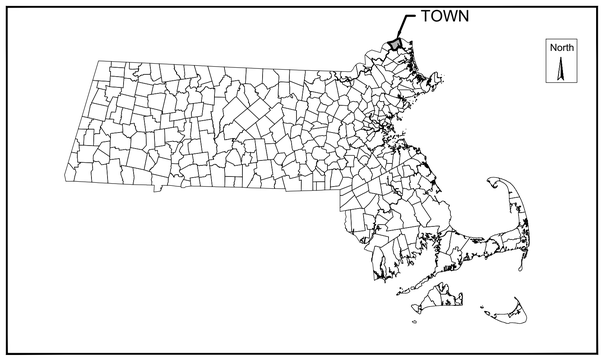
MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

November 2015

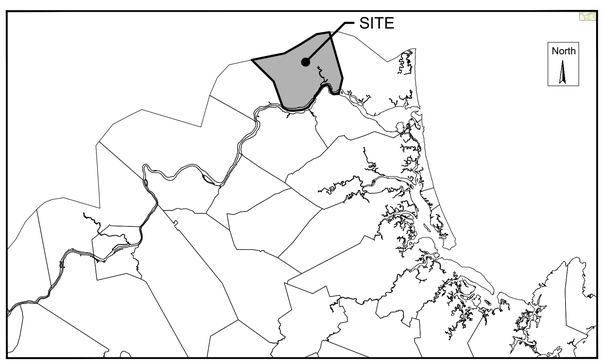


MASSACHUSETTS

Graphic Scale

0 150000

SCALE IN FEET
1:150000

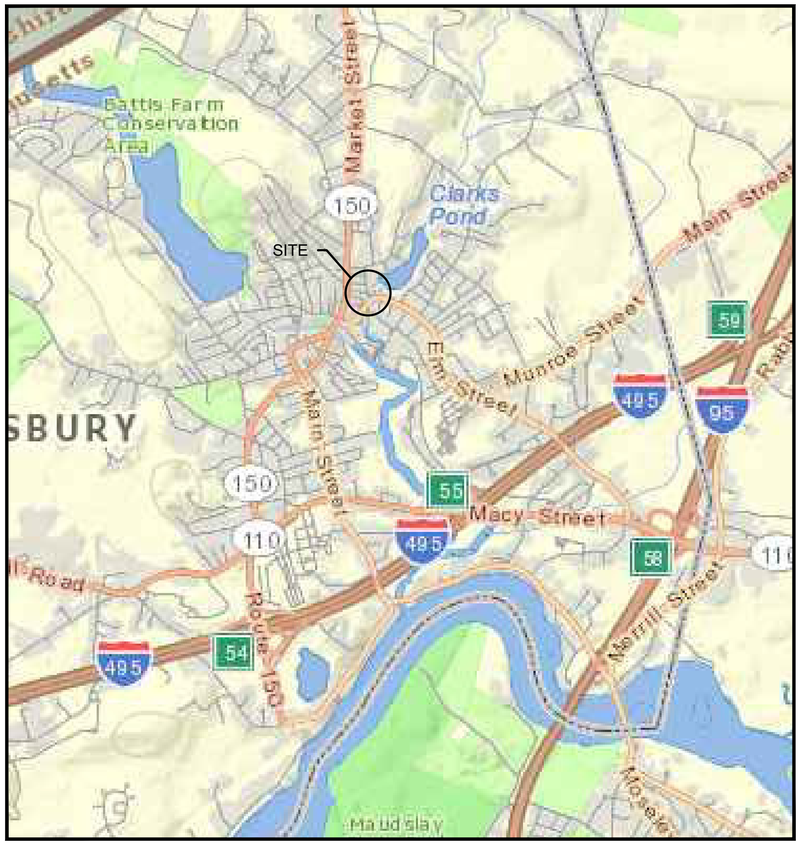


AMESBURY

Graphic Scale

0 12000

SCALE IN FEET
1:12000



VICINITY MAP

Graphic Scale

1-inch = 500-feet

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GENERAL NOTES:

1. THE PROPERTY IS LOCATED AT 77 ELM STREET AND IS ZONED IC.

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

Plan Set:

MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

Prepared For:

Martin Development LLC.
77 Elm Street
Amesbury, MA 01913
(978) 834-0066 x 101

Prepared By:

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Date Issued: November 2015

Designed By: BRK

Drawn By: MJC

Checked By: RAC

Registration:

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CLAYTOR
CIVIL
NO. 45116
REGISTERED PROFESSIONAL ENGINEER

11-13-15

Revisions

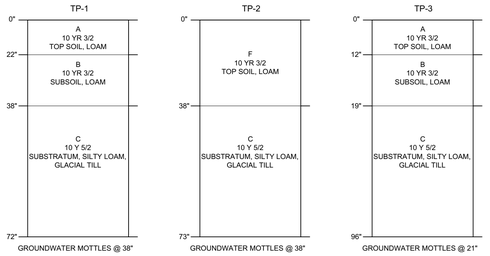
Rev.	Date	By	Appr.	Description
1				
2				
3				
4				
5				
6				
7				

Project Number: 15123

Sheet Number: 1 of 17

SOIL TEST PIT DATA

PERFORMED BY: JOHN B PAULSON, SE1871 ATLANTIC ENGINEERING & SURVEY CONSULTANTS, INC.
DATE: OCTOBER 9, 2008.



LEGEND:

GENERAL

EXISTING

- BERM
- BERM CUT
- BUILDING
- CONTOUR - MINOR
- CONTOUR - MAJOR
- FENCE - CHAIN LINK
- FENCE - WIRE
- FENCE - WOOD
- TREE LINE
- WALL - STONE

PROPERTY INFORMATION

EXISTING

- ABUTTING LOT
- EASEMENT LINE
- PROPERTY, LOT, OR ROW
- SETBACK LINE

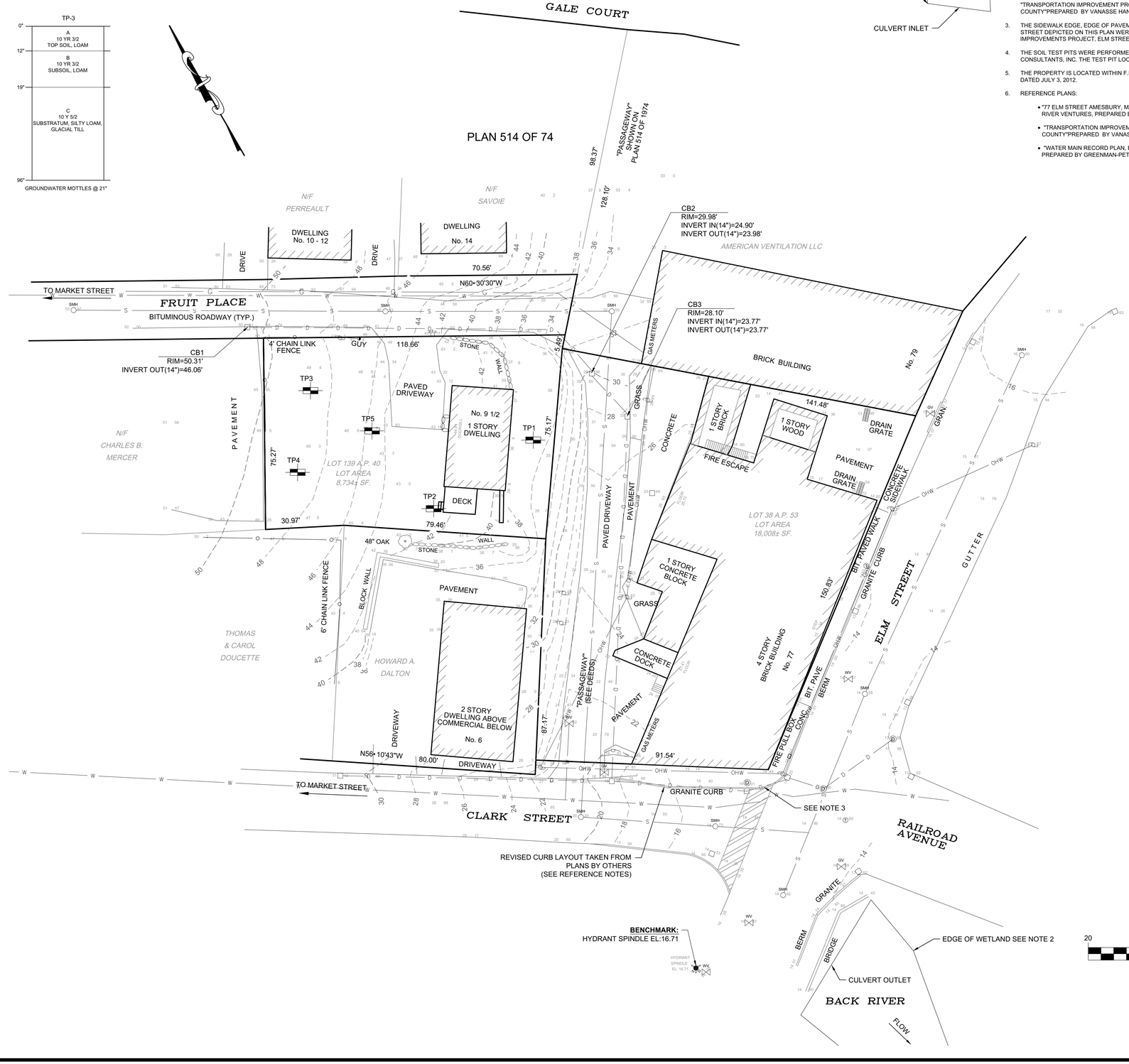
UTILITIES

EXISTING

- DRAIN PIPE
- GAS LINE
- OVERHEAD WIRE
- UNDERGROUND ELEC.
- CABLE LINE
- TELEPHONE LINE
- WATER LINE

ENVIRONMENTAL

- WETLAND BOUNDARY
- WETLAND 100 BUFFER
- RIVERFRONT BOUNDARY
- FEMA FLOOD ZONE



SURVEY NOTES

1. THIS PLAN IS NOT THE RESULT OF AN ON THE GROUND FIELD SURVEY BY THE HORSLEY WITTEN GROUP INC.THE PROPERTY LINES, TOPOGRAPHY, STRUCTURES AND EXISTING CONDITIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE SURVEY PLAN ENTITLED "77 ELM STREET AMESBURY, MASSACHUSSETTS EXISTING CONDITIONS PLAN" PREPARED FOR BLACK RIVER VENTURES BY EASTERN LAND SURVEY ASSOC. INC. DATED APRIL 18. 2008.
2. THE EDGE OF RIVER AND WETLANDS LINE DEPICTED ON THIS PLAN WERE TAKEN FROM THE PLAN ENTITLED "TRANSPORTATION IMPROVEMENT PROJECT, ELM STREET IN THE TOWN OF AMESBURY ESSEX COUNTY"PREPARED BY VANASSE HANGEN BRUSTLIN (VHB), INC DATED FEBRUARY 3, 2012.
3. THE SIDEWALK EDGE, EDGE OF PAVEMENT; CROSSWALK AT THE INTERSECTION OF CLARK STREET; ELM STREET DEPICTED ON THIS PLAN WERE TAKEN FROM THE PLAN ENTITLED "TRANSPORTATION IMPROVEMENTS PROJECT, ELM STREET IN THE TOWN OF AMESBURY ESSEX COUNTY."
4. THE SOIL TEST PITS WERE PERFORMED ON OCTOBER 9, 2008 BY ATLANTIC ENGINEERING AND SURVEY CONSULTANTS, INC. THE TEST PIT LOCATIONS ARE APPROXIMATE.
5. THE PROPERTY IS LOCATED WITHIN F.I.R.M ZONE A AS SHOWN ON COMMUNITY PANEL NO. 250075 0106F DATED JULY 3, 2012.
6. REFERENCE PLANS:
   - "77 ELM STREET AMESBURY, MASSACHUSSETTS EXISTING CONDITIONS PLAN" PREPARED FOR BLACK RIVER VENTURES, PREPARED BY EASTERN LAND SURVEY ASSOC. INC. DATED APRIL 18. 2008.
   - "TRANSPORTATION IMPROVEMENT PROJECT, ELM STREET IN THE TOWN OF AMESBURY ESSEX COUNTY"PREPARED BY VANASSE HANGEN BRUSTLIN (VHB), INC DATED FEBRUARY 3, 2012.
   - "WATER MAIN RECORD PLAN, ELM STREET WATER MAIN REPLACEMENT PROJECT AMESBURY, MA" PREPARED BY GREENMAN-PETERSEN (GPI), INC. DATED 07/24/09.

GRAPHIC SCALE

20 0 10 20 40 80

(in feet)
1 INCH = 20 FEET

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

Revisions

No.	Date	By	Appr.	Description
1	---	---	---	---
2	---	---	---	---
3	---	---	---	---
4	---	---	---	---
5	---	---	---	---
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Checked By: RAC
Drawn By: MJC
Designed By: BRK
Date: November 2015

Plan Set:

MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

Plan Title:

EXISTING CONDITIONS PLAN

Prepared For:
Martin Development LLC.
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Dated: —

Registration:

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CLAYTON
CIVIL
NO. 45116
REGISTERED PROFESSIONAL ENGINEER

11-13-15

Project Number: 15123
Sheet : 2 of 17

Sheet Number: C - 2

last modified: 11/13/15 printed: 11/13/15 by bl \\HW-FILE\HW-Server\Projects\2015\15123 77 Elm St-Amesbury\Drawings\15123-EX.DWG

GENERAL CONSTRUCTION NOTES

1. ALL SITE SITE WORK TO COMPLETE THIS PROJECT AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONNEL AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING THE INSTALLATION OF TEMPORARY FENCING BARRICADES, SAFETY LIGHTING, CONES, POLICE DETAIL AND/OR FLAGMEN AS DETERMINED NECESSARY BY THE TOWN/CITY/LOCAL MUNICIPALITY. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF POLICE DETAIL AND FOR COORDINATING WITH THE LOCAL OR STATE POLICE DEPARTMENT FOR ALL REQUIRED POLICE DETAIL.
3. MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS, PAY ALL FEES INCLUDING POLICE DETAILS AND POST ALL BONDS, IF NECESSARY, ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE OWNER AND THE ENGINEER.
4. ALL EXISTING CONDITIONS SHOWN ARE APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. PRIOR TO THE START CONSTRUCTION VERIFY THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLING ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
5. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS INDICATED ON THE DRAWINGS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE TOWN, AND "DIGSAFE" (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR MUST RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD-LOCATED UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACCURATELY SHOWN. THE CONTRACTOR MUST MAINTAIN ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
6. COORDINATE AND MAKE ALL CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS REQUIRED.
7. THE CONTRACTOR MUST MAINTAIN ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ALL COST RELATED TO THE REPAIR OF UTILITIES. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES MUST BE DONE BY HAND.
8. COORDINATE ALL TRENCHING WORK WITHIN ROADWAYS WITH THE PROPER LOCAL & STATE AGENCY. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY INCLUDING ANY LOCAL AND/OR STATE PERMITS REQUIRED FOR THE TRENCH WORK. IF THIS THIS WORK IS REQUIRED TO OCCUR OUTSIDE THE AGREED UPON HOURS OF OPERATION FOR THE FACILITY, THE CONTRACTOR MUST PLAN ACCORDINGLY.
9. SAWCUT ALL TRENCH WORK WITHIN EXISTING PAVEMENT AS INDICATED ON THE DRAWINGS. BACKFILL AND COMPACT TRENCH WORK AS INDICATED ON THE DRAWING AND IN THE SPECIFICATIONS. IF SETTLEMENT OCCURS DUE TO INADEQUATE COMPACTION, AS DETERMINED BY THE ENGINEER, WITHIN THE WARRANTY PERIOD, CONTRACTOR IS REQUIRED TO REMOVE, PATCH AND REPAVE AFTER ONE COMPLETE 12-MONTH CYCLE.
10. IMPORT ONLY CLEAN MATERIAL. MATERIAL FROM AN EXISTING OR FORMER 21E SITE AS DEFINED BY THE MASSACHUSETTS CONTINGENCY PLAN 310 CMR 40.0000 WILL NOT BE ACCEPTED .
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH AND MAINTAIN ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. COORDINATE WITH THE ENGINEER THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS.
12. SITE LAYOUT SURVEY REQUIRED FOR CONSTRUCTION MUST BE PROVIDED BY THE CONTRACTOR AND PERFORMED BY A MASSACHUSETTS' REGISTERED PROFESSIONAL LAND SURVEYOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SURVEYOR FOR ALL SITE SURVEY WORK.
13. MAINTAIN ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES ARE TO REMAIN UNTIL A FINAL INSPECTION OF THE ITEM HAS BEEN COMPLETED BY THE ENGINEER. RE-STAKING OF PREVIOUSLY SURVEYED SITE FEATURES IS THE RESPONSIBILITY (INCLUDING COST) OF THE CONTRACTOR.
14. UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (THE MASSACHUSETTS HIGHWAY DEPARTMENT 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE 2002 SUPPLEMENTAL SPECIFICATIONS, AND THE 2005 STANDARD SPECIAL PROVISIONS)
15. PROVIDE ALL CONSTRUCTION SERVICE IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION CONTAINMENT, AND TRENCH WORK.
16. COLLECT SOLID WASTES AND STORE IN A SECURED DUMPSTER. THE DUMPSTER MUST MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
17. RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE PER SPECIFICATIONS. LEAVE ALL AREAS NOT DISTURBED BY CONSTRUCTION IN THEIR NATURAL STATE. TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES, OTHER LANDSCAPING AND/OR NATURAL FEATURES. WHEREAS THE PLANS DO NOT SHOW ALL LANDSCAPE FEATURES, EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF THE WORK.
18. CONSTRUCT ALL WHEELCHAIR RAMPS IN ACCORDANCE WITH MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS AND CONSTRUCTION AND TRAFFIC STANDARD DETAILS (1996) DRAWING NUMBER 107.1.0 AND 107.2.0. CONSTRUCT RAMPS WITH AN 8% MAX. SLOPE AND 2% CROSS SLOPE.
19. LEDGE OR BOULDER EXCAVATION IS NOT ANTICIPATED FOR THIS SITE. HOWEVER, PROVIDE A UNIT PRICE COST IN CUBIC YARD MEASURE FOR LEDGE AND/OR BOULDER REMOVAL. LEDGE AND/OR BOULDERS LESS THAN 1 CUBIC YARD IN SIZE BASED ON THE AVERAGE DIMENSIONS WILL NOT BE CONSIDERED PAYABLE ROCK. PROVIDE UNIT PRICES FOR BOTH ON AND OFF SITE DISPOSAL. IF ADDITIONAL FILL MATERIAL IS REQUIRED INCLUDE THE COST OF ALL FILL MATERIAL.
20. REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. PROMPTLY REMOVE ALL DEMOLITION DEBRIS FROM THE SITE TO AN APPROVED DUMP SITE.
21. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.
22. DO NOT WASH ANY CONCRETE TRUCKS ONSITE. REMOVE BY HAND ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA.
23. BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOULDERS ONSITE IS PROHIBITED. DO NOT USE ROAD SALT OR OTHER DE-ICING CHEMICALS ON THE ACCESS ROADWAY.
24. IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED.
25. AT THE END OF CONSTRUCTION, REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE [AS INDICATED IN THE SPECIFICATIONS OR]. PERFORM A THOROUGH INSPECTION OF THE WORK PERIMETER. COLLECT AND REMOVE ALL MATERIALS AND BLOWN OR WATER CARRIED DEBRIS FROM THE SITE.

GENERAL GRADING AND DRAINAGE NOTES

1. ALL CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
2. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 2 FOOT.
3. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
4. ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
5. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS. IMMEDIATELY NOTIFY THE ENGINEER IF POSITIVE DRAINAGE CANNOT BE PROVIDED.
6. REFER TO ARCHITECTURAL PLAN AND SPECIFICATIONS FOR EARTHWORK AND COMPACTION REQUIREMENTS FOR ALL SLABS AND BUILDING FOUNDATIONS.
7. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE UNLESS NOTED OTHERWISE.
8. ALL EARTHWORK AND SITE PREPARATION MUST BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF ANY SUBSURFACE INVESTIGATION OR GEOTECHNICAL REPORTS PREPARED FOR THIS SITE.
9. ALL DRAINAGE STRUCTURES AND PIPES MUST BE CONNECTED TO THE DRAINAGE SYSTEM PRIOR TO THE INSTALLATION OF ANY PAVEMENT. PAVING WILL NOT BE ALLOWED IF THE DRAINAGE SYSTEM FOR THE PROPOSED PAVED AREA IS NOT COMPLETELY AND PROPERLY INSTALLED. THIS INCLUDES THE STABILIZATION OF ALL DISTURBED AREAS CONTRIBUTING TO THE DRAINAGE SYSTEMS AND ANY STORMWATER BASIN FLOORS AND SIDE SLOPES .

DEWATERING

1. A GROUNDWATER TABLE IS NOT ANTICIPATED. HOWEVER, IF THE WATER TABLE IS ENCOUNTERED DURING EXCAVATION, TEMPORARILY LOWER THE WATER TABLE [PER SPECIFICATIONS OR] BY PUMPING. INSTALL A DEWATERING BASIN AS INDICATED IN THE DEWATERING BASIN DETAIL AND PROVIDE A DEWATERING PLAN DEPICTING PROPOSED DEWATERING LOCATION. DIRECT THE PUMP DISCHARGE TO THIS BASIN TO PREVENT SEDIMENTS FROM LEAVING THE CONSTRUCTION AREA. INSTALL ADDITIONAL BASINS IF REQUIRED. INSTALL THE BASIN AS INDICATED ON DRAWINGS IF SO NOTED, OTHERWISE INSTALL THE BASIN(S) WITHIN THE LIMIT OF DISTURBANCE INDICATED BY THE SILT FENCE OR STRAWBALES. OR
2. HIGH WATER TABLE IS ANTICIPATED. IF THE WATER TABLE IS ENCOUNTERED DURING EXCAVATION, TEMPORARILY LOWER THE WATER TABLE AS INDICATED IN THE SPECIFICATIONS.
3. PRIOR TO ANY DEWATERING, THE DEWATERING PLAN MUST BE APPROVED BY THE ENGINEER.
4. IF DEWATERING IS NECESSARY DURING CONSTRUCTION, IMPLEMENT THE PROPER ESC MEASURES ON SITE TO PREVENT EROSION OR SEDIMENT RUNOFF. THESE MEASURES CAN INCLUDE DEWATERING BAGS, TEMPORARY STRAWBALES, SILT FENCES, SILT SOCKS AND/OR OTHER APPROVED DEVICES AS INDICATED IN THE DETAILS.

BASIC CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND LANDSCAPE ARCHITECTS AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

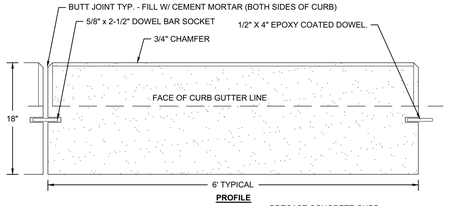
1. SURVEY AND STAKE THE PROPOSED LIMIT OF DISTURBANCE AND LIMIT OF SEDIMENTATION BARRIERS.
2. PLACE SEDIMENTATION BARRIERS (STRAWBALES, SILT FENCE, ETC.) AS INDICATED ON DRAWINGS AND STAKED OUT IN THE FIELD. UNDER NO CIRCUMSTANCES IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS/LIMIT OF DISTURBANCE AS INDICATED ON DRAWINGS AS APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP).
3. INSTALL TEMPORARY CONSTRUCTION ENTRANCES IN LOCATIONS INDICATED ON DRAWINGS. NO OTHER ENTRANCES ARE TO BE USED TO GAIN ACCESS TO THE SITE BY ANY CONSTRUCTION OR DELIVERY VEHICLES.
4. BEGIN CLEARING THE SITE AS REQUIRED.
5. SURVEY AND STAKE CENTERLINE OF THE PROPOSED ROADS, STORMWATER MANAGEMENT AREAS, AND DRAINAGE LINES.
6. EXCAVATE AND ROUGH GRADE THE PROPOSED STORMWATER MANAGEMENT AREAS AND ANY ADDITIONAL TEMPORARY BASINS NECESSARY TO CONTROL SITE RUNOFF AND SEDIMENTS.
7. BEGIN CLEARING AND GRUBBING THE PARKING AND ROADWAY AREAS. TOPSOIL IS TO BE STRIPPED FROM THE AREA OF THE PROPOSED ROADWAYS AND DRAINAGE BASINS AND STOCKPILED IN APPROVED LOCATIONS. TOPSOIL STOCKPILES MUST BE PROTECTED BY A SEDIMENT BARRIER.
8. INSTALL TEMPORARY CONVEYANCE DEVICES (SWALES, CHECK DAMS, PIPES, ETC.) AS NECESSARY TO CONVEY RUNOFF TO STORMWATER MANAGEMENT AREAS.
9. BEGIN ROUGH GRADING AREAS FOR ROADS AND PARKING. BRING ROUGH GRADING TO PROPER ELEVATIONS AS SOON AS PRACTICABLE. COORDINATE WORK TO MINIMIZE TIME SOILS ARE UN-STABILIZED.
10. BEGIN UTILITY CONSTRUCTION. THE CONTRACTOR IS FREE TO INSTALL THE UTILITIES IN THE SEQUENCE HE/SHE CHOOSES. IMMEDIATELY REPAIR, REPLACE AND STABILIZE ANY EROSION CONTROL DEVICES DISTURBED DURING THE UNDERGROUND UTILITY CONSTRUCTION. MODIFY TEMPORARY CONVEYANCE DEVICES, AS NECESSARY, TO CONVEY RUNOFF TO STORMWATER MANAGEMENT AREAS.
11. INSTALL DRAINAGE PIPES, DRAINAGE MANHOLES, CATCH BASINS, AND UNDERGROUND DRAINAGE STRUCTURES. BEGIN WORK DOWN-GRADIENT AND PROGRESS UP-GRADIENT. PROTECT DISCHARGE OUTLETS WITH RIP-RAP APRONS. THE STORMWATER MANAGEMENT AREAS AND DRAINAGE NETWORK ARE TO BE PROTECTED FROM SEDIMENTATION WITH SILT FENCE AND STRAWBALES UNTIL ALL UN-STABILIZED AREAS ARE STABILIZED WITH STONE SUB-BASE OR VEGETATION. INSTALL SEDIMENT BARRIERS AT ALL POINTS OF ENTRY INTO THE DRAINAGE NETWORK. TAKE PARTICULAR CARE TO PROTECT UNDERGROUND SYSTEMS FROM SEDIMENT.
12. PERMANENTLY SEED ALL DISTURBED AREAS OUTSIDE OF THE AREA TO BE PAVED.
13. UPON COMPLETION OF UNDERGROUND UTILITIES INSTALLATION, PLACE COMPACTED GRAVEL FOUNDATION AND ROUGH GRADE THE ROADWAYS/PARKING AREAS IN ACCORDANCE WITH THE SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS AS SOON AS POSSIBLE.
14. BEGIN ROAD AND PARKING CONSTRUCTION PER SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. ROADS AND PARKING AREAS ARE NOT TO BE PAVED UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS COMPLETE.
15. FINISH PERMANENT STABILIZATION. SWEEP THE ROADWAY TO REMOVE ALL SEDIMENTS. REPAIR DRAINAGE OUTLETS AND BASINS AS REQUIRED. CLEAN AND FLUSH THE DRAINAGE STRUCTURES AND PIPES AT THE END OF CONSTRUCTION AND REMOVE ALL ACCUMULATED SEDIMENTS IN THE DRAINAGE BASINS. CONTRACTOR MUST INSPECT THE DRAINAGE NETWORK AND REPAIR ANY DAMAGE IMMEDIATELY.
16. COMPLETE ALL REMAINING PLANTING AND SEEDING.
17. ENGINEER TO APPROVE THE REMOVAL OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS AND DETERMINE WHEN THE CONTRIBUTING AREA HAS REACHED A MINIMUM OF 80% STABILIZATION.

STORMWATER FACILITY OPERATION & MAINTENANCE:

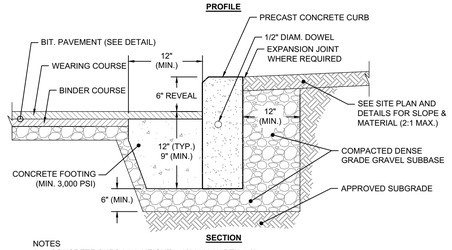
THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES AS OUTLINED BELOW UNTIL SUCH TIME THAT THE ROADWAYS AND ASSOCIATED UTILITIES ARE ACCEPTED BY THE OWNER AND THE ENGINEER.

1. INSPECT AND RESTORE/CLEAN ALL FACILITIES (INLETS, MANHOLES, INFILTRATION BASINS, ETC.) OF SEDIMENT AND DEBRIS PRIOR TO THE OWNER'S ACCEPTANCE.
2. REMOVE AND DISPOSE ALL SEDIMENT AND DEBRIS OF A PRE-APPROVED LOCATION AS APPROVED BY THE TOWN.
3. REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION PERTAINING TO STORMWATER FACILITY OPERATION AND MAINTENANCE REQUIREMENTS. MAINTAIN A WORKING COPY OF THE SWPPP ON SITE AT ALL TIMES.
4. INSPECT AFTER EVERY MAJOR RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND THE FIRST 3 MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND CONSTRUCTION.
5. SPECIFIC ANNUAL MAINTENANCE REQUIRED AS FOLLOWS:
   - A. DRAINAGE STRUCTURES (INLETS, MANHOLES & CATCHBASINS) : ALL DRAINAGE STRUCTURES WILL BE INSPECTED ON A WEEKLY BASIS & AFTER EACH RAIN EVENT OF .25 INCH OR GREATER TO MONITOR FOR PROPER OPERATION, COLLECTION OF LITTER OR TRASH, AND STRUCTURAL DETERIORATION. THE BASINS WILL BE CLEANED OF SEDIMENT (INCLUDING SUMPS) AS NECESSARY, AND REPAIRED WHEN REQUIRED.
   - B. SEDIMENT FOREBAY: INSPECT ON A WEEKLY BASIS & AFTER EACH RAIN EVENT OF .25 INCH OR GREATER TO ENSURE PROPER FUNCTIONING. REMOVE SEDIMENT BUILD-UP ON THE FLOOR OF THE FOREBAY AND PROPERLY DISPOSE OF ONCE EVERY FIVE TO SEVEN YEARS, OR MORE OFTEN AS NECESSARY TO LIMIT SEDIMENT BUILDUP TO LESS THAN 50 PERCENT OF THE DESIGN VOLUME.
   - C. BIORETENTION SYSTEMS AND RAINGARDENS : INSPECT TWICE ANNUALLY FOR THE FIRST YEAR OF OPERATION AND ANNUALLY AFTER THE FIRST YEAR, AND AFTER STORM EVENTS GREATER THAN OR EQUAL TO THE 1-YEAR, 24-HOUR PRECIPITATION EVENT. GENERAL MAINTENANCE OF BIORETENTION SYSTEMS FALLS UNDER LANDSCAPING PRACTICES. MONITOR THE PLANTING SOIL BED FOR PROPER PH, EROSION, AND AERATION. REPLACE MULCH BI-ANNUALLY, AND REMOVE AND REPLACE ILL-ESTABLISHED, DEAD OR SEVERELY DISEASED PLANTS ANNUALLY. REMOVE SEDIMENT BUILD-UP FROM THE PEA GRAVEL DIAPHRAGM AS NEEDED, AND REPLACE THE DIAPHRAGM WHEN NECESSARY.
   - D. ROUTINE MAINTENANCE: OTHER ROUTINE MAINTENANCE INCLUDES THE REMOVAL OF TRASH AND LITTER FROM PAVED AND PERIMETER AREAS, AND ANNUAL STREET AND PARKING LOT SWEEPING AFTER THE SPRING THAW TO AVOID EXCESSIVE ACCUMULATION OF SEDIMENT IN THE DRAINAGE SYSTEM. INSPECT THE PIPES DRAINING THE PROJECT ANNUALLY FOR PROPER FLOW.

NOTE: OPERATION AND MAINTENANCE CHECKLIST AVAILABLE UPON REQUEST



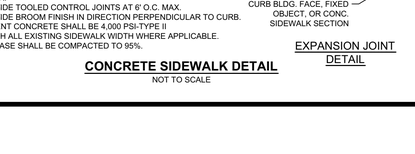
PROFILE



SECTION

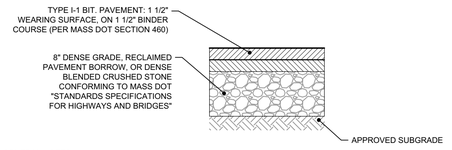
NOTES
1. CONCRETE CURB MIN. HEIGHT = 18" MIN. WIDTH = 6".
2. EXPOSED EDGES TO HAVE 3/4" CHAMFER.
3. EXPOSED SURFACES TO HAVE SPONGE FLOAT FINISH.
4. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0".
5. TO HAVE A MINIMUM CONCRETE STRENGTH OF 4,000 PSI.
6. TO BE INSTALLED IN ACCORDANCE WITH SECTION 501 OF THE 1995 MHD STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
7. JOINTS BETWEEN CURB SECTIONS SHALL BE POINTED.
8. CURB TO BE INSTALLED TO THE REVEAL AND SLOPE SHOWN IN THE DETAILS.
9. INSTALL IN LOCATIONS SHOWN ON THE SITE PLAN.
10. INSTALL TRANSITION CURB AT ALL WALKWAY/RAMPS AND CURB ENDINGS.
11. PROVIDE CURB EXPANSION JOINTS AT 5'-0" TO 6'-0" O.C.
12. FOR CURB REPLACEMENT IN EXISTING PAVEMENT - SAWCUT EDGE MIN. 12" FROM CURB.
13. SUBBASE FILL TO BE COMPACTED TO 95% COMPACTION.

TYPICAL VERTICAL CONCRETE CURB
NOT TO SCALE



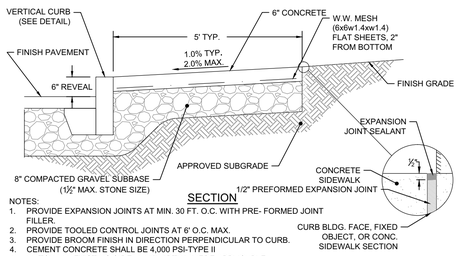
NOTES:
1. BERM TO BE CONSTRUCTED OF BITUMINOUS WEARING SURFACE COURSE AS SHOWN.
2. BERM TO BE CONSTRUCTED INTEGRAL WITH BITUMINOUS WEARING SURFACE.
3. WHEN BERM IS TO BE CONSTRUCTED ON A FRESH LAID BITUMINOUS SURFACE, THAT SURFACE MUST FIRST BE CLEANED.
4. BERM TO BE FOUNDED ENTIRELY ON THE BASE COURSE.
5. FINISH GRADE AT THE BACK OF THE BERM IS TO BE BROUGHT TO THE TOP OF THE BACK EDGE OF BERM.

TYPICAL BITUMINOUS BERM DETAIL
NOT TO SCALE



GENERAL NOTES:
1. SUB-GRADE (EXISTING MATERIAL) SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND/OR COARSE SAND, FREE FROM LOAM AND CLAY TO A DEPTH NOT LESS THAN 4-FT BELOW THE FINISH PAVEMENT SURFACE. EXCAVATE SANDY-LOAM AND/OR LOAMY-SAND TOPSOIL MATERIAL FROM ALL PAVED AREAS PRIOR TO SUB-BASE INSTALLATION.
2. PLACE SUB-BASE IN MAXIMUM 8" LIFTS (COMPACTED TO 95%).
3. COMPACT SUB-GRADE FILL TO 95% COMPACTION.
4. SEE SITE LAYOUT PLAN FOR PAVEMENT WIDTH AND LOCATION.
5. SEE GRADING PLANS FOR PAVEMENT SLOPE AND CROSS SLOPE.
6. SWEEP CLEAN THE EXISTING BINDER COURSE SURFACE PRIOR TO INSTALLING THE WEARING COURSE BY A STREET SWEEPING MACHINE . APPLY A TACK COAT PER SPECIFICATIONS.

TYPICAL BITUMINOUS PAVEMENT
NOT TO SCALE



SECTION

NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE- FORMED JOINT FILLER.
2. PROVIDE TOOLED CONTROL JOINTS AT 6' O.C. MAX.
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
4. CEMENT CONCRETE SHALL BE 4,000 PSI-TYPE II
5. MATCH ALL EXISTING SIDEWALK WIDTH WHERE APPLICABLE.
6. SUBBASE SHALL BE COMPACTED TO 95%.

CONCRETE SIDEWALK DETAIL
NOT TO SCALE

EXPANSION JOINT DETAIL

LEGEND:

GENERAL

PROPOSED

- BERM
- BERM CUT
- BUILDING
- CENTERLINE
- 44 — CONTOUR - MINOR
- 50 — CONTOUR - MAJOR
- CURB
- CURB CUT
- EDGE OF PAVEMENT
- FENCE - CHAIN LINK
- FENCE - WIRE
- FENCE - WOOD
- GUARD RAIL
- LIMIT OF WORK
- PATHWAY
- RIP RAP
- SIDEWALK
- STORMWATER AREA
- TREE LINE
- WALL - RETAINING
- WALL - STONE
- VEGETATED SWALE
- CONCRETE
- CROSSWALK/PAVEMENT STRIPING

PROPERTY INFORMATION

PROPOSED

- ABUTTING LOT
- EASEMENT LINE
- PROPERTY, LOT, OR ROW
- SETBACK LINE

UTILITIES

PROPOSED

- DRAIN PIPE
- G — GAS LINE
- OHW — OVERHEAD WIRE
- S — S — SANITARY SEWER
- FM — FM — SEWER FORCE MAIN
- E/T/D — UNDERGROUND E/T/C
- UGE — UNDERGROUND ELEC.
- C — CABLE LINE
- T — TELEPHONE LINE
- W — W — WATER LINE

EROSION & SEDIMENT CONTROL

- SF — SILT FENCE

ENVIRONMENTAL

- WETLAND BOUNDARY
- WETLAND 100 BUFFER
- RIVERFRONT BOUNDARY
- MLW — MEAN LOW WATER
- MHW — MEAN HIGH WATER
- COASTAL BANK
- COASTAL BANK BUFFER
- FEMA FLOOD ZONE

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

Revisions

Rev.	Date	By	Appr.	Description

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Drawn By: MJC
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Date: November 2015

MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

Plan Set:
Plan Title: CONSTRUCTION NOTES

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Registration:
COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CLAYTOR
CIVIL
NO. 45116
REGISTERED PROFESSIONAL ENGINEER
11-13-15

Project Number: 15123
Sheet : 3 of 17
Sheet Number: C - 3

EROSION & SEDIMENT CONTROL NOTES

1. DESIGNATE THE SITE CONSTRUCTION FOREMAN AS THE ON-SITE PERSONNEL RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROLS AND IMPLEMENTATION OF ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES AS INDICATED ON DRAWINGS AND IN CONSULTATION WITH THE CONSERVATION AGENT, AND ENGINEER BEFORE ANY CONSTRUCTION ACTIVITIES BEGIN. INSPECT, MAINTAIN REPAIR AND REPLACE EROSION CONTROL MEASURES, AS NECESSARY, DURING THE ENTIRE CONSTRUCTION PERIOD. THE SITE PERIMETER EROSION CONTROLS ARE THE DESIGNATED LIMIT OF WORK. INFORM ALL PERSONNEL WORKING ON THE PROJECT SITE THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGHOUT THE CONSTRUCTION PERIOD.
3. MAINTAIN A MINIMUM SURPLUS OF 100 FEET OF EROSION CONTROL BARRIER (SILT FENCE, STRAWBALE, &/OR SILT SOCK) ONSITE AT ALL TIMES.
4. PROTECT THE ADJACENT RESOURCE AREA FROM SEDIMENTATION DURING PROJECT CONSTRUCTION UNTIL ACCEPTANCE BY THE OWNER & IN CONFORMANCE WITH THE ORDER OF CONDITIONS.
5. PROVIDE CONSTRUCTION ENTRANCES AS INDICATED ON DRAWINGS TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. CLEAN AND/OR REPLACE THE CRUSHED STONE PAD, AS NECESSARY, TO MAINTAIN ITS EFFECTIVENESS.
6. KEEP THE LIMIT OF CLEARING, GRADING AND DISTURBANCES TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED SOIL. IF TREES ARE TO BE CUT, CLEAR AND GRUB ONLY THOSE AREAS WHICH ARE ACTIVELY UNDER CONSTRUCTION. PROPERLY INSTALL THE SEDIMENTATION CONTROLS PRIOR TO BEGINNING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK.
7. MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH LEAVE LARGE DISTURBED AREAS UNSTABILIZED. IF INCLEMENT WEATHER IS PREDICTED, USE BEST PROFESSIONAL JUDGEMENT AND GOOD CONSTRUCTION PRACTICES WHEN SCHEDULING CONSTRUCTION ACTIVITIES AND ENSURE THE NECESSARY EROSION CONTROL DEVICES ARE INSTALLED AND FUNCTIONING PROPERLY TO MINIMIZE EROSION FROM ANY IMPENDING WEATHER EVENTS.
8. INSPECT EROSION AND SEDIMENT CONTROL DEVICES AND STABILIZED SLOPES ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF .25 INCH OR GREATER. REPAIR IDENTIFIED PROBLEMS WITHIN 24 HOURS TO ENSURE EROSION AND SEDIMENT CONTROLS ARE IN GOOD WORKING ORDER. RESET OR REPLACE MATERIALS AS REQUIRED.
9. SURROUND THE PERIMETER OF SOIL STOCKPILES WITH SILT SOCK, SILT FENCE, STRAWBALES, OR A COMBINATION OF SILT FENCE WITH STRAWBALE, AS DETERMINED NECESSARY.
10. DISTURBED AREAS AND SLOPES MUST NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. PROVIDE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, REINFORCE TEMPORARY AREAS HAVING A SLOPE GREATER THAN 4:1 WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERLY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER.
11. INSTALL A SILT SACK OR APPROVED EQUIVALENT IN EACH EXISTING CATCHBASIN RECEIVING RUNOFF FROM THE SITE. UPON THE INSTALLATION OF EACH PROPOSED CATCH BASIN, INSTALL A SILT SACK OR APPROVED EQUIVALENT. INSPECT SILT SACKS, AFTER EACH SIGNIFICANT STORM EVENT AND REMOVE AND EMPTY AS NEEDED FOR THE DURATION OF THE CONSTRUCTION PERIOD.
12. SMALL SEDIMENTATION BASINS MAY BE CONSTRUCTED ON AN AS-NEEDED BASIS DURING CONSTRUCTION TO AID IN THE CAPTURE OF SITE RUNOFF AND SEDIMENT. IT WILL BE THE RESPONSIBILITY OF THE SITE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER, TO SIZE AND CREATE THESE BASINS IN APPROPRIATE LOCATIONS.
13. CONTAIN ALL SEDIMENT ONSITE. SWEEP ALL PAVED TRAVEL WAYS AS NECESSARY INCLUDING ANY SEDIMENT TRACKING. SWEEP PAVED AREAS AS NEEDED TO REMOVE SEDIMENT AND POTENTIAL POLLUTANTS ACCUMULATED DURING SITE CONSTRUCTION.
14. REMOVE ACCUMULATED SEDIMENT FROM ALL TEMPORARY PRACTICES AND DISPOSE OF IN A PRE-APPROVED LOCATION.
15. PROVIDE ON SITE OR MAKE READILY AVAILABLE THE NECESSARY EQUIPMENT AND SITE PERSONNEL DURING CONSTRUCTION HOURS FOR THE DURATION OF THE PROJECT TO ENSURE ALL EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER. IF SITE WORK IS SUSPENDED DURING THE WINTER MONTHS THE CONTRACTOR MUST CONTINUE TO PROVIDE PERSONNEL AND EQUIPMENT EITHER ON SITE OR READILY AVAILABLE TO PROPERLY MAINTAIN AND REPAIR ALL EROSION AND SEDIMENTATION CONