

GENERAL SEQUENCE OF CONSTRUCTION

- 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.
- 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.
- 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.
- SURVEY AND STAKE THE LIMIT OF DISTURBANCE AND LOCATION OF THE SEDIMENTATION BARRIERS.
- INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES.
- CLEAR AND GRUB TO THE LIMITS OF DISTURBANCE SHOWN ON THE SITE PLANS.
- CONSTRUCT DOGHOUSE SMH 111 ON THE EXISTING 36 INCH EAST MAIN STREET SEWER.
- 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 SPECIFICATION 02062. THE MAPLE STREET BYPASS CHAMBER AND 3 INCH FORCE MAIN SHALL BE ABANDONED IN PLACE FOLLOWING SUBSTANTIAL COMPLETION. THE STATION SHALL COMPLY WITH DIVISION 1 REQUIREMENTS AND STRUCTURAL GENERAL NOTES FOR SUPPORTING BUILDINGS OR STRUCTURES. THE ELECTRICAL SERVICE AND CONSUMPTION CHARGES SHALL BE PAID FOR AS AN ALLOWANCE UNDER BID ITEM 2.
- 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.
- ABATE AND REMOVE ASBESTOS, PCBs, UNIVERSAL WASTES AND LEAD CONTAINING PAINT AND BUILDING MATERIALS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- COMMENCE WITH SITE, BURIED TREATMENT TANKS, AND BUILDING SELECTIVE DEMOLITION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- COMPLETE SITE AND BUILDING DEMOLITION INCLUDING PILE AND DEEP FOUNDATION REMOVAL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- COMMENCE CONSTRUCTION OF THE PUMP STATION BUILDING, VALVE VAULT, SURGE TANK, AND SITE IMPROVEMENTS.
- COMMENCE CONSTRUCTION OF THE GRAVITY SEWERS. CONSTRUCT THE 36 INCH EAST MAIN STREET SEWER FROM SMH 105 TO SMH 111.
- CONSTRUCT THE 36 INCH RIVER ROAD SEWER FROM SMH 103 TO SMH 105.
- 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.
- COMPLETE CONSTRUCTION OF THE PUMP STATION BUILDING, SITE IMPROVEMENTS AND 30 INCH FORCE MAIN EXTENSION.
- 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.
- COMMENCE DEMOLITION OF THE EXISTING SANITARY CHAMBER. REMOVE TEMPORARY SHEETING AS ORDERED BY THE ENGINEER.
- 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 AND TEMPORARILY PLUG EXISTING 30 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.
- 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.
- CONSTRUCT NEW 12 INCH MAPLE STREET SEWER FROM SMH 109 TO EXISTING SMH 114.
- 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.
- 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.
- REMOVE OR ABANDON IN PLACE ALL TEMPORARY PLUGS AND EXISTING PIPES THAT ARE NO LONGER NEEDED OR IN SERVICE.

PROJECT PERMITS AND APPROVALS

- THE CONTRACTOR SHALL PROVIDE NOTICE AND COMPLY WITH ALL PERMITS, LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK.
- 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.
- 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).
- 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.
- THE CONTRACTOR WILL OBTAIN ALL BUILDING DEMOLITION RELATED PERMITS, BONDS AND INSURANCES, FROM THE CITY DEPARTMENT OF PUBLIC WORKS.

EROSION AND SEDIMENTATION CONTROL NOTES

- EROSION CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE PROVISIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
- 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.
- CONTRACTOR SHALL MAINTAIN E&S MEASURES IN EFFECTIVE CONDITION UNTIL DISTURBED AREAS HAVE BEEN STABILIZED WITH VEGETATION.
- 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.
- 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.
- THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION.
- 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.
- AREAS BEYOND THE STAKED LIMITS OF DISTURBANCE SHALL BE UNDISTURBED.
- 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.
- DENUDED 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- PERMANENT SEEDING DATES SHALL BE AS FOLLOWS:
APRIL 1 - JUNE 13
AUGUST 15 - OCTOBER 15
- THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS, BEFORE MIXING AND PLANTING WITH APPROPRIATE INOCULUM FOR EACH VARIETY
- 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

- THE CONTRACTOR'S ATTENTION IS DRAWN TO THE ENVIRONMENTAL DRAWINGS REFERENCING AREAS OF ENVIRONMENTAL CONCERN (AEOC).
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL COMPLY WITH ALL STATE, FEDERAL, AND LOCAL PERMIT CONDITIONS AS NOTED IN THE SPECIFICATIONS.

GENERAL NOTES

- 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.
- 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.
- 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.
- 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'.
- THE GENERAL CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN AND SHEETING, SHORING AND BRACING PLAN FOR ENGINEER'S APPROVAL.
- 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.
- 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.
- THE CONTRACTOR SHALL DEMONSTRATE EXTREME CARE WHEN WORKING IN THE AREA OF EXISTING UTILITIES, PIPES AND DRAINAGE STRUCTURES SO AS NOT TO DAMAGE THEM.
- 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).
- 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).
- THE CONTRACTOR SHALL SUPPORT, PROTECT AND MAINTAIN EXISTING "CRITICAL" UTILITIES AND "CRITICAL" STRUCTURES, THROUGHOUT PERIOD OF CONSTRUCTION.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATION IN A DRY CONDITION AT ALL TIMES.
- 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.
- 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.
- ALL EXISTING CURBING, SIDEWALK AND PAVEMENT DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE SAWCUT AT THE NEXT NEAREST JOINT, REPLACED, AND RESTORED IN KIND.
- 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.
- 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.
- CONTRACTOR SHALL MONITOR ANY MOVEMENT OF THE SANITARY CHAMBER DURING THE PERIOD OF CONSTRUCTION.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MATERIAL TESTING IN COMPLIANCE WITH THE SPECIFICATIONS, AND UNLESS NOTED OTHERWISE.
- 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.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL. REFERENCE SPECIFICATION SECTION 120 FOR MAINTENANCE AND PROTECTION OF TRAFFIC AND EXHIBIT C CONNODOT TRAFFIC CONTROL PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL CONSTRUCTION ACTIVITIES FOLLOW OSHA SAFETY RULES AND GUIDELINES.
- NECESSARY PRECAUTIONS ARE TO BE TAKEN WHEN WORKING IN THE AREA OF THE EXISTING OVERHEAD WIRES AND CL&P UTILITY POLES #3830 & #870.
- 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.
- ALL ELEVATIONS ARE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929 UNLESS OTHERWISE NOTED.
- 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.
- BEST MANAGEMENT PRACTICES WILL BE UTILIZED DURING ANY ON-SITE DEWATERING ACTIVITIES WITHIN THE CONSTRUCTION LIMITS OF DISTURBANCE.
- MEAN HIGH WATER (MHW) ELEVATION IS BASED ON DATUM OBSERVED AT MIDDLETOWN TIDAL BENCH MARK LOCATED AT HARBOR PARK.
- HIGH TIDE LINE IS BASED ON REPORTED CTDEEP COASTAL JURISDICTION LINE (CJL)
- THE ORDINARY HIGH WATER (OHW) LINE IS DETERMINED BY A CERTIFIED SOILS SCIENTIST
- 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

- THE CONTRACTOR IS DIRECTED TO SPECIFICATION SECTION 02060 SELECTIVE DEMOLITION AS WELL AS TO THE PERTINENT DRAWINGS.
- NO ON-SITE DEMOLITION ACTIVITIES SHALL COMMENCE UNTIL ALL REQUIRED LOCAL BUILDING DEPARTMENT PERMITS, BONDS AND INSURANCES, ARE OBTAINED BY THE CONTRACTOR.
- NO BUILDING DEMOLITION WILL BE PERMITTED UNTIL COMPLETION OF ASBESTOS ABATEMENT AND UNIVERSAL WASTE REMOVAL. COORDINATE DEMOLITION WITH PCB ABATEMENT.
- REFER TO HAZARDOUS BUILDING MATERIAL ABATEMENT DRAWINGS AND SPECIFICATIONS FOR ABATEMENT PRIOR TO DEMOLITION OF PUMP STATION BUILDING, INCINERATOR BUILDING, AND FORMER TREATMENT TANKS.
- NO MATERIAL CRUSHING EQUIPMENT SHALL BE ALLOWED ON SITE.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- EARTH, TOPSOIL, DEMOLITION DEBRIS, CONTAINERS AND EQUIPMENT SHALL NOT BE PLACED OR STOCKPILED BENEATH TREES OR WITHIN THE LIMIT OF TREE DRIP LINES.
- 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.
- THE CONTRACTOR SHALL REMOVE DEEP FOUNDATION PILINGs, 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.
- 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.
- TERMINATE UTILITIES SERVING STRUCTURES TO BE DEMOLISHED IN ACCORDANCE WITH THE NOTED INSTRUCTIONS, DETAILS AND THE SPECIFICATIONS.
- 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.
- 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.
- REFER TO EXISTING STRUCTURAL PILING LOCATIONS ON DETAIL SHEETS
- REFER TO SPECIFICATION SECTION NO. 02060 SELECTIVE DEMOLITION.
- REFER TO SPECIFICATION SECTION 02072 REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANKS.
- REFER TO SHEET C-1.5 FOR MAPLE STREET SEWER BYPASS PUMPING LOCATION.
- 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
2	BID ADDENDUM 1	7/11/2016



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

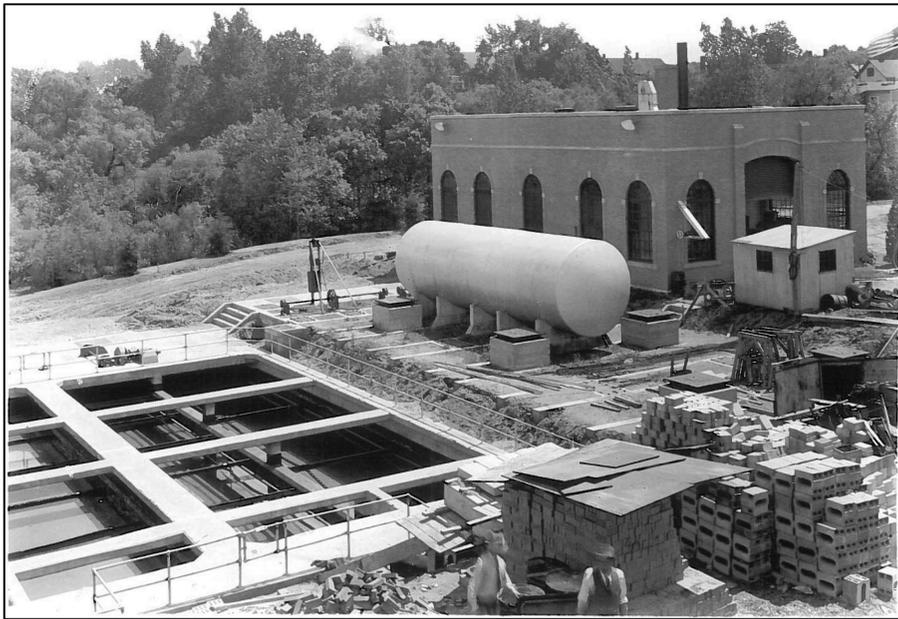
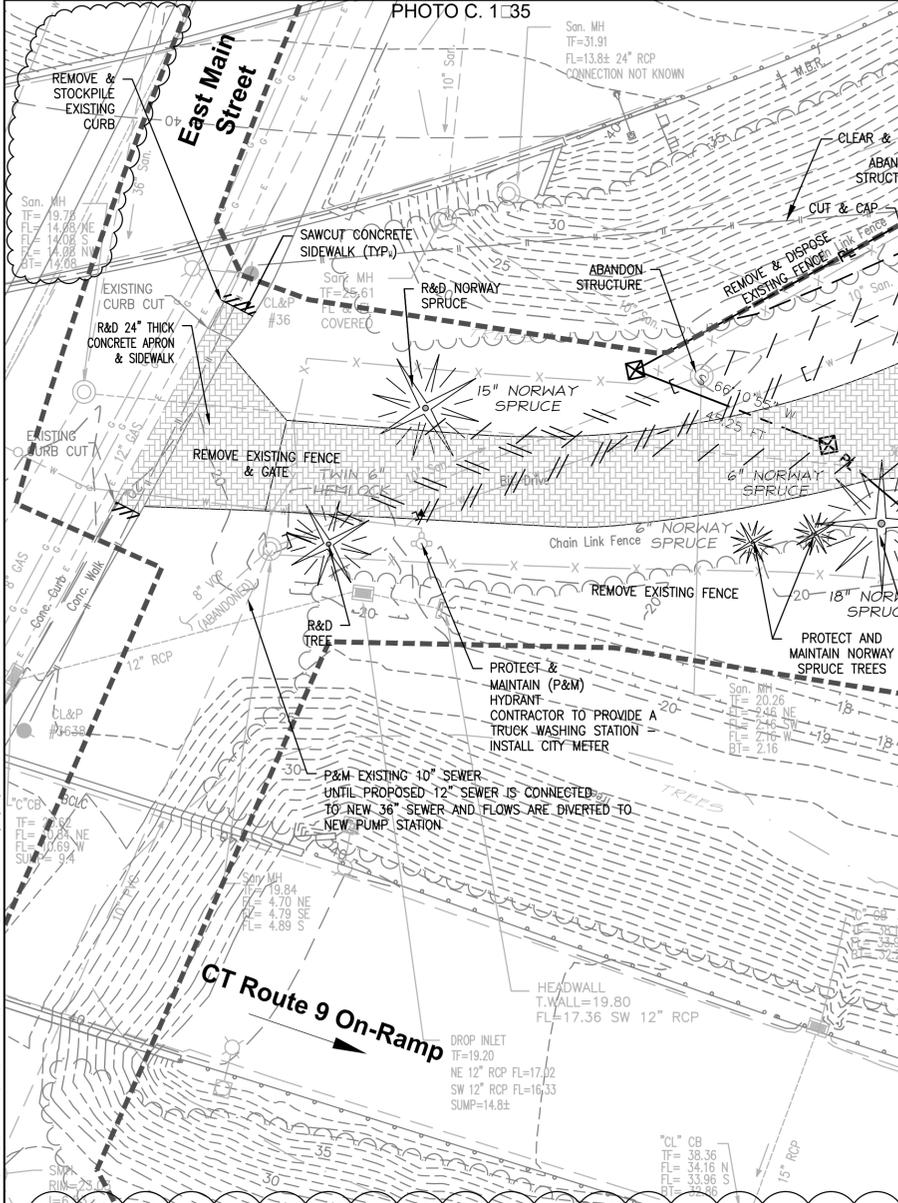
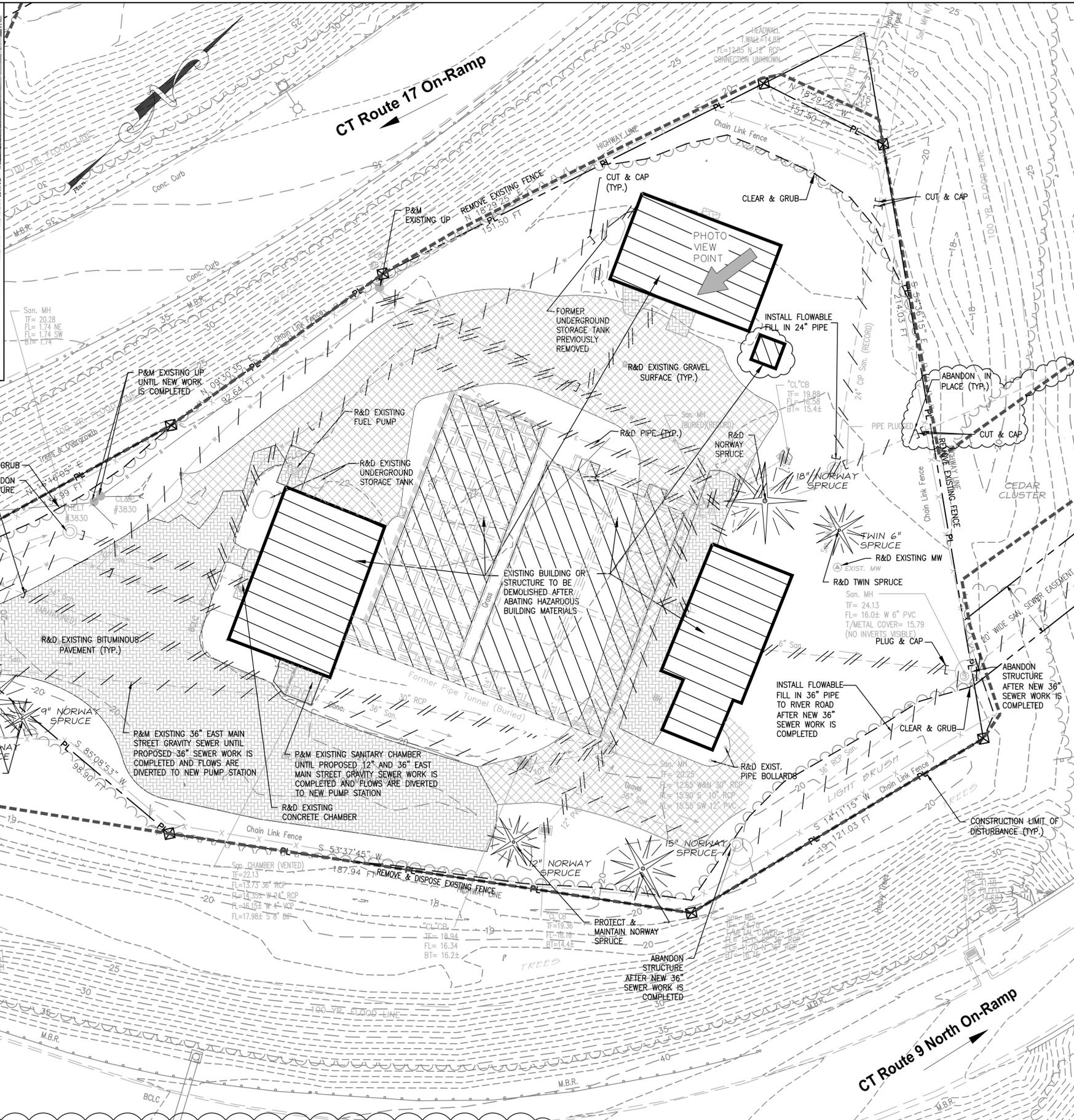
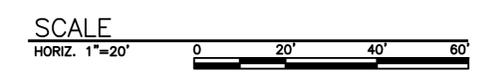


