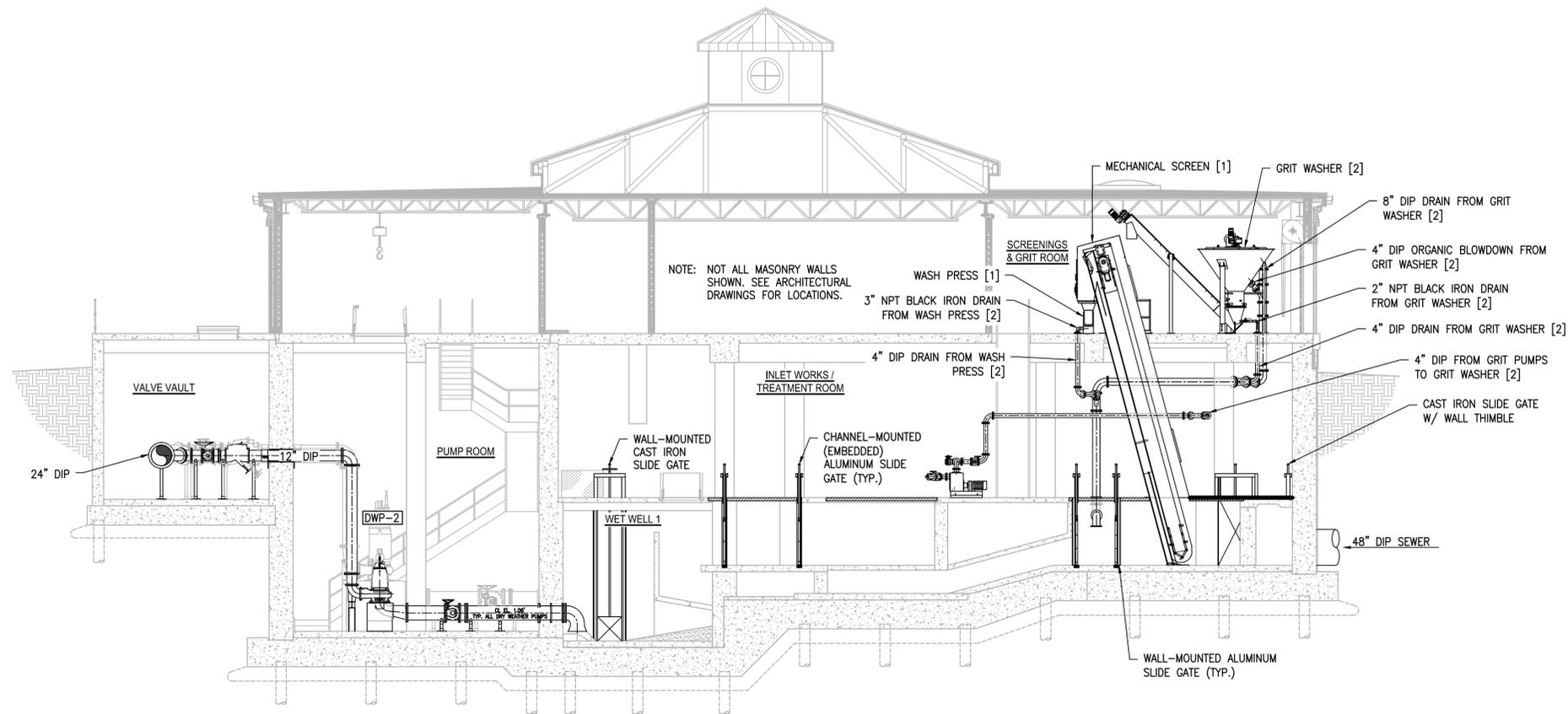
**FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

**PROCESS EQUIPMENT
AND PIPING
GROUND LEVEL PLAN**

PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

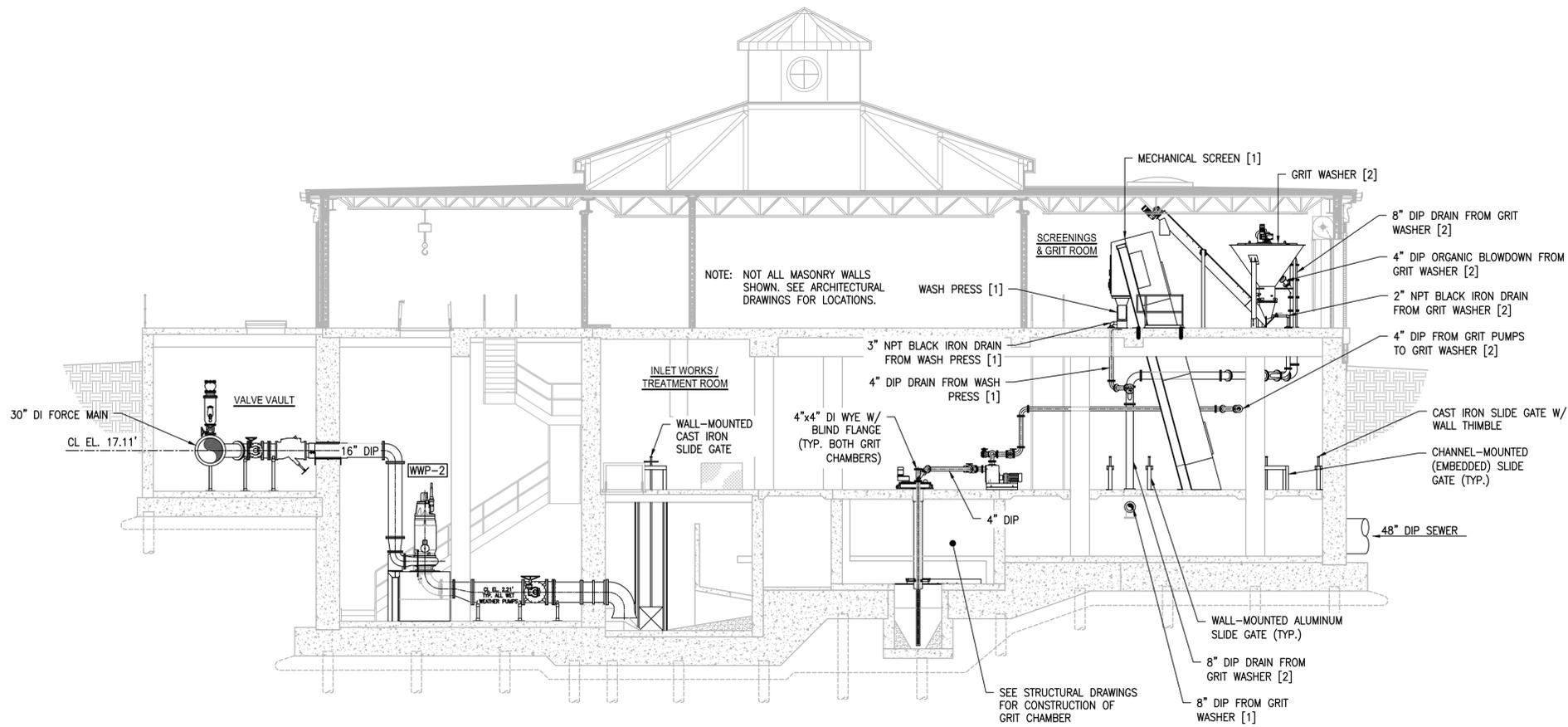
EP-1.1



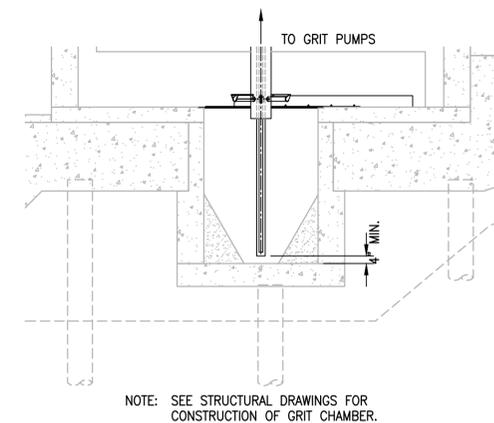
1 SECTION THROUGH BUILDING
 Scale: 1/8" = 1'-0"

NOTE: CONFIRM WITH MFR. FOR GRIT WASHER INLET, GRIT WASHER DRAIN, AND WASH PRESS DRAIN SIZES.

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



2 SECTION THROUGH BUILDING
 Scale: 1/8" = 1'-0"



SECTION AT BOTTOM OF GRIT CHAMBER
 Scale: 1/4" = 1'-0"

NOTE: SEE STRUCTURAL DRAWINGS FOR CONSTRUCTION OF GRIT CHAMBER.



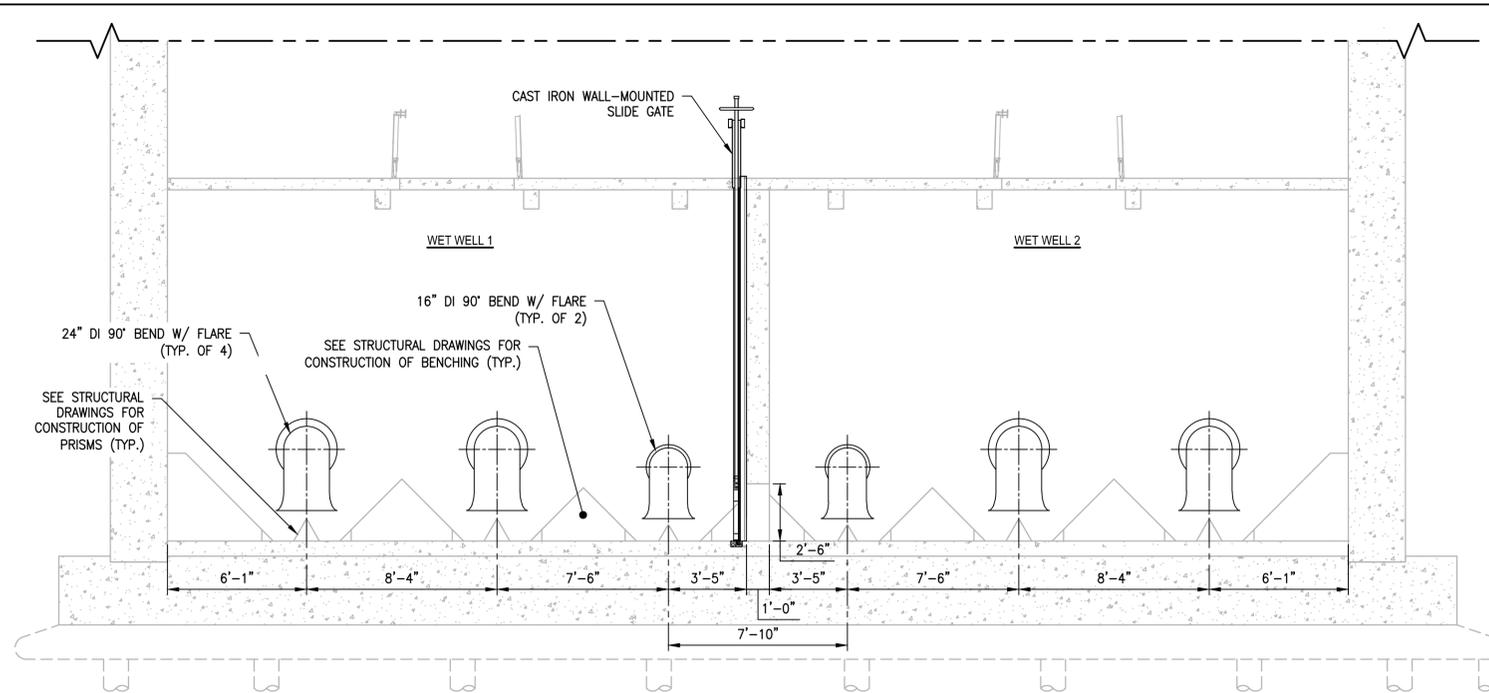
**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

**PROCESS EQUIPMENT
 AND PIPING
 SECTIONS I**

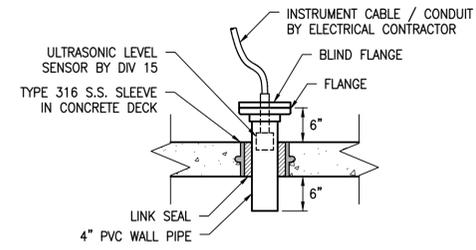
PROJECT NUMBER: 14712
 DESIGNED BY: TJC
 DRAWN BY: TJC
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

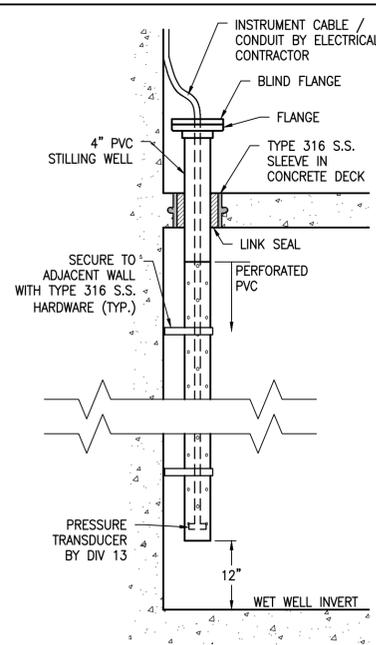
EP-3.1



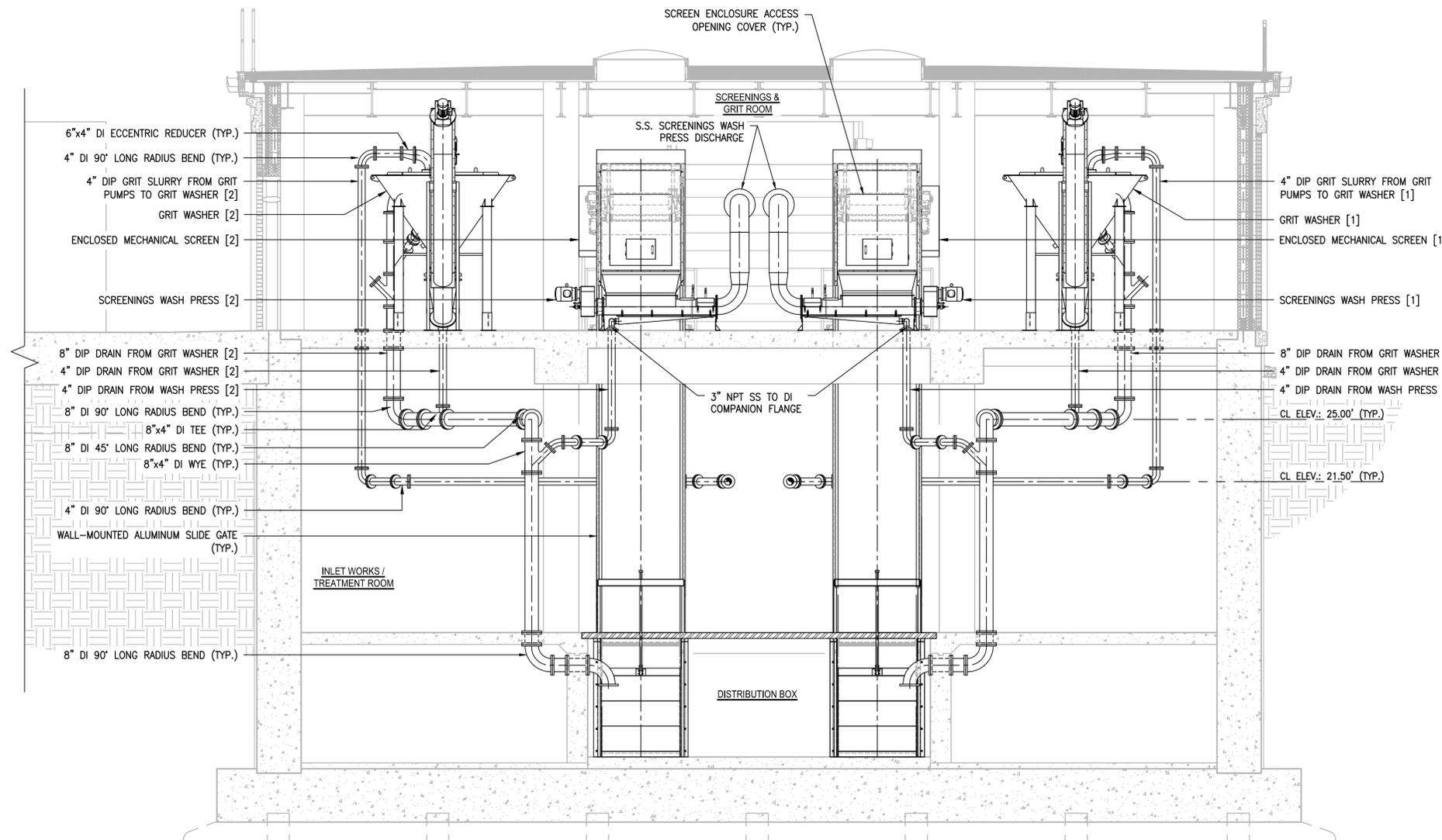
1 BUILDING SECTION THROUGH WET WELL
Scale: 1/4" = 1'-0"



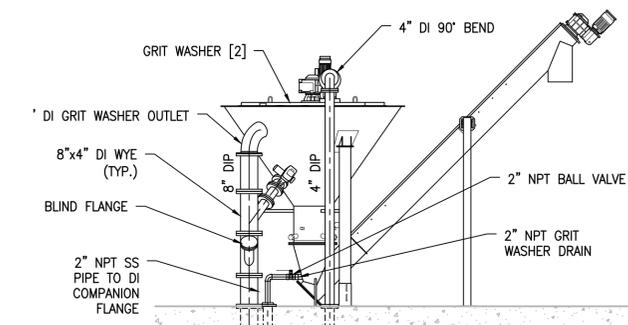
3 MOUNTING DETAIL FOR MECHANICAL SCREEN ULTRASONIC LEVEL SENSORS
N.T.S.



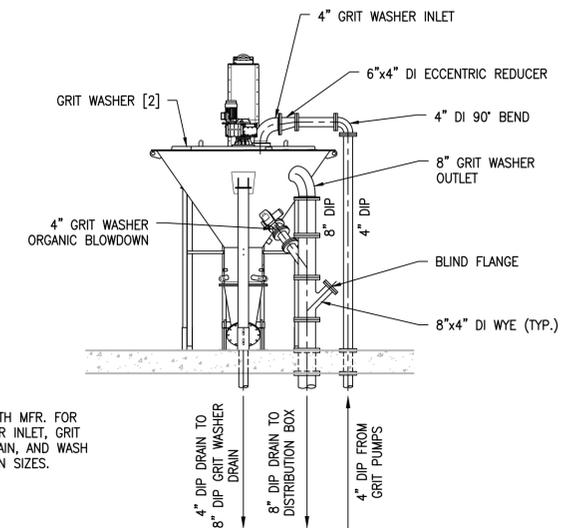
4 STILLING WELL FOR WET WELL LEVEL SENSORS
N.T.S.



2 BUILDING SECTION THROUGH DISTRIBUTION BOX
Scale: 1/4" = 1'-0"



NOTE: CONFIRM WITH MFR. FOR GRIT WASHER INLET, GRIT WASHER DRAIN, AND WASH PRESS DRAIN SIZES.



5 TYPICAL GRIT WASHER PROFILE
Scale: 1/4" = 1'-0"

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



**FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

**PROCESS
EQUIPMENT
AND PIPING
SECTIONS III**

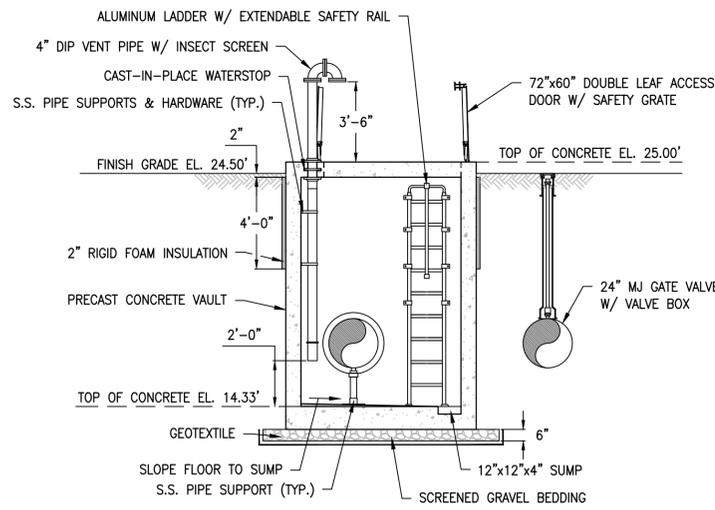
PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

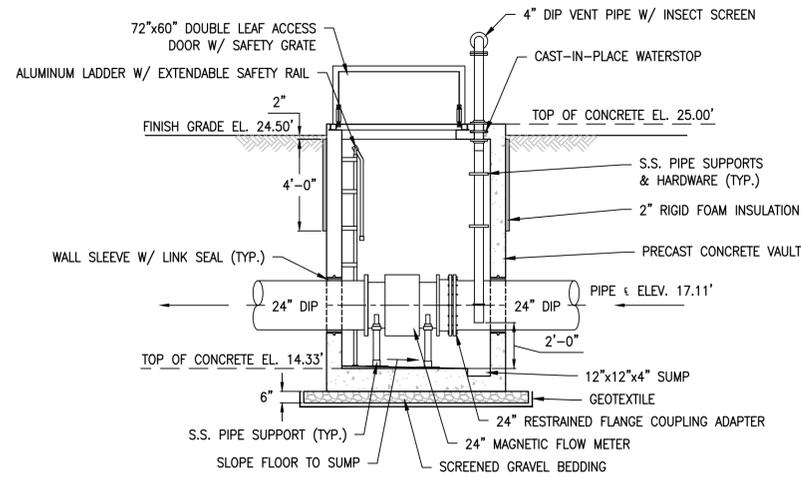
EP-3.3

REVISIONS

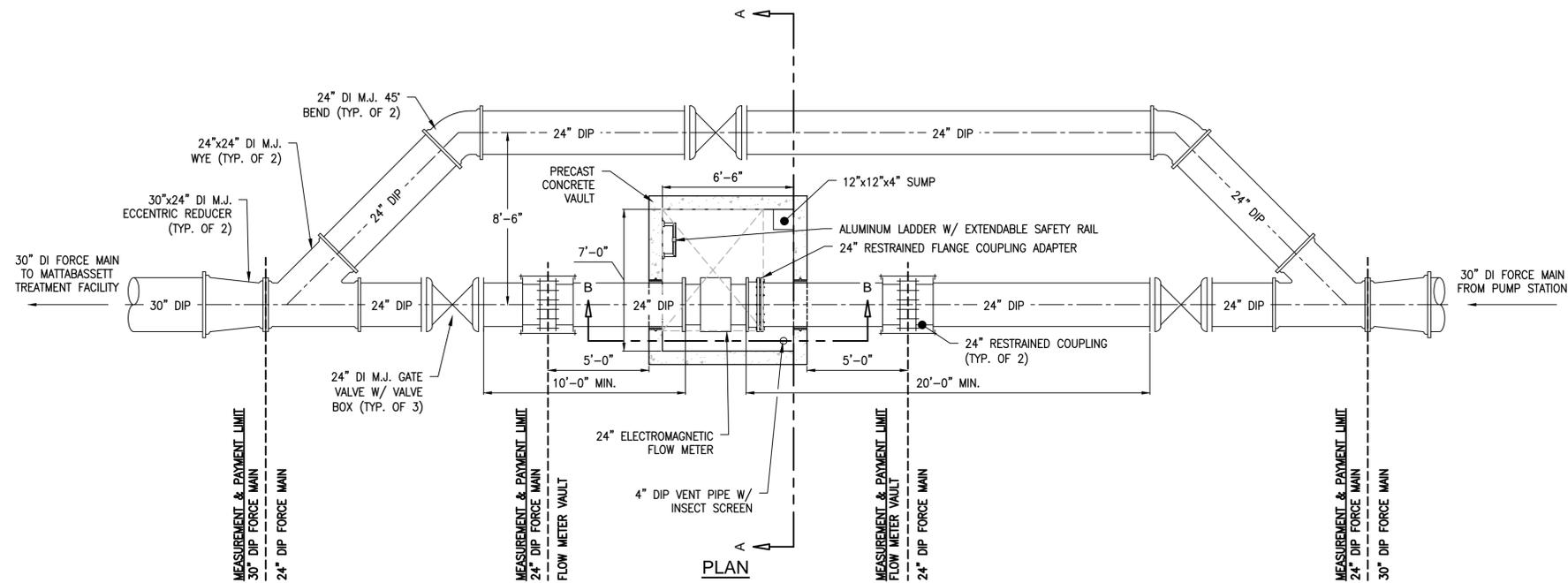
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



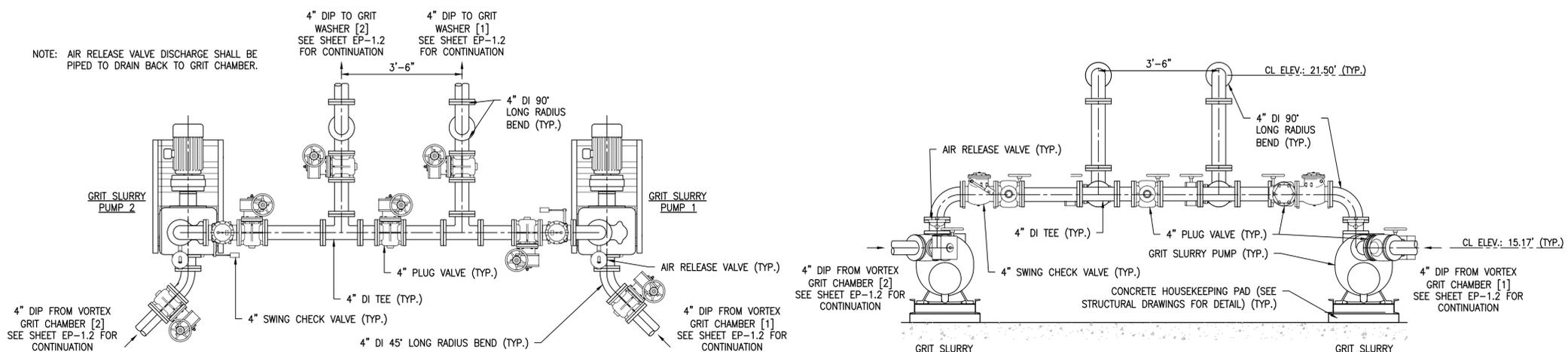
SECTION A-A



SECTION B-B



1 FLOW METER VAULT DETAIL
Scale: 1/4" = 1'-0"



2 GRIT PUMP PIPING DETAIL
Scale: 1/2" = 1'-0"



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

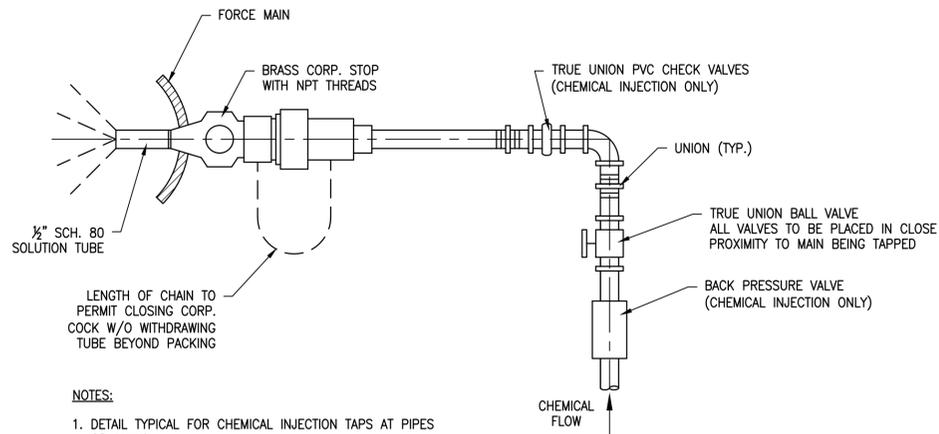
PROCESS PIPING
DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

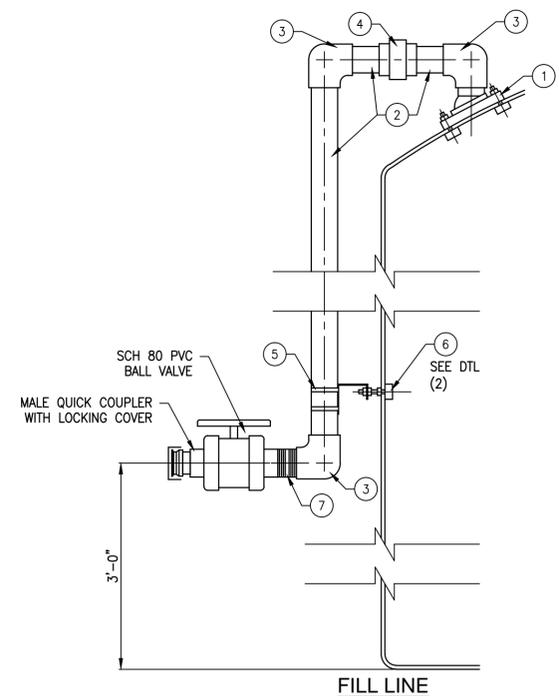
EP-5.1

DRAWING FILE: G:\PROJECTS\14712-02-Middletown_P5_Plan_Final_Design\A000\WATER\PROCESS\BRUNNOS\EP-5.1.dwg PLOTTED: May 24, 2016 11:22:28am BY: Tom.Covall



- NOTES:**
1. DETAIL TYPICAL FOR CHEMICAL INJECTION TAPS AT PIPES OR MAINS.
 2. SCH. 80 CPVC TO BE USED FOR CHEMICAL INJECTION LINES.
 3. USE DOUBLE STRAP SERVICE SADDLE.
 4. TAPS TO BE MADE AT 45° FROM VERTICAL AXIS.

CHEMICAL INJECTION DETAIL
N.T.S.



- 1 UNIVERSAL BALL DOME FTG W/ BOLTS W/ GSKTS
NOTE: 1" HAS NO BOLTS
- 2 SCH. 80 PVC PIPE
NOTE: MAY BE THREADED
- 3 SCH. 80 PVC 90° ELL
- 4 SCH. 80 PVC UNION
- 5 SCH. 80 PVC COUPLING (S x T)
- 6 PIPE SUPPORT BRACKET
- 7 SHORT NIPPLE (T x T)

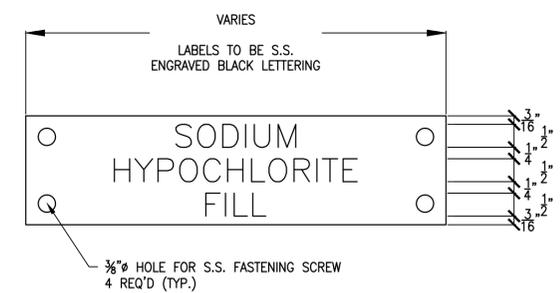
TANK FILL ASSEMBLY
N.T.S.

DTL (2) EXTERIOR FILL LINE SUPPORT

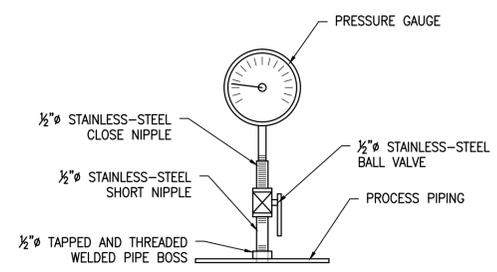
- 1/2-13 STUD W/PE ENCAPSULATED HEAD
- SCH. 80 PVC PIPE
- TANK WALL
- 3/8" THK PLATE/PE
- PIPE CLAMPS/SS
- BRACKET/316SS

PIPE SUPPORT BRACKET DETAILS

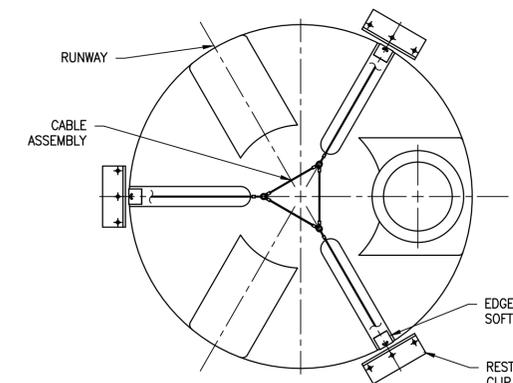
- NOTES:**
1. DROP PIPE ASSEMBLIES SHALL BE 4" PIPE SIZE. PIPING SHALL BE SCH. 80 PVC. BOLTING SHALL BE 316SS. GASKETS SHALL BE EPDM.



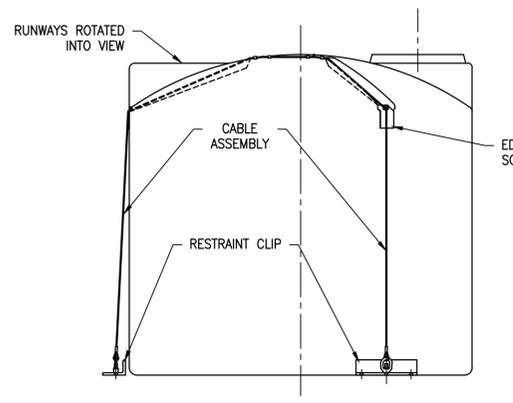
TYPICAL FILL STATION I.D. LABEL
N.T.S.



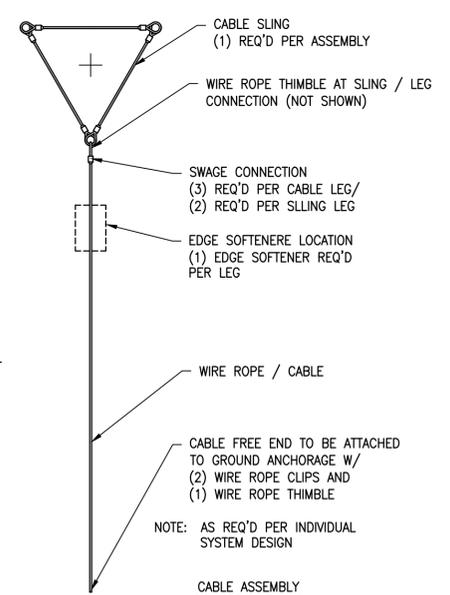
PRESSURE GAUGE MOUNTING
N.T.S.



3-WAY CABLE / 3 RESTRAINT CLIP LAYOUT



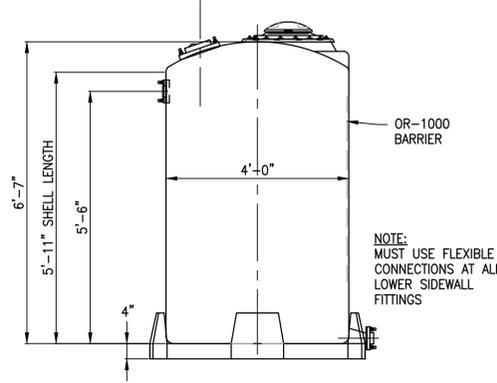
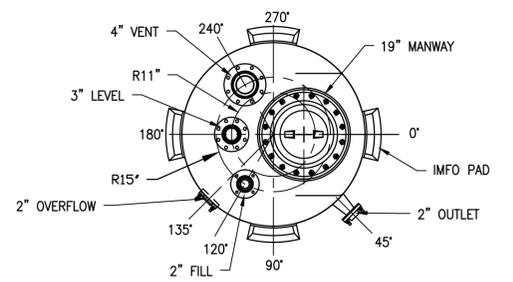
3-WAY CABLE / 3 RESTRAINT CLIP ELEVATION VIEW



RESTRAINT CLIP / CABLE CONNECTION

SEISMIC RESTRAINT DETAIL
N.T.S.

- NOTES:**
1. SIZE AND QUANTITY OF RESTRAINT CLIPS, CABLE LEGS, AND OTHER COMPONENTS MAY VARY ACCORDING TO TANK SIZE AND RESTRAINT SYSTEM RATING
 2. ANCHOR BOLTS TO BE SUPPLIED BY CONTRACTOR. PER MANUFACTURER'S RECOMMENDATION
 3. ANCHOR BOLT LENGTH, EMBEDMENT, AND METHOD OF ANCHORAGE TO BE DETERMINED BY TANK MANUFACTURER IN ACCORDANCE WITH THE APPLICABLE BUILDING SEISMIC CODE.



545 GALLON SODIUM HYPOCHLORITE TANK
N.T.S.

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

CHEMICAL STORAGE DETAILS

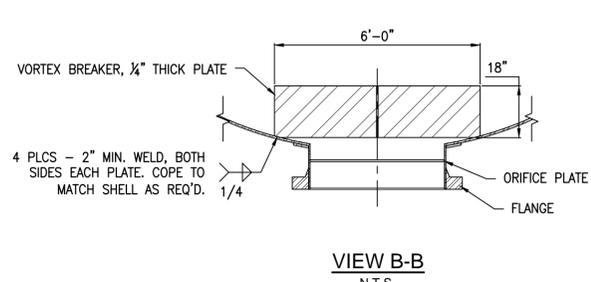
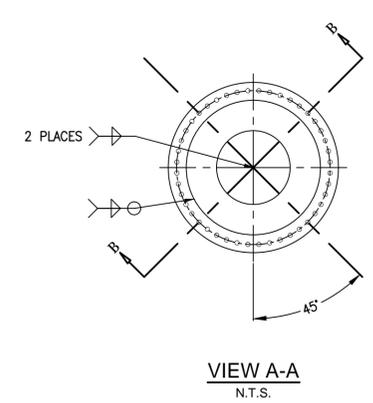
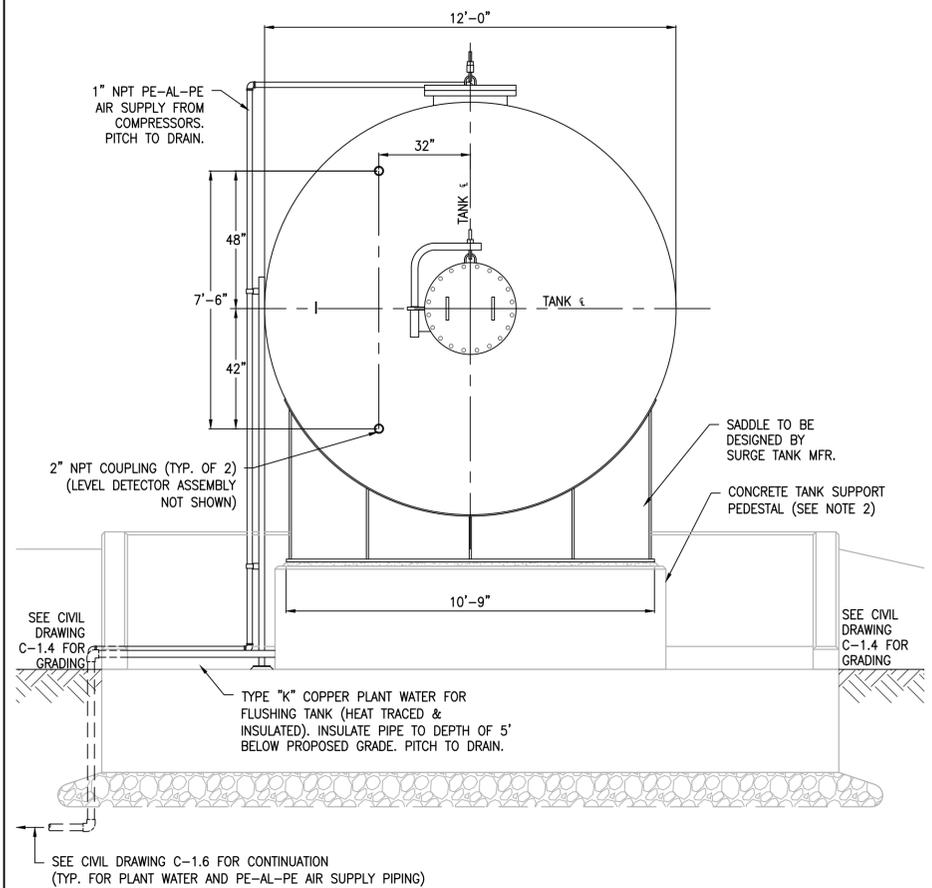
PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

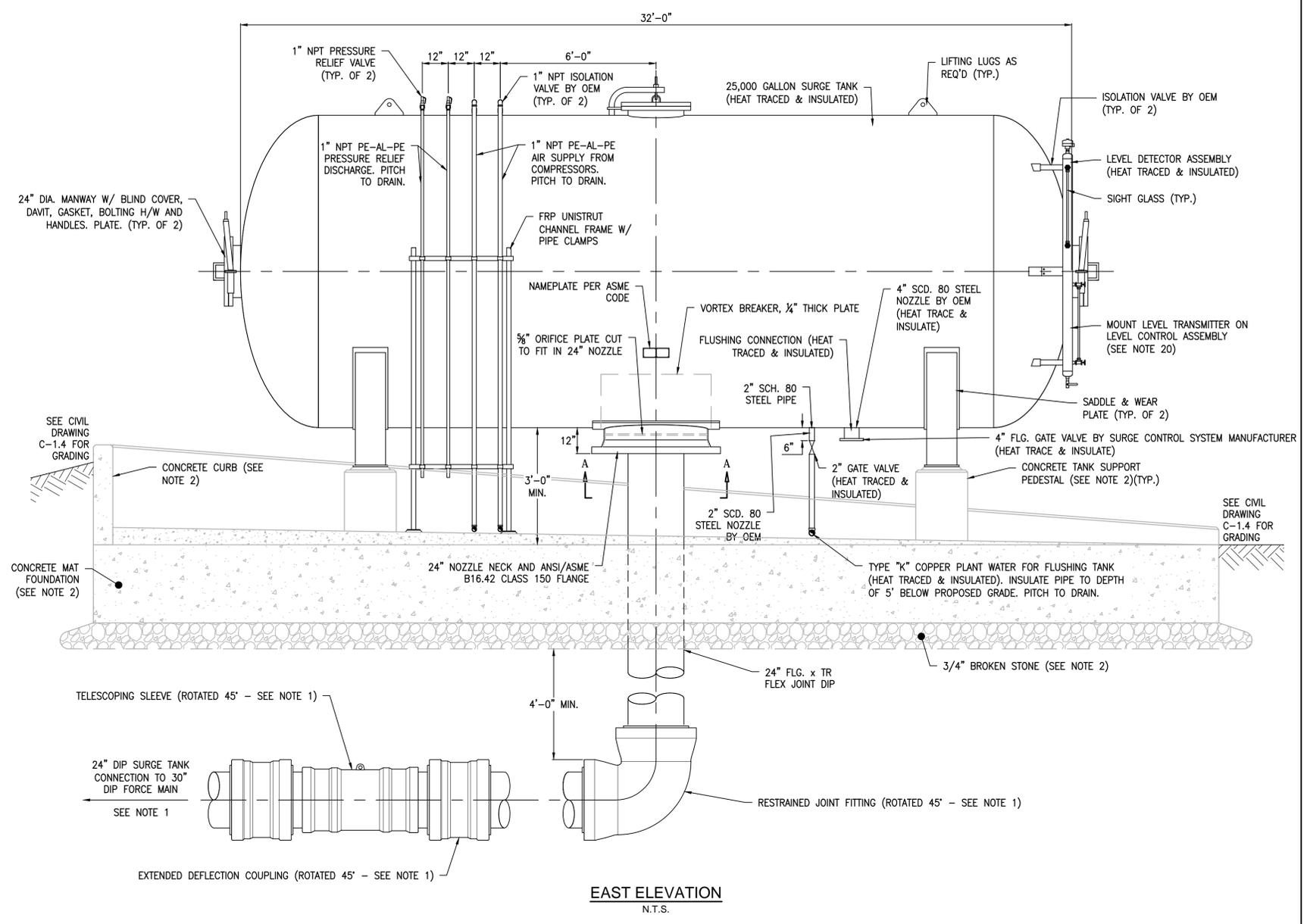
EP-5.2

DRAWING FILE: G:\PROJECTS\14712-02-Middletown_P5_Final_Design\ACAD\WATER\PROCESS\BROWNS\Browns.dwg PLOTTED: May 05, 2016 4:45:15 pm BY: Tom.Cavali

DRAWING FILE: G:\PROJECTS\14712.02-Middletown_PFS_Final_Design\A00\WTRV\PROCESS DRAWINGS\Rev-bd\14712.02ep-5.3 [REB]dwg PLOTTED: Mon 05/20/16 - 6:51pm BY: Tom.Covill



VORTEX BREAKER AND ORIFICE DETAIL



- NOTES:**
- REFER TO CIVIL DRAWING C-2.5 FOR 24" DIP SURGE TANK CONNECTION TO 30" DIP FORCE MAIN PLAN & PROFILE.
 - REFER TO STRUCTURAL DRAWING S-10.1 FOR CONSTRUCTION PLAN AND DETAILS OF CONCRETE MAT FOUNDATION, CURB, AND TANK SUPPORT PEDESTALS.
 - ANCHOR SURGE TANK WITH 1 1/4" DIA. THREADED TYPE 304 S.S. ANCHOR BOLTS. ANCHOR BOLT MATERIALS PER PROJECT SPECIFICATIONS. ANCHOR BOLTS TO BE FURNISHED BY CONTRACTOR.
 - SEISMIC REQUIREMENTS PER STRUCTURAL DRAWINGS.
 - MANWAY BOLTING HARDWARE TO BE TYPE 316 STAINLESS STEEL.
 - PROVIDE BLIND FLANGE, GASKET, AND HARDWARE.
 - ALL INTERNAL WETTED SURFACES OF THE NOZZLE SHALL BE COATED PER SPECIFICATION 099600 - HIGH PERFORMANCE COATINGS.
 - FLANGE BOLT HOLES TO STRADDLE TANK CENTERLINES.
 - REFER TO SECTION 02615 FOR DEFLECTION AND EXPANSION JOINTS. VERTICAL PIPE JOINT SHALL BE FULLY EXTENDED.
 - COLORS TO BE SELECTED FROM PAINT MFR.'S COLOR GUIDE. REFER TO SECTION 099600 FOR COATINGS AND SURFACE PREPARATION. APPLY COATING IN ACCORDANCE WITH PAINT MFR.'S INSTRUCTIONS.
 - REFER TO SECTION 13965 FOR SCOPE OF SURGE TANK AND APPURTENANCES.
 - FABRICATOR IS RESPONSIBLE FOR MATERIAL SELECTION AND THICKNESS TO MEET THE REQUIREMENTS OF CODE; SADDLES TO MEET SPECIFIC LOCAL SUPPORTS REQUIREMENTS.
 - VESSEL SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASME BOILER & PRESSURE VESSEL CODE, SECTION VIII DIV. 1, LATEST EDITION, "U" STAMP REQUIRED.
 - VESSEL FLOODED WEIGHT: 273,000 LBS. (EST.); OPERATING WEIGHT (60% WATER, 40% AIR): 190,000 LBS.
 - VESSEL SHIPPING WEIGHT: 64,000 LBS. (EST.)
 - HYDROSTATIC TEST PRESSURE: 195 PSIG.
 - MAMP: 100 PSIG. TANK NOM CAPACITY: 25,000 USG (3343 CU. FT.).
 - DESIGN TEMPERATURE: 120°F, 0°F MINIMUM.
 - CORROSION ALLOWANCE: 0.0 IN.
 - MOUNT LEVEL TRANSMITTER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AT BASE OF LEVEL DETECTOR ASSEMBLY. MOUNTING HARDWARE SHALL BE 316 S.S.
 - SURGE TANK, DISCHARGE PIPING, PLANT FLUSH WATER, LEVEL DETECTOR ASSEMBLY SHALL BE INSULATED AND HEAT TRACED AS SPECIFIED IN SECTION 13965. INSULATION NOT SHOWN FOR CLARITY. CONTRACTOR TO COORDINATE ALL FITTINGS AND APPURTENANCES TO PENETRATE INSULATION TO ALLOW UNIMPEDED VISIBILITY, OPERATION, AND MAINTENANCE.

