



LOCATION MAP

**OWNER:**  
 UNICORN CONTRACTING CORP.  
 3102 RT 9 SUITE 2A  
 COLD SPRING, NY 10516  
 P:845 809 5969

**CONSTRUCTION MANAGER:**  
 UNICORN CONTRACTING CORP.  
 3102 RT 9 SUITE 2A  
 COLD SPRING, NY 10516  
 P:845 809 5969

**CIVIL ENGINEER:**  
 SITE DESIGN CONSULTANTS  
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**ARCHITECT:**  
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# BUTTERFIELD REDEVELOPMENT PROJECT

## 3102 ROUTE 9 COLD SPRING, NY

### VILLAGE OF COLD SPRING PUTNAM COUNTY, NEW YORK

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NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 2209 (2) OF THE NEW YORK STATE EDUCATION LAW.

GENERAL NOTES:

- 1. THE ENGINEER WHOSE SEAL APPEARS HEREON IF NOT RETAINED FOR SUPERVISION OF CONSTRUCTION, IS NOT RESPONSIBLE FOR CONCEPTIONS AND THEREFORE ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION PRACTICES, PROCEDURES, AND RESULTS THEREFROM.
2. THE ENGINEER SHALL NOT BE HELD RESPONSIBLE OR HELD ACCOUNTABLE FOR THE INTEGRITY OF ANY STRUCTURES CONSTRUCTED OR UNDER CONSTRUCTION PRIOR TO THE APPROVAL OF THE PLANS.
3. THE VILLAGE ENGINEER'S OFFICE AND WATER DISTRICT OFFICE IS TO BE NOTIFIED 24 HOURS BEFORE COMMENCING SITE CONSTRUCTION OR WATER MAIN CONNECTION.
4. ALL WORK IS TO BE IN ACCORDANCE WITH THE VILLAGE CODE OF PRACTICE AND SPECIFICATIONS.
5. ALL CONDITIONS, LOCATIONS, AND DIMENSIONS SHALL BE FIELD VERIFIED AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY DISCREPANCIES.
6. ALL CHANGES MADE TO THE PLANS SHALL BE APPROVED BY THE ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS. ANY SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE ORIGINAL BUILDING PERMIT.
7. ALL WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL IN A 'CODE 753' PRIOR TO CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS.
9. SUBSTRUCTURES AND THEIR ENCLOSURES BELOW GRADE, IF ANY, ARE NOT SHOWN.
10. ANY PROPOSED ELECTRIC AND/OR TELEPHONE SERVICE LINES ARE TO BE PLACED UNDERGROUND.
11. THE DESIGN ENGINEER DISCLAIMS ANY LIABILITY FOR DAMAGE OR LOSS INCURRED DURING OR AFTER CONSTRUCTION.
12. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE OWNER/ENGINEER NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO THE START OF WORK. THE OWNER/ENGINEER WILL EVALUATE THE SITUATION AND MODIFY THE PLAN AS NECESSARY.

CONTRACTOR RESPONSIBILITIES:

- 1. ALL WORK ON THE PROJECT SHALL BE PERFORMED IN A WORKMAN LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE INDUSTRY. THE OWNER WILL BE THE SOLE JUDGE OF THE ACCEPTABILITY OF THE WORK MATERIALS AND QUALITY DEEMED UNACCEPTABLE WILL BE REMOVED AND REDONE AT THE SOLE COST AND RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT HIS WORK AND WILL BE HELD RESPONSIBLE FOR CONSEQUENTIAL DAMAGES DUE TO HIS ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEE, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY THE WORK UNDER A SEPARATE CONTRACT WITH THE CONTRACTOR.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY SHORE EXISTING UTILITIES IF REQUIRED BY CONSTRUCTION.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE THE TOWN ENGINEER IN ADVANCE OF HIS WORK OR AS THE INSPECTOR DEEMS APPROPRIATE.
5. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE OWNER/ENGINEER WILL EVALUATE THE SITUATION AND MODIFY THE PLAN AS NECESSARY.
6. ALL CHANGES MADE TO THIS PLAN SHALL BE APPROVED BY THE ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS. ANY UNAUTHORIZED ALTERATION OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.
7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING AND CONTROLLING ALL PORTIONS OF THE WORK UNDER THIS CONTRACT.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTRACT WITH THE CONTRACTOR.
9. THE CONTRACTOR SHALL VERIFY ALL SUBSTRUCTURES ENCOUNTERED DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL SECURE A PAY FOR A BUILDERS RISK POLICY TO COVER THE PERIOD OF CONSTRUCTION. THE ENGINEER & OWNER SHALL BE NAMED AS ADDITIONAL INSURED. ALL CONTRACTORS EMPLOYED AT THE SITE SHALL BE COVERED BY WORKMAN'S COMPENSATION.

GENERAL CONSTRUCTION NOTES:

- 1. THE CONTRACTOR SHALL REQUEST A BENCH MARK FROM THE SURVEYOR IN THE SAME DATUM AS THE DRAWINGS.
2. FINISHED GRADES SHALL BE OF SUCH ELEVATION THAT THE GROUND WILL SLOPE AWAY FROM IT IN ALL DIRECTIONS.
3. CONSTRUCTION ACTIVITY SHALL BE LIMITED FROM 8:00 A.M. TO 6 P.M., AND NO CONSTRUCTION ACTIVITY SHALL OCCUR ON SUNDAYS OR LEGAL NEW YORK STATE HOLIDAYS, WHERE BLASTING IS NECESSARY, IT SHALL OCCUR FROM MONDAY THROUGH SATURDAY BETWEEN THE HOURS OF 8:00 A.M. AND 6:00 P.M. NO BLASTING SHALL OCCUR ON HOLIDAYS, SATURDAY OR SUNDAY. ALL BLASTING SHALL ALSO BE COMPLETED IN ACCORDANCE WITH THE VILLAGE OF COLD SPRING AND NEW YORK STATE BLASTING ORDINANCES.
4. ANY SOIL THAT IS UNSUITABLE FOR DEVELOPMENT OF BUILDINGS OR ROADWAYS SHALL BE REMOVED FROM AREAS TO BE DEVELOPED AND SHALL BE DISPOSED OF WITHIN THE SITE IN NEW EMBANKMENTS WHERE STRUCTURAL LOADING, I.E. A BUILDING OR ROADWAY, WILL NOT TAKE PLACE. CONSTRUCTION PROPOSED TO BE CONSTRUCTED IN AREAS OF QUESTIONABLE SUITABILITY, THE OWNER SHALL RETAIN A SOILS ENGINEER TO EVALUATE AND PREPARE A DESIGN FOR THE CONDITION.
5. NO TOPSOIL SHALL BE REMOVED FROM THE SITE, UNLESS DESIRED BY THE OWNER.
6. ROCK CUT STABILITY IS TO BE FIELD VERIFIED BY GEOTECHNICAL ENGINEER AND SHALL BE MODIFIED IF REQUIRED.
7. NO CRUSHING/PROCESSING IS PERMITTED ON THE SITE WITHOUT PRIOR APPROVAL BY THE VILLAGE OF COLD SPRING PLANNING BOARD.
8. ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL STANDARDS. IF NECESSARY THE REMOVAL SHALL BE DONE BY A CONTRACTOR LICENSED TO REMOVE AND DISPOSE OF VARIOUS MATERIALS.

GENERAL STORM DRAINAGE & UTILITY NOTES

- 1. ALL UTILITIES, INCLUDING ELECTRIC LINES, TELEPHONE, WATER, SANITARY SEWER LINES, AND STORM SEWER LINES SHALL BE LOCATED UNDERGROUND AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VILLAGE OF COLD SPRING AND THE UTILITY COMPANIES HAVING JURISDICTION.
2. LOCATION OF GAS AND WATER VALVES, ELECTRIC AND TELEPHONE POLES ARE TO BE DETERMINED BY PROPER AUTHORITIES AND APPROVED, AS TO LOCATION, BY THE VILLAGE ENGINEER.
3. EACH BUILDING CONSTRUCTED HEREON SHALL BE OF SUCH AN ELEVATION THAT THE GROUND WILL SLOPE AWAY FROM IT IN ALL DIRECTIONS. IN THE EVENT THAT THIS IS NOT FEASIBLE, THE POINTIAL TYPICAL YARD DRAINS AS REQUIRED AND CONNECT THEM TO THE STORM DRAINAGE SYSTEM OR AS DIRECTED BY THE PROJECT ENGINEER.
4. ROOF LEADERS AND FOOTING DRAINS SHALL EMPTY INTO THE STORM DRAINAGE SYSTEM OR DISCHARGE DIRECTLY TO STORMWATER MANAGEMENT SYSTEMS IF GRADES PERMIT, AND CONNECTION TO THE STORM DRAINAGE SYSTEM IS NOT FEASIBLE, FOOTING DRAINS ONLY MAY DISCHARGE TO DAYLIGHT. FOOTING DRAINS SHALL EXTEND A MINIMUM OF 30 FT. FROM THE REAR FACE OF THE BUILDING WHEN POSSIBLE. UNLESS UNDER NO CIRCUMSTANCES SHALL THE DISCHARGE OF GROUND WATER OR STORM WATER, EITHER BY GRAVITY OR BY PUMPING, BE DISCHARGED TO ANY SANITARY SEWER SYSTEM.
5. ANY REVISIONS AND/OR ADDITIONS TO THE ROAD STORM DRAINAGE SYSTEMS CURRENTLY SHOWN ON THE PLANS WHICH ARE DEEMED NECESSARY DURING CONSTRUCTION MUST BE MADE BY THE CONTRACTOR AS REQUIRED BY THE VILLAGE AND SHALL BE SHOWN ON THE AS-BUILT DRAWINGS.
6. STORM DRAIN PIPING TO BE HIGH DENSITY POLYETHYLENE, AS SHOWN ON THE CONSTRUCTION DRAWINGS. MINIMUM COVER TO BE 2' UNLESS OTHERWISE NOTED.
7. INTERCEPTOR DRAINS ARE TO BE INSTALLED WHERE REQUIRED BY THE VILLAGE OR PROJECT ENGINEER DURING ROAD CONSTRUCTION.
8. ALL EXISTING UNDERGROUND DRAINS ENCOUNTERED DURING CONSTRUCTION OF PROPOSED ROADS ARE TO BE CONNECTED TO PROPOSED DRAINAGE IMPROVEMENTS. CONNECTIONS TO BE APPROVED BY THE VILLAGE ENGINEER.
9. PRIOR TO FINAL APPROVAL AND OPERATION OF DRAINAGE SYSTEM, CONTRACTOR SHALL CLEAR ALL ACCUMULATED SEDIMENT AND/OR DEBRIS FROM DRAINAGE STRUCTURES, MANHOLES, CULVERTS, OUTLETS AND DRAIN INLETS. ENGINEER SHALL BE NOTIFIED FOR FINAL INSPECTION.
10. ALL STRUCTURES SHALL BE SET ONE INCH BELOW PAVEMENT.
11. STREET OPENING PERMIT FROM THE VILLAGE OF COLD SPRING D.P.W. MAY BE REQUIRED FOR INSTALLATIONS IN PUBLIC ROADS.

WATERMAIN NOTES

I. DISTRIBUTION SYSTEM - WATERMAIN

A. GENERAL

THE CONTRACTOR SHALL PERFORM THE NECESSARY EXCAVATION, BACKFILLING, CLEARING, GRUBBING, SHEETING, SHORING, DO ALL SHAPING OF TRENCHES, PIPING AND BAILING, LAYING AND JOINING OF ALL PIPES, PROTECT AND SUPPORT EXISTING STRUCTURES AND REPAIR THEM, IF DAMAGED, AND ALL ELSE NECESSARY TO COMPLETE THE WORK.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND TOOLS NECESSARY TO COMPLETE THE WORK IN A SAFE, NEAT, AND WORKMANLIKE MANNER.

B. SITE AND ACCESS CLEARING (WITHIN EASEMENTS)

THE CONTRACTOR SHALL CONFINE ALL CLEARING OPERATIONS TO WITHIN THE IMMEDIATE AREAS THAT ARE ESSENTIAL FOR CONSTRUCTION OF THE WORK.

C. STOCKPILING OF SUITABLE BACKFILL MATERIAL

THE CONTRACTOR SHALL BE PREPARED WHEN EXCAVATING THE TRENCH TO SEPARATE SUITABLE BACKFILL MATERIAL FROM UNSUITABLE MATERIAL FOR USE AS BACKFILL ADJACENT TO THE PIPE.

D. PROTECTION OF EXISTING STRUCTURES AND UTILITIES

SPECIAL PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT OVERHEAD POWER LINES, WATERMANS, GAS MAINS, ELECTRIC AND TELEPHONE CONDUITS, STORM AND SANITARY SEWERS, CULVERTS, BUILDINGS AND OTHER EXISTING STRUCTURES IN AND NEAR THE EXCAVATION. IN ALL CASES, WHETHER UNDERGROUND STRUCTURES HAVE OR HAVE NOT BEEN DELINEATED, THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE ACCEPTS NO RESPONSIBILITY FOR THEIR LOCATION. UNDERGROUND UTILITIES LOCATES EXISTING UNDERGROUND UTILITIES FREE OF CHARGE. THE PHONE NUMBER IS 1-800-962-7962.

GUTTERS, SEWERS, DRAINS AND DITCHES SHALL BE KEPT OPEN AT ALL TIMES FOR SURFACE DRAINAGE, NO DAMMING OR PONDING OF WATER IN GUTTERS OR OTHER WATERWAYS WILL BE PERMITTED EXCEPT WHERE STREAM CROSSINGS ARE NECESSARY AND THEN ONLY TO AN EXTENT WHICH THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE SHALL CONSIDER NECESSARY. THE CONTRACTOR SHALL NOT DIRECT ANY FLOW OF WATER ACROSS OR OVER PAVEMENTS EXCEPT THROUGH APPROVED PIPES OR PROPERLY CONSTRUCTED TROUGHS OF SUCH SIZES AND LENGTHS AS MAY BE REQUIRED, AND PLACE THE SAME AS DIRECTED. THE GRADING IN THE VICINITY OF TRENCHES SHALL BE CONTROLLED SO THAT THE GROUND SURFACE IS PROPERLY FITTED TO PREVENT WATER RUNNING IN THE TRENCHING. THE CONTRACTOR SHALL NOT COMMENCE OPERATIONS INVOLVING ANY PUBLIC UTILITY BEFORE HAVING GIVEN WRITTEN NOTICE TO THE CITY OR OWNER, OR ITS AGENTS, AND SHALL COOPERATE WITH THE COMPANY'S OR OWNER'S FORCES IN PROTECTING AND PREVENTING DAMAGE TO THE PROPERTY.

THE CONTRACTOR WILL, AT HIS OWN EXPENSE, BE RESPONSIBLE FOR DIRECT OR INDIRECT DAMAGE THAT MAY BE DONE TO ANY UTILITY OR STRUCTURE IN THE PROSECUTION OF HIS WORK. THE LIABILITY OF THE CONTRACTOR IS ABSOLUTE AND IS NOT DEPENDENT UPON ANY QUESTIONS OF NEGLIGENCE ON HIS PART OR ON THE PART OF HIS AGENT, OR EMPLOYEES, AND THE NEGLECT OF THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE TO DIRECT THE CONTRACTOR TO TAKE ANY PARTICULAR PRECAUTION OR TO REFRAIN FROM DOING SUCH DAMAGE.

SHOULD THE POSITION OF ANY PIPE, CONDUIT, POLE OR OTHER STRUCTURES, ABOVE OR BELOW THE GROUND, BE SUCH AS TO REQUIRE ITS REMOVAL, REALIGNMENT, OR CHANGE DUE TO WORK TO BE DONE, REALIGNMENT OR CHANGE WILL BE DONE BY OR UNDER SUPERVISION OF THE OWNER OF THE STRUCTURES. THE CONTRACTOR SHALL UNCOVER AND SUSTAIN THE STRUCTURES, AFTER SUCH REALIGNMENT OR CHANGE.

THE CONTRACTOR SHALL NOT INTERFERE WITH ANY PERSONS, OR WITH THE OWNER IN PROTECTING, REMOVING, CHANGING OR REPLACING THEIR PIPES, CONDUITS, POLES OR OTHER STRUCTURES, BUT HE SHALL SUFFER SAID PERSONS OR THE OWNER TO TAKE ALL SUCH MEASURES AS THEY MAY DEEM NECESSARY OR ADVISABLE FOR THE PURPOSE AFORESAID, AND THE CONTRACTOR SHALL THEREBY BE IN NO WAY RELIEVED OF ANY OF HIS RESPONSIBILITIES.

THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE OWNER OF THE RESPECTIVE UTILITY PRIOR TO RELOCATION OR INTERRUPTION OF SERVICE. ALL WORK NECESSARY FOR THE RELOCATION SHALL BE PERFORMED BY THE CONTRACTOR, OR BY THE OWNER AT THE OWNER'S OPTION, AND TO THE SATISFACTION OF THE OWNER. WHERE SERVICE IS INTERRUPTED, THE CONTRACTOR SHALL COOPERATE IN RESTORING SERVICE PROMPTLY. ALL CHARGES FOR DAMAGES DONE TO UTILITIES SHALL BE PAID BY THE CONTRACTOR.

E. CONSTRUCTION OF ROAD RIGHT-OF-WAY CONSTRUCTION IN THE ROAD RIGHT-OF-WAY SHALL AT ALL TIMES BE PERFORMED WITH MINIMUM DISTURBANCE TO TRAFFIC WITH SUFFICIENT BARRICADES AND DIRECTION. DETOURS CAN BE INSTITUTED WITH APPROVAL OF THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE, OR STATE, COUNTY, OR LOCAL AUTHORITIES. PAVEMENT SHALL BE CUT PRIOR TO REMOVAL. HOLES AND SETTLEMENTS IN THE TRENCHES SHALL BE IMMEDIATELY FILLED TO THE ORIGINAL GRADE ELEVATION WITH THE SPECIFIED MATERIALS.

F. EXCAVATION AND PREPARATION OF TRENCH THE CONTRACTOR SHALL PROCEED WITH CAUTION IN THE EXCAVATION AND PREPARATION OF THE TRENCH SO THAT THE EXACT LOCATION OF UNDERGROUND STRUCTURES, BOTH KNOWN AND UNKNOWN, MAY BE DETERMINED. THE TRENCH SHALL BE EXCAVATED SO THAT THE PIPE CAN BE LAID TO THE ALIGNMENT AND DEPTH APPROVED. MINIMUM DEPTH OF GROUND TO TOP OF PIPE BARREL SHALL BE FOUR FEET (4'). NO TRENCH SHALL BE EXCAVATED MORE THAN FIVE HUNDRED LINEAL FEET (500 LF) IN ADVANCE OF PIPE LAYING UNLESS AUTHORIZED BY THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE. THE TRENCH SHALL BE SO BRACED AND DRAINED THAT THE WORKMEN MAY WORK THEREIN SAFELY AND EFFICIENTLY. IT IS ESSENTIAL THAT THE DISCHARGE OF THE TRENCH DRAINING PUMPS BE CONDUCTED TO NATURAL DRAINAGE CHANNELS OR DRAINS, AS IN ACCORDANCE WITH OSHA REQUIREMENTS.

THE WIDTH OF THE TRENCH SHALL BE OF ADEQUATE SIZE TO PERMIT THE PIPE TO BE LAID AND JOINTED PROPERLY, BUT SHALL NOT EXCEED THE SUM OF TWENTY-FOUR INCHES(24") PLUS THE PIPE OUTSIDE DIAMETER, AND THE BACKFILL TO BE PLACED AND COMPACTED AS SPECIFIED.

LEDGE ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST SIX INCHES (6") BELOW AND ON EACH SIDE OF ALL PIPES AND FITTINGS.

THE TRENCH SHALL BE EXCAVATED TO THE DEPTH REQUIRED SO AS TO PROVIDE A UNIFORM AND CONTINUOUS BEARING AND SUPPORT FOR THE PIPE ON SOLID AND UNDISTURBED GROUND AT EVERY POINT, WHERE THE BOTTOM OF THE TRENCH AT A SUBGRADE IS TO BE USED AS THE BEARING, IT SHALL INCLUDE ASHES, CINDERS, ALL TYPES OF REFUSE, VEGETABLE OR OTHER ORGANIC MATERIAL, OR LARGE PIECES OF FRAGMENTS OR INORGANIC MATERIAL, WHICH IN THE JUDGEMENT OF THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE SHOULD BE REMOVED. THE CONTRACTOR SHALL EXCAVATE AND REMOVE SUCH UNSUITABLE MATERIAL TO THE WIDTH AND DEPTH ORDERED BY THE VILLAGE ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE.

ANY PART OF THE BOTTOM OF THE TRENCH EXCAVATED BELOW THE SPECIFIED GRADE SHALL BE CORRECTED WITH APPROVED MATERIAL. SUCH AS THOROUGHLY COMPACTED CRUSHED STONE, GRAVEL, OR CONCRETE AS DIRECTED BY THE VILLAGE ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE. THE FINISHED SUBGRADE SHALL BE PREPARED ACCURATELY BY MEANS OF HAND TOOLS.

GENERAL WATER MAIN NOTES:

- 1. ALL PROPOSED WATER MAIN MATERIALS, CONSTRUCTION AND INSTALLATION SHALL CONFORM TO ALL APPLICABLE RULES AND REGULATIONS OF THE VILLAGE OF COLD SPRING WATER DEPARTMENT AND THE PUTNAM COUNTY HEALTH DEPARTMENT STANDARDS AND SPECIFICATIONS.
2. THE RECORDS OF THE VILLAGE OF COLD SPRING INDICATE THAT THERE IS ADEQUATE WATER PRESSURE AND CAPACITY AS REQUIRED TO SERVE THIS PROJECT.
3. ALL BACKFLOW PREVENTION DEVICES ASSOCIATED WITH THE FIRE AND DOMESTIC SERVICES FOR EACH SERVICE CONNECTION SHALL BE LOCATED INTERNAL TO THE BUILDING AND SHALL REQUIRE SEPARATE APPROVAL BY THE PUTNAM COUNTY DEPARTMENT OF HEALTH.
4. ALL FIRE AND DOMESTIC SERVICE CONNECTIONS FROM THE PROPOSED WATER MAIN SHALL BE INSTALLED WITH WET TAPS AFTER THE CONTRACTOR HAS INSTALLED THE MAIN AND IT HAS BEEN APPROVED BY THE VILLAGE OF COLD SPRING WATER DEPARTMENT AND THE PUTNAM COUNTY DEPARTMENT OF HEALTH.
5. THE CONTRACTOR IS ADVISED THAT BEFORE HE CONNECTS TO THE EXISTING WATER SYSTEM, HE MUST ADVISE AND COORDINATE HIS OPERATIONS WITH THE VILLAGE OF COLD SPRING WATER DEPARTMENT'S SUPERINTENDENT. MEANS AND METHODS USED TO CONNECT TO THE EXISTING SERVICE SHALL BE APPROVED BY THE VILLAGE AND SHALL INCLUDE BUT NOT BE LIMITED TO WET TAPS OR OTHERWISE.
6. THE CONTRACTOR IS TO MAINTAIN CONSTANT FLOW AND PRESSURE IN ALL WATER MAINS AT ALL TIMES. IF THE NEED TO INTERRUPT THE SERVICE IS TO BE INTERRUPTED FOR A SHORT PERIOD, IT MUST BE COORDINATED WITH AND APPROVED BY THE ENGINEER AND THE VILLAGE OF COLD SPRING SUPERINTENDENT OF WATER.
7. WATER MAINS CROSSING HOUSE SEWERS, STORM SEWERS OR SANITARY SEWERS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF A MINIMUM OF 18" BETWEEN THE BOTTOM OF WATER MAIN AND TOP OF SEWER.
8. WATER MAINS PASSING UNDER HOUSE SEWERS, IN ADDITION, SHALL BE PROTECTED BY PROVIDING A VERTICAL SEPARATION OF 18" MINIMUM FROM THE BOTTOM OF THE SEWER TO THE TOP OF THE WATER MAIN AND ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE JOINTS AND THE SEWER SETTLING AND BREAKING THE WATER MAIN. IN ADDITION THE LENGTH OF WATER PIPE IS TO BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
9. THE COVER OVER THE TOP OF THE WATER MAIN SHALL BE A MINIMUM OF 4 FEET TO A MAXIMUM OF 5.5 FT.
10. WATER MAINS SHALL BE CLASS 54 DUCTILE IRON PIPES (DIP) TYTON JOINT TYPE AND FITTINGS SHALL BE FACTORY CEMENT LINED CLASS 54. ALL FITTINGS SHALL HAVE MECHANICAL JOINTS AND SHALL BE PRESSURE RATED AT 250 PSI. ALL NECESSARY JOINT MATERIALS SHALL BE FURNISHED. WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH AWWA STANDARDS, LATEST EDITION.
11. ALL GATE VALVES SHALL BE MUELLER RESILIENT WEDGE (TURN LEFT OPEN) TYPE AND SHALL MEET AWWA STANDARDS, LATEST REVISION.
12. ALL SERVICE CONNECTIONS AND SMALL DIAMETER EXTENSIONS SHALL CONFORM TO THE LATEST EDITION OF AWWA C-151.
13. RETAINER GLANDS AND CONCRETE THRU-DRILL BLOCKS OR RODS SHALL BE USED AT ALL LOCATIONS WHERE RESTRAINTS EXIST.
14. INSTALLATION AND TESTING OF THE WATER MAIN SHALL BE INSPECTED BY THE VILLAGE OF COLD SPRING PUTNAM COUNTY DEPARTMENT OF HEALTH. THE CONTRACTOR SHALL PROVIDE THE HEALTH DEPARTMENT A MINIMUM 48 HOURS NOTICE PRIOR TO ANY PRESSURE/LEAKAGE TESTS AND/OR DISINFECTION AND BACTERIOLOGICAL TESTS PERFORMED ON THE PROPOSED WATER MAIN. THE RESULTS OF THE ABOVE TESTS MUST BE ACCEPTED BY THE PCDOH PRIOR TO USE OF THE MAIN. ASBUILT DRAWINGS SHALL SHOW DIMENSIONS BETWEEN ALL VALVE TURNING NUTS AND FINISH GRADE.
15. INSTALLATION, DISINFECTION AND TESTING TO BE WITNESSED AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER OR VILLAGE OF COLD SPRING ENGINEER AND THE PUTNAM COUNTY DEPARTMENT OF HEALTH.
16. ALL HYDRANTS AND VALVES SHALL BE AS MANUFACTURED BY THE MUELLER COMPANY.
17. THE FINAL LOCATIONS OF ALL HYDRANTS AND SIAMISE CONNECTIONS SHALL BE DETERMINED BY AND COORDINATED WITH THE VILLAGE OF COLD SPRING FIRE DEPARTMENT.
18. IF, DURING CONSTRUCTION, IT IS FOUND THAT THE REQUIRED SEPARATION OF WATER MAINS, SANITARY SEWERS, STORM SEWERS, AND BUILDING SEWERS CANNOT BE MET, THE DEVELOPER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONTACT THE PUTNAM COUNTY DEPARTMENT OF HEALTH. APPROVAL BY THE PCDOH IS REQUIRED PRIOR TO ANY FIELD CHANGES THAT WILL AFFECT MINIMUM WATER/SEWER SEPARATION DISTANCES.
19. ALL TYPES OF INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C-600.
20. ALL NEW, CLEANED OR REPAIRED WATER MAINS SHALL BE DISINFECTED AND BACTERIOLOGICAL TESTING PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C-651-05 (EXCEPT FOR SECTION 4.4.2 WHICH IS NOT APPROVABLE). THE SPECIFICATIONS INCLUDE DETAILED PROCEDURES FOR THE ADEQUATE FLUSHING, DISINFECTION, AND MICRO- BIOLOGICAL TESTING OF ALL WATER MAINS.
22. ROAD OPENINGS SHALL BE DONE IN ACCORDANCE WITH CONDITIONS OF PERMIT, AND COORDINATED WITH THE VILLAGE OF COLD SPRING.