PHOTO C. 1-35



- NOTES:
1. REMOVE AND DISPOSE OF EXISTING UNDERGROUND STORAGE TANKS IN ACCORDANCE WITH SPECIFICATION 02072.
 2. ABATE EXISTING STRUCTURES IN ACCORDANCE WITH SPECIFICATION 02075, 02080, 02082 AND 02085 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.
 4. BACKFILL INCINERATOR BASEMENT WITH AOEC EXCAVATED SOILS. THE STACK PILES MAY BE LEFT IN PLACE OR CUT & CAPPED, DEPENDING ON FINAL GRADING.



REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



**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
2	BID ADDENDUM 1	7/11/2016



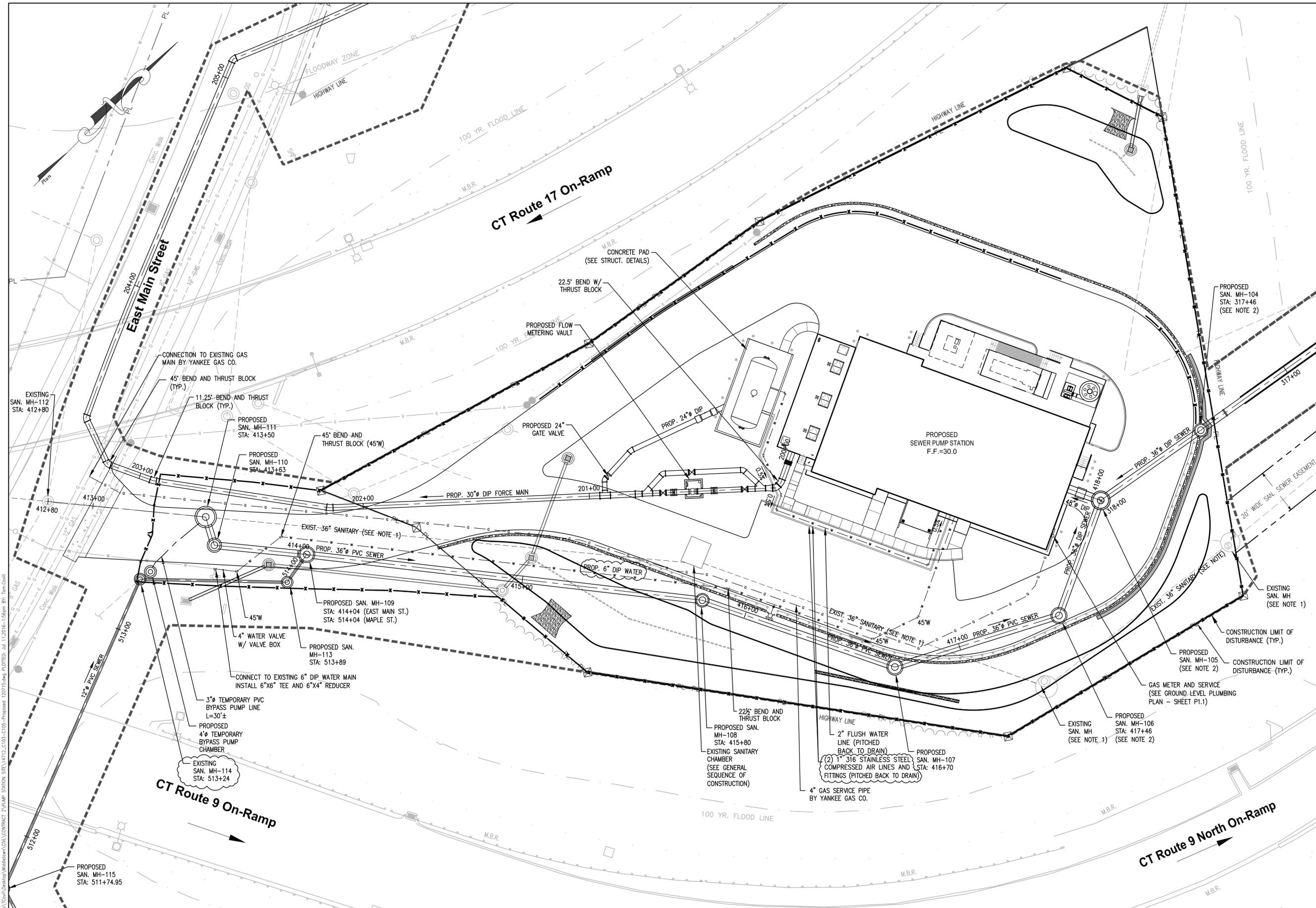
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

YARD PIPING PLAN

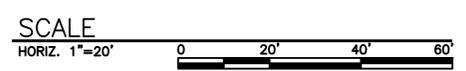
PROJECT NUMBER: 14712
DESIGNED BY: RED
DRAWN BY: RED
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

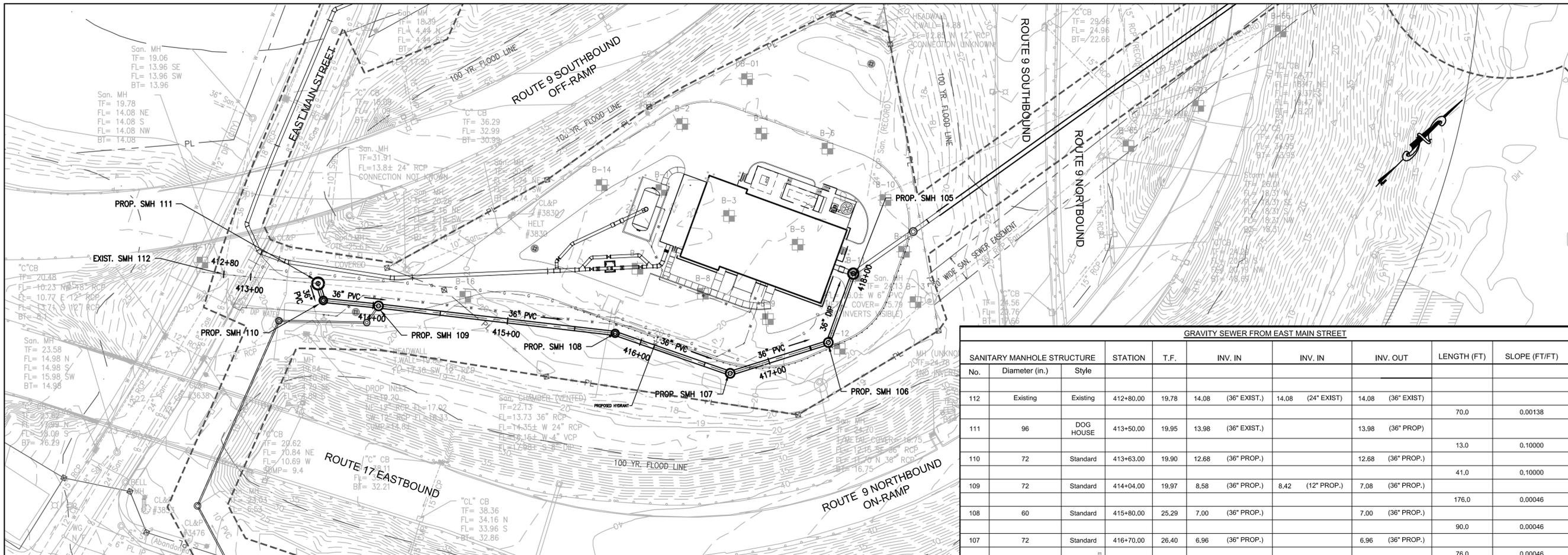
C-1.5



NOTES:
1. REFER TO DEMOLITION PLAN C-1.2 AND GENERAL SEQUENCE OF CONSTRUCTION NOTES ON SHEET G-0.4 REGARDING MAINTENANCE OF SEWAGE FLOWS DURING CONSTRUCTION.
2. PROVIDE PILE SUPPORTED FOUNDATION AT SMH 104, 105, 106 & ON ALL CONNECTING PIPES BETWEEN MANHOLE STRUCTURES AND BETWEEN SMH 105 AND THE BUILDING (REFER TO STRUCTURAL DETAIL).
3. THE CONTRACTOR SHALL PREPARE THE TRENCH; EVERSOURCE-GAS SHALL INSTALL THE GAS LINE AND METER AND THE CONTRACTOR SHALL BACKFILL AND COMPACT THE TRENCH.



DRAWING FILE: C:\Users\Tom\Documents\Middletown\CONTRACT 7\PUMP STATION\SITE\14712_C-103-C105-Proposed\201715.dwg PLOTTED: JUN 11 2016 - 1:58pm BY: Tom Covali

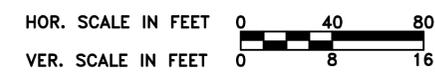
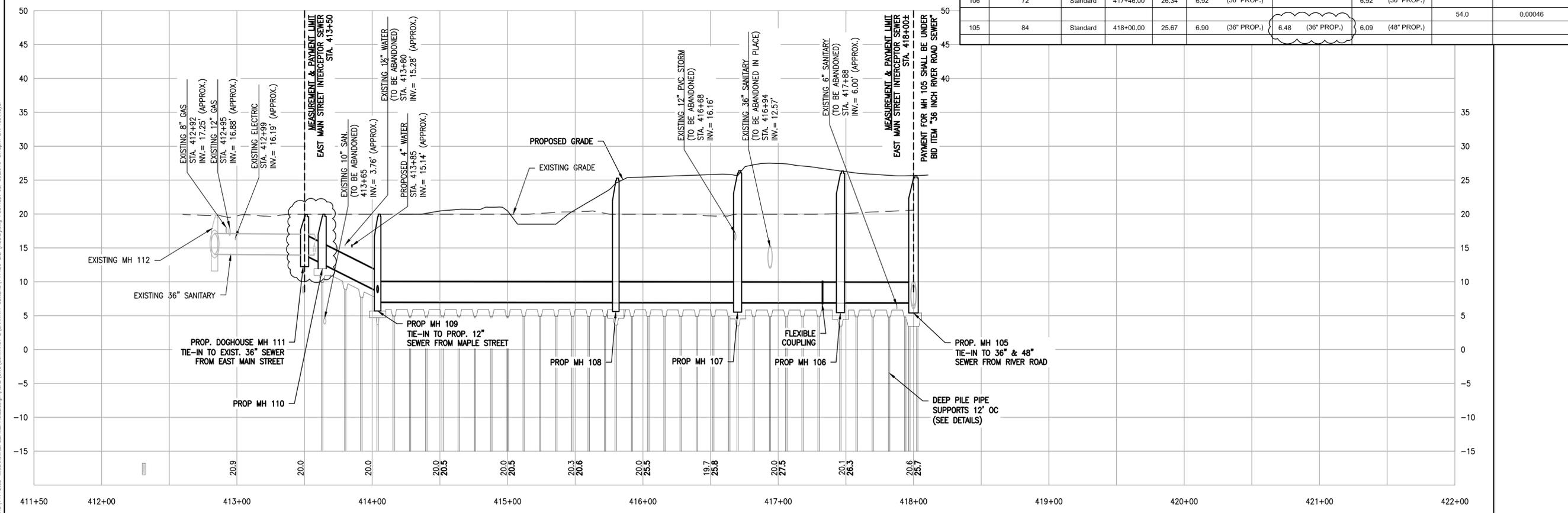


GRAVITY SEWER FROM EAST MAIN STREET

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+80.0	19.78	14.08 (36" EXIST.)	14.08 (24" EXIST.)	14.08 (36" EXIST.)	70.0	0.00138
111	96	DOG HOUSE	413+50.0	19.95	13.98 (36" EXIST.)		13.98 (36" PROP.)	13.0	0.10000
110	72	Standard	413+63.0	19.90	12.88 (36" PROP.)		12.88 (36" PROP.)	41.0	0.10000
109	72	Standard	414+04.0	19.97	8.58 (36" PROP.)	8.42 (12" PROP.)	7.08 (36" PROP.)	176.0	0.00046
108	60	Standard	415+80.0	25.29	7.00 (36" PROP.)		7.00 (36" PROP.)	90.0	0.00046
107	72	Standard	416+70.0	26.40	6.96 (36" PROP.)		6.96 (36" PROP.)	76.0	0.00046
106	72	Standard	417+46.0	26.34	6.92 (36" PROP.)		6.92 (36" PROP.)	54.0	0.00046
105	84	Standard	418+00.0	25.67	6.90 (36" PROP.)	6.48 (36" PROP.)	6.09 (48" PROP.)		