25,000 GALLON SURGE TANK DETAIL
N.T.S.

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



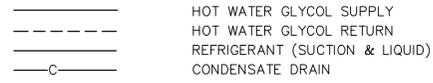
FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

SURGE TANK DETAIL

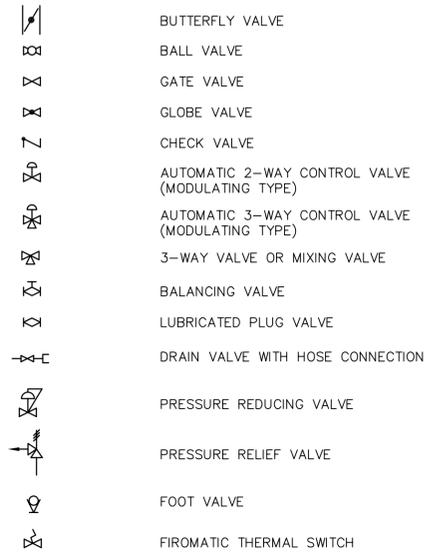
PROJECT NUMBER: 14712
DESIGNED BY: TJC
DRAWN BY: TJC
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

EP-5.3

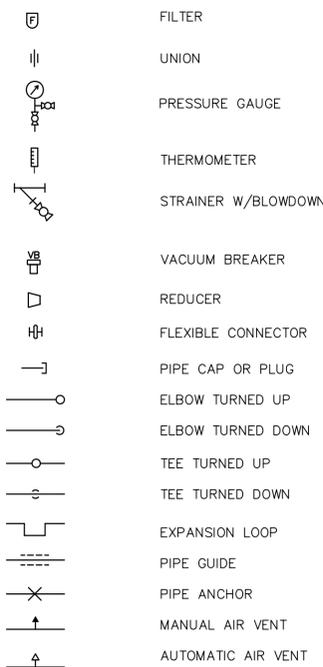
PIPING



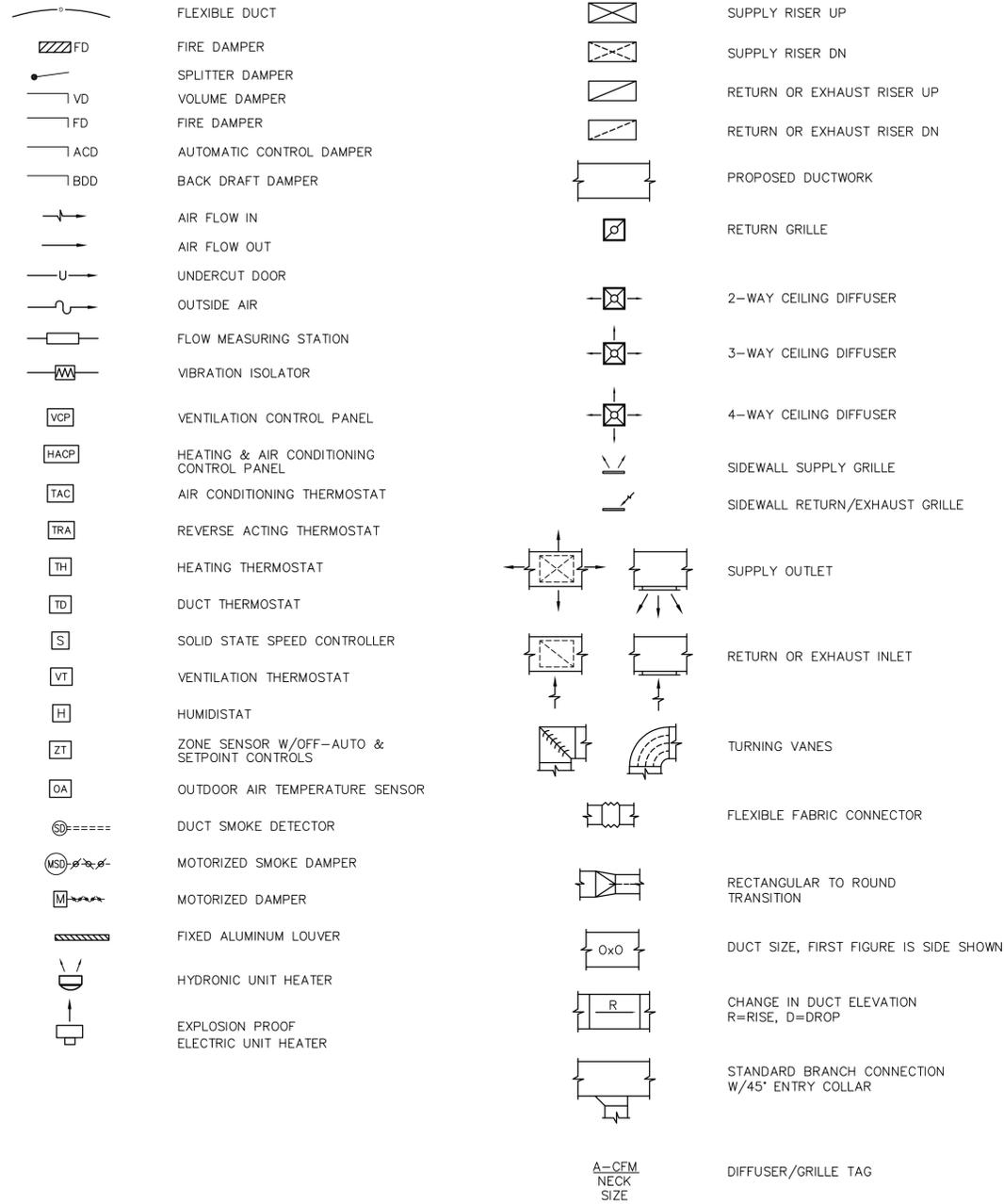
PIPING-VALVES



PIPING-COMPONENTS & FITTINGS



GENERAL MECHANICAL



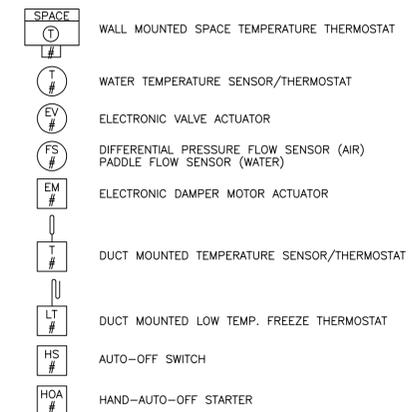
GENERAL NOTES

- COORDINATE ALL MECHANICAL WORK WITH WORK OF OTHER TRADES.
- ALL PIPING AND DUCTWORK RUNS SHOWN ARE APPROXIMATE LOCATIONS. THE HVAC SUBCONTRACTOR SHALL INSTALL ALL REQUIRED OFFSETS AND TRANSITIONS TO PREVENT INTERFERENCE WITH FIELD CONDITIONS.
- ALL REQUIRED OPENINGS THROUGH WALLS, FLOORS, AND CEILINGS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR BY THE HVAC SUBCONTRACTOR AND APPROVED EQUIPMENT SHOP DRAWINGS.
- ALL DUCTWORK SHALL BE MOUNTED AS CLOSE TO THE CEILING DECK AS POSSIBLE UNLESS OTHERWISE NOTED. DUCTWORK SHALL NOT DISTURB OR BLOCK THE FLOW OF LIGHT FROM LIGHT FIXTURES.
- ALL HYDRONIC PIPING WHICH PASSES THROUGH WALLS AND/OR FLOORS SHALL BE INSTALLED WITH A SLEEVE AND SEAL.
- PROVIDE BALANCE DAMPERS IN ALL BRANCH DUCTS AND DUCT MAINS AS REQUIRED TO PROPERLY BALANCE THE AIR SYSTEM.
- CONTRACTOR SHALL CONSULT ARCHITECTURAL DRAWINGS FOR CODE REFERENCES.
- ALL MECHANICAL SUPPORTS SHALL COMPLY WITH REFERENCED VERSION OF CONNECTICUT BUILDING CODE.

ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACD	AUTOMATIC CONTROL DAMPER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
BDD	BACK DRAFT DAMPER
BOD	BOTTOM OF DUCT
C	CONDENSATE
CFM	CUBIC FEET PER MINUTE
COND	CONDENSING UNIT
CTE	CONNECT TO EXISTING
CUH	HYDRONIC CABINET UNIT HEATER
DHU	DOOR HEATER UNIT
DN	DOWN
E.A.	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECH	ELECTRIC CONVECTION HEATER
ECUH	ELECTRIC CABINET UNIT HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EHC	ELECTRIC HEATING COIL
ER	EXHAUST REGISTER
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EXP	EXPLOSION PROOF
FCU	FAN COIL UNIT
F.O.B.	FLAT ON BOTTOM
F.O.T.	FLAT ON TOP
FPM	FEET PER MINUTE
FT	FIN TUBE RADIATION
GFH	GAS-FIRED UNIT HEATER
GPM	GALLONS PER MINUTE
HWC	HOT WATER HEATING COIL
HRV	HEAT RECOVERY VENTILATOR
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
IN.	INCH
L	LENGTH
M	MOTORIZED
MOPD	MOTOR OPERATED DAMPER
MUA	MAKE-UP AIR UNIT
OA	OUTSIDE AIR
ODP	OPEN DRIP PROOF
O.C.	ODOR CONTROL SYSTEM
P	CIRCULATING PUMP
PD	PRESSURE DROP
RA	RETURN AIR
RG	RETURN GRILLE
RR	RETURN REGISTER
RTU	ROOF TOP AIR CONDITIONING UNIT
SA	SUPPLY AIR
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SPD	STATIC PRESSURE DROP
SR	SUPPLY REGISTER
S.S.	STAINLESS STEEL
TOD	TOP OF DUCT
UD	UNDERCUT DOOR
UH	HYDRONIC UNIT HEATER
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
WG	WATER GAUGE
WMS	1/2" WIRE MESH SCREEN

CONTROLS LEGEND



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com

30 Faith Ave. Auburn, MA 01501
508-832-3535 fx 508-832-3393

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

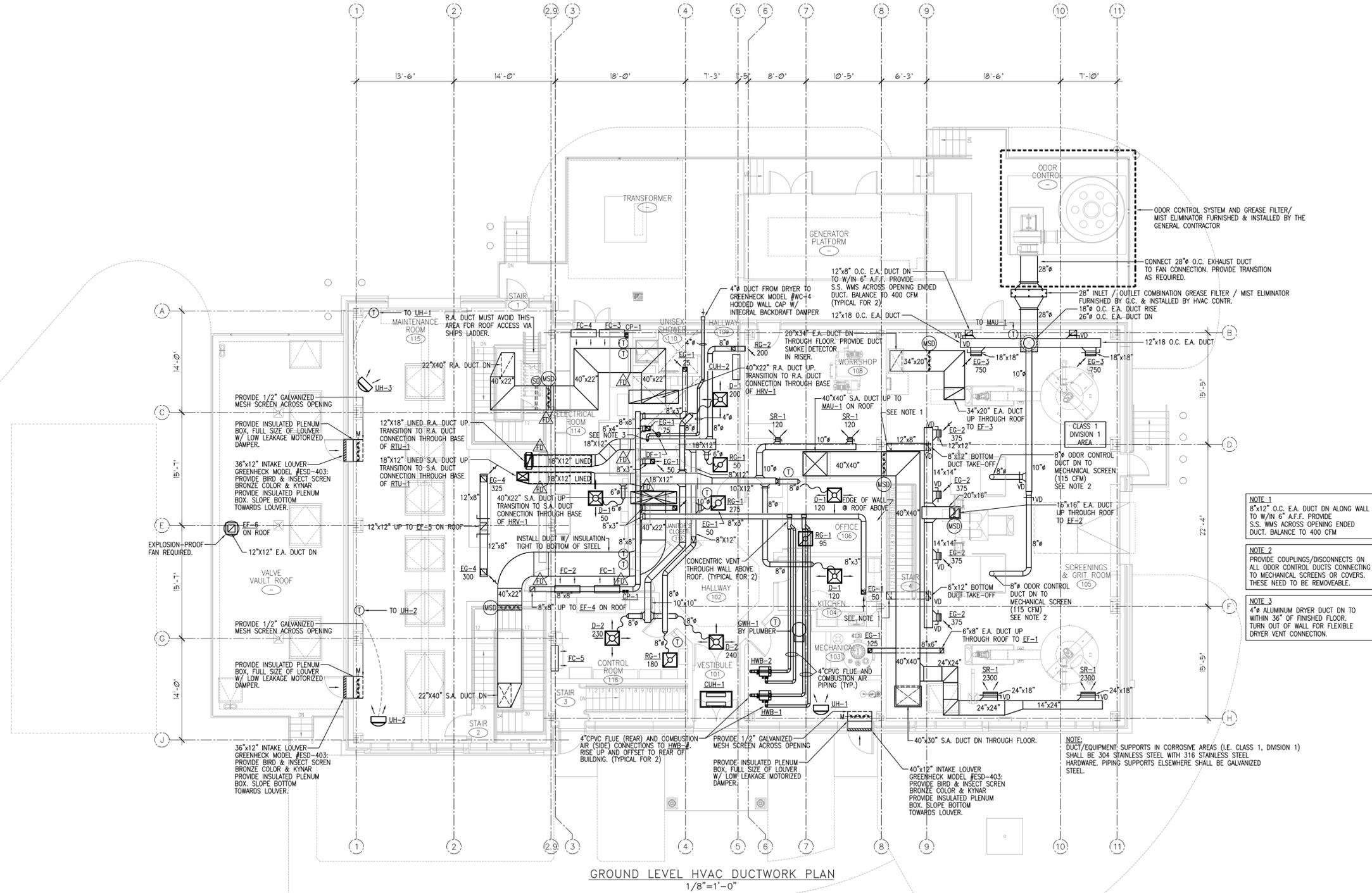
HVAC LEGEND

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

H-0.1

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



GROUND LEVEL HVAC DUCTWORK PLAN
1/8"=1'-0"

- NOTE 1**
8" x 12" O.C. E.A. DUCT DN ALONG WALL TO W/IN 6" A.F.F. PROVIDE S.S. WMS ACROSS OPENING ENDED DUCT. BALANCE TO 400 CFM
- NOTE 2**
PROVIDE COUPLINGS/DISCONNECTS ON ALL ODOR CONTROL DUCTS CONNECTING TO MECHANICAL SCREENS OR COVERS. THESE NEED TO BE REMOVABLE.
- NOTE 3**
4" ALUMINUM DRYER DUCT DN TO WITHIN 36" OF FINISHED FLOOR. TURN OUT OF WALL FOR FLEXIBLE DRYER VENT CONNECTION.



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

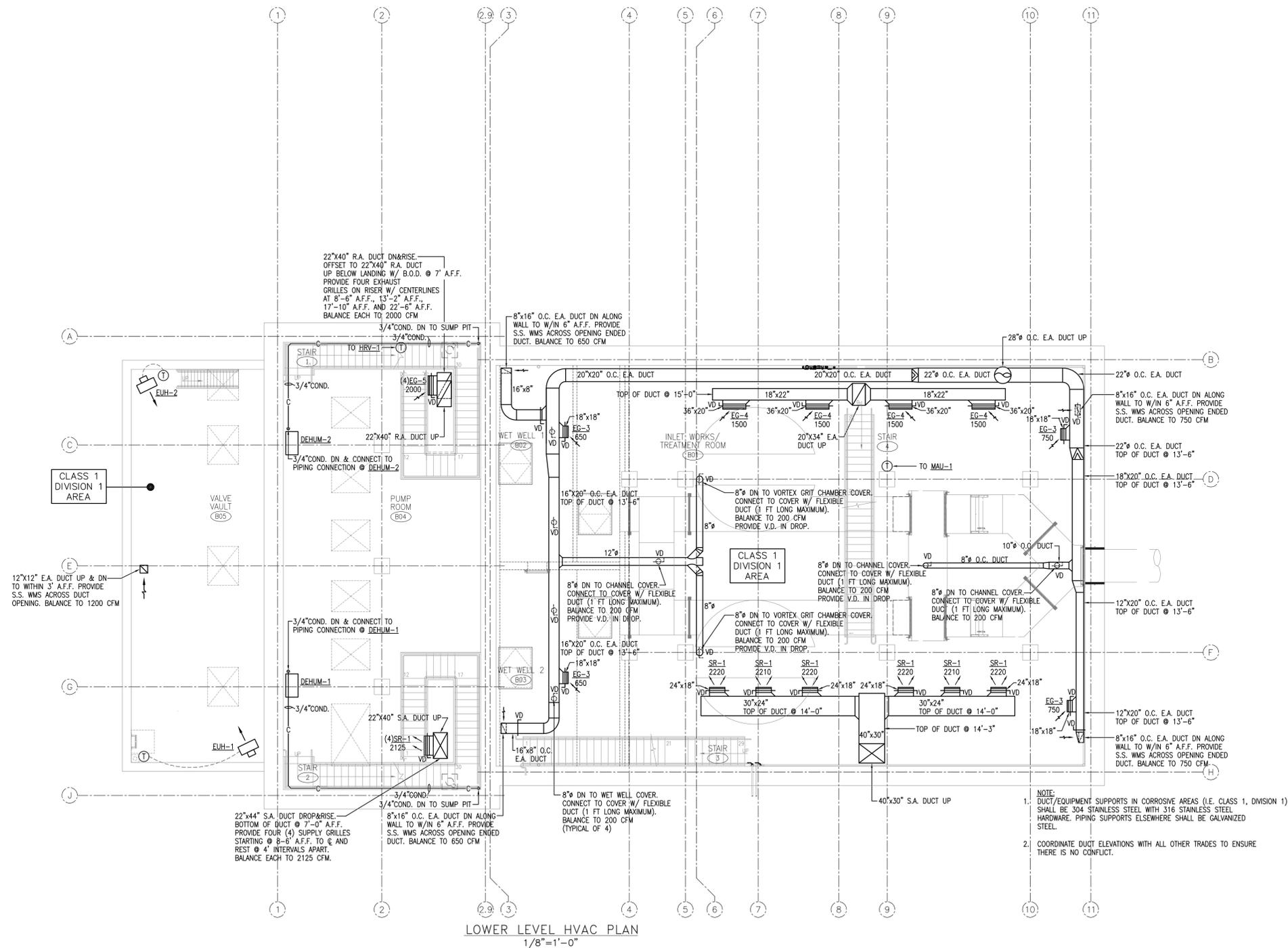
HVAC DUCTWORK
PLAN -
GROUND LEVEL

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

H-1.1

DRAWING FILE: Z:\Projects\14712\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined-HVAC-Middletown-Pumping-Station.dwg PLOTTED: May 04/2016 - 2:26pm BY: CRobinson

DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined-HMC-Middletown-Pumping-Station.dwg PLOTTED: May 04/2016 - 5:27pm BY: CRobinson



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



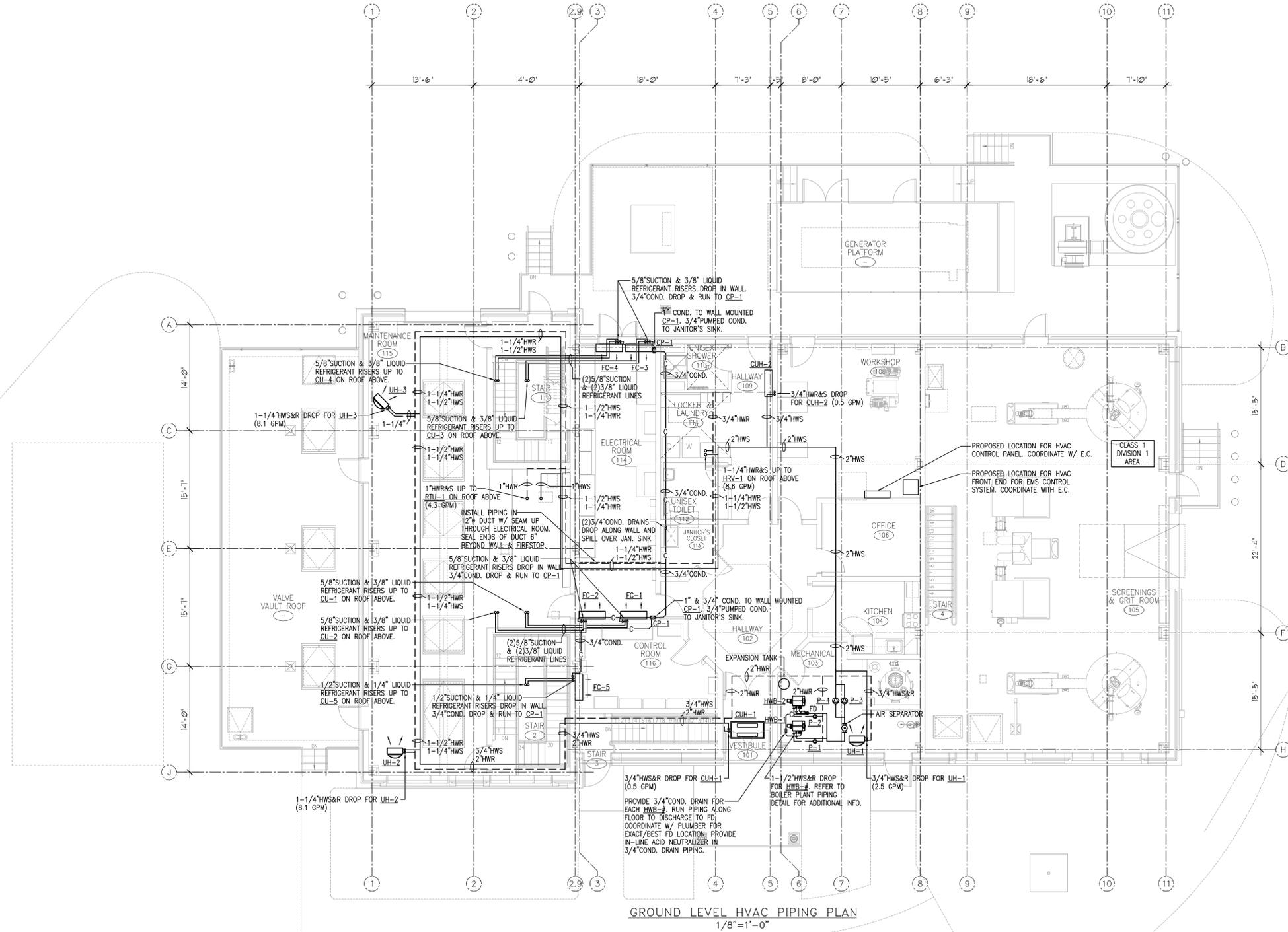
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

HVAC PLAN -
LOWER LEVEL

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

H-1.2

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



GROUND LEVEL HVAC PIPING PLAN
1/8"=1'-0"

DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined-HVAC-Middletown-Pumping-Station.dwg PLOTTED: May 04/2016 10:52:26am BY: CRobinson



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

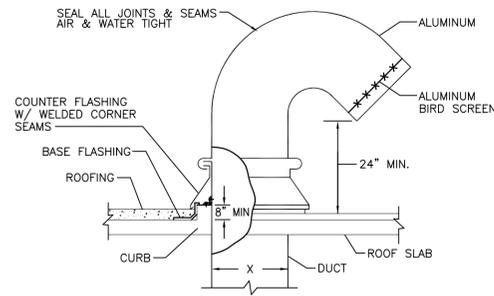
HVAC PIPING
PLAN -
GROUND LEVEL

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

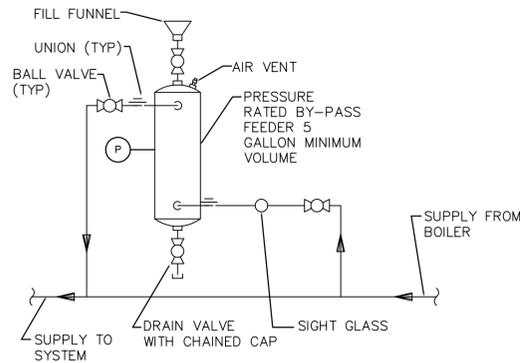
SHEET NUMBER:

H-1.4

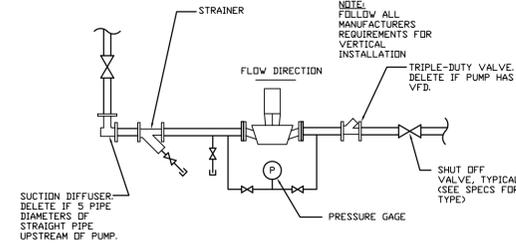
DRAWING FILE: 2\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combine-HWC-MultiPump-Station.dwg PLOTTED: May 04/2016 - 5:27pm BY: CRobinson



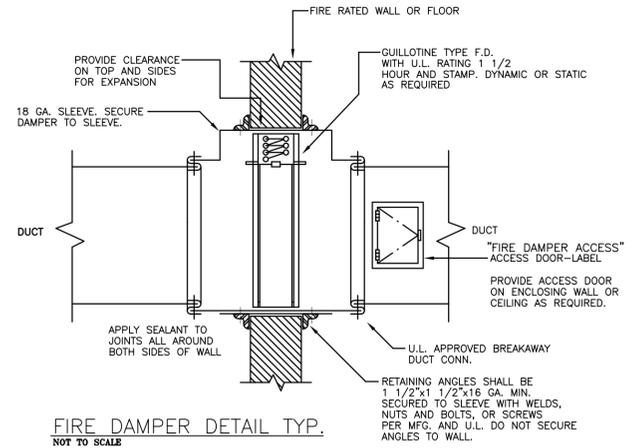
EXHAUST GOOSENECK DETAIL
NO SCALE



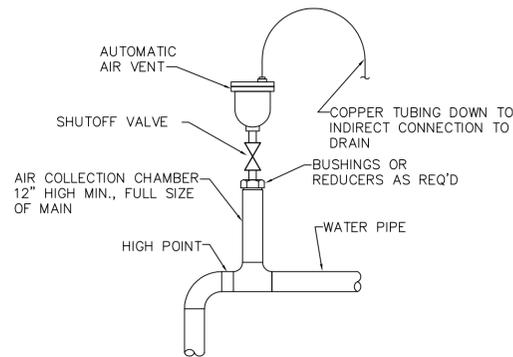
CHEMICAL BYPASS PIPING DETAIL
NO SCALE



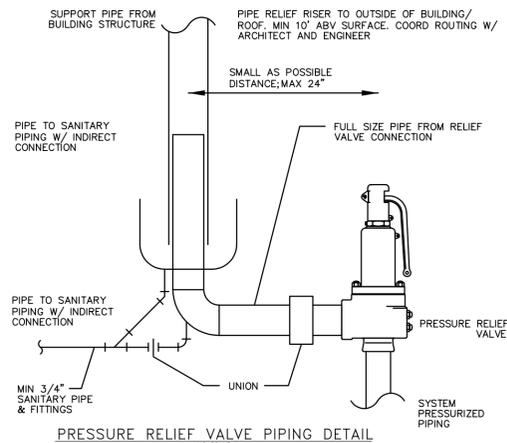
IN-LINE PUMP DETAIL
NO SCALE



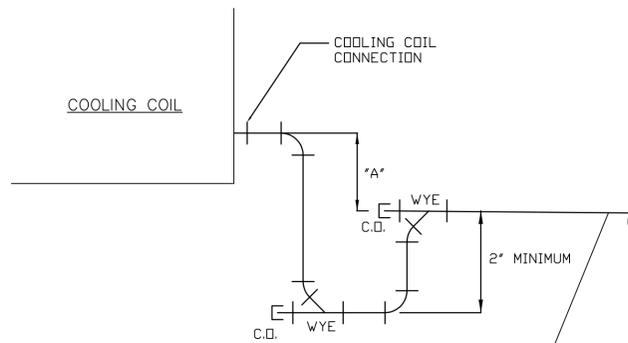
FIRE DAMPER DETAIL TYP.
NOT TO SCALE



AUTOMATIC AIR VENT DETAIL
NO SCALE



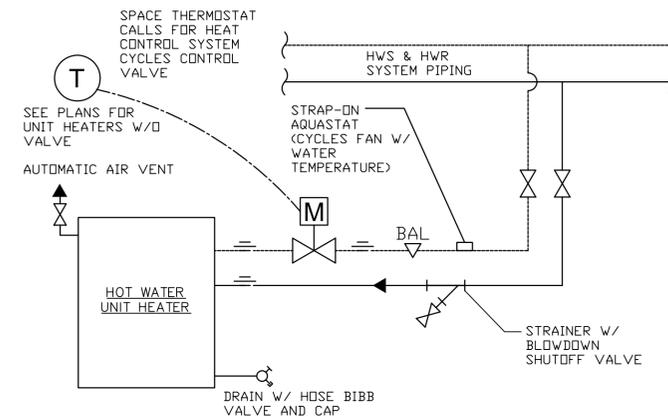
PRESSURE RELIEF VALVE PIPING DETAIL
NO SCALE



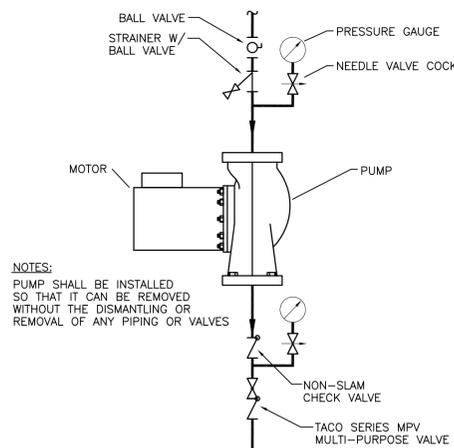
DIMENSION 'A' SHALL BE THE GREATER OF:
1. THE TOTAL STATIC PRESSURE DEVELOPED BY THE SUPPLY FAN + 1/2"
2. 2" MINIMUM

SLOPE DRAIN LINE TO THE LARGER OF:
1. PLUMBING CODE REQUIREMENTS
2. A MINIMUM OF 1/8" PER FOOT

COOLING CONDENSATE DRAIN DETAIL FOR DRAW-THROUGH COILS
NO SCALE

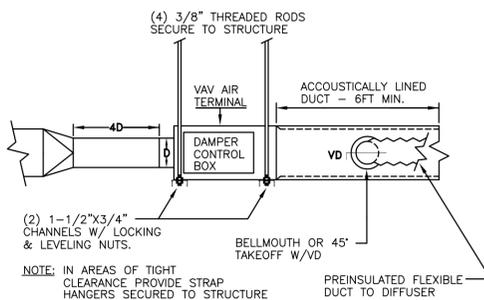


HYDRONIC UNIT HEATER PIPING DETAIL
NO SCALE



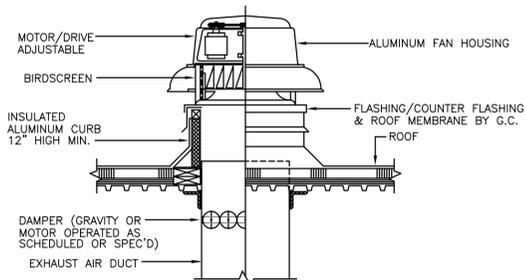
NOTES:
PUMP SHALL BE INSTALLED SO THAT IT CAN BE REMOVED WITHOUT THE DISMANTLING OR REMOVAL OF ANY PIPING OR VALVES

CARTRIDGE PUMP DETAIL
NO SCALE



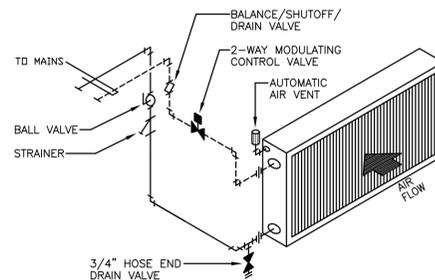
NOTE: IN AREAS OF TIGHT CLEARANCE PROVIDE STRAP HANGERS SECURED TO STRUCTURE

VAV TERMINAL INSTALLATION DETAIL
NOT TO SCALE



EF-3 & 6 ROOF EXHAUST FAN DETAIL
NOT TO SCALE

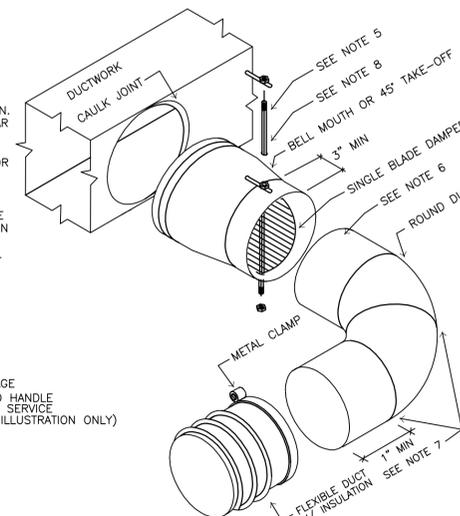
NOTE: EF-1, 2 & 5 ARE SIMILAR, BUT USE UPBLAST FANS INSTEAD OF BELLHOUSE STYLE FANS



TYPICAL HOT WATER COIL PIPING DETAIL
NOT TO SCALE

NOTES:

- SUPPORT AS RECOMMENDED BY SMACNA
- BAND FLEX TO COLLAR 1/2" MIN. FROM OUTBOARD END OF COLLAR
- INSTALL DAMPER IN OPEN POSITION; FINAL ADJUSTMENT BY TAB CONTRACTOR
- PROVIDE INSULATION OVER ROUND DUCT ELL TO EDGE OF RECTANGULAR DUCTWORK; SEAL VAPOR BARRIER WITH GREY TAPE TO PREVENT MOISTURE MIGRATION
- PROVIDE EXTENSION RODS TO ACCOMMODATE INSULATION; PULL TO EDGE OF DUCTWORK AS REQ AND SEAL TO EFFECT VAPOR BARRIER
- SHEET METAL SCREWS, MIN 3 EA AT 12" INTERVALS, CONNECTING 90 ELL TO TAKE-OFF. ENSURE THAT SCREWS DO NOT INTERFERE W/DAMPER
- SEAL JOINTS TO PREVENT LEAKAGE
- INSTALL LOCKING QUADRANT AND HANDLE ON BOTTOM OF DUCT FOR EASY SERVICE (SHOWN ON TOP FOR EASE OF ILLUSTRATION ONLY)



FLEXIBLE DUCT CONNECTION DETAIL
NO SCALE TYP. FOR BOTH STRAIGHT OR ELBOW EXTENSION



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com



REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

HVAC
DETAILS

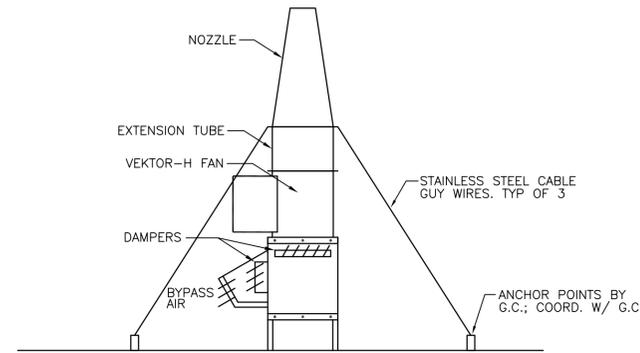
PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

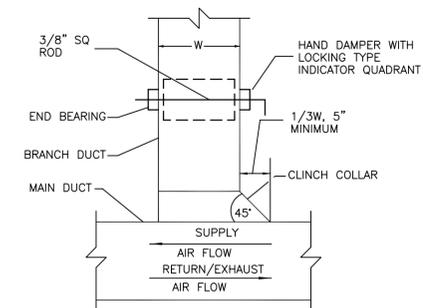
H-5.1

GENERAL NOTES

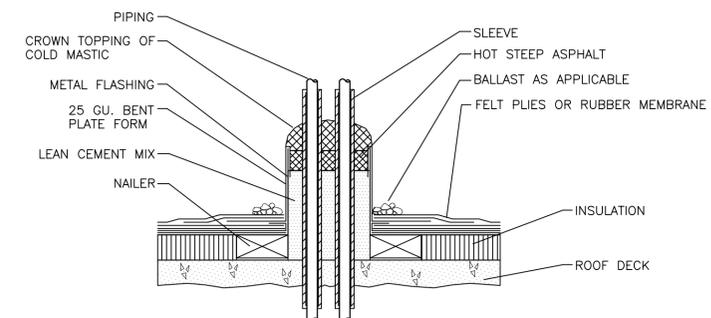
1. USING THESE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL BUILDING SYSTEMS, INCLUDING PLUMBING, FIRE PROTECTION, HVAC, MECHANICAL, FIRE ALARM, ELECTRICAL POWER, AND ELECTRICAL COMMUNICATION, AND ALL ASSOCIATED SPECIFIC SYSTEMS. ALL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS, OPERATING, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION, AND READY FOR BENEFICIAL USE BY THE OWNER.
2. THE DRAWINGS AND SPECIFICATIONS, PLUS ANY FORMALLY ISSUED ADDENDA, FORM A COMPLETE SET OF CONSTRUCTION DOCUMENTS.
3. THE WORD "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
4. THE INFORMATION SHOWN ON THE DRAWINGS IS DIAGRAMMATIC, INDICATING THE GENERAL ARRANGEMENT OF SYSTEMS AND THE SCOPE OF WORK INCLUDED IN THIS CONTRACT.
5. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL CONFLICTS BETWEEN DRAWINGS AND SPECIFICATIONS, OR BETWEEN CONSTRUCTION DOCUMENTS AND FIELD CONDITIONS. FOR EACH CONFLICT, CONTRACTOR SHALL CARRY THE MORE EXPENSIVE OR LARGER QUANTITY OPTION.
6. SUBMISSION OF PROPOSAL DIRECTLY OR INDIRECTLY IN CONNECTION WITH THIS WORK SHALL IMPLY THAT THE BIDDER HAS EXAMINED THE JOB SITE UNDER WHICH HE WILL BE OBLIGATED TO OPERATE SHOULD HE BE AWARDED THE WORK UNDER THIS CONTRACT. NO EXTRA CHARGE WILL BE ALLOWED FOR FAILURE OF ANY BIDDER TO EXAMINE THE SITE PRIOR TO BID.
7. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS IN THE FIELD, AND SHALL ADVISE THE ENGINEER AND THE OWNER OF ANY DISCREPANCIES BEFORE PERFORMING THE WORK.
8. ALL WORK SHALL CONFORM TO ALL STATE AND LOCAL CODES, RULES AND REGULATIONS AND ORDINANCES, INCLUDING:
 - 8.1. CURRENT EDITION OF THE CONNECTICUT BUILDING CODE.
 - 8.2. LOCAL AUTHORITIES HAVING JURISDICTION.
 - 8.3. OWNER'S INSURANCE CARRIER
9. CONTRACTOR SHALL SECURE ALL PERMITS AND APPLICATIONS AND PAY ALL FEES PERTAINING TO THE CONTRACT.
10. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. THE CONTRACTOR SHALL PROVIDE ALL HANGERS AND SUPPORTS REQUIRED FOR A COMPLETE INSTALLATION.
11. EACH CONTRACTOR SHALL COORDINATE THE LOCATION OF THEIR WORK WITH ALL OTHER TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE SYSTEM LAYOUT REQUIRED FOR INSTALLATION SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER. SPECIFIC REQUIREMENTS:
 - 11.1. COORDINATE WITH ALL SITE CONTRACTORS THE LOCATION OF ALL PIPES AND CONDUITS EXITING THE BUILDING.
 - 11.2. CONTRACTOR SHALL COORDINATE THEIR WORK WITH ALL OWNER-FURNISHED EQUIPMENT, INCLUDING ALL REQUIRE ACCESS SPACE AND UTILITIES, BEFORE INSTALLATION.
12. NOT USED.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR WORKMEN'S IDENTIFICATION AND BADGING, SAFETY AND FIRE PROTECTION, CONTRACTOR'S LIABILITY INSURANCE, BARRICADES, WARNING SIGNS, TRASH REMOVAL, CUTTING AND PATCHING.
14. CONTRACTOR SHALL SCHEDULE ALL SHUTDOWNS THAT AFFECT UTILITIES AND PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION WITH THE OWNER.
15. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER AND ALL OTHER CONTRACTORS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RIGGING, HANDLING AND PROTECTION OF MATERIALS.
17. CONTRACTOR SHALL PROVIDE LABOR TO RECEIVE, UNLOAD, STORE, PROTECT AND TRANSFER TO POINT OF INSTALLATION, OWNER FURNISHED ITEMS.
18. ALL EQUIPMENT SHALL BE LOCATED IN ACCESSIBLE LOCATIONS, UNLESS AN ACCESS DOOR OF SUFFICIENT SIZE AND FIRE RATING IS PROVIDED.
19. WHERE CONDUIT, CABLES, DUCTWORK OR PIPING PASSES THROUGH FIRE RATED FLOORS OR WALLS, THE SLEEVES SHALL BE COMPLETELY SEALED WITH A LISTED FIRE STOP MATERIAL THAT MEETS ALL OF THE REQUIREMENTS OF THE STATE AND LOCAL BUILDING CODES AND THE LOCAL AUTHORITIES HAVING JURISDICTION. THIS MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER TO MAINTAIN THE FIRE RATING OF THE PENETRATED WALL OR FLOOR.
20. ALL FLOOR-MOUNTED MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE INSTALLED ON A CONCRETE HOUSEKEEPING PAD.
21. CONTRACTOR SHALL SUBMIT SIZE AND LOCATION OF ALL WALL AND FLOOR CORING TO STRUCTURAL ENGINEER FOR REVIEW BEFORE INSTALLATION. CONTRACTOR SHALL REPAIR ANY DAMAGE DUE TO CORING INSTALLED PRIOR TO STRUCTURAL ENGINEER'S REVIEW, AT NO COST TO OWNER.
22. CONTRACTOR SHALL SUBMIT SIZE AND LOCATION OF ANY PROPOSED STRUCTURAL MEMBER PENETRATIONS TO THE STRUCTURAL ENGINEER FOR REVIEW AND DETAIL BEFORE INSTALLATION. CONTRACTOR SHALL REPAIR ANY DAMAGE DUE TO PENETRATIONS INSTALLED PRIOR TO STRUCTURAL ENGINEER'S REVIEW, AT NO COST TO OWNER.
23. CONTRACTOR SHALL SUBMIT (3) SETS OF SHOP DRAWINGS AND EQUIPMENT CUTS TO THE ENGINEER FOR REVIEW PRIOR TO STARTING ANY WORK.
24. UPON COMPLETION OF CONSTRUCTION CONTRACTOR SHALL SUPPLY THE ENGINEER WITH (1) COMPLETE SET OF ELECTRONIC AS-BUILT DOCUMENTS AND (3) COMPLETE COPIES OF OPERATIONS AND MAINTENANCE MANUALS, ALL AT CONTRACTOR'S EXPENSE.
25. ALL PIPING AND DUCTWORK RUNS SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL INSTALL ALL REQUIRED OFFSETS AND TRANSITIONS TO PREVENT INTERFERENCE WITH FIELD CONDITIONS AND TO COORDINATE WITH OTHER TRADES.
26. ALL REQUIRED OPENINGS THROUGH WALLS, FLOORS, AND CEILINGS SHALL BE COORDINATED BY THE CONTRACTOR USING APPROVED EQUIPMENT SHOP DRAWINGS.
27. ALL HYDRONIC PIPING WHICH PASSES THROUGH WALLS AND/OR FLOORS SHALL BE INSTALLED WITH A SLEEVE AND SEAL.
28. PROVIDE A VOLUME DAMPER FOR EACH SUPPLY, RETURN, AND EXHAUST AIR TAKE-OFF, AND EVERY DUCT SPLIT OR WYE.
29. PROVIDE A BALANCING VALVE FOR EACH HYDRONIC PIECE OF EQUIPMENT.
30. PROVIDE DUCT SMOKE DETECTORS ON THE SUPPLY SIDE OF EACH AHU WITH AN AIRFLOW GREATER THAN 2000 CFM.
31. THE HVAC CONTROL SYSTEM SHALL BE A COMPLETE SYSTEM. EACH HVAC ZONE SHALL BE AT A MINIMUM THERMOSTATICALLY CONTROLLED BY A SENSOR, THERMOSTAT, OR CONTROLLER IS SHOWN ON THE DRAWINGS.
32. ALL HVAC SYSTEMS SHALL BE TESTED AND BALANCED.
33. NO PIPING OR DUCTS SHALL BE INSTALLED OVER ELECTRICAL PANELS, TRANSFORMERS. COORDINATE PIPING AND DUCTWORK WITH ELECTRICAL EQUIPMENT IN FIELD AS PART OF COORDINATION DRAWINGS.
34. PROVIDE HOT WATER PIPING FROM DISTRIBUTION PIPING TO ALL RTU, HRV, UH, CUH AND RISERS. SEE EQUIPMENT SCHEDULES OR FLOOR PLANS FOR PIPING RUNOUT SIZES, BUT NO LESS THAN 3/4" SIZE FROM DISTRIBUTION MAIN TO FIRST VALVE CONNECTION.
35. PROVIDE REFRIGERANT PIPING FROM EACH SOURCE TO EACH LOAD, AND FROM EACH CU TO EACH FAN COIL. SIZE ACCORDING TO REFRIGERATION EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. INSULATE SUCTION AND LIQUID PIPING. PROVIDE ALL FILTER/DRYERS, VALVES, AND GAUGES FOR A COMPLETE REFRIGERANT PIPING INSTALLATION.
36. PROVIDE SPRING ISOLATED & SEISMICALLY RATED HANGERS FOR EQUIPMENT, DUCTS, AND PIPING ACCORDING TO THE VIBRATION ISOLATION SCHEDULE. INCLUDE DETAILS AND LOCATIONS ON COORDINATION DRAWINGS.
37. PROVIDE AIR VENTS AT ALL HIGH POINTS AND DRAINS AT LOW POINTS.
38. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF RATED CONSTRUCTION.



