

PROJECT TEAM

OWNERS/APPLICANTS

C. P. BERRY RESIDENCES, LLC.
460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983
978.887.1188

TOWN OF HAMILTON
577 BAY ROAD
HAMILTON, MA 01936
978.468.5570

CIVIL ENGINEER

BEALS ASSOCIATES, INC.
2 THIRTEENTH STREET
CHARLESTOWN, MA 02129
617.242.1120

ARCHITECT

MZO GROUP
92 MONTVALE AVENUE, SUITE 4350
STONEHAM, MA 02180
781.279.4446

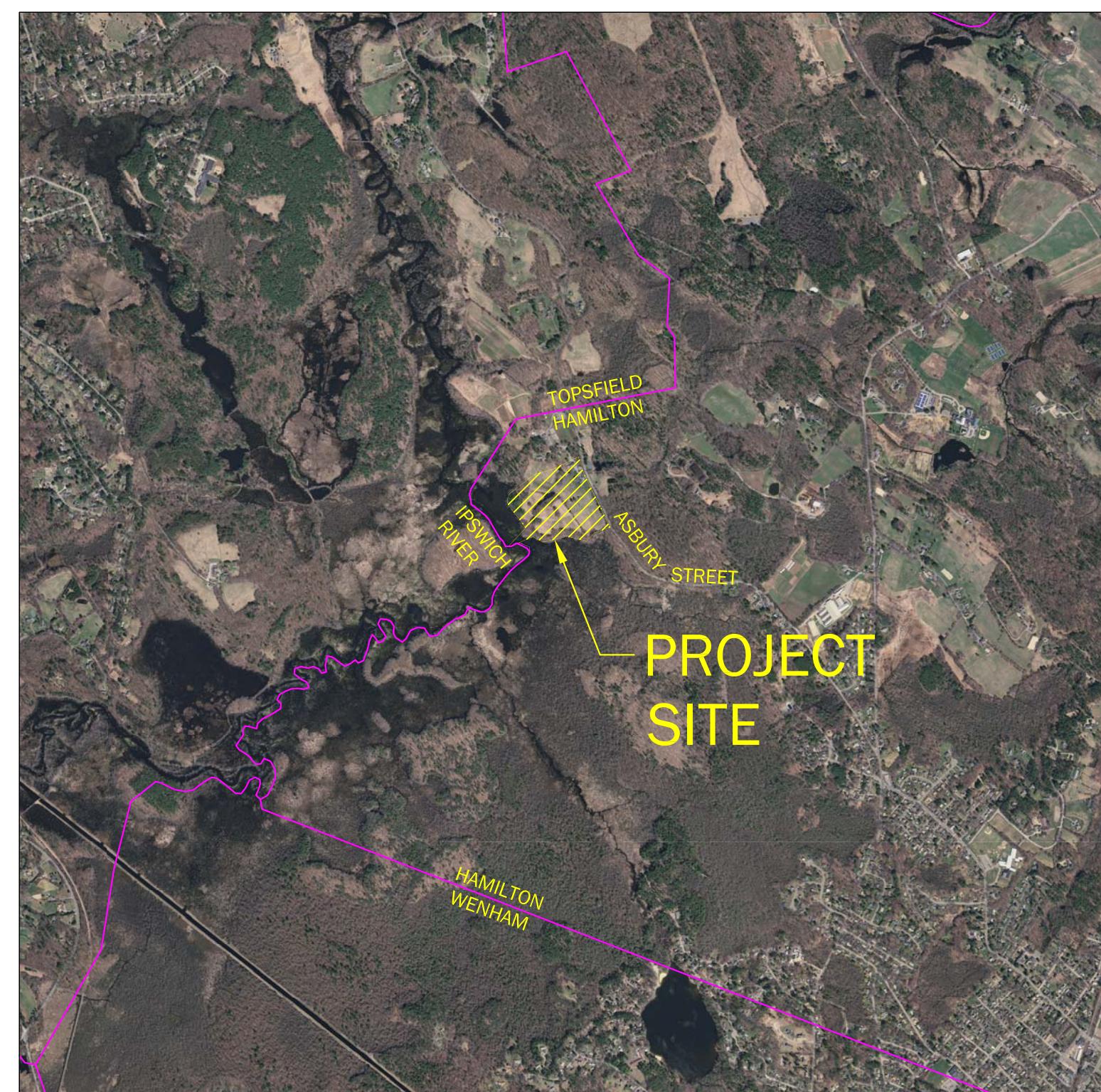
SURVEYOR (ON BEHALF OF TOWN OF HAMILTON)

KANE LAND SURVEYORS
72 HAMILTON AVENUE
SOUTH HAMILTON, MA 01982
978.468.5082

NATURAL RESOURCE DELINEATION

WETLANDS & LAND MANAGEMENT, INC
100 CONIFER HILL DRIVE
DANVERS, MA 01923
978.777.0004

PLANS TO ACCOMPANY PERMIT APPLICATIONS FOR PATTON HOMESTEAD 650 ASBURY STREET HAMILTON, MASSACHUSETTS



LOCUS MAP

SCALE: 1" = 2000'

INDEX

- COVER
- GENERAL NOTES AND LEGEND
- EXISTING CONDITIONS PLAN
- RESOURCE AREA DELINEATION PLAN
- SITE PLAN
- ROADWAY LAYOUT PLAN AND PROFILE
- GRADING AND DRAINAGE PLAN
- EROSION AND SEDIMENT CONTROL PLAN
- EROSION CONTROL NOTES
- EXISTING WATERSHED PLAN
- PROPOSED WATERSHED PLAN
- SITE UTILITY PLAN
- WASTEWATER DISPOSAL PLAN
- LANDSCAPING PLAN
- SAS SYSTEM LAYOUT AND NOTES
- WASTEWATER DETAILS - 1
- WASTEWATER DETAILS - 2
- CULTECH DETAILS
- SITE DETAILS
- DRAINAGE DETAILS
- WATER SYSTEM DETAILS
- EROSION CONTROL DETAILS
- LANDSCAPING DETAILS
- LIGHTING DETAILS
- INFILTRATION AREA DETAILS
- BIOFILTRATION AREA DETAILS

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- C-100
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ORIGINAL ISSUE DATE:
NOVEMBER 26, 2014

SCALE:
N.T.S.

REVISIONS:	DATE:

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PREPARED FOR:
C.P. BERRY RESIDENCES, LLC
460 BOSTON STREET, SUITE 5
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2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE TOWN OF HAMILTON DEPARTMENT OF PUBLIC WORKS AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY ROADWORK OR MUNICIPAL CONSTRUCTION.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES. SURVEY INFORMATION BY THE PROJECT SURVEYOR, AND MEASUREMENTS TAKEN IN THE FIELD WHERE POSSIBLE. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AND DIGSAFE (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN. THE CONTRACTOR SHALL NOT RELOCATE ANY TOWN OWNED UTILITY WITHOUT PRIOR APPROVAL OF THE TOWN OF HAMILTON DEPARTMENT OF PUBLIC WORKS. ALL UTILITY WORK WITHIN THE RIGHT OF WAY SHALL BE PERFORMED BY A LICENSED DRAIN LAYER UNDER THE SUPERVISION OF THE TOWN OF HAMILTON DEPARTMENT OF PUBLIC WORKS.
- MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE, AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS DEEMED NECESSARY BY ONSITE INSPECTIONS BY THE OWNER OR THEIR REPRESENTATIVES AND THE MUNICIPAL CODE ENFORCEMENT OFFICER AT NO ADDITIONAL COST TO THE OWNER.
- ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED ON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
- ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE TOWN OF HAMILTON SPECIFICATIONS, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS, AWWA STANDARDS AND OTHER RELATED INDUSTRY STANDARDS.
- THIS PROJECT IS SUBJECT TO ALL TERMS AND CONDITIONS OF ALL REGULATIONS ADMINISTERED BY THE MASSACHUSETTS ENVIRONMENTAL POLICY ACT, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, LOCAL UTILITY COMPANIES AND MUNICIPAL OFFICIALS.
- THE CONTRACTOR SHALL REVIEW ALL RELEVANT FEDERAL, STATE AND MUNICIPAL PERMITS ASSOCIATED WITH THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CERTIFY THAT ALL RELEVANT REQUIREMENTS REGARDING CONSTRUCTION, TESTING, AND REPORTING OF THE PERMITS HAVE BEEN MET AND THE PROJECT HAS BEEN CONSTRUCTED IN COMPLIANCE WITH THESE PORTIONS OF THE PERMITS.
- ALL SIGNAGE SHALL CONFORM TO THE STANDARDS FOR SIZE, HEIGHT, LOCATION, AND REFLECTIVITY SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
- ALL CURB SHALL CONFORM TO THE SPECIFICATIONS OR THE MORE STRINGENT OF THE TOWN OF HAMILTON DEPARTMENT OF PUBLIC WORKS OR THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION.
- ALL DIMENSIONING UNLESS OTHERWISE NOTED IS TO THE FACE OF CURB, EDGE OF PAVEMENT OR FACE OF BUILDING.
- THE PROJECT IS TO BE SERVED BY PUBLIC WATER, PRIVATE SEWER, AND UNDERGROUND CABLE, TELEPHONE, AND ELECTRIC UTILITIES.
- AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE.
- ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
- PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED AT ALL TIMES DURING CONSTRUCTION TO ENSURE INTEGRITY. IF DISTURBED, THEY SHALL BE REPLACED BY A REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- ADA ACCESSIBLE RAMPS SHALL BE PROVIDED ALONG SIDEWALKS AND AT ALL DRIVEWAY CROSSINGS. ALL ADA RAMPS SHALL CONFORM TO MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (AAB) STANDARDS AS WELL AS MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARDS.

UTILITY NOTES

- ALL WATER UTILITY MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO TOWN OF HAMILTON PUBLIC WORKS DEPARTMENT STANDARDS. ALL WATER DISTRIBUTION PIPING SHALL BE CLASS 52 DUCTILE IRON PIPE. DISINFECTION OF WATER LINES SHALL CONFORM TO AWWA STANDARDS. THE CONTRACTOR SHALL COORDINATE ALL CONNECTIONS TO THE MUNICIPAL SYSTEM WITH THE TOWN OF HAMILTON PUBLIC WORKS DEPARTMENT.
- THE LOCATION OF THE ELECTRIC, TELEPHONE, AND CABLE SERVICES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR EXACT LOCATIONS.
- SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF SDR-35 FOR GRAVITY PIPE AND SDR-11 FOR FORCEMAIN PIPE UNLESS OTHERWISE NOTED ON THE PLANS. ALL SEWER MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO THE TOWN OF HAMILTON DEPARTMENT OF PUBLIC WORKS STANDARDS.
- COORDINATE ALL UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY. ALL UTILITY WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS OF THAT UTILITY.
- UNDERGROUND ELECTRICAL, TELEPHONE, AND CABLE CONDUIT SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF THAT UTILITY.
- ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLE.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF THE UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
- A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18 INCH OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS.
- THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL BE PLACED ON THE WATER DISTRIBUTION LINES AT ALL BENDS, TEES, FIRE HYDRANTS, VALVES, CHANGES IN DIRECTION, ETC. THE THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL MEET THE REQUIREMENTS OF THE TOWN OF HAMILTON PUBLIC WORKS DEPARTMENT AND THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS THROUGHOUT THE PROJECT AND PROVIDING THE OWNER WITH A SET OF THE FINAL RECORD DRAWINGS WHEN THE PROJECT IS COMPLETE.
- ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.

GRADING & DRAINAGE NOTES

- ALL STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), SMOOTH BORE INTERIOR, PROVIDING A MANNING'S ROUGHNESS COEFFICIENT OF 0.013 OR LESS UNLESS OTHERWISE NOTED.
- THE PROJECT ELEVATIONS ARE BASED ON NGVD 1988 VERTICAL DATUM. THE HORIZONTAL AND VERTICAL CONTROL FOR THE PROJECT WAS PERFORMED BY THE PROJECT SURVEYOR. THE SITE BENCHMARK(S) ARE NOTED ON THE EXISTING CONDITIONS PLANS.
- ALL EXCESS SOIL EXCAVATED FROM THE PROJECT SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
- ALL DISTURBED AREAS NOT TO BE PAVED, SODDED, OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, FERTILIZER, SEED AND MULCH.
- COMPACTATION REQUIREMENTS:

LOCATION	MINIMUM COMPACTION
SUBBASE AND BASE GRAVEL BELOW PAVED AREAS	95%
SUBGRADE FILL BELOW PAVED AREAS	92%
TRENCH BEDDING MATERIAL	95%
LOAM AND SEED AREAS	90%

ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557

- ADJUST ALL MANHOLE COVERS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISHED GRADE.
- CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS.
- ALL SUBGRADE SURFACES SHALL BE SLOPED AT NO LESS THAN 1% TO PROMOTE ADEQUATE DRAINAGE TOWARDS DRAINAGE AREAS.
- PROVIDE STABILIZATION OR SEPARATION GEOTEXTILE FABRIC OVER UNSTABLE SOILS AS DIRECTED BY THE OWNERS REPRESENTATIVE OR ENGINEER.
- CATCH BASINS SHALL BE INSPECTED IN THE SPRING AND FALL. ANY STRUCTURES WHICH ARE INSPECTED AND HAVE AN ACCUMULATED SEDIMENT DEPTH OF 12" SHALL BE CLEANED. DISPOSAL OF ACCUMULATED SEDIMENT SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, OPERATION AND REMOVAL OF APPROPRIATE EXCAVATION Dewatering SYSTEMS AS WELL AS THE PROTECTION OF EXPOSED SUBGRADE SOILS AT NO ADDITIONAL COST TO THE OWNER. WATER ENTERING EXCAVATIONS SHALL BE CONTROLLED AND PROMPTLY REMOVED TO AVOID SUBGRADE DISTURBANCE. SURFACE WATER RUNOFF SHALL BE DIRECTED AWAY FROM EXPOSED SOIL SURFACES.
- ALL EXISTING STRUCTURES, FENCES, TREES, ETC. WITHIN THE CONSTRUCTION AREA, UNLESS SPECIFICALLY NOTED TO REMAIN, SHALL BE REMOVED.
- ALL DRAINAGE STRUCTURES SHALL BE PRECAST UNLESS OTHERWISE NOTED.
- ALL DRAINAGE STRUCTURES AND STORM SEWER PIPE SHALL MEET HEAVY DUTY TRAFFIC (H-20) LOADING AND BE INSTALLED ACCORDINGLY.

EROSION CONTROL NOTES

- LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE SITE.
- PRIOR TO BEGINNING ANY CLEARING OR LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL THE PERIMETER SILT FENCE OR EROSION CONTROL BARRIERS AND THE STABILIZED CONSTRUCTION ENTRANCES.
- ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED AND SEEDED AS SOON AS POSSIBLE. PERMANENT SEED MIXTURE SHALL CONFORM TO THE SEEDING PLAN CONTAINED IN EROSION AND SEDIMENT CONTROL NOTES AND DETAILS ON THIS SET.
- PRIOR TO PAVING, THE CONTRACTOR SHALL FLUSH SILT FROM ALL STORM DRAIN LINES.
- SILT FENCES SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES AND DETAILS FOR THIS PROJECT.
- THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCES AS THEY BECOME SATURATED WITH MUD TO ENSURE THAT THEY FUNCTION AS INTENDED DURING CONSTRUCTION. ALL PUBLIC STREETS SHALL BE SWEEP AS NECESSARY.
- SILT REMOVED FROM AROUND INLETS AND BEHIND THE SILT FENCES SHALL BE PLACED ON A TOPSOIL STOCKPILE AND MIXED INTO IT FOR LATER USE IN LANDSCAPING OPERATIONS.
- THE CONTRACTOR IS CAUTIONED THAT FAILURE TO COMPLY WITH THE SEQUENCE OF CONSTRUCTION, EROSION/SEDIMENT CONTROL PLAN, AND OTHER PERMIT REQUIREMENTS MAY RESULT IN MONETARY PENALTIES. THE CONTRACTOR SHALL BE ASSESSED ALL SUCH PENALTIES AT NO COST TO THE OWNER.

UTILITY CONTACTS

ELECTRIC
NATIONAL GRID
40 SYLVAN ROAD
WALTHAM, MA 02451
781.907.3280

GAS
TENNESSEE GAS PIPELINE COMPANY
8 ANNINNA DRIVE
ENFIELD, CT 06082
860.763.6005
*PROJECT TO BE SERVED BY PROPANE

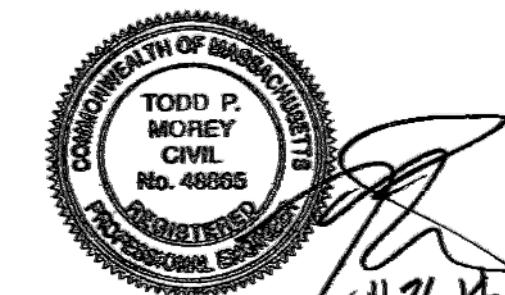
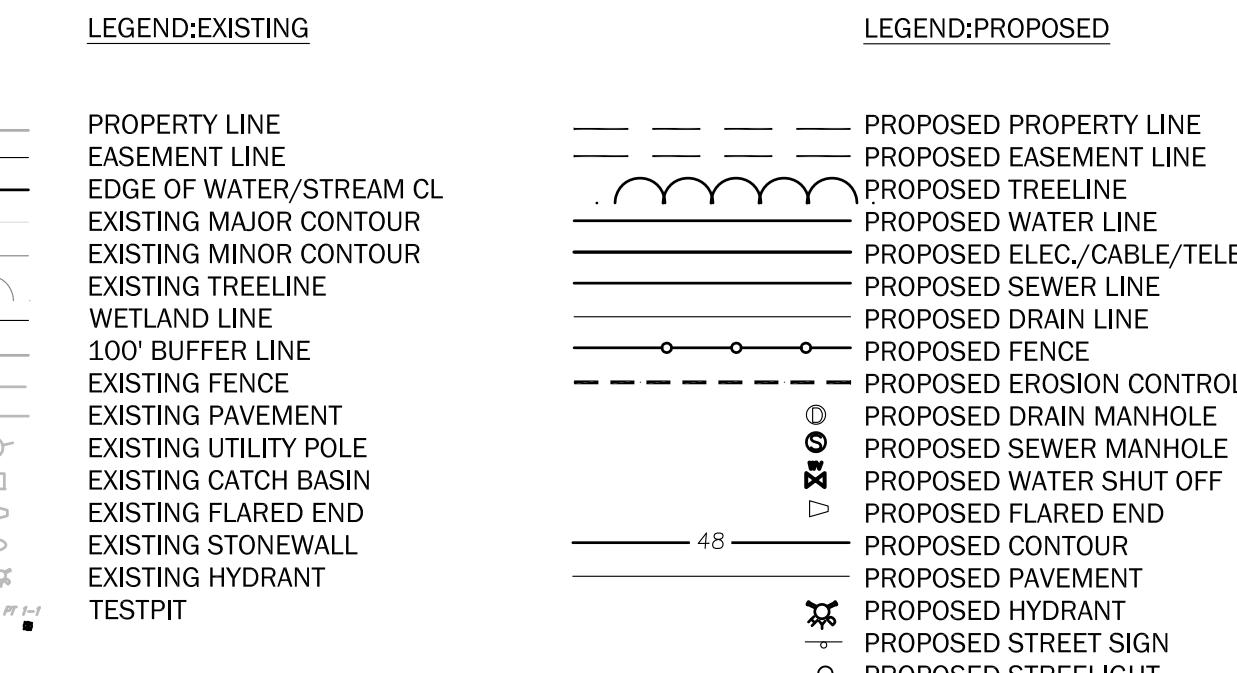
TELEPHONE
VERIZON
385 MILES STANDISH BLVD.
TAUNTON, MA 02780
508.828.6437

WATER
HAMILTON PUBLIC WORKS
577 BAY ROAD
HAMILTON, MA 01982
978.468.5581
ATTN: WILLIAM REDFORD
wredford@hamilton.gov

SEWER
PRIVATE SYSTEM

LANDSCAPE NOTES

- THE LANDSCAPE CONTRACTOR IS ADVISED OF THE EXISTENCE OF UNDERGROUND UTILITIES. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS PRIOR TO COMMENCING CONSTRUCTION.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY UTILITIES, WALKS, PAVING, CURBING, ETC. DAMAGED IN THE PERFORMANCE OF THIS JOB AT NO COST TO THE OWNER.
- PLANTING OF TREES AND SHRUBS SHALL NOT OCCUR UNTIL ALL GRADING AND BINDER PAVEMENT IS COMPLETED.
- PLANT SPECIES SUBSTITUTIONS WILL NOT BE ALLOWED UNLESS APPROVED IN ADVANCE BY OWNER OR OWNER'S REPRESENTATIVE. SUBSTITUTION OF PLANT SPECIES MAY RESULT IN A VIOLATION OF PERMITS FOR THE PROJECT.
- ALL PLANT LOCATIONS SHALL BE STAKED BY THE LANDSCAPE CONTRACTOR AND THE LOCATIONS APPROVED BY THE OWNER PRIOR TO PLANT INSTALLATION. ALL PLANTS SHALL BE ORIENTED FOR THEIR BEST APPEARANCE.
- IF QUANTITIES OF PLANTS LISTED IN THE PLANT LIST DO NOT CORRELATE WITH THE PLANTING INDICATED ON THE PLAN, THE QUANTITIES ON THE PLAN SHALL GOVERN.
- ALL PLANTS SHALL HAVE A NORMAL HABIT OF GROWTH FOR THE SPECIES AND SHALL BE SOUND, HEALTHY, AND FREE OF DISEASE AND PESTS. THEY SHALL CONFORM TO THE MEASUREMENTS ON THE PLANT LIST AND SHALL CONFORM TO ANSI Z60.1 - NURSERY STOCK, LATEST REVISION.
- ALL PLANTS SHALL HAVE ALL NON-Biodegradable MATERIALS (STRING, WIRE, POTS, ETC.) REMOVED AT THE TIME OF PLANTING. CIRCLING ROOTS OR ROOTS THAT WOULD LATER GIRDLE THE PLANT SHALL BE STRAIGHTENED, CUT OR THE ROOTBALL SHALL BE CUT, UTILIZING THE BUTTERFLY METHOD. THE TOP 1/3 OF WIRE BASKETS AND BURLAP ON TREES SHALL BE REMOVED.
- THE PLANTING PITS SHALL BE EXCAVATED TO TWO TIMES THE DIAMETER AND TO THE SAME DEPTH OF THE PLANT ROOT BALL. BACKFILL 1/2 DEPTH OF PIT AT A TIME AND COMPACT. INSTALL SLOW RELEASE FERTILIZER AFTER FIRST BACKFILL LIFT.
- THE CONTRACTOR MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE TRUNK IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. MULCH SHALL NOT REACH THE TRUNK FLARE BUT MAY COVER THE ROOT BALL.
- TREES SHALL NOT BE STAKED UNLESS, IN THE OPINION OF THE LANDSCAPE CONTRACTOR, IT WOULD BE BENEFICIAL. GIVEN THE ENVIRONMENTAL CONDITIONS ON THE SITE, SPECIFIC INSTANCE SHOULD BE REPORTED TO THE OWNER FOR APPROVAL. IN NO CASES SHALL THE TREE BE STAKED BECAUSE THE ROOT BALL CRUMBLE; THE TREE SHALL BE REMOVED AND REPLACED WITH A TREE OF THE SAME SPECIES AND SIZE WITH A SOLID AND INTACT ROOT BALL.
- MULCH SHALL BE INSTALLED TO A DEPTH OF 3" AFTER NORMAL SETTLING. MULCH SHALL BE MEDIUM SHREDDED HEMLOCK BARK OR APPROVED EQUAL OVER 10 MIL. FABRIC. DO NOT PLACE MULCH IN CONTACT WITH ROOT FLARE OR PLANT CROWN.
- ALL AREAS NOT IDENTIFIED WITH OTHER SURFACE TREATMENTS SHALL BE LAWN OF SPECIFIED SEED MIX. THE GENERAL CONTRACTOR SHALL PROVIDE AND GRADE 6" LOAM FOR ALL AREAS TO BE SEADED. THE LAWN AREA SHALL BE SEADED AND STRAW MULCHED. THE GENERAL OR LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LAWN MAINTENANCE COMMENCING AT THE TIME OF PLANTING AND CONTINUING UNTIL GRASS HAS BEEN ESTABLISHED PER THE OWNERS REQUIREMENTS.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE MAINTENANCE INCLUDING SUPPLEMENTAL WATERING UNTIL FINAL ACCEPTANCE BY THE OWNER.
- UPON ACCEPTANCE BY THE OWNER, ALL PLANTS SHALL BE GUARANTEED FOR ONE YEAR. ANY PLANTS THAT DIE DURING THE WARRANTY PERIOD SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.



NO.	REVISION/ISSUE	DATE

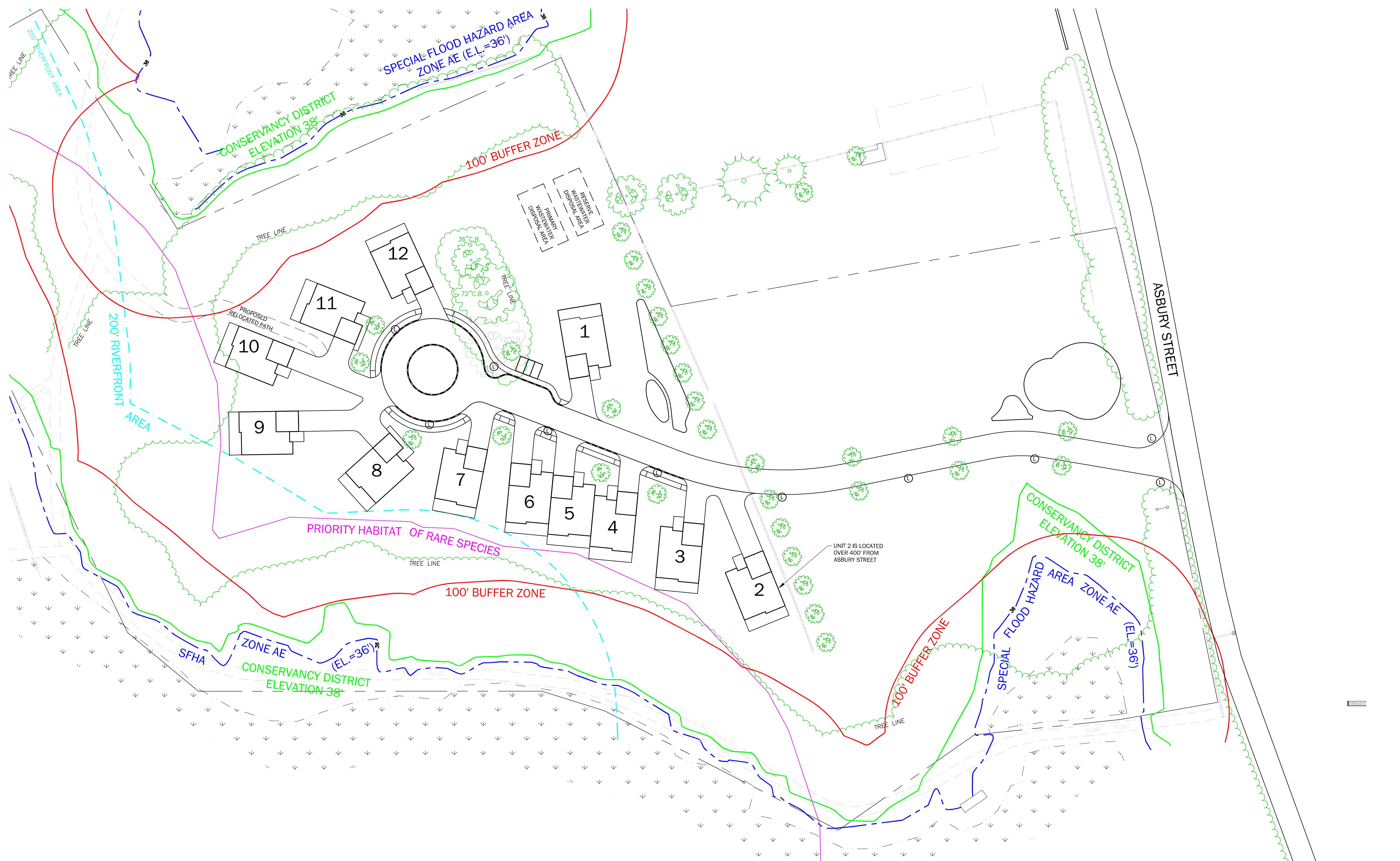
GENERAL NOTES AND LEGEND

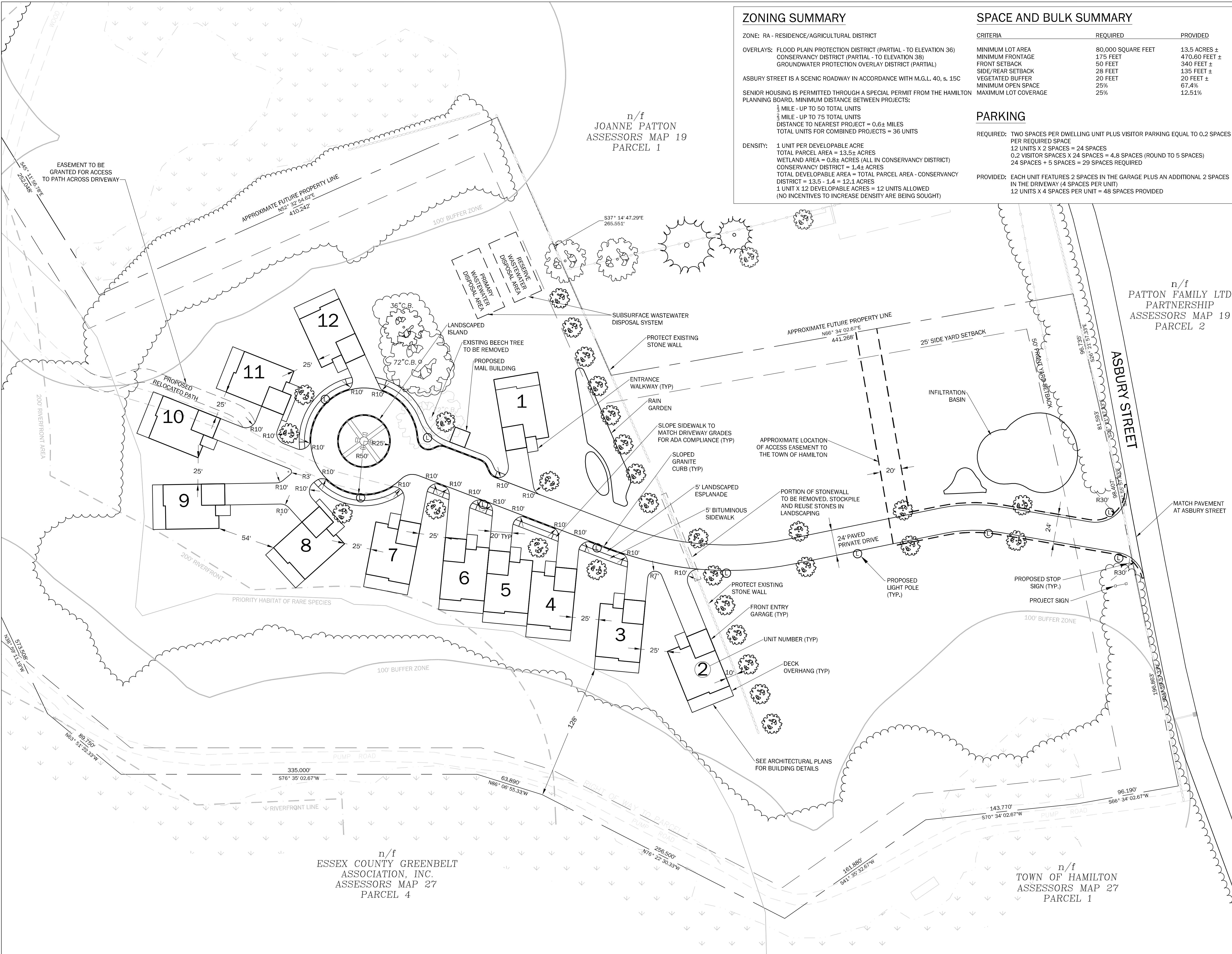
PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN MAW	C-001
DATE NOVEMBER 26, 2014	CHECKED TPM	
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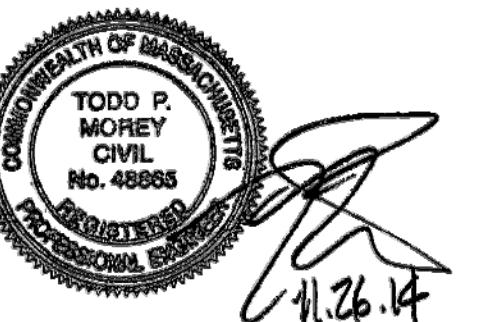


REPAID FOR:
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460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983

BEALS · ASSOCIATES INC.

SITE LAYOUT NOTES

1. ALL SIGNAGE SHALL CONFORM TO THE STANDARDS FOR SIZE, HEIGHT, LOCATION, AND REFLECTIVITY SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 2. ALL CURB SHALL CONFORM TO THE SPECIFICATIONS OF THE MORE STRINGENT OF THE LOCAL HIGHWAY DEPARTMENT OR THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION.
 3. ALL DIMENSIONING UNLESS OTHERWISE NOTED IS TO THE FACE OF CURB, EDGE OF PAVEMENT OR FACE OF BUILDING.
 4. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE.
 5. ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
 6. PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED AT ALL TIMES DURING CONSTRUCTION TO ENSURE INTEGRITY. IF DISTURBED, THEY SHALL BE REPLACED BY A REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
 7. ADA ACCESSIBLE RAMPS SHALL BE PROVIDED ALONG SIDEWALKS AT LOCATIONS IDENTIFIED ON THIS PLAN.



A vertical line with a black swoosh on the right side. The word "GENETIC" is written vertically along the bottom edge of the swoosh.

GRAPHIC SCALE

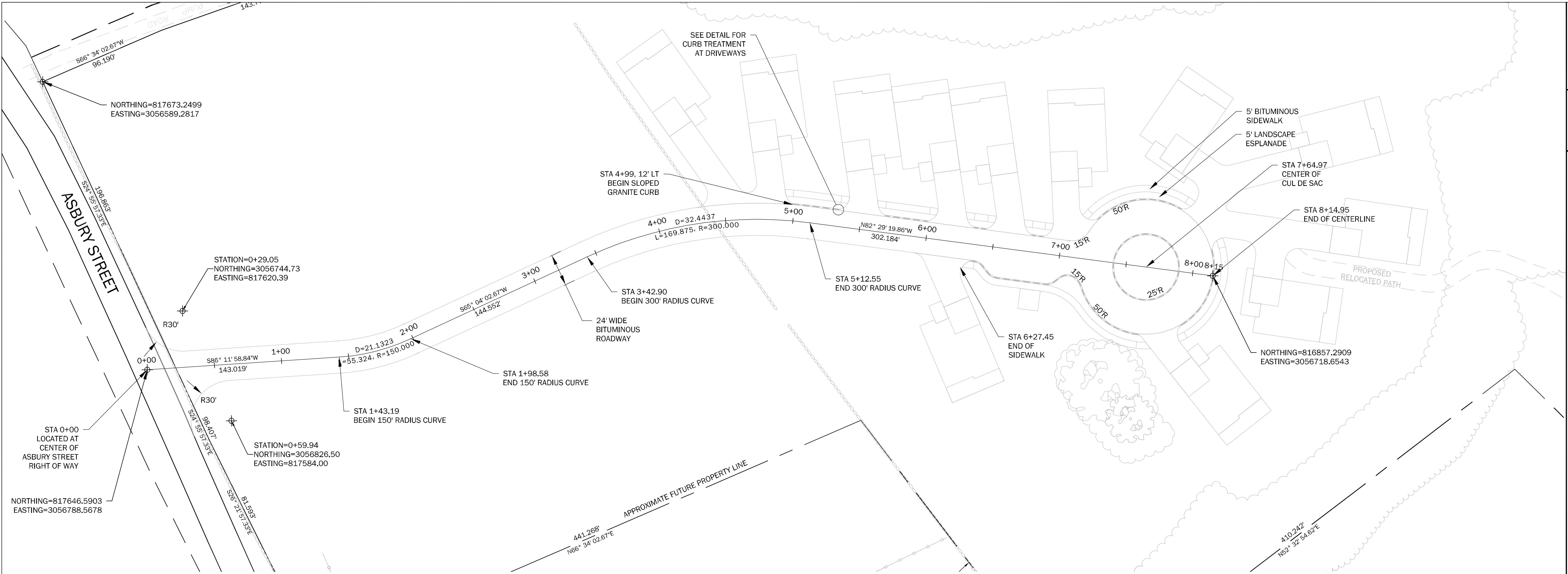
(IN FEET)

1 inch = 40 ft.