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016

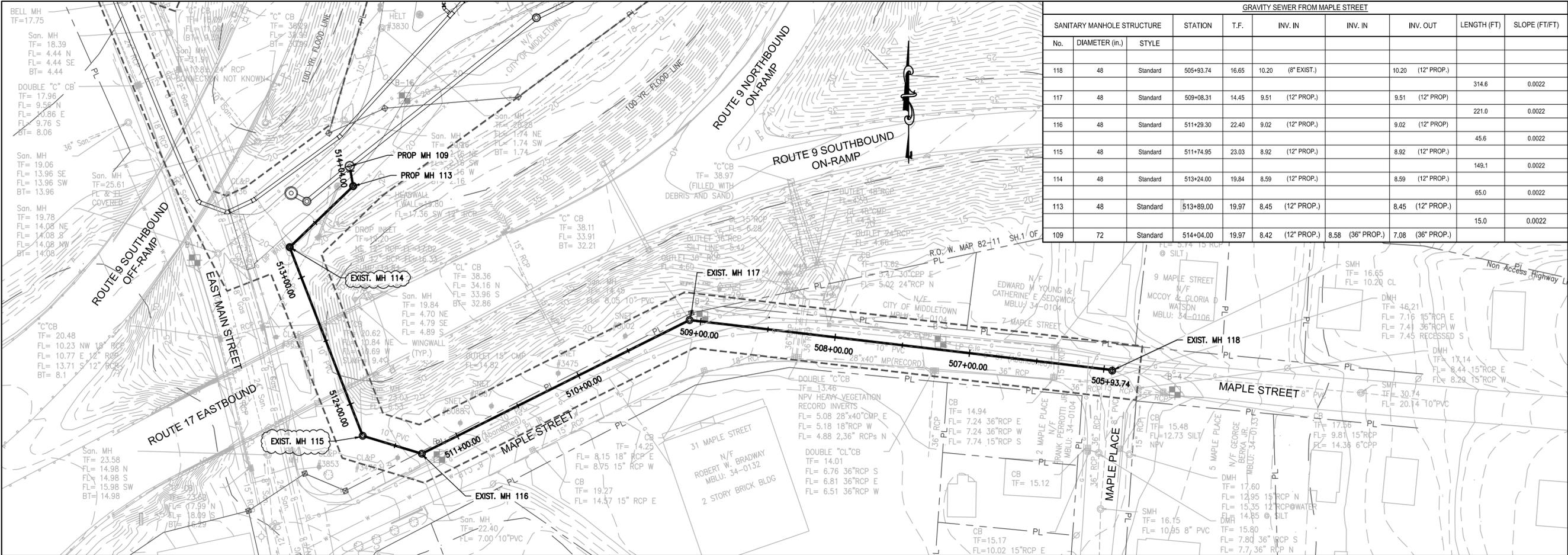


FRANCIS T. PATNAUDE
 INTER-MUNICIPAL PUMPING STATION
 MIDDLETOWN, CT

36" EAST MAIN STREET SEWER PLAN & PROFILE

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

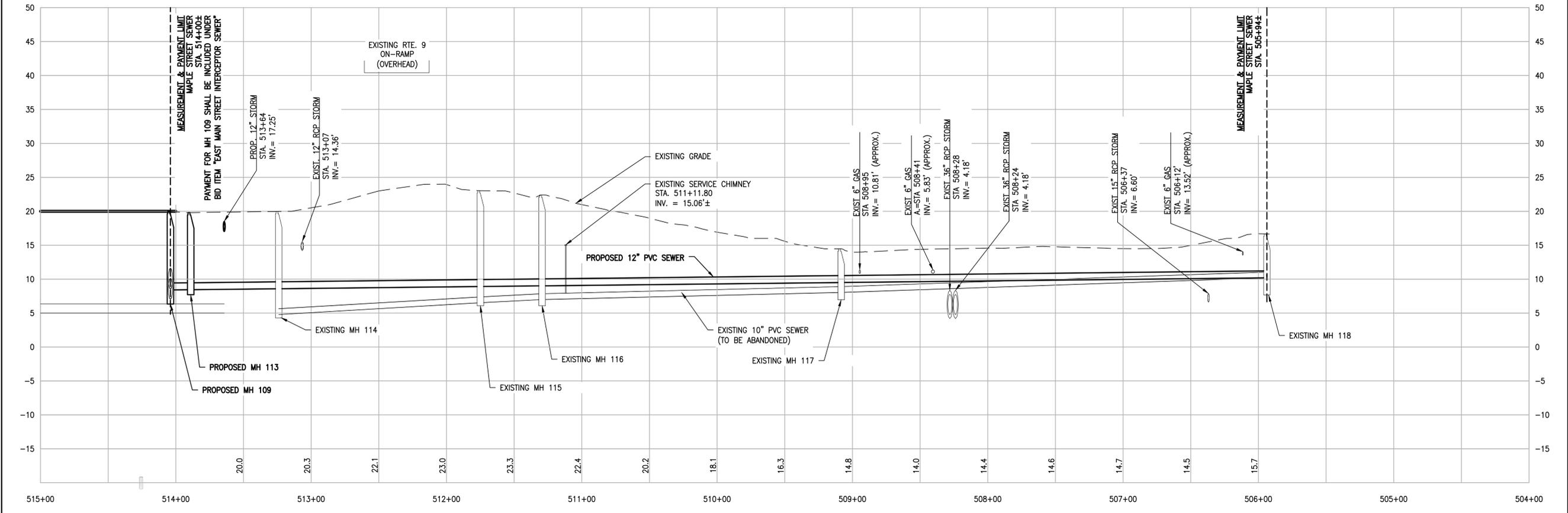
SHEET NUMBER:
C-2.2



GRAVITY SEWER FROM MAPLE STREET										
SANITARY MANHOLE STRUCTURE	STATION	T.F.	INV. IN	INV. IN	INV. OUT	LENGTH (FT)	SLOPE (FT/FT)			
No.	DIAMETER (in.)	STYLE								
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.cdrmagine.com

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



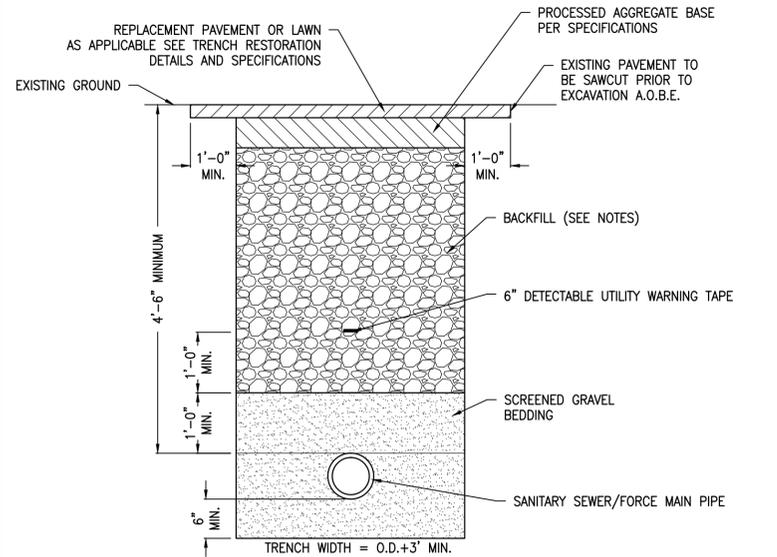
FRANCIS T. PATNAUDE
INTER-MUNICIPAL PUMPING STATION
MIDDLETOWN, CT

12" MAPLE STREET SEWER
PLAN & PROFILE

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

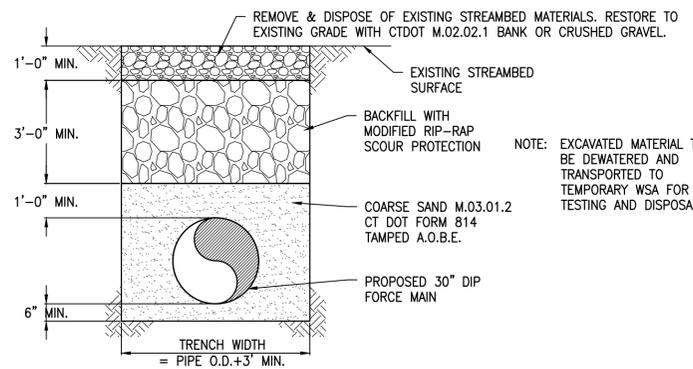
C-2.3

DRAWING FILE: C:\PROJECTS\14712-02-Middletown_PUMPING STATION\CONTRACT 3_SANITARY_SEWERS\14712-02-3.3 [REVISION]_DWG_PLOTTED: Jul 08, 2016 - 10:10am BY: cobb.dvr



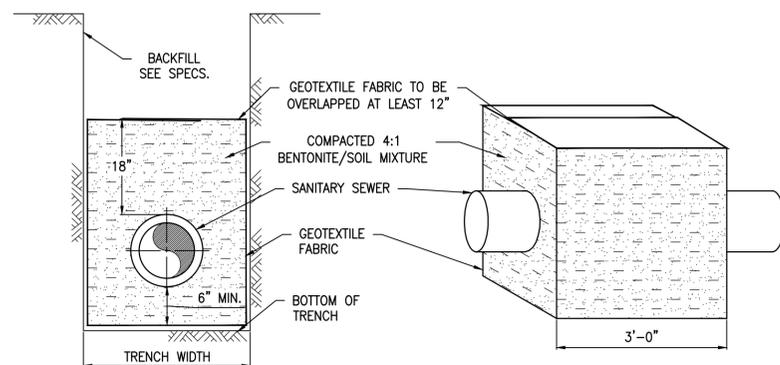
- NOTES:**
- IN PAVED AREAS OR AREAS TO BE PAVED OR THE SHOULDER OF A PAVED ROADWAY, BACKFILL MATERIAL SHALL BE BANK-RUN GRAVEL M.02.06 GRADATION C, FORM 816, AS APPROVED BY THE ENGINEER. PROCESSED AGGREGATE CAN BE USED IN LIEU OF BANK-RUN GRAVEL. IN ALL OTHER AREAS, SUITABLE EXCAVATED MATERIAL MAY BE 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.



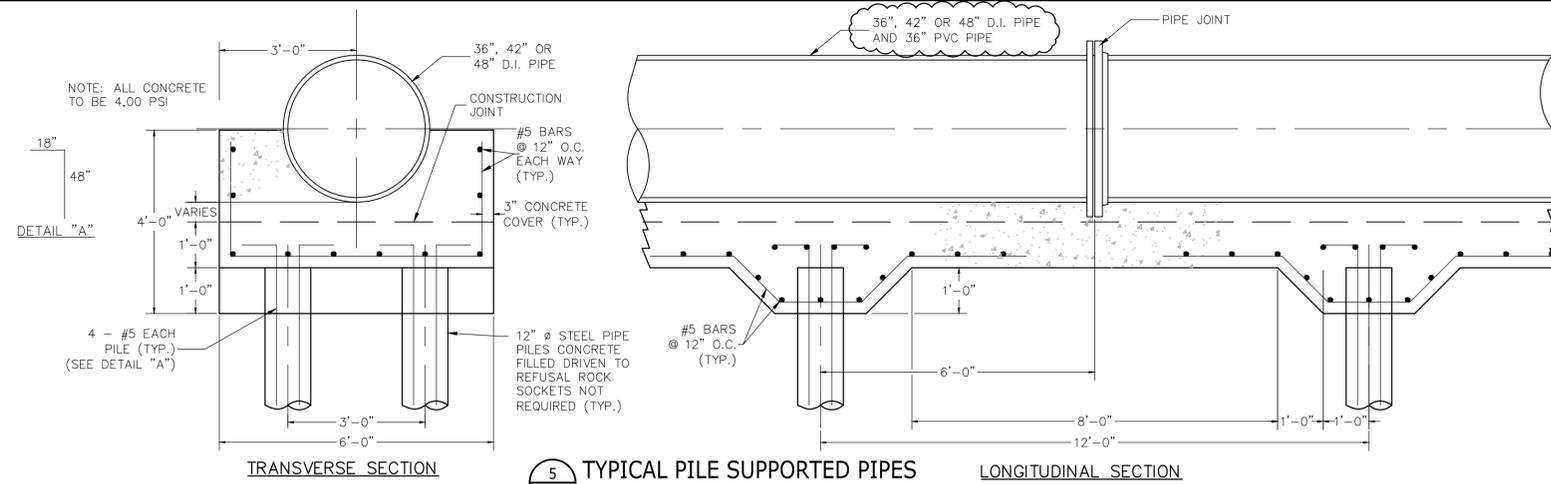
NOTE: EXCAVATED MATERIAL TO BE DEWATERED AND TRANSPORTED TO TEMPORARY WSA FOR TESTING AND DISPOSAL.

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

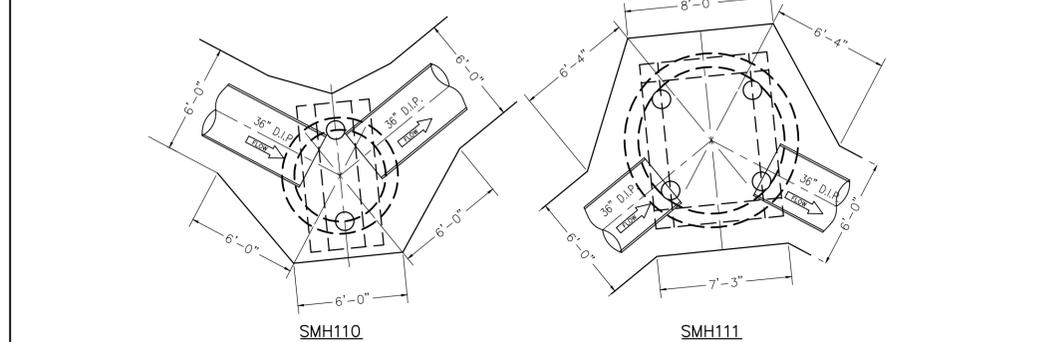
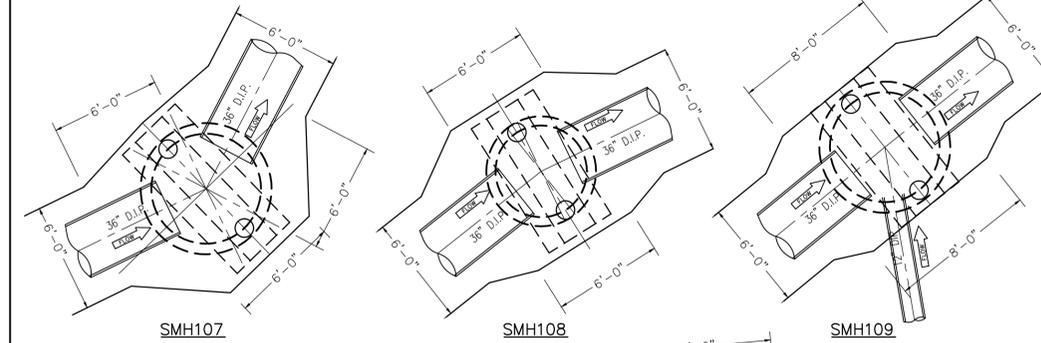
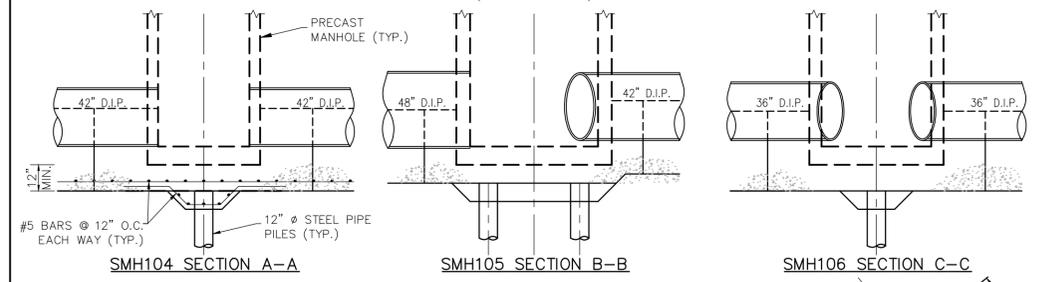
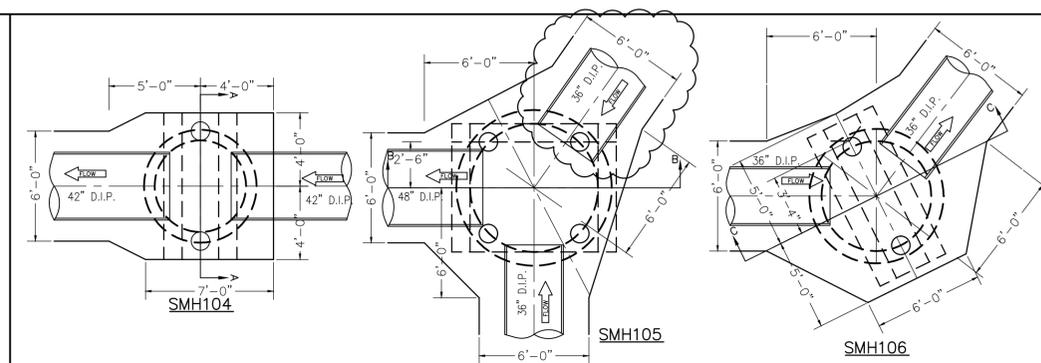


NOTE: PROVIDE TRENCH DAMS 33' ON-CENTER WHEREVER TRENCH GRADE IS 8% AND GREATER

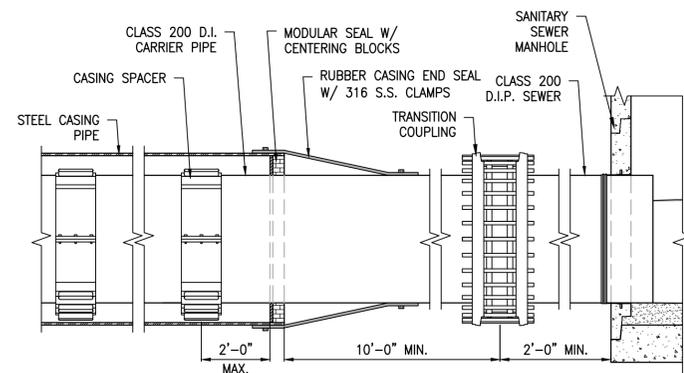
3 TYPICAL TRENCH DAM
C-5.3 N.T.S.