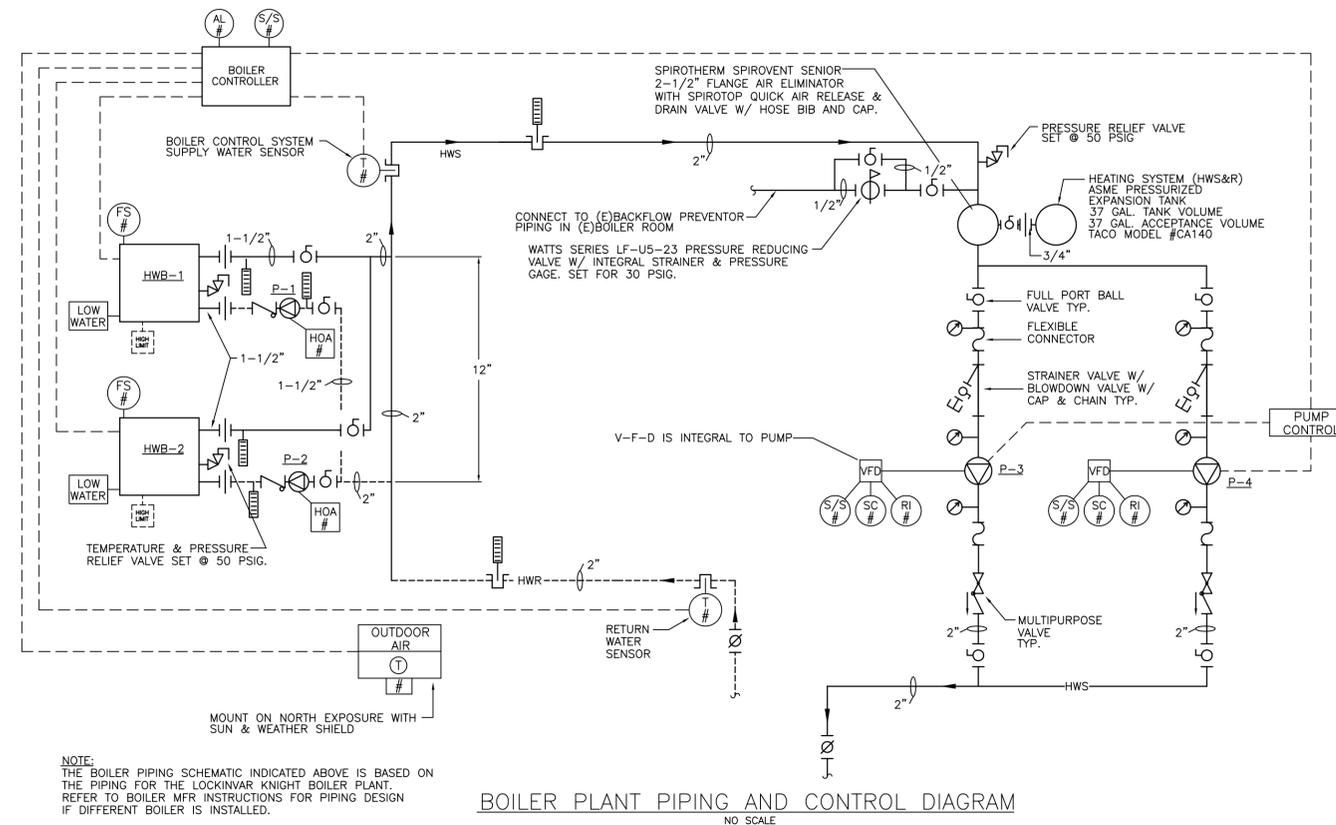
**EF-4 ROOF MOUNTED HOOD
EXHAUST FAN DETAIL**
NO SCALE



**RECTANGULAR DUCT TAP
WITH VOLUME DAMPER**
NO SCALE



PIPING THROUGH ROOF TYP.
NO SCALE



BOILER PLANT PIPING AND CONTROL DIAGRAM
NO SCALE



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com



REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



**FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

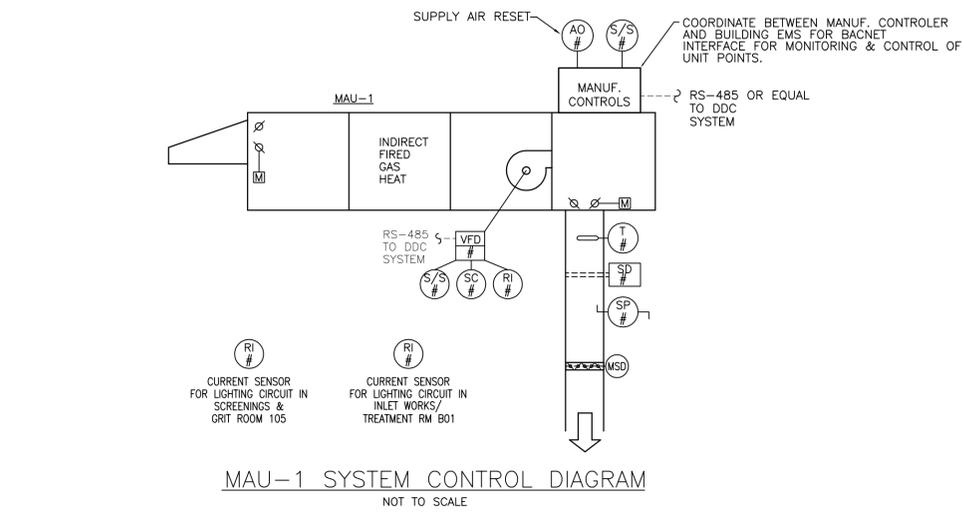
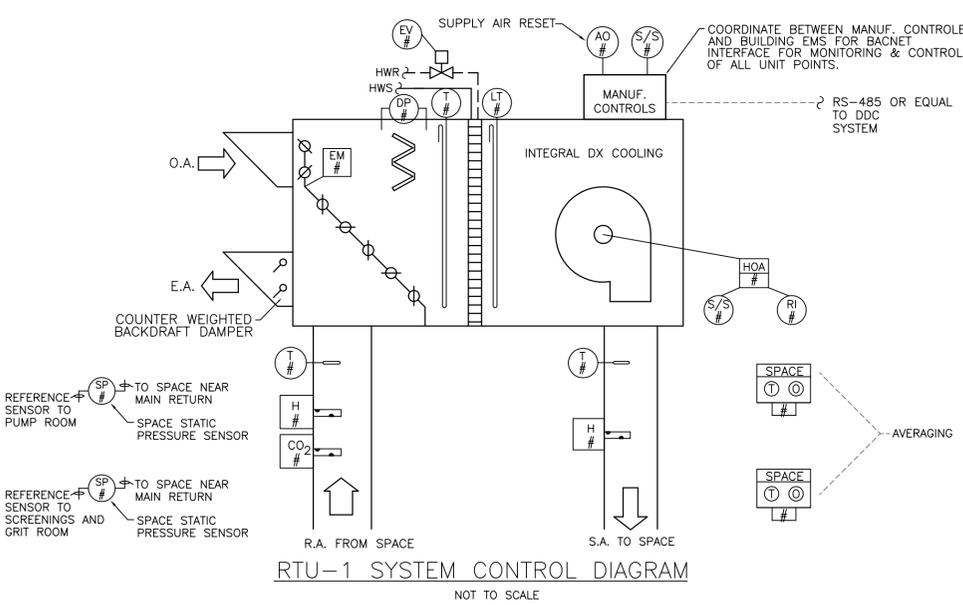
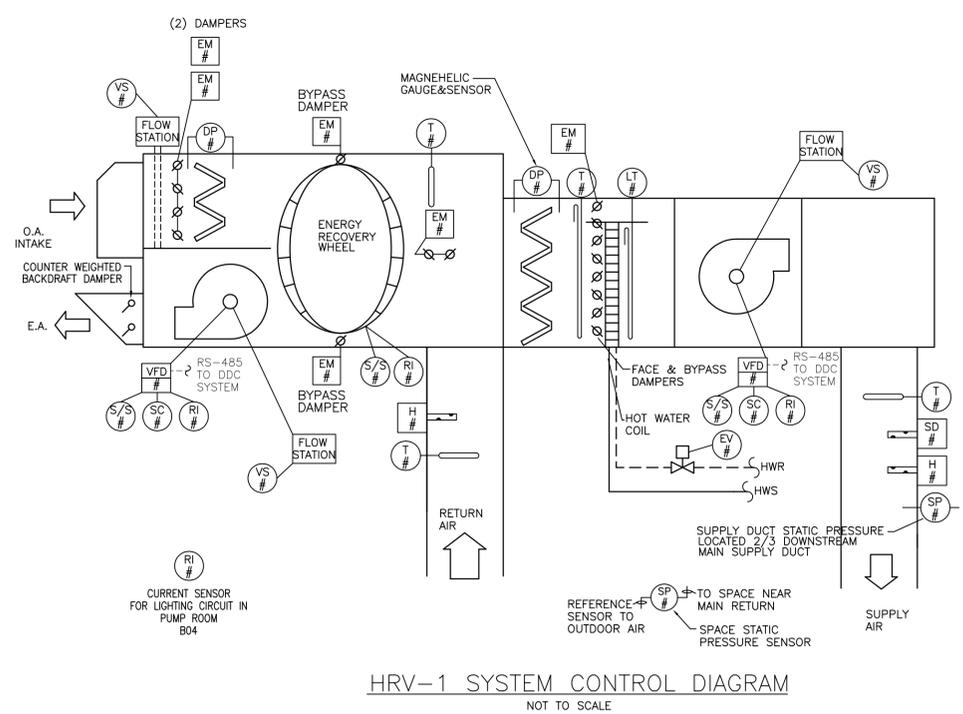
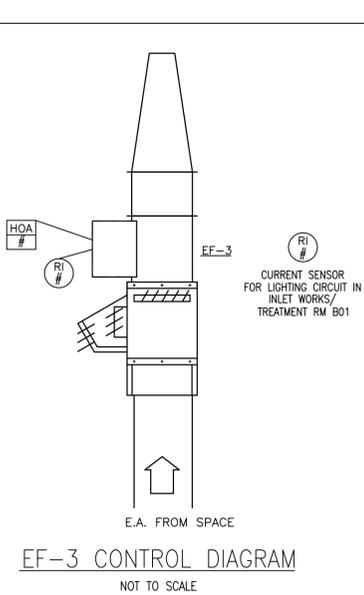
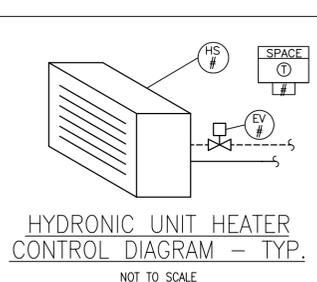
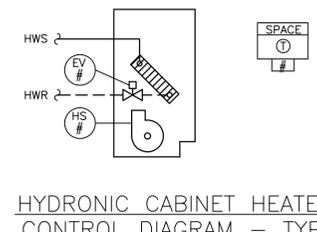
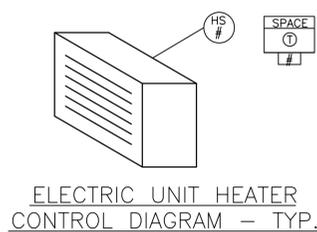
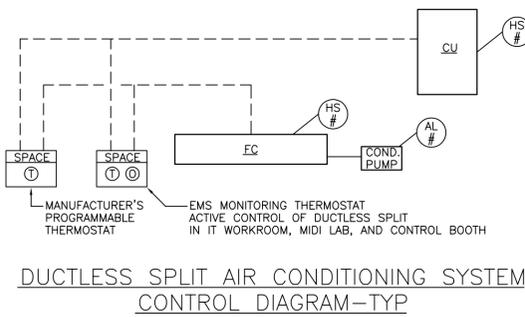
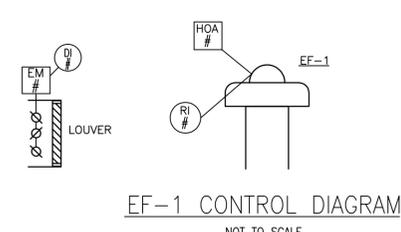
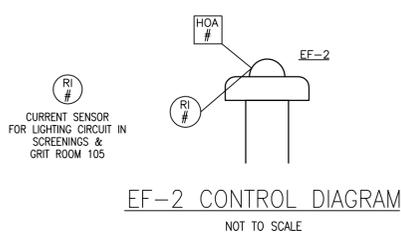
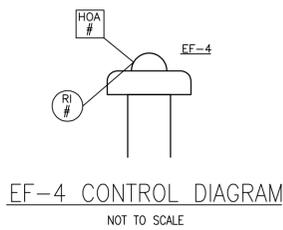
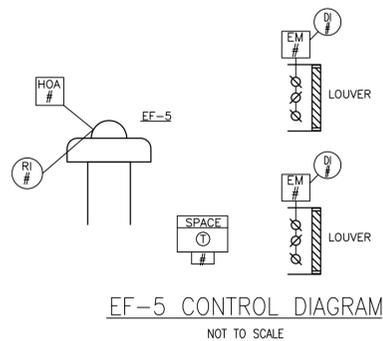
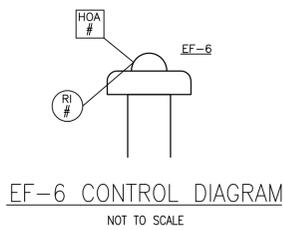
**HVAC
DETAILS & NOTES**

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

H-5.2

DRAWING FILE: Z:\Projects & Bond\Middletown, CT Pump Station\Mechanical\Combined-HMC-Modifications-Pumping-Station.dwg PLOTTED: May 04 2016 - 2:29pm BY: CRabbs



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

HVAC CONTROLS

PROJECT NUMBER: 14712
 DESIGNED BY: CDR
 DRAWN BY: CDR
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

H-5.3

ROOFTOP UNIT SCHEDULE		
UNIT NUMBER	RTU-1	
SERVICE	OFFICE SPACE	
NOMINAL COOLING CAPACITY(TONS)	3	
MANUFACTURER MAKE	⑤ DAIKIN	
MANUFACTURER MODEL #	⑤ DPS003A	
OPERATING WEIGHT (LBS)	1295	
C.F.M.	1,200	
EXT./TOTAL STATIC PRESS. (IN WG)	1.5" / 1.9"	
FAN RPM	1788	
FAN BHP	0.65	
ENT. AIR EVAP. DB/WB (°F)	78.4/65.5	
LVG. AIR EVAP. DB/WB (°F)	55.7/55.6	
TOTAL CAPACITY (BTUH)	36302	
DX COIL ROWS/FPI	3 / 16	
DX COIL FACE AREA (SF)	4.8	
SENSIBLE CAPACITY (BTUH)	29723	
MIN. OUTDOOR AIR (CFM)	400	
EER / SEER	13.2 / 16.5	
ENTERING/LEAVING WATER TEMP.	140°F / 120°F	
ENTERING/LEAVING AIR TEMP.	51°F / 83.0°F	
TOTAL HEATING CAPACITY (BTUH)	43141	
FLUID FLOW RATE (GPM)	4.3	
FLUID PRESSURE DROP (FT H2O)	0.6	
COIL ROWS/FPI	2 / 8	
COIL FACE AREA (SF)	2.1	
COIL AIR PRESSURE DROP (IN H2O)	0.14	
V-PH-HZ	460-3-60	
MCA	7.1 A	
MOCP	15 A	
STARTER	TYPE	INTEGRAL
	NEMA SIZE	INTEGRAL
	CONTROL	INTEGRAL
	AUX. CONTACTS	INTEGRAL
ACCESSORIES	①②③④	

- PROVIDE MODULATING TOTAL ENTHALPY ECONOMIZER. SINGLE WALL INSULATED CONSTRUCTION. PROVIDE NEMA 3R NON-FUSED DISCONNECT SWITCH. PROVIDE UNIT POWERED 115V GFI OUTLET & PHASE FAILURE MONITOR. PROVIDE OUTDOOR AIR MONITOR. PROVIDE STANDARD ONE YEAR WARRANTY ON PARTS.
- PROVIDE SEISMIC ROOF CURB FOR CONFIGURATION AS A VERTICAL DISCHARGE UNIT.
- PROVIDE FOUR (4) SPARE SETS OF FILTERS, IN ADDITION TO THOSE SUPPLIED IN THE UNIT, I.E. COMBO 2" / 4" RACK WITH 2" MERV 7
- PROVIDE BAROMETRIC RELIEF DAMPER
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE TRANE, CARRIER, YORK OR EQUAL.

ROOFTOP ENERGY RECOVERY UNIT SCHEDULE		
UNIT NUMBER	HRV-1	
SERVICE	PUMP ROOM BO3	
MANUFACTURER MAKE	⑥ DAIKIN	
MANUFACTURER MODEL #	⑥ RDS800C	
OPERATING WEIGHT (LBS)	7626	
MAXIMUM C.F.M., SUPPLY/EXHAUST	8,500 / 8,000	
DESIGN AIRFLOWS C.F.M.	4,550 / 4,250	
SUPPLY EXT./TOTAL STATIC PRESS. (IN WG)	2.0" / 2.88"	
EXHAUST EXT./TOTAL STATIC PRESS. (IN WG)	1.0" / 1.7"	
SUPPLY/RETURN FAN RPM	1907.9 / 1307.2	
SUPPLY/RETURN FAN BHP	6.71 / 3.79	
SUPPLY/RETURN FAN HP	10.0 / 5.0	
SEASON	SUMMER WINTER	
AMBIENT AIR TEMP. DB/WB (°F)	91.0/73.0 3.0/3.0	
RETURN AIR TEMP. DB/WB (°F)	75.0/62.0 75.0/62.0	
WHEEL LEAVING AIR TEMP. DB/WB (°F)	79.0/65.1 47.4/44.6	
MIXED AIR TEMP. DB/WB (°F)	77.1/63.6 60.7/53.0	
SUPPLY/EXH. AIR PRESSURE DROP (IN H2O)	0.76/0.70 0.76/0.70	
TOTAL EFFECTIVENESS	0.74	
SENSIBLE EFFECTIVENESS	0.78	
RECOVERED CAPACITY (BTUH)	- 348367	
ENTERING/LEAVING WATER TEMP.	140°F / 119.1°F	
ENTERING/LEAVING AIR TEMP.	60.7°F / 70.4°F	
TOTAL HEATING CAPACITY (BTUH)	90074	
FLUID FLOW RATE (GPM)	8.6	
FLUID PRESSURE DROP (FT H2O)	0.6	
COIL ROWS/FPI	1 / 6	
COIL FACE AREA (SF)	19.8	
COIL AIR PRESSURE DROP (IN H2O)	0.05	
V-PH-HZ	460-3-60	
MCA	22.9 A	
MOCP	35 A	
STARTER	TYPE	INTEGRAL
	NEMA SIZE	INTEGRAL
	CONTROL	INTEGRAL
	AUX. CONTACTS	INTEGRAL
ACCESSORIES	①②③④	

- PROVIDE ODP, PREMIUM EFFICIENCY FAN MOTORS WITH VFD DRIVES ON BOTH. PROVIDE 1 DUCT STATIC PRESSURE SENSOR & 1 SPACE STATIC PRESSURE SENSOR. PROVIDE ACROSS-THE-LINE STARTER. PROVIDE 30% FILTERS WITH FOUR (4) SPARE SETS. PROVIDE BOTTOM DISCHARGE PLENUM SECTION.
- PROVIDE SEISMIC ROOF CURB FOR CONFIGURATION AS A VERTICAL DISCHARGE UNIT.
- PROVIDE SOLID GALVANIZED STEEL LINER. NOMINAL 2" THICK, 1.5# DENSITY INSULATION. PROVIDE SINGLE LEVER ACCESS DOORS ON BOTH SIDES.
- PROVIDE NEMA 3R DISCONNECT SWITCH
- DESIGN AIRFLOW, SUPPLY/EXHAUST TO DELIVER 6 ACH IN WINTER
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE MAMMOUTH, GOVERNAIRE OR EQUAL.

FAN SCHEDULE							
UNIT NUMBER	EF-1	EF-2	EF-3	EF-4	EF-5	EF-6	DF-1
SERVICE	MECHANICAL RM	SCREENINGS/GRIT	INLET WORKS	GENERAL OFFICE	MAINTENANCE RM	VALVE VAULT	DRYER
MANUFACTURER	⑥ GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	FANTECH
MODEL #	⑥ G-060-VG	CUE-200-7	VEKTOR-H-22-16	G-070-VG	CUE-090-VG	CUE-141-4	DBF110
C.F.M.	125	2,300	6,000	250	625	1,200	120
EXT. STATIC PRESS. (IN WG)	0.25"	0.5"	0.75"/0.957"⑥	0.5"	0.25"	0.25"	0.5"
FAN RPM	1592	693	1722 MAX	1725	1474	839	2761
FAN BHP	0.02	0.42	6.09	0.03	0.06	0.14	-
OPERATING WEIGHT (LBS)	36	170	1,113	55	119	55	-
MOTOR	TYPE	TENV	EXP	TENV	TENV	EXP	ODP
	H.P.	1/6	3/4	7-1/2	1/6	1/4	78 WATTS
STARTER	F.L.A.	3.4	13.8	-	3.4	5.8	-
	VOLTAGE/PHASE	115 - 1ø	115 - 1ø	460V-3ø	115 - 1ø	115 - 1ø	115 - 1ø
STARTER	TYPE	H-O-A	H-O-A	H-O-A	H-O-A	H-O-A	INTEGRAL
	NEMA SIZE	-	-	-	-	-	-
	CONTROL	-	-	-	-	-	AUTOMATIC
	AUX. CONTACTS	-	-	-	-	-	-

- PROVIDE INSULATED GALVANIZED ROOF CURB; VARI-GREEN EC MOTOR W/ MOUNTED POTENTIOMETER DIAL; NEMA 3R DISCONNECT SWITCH; #WD-90-PB-8X8 GRAVITY DAMPER; BODY COATED WITH PERMATECTOR, CONCRETE GRAY;
- PROVIDE INSULATED GALVANIZED ROOF CURB; NEMA 7 & 9 TOGGLE DISCONNECT SWITCH IN JUNCTION BOX, MOUNTED & WIRED; #VCD-23-PB-18X18 DAMPER; 24 VAC EXP DAMPER ACTUATOR; BODY COATED WITH PERMATECTOR, CONCRETE GRAY; S.S. SHAFT; ALUMINUM RUB RING
- NEMA PREMIUM EFFICIENT MOTOR; MOTOR WITH CLASS F INSULATION; BYPASS AIR PLENUM - SINGLE WALL, STEEL, BOTTOM EXHASUT INTAKE; COATED WITH LABCOAT, CONCRETE GRAY; NEMA 7 & 9 TOGGLE DISCONNECT SWITCH; 1 YEAR WARRANTY; UL-705 POWER VENTILATORS; SHAFT MATERIAL - TURNED & POLISHED STEEL WITH PROTECTIVE COATING; #VCD-23 BYPASS DAMPER, GALVANEAL, COATED, 10X10; #EMV-11 ISOLATION DAMPER, EXTRUDED ALUMINUM, COATED, 33X33, PARALLEL BLADESL ROOF CURB #GPFHL-39/39 GALVANIZED CONSTRUCTION, 12" HIGH, 1" INSULATION, MILL FINISH; EXTENDED LUBE LINES - NYLON; MOTOR COVER; WEATHERPROOF HOOD OVER BYPASS DAMPER WITH INLET SCREEN.
- PROVIDE INSULATED GALVANIZED ROOF CURB; VARI-GREEN EC MOTOR W/ MOUNTED POTENTIOMETER DIAL; NEMA 3R DISCONNECT SWITCH; #WD-100-PB-10X10 MOTORIZED DAMPER; 115 VAC DAMPER ACTUATOR; BODY COATED WITH PERMATECTOR, CONCRETE GRAY;
- PROVIDE INSULATED GALVANIZED ROOF CURB; NEMA 7 & 9 TOGGLE DISCONNECT SWITCH IN JUNCTION BOX, MOUNTED & WIRED; #VCD-23-PB-16X16 DAMPER; 24 VAC EXP DAMPER ACTUATOR; BODY COATED WITH PERMATECTOR, CONCRETE GRAY; S.S. SHAFT; ALUMINUM RUB RING
- EXTERNAL STATIC PRESSURE/TOTAL STATIC PRESSURE (IN WG)
- PROVIDE VIBRATION ISOLATING HANGERS, PROVIDE INTEGRAL AUTOMATIC PRESSURE SWITCH TO OPERATE FAN ONLY WHEN DRYER IS OPERATING, DISCONNECT SWITCH.
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE ACME, LOREN COOK OR EQUAL.

ROOFTOP 100% OUTDOOR AIR UNIT SCHEDULE		
UNIT NUMBER	MAU-1	
SERVICE	SCREENINGS & GRIT/ INLET WORKS-TREATMENT	
MANUFACTURER MAKE	⑦ DAIKIN	
MANUFACTURER MODEL #	⑦ RAH077C	
OPERATING WEIGHT (LBS)	7812	
MAXIMUM C.F.M., SUMMER OCCUPIED	17900	
DESIGN AIRFLOWS C.F.M.	⑥	
EXT./TOTAL STATIC PRESS. (IN WG)	2.0" / 2.29"	
FAN RPM	866.9	
FAN BHP	9.13	
FAN HP	10.0	
ENTERING AIR TEMP.	3°F	
LEAVING AIR TEMP.	79.9°F	
TOTAL GAS HEATING CAPACITY (BTUH)	1,500,000	
GAS PRESSURE REGULATOR (PSI)	0.5	
HEAT EXCHANGER AIR P.D. (IN H2O)	0.21	
V-PH-HZ	460-3-60	
MCA	16.1 A	
MOCP	25 A	
STARTER	TYPE	INTEGRAL
	NEMA SIZE	INTEGRAL
	CONTROL	INTEGRAL
	AUX. CONTACTS	INTEGRAL
ACCESSORIES	①②③④⑤	

- PROVIDE ODP, PREMIUM EFFICIENCY FAN MOTOR WITH VFD DRIVE. PROVIDE 1 DUCT STATIC PRESSURE SENSOR & 1 SPACE STATIC PRESSURE SENSOR. PROVIDE ACROSS-THE-LINE STARTER. PROVIDE BOTTOM DISCHARGE PLENUM SECTION. PROVIDE UNIT WITH 2" THICK, 1.5# DENSITY FIBERGLASS INSULATION
- PROVIDE SEISMIC ROOF CURB FOR CONFIGURATION AS A VERTICAL DISCHARGE UNIT.
- PROVIDE FOUR (4) SPARE SETS OF FILTERS, IN ADDITION TO THOSE SUPPLIED IN THE UNIT, I.E. 2" THICK, 30% PLEATED PANEL FILTERS.
- PROVIDE 100% OUTDOOR AIR HOOD WITH DAMPER
- PROVIDE STAINLESS STEEL PRIMARY & SECONDARY HEAT EXCHANGERS GAS BURNER SHALL HAVE A MINIMUM 20-TO-1 HIGH TURNDOWN RATIO
- DESIGN AIRFLOWS ARE PER THE FOLLOWING TABLE:

SEASON	UPSTAIRS	DOWNSTAIRS	AIRFLOW (CFM)
WINTER	OCCUPIED	OCCUPIED	13,100
WINTER	UNOCCUPIED	UNOCCUPIED	4,800
WINTER	OCCUPIED	UNOCCUPIED	7,100
WINTER	UNOCCUPIED	OCCUPIED	10,800
SUMMER	OCCUPIED	OCCUPIED	17,900
SUMMER	UNOCCUPIED	UNOCCUPIED	9,600
SUMMER	OCCUPIED	UNOCCUPIED	11,900
SUMMER	UNOCCUPIED	OCCUPIED	15,600
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE MAMMOUTH, GOVERNAIRE OR EQUAL.

PUMP SCHEDULE			
UNIT NUMBER	P-1	P-2	P-3 & P-4
SERVICE	HWB-1 PRIMARY PUMP	HWB-2 PRIMARY PUMP	SYSTEM PUMP
MANUFACTURER	① GRUNDFOS	GRUNDFOS	GRUNDFOS
MODEL #	① UPS26-99F	UPS26-99F	MAGNA3 40-120F
PUMP STYLE	FLUID	CIRCULATOR	CIRCULATOR
	WATER	WATER	WATER
	TEMPERATURE (°F)	180°	180°
	FLOW RATE (GPM)	21	21
PUMP DATA	T.D.H. (FT)	12'	20'
	TYPE	CIRCULATOR	CIRCULATOR
	AMPERAGE (AMPS)	2.15A	2.15A
	POWER (WATTS)	-	-
STARTER DATA	MOTOR H.P.	1/3	1/3
	VOLTAGE-PH-Hz	115 / 1 / 60	115 / 1 / 60
	TYPE	RELAY - HOA	RELAY - HOA
	NEMA SIZE	AS REQUIRED	AS REQUIRED
STARTER DATA	CONTROL	AS REQUIRED	AS REQUIRED
	AUX. CONTACTS	AS REQUIRED	AS REQUIRED
	TYPE	RELAY - HOA	RELAY - HOA
	NEMA SIZE	AS REQUIRED	AS REQUIRED

- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE BELL AND GOSSETT IIT, TACO, ARMSTRONG OR EQUAL.

DIFFUSER, REGISTER & GRILLE SCHEDULE										
KEY	D-1	D-2	D-3	SR-1	RC-1	EG-1	EG-2	EG-3	EG-4	EG-5
MANUFACTURER	⑤	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	⑤ AMDA	AMDA	AMDA	720D	70	70	70	730	730	70
NECK SIZE	9"x9"x6"ø	9"x9"x6"ø	9"x9"x8"ø	12"x12"x10"ø	-	20"x20"	-	-	-	-
MODULE SIZE	24"x24"	24"x24"	24"x24"	24"x18"	24"x24"	6"x6"	12"x12"	18"x18"	36"x20"	30"x30"
BORDER	TYPE 3P	TYPE 3P	TYPE 3P	SURFACE	TYPE 3P	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
FINISH	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4
THROW PATTERN	SEE PLANS	SEE PLANS	SEE PLANS	-	-	-	-	-	-	-
DAMPER	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NOTES	②③	③	③	②③	②③	③	③	③	③	③

- PROVIDE LINED PLENUM BOX FULL SIZE OF REGISTER CONNECTION FOR PLENUM RETURN.
- PROVIDE HEAVY GAUGE SHEETMETAL ANGLES TO SUPPORT REGISTER/GRILLE FROM T-BAR AND NOT TILE.
- COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN FOR FINAL LOCATION & BORDER TYPE (STANDARD LAY-IN (NARROW TEE) AND SURFACE)
- SUBMIT COLOR CHART TO ARCHITECT FOR COLOR SELECTION.
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE ANEMOSTAT PRODUCTS, METALAIRE, TITUS, HART & COOLLEY OR EQUAL.

UNIT/CABINET HEATER SCHEDULE											
SYMBOL	GPM	P.D	EWT	LWT	CFM	FFM	DERATED BTUH	ELECTRICAL		MFG. MODEL NO.	REMARKS
								H.P.	PHASE	VOLTS	
UH-1	2.5	1.0'	140	120	630	495	13,046	1/15	1	115	RITTLING MODEL #RH-33 ⑦ ①②③
UH-2,3	8.1	3.6'	140	120	1550	605	43,133	1/8	1	115	RITTLING MODEL #RH-108 ⑦ ①②③
CUH-1	0.5	0.0'	140	120	275	-	6,111	1/40	1	115	RITTLING MODEL #RFRC-420-02 ⑧ ①②④⑥
CUH-2	0.5	0.0'	140	120	190	-	5,337	1/40	1	115	RITTLING MODEL #RF-200-02 ⑧ ①②④⑤

- PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
- ENAMEL FINISH- COLOR BY ARCH.
- CAPACITY BASED ON 140°F EWT AND 65°F EAT
- CAPACITY BASED ON 140°F EWT AND 60°F EAT
- BASED ON LOW FAN SPEED, STANDARD 1-ROW COIL
- BASED ON HIGH FAN SPEED, STANDARD 1-ROW COIL
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE VULCAN, STERLING, MODINE OR APPROVED EQUAL.
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE MCQUAY, TED REED THERMAL, DUNHAM BUSH, MODINE OR EQUAL.

EQUIPMENT NOTES:

- FC-1/CU-1 AIR-COOLED CONDENSING UNIT W/ HIGH WALL FAN COIL SPLIT A/C SYSTEMS
FC-2/CU-2 INDOOR HIGH WALL FAN COIL
FC-3/CU-3 MITSUBISHI MODEL #PKA-A36FA, 780 - 990 CFM @ LOW - HIGH SPEED, DRY COIL
FC-4/CU-4 700 - 890 CFM @ LOW - HIGH SPEED, WET COIL
34,200 BTUH RATED CAPACITY
12,000 BTUH MINIMUM CAPACITY
SEER = 13.1
MCA = 1 AMPS, FAN MOTOR = 0.52 F.L.A.
FAN MOTOR OUTPUT = 70 WATTS
PROVIDE PROGRAMMABLE THERMOSTAT.
OUTDOOR CONDENSING UNIT MITSUBISHI MODEL #PUY-A36NHA
MCA = 25 AMPS, FAN MOTOR = 0.75 F.L.A.
SOUND LEVEL = 48 dB(A); WEIGHT = 163 LBS
SYSTEM TOTAL INPUT = 5030 WATTS
208 VOLT-1ø-60HZ, BREAKER SIZE = 30A FOR SYSTEM.
PROVIDE CRANKCASE HEATER, WINTER START PACKAGE & LOW AMBIENT CONTROLS. DISCONNECT SWITCH
MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY.
ALTERNATE MANUFACTURER'S ARE CARRIER, DAIKIN, TRANE, FUJITSU, OR EQUAL.
- GP-1 LITTLE GIANT MODEL #VCM-20JLS AUTOMATIC CONDENSATE PUMP
30 GPM @ 9' HEAD, 1/50 HP, 115 V - 1ø; PROVIDE SAFETY SWITCH AND CHECK VALVE.
MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY.
ALTERNATE MANUFACTURER'S ARE HARTELL, DIVERSITECH, DAYTON, OR EQUAL.
- FUH-1 QMARK MODEL #GUX10004832 EXPLOSION PROOF UNIT HEATER;
FUH-2 10 KW @ 480 VOLT, 3 PHASE, 12.7 AMPS, 34,120 BTUH HEAT OUTPUT;
840 CFM @ 36°F AIR TEMPERATURE RISE; 138 LBS; PROVIDE WALL MOUNTED THERMOSTAT & CEILING/HANG MOUNTING KIT.
MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY.
ALTERNATE MANUFACTURER'S ARE INDEECO, MODINE, CHROMALOX, OR EQUAL.
- DEHUM-1 THERMA-STOR LLC MODEL HI-E-DRY 195 HIGH-EFFICIENCY DEHUMIDIFIER
DEHUM-2 192 PINTS PER DAY WATER REMOVAL RATE @ 80°F & 60% R.H.
6-FOOT POWER CORD W/ 115V PLUG W/ GROUND, 1.25 KW, 12 AMPS
540 CFM, MERV 8 FILTERS, INTEGRAL CONDENSATE PUMP @ 17 FT LIFT
MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY.
ALTERNATE MANUFACTURER'S ARE APRILAIRE, EBAC, OR EQUAL.
- FC-5/CU-5 AIR-COOLED CONDENSING UNIT W/ HIGH WALL FAN COIL SPLIT A/C SYSTEMS
INDOOR HIGH WALL FAN COIL
MITSUBISHI MODEL #PKA-A18HAL, 320 - 425 CFM @ LOW - HIGH SPEED, DRY COIL
290 - 380 CFM @ LOW - HIGH SPEED, WET COIL
18,000 BTUH RATED CAPACITY
8,000 BTUH MINIMUM CAPACITY
SEER = 15.3
MCA = 1 AMPS, FAN MOTOR = 0.33 F.L.A.
FAN MOTOR OUTPUT = 30 WATTS
PROVIDE PROGRAMMABLE THERMOSTAT.
OUTDOOR CONDENSING UNIT MITSUBISHI MODEL #PUY-A18NHA3
MCA = 13 AMPS, FAN MOTOR = 0.35 F.L.A.
SOUND LEVEL = 46 dB(A); WEIGHT = 97 LBS
SYSTEM TOTAL INPUT = 2240 WATTS
208 VOLT-1ø-60HZ, BREAKER SIZE = 15A FOR SYSTEM.
PROVIDE CRANKCASE HEATER, WINTER START PACKAGE & LOW AMBIENT CONTROLS. DISCONNECT SWITCH
MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY.
ALTERNATE MANUFACTURER'S ARE CARRIER, DAIKIN, TRANE, FUJITSU, OR EQUAL.

GAS FIRED BOILER SCHEDULE		
UNIT NUMBER	HWB-1,2	
SERVICE	BUILDING	
MANUFACTURER	⑥ LOCHINVAR	
MODEL #	⑥ KNIGHT KBN286	
GAS INPUT (MBH)	285	
GROSS OUTPUT (MBH)	259	
EFFICIENCY A.F.U.E.	90.3%	
MAX. WORKING PRESSURE (PSI)	50	
FLUE CONNECTION	4"ø	
WATER SUPPLY TEMPERATURE	180°F	
WATER TEMPERATURE RISE	20°F	
ELECTRICAL DATA	VOLTAGE	115 V
	STARTER	INTEGRAL ①
	FUSE SIZE	-
	CONTROL	INTEGRAL ①
REMARKS	NEMA SIZE	-
		②③④⑤

- COORDINATE WITH CONTROL SYSTEM
- PROVIDE MASS. CODE GAS TRAIN, LOW WATER CUT-OFF, HIGH LIMIT & FLOW SWITCHES
- SEE SPECS FOR FURTHER REQUIREMENTS
- PROVIDE VERTICAL CONCENTRIC KIT
- PROVIDE CONDENSATE NEUTRALIZATION KIT
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE VIESSMAN, WEIL MCLAIN, HEAT TRANSFER PRODUCTS OR EQUAL.



REVISIONS		
Number	Description	Date

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

VALVE SYMBOLS	IN-LINE INSTRUMENTS	GENERAL INSTRUMENT OR FUNCTION SYMBOLS																								
		FIELD MOUNTED	PRIMARY LOCATION ACCESSIBLE TO OPERATOR	PRIMARY LOCATION INACCESSIBLE TO OPERATOR	AUXILIARY LOCATION ACCESSIBLE TO OPERATOR	HARDWARE INTERLOCK																				
<ul style="list-style-type: none"> GATE VALVE GLOBE VALVE BALL VALVE PLUG VALVE BUTTERFLY VALVE DIAPHRAGM VALVE PINCH VALVE NEEDLE VALVE 3-WAY VALVE VALVE TYPE VARIES CHECK VALVE DOUBLE LEAF CHECK VALVE BALL CHECK VALVE 	<ul style="list-style-type: none"> NOZZLE ORIFICE PITOT RESISTANCE TEMPERATURE DIFFERENTIAL MAGNETIC ELEMENT VENTURI AVERAGING PITOT PARSHALL FLUME VORTEX SHREDDING POSITIVE DISPLACEMENT TARGET TURBINE SONIC ROTOMETER 	<table border="1"> <tr> <td>DISCRETE INSTRUMENTS</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SHARED DISPLAY SHARED CONTROL</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COMPUTER FUNCTION</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PROGRAMMABLE LOGIC CONTROL</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	DISCRETE INSTRUMENTS						SHARED DISPLAY SHARED CONTROL						COMPUTER FUNCTION						PROGRAMMABLE LOGIC CONTROL					
DISCRETE INSTRUMENTS																										
SHARED DISPLAY SHARED CONTROL																										
COMPUTER FUNCTION																										
PROGRAMMABLE LOGIC CONTROL																										
RELIEF DEVICES	MECHANICAL EQUIPMENT																									
<ul style="list-style-type: none"> RELIEF VALVE (ANGLE PATTERN) RELIEF VALVE (STRAIGHT THROUGH PATTERN) COMBINATION RELIEF VALVE RUPTURE DISC 	<ul style="list-style-type: none"> CENTRIFUGAL PUMP CHEMICAL METERING PUMP SUMP PUMP VERTICAL TURBINE PUMP CENTRIFUGAL BLOWER MIXER MECHANICAL SCREEN WASHING PRESS STATIC MIXER DEMISTING FILTER SLIDE GATE ULTRA SONIC LEVEL TRANSMITTER SUBMERSIBLE PRESSURE SENSOR GRIT WASHER VORTEX GRIT CHAMBER 																									
SELF-ACTING REGULATORS																										
<ul style="list-style-type: none"> PRESSURE REDUCING BACK PRESSURE 																										
VALVE ACTUATORS																										
<ul style="list-style-type: none"> DIAHRAGM ELECTRIC MOTOR SOLENOID DOUBLE-ACTING CYLINDER 																										
PIPING SYMBOLS																										
<ul style="list-style-type: none"> Y-STRAINER BASKET STRAINER BLIND FLANGE WELDED CAP THREADED CAP CONCENTRIC REDUCER ECCENTRIC REDUCER FUNNEL OR DRAIN CAM LEVER COUPLING WITH CAP/PLUG & CHAIN FLEXIBLE HOSE EXPANSION JOINT AIR RELEASE VALVE FILTER OR SCREEN GAUGE ASSEMBLY W/TEST CONNECTION GAUGE ASSEMBLY W/TEST CONNECTION & DIAPHRAGM SEAL CALIBRATION COLUMN PULSATION DAMPENER CHEMICAL INJECTOR CARTRIDGE FILTER BUTTERFLY DAMPER 																										



FRANCIS T.
 PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

PIPING AND
 INSTRUMENTATION
 LEGEND SYMBOLS

PROJECT NUMBER: 14712
 DESIGNED BY: FAM
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

PI-0.1

TYPICAL VARIABLE LETTER COMBINATIONS

FIRST LETTERS	INITIATING OR MEASURED VARIABLE	CONTROLLERS				READOUT DEVICES		SWITCHES AND ALARM DEVICES			TRANSMITTERS			SOLENOIDS, RELAYS, COMPUTING DEVICES	PRIMARY ELEMENT	TEST POINT	WELL OR PROBE	VIEWING DEVICE, GLASS	SAFETY DEVICE	FINAL ELEMENT	SUCEEDING LETTERS	
		RECORDING	INDICATING	BLIND	SELF-ACTUATED CONTROL VALVES	RECORDING	INDICATING	HIGH	LOW	COMB	RECORDING	INDICATING	BLIND								VALUE	DESCRIPTION
A	ANALYSIS	ARC	AIC	AC	-	AR	AI	ASH	ASL	ASHL	ART	AIT	AT	AY	AE	AP	AW	-	-	AZ	A	ALARM
B	BURNER/COMBUSTION	BRC	BIC	BC	-	BR	BI	BSH	BSL	BSHL	BRT	BIT	BT	BY	BE	-	BW	BG	-	BZ	B	-
C	USER'S CHOICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	CLOSED
D	USER'S CHOICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	-
E	VOLTAGE	ERC	EIC	EC	-	ER	EI	ESH	ESL	ESHL	ERT	EIT	ET	EY	EE	-	-	-	-	EZ	E	-
F	FLOW RATE	FRC	FIC	FC	FCV	FR	FI	FSH	FSL	FSHL	FRT	FIT	FT	FY	FE	FP	-	FG	-	FZ	F	-
FQ	FLOW QUANTITY	FQRC	FQIC	-	-	FQR	FQI	FQSH	FQSL	FQSHL	-	FOIT	FOI	FQY	FQE	-	-	-	-	FOZ	-	-
FF	FLOW RATIO	FFRC	FFIC	FFC	-	FFR	FFI	FFSH	FFSL	FFSHL	-	-	-	-	-	-	-	-	-	FFZ	-	-
G	USER'S CHOICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	G	-
H	HAND	-	HIC	HC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	HIGH
I	CURRENT	IRC	IIC	-	-	IR	II	ISH	ISL	ISHL	IRT	IIT	IT	IY	IE	-	-	-	-	IZ	HH	HIGH HIGH
J	POWER	JRC	JIC	-	-	JR	JI	JSH	JSL	JSHL	JRT	JIT	JT	JY	JE	-	-	-	-	JZ	I	-
K	TIME	KRC	KIC	KC	KCV	KR	KI	KSH	KSL	KSHL	KRT	KIT	KT	KY	KE	-	-	-	-	KZ	J	-
L	LEVEL	LRC	LIC	LC	LCV	LR	LI	LSH	LSL	LSHL	LRT	LIT	LT	LY	LE	-	LW	LG	-	LZ	K	-
M	MOISTURE	-	-	-	-	-	-	MS	-	-	-	-	-	-	ME	-	-	-	-	-	L	LOW
N	USER'S CHOICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LL	LOW LOW
O	USER'S CHOICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	MIDDLE
P	PRESSURE/VACUUM	PRC	PIC	PC	PCV	PR	PI	PSH	PSL	PSHL	PRT	PIT	PT	PY	PE	PP	-	-	PSE	PZ	N	-
PD	PRESSURE DIFFERENTIAL	PDRC	PDIC	PDC	PDCV	PDR	PDI	PDSH	PDSL	PDSHL	PDRT	PDIT	PDT	PDY	PDE	PDP	-	-	-	PDZ	O	OPEN
Q	QUANTITY	QRC	QIC	-	-	QR	QI	QSH	QSL	QSHL	QRT	QIT	QT	QY	QE	-	RW	-	-	QZ	P	-
R	RADIATION	RRC	RIC	RC	-	RR	RI	RSH	RSL	RSHL	RRT	RIT	RT	RY	RE	-	-	-	-	RZ	Q	-
S	SPEED/FREQUENCY	SRC	SIC	SC	SCV	SR	SI	SSH	SSL	SSHL	SRT	SIT	ST	SY	SE	-	-	-	-	SZ	R	-
T	TEMPERATURE	TRC	TIC	TC	TCV	TR	TI	TSH	TSL	TSHL	TRT	TIT	TT	TY	TE	TP	TPW	-	TSE	TZ	S	-
TD	TEMPERATURE DIFFERENTIAL	TDRC	TDIC	TDC	TDCV	TDR	TDI	TDSH	TDSL	TDSHL	TDRT	TDIT	TDT	TDY	TDE	TDP	TDPW	-	-	TDZ	T	-
U	MULTIVARIABLE	-	-	-	-	UR	UI	-	-	-	-	-	-	-	-	-	-	-	-	-	U	-
V	VIBRATION/MACHINERY ANALYSIS	-	-	-	-	VR	VI	VSH	VSL	VSHL	VRT	VIT	VT	VY	VE	-	-	-	-	VZ	V	-
W	WEIGHT/FORCE	WRC	WIC	WC	WCV	WR	WI	WSH	WSL	WSHL	WRT	WIT	WT	WY	WE	-	-	-	-	WZ	W	-
WD	WEIGHT/FORCE DIFFERENTIAL	WDRC	WDIC	WDC	WDCV	WDR	WDI	WDSH	WDSL	WDSHL	WDRT	WDIT	WDT	WDY	WDE	-	-	-	-	WDZ	-	-
X	UNCLASSIFIED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
Y	EVENT/STATE/PRESENCE	-	YIC	YC	-	YR	YI	YSH	YSL	YSHL	YRT	YIT	YT	YY	YE	-	-	-	-	YZ	Y	-
Z	POSITION/DIMENSION	ZRC	ZIC	ZC	ZCV	ZR	ZI	ZSH	ZSL	ZSHL	ZRT	ZIT	ZT	ZY	ZE	-	-	-	-	ZZ	Z	-
ZD	GAUGING/DEVIATION	ZDRC	ZDIC	ZDC	ZDCV	ZDR	ZDI	ZDSH	ZDSL	ZDSHL	ZDRT	ZDIT	ZDT	ZDY	ZDE	-	-	-	-	ZDZ	-	-

NOTE: THIS TABLE IS NOT ALL-INCLUSIVE.

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

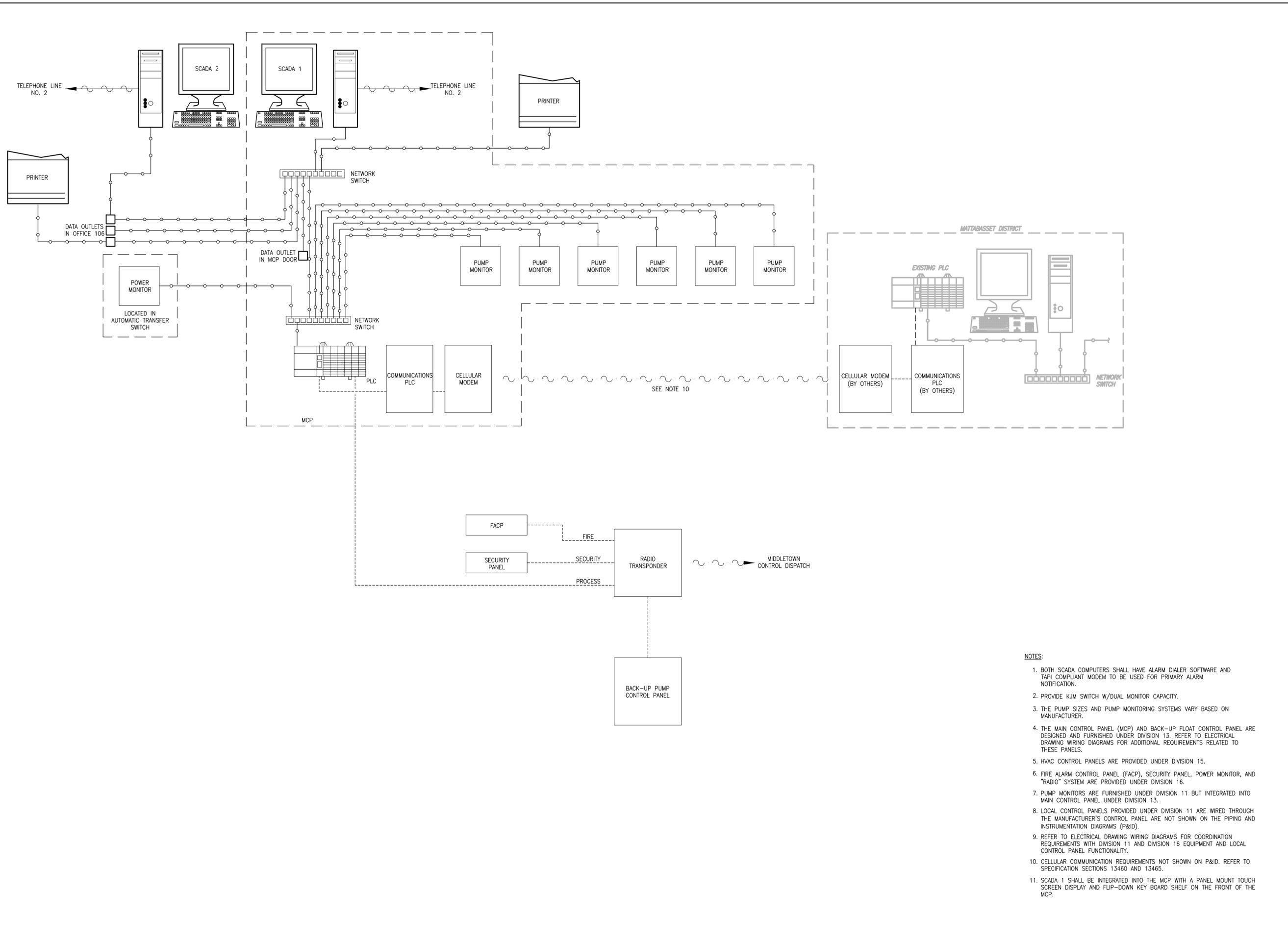
LINE CODING	FLUID CODE	LINE SYMBOLS	SCREEN TYPES	BLOWER TYPES	PUMP TYPES
<p>XX"-PVC-INFLT</p> <p>FLUID CODE PIPE MATERIAL NOMINAL PIPE SIZE</p>	<p>BYPS BYPASS</p> <p>CA COMPRESSED AIR</p> <p>CDS CHEMICAL DOSING</p> <p>EFFL EFFLUENT</p> <p>INFLT INFLUENT</p> <p>MAG MAGNETITE BALLAST</p> <p>OC ODOR CONTROL</p> <p>OVRFL OVERFLOW</p> <p>PA PROCESS AIR</p> <p>PRMT PERMEATE</p> <p>PW PLANT WATER</p> <p>RAS RETURN ACTIVATED SLUDGE</p> <p>RECYC RECYCLE</p> <p>RNS RINSE</p> <p>SCUM SCUM</p> <p>SEPT SEPTAGE</p> <p>WAS WASTE ACTIVATED SLUDGE</p> <p>WS WASTE SLUDGE</p>	<p>EXISTING PROCESS LINE</p> <p>MAJOR PROCESS LINE</p> <p>MINOR PROCESS LINE</p> <p>ELECTRICAL</p> <p>PLC TO SCADA COMMUNICATION</p> <p>PNEUMATIC SIGNAL</p> <p>HYDRAULIC SIGNAL</p> <p>INTERNAL SYSTEM LINE (SOFTWARE OR DATA)</p> <p>ELECTROMAGNETIC SIGNAL (GUIDED)</p> <p>ELECTROMAGNETIC SIGNAL (NOT GUIDED)</p> <p>HARDWIRED INTERLOCK</p> <p>AUTOMATION INTERLOCK</p> <p>LINE CODE</p> <p>PROCESS CONTINUATION</p> <p>PROCESS CONTINUATION WITH BACKFLOW</p>	<p>FS1 PERFORATED PLATE FINE SCREEN</p> <p>FS2 MANUAL COARSE SCREEN</p> <p>FS3 SCREENING CONVEYOR</p> <p>FS4 GRIT CLASSIFIER</p> <p>MIXER TYPES</p> <p>M1 MIXER (RAPID)</p> <p>M2 LOW SPEED MIXER (INVENT)</p> <p>M3 RAIL MOUNTED SUBMERSIBLE MIXER</p> <p>M4 JET MIXER/AERATOR</p> <p>IN-LINE INSTRUMENT TYPES</p> <p>LE1 NOZZLE</p> <p>LE2 MAGNETIC ELEMENT</p> <p>LE3 ORIFICE</p> <p>LE4 VENTURI</p> <p>LE5 PITOT</p> <p>LE6 AVERAGING PITOT</p> <p>LE7 VORTEX SHEDDING</p> <p>LE8 TURBINE</p> <p>LE9 POSITIVE DISPLACEMENT</p> <p>LE10 SONIC</p> <p>LE11 TARGET</p> <p>LE12 ROTAMETER</p> <p>LE13 RESISTANCE TEMPERATURE DIFFERENTIAL</p> <p>LE14 MASS FLOW METER</p> <p>LE15 VARIABLE</p>	<p>B1 REGENERATIVE</p> <p>B2 PD (TRI-LOBE)</p> <p>B3 PD (DUAL-LOBE)</p> <p>B4 CENTRIFUGAL</p> <p>B5 ROTARY SCREW COMPRESSOR</p> <p>SPECIALTY ITEMS</p> <p>SP1 FINE BUBBLE DIFFUSER</p> <p>SP2 MEDIUM BUBBLE DIFFUSER</p> <p>SP3 COARSE BUBBLE DIFFUSER</p> <p>SP4 INVENT DIFFUSER</p> <p>SP5 PARSHALL FLUME</p> <p>SP6 ULTRASONIC LEVEL TRANSMITTER</p> <p>SP7 SUBMERSIBLE PRESSURE TRANSMITTER</p> <p>SP8 EXPANSION JOINT</p> <p>SP9 CARBON ODOR CONTROL UNIT</p> <p>SP10 BIOFILTER ODOR CONTROL UNIT</p> <p>SP11 CHEMICAL SCRUBBER ODOR CONTROL UNIT</p> <p>SP12 SHEAR MILL</p> <p>SP13 RECOVERY DRUM</p> <p>SP14 CHEMICAL FEED SKID</p> <p>SP15 POLISHING MAGNET</p> <p>SP16 STATIC MIXER</p> <p>SP17 SPARGE RING</p>	<p>P1 AIR LIFT PIMP</p> <p>P2 SUBMERSIBLE PUMP</p> <p>P3 CENTRIFUGAL SCREW PUMP</p> <p>P4 CENTRIFUGAL PUMP</p> <p>P5 PROGRESSIVE CAVITY PUMP</p> <p>P6 PROPELLER PUMP</p> <p>P7 PERISTALTIC (HOSE) PUMP</p> <p>P8 POSITIVE DISPLACEMENT PUMP</p> <p>P9 DIAPHRAGM PUMP</p> <p>P10 SOLENOID METERING PUMP</p> <p>P11 ROTARY LOBE PUMP</p>
<p>PIPE MATERIAL ABBREVIATION</p> <p>BR BRONZE</p> <p>CI CAST IRON</p> <p>CPVC CHLORINATED POLYVINYL CHLORIDE</p> <p>CS CARBON STEEL (BLACK STEEL)</p> <p>CU COPPER</p> <p>DI DUCTILE IRON</p> <p>DIGL DUCTILE IRON GLASS LINED</p> <p>FRP FIBERGLASS</p> <p>GS GALVANIZED STEEL</p> <p>PP POLYPROPYLENE</p> <p>PVC POLYVINYL CHLORIDE</p> <p>RH RUBBER HOSE</p> <p>SS STAINLESS STEEL</p> <p>TF TEFLON</p>	<p>EQUIPMENT NUMBERING</p> <p>XX00 - 0000 (EXAMPLE)</p> <p>SEQUENTIAL EQUIPMENT NUMBER P&ID DRAWING NO. EQUIPMENT TYPE</p>	<p>INSTRUMENT NUMBERING</p> <p>0000 (EXAMPLE)</p> <p>P&ID DRAWING NO. SEQUENTIAL INSTRUMENT NO.</p>			



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT
PIPING AND INSTRUMENTATION LEGEND-CODE, NUMBERING, AND ABBREVIATIONS

PROJECT NUMBER: 14712
DESIGNED BY: FAM
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

PI-0.2



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

- NOTES:
- BOTH SCADA COMPUTERS SHALL HAVE ALARM DIALER SOFTWARE AND TAPI COMPLIANT MODEM TO BE USED FOR PRIMARY ALARM NOTIFICATION.
 - PROVIDE KJM SWITCH W/DUAL MONITOR CAPACITY.
 - THE PUMP SIZES AND PUMP MONITORING SYSTEMS VARY BASED ON MANUFACTURER.
 - THE MAIN CONTROL PANEL (MCP) AND BACK-UP FLOAT CONTROL PANEL ARE DESIGNED AND FURNISHED UNDER DIVISION 13. REFER TO ELECTRICAL DRAWING WIRING DIAGRAMS FOR ADDITIONAL REQUIREMENTS RELATED TO THESE PANELS.
 - HVAC CONTROL PANELS ARE PROVIDED UNDER DIVISION 15.
 - FIRE ALARM CONTROL PANEL (FACP), SECURITY PANEL, POWER MONITOR, AND "RADIO" SYSTEM ARE PROVIDED UNDER DIVISION 16.
 - PUMP MONITORS ARE FURNISHED UNDER DIVISION 11 BUT INTEGRATED INTO MAIN CONTROL PANEL UNDER DIVISION 13.
 - LOCAL CONTROL PANELS PROVIDED UNDER DIVISION 11 ARE WIRED THROUGH THE MANUFACTURER'S CONTROL PANEL ARE NOT SHOWN ON THE PIPING AND INSTRUMENTATION DIAGRAMS (P&ID).
 - REFER TO ELECTRICAL DRAWING WIRING DIAGRAMS FOR COORDINATION REQUIREMENTS WITH DIVISION 11 AND DIVISION 16 EQUIPMENT AND LOCAL CONTROL PANEL FUNCTIONALITY.
 - CELLULAR COMMUNICATION REQUIREMENTS NOT SHOWN ON P&ID. REFER TO SPECIFICATION SECTIONS 13460 AND 13465.
 - SCADA 1 SHALL BE INTEGRATED INTO THE MCP WITH A PANEL MOUNT TOUCH SCREEN DISPLAY AND FLIP-DOWN KEY BOARD SHELF ON THE FRONT OF THE MCP.



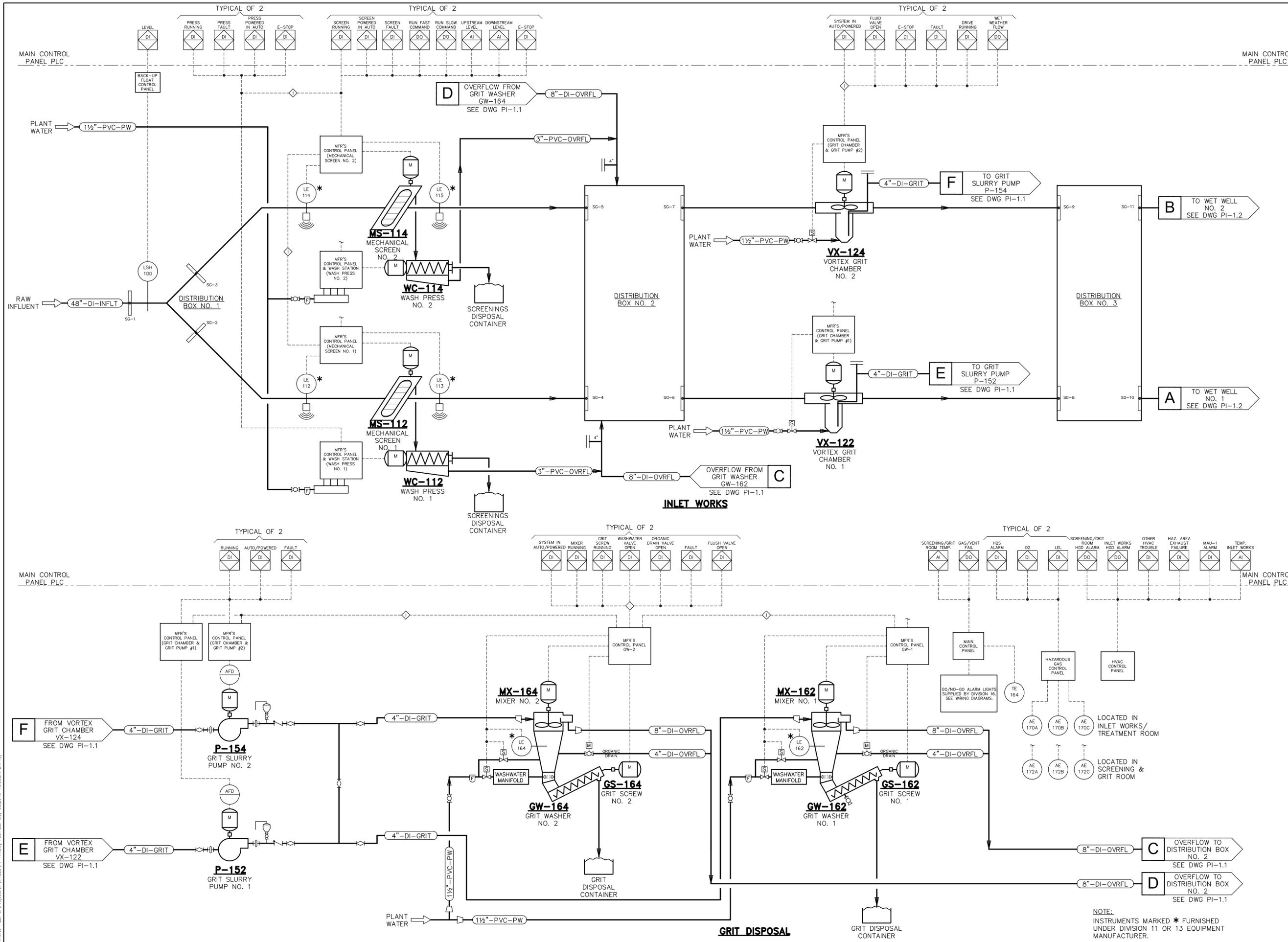
**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

**CONTROL SYSTEM
 ARCHITECTURE**

PROJECT NUMBER: 14712
 DESIGNED BY: FAM
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

PI-0.3

DRAWING FILE: C:\Projects\14712\PI-0.3.dwg PLOTTED: May 05, 2016 10:40am BY: rej



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

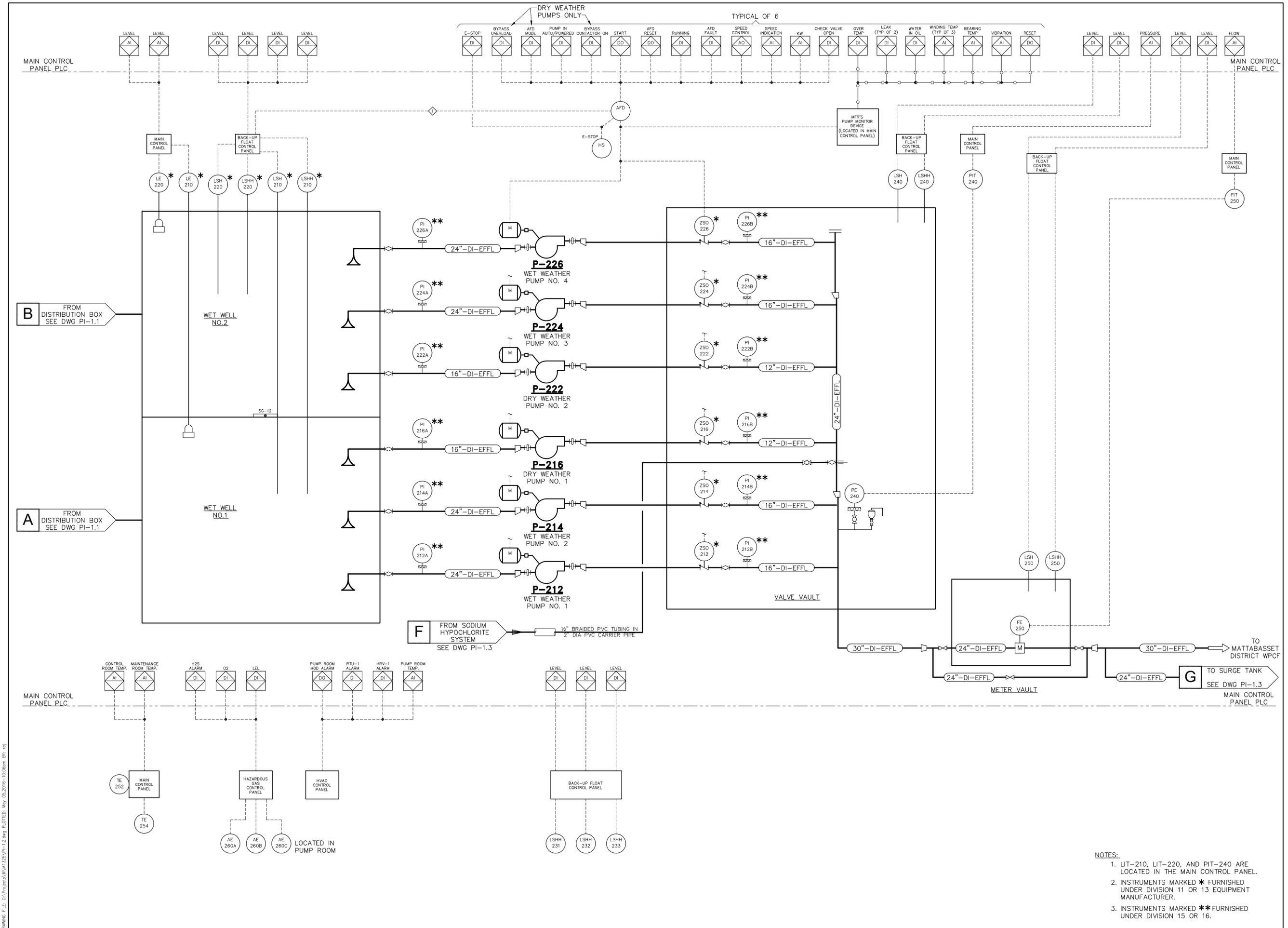
**P&ID
 HEADWORKS**

PROJECT NUMBER: 14712
 DESIGNED BY: FAM
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

PI-1.1

DRAWING FILE: C:\Projects\14712\PI-1.1.dwg PLOTTED: May 05, 2016 10:05:00am (B) (r)

NOTE:
 INSTRUMENTS MARKED * FURNISHED
 UNDER DIVISION 11 OR 13 EQUIPMENT
 MANUFACTURER.



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



**FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT**

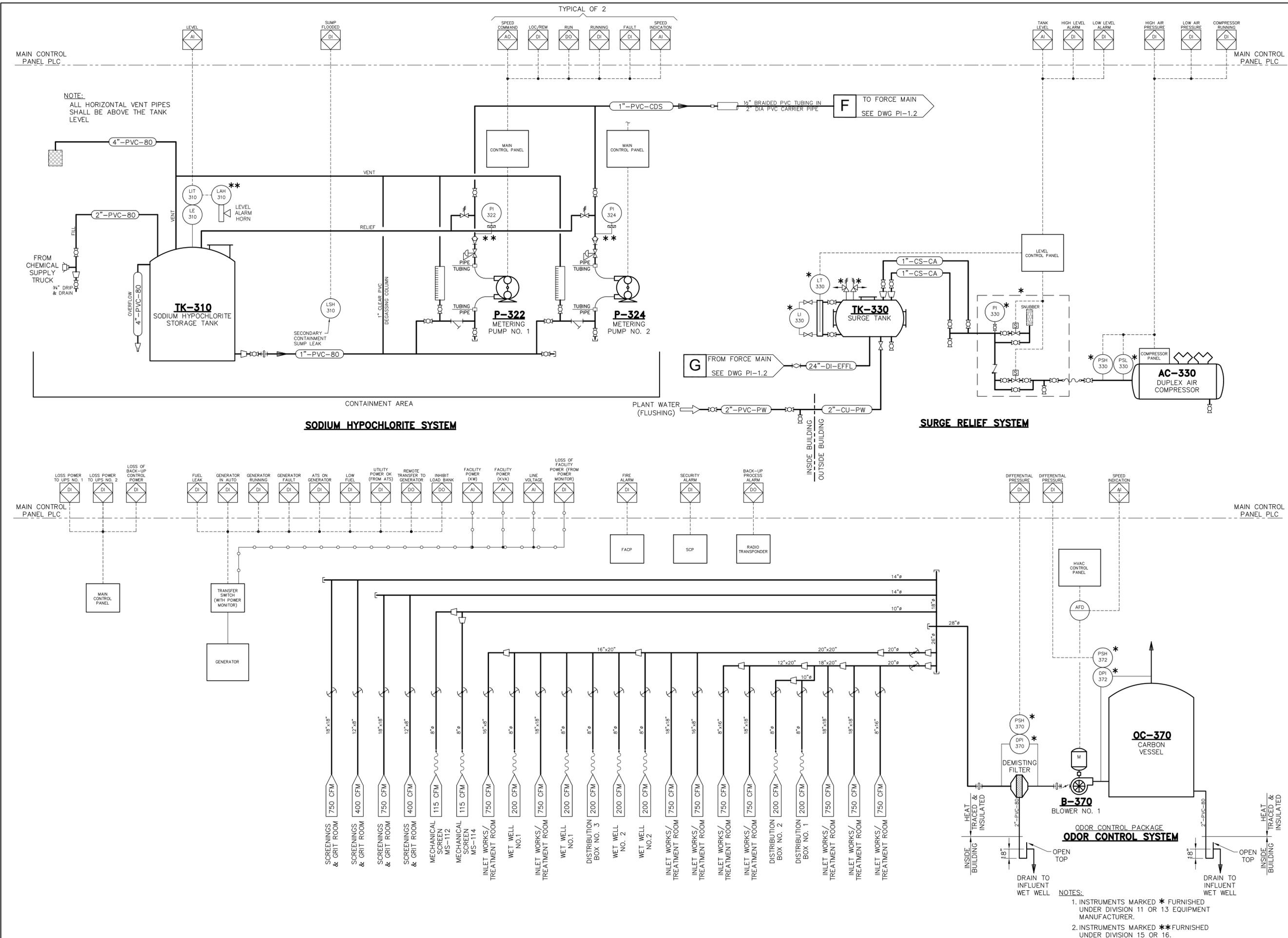
**P&ID
 PUMPS &
 FORCE MAINS**

PROJECT NUMBER: 14712
 DESIGNED BY: FAM
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:
PI-1.2

- NOTES:
- LIT-210, LIT-220, AND PIT-240 ARE LOCATED IN THE MAIN CONTROL PANEL.
 - INSTRUMENTS MARKED * FURNISHED UNDER DIVISION 11 OR 13 EQUIPMENT MANUFACTURER.
 - INSTRUMENTS MARKED ** FURNISHED UNDER DIVISION 15 OR 16.

DRAWING FILE: C:\Projects\14712\PI-1.2.dwg PLOTTED: May 05, 2016 10:06am BY: rej



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

**P&ID
 OTHER SYSTEMS**

PROJECT NUMBER: 14712
 DESIGNED BY: FAM
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

PI-1.3

DRAWING FILE: C:\Projects\VA\14712\PI-1.3.dwg PLOTTED: May 05, 2016 - 10:07am BR: rej

DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined=Pumping=Station.dwg PLOTTED: May 02, 2016 - 12:25pm, Br. Robinson

PLUMBING FIXTURE SCHEDULE

KEY	P-1	P-2	P-3	P-4	P-5	P-6	P-7
FIXTURE	FLOOR MOUNT WATER CLOSET	WALL HUNG HC LAVATORY	SHOWER STALL & VALVE (HANDICAP)	COUNTERTOP SINK (HANDICAP)	CLOTHES WASKER HOOK-UP	FLOOR MOUNT SERVICE SINK	COMBINATION EMERGENCY EYE WASH/SHOWER
P I P I N G C O N N E C T I O N S	TRAP	—	1-1/4"	—	1-1/2"	2"	3"
	WASTE	4"	1-1/2"	—	1-1/2"	2"	3"
	VENT	2"	1-1/4"	—	1-1/2"	1-1/2"	1-1/2"
	CWS	1"	3/8"	1/2"	1/2"	1/2"	1/2"
	HWS	—	3/8"	1/2"	1/2"	1/2"	1/2"
MOUNTING HEIGHT FL. TO RIM	16-1/2"	34"	48" MAX.	PER ADA & ARCH.	36"	—	—
MATERIAL	VITREOUS CHINA	VITREOUS CHINA	GELCOAT FIBERGLASS	STAINLESS STEEL	—	MOLDED STONE	—
FITTINGS	SLOAN ROYAL FLUSHOMETER FOR HET @ 1.28 GPF 111-1.28 OPEN FRONT SEAT	CHICAGO FAUCETS COMMERCIAL LAVATORY 2200-4E2805ABCP OFFSET GRID DRAIN	SYMMONS SAFETYMIX HAND SHOWER SYSTEM #1-25-FSB 2.0-X	CHICAGO FAUCETS SINGLE HANDLE FAUCET 2300-8ABCP	—	FIAT SERVICE FAUCET 830-AA HOSE&BRACKET 832-AA MOP HANGER 889-CC	—
SEE NOTE 6	MANUF.	AMERICAN STANDARD	AMERICAN STANDARD	AQUATIC BATH	ELKAY	SYMMONS	FIAT
	MODEL	MADERA FLOWISE 3481-001	MURRO 0954.004EC	1363BFS	LRAD2521653	W-602-X	MSB-3624
GWH-1	RHEM/RUID ADVANTAGEPLUS COMMERCIAL SEALED-COMBUSTION GAS-FIRED WATER HEATER MODEL #HE119-199, 119 GALLON CAPACITY, 199 CFH NAT. GAS INPUT, 95% THERMAL EFFICIENCY, 120V-1Ø, 229 GPH RECOVERY @ 100°F TEMP. RISE, 1-1/2" MALE NPT SIDE WATER CONN.'S, 3" PVC FLUE CONNECTION & COMBUSTION AIR; PROVIDE CONCENTRIC VENT KIT FOR FLUE THROUGH ROOF; PROVIDE ACID NEUTRALIZING KIT.						

NOTES:

- REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ALL DIMENSIONS ARE AS IS UNLESS NOTED OTHERWISE ON DRAWINGS.
- VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECT AND ALL APPLICABLE CODES BEFORE INSTALLATION.
- PROVIDE WHEELCHAIR LAVATORY STRAINERS ON ALL HANDICAP LAVATORIES. INSTALL PVC COATED INSULATION ON ALL PIPING BELOW HANDICAP LAVATORIES.
- PIPE INSULATION UNDER FIXTURE P-2 SHALL BE TRUEBRO LAV GUARD MODEL #103, IF NOT ENCLOSED BY ARCHITECTURAL SHROUD.
- MANUFACTURER'S AND MODEL NUMBERS PROVIDED FOR REFERENCE TO QUALITY OF FIXTURE REQUIRED. REFER TO SPECIFICATION FOR LIST OF ALTERNATE MANUFACTURERS.

L E G E N D

—	SANITARY OR WASTE PIPING - (W)	FD	FLOOR DRAIN
-----	VENT PIPING - (V)	A.P.	ACCESS PANEL
-----	POTABLE COLD WATER PIPING - (CW)	W.H.A.	WATER HAMMER ARRESTOR
---NPCW---	NON-POTABLE COLD WATER PIPING - (NPCW)	H.B.	3/4" HOSE BIBB
-----	HOT WATER PIPING- (HW)	FPSC	3/4" FREEZE PROOF SILCOCK
---140---	140°F HOT WATER PIPING- (HW)	VIR	VENT THRU ROOF
-----	TEMPERED HOT WATER PIPING (80°F)- (TW)	INV.	INVERT
---G---	NATURAL GAS SUPPLY PIPING	W & T	WASTE AND TRAP
=====	SANITARY OR WASTE PIPING - BELOW SLAB	PRV	PRESSURE REDUCING VALVE
=====	VENT PIPING - BELOW SLAB	L.O.W.	LIMIT OF WORK
=====	COLD WATER PIPING - BELOW SLAB OR GRADE	W.C.O.	WALL CLEANOUT
=====	NATURAL GAS SUPPLY PIPING - BELOW GRADE	GWH-1	PLUMBING EQUIPMENT CALLOUT
	CLEANOUT - (CO)	P-#	PLUMBING FIXTURE CALLOUT
⊙	FLOOR LEVEL CLEANOUT - (FCO)	RPZ	REDUCED PRESSURE ZONE
○	PIPE UP	BFP	BACKFLOW PREVENTER
○	PIPE DOWN	V.I.F.	VERIFY IN FIELD
⊕ or ⊖	BALL VALVE	B.F.P.	BACKFLOW PREVENTER
⊕	GATE VALVE (G.V.)	A.F.F.	ABOVE FINISHED FLOOR
⊕	CHECK VALVE	HC	HANDICAP
⊕	STRAINER	CFH	CUBIC FEET PER HOUR (OF LP GAS)
⊕	GLOBE VALVE	ADJ.	ADJUSTABLE
⊕	PRESSURE REDUCING VALVE	P.C.	PLUMBING CONTRACTOR
⊕	GAS COCK	G.C.	GENERAL CONTRACTOR
⊕	BALANCE VALVE	UH	UNIT HEATER
RTU	ROOFTOP HVAC UNIT	GPM	GALLONS PER MINUTE
⊕	PIPE UNION	NPTF	NATIONAL PIPE THREAD FINE
⊕	DRAIN VALVE		
⊕	THERMOMETERS (STRAIGHT)-(DIAL)	--+	FIXTURE STOP
⊕	PRESSURE GAUGE	---	PIPE CAP
⊕	WATER METER	⊕	GAS METER

PLUMBING NOTES:

- CONTRACTOR RESPONSIBLE FOR PROVIDING ALL MATERIAL, LABOR, SUPERVISION AND TRANSPORTATION REQUIRED TO COMPLETE THE WORK DESCRIBED ON THESE DRAWINGS AND IN THE SPECIFICATIONS UNLESS NOTED OTHERWISE.
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND LOCATION IN THE FIELD.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
- ALL PIPING TO BE INSTALLED PER LOCAL, STATE, AND FEDERAL CODES.
- CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS AND MODIFICATIONS AS REQUIRED TO CLEAR BUILDING STRUCTURES.
- ALL PIPING TO BE PRESSURE TESTED BEFORE INSULATION. LEAVE VALVES OPEN, READY FOR OPERATION.
- INSULATE ALL COLD AND HOT WATER LINES INSTALLED.
- REPAIR OF ANY DAMAGE TO THE NEW CONSTRUCTION DURING THE EXECUTION OF THIS WORK SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.
- ALL EXPOSED PIPING/FITTINGS TO BE CHROME PLATED COPPER/BRASS.
- ALL WATER SUPPLY PIPING TO BE RIGID TYPE L COPPER UNLESS STATED OTHERWISE.
- ALL WASTE AND VENT PIPING TO BE CAST IRON OR DWV COPPER AS ALLOWED BY THE CT PLUMBING CODE. PVC PIPING SHALL NOT BE USED.
- ALL WASTE PIPING 4" AND UNDER TO HAVE A CLEANOUT EVERY 50 FT AND AT EACH CHANGE IN PIPE SIZE. NOT ALL CLEANOUTS SHOWN ON DRAWINGS. CLEANOUTS SHALL BE EVERY 100 FT PER PIPING OVER 4" IN SIZE AT AT EVERY CHANGE IN DIRECTION.
- PIPING RUNS ARE SHOWN AS REPRESENTATIVE OF REQUIRED SIZES. ROUTING MAY BE CHANGED BY CONTRACTOR AS NECESSITATED BY STRUCTURAL CONSIDERATIONS.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND ELEVATION OF PLUMBING FIXTURES.
- A WATER HAMMER ARRESTOR (MECHANICAL DEVICE) SHALL BE INSTALLED WHERE NOTED ON PLANS
- ALL DOMESTIC AND WASTE PIPING IS DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE TO PROVIDE COMPLETE AND WORKING FIXTURES.

NATURAL GAS PIPING NOTES:

- CONTRACTOR RESPONSIBLE FOR PROVIDING ALL MATERIAL, LABOR, SUPERVISION AND TRANSPORTATION REQUIRED TO COMPLETE THE WORK DESCRIBED ON THESE DRAWINGS.
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND LOCATION IN THE FIELD.
- ALL PIPING TO BE INSTALLED PER LOCAL, STATE AND FEDERAL CODES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PLUMBING PERMITS.
- ALL INTERIOR PIPING WILL BE SCHEDULE 40 BLACK STEEL PIPE W/ THREADED TYPE STEEL FITTINGS FOR PIPE SIZES 2" & BELOW. MALLEABLE OR DUCTILE IRON SCREW TYPE FITTINGS WILL BE USED. CAST IRON FITTINGS ARE NOT ALLOWED.
- VALVES: ALL VALVES WILL BE AGA APPROVED WITH AGA STAMPED ON VALVE BODY.
- PIPE SYSTEM WILL BE PRESSURE TESTED TO 1.5 TIMES THE SYSTEM OPERATING PRESSURE, BUT NO LESS THEN 3 PSIG.
- AFTER TESTING AND PRIOR TO PLACING PIPE SYSTEM IN SERVICE, THE GAS PIPE LINE WILL BE PURGED WITH CO2 OR NITROGEN GAS TO EXPEL AIR PRIOR TO CHARGING WITH FUEL GAS.
- ALL EQUIPMENT TO HAVE APPROVED GAS TRAINS.

MIXING VALVE SCHEDULE

UNIT NUMBER	MV-1	MV-2
MANUFACTURER	① LEONARD VALVE COMPANY	LEONARD VALVE COMPANY
MODEL	① TM-20-LF-E-RF	TM-800-LF
SERVICE	110°F HW FOR GWH-1	TW FOR FIXTURE P-7
TYPE	ADJ. THERMOSTATIC	ADJ. THERMOSTATIC
MIXED WATER TEMPERATURE (°F)	110	80
MIN. FLOW RATE (GPM)	1.0	3.0
EST. MAX. FLOW RATE (GPM)	4.0	20
MAX. FLOW RATE (GPM)	7.3 GPM @ 10 PSI P.D.	21 GPM @ 5 PSI P.D.
INLET PIPE SIZE (IN)	3/4" NPT	1" NPT
OUTLET PIPE SIZE (IN)	3/4" NPT	1-1/4" NPT

- PROVIDE ROUGH BRONZE FINISH FOR BOTH MIXING VALVES.
- PROVIDE OUTLET DIA. THERMOMETER FOR BOTH MIXING VALVES (NONE ON INLETS).
- PROVIDE OUTLET TEST CONNECTION BEFORE A BALL VALVE @ OUTLET FOR BOTH.
- BOTH MIXING VALVES SHALL BE MOUNTED EXPOSED ON WALLS, NO CABINET NECESSARY.

- ① MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE POWERS, BRADLEY, LAWLER OR EQUAL.

SUMP PUMP SCHEDULE

UNIT NUMBER	SP-1 & SP-2
SERVICE	PUMP ROOM
MANUFACTURER	③ ZOELLER PUMP CO.
MODEL NUMBER	③ M292
FLOW RATE (GPM)	30
TOTAL DYNAMIC HEAD (FT)	35
MODE	AUTOMATIC
CONNECTIONS	2" NPT
UNIT HORSEPOWER	1/2
VOLTS - PH	115V - 1Ø
AMP DRAW	15
REMARKS	① ②

- ① INTEGRAL FLOAT OPERATED MECHANICAL SWITCH, NO EXTERNAL CONTROL REQUIRED; 20 FT CORD. MOUNT IN PIT FLOOR.

- ② PROVIDE SINGLE PHASE SIMPLEX PLUG-IN CONTROL PANEL, ZOELLER MODEL #10-1019 WITH ALARM FLOAT ONLY (HIGH WATER ALARM). PROVIDE DRY CONTACTS FOR SCADA.

- ③ MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE PEABODY BARNERS, ABS PUMPS, OR EQUAL.