SANITARY SEWER NOTES:

- 1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE CODE OF THE VILLAGE OF COLD SPRING AND THE REGULATIONS OF THE PUTNAM COUNTY DEPARTMENT OF HEALTH.
2. THERE ARE NO WATER SUPPLY WELLS WITHIN 25 FT OF THE PROPOSED SANITARY SEWER.
3. SANITARY SEWERS ARE TO BE OF 8" RING-TIGHT PVC PLASTIC PIPE ASTM CLASS SDR-35 (OR HEAVIER IF REQUIRED BY THE VILLAGE CONSULTING ENGINEER DUE TO LOADING CONDITIONS), ALL PIPE TO BE MANUFACTURED BY JOHN MANSVILLE OR EQUAL.
4. SANITARY MANHOLES/SEALIT MANHOLES SHALL BE PRECAST CONCRETE. ALL WORK SHALL BE MANUFACTURED IN ACCORDANCE WITH APPROVED STANDARDS AND SHALL BE SPACED A MAXIMUM DISTANCE OF 300' ON STRAIGHT RUNS AND INSTALLED AT EVERY CHANGE IN ALIGNMENT. MANHOLE POSITIONING SHALL BE AS TO PREVENT THE ENTRANCE OF SURFACE WATER DURING STORMS. MANHOLE RIMS ARE TO BE WATER TIGHT IN AREAS SUBJECT TO POSSIBLE FLOODING CONDITIONS.
5. ALL BUILDING LATERALS TO BE INSTALLED BY PLUMBERS, LICENSED IN THE VILLAGE OF COLD SPRING ACCORDING TO THE REQUIREMENTS OF THE VILLAGE OF COLD SPRING.
6. A 6" MINIMUM BEDDING OF 3/4" CRUSHED STONE IS TO BE PLACED UNDER ALL SEWER LINES AND ALONG THE SIDES UP TO THE TOP TO PROVIDE FIRM SUPPORT.
7. SANITARY SEWER CONSTRUCTION SHALL MEET ALL SEWER CONSTRUCTION SPECIFICATIONS FOR THE VILLAGE OF COLD SPRING.
8. THE VILLAGE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO THE START OF ANY WORK.
9. THE SANITARY SEWER MAIN SHALL BE LAID AT A MINIMUM SLOPE OF 0.5%.
10. ALL SEWERS SHALL BE LAID AT LEAST 10 FT HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS IMPRACTICAL TO MAINTAIN A 10 FOOT SEPARATION, THE PUTNAM COUNTY DEPARTMENT OF HEALTH MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER.
11. HEAVY-DUTY WHITE FITTINGS AS MANUFACTURED BY GPK PRODUCTS, INC. OR APPROVED EQUAL, SHALL BE USED FOR THE CONSTRUCTION OF THE PVC SEWER SYSTEM.
12. MANHOLE STEPS SHALL BE CAST IRON NEEHAN NO. R-1981-0 OR CAMPBELL FOUNDRY NO. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
13. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE THE LETTERS 'SEWER' CAST ON THE COVER.
14. MANHOLE COVERS AND STRUCTURES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS AND MUST BE RATED FOR H-20 VEHICLE LOADING. MANHOLES MUST BE MIN. 48" DIAMETER.
15. ALL SANITARY STRUCTURES SHALL RECEIVE 2 MIL COATS OF BITUMINOUS MATERIAL "INERTOL NO. 49" COPPERS SUPPLIER SERVICE BLACK OR APPROVED EQUAL, APPLIED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
16. RING JOINTS TO CONFORM TO A.S.T.M. DESIGNATION C-443 LATEST REVISION. JOINTS TO BE MORTARED INSIDE AND OUT USING NON-SHRINKING MORTAR.
17. PRE-CAST MANHOLE SECTIONS TO BE IN ACCORDANCE WITH "PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS" A.S.T.M. DESIGNATION C-476, LATEST REVISION, MINIMUM COMPRESSIVE STRENGTH TO BE 4000 P.S.I.
18. WHERE SEWER MAIN IS TO BE INSTALLED 10' DEEP OR GREATER, PVC SDR-26 SHALL BE USED.
19. WHEN SEWER IS TO BE INSTALLED IN FILL MATERIAL, THE SUPPORTING FILL IS TO BE COMPACTED TO MINIMUM STANDARD PROCTOR DENSITY OF 95% AND SHALL BE CERTIFIED TO THE VILLAGE.
20. WATER MAINS CROSSING HOUSE SEWERS, STORM SEWERS OR SANITARY SEWERS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF A MINIMUM OF 18" BETWEEN THE BOTTOM OF WATER MAIN AND TOP OF SEWER. IN ADDITION, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE JOINTS AND THE SEWER SETTLING AND BREAKING THE WATER MAIN. IN ADDITION THE LENGTH OF WATER PIPE IS TO BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.
21. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
22. MANHOLES AND SANITARY SEWER LINES SHALL BE TESTED TO CONFORM WITH PUTNAM COUNTY DEPARTMENT OF HEALTH RULES AND REGULATIONS IN THAT THE INFILTRATION / EXFILTRATION SHALL NOT EXCEED ONE HUNDRED (100) GALLONS/INCH DIAMETER OF PIPE/MILE/DAY.
23. INFILTRATION, EXFILTRATION AND VISUAL TESTS BY MEANS OF LIGHT FLASHING BETWEEN MANHOLES SHALL BE AS PER REQUIREMENTS OF THE VILLAGE ENGINEER. TESTING OF THE MANHOLES WITH THE PIPELINE SHALL NOT BE PERMITTED. MANHOLES AND SANITARY SEWER LINES SHALL BE TREATED INDEPENDENTLY OF EACH OTHER. NO TESTS SHALL BE MADE UNTIL TWO WEEKS AFTER BACKFILLING OF SANITARY SEWERS OR LONGER IF CONDITIONS, IN THE OPINION OF THE VILLAGE ENGINEER, WARRANT IT.
24. AIR AND VACUUM TESTING MAY BE PERFORMED ON THE SANITARY SEWER LINES IN LIEU OF HYDROSTATIC TESTING. AIR TESTING OF THE SANITARY SEWER LINES SHALL BE IN ACCORDANCE WITH ASTM 9141-92 'STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR.' VACUUM TESTING OF THE MANHOLES SHALL BE IN ACCORDANCE WITH THE LATEST RELEASE OF ATTACHMENT B "VACUUM TESTING OF MANHOLES" FROM THE PUTNAM COUNTY DEPARTMENT OF HEALTH.
25. SANITARY SEWER LINES SHALL BE TESTED IN CONJUNCTION WITH THE SEWER MAINS TO THE PROPERTY LINE OR EASEMENT LINE IN ACCORDANCE WITH THE LATEST PUTNAM COUNTY DEPARTMENT OF HEALTH RULES AND REGULATIONS.

SANITARY SEWER TESTING:

Procedure and method of testing - The test length intervals and type of leakage test shall be approved by the Owner's field representative and Site Engineer. In the case of sewers laid on steep grades, the length of line to be tested by wet taps after the contractor has installed the main and it has been approved by the Village of Cold Spring Water Department and the Putnam County Department of Health, shall be as follows:

- 1. Hydrostatic Test - The test period, wherein the measurements are taken shall not be less than four (4) hours in either type of test. The total leakage of any section tested shall not exceed the rate of 100 gallons per mile of pipe per 24 hours per inch of nominal pipe diameter. For purposes of determining the maximum allowable leakage, manholes shall be considered as sections of pipe and shall be tested at a level above the highest joint prior to the concrete/rim connection.

- 1.1. Infiltration Test - This test may be used only when ground water levels are at least two (2) feet above the top of the pipe for the entire length of the section to be tested. Ground water levels may be measured in an open trench or in standpipes previously placed in backfilled trenches during the backfilling operations. When standpipes are installed in the backfill for ground water measurement, the lower ends of these shall be satisfactorily embedded in a mass of crushed stone or gravel to maintain free percolation and drainage. Infiltration through joints shall be measured by using a watertight wiper or any other approved device for volumetric measurement installed at the lower end of the section under test.
1.2. Exfiltration Test - This test consists of filling the pipe with water to provide a head of at least two (2) feet above the top of the pipe or two (2) feet above ground water, whichever is higher, at the highest point of the pipe line under test, and then measuring the loss of water from the line by the amount which must be added to maintain the original level. In this test the line must remain filled with water for at least twenty-four (24) hours prior to the taking of measurements. Exfiltration shall be measured by the drop of water level in a closed-end standpipe or in one of the sewer manholes available for convenient measuring. When a standpipe and plug arrangement is used at the upper manhole of a line under test, there must be some positive method of releasing entrapped air in the sewer prior to taking measurements.

- 2. Vacuum Testing of Manholes - This test method is only applicable to precast concrete manholes. All lifting holes and exterior joints shall be filled and pointed with an approved non-shrinking mortar. No standing water shall be allowed in the manhole excavation which may affect the accuracy of the test. All pipes and other openings into the manhole shall be suitably plugged in such a manner as to prevent displacement of the plugs while the vacuum is drawn. Installation and operation of the vacuum equipment and indicating devices shall be in accordance with equipment specifications and instructions provided by the manufacturer.

The test head may be placed in the cone section of the manhole. The rim-cone joint is not usually tested. A vacuum of 10 inches of mercury shall be drawn. The time for the vacuum to drop to 9 inches of mercury shall be recorded. Acceptance for 4 ft diameter manholes shall be defined as when the time to drop to 9 inches of mercury meets or exceeds the following:

Table with 2 columns: Manhole Depth, Time to Drop 1" Hg. Rows: 10 ft of Less (60 sec), 10 to 15 ft (75 sec), 15 to 25 ft (90 sec).

For manholes 5 ft in diameter, add 15 seconds; for manholes 6 ft in diameter, add 30 seconds to the time requirements for four foot diameter manholes indicated above.

- 3. Low-Pressure Air Test of Pipe Lines - Plug all openings in the test section. Add air until the internal pressure of the line is raised to approximately 4.0 psi. After this pressure is reached, allow the pressure to stabilize. The pressure will normally drop as the air temperature stabilizes. This usually takes 2 to 5 min. Depending on the pipe size. The pressure may be reduced to 3.5 psi before starting the test.

When the pressure has stabilized and is at or above the starting test pressure of 3.5 psi, start the test. If the pressure drops more than 1.0 psi during the test time, the line is presumed to have failed the test. If a 1.0-psi drop does not occur within the test time, the line has passed the test. Test times are for a 1.0 psi pressure drop from 3.5 to 2.5 psi. If the section of line to be tested includes more than one pipe size, calculate the test time for each size and add the test times to arrive at the total test time for the section. Minimum test times for various pipe sizes in inches are as follows:

Table with 2 columns: SIZE (INCHES), TIME (MIN./100 FT.). Rows: UP TO 8 (1.2), 10 (1.5), 12 (1.8).

DRAWING LEGEND

- 222 --- EXISTING GRADING
x 222.8 EXISTING SPOT GRADE
--- 200 --- PROPOSED GRADING
+222.8 PROPOSED SPOT GRADE
- - - - - PROPERTY LINE / RIGHT OF WAY
--- EXISTING STONE WALL
- - - - - PROPOSED ROAD CENTERLINE
===== PROPOSED CURB
W EXISTING WATER LINE
--- W --- W PROPOSED WATER MAIN
S EXISTING FIRE HYDRANT
--- S --- S PROPOSED FIRE HYDRANT
S EXISTING SANITARY LINE
S EXISTING CATCH BASIN
S EXISTING DRAINAGE INLET
===== PROPOSED DRAINAGE LINE
===== PROPOSED DRAIN INLET
===== PROPOSED CATCH BASIN
===== PROPOSED DRAINAGE MANHOLE
FD PROPOSED FOOTING DRAIN
RD PROPOSED ROOF DRAIN
SS PROPOSED SEWER SERVICE CONNECTION
FS PROPOSED FIRE SERVICE CONNECTION
WS PROPOSED WATER SERVICE CONNECTION
UE PROPOSED UNDERGROUND ELECTRIC SERVICE
GAS PROPOSED GAS SERVICE
PROPOSED UTILITY CROSSING - WATER TO SEWER/STORM
PROPOSED SANITARY MANHOLE AND LINE
PROPOSED LIGHT POST
PROPOSED TRAFFIC SIGN
PROPOSED RETAINING WALLS
PROPOSED SOIL STOCKPILES
PROPOSED SILT FENCE
PROPOSED CRUSHED STONE INLET PROTECTION
PROPOSED WATER BAR
PROPOSED STABILIZED CONSTRUCTION ENTRANCE
PROPOSED LIMIT OF DISTURBANCE
PROPOSED EROSION BLANKET / PERMANENT SEED
PROPOSED TEMPORARY TRAP
EXISTING TREE TO BE PROTECTED
EXISTING TREE TO BE REMOVED
PROPOSED HANDICAP PARKING
ADA ACCESSIBLE RAMP



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Table with columns: Revisions, No., Date, Comments.

SCALE: NTS
DRAWN BY: EL
DATE: 10/22/14

NOTES

Butterfield Redevelopment Project
1756 NYS ROUTE 9D
Village Of Cold Spring
Putnam County, New York
Sheet G-1

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LOCATION MAP  
NOT TO SCALE

**SITE DATA:**

OWNER / DEVELOPER: BUTTERFIELD REALTY LLC  
3102 ROUTE 9  
COLD SPRING, NY 10516

PROJECT LOCATION: 55 PAULDING AVENUE  
COLD SPRING, NEW YORK, 10516

EXISTING ZONE: B-4A, MEDICAL AND HEALTH CARE FACILITY MIXED USE  
R-1, ONE FAMILY RESIDENCE DISTRICT

TOWN TAX MAP DATA: SECTION 49.5, BLOCK 3, LOT 45

SITE AREA: 5.797 ACRES (252,517.32SF)

SEWAGE FACILITIES: PUBLIC SEWERS

WATER FACILITIES: PUBLIC WATER FACILITIES

**PROJECT SUMMARY:**

- BUILDING 1, MUNICIPAL OFFICE BUILDING - 6,000 SF FOOTPRINT, WITH 15,000 SF TOTAL (FIRST FLOOR RETAIL NOT TO EXCEED 6,000SF)
- BUILDING 2, RETAIL OFFICE BUILDING - 7,000 SF FOOTPRINT, WITH 17,500 SF TOTAL (FIRST FLOOR RETAIL NOT TO EXCEED 7,000SF)
- BUILDINGS 3 - 6, SENIOR CONDOMINIUM - 55 UNITS
- LOTS 1, 2, & 3 - THREE (3) SINGLE FAMILY HOMES

**Parking Schedule**

Building	Land Use	Parking Code	Code Requirement Spaces	Shared Parking Reduction	Required Parking After Reduction	Provided
1	Retail (6,000 SF) -Ground Floor	1 Space per 150 SF	40	20%	32	63
	Office (6,000 SF) -Upper Floor	1 Space per 300 SF	20	20%	16	
2	Retail (7,000 SF) -Ground Floor	1 Space per 150 SF	47	20%	38	70
	Office (10,500 SF) -Upper Floor	1 Space per 300 SF	35	20%	28	
Lahey Pavilion	Existing	----	35	----	35	35
<b>Non-Residential Parking</b>			<b>177</b>	<b>20%</b>	<b>149</b>	<b>166</b>
3 - (25 units)*	Multi Family	1 space per unit	25	0%	25	Interior Parking
4, 5, & 6 - (30 units)*	Multi Family	1 space per unit	31	0%	31	Interior Parking
<b>Multi Family Parking</b>			<b>56</b>	<b>0%</b>	<b>56</b>	<b>69</b>
Lots 1, 2, & 3	Single Family		3	0%	3	3
<b>Single Family Parking</b>			<b>3</b>		<b>3</b>	<b>3</b>
<b>Total Parking</b>					<b>208</b>	<b>237</b>

\* Interior Parking

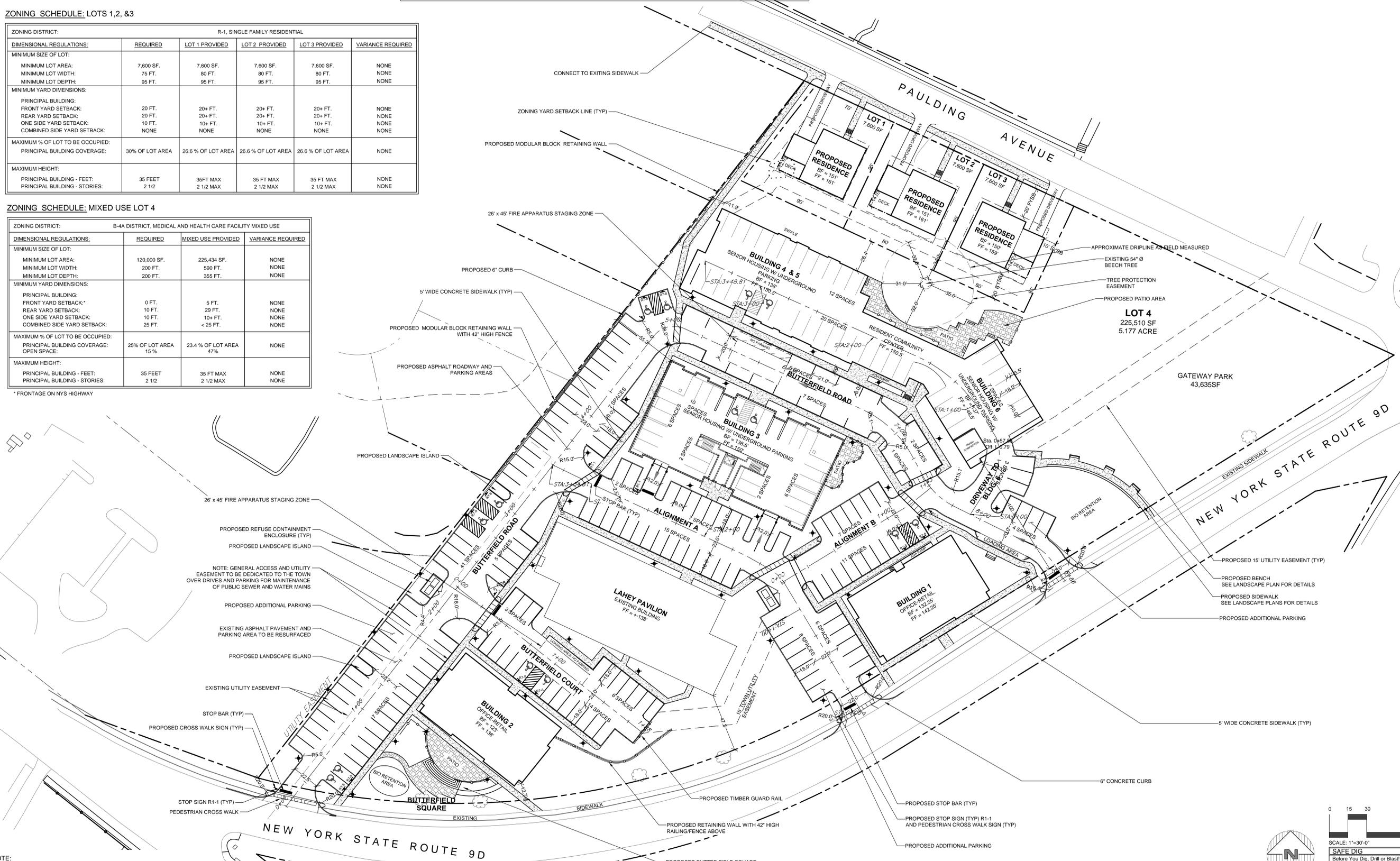
**ZONING SCHEDULE: LOTS 1, 2, & 3**

R-1, SINGLE FAMILY RESIDENTIAL					
DIMENSIONAL REGULATIONS:	REQUIRED	LOT 1 PROVIDED	LOT 2 PROVIDED	LOT 3 PROVIDED	VARIANCE REQUIRED
MINIMUM SIZE OF LOT:					
MINIMUM LOT AREA:	7,600 SF.	7,600 SF.	7,600 SF.	7,600 SF.	NONE
MINIMUM LOT WIDTH:	75 FT.	80 FT.	80 FT.	80 FT.	NONE
MINIMUM LOT DEPTH:	95 FT.	95 FT.	95 FT.	95 FT.	NONE
MINIMUM YARD DIMENSIONS:					
PRINCIPAL BUILDING:					
FRONT YARD SETBACK:	20 FT.	20+ FT.	20+ FT.	20+ FT.	NONE
REAR YARD SETBACK:	20 FT.	20+ FT.	20+ FT.	20+ FT.	NONE
ONE SIDE YARD SETBACK:	10 FT.	10+ FT.	10+ FT.	10+ FT.	NONE
COMBINED SIDE YARD SETBACK:	NONE	NONE	NONE	NONE	NONE
MAXIMUM % OF LOT TO BE OCCUPIED:					
PRINCIPAL BUILDING COVERAGE:	30% OF LOT AREA	26.6% OF LOT AREA	26.6% OF LOT AREA	26.6% OF LOT AREA	NONE
MAXIMUM HEIGHT:					
PRINCIPAL BUILDING - FEET:	35 FEET	35 FT MAX	35 FT MAX	35 FT MAX	NONE
PRINCIPAL BUILDING - STORIES:	2 1/2	2 1/2 MAX	2 1/2 MAX	2 1/2 MAX	NONE

**ZONING SCHEDULE: MIXED USE LOT 4**

B-4A DISTRICT, MEDICAL AND HEALTH CARE FACILITY MIXED USE			
DIMENSIONAL REGULATIONS:	REQUIRED	MIXED USE PROVIDED	VARIANCE REQUIRED
MINIMUM SIZE OF LOT:			
MINIMUM LOT AREA:	120,000 SF.	225,434 SF.	NONE
MINIMUM LOT WIDTH:	200 FT.	590 FT.	NONE
MINIMUM LOT DEPTH:	200 FT.	355 FT.	NONE
MINIMUM YARD DIMENSIONS:			
PRINCIPAL BUILDING:			
FRONT YARD SETBACK:	0 FT.	5 FT.	NONE
REAR YARD SETBACK:	10 FT.	29 FT.	NONE
ONE SIDE YARD SETBACK:	10 FT.	10+ FT.	NONE
COMBINED SIDE YARD SETBACK:	25 FT.	< 25 FT.	NONE
MAXIMUM % OF LOT TO BE OCCUPIED:			
PRINCIPAL BUILDING COVERAGE:	25% OF LOT AREA	23.4% OF LOT AREA	NONE
OPEN SPACE:	15%	47%	NONE
MAXIMUM HEIGHT:			
PRINCIPAL BUILDING - FEET:	35 FEET	35 FT MAX	NONE
PRINCIPAL BUILDING - STORIES:	2 1/2	2 1/2 MAX	NONE

\* FRONTAGE ON NYS HIGHWAY



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PROJECT # 14-25

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www.sitedesignconsultants.com

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Engineer: Joseph C. Rima, P.E.  
NYS Lic. No. 64451

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REVISIONS:  
NO. | DATE | COMMENTS

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SCALE: 1" = 30'  
DRAWN BY: EL  
DATE: 10/22/14

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**SITE / SUBDIVISION PLAN**

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**BUTTERFIELD SITE**  
1756 NEW YORK 9D

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TOWN OF COLD SPRINGS PUTNAM COUNTY