SITE PLAN

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
MILTON, MASSACHUSETTS

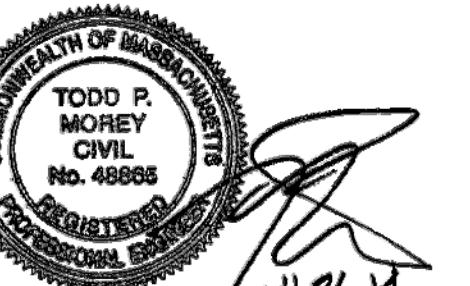
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SCALE AS NOTED	REVISED TRG	
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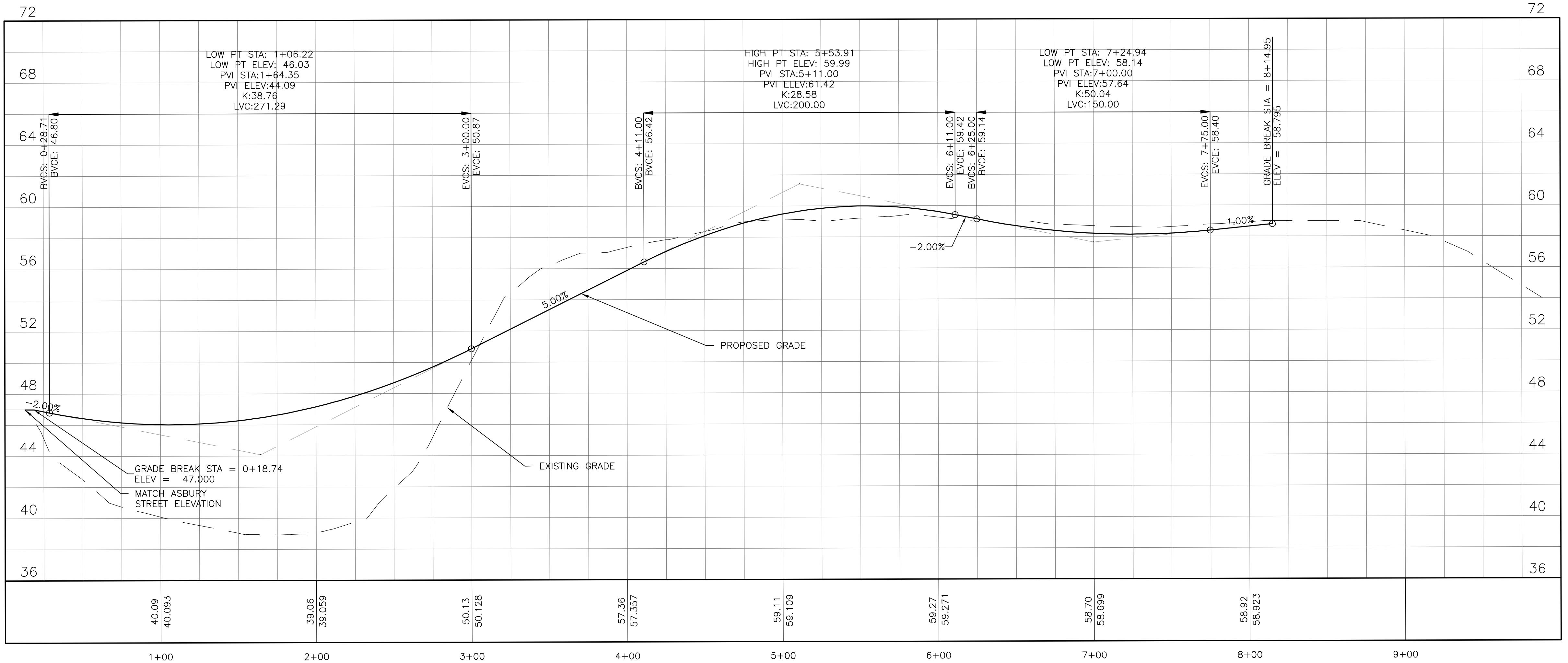
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GRAPHIC SCALE

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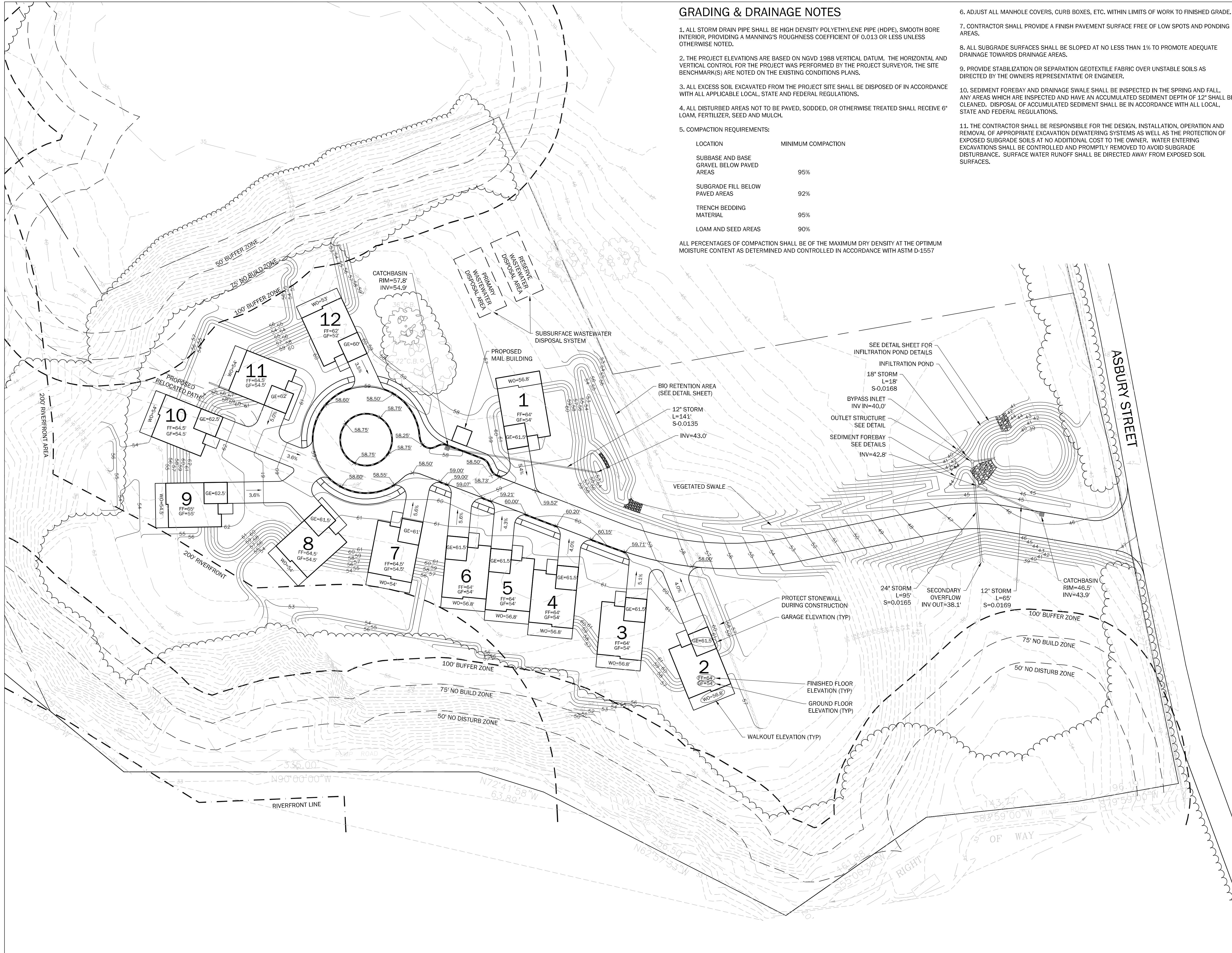
(IN FEET)

1 inch = 40 ft

ROADWAY LAYOUT PLAN AND PROFILE F

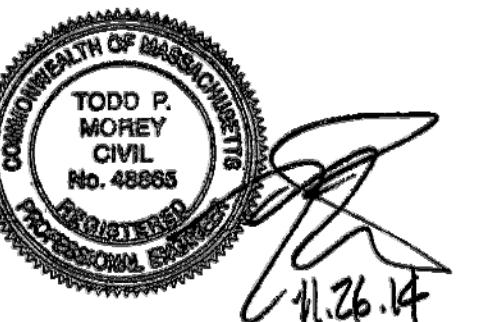
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ED	REVISED TRG	C-201



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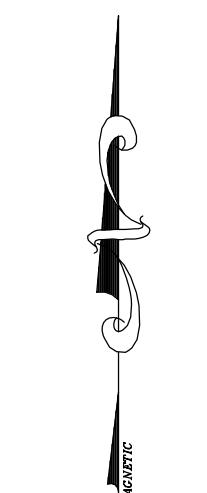
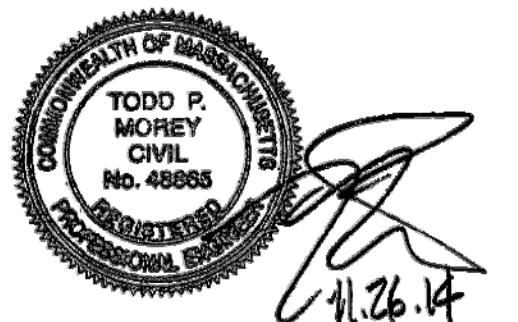


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NOTE:
THE EROSION CONTROL MEASURES DEPICTED ON THIS PLAN ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION.



GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

NO.	REVISION/ISSUE	DATE

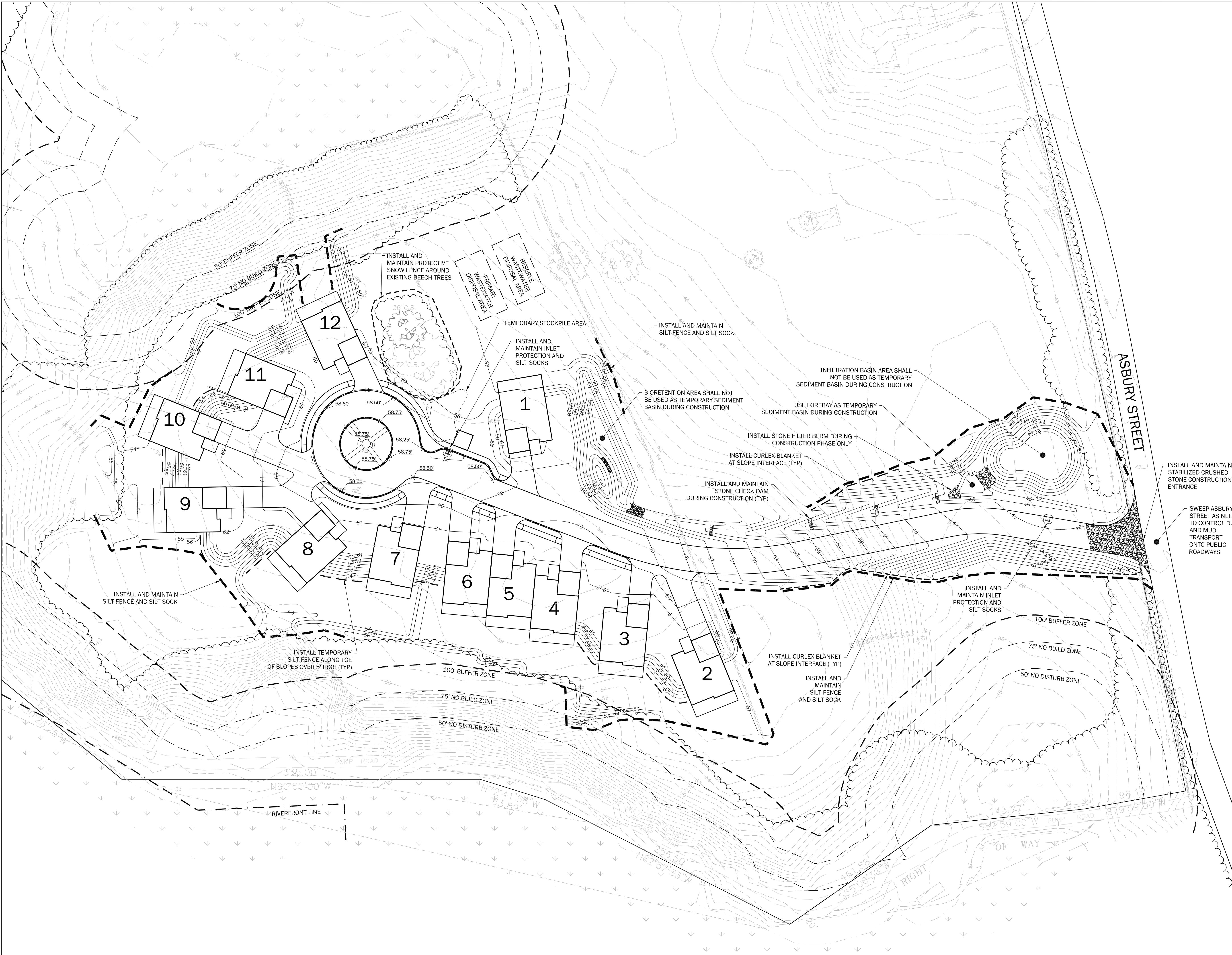
EROSION PREVENTION AND SEDIMENTATION CONTROL PLAN

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN TRG	SHEET
DATE NOVEMBER 26, 2014	CHECKED TPM	
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WRITTEN EROSION AND SEDIMENT CONTROL PLAN

EROSION/SEDIMENT CONTROL DEVICES

THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR AS PART OF THE SITE DEVELOPMENT. INSTALLATION SHALL BE PERFORMED AS INDICATED ON THE FINAL CONSTRUCTION PLANS AND DETAILS. FOR ADDITIONAL REFERENCE, REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE PROJECT.

SILTATION FENCE SHALL BE INSTALLED DOWNSTREAM OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE HAS BEEN STABILIZED. THE SILT FENCE SHALL BE INSTALLED PER THE DETAILS ON THE CONSTRUCTION PLANS AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IMMEDIATELY BY THE CONTRACTOR IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE SILT FENCE LINE. PROPER PLACEMENT OF STAKES AND FABRIC INTO THE GROUND IS CRITICAL FOR THE FILTER'S EFFECTIVENESS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

STRAW OR HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEDED AREAS UNTIL THE AREAS ARE STABILIZED. MULCH PLACED ON SLOPES LESS THAN 10% SHALL BE ANCHORED BY APPLYING WATER; MULCH PLACED ON SLOPES STEEPER THAN 10% SHALL BE COVERED WITH FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH OR OTHER STABILIZATION MATERIALS SHALL BE KEPT ON SITE AT ALL TIMES IN ORDER TO PROVIDE IMMEDIATE TEMPORARY STABILIZATION WHEN NECESSARY.

A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE VEHICULAR ACCESS POINT ONTO ASBURY STREET TO PREVENT THE TRACKING OF SOIL ONTO PUBLIC ROADWAYS.

STONE CHECK DAMS AND STONE FILTER BERMS SHALL BE INSTALLED AS INDICATED ON THE CONSTRUCTION PLANS. THE DAMS AND BERMS SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHALL BE REMOVED WHEN IT HAS ACCUMULATED TO 1/2 THE HEIGHT OF THE DAM/BERM. THE STONE SHALL BE REMOVED WHEN THE TRIBUTARY DRAINAGE AREA HAS BEEN STABILIZED.

LOAM AND SEED IS INTENDED TO SERVE AS THE PRIMARY PERMANENT REVEGETATIVE MEASURE FOR ALL DENUDED AREAS NOT PROVIDED WITH OTHER FORMS OF STABILIZATION.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

THE FOLLOWING ARE PLANNED AS TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION:

A STABILIZED STONE CONSTRUCTION ENTRANCE SHALL BE PLACED AT ASBURY STREET.

SILTATION FENCE SHALL BE INSTALLED ALONG DOWNGRADIENT SIDES OF ALL DISTURBED AREAS.

THE SILTATION BARRIER SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL THE SITE IS PROPERLY STABILIZED.

TEMPORARY STOCKPILES SHALL BE STABILIZED WITHIN SEVEN (7) DAYS BY EITHER TEMPORARILY SEEDING THE STOCKPILE WITH A HYDRO SEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.

FOR WORK WHICH IS CONDUCTED BETWEEN NOVEMBER 1 AND APRIL 15 OF ANY CALENDAR YEAR, ALL DENUDED AREAS SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR IMMEDIATELY IN ADVANCE OF A PREDICTED RAINFALL EVENT.

ASBURY STREET SHALL BE SWEEP TO CONTROL MUD AND DUST AS NECESSARY. A STREET SWEEPER SHALL BE AVAILABLE ON IMMEDIATE NOTICE.

SILT FENCING WITH A MAXIMUM STAKE SPACING OF 6 FEET SHALL BE USED, UNLESS THE FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT OF MINIMUM 14 GAUGE AND WITH A MAXIMUM MESH SPACING OF 6 INCHES, IN WHICH CASE STAKES MAY BE PLACED A MAXIMUM OF 10 FEET APART. THE BOTTOM OF THE FENCE SHALL BE PROPERLY ANCHORED A MINIMUM OF 6 INCHES. FOR THE CONSTRUCTION DETAILS AND BACKFILLED, ANY SILT FENCE IDENTIFIED BY THE OWNER OR REVIEWING AGENCIES AS NOT BEING PROPERLY INSTALLED DURING CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED IN ACCORDANCE WITH THE CONSTRUCTION DETAILS.

DIRTBAG DEVICES SHALL BE USED FOR TEMPORARY DEWATERING OF TRENCHES AND FOUNDATION EXCAVATIONS.

WIND FENCE/SAND FENCE MAY BE INSTALLED TO REDUCE WIND BORNE EROSION AND CONTROL DUST ACROSS THE WORK ZONE.

TEMPORARY DIVERSION BERMS MAY BE USED TO DIRECT RUNOFF AROUND WORK ZONES OR TO STABILIZE CONVEYANCE MEASURES.

TIMING AND SEQUENCE OF EROSION/SEDIMENT CONTROL MEASURES

THE FOLLOWING GENERAL CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE OPTIMIZED. THE SEQUENCE APPLIES TO ALL PHASES OF CONSTRUCTION.

- A. A PRECONSTRUCTION MEETING SHALL BE HELD BY THE OWNER'S ENGINEER PRIOR TO LAND DISTURBING ACTIVITIES.
- B. INSTALL CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON THE CONSTRUCTION PLANS
- C. INSTALL PERIMETER FENCING.
- D. COMPLETE SUBGRADE PREPARATION FOR ACCESS ROADWAY
- E. INSTALL STORM DRAINAGE FEATURES, INCLUDING TEMPORARY INLET PROTECTION DEVICES..
- F. COMPLETE SUB GRADE PREPARATION FOR DRIVEWAYS, HOUSES, WALKWAYS, ETC.
- G. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT.
- H. CONSTRUCT ALL IMPROVEMENTS SHOWN ON THE PLANS.
- I. REMOVE TEMPORARY INLET PROTECTION AROUND INLETS NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
- J. COMPLETE FINAL GRADING.
- K. INSPECT AND CLEAN STORM DRAINAGE SYSTEM.
- L. REMOVE SILT FENCING ONLY AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.
- M. REMOVE TEMPORARY CONSTRUCTION EXITS ONLY PRIOR TO PAVEMENT CONSTRUCTION IN THESE AREAS.

PROVISIONS FOR THE MAINTENANCE OF THE EROSION/SEDIMENTATION CONTROL FEATURES

THIS PROJECT IS SUBJECT TO THE REQUIREMENTS OF A US EPA NPDES PERMIT AND AN ACCOMPANYING STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THESE DOCUMENTS REQUIRE THE CONTRACTOR TO PREPARE A LIST AND DESIGNATE BY NAME, ADDRESS AND TELEPHONE NUMBER ALL INDIVIDUALS WHO WILL BE RESPONSIBLE FOR IMPLEMENTATION, INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES IDENTIFIED WITHIN THIS SECTION AND AS CONTAINED WITHIN THE CONTRACT DRAWINGS. SPECIFIC RESPONSIBILITIES OF THE INSPECTOR(S) WILL INCLUDE, BUT NOT BE LIMITED TO:

EXECUTION OF THE CONTRACTOR/SUBCONTRACTOR CERTIFICATION BY ANY AND ALL PARTIES RESPONSIBLE FOR EROSION CONTROL MEASURES ON THE SITE AS REQUIRED BY THE SWPPP.

ASSURING AND CERTIFYING THE OWNER'S CONSTRUCTION SEQUENCE IS IN CONFORMANCE WITH THE SPECIFIED SCHEDULE OF THIS SECTION. A WEEKLY CERTIFICATION STATING COMPLIANCE, ANY DEVIATIONS, AND CORRECTIVE MEASURES NECESSARY TO COMPLY WITH THE EROSION CONTROL REQUIREMENTS OF THIS SECTION SHALL BE PREPARED AND SIGNED BY THE INSPECTOR(S).

IN ADDITION TO THE WEEKLY CERTIFICATIONS, THE INSPECTOR(S) SHALL MAINTAIN WRITTEN REPORTS RECORDING CONSTRUCTION ACTIVITIES ON SITE WHICH INCLUDE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR IN A PARTICULAR AREA; DATES WHEN MAJOR CONSTRUCTION ACTIVITIES CEASE IN A PARTICULAR AREA, EITHER TEMPORARY OR PERMANENT; DATES WHEN AN AREA IS STABILIZED.

INSPECTION OF THE PROJECT WORK SITE AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND BEFORE AND AFTER EACH SIGNIFICANT RAINFALL EVENT (0.1 INCHES OR MORE IN ANY 24-HOUR PERIOD) DURING CONSTRUCTION UNTIL PERMANENT EROSION CONTROL MEASURES HAVE BEEN PROPERLY INSTALLED AND THE SITE HAS BEEN STABILIZED.

INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:

- A. IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET OR AS SPECIFIED IN THIS SECTION.
- B. DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS PROPERLY OPERATING. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.
- C. IDENTIFY AREAS THAT APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES THAT SHOULD BE USED TO IMPROVE CONDITIONS.
- D. INSPECT AREAS OF RECENT SEEDING TO DETERMINE PERCENT CATCH OF GRASS. A MINIMUM CATCH OF 90 PERCENT IS REQUIRED PRIOR TO REMOVAL OF EROSION CONTROL MEASURES.
- E. RECORD DATES OF PAVING.

IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, EITHER TO IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.

ONCE CONSTRUCTION HAS BEEN COMPLETED, LONG TERM MAINTENANCE OF THE FACILITIES WILL BE THE RESPONSIBILITY OF THE APPLICANT. THE LONG TERM OPERATION AND MAINTENANCE OF THE PROJECT SITE IS DESCRIBED IN THE SECTIONS BELOW.

LONG TERM STORMWATER MANAGEMENT OPERATIONS AND MAINTENANCE

ROUTINE MAINTENANCE TASKS:

ROUTINE MAINTENANCE OF LAWNS, GARDENS, AND OTHER LANDSCAPED AREAS SHALL OCCUR AS NECESSARY TO MAINTAIN THE PROPERTY IN A NEAT AND ORDERLY FASHION. CLIPPINGS AND/OR MULCH SHALL NOT BE WASHED INTO THE DRAINAGE AREAS.

MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM SHALL BE IN ACCORDANCE WITH THE OPERATIONS AND MAINTENANCE CHECKLIST.

GOOD HOUSEKEEPING - ALL AREAS SHOULD BE KEPT FREE OF TRASH AND DEBRIS. ANY STORAGE OF MATERIALS AND WASTE PRODUCTS SHALL BE INSIDE OR UNDER COVER. FERTILIZERS, HERBICIDES AND PESTICIDES, IF STORED ON SITE, SHALL BE STORED PROPERLY CONTAINED AND UNDER COVER. STORAGE OF SALT OR DEICING CHEMICALS, IF ANY, SHALL BE ON IMPERVIOUS AREA, COVERED AND PROTECTED FROM RUNOFF.

INFILTRATION BASIN

REGULAR INSPECTION AND MAINTENANCE ARE ESSENTIAL TO ASSURE A PROPERLY FUNCTIONING SYSTEM.

THE BASIN SHOULD BE INSPECTED IMMEDIATELY AFTER COMPLETION OF SITE CONSTRUCTION. WHILE EVERY EFFORT SHOULD BE MADE TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM DURING CONSTRUCTION, IT IS DURING THIS TIME THAT EXCESS AMOUNTS OF SEDIMENTS ARE MOST LIKELY TO ENTER THE BASIN. INSPECTION AND MAINTENANCE, IF NECESSARY, SHOULD BE PERFORMED PRIOR TO THE CONTRACTOR PASSING RESPONSIBILITY OVER TO THE SITE OWNER. ONCE IN NORMAL SERVICE, THE BASIN SHOULD BE INSPECTED BI-ANNUALLY UNTIL AN UNDERSTANDING OF THE SITE'S DRAINAGE CHARACTERISTICS IS DEVELOPED.

THE BANKS OF THE POND SHOULD BE MOVED AT LEAST ONCE PER YEAR. GRASS SHOULD NOT BE CUT SHORTER THAN FOUR INCHES. RE-SEEDING, PRUNING, WEEDING, AND PEST CONTROL SHOULD BE CONDUCTED AS NECESSARY. ACCUMULATED DEBRIS SHOULD BE REMOVED MANUALLY AS NECESSARY. ACCUMULATED SEDIMENT SHOULD BE REMOVED AT LEAST ONCE EVERY 5 YEARS.

BIORETENTION AREA

REGULAR INSPECTION AND MAINTENANCE ARE ESSENTIAL TO ASSURE A PROPERLY FUNCTIONING SYSTEM.

THE BIORETENTION AREA SHOULD BE INSPECTED IMMEDIATELY AFTER COMPLETION OF SITE CONSTRUCTION. WHILE EVERY EFFORT SHOULD BE MADE TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM DURING CONSTRUCTION, IT IS DURING THIS TIME THAT EXCESS AMOUNTS OF SEDIMENTS ARE MOST LIKELY TO ENTER THE AREA. INSPECTION AND MAINTENANCE, IF NECESSARY, SHOULD BE PERFORMED PRIOR TO THE CONTRACTOR PASSING RESPONSIBILITY OVER TO THE SITE OWNER. ONCE IN NORMAL SERVICE, THE AREA SHOULD BE INSPECTED BI-ANNUALLY UNTIL AN UNDERSTANDING OF THE SITE'S DRAINAGE CHARACTERISTICS IS DEVELOPED.

THE VEGETATION SURROUNDING THE BIORETENTION AREA SHOULD BE INSPECTED FOR EROSION AND/OR SEDIMENT BUILDUP. INSPECT AREA FOR CHANNELS IN SOIL WHERE WATER MAY HAVE FORMED A PATH. IF CHANNELS ARE PRESENT, REPAIR THE AREAS WITH NEW SOIL AND RE-SEED. TRASH AND DEBRIS SHALL BE REMOVED FROM THE AREA AS NECESSARY.

VEGETATED SWALE

SWALE SHALL BE MOVED AS NECESSARY TO MAINTAIN A GRASS HEIGHT BETWEEN 3-6 INCHES. SWALE SHALL BE INSPECTED REGULARLY TO ENSURE ADEQUATE VEGETATION IS PRESENT AND THAT EROSION HAS NOT OCCURRED. INSPECT CHECK DAMS REGULARLY AND REMOVE ACCUMULATED DEBRIS.

WINTER MAINTENANCE PROGRAM

ENSURE STRUCTURES ARE NOT BLOCKED BY ICE, SNOW, DEBRIS OR TRASH DURING WINTER MONTHS.

SNOW STORAGE AREAS SHALL BE LOCATED ADJACENT TO OR ON IMPERVIOUS SURFACES IN UPLAND AREAS AWAY FROM RESOURCE AREAS AND WETLANDS. SNOW SHALL NOT BE PLACED WITHIN DRAINAGE SWALES, BIORETENTION AREAS, OR THE INFILTRATION POND.

ILLCIT DISCHARGES

DURING CONSTRUCTION, AND ALL ILLCIT CONNECTIONS FROM THE PROPERTY SHALL BE CUT AND CAPPED. THE PROPOSED SITE STORMWATER MANAGEMENT SYSTEM SHALL BE CHECKED FOR SIGNS OF ILLCIT DISCHARGE DURING REGULAR OPERATION AND MAINTENANCE ACTIVITIES. THIS WILL INCLUDE BUT NOT BE LIMITED TO CHECKING FOR CONNECTIONS OTHER THAN STORMWATER TO THE DRAINAGE SYSTEM. SHOULD CONNECTIONS OTHER THAN STORMWATER BE FOUND, THEY WILL BE IMMEDIATELY REMOVED.

CATCH BASINS AND MANHOLES

REGULAR MAINTENANCE IS ESSENTIAL. DEEP SUMP CATCH BASINS REMAIN EFFECTIVE AT REMOVING POLLUTANTS ONLY IF THEY ARE CLEANED OUT FREQUENTLY. ONCE 50% OF THE SUMP VOLUME IS FILLED, THE CATCH BASIN MAY NOT BE ABLE TO RETAIN ADDITIONAL SEDIMENT.

INSPECT OR CLEAN DEEP SUMPS AT LEAST FOUR TIMES PER YEAR AND AT THE END OF THE FOLIAGE AND SNOW REMOVAL SEASONS. SEDIMENTS MUST ALSO BE REMOVED FOUR TIMES PER YEAR OR WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT OF THE LOWEST PIPE IN THE BASIN.

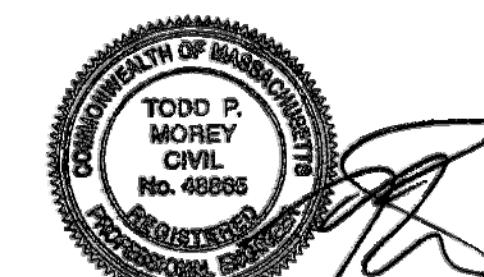
CLAMSHELL BUCKETS ARE TYPICALLY USED TO REMOVE SEDIMENT; HOWEVER, VACUUM TRUCKS ARE PREFERABLE AS THEY REMOVE MORE TRAPPED SEDIMENT THAN CLAMSHELLS. VACUUMING IS ALSO A SPEEDIER PROCESS AND IS LESS LIKELY TO DAMAGE THE HOOD WITHIN THE DEEP SUMP CATCH BASIN.

ALWAYS CONSIDER THE SAFETY OF THE STAFF CLEANING DEEP SUMP CATCH BASINS. CLEANING A DEEP SUMP CATCH BASIN WITHIN A ROAD WITH ACTIVE TRAFFIC OR EVEN WITHIN A PARKING LOT IS DANGEROUS AND A POLICE DETAIL MAY BE NECESSARY TO SAFEGUARD WORKERS.

ALTHOUGH CATCH BASIN DEBRIS OFTEN CONTAINS OIL AND HAZARDOUS MATERIAL SUCH AS PETROLEUM HYDROCARBONS AND METALS, MASSDEP CLASSIFIES THEM AS SOLID WASTE. UNLESS THERE IS EVIDENCE THAT THEY HAVE BEEN CONTAMINATED BY A SPILL OR OTHER MEANS, MASSDEP DOES NOT ROUTINELY REQUIRE CATCH BASIN CLEANINGS TO BE TESTED BEFORE DISPOSAL. CONTAMINATED CATCH BASIN CLEANINGS MUST BE EVALUATED IN ACCORDANCE WITH THE HAZARDOUS WASTE REGULATIONS, 310 CMR 30.000, AND HANDLED AS HAZARDOUS WASTE. IN THE ABSENCE OF EVIDENCE OF CONTAMINATION, CATCH BASIN CLEANINGS MAY BE TAKEN TO A LANDFILL OF OTHER FACILITY PERMITTED BY MASSDEP TO ACCEPT SOLID WASTE, WITHOUT ANY PRIOR APPROVAL BY MASSDEP; HOWEVER, SOME LANDFILLS MAY REQUIRE TESTING BEFORE THEY ARE ACCEPTED.

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EROSION CONTROL NOTES

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN TRG	SHEET C-302
DATE NOVEMBER 26, 2014	CHECKED TPM	
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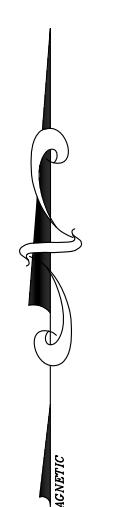
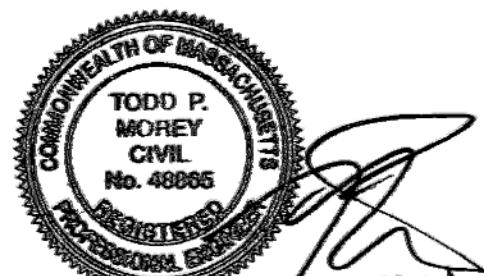
ASSESSOR'S INFORMATION COMPILED FROM MASS GIS.

SURVEY INFORMATION OBTAINED FROM THE PLAN TITLED:

"PLAN OF LAND 650 ASBURY STREET TOWN OF HAMILTON"
PREPARED BY KANE LAND SURVEYORS
DATED SEPTEMBER 19, 2013.

LEGEND:

- E1 EXISTING DRAINAGE AREA
- EXISTING Tc FLOW PATH
- NRCS SOIL TYPE AND HYDROLOGIC SOIL GROUP



GRAPHIC SCALE

60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

NO. REVISION/ISSUE DATE

EXISTING WATERSHED PLAN

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN MAW	SHEET C-303
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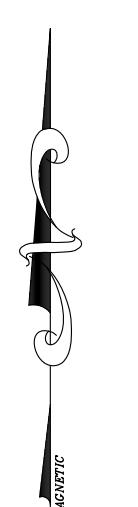
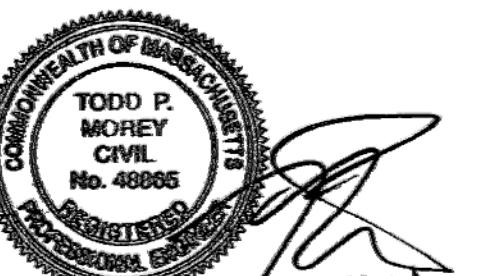
PROPOSED DRAINAGE AREA



PROPOSED Tc FLOW PATH



NRCS SOIL TYPE AND
HYDROLOGIC SOIL GROUP



GRAPHIC SCALE

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PROPOSED WATERSHED PLAN

PATTON HOMESTEAD
650 ASBURY STREET
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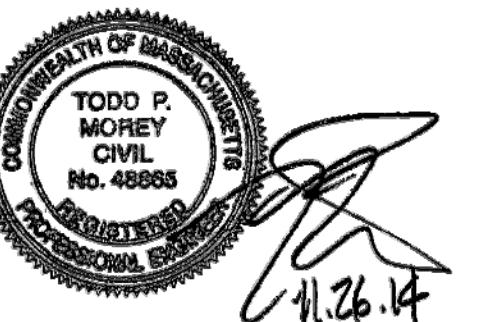
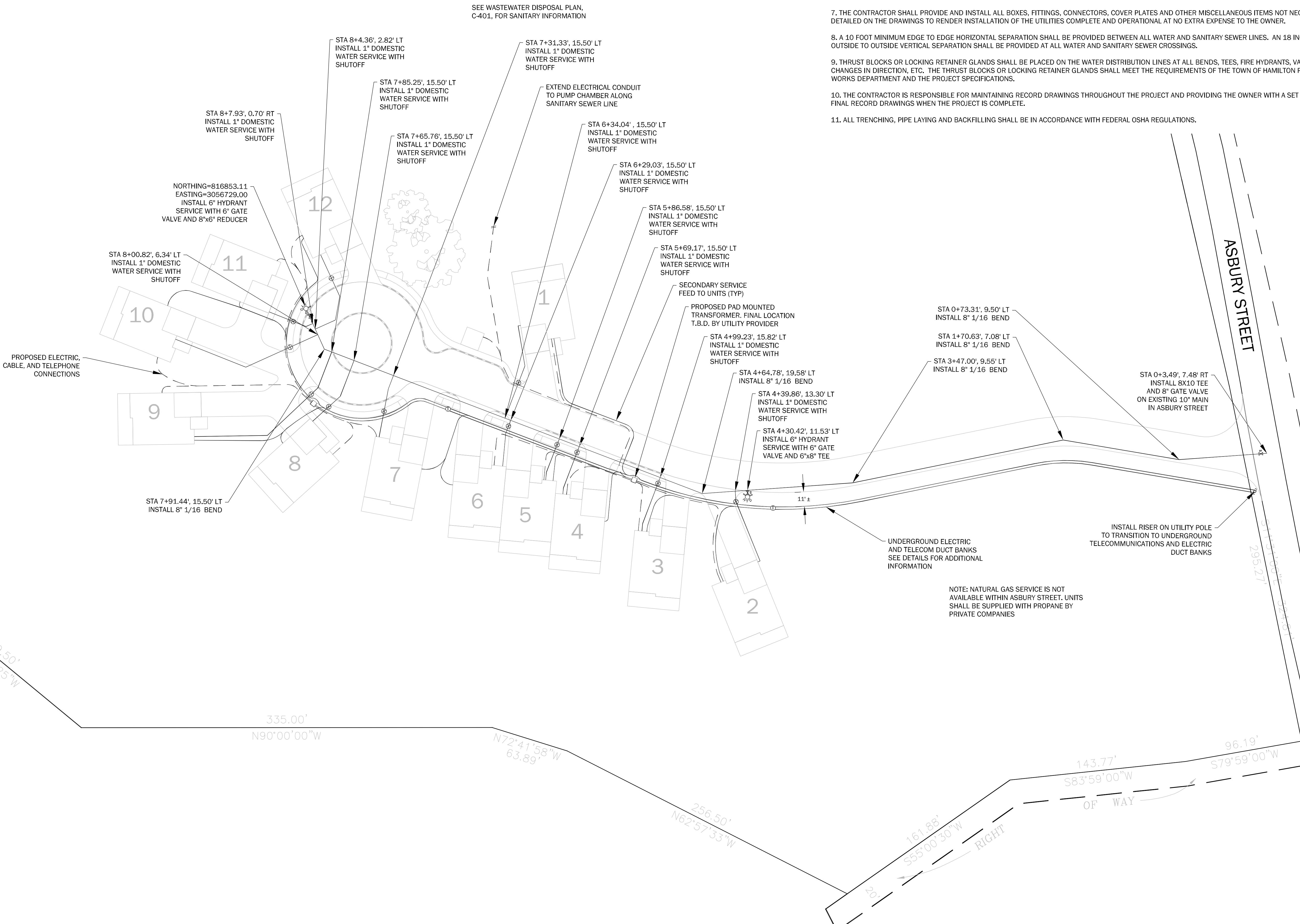
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UTILITY NOTES

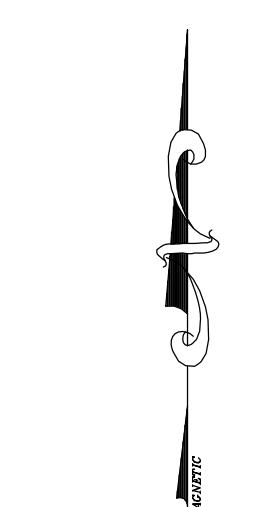
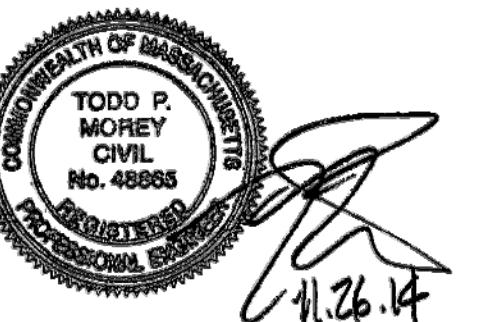
1. ALL WATER UTILITY MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO TOWN OF HAMILTON PUBLIC WORKS DEPARTMENT STANDARDS. ALL WATER DISTRIBUTION PIPING SHALL BE CLASS 52 DUCTILE IRON PIPE. DISINFECTION OF WATER LINES SHALL CONFORM TO AWWA STANDARDS. THE CONTRACTOR SHALL COORDINATE ALL CONNECTIONS TO THE MUNICIPAL SYSTEM WITH THE TOWN OF HAMILTON PUBLIC WORKS DEPARTMENT.
2. THE LOCATION OF THE ELECTRIC, TELEPHONE, AND CABLE SERVICES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR EXACT LOCATIONS.
3. SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF SDR-35 FOR GRAVITY PIPE AND SDR-11 FOR FORCEMAIN PIPE UNLESS OTHERWISE NOTED ON THE PLANS. ALL SEWER MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO THE TOWN OF HAMILTON DEPARTMENT OF PUBLIC WORKS STANDARDS.
4. COORDINATE ALL UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY. ALL UTILITY WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS OF THAT UTILITY.
5. UNDERGROUND ELECTRICAL, TELEPHONE, AND CABLE CONDUIT SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF THAT UTILITY.
6. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLE.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF THE UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
8. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18 INCH OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS.
9. THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL BE PLACED ON THE WATER DISTRIBUTION LINES AT ALL BENDS, TEES, FIRE HYDRANTS, VALVES, CHANGES IN DIRECTION, ETC. THE THRUST BLOCKS OR LOCKING RETAINER GLANDS SHALL MEET THE REQUIREMENTS OF THE TOWN OF HAMILTON PUBLIC WORKS DEPARTMENT AND THE PROJECT SPECIFICATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS THROUGHOUT THE PROJECT AND PROVIDING THE OWNER WITH A SET OF THE FINAL RECORD DRAWINGS WHEN THE PROJECT IS COMPLETE.
11. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.



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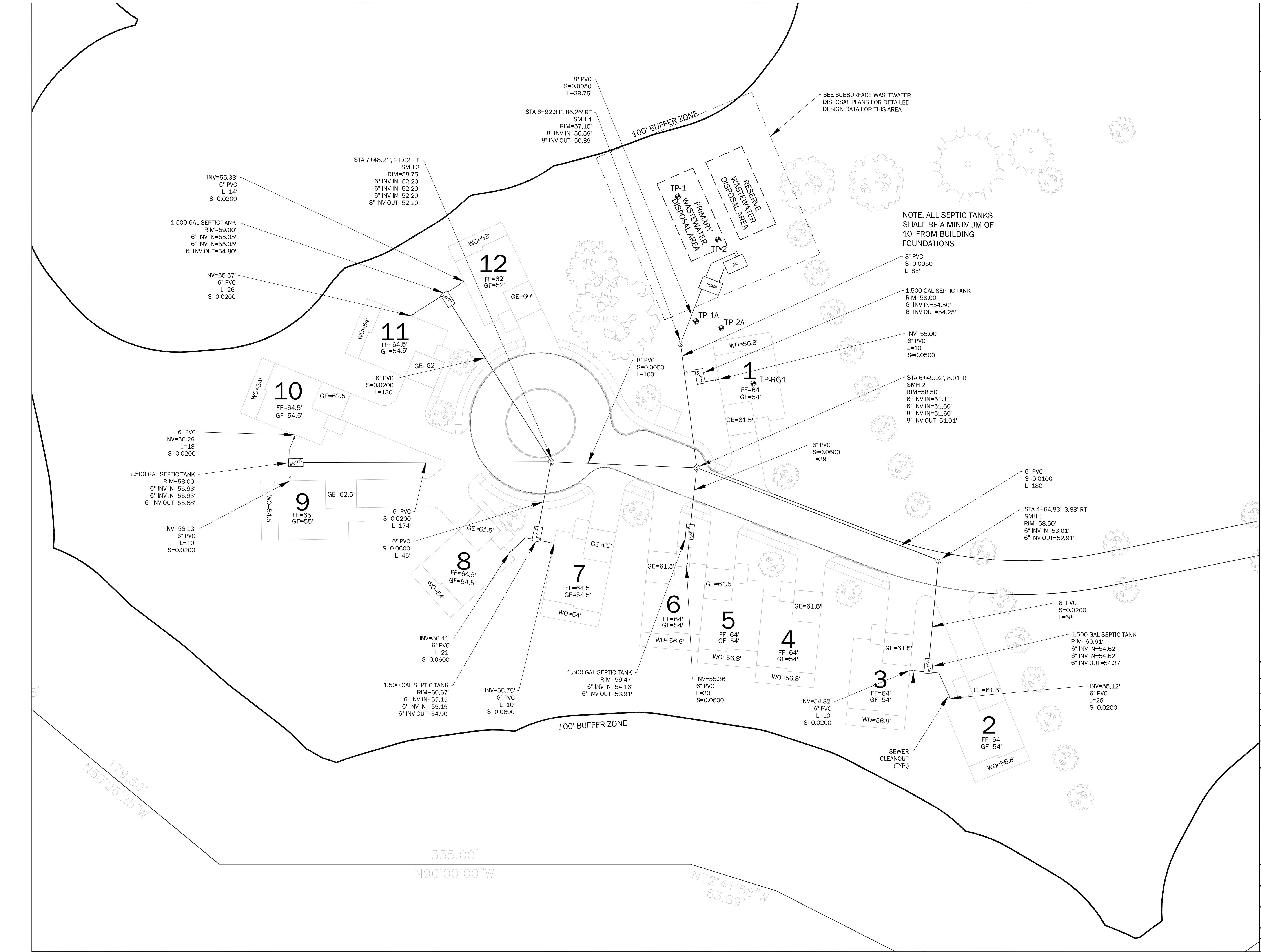
WASTEWATER DISPOSAL PLAN

PATTON HOMESTEAD
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IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN TRG	SHEET
DATE NOVEMBER 26, 2014	CHECKED TPM	C-401
SCALE AS NOTED	REVISED TRG	

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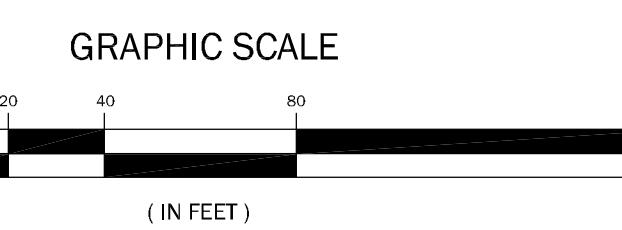
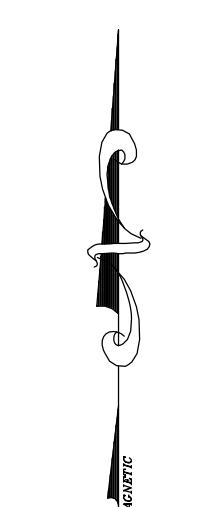
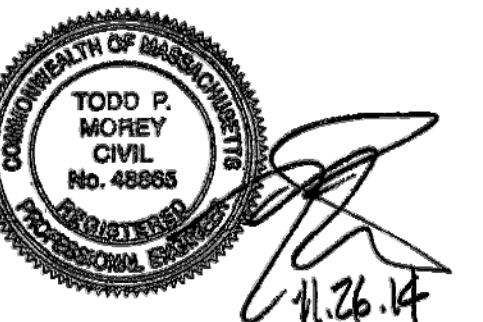
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PREPARED FOR:
C.P. BERRY RESIDENCES, LLC
460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983

BEALS ASSOCIATES INC.