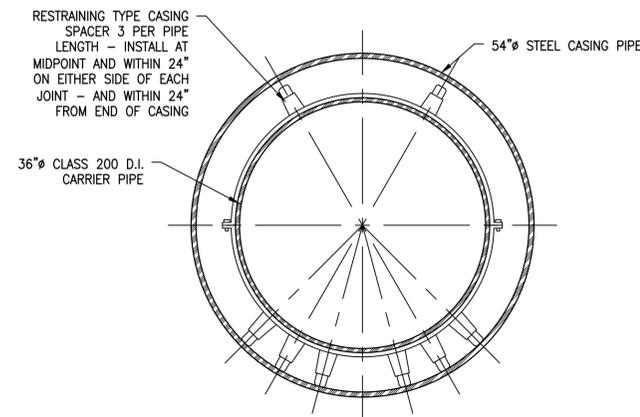
5 TYPICAL PILE SUPPORTED PIPES
C-5.3 N.T.S.



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



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



4 TYPICAL SECTION
C-5.3 N.T.S.

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



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

GENERAL NOTES:

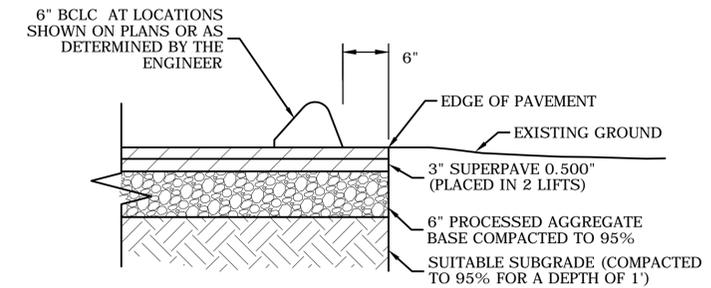
1. ANY CONTROLLED MATERIALS THAT ARE NOT IMMEDIATELY REUSED SHALL BE TRANSPORTED TO THE WASTE STOCKPILE AREA (WSA).
2. ANY NONCONTROLLED MATERIALS SHALL BE TRANSPORTED TO THE SOILS CLASSIFICATION AREA (SCA). THE WSA MAY BE USED AS OVERFLOW FOR THE SCA BUT THE CONTROLLED MATERIALS SHALL BE KEPT SEPARATED FROM THE NONCONTROLLED MATERIALS.
3. NO CONTROLLED MATERIALS SHALL BE BROUGHT TO THE SOILS CLASSIFICATION AREA.
4. THE CONTRACTOR MAY USE THE WSA FOR STAGING AND STORING OF NONCONTROLLED MATERIALS, BUT SHALL KEEP THESE MATERIALS SEPARATED FROM THE CONTROLLED MATERIALS.
5. WSA INSTALLATION AND ALL REQUIRED MATERIAL ARE AS INDICATED ON THE PLANS.
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 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 MINIMIZE 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. CHAIN LINK FENCE MAY BE UTILIZED IN RESIDENTIAL NEIGHBORHOODS TO PREVENT UNAUTHORIZED ENTRY UNTO STOCKPILES WHERE THERE ARE UNLIMITED ACCESS TO PEDESTRIANS AND OR TRAFFIC.
- B. PORTABLE TYPE CHAIN LINK FENCE/GATES MAY BE UTILIZED ACROSS THE OPENINGS ON THE BINS AT THE DIRECTION OF THE ENGINEER.
- C. IN AREAS WHERE THERE ARE LIMITED ACCESS OTHER APPROPRIATE PREVENTATIVE MEASURES MAY BE ACCOMPLISHED THROUGH THE USES OF OTHER NATURAL OR ARTIFICIAL BARRIERS.

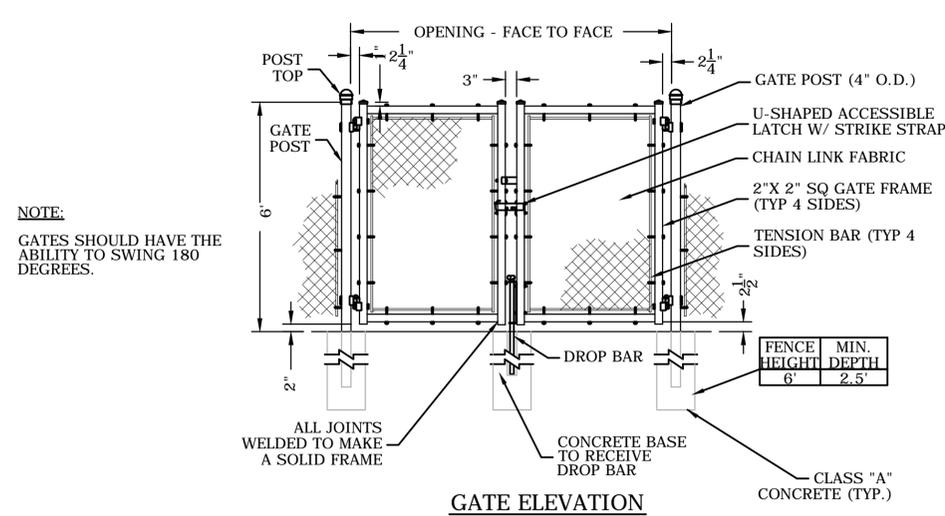
NOTES:

- A. DIMENSIONS SHOWN HERE ARE INTERIOR AND APPROXIMATE SUGGESTED DIMENSIONS.
- B. THE CONTRACTOR SHALL UTILIZE THE MILES LANE SITE TO ITS MAXIMUM CAPACITY AS THERE IS NO OTHER SITE TO TRANSPORT CONTROLLED MATERIALS.



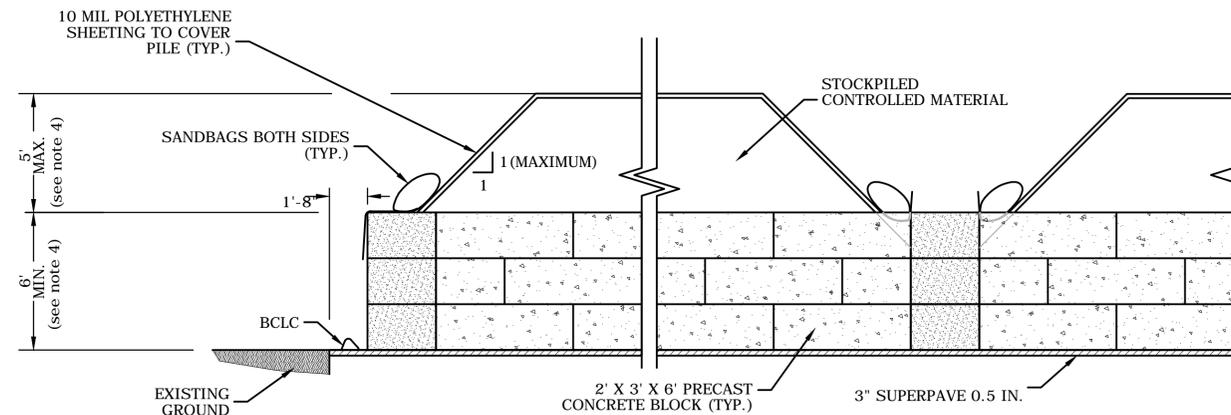
NOTE:

IF THE WSA IS TO BE LOCATED ON EXISTING PAVEMENT SUCH AS ROADWAY AND OR PARKING LOT A COMPOSITE PAVEMENT STRUCTURE WILL NOT BE REQUIRED.

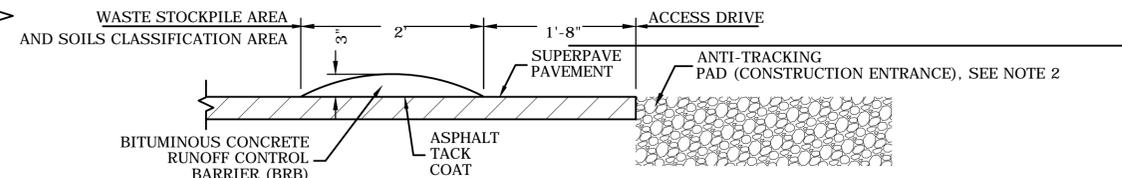


1 TYPICAL DOUBLE SWING GATES

3 COMPOSITE PAVEMENT STRUCTURE DETAIL



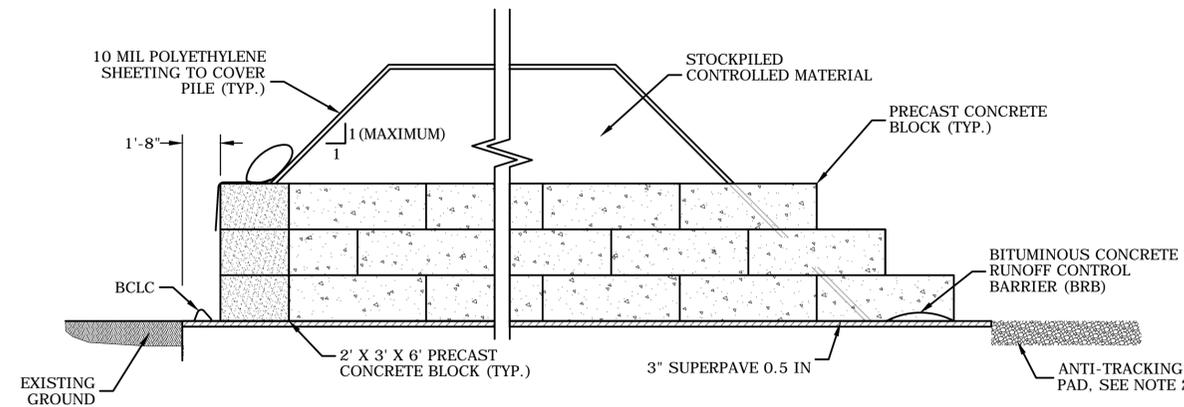
SECTION B-B



NOTE:

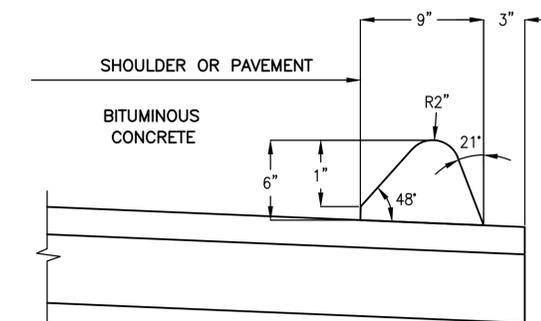
- A. INSTALLATION OF BRB SHALL BE ON PAVEMENT ONLY AND IS BASED ON FIELD CONDITIONS OR AS DETERMINED BY THE ENGINEER.

3 BITUMINOUS RUNOFF CONTROL BARRIER (BRB) DETAIL



SECTION A-A

2 WASTE STOCKPILE AREA DETAIL



5 BITUMINOUS CONCRETE LIP CURBING

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



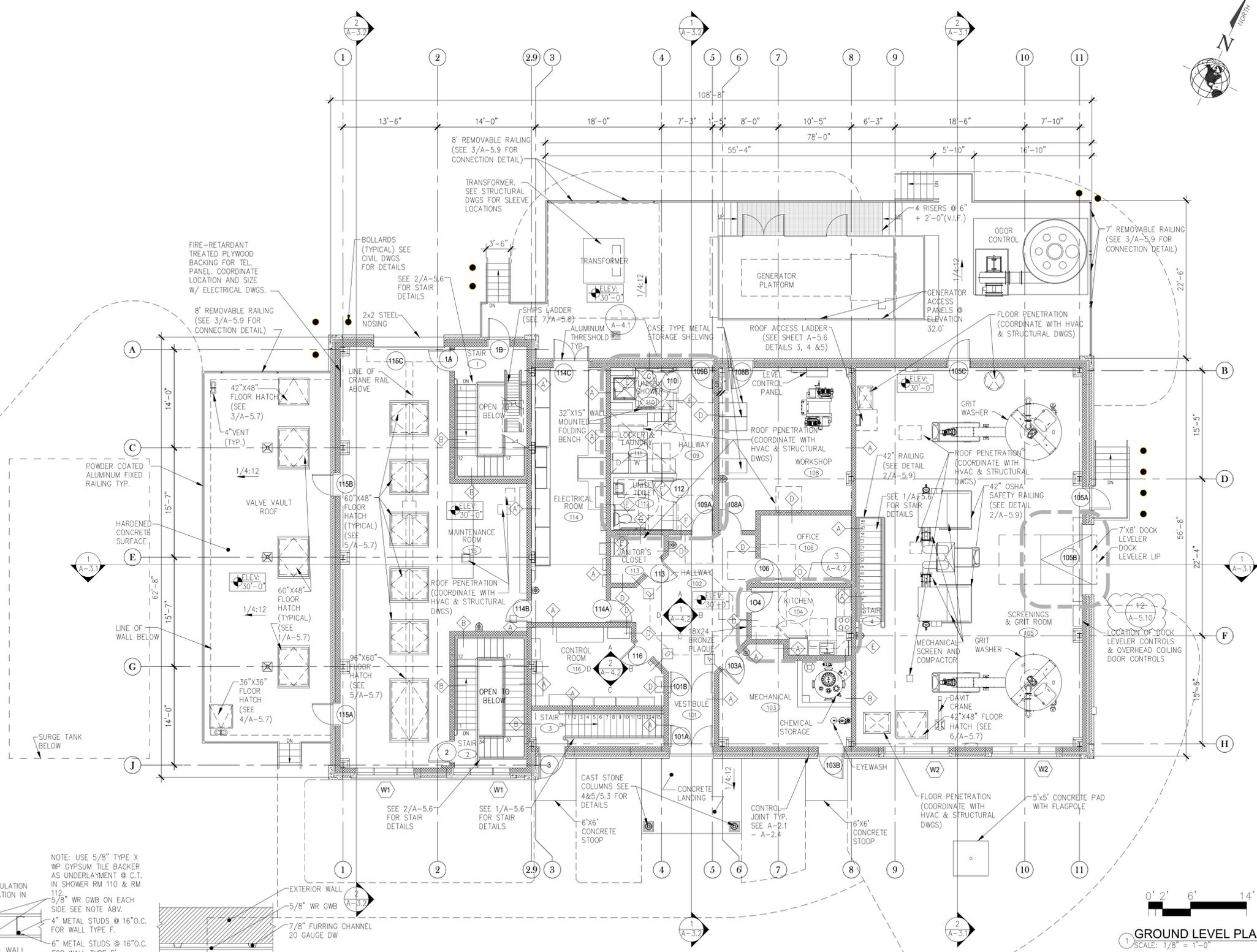
FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT

WASTE STOCKPILE 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
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM-1	7/11/2016



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

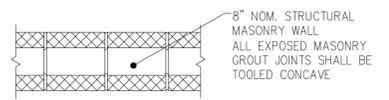
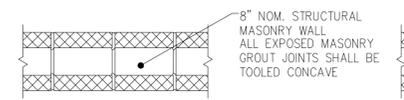
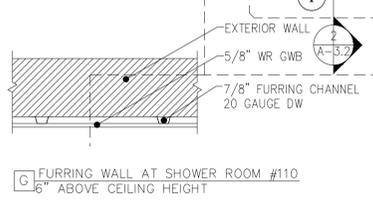
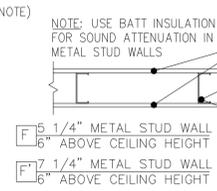
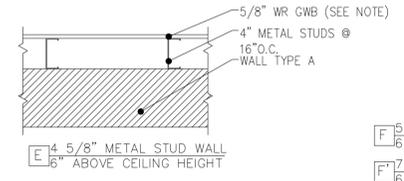
**GROUND LEVEL
ARCHITECTURAL
PLAN**

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

A-1.1

NOTE: USE 5/8" TYPE X WP GYPSUM TILE BACKER AS UNDERLAYMENT @ C.T. IN SHOWER RM 110 & RM 112.