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

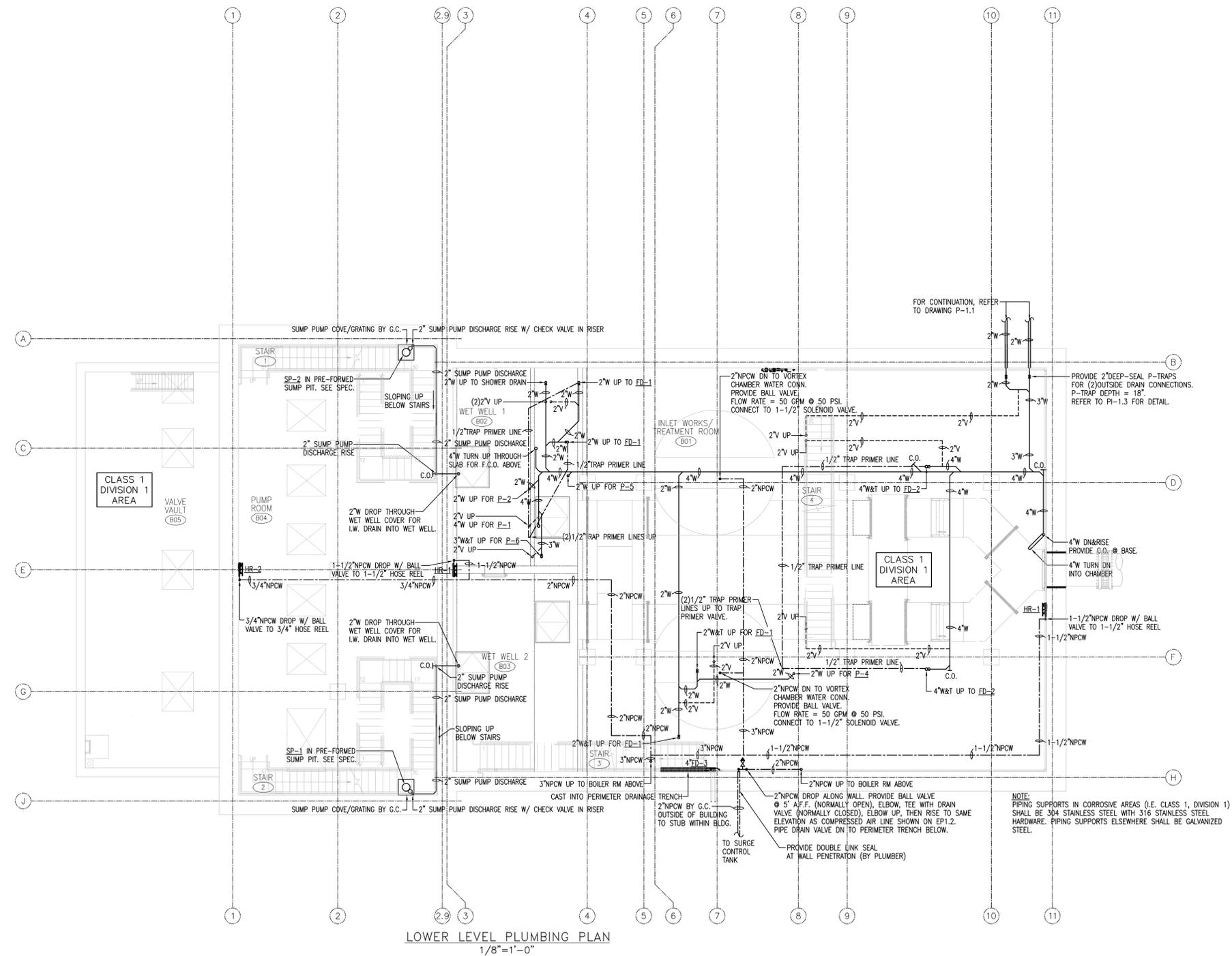
**PLUMBING LEGEND,
NOTES & SCHEDULES**

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

P-0.1

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

LOWER LEVEL
PLUMBING PLAN

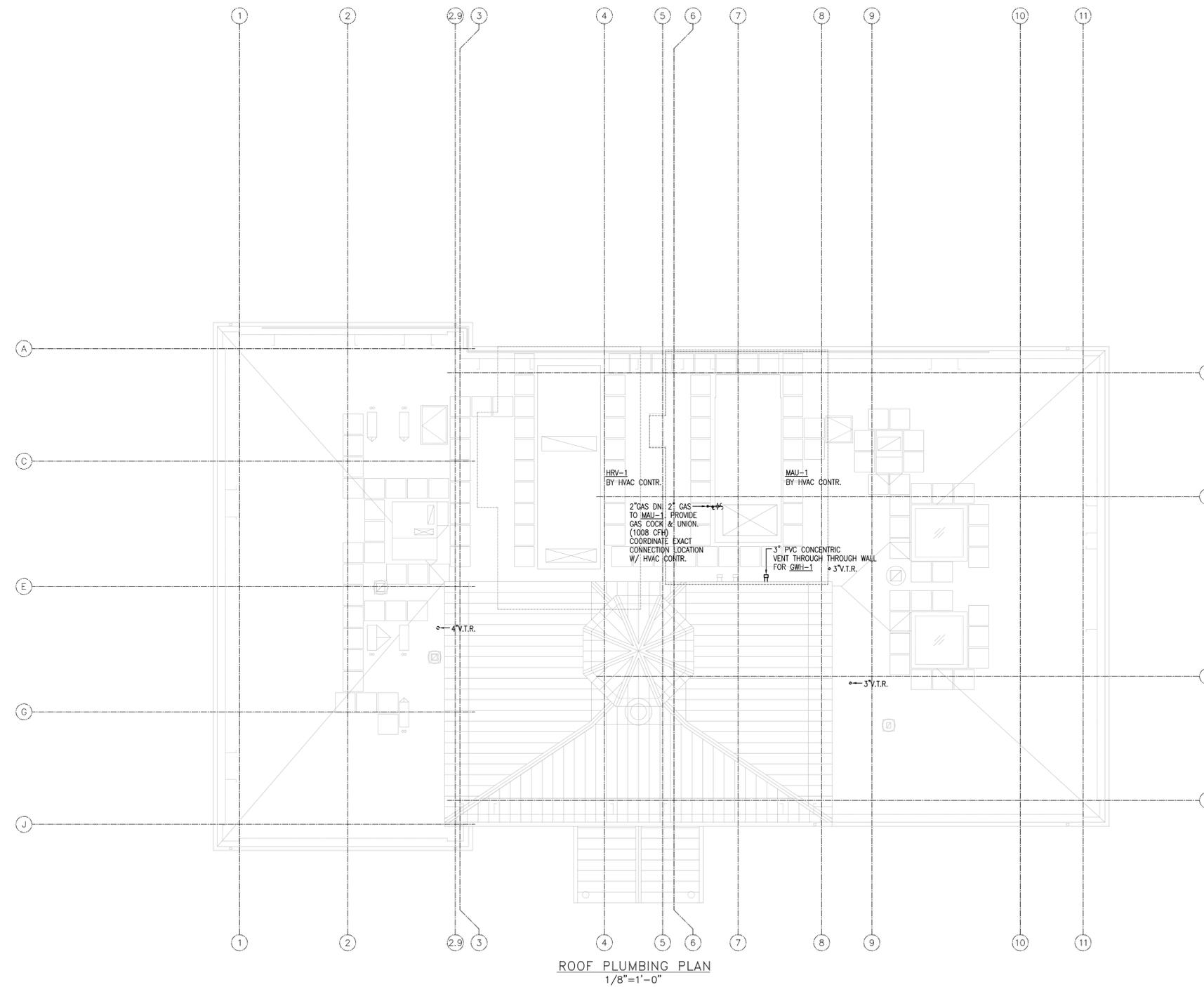
PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

P-1.2

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined-Pumping-Middletown-Pumping-Station.dwg PLOTTED: May 02, 2016 - 11:41am By: CRobinson



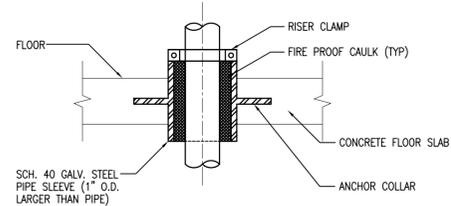
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

ROOF LEVEL
PLUMBING PLAN

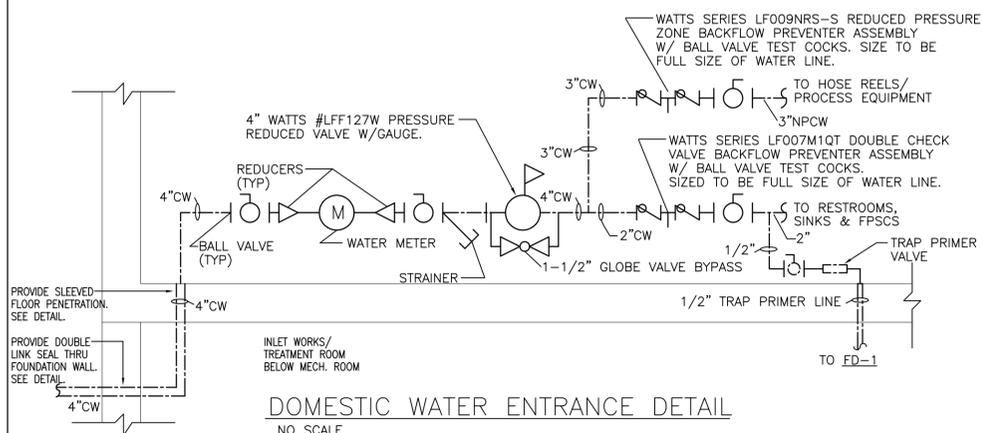
PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

P-1.3



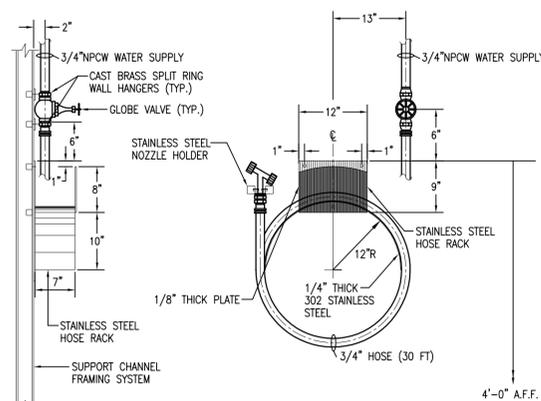
DETAIL OF PENETRATION WITH SLEEVE
NOT TO SCALE



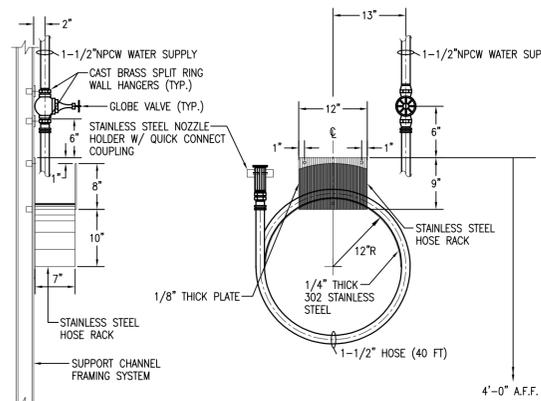
DOMESTIC WATER ENTRANCE DETAIL
NO SCALE

GENERAL NOTES:

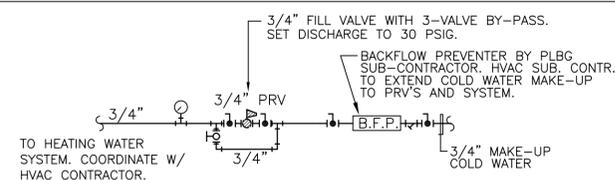
- OBTAIN PROPER SIZE AND TYPE WATER METERS FROM WATER DEPARTMENT. VERIFY WATER SERVICE CONFIGURATION WITH LOCAL WATER DEPARTMENT PRIOR TO INSTALLATION.
- SECURELY SUPPORT SERVICES WITH COPPER CLAD HANGERS AND SUPPORTS.
- PROVIDE PRESSURE GAUGES AT EACH SIDE OF PRESSURE REDUCING VALVE ASSEMBLY.
- STATIC PRESSURE AT SITE IS 130 PSI, SO PRV IS REQUIRED FOR THIS PROJECT.
- PLUMBING CONTRACTORS WORK STARTS AT 5'-0" OUTSIDE OF BUILDING.



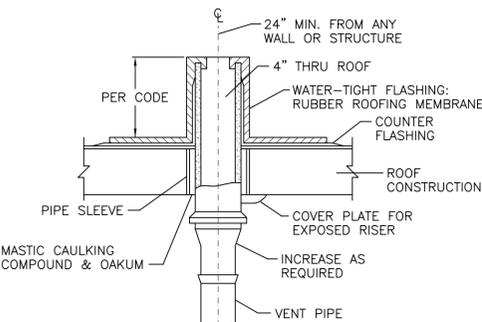
HOSE REEL DETAIL, HR-2
NOT TO SCALE



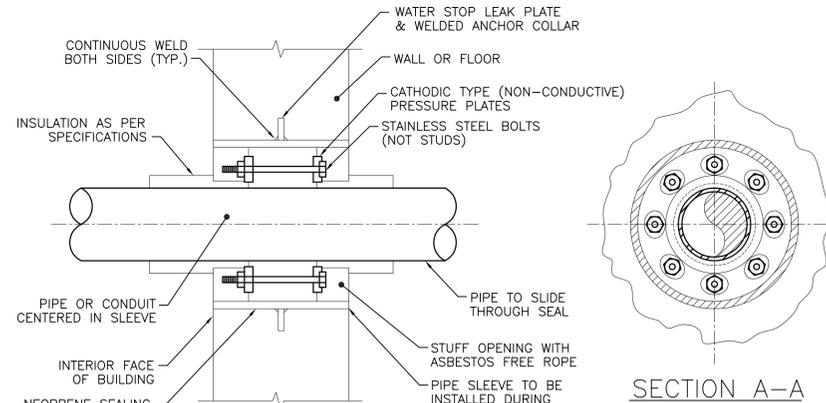
HOSE REEL DETAIL, HR-1
NOT TO SCALE



MECHANICAL ROOM: HEATING SYSTEM CW MAKE-UP PIPING DETAIL
NO SCALE

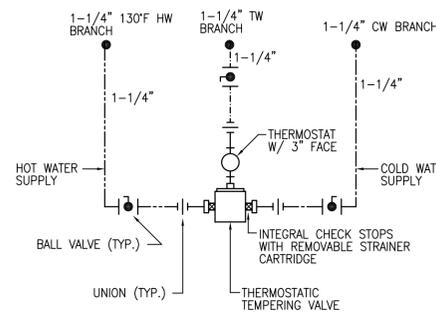


VENT THRU ROOF DETAIL
NO SCALE

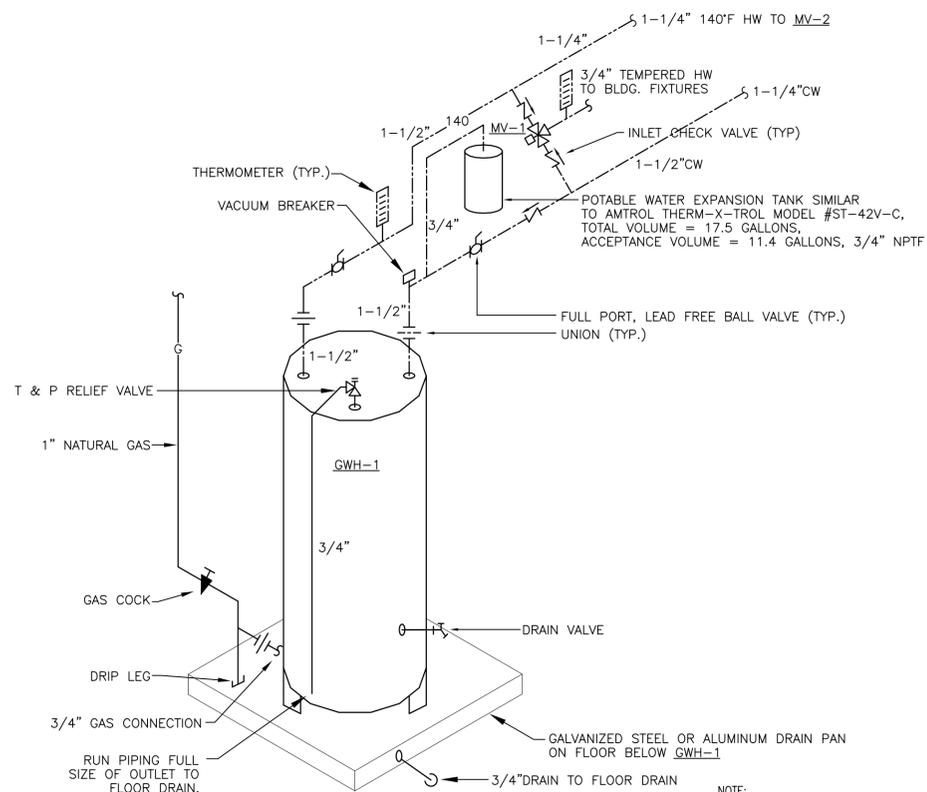


- NOTES:**
- WHEN SEALING FLOOR PENETRATIONS, EXTEND SLEEVE 3" ABOVE FINISHED FLOOR. WHEN CORE DRILL IS USED THE PIPE SLEEVE & WATER STOP/LEAK PLATE ARE NOT REQUIRED.
 - PROVIDE DOUBLE LINK-SEAL @ WATER PENETRATION.

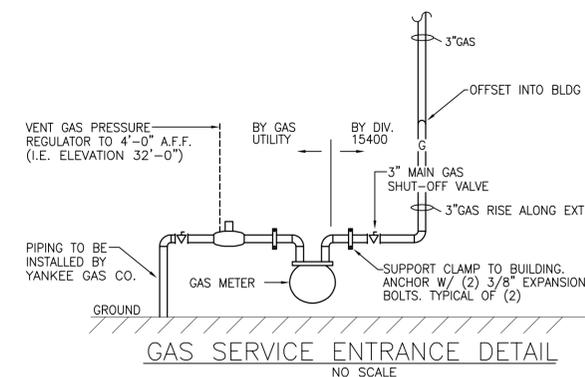
DETAIL OF WATER MAIN PIPING PENETRATION THROUGH FOUNDATION WALL
NOT TO SCALE WHERE SHOWN ON DRAWINGS



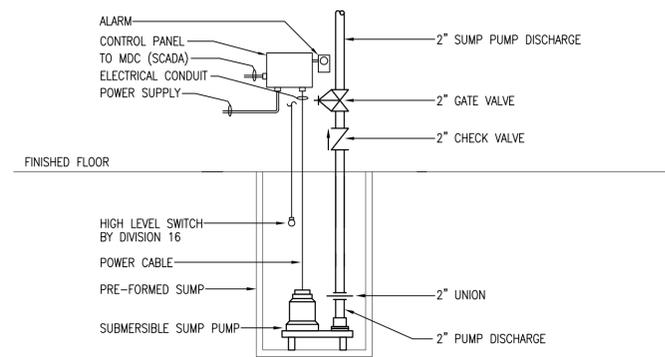
DETAIL OF PIPING AT THERMOSTATIC MIXING VALVE, MV-2
NOT TO SCALE



GAS FIRED WATER HEATER DETAIL (GWH-1)
NO SCALE



GAS SERVICE ENTRANCE DETAIL
NO SCALE



SUMP PUMP DETAIL (SP-1)
NO SCALE

CDR MAGUIRE
2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com

SEAMAN
ENGINEERING CORPORATION
30 Faith Ave. Auburn, MA 01501
508-832-3535 fx 508-832-3393

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

PLUMBING DETAILS

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

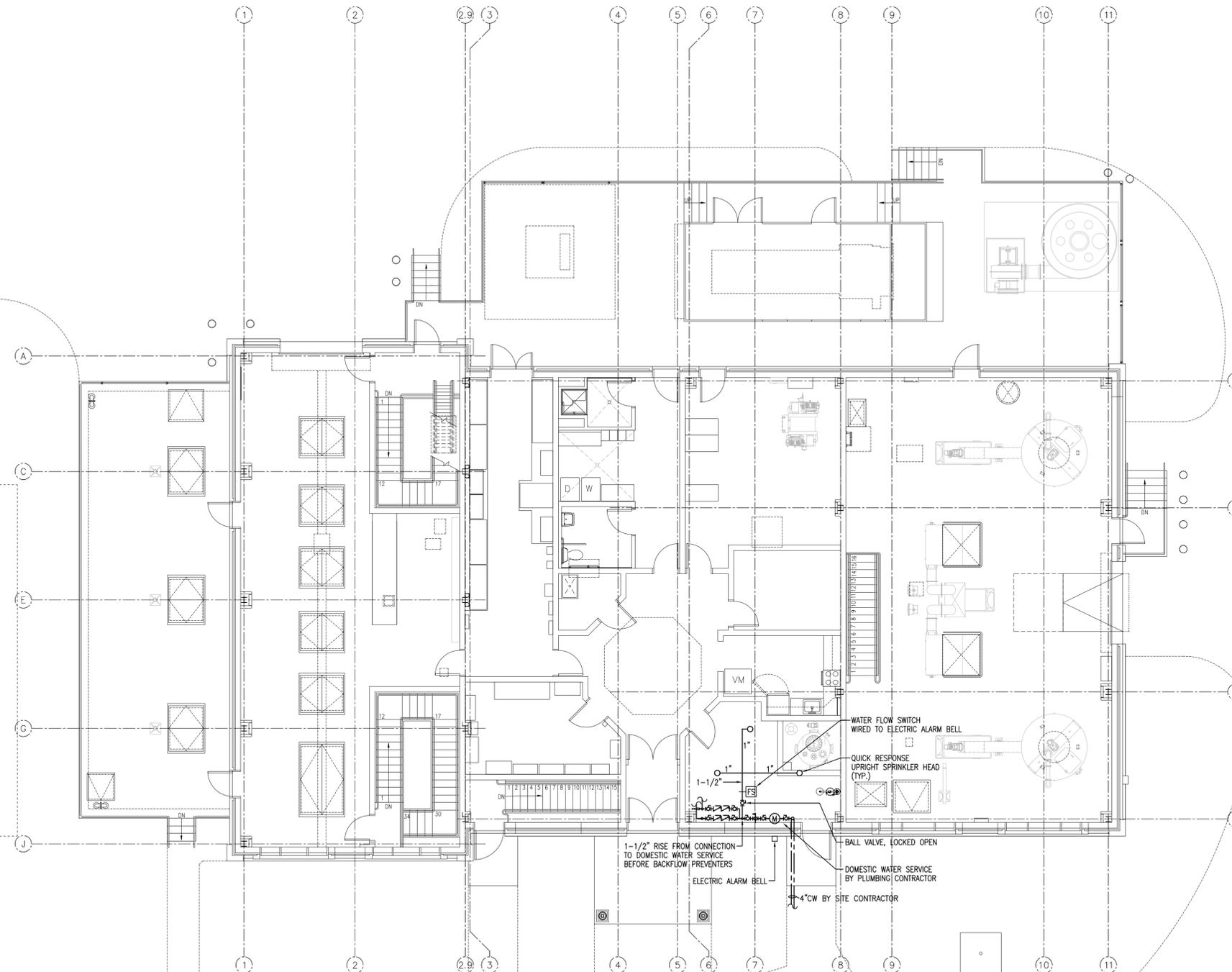
SHEET NUMBER:

P-5.1

SHEET 135 OF 155

DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined=Pumping-Middletown-Pumping-Station.dwg PLOTTED: May 02, 2016 - 11:42am By: CRobinson

DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\FP-Middletown-Pumping-Station.dwg PLOTTED: May 02, 2016 - 11:30am By: CRobinson



GROUND LEVEL FIRE PROTECTION PLAN
1/8"=1'-0"

- FIRE PROTECTION LEGEND**
- PROPOSED SPRINKLER PIPING, TYPE 'L' COPPER
 - PROPOSED QUICK RESPONSE UPRIGHT SPRINKLER HEAD
 - AHJ AUTHORITY HAVING JURISDICTION
 - FLOW SWITCH
 - LOCKING BALL VALVE

- FIRE PROTECTION GENERAL NOTES:**
1. THE PROPOSED SPRINKLER SYSTEM IS A LIMITED AREA SPRINKLER SYSTEM. THIS HAS BEEN REVIEWED WITH THE AUTHORITY HAVING JURISDICTION, BUT FORMAL SUBMISSION MUST BE MADE.
 2. DOCUMENTS SHALL BE PREPARED AND THE SYSTEM FURNISHED AND INSTALLED PURSUANT TO THE REQUIREMENTS OF NFPA 13 AND ALL OTHER APPLICABLE STATE AND LOCAL CODES. FLOW TEST DATA IS AS FOLLOWS:
DATE: DECEMBER 28, 2011
STATIC PRESSURE: 130 PSI
RESIDUAL PRESSURE: 120 PSI
FLOW RATE: 1093 GPM
FLOW HYDRANT: HYDRANT #1179
GAUGE HYDRANT: HYDRANT #529 ON MAIN STREET.
 3. SPRINKLER HEADS SHALL BE INTERMEDIATE TEMPERATURE CLASSIFICATION FOR SERVING THE MECHANICAL ROOM. QUICK RESPONSE SPRINKLER HEADS SHALL BE USED.
 4. ALL PIPING SHALL BE TYPE 'L' COPPER.

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

**FIRE PROTECTION
PLAN -
GROUND LEVEL**

PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:
FP-1.1

GENERAL SYMBOLS:

	CONDUIT CONCEALED IN CONSTRUCTION IN FINISHED AREAS, EXPOSED IN UNFINISHED AREAS
	UNDERGROUND CONDUIT (CONCRETE ENCASED)
	CONDUIT IN OR UNDER SLAB OR ROOF
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	HOMERUN TO LOCATION INDICATED, NO. OF TICKS INDICATES QUANTITY OF #12AWG WIRES OR OTHER SIZE AS INDICATED, IN 3/4" CONDUIT (QUANTITY INCLUDES GROUNDWIRE)
	1/3/5=CIRCUIT NUMBER(S), LP= PANEL NUMBER OR EQUIPMENT DESIGNATION, DASHED LINE INDICATES INSTALLATION IN OR UNDER SLAB
	HOMERUN TO LOCATION INDICATED, PHASE & GROUND CONDUCTOR SIZES & CONDUIT SIZE AS INDICATED DASHED LINE INDICATES INSTALLATION IN OR UNDER SLAB
	INSTRUMENTATION DEVICE, SSL IS DEVICE TYPE NUMERAL IS DEVICE NUMBER
	JUNCTION BOX (STAND ALONE OR EQUIPMENT MOUNTED)
	PULLBOX
	MANHOLE
	HANDHOLE
	SINGLE SPEED MAGNETIC STARTER
	2-SPEED STARTER
	SINGLE SPEED COMBINATION STARTER WITH DISCONNECT SWITCH
	2-SPEED COMBINATION STARTER WITH DISCONNECT SWITCH
	DISCONNECT SWITCH A=FRAME SWITCH, B=FUSE SIZE OR U IS UNFUSED
	DISCONNECT SWITCH (SIZE AS REQUIRED FOR CIRCUIT-HP RATED WHEN USED FOR A MOTOR)
	TRANSFORMER
	MANUAL MOTOR STARTER, THERMAL OVERLOAD SWITCH
	AUTOMATIC TRANSFER SWITCH N=NORMAL POWER SOURCE, E=EMERGENCY POWER SOURCE
	MOTOR NUMERAL, IF ANY, IS HORSEPOWER RATING
	PANELBOARD CABINET - SURFACE MOUNTED PANELBOARD ID AS INDICATED
	PANELBOARD CABINET - FLUSH MOUNTED PANELBOARD ID AS INDICATED
	PUSH BUTTON OPERATOR
	FLOAT SWITCH
	PRESSURE SWITCH
	SOLENOID VALVE
	CLOSED LIMIT SWITCH
	OPEN LIMIT SWITCH
	START/STOP PUSHBUTTON STATION

LIGHTING & POWER SYMBOLS:

	FLUORESCENT FIXTURE - SURFACE OR PENDANT MOUNT A=FIXTURE TYPE, 1=CIRCUIT NUMBER, a=SWITCH CONTROL NL= NIGHT LIGHT
	FLUORESCENT FIXTURE - TROFFER TYPE A=FIXTURE TYPE, 1=CIRCUIT NUMBER, a=SWITCH CONTROL NL= NIGHT LIGHT
	WALL MOUNTED LIGHT FIXTURE A=FIXTURE TYPE, 1=CIRCUIT NUMBER, PC=PHOTOELECTRIC CELL, e=SWITCH CONTROL
	SURFACE OR PENDANT MOUNTED LIGHT FIXTURE A=FIXTURE TYPE, 1=CIRCUIT NUMBER, e=SWITCH CONTROL, NL= NIGHT LIGHT
	FLOODLIGHT, MOUNTED ON WALL K=FIXTURE TYPE, PC=PHOTOELECTRIC CELL
	EXIT SIGN, WALL MOUNTED, SINGLE SIDE/DOUBLE SIDED ARROW INDICATES DIRECTION TO EXIT NO ARROW INDICATES SIGN IS ABOVE EXIT
	EXIT SIGN, CEILING MOUNTED ARROW INDICATES DIRECTION TO EXIT
	LIGHT STANDARD AND BASE M=FIXTURE TYPE
	FLOODLIGHT, MOUNTED ON GROUND M=FIXTURE TYPE
	EMERGENCY LIGHT, BATTERY OPERATED
	EMERGENCY LIGHT, REMOTE HEAD
	SINGLE POLE SWITCH, a=LIGHTS CONTROLLED
	DOUBLE POLE SWITCH, a=LIGHTS CONTROLLED
	THREE-WAY SWITCH, a=LIGHTS CONTROLLED
	FOUR-WAY SWITCH, a=LIGHTS CONTROLLED
	SWITCH WITH PILOT LIGHT, a=LIGHTS CONTROLLED
	DIMMER SWITCH
	MOTION DETECTOR CONTROLLED LIGHT SWITCH
	MOTION SENSOR FOR CONTROLLING LIGHT
	SINGLE OUTLET, 20 AMP WP=WEATHERPROOF GFI=GROUND FAULT CIRCUIT INTERRUPTER, EXP=EXPLOSION PROOF,
	DUPLEX CONVENIENCE OUTLET, 20-AMP, 3=CIRCUIT NUMBER, WP=WEATHER PROOF, CR=CORROSION RESISTANT
	QUADRUPLUX OUTLET, 20 AMP
	RECESSED WALL RECEPTACLE FOR ELECTRIC CLOCK
	SPECIAL RECEPTACLE, TYPE & RATING AS NOTED
	DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTER
	FLOOR BOX WITH OUTLET, TYPE AS INDICATED
	SURFACE RACEWAY-QUANTITY, TYPE, AND LOCATION OF RECEPTACLES AS INDICATED
	BATTERY
	BATTERY CHARGER
	BLOCK HEATER

FIRE & SECURITY SYMBOLS:

	FIRE ALARM CONTROL PANEL
	FIRE ALARM PULL STATION
	FIRE ALARM HORN & LIGHT
	FIRE ALARM STROBE
	FIROMATIC SWITCH
	SMOKE DETECTOR
	DUCT SMOKE DETECTOR
	DUAL TECHNOLOGY CEILING, MOUNTED MOTION DETECTOR
	GAS DETECTOR
	COMBINATION FIXED TEMPERATURE AND RATE-OF-RISE HEAT DETECTOR, NUMERAL IS TEMPERATURE RATING (*), SEC 16850
	SECURITY SYSTEM CONTROL PANEL
	DOOR CONTACT SWITCH OHD = OVERHEAD DOOR TYPE
	DUCT SMOKE DETECTOR REMOTE TEST SWITCH
	ALARM HORN, F=FIRE ALARM
	ALARM HORN & STROBE LIGHT
	CLOSED CIRCUIT TV CAMERA
	END-OF-LINE RESISTOR
	AUTODIALER
	ARMING KEYPAD
	ALARM BELL
	ALARM SYSTEM WIRING
	KEYPAD FOR ACCESS CODE ENTRY
	REMOTE TEST SWITCH (FOR DUCT SMOKE DETECTOR)

COMMUNICATION SYMBOLS:

	COMMUNICATIONS SYSTEM OUTLET
	FLUSH WALL TELEPHONE OUTLET
	FLUSH WORK STATION OUTLET 1 VOICE, 2 DATA
	TELEPHONE CABINET

HVAC SYMBOLS:

	LOUVER MOTOR
	DAMPER MOTOR
	SHUTTER MOTOR
	HEATING THERMOSTAT
	FAN CONTROLLER
	VENTILATION THERMOSTAT
	VENTILATION CONTROL PANEL
	AIR CONDITIONING THERMOSTAT
	HEATING & AIR CONDITIONING CONTROL PANEL
	HEATING & VENTILATION CONTROL PANEL
	HEAT TRACING CONTROLLER
	HEATING CABLE

ABBREVIATIONS:

#	ITEM IDENTIFICATION NUMBER
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TV
CKT	CIRCUIT
CP	CONTROL PANEL
CP-1	CIRCULATION PUMP (1/50 HP)
CPT	CONTROL POWER TRANSFORMER 480 VOLTS - 120/240 VOLTS, UNLESS OTHERWISE INDICATED
DISC SW	DISCONNECT SWITCH
DWG	DRAWING
DVR	DIGITAL VIDEO RECORDER
EF	EXHAUST FAN
ES	EMERGENCY STOP
EUH	ELECTRIC UNIT HEATER
EXP	EXPLOSION-PROOF
FVNR	FULL VOLTAGE NON-REVERSING
G	GROUND
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
ID	IDENTIFICATION
L	LOUVER
LCP	LOCAL CONTROL PANEL
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MOV	MOTOR OPERATED VALVE
MTD	MOUNTED
NEEIT	NUMBER
NTS	NOT TO SCALE
OL	OVERLOAD
PC	PERSONAL COMPUTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL CONDUIT
RVNR	REDUCED VOLTAGE NON-REVERSING
RTU	REMOTE TERMINAL UNIT
SCH 40	SCHEDULE 40 PVC CONDUIT
3/C SH	3-CONDUCTOR SHIELDED CABLE
SOL	SOLENOID VALVE
SPD	SURGE PROTECTION DEVICE
SS	STAINLESS STEEL
ST	SWITCH (THERMAL RATED FOR MOTORS)
SW	SWITCH
TS	TEMPERATURE SWITCH
TSP	TWISTED, SHIELDED PAIR
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER, HYDRONIC OR GAS-FIRED
UPS	UNINTERRUPTABLE POWER SUPPLY
WP	WEATHERPROOF
WWTF	WASTEWATER TREATMENT FACILITY

AREA CLASSIFICATIONS:

	INDICATES THAT ALL ELECTRICAL MATERIALS AND EQUIPMENT INSTALLED IN THE ROOM OR DEMARCATED AREA SHALL BE OF WATER RESISTANT OR NEMA 4 CONSTRUCTION SUITABLE FOR USE IN A DAMP LOCATION
	INDICATES THAT ALL ELECTRICAL MATERIALS AND EQUIPMENT INSTALLED IN THE ROOM OR DEMARCATED AREA SHALL BE OF WATERTIGHT OR NEMA 4 CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION

	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND INSTALLATION MATERIALS AND METHODS WITHIN THE ROOM OR DEMARCATED AREA SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION (ARTICLE 501 FOR CLASS I AREA, ARTICLE 502 FOR CLASS II AREA, ARTICLE 503 FOR CLASS III AREA)
	INDICATES THAT ALL ELECTRICAL MATERIALS INSTALLED IN THE ROOM OR DEMARCATED AREA SHALL BE OF CORROSION RESISTANT, AND WATERTIGHT OR NEMA 4X CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION AND RESISTANT TO THE CHEMICALS OR CORROSIVE ENVIRONMENT WITHIN THE AREA.



Tighe & Bond
Consulting Engineers
www.tighebond.com

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



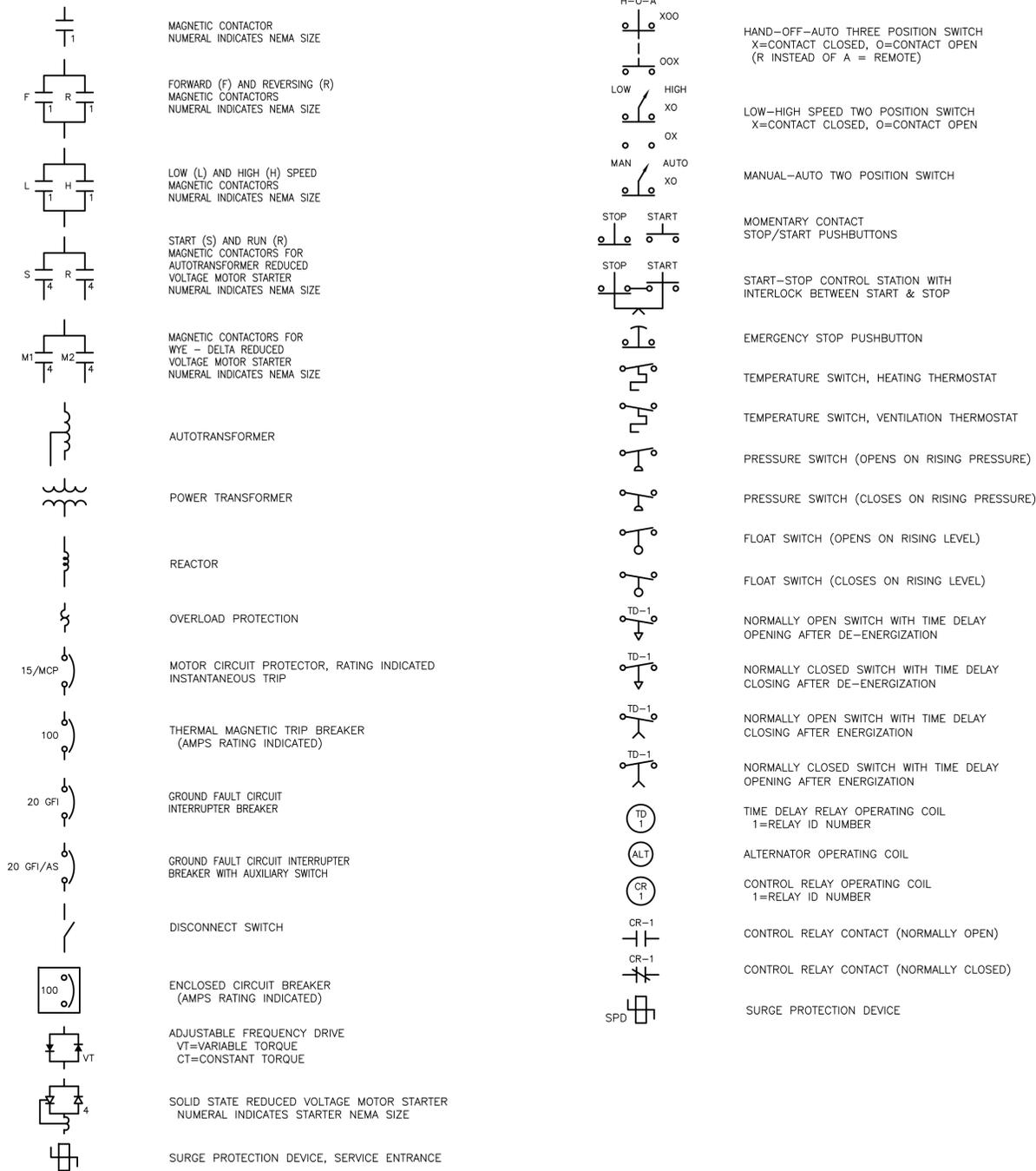
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

ELECTRICAL LEGEND AND NOTES

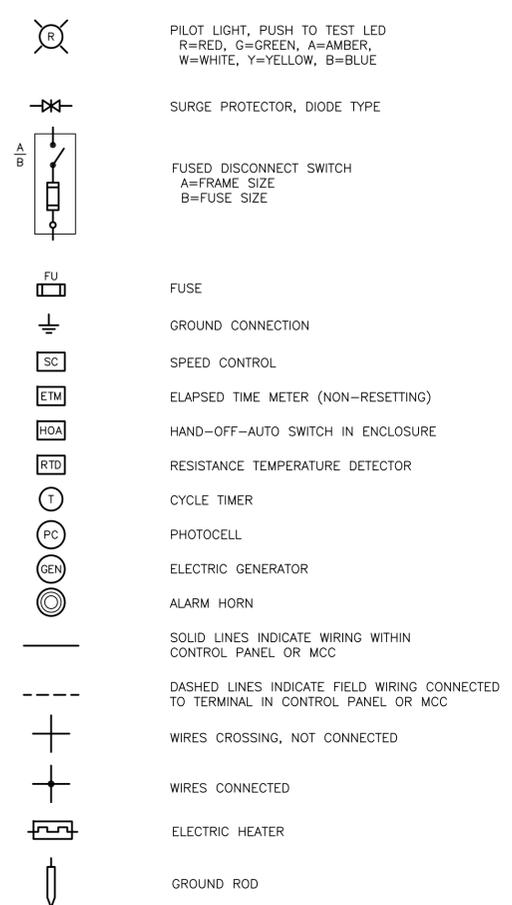
PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:
E-0.1

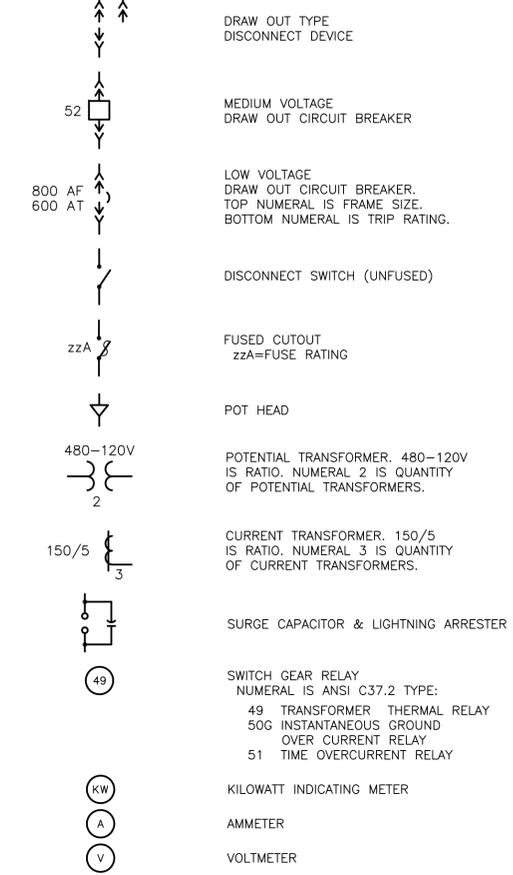
SCHEMATIC SYMBOLS:



SCHEMATIC SYMBOLS:



SWITCHGEAR SYMBOLS:



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

**ELECTRICAL LEGEND
AND NOTES**

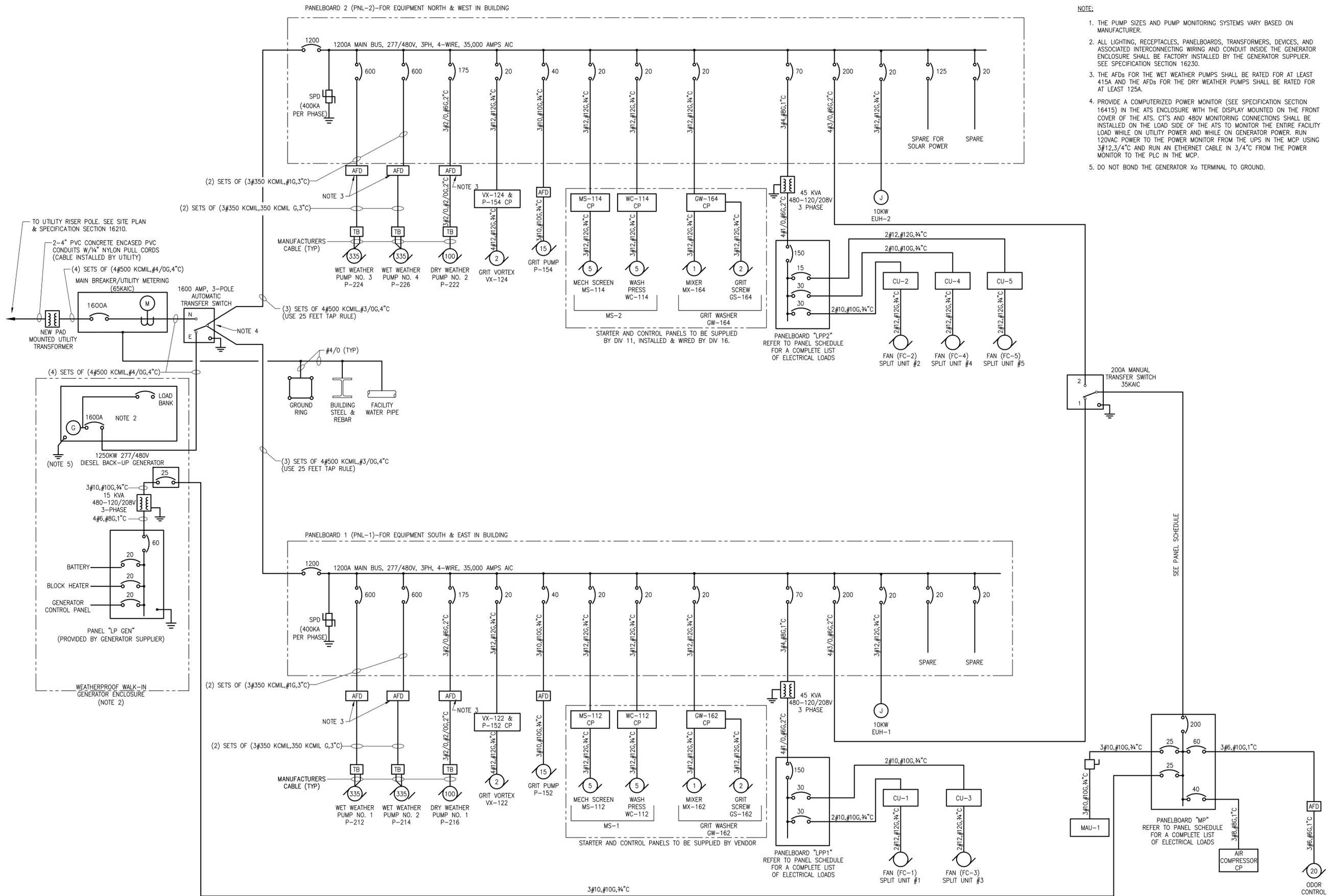
PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

E-0.2

DRAWING FILE: C:\Projects\VA\1325\VA-02.dwg PLOTTER: May 05:2016 10:11am BRJ: rj

DRAWING FILE: C:\Projects\MA\13292\13292-11.dwg PLOTDATE: May 05 2016 10:12:00am BY: rj



- NOTE:
1. THE PUMP SIZES AND PUMP MONITORING SYSTEMS VARY BASED ON MANUFACTURER.
 2. ALL LIGHTING, RECEPTACLES, PANELBOARDS, TRANSFORMERS, DEVICES, AND ASSOCIATED INTERCONNECTING WIRING AND CONDUIT INSIDE THE GENERATOR ENCLOSURE SHALL BE FACTORY INSTALLED BY THE GENERATOR SUPPLIER. SEE SPECIFICATION SECTION 16230.
 3. THE AFDs FOR THE WET WEATHER PUMPS SHALL BE RATED FOR AT LEAST 415A AND THE AFDs FOR THE DRY WEATHER PUMPS SHALL BE RATED FOR AT LEAST 125A.
 4. PROVIDE A COMPUTERIZED POWER MONITOR (SEE SPECIFICATION SECTION 16415) IN THE ATS ENCLOSURE WITH THE DISPLAY MOUNTED ON THE FRONT COVER OF THE ATS. CT'S AND 480V MONITORING CONNECTIONS SHALL BE INSTALLED ON THE LOAD SIDE OF THE ATS TO MONITOR THE ENTIRE FACILITY LOAD WHILE ON UTILITY POWER AND WHILE ON GENERATOR POWER. RUN 120VAC POWER TO THE POWER MONITOR FROM THE UPS IN THE MCP USING 3#12, 3/4\"/>
 - 5. DO NOT BOND THE GENERATOR X₀ TERMINAL TO GROUND.