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**C - 101**



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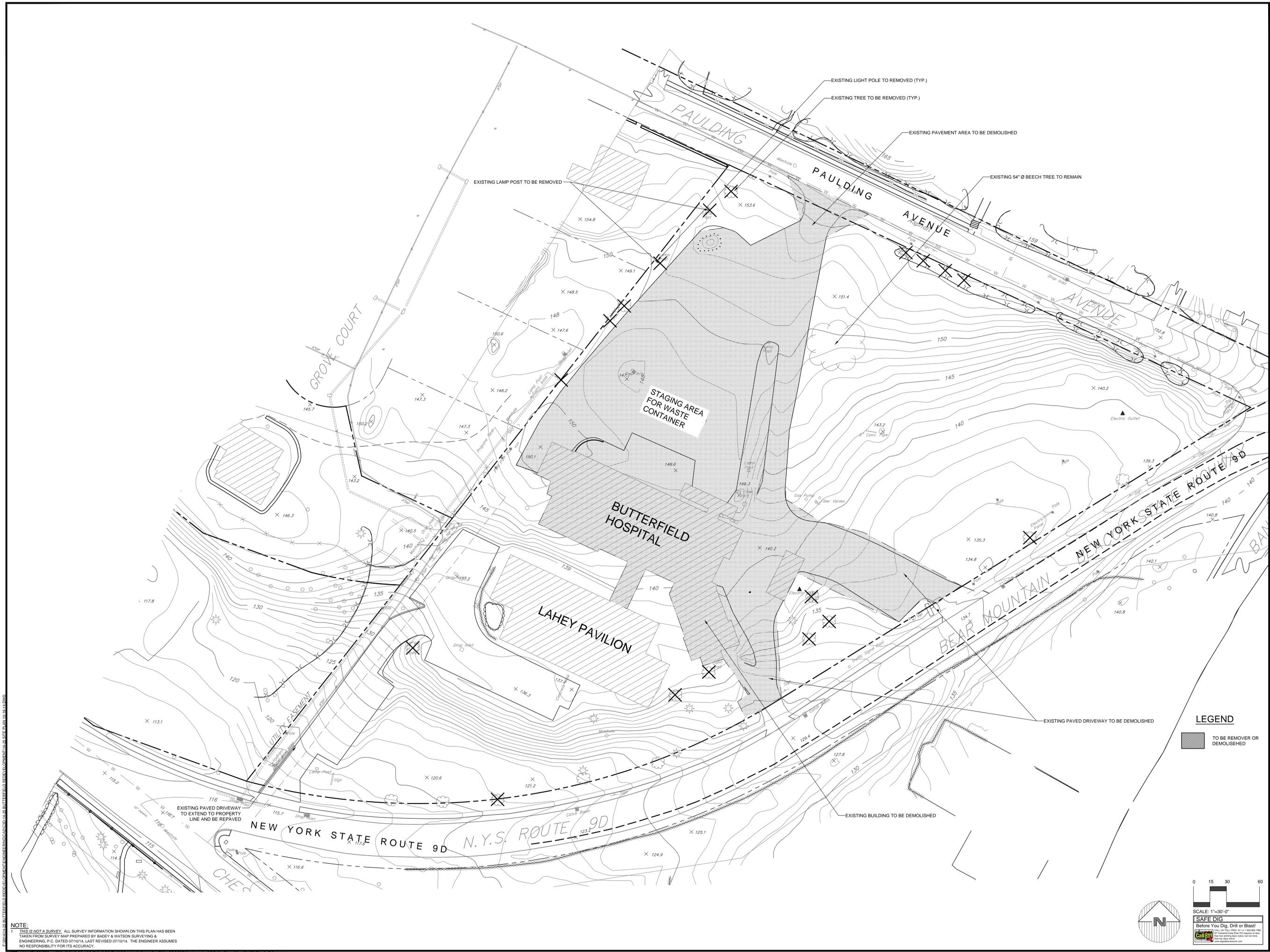
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Revisions:	No.	Date:	Comments:

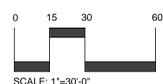
SCALE: 1"=30'  
 DRAWN BY: EL  
 DATE: 10/22/14

**EXISTING CONDITIONS & DEMOLITION PLAN**

SITE PLAN PREPARED FOR  
**BUTTERFIELD SITE**  
 1756 NEW YORK 9D  
 TOWN OF COLD SPRINGS PUTNAM COUNTY



**LEGEND**  
 [Hatched Box] TO BE REMOVED OR DEMOLISHED



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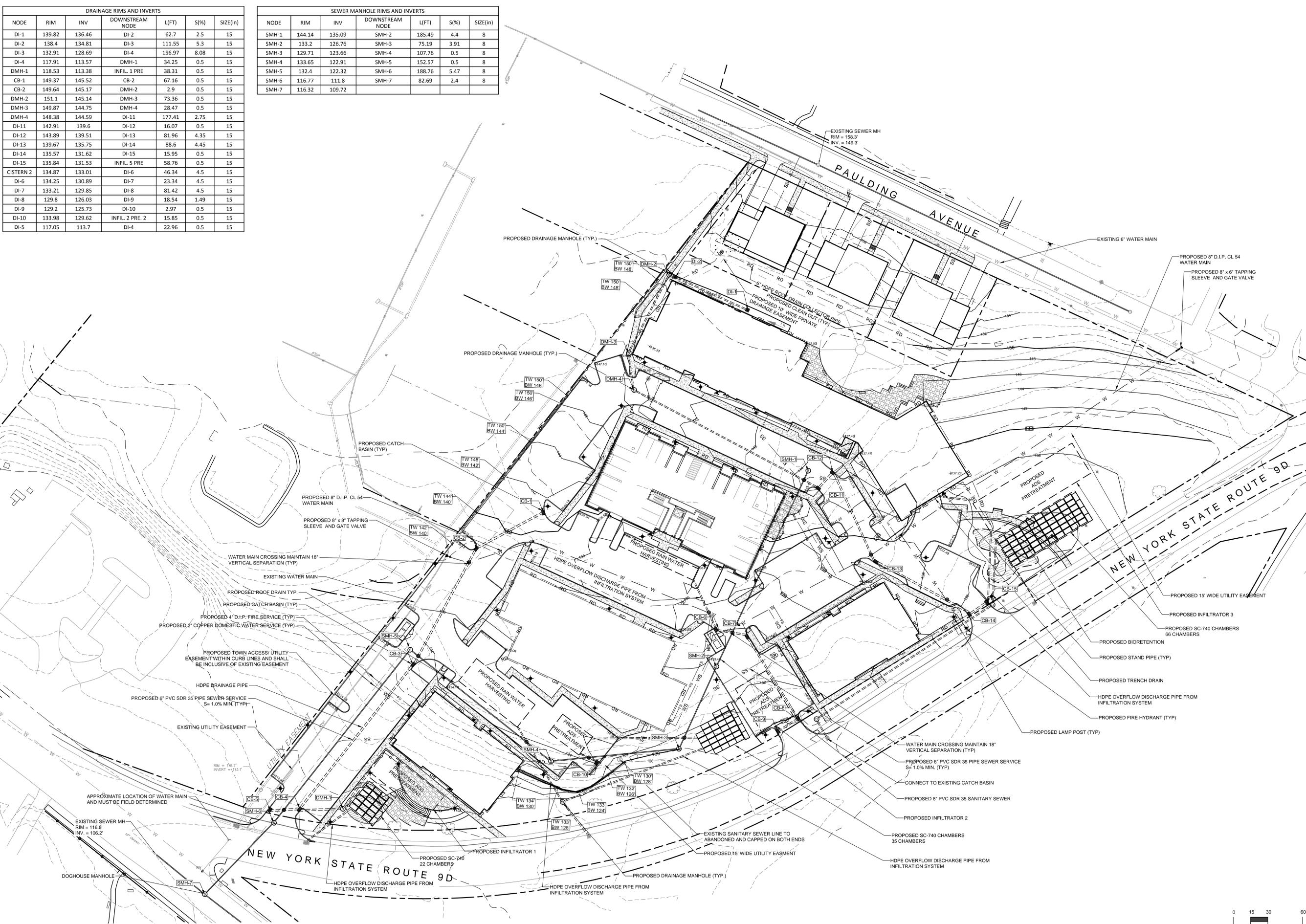






DRAINAGE RIMS AND INVERTS						
NODE	RIM	INV	DOWNSTREAM NODE	L(FT)	S(%)	SIZE(IN)
DI-1	139.82	136.46	DI-2	62.7	2.5	15
DI-2	138.4	134.81	DI-3	111.55	5.3	15
DI-3	132.91	128.69	DI-4	156.97	8.08	15
DI-4	117.91	113.57	DMH-1	34.25	0.5	15
DMH-1	118.53	113.38	INFIL 1 PRE	38.31	0.5	15
CB-1	149.37	145.52	CB-2	67.16	0.5	15
CB-2	149.64	145.17	DMH-2	2.9	0.5	15
DMH-2	151.1	145.14	DMH-3	73.36	0.5	15
DMH-3	149.87	144.75	DMH-4	28.47	0.5	15
DMH-4	148.38	144.59	DI-11	177.41	2.75	15
DI-11	142.91	139.6	DI-12	16.07	0.5	15
DI-12	143.89	139.51	DI-13	81.96	4.35	15
DI-13	139.67	135.75	DI-14	88.6	4.45	15
DI-14	135.57	131.62	DI-15	15.95	0.5	15
DI-15	135.84	131.53	INFIL 5 PRE	58.76	0.5	15
CISTERN 2	134.87	133.01	DI-6	46.34	4.5	15
DI-6	134.25	130.89	DI-7	23.34	4.5	15
DI-7	133.21	129.85	DI-8	81.42	4.5	15
DI-8	129.8	126.03	DI-9	18.54	1.49	15
DI-9	129.2	125.73	DI-10	2.97	0.5	15
DI-10	133.98	129.62	INFIL 2 PRE. 2	15.85	0.5	15
DI-5	117.05	113.7	DI-4	22.96	0.5	15

SEWER MANHOLE RIMS AND INVERTS						
NODE	RIM	INV	DOWNSTREAM NODE	L(FT)	S(%)	SIZE(IN)
SMH-1	144.14	135.09	SMH-2	185.49	4.4	8
SMH-2	133.2	126.76	SMH-3	75.19	3.91	8
SMH-3	129.71	123.66	SMH-4	107.76	0.5	8
SMH-4	133.65	122.91	SMH-5	152.57	0.5	8
SMH-5	132.4	122.32	SMH-6	188.76	5.47	8
SMH-6	116.77	111.8	SMH-7	82.69	2.4	8
SMH-7	116.32	109.72				



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1756 NEW YORK 9D BUTTERFIELD SITE PREPARED FOR THE TOWN OF COLD SPRINGS, PUTNAM COUNTY, NEW YORK

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Project No.:  
 Date:  
 Comments:

Engineer:  
 Joseph C. Rima, P.E.  
 NYS Lic. No. 64431

Scale:  
 1" = 30'

Drawn By:  
 EL

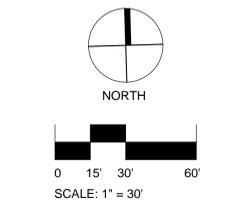
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**GRADING AND UTILITY PLAN**

SITE PLAN  
 PREPARED FOR  
**BUTTERFIELD SITE**  
 1756 NEW YORK 9D

PUTNAM COUNTY  
 TOWN OF COLD SPRINGS

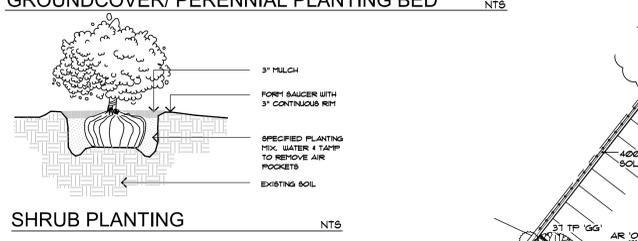
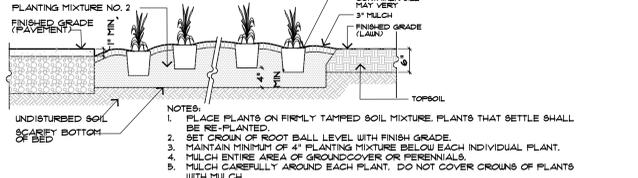
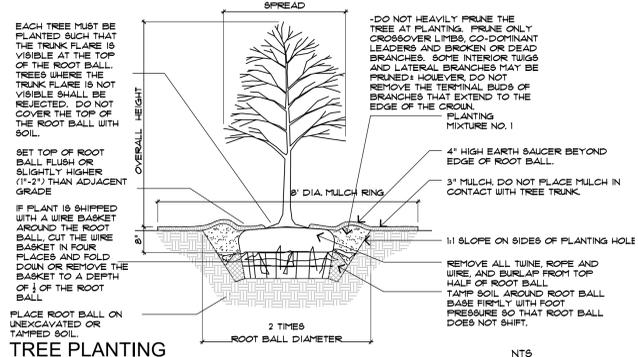
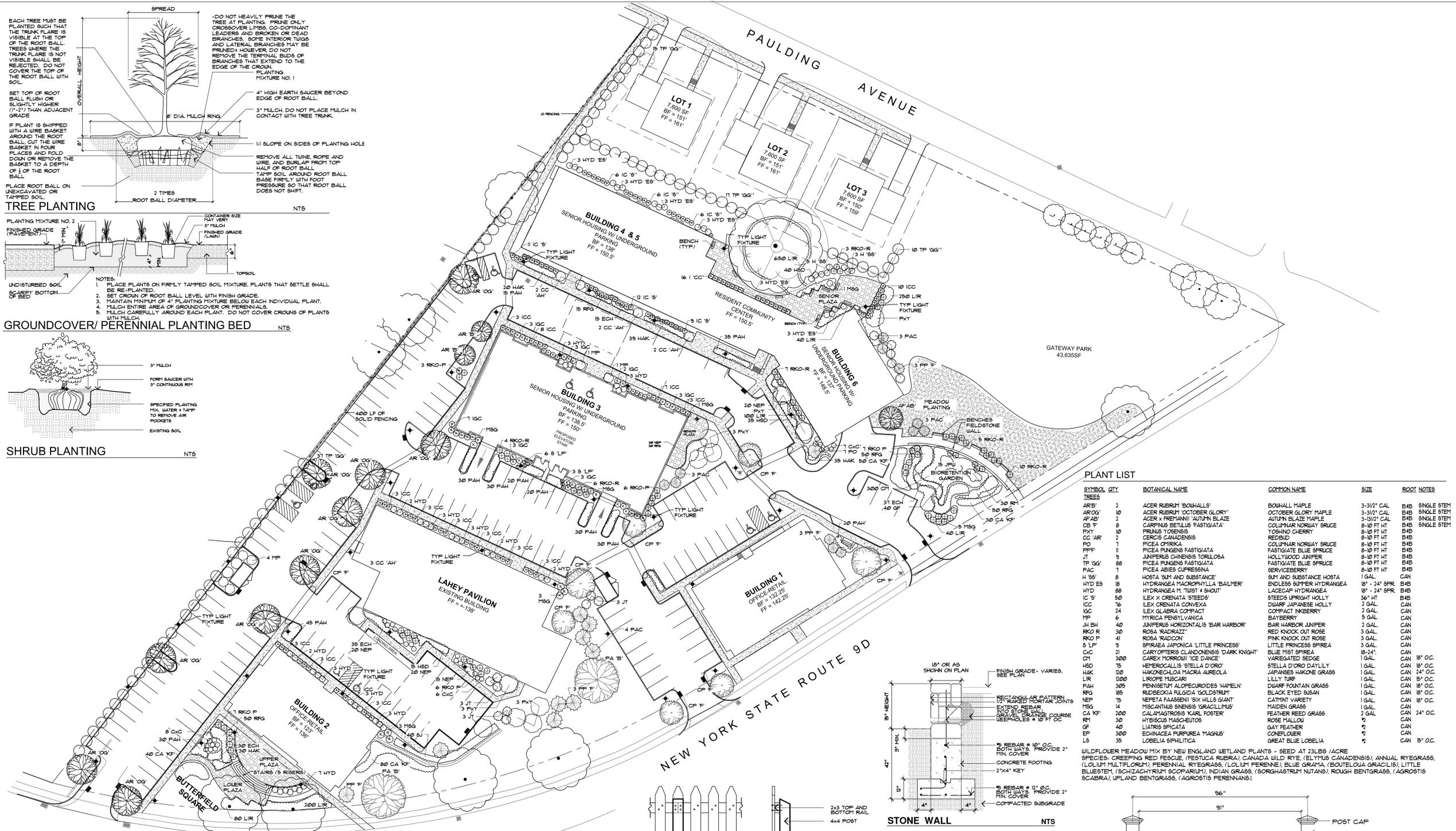
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**BUTTERFIELD SITE**

1756 NEW YORK ROAD  
TOWN OF COLD SPRING  
PUTNAM COUNTY  
NEW YORK

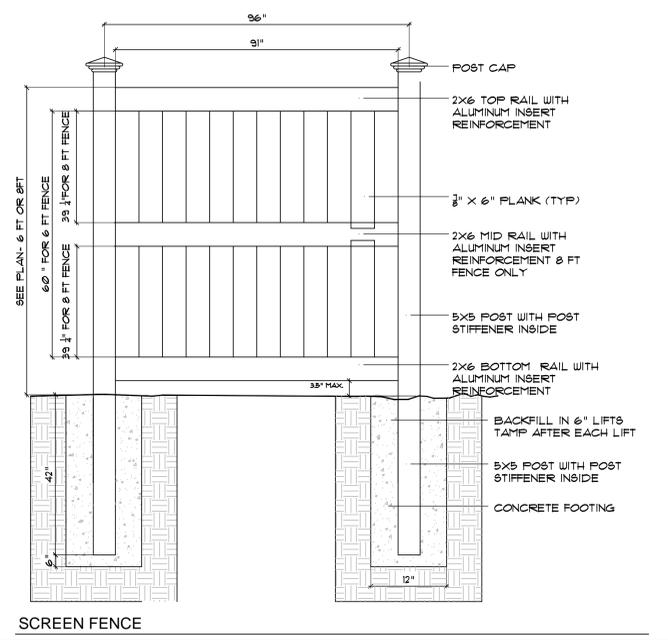
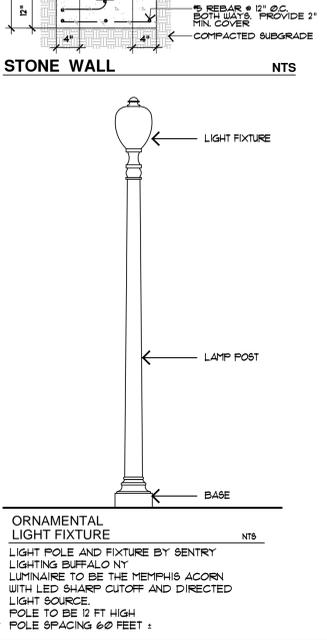
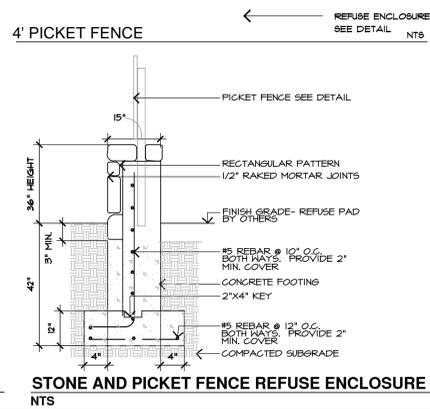
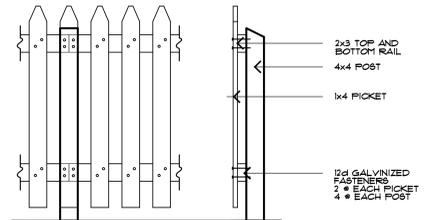
**LANDSCAPE AND LIGHTING PLAN**



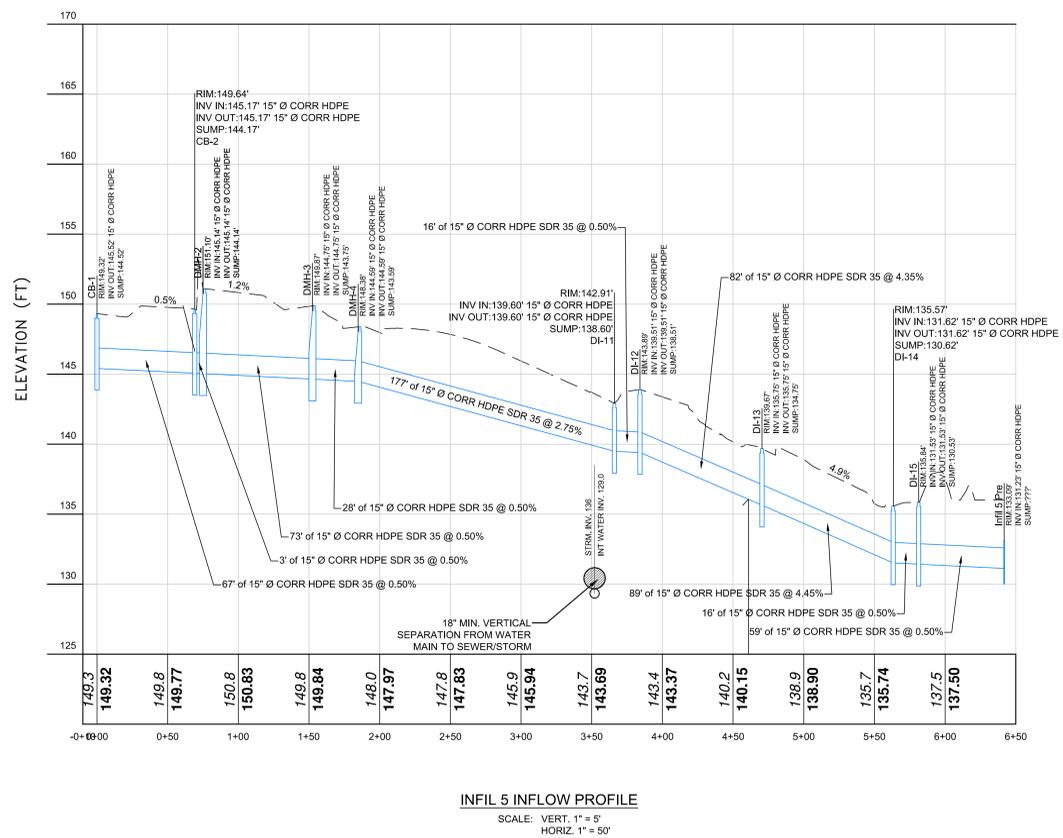
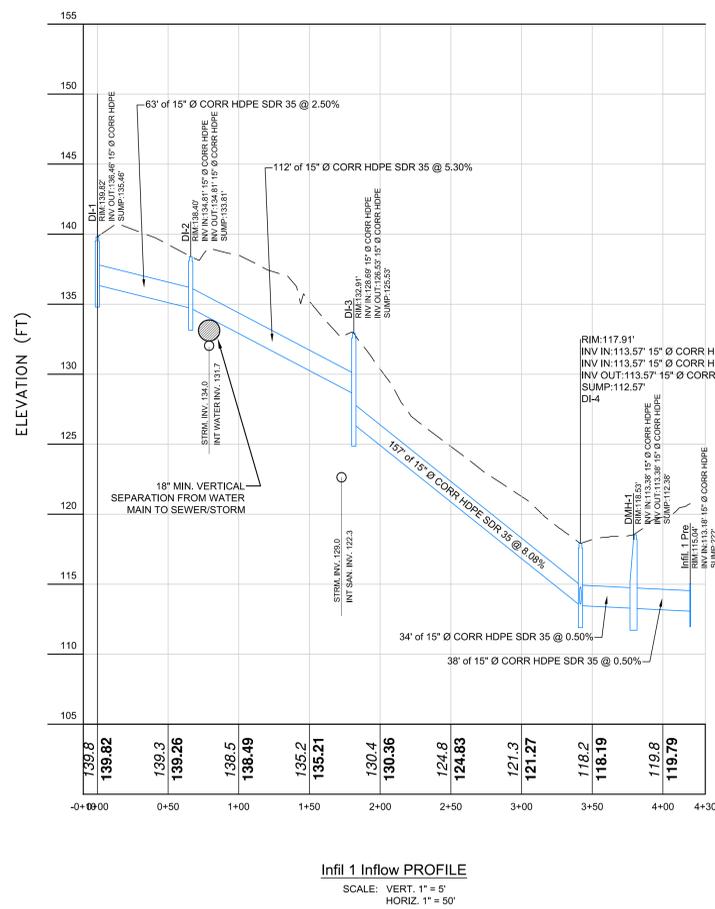
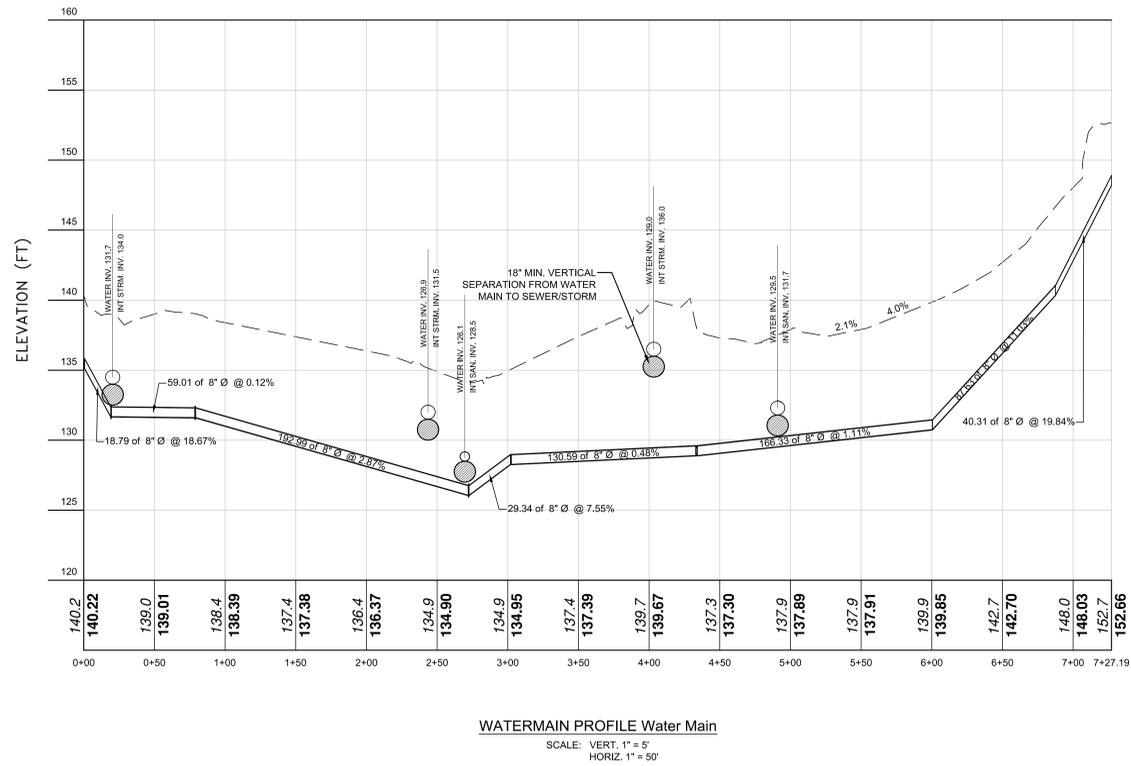
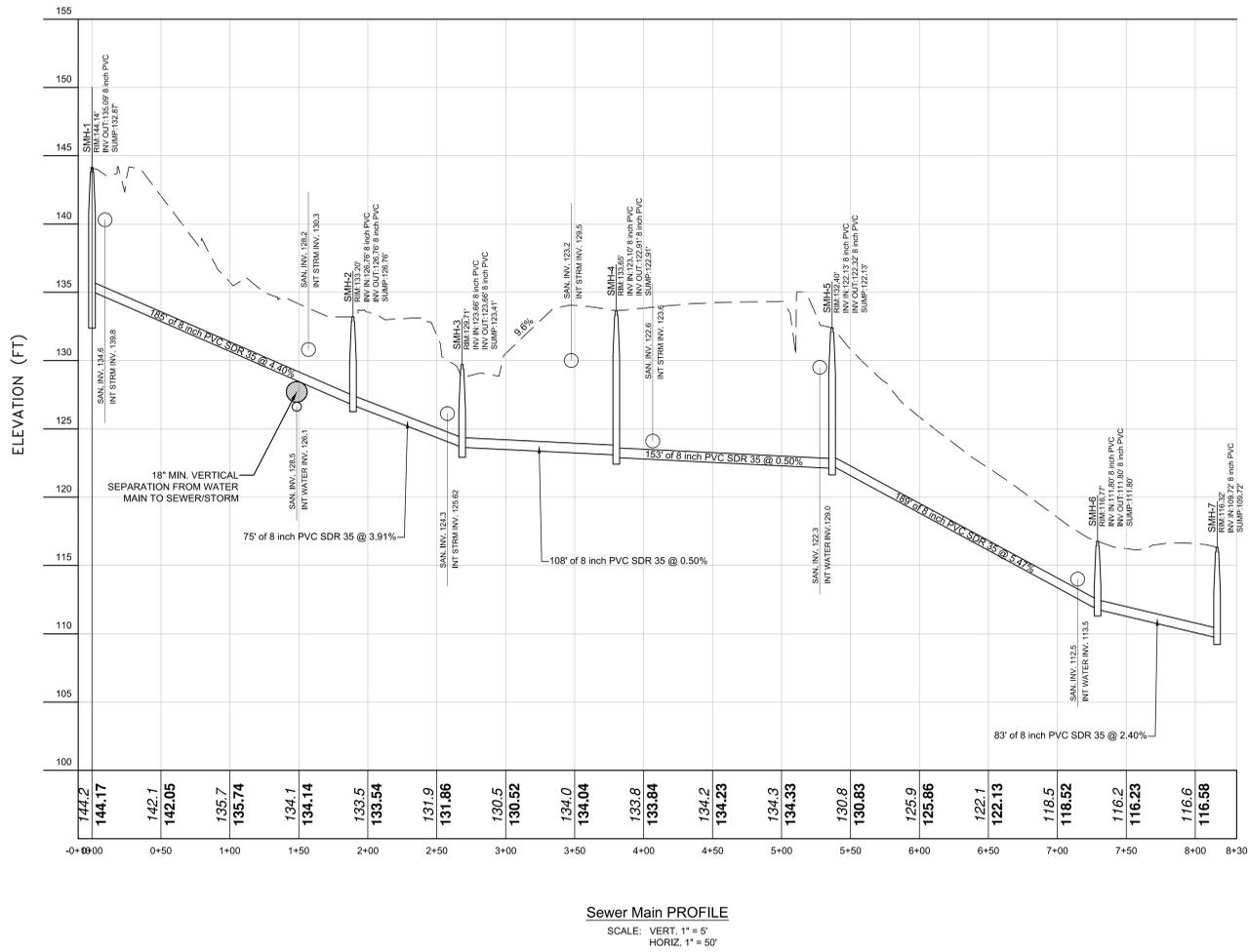
**PLANT LIST**