NOTE: USE 5/8" TYPE X WP GYPSUM TILE BACKER AS UNDERLAYMENT @ C.T. IN SHOWER RM 110 & RM 112.



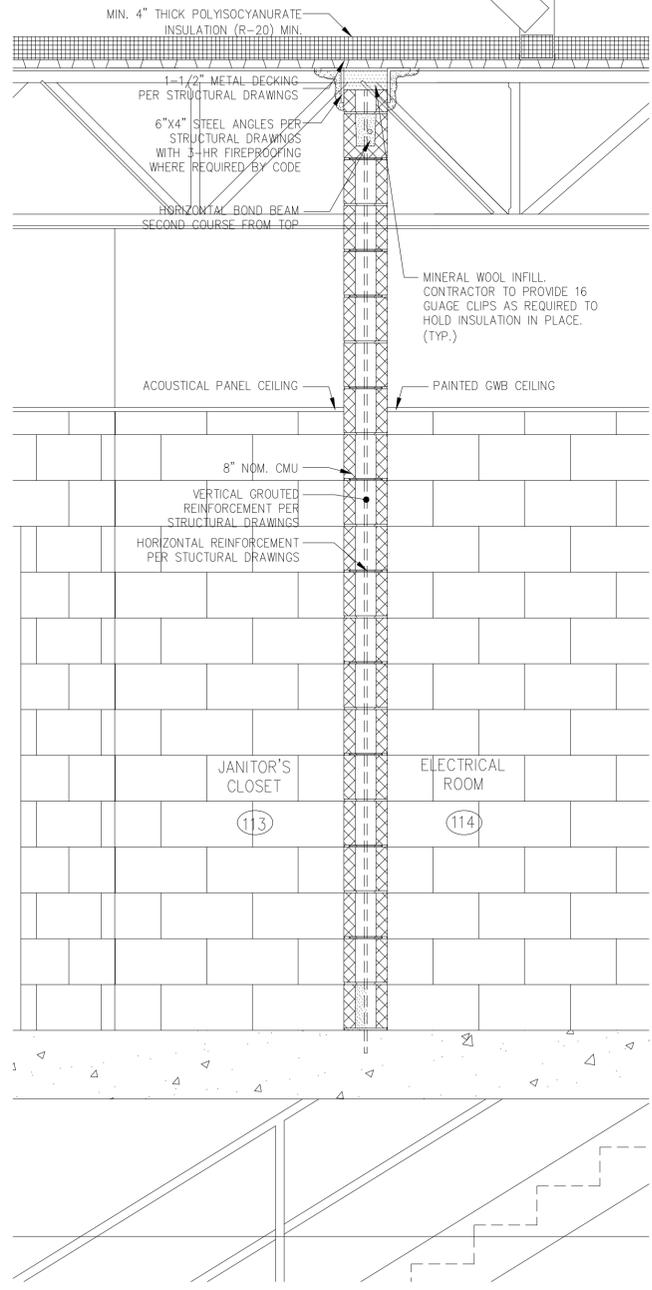
GENERAL FLOOR PLAN NOTES:

- 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 UNLESS OTHERWISE NOTED.
- 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, 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 JANITOR'S CLOSET SHALL BE OUTFITTED WITH 5/8" WR GWB.
- SEE MECHANICAL PROCESS DRAWINGS FOR ALL FINAL PROCESS EQUIPMENT & PIPING LOCATIONS.
- CONTRACTORS TO COORDINATE ALL CONCRETE SLEEVE LOCATIONS WITH ALL TRADES.

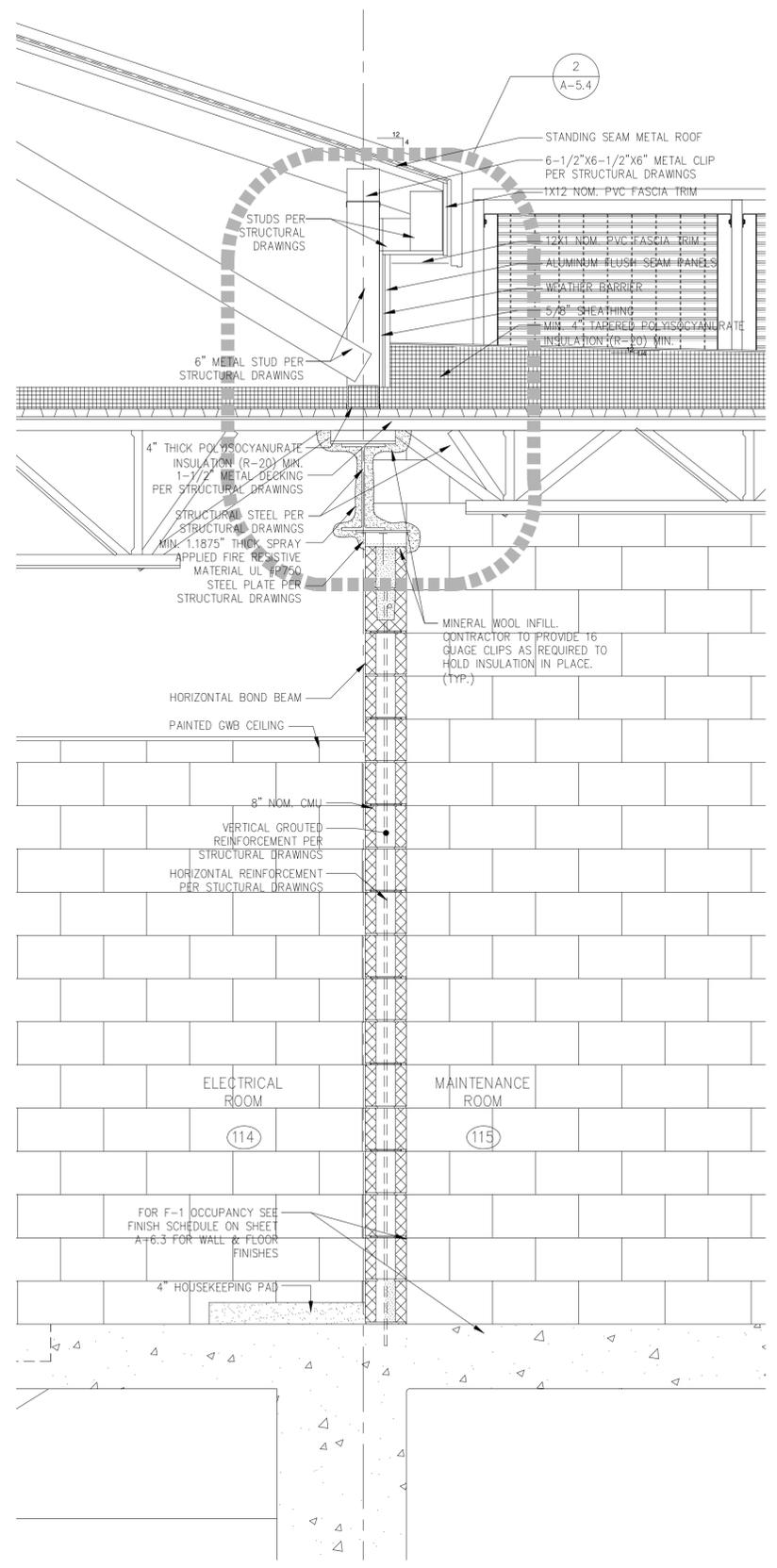
SEE SHEET A-1.12 FOR FULLY DIMENSIONED FLOOR PLAN

DRAWING FILE: L:\V\13005 Middletown Pump Station\Contract Documents\A-1.1 (Ground Plan) (MGI)dwg PLOTTED: Jul 11, 2016 9:07am BY: Scharner

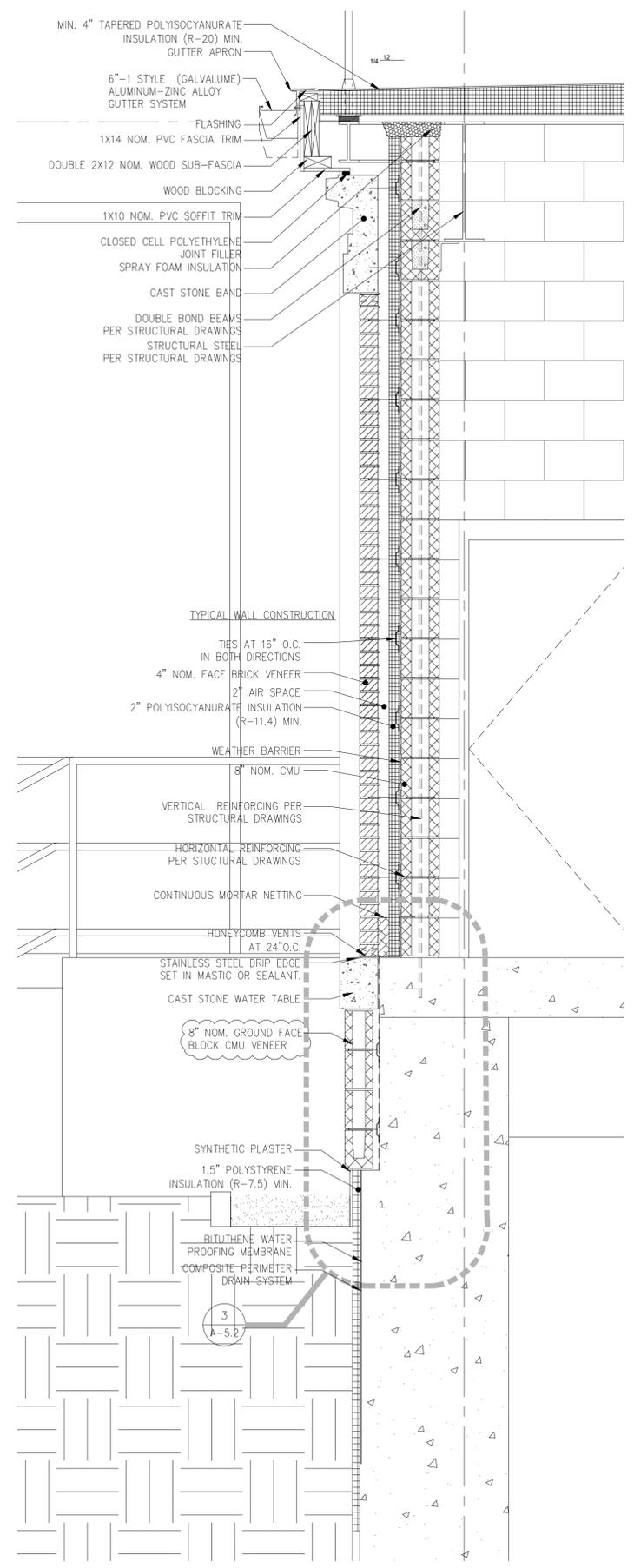
NOTE: THE CONTRACTOR MAY USE EITHER MINERAL WOOL OR SPRAY FOAM INSULATION FOR THE SPACE BETWEEN THE TOP OF MASONRY WALL AND BOTTOM OF DECK.



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



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



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

DRAWING FILE: L:\13005 Middletown Pump Station\Contract Documents\A-3.1...3.4 (Sections)dwg PLOTTED: Jul 11, 2016 12:13pm BR: Sattawh