CDR MAGUIRE
 2080 Silas Deane Highway
 Rocky Hill, Connecticut
 TEL. (860) 563-3158
 www.cdrmaguire.com

Tighe & Bond
 Consulting Engineers
 www.tighebond.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



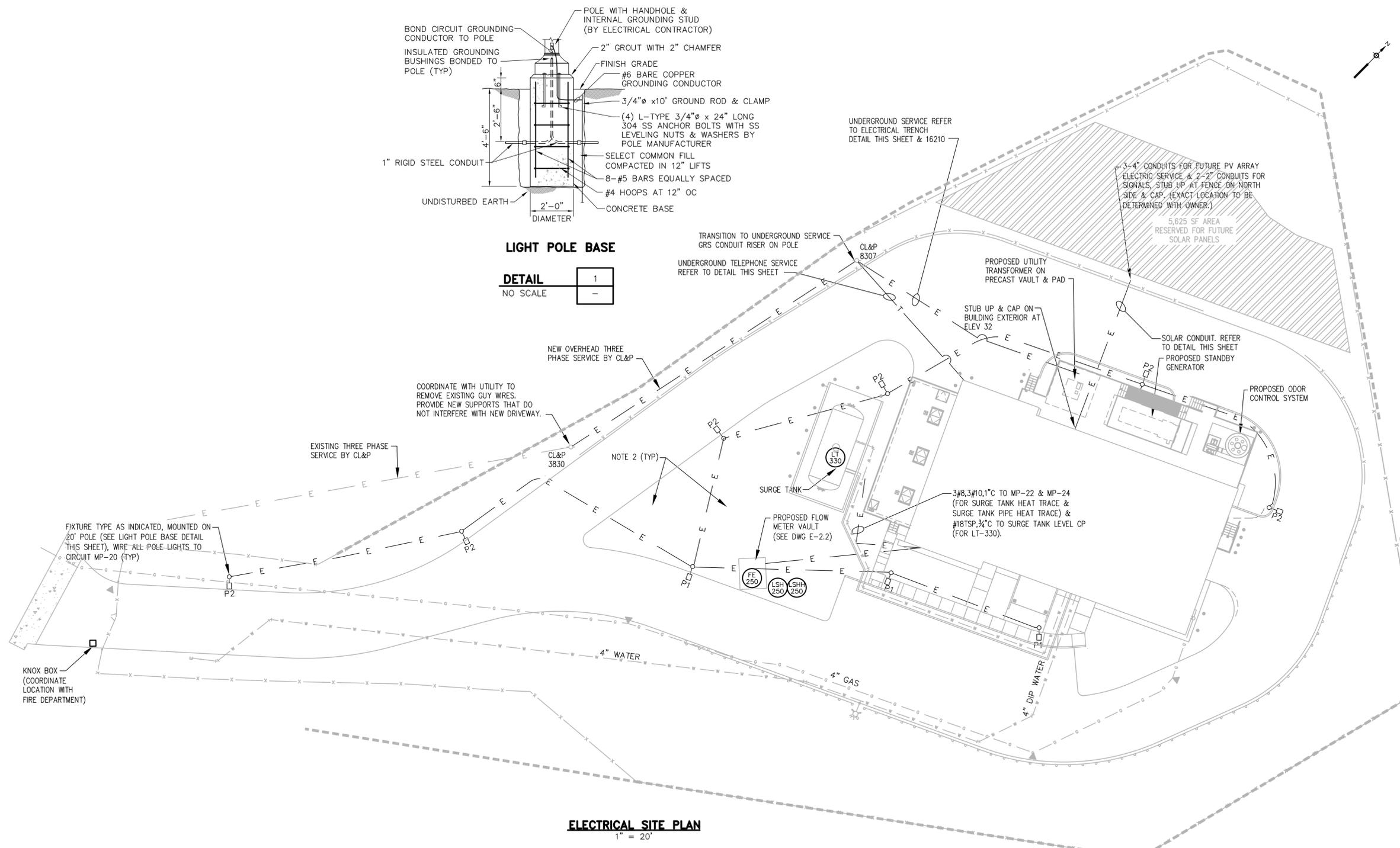
FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

ONE-LINE DIAGRAM

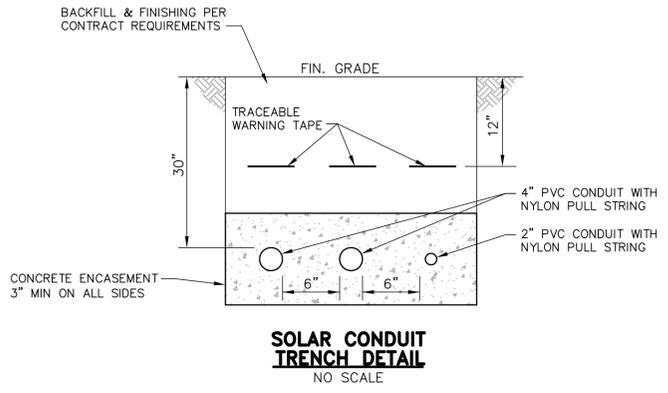
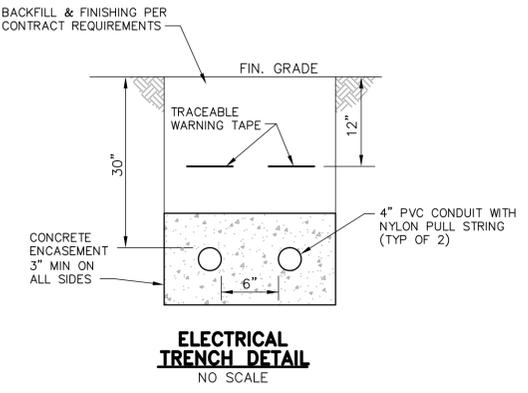
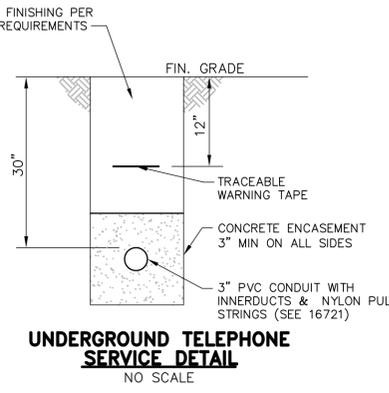
PROJECT NUMBER: 14712
 DESIGNED BY: MJR
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016
 SHEET NUMBER:

E-1.1

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



ELECTRICAL SITE PLAN
 1" = 20'



- NOTES:**
- ALL EXTERIOR CONDUITS ENTERING THE BUILDING FROM OUTDOORS/BELOW GRADE LOCATION SHALL ENTER THE BUILDING ABOVE ELEVATION 31 (1 FOOT AFF), UNLESS OTHERWISE INDICATED ON E-5.1.
 - CONDUIT FOR POLE LIGHTING SHALL BE CONCRETE ENCASED (MIN 3" AROUND ALL SIDES) BELOW PAVEMENT. FEED ALL POLE LIGHTING FROM CIRCUIT MP-20 USING 3#10, 3/4"C.

DRAWING FILE: C:\Projects\14712\14712-E-1.2.dwg PLOTTED: May 05, 2016 10:01:30am BR: rj



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

**ELECTRICAL
 SITE PLAN**

PROJECT NUMBER: 14712
 DESIGNED BY: MJR
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

E-1.2

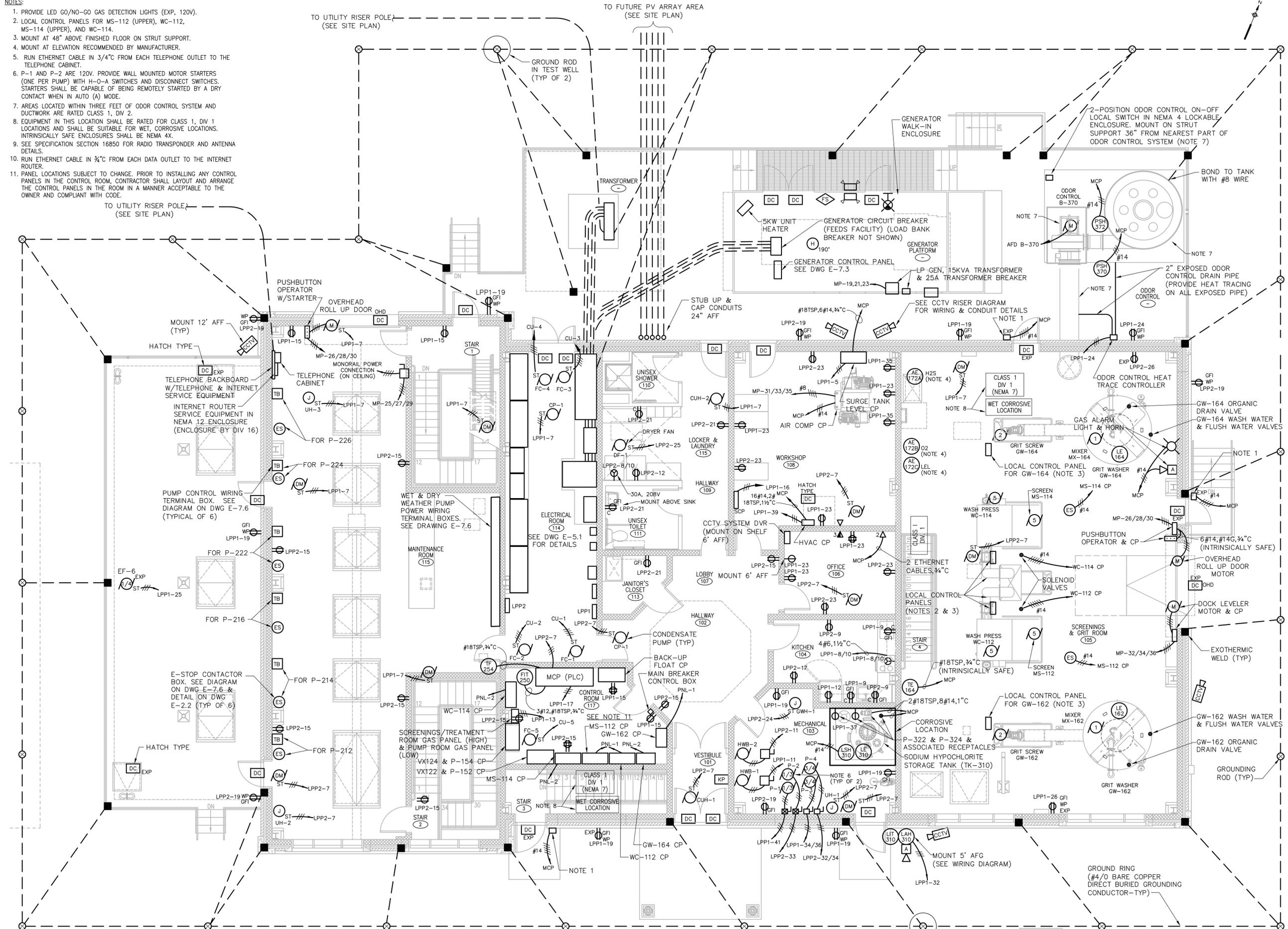
NOTES:

1. PROVIDE LED GO/NO-GO GAS DETECTION LIGHTS (EXP, 120V).
2. LOCAL CONTROL PANELS FOR MS-112 (UPPER), WC-112, MS-114 (UPPER), AND WC-114.
3. MOUNT AT 48" ABOVE FINISHED FLOOR ON STRUT SUPPORT.
4. MOUNT AT ELEVATION RECOMMENDED BY MANUFACTURER.
5. RUN ETHERNET CABLE IN 3/4" FROM EACH TELEPHONE OUTLET TO THE TELEPHONE CABINET.
6. P-1 AND P-2 ARE 120V. PROVIDE WALL MOUNTED MOTOR STARTERS (ONE PER PUMP) WITH H-O-A SWITCHES AND DISCONNECT SWITCHES. STARTERS SHALL BE CAPABLE OF BEING REMOTELY STARTED BY A DRY CONTACT WHEN IN AUTO (A) MODE.
7. AREAS LOCATED WITHIN THREE FEET OF ODOR CONTROL SYSTEM AND DUCTWORK ARE RATED CLASS 1, DIV 2.
8. EQUIPMENT IN THIS LOCATION SHALL BE RATED FOR CLASS 1, DIV 1 LOCATIONS AND SHALL BE SUITABLE FOR WET, CORROSIVE LOCATIONS. INTRINSICALLY SAFE ENCLOSURES SHALL BE NEMA 4X.
9. SEE SPECIFICATION SECTION 16850 FOR RADIO TRANSPONDER AND ANTENNA DETAILS.
10. RUN ETHERNET CABLE IN 3/4" FROM EACH DATA OUTLET TO THE INTERNET ROUTER.
11. PANEL LOCATIONS SUBJECT TO CHANGE. PRIOR TO INSTALLING ANY CONTROL PANELS IN THE CONTROL ROOM, CONTRACTOR SHALL LAYOUT AND ARRANGE THE CONTROL PANELS IN THE ROOM IN A MANNER ACCEPTABLE TO THE OWNER AND COMPLIANT WITH CODE.

TO UTILITY RISER POLE (SEE SITE PLAN)

TO FUTURE PV ARRAY AREA (SEE SITE PLAN)

TO UTILITY RISER POLE (SEE SITE PLAN)



GROUND LEVEL ELECTRICAL POWER PLAN
3/16"=1'-0"

CDR MAGUIRE
2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



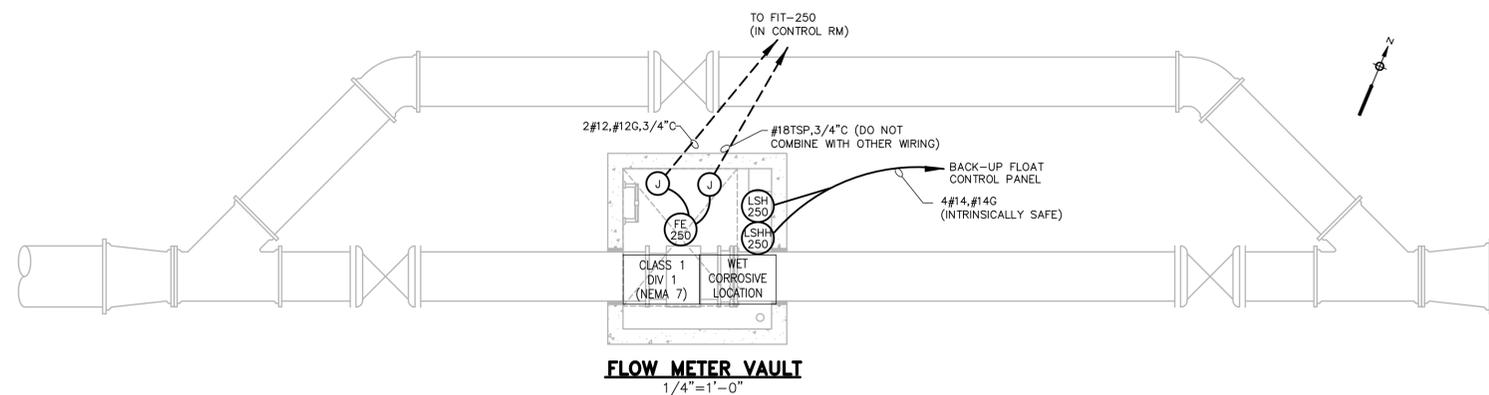
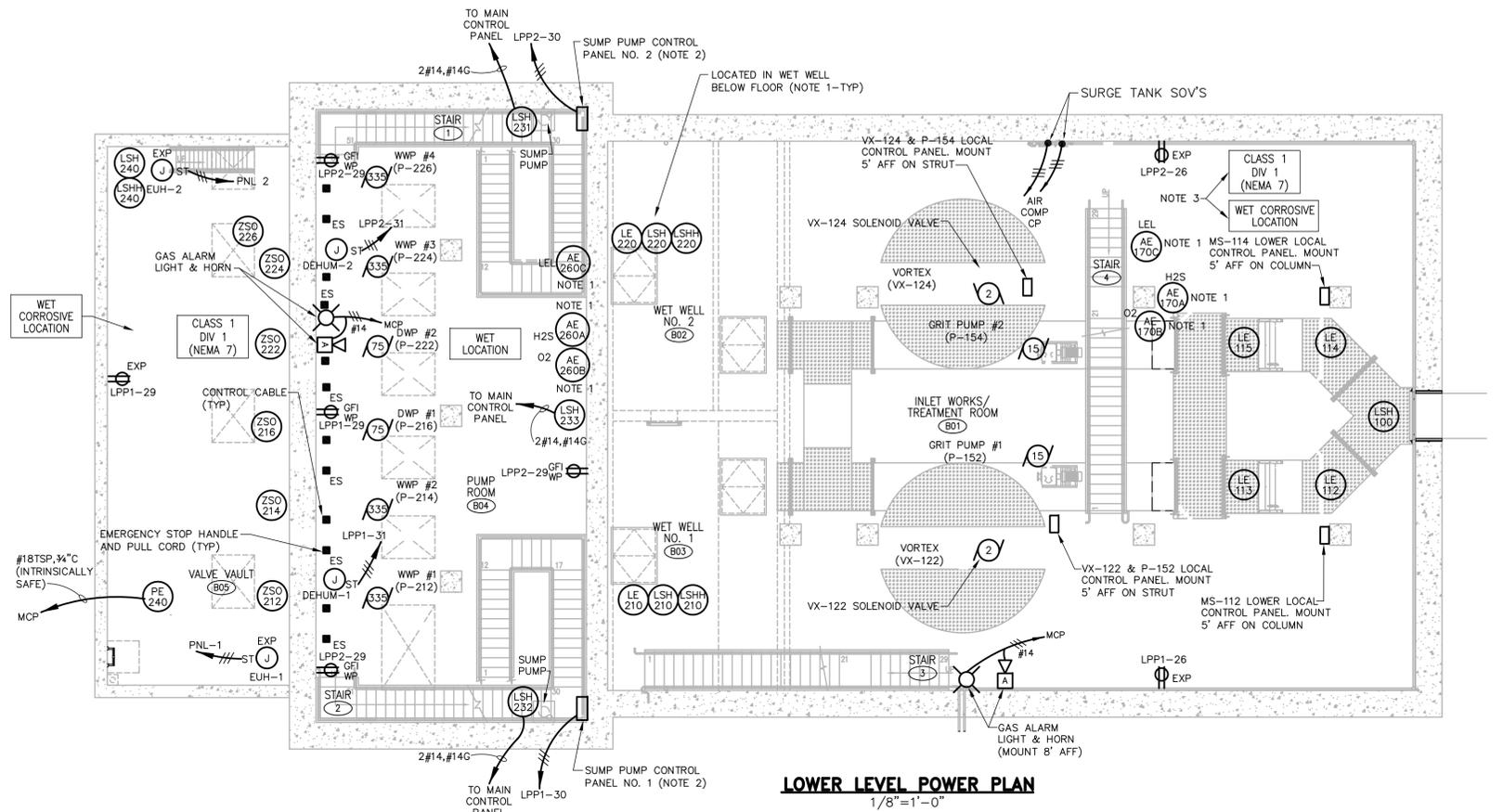
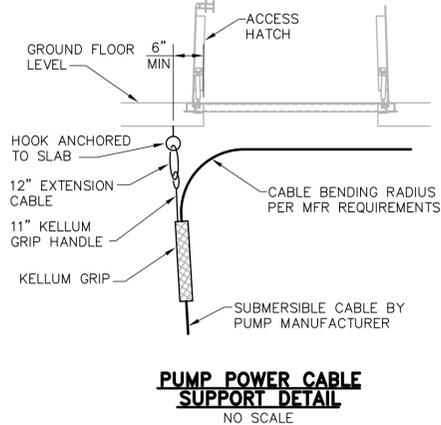
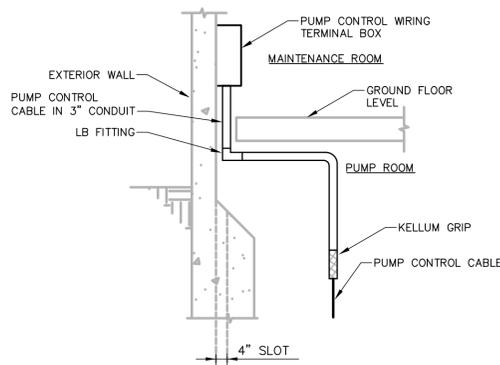
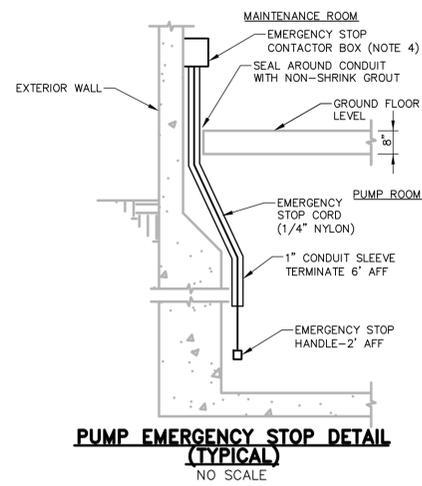
FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

GROUND LEVEL ELECTRICAL POWER PLAN

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:
E-2.1

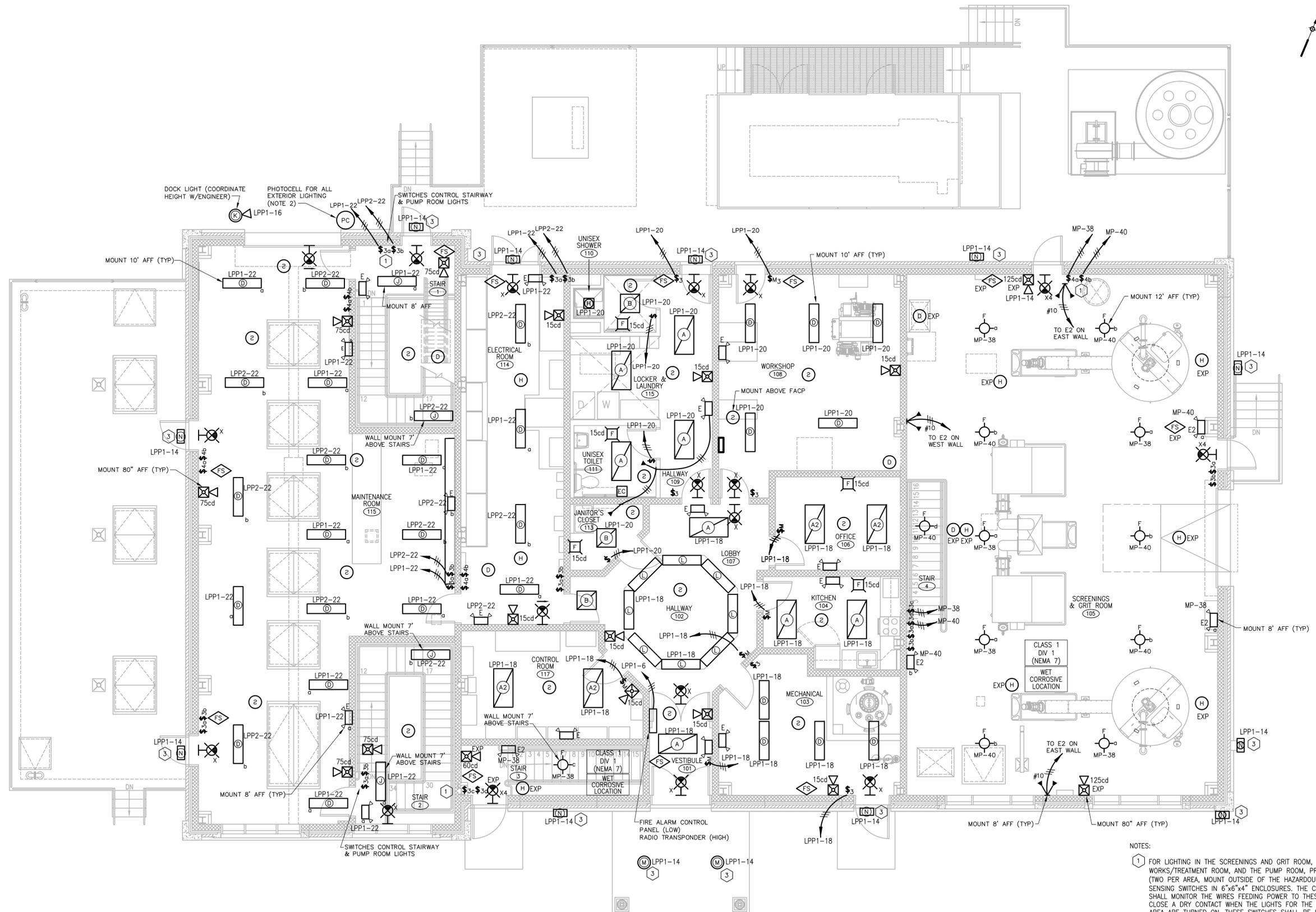
REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



NOTES:

1. MOUNT AT ELEVATION RECOMMENDED BY MANUFACTURER.
2. RUN 2#12, #12G, 3/4\"/>

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



GROUND LEVEL ELECTRICAL LIGHTING & FIRE ALARM PLAN
3/16"=1'-0"

- NOTES:
- FOR LIGHTING IN THE SCREENINGS AND GRIT ROOM, THE INLET WORKS/TREATMENT ROOM, AND THE PUMP ROOM, PROVIDE SIX REMOTE (TWO PER AREA, MOUNT OUTSIDE OF THE HAZARDOUS AREA) AC CURRENT SENSING SWITCHES IN 6"x6"x4" ENCLOSURES. THE CURRENT SWITCHES SHALL MONITOR THE WIRES FEEDING POWER TO THESE LIGHTS AND SHALL CLOSE A DRY CONTACT WHEN THE LIGHTS FOR THE CORRESPONDING AREA ARE TURNED ON. THESE SWITCHES SHALL BE USED BY THE HVAC CONTRACTOR FOR OCCUPANCY SENSING IN THE AREAS.
 - PROVIDE ONE PHOTOCELL TO CONTROL ALL EXTERIOR LIGHTING. PROVIDE LIGHTING CONTACTORS AS REQUIRED. SUBMIT ON CIRCUIT CONTROL AND POWER WIRING DIAGRAM.
 - EXTERIOR LIGHTING TO BE CONTROLLED BY A PHOTOCELL. REFER TO SITE LIGHTING ON DRAWING E-1.2.



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

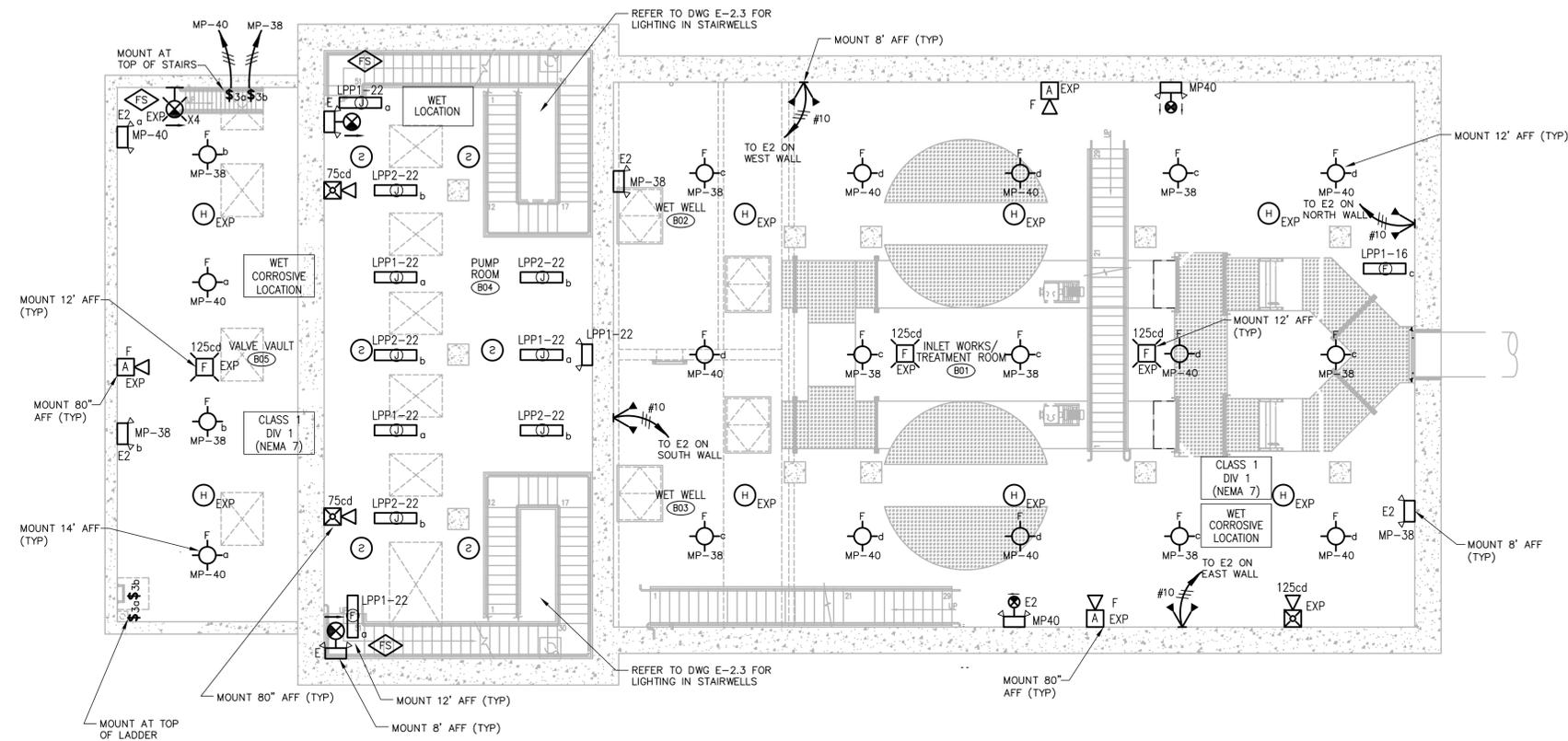
**GROUND LEVEL
ELECTRICAL
LIGHTING PLAN**

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

E-2.3

DRAWING FILE: C:\Projects\VA\13292\E-2.3.dwg PLOTTED: May 05, 2016 10:01:01 from BR: rj

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



LOWER LEVEL ELECTRICAL LIGHTING & FIRE ALARM PLAN
1/8"=1'-0"



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

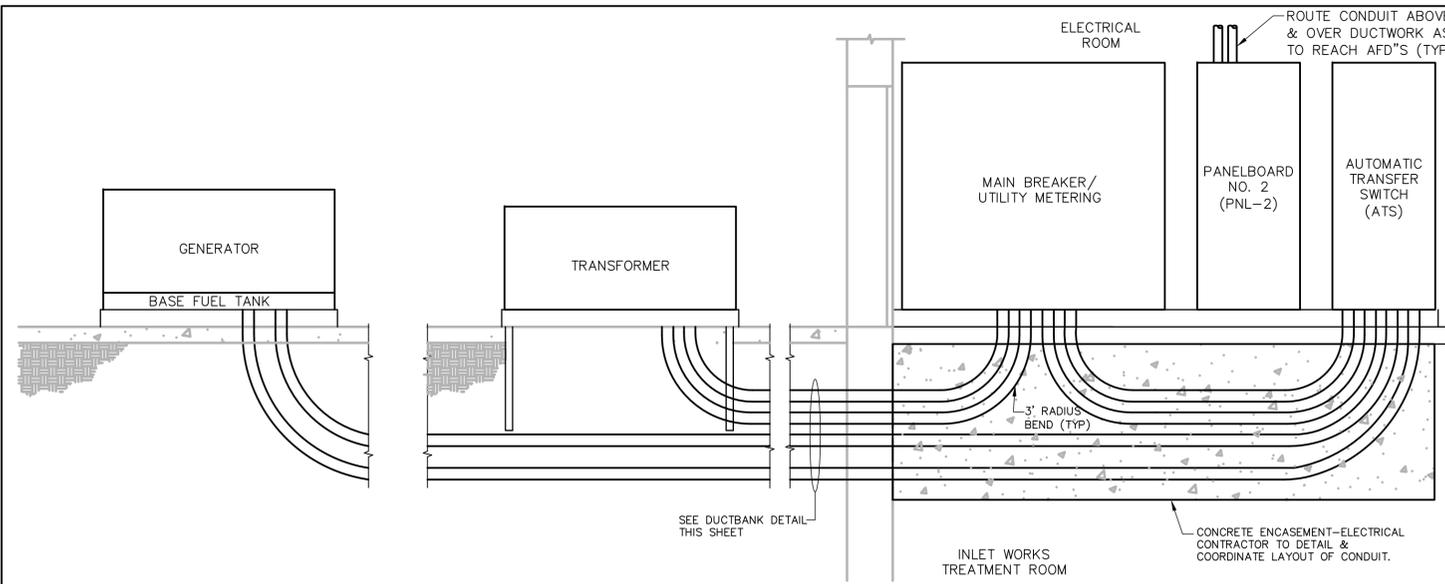
MIDDLETOWN, CT

LOWER LEVEL
ELECTRICAL
LIGHTING PLAN

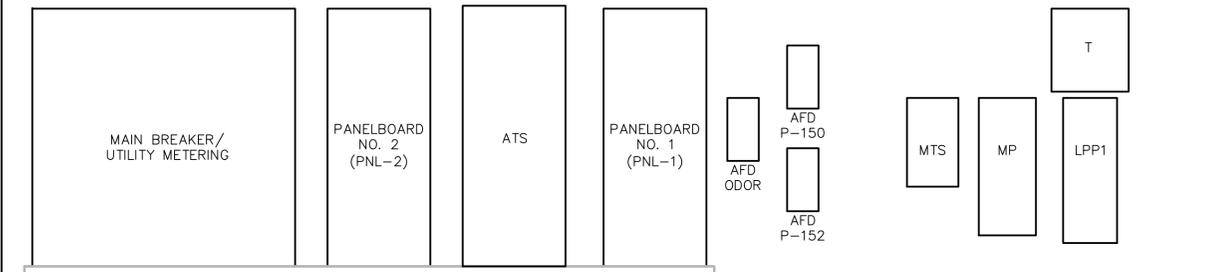
PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

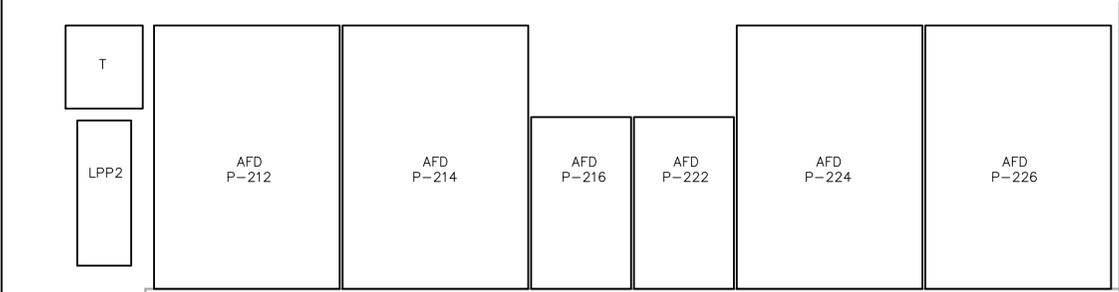
E-2.4



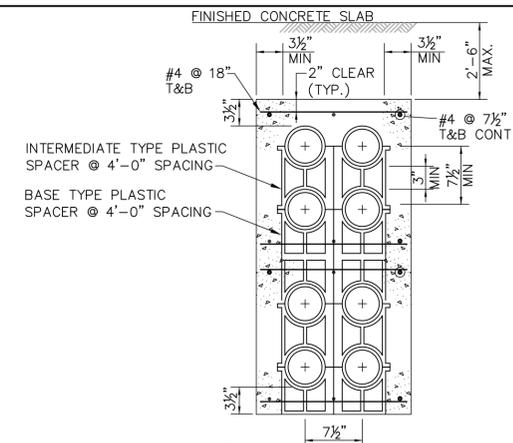
**ELECTRIC SERVICE
CONCRETE ENCASED DUCTBANK ENTRANCE**
NO SCALE



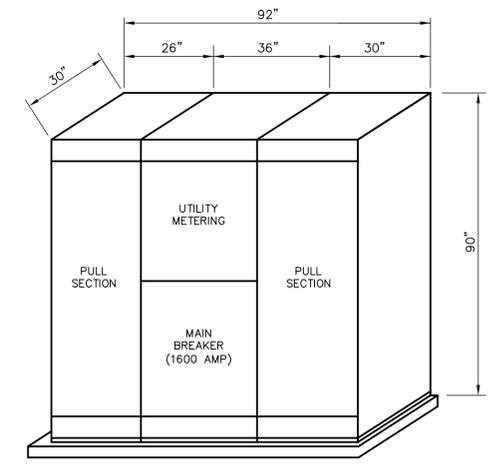
**ELECTRIC ROOM
EAST WALL ELEVATION**
3/8"=1'-0"



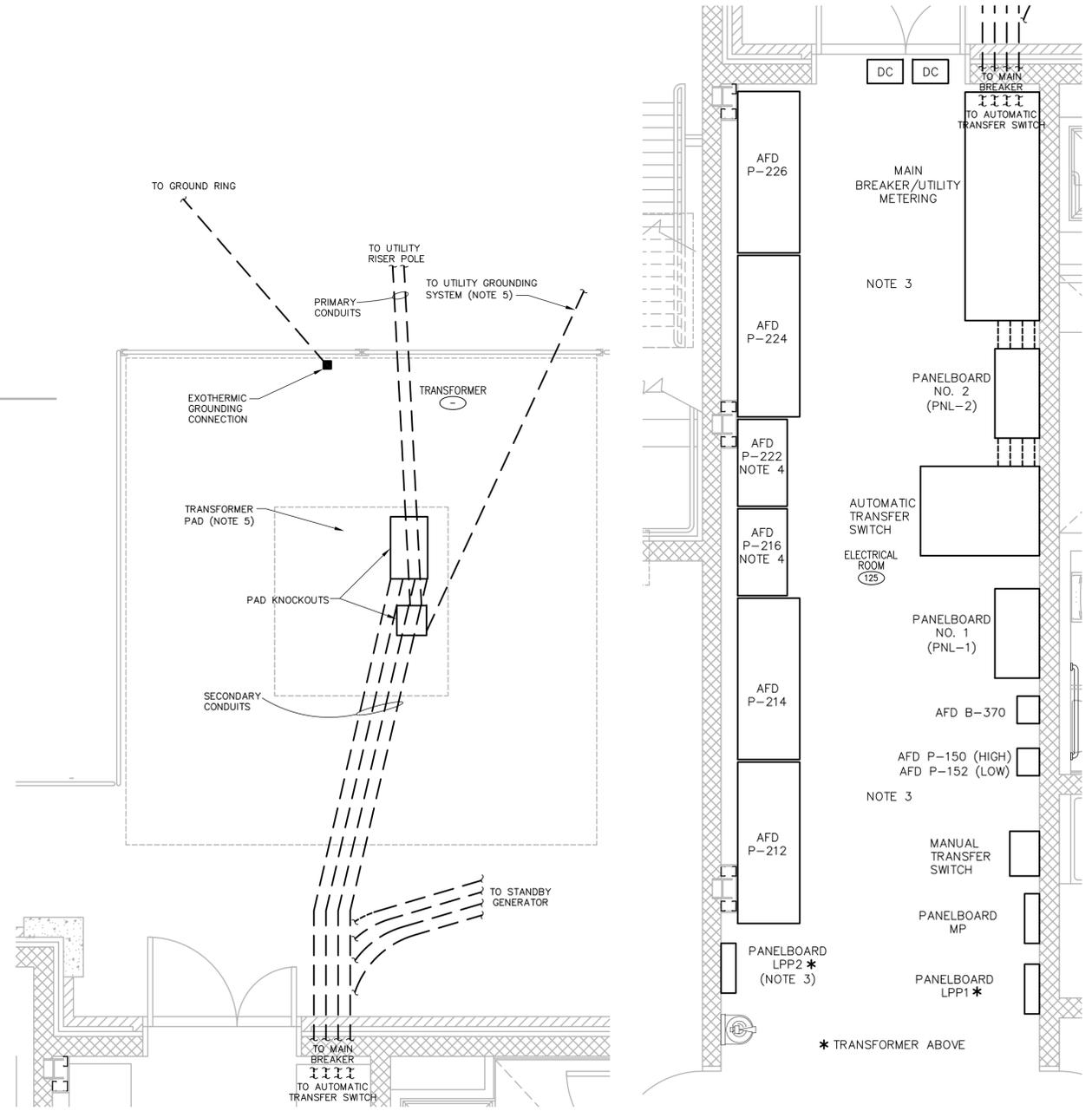
**ELECTRIC ROOM
WEST WALL ELEVATION**
3/8"=1'-0"
SEE NOTE 2



DUCTBANK DETAIL
1"=1'-0"



**MAIN BREAKER/UTILITY METERING
ELEVATION**



PAD MOUNT TRANSFORMER LAYOUT
3/8"=1'-0"

ELECTRICAL ROOM LAYOUT
3/8"=1'-0"

- NOTES:**
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR LAYING OUT ALL ELECTRICAL CONDUIT BETWEEN THE ELECTRICAL ROOM AND THE CONTROL ROOM WITHOUT PENETRATING THE CONCRETE CEILING ABOVE THE CLASS 1, DIV 1 RATED SPACE BELOW. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, COORDINATION WITH OTHER TRADES, ROUTING THE CONDUIT INTO THE CEILING OF THE ELECTRICAL ROOM AND OVER THE HVAC DUCTWORK AND THROUGH AND BETWEEN THE ROOF STRUCTURE AND TRUSSES. FOR EQUIPMENT LOCATED IN CLASS 1, DIV 1 SPACES PROVIDE SEALING FITTINGS IN LOCATION ACCEPTABLE TO OWNER.
 - VENTILATION LOUVERS FOR AFDs SHALL BE ON FRONT COVER OF AFDs SO AFDs CAN BE INSTALLED ADJACENT TO EACH OTHER AS SHOWN.
 - CONTRACTOR SHALL PROVIDE A SCALED SKETCH OF THE ELECTRICAL ROOM SHOWING DIMENSIONS OF ALL EQUIPMENT BEING INSTALLED IN THE ROOM. DIMENSIONS USED SHALL BE THOSE OF THE SUBMITTED AND APPROVED EQUIPMENT. CONTRACTOR SHALL CONFIRM ALL SUBMITTED EQUIPMENT WILL FIT IN THE ROOM PRIOR TO SUBMITTING ON EQUIPMENT. IF AFD'S ARE WIDER THAN SHOWN, INSTALL PANELBOARD LPP2 ON THE OPPOSITE WALL TO ENSURE SUFFICIENT WALL SPACE.
 - CLEAR SPACE (WORKING SPACE) BETWEEN THE ATS AND THE AFDs ON THE WEST WALL SHALL BE AT LEAST 48" (CONFIRM AFD ENCLOSURE DEPTH IS NOT TOO LARGE).
 - PROVIDE IN ACCORDANCE WITH UTILITY REQUIREMENTS.

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

**ELECTRICAL ROOM
DETAILS**

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

E-5.1

DRAWING FILE: C:\Projects\14712\14712-E-5.1.dwg PLOTTED: May 05 2016 10:01:00 AM BR: rj

Panel Designation:		Panelboard LPP1		Location:		Electrical Room						
Amperage / Mains:		150		AIC:		10K						
Voltage / Phase		208/120V, 3		Feeder:		4#1/0, 1#6G, 2" C						
Mounting		Surface		Computer/TVSS:		No						
CIRCUIT BREAKER		LTG REC MISC		MISC REC LTG		CIRCUIT BREAKER						
AMP	POLES	LOAD DESCRIPTION	KVA	KVA	A	B	C	KVA	KVA	LOAD DESCRIPTION	AMP	POLES
1	30	2	Split Unit #1		2.5			2.5		Split Unit #3	30	2
3	-	-	-		2.5			2.5		-	-	4
5	20	1	Surge Tank Level Control Panel		0.1			0.5		Fire Alarm System	20	1
7	20	1	Miscellaneous HVAC North		0.7			2.8		Range	50	2
9	20	1	Recept. Kitchen		1.0			2.8		-	-	10
11	20	1	Boiler HMB-1		0.5			1.0		Refrigerator Receptacle	20	1
13	20	1	Gas Panels		0.4			0.8		Lighting Exterior	20	1
15	20	1	Recept. Maintenance & Control Rooms & North Stairs		1.3			0.1		Security System	20	1
17	20	1	Main Control Panel - Circuit 1		0.3			1.3		Lighting-Office, Kitchen, Mech Rm, Vestibule, Contrl Rm, Hall/Lobby	20	1
19	20	1	Recept. Mech Room & Exterior		1.3			0.8		Locker/Laundry, Janitor	20	1
21	20	1	Spare					1.2		Lighting - Maintenance, Pump & Electrical Rooms	20	1
23	20	1	Recept. Office & Workshop		1.1			0.2		Odor Control Drain Heat Trace	20	1
25	20	1	EF-1 & EF-6		1.2			0.4		Recept. Screen/Grit & Inlet/Treat Rm	20	1
27	20	1	Recept. - Roof		0.5			0.6		Maint. Room Rollup Overhead Door	20	1
29	20	1	Recept. - Pump Room & Valve Vault		0.5			1.2		Sump Pump No. 1	20	1
31	20	1	Dehumidifier (Dehum-1)		1.4			0.1		Sodium Hypochlorite Alarm Panel	20	1
33	20	1	EF-2		1.7			0.8		Hot Water Pump P-3	20	2
35	20	1	Recept. Workshop		0.5			0.8		-	-	36
37	20	1	P-320 (Receptacle)		0.3					Spare	20	1
39	20	1	HVAC Control Panel		0.5					Spare	20	1
41	20	1	Hot Water Pump P-1		0.9					Spare	20	1
Connected Load (KVA):		0.0	5.2	13.9				14.9	1.4	4.1	Poles Used: 42	
Computed Load * (KVA):		0.0	5.2	11.1				11.9	1.4	4.1		
* per NEC 220-10												
Total Connected Load (KVA):		39.4	Computed Load (A):		93							
Total Computed Load * (KVA):		33.7	125% of Computed Load (A):		117							

Panel Designation:		Panelboard LPP2		Location:		Electrical Room						
Amperage / Mains:		150		AIC:		10K						
Voltage / Phase		208/120V, 3		Feeder:		4#1/0, 1#6G, 2" C						
Mounting		Surface		Computer/TVSS:		No						
CIRCUIT BREAKER		LTG REC MISC		MISC REC LTG		CIRCUIT BREAKER						
AMP	POLES	LOAD DESCRIPTION	KVA	KVA	A	B	C	KVA	KVA	LOAD DESCRIPTION	AMP	POLES
1	30	2	Split Unit #2		2.5			2.5		Split Unit #4	30	2
3	-	-	-		2.5			2.5		-	-	4
5	20	1	Main Control Panel-Circuit 2		0.3					Spare	20	1
7	20	1	Miscellaneous HVAC South		0.9			2.2		Dryer Receptacle	30	2
9	20	1	Recept. Kitchen		1.0			2.2		-	-	10
11	20	1	Boiler HMB-2		0.5			1.0		Washing Machine Recept	20	1
13	20	1	Spare		0.4			1.1		Split Unit #5	15	2
15	20	1	Recept. Maintenance & Control Rm & South Stairs		1.3			1.1		-	-	16
17	20	1	Recept. Vending Machine		0.2					Spare	20	1
19	20	1	Recept. Mechanical Room & Exterior		1.3					Spare	20	1
21	20	1	Recept. Locker/Laundry, Toilet & Janitor Rooms		0.9			1.2		Lighting - Maintenance, Pump & Electrical Rooms	20	1
23	20	1	Recept. Office & Workshop		1.3			0.2		Water Heater GWH-1	20	1
25	20	1	EF-4 & EF-5 & DF-1		1.2			0.4		Recept. Screen/Grit & Inlet/Treat Rm	20	1
27	20	1	Recept. - Roof		0.5			0.6		Spare	20	1
29	20	1	Recept. - Pump Room		0.4			1.2		Sump Pump No. 2	20	1
31	20	1	Dehumidifier (Dehum-2)		1.4			0.8		Hot Water Pump P-4	20	2
33	20	1	Hot Water Pump P-2		0.9			0.8		-	-	34
35	20	1	Spare					0.4		Spare	20	1
37	20	1	Spare							Spare	20	1
39	20	1	Spare							Spare	20	1
41	20	1	Spare							Spare	20	1
Connected Load (KVA):		0.0	5.8	11.6				13.5	3.6	1.2	Poles Used: 42	
Computed Load * (KVA):		0.0	5.8	9.2				10.8	3.6	1.2		
* per NEC 220-10												
Total Connected Load (KVA):		35.6	Computed Load (A):		85							
Total Computed Load * (KVA):		30.6	125% of Computed Load (A):		106							

Panel Designation:		Panelboard MP		Location:		Electrical Room						
Amperage / Mains:		225		AIC:		35K						
Voltage / Phase		480/277V, 3		Feeder:		4#4/0, 1#4G, 2-1/2" C						
Mounting		Surface		Computer/TVSS:		No						
CIRCUIT BREAKER		LTG REC MISC		MISC REC LTG		CIRCUIT BREAKER						
AMP	POLES	LOAD DESCRIPTION	KVA	KVA	A	B	C	KVA	KVA	LOAD DESCRIPTION	AMP	POLES
1	15	3	Ref Top Unit (RTU-1)		2.0			6.3		Heat Recovery Unit (HRV-1)	35	3
3	-	-	-		2.0			6.3		-	-	4
5	-	-	-		2.0			6.3		-	-	6
7	20	3	Exhaust Fan EF-3 (7.5HP)		3.0			4.5		Make Up Air Unit (MAU-1)	25	3
9	-	-	-		3.0			4.5		-	-	10
11	-	-	-		3.0			4.5		-	-	12
13	20	3	Grit Vortex Pump (VX-122)		1.4			7.5		Odor Control Fan	60	3
15	-	-	-		1.4			7.5		-	-	16
17	-	-	-		1.4			7.5		-	-	18
19	20	3	Panelboard GBN		3.4			5.0		1.3 Lighting, Site Pole Lights	20	1
21	-	-	-		3.4			5.0		Surge Tank Heat Trace	30	1
23	-	-	-		3.4			2.0		Surge Tank Rping, Plant Wtr Heat Trace	20	1
25	20	3	Monorail (Maintenance Room)		0.5			0.2		Overhead Rollup Doors	20	3
27	-	-	-		0.5			0.2		-	-	28
29	-	-	-		0.5			0.2		-	-	30
31	40	3	Surge Tank Air Comp. CP		7.5					Dock Leveler	20	3
33	-	-	-		7.5					-	-	34
35	-	-	-		7.5					-	-	36
37	20	3	Spare							Lighting, Screen/Inlet Rm & Valve Vault	20	1
39	-	-	-							Lighting, Screen/Inlet Rm & Valve Vault	20	1
41	-	-	-							Spare	20	1
Connected Load (KVA):		0.0	0.0	53.5				62.5	0.0	8.5	Poles Used: 42	
Computed Load * (KVA):		0.0	0.0	42.8				50.0	0.0	8.5		
* per NEC 220-10												
Total Connected Load (KVA):		124.5	Computed Load (A):		122							
Total Computed Load * (KVA):		101.3	125% of Computed Load (A):		152							

LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER (NOTE 2)	MODEL #	LAMP QNTY	LAMP TYPE	WATTS/ FIXTURE	NOTES
2'x4' Perf Basket	Columbia	STE24-228G-MPO-EPU	2	28W T5	70	
2'x4' Perf Basket	Columbia	STE24-328G-MPO-EPU	3	28W T5	70	
2'x2' Perf Basket	Columbia	STE22-214G-MPO-E104U	2	14W T5	35	
2'x2' Perf Basket	Columbia	STE22-214G-MPO-E104U-EL	2	14W T5	35	w/ Emergency Ballast
Not Used	-	-	-	-	-	-
1'x4' Industrial Strip	Columbia	KL4-228-U-EPU	2	28W T5	70	
1'x4' Industrial Strip	Columbia	KL4-228-U-EPU-EL	2	28W T5	70	w/ Emergency Ballast
Emergency Light	Dual-Lite	EZ-2-1	2	5.4W, 6V	12	Emergency Light, environmental rating shall be suitable for installation location
Emergency Light	Dual-Lite	EX-1CD1228 with REX1CDW1228 remote heads	2	28W, 12V	56	Explosion proof Emergency Light with 2 heads per unit. Provide EXIT option and/or remote heads where shown
Explosion Proof Fixture	Hubbell	HBLH-72LU-5K-1-070-WH	-	169W LED	169	Rated for Class I Div 1 locations
Exterior Light	Hubbell	LCC-12LD-1	9	LED	12.8	Exterior Wall Pack
Shower Light	Prescolite	DBXQCSBH-TL64	1	A-19 INC	60	Wet Location
Sealed 4", wet location	Day-Brite	V2WPT228-120-1/2-EB	2	28W T5	70	Sealed, gasketed, rated for wet locations
Dock Light	Phoenix	DL-INC-DWT-60	1	200W INC	200	Aluminum powder coat w/ guard
Cove Lighting	Columbia	COV4-128-EPU	1	28W T5	32	
Exterior Pendant Can Downlight	Prescolite	DB7163PLT32IPMBZ	1	32W CFL	32	Pendant 18"
Exterior Wall Pack	Gardco	101EMC-MT-226QF-UNIV-BL	2	26W CFL	52	Wall Pack w/ emergency battery backup & 0-degree starting
Exterior Pole Mounted Light	Sternberg	1A-AP650-CA-20L45T3-F-MDL14-BK	-	100W LED	100	Pole Mounted LED (NOTE 1)
Exterior Pole Mounted Light	Sternberg	1A-AP650-CA-20L45T2BL-F-MDL07-BK	-	49W LED	49	Pole Mounted LED (NOTE 1)
Exit Sign	Dual-Lite	LXU-RWEI	-	LED	-	Exit Sign, rating shall be suitable for installation location
Exit Sign	Dual-Lite	12XPB-75P-EX100-CD	1	12V INC	6	Explosion Proof

- NOTES: 1. Mount on 20 foot square straight steel pole (4" Black). Coordinate bolt pattern with pole base supplier.
2. Fixtures shall be by manufacturer listed or equal by Day Brite, Lithonia, Hubbel, or equal.

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

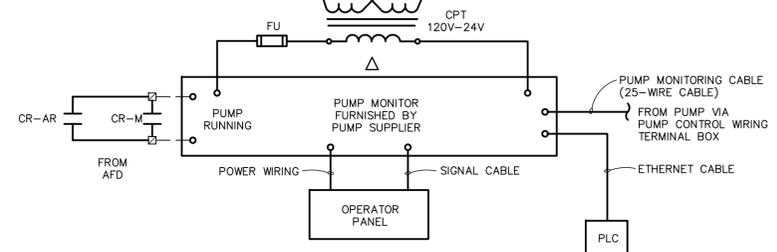
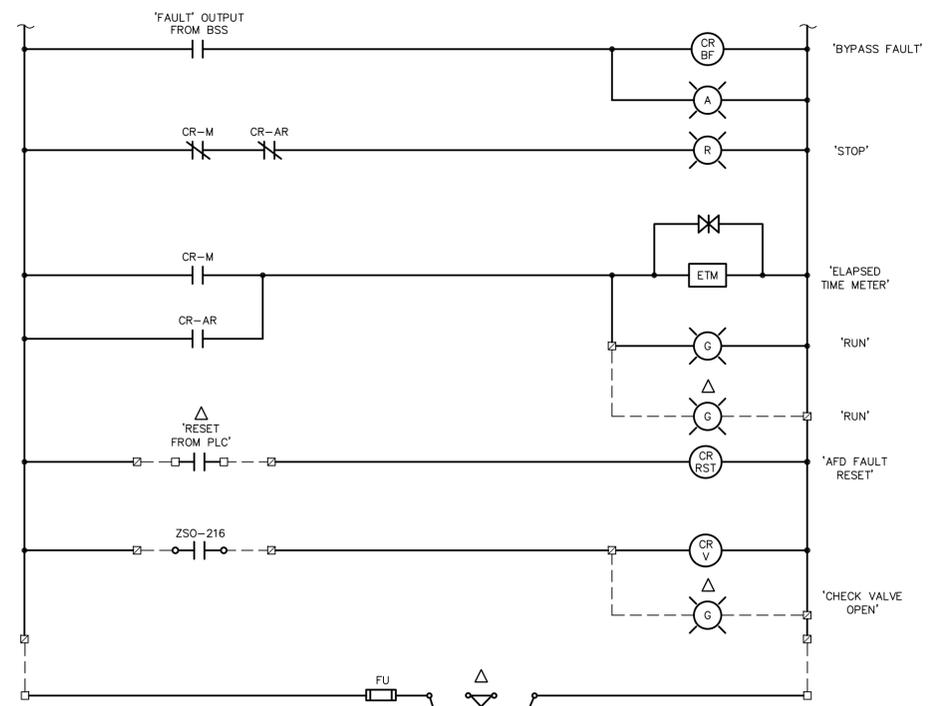
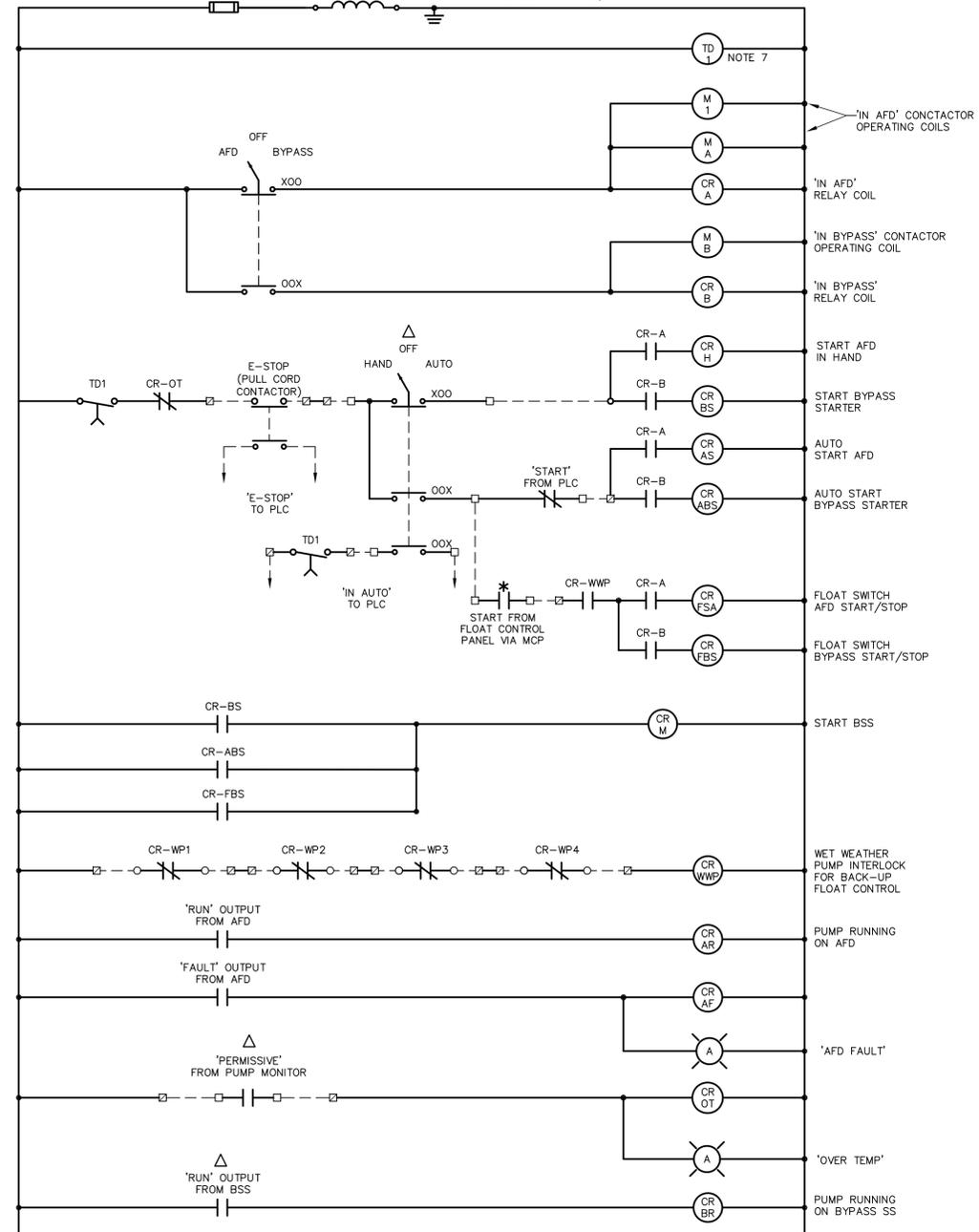
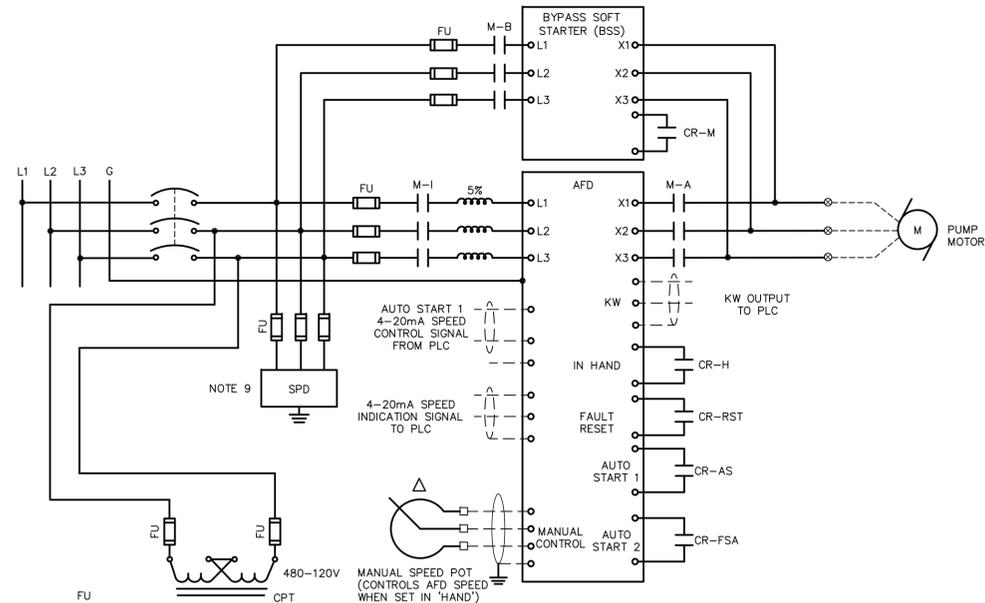
MIDDLETOWN, CT

**PANEL SCHEDULES
AND LIGHTING
FIXTURE SCHEDULE**

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

E-6.1



- NOTES:**
1. MOUNT THE AFD KEYPAD ON DOOR OF THE AFD ENCLOSURE.
 2. THE H-O-A SWITCH, MANUAL SPEED POT, VALVE OPEN LIGHT, AND 'RUN' LIGHT SHALL BE MOUNTED ON THE DOOR OF THE AFD ENCLOSURE.
 3. THE E-STOP CONTACTOR SHALL BE MOUNTED IN THE MAINTENANCE ROOM.
 4. WHEN IN 'HAND', THE AFD SPEED SHALL BE PAGED BY THE SPEED POT; WHEN IN 'AUTO', THE AFD SHALL BE PAGED BY THE 4-20MA SPEED CONTROL SIGNAL.
 5. PROVIDE A 3-CONTACTOR BYPASS SYSTEM FOR THE AFD'S IN THE AFD ENCLOSURE. THE AFD/BYPASS SELECTION SWITCH SHALL BE MOUNTED ON THE DOOR OF THE AFD ENCLOSURE.
 6. THE PUMP MONITOR SHALL BE LOCATED IN THE MAIN CONTROL PANEL.
 7. SET TIME DELAY FOR P-216 AT 10 SECONDS. SET TIME DELAY FOR P-222 AS REQUIRED BUT NO LESS THAN 20 SECONDS.
 8. PROGRAM AFD TO RUN AT SPEED BASED ON PLC SPEED CONTROL INPUT SIGNAL WHEN STARTED BY "AUTO START #1 INPUT". PROGRAM AFD TO RUN AT PRE-PROGRAMMED SPEED WHEN STARTED BY "AUTO START #2 INPUT".
 9. PROVIDE SURGE PROTECTOR SIZED IN ACCORDANCE WITH AFD MANUFACTURER'S RECOMMENDATION.

DRY WEATHER PUMP AFD WIRING DIAGRAM WITH FLOAT CONTROL
 TYPICAL OF: P-216
 TYPICAL OF P-222 EXCEPT EXCHANGE ZSO-216 WITH ZSO-222, CR-2 WITH CR-4 AND CR-3 WITH CR-5 FOR FLOAT CONTROL.

- GENERAL NOTES:**
1. PRIOR TO INSTALLING ANY CONDUITS OR PULLING ANY WIRE, CONFIRM WIRING REQUIREMENTS WITH THE EQUIPMENT AND/OR SYSTEM SUPPLIER'S SUBMITTED WIRING DIAGRAMS. CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES.
 2. PRIOR TO PERFORMING WIRING ON VENDOR SUPPLIED CONTROL PANELS AND VENDOR SUPPLIED EQUIPMENT, THE CONTRACTOR SHALL COORDINATE EXACT WIRING CONNECTIONS FROM VENDOR SUPPLIED WIRING DIAGRAMS. IF THERE ARE ANY DISCREPANCIES, REPORT THIS TO THE ENGINEER AND THE ENGINEER WILL PROVIDE DIRECTION ON HOW TO PROCEED.
 3. THIS DESIGN IS BASED ON FLYGT PUMPS AND FLYGT PUMP MONITORING SYSTEMS. SHOULD THE CONTRACTOR SELECT ALTERNATE PUMPS THEN THE CONTRACTOR SHALL COORDINATE THE REDESIGN OF THE RELATED ELECTRICAL AND INSTRUMENTATION AND CONTROL SYSTEMS TO REFLECT THE DIFFERENCES IN THE PROPOSED EQUIPMENT AT NO COST TO THE OWNER.

WIRING DIAGRAM SYMBOLS

- FIELD WIRING
- DEVICE TERMINAL
- PLC OR I/O TERMINAL
- ⊠ CONTROL PANEL TERMINAL
- △ LOCATED IN MAIN CONTROL PANEL
- * LOCATED IN BACK-UP FLOAT CONTROL PANEL

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

WIRING DIAGRAMS 1

PROJECT NUMBER: 14712
 DESIGNED BY: MJR
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

E-7.1

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



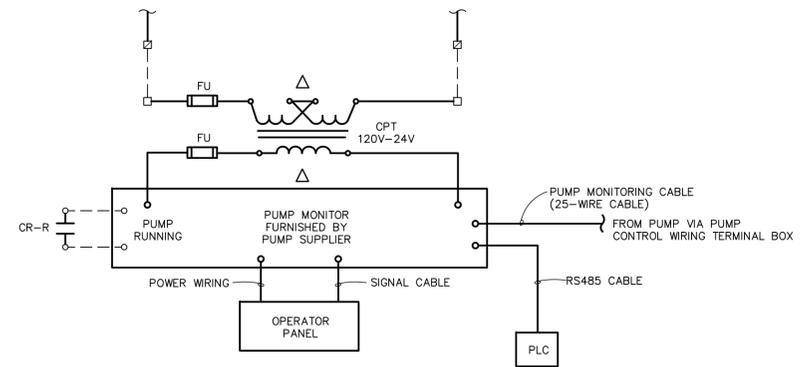
FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

WIRING DIAGRAMS 2

PROJECT NUMBER: 14712
 DESIGNED BY: MJR
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

SHEET NUMBER:

E-7.2



- NOTES:**
- MOUNT THE AFD KEYPAD ON DOOR OF THE AFD ENCLOSURE.
 - THE H-O-A SWITCH, MANUAL SPEED POT, VALVE OPEN LIGHT, AND A 'RUN' LIGHT SHALL BE MOUNTED ON THE DOOR OF THE AFD ENCLOSURE.
 - THE E-STOP CONTACTOR SHALL BE MOUNTED IN THE MAINTENANCE ROOM.
 - WHEN IN 'HAND', THE AFD SPEED SHALL BE PAGED BY THE SPEED POT; WHEN IN 'AUTO' AND 'AUTO START 1', THE AFD SHALL BE PAGED BY THE 4-20mA SPEED CONTROL SIGNAL.
 - NO MORE THAN 3 PUMPS ARE PERMITTED TO RUN SIMULTANEOUSLY.
 - THE PUMP MONITOR SHALL BE LOCATED IN THE MAIN CONTROL PANEL.
 - SET TIME DELAY AT 10 SECONDS FOR P-212, SET TIME DELAY FOR THE OTHER PUMPS AS REQUIRED AT INCREASINGLY LONGER TIMES BUT NO LESS THAN 20 SECONDS FOR P-214, NO LESS THAN 30 SECONDS FOR P-224, AND NO LESS THAN 40 SECONDS FOR P-226.
 - PROVIDE THE FOLLOWING WARNING LABEL NEAR THE CR-1 RELAY INSIDE THE WWP-1 PUMP AFD ENCLOSURE: "WARNING: CONTROL RELAY CR-1 IS AN INTERLOCK RELAY THAT PREVENTS MORE THAN THREE WET WEATHER PUMPS FROM OPERATING. DISTURBING THE CR-1 RELAY OR RELATED WIRING MAY PERMIT FOURTH PUMP TO OPERATE OR PREVENT ADDITIONAL PUMPS FROM OPERATING". PROVIDE THE SAME WARNING LABEL FOR THE OTHER WET WEATHER PUMPS, CHANGING THE CONTROL RELAY ID NUMBER.
 - PROGRAM AFD TO RUN AT SPEED BASED ON PLC SPEED CONTROL INPUT SIGNAL WHEN STARTED BY "AUTO START #1 INPUT". PROGRAM AFD TO RUN AT PRE-PROGRAMMED SPEED WHEN STARTED BY "AUTO START #2 INPUT".
 - PROVIDE SURGE PROTECTOR SIZED IN ACCORDANCE WITH AFD MANUFACTURER'S RECOMMENDATIONS.

WET WEATHER PUMP AFD WIRING DIAGRAM

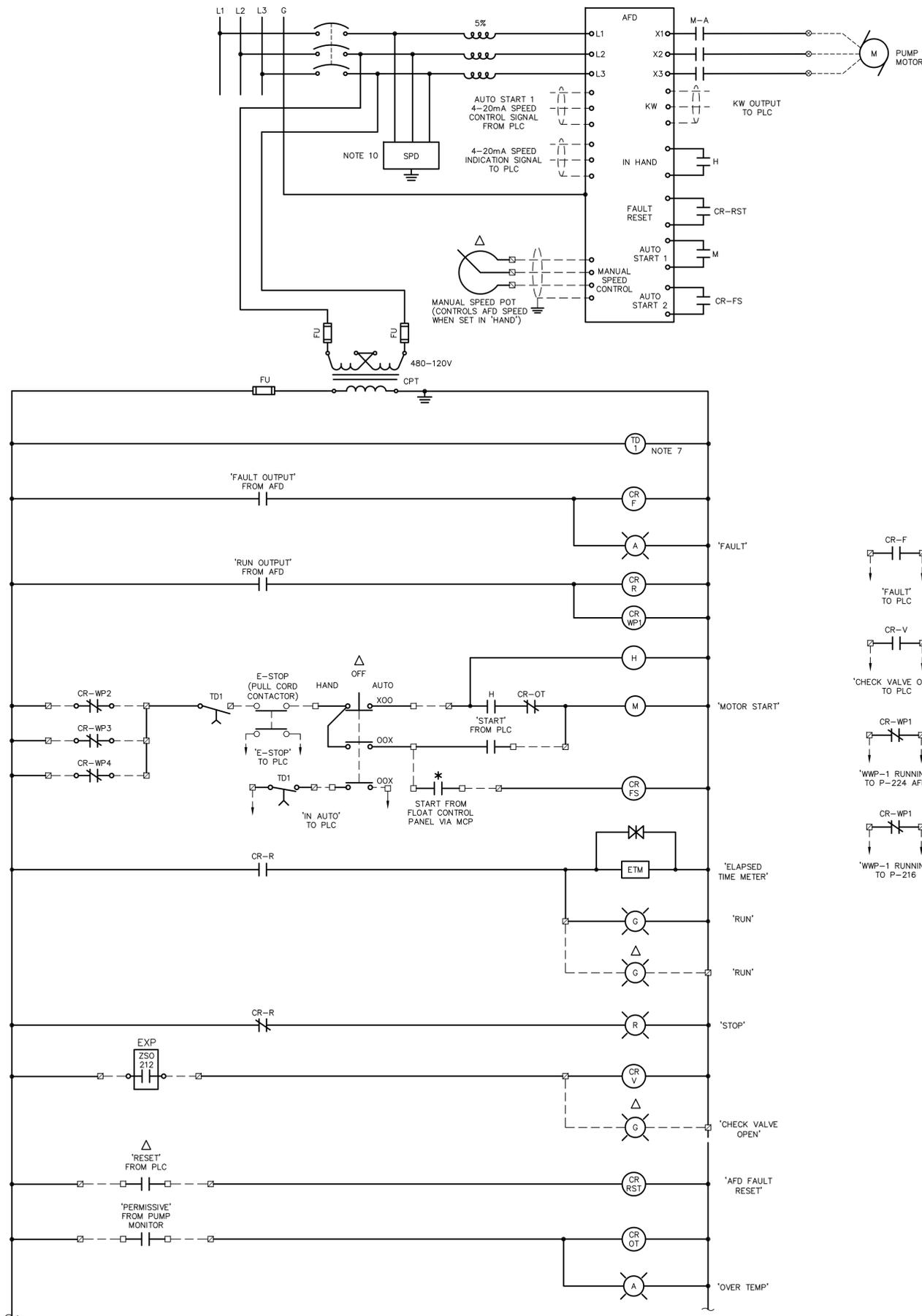
TYPICAL OF: P-212
 TYPICAL OF: P-214 EXCEPT EXCHANGE CR-WP1 WITH CR-WP2 AND CONNECT CR-WP2 N.C. CONTACTS TO P-212, P-224, AND P-226 AFDS, AND EXCHANGE ZSO-212 WITH ZSO-214
 TYPICAL OF: P-224 EXCEPT EXCHANGE CR-WP1 WITH CR-WP3 AND CONNECT CR-WP3 N.C. CONTACTS TO P-212, P-214, AND P-226 AFDS, AND EXCHANGE ZSO-212 WITH ZSO-224.
 TYPICAL OF: P-226 EXCEPT EXCHANGE CR-WP1 WITH CR-WP4 AND CONNECT CR-WP4 N.C. CONTACTS TO P-212, P-214, AND P-224 AFDS, AND EXCHANGE ZSO-212 WITH ZSO-226.

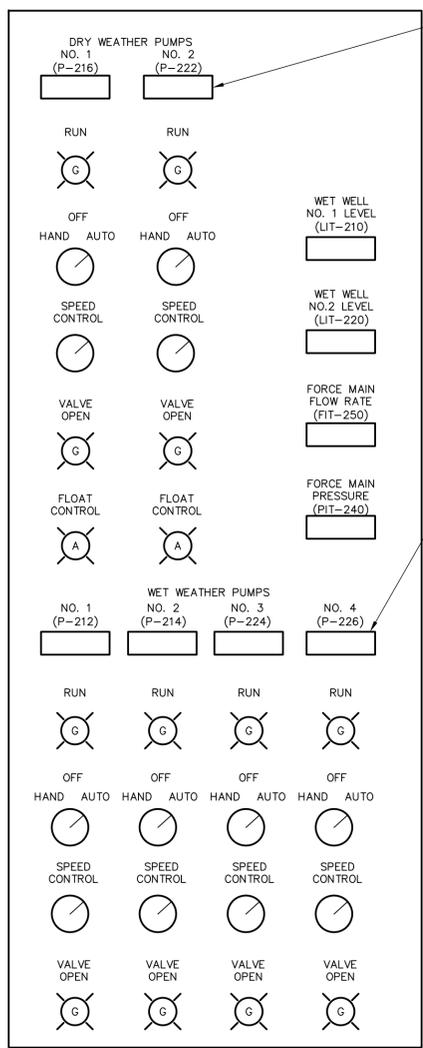
GENERAL NOTES:

- PRIOR TO INSTALLING ANY CONDUITS OR PULLING ANY WIRE, CONFIRM WIRING REQUIREMENTS WITH THE EQUIPMENT AND/OR SYSTEM SUPPLIER'S SUBMITTED WIRING DIAGRAMS. CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES.
- PRIOR TO PERFORMING WIRING ON VENDOR SUPPLIED CONTROL PANELS AND VENDOR SUPPLIED EQUIPMENT, THE CONTRACTOR SHALL COORDINATE EXACT WIRING CONNECTIONS FROM VENDOR SUPPLIED WIRING DIAGRAMS. IF THERE ARE ANY DISCREPANCIES, REPORT THIS TO THE ENGINEER AND THE ENGINEER WILL PROVIDE DIRECTION ON HOW TO PROCEED.
- THIS DESIGN IS BASED ON FLYGT PUMPS AND FLYGT PUMP MONITORING SYSTEMS. SHOULD THE CONTRACTOR SELECT ALTERNATE PUMPS THEN THE CONTRACTOR SHALL COORDINATE THE REDESIGN OF THE RELATED ELECTRICAL AND INSTRUMENTATION AND CONTROL SYSTEMS TO REFLECT THE DIFFERENCES IN THE PROPOSED EQUIPMENT AT NO COST TO THE OWNER.

WIRING DIAGRAM SYMBOLS

- FIELD WIRING
- DEVICE TERMINAL
- PLC OR I/O TERMINAL
- ▣ CONTROL PANEL TERMINAL
- △ LOCATED IN MAIN CONTROL PANEL
- * LOCATED IN BACK-UP FLOAT CONTROL PANEL
- ⊗ MCC TERMINAL





PUMP MONITORING DEVICE OPERATOR PANEL (TYP OF 2)

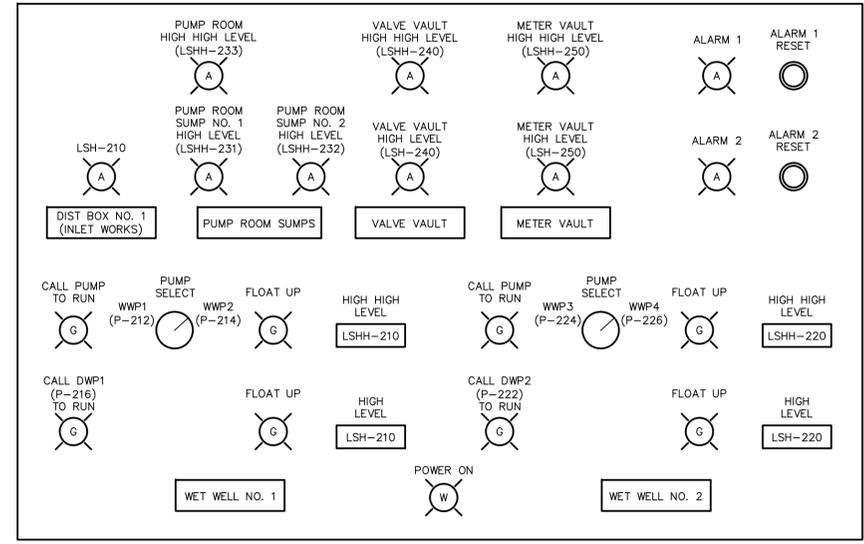
GENERAL NOTES:

- PRIOR TO INSTALLING ANY CONDUITS OR PULLING ANY WIRE, CONFIRM WIRING REQUIREMENTS WITH THE EQUIPMENT AND/OR SYSTEM SUPPLIER'S SUBMITTED WIRING DIAGRAMS. CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES.
- PRIOR TO PERFORMING WIRING ON VENDOR SUPPLIED CONTROL PANELS AND VENDOR SUPPLIED EQUIPMENT, THE CONTRACTOR SHALL COORDINATE EXACT WIRING CONNECTIONS FROM VENDOR SUPPLIED WIRING DIAGRAMS. IF THERE ARE ANY DISCREPANCIES, REPORT THIS TO THE ENGINEER AND THE ENGINEER WILL PROVIDE DIRECTION ON HOW TO PROCEED.
- THIS DESIGN IS BASED ON FLYGT PUMPS AND FLYGT PUMP MONITORING SYSTEMS. SHOULD THE CONTRACTOR SELECT ALTERNATE PUMPS THEN THE CONTRACTOR SHALL COORDINATE THE REDESIGN (AND CHANGES IN SCOPE OF SUPPLY) OF THE RELATED ELECTRICAL AND INSTRUMENTATION AND CONTROL SYSTEMS TO REFLECT THE DIFFERENCES IN THE PROPOSED EQUIPMENT AT NO COST TO THE OWNER.

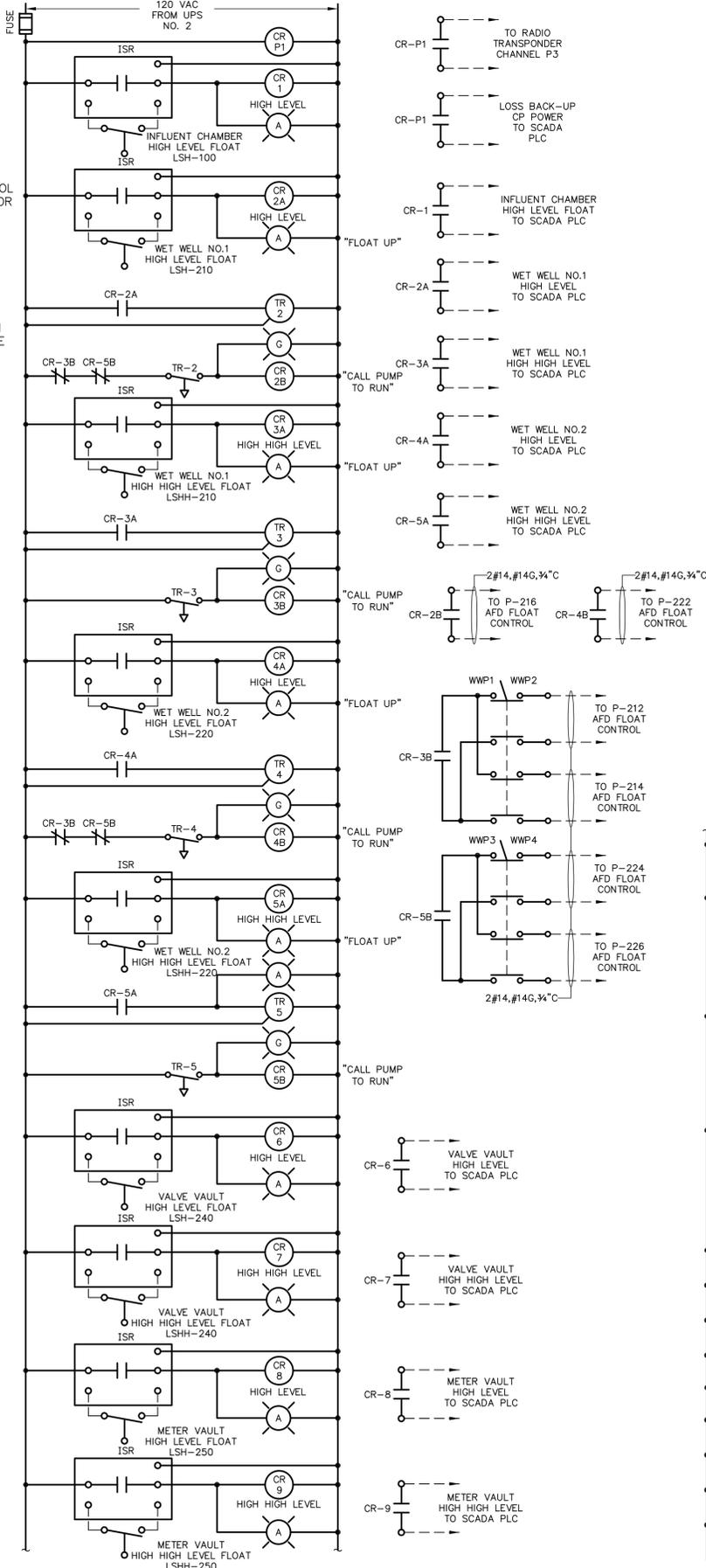
PUMP MONITORING DEVICE OPERATOR PANEL (TYP OF 4)

NOTE:
LOCATE THE SCADA PLC AND SCADA 1 COMPUTER IN THIS ENCLOSURE. PROVIDE TOUCH SCREEN DISPLAY AND KEYBOARD ON FLIP-DOWN SHELF ON THE FRONT OF PANEL (NOT SHOWN).

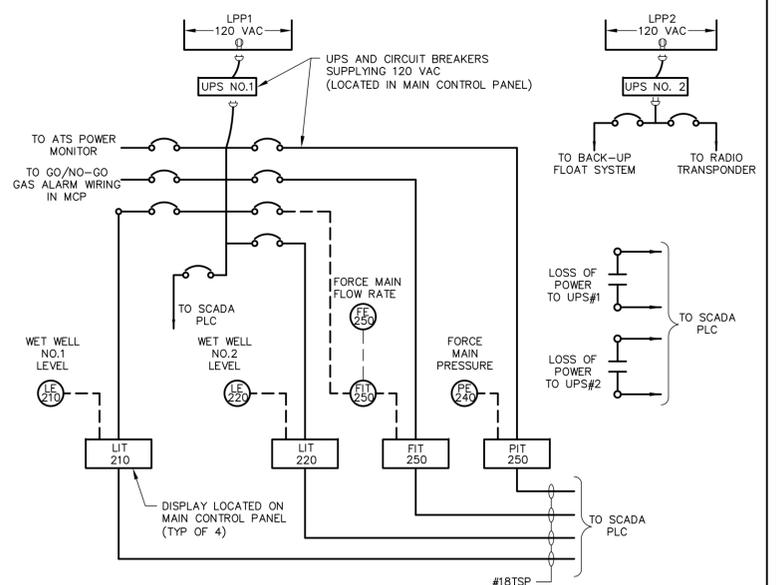
MAIN CONTROL PANEL
FURNISHED UNDER DIVISION 13,
INSTALLED BY DIVISION 16.
FIELD WIRING AND CONDUIT BY DIVISION 16.



BACK-UP FLOAT CONTROL PANEL
FURNISHED UNDER DIVISION 13,
INSTALLED BY DIVISION 16.
FIELD WIRING AND CONDUIT BY DIVISION 16.



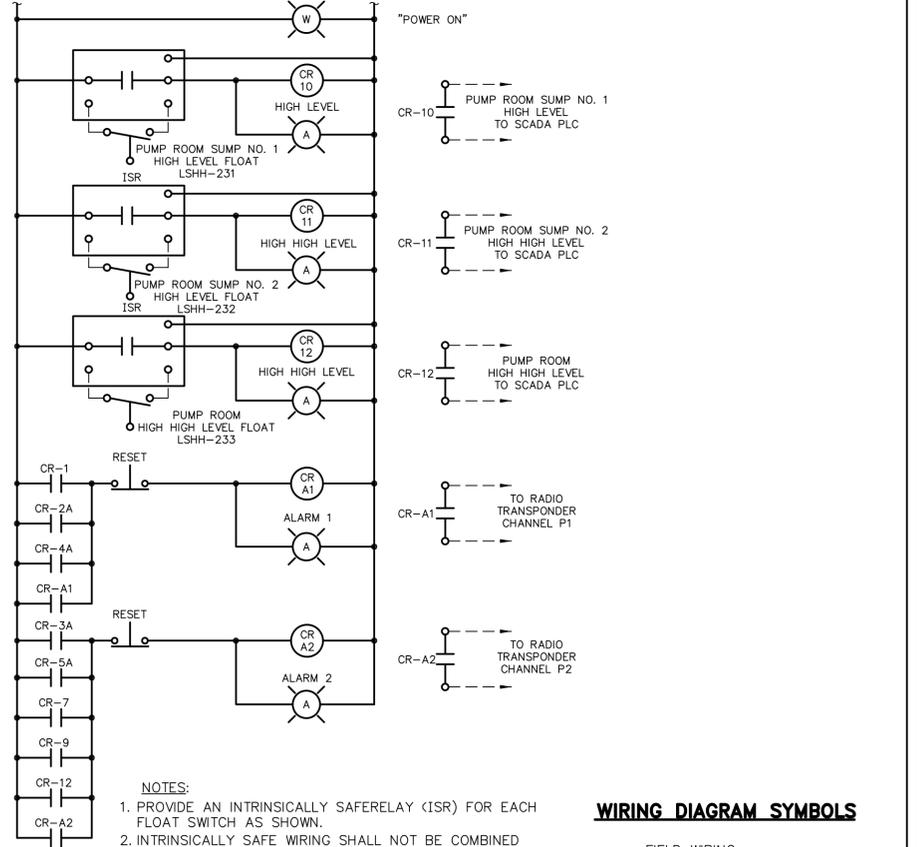
BACK-UP FLOAT & ALARM SYSTEM WIRING
FURNISHED UNDER DIVISION 13,
INSTALLED BY DIVISION 16.
FIELD WIRING AND CONDUIT BY DIVISION 16.



MAIN CONTROL PANEL POWER & INSTRUMENT WIRING

NOTES:

- UNLESS OTHERWISE SPECIFIED, THE MAIN CONTROL PANEL DISPLAYS SHALL BE PANEL METERS WHICH CAN PROVIDE 24VDC FOR LOOP-POWERED TRANSMITTERS AND RETRANSMIT A 4-20MA SIGNAL. THE DISPLAYS SHALL BE PRECISION DIGITAL MODEL NO. PD600-6R3 OR EQUIVALENT. PROVIDE INTRINSICALLY SAFE BARRIERS IN THE MAIN CONTROL PANEL FOR ALL FIELD DEVICES.
- THE 120 VAC CIRCUITS AND UPS'S SHALL EACH HAVE ENOUGH CAPACITY TO RUN THE SCADA PLC AND INSTRUMENTS AND TO RUN THE MAIN CONTROL PANEL. EACH UPS SHALL OPERATE SEPARATELY OR TO PLUG BOTH INTO EITHER DUPLEX RECEPTACLE. LIKEWISE THE INTENT IS TO BE ABLE TO PLUG EACH SYSTEM INTO SEPARATE UPS'S AS SHOWN OR TO PLUG BOTH SYSTEMS INTO THE SAME UPS.
- UPS NO. 1 AND UPS NO. 2 SHALL HAVE LOSS OF 120VAC POWER SUPPLY ALARMS CONNECTED TO THE SCADA PLC AND TO THE RADIO TRANSPONDER.
- FURNISHED UNDER DIVISION 13, INSTALLED BY DIVISION 16, FIELD WIRING AND CONDUIT BY DIVISION 16.



NOTES:

- PROVIDE AN INTRINSICALLY SAFERELAY (ISR) FOR EACH FLOAT SWITCH AS SHOWN.
- INTRINSICALLY SAFE WIRING SHALL NOT BE COMBINED WITH OTHER WIRING.
- PROVIDE 2#12, #12G, 26#14, 8#14 SPARES, 1/2" C FROM BACK-UP FLOAT CONTROL PANEL TO MCP. PROVIDE 6#14, 2#14 SPARES, 3/4" C FROM BACK-UP FLOAT CONTROL PANEL TO THE RADIO TRANSPONDER.