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT NOTES
ARB1	2	ACER RUBRUM 'BOUHALLS'	BOUHALL MAPLE	3-3 1/2' CAL	B#B SINGLE STEM
ARB2	10	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY MAPLE	3-3 1/2' CAL	B#B SINGLE STEM
ARB3	2	ACER X FREEMANNII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	3-3 1/2' CAL	B#B SINGLE STEM
CB F	8	CARPINUS BETULUS 'FASTIGIATA'	COLUMNAR NORWAY BRUCE	8-10 FT HT	B#B SINGLE STEM
PCH	10	PRUNUS YONISINENSIS	YONISIN CHERRY	8-10 FT HT	B#B
CC' AR	2	CERCIS CANADENSIS	REDBUD	8-10 FT HT	B#B
JO	1	PICEA OHSIRICA	COLUMNAR NORWAY BRUCE	8-10 FT HT	B#B
PPF	11	PICEA PUNGENS FASTIGIATA	FASTIGIATE BLUE SPRUCE	8-10 FT HT	B#B
PT	9	JUNIFERUS CHINENSIS TORULOSA	HOLLYWOOD JUNIFER	8-10 FT HT	B#B
TP YGG	88	PICEA PUNGENS FASTIGIATA	FASTIGIATE BLUE SPRUCE	8-10 FT HT	B#B
PAC	200	PICEA ABIES CUPRESSINA	SERVICEBERRY	8-10 FT HT	B#B
H 'SS'	8	HOSTA 'SUN AND SUBSTANCE'	SUN AND SUBSTANCE HOSTA	1 GAL.	CAN
HYD EB	18	HYDRANGEA MACROPHYLLA 'BALMER'	ENDLESS SUMMER HYDRANGEA	18" - 24" SFR	B#B
HYD	28	HYDRANGEA M. 'TWIST & SHOUT'	LACECAP HYDRANGEA	18" - 24" SFR	B#B
IC 'S'	50	ILEX X CRENATA 'STEDS'	STEDS UPRIGHT HOLLY	36" HT	B#B
IGC	16	ILEX CRENATA CONVEXA	DIWARF JAPANESE HOLLY	2 GAL.	CAN
IGC	24	ILEX GLABRA COMPACT	COMPACT INGBERRY	2 GAL.	CAN
MP	6	MYRICA PENNSYLVANICA	BAYBERRY	5 GAL.	CAN
AR EBH	4	JUNIFERUS HORIZONTALIS 'BAR HARBOR'	BAR HARBOR JUNIFER	2 GAL.	CAN
RKO R	30	ROSA 'RADON'	RED KNOCK OUT ROSE	3 GAL.	CAN
RKO P	41	ROSA 'RADON'	PINK KNOCK OUT ROSE	3 GAL.	CAN
S LP'	3	SPIRAEA JAPONICA 'LITTLE PRINCESS'	LITTLE PRINCESS SPIREA	3 GAL.	CAN
CC	71	CARYOPTERIS CLAUDONENSIS 'DARK KNIGHT'	BLUE HST SPIREA	18-24" CAN	
CM	300	CAREX 'HORROR' 'ICE DANCE'	VAREGATED REDGE	1 GAL.	CAN
HSD	15	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	1 GAL.	CAN
HAK	120	HAKONECHLOA MACRA AUREOLA	JAPANESE HAKONE GRASS	1 GAL.	CAN
LIR	300	LIRIOPE MUSCARI	LILLY TURF	1 GAL.	CAN
PAH	305	PENNISETUM ALOPECUROIDES 'HAMELN'	DIWARF FOUNTAIN GRASS	1 GAL.	CAN
RG	85	RUDBECKIA RULGIDA 'GOLDSTRUM'	BLACK EYED SUSAN	1 GAL.	CAN
NEP	15	NEPETA FAASSENSIS '6X HILLS GIANT'	CATMINT VARIETY	1 GAL.	CAN
MSG	14	MISCANTHUS SENSIBIS 'GRACILLIUM'	MAIDEN GRASS	1 GAL.	CAN
CA KF'	100	CALAMAGROSTIS KARL FOSTER	FEATHER REED GRASS	1 GAL.	CAN
R1	30	HYBISCUS MASCHOUTOS	ROSE MALLOU	2" CAN	
GF	40	LIATRIS SPICATA	GAY FEATHER	2" CAN	
EP	300	ECONACEA PARPUREA 'MAGNUS'	CONEFLOWER	2" CAN	
L5	35	LOBELIA SIFILITICA	GREAT BLUE LOBELIA	2" CAN	

WILDFLOWER MEADOW MIX BY NEW ENGLAND WETLAND PLANTS - SEED AT 23 LBS / ACRE SPECIES: CREEPING RED FESCUE, (FESTUCA RUBRA), CANADA WILD RYE, (ELYMUS CANADENSIS), ANNUAL RYEGRASS, (LOLIUM MULTIFLORUM), PERENNIAL RYEGRASS, (LOLIUM PERENNE), BLUE GRAMA, (BOUPELOUA GRACILIS), LITTLE BLUESTEM, (SCHIZACHYRIUM SCOPARUM), INDIAN GRASS, (SORGHASTRUM NUTANS), ROUGH BENTGRASS, (AGROSTIS SCABRA), UPLAND BENTGRASS, (AGROSTIS PERENNANS).









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Engineer: Joseph C. Rina, P.E.  
NYS Lic. No. 64151

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Scale: N.T.S.  
Date: 10/22/14

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## UTILITY PROFILES

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SITE PLAN PREPARED FOR  
**BUTTERFIELD SITE**  
1756 NEW YORK 9D  
TOWN OF COLD SPRINGS PUTNAM COUNTY

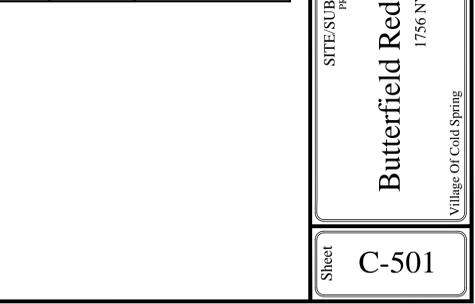
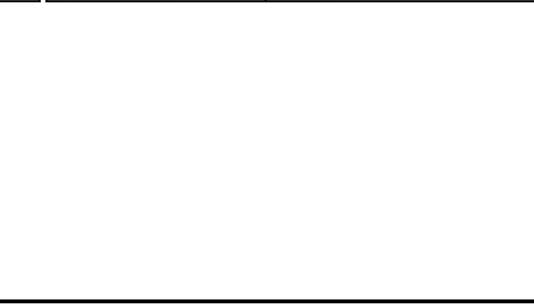
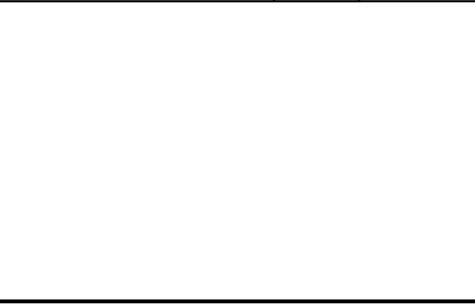
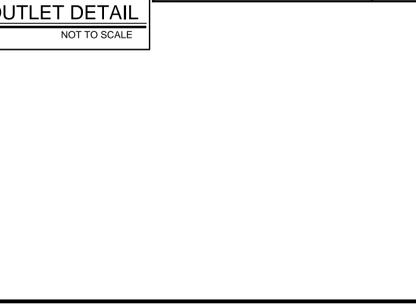
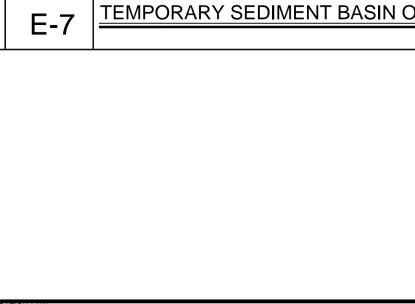
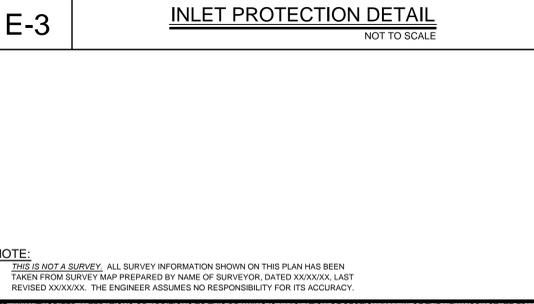
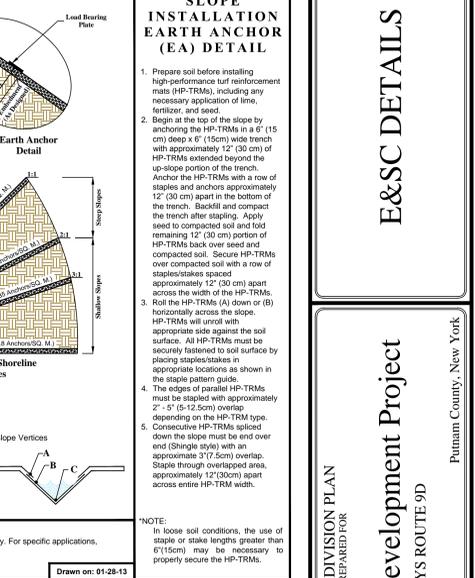
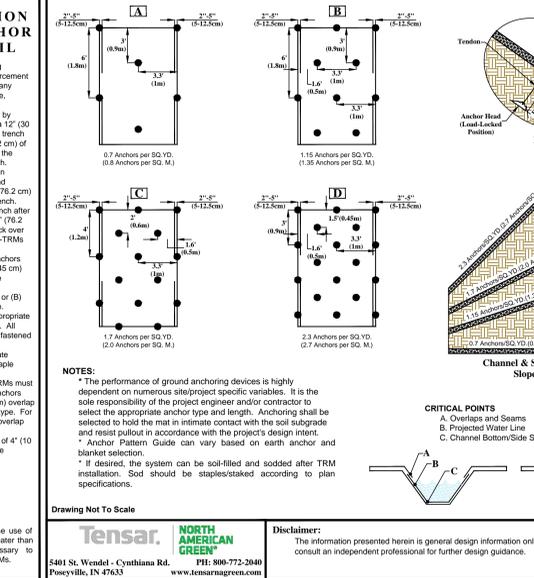
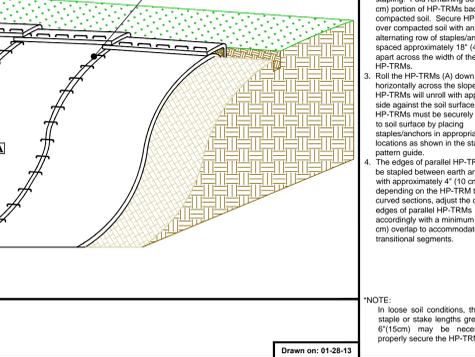
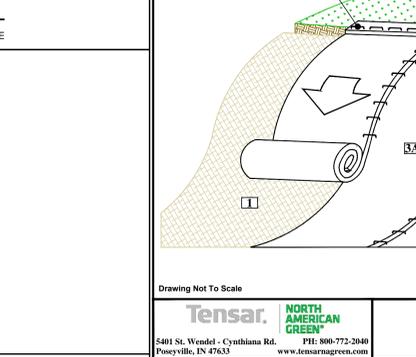
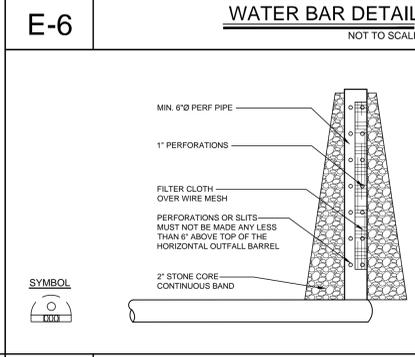
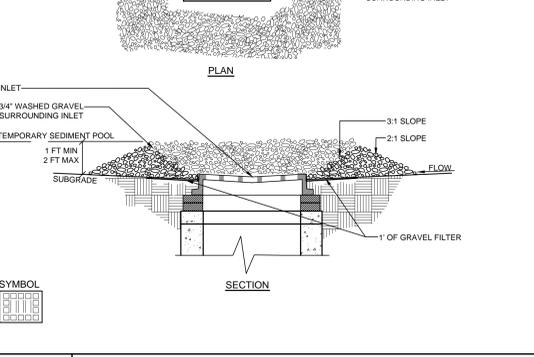
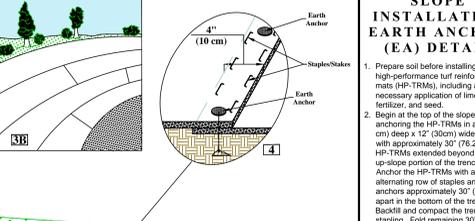
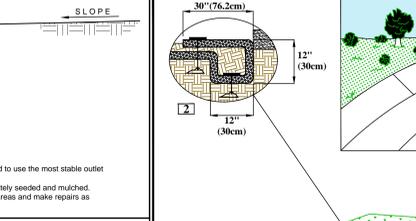
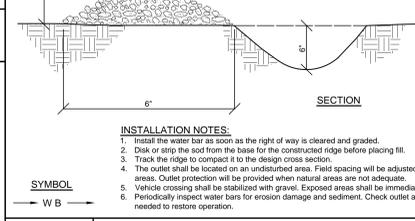
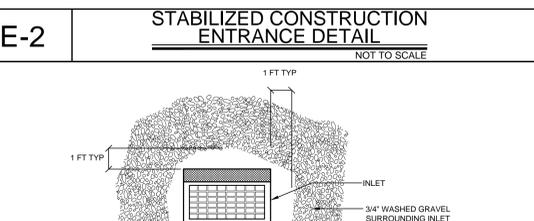
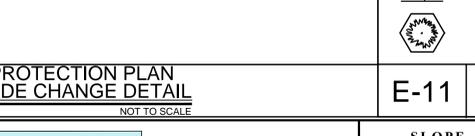
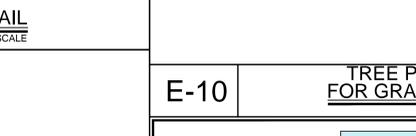
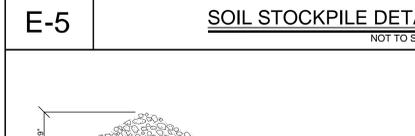
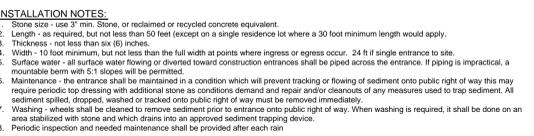
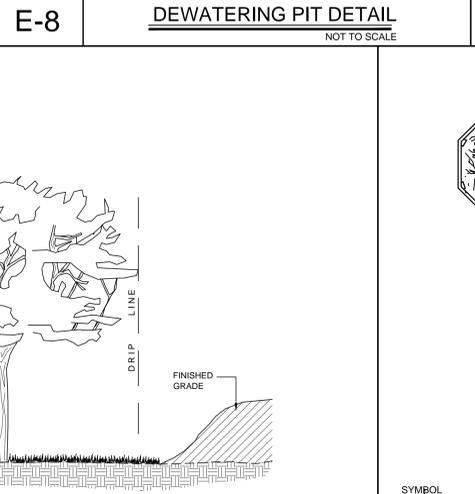
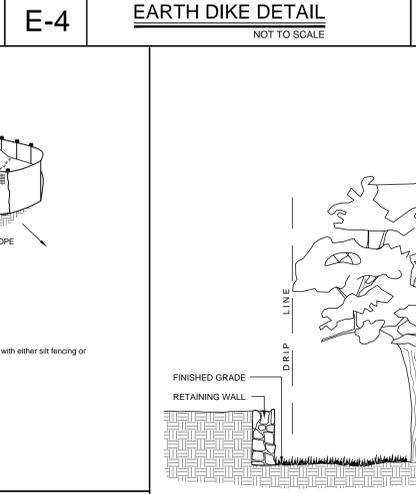
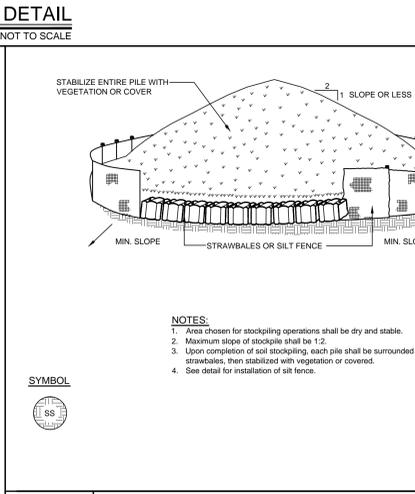
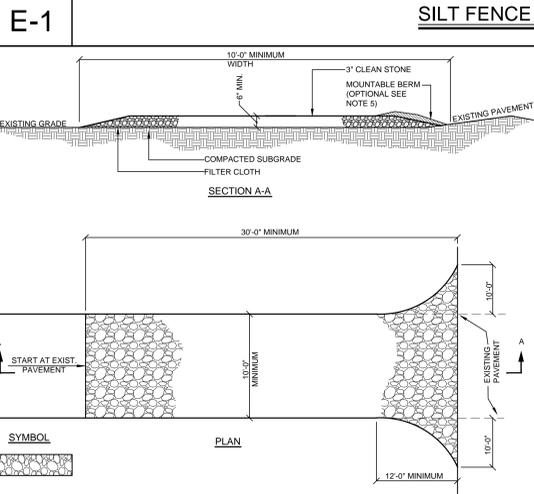
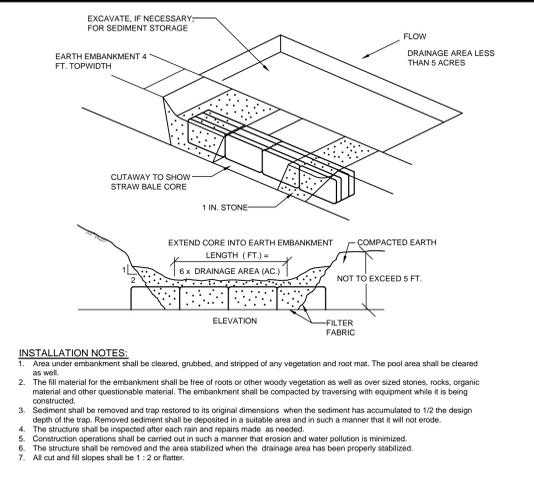
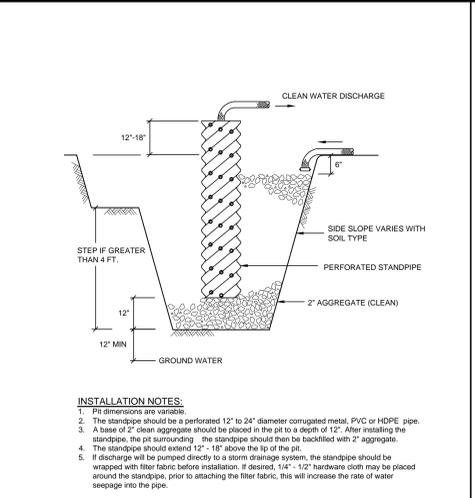
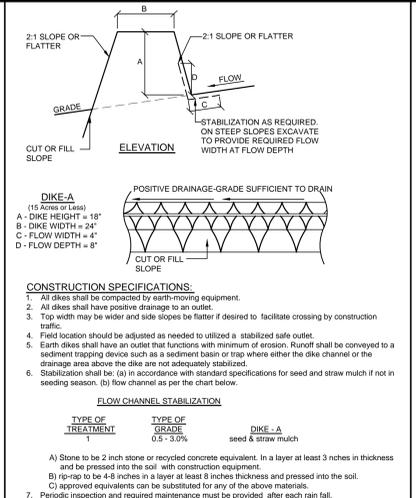
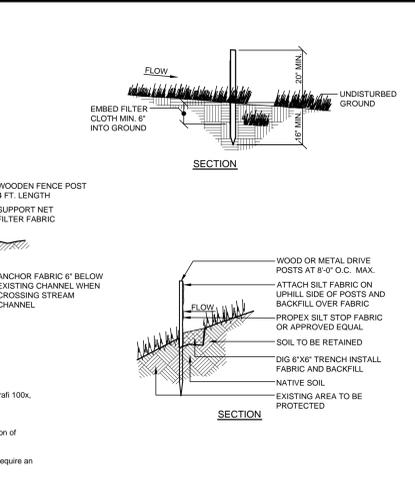
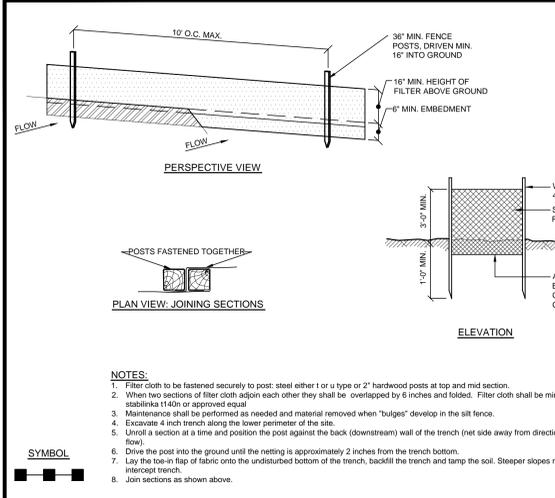
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C - 302

2014/10/22 BUTTERFIELD DEVELOPMENT/ENGINEERING/2014/10/22 BUTTERFIELD DEVELOPMENT/ENGINEERING/SITE PLAN/04/14/14

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.

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NOTE: 1. THIS IS NOT A SURVEY. ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY NAME OF SURVEYOR, DATED XX/XX/XX, LAST REVISED XXXXXX. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

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PROJECT # 14-25

STATE OF NEW YORK  
ARCHITECTS AND ENGINEERS  
Joseph C. Rina, P.E.  
NYS Lic. No. 64451

SCALE: NTS  
DRAWN BY: EL  
DATE: 10/22/14

**E&S DETAILS**

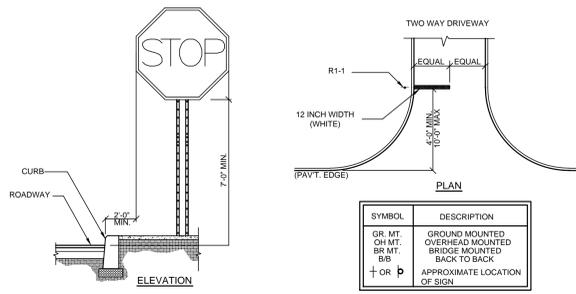
**Butterfield Redevelopment Project**  
1756 NYS ROUTE 9D  
Putnam County, New York

SITE/SUBDIVISION PLAN  
PREPARED FOR

Sheet **C-501**

Village Of Cold Spring  
Putnam County, New York

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TYPICAL INSTALLATION GUIDELINES

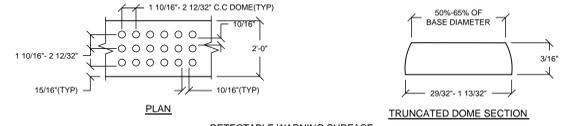
SYMBOL	DESCRIPTION
GR. MT.	GROUND MOUNTED
OH MT.	OVERHEAD MOUNTED
BS MT.	BRIDGE MOUNTED
BB	BACK TO BACK
+	APPROXIMATE LOCATION OF SIGN

SIGN	M.U.T.C.D. NUMBER	SIZE OF SIGN	TYPE OF MOUNT
	R1-1	18" X 18"	GR. MT.
	R7-6	12" X 18"	GR. MT.

SIGN	M.U.T.C.D. NUMBER	SIZE OF SIGN	TYPE OF MOUNT
	P1-2 (SEE NOTE 4)	12" X 18"	GR. MT.
	W11-15	24" X 24"	GR. MT.

- GENERAL NOTES:**
- All signage shall be in accordance with the latest edition of the national MUTCD and the N.Y.S. Supplement (MUTCD), September 2007, including the following:
    - A. Letter size and series
    - B. Legend and background color
    - C. Retroreflectivity
    - D. Size of sign
  - The type of characters as specified in the standard specifications shall be as follows:
 

MUTCD CODE LETTER	TYPE OF CHARACTER
G.I.	TYPE IV
R.V.W.M.	TYPE IV OR V
  - Sign locations as shown on plans are approximate. The Contractor shall relocate existing signs and install new signs in accordance with the MUTCD, latest edition. The Contractor shall contact the Town Engineer to discuss/resolve problem areas.
  - Except where otherwise specified, parking signs shall be placed facing approaching traffic at an angle of between 30 and 45 degrees with the line of traffic flow. Parking signs shall be placed at each end of a regulation (single-headed arrows) and, within the regulation (double-headed arrows), at intervals not to exceed 200 ft.
  - Where new signs are installed the Contractor shall affix a label to the back of the sign panel. This label will show the date of installation and identification numbers.
  - Placement of WS-17 sign is prescribed in the General Municipal Law.



DETECTABLE WARNING SURFACE

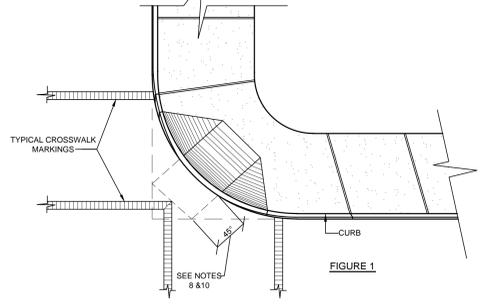
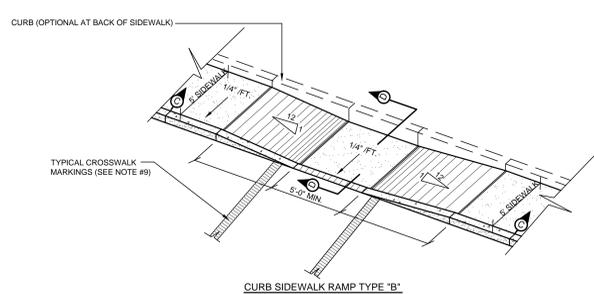
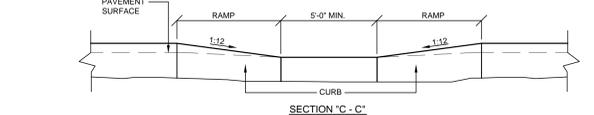


FIGURE 1

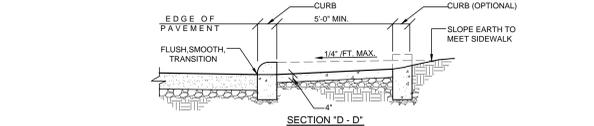
- NOTES:**
- GENERAL:**
- Sidewalk curb ramp type and location are as shown on the plans or as directed.
  - All sidewalk curb ramp types may be used as straight or curved curb sections.
  - Sidewalk curb ramp types may be different at each location within an intersection.
- SIDEWALK CURB RAMP CRITERIA:**
- The maximum slope of a sidewalk curb ramp shall be 1:12.
  - The maximum width of a sidewalk curb ramp shall be five feet. Exclusive of flared sides.
  - All sidewalk curb ramps shall have flush, smooth transitions to the adjacent street or highway surface.
- SURFACE FINISH:**
- The surface of all sidewalk curb ramps shall be stable, firm, and slip resistant (E.G. A coarse broom finish perpendicular to the ramp slope is acceptable on cement concrete curb ramps).
  - All proposed sidewalk curb ramps shall have a detectable warning surface installed from the back of the curb for a distance of 2 feet in the direction of travel on the ramp and extending the full width of the ramp, excluding the ramp sides or flares. The detectable warning surface shall comply with the requirements of section 4.29.2 of the Americans with Disabilities Act accessibility guidelines (ADAAG).
- SIDEWALK CURB RAMP PLACEMENT:**
- At a corner, where the curb radius is 25-feet or less, a single ramp (either type a or b) located diagonally can often serve crosswalks in two directions. However, a single ramp shall only be used where there is a minimum clear space of 48" falling entirely within the projection of the intersection curb (see Figure 1). Where the radius exceeds 25' or the minimum 48" clear space is not achievable, then separate ramps should be provided for each crosswalk.
- PAVEMENT MARKINGS AT CROSSWALKS:**
- Sidewalk curb ramps at marked crossings shall be wholly contained within the markings excluding any flared sides.
  - At a corner where a single ramp (either type a or b) located diagonally serves two crosswalks, this shall be a 48" minimum clear space at the ramp bottom wholly contained within the intersection crosswalk markings (see Figure 1).
  - Where stop lines are necessary, they shall be located in advance of sidewalk curb ramps.
- UTILITIES - DRAINAGE INLETS OR GRATES:**
- Where feasible, provide for drainage inlets or grates immediately upstream from the curb ramps. Rectilinear or rectangular drainage grates are to be used in the area of curb ramps.
  - Do not place signal poles, sign posts, utility poles, fire hydrants, etc., within the ramp or side flare areas.



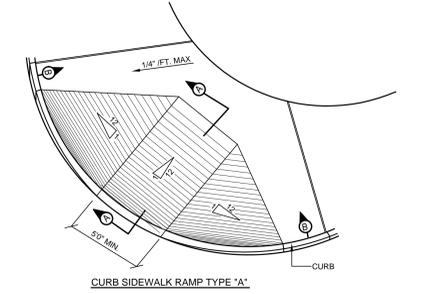
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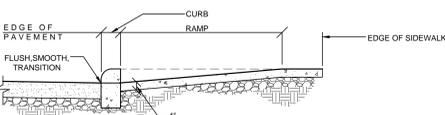
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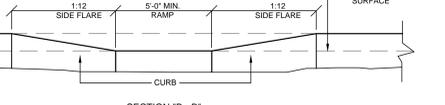
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CURB SIDEWALK RAMP TYPE "A"

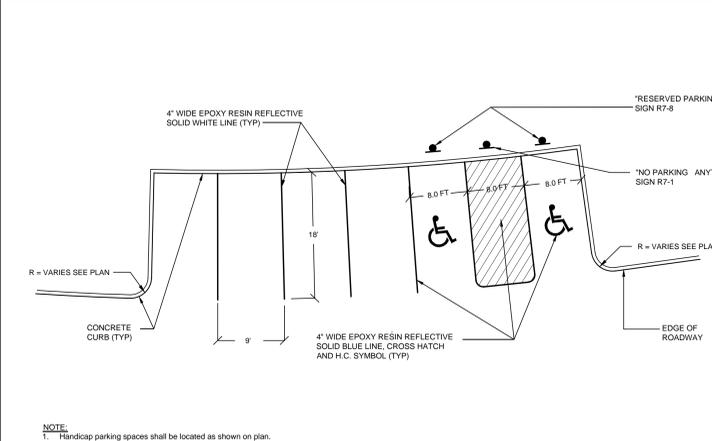


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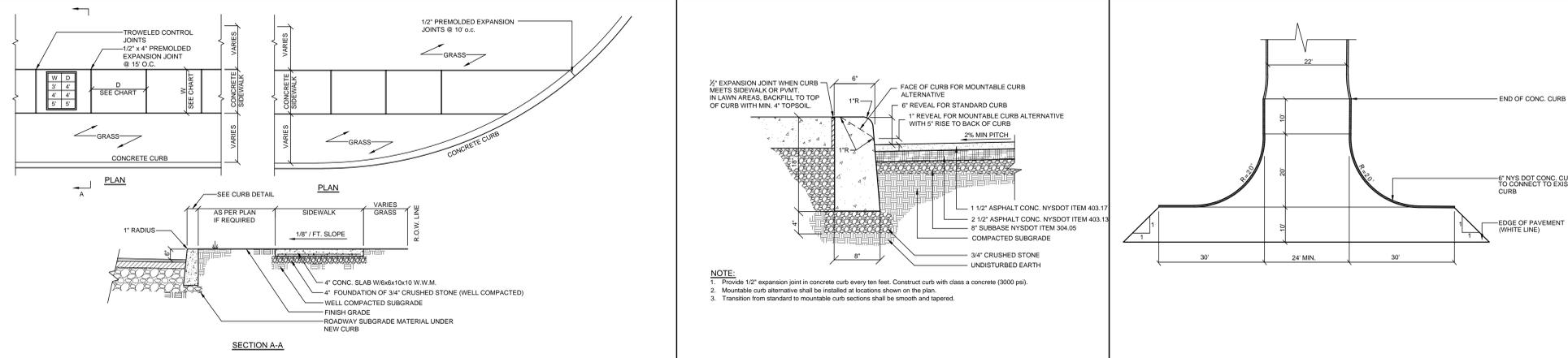


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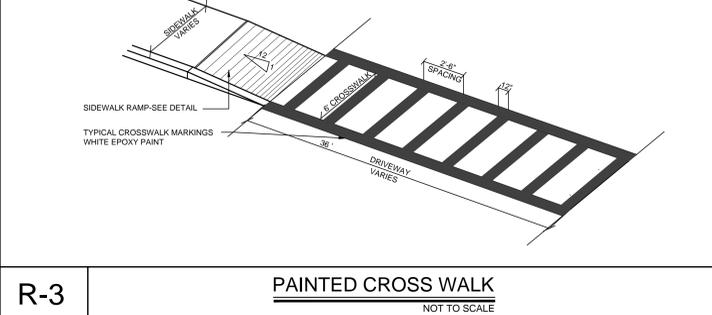
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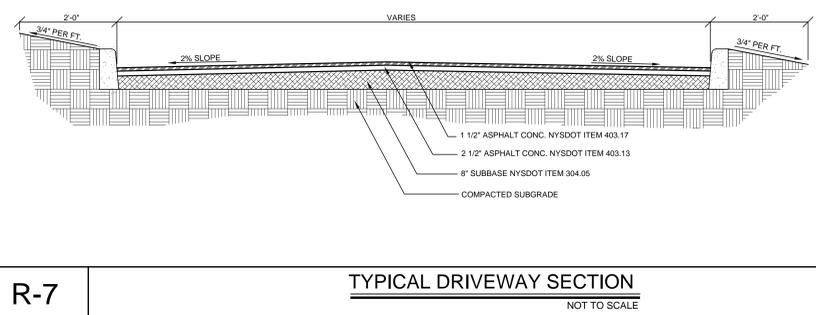
R-5 SIDEWALK CURB-RAMP DETAIL NOT TO SCALE



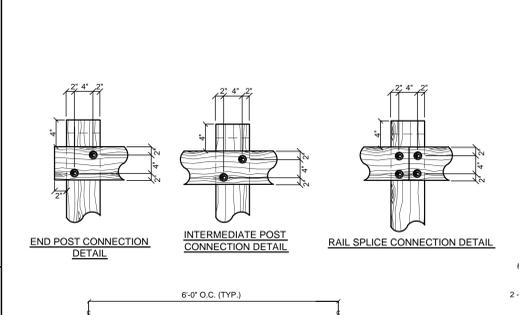
R-2 TYPICAL PARKING STALL LAYOUT NOT TO SCALE



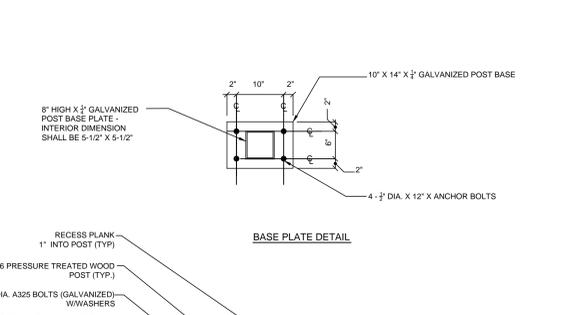
R-6 CONCRETE SIDEWALK DETAIL NOT TO SCALE



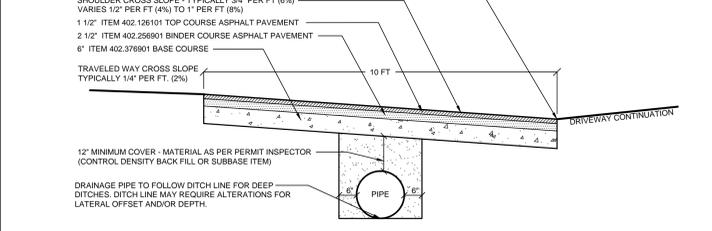
R-9 PAVEMENT AND STANDARD/MOUNTABLE CONCRETE CURB DETAIL NOT TO SCALE



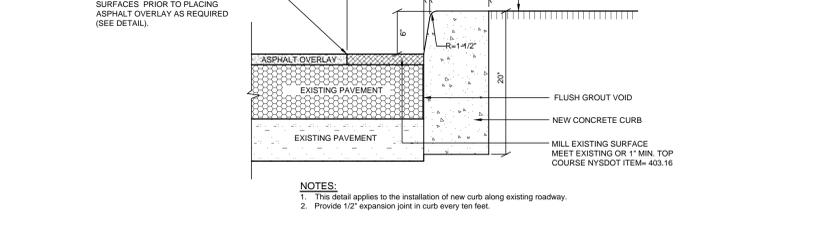
R-10 NYS DOT TYPE 2 ENTRANCE DETAIL NOT TO SCALE



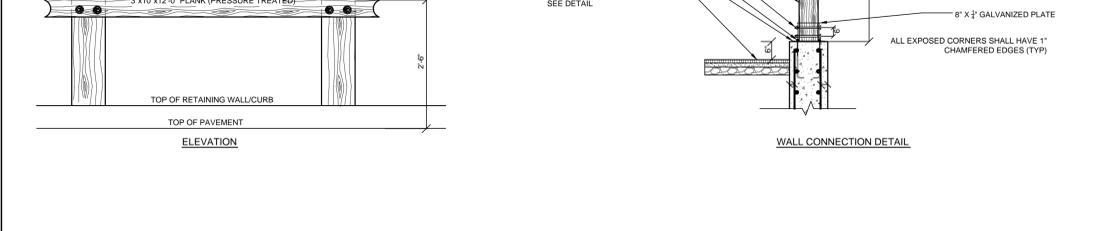
R-3 PAINTED CROSS WALK NOT TO SCALE



R-7 TYPICAL DRIVEWAY SECTION NOT TO SCALE



R-8 NYS DOT CONCRETE CURB INSTALLATION DETAIL NOT TO SCALE



R-4 NYS DOT DRIVEWAY ENTRANCE PAVEMENT DETAIL NOT TO SCALE



R-11 TIMBER GUARDRAIL AND WALL CONNECTION DETAIL NOT TO SCALE



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www.sitedesignconsultants.com

STATE OF NEW YORK  
JULY 15, 2013  
EXPIRES  
JOSEPH C. RINA, P.E.  
NYS Lic. No. 64451

Revisions:  
No. | Date | Comments:

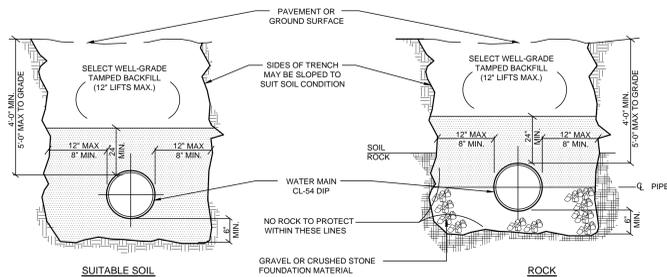
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**SITE DETAILS**

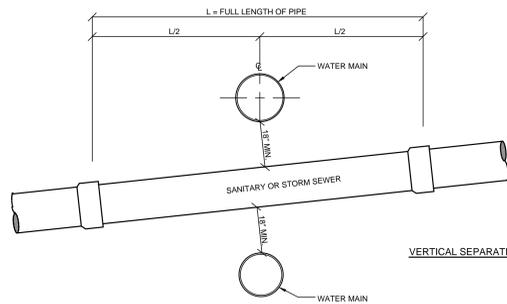
**Butterfield Redevelopment Project**  
1756 NYS ROUTE 9D  
Village Of Cold Spring  
Putnam County, New York

SITE/SUBDIVISION PLAN  
PREPARED FOR

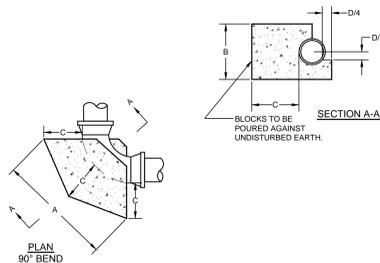
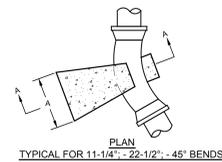
Sheet **C-502**



- NOTES:**
- In materials to be considered as unsuitable (i.e. Muck) material is to be replaced 24" below the pipe invert and replaced with item no. 4 bedding.
  - A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a depth of at least six inches below the bottom of the pipe.
  - See Pavement Replacement Detail for backfill specifications in local and main Village roads.



- NOTES:**
- Any deviation from the required minimum separations shall be subject to a review and approval by the Putnam County Department of Health prior to construction.
  - HORIZONTAL SEPARATION NOTES:**
    - Water mains shall be laid at least ten (10) feet horizontally, as measured from edge to edge, from any existing or proposed sewer or drain lines. Should local conditions prevent a lateral separation of ten feet, a water main may be laid closer than ten feet to a sewer if (1) it is laid in a separate trench, or if (2) it is laid in the same trench with the water main located at one side on a bench of undisturbed earth and if in either case the elevation of the crown of the sewer or drain is at least 18 inches below the bottom of the water main.
    - When it is impossible to obtain proper horizontal separation, as stipulated above, the sewer or drain shall be constructed of materials and with joints equivalent to the standards for the water main and shall be pressure tested to assure water tightness prior to backfilling.
  - VERTICAL SEPARATION NOTES:**
    - Normal conditions: whenever a water main must cross over or under a sewer or drain, the pipes shall be laid to provide a vertical separation between them of at least 18 inches, as measured from the bottom of the higher pipe to the crown of the lower pipe.
    - Unusual conditions: when conditions prevent a vertical separation of 18 inches, the sewer shall be constructed of materials and with joints equivalent to the water main standards and shall be pressure tested to assure water tightness prior to backfilling.



PIPE DIA. IN.	BEND	BLOCK DIMENSIONS			CONCRETE VOLUME FT <sup>3</sup>
		A IN.	B IN.	C IN.	
16	90	80	32	32	38.5
	45	48	28	30	19.7
	22.5	30	22	26	10.0
12	11.25	20	18	12	3.8
	90	56	28	20	15.0
	45	38	22	10	7.7
10	22.5	20	20	12	3.6
	11.25	18	18	12	3.0
	90	48	22	16	8.9
8	45	28	20	12	4.0
	22.5	18	18	12	2.7
	11.25	16	16	12	2.2
6	90	34	20	12	4.4
	45	20	18	12	2.5
	22.5	14	14	12	1.6
4	90	24	16	12	2.5
	45	14	14	12	1.5
	22.5	12	12	12	1.2
3	11.25				(3)
					(3)
					(3)

- NOTES:**
- Min. 2,500 psi concrete to be used.
  - Block dimensions are minimum and are based upon soil bearing pressure of 2,000 pcf and water pressure of 150 psi. Where soil bearing is less or water pressure is greater, a special design will be required.
  - All bolts shall be covered with burlap before pouring concrete.
  - Bend to be set against disturbed earth, backfill to be firmly tamped, or block to be furnished as directed by the engineer.

W-1

**WATER MAIN BEDDING DETAIL**

NOT TO SCALE

W-4

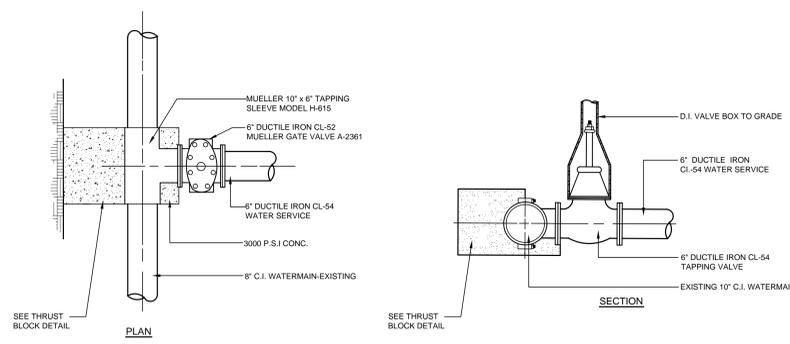
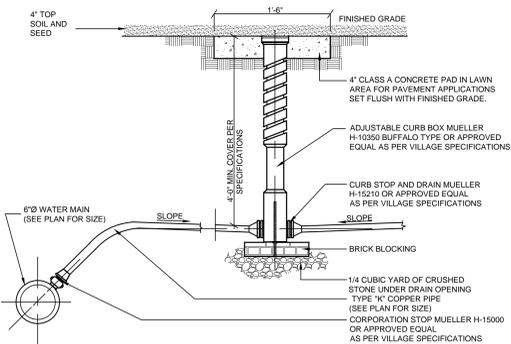
**SEPARATION OF WATER MAINS, SANITARY SEWERS OR STORM SEWERS**

NOT TO SCALE

W-7

**THRUST BLOCKING FOR HORIZONTAL BENDS**

NOT TO SCALE



W-2

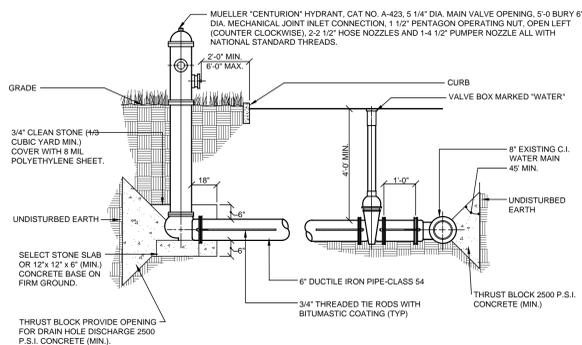
**WATER SERVICE CONNECTION DETAIL**

NOT TO SCALE

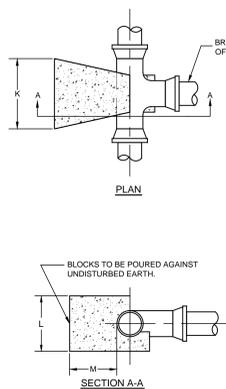
W-5

**TAPPING SLEEVE AND GATE VALVE CONNECTION DETAIL**

NOT TO SCALE



- NOTES:**
- Retainer glands, concrete thrust blocks and tie rods shall be used at all locations where restraints are required.
  - If groundwater is encountered within 7 feet of grade, hydrant drain holes shall be plugged. When the drains are plugged the barrels must be pumped dry after use during freezing weather. Where hydrant drains are not plugged, a gravel pocket or dry well shall be provided unless the natural soil will provide adequate drainage. Hydrant drains shall not be connected to or located within 10 feet of sanitary sewers or storm drains.
  - If hydrant is within 10 feet of sewers, hydrant drain holes shall be plugged.
  - Hydrant shall be painted with two coats of Electro-Farothane, plastic finish, No. 44 red paint.
  - All gate valves shall be Mueller AWWA standard.