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM-1	7/11/2016



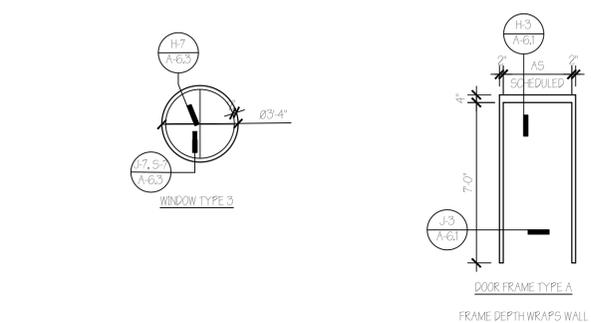
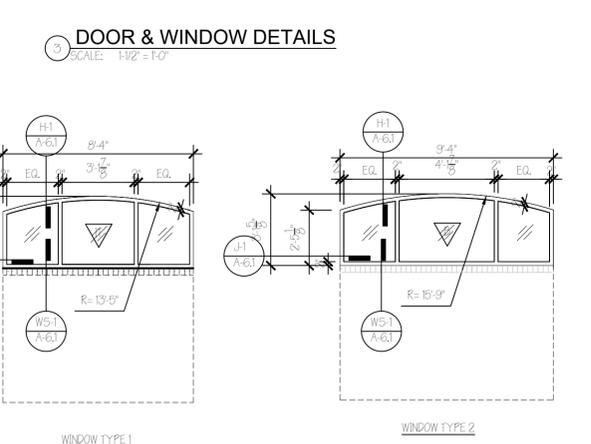
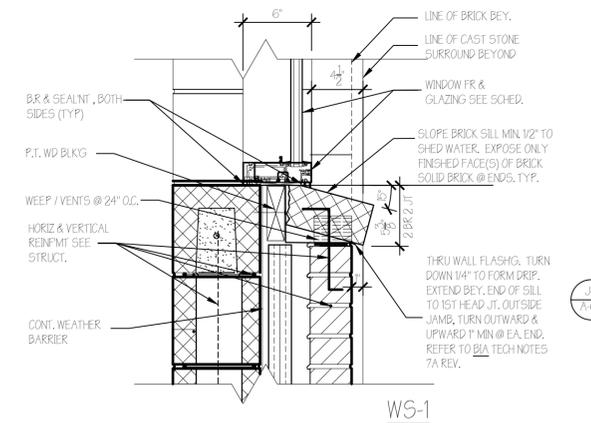
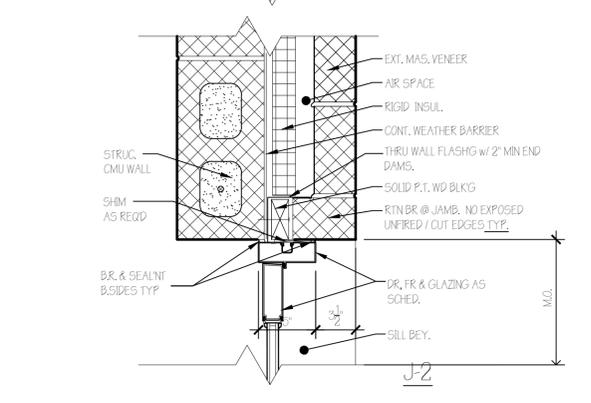
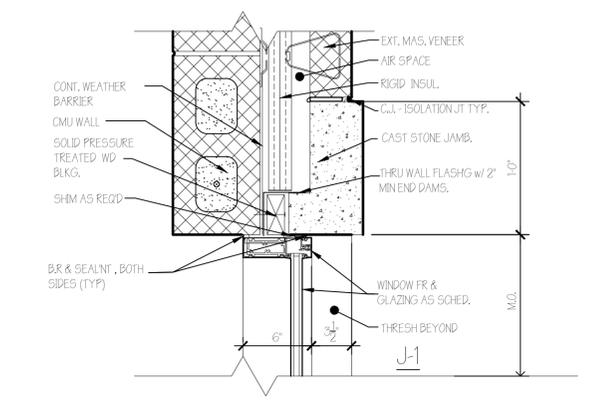
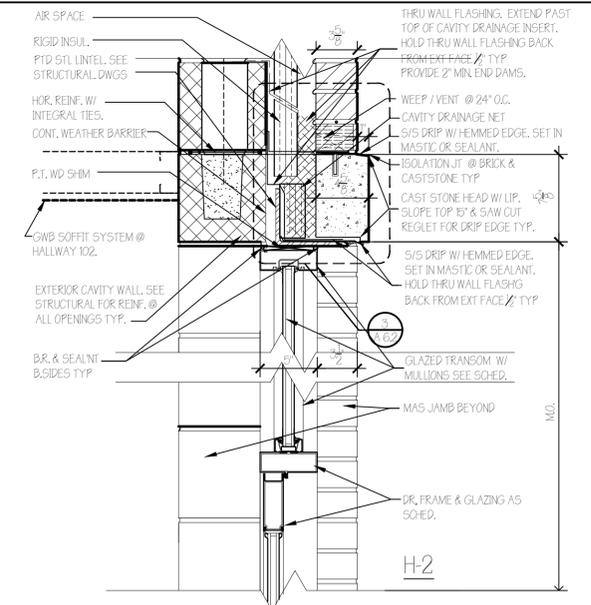
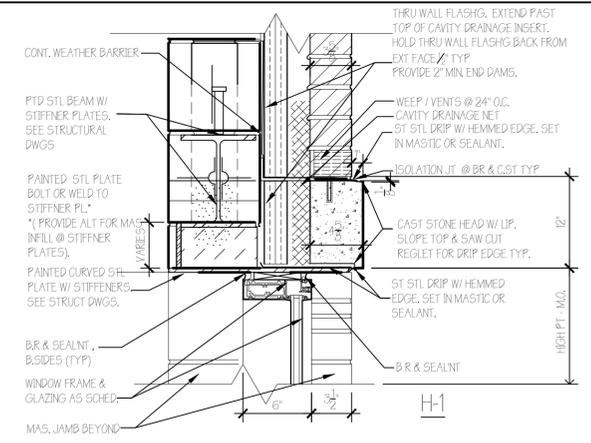
**FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION
MIDDLETOWN, CT**

WALL SECTIONS

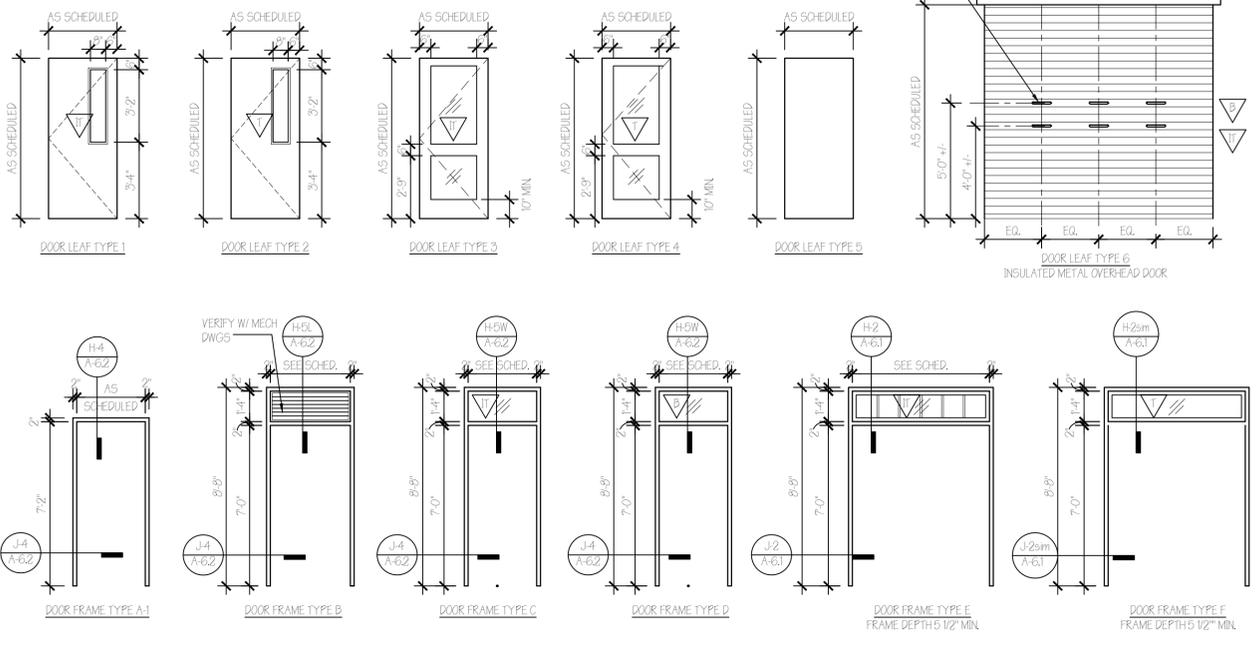
PROJECT NUMBER: 14712
DESIGNED BY: PSP
DRAWN BY: PM
DATE: FEBRUARY 23, 2016
SHEET NUMBER:

A-3.3

DRAWING FILE: L:\A13005 Middletown Pump Station\Contract Documents\A-6.1_6.3.dwg PLOTTED: Jun 11 2016 8:12am BY: Sattawer



WINDOW ELEVATIONS
SCALE: 1/4" = 1'-0"



DOOR & FRAME ELEVATIONS
SCALE: 1/4" = 1'-0"

DOOR NUMBER	DETAIL SHEET	DOOR		FRAME			FIRE RATING (MINUTES)			LINTEL			REMARKS	
		MAT'L	SIZE	DETAIL / SHEET NUMBER			MAT'L	100 MINUTES	30 MINUTES	60 MINUTES	SIZE			
				HEAD DETAIL	JAMB DETAIL	SILL DETAIL					4'-0" HIGH	5'-0" HIGH		6'-0" HIGH
101A	A-6.1	PAINTED HOLLOW METAL	7'-0" HIGH	A6.1.A6.2.A6.3	H2	J2	S1				4'-0" WIDE	8'-0" HIGH	STEEL	ENTRY DOOR - EXTERIOR
101B	A-6.1	BRUSHED STAINLESS STEEL	7'-0" HIGH	A6.1.A6.2.A6.3	H2sm	J2sm	S3				8'-0" WIDE	8'-0" HIGH	CAST STONE	ENTRY DOOR - VESTIBULE
103A	A-6.1	DOUBLE LEAF DOOR	7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH	CONCRETE	MORTAR GROUT HM FRAME
103B	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H3L	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - MORTAR GROUT HM FRAME
104	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		
105A	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5W	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DR IN EXPL. RESISTANT AREA - MORTAR GROUT HM FRAME
105B	A-6.3		7'-0" HIGH	A6.1.A6.2.A6.3	H6	J6	S3				8'-0" WIDE	8'-0" HIGH		EXPOS. RESIS-FACTORY FIN. CH DR W/ GASKETED SILL
105C	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5W	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DR IN EXPL. RESISTANT AREA - MORTAR GROUT HM FRAME
106	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		
108A	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		
108B	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5W	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - FOAM FILL HM FRAME
109A	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		
109B	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5W	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - FOAM FILL HM FRAME
110	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S4				8'-0" WIDE	8'-0" HIGH		
112	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S4				8'-0" WIDE	8'-0" HIGH		
113	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		
114A	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S3				8'-0" WIDE	8'-0" HIGH		MORTAR GROUT HM FRAME
114B	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S3				8'-0" WIDE	8'-0" HIGH		MORTAR GROUT HM FRAME
114C	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H4	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - FOAM FILL HM FRAME
115A	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5L	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - MORTAR GROUT HM FRAME
115B	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5L	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - MORTAR GROUT HM FRAME
115C	A-6.3		7'-0" HIGH	A6.1.A6.2.A6.3	H6	J6					8'-0" WIDE	8'-0" HIGH		INSUL. CH DR W/ GASKETED SILL
116														
1A	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		MORTAR GROUT HM FRAME
1B	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5W	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DOOR - MORTAR GROUT HM FRAME
2	A-6.1		7'-0" HIGH	A6.1.A6.2.A6.3	H3	J3	S2				8'-0" WIDE	8'-0" HIGH		MORTAR GROUT HM FRAME
3	A-6.2		7'-0" HIGH	A6.1.A6.2.A6.3	H5W	J4	S1				8'-0" WIDE	8'-0" HIGH		EXTERIOR DR IN EXPL. RESISTANT AREA - MORTAR GROUT HM FRAME

GLAZING LEGEND:
 ▽ T EXPL. RESIST. HAZARD GLASS LOW L
 ▽ T 1/4" TEMPERED GLAZING PANEL
 ▽ T TEMPERED THERMAL GLAZING PANEL
 T TEMPERED GLAZING PANEL AS SCHEDULED

FINISH NOTE:
 ALL FRAMES LOUVERS & DOORS SCHEDULED TO BE PAINTED SHALL HAVE FACTORY APPLIED FINISH. W/ SUPER HD. CORROSION RESIST FINISH. KYNAR 500, PVDF RESIN OR SIM.

DIMENSIONAL NOTE:
 ALL DIMENSIONS SHOWN ARE TO ROUGH OPENING. ADJUST ACTUAL FRAME SIZES TO ACCOUNT FOR MANUFACTURER'S RECOMMENDED SPACING AND/OR SHIMMING AT HEADS, JAMBS, AND SILLS.



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM-1	7/11/2016



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

DOOR SCHEDULE, WINDOW SCHEDULE, DOOR & WINDOW TYPES

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

A-6.1

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.
- COMPACTED 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.
- ANY TEMPORARY BLOCK-OUTS IN THE CONCRETE FOUNDATIONS, IF PROPOSED BY THE CONTRACTOR, SHALL HAVE LOCATIONS AND DETAILS SUBMITTED FOR REVIEW AND APPROVAL BY THE SEOR. BLOCK OUTS SHALL BE LIMITED TO 18"x18" OPENINGS IN FOUNDATIONS, UNLESS NOTED OTHERWISE. ADDITIONAL REINFORCEMENT AT BLOCK-OUTS MAY BE REQUIRED BASED ON A REVIEW BY THE SEOR. THE COST OF ADDITIONAL REINFORCEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE BID. ALL TEMPORARY BLOCK-OUTS SHALL BE FILLED WITH HIGH-STRENGTH, NON-SHRINK GROUT AND WATERPROOFED PER THE CONTRACT DRAWINGS AND SPECIFICATIONS.

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 A325M 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 OTHER TRADES 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.
 - STRUCTURAL STEEL AND METAL DECK SHOP DRAWINGS (CT P.E. STAMP REQ'D)
 - 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.
 - 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.
 - DESIGN LOADS: AS FOLLOWS
 - DEAD LOADS: WEIGHTS OF MATERIALS AND CONSTRUCTION
 - LIVE LOADS: 10 PSF INTERNAL BUILDING PRESSURE ON ALL VERTICAL WALLS
 - SEISM LOADS: SEE THIS SHEET FOR SEISMIC DESIGN PARAMETERS
 - WIND LOADS: SEE THIS SHEET FOR WIND DESIGN PARAMETERS
 - DEFLECTION LIMITS: DESIGN FRAMING SYSTEMS TO WITHSTAND DESIGN LOADS WITHOUT DEFLECTIONS GREATER THAN THE FOLLOWING:
 - INTERIOR NON LOAD-BEARING WALL FRAMING: HORIZONTAL DEFLECTION OF 1/240 OF THE WALL HEIGHT UNDER A HORIZONTAL LOAD OF 10 PSF.
 - 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
 - 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:
 - UPWARD AND DOWNWARD MOVEMENT OF 1 1/2 INCHES.
 - CONCRETE REBAR SHOP DRAWINGS
 - METAL STAIRS, HAND RAILS AND GUARD RAILS
 - 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).
 - CONCRETE FORMWORK
 - SHORING & BRACING CALCULATIONS AND SHOP DRAWINGS (CT P.E. STAMP REQ'D)
 - EXCAVATION
 - SHEETING AND SHORING
 - BRACING CALCULATIONS & SHOP DRAWINGS (CT P.E. STAMP REQ'D)
 - 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 SQ 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:
 - AT ENDS OF UNITS AND AT ALL INTERMEDIATE SUPPORTS: BY PUDDLE WELDS NOT LESS THAN 3/4 INCH DIAMETER WITH 3/67 WELD PATTERN.
 - SIDE LAPS OF ADJACENT UNITS: SHALL BE FASTENED BY SIDE SEAM WELDING OR SIDLAP SCREWS SPACED PER MANUFACTURER'S ENGINEERED CALCULATIONS WITH A MAXIMUM SPACING OF 24 INCHES ON CENTER. ARC 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.