WIRING DIAGRAM SYMBOLS

- FIELD WIRING
- DEVICE TERMINAL
- PLC OR I/O TERMINAL
- ⊗ LOCAL CONTROL PANEL TERMINAL
- △ LOCATED IN LOCAL CONTROL PANEL

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

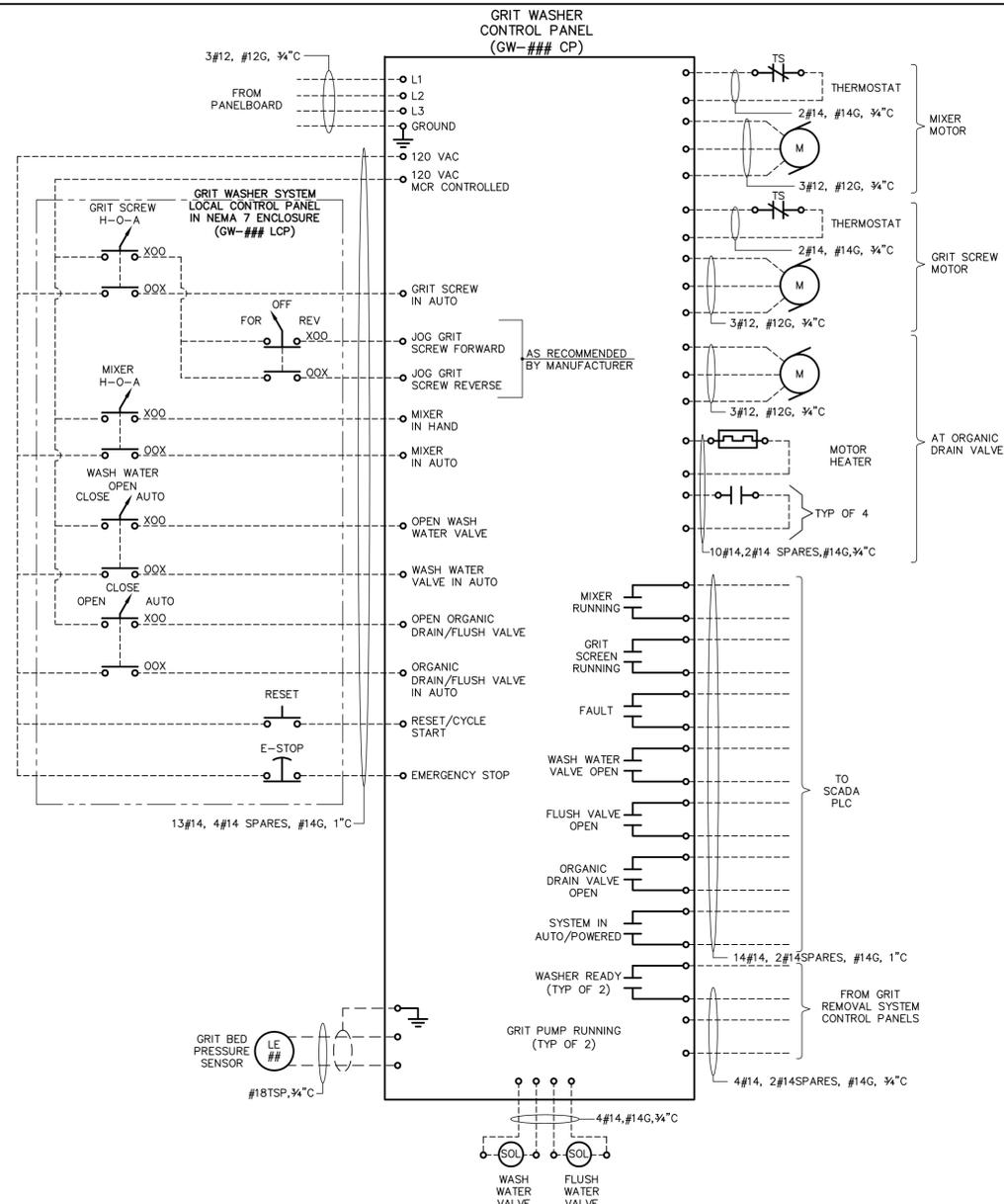
WIRING DIAGRAMS 3

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

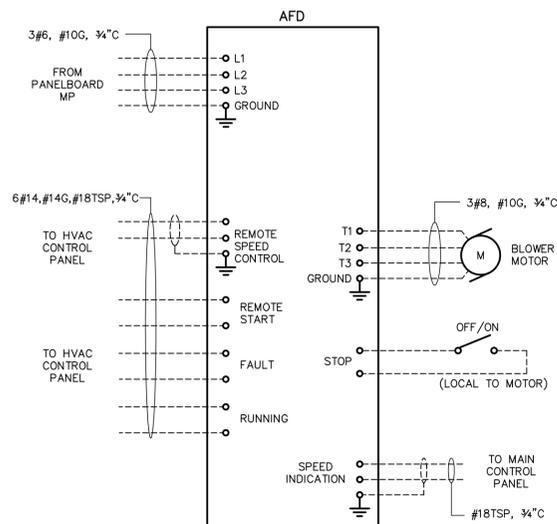
SHEET NUMBER:

E-7.3

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016

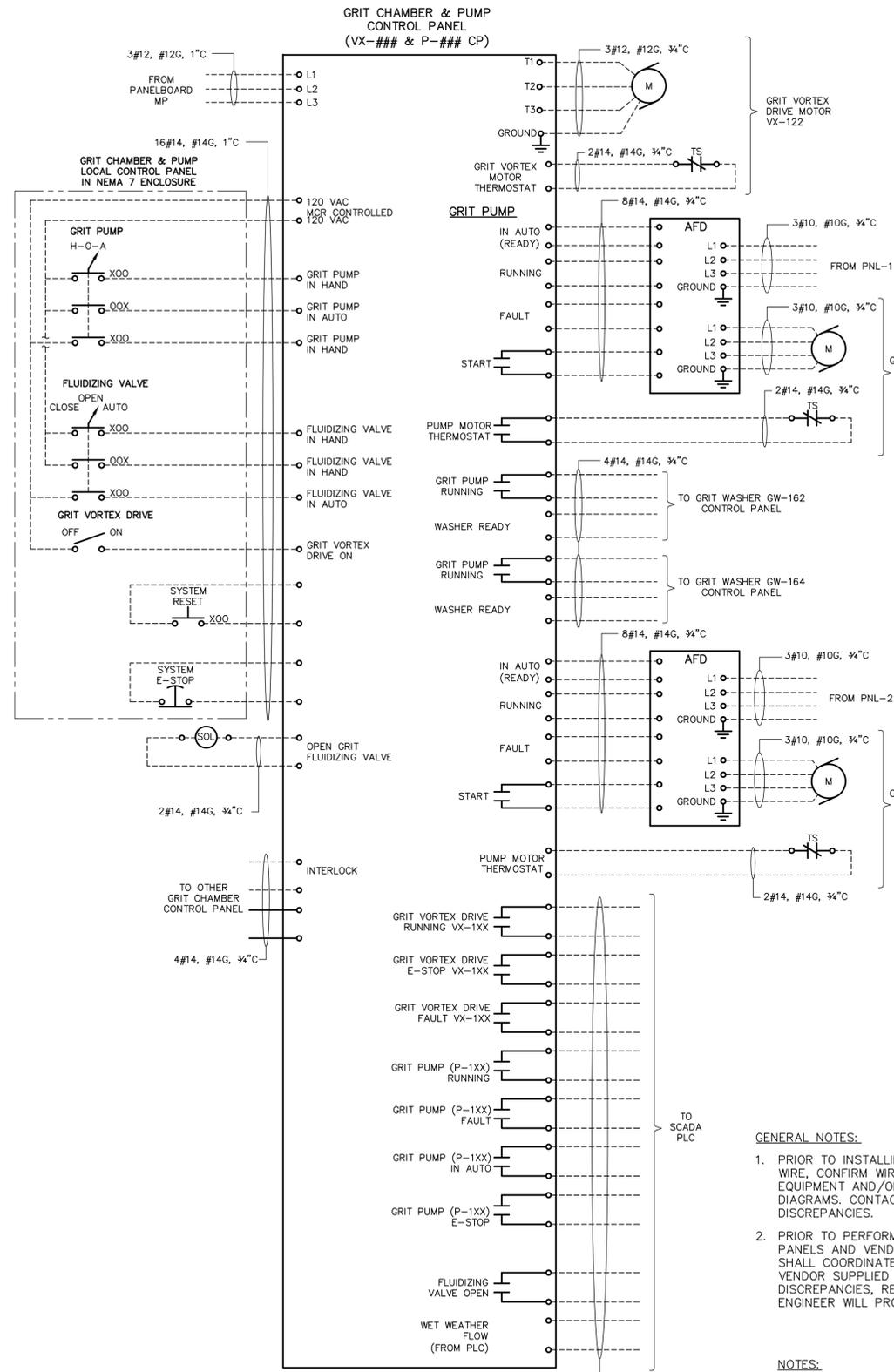


GRIT WASHER SYSTEM FIELD WIRING
(TYPICAL FOR GW-162 & LE-162 AND GW-164 & LE-164)



ODOR CONTROL BLOWER FIELD WIRING

- NOTES:**
1. WIRING TO THE HVAC CONTROL PANEL SHALL BE BY DIVISION 15.
 2. OTHER WIRING SHALL BE BY DIVISION 16.



GRIT REMOVAL SYSTEM FIELD WIRING
(TYPICAL FOR VX-122 & P-152 AND VX-124 & P-124)

GENERAL NOTES:

1. PRIOR TO INSTALLING ANY CONDUITS OR PULLING ANY WIRE, CONFIRM WIRING REQUIREMENTS WITH THE EQUIPMENT AND/OR SYSTEM SUPPLIER'S SUBMITTED WIRING DIAGRAMS. CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES.
2. PRIOR TO PERFORMING WIRING ON VENDOR SUPPLIED CONTROL PANELS AND VENDOR SUPPLIED EQUIPMENT, THE CONTRACTOR SHALL COORDINATE EXACT WIRING CONNECTIONS FROM VENDOR SUPPLIED WIRING DIAGRAMS. IF THERE ARE ANY DISCREPANCIES, REPORT THIS TO THE ENGINEER AND THE ENGINEER WILL PROVIDE DIRECTION ON HOW TO PROCEED.

NOTES:

1. EVERYTHING SHOWN ON THIS DRAWING, EXCEPT FOR FIELD WIRING AND CONDUIT, FURNISHED UNDER DIVISION 11.

WIRING DIAGRAM SYMBOLS

- FIELD WIRING
- DEVICE TERMINAL
- PLC OR I/O TERMINAL
- ⊠ CONTROL PANEL TERMINAL
- △ LOCATED IN MAIN CONTROL PANEL
- * LOCATED IN BACK-UP FLOAT CONTROL PANEL
- ⊙ MCC TERMINAL



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

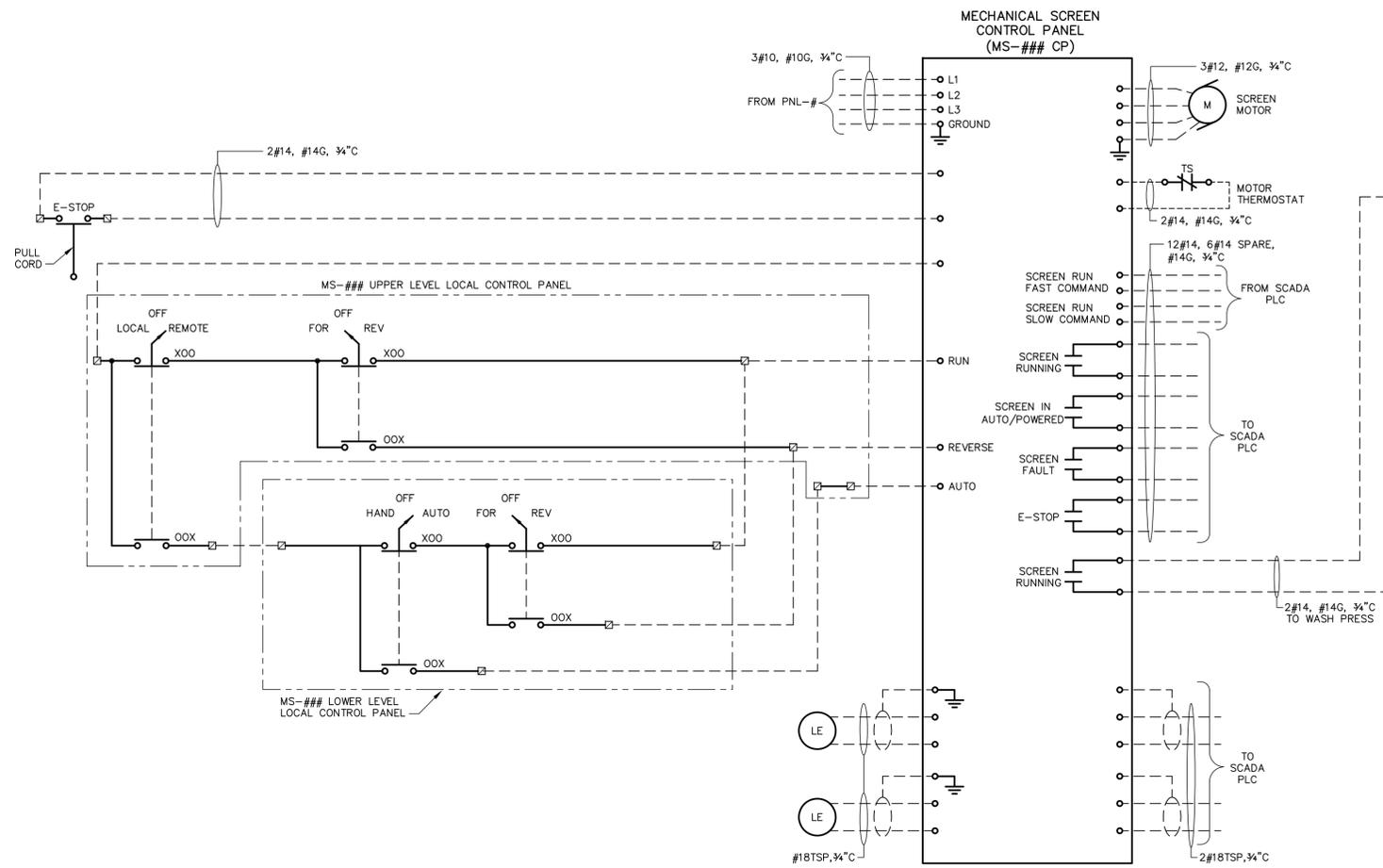
WIRING DIAGRAMS 4

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

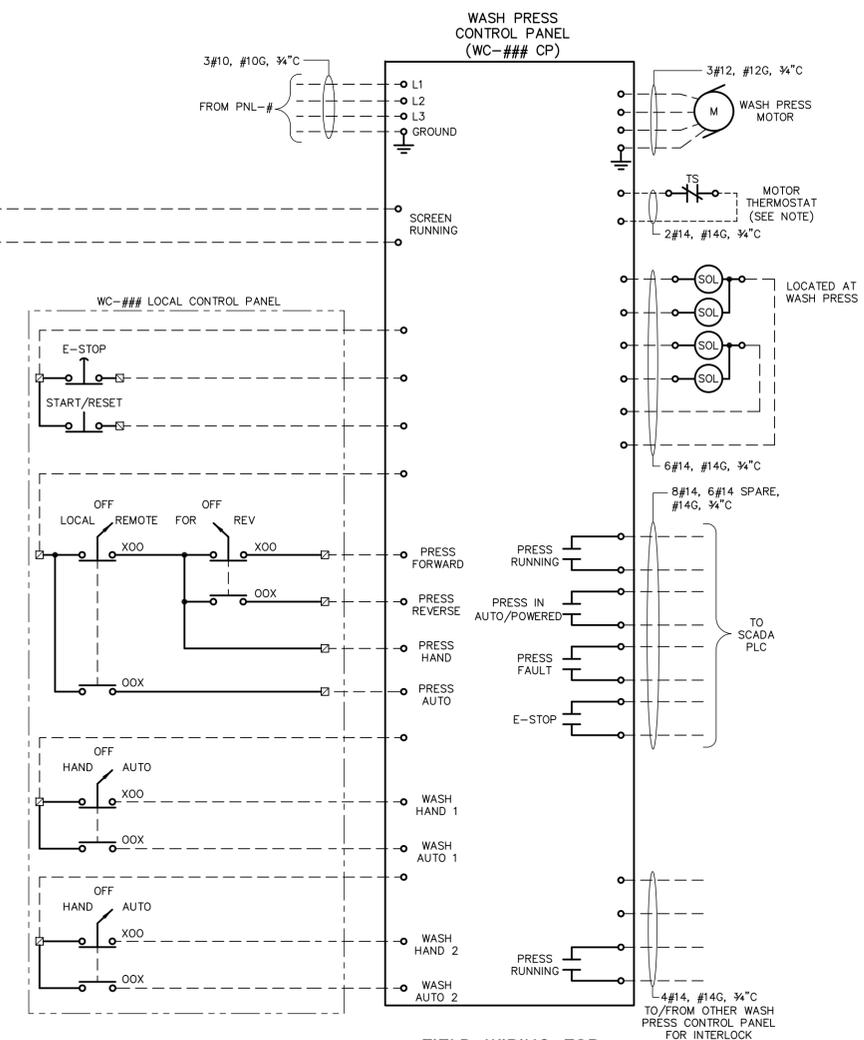
E-7.4

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FIELD WIRING FOR MECHANICAL SCREEN

TYPICAL FOR MS-112 (WITH LE-112 AND LE-113)
AND FOR MS-114 (WITH LE-114 AND LE-115)



FIELD WIRING FOR WASH PRESS

TYPICAL FOR WC-112 AND FOR WC-114

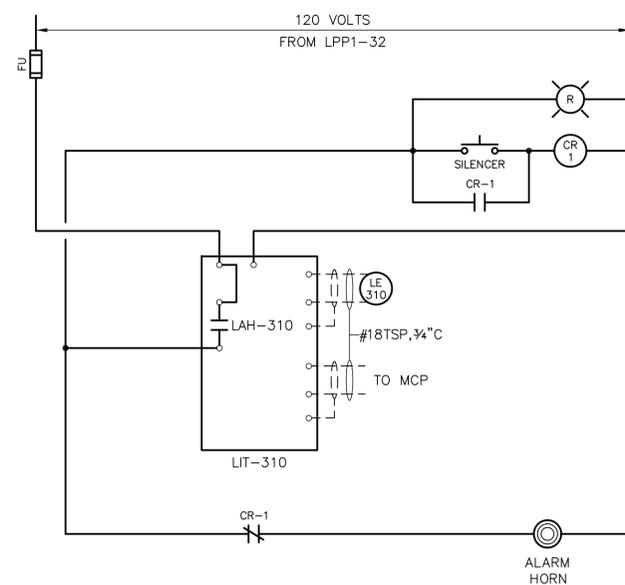
NOTE:
IF MOTOR THERMOSTAT IS REPLACED BY
ULTRASONIC LEVEL SENSOR, PROVIDE #18TSP
IN 3/4" C.

GENERAL NOTES:

- PRIOR TO INSTALLING ANY CONDUITS OR PULLING ANY WIRE, CONFIRM WIRING REQUIREMENTS WITH THE EQUIPMENT AND/OR SYSTEM SUPPLIER'S SUBMITTED WIRING DIAGRAMS. CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES.
- PRIOR TO PERFORMING WIRING ON VENDOR SUPPLIED CONTROL PANELS AND VENDOR SUPPLIED EQUIPMENT, THE CONTRACTOR SHALL COORDINATE EXACT WIRING CONNECTIONS FROM VENDOR SUPPLIED WIRING DIAGRAMS. IF THERE ARE ANY DISCREPANCIES, REPORT THIS TO THE ENGINEER AND THE ENGINEER WILL PROVIDE DIRECTION ON HOW TO PROCEED.

NOTES:

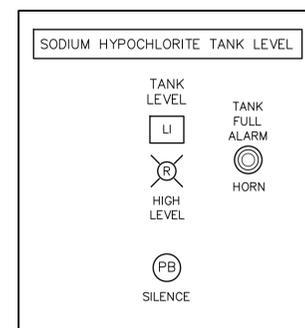
- EVERYTHING SHOWN ON THIS DRAWING, EXCEPT FOR FIELD WIRING AND CONDUIT, FURNISHED UNDER DIVISION 11.



SODIUM HYPOCHLORITE TRANSMITTER & LEVEL ALARM HORN WIRING DIAGRAM

NOTES:

- LAH SHALL CLOSE WHEN ANY INPUT ENTERS ALARM.



PROVIDED BY DIVISION 16
NEMA 4X S.S. ENCLOSURE

SODIUM HYPOCHLORITE LEVEL ALARM HORN PANEL
TYPICAL OF LAH-310

WIRING DIAGRAM SYMBOLS

- FIELD WIRING
- DEVICE TERMINAL
- PLC OR I/O TERMINAL
- ⊠ CONTROL PANEL TERMINAL
- △ LOCATED IN MAIN CONTROL PANEL
- * LOCATED IN BACK-UP FLOAT CONTROL PANEL
- ⊗ MCC TERMINAL



FRANCIS T.
PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

WIRING DIAGRAMS 5

PROJECT NUMBER: 14712

DESIGNED BY: MJR

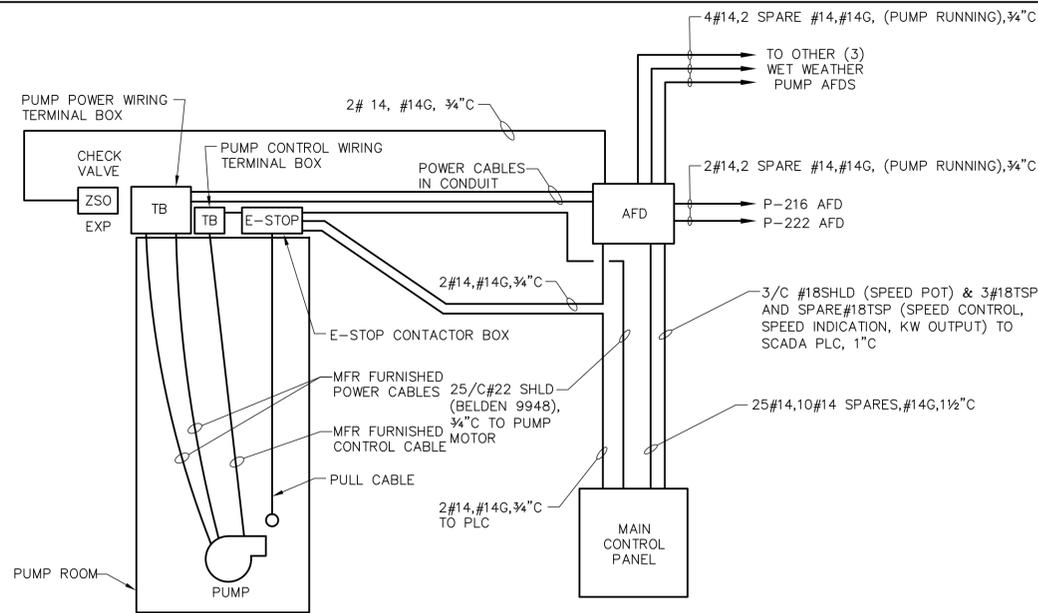
DRAWN BY: REJ

DATE: FEBRUARY 23, 2016

SHEET NUMBER:

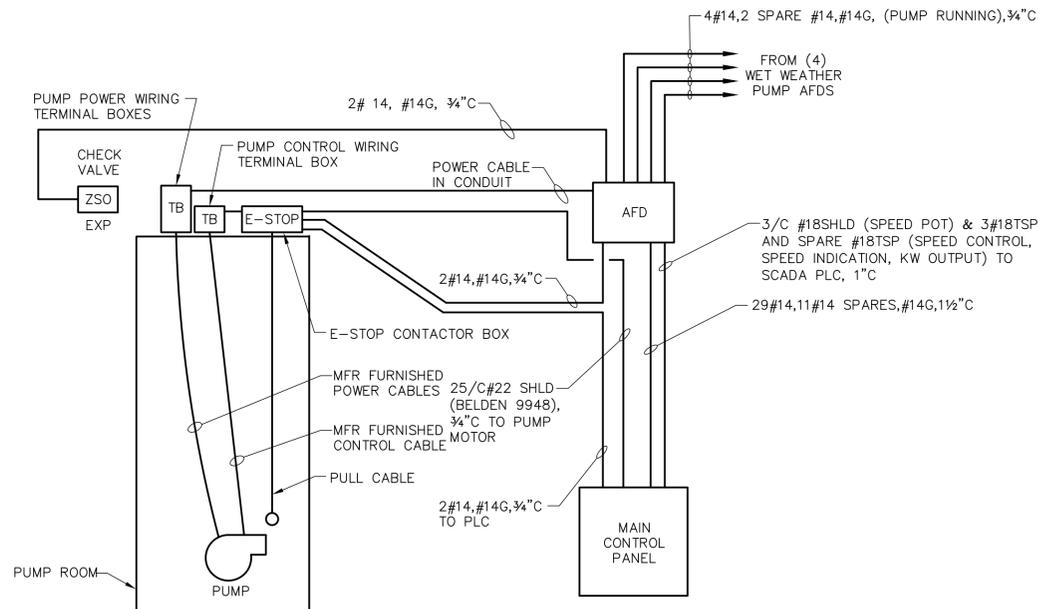
E-7.5

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



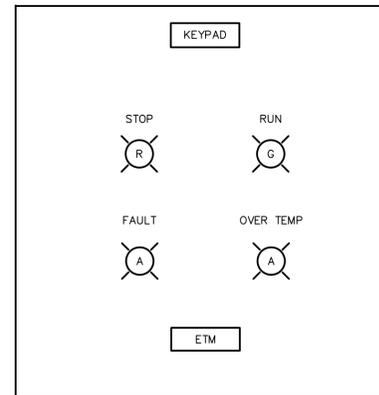
WET WEATHER PUMP FIELD CONTROL WIRING

TYPICAL FOR P-212, P-214, P-224, P-226
 "ZSO" TYPICAL OF ZSO-212, ZSO-214, ZSO-224 & ZSO-226



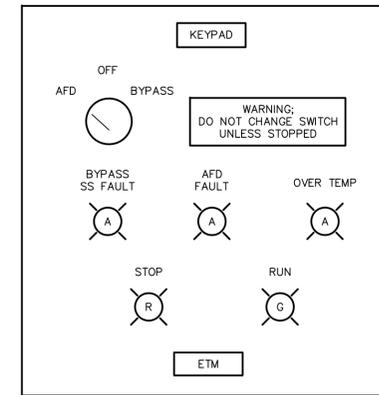
DRY WEATHER PUMP FIELD CONTROL WIRING

TYPICAL FOR DRY P-216 & P-222
 "ZSO" TYPICAL OF ZSO-222 & ZSO-216



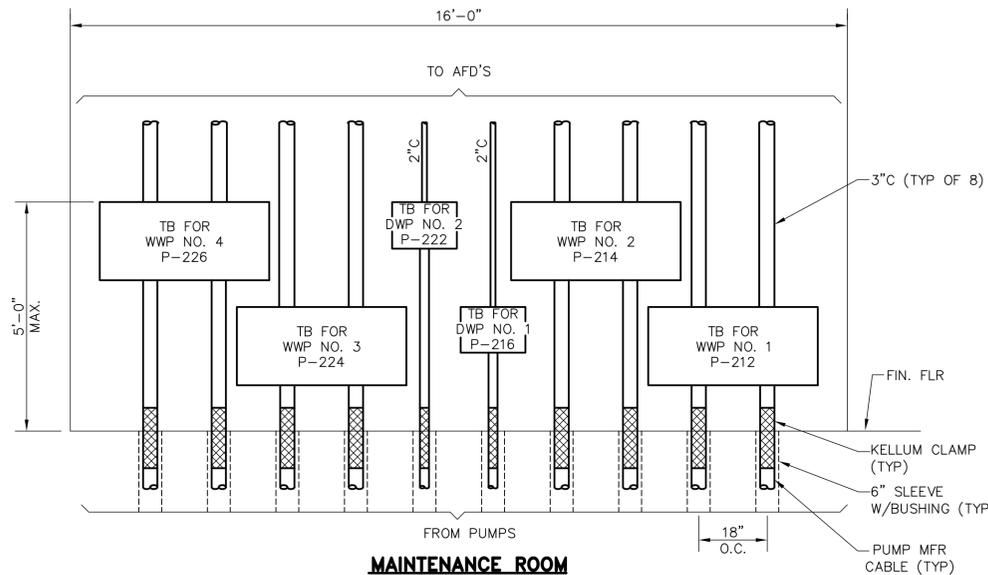
LAYOUT OF DOOR OF WET WEATHER PUMP AFD

TYPICAL OF: WWP-214, WWP-216, WWP-224, & WWP-226



LAYOUT OF DOOR OF DRY WEATHER PUMP AFD

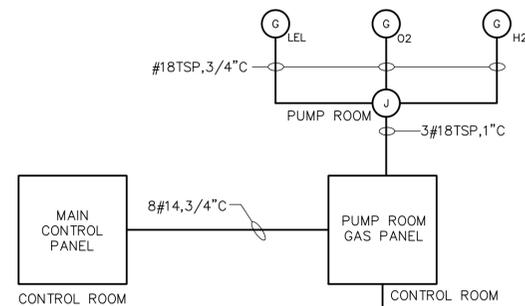
TYPICAL OF: DWP-212 & DWP-222



ARRANGEMENT OF PUMP POWER CABLE TERMINAL BOXES

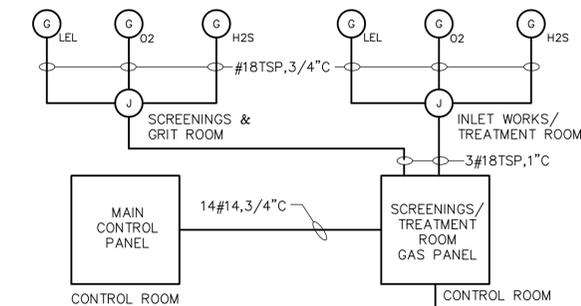
NO SCALE

- NOTE:
 1. THERE ARE 2 POWER CABLES FOR EACH WET WEATHER PUMP.



PUMP ROOM HAZARDOUS GAS DETECTION SYSTEM WIRING DIAGRAM

FURNISH UNDER DIVISION 13
 INSTALL UNDER DIVISION 16



SCREENINGS/TREATMENT ROOM HAZARDOUS GAS DETECTION SYSTEM WIRING DIAGRAM

FURNISH UNDER DIVISION 13
 INSTALL UNDER DIVISION 16

GENERAL NOTES:

1. EVERYTHING SHOWN ON THIS DRAWING IS PROVIDED BY DIVISION 16 EXCEPT FOR MAIN CONTROL PANEL, ZSO, GAS PANELS, AND GAS SENSORS WHICH ARE FURNISHED UNDER DIVISION 13.



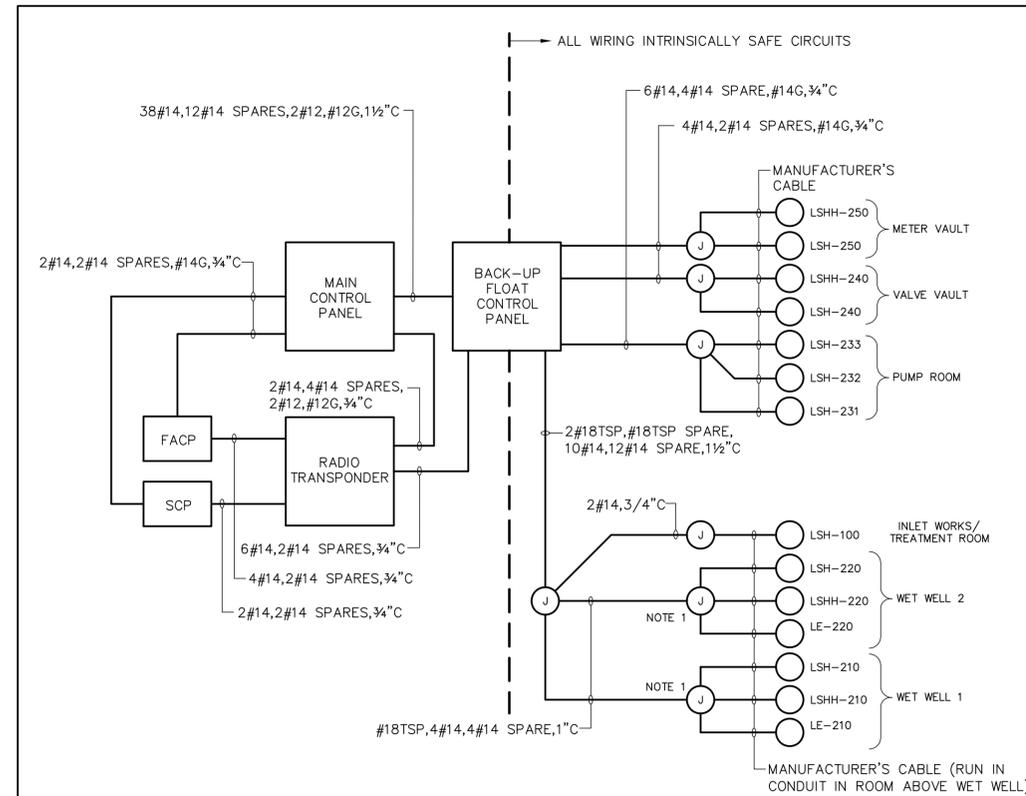
FRANCIS T. PATNAUDE
 INTER-MUNICIPAL
 PUMPING STATION
 MIDDLETOWN, CT

WIRING DIAGRAMS 6

PROJECT NUMBER: 14712
 DESIGNED BY: MJR
 DRAWN BY: REJ
 DATE: FEBRUARY 23, 2016

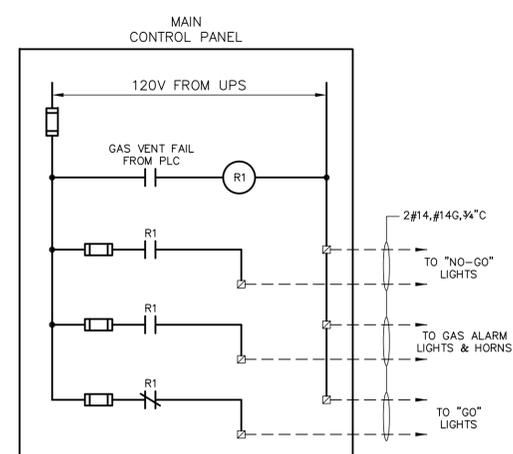
SHEET NUMBER:

E-7.6

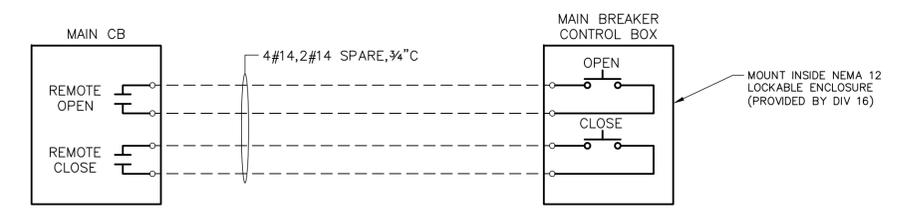


BACK-UP FLOAT CONTROL PANEL AND RADIO TRANSPONDER FIELD WIRING

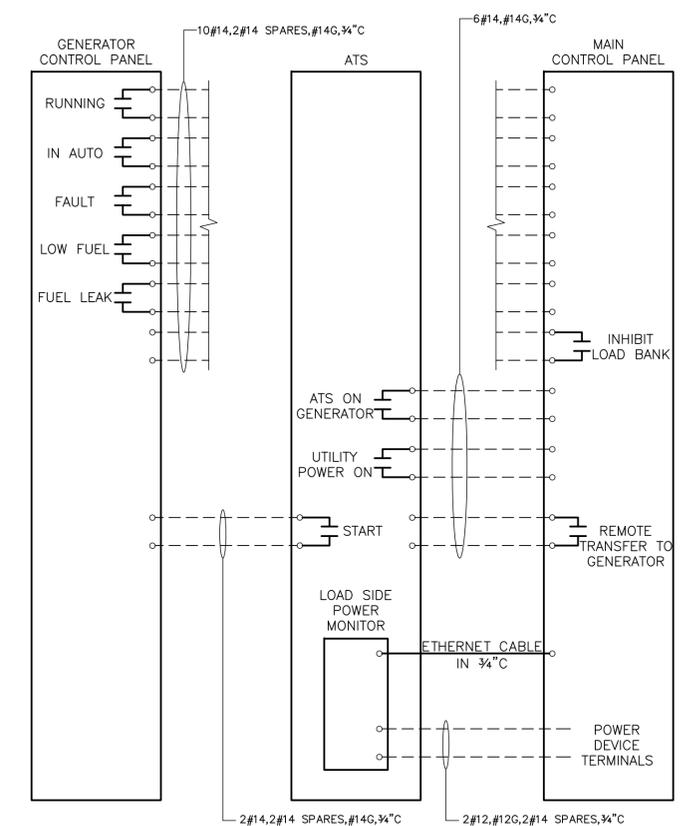
NOTE:
1. MOUNT BELLOWS FOR LE-210/LE-220 IN THE JUNCTION BOX. MOUNT JUNCTION BOX 10' AFF ON WALL.



GO/NO-GO ALARM WIRING DIAGRAM



MAIN BREAKER REMOTE CONTROL WIRING



GENERATOR/ATS CONTROL & MONITORING FIELD WIRING DIAGRAM

- GENERAL NOTES:
- PRIOR TO INSTALLING ANY CONDUITS OR PULLING ANY WIRE, CONFIRM WIRING REQUIREMENTS WITH THE EQUIPMENT AND/OR SYSTEM SUPPLIER'S SUBMITTED WIRING DIAGRAMS. CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES.
 - PRIOR TO PERFORMING WIRING ON VENDOR SUPPLIED CONTROL PANELS AND VENDOR SUPPLIED EQUIPMENT, THE CONTRACTOR SHALL COORDINATE EXACT WIRING CONNECTIONS FROM VENDOR SUPPLIED WIRING DIAGRAMS. IF THERE ARE ANY DISCREPANCIES, REPORT THIS TO THE ENGINEER AND THE ENGINEER WILL PROVIDE DIRECTION ON HOW TO PROCEED.

WIRING DIAGRAM SYMBOLS

- FIELD WIRING
- DEVICE TERMINAL
- PLC OR I/O TERMINAL
- ⊠ CONTROL PANEL TERMINAL
- △ LOCATED IN MAIN CONTROL PANEL
- * LOCATED IN BACK-UP FLOAT CONTROL PANEL
- ⊙ MCC TERMINAL

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

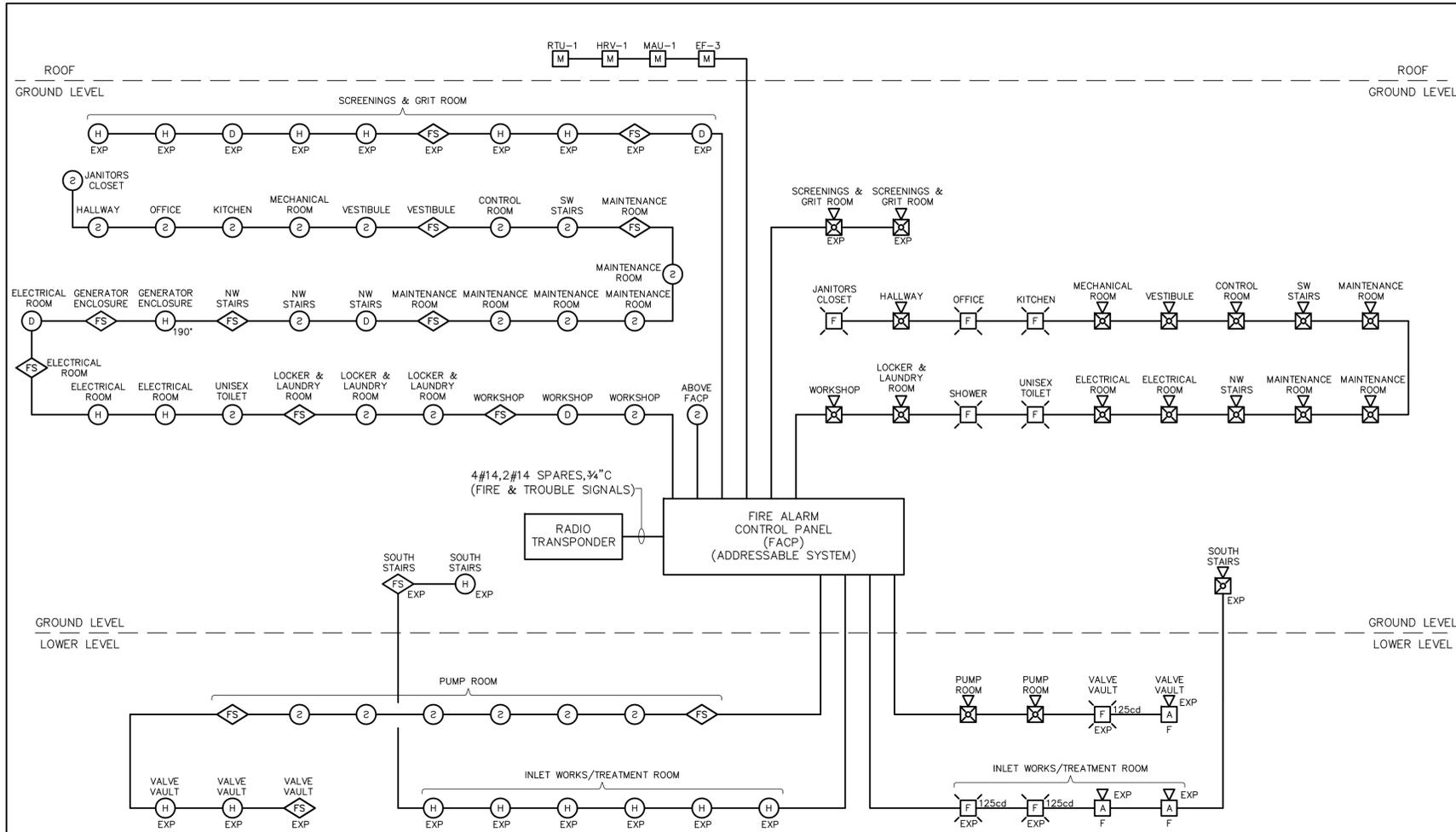
WIRING DIAGRAMS 7

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

E-7.7

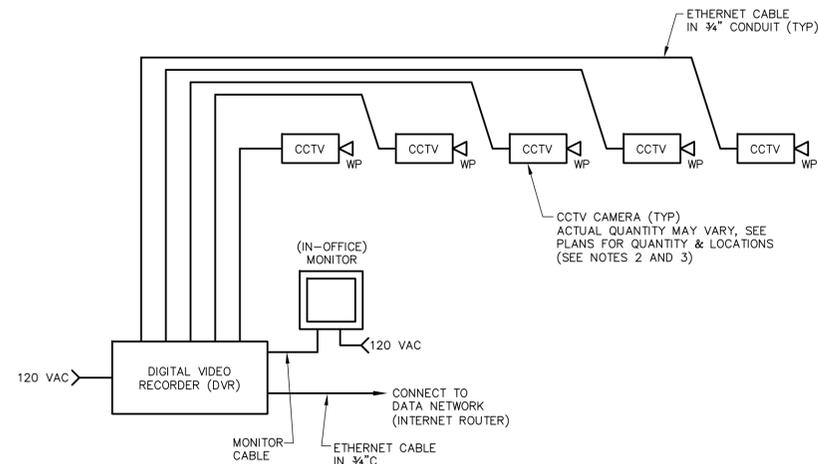
DRAWING FILE: C:\Projects\VA\1325\1-E-7.7.dwg PLOTTED: May 05 2016 10:02:40am BR: rj



FIRE ALARM SYSTEM RISER DIAGRAM

NOTES:

1. DEVICE QUANTITIES, LOCATIONS, TYPES, CONNECTIONS, & RATINGS ARE APPROXIMATE ONLY. REFER TO LIGHTING FLOOR PLANS FOR EXACT DEVICE QUANTITY, LOCATIONS AND RATINGS. EXACT WIRE/CONDUIT ROUTING & CONNECTIONS BETWEEN DEVICES SHALL BE DETERMINED IN THE FIELD.
2. PROVIDE CABLE AS RECOMMENDED BY THE FIRE ALARM SYSTEM SUPPLIER.

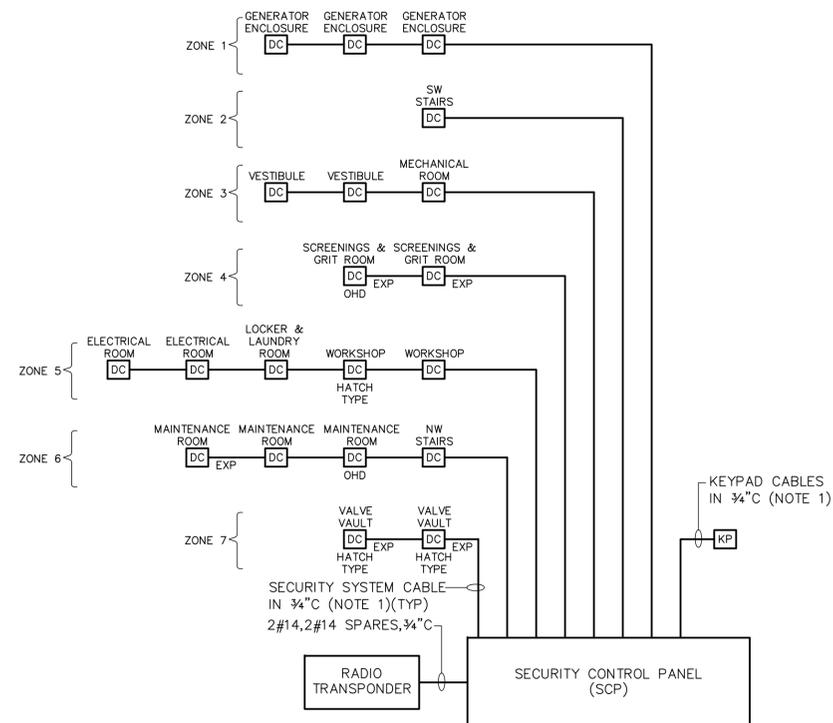


NOTES:

1. REFER TO DRAWINGS FOR EXACT LOCATION AND QUANTITY OF DEVICES.
2. PROVIDE EACH EXTERIOR CAMERA WITH 24VAC POWER (FOR CAMERA HEATER) FROM A LOCAL 50VA 120-24V TRANSFORMER (MOUNT IN A NEMA 4 ENCLOSURE). PROVIDE 120V POWER TO THE TRANSFORMER FROM A JUNCTION BOX TAPPED OFF A LOCAL GENERAL PURPOSE RECEPTACLE CIRCUIT (USE 3#12, 3/4" C).
3. EXTERIOR CAMERAS SHALL BE PROVIDED WITH ENCLOSURE HEATERS.

VIDEO SURVEILLANCE CCTV SYSTEM RISER

NO SCALE



NOTES:

1. PROVIDE CABLE AS RECOMMENDED BY THE SECURITY SYSTEM PROVIDER.

SECURITY SYSTEM RISER DIAGRAM



2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com

Tighe & Bond
Consulting Engineers
www.tighebond.com

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

WIRING DIAGRAMS 8

PROJECT NUMBER: 14712
DESIGNED BY: MJR
DRAWN BY: REJ
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

E-7.8