2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190



NO.	REVISION/ISSUE	DATE
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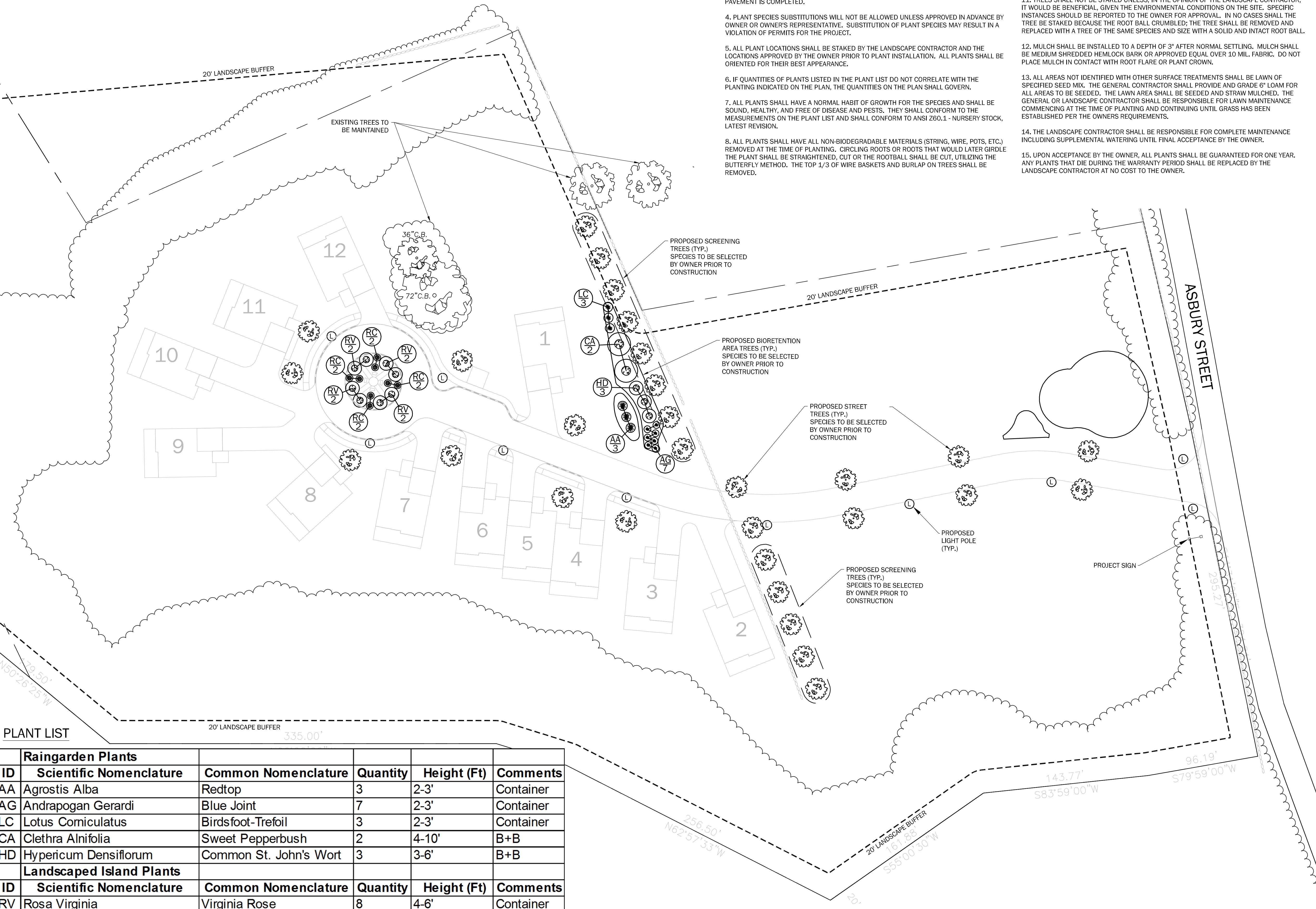
LANDSCAPE PLAN

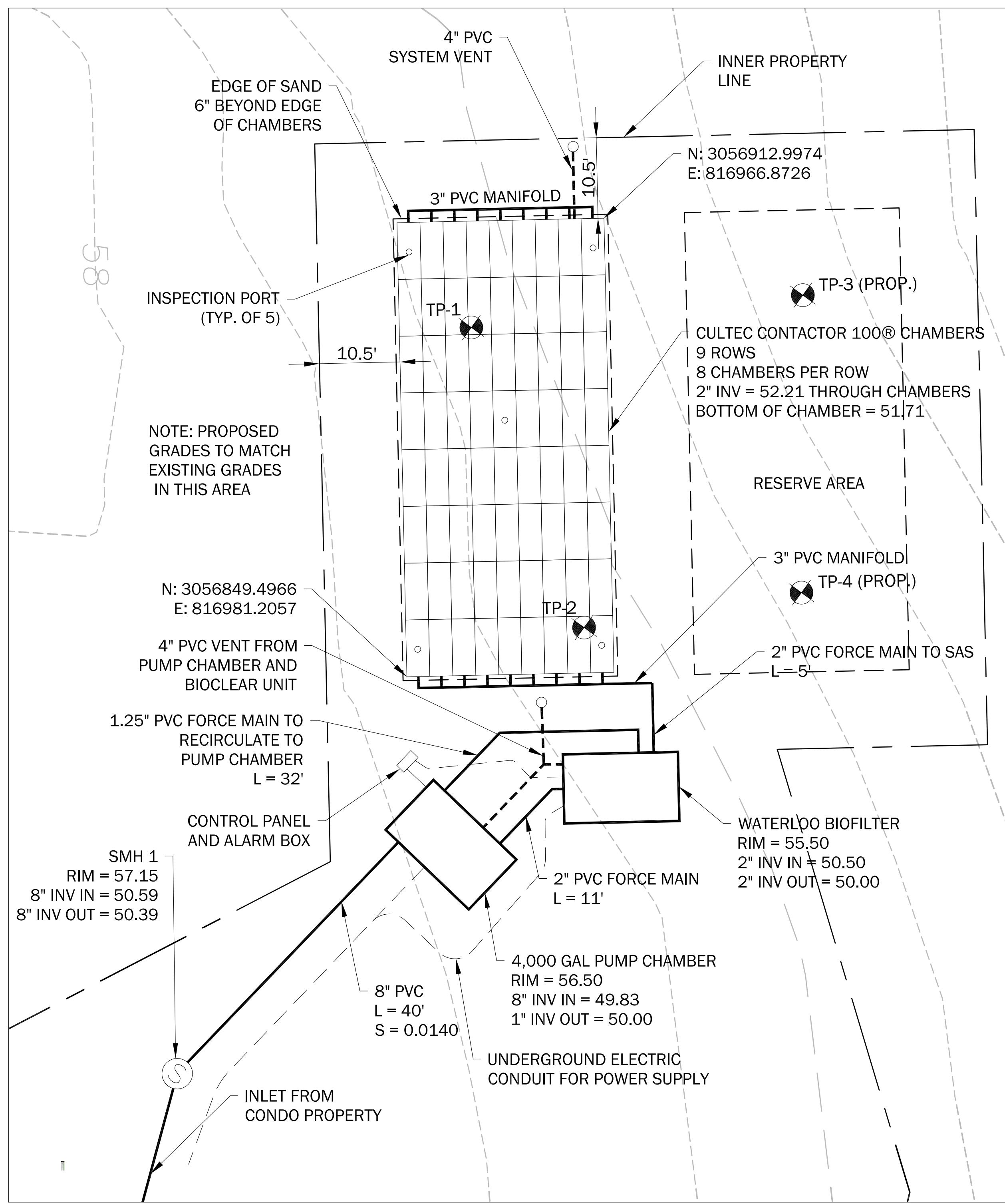
PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN TRG	SHEET
DATE NOVEMBER 26, 2014	CHECKED TPM	C-500
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LANDSCAPE NOTES

- THE LANDSCAPE CONTRACTOR IS ADVISED OF THE EXISTENCE OF UNDERGROUND UTILITIES. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS PRIOR TO COMMENCING CONSTRUCTION.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY UTILITIES, WALKS, PAVING, CURBING, ETC. DAMAGED IN THE PERFORMANCE OF THIS JOB AT NO COST TO THE OWNER.
- PLANTING OF TREES AND SHRUBS SHALL NOT OCCUR UNTIL ALL GRADING AND BINDER PAVEMENT IS COMPLETED.
- PLANT SPECIES SUBSTITUTIONS WILL NOT BE ALLOWED UNLESS APPROVED IN ADVANCE BY OWNER OR OWNER'S REPRESENTATIVE. SUBSTITUTION OF PLANT SPECIES MAY RESULT IN A VIOLATION OF PERMITS FOR THE PROJECT.
- ALL PLANT LOCATIONS SHALL BE STAKED BY THE LANDSCAPE CONTRACTOR AND THE LOCATIONS APPROVED BY THE OWNER PRIOR TO PLANT INSTALLATION. ALL PLANTS SHALL BE ORIENTED FOR THEIR BEST APPEARANCE.
- IF QUANTITIES OF PLANTS LISTED IN THE PLANT LIST DO NOT CORRELATE WITH THE PLANTING INDICATED ON THE PLAN, THE QUANTITIES ON THE PLAN SHALL GOVERN.
- ALL PLANTS SHALL HAVE A NORMAL HABIT OF GROWTH FOR THE SPECIES AND SHALL BE SOUND, HEALTHY, AND FREE OF DISEASE AND PESTS. THEY SHALL CONFORM TO THE MEASUREMENTS ON THE PLANT LIST AND SHALL CONFORM TO ANSI Z60.1 - NURSERY STOCK, LATEST REVISION.
- ALL PLANTS SHALL HAVE ALL NON-BiodeGRADABLE MATERIALS (STRING, WIRE, POTS, ETC.) REMOVED AT THE TIME OF PLANTING. CIRCLING ROOTS OR ROOTS THAT WOULD LATER GIRDLE THE PLANT SHALL BE STRAIGHTENED. CUT OF THE ROOTBALL SHALL BE CUT, UTILIZING THE BUTTERFLY METHOD. THE TOP 1/3 OF WIRE BASKETS AND BURLAP ON TREES SHALL BE REMOVED.
- THE PLANTING PITS SHALL BE EXCAVATED TO TWO TIMES THE DIAMETER AND TO THE SAME DEPTH OF THE PLANT ROOT BALL. BACKFILL 1/2 DEPTH OF PIT AT A TIME AND COMPACT. INSTALL SLOW RELEASE FERTILIZER AFTER FIRST BACKFILL LIFT.
- EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE TRUNK IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. MULCH SHALL NOT REACH THE TRUNK FLARE BUT MAY COVER THE ROOT BALL.
- TREES SHALL NOT BE STAKED UNLESS, IN THE OPINION OF THE LANDSCAPE CONTRACTOR, IT WOULD BE BENEFICIAL, GIVEN THE ENVIRONMENTAL CONDITIONS ON THE SITE. SPECIFIC INSTANCE SHOULD BE REPORTED TO THE OWNER FOR APPROVAL. IN NO CASES SHALL THE TREE BE STAKED BECAUSE THE ROOT BALL CRUMPLED; THE TREE SHALL BE REMOVED AND REPLACED WITH A TREE OF THE SAME SPECIES AND SIZE WITH A SOLID AND INTACT ROOT BALL.
- MULCH SHALL BE INSTALLED TO A DEPTH OF 3" AFTER NORMAL SETTLING. MULCH SHALL BE MEDIUM SHREDDED HEMLOCK BARK OR APPROVED EQUAL OVER 10 MIL. FABRIC. DO NOT PLACE MULCH IN CONTACT WITH ROOT FLARE OR PLANT CROWN.
- ALL AREAS NOT IDENTIFIED WITH OTHER SURFACE TREATMENTS SHALL BE LAWN OF SPECIFIED SEED MIX. THE GENERAL CONTRACTOR SHALL PROVIDE AND GRADE 6" LOAM FOR ALL AREAS TO BE SEEDED. THE LAWN AREA SHALL BE SEEDED AND STRAW MULCHED. THE GENERAL OR LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LAWN MAINTENANCE COMMENCING AT THE TIME OF PLANTING AND CONTINUING UNTIL GRASS HAS BEEN ESTABLISHED PER THE OWNERS REQUIREMENTS.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE MAINTENANCE INCLUDING SUPPLEMENTAL WATERING UNTIL FINAL ACCEPTANCE BY THE OWNER.
- UPON ACCEPTANCE BY THE OWNER, ALL PLANTS SHALL BE GUARANTEED FOR ONE YEAR. ANY PLANTS THAT DIE DURING THE WARRANTY PERIOD SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.





SAS SYSTEM LAYOUT
SCALE: 1" = 10'

SOIL ABSORPTION SYSTEM (SAS) DESIGN

- REQUIRED HYDRAULIC LOADING**
12 UNITS X 150 GALLONS PER DAY (GPD) PER UNIT = 1,800 GPD
- REQUIRED EFFLUENT LOADING**
ASSUME SOIL CLASS I
DESIGN PERCOLATION RATE: LESS THAN 5 MINUTES PER INCH (MPI)
EFFLUENT LOADING RATE: 0.74 GPD PER SQUARE FOOT (SF)
- REQUIRED LEACHING AREA**
1,800 GPD / 0.74 GPD PER SF = 2,433 SF
- LEACHING AREA DESIGN:**
USE CULTEC CONTACTOR® 100:
INSTALLED LENGTH = 7.4 FEET (FT)
WIDTH = 36 INCHES (IN)
ASSUME 9 ROWS WITH 8 CHAMBERS IN EACH ROW

EFFECTIVE LEACHING AREA:
NOTE: ASSUME EFFECTIVE LEACHING AREA IS EQUAL TO 1.67 TIMES
BOTTOM WIDTH BASED ON MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
(MASSDEP) CERTIFICATION FOR GENERAL USE FOR CULTEC CHAMBERS,
REVISED MAY 22, 2014.

EFFECTIVE WIDTH PER CHAMBER = 36 IN X 1.67 = 60 IN = 5 FT
EFFECTIVE LEACHING AREA = (8 X 7.4 FT) X (9 X 3 FT X 1.67) = 2,669 SF
EFFECTIVE LEACHING AREA > REQUIRED LEACHING AREA

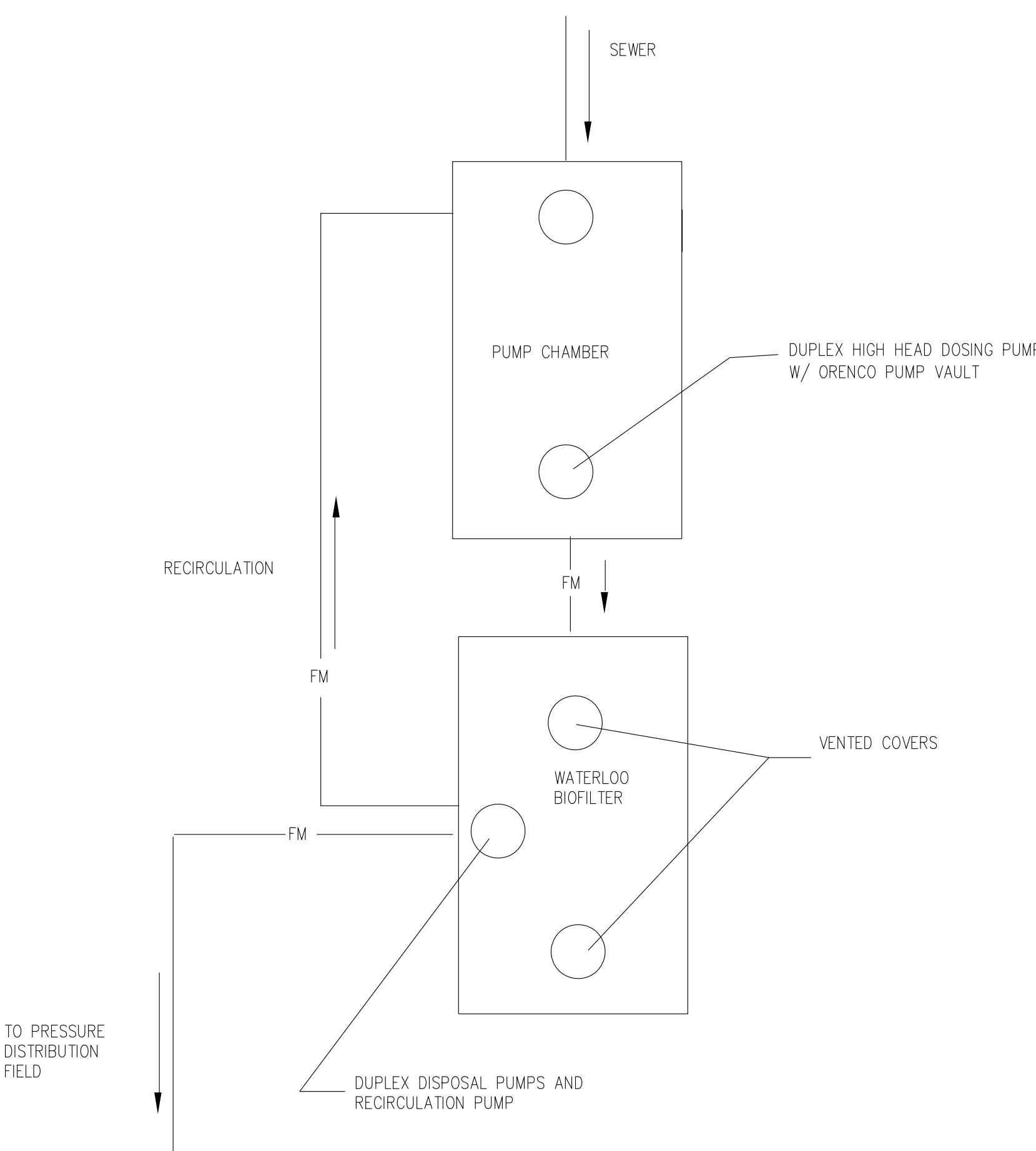
HYDRAULIC LOADING CHECK: 2,669 SF X 0.74 GPD PER SF = 1,975 GPD
CAPACITY = 1,975 GPD CAPACITY > 1,800 GPD REQUIRED

RESERVE LEACHING AREA REQUIRED = 100% X 2,433 SF = 2,433 SF
PROVIDED = 2,669 SF

SAS DOSING PUMP DESIGN

- SAS NOTES:**
- TRENCH LATERS TO BE 1-1/2" Ø
 - TRENCH LATERS TO HAVE $\frac{1}{8}$ " PERFORATIONS SPACED 5' APART
 - DISTAL HEAD = 5.0'
PERFORATION DISCHARGE RATE = 0.41 GPM
LATERN LENGTH = 40'
NUMBER OF PERFORATIONS PER LATERN = 60 / 5 = 12
LATERN DISCHARGE = 12 X 0.41 = 4.92 GPM/LAT
 - MANIFOLD SIZE = 3"
 - LATERAL VOLUME = $\pi X (0.125 / 2)^2 X 60' = 0.74 \text{ CF} = 5.50 \text{ GAL}$
FIELD VOLUME = $9 X 5.50 = 49.5 \text{ GAL/FIELD}$
- HOLDING TANK TO SAS**
- MANIFOLD VOLUME = $(30') X (\pi X (0.25 / 2)^2) = 1.47 \text{ CF} = 11.01 \text{ GAL}$
FORCE MAIN VOLUME = $(5') X (\pi X (0.167 / 2)^2) = 0.109 \text{ CF} = 0.82 \text{ GAL}$
DRAIN BACK VOLUME = 11.83 GAL
- DOSE VOLUME AT HOLDING TANK = $1,800 \text{ GAL} / 10 \text{ DOSE/DAY} = 180 \text{ GAL/DOSE}$
VOLUME PUMPED AT HOLDING TANK = 192 GAL/DOSE
- FIELD DISCHARGE RATE = 4.92 GPM/LAT X 9 LAT = 45 GPM
- PROPOSED PUMP DISCHARGE RATE = 45 GPM
DISTAL HEAD = 5.0'
NETWORK LOSSES = $1.31 X H_d = 6.55'$
- ASSUMED OTHER MINOR LOSSES = $15 X 3" \text{ WATERLOO PIPES} + (3) 3" 90^\circ \text{ ELBOWS} + (1) 3" \text{ BALL VALVE} + (3) 3" 45^\circ \text{ BENDS} + (2) 3" \text{ GATE VALVES} = 141.26 \text{ EQ. FT}$
- MIN FRICTION LOSSES = $(19 + 141.26) X [(3.55 X 123) / (150 X (3^2.63))]^{1.85} = 5.52'$
- MAX FRICTION LOSSES = $(19 + 141.26) X [(3.55 X 123) / (120 X (3^2.63))]^{1.85} = 8.34'$
- MIN TOTAL LOSSES = $6.55 + 5.52 = 12.07'$
MAX TOTAL LOSSES = $6.55 + 8.34 = 14.89'$
STATIC HEAD = $52.21 - 44.67 = 7.54'$
MIN TOTAL HEAD LOSS = $19.61'$
MAX TOTAL HEAD LOSS = $22.43'$
- PUMP DESIGN REQUIREMENTS: 45 GPM, 25 FT HEAD

DEEP HOLE: TP-1 PERFORMED BY: BEALS ASSOCIATES, INC WITNESS: B.O.H. AGENT DATE OF TEST: 7.30.2014 GROUND ELEVATION = 57.00 DEPTH HORIZON SOIL TEXTURE MUNSELL COLOR	PERCOLATION TEST LOCATION: TP-1 PERFORMED BY: BEALS ASSOCIATES, INC WITNESS: LESLIE WHELAN DATE OF TEST: 7.30.2014 DEPTH OF PERC: 32" START PRE-SOAK: 11:20 END PRE-SOAK: 11:40 TIME AT 12": 11:42 TIME AT 9": 11:46 TIME AT 6": 11:50 RATE (MIN/INCH): 1.33
DEEP HOLE: TP-2 PERFORMED BY: BEALS ASSOCIATES, INC WITNESS: B.O.H. AGENT DATE OF TEST: 7.30.2014 GROUND ELEVATION = 56.00 DEPTH HORIZON SOIL TEXTURE MUNSELL COLOR	PERCOLATION TEST LOCATION: TP-2 PERFORMED BY: BEALS ASSOCIATES, INC WITNESS: LESLIE WHELAN DATE OF TEST: 7.30.2014 DEPTH OF PERC: 38" START PRE-SOAK: 11:41 END PRE-SOAK: 11:57 TIME AT 12": 11:58 TIME AT 9": 12:01 TIME AT 6": 12:04 RATE (MIN/INCH): 1.0

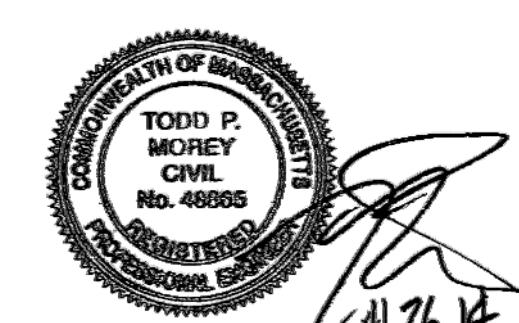


WATERLOO BIOFILTER SYSTEM SCHEMATIC

NTS
NOTE: SCHEMATIC DETAIL PROVIDED BY:
CLEAR WATER INDUSTRIES
22 MITCHEL ROAD
IPSWICH, MA 01938
ATTN: MARK COTTRELL
978.356.0779

PREPARED FOR:
C.P. BERRY RESIDENCES, LLC
460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983

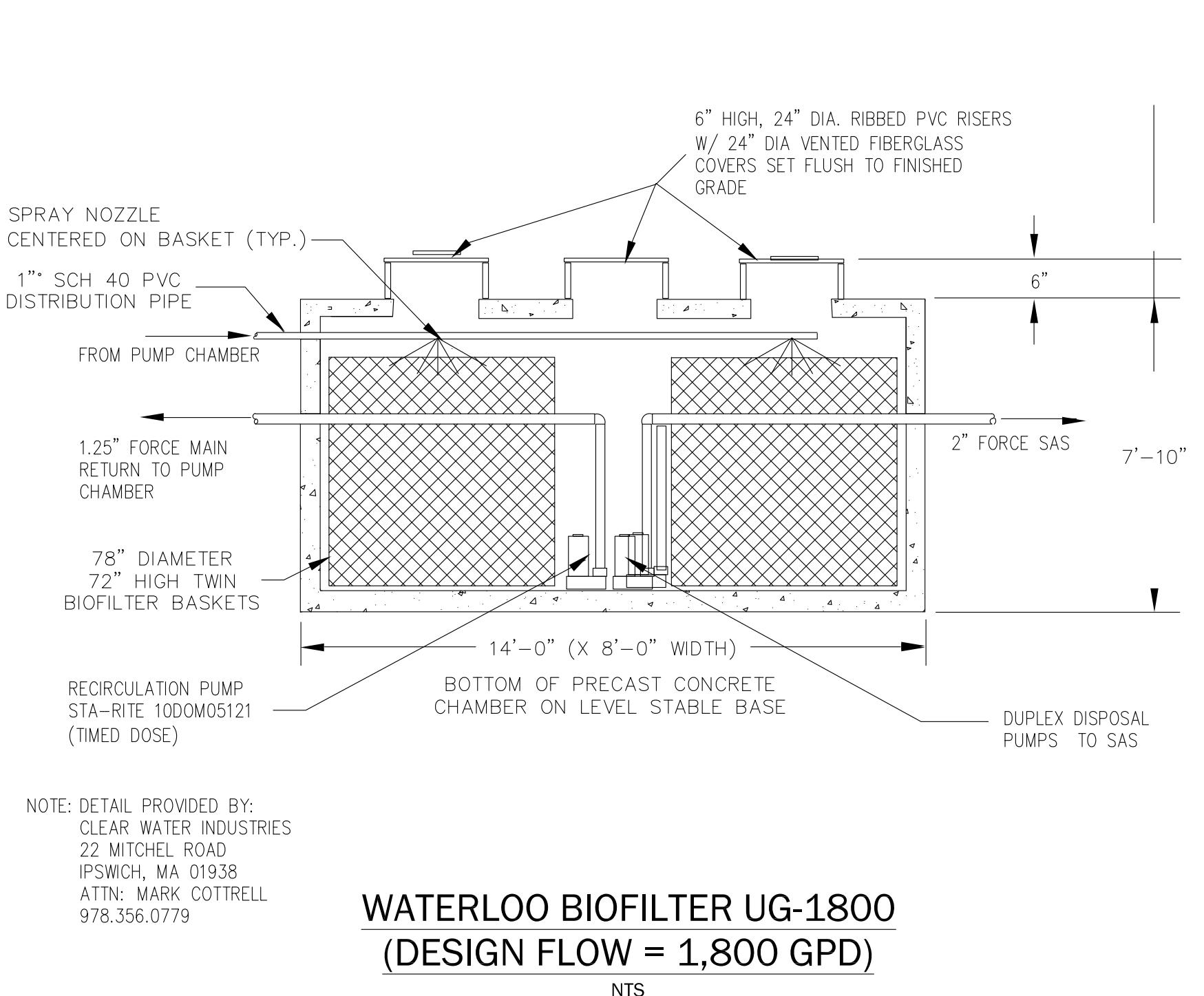
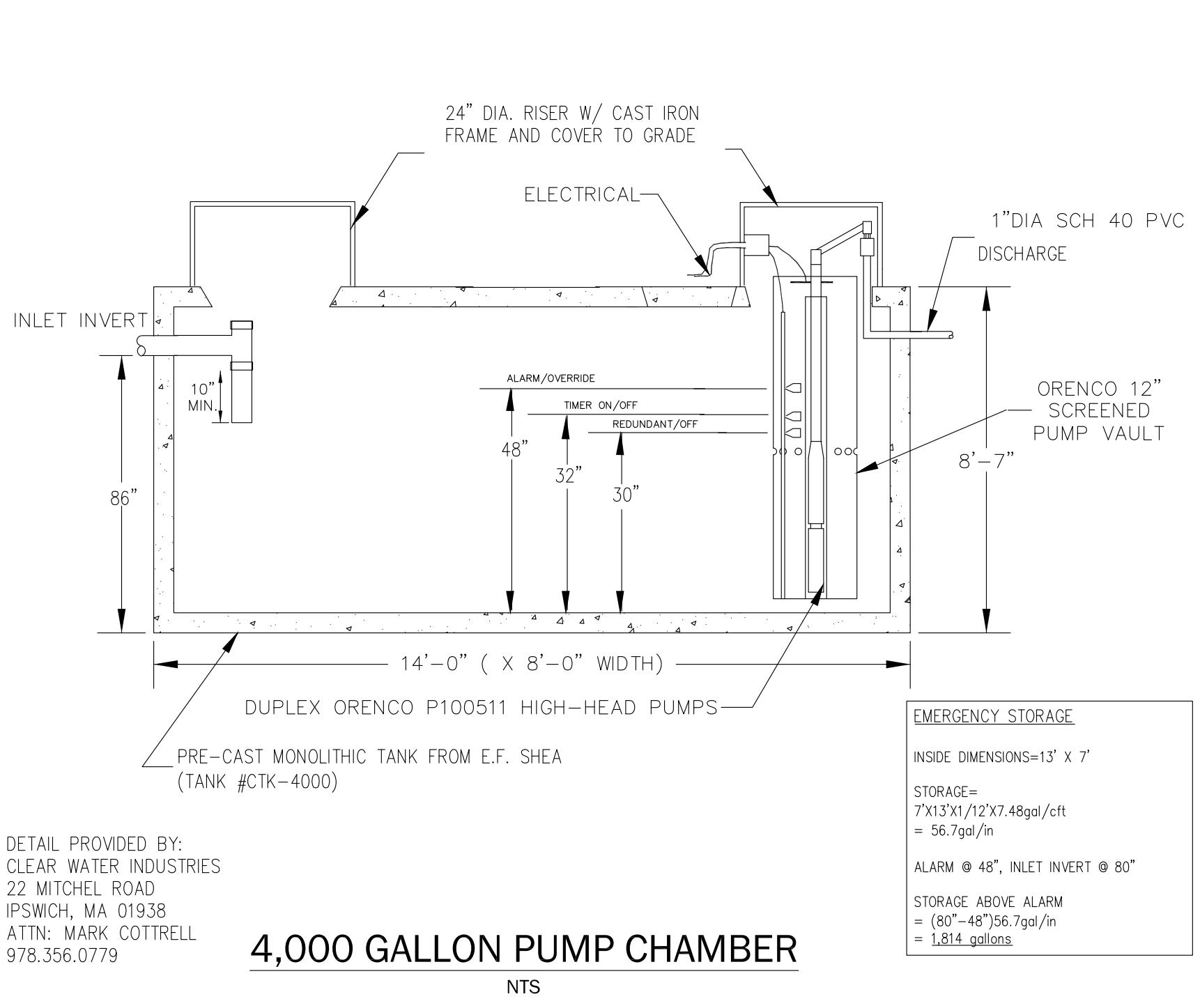
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PHONE: 617-242-1120 FAX: 617-242-1190



SAS SYSTEM LAYOUT AND NOTES

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN MAW	SHEET
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Residential Biotube® Effluent Filters

Applications

Our patented* 4-in. (102-mm) Biotube Effluent Filters, Biotube Jr., Biotube Insert Filters, and Biotube Base Inlet Filters are ideal for residential septic tanks and have a lifetime warranty. They prevent large solids from leaving the tank, dramatically improving wastewater quality and extending the life of residential drainfields.

- Easy to clean by simply hosing off whenever the tank needs pumping
 - Removes about two-thirds of suspended solids, on average, extending drainfield life
 - Corrosion-proof construction, to ensure long life
 - Lifetime warranty

**Bio
Filter
Pro**

- Effluent from the relatively clear zone of the septic tank flows between the scum and sludge layers horizontally entering the Biotube Effluent Filter. Effluent then enters the annular space between the housing and the Biotubes, utilizing the Biotubes' entire surface for filtration. Particles larger

Drenco's superior effluent filters resist clogging better than all other brands. Our standard, full-sized 4-in. (102-mm) Biotube Effluent Filter provides maximum long-term protection in a complete package, with housing. Our 4-in. (102-mm) Biotube Jr., at half the size of our standard model, has more filtering capacity than the full-sized filters sold by other manufacturers. For tanks with existing outlet tees, the Biotube Insert Filter is ideal. And for low-profile tanks, there's the Base Inlet Filter.

Covered by patent numbers 5,492,635 and 4,439,323

To Order

Call your nearest Orenco Systems[®], Inc. distributor. For nearest distributor, call Orenco at 800-348-9843 or go to www.orenco.com and click on Distributor Locator."



Nomenclatures

4-in. Biotube Filter (standard)

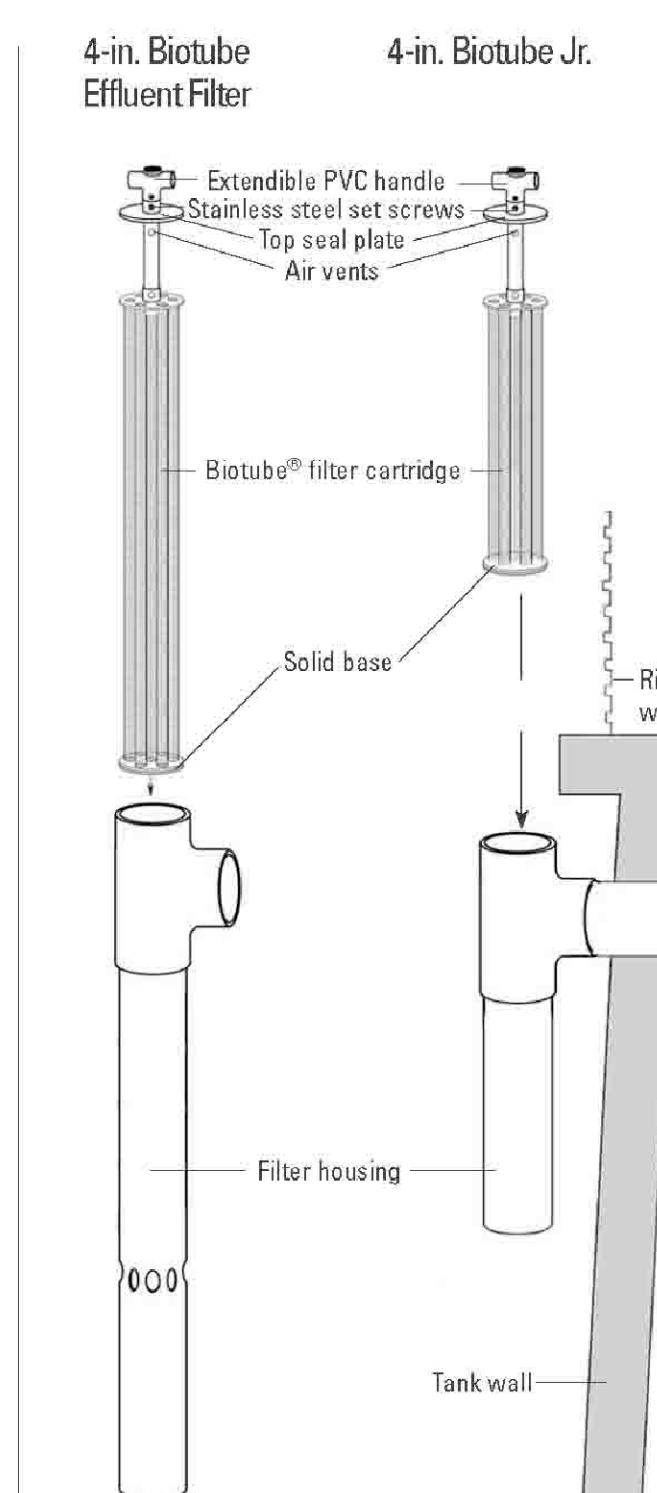
FT **□** **□** **04** **□**-**□** **□**

Options:
Blank = no options
M = flow modulation plate installed
A = float bracket attached

Cartridge height: 28" and 36" are standard

Housing height: 36" and 44" are standard

Filter diameter (inches)

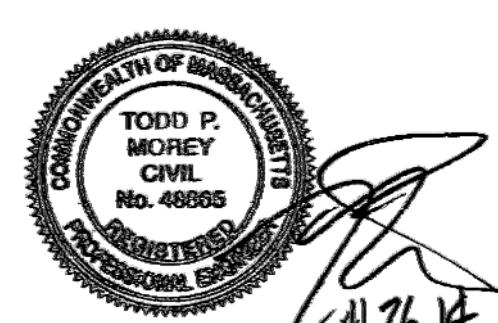


Environ Biol Fish (2008) 82:1–10

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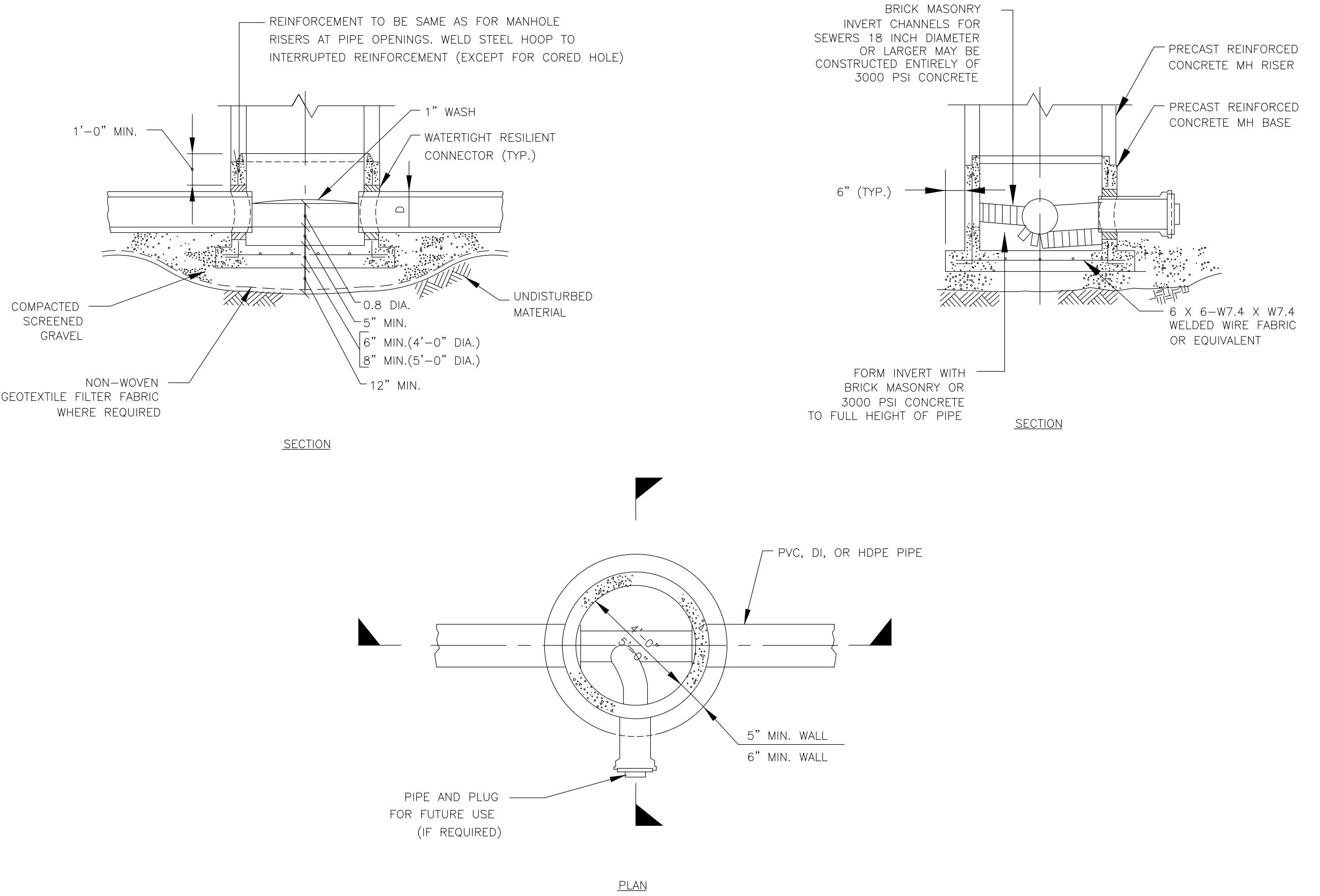
WASTEWATER DETAILS - 1

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

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SEWER MANHOLE BASE DETAILS

NTS

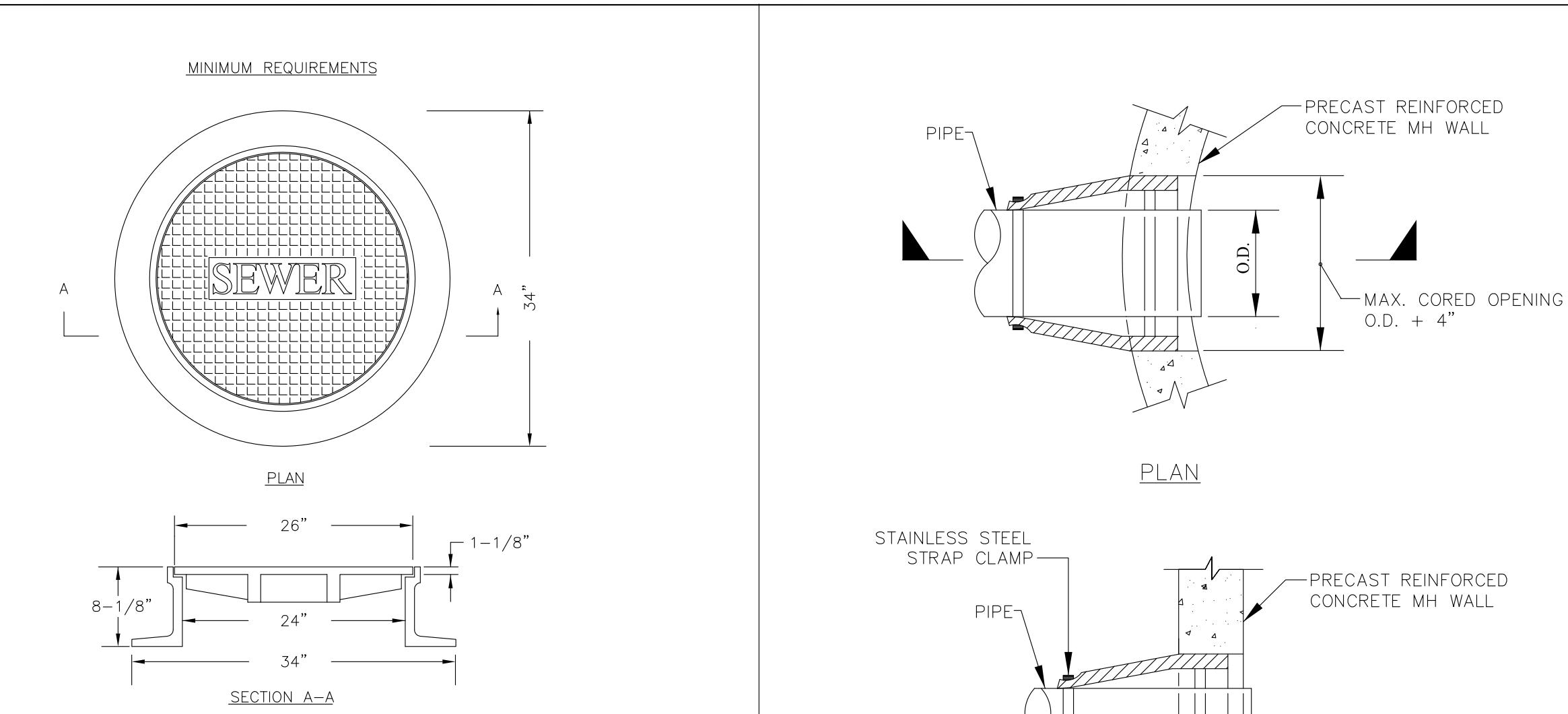
GENERAL NOTES

- PIPE TRENCHES MAY BE EXCAVATED WIDER THAN TRENCH WIDTH W_s (SHEETED) OR W_u (UNSHEETED) ABOVE THE TOP OF PIPE ZONE.
- TRENCHES SHALL NOT BE EXCAVATED BEYOND THE TRENCH WIDTH W_u BELOW THE TOP OF PIPE ZONE.
- SHEETING MUST BE USED IF EXCAVATION AND BACKFILL, BELOW NORMAL DEPTH, IS REQUIRED. SHEETING SHALL BE LEFT IN PLACE AS SPECIFIED.
- ALL ROCK WITHIN 3'-0" HORIZONTALLY OF THE ENDS OF BUILDING CONNECTIONS, BRANCHES OR STUBS AND DOWN TO A HORIZONTAL PLANE 6" BELOW THE BOTTOMS OF SUCH CONNECTIONS, BRANCHES OR STUBS, SHALL BE EXCAVATED.
- WHERE INDICATED ON THE DRAWINGS, GEOTEXTILE FILTER FABRIC SHALL BE PROVIDED FOR SEWER AND BUILDING CONNECTION FOUNDATIONS. OVERLAP FABRIC ABOVE THE PIPE CROWN AND PROVIDE A MINIMUM OF 12" FABRIC OVERLAP.
- CONTRACTOR RESPONSIBLE FOR DESIGNING AND MAINTAINING PROPER TRENCH PROTECTION AND OBTAINING ALL REQUIRED PERMITS.

TRENCH WIDTH W_s OR W_u	
NOMINAL PIPE DIAMETER D	DEPTH OF PIPE INVERT BELOW GROUND SURFACE
0 TO 12'	12' TO 20'
24" AND SMALLER	5'-0"
OVER 24"	$D + 3'-0"$
	$D + 5'-0"$

TRENCHING NOTES

NTS

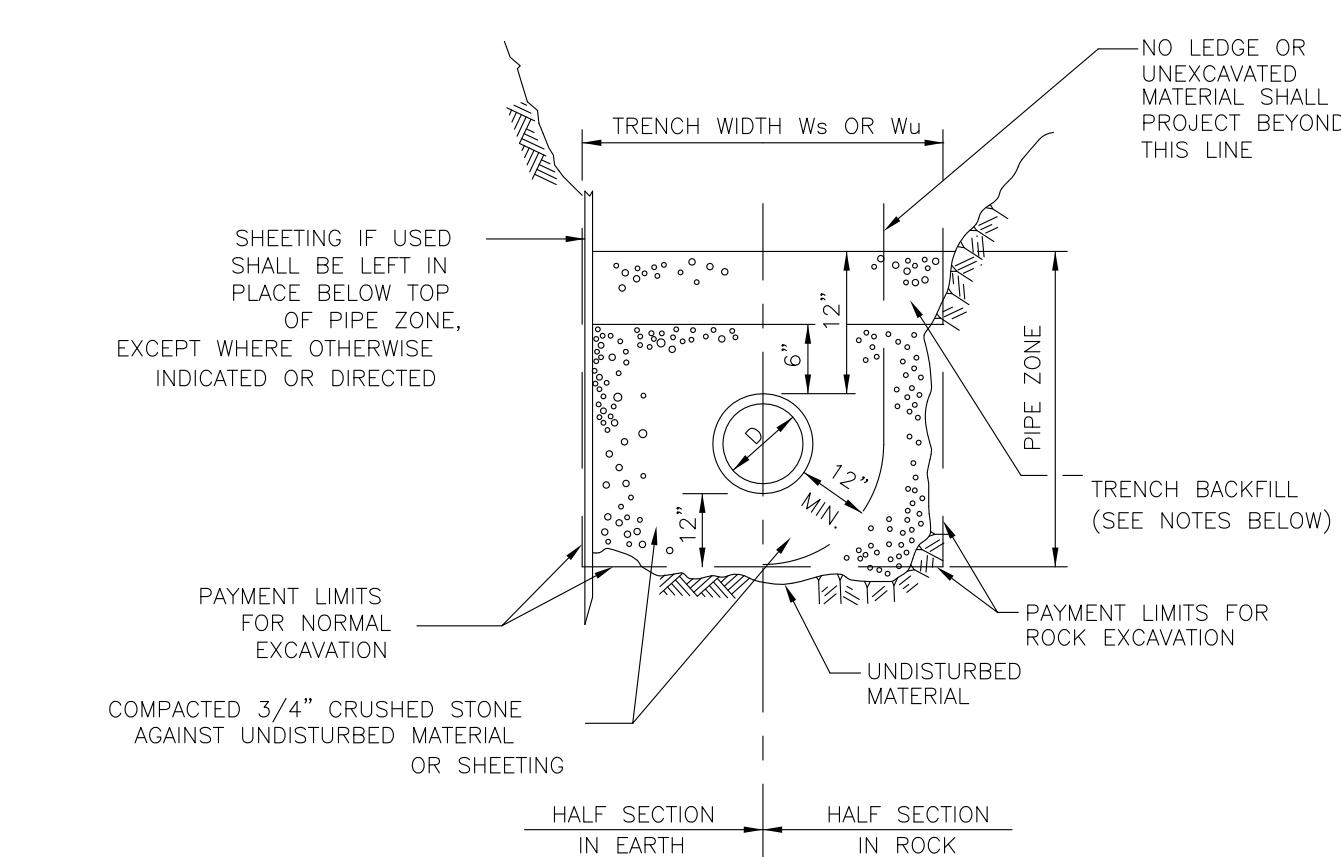


MANHOLE FRAME AND COVER

NTS

MANHOLE CONNECTION DETAIL

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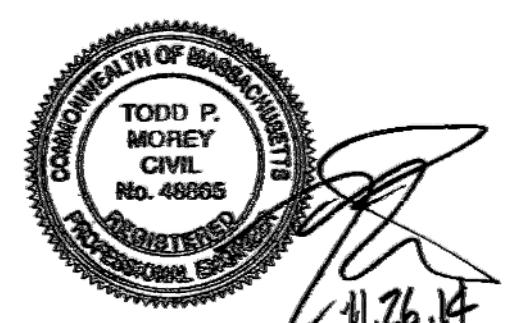


NOTES:

- TRENCH BACKFILL TO BE USED WITHIN THE RIGHT-OF-WAY SHALL CONSIST OF EITHER GRAVEL BORROW MEETING MASSDOT SPECIFICATION M1.03.0, TYPE "B" OR PROCESSED GRAVEL BORROW FOR SUBBASE MEETING MASSDOT SPECIFICATION M1.03.1.
- WHERE THE REMOVAL OF 100 SQUARE FEET OR LESS OF ASPHALT IS REQUIRED WITHIN THE RIGHT-OF-WAY, THEN THE TRENCH BACKFILL MATERIAL SHALL CONSIST OF CONTROLLED DENSITY FILL MEETING MASSDOT SPECIFICATION M4.08.0, TYPE "1E" OR "2E".
- TRENCH BACKFILL MATERIAL TO BE USED OUTSIDE OF THE RIGHT-OF-WAY MAY CONSIST OF MATERIAL GENERATED DURING EXCAVATIONS PROVIDED ALL STONES GREATER THAN 4" ARE REMOVED PRIOR TO PLACEMENT AND COMPACTION.
- GRANULAR TRENCH BACKFILL MATERIAL USED WITHIN THE RIGHT-OF-WAY SHALL BE PLACED IN MAXIMUM 6" LISTS AND MECHANICALLY COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AND TO 90% ELSEWHERE AS DETERMINED BY ASTM D 1557.
- CONTRACTOR RESPONSIBLE FOR DESIGNING AND MAINTAINING PROPER TRENCH PROTECTION AND OBTAINING ALL REQUIRED PERMITS.

SEWER TRENCH SECTION PIPES LESS THAN 18" DIA.

NTS



WASTEWATER DETAILS - 2

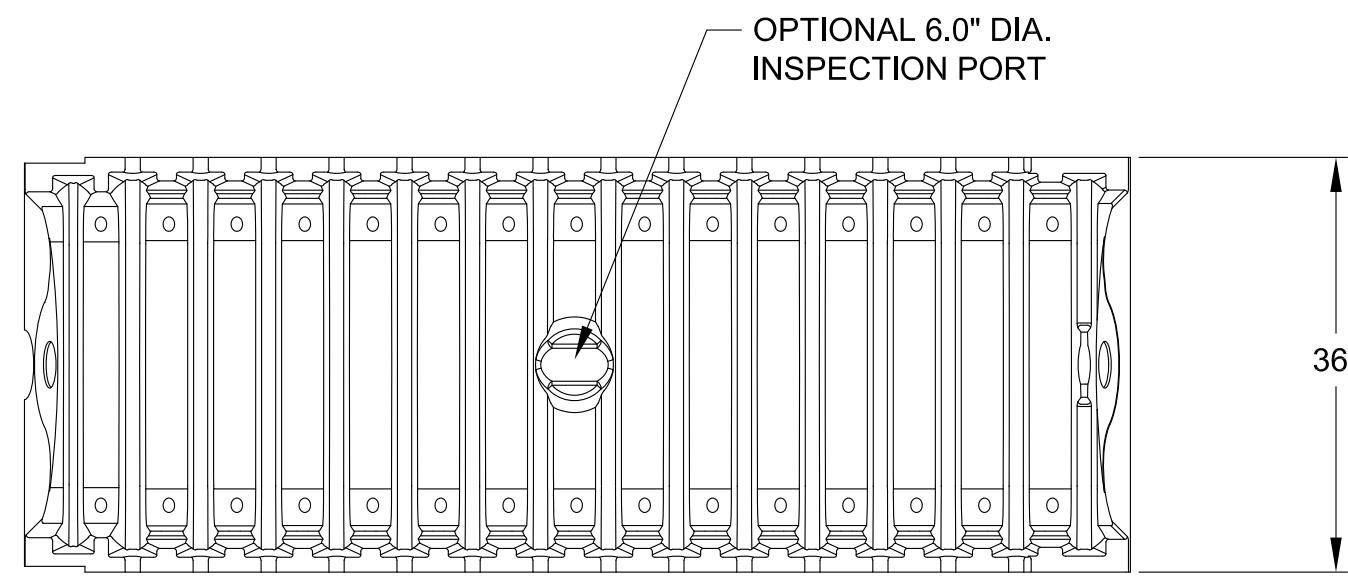
PATTON HOMESTEAD
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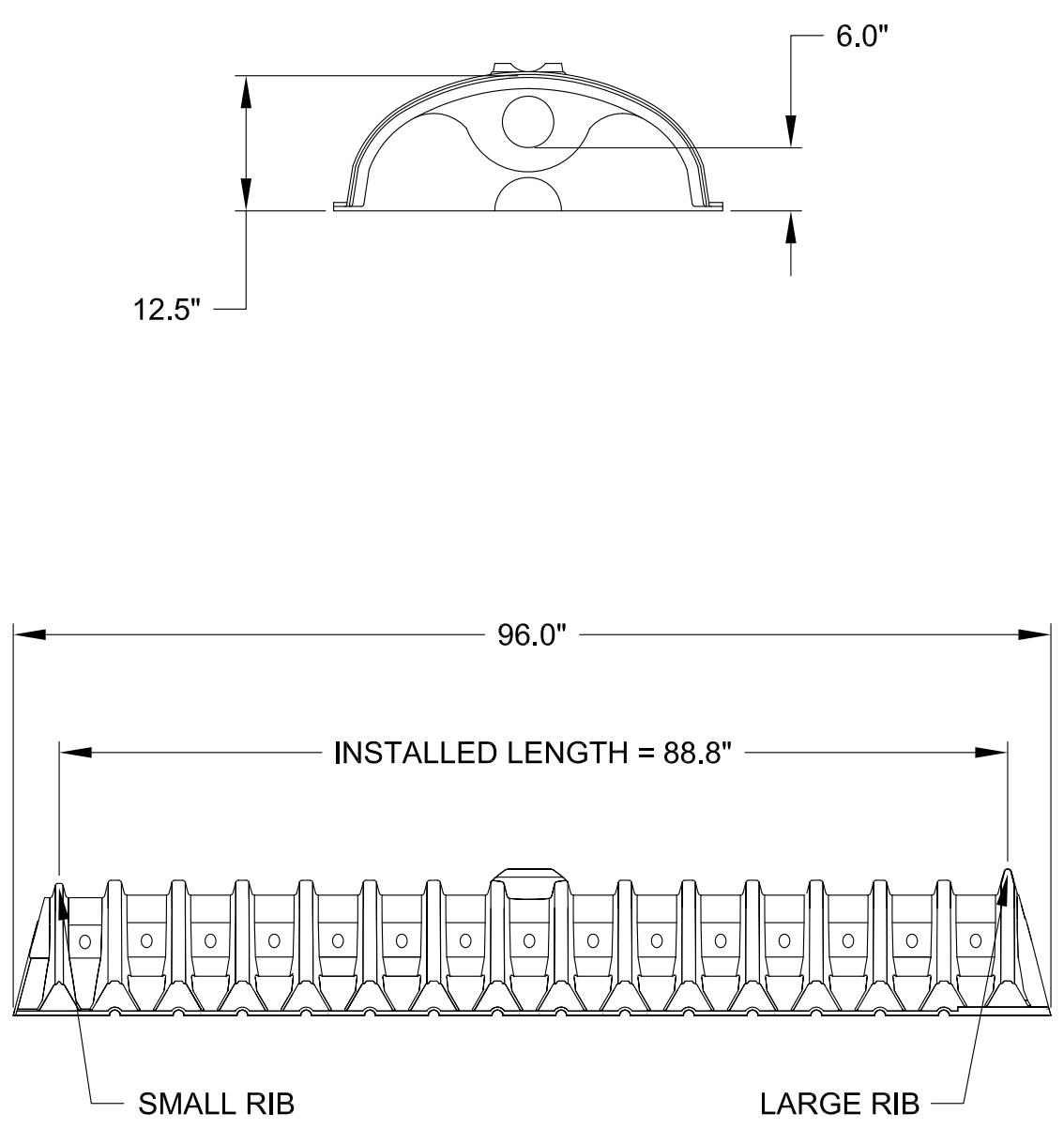
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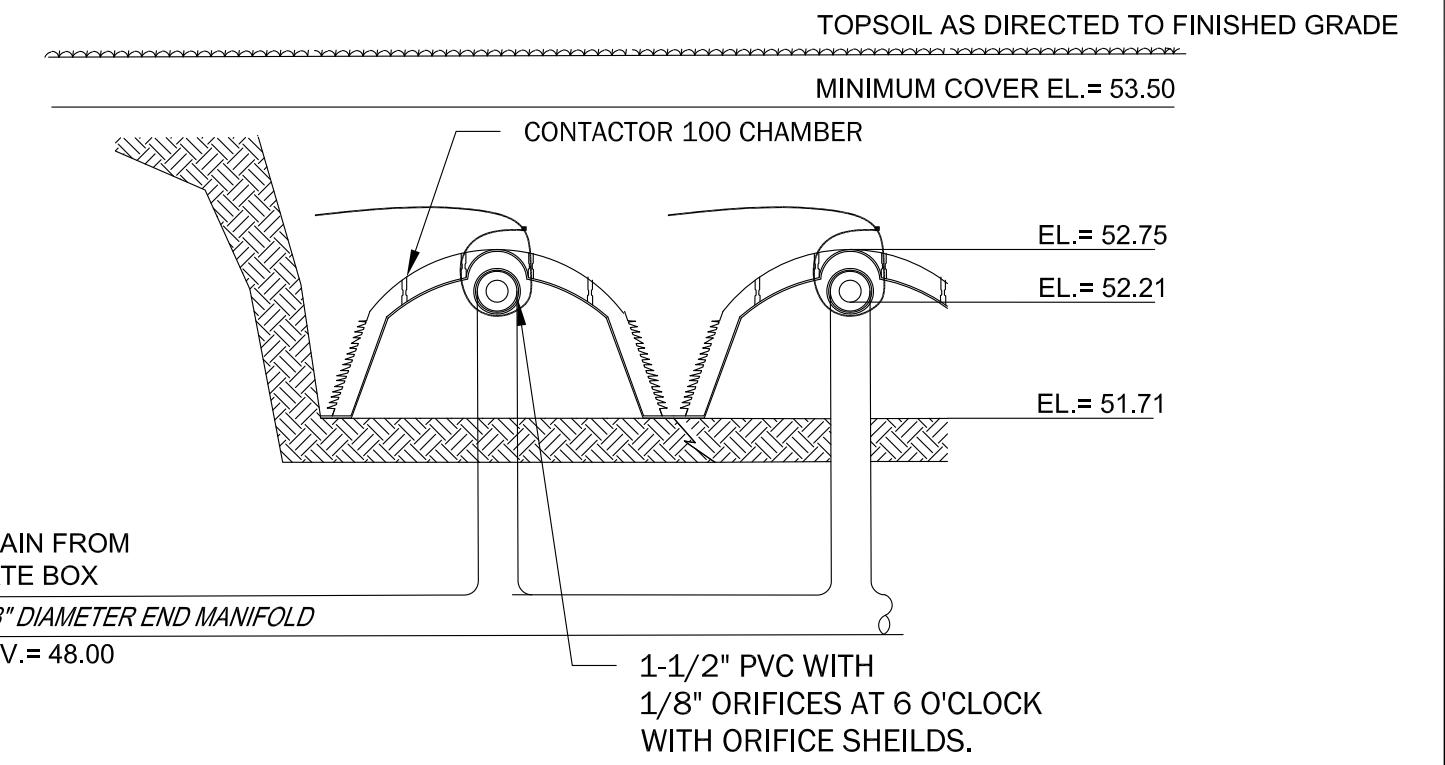
TYPICAL PLAN VIEW

NOT TO SCALE



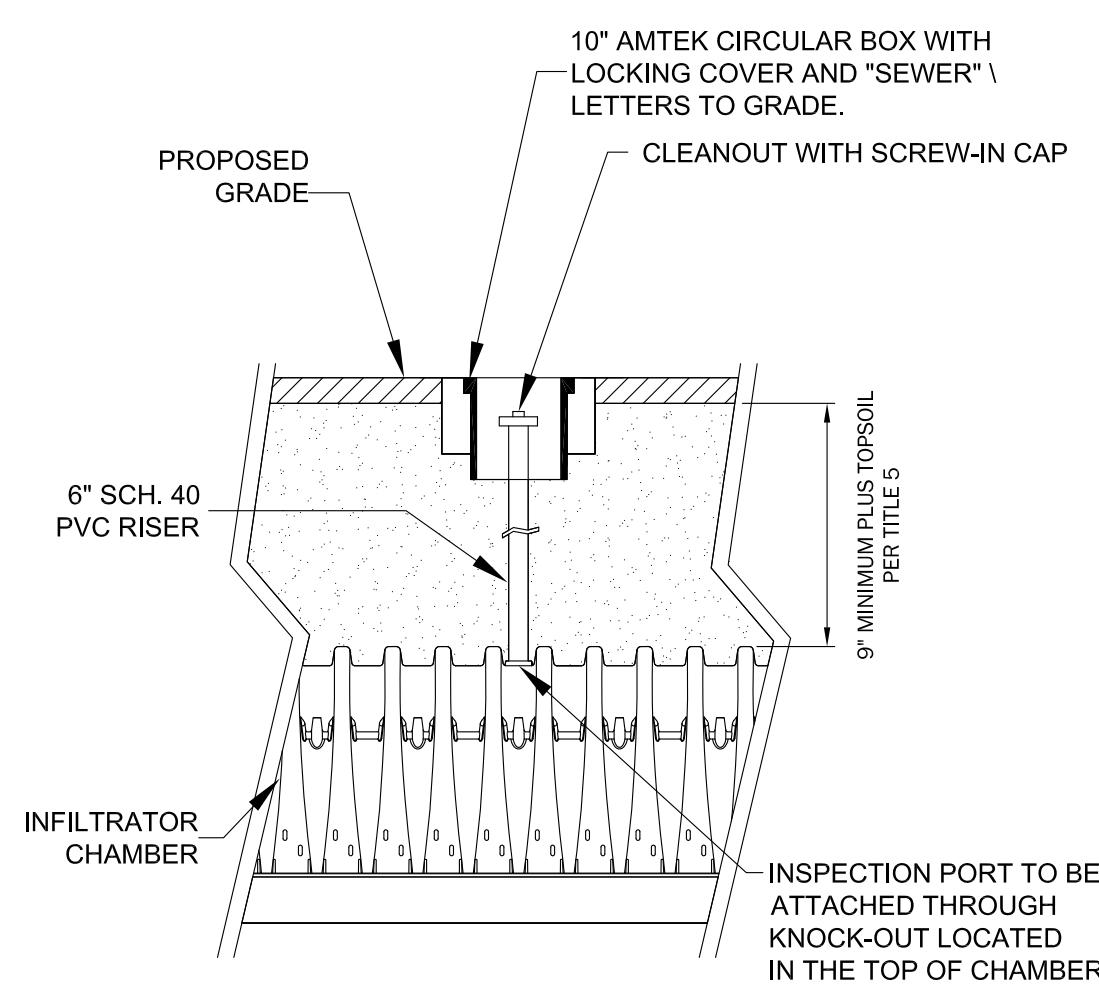
TYPICAL SIDE ELEVATION AND CROSS SECTION

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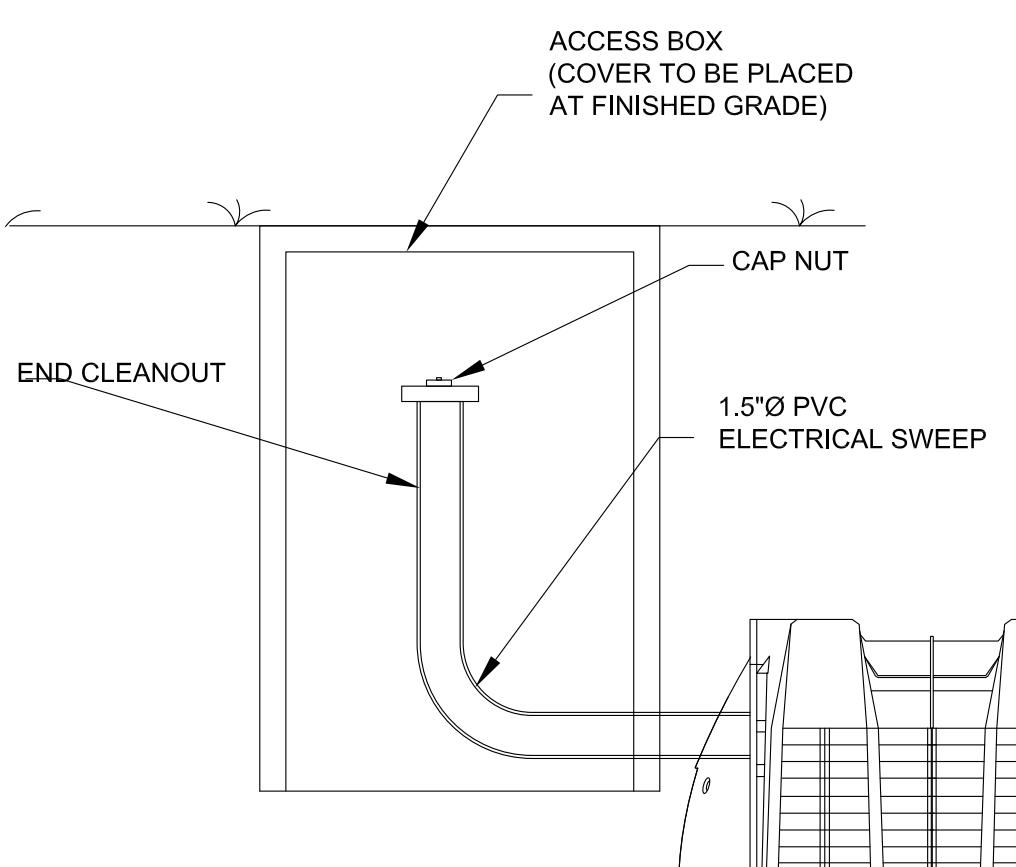
TYPICAL END CROSS SECTION

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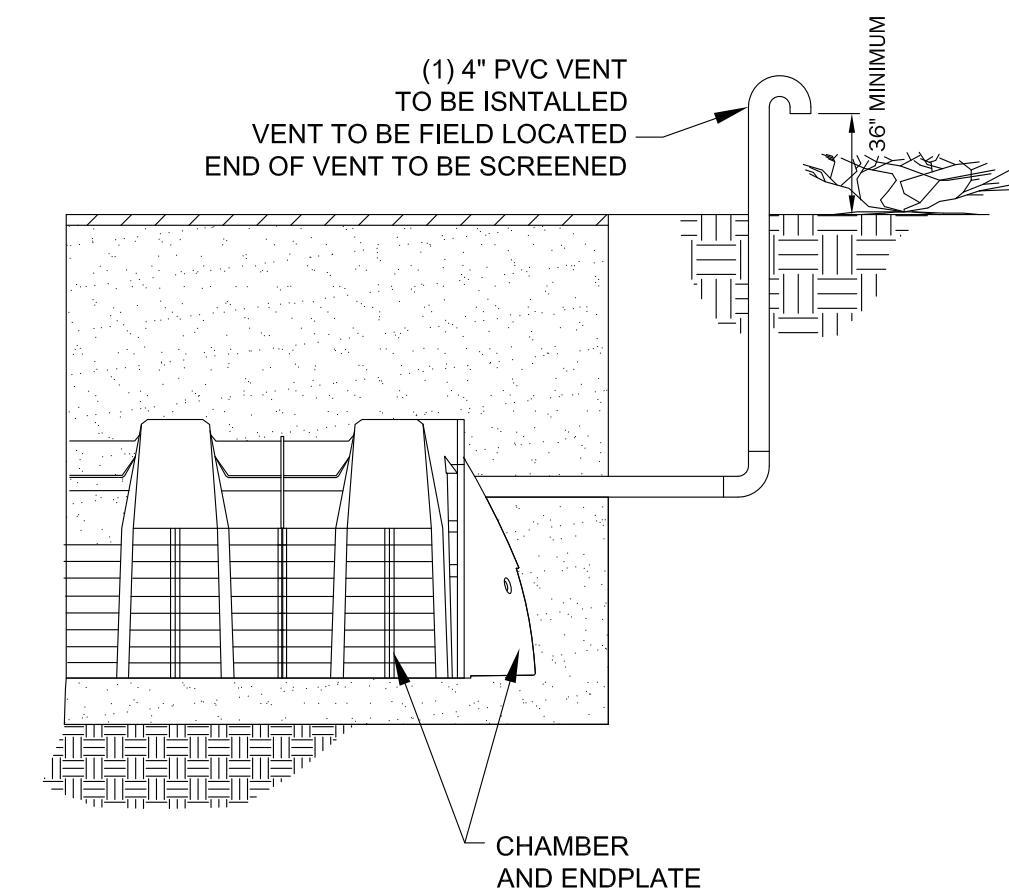
INSPECTION PORT DETAIL

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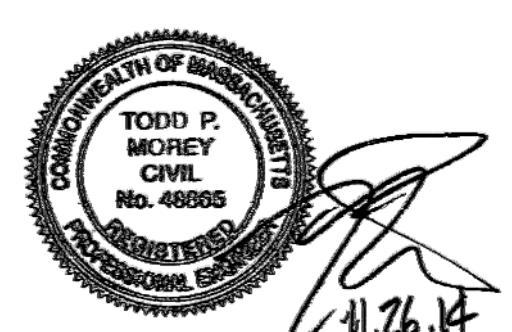
ACCESS BOX AND END CLEANOUT DETAIL

NOT TO SCALE



FIELD VENT DETAIL (TYP.)

NOT TO SCALE



CULTECH DETAILS

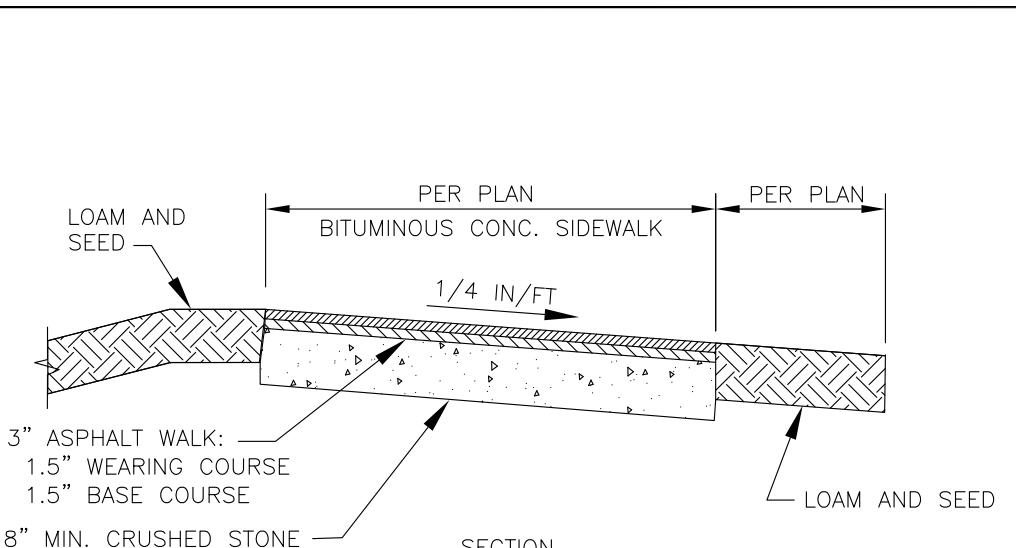
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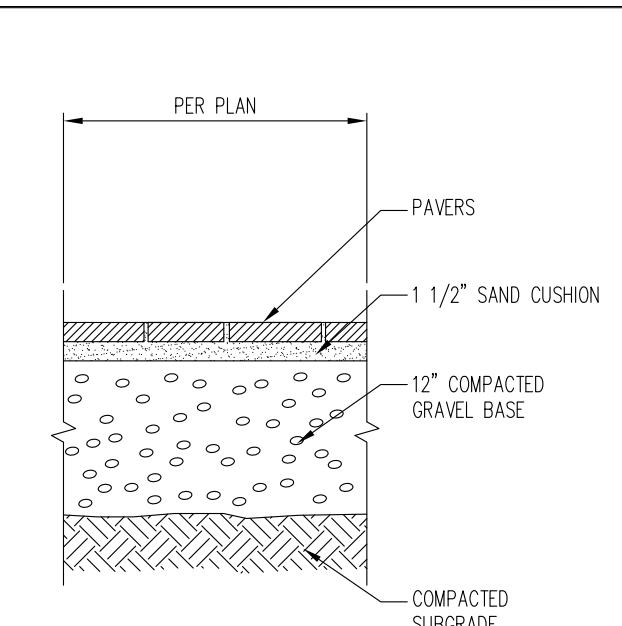
BEALS ASSOCIATES INC.

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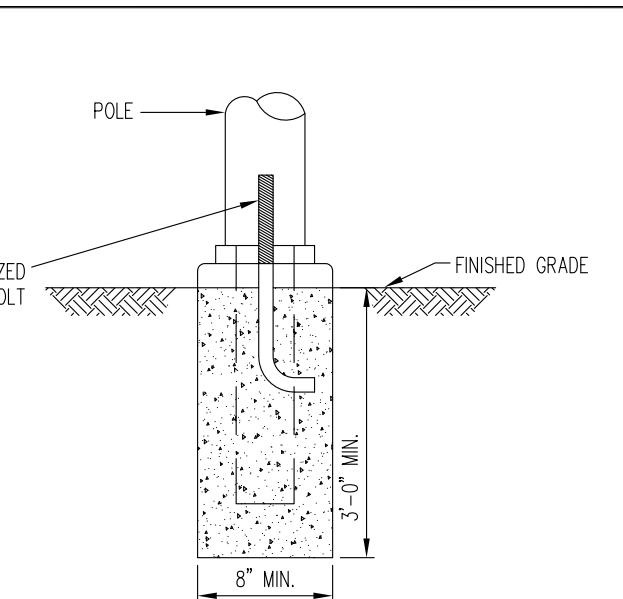
BITUMINOUS SIDEWALK

N.T.S.



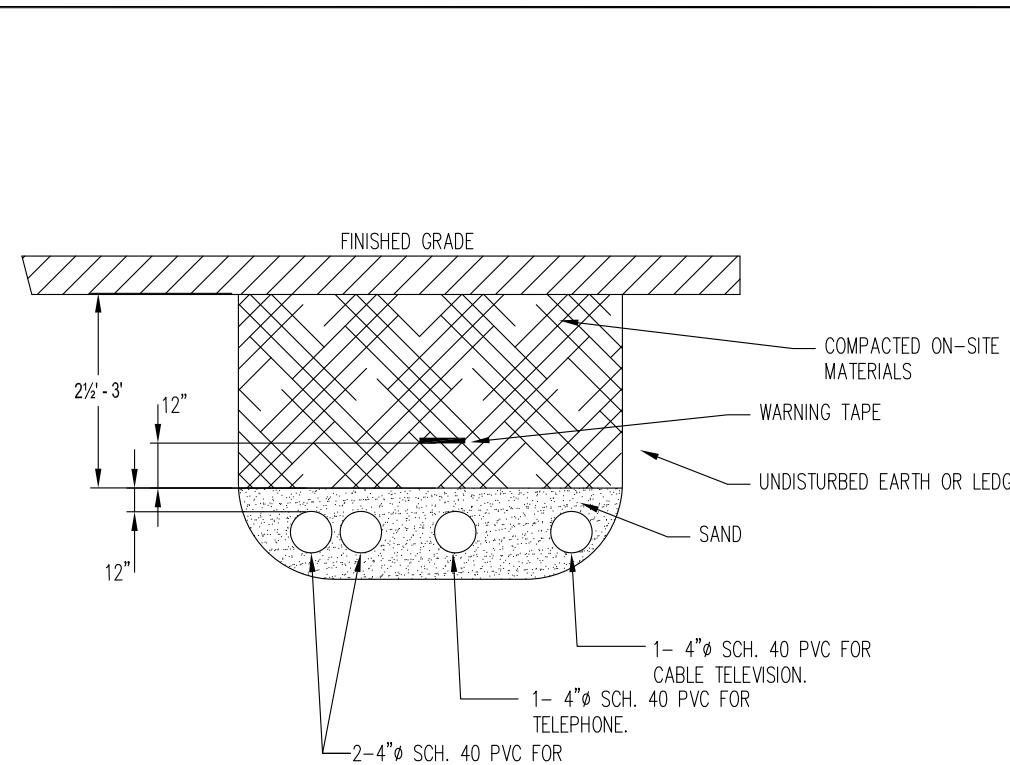
**CONCRETE PAVERS
WALK & DRIVEWAY**

N.T.S.



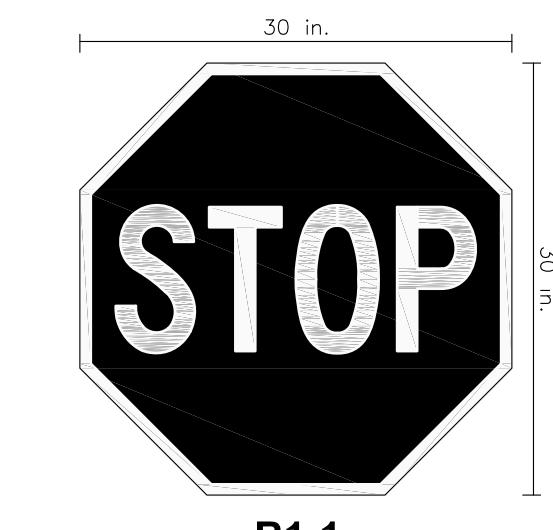
TYPICAL STREET SIGN BASE

N.T.S.



**ELECTRIC, TELEPHONE
& CABLE TRENCH**

N.T.S.

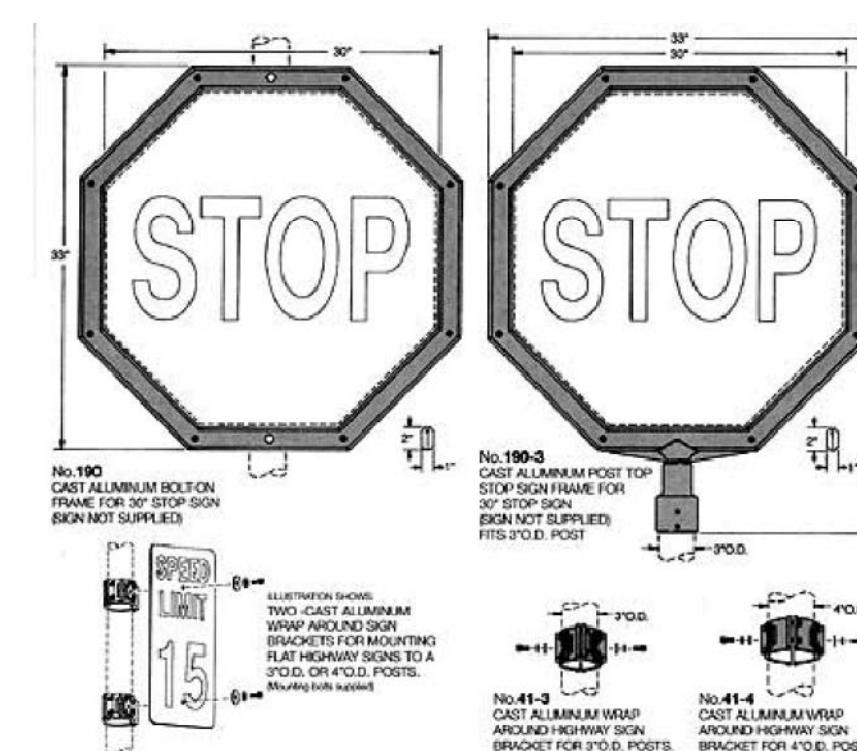
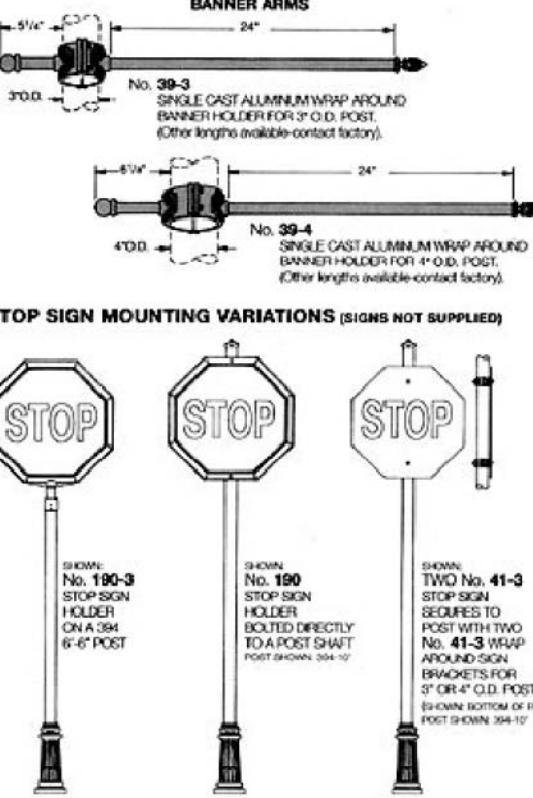


R1-1

SIZE ENGLISH (METRIC)	CONVENTIONAL ROAD 30 X 30 (750 X 750)	MINIMUM 24 X 24 (600 X 600)
-----------------------------	--	-----------------------------------

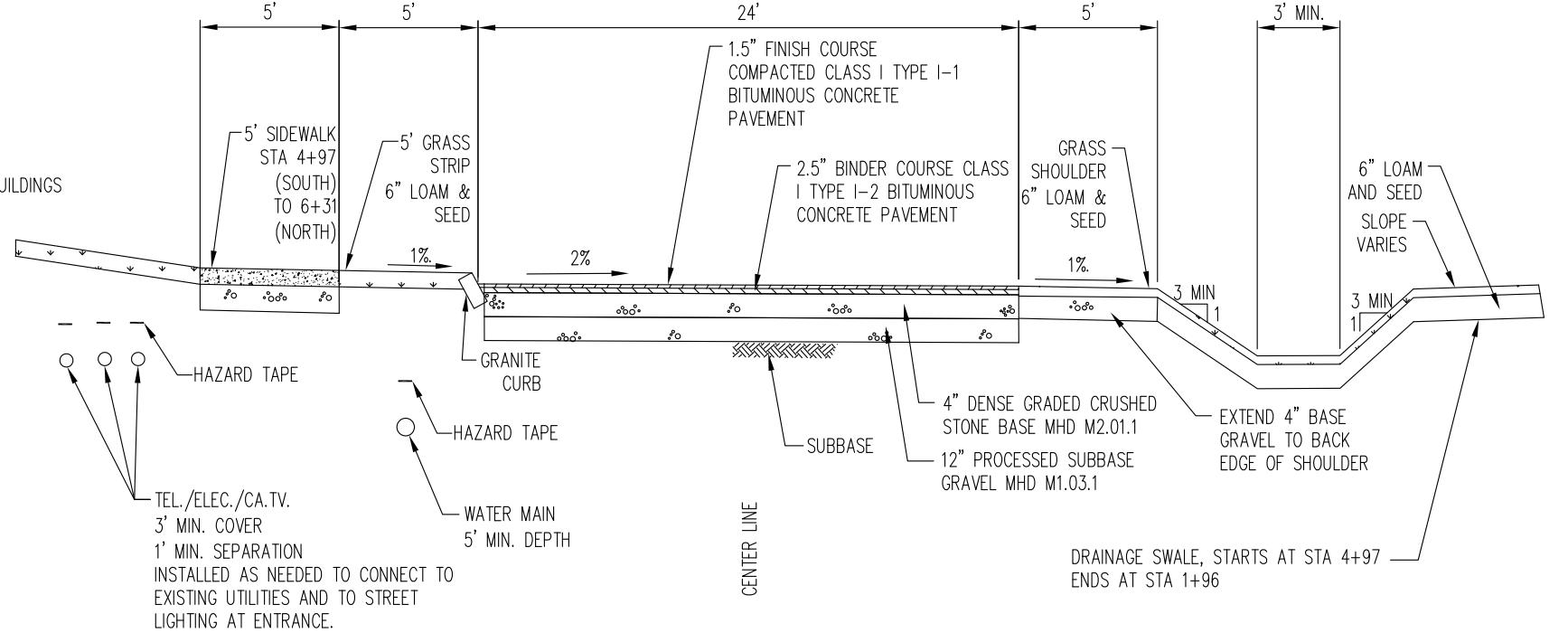
SIGN DETAIL FOR STOP SIGN

NOT TO SCALE



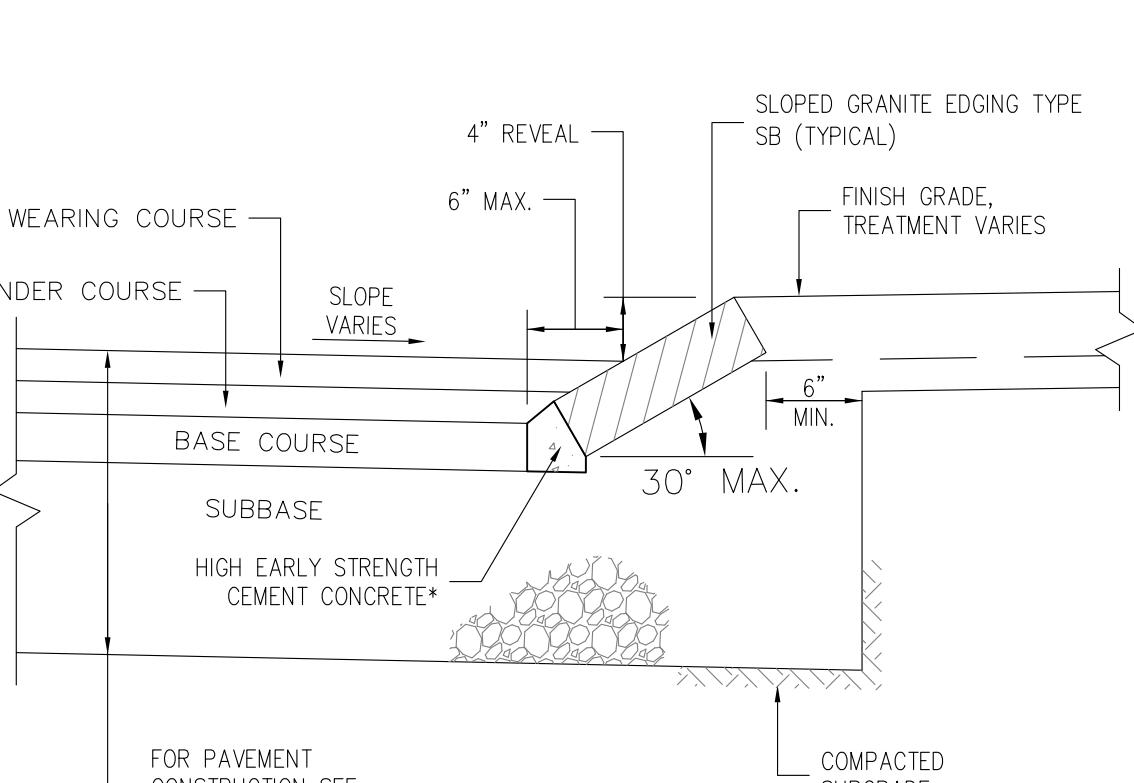
TYPICAL STREET SIGN

N.T.S.



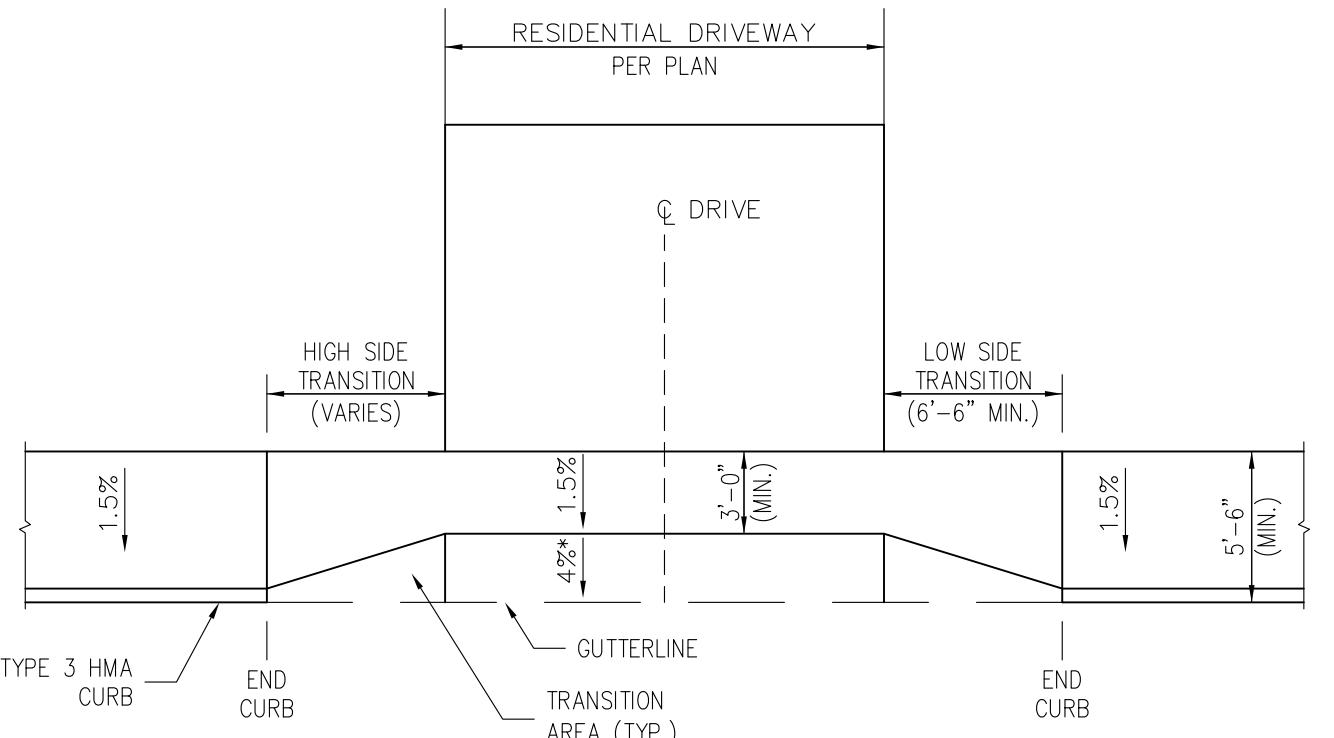
TYPICAL ROADWAY SECTION

N.T.S.



SLOPED GRANITE CURB

N.T.S.

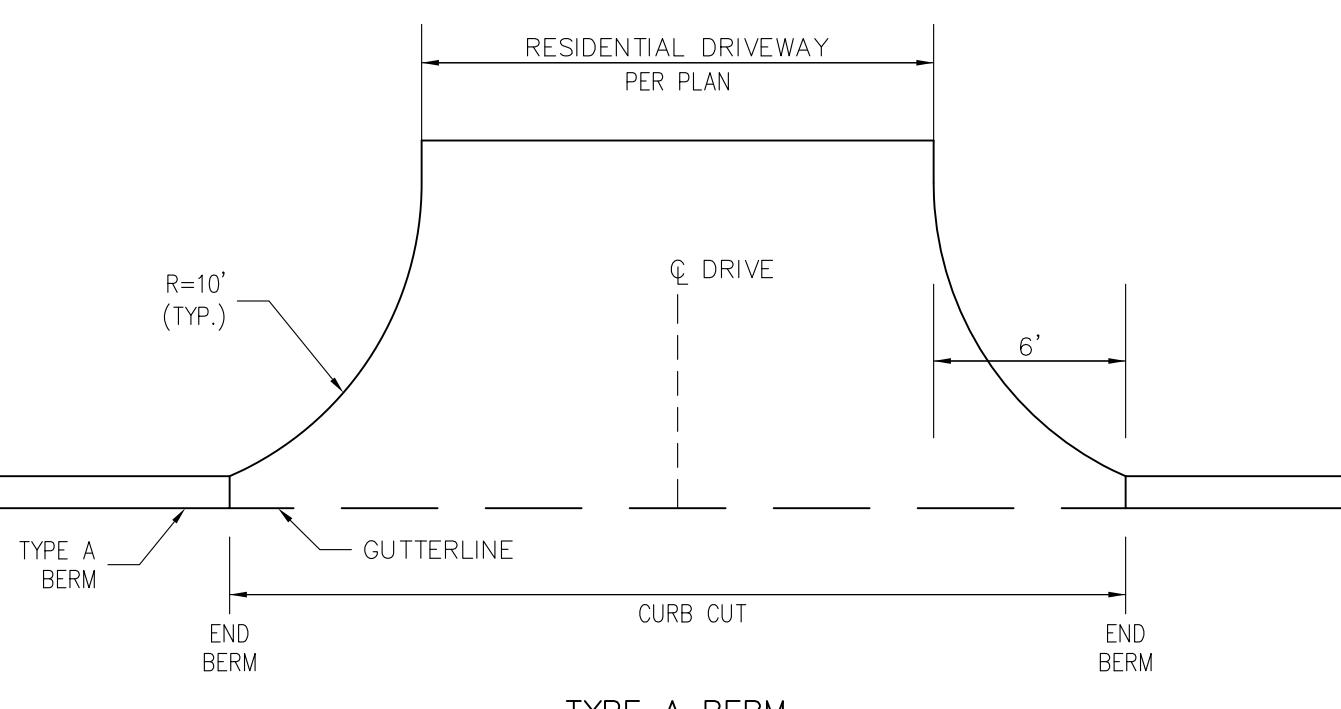


DRIVEWAY APRON CONSTRUCTION

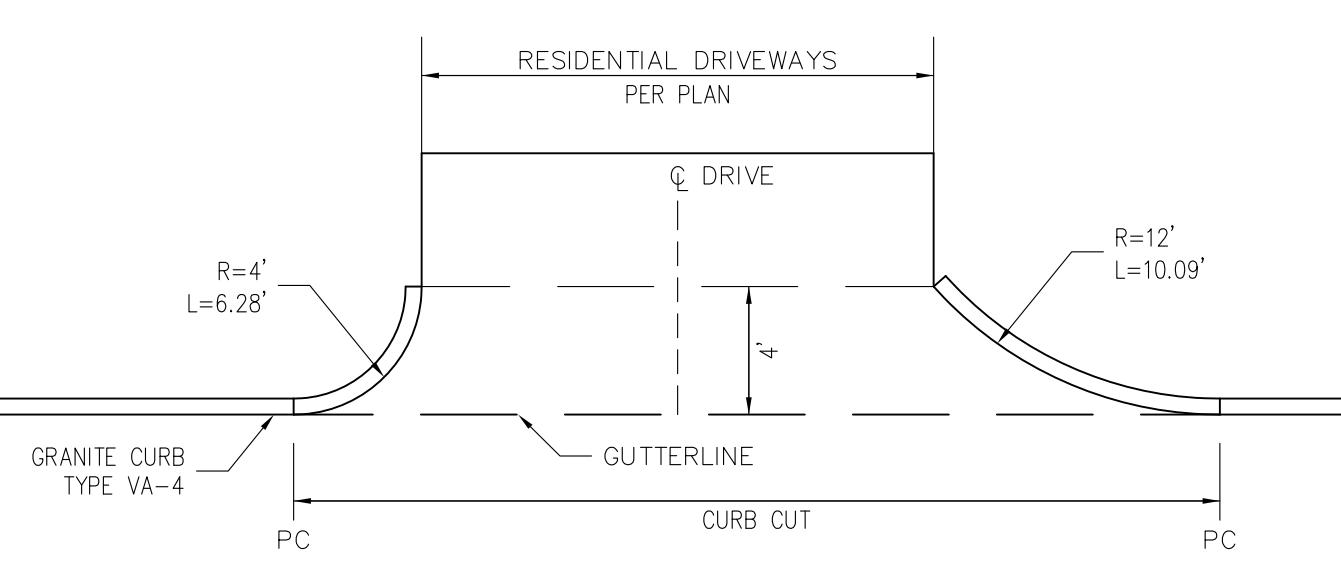
SURFACE: 4" HOT MIX ASPHALT (2" TOP COURSE MATERIAL OVER 2" BINDER COURSE MATERIAL)
SUBBASE: 8" GRAVEL BORROW (TYPE "B")

**BITUMINOUS CONCRETE SIDEWALK
THROUGH DRIVEWAY**

N.T.S.

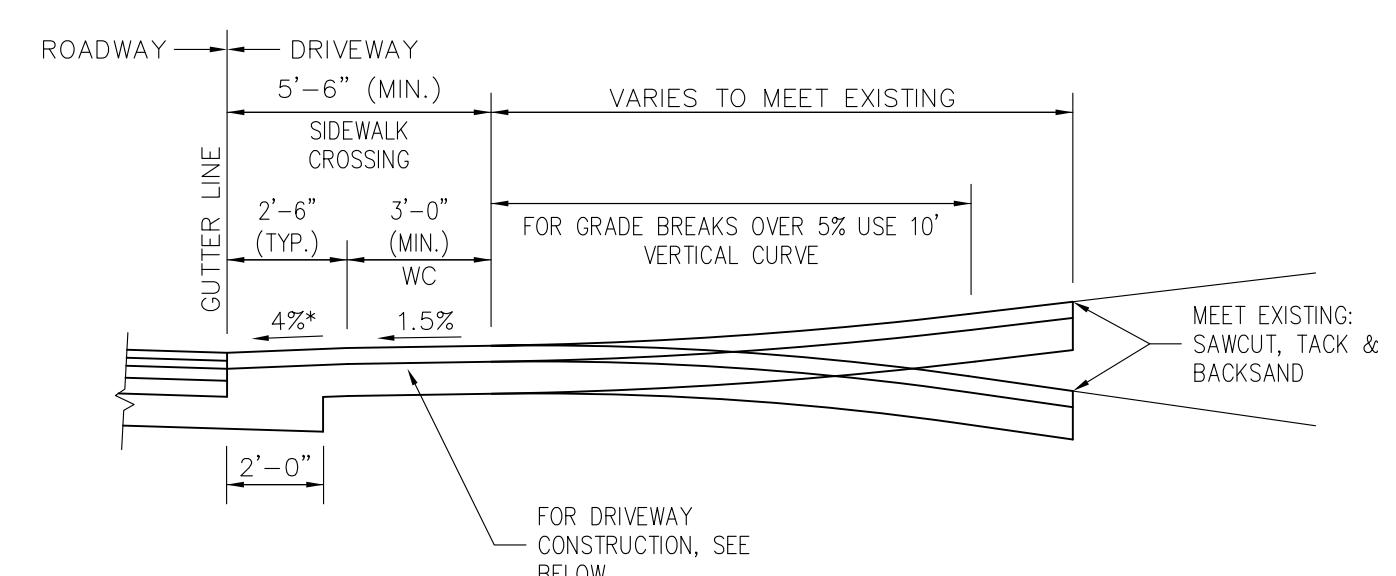


TYPE A BERM



DRIVEWAY CURB TRANSITION

N.T.S.

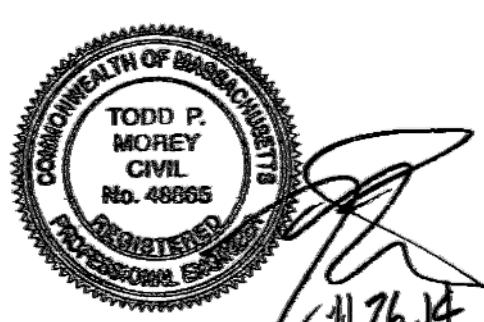


DRIVEWAY APRON CONSTRUCTION

SURFACE: 4" HOT MIX ASPHALT (2" TOP COURSE MATERIAL OVER 2" BINDER COURSE MATERIAL)
SUBBASE: 8" GRAVEL BORROW (TYPE "B")

FULL DEPTH DRIVEWAY APRON SECTION VIEW

N.T.S.



SITE DETAILS

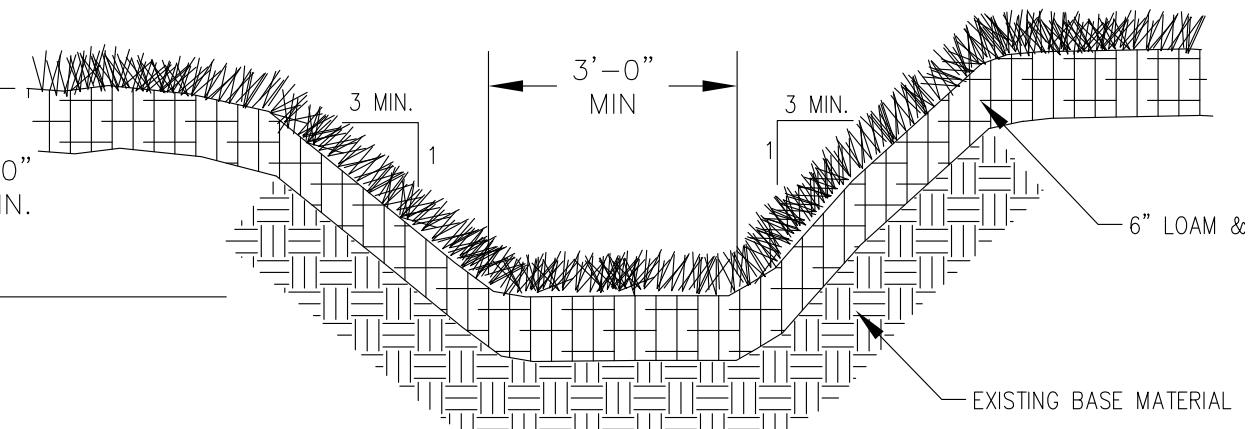
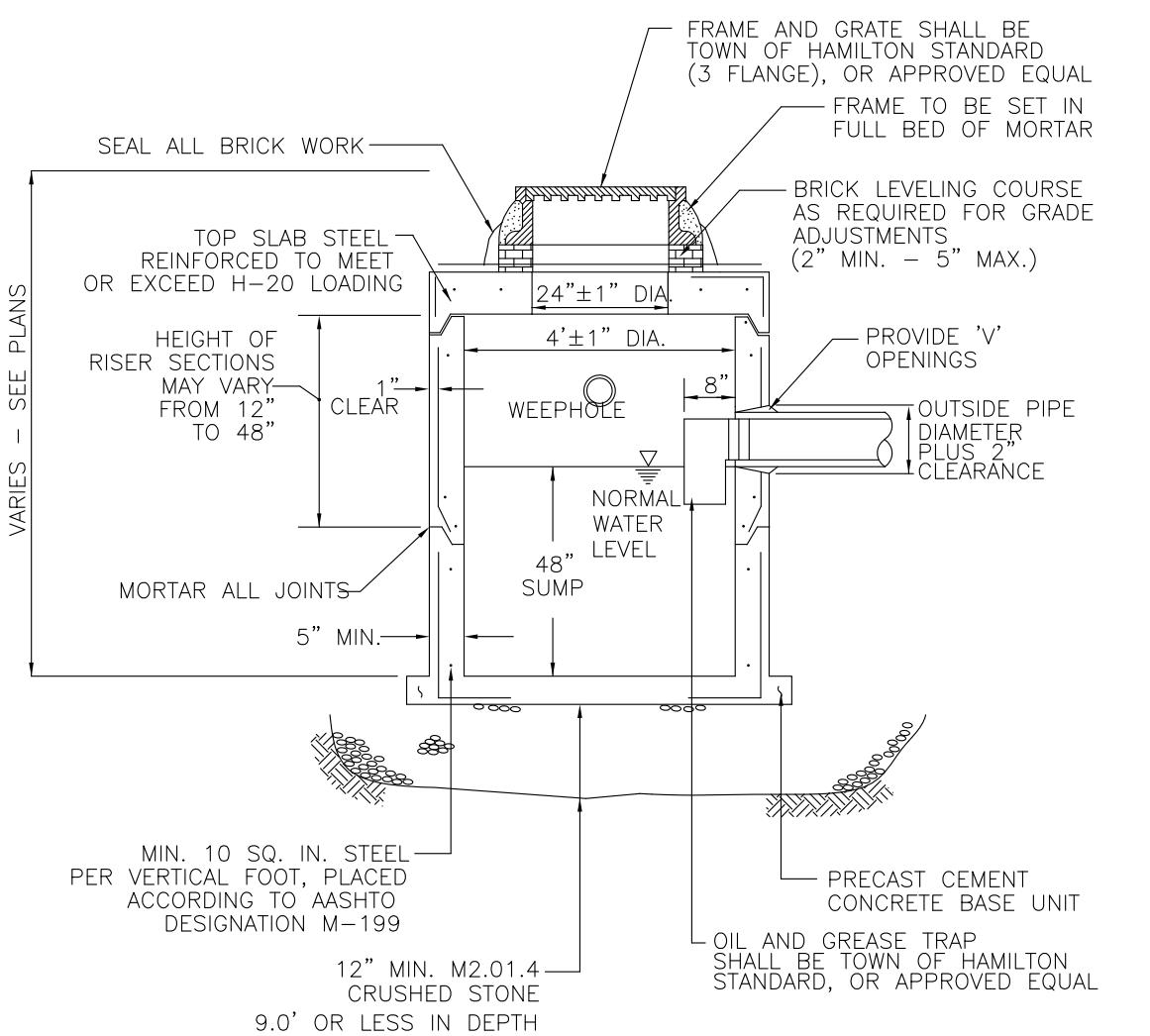
**PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS**

PROJECT C-840	DESIGN MAW	SHEET C-700
DATE NOVEMBER 26, 2014	CHECKED TPM	
SCALE AS NOTED	REVISED	

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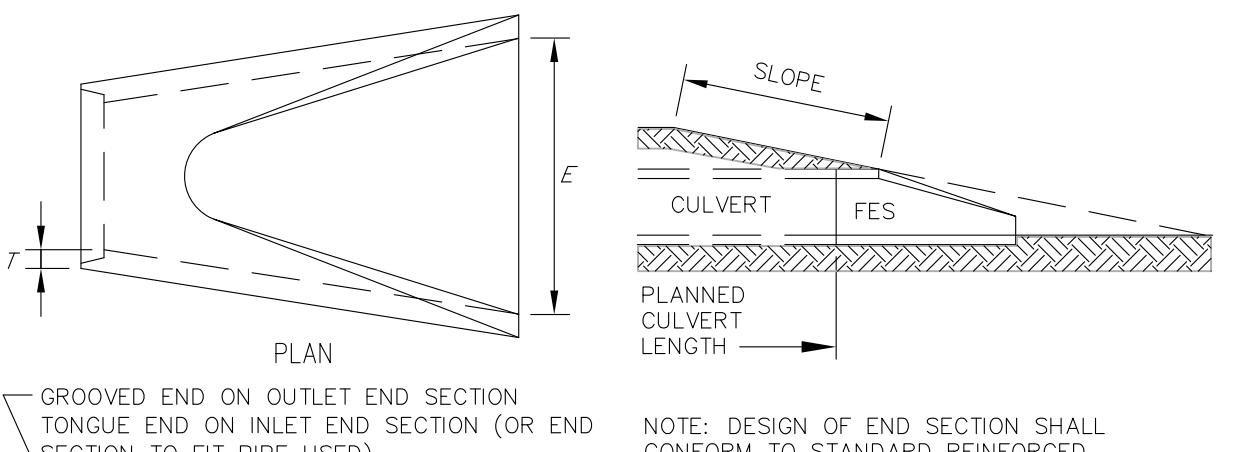
PREPARED FOR:
C.P. BERRY RESIDENCES, LLC
460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983

BEALS ASSOCIATES INC.
2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190



TYPICAL SWALE
N.T.S.

STANDARD CATCH BASIN DETAIL
N.T.S.



GROOVED END ON OUTLET END SECTION
TONGUE END ON INLET END SECTION (OR END
SECTION TO FIT PIPE USED)

NOTE: DESIGN OF END SECTION SHALL
CONFORM TO STANDARD REINFORCED
CONCRETE PIPE, AASHTO CLASS III

CULVERT
FES
PLANNED
CULVERT
LENGTH

PIPE DIA.
INCHES
12 3 TO 1 4" 24" 48 7/8" 72 7/8" 24" 2" 1 1/2" 2"

15 3 TO 1 6" 27" 46" 73" 30" 2 1/4" 1 1/2" 2 1/4"

18 3 TO 1 9" 27" 46" 73" 36" 2 1/2" 1 1/2" 2 1/2"

24 3 TO 1 9 1/2" 43 1/2" 30" 73 1/2" 48" 3" 1 1/2" 3"

PIPE DIA.
INCHES
APPROX.
SLOPE
X
TO Y
A B C D E G R T

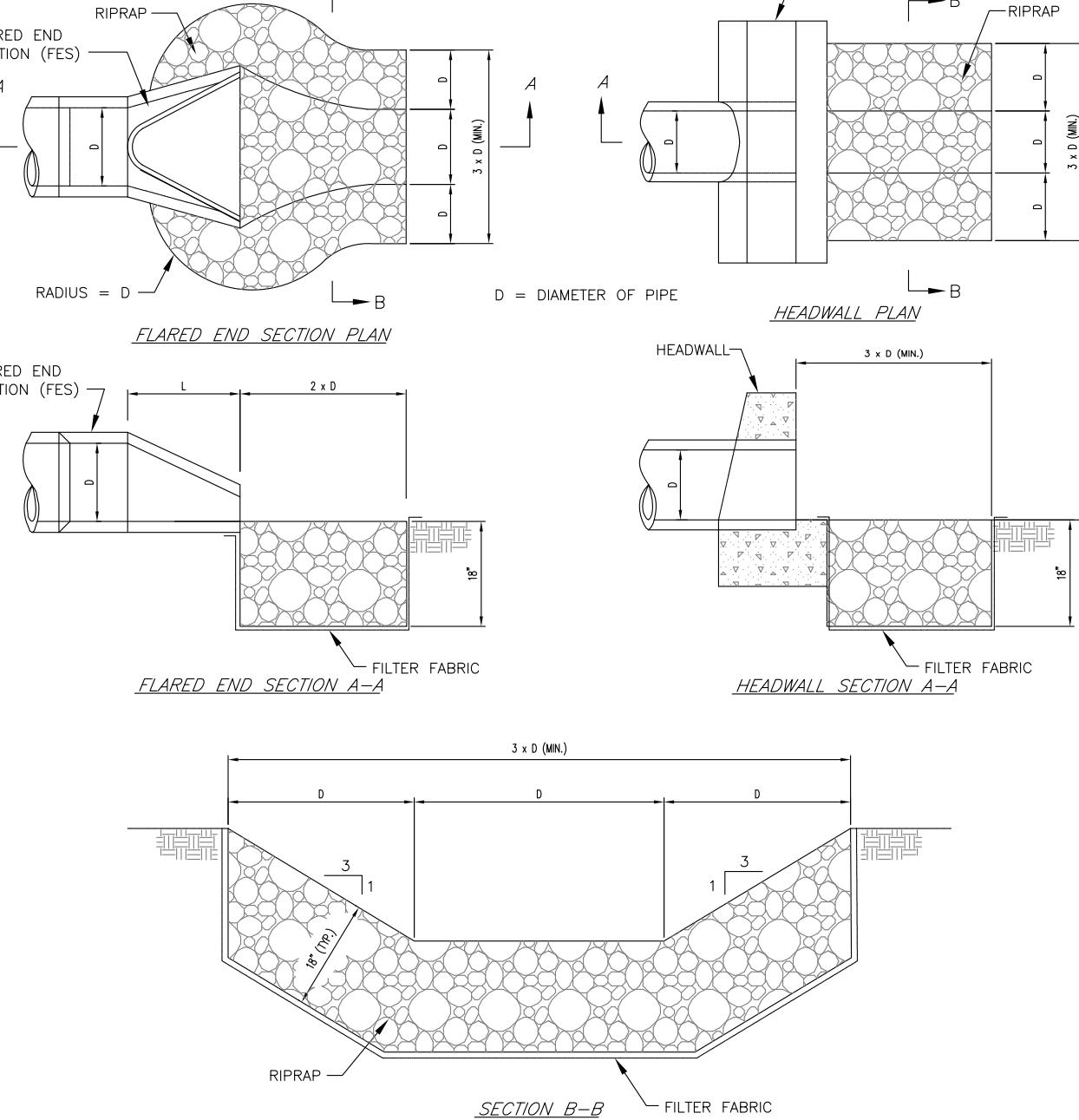
12 3 TO 1 4" 24" 48 7/8" 72 7/8" 24" 2" 1 1/2" 2"

15 3 TO 1 6" 27" 46" 73" 30" 2 1/4" 1 1/2" 2 1/4"

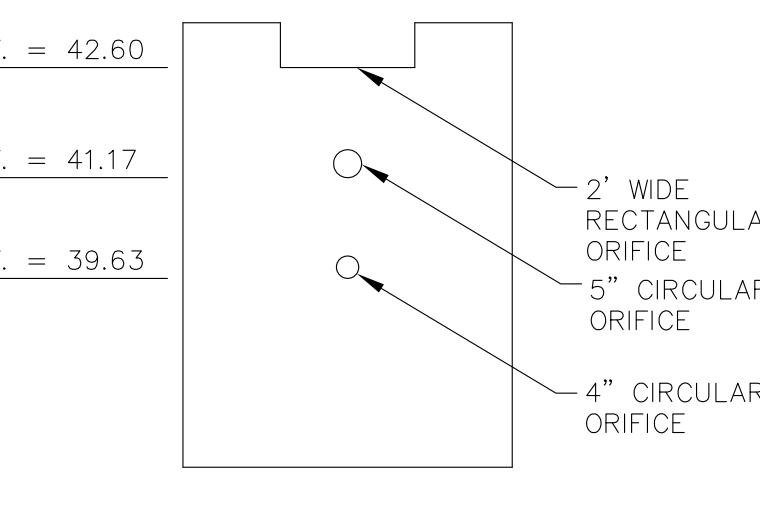
18 3 TO 1 9" 27" 46" 73" 36" 2 1/2" 1 1/2" 2 1/2"

24 3 TO 1 9 1/2" 43 1/2" 30" 73 1/2" 48" 3" 1 1/2" 3"

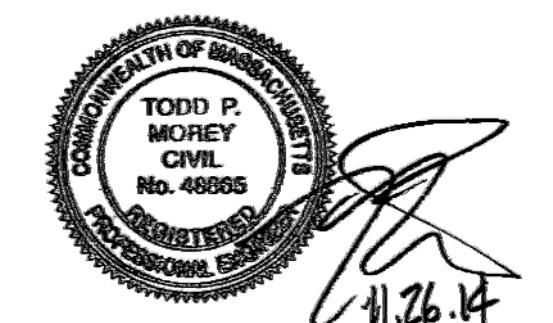
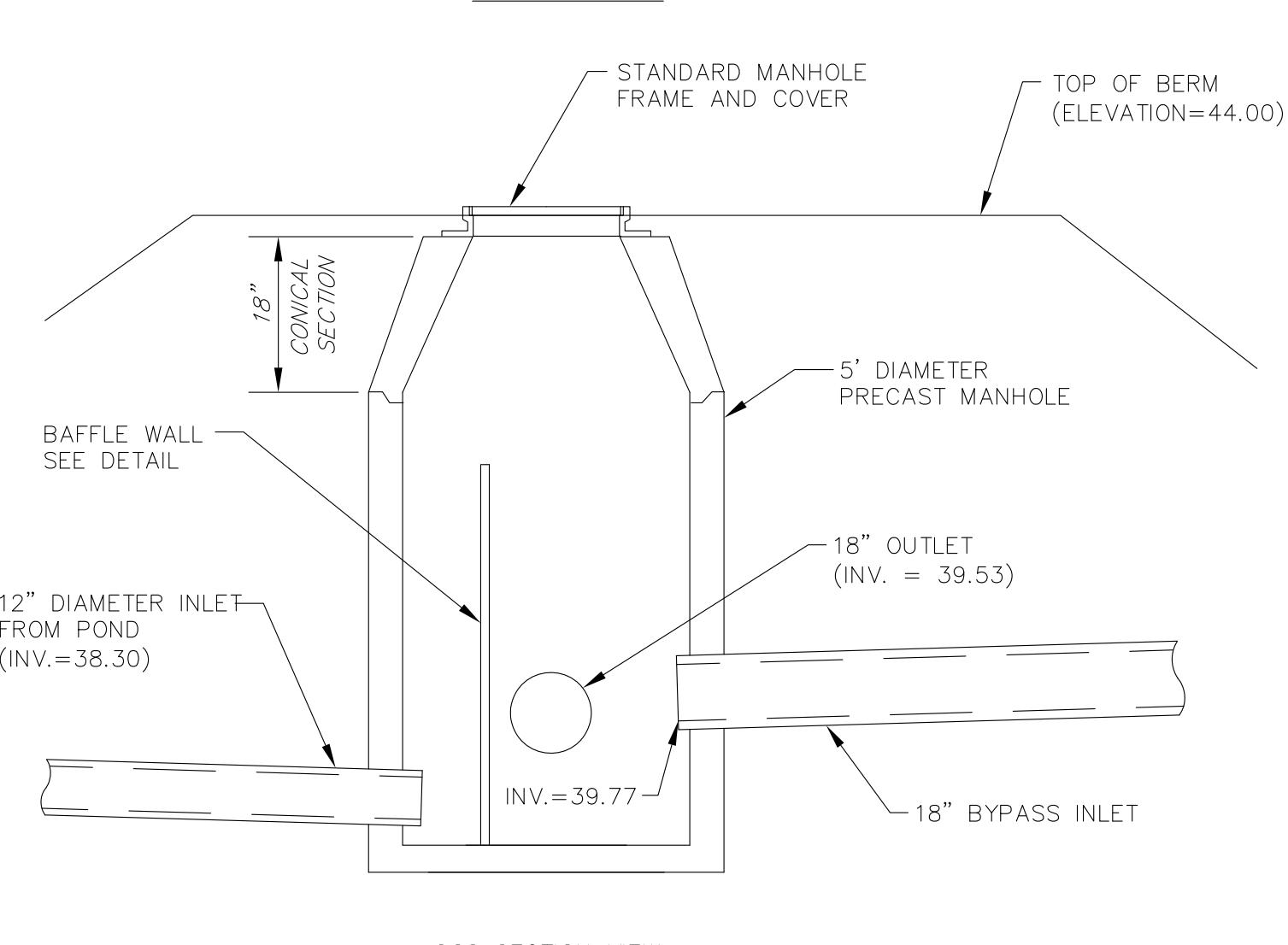
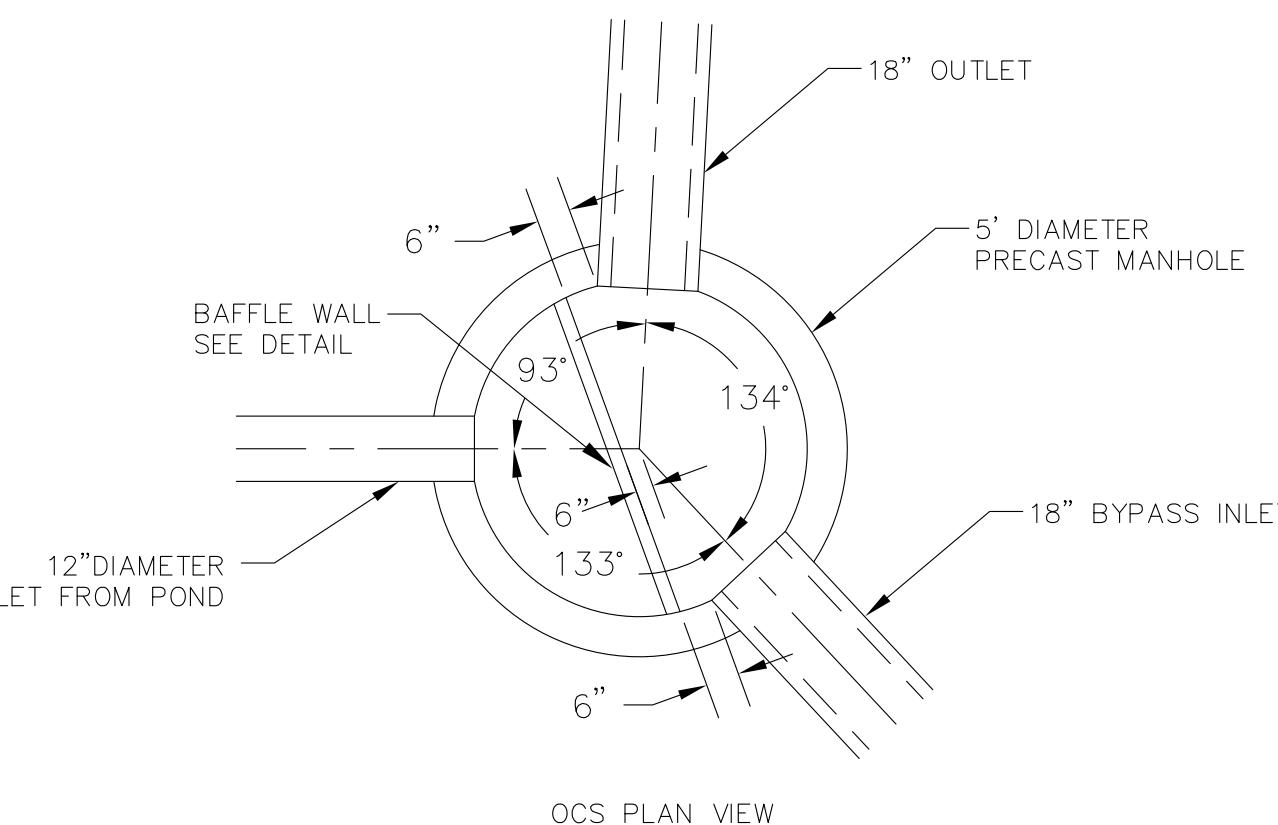
FLARED END SECTION
N.T.S.



EROSION CONTROL AT DISCHARGE
N.T.S.



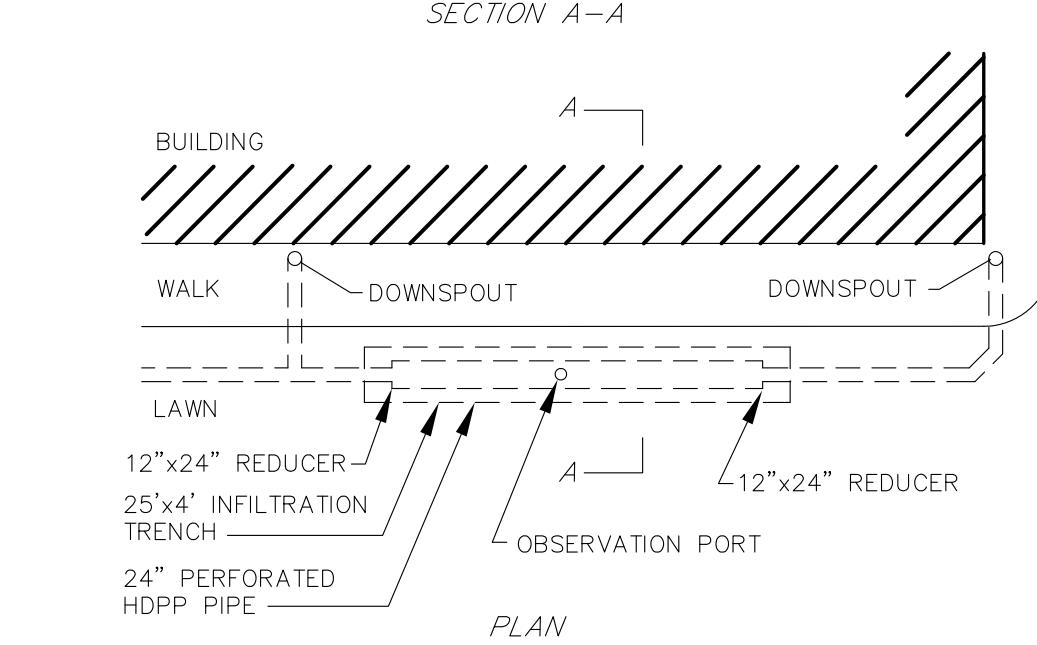
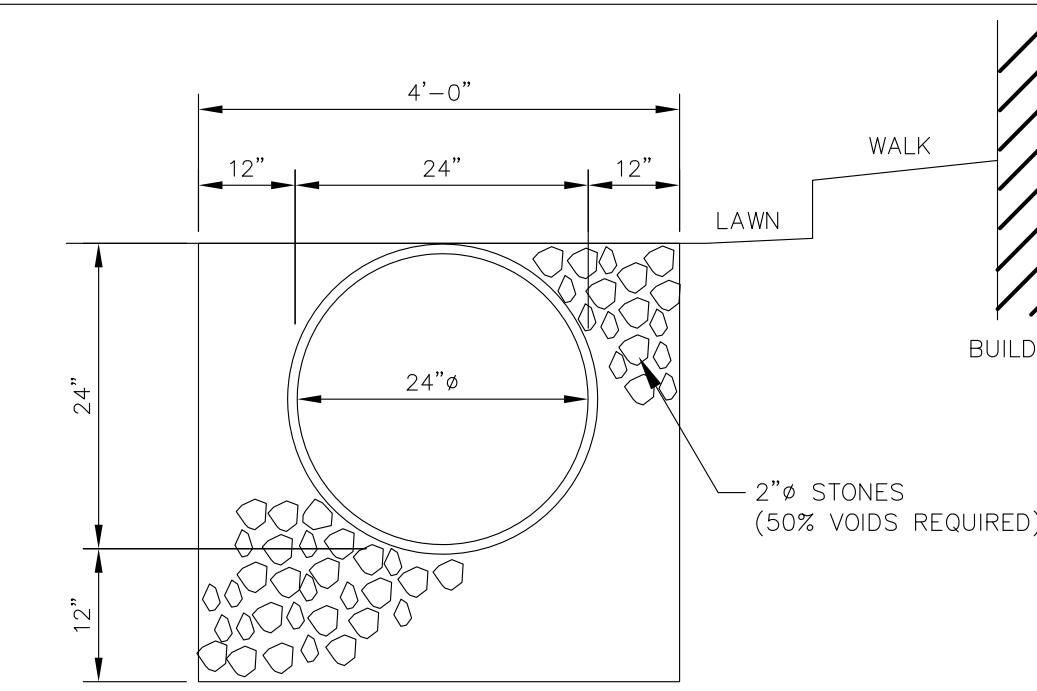
OUTLET CONTROL STRUCTURE
N.T.S.



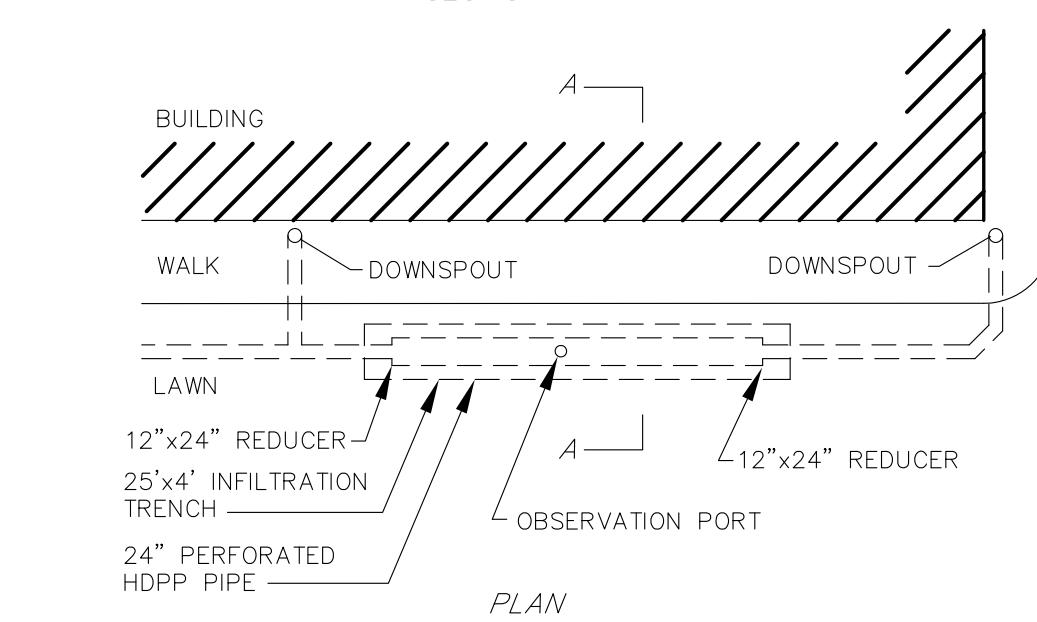
NO. REVISION/ISSUE DATE

DRAINAGE DETAILS

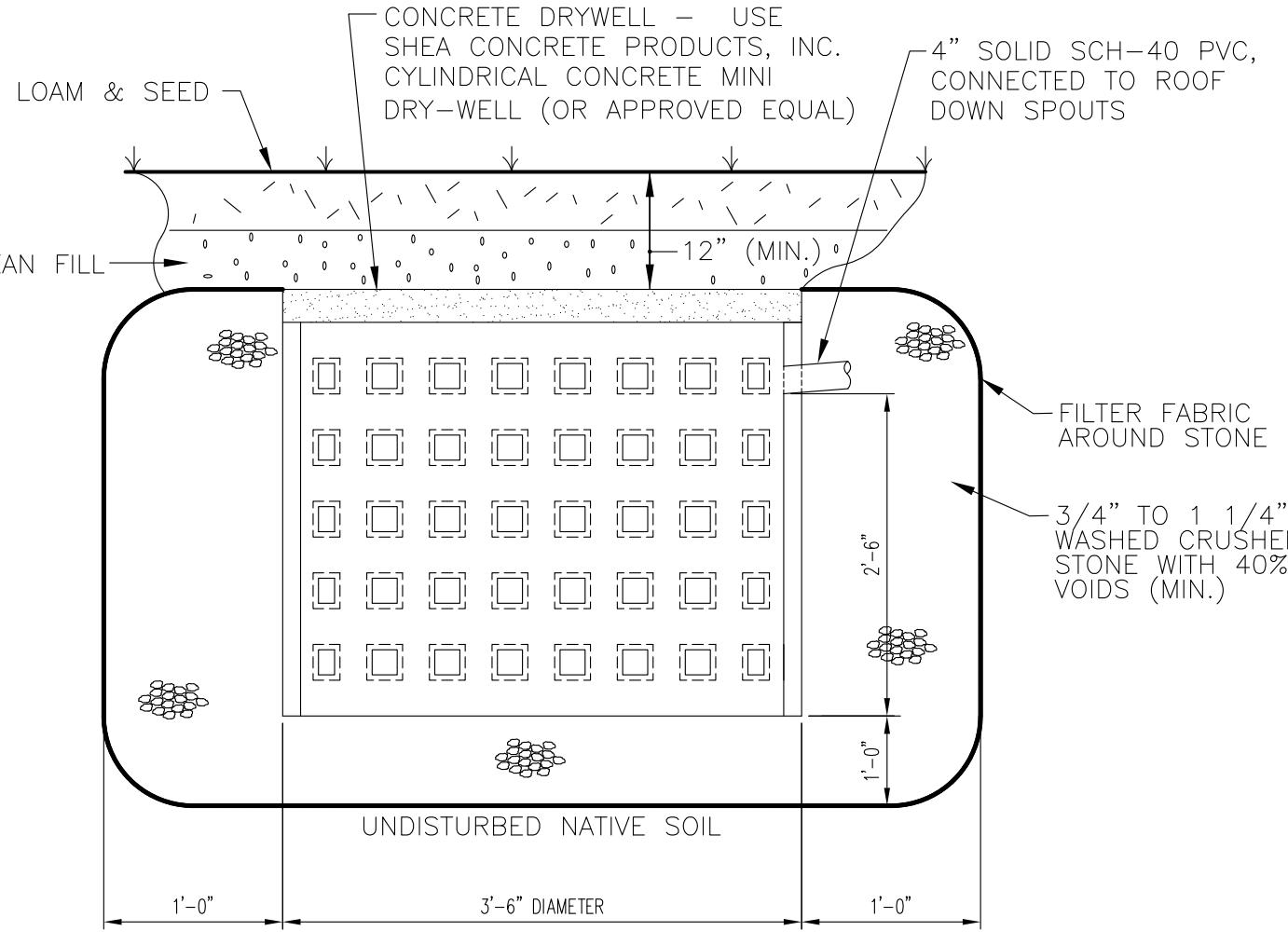
PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
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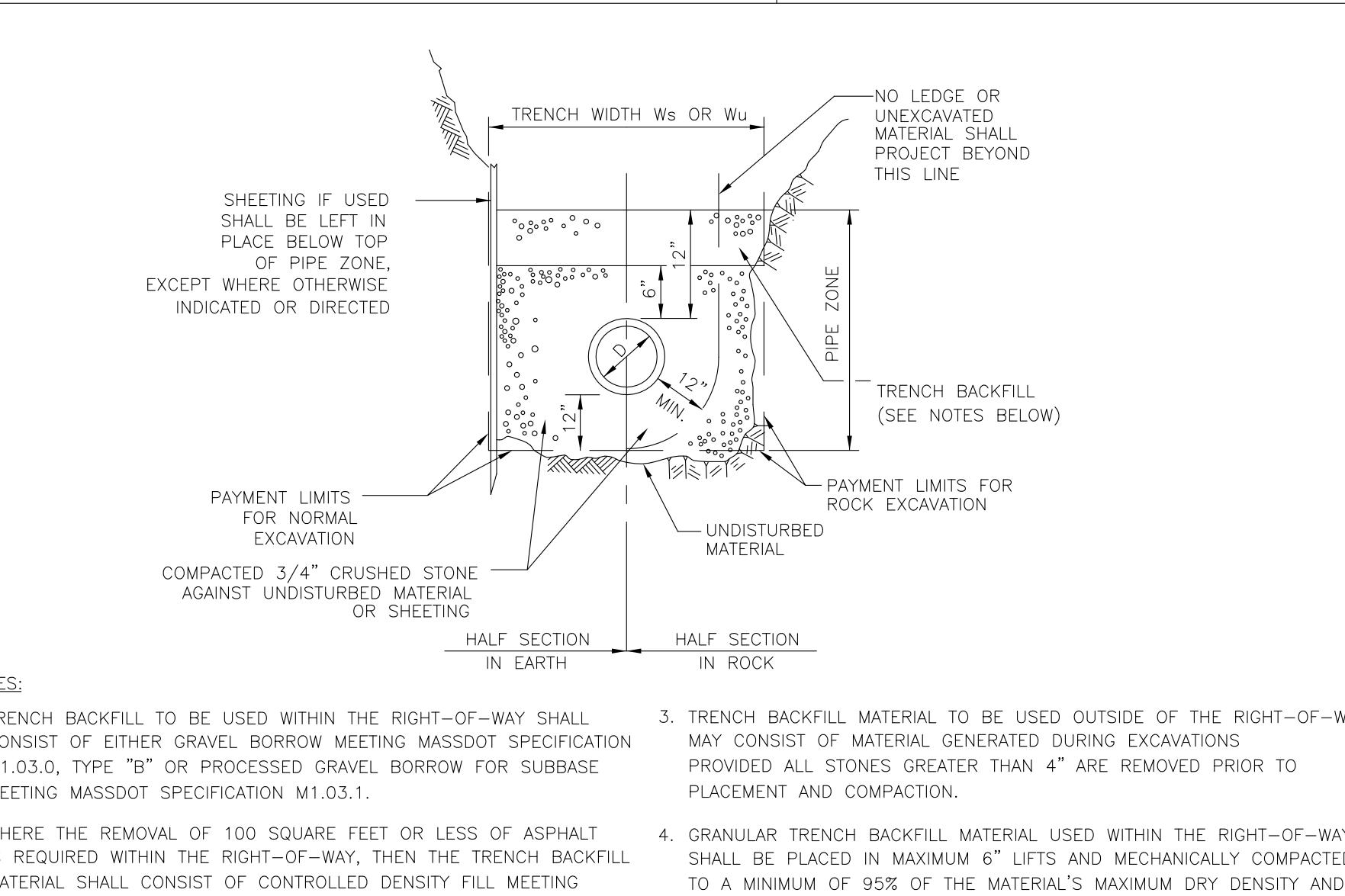
TYPICAL BUILDING DRIP EDGE
N.T.S.



TYPICAL BUILDING DRIP EDGE
N.T.S.



ROOF DRAIN DRYWELL
N.T.S.



DRAINAGE PIPE TRENCH SECTION
PIPES LESS THAN 18" DIA.
N.T.S.

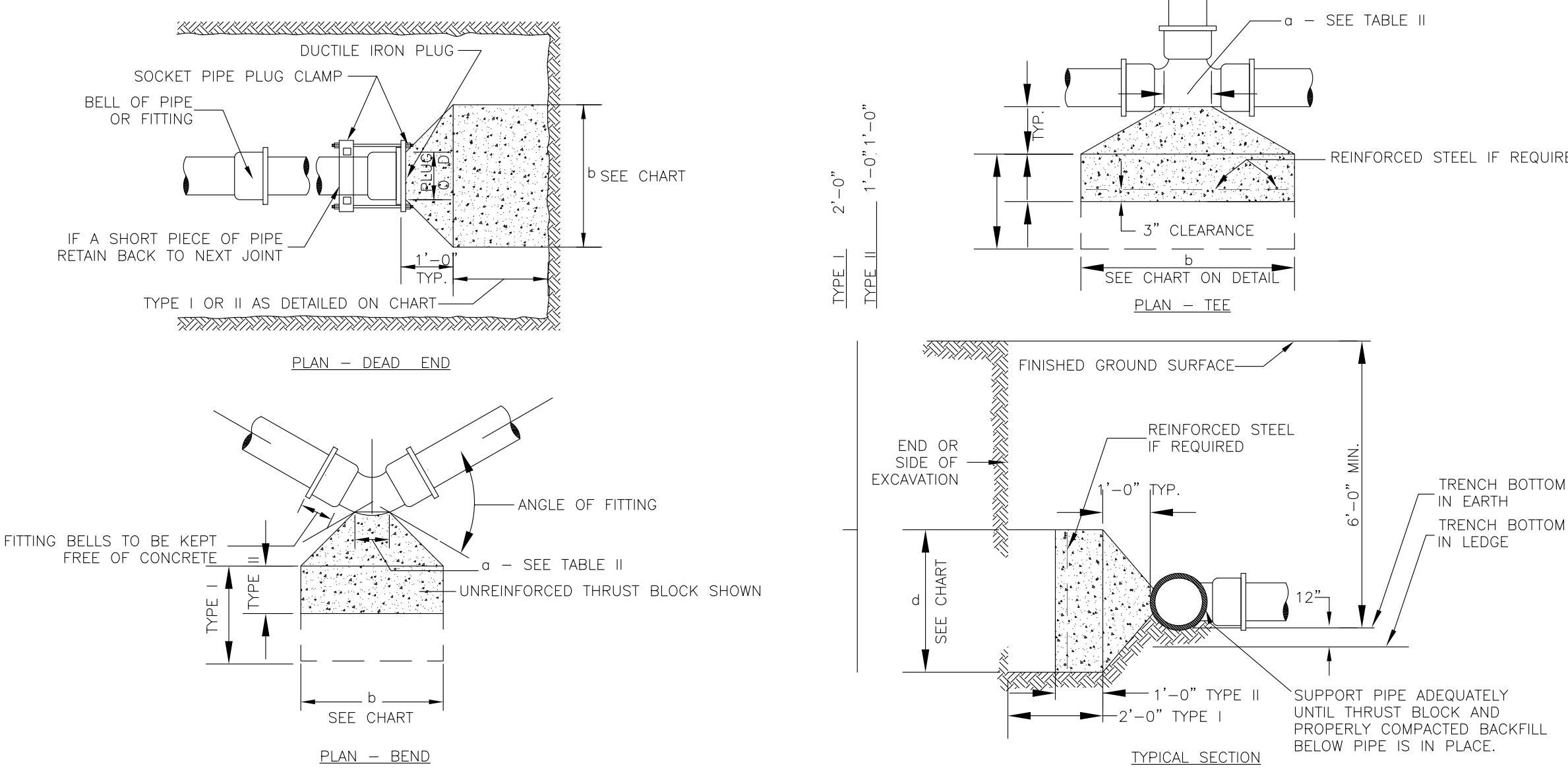
PROJECT C-840	DESIGN MAW	SHEET
DATE NOVEMBER 26, 2014	CHECKED TPM	C-701
SCALE AS NOTED	REVISED	

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TOPSFIELD, MA 01983

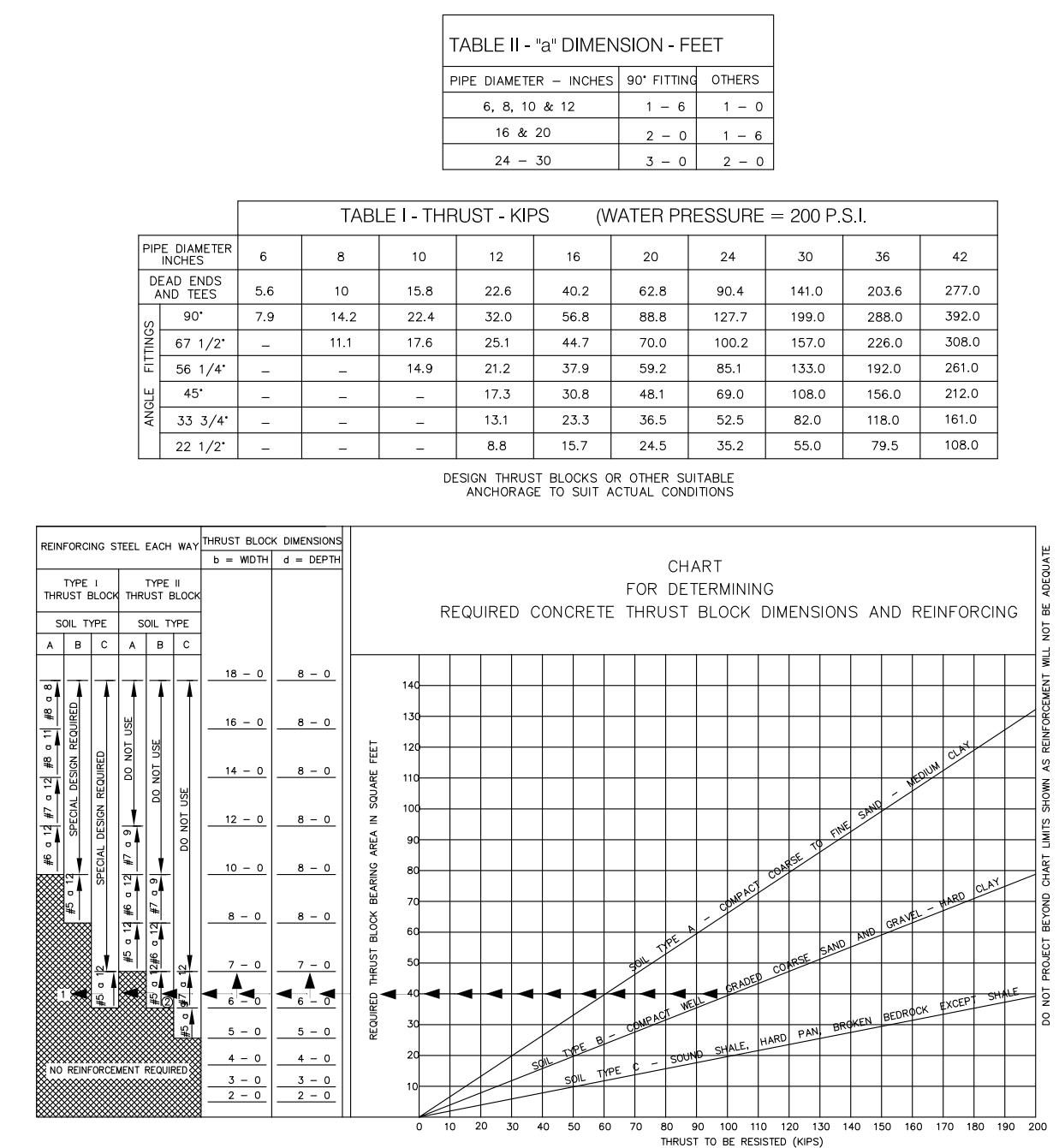
BEALS ASSOCIATES INC.

2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190



THRUST BLOCK DETAILS

N.T.S.



- NOTES:
- ALL FITTINGS SHALL BE ANCHORED BY MECHANICAL MEANS OR BY CONCRETE THRUST BLOCKS, OR BOTH, IF REQUIRED BY THE CITY OF GLOUCESTER OR AS NOTED ON THE CONTRACT PLANS.
 - ALL EXPOSED METAL SHALL BE PAINTED OR COATED.
 - CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRESS OF 3,000 P.S.I. AT 28 DAYS.
 - REINFORCING STEEL SHALL BE A.S.T.M. A615 GRADE 40.
 - WATER PRESSURE IN TABLE 1 INCLUDES WATER HAMMER ALLOWANCE.
 - THE ACTUAL METHOD OF RESTRAINT MUST BE DETERMINED BY ACTUAL FIELD CONDITIONS.
 - THESE ARE TYPICAL INSTALLATIONS TO BE USED AS A GUIDE TO THE DESIGNER.
 - FINAL DESIGNS ARE SUBJECT TO REVIEW BY THE TOWN OF HAMILTON.

ILLUSTRATIVE PROBLEM

DESIGN A THRUST BLOCK FOR A 67-1/2° BEND, A 24-INCH DIAMETER WATER MAIN, CARRYING A MAXIMUM PRESSURE OF 200 P.S.I. SOIL CLASSIFIED AS A WELL GRADED COMPACT COURSE SAND AND GRAVEL.

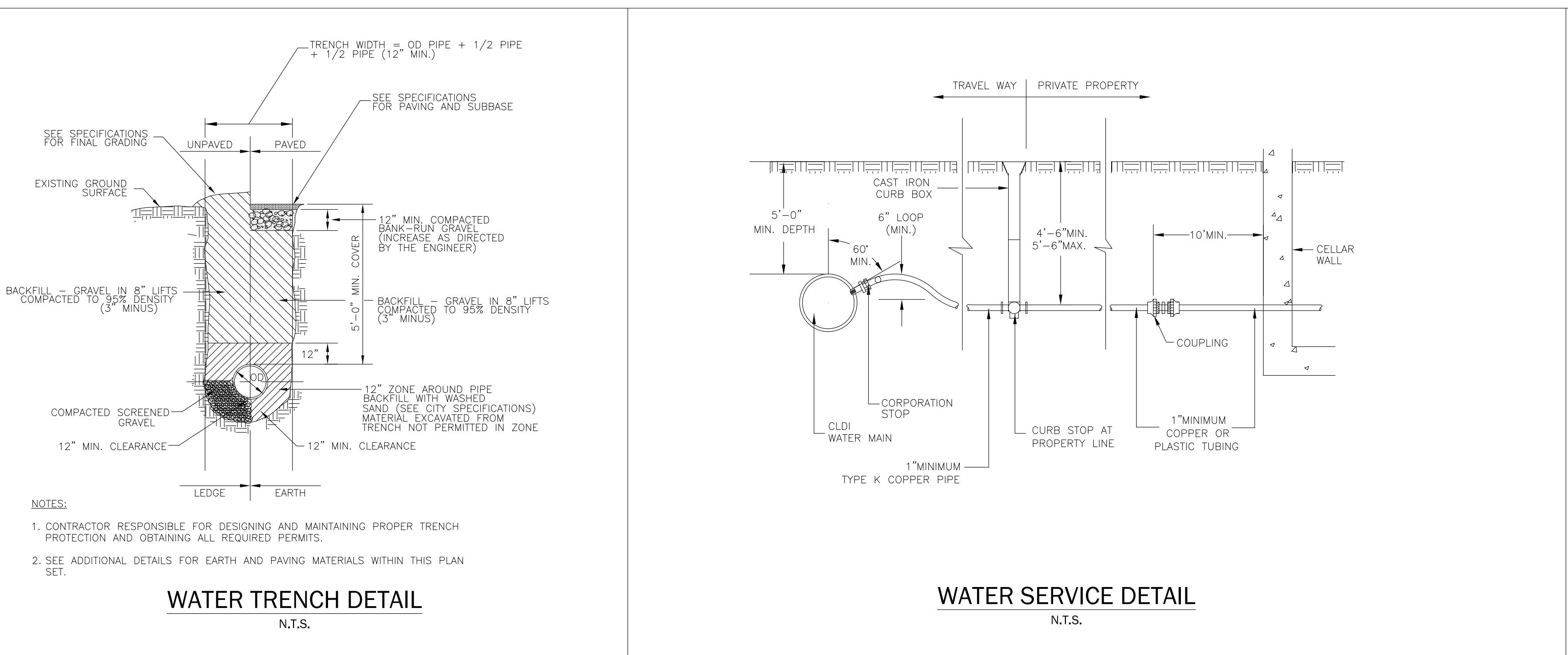
SOLUTION

- ENTER TABLE 1 AT 24-INCH PIPE DIAMETER - GO VERTICALLY DOWN COLUMN UNTIL OPPOSITE 67-1/2° ANGLE FITTING. READ THRUST = 100.2 KIPS.
- SEE CHART IMMEDIATELY BELOW TABLE 1 - SELECT SOIL TYPE CURVE REFLECTING ACTUAL SOIL CLASSIFICATION. TYPE B FOR THIS PROBLEM.
- ENTER CHART AT THRUST TO BE RESISTED AND GO VERTICALLY TO SOIL TYPE CURVE SELECTED IN 2 ABOVE - SEE CHART AND FOLLOW ILLUSTRATIVE PROBLEM ARROW LINE FROM 100.2 KIP THRUST TO SOIL TYPE B CURVE.
- FROM THIS INTERSECTION GO HORIZONTALLY FOLLOWING ARROW LINE TO INTERSECTION WITH REQUIRED THRUST BLOCK BEARING AREA IN SQUARE FEET - 40 SQUARE FEET MINIMUM IS REQUIRED TO RESIST THRUST.
- CONTINUE HORIZONTALLY TO "THRUST BLOCK DIMENSIONS" COLUMN AND SELECT DIMENSIONS "b" AND "d" IMMEDIATELY ABOVE HORIZONTAL ARROW LINE PROJECTION.
- CONTINUE HORIZONTALLY TO "REINFORCING STEEL - EACH WAY" COLUMN, NOTING COLUMNS FURTHER CLASSIFICATION BY SOIL TYPE AND FOOTING TYPE. (SEE "THRUST BLOCK DETAIL", FOR TYPE I AND TYPE II REQUIREMENTS.)

TWO SOLUTIONS TO ILLUSTRATIVE PROBLEM ARE ACCEPTABLE:

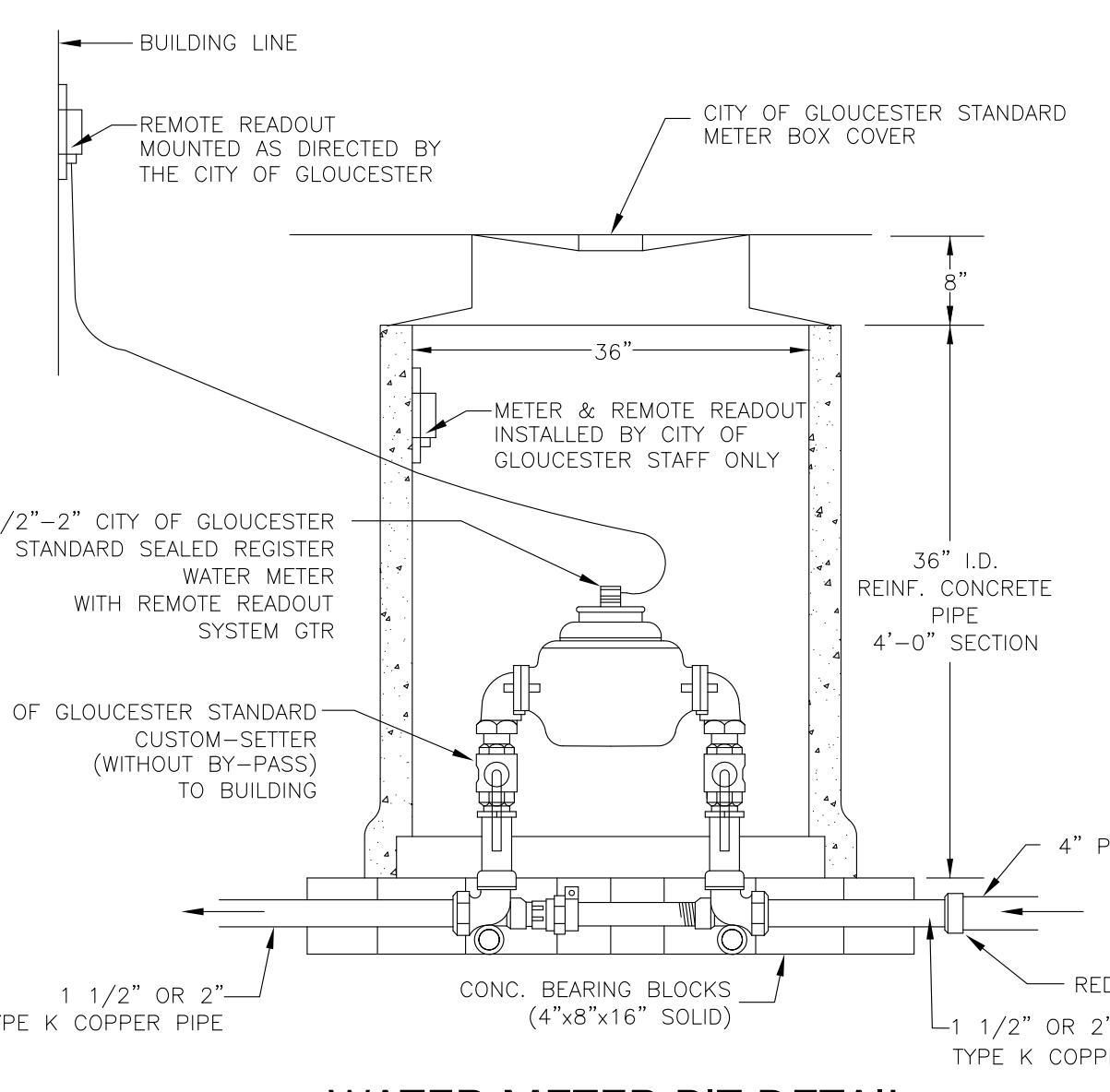
SOLUTION 1 - TYPE I THRUST BLOCK AND SOIL TYPE B INDICATES NO REINFORCEMENT REQUIRED.

SOLUTION 2 - TYPE II THRUST BLOCK AND SOIL TYPE B INDICATES #5 x 12 EACH WAY REQUIRED.



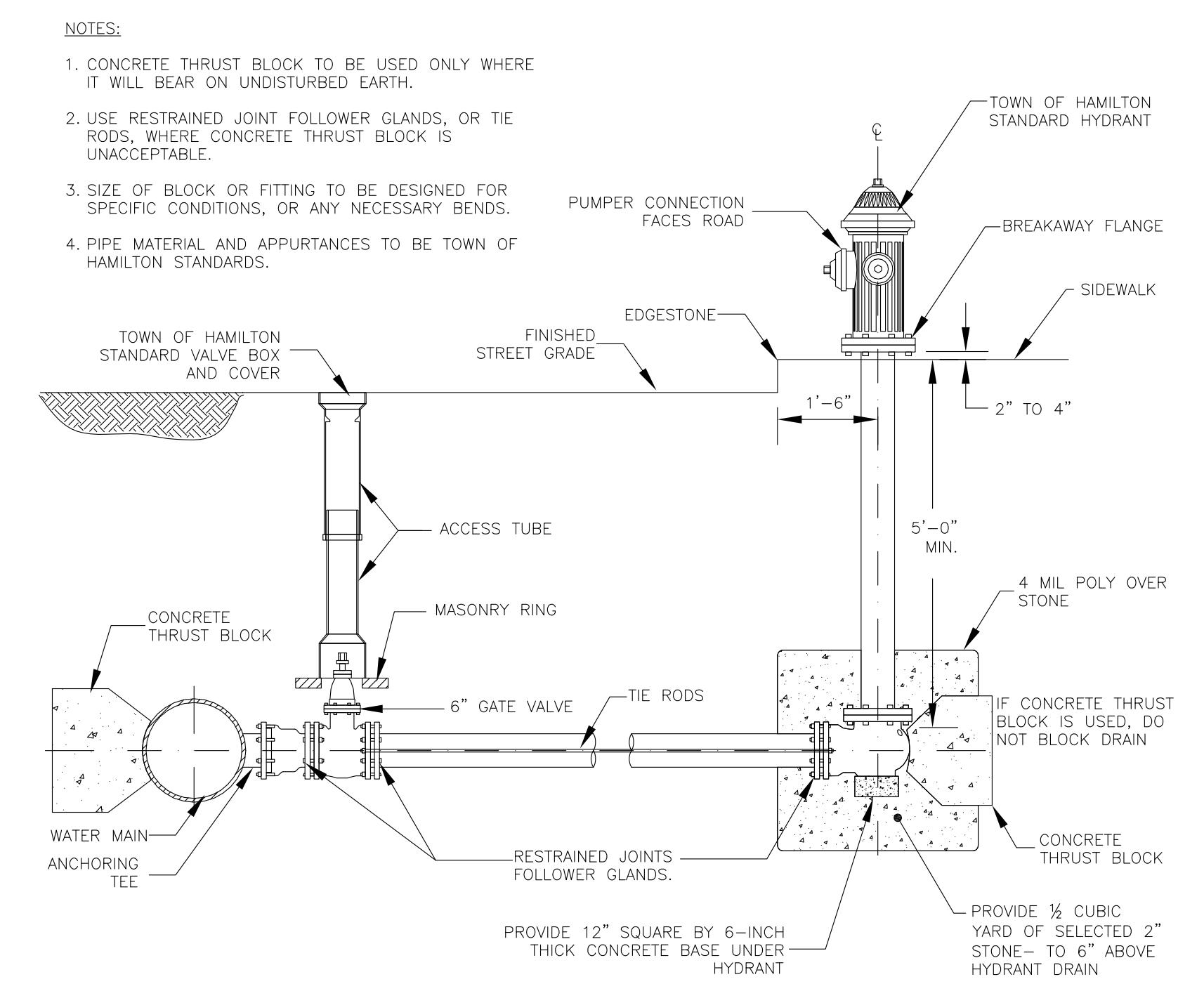
WATER SERVICE DETAIL

N.T.S.



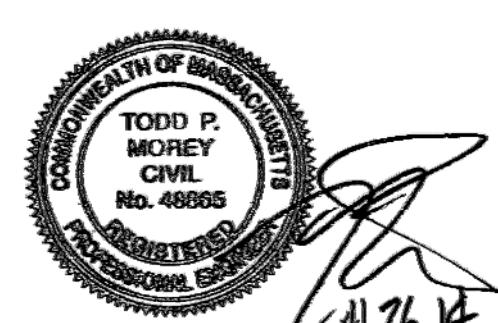
WATER METER PIT DETAIL

N.T.S.



TYPICAL HYDRANT DETAIL

N.T.S.



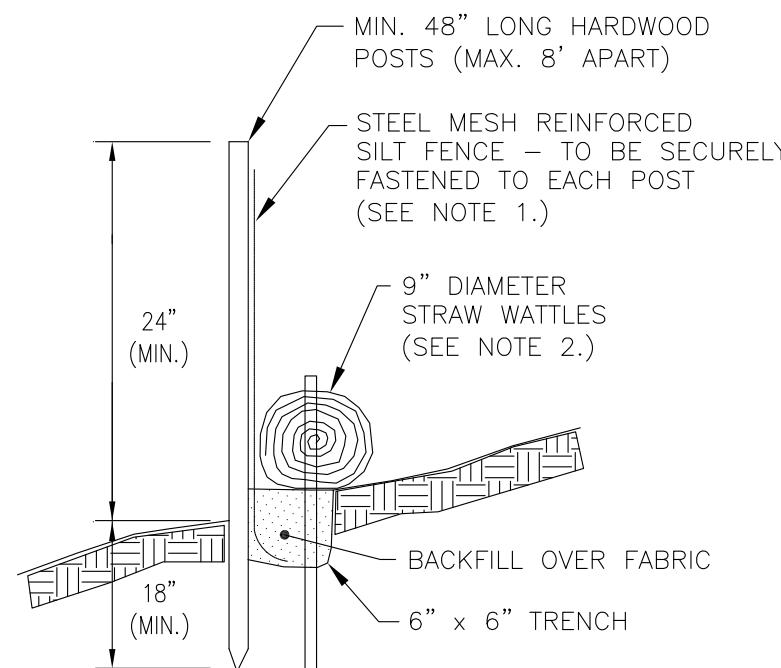
NO. REVISION/ISSUE DATE
WATER SYSTEM DETAILS
PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN MAW	SHEET
DATE NOVEMBER 26, 2014	CHECKED TPM	C-702
SCALE AS NOTED	REVISED	
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PREPARED FOR:
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460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983

BEALS ASSOCIATES INC.

2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190



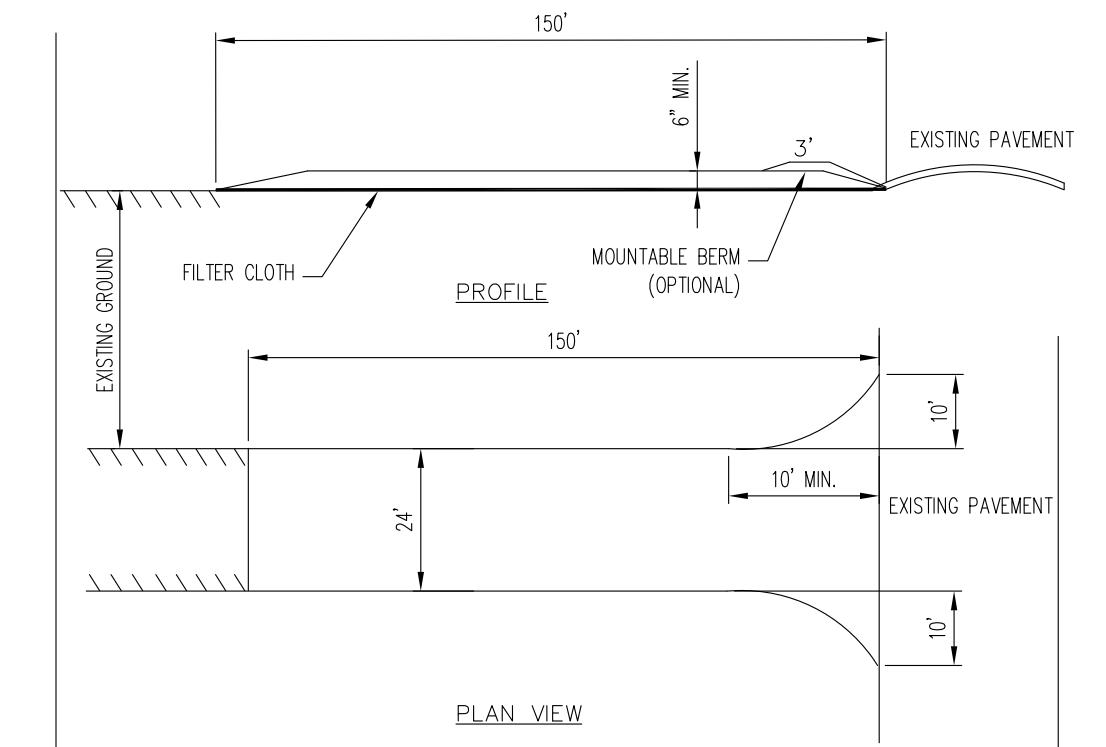
NOTE:
WATTLES SHALL BE STAKED A MINIMUM OF 24 INCHES INTO THE GROUND WITH 2 INCHES OR LESS OF STAKE EXPOSED ABOVE WATTLE. STAKE SHALL BE A MAXIMUM OF 4 FEET APART AND WITHIN 2 FEET OF END OF WATTLE SECTIONS.

1. THE STEEL MESH REINFORCED SILT FENCE CAN BE ORDERED ONLINE AT: WWW.DGINDUSTRIES.COM. THE COMPANY CAN BE REACHED AT: TEC: 1-800-743-8344, OR TEC: 1-603-227-0495 FAX: 1-603-227-0498

2. THE STRAW WATTERS CAN BE ORDERED ONLINE AT: WWW.NEWP.COM. THE COMPANY CAN BE REACHED AT: NEW ENGLAND METAL PLANTS, INC. 520 WEST STREET AMHERST, MA 01002 TEL: 1-413-548-8000 FAX: 1-413-549-4000

SILT FENCE STRAW WATTLE BARRIER DETAIL

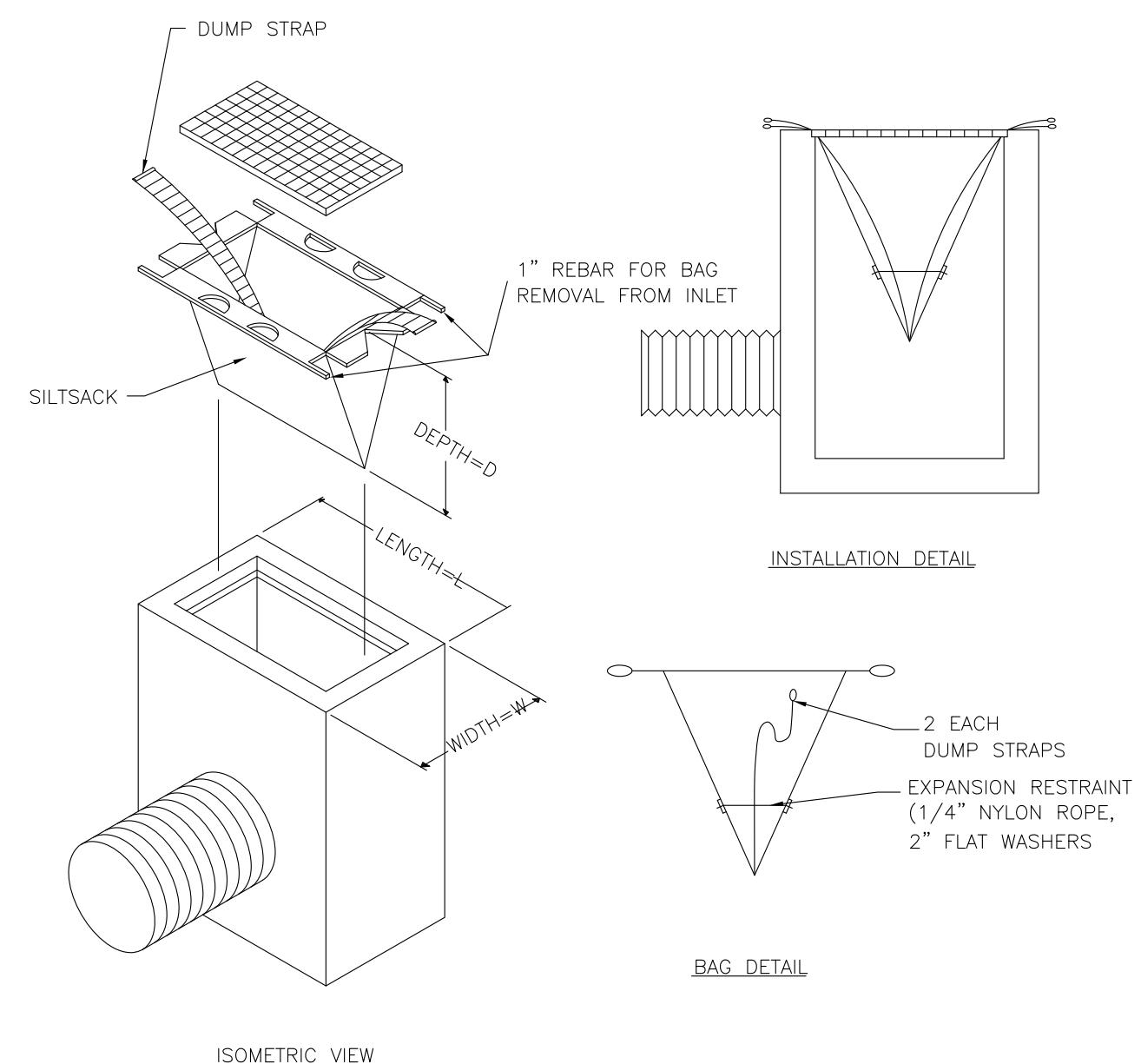
N.T.S.



1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGREG OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE, FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BEHIND THE ENTRANCE. IF PIPING IS IMPRactical, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED onto PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE

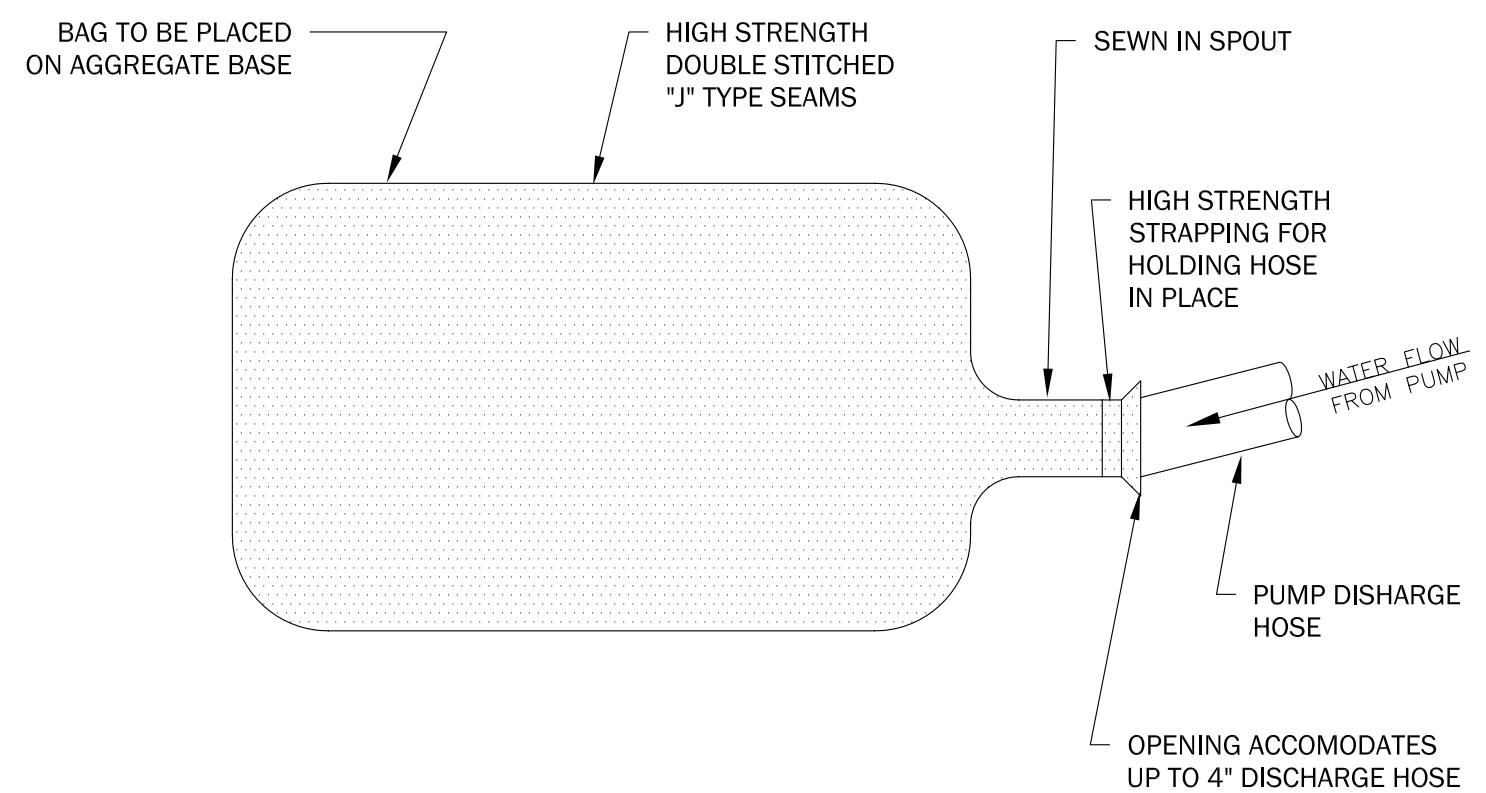
N.T.S.



- NOTES:
1. SILTSACKS SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT GREATER THAN 1.25 INCHES.
 2. IF THERE HAVE BEEN NO MAJOR RAIN EVENTS, SILTSACKS SHOULD BE INSPECTED EVERY TWO TO THREE WEEKS.
 3. WHEN THE EXPANSION RESTRAINT CORD IS NO LONGER VISIBLE, SILTSACKS SHOULD EITHER BE REMOVED, CLEANED AND REINSTALLED, OR DISCARDED AND REPLACED.

SILTSACK INSTALLATION DETAIL

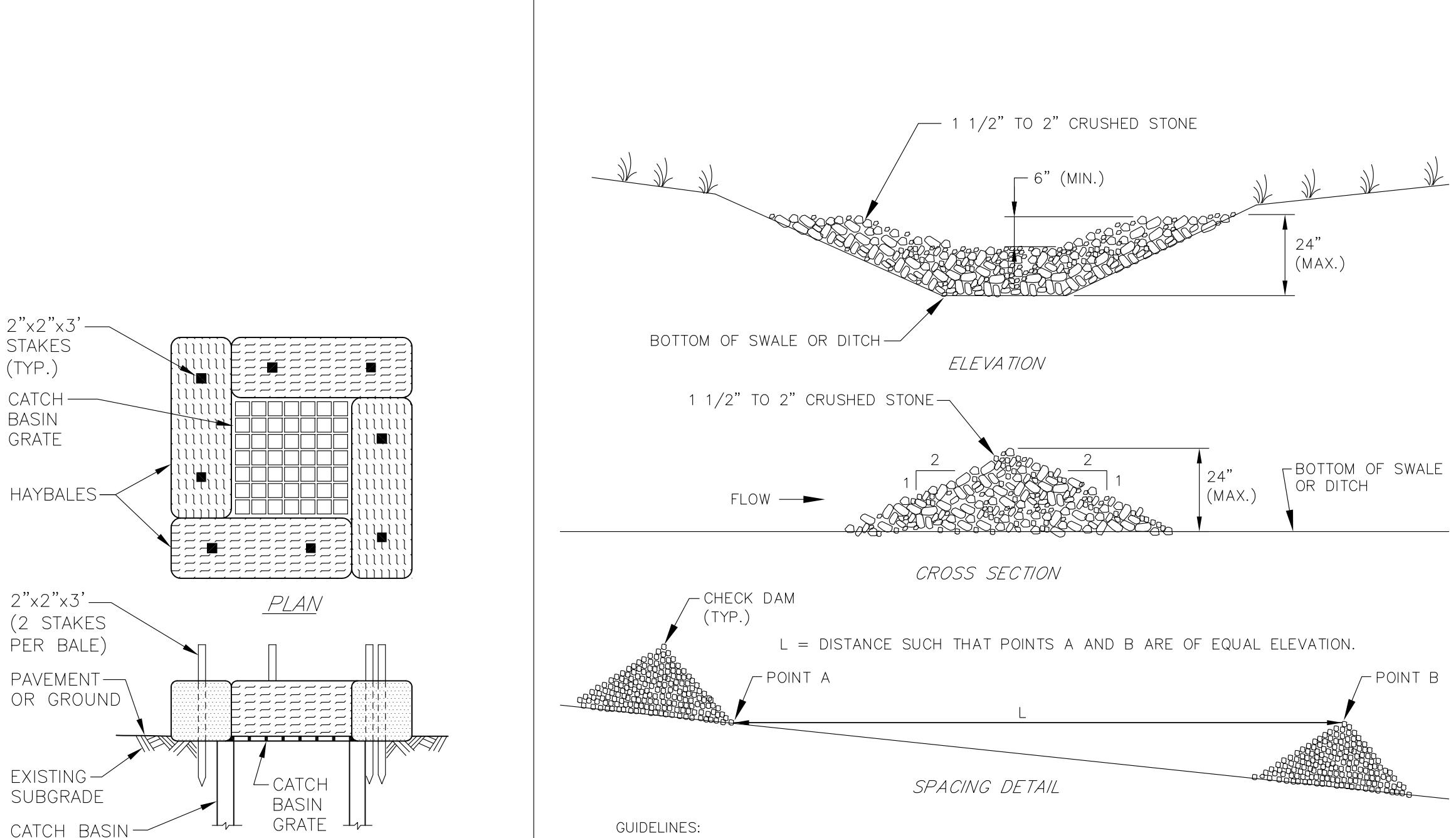
N.T.S.



- NOTES:
1. TO INSTALL, UNFOLD AND INSERT UP TO A 4" PUMP DISCHARGE INTO HAND SEWN SPOUT AND SECURE WITH ATTACHED STRAPS. PUMP SEDIMENT LADEN WATER INTO DIRTPACK.
 2. MEETS STATE AND CORPS OF ENGINEERS SPECIFICATIONS
 3. AVAILABLE IN 10' X 15', 12 1/2' X 15', AND 15' X 15' SIZES.

DIRTPACK INSTALLATION DETAIL

N.T.S.



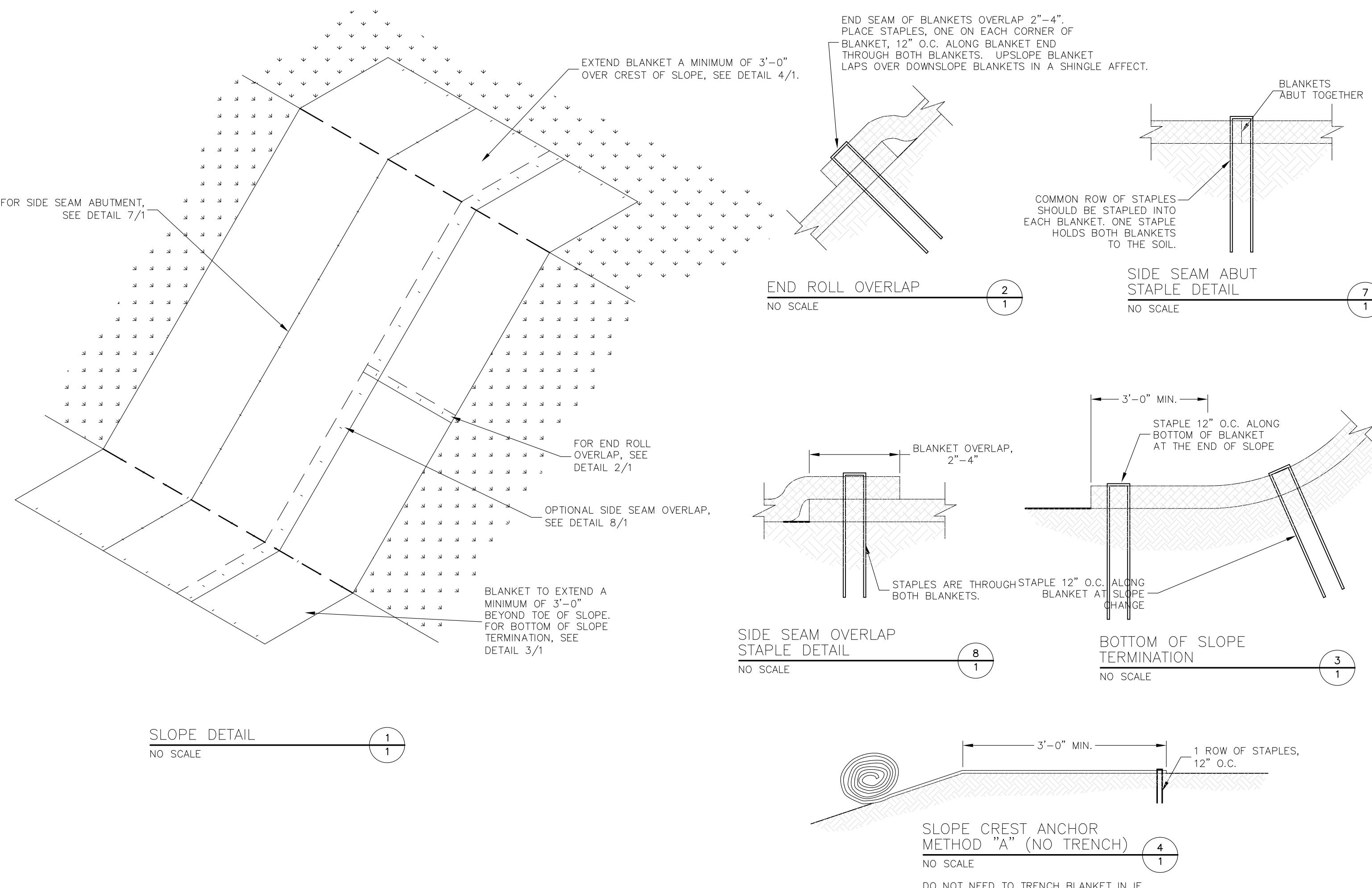
GUIDELINES:
- THE DRAINAGE AREA OF THE DITCH OR SWALE BEING PROTECTED SHOULD NOT EXCEED 10 ACRES EXCEPT AS MAY BE REQUIRED BY THE PLANS.
- THE MAXIMUM HEIGHT OF THE CHECK DAM SHOULD BE ABOUT 24", AND THE CENTER SHOULD BE AT LEAST 12" LOWER THAN THE DITCH BASE.
- THE MAXIMUM SPACING BETWEEN THE CHECK DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
MAINTENANCE:
- CHECK DAMS ARE NOT INTENDED AS SEDIMENT-TRAPPING DEVICES, BUT LARGER SIZED PARTICLES WILL ACCUMULATE BEHIND THEM. THE SEDIMENT MUST BE REMOVED WHEN IT ACCUMULATES TO ONE-HALF OF THE ORIGINAL HEIGHT OF THE CENTER OF THE CHECK DAM. SPOILS ARE TO BE PLACED WHERE THEY WILL NOT BE WASHED BACK INTO A DRAINAGE SYSTEM OR WETLAND AREA.
REMOVAL:
- CHECK DAMS ARE TO BE REMOVED ONLY WHEN THEY ARE NO LONGER NEEDED. IN PERMANENT GRASSED DRAINAGEWAYS, CHECK DAMS SHOULD BE REMOVED ONLY AFTER THE GRASS HAS MATURED SUFFICIENTLY TO PROTECT THE WATERWAY.

CATCH BASIN INLET PROTECTION SEDIMENTATION CONTROL

N.T.S.

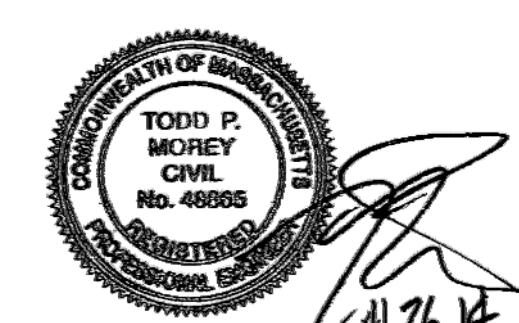
STONE CHECK DAM

N.T.S.



CURLEX BLANKET DETAIL

N.T.S.



NO. REVISION/ISSUE DATE

EROSION CONTROL DETAILS

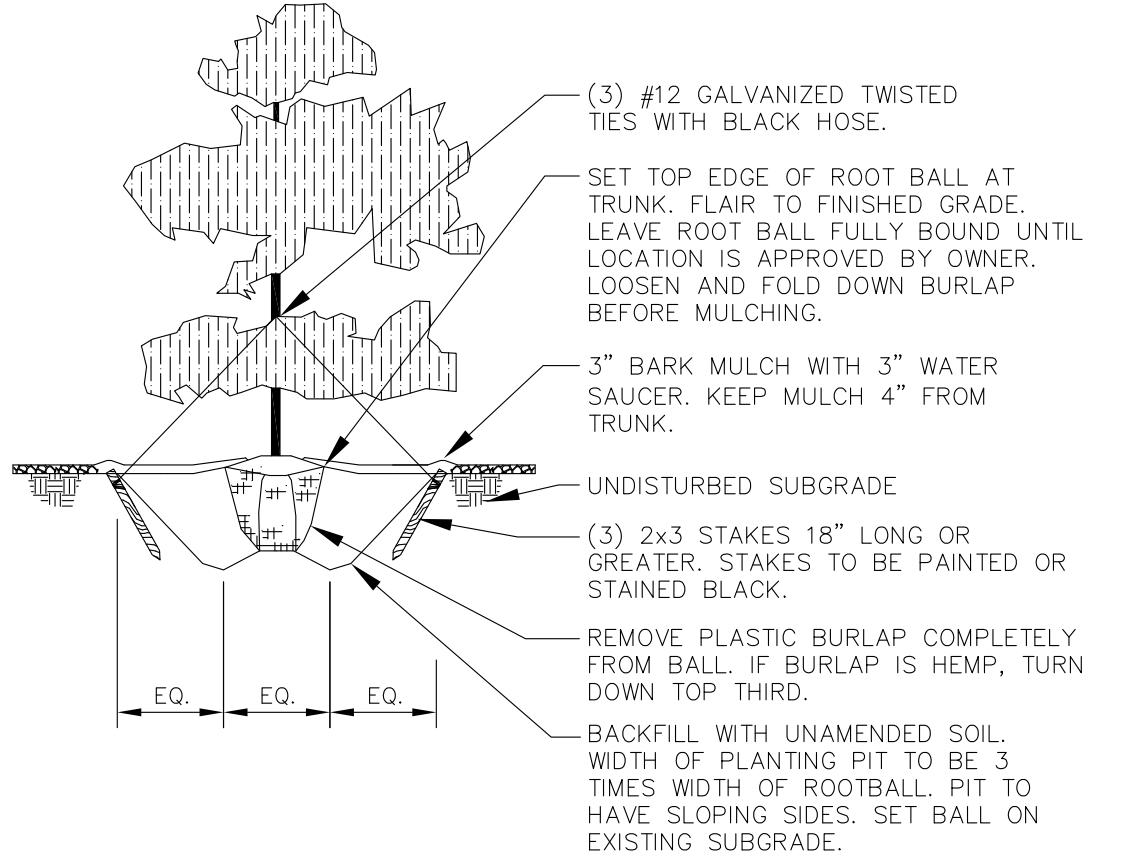
PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN MAW	SHEET
DATE NOVEMBER 26, 2014	CHECKED	C-703
SCALE AS NOTED	REVISED	
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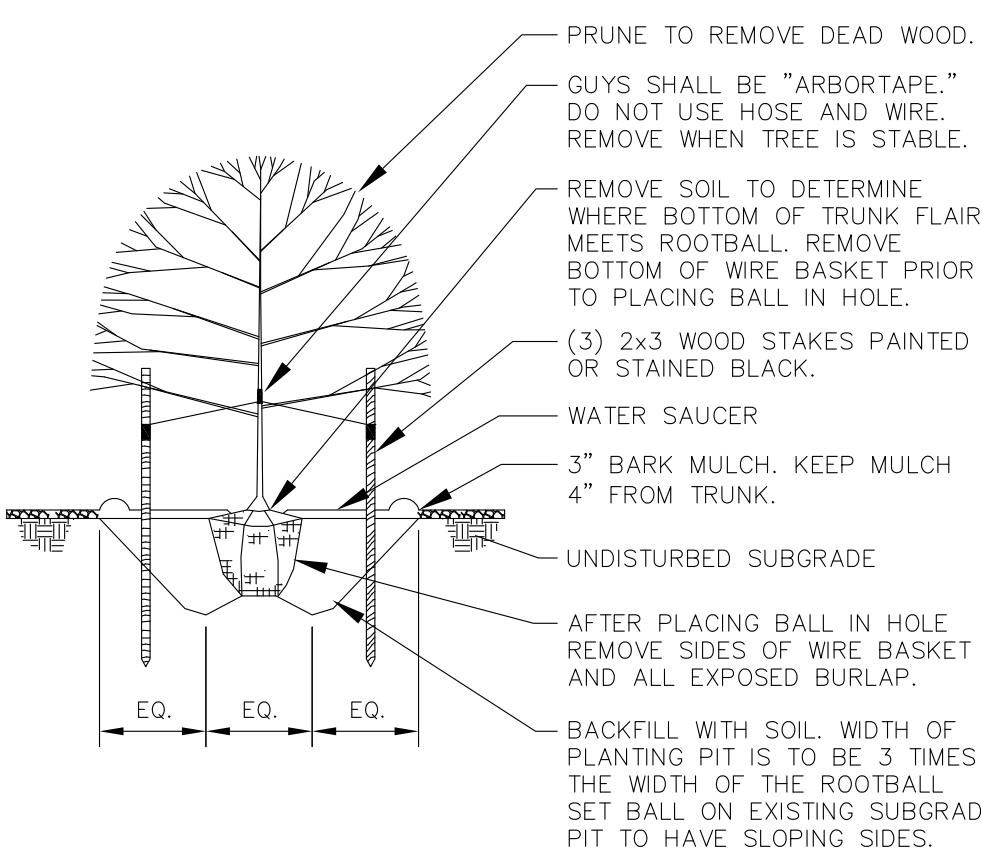
BEALS ASSOCIATES INC.

2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190



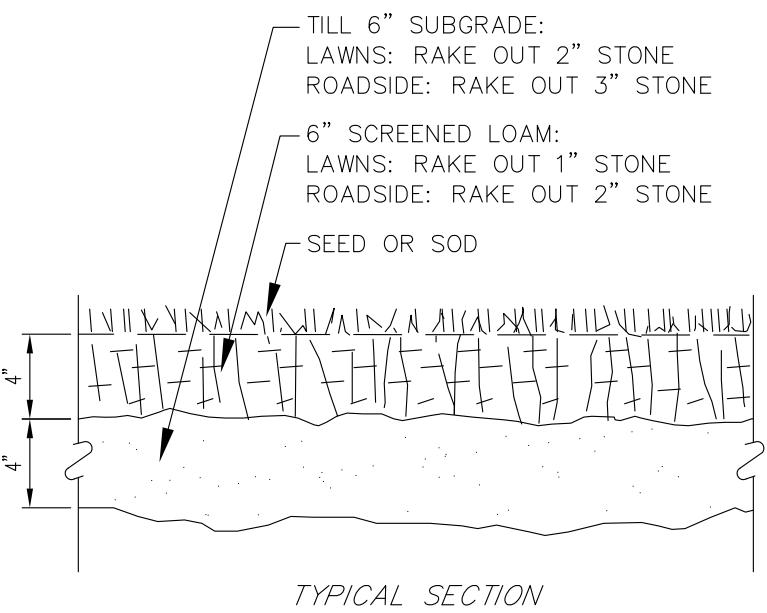
EVERGREEN TREE PLANTING

N.T.S.



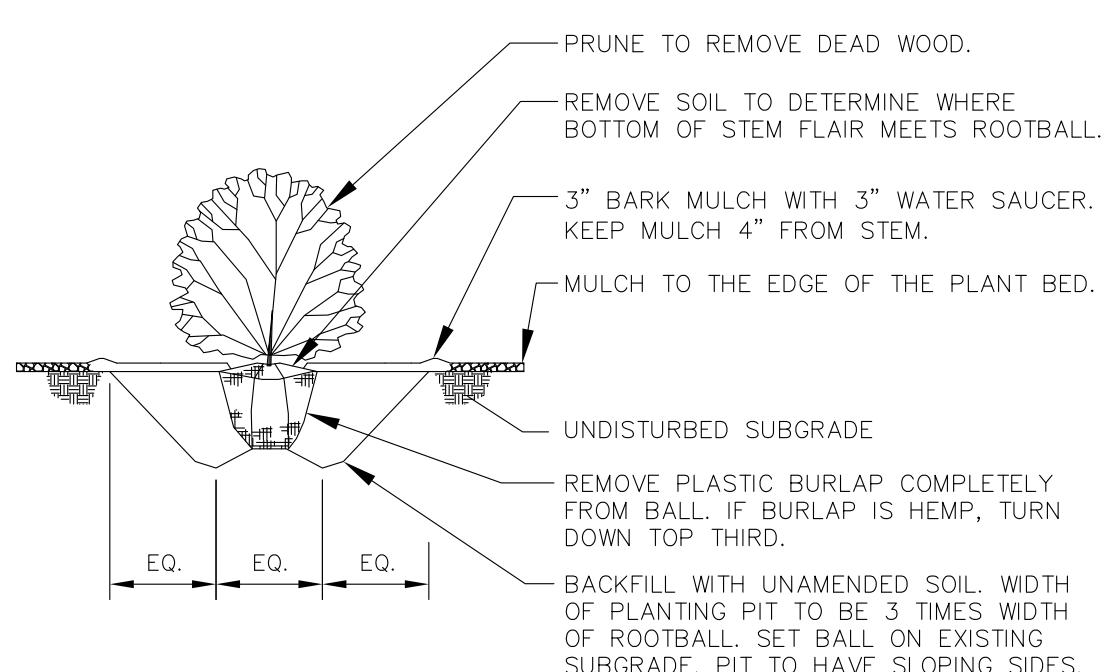
DECIDUOUS TREE PLANTING

N.T.S.



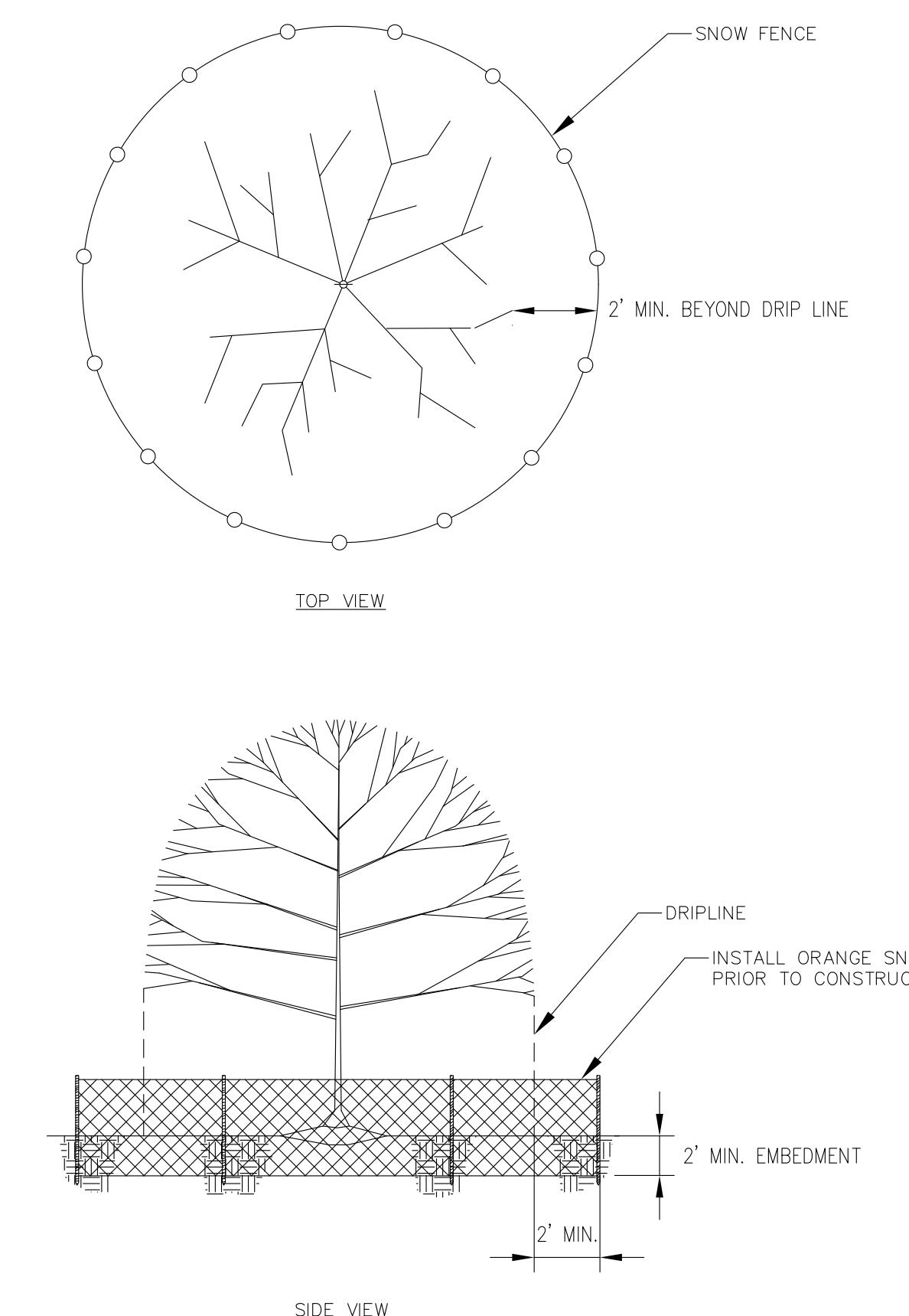
SEEDED LAWN

N.T.S.



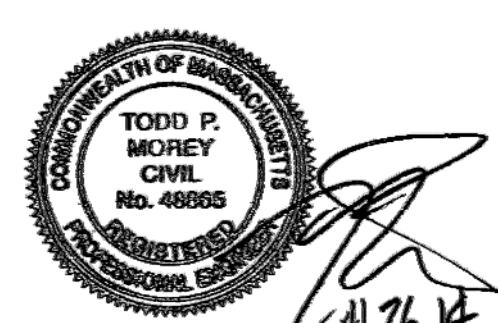
SHRUB PLANTING

N.T.S.



SNOW FENCE TREE PROTECTION

N.T.S.



LANDSCAPING DETAILS

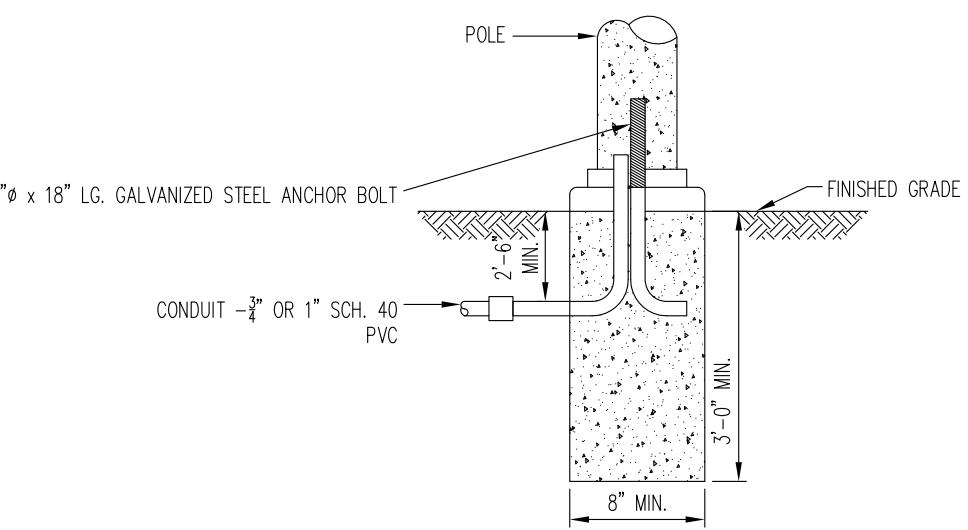
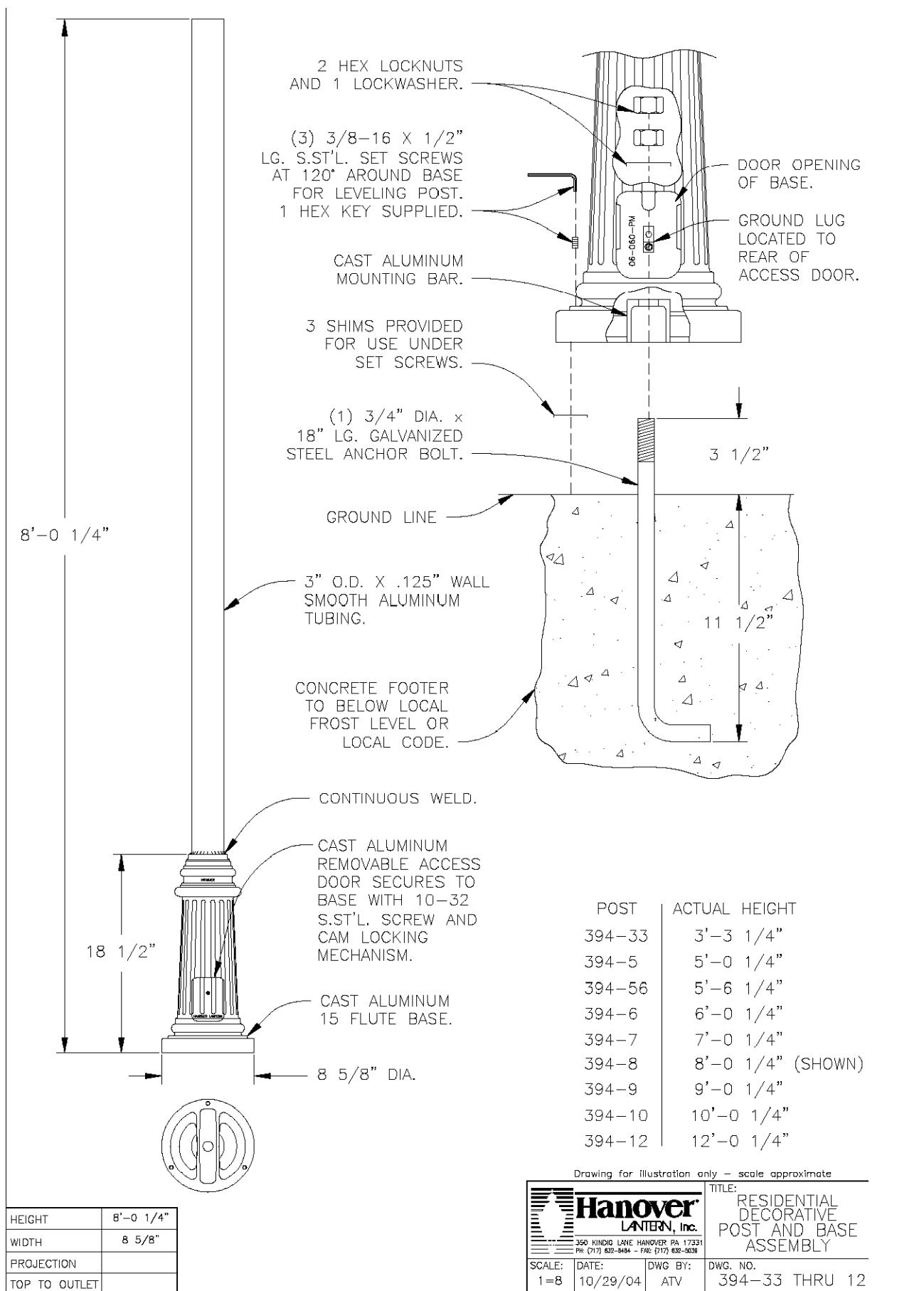
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PROJECT C-840	DESIGN MAW	SHEET
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C-704		
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PATH:S:\Data\ C-840 Hamilton\Autocad\Design Development\ C-840 COVER AND DETAILS 11.24.14.dwg		

PREPARED FOR:
C.P. BERRY RESIDENCES, LLC
460 BOSTON STREET, SUITE 5
TOPSFIELD, MA 01983

BEALS ASSOCIATES INC.

2 THIRTEENTH STREET CHARLESTOWN, MA 02129
PHONE: 617-242-1120 FAX: 617-242-1190



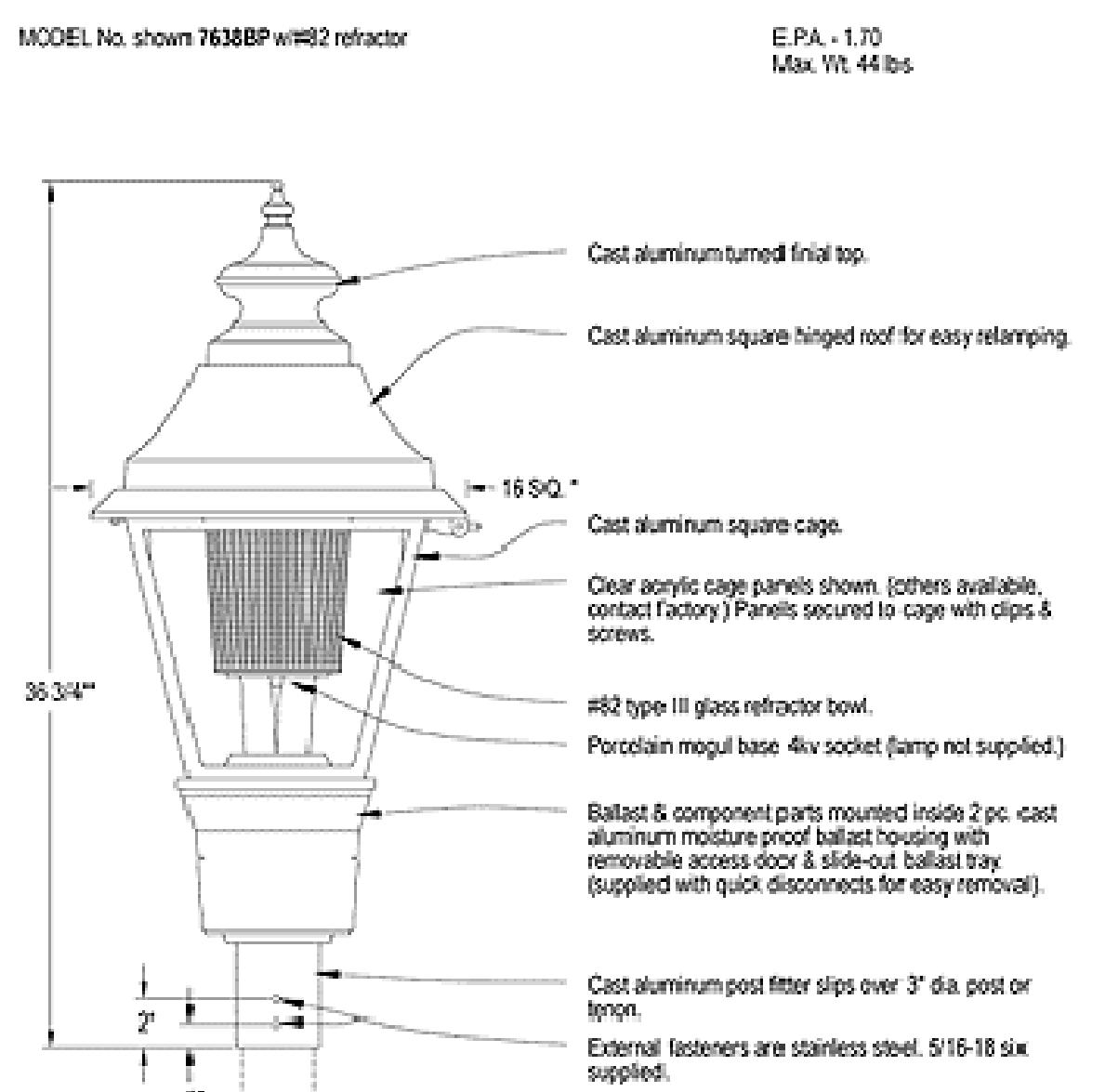
NOTE:
1. FURNISH POLE BASE TEMPLATE TO GENERAL CONTRACTOR PRIOR TO CONCRETE POUR.
2. REFER TO ARCHITECTURAL AND DETAIL DRAWINGS FOR BASE SIZE AND REBAR REQUIREMENTS.
3. PROVIDE GROUNDING BUSBINGS PER NEC.
4. COORDINATE DIMENSIONS WITH ARCHITECT.
5. THE CONSTRUCTION STANDARDS FOR ELECTRICAL SERVICE LINES AND APPURTENANCES FOR STREETLIGHTING FACILITIES SHALL BE DESIGNED ACCORDING TO SPECIFICATIONS OF THE ELECTRICAL SERVICE PROVIDER.
6. CONDUIT WITH CABLE SHALL BE INSTALLED ANTICIPATING FUTURE CABLE SERVICE. LIGHT BASE AND CONDUIT FOR FUTURE STREETLIGHTS SHALL BE INSTALLED AS SPECIFIED BY ELECTRICAL SERVICE PROVIDER.
7. LIGHT POLE HEIGHT AND TYPE SHALL BE AS SPECIFIED BY THE TOWN OF HAMILTON REGULATIONS.

TYPICAL LIGHT POLE BASE

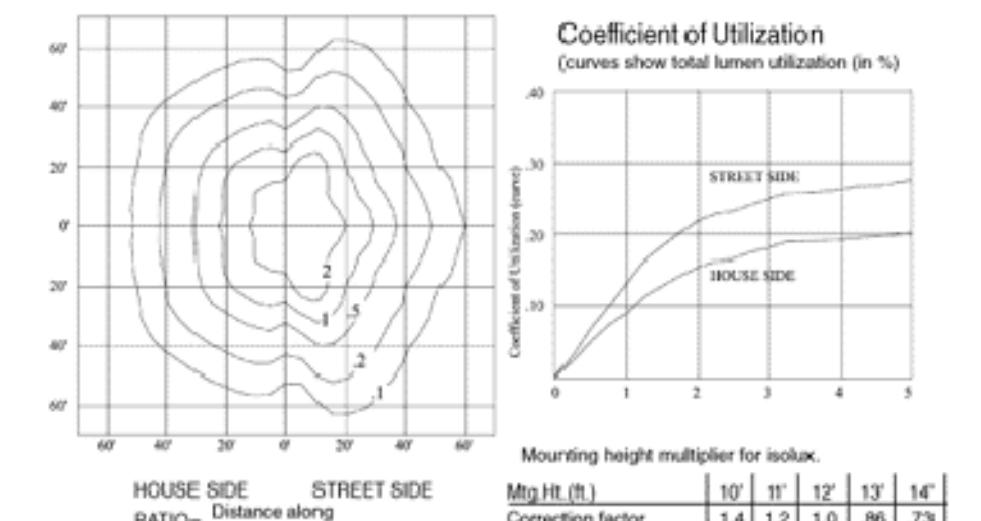
N.T.S.

POST	ACTUAL HEIGHT
394-33	3'-3 1/4"
394-5	5'-0 1/4"
394-56	5'-6 1/4"
394-6	6'-0 1/4"
394-7	7'-0 1/4"
394-8	8'-0 1/4" (SHOWN)
394-9	9'-0 1/4"
394-10	10'-0 1/4"
394-12	12'-0 1/4"

Drawing for illustration only - exact approximate
Hanover LANTERN, INC. RESIDENTIAL DECORATIVE POST AND BASE ASSEMBLY
SHEET NO. 1-8 DATE 10/29/04 DRAW. NO. 394-33 THRU 12

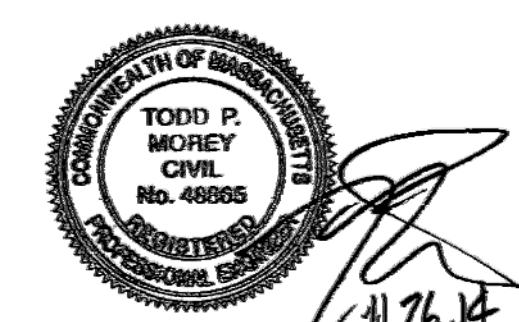


Asymmetric Distribution
Fixture: 7638BP W/#82 Optics: Type III
Lamp: 150W H.P.S.
Lamp Lumens: 16,000
Panels: Clear polycarbonate



TYPICAL STREET LIGHT

N.T.S.



LIGHTING DETAILS

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN MAW	C-705
DATE NOVEMBER 26, 2014	CHECKED TPM	
SCALE AS NOTED	REVISED	

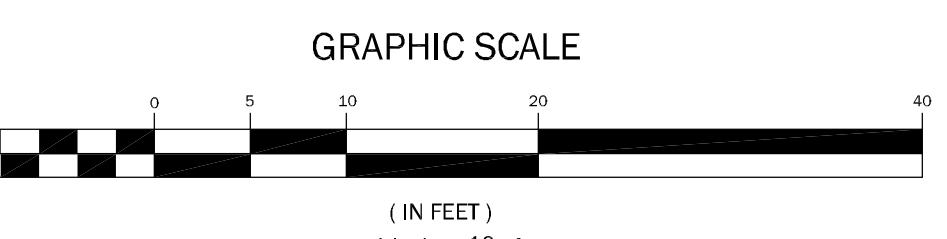
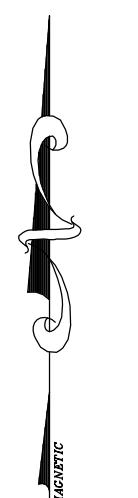
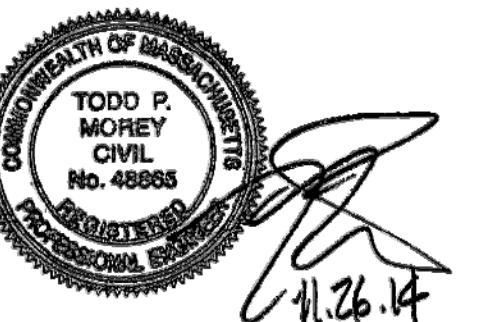
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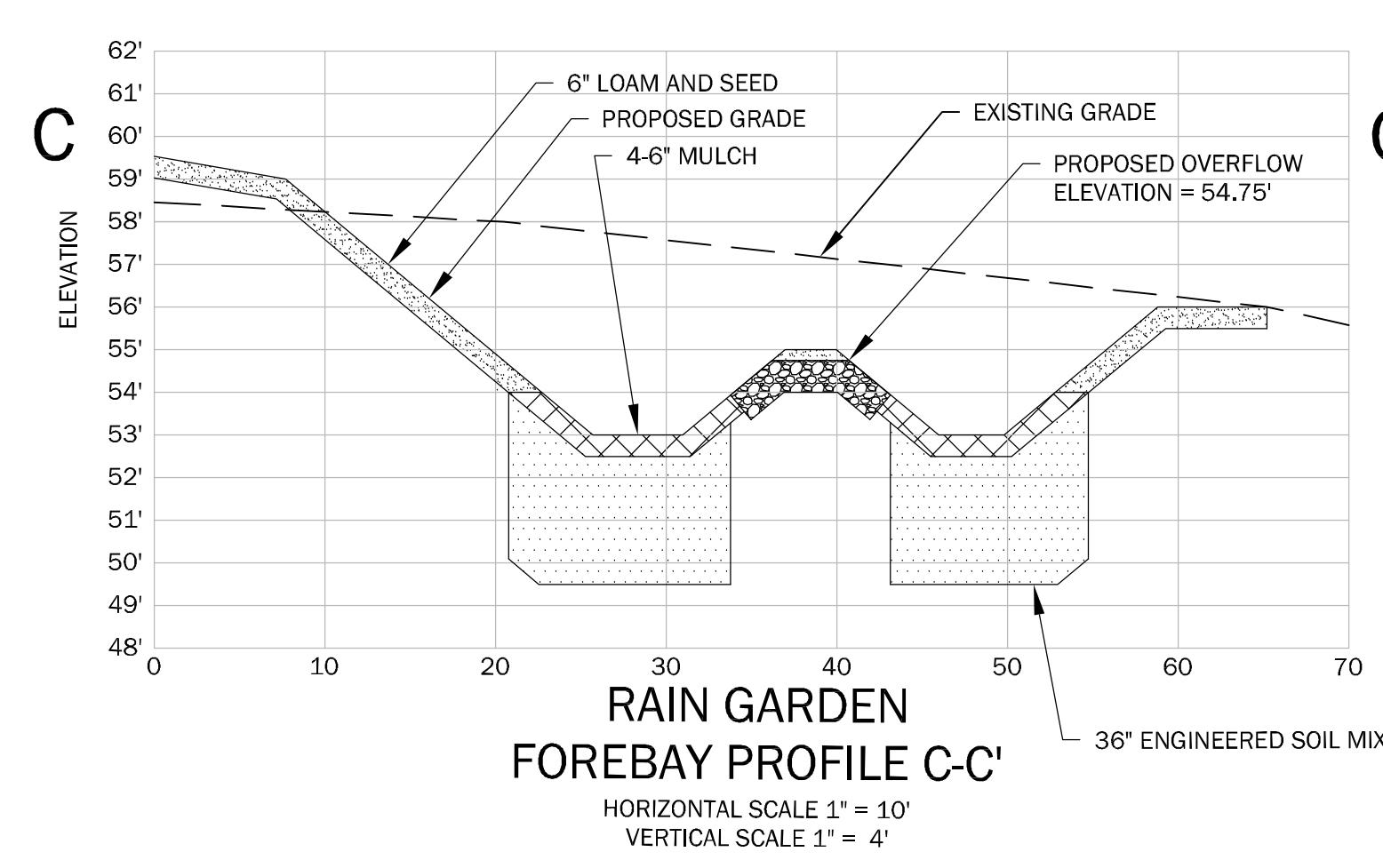
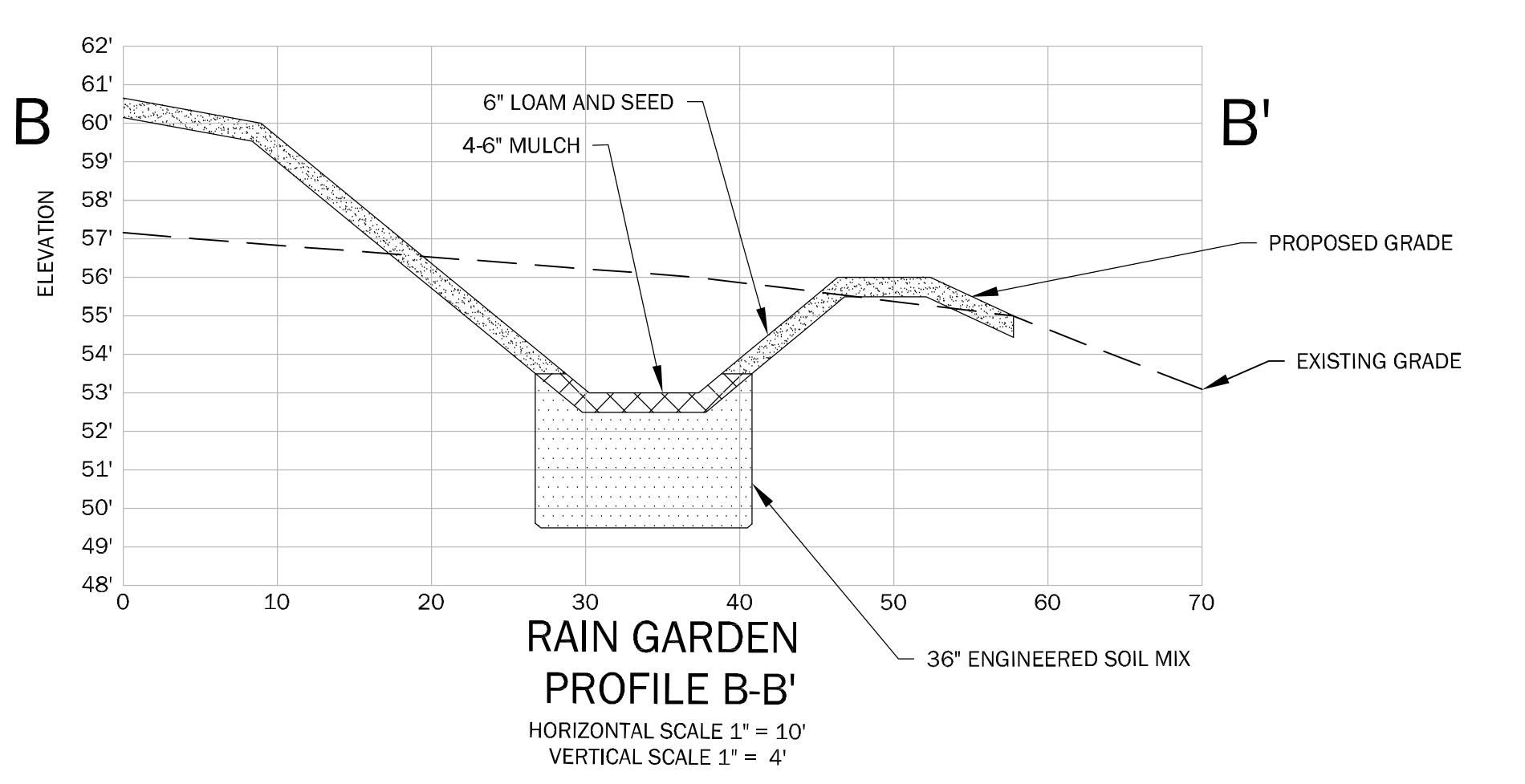
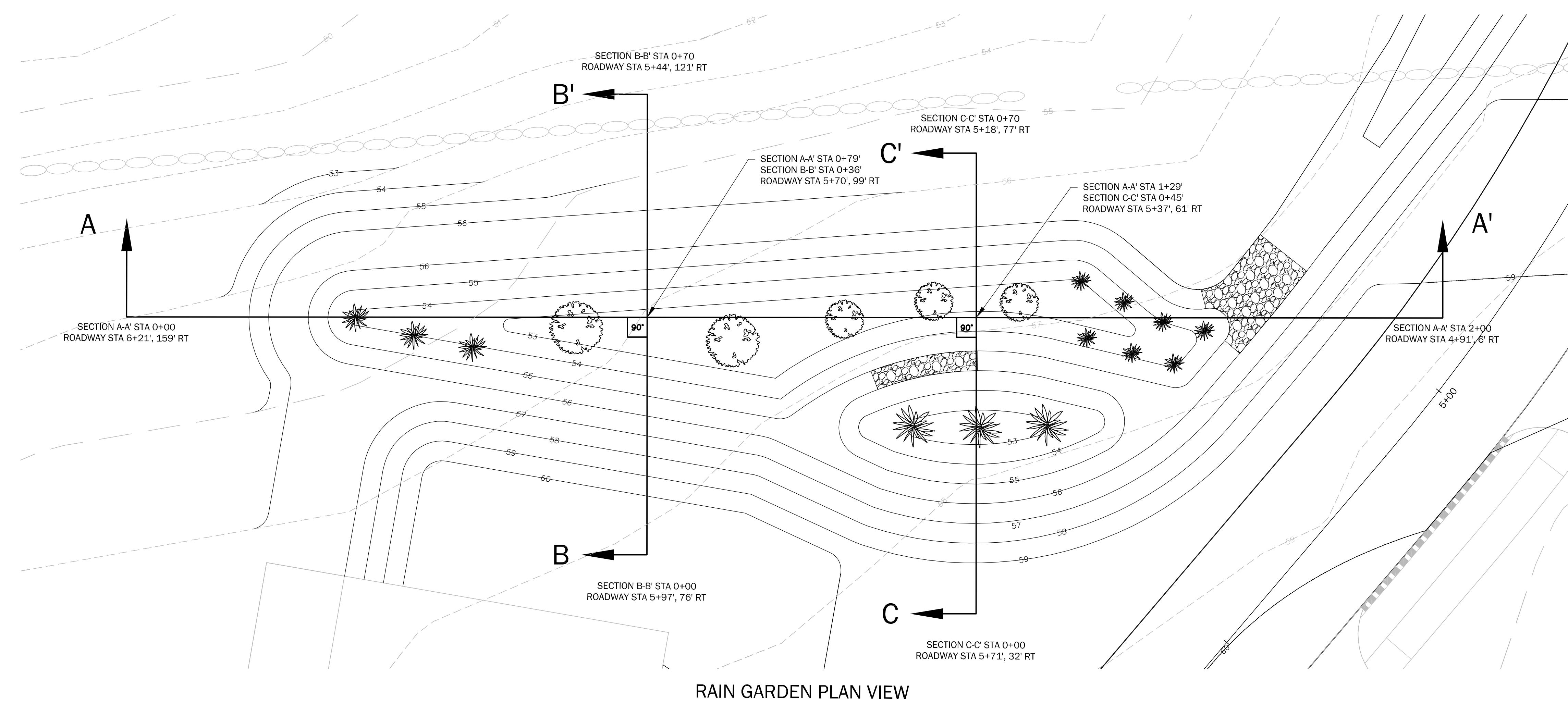
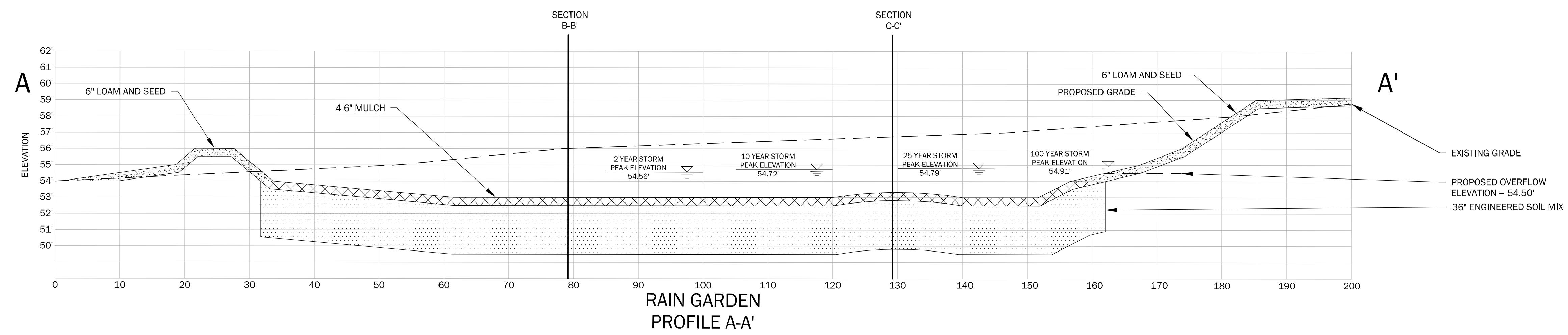


NO. REVISION/ISSUE DATE

RAIN GARDEN DETAIL PLAN

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN TRG	SHEET C-706	
DATE NOVEMBER 26, 2014	CHECKED TPM		
SCALE AS NOTED	REVISED TRG		
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NOTES:
LANDSCAPING OMITTED FOR CLARITY.

ENGINEERED SOIL MIX FOR BIORETENTION SYSTEMS

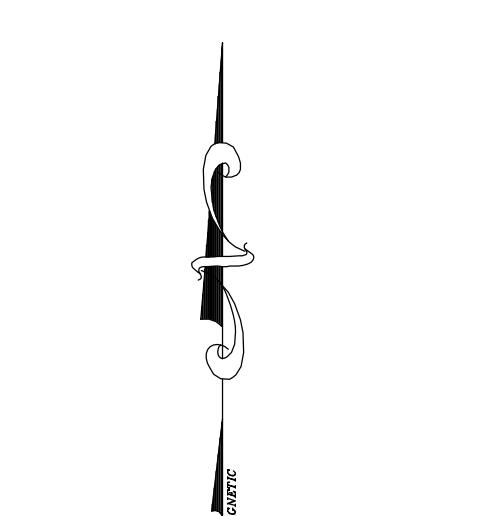
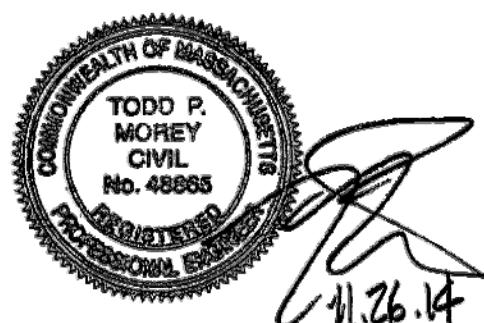
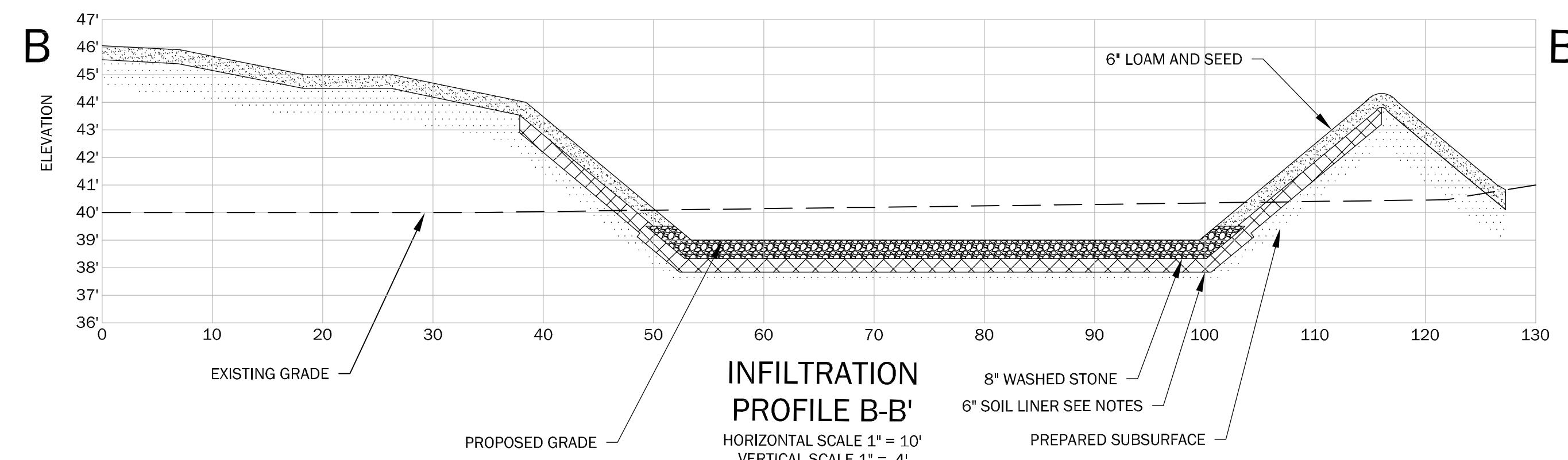
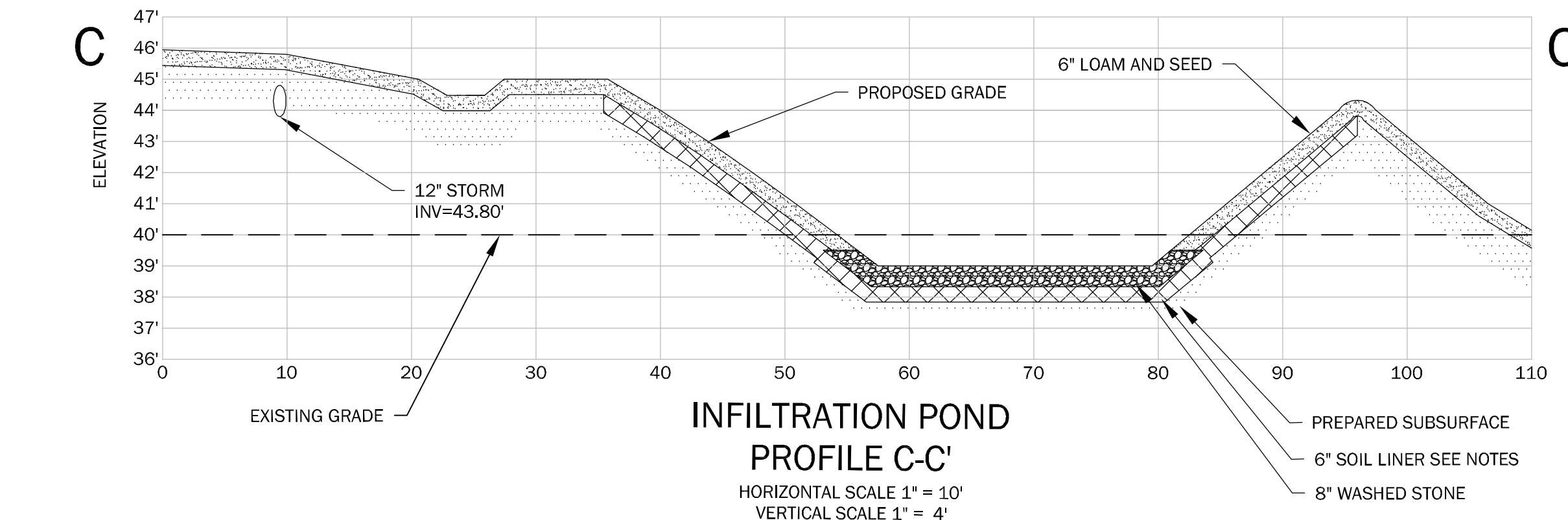
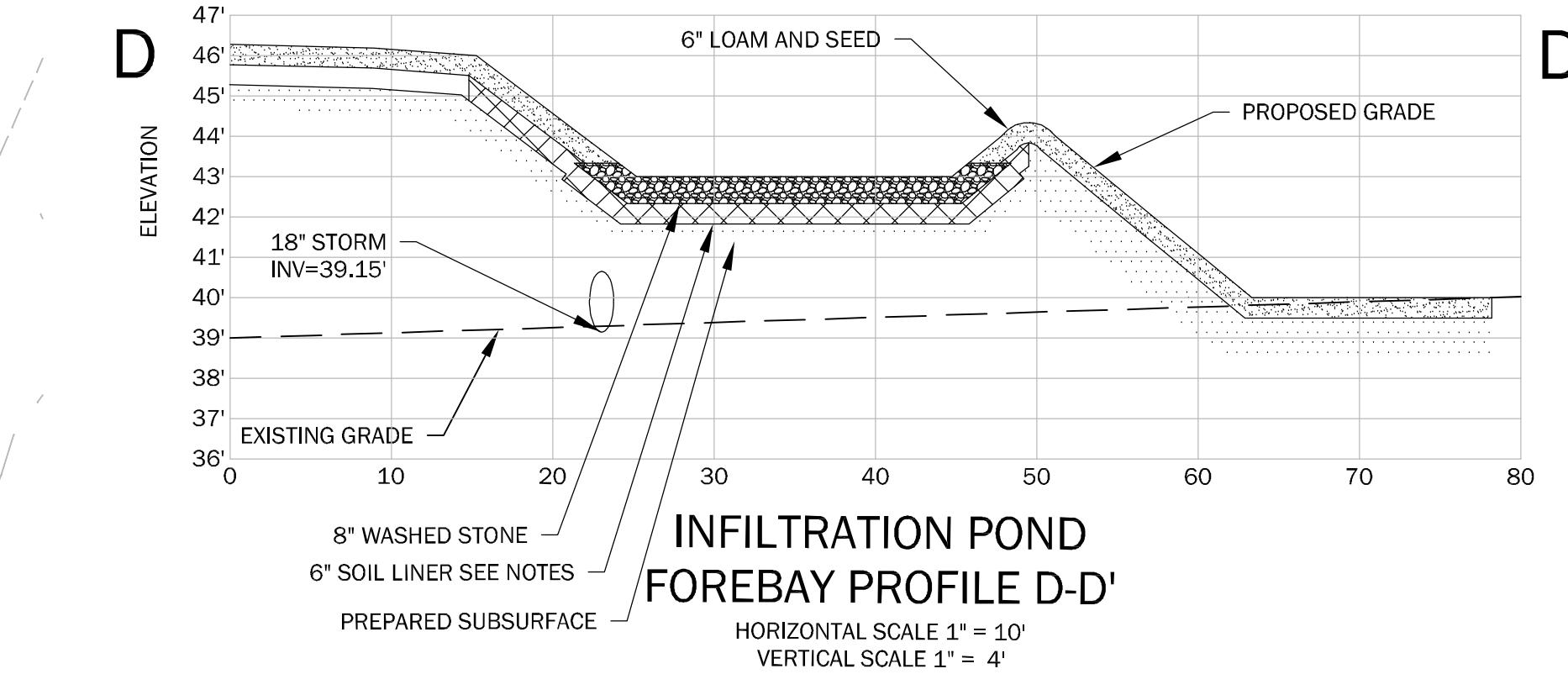
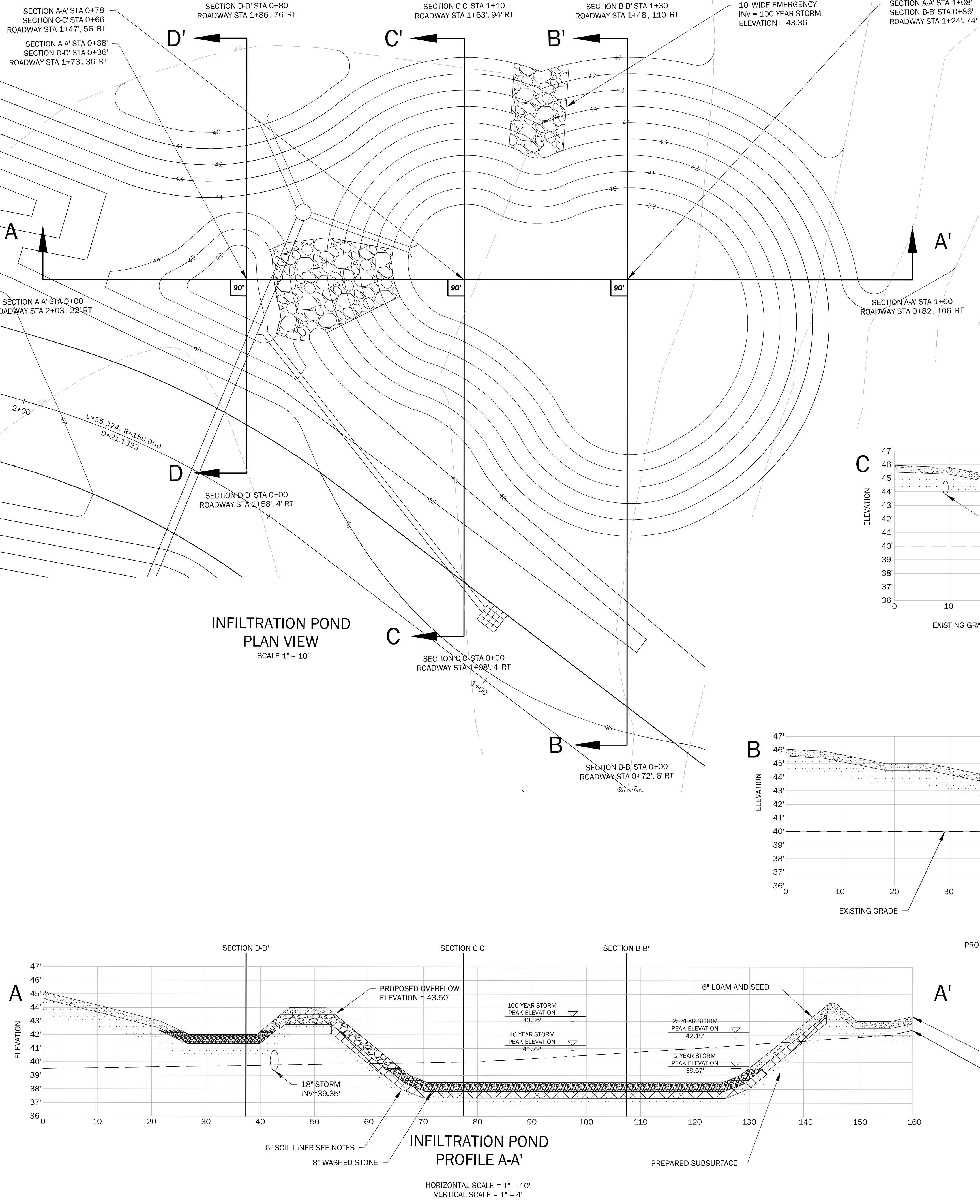
MATERIAL	PERCENTAGE BY WEIGHT
SAND	40%
TOPSOIL	20% - 30%
COMPOST	30% - 40%

- THE SOIL MIX MUST BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%.
- SOIL pH SHOULD GENERALLY BE BETWEEN 5.5-6.5, A RANGE THAT IS OPTIMAL FOR MICROBIAL ACTIVITY AND ADSORPTION OF NITROGEN, PHOSPHOROUS, AND OTHER POLLUTANTS.
- USE SOILS WITH 1.5% - 3% ORGANIC CONTENT AND MAXIMUM 500 PPM SOLUBLE SALTS.
- THE SAND COMPONENT SHOULD BE GRAVELLY SAND THAT MEETS ASTM D 422.
- THE TOPSOIL COMPONENT SHALL BE SANDY LOAM, LOAMY SAND, OR LOAM TEXTURE.
- THE COMPOST COMPONENT MUST BE PROCESSED FROM YARD WASTE IN ACCORDANCE WITH MassDEP GUIDELINES. THE COMPOST SHALL NOT CONTAIN BIOSOLIDS.

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10	0	5	10	20	40
(IN FEET) 1 inch = 10 ft.					

INFILTRATION POND DETAIL PLAN

PATTON HOMESTEAD
650 ASBURY STREET
IN THE TOWN OF
HAMILTON, MASSACHUSETTS

PROJECT C-840	DESIGN TRG	SHEET C-707
DATE NOVEMBER 26, 2014	CHECKED TPM	
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