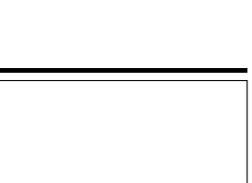


2080 Silas Deane Highway
Rocky Hill, Connecticut
TEL. (860) 563-3158
www.cdrmaguire.com



REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



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

STRUCTURAL NOTES

PROJECT NUMBER: 14712.02

DESIGNED BY: IES

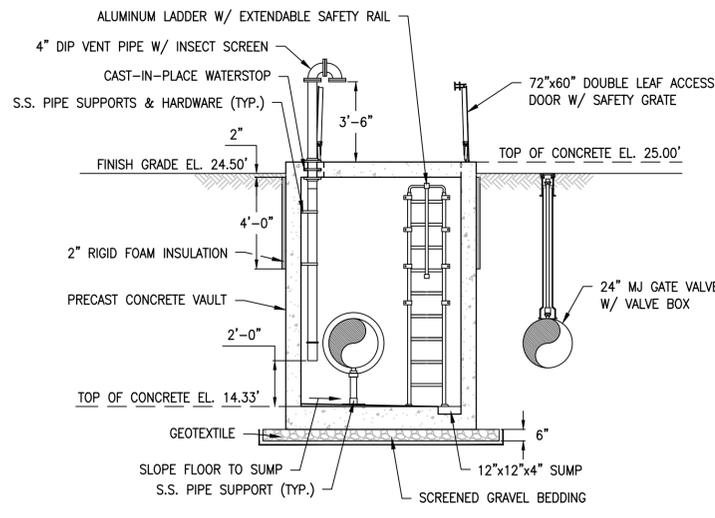
DRAWN BY: IES

DATE: FEBRUARY 23, 2016

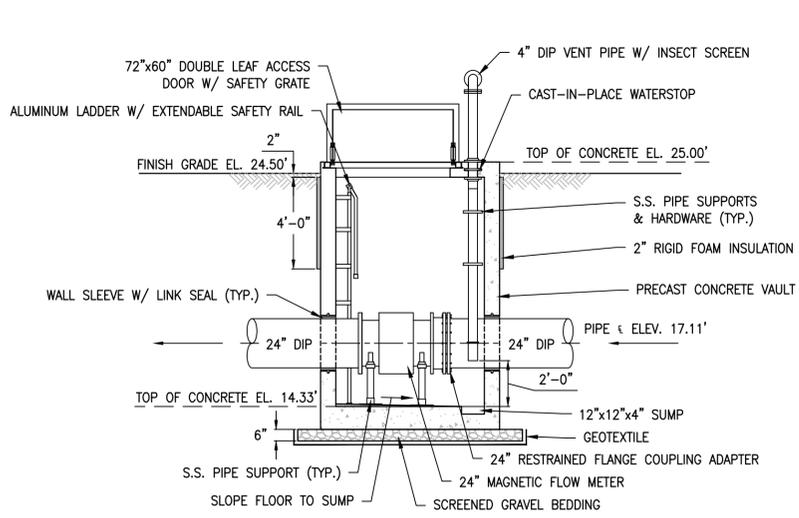
SHEET NUMBER:

S-0.1

SHEET 68 OF 155



SECTION A-A

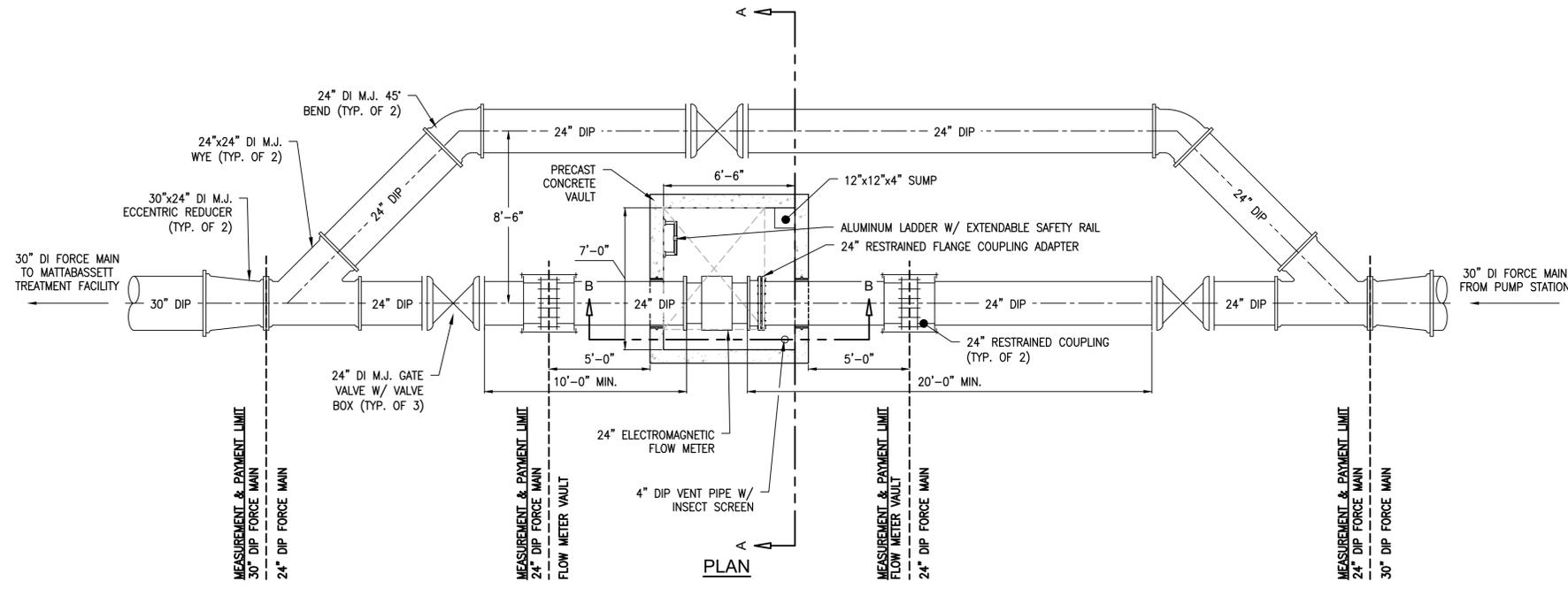


SECTION B-B

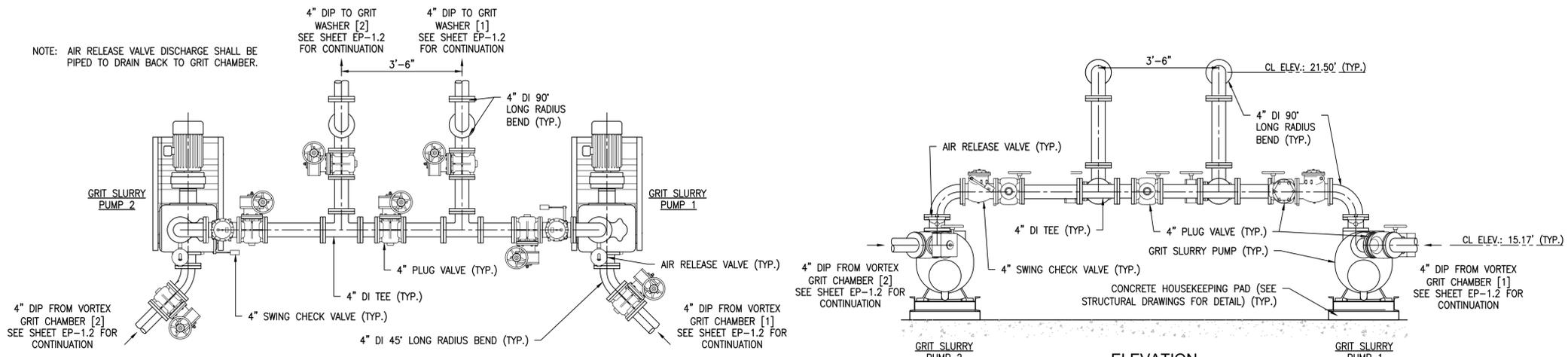
DESIGN: H-20 wheel loads
 Frame and bearing plate cast into concrete.

MATERIALS: 6061-T6 aluminum for bars, angles and extrusions;
 5086 aluminum for 1/4 inch diamond plate

MANUFACTURERS:
 Syracuse Casings Style ECD-HDAOSG, or equivalent by Bilco Company (New Haven);
 Holliday Products (Orlando); or Equal.



1 FLOW METER VAULT DETAIL
 Scale: 1/4" = 1'-0"



2 GRIT PUMP PIPING DETAIL
 Scale: 1/2" = 1'-0"

REVISIONS

Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



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

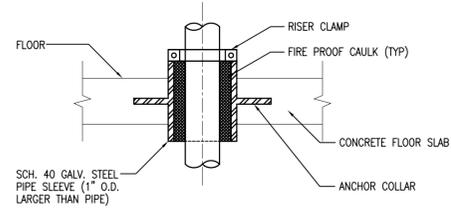
PROCESS PIPING
 DETAILS

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

SHEET NUMBER:

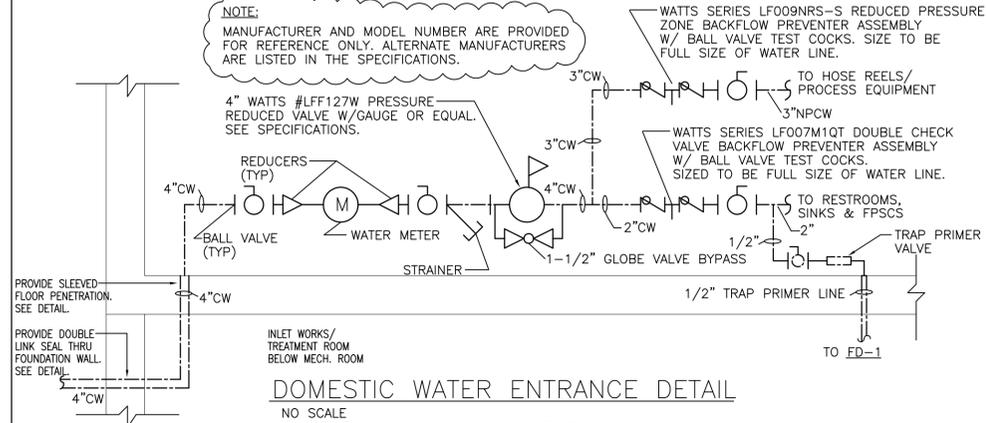
EP-5.1

DRAWING FILE: G:\PROJECTS\14712-02-Middletown_P5_Pipe_Final_Design\A000\WATER\PROCESS_PROCESS\BRUNNINGS\EP-5.1.dwg PLOTTED: Jul 08 2016 4:49pm BY: Tom Covill



DETAIL OF PENETRATION WITH SLEEVE
NOT TO SCALE

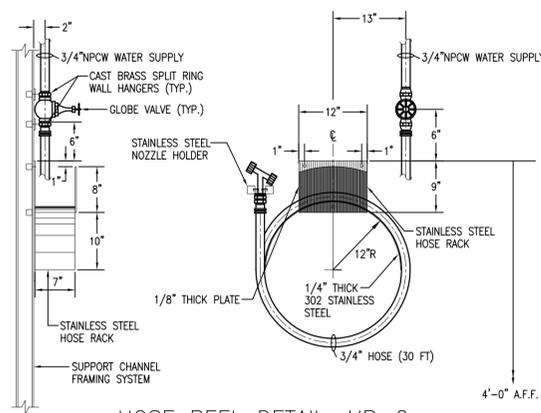
NOTE:
MANUFACTURER AND MODEL NUMBER ARE PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURERS ARE LISTED IN THE SPECIFICATIONS.



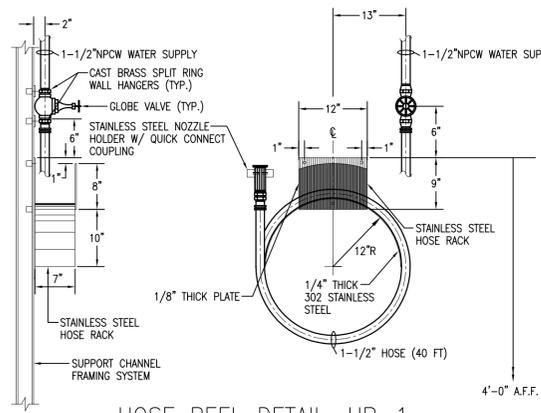
DOMESTIC WATER ENTRANCE DETAIL
NO SCALE

GENERAL NOTES:

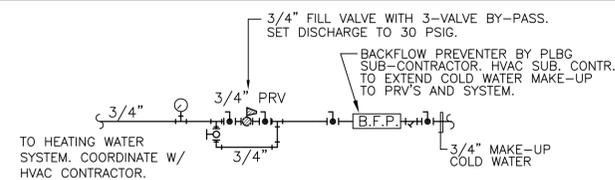
- OBTAIN PROPER SIZE AND TYPE WATER METERS FROM WATER DEPARTMENT. VERIFY WATER SERVICE CONFIGURATION WITH LOCAL WATER DEPARTMENT PRIOR TO INSTALLATION.
- SECURELY SUPPORT SERVICES WITH COPPER CLAD HANGERS AND SUPPORTS.
- PROVIDE PRESSURE GAUGES AT EACH SIDE OF PRESSURE REDUCING VALVE ASSEMBLY.
- STATIC PRESSURE AT SITE IS 130 PSI, SO PRV IS REQUIRED FOR THIS PROJECT.
- PLUMBING CONTRACTORS WORK STARTS AT 5'-0" OUTSIDE OF BUILDING.
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE LISTED IN THE SPECIFICATIONS.



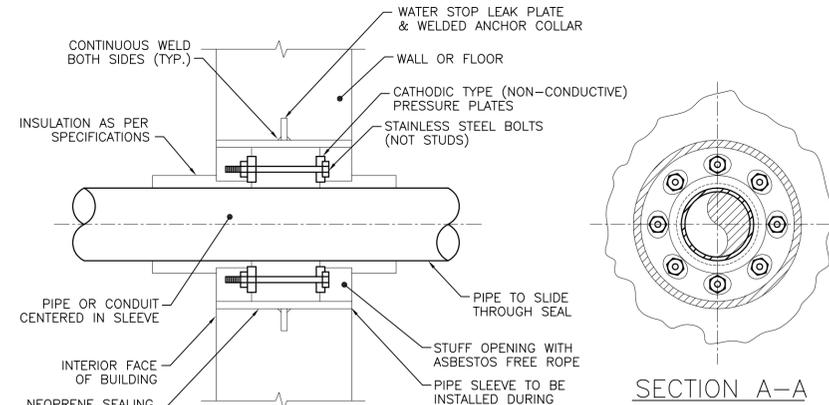
HOSE REEL DETAIL, HR-2
NOT TO SCALE



HOSE REEL DETAIL, HR-1
NOT TO SCALE



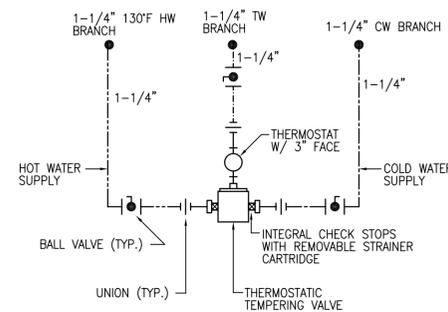
MECHANICAL ROOM: HEATING SYSTEM CW MAKE-UP PIPING DETAIL
NO SCALE



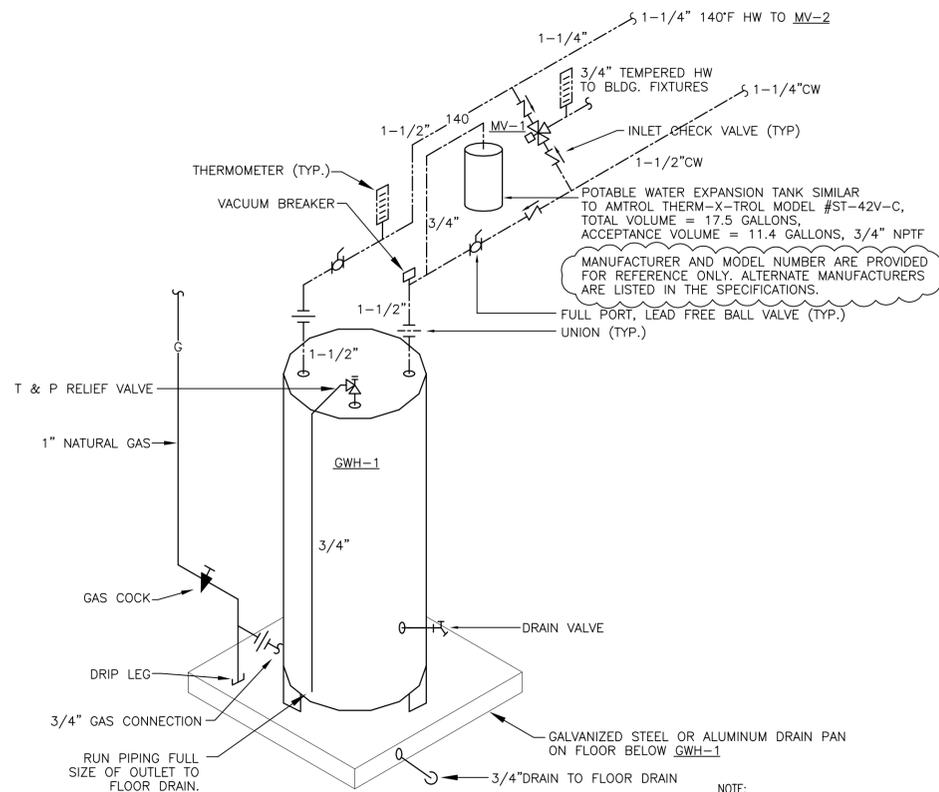
SECTION A-A

- 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

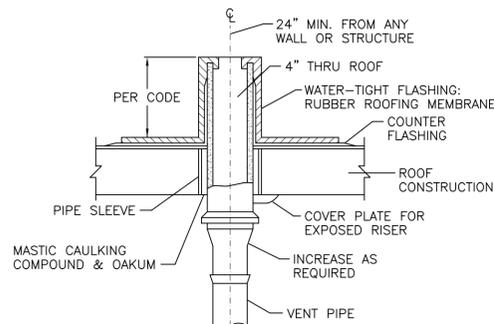


DETAIL OF PIPING AT THERMOSTATIC MIXING VALVE, MV-2
NOT TO SCALE

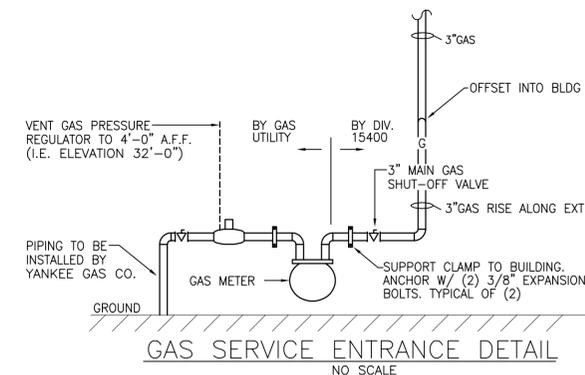


GAS FIRED WATER HEATER DETAIL (GWH-1)
NO SCALE

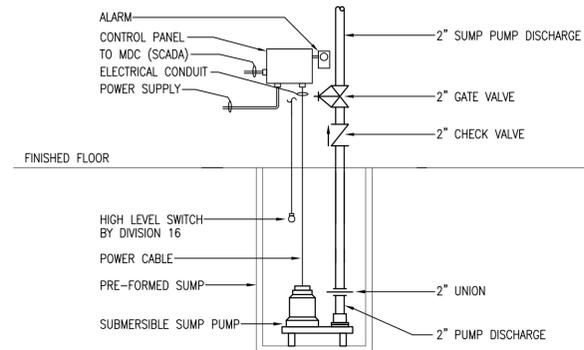
NOTE:
PIPE ACIDIC WASTE FROM WATER HEATER & FLUE DRAIN CONNECTIONS THROUGH ACID NEUTRALIZER AND TO MECHANICAL ROOM FLOOR DRAIN.



VENT THRU ROOF DETAIL
NO SCALE



GAS SERVICE ENTRANCE DETAIL
NO SCALE



SUMP PUMP DETAIL (SP-1)
NO SCALE



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
2	BID ADDENDUM 1	7/11/2016



FRANCIS T. PATNAUDE
INTER-MUNICIPAL
PUMPING STATION

MIDDLETOWN, CT

PLUMBING DETAILS

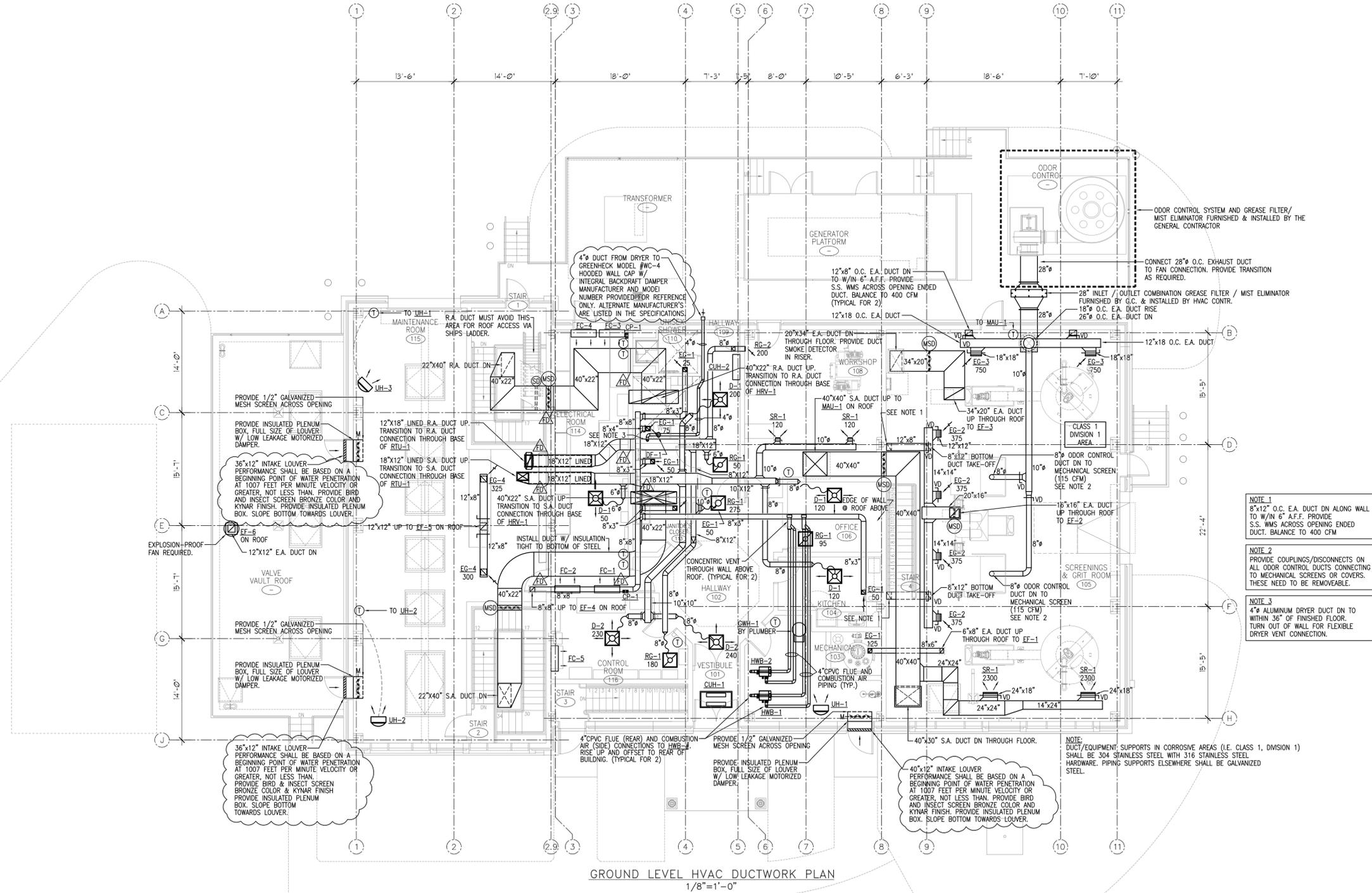
PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

P-5.1

SHEET 135 OF 155

REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016



GROUND LEVEL HVAC DUCTWORK PLAN
1/8"=1'-0"

DRAWING FILE: Z:\Projects P-2\Tighe & Bond\Middletown, CT Pump Station\Mechanical\Combined-HWC-Multiplier-Pumping-Station.dwg PLOTTED: Jul 08, 2016 4:43pm BR: Robinson



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

HVAC DUCTWORK
PLAN -
GROUND LEVEL

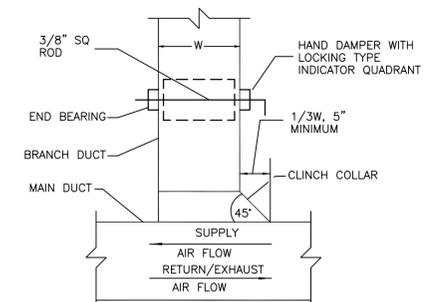
PROJECT NUMBER: 14712
DESIGNED BY: CDR
DRAWN BY: CDR
DATE: FEBRUARY 23, 2016

SHEET NUMBER:

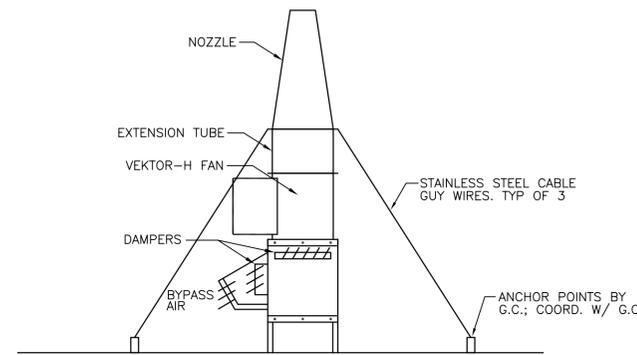
H-1.1

GENERAL NOTES

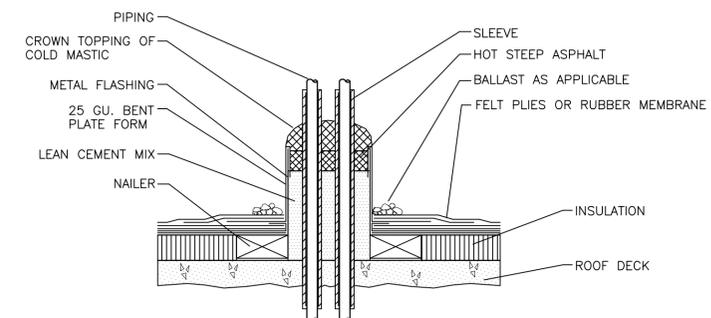
1. USING THESE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL BUILDING SYSTEMS, INCLUDING PLUMBING, FIRE PROTECTION, HVAC, MECHANICAL, FIRE ALARM, ELECTRICAL POWER, AND ELECTRICAL COMMUNICATION, AND ALL ASSOCIATED SPECIFIC SYSTEMS. ALL SYSTEMS SHALL 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.



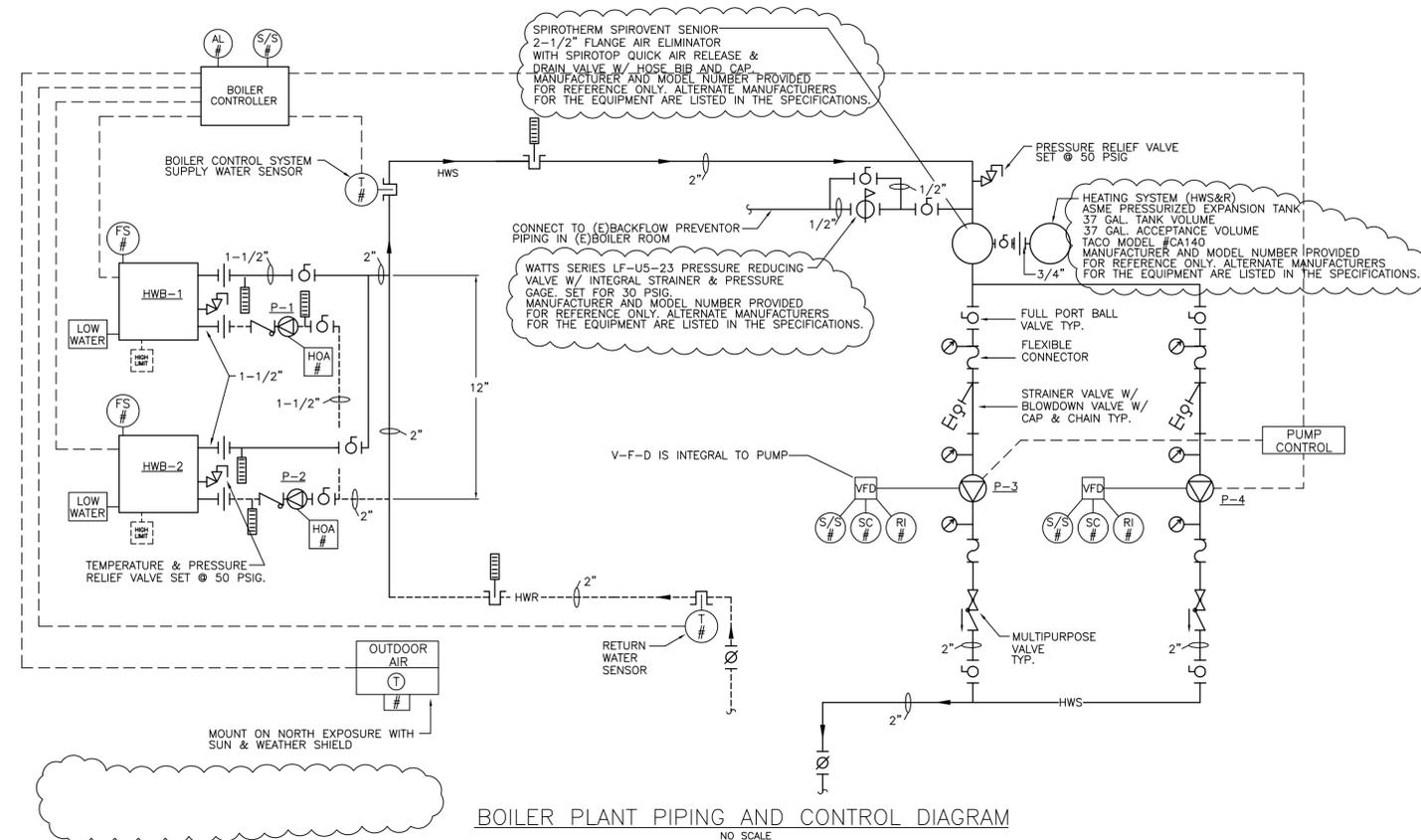
RECTANGULAR DUCT TAP WITH VOLUME DAMPER
NO SCALE



EF-4 ROOF MOUNTED HOOD EXHAUST FAN DETAIL
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
2	BID ADDENDUM 1	7/11/2016



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

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" 7/8" MERV 7
- PROVIDE BAROMETRIC RELIEF DAMPER
- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE LISTED IN THE SPECIFICATION.

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 LISTED IN THE SPECIFICATION.

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	37	55	119	-
MOTOR	TYPE	TENV	EXP	TENV	TENV	EXP	ODP
	H.P.	1/6	3/4	7-1/2	1/6	1/4	78 WATTS
	F.L.A.	3.4	13.8	-	3.4	3.4	5.8
STARTER	VOLTAGE/PHASE	115 - 1Ø	115 - 1Ø	460V-3Ø	115 - 1Ø	115 - 1Ø	120-1Ø
	TYPE	H-O-A	H-O-A	H-O-A	H-O-A	H-O-A	INTEGRAL
STARTER	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 EXHAUST 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 BLADES; 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 LISTED IN THE SPECIFICATIONS.

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 LISTED IN THE SPECIFICATION.

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	CIRCULATOR	CIRCULATOR	IN-LINE
	FLUID	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
STARTER DATA	NEMA SIZE	AS REQUIRED	AS REQUIRED
	CONTROL	AS REQUIRED	AS REQUIRED
	AUX. CONTACTS	AS REQUIRED	AS REQUIRED

- MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE LISTED IN THE SPECIFICATIONS.

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 LISTED IN THE SPECIFICATIONS.

UNIT/CABINET HEATER SCHEDULE												
SYMBOL	GPM	P.D	EWT	LWT	CFM	FFM	DERATED BTUH	ELECTRICAL H.P.	PHASE	VOLTS	MFG. MODEL NO.	REMARKS
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	⑦ ①②④⑥
CUH-2	0.5	0.0'	140	120	190	-	5,337	1/40	1	115	RITTLING MODEL #RF-200-02	⑦ 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 LISTED IN THE SPECIFICATIONS.

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 LISTED IN THE SPECIFICATIONS.
- CP-1 LITTLE GIANT MODEL #XCM-20ULS 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 LISTED IN THE SPECIFICATIONS.
- FUJH-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 LISTED IN THE SPECIFICATIONS.
- 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
 640 CFM; W/ 6-FILTERS; INTEGRAL CONDENSATE PUMP; 13" F.L.A.
 MANUFACTURER AND MODEL NUMBER PROVIDED FOR REFERENCE ONLY. ALTERNATE MANUFACTURER'S ARE LISTED IN THE SPECIFICATIONS.
- 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 LISTED IN THE SPECIFICATIONS.

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 LISTED IN THE SPECIFICATION.



REVISIONS		
Number	Description	Date
1	ADDRESS DEEP REVIEW	5/6/2016
2	BID ADDENDUM 1	7/11/2016