BRANCH SIZE IN.	BLOCK DIMENSIONS			CONCRETE VOLUME FT <sup>3</sup>
	K IN.	L IN.	M IN.	
6	18	16	12	2.4
8	30	18	12	4.0
10	42	20	12	6.3
12	50	24	16	11.3
16	60	36	24	30.0

- NOTES:**
- Min. 2,500 psi concrete to be used.
  - Block dimensions are minimum and are based upon soil bearing pressure of 2,000 pcf and water pressure of 150 psi. Where soil bearing is less or water pressure is greater, a special design will be required.
  - All bolts shall be covered with burlap before pouring concrete.

W-3

**FIRE HYDRANT DETAIL**

NOT TO SCALE

W-6

**THRUST BLOCKING FOR TEES**

NOT TO SCALE

**NOTE:**  
1. THIS IS NOT A SURVEY. ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY NAME OF SURVEYOR, DATED XX/XX/XX, LAST REVISED XXXXXX. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.



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Joseph C. Rina, P.E.  
NYS Lic. No. 64451

**WATER-UTILITY DETAILS**

**Butterfield Redevelopment Project**  
1756 NYS ROUTE 9D  
Village Of Cold Spring  
Putnam County, New York

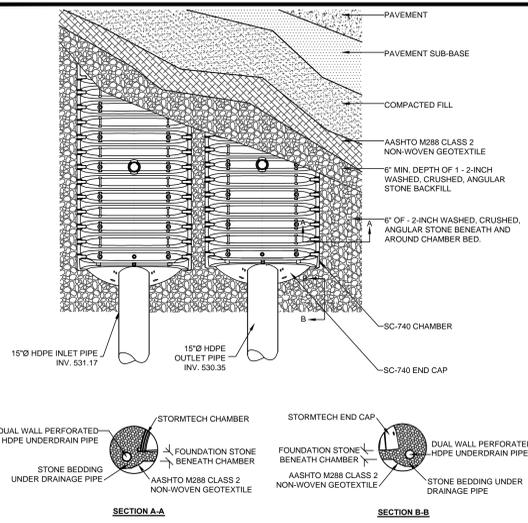
SITE/SUBDIVISION PLAN  
PREPARED FOR

C-503

DATE: 10/22/14  
DRAWN BY: EL  
SCALE: NTS  
REVISIONS: No. | Date | Comments:

PROJECT # 14-25  
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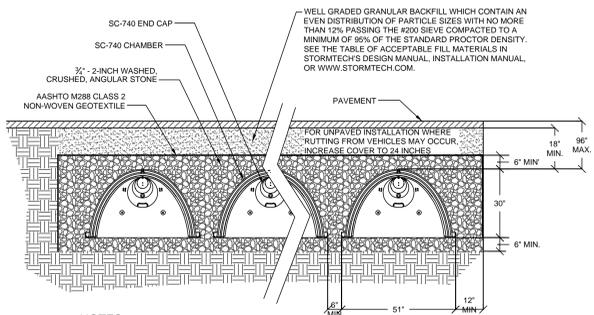




**NOTES:**

- All design specifications for Stormtech SC-740 chambers shall be in accordance with the Stormtech design manual.
- The installation of Stormtech SC-740 chambers shall be in accordance with the latest Stormtech installation instructions.
- The contractor is advised to review and understand the installation instructions prior to beginning system installation. Call 1-888-892-2694 or visit [www.stormtech.com](http://www.stormtech.com) to receive a copy of the latest Stormtech installation instructions.
- Chambers shall meet the design requirements and load factors specified in Section 12.12 of the latest edition of the AASHTO LRFD bridge design specifications.

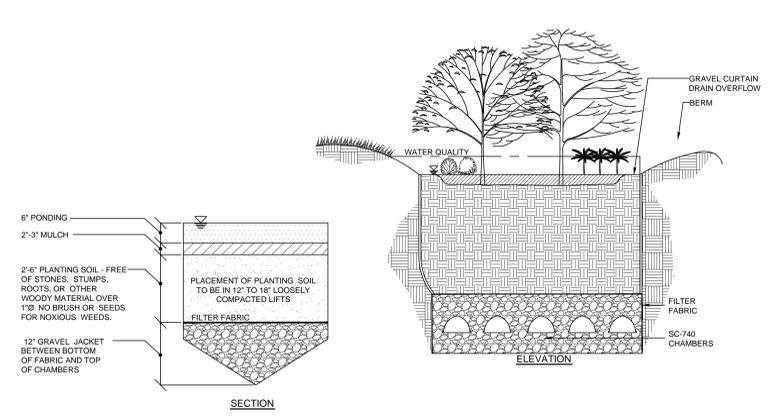
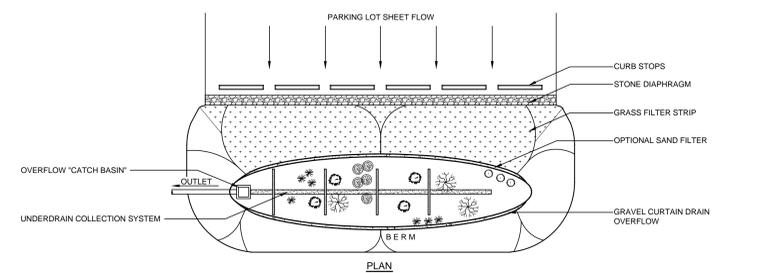
**SWM-1** STORMTECH SC-740 CHAMBER SYSTEM PLAN VIEW DETAIL NOT TO SCALE



**NOTES:**

- All design specifications for Stormtech SC-740 chambers shall be in accordance with the Stormtech design manual.
- The installation of Stormtech SC-740 chambers shall be in accordance with the latest Stormtech installation instructions.
- The contractor is advised to review and understand the installation instructions prior to beginning system installation. Call 1-888-892-2694 or visit [www.stormtech.com](http://www.stormtech.com) to receive a copy of the latest Stormtech installation instructions.
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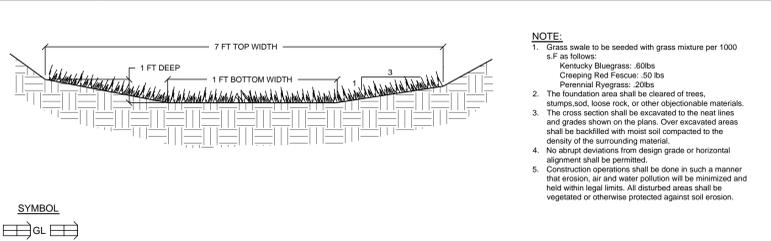
**SWM-4** STORMTECH SC-740 CHAMBER SYSTEM TYPICAL CROSS SECTION NOT TO SCALE



**PLANTING SPECIFICATIONS:**

- CLASSIFICATION	SM OR ML-UNIFIED SOIL CLASSIFICATION SYSTEM
- PERMEABILITY	1.0 FEET PER DAY OR 0.5 INCHES PER HOUR
- PH-RANGE	5.2 TO 7.0%
- ORGANIC MATTER	1.5 TO 4.0%
- MAGNESIUM	35 LBS / ACRE PER MIN.
- PHOSPHORUS	75 LBS / ACRE PER MIN.
- POTASSIUM	85 LBS / ACRE PER MIN.
- SOLUBLE SALTS	≤ 500 PPM
- CLAY	10 TO 25%
- SILT	30 TO 55%
- SAND	35 TO 60%

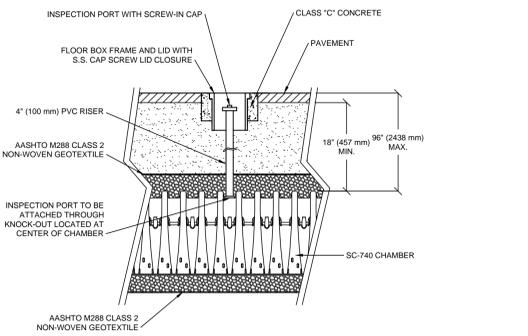
**SW-6** TYPICAL BIORETENTION DETAIL NOT TO SCALE



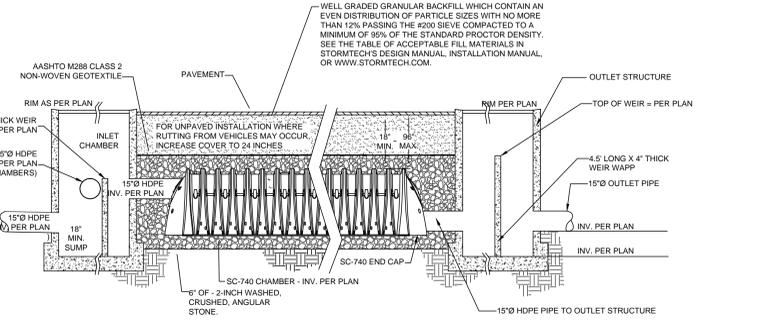
**NOTE:**

- Grass swale to be seeded with grass mixture per 1000 s F as follows:  
 Kentucky Bluegrass: 60bs  
 Creeping Red Fescue: 50 bs  
 Perennial Ryegrass: 20bs
- The foundation area shall be cleared of trees, stumps, soil, loose rock, or other objectionable materials.
- The cross section shall be excavated to the neat trees and grades shown on the plans. Over excavated areas shall be backfilled with moist soil compacted to the density of the surrounding material.
- No abrupt deviations from design grade or horizontal alignment shall be permitted.
- Construction operations shall be done in such a manner that erosion, air and water pollution will be minimized and held within legal limits. All disturbed areas shall be vegetated or otherwise protected against soil erosion.

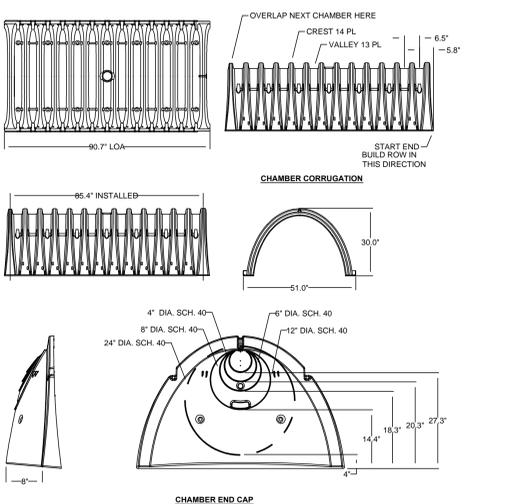
**SW-7** GRASS SWALE DETAIL NOT TO SCALE



**SWM-2** STORMTECH SC-740 INSPECTION PORT DETAIL NOT TO SCALE



**SWM-5** STORMTECH SC-740 CHAMBER DETENTION SYSTEM INLET/OUTLET DETAIL NOT TO SCALE



**NOMINAL CHAMBER SPECIFICATIONS**

SIZE (W x H x INSTALLED LENGTH)	51.0" x 30.0" x 85.4"
CHAMBER STORAGE	45.9 CUBIC FEET
MINIMUM INSTALLED STORAGE	74.9 CUBIC FEET
WEIGHT	75 LBS.

**SWM-3** STORMTECH SC-740 CHAMBER DETAIL NOT TO SCALE

**Stormwater Management System Rims and Inverts**

System	System Inv.	Pipe In Size (in)	Inv.	Pipe Out Size (in)	Inv.
Infil. 1 Pretreatment	111.58	15	113.33	15	113.33
Infiltration 1	111.58	15	113.3	12	112.93
Cistern 1	123.5	8	125.83	8	125
Infil. 2 Pretreatment 48 inch	122.98	15	125.73	15	124.73
Infil. 2 Pretreatment 36 inch	128.5	12	130.5	12	130.5
Infiltration 2	121.93	12, 15	124.93, 124.43	12	124.43
Cistern 2	127.83	8	130.16	12	129.83
Infil. 3 Pretreatment	129.65	15	132.4	12	131.25
Infiltration 3	127.5	12	130.5	12	130

PROJECT # 14-25  
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STATE OF NEW YORK  
 J. Andrew G. Rina, P.E.  
 PROFESSIONAL ENGINEER  
 No. 44151  
 Joseph C. Rina, P.E.  
 PROFESSIONAL ENGINEER  
 No. 64451

Revisions:  
 No. | Date | Comments:

SCALE: NTS  
 DRAWN BY: EL  
 DATE: 10/22/14

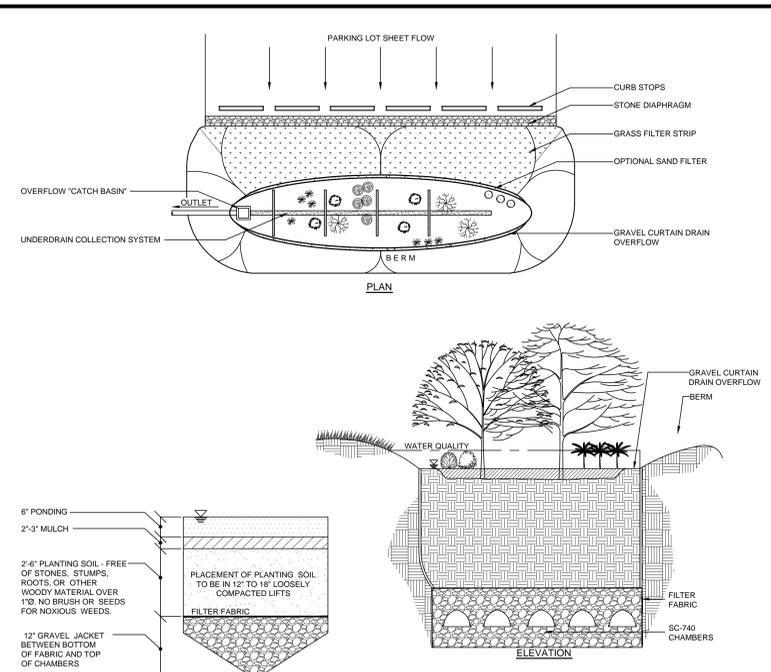
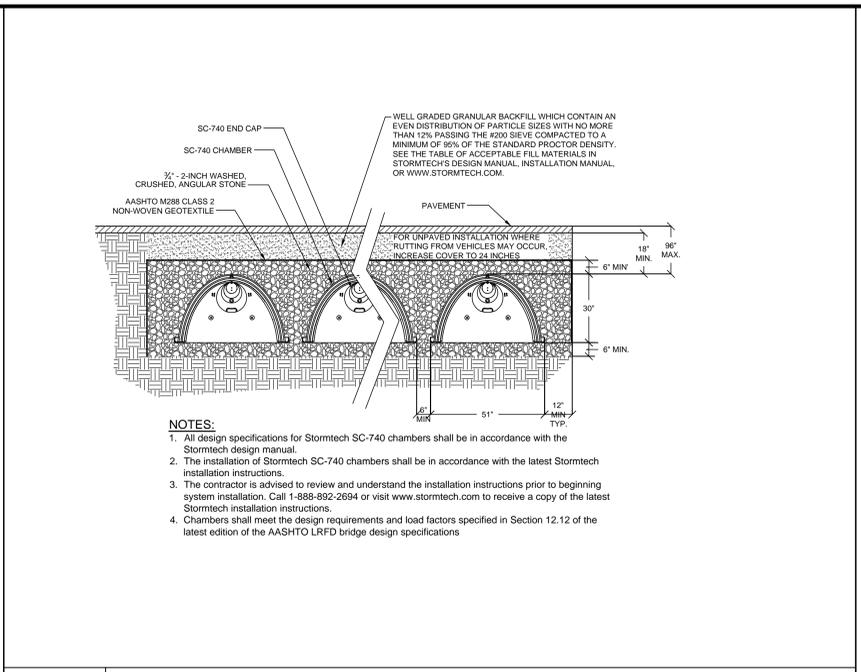
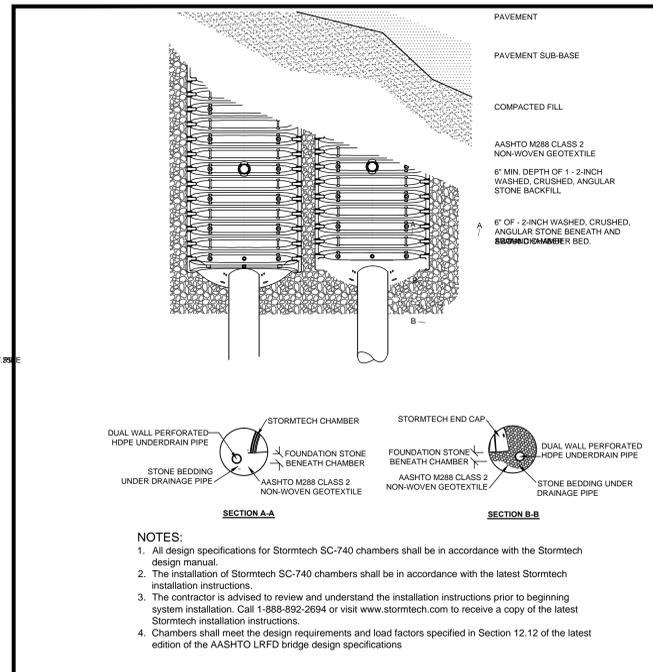
**STORMWATER MANAGEMENT DETAILS**

**Butterfield Redevelopment Project**  
 1756 NYS ROUTE 9D  
 Village Of Cold Spring  
 Putnam County, New York

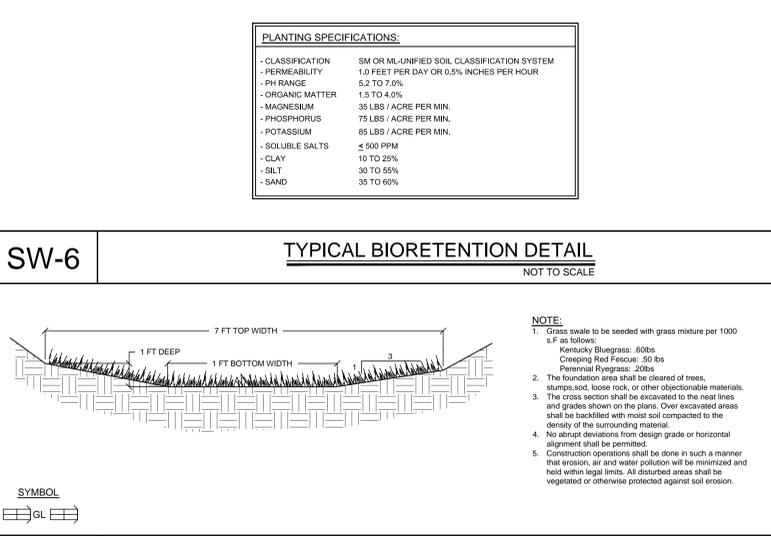
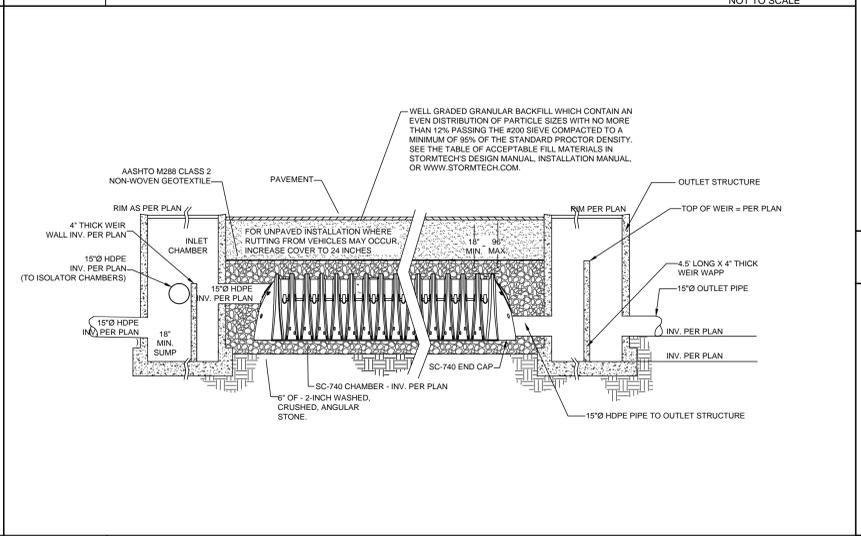
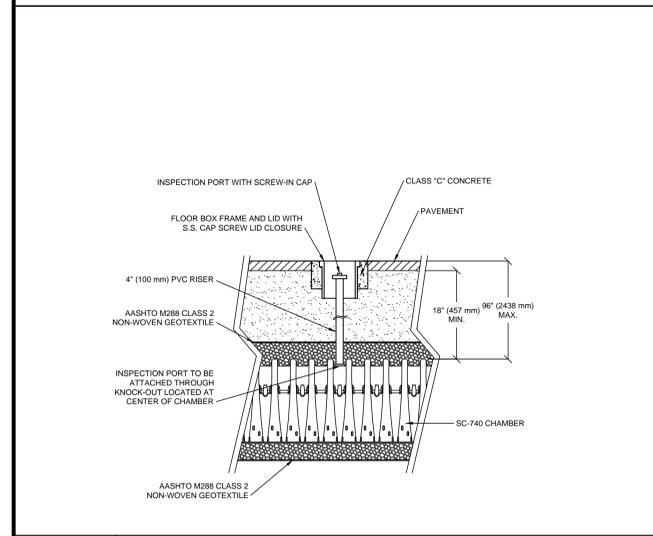
SITE/SUBDIVISION PLAN  
 PREPARED FOR

Sheet **C-505**

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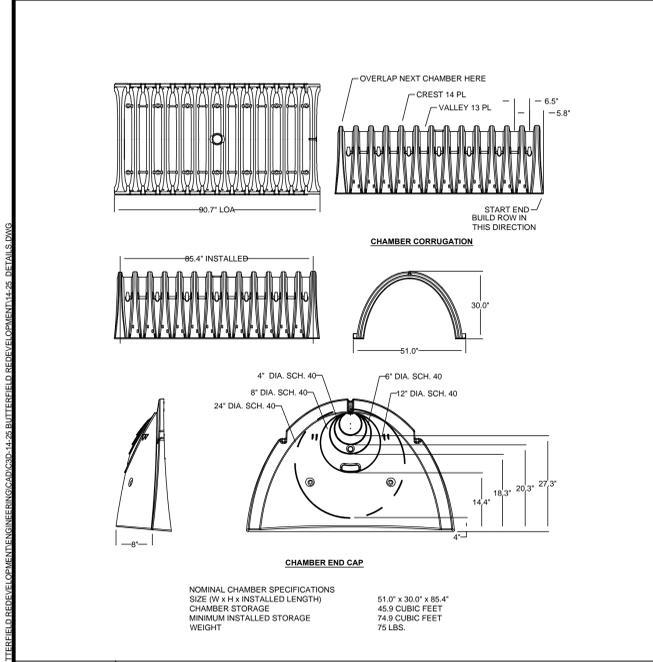


**SWM-4** STORMTECH SC-740 CHAMBER SYSTEM TYPICAL CROSS SECTION  
NOT TO SCALE



**SWM-5** STORMTECH SC-740 CHAMBER DETENTION SYSTEM INLET/OUTLET DETAIL  
NOT TO SCALE

**SW-7** GRASS SWALE DETAIL  
NOT TO SCALE



**SWM-2** STORMTECH SC-740 INSPECTION PORT DETAIL  
NOT TO SCALE

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Cistern 2	127.83	8	130.16	12	129.83
Infil. 3 Pretreatment	129.65	15	132.4	12	131.25
Infiltration 3	127.5	12	130.5	12	130

**SWM-3** STORMTECH SC-740 CHAMBER DETAIL  
NOT TO SCALE

PROJECT # 14-25  
CITY OF BUTTERFIELD  
Village Of Cold Spring  
Putnam County, NY

**STORMWATER MANAGEMENT DETAILS**

**BUTTERFIELD DEVELOPMENT**  
1756 NY 9D

C-505

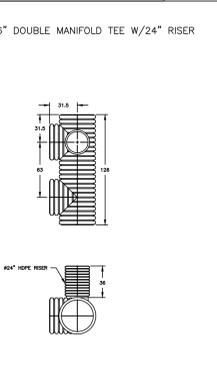
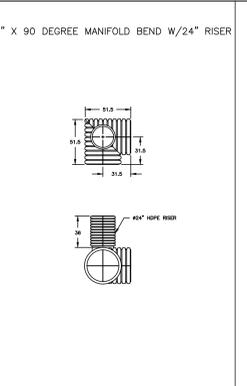
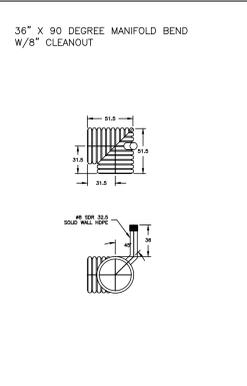
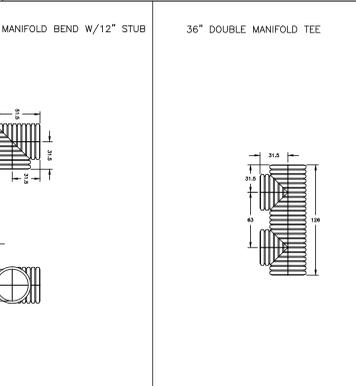
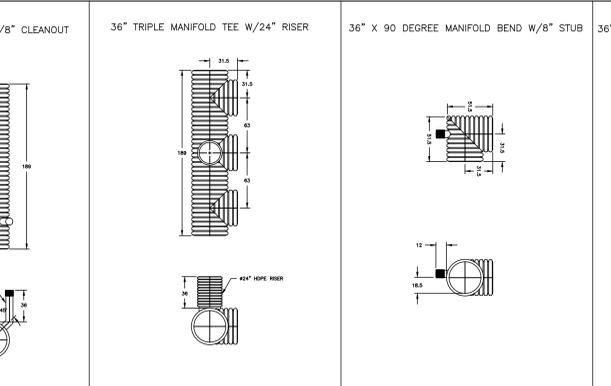
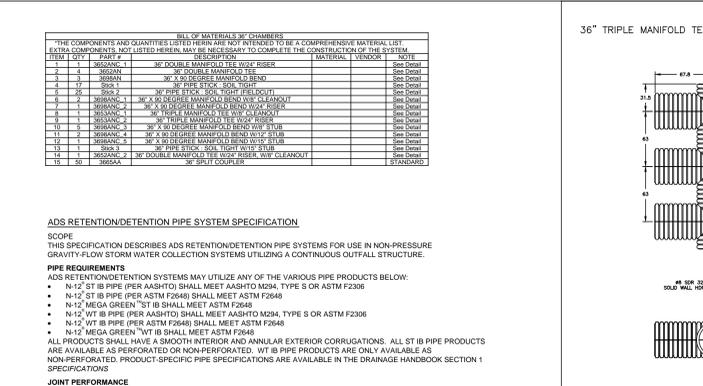
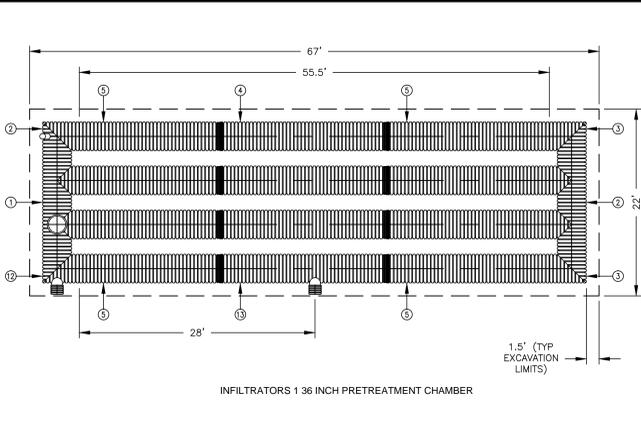
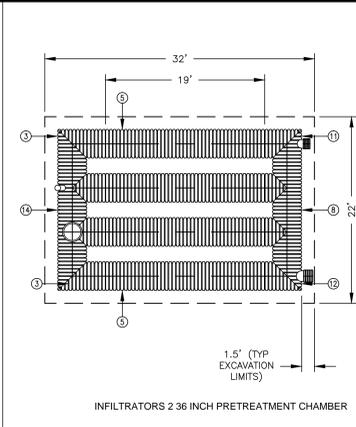
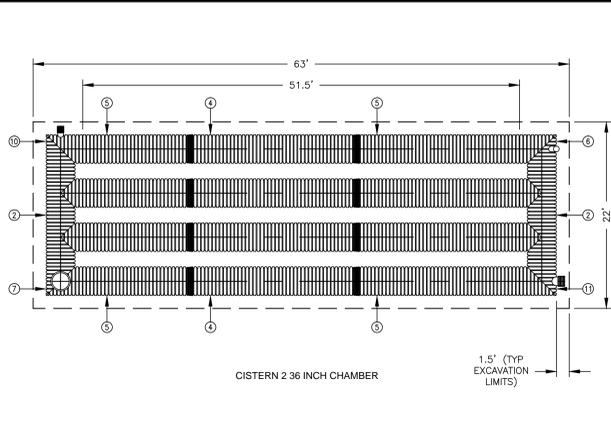
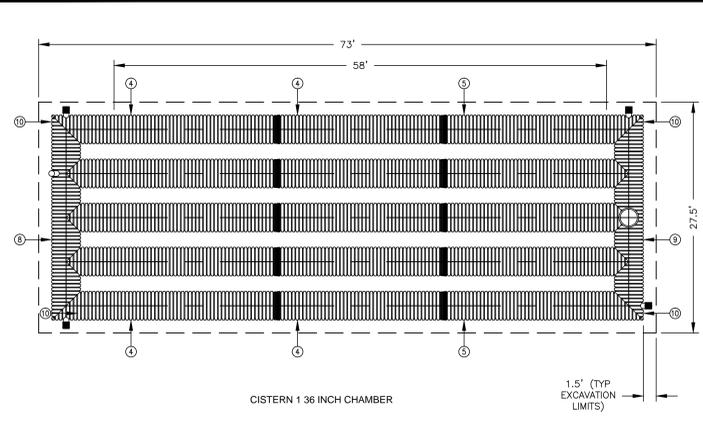
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NYS Lic. No. 64451

SCALE: NTS  
DRAWN BY: EL  
DATE: 10/22/14

SHEET

NOTE: TYPICAL HORIZONTAL VARIATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 2209 (2) OF THE NEW YORK STATE EDUCATION LAW.



**BELL & SPIGOT MATERIALS 36\"/>

ITEM NO.	DESCRIPTION	QUANTITY	UNIT																												
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**ADDITIONAL DETENTION PIPE SYSTEM SPECIFICATION**  
 SCOPE: THIS SPECIFICATION DESCRIBES ADS RETENTION/DETENTION PIPE SYSTEMS FOR USE IN NON-PRESSURE GRAVITY FLOW STORM WATER COLLECTION SYSTEMS UTILIZING A CONTINUOUS OUTFALL STRUCTURE.

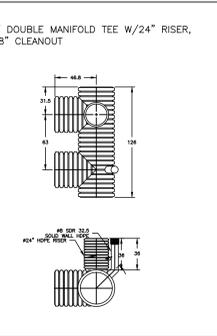
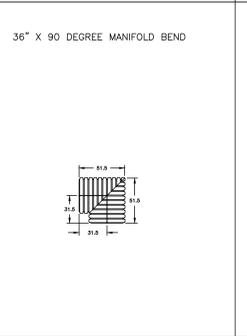
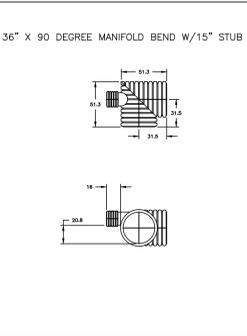
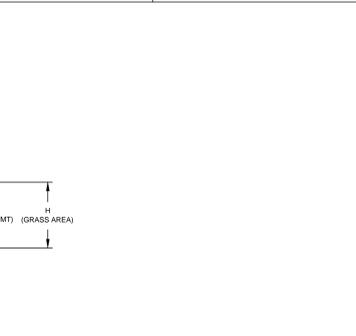
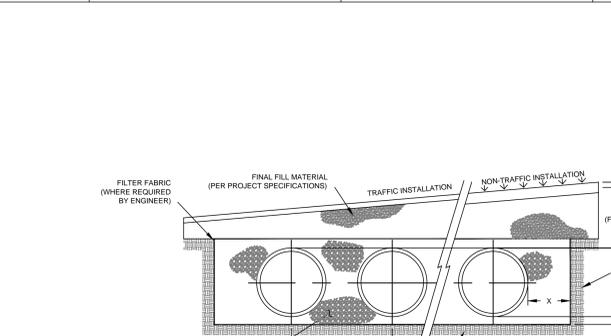
**PIPE REQUIREMENTS**  
 ADS RETENTION/DETENTION SYSTEMS MAY UTILIZE ANY OF THE VARIOUS PIPE PRODUCTS BELOW:  
 • N-12 ST IB PIPE (PER AASHTO) SHALL MEET AASHTO M294, TYPE S OR ASTM F2306  
 • N-12 ST IB PIPE (PER ASTM F2648) SHALL MEET ASTM F2648  
 • N-12 MEGA GREEN "ST" IB SHALL MEET ASTM F2648  
 • N-12 WT IB PIPE (PER AASHTO) SHALL MEET AASHTO M294, TYPE S OR ASTM F2306  
 • N-12 WT IB PIPE (PER ASTM F2648) SHALL MEET ASTM F2648  
 • N-12 MEGA GREEN "WT" IB SHALL MEET ASTM F2648  
 ALL PRODUCTS SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. ALL ST IB PIPE PRODUCTS ARE AVAILABLE AS PERFORATED OR NON-PERFORATED. WT IB PIPE PRODUCTS ARE ONLY AVAILABLE AS NON-PERFORATED. PRODUCT-SPECIFIC PIPE SPECIFICATIONS ARE AVAILABLE IN THE DRAINAGE HANDBOOK SECTION 1 SPECIFICATIONS.

**JOINT PERFORMANCE**  
 FLAN END SOIL-TIGHT (ST IB): ST IB PIPE SHALL BE JOINED USING A BELL & SPIGOT JOINT. THE BELL & SPIGOT JOINT SHALL MEET THE SOIL-TIGHT REQUIREMENTS OF ASTM F2306 AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F177, 12" THROUGH 60" INCH (300 TO 1500MM) DIAMETERS SHALL HAVE A BELL REINFORCED WITH A POLYMER COMPOSITE BAND. THE BELL TOLERANCE DEVICE SHALL BE INSTALLED BY THE MANUFACTURER.  
 WATER TIGHT (WT IB): WT IB PIPE SHALL BE JOINED USING A BELL & SPIGOT JOINT. THE JOINT SHALL BE WATER TIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F177, 12" THROUGH 60" INCH (300 TO 1500MM) DIAMETERS SHALL HAVE A BELL REINFORCED WITH A POLYMER COMPOSITE BAND. THE BELL TOLERANCE DEVICE SHALL BE INSTALLED BY THE MANUFACTURER.  
 PIPE & FITTING CONNECTIONS SHALL BE WITH A BELL AND SPIGOT CONNECTION UTILIZING A SPIGON-ON OR HELD-BELL AND VALLEY OR SADDLE GASKET. THE JOINT SHALL MEET THE WATER TIGHT REQUIREMENTS OF ASTM D3212, AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. DETENTION SYSTEMS ARE SUBJECT TO GREATER LEAKAGE THAN TYPICAL SINGLE RUN STORM SEWER APPLICATIONS AND THEREFORE ARE NOT APPROPRIATE FOR APPLICATIONS REQUIRING LONG-TERM FLUID CONTAINMENT OR HYDROSTATIC PRESSURE. FOR ADDITIONAL DETAILS REFER TO TECHNICAL NOTE 7.01, RAINWATER HARVESTING WITH HOPE CISTERNS.

**FITTINGS**  
 FITTINGS SHALL CONFORM TO ASTM F2306 AND MEET JOINT PERFORMANCE INDICATED ABOVE FOR FITTINGS CONNECTIONS. CUSTOM FITTINGS ARE AVAILABLE AND MAY REQUIRE SPECIAL INSTALLATION CRITERION.

**INSTALLATION**  
 INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D3212 AND ADS RECOMMENDED INSTALLATION GUIDELINES, WITH THE EXCEPTION THAT MINIMUM COVER IN TRAFFIC AREAS FOR 12" THROUGH 60" INCH (300 TO 1500MM) DIAMETERS SHALL BE ONE FOOT (0.3M), MINIMUM COVER IN TRAFFIC AREAS FOR 12" THROUGH 36" INCH (300 TO 900MM) DIAMETERS SHALL BE ONE FOOT (0.3M) AND FOR 42" THROUGH 60" INCH (1060 TO 1500MM) DIAMETERS, THE MINIMUM COVER SHALL BE 2 FT (0.6M). BACKFILL SHALL CONSIST OF CLASS II MATERIAL ONLY. MINIMUM COVER HEIGHTS DO NOT ACCOUNT FOR PIPE BUOYANCY. REFER TO ADS TECHNICAL NOTE 3.03 HOPE PIPE FLOATATION FOR BUOYANCY DESIGN CONSIDERATIONS. MAXIMUM COVER OVER SYSTEM USING STANDARD BACKFILL IS 8 FT (2.4M). CONTACT A REPRESENTATIVE WHEN MAXIMUM FILL HEIGHT MAY BE EXCEEDED ADDITIONAL INSTALLATION REQUIREMENTS ARE PROVIDED IN THE DRAINAGE HANDBOOK SECTION 6, RETENTION/DETENTION.

**NOTES:**  
 1. ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D3212 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION, AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.  
 2. ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D3212, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.  
 3. MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED, SEE ASTM D3212.  
 4. FILTER FABRIC: A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.  
 5. **FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.  
 6. **BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).  
 7. **INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D3212, LATEST EDITION.  
 8. **COVER:** MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION FOR TRAFFIC APPLICATIONS. MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. MAXIMUM FILL HEIGHT LIMITED TO 8 FT OVER FITTINGS FOR STANDARD INSTALLATIONS. CONTACT A SALES REPRESENTATIVE WHEN MAXIMUM FILL HEIGHTS EXCEED 8 FT FOR INSTALLATION CONSIDERATIONS.**

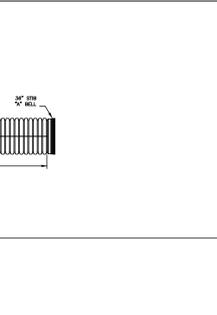
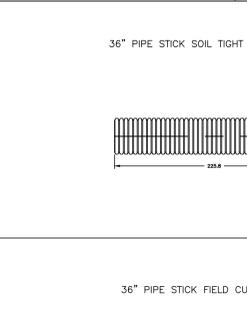
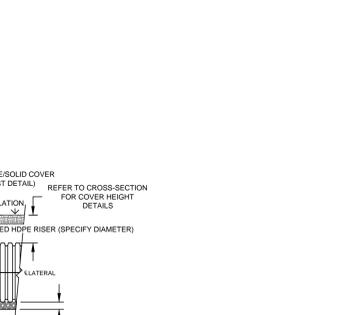
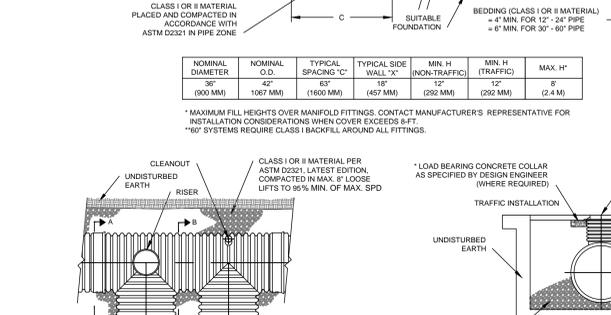


**TABLE 1: BEDDING REQUIREMENTS**

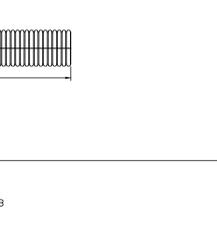
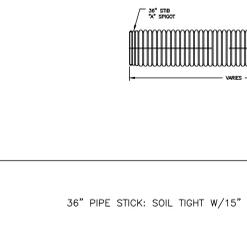
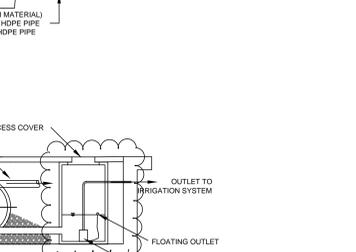
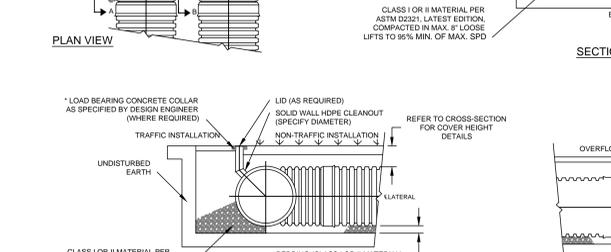
NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X" (NON-TRAFFIC)	MIN. H (TRAFFIC)	MIN. H (NON-TRAFFIC)	MAX. H*
36"	42"	63"	31"	12"	12"	6"
(900 MM)	(1067 MM)	(1600 MM)	(457 MM)	(292 MM)	(292 MM)	(2.4 M)

\* MAXIMUM FILL HEIGHTS OVER MANHOLE FITTINGS: CONTACT MANUFACTURER'S REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN COVER EXCEEDS 8 FT.  
 \*\* SYSTEMS REQUIRE CLASS II BACKFILL AROUND ALL FITTINGS.

**SECTION A-A**  
 PLAN VIEW: Shows riser, cleanout, and bedding details.  
 SECTION A-A: Shows cross-section with load bearing concrete collar, frame & grate/solid cover, and bedding details.  
 SECTION B-B: Shows cross-section with lid, solid wall HOPE cleanout, and bedding details.  
 PUMP DETAIL (BY OTHERS): Shows overflow to outlet, access cover, and floating outlet details.



**NOTES:**  
 1. ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS, INLETS AND OUTLETS, SHALL BE VERIFIED BY THE ENGINEER PRIOR TO RELEASE FOR FABRICATION.  
 2. IN SITUATIONS WHERE A FINE-GRAINED BACKFILL MATERIAL IS USED ADJACENT TO THE PIPE SYSTEM, AND ESPECIALLY INVOLVING GROUND WATER CONDITIONS, CONSIDERATION SHOULD BE GIVEN TO THE USE OF GASKETED PIPE JOINTS. AT THE VERY LEAST THE PIPE JOINTS SHOULD BE WRAPPED IN A SUITABLE, NON-WOVEN GEOTEXTILE FABRIC TO PREVENT INFILTRATION OF FINES INTO THE PIPE SYSTEM.  
 3. CONSIDERATION FOR CONSTRUCTION EQUIPMENT LOADS MUST BE TAKEN INTO ACCOUNT.  
 4. ALL PIPE DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES.  
 5. ALL RISERS TO BE FIELD EXTENDED OR TRIMMED TO FINAL GRADE.  
 THE PROCEEDING DETAILS WERE GENERATED USING ADS DESIGN PRO6, A SOFTWARE PROGRAM DEVELOPED BY ADVANCED DRAINAGE SYSTEMS, INC. (ADS). THESE DRAWINGS ARE INTENDED TO DEPICT THE ADS COMPONENTS AS REQUESTED BY THE USER. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.



THE UNDERSIGNED HEREBY APPROVES THE ATTACHED ( ) PAGES.  
 DATE: \_\_\_\_\_

**NOTE:**  
 1. THIS IS NOT A SURVEY. ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY NAME OF SURVEYOR, DATED XX/XX/XX, LAST REVISED XXXXXX. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.  
 NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.

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PROJECT # 14-25

STATE OF NEW YORK  
 ARCHITECTS AND ENGINEERS  
 Joseph C. Rina, P.E.  
 NYS Lic. No. 64451

REVISIONS:  
 NO. | DATE | COMMENTS

SCALE: NTS  
 DRAWN BY: EL  
 DATE: 10/22/14

**36 INCH DETAILS**

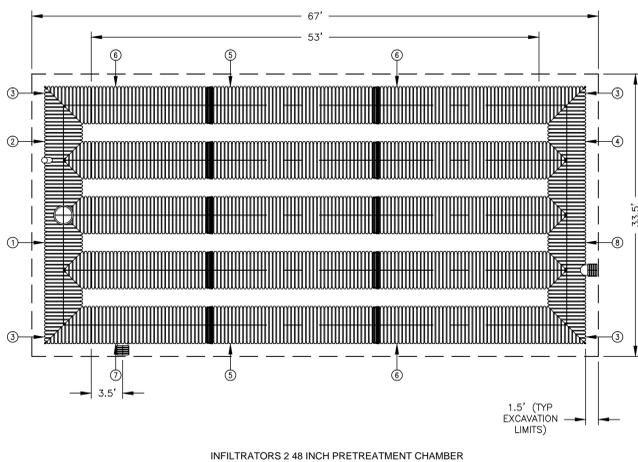
**Butterfield Redevelopment Project**  
 1756 NYS ROUTE 9D  
 Putnam County, New York

SITE/SUBDIVISION PLAN  
 PREPARED FOR

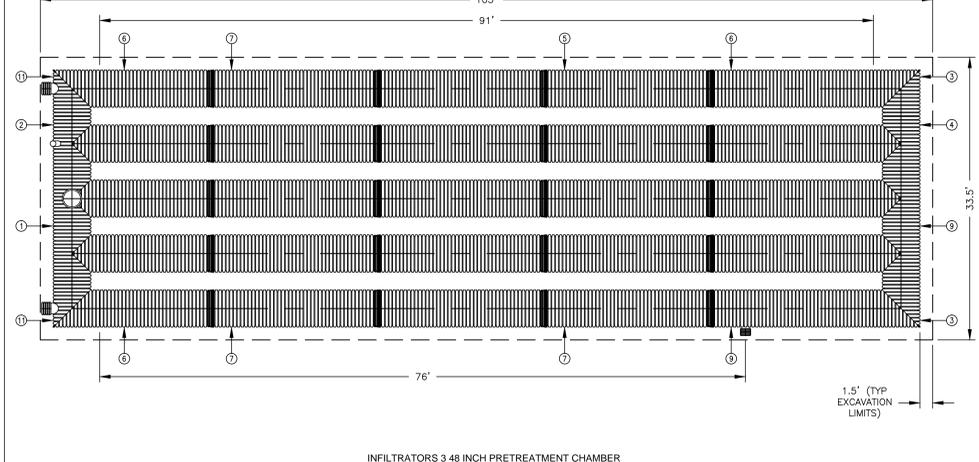
Village Of Cold Spring

Sheet **C-506**

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INFILTRATORS 2 48 INCH PRETREATMENT CHAMBER



INFILTRATORS 3 48 INCH PRETREATMENT CHAMBER

**BILL OF MATERIALS - CHAMBERS**

ITEM	QTY	DESCRIPTION	MATERIAL	VENDOR	NOTE
1	2	48" DOUBLE MANIFOLD TEE W/24" RISER	SP-DM24		
2	4	48" SINGLE MANIFOLD TEE W/8" CLEANOUT	SP-SM8		
3	4	48" SINGLE MANIFOLD TEE W/15" STUB	SP-SM15		
4	20	48" PIPE STICK, SOIL TIGHT	SP-PS		
5	20	48" PIPE STICK, FIELD CUT	SP-FC		
6	1	48" X 90 DEGREE BEND W/15" STUB	SP-B15		
7	1	48" X 90 DEGREE BEND W/12" STUB	SP-B12		
8	1	48" X 90 DEGREE BEND W/8" CLEANOUT	SP-B8		
9	1	48" X 90 DEGREE BEND W/12" STUB	SP-B12		
10	1	48" X 90 DEGREE BEND W/8" CLEANOUT	SP-B8		
11	1	48" X 90 DEGREE BEND W/15" STUB	SP-B15		
12	2	48" X 90 DEGREE BEND W/15" STUB	SP-B15		

**ADS RETENTION/DETENTION PIPE SYSTEM SPECIFICATION**

**SCOPE**  
THIS SPECIFICATION DESCRIBES ADS RETENTION/DETENTION PIPE SYSTEMS FOR USE IN NON-PRESSURE GRAVITY-FLOW STORM WATER COLLECTION SYSTEMS UTILIZING A CONTINUOUS OUTFALL STRUCTURE.

- PIPE REQUIREMENTS**  
ADS RETENTION/DETENTION SYSTEMS MAY UTILIZE ANY OF THE VARIOUS PIPE PRODUCTS BELOW:
- N-12 ST 18 PIPE (PER AASHTO) SHALL MEET AASHTO M284, TYPE S OR ASTM F2306
  - N-12 ST 18 PIPE (PER ASTM F2648) SHALL MEET ASTM F2648
  - N-12 MEGA GREEN "T" 18 SHALL MEET ASTM F2648
  - N-12 WT 18 PIPE (PER AASHTO) SHALL MEET AASHTO M284, TYPE S OR ASTM F2306
  - N-12 WT 18 PIPE (PER ASTM F2648) SHALL MEET ASTM F2648
  - N-12 MEGA GREEN "T" 18 SHALL MEET ASTM F2648

ALL PRODUCTS SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. ALL ST 18 PIPE PRODUCTS ARE AVAILABLE AS PERFORATED OR NON-PERFORATED. WT 18 PIPE PRODUCTS ARE ONLY AVAILABLE AS NON-PERFORATED. PRODUCT-SPECIFIC PIPE SPECIFICATIONS ARE AVAILABLE IN THE DRAINAGE HANDBOOK SECTION 1 SPECIFICATION.

**JOINT PERFORMANCE**  
PLAIN END SOIL-TIGHT (ST 18):  
ST 18 PIPE SHALL BE JOINED USING A BELL & SPIGOT JOINT. THE BELL & SPIGOT JOINT SHALL MEET THE SOIL-TIGHT REQUIREMENTS OF ASTM F2306 AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477.

PLAIN END PIPE & FITTINGS CONNECTIONS SHALL BE JOINED WITH COUPLING BANDS COVERING AT LEAST TWO FULL CORRUGATIONS ON EACH END OF THE PIPE. GASKETED SOIL-TIGHT COUPLING BAND CONNECTIONS SHALL INCORPORATE A CLOSED-CELL SYNTHETIC EXPANDED RUBBER GASKET MEETING THE REQUIREMENTS OF ASTM D1056 GRADE 2A2. GASKETS, WHEN APPLICABLE, SHALL BE INSTALLED BY THE PIPE MANUFACTURER.

**WATERTIGHT (WT 18):**  
WT 18 PIPE SHALL BE JOINED USING A BELL & SPIGOT JOINT. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D2321. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. 12" THROUGH 60" INCH (300 TO 1500MM) DIAMETERS SHALL HAVE A BELL REINFORCED WITH A POLYMER COMPOSITE BAND. THE BELL TOLERANCE DEVICE SHALL BE INSTALLED BY THE MANUFACTURER.

PIPE & FITTING CONNECTIONS SHALL BE WITH A BELL AND SPIGOT CONNECTION UTILIZING A SPUN-ON OR WELDED BELL AND VALLEY OR SADDLE GASKET. THE JOINT SHALL MEET THE WATERTIGHT REQUIREMENTS OF ASTM D2321. AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. DETENTION SYSTEMS ARE SUBJECT TO GREATER LEAKAGE THAN TYPICAL SINGLE RUN STORM SEWER APPLICATIONS AND THEREFORE ARE NOT APPROPRIATE FOR APPLICATIONS REQUIRING LONG-TERM FLUID CONTAINMENT OR HYDROSTATIC PRESSURE. FOR ADDITIONAL DETAILS REFER TO TECHNICAL NOTE 171, DRAINAGE HARVESTING WITH HOPE COVERS.

**FITTINGS**  
FITTINGS SHALL CONFORM TO ASTM F2306 AND MEET JOINT PERFORMANCE INDICATED ABOVE FOR FITTINGS CONNECTIONS. CUSTOM FITTINGS ARE AVAILABLE AND MAY REQUIRE SPECIAL INSTALLATION CRITERIA.

**INSTALLATION**  
INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321 AND ADS RECOMMENDED INSTALLATION GUIDELINES, WITH THE EXCEPTION THAT MINIMUM COVER IN NON-TRAFFIC AREAS FOR 12" THROUGH 60" INCH (300 TO 1500MM) DIAMETERS SHALL BE ONE FOOT (0.3M). MINIMUM COVER IN TRAFFIC AREAS FOR 12" THROUGH 36" INCH (300 TO 900MM) DIAMETERS SHALL BE ONE FOOT (0.3M) AND FOR 42" THROUGH 60" INCH (1050 TO 1500MM) DIAMETERS THE MINIMUM COVER SHALL BE 2 FT (0.6M). BACKFILL SHALL CONSIST OF CLASS I MATERIAL ONLY. MINIMUM COVER HEIGHTS DO NOT ACCOUNT FOR PIPE BUOYANCY. REFER TO ADS TECHNICAL NOTE 128 HOPE PIPE FLOATATION FOR BUOYANCY DESIGN CONSIDERATIONS. MAXIMUM COVER OVER SYSTEM USING STANDARD BACKFILL IS 8 FT (2.4M). CONTACT A REPRESENTATIVE WHEN MAXIMUM FILL HEIGHT MAY BE EXCEEDED. ADDITIONAL INSTALLATION REQUIREMENTS ARE PROVIDED IN THE DRAINAGE HANDBOOK SECTION 6, RETENTION/DETENTION.

**NOTES:**

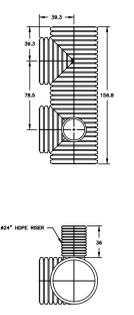
- ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 - STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF TRENDS AND OTHER GRAVITY FLOW APPLICATIONS, LATEST EDITION.
- ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
- MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
- FILTER FABRIC:** A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
- FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm), 6" (150mm) FOR 30"-60" (750mm-900mm).
- INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6' ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
- COVER:** MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION FOR TRAFFIC APPLICATIONS. MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42" - 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. MAXIMUM FILL HEIGHT LIMITED TO NET COVER FITTINGS FOR STANDARD INSTALLATIONS. CONTACT A SALES REPRESENTATIVE WHEN MAXIMUM FILL HEIGHTS EXCEED 8-FT FOR INSTALLATION CONSIDERATIONS.

- NOTES:**
- ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS, INLETS AND OUTLETS, SHALL BE VERIFIED BY THE ENGINEER PRIOR TO RELEASING FOR FABRICATION.
  - IN SITUATIONS WHERE A FINE-GRAINED BACKFILL MATERIAL IS USED ADJACENT TO THE PIPE SYSTEM, AND ESPECIALLY INVOLVING GROUND WATER CONDITIONS, CONSIDERATION SHOULD BE GIVEN TO THE USE OF GASKETED PIPE JOINTS. AT THE VERY LEAST THE PIPE JOINTS SHOULD BE WRAPPED IN A SUITABLE, NON-WOVEN GEOTEXTILE FABRIC TO PREVENT INFILTRATION OF FINES INTO THE PIPE SYSTEM.
  - CONSIDERATION FOR CONSTRUCTION EQUIPMENT LOADS MUST BE TAKEN INTO ACCOUNT.
  - ALL PIPE DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.
  - ALL RISERS TO BE FIELD EXTENDED OR TRIMMED TO FINAL GRADE.

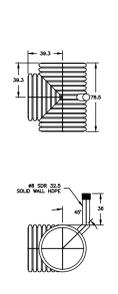
THE PROCEEDING DETAILS WERE GENERATED USING ADS DESIGN PRO9, A SOFTWARE PROGRAM DEVELOPED BY ADVANCED DRAINAGE SYSTEMS, INC. (ADS). THESE DRAWINGS ARE INTENDED TO DEPICT THE ADS COMPONENTS AS REQUESTED BY THE USER. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE INFORMATION PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

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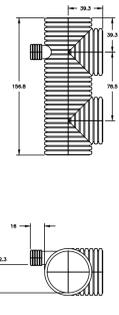
48" DOUBLE MANIFOLD TEE W/24" RISER



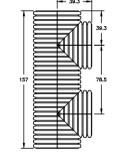
48" SINGLE MANIFOLD TEE W/8" CLEANOUT



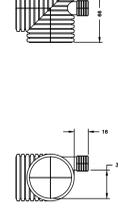
48" DOUBLE MANIFOLD TEE W/15" STUB



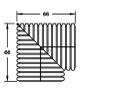
48" DOUBLE MANIFOLD TEE



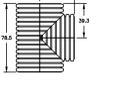
48" X 90 DEGREE BEND W/15" STUB



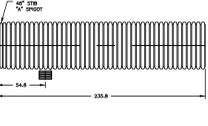
48" X 90 DEGREE BEND



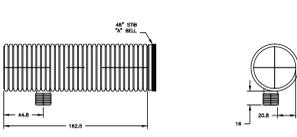
48" SINGLE MANIFOLD TEE



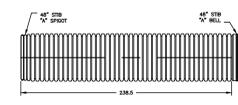
48" PIPE STICK: FIELD CUT W/12" STUB



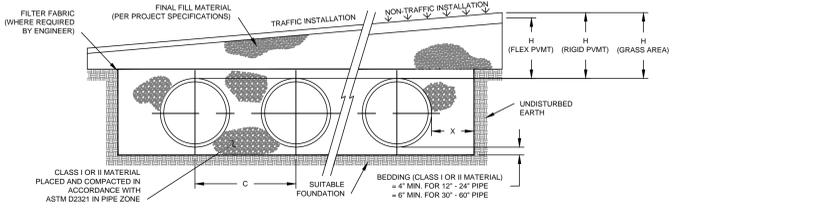
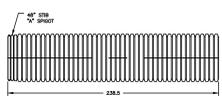
48" PIPE STICK: FIELD CUT W/15" STUB



48" PIPE STICK: SOIL TIGHT

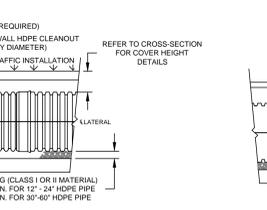
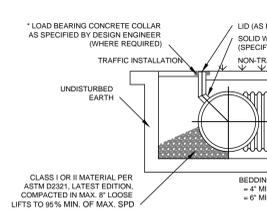
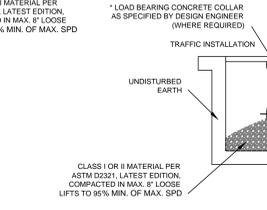
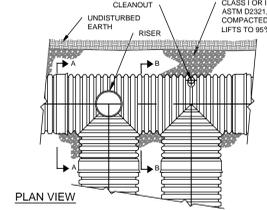


48" PIPE STICK: FIELD CUT



NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING 'C'	TYPICAL SIDE WALL 'X'	MIN. H (NON-TRAFFIC)	MIN. H (TRAFFIC)	MAX. H*
48"	54"	75.5"	18"	12"	24"	6' (2.4 M)
(1200 MM)	(1372 MM)	(1994 MM)	(457 MM)	(292 MM)	(610 MM)	

\* MAXIMUM FILL HEIGHTS OVER MANIFOLD FITTINGS. CONTACT MANUFACTURER'S REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN COVER EXCEEDS 8-FT.  
\*H\* SYSTEMS REQUIRE CLASS I BACKFILL AROUND ALL FITTINGS.



\* LOAD BEARING CONCRETE COLLAR SHALL BE CONSTRUCTED IN TRAFFIC AREAS SUCH THAT THE LIVE LOAD IS TRANSMITTED TO THE SURROUNDING SOIL AND NOT DIRECTLY TO THE RISER.

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STATE OF NEW YORK  
EXHIBIT A  
LICENSED PROFESSIONAL ENGINEER  
NO. 64151  
Joseph C. Rina, P.E.  
NYS Lic. No. 64151

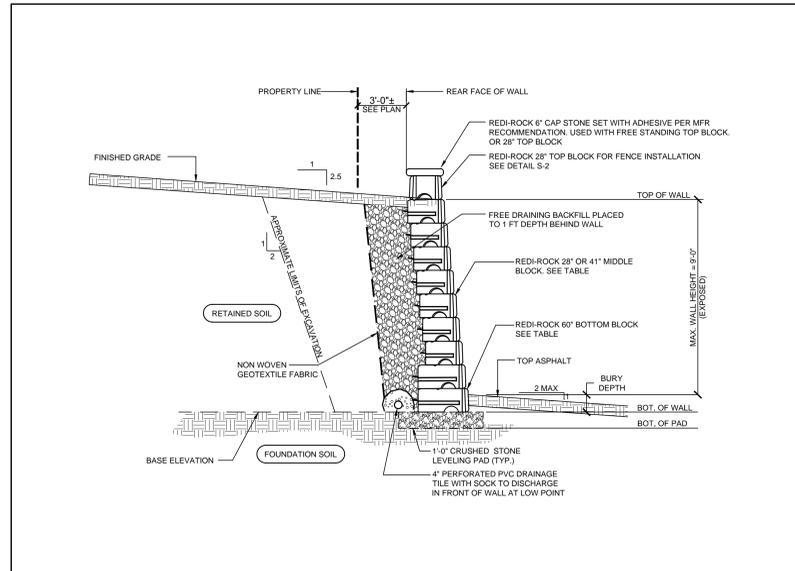
REVISIONS:  
NO. | DATE | COMMENTS

SCALE: NTS  
DRAWN BY: EL  
DATE: 10/22/14

**48 INCH ADS DETAILS**

SITING/STUDY DIVISION PLAN  
PREPARED FOR  
**Butterfield Redevelopment Project**  
1756 NYS ROUTE 9D  
Putnam County, New York  
Village Of Cold Spring

Sheet  
**C-507**

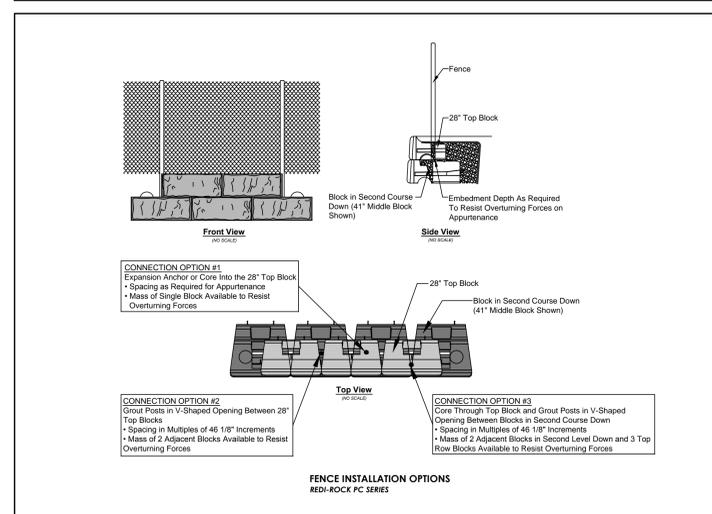


NOTE: THIS DETAIL IS PROVIDED FOR BID PURPOSES ONLY. THE CONTRACTOR SHALL PROVIDE SEALED SHOP DRAWINGS PROVIDED BY THE MANUFACTURER AND SIGNED BY A LICENSED NYS PROFESSIONAL ENGINEER

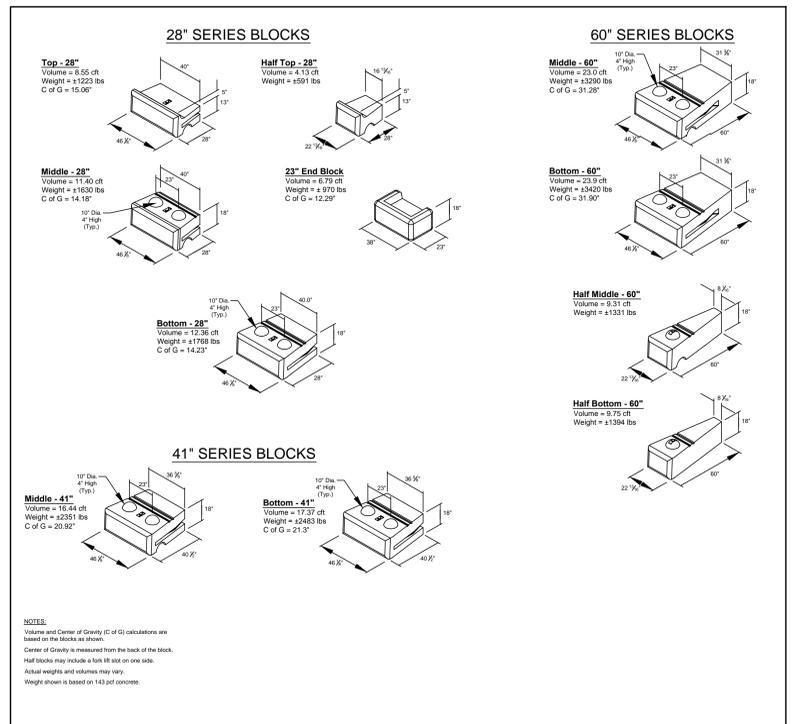
**ST-1** TYPICAL GRAVITY WALL SECTION DETAIL  
NOT TO SCALE

**TYPICAL WALL CHART**

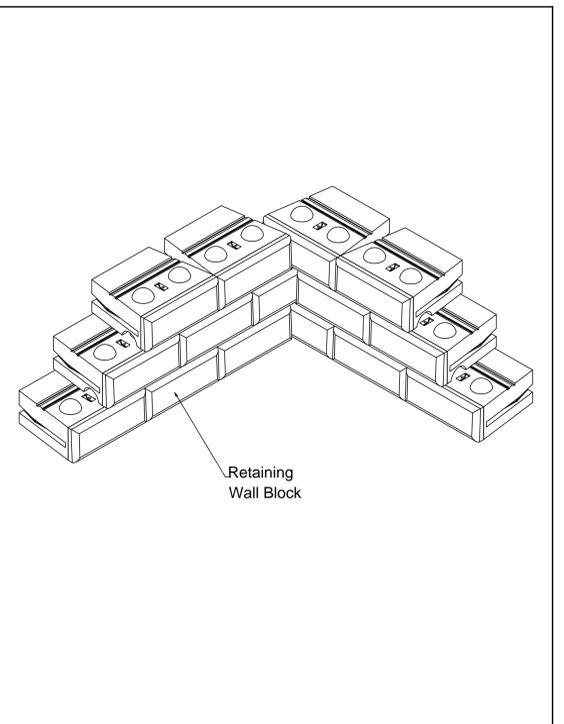
WALL HEIGHT	NO. COURSES	MINIMUM BURY DEPTH	LEVELING PAD DEPTH	NO. 60" BLOCK COURSES	NO. 41" BLOCK COURSES	NO. 28" BLOCK COURSES	Comments
3.0'	3	1.5'	1.0'	0	0	3	1. Number of courses shown in Table does NOT include course for free standing block.
4.0'	3	0.5'	1.0'	0	0	3	2. Hold top of wall elevations.
5.0'	4	1.0'	1.0'	0	3	1	3. Step walls as required to meet grades shown.
7.0'	5	0.5'	1.0'	0	4	1	4. All walls shall be topped with 28" middle block and 24" free standing block.
8.0'	6	1.0'	1.0'	1	4	1	
9.0'	7	1.5'	1.0'	1	5	1	



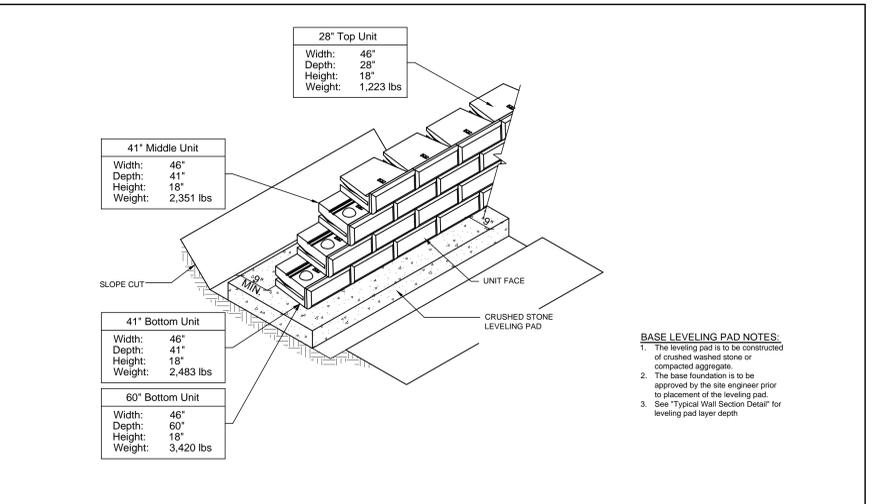
**ST-2** FENCE INSTALLATION DETAILS  
NOT TO SCALE



**ST-3** REDI ROCK BLOCK DETAILS  
NOT TO SCALE



**ST-4** REDI ROCK CORNER DETAIL  
NOT TO SCALE



**ST-5** STANDARD UNIT/BASE PAD ISOMETRIC VIEW DETAIL  
NOT TO SCALE

**GENERAL NOTES:**

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN CODE OF PRACTICE AND THE NEW YORK STATE BUILDING CONSTRUCTION CODE.
- ALL CHANGES MADE TO THESE PLANS SHALL BE APPROVED BY THE ENGINEER AND ANY SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE ORIGINAL BUILDING PERMIT.
- ALL WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT HIS WORK AND WILL BE HELD RESPONSIBLE FOR CONSEQUENTIAL DAMAGE DUE TO HIS ACTIVITIES. THE OWNER AND THE ENGINEER SHALL BE HELD HARMLESS.
- THE CONTRACTOR SHALL SECURE & PAY FOR A BUILDERS RISK POLICY TO COVER THE PERIOD OF CONSTRUCTION. THE ENGINEER & OWNER SHALL BE NAMED AS ADDITIONAL INSURED. ALL CONTRACTORS EMPLOYED AT THE SITE SHALL BE COVERED BY WORKMANS COMPENSATION.
- ENGINEER'S WHOSE SEAL APPEARS HEREON HAS NOT BEEN RETAINED FOR SUPERVISION OF CONSTRUCTION. SUBSEQUENTLY, HE IS NOT RESPONSIBLE FOR CONSTRUCTION AND THEREFORE ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION PRACTICES, PROCEDURES, AND RESULTS THEREFROM.

**CONSTRUCTION NOTES:**

- WALL UNITS SHALL BE REDI-ROCK® AS PRODUCED BY A LICENSED MANUFACTURER.
- WALL UNITS SHALL BE MADE WITH READY-MIXED CONCRETE IN ACCORDANCE WITH ASTM C94, LATEST REVISION AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH  $f_c = 4000$  PSI.
- REDI-ROCK WALL UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND INSTALLATION MANUAL.
- ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE, ACI 318, LATEST EDITION.
- EXCAVATION IN GENERAL SHALL CONFORM TO THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS.
- FILL MATERIAL SHALL BE PLACED IN LOOSE 8 INCH LIFTS. PRIOR TO COMPACTION, EACH LIFT SHALL BE MOISTENED OR AERATED AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. EACH LIFT SHALL BE COMPACTED TO THE MINIMUM DRY DENSITY AS DETERMINED BY A.S.T.M. D1557 METHOD C. THE CONTRACTOR WILL BE REQUIRED TO HIRE AN INDEPENDENT CERTIFIED TESTING LAB TO PERFORM FIELD DENSITY TESTS. FIELD TESTING SHALL BE PERFORMED IN ACCORDANCE WITH A.S.T.M. D1556 OR D2922. A MINIMUM OF IN-PLACE FIELD DENSITY TESTS SHALL BE PERFORMED ON ALTERNATE LIFTS. FILLING OPERATIONS MAY NOT PROCEED UNTIL IN-PLACE DENSITY TESTS HAVE BEEN PERFORMED AND THE FILL PROPERLY COMPACTED.
- FILL SHALL CONSIST OF SOUND DURABLE PARTICLES TO THE GRADATION SHOWN IN THE TABLE BELOW. THE MATERIAL SHALL BE GRANULAR AND FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL. IN GENERAL THE SOIL SHALL BE NON-PLASTIC WITH A PLASTICITY INDEX LESS THAN 5 AND SHALL CONFORM TO THE UNIFIED SOIL CLASSIFICATION SYSTEM FOR AN "SW" SOIL OR THE REQUIREMENTS OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION SECTION 203-2 ITEM NO. 203.07 SELECT GRANULAR FILL, HOWEVER THE MAXIMUM SIZE SHALL BE 3 INCHES.

SIEVE SIZE	PERCENT PASSING BY WEIGHT
3"	100
No. 40	0 - 70
No. 200	0 - 15

- IF ON-SITE EXCAVATED MATERIAL IS USED IT MUST CONFORM TO THE SAME MINIMUM REQUIREMENTS SPECIFIED IN ALL INSTANCES. THE CONTRACTOR MUST SUBMIT CERTIFIED LABORATORY TEST REPORTS ON ALL MATERIALS USED FOR BACKFILL. THE FOLLOWING REPORTS SHALL BE PROVIDED AND BE IN ACCORDANCE WITH THE FOLLOWING ASTM SPECIFICATIONS:
- PARTICLE SIZE ANALYSIS - A.S.T.M. D422
  - SOIL CLASSIFICATION - A.S.T.M. D2487
  - LIQUID & PLASTIC LIMITS - A.S.T.M. D424
  - MODIFIED PROCTOR MAXIMUM DENSITY - A.S.T.M. D1557 METHOD C
- EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH THE "CONSTRUCTION SAFETY & HEALTH ACT O.S.H.A. PART 192
  - GEOTEXTILE FABRIC SHALL BE TREVIRA SPUNBOUND NON-WOVEN #125 OR APPROVED EQUAL. THE GEOTEXTILE SHALL BE INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS AND GUIDELINES.
  - THE CONTRACTOR SHALL NOTIFY CONSTRUCTION EQUIPMENT WITHIN 5 FEET OF THE RETAINING WALL. SUITABLE HAND/SMALL COMPACTION EQUIPMENT SHALL BE USED WITHIN 5 FEET OF THE WALL.
  - FOOTINGS CONSTRUCTED ON VIRGIN IN-SITU SOIL SHALL HAVE A MINIMUM ALLOWABLE BEARING CAPACITY OF 3000 PSF.
  - TO INSURE A PROPER BEARING SURFACE FOR THE FOOTINGS CONSTRUCTED ON NATURAL IN-SITU SOIL, THE CONTRACTOR SHALL STRIP ALL TOP SOIL. PRIOR TO CONSTRUCTION OF THE FOOTINGS, THE AREA SHALL BE COMPACTED USING SUITABLE COMPACTION EQUIPMENT. A MINIMUM OF 3 PASSES SHALL BE MADE.
  - DURING BACKFILL OPERATIONS, THE CONTRACTOR SHALL BE CAREFUL NOT TO CREATE UNBALANCED LOADING CONDITIONS ON THE WALL. BACKFILL SHOULD BE PLACED AND COMPACTED ON BOTH SIDES OF THE WALL SIMULTANEOUSLY.
  - ALL FOOTINGS SHALL BE LOCATED A MINIMUM OF 3'-6" BELOW ANY ADJACENT FINISHED GRADE.
  - ALL CONCRETE SUPPLIED TO THE PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH  $f_c = 4000$  PSI AND SHALL CONTAIN A MINIMUM 0% AIR ENTRAINING ADMIXTURE IN ACCORDANCE WITH A.S.T.M. C 360.
  - STEEL REINFORCEMENT SHALL BE OF THE SIZES SPECIFIED AND SHALL HAVE A MIN. YIELD STRENGTH  $f_y = 60,000$  PSI.
  - THE CONTRACTOR SHALL PROVIDE EXPANSION JOINTS @ 90'-0" O.C. (MAX.) IN THE WALL.
  - FOOTINGS SHALL NOT BE CONSTRUCTED ON WET OR FROZEN GROUND. UNSUITABLE MATERIAL SHALL BE EXCAVATED AND REPLACED WITH COMPACTED GRANULAR FILL OR 3/4" CRUSHED STONE.

NOTE: 1. THIS IS NOT A SURVEY. ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY NAME OF SURVEYOR, DATED XX/XX/XX, LAST REVISED XXXXXX. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.

PROJECT # 14-25  
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STATE OF NEW YORK  
JULY 16, 1908  
EXPIRES JANUARY 15, 2015  
Professional Engineer  
Joseph C. Rina, P.E.  
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REVISIONS:  
NO. | DATE | COMMENTS

SCALE: NTS  
DRAWN BY: EL  
DATE: 10/22/14

**RETAINING WALL  
DETAILS**

SHEET DIVISION PLAN  
PREPARED FOR  
**Butterfield Redevelopment Project**  
1756 NYS ROUTE 9D  
Putnam County, New York  
Village Of Cold Spring

Sheet  
**C-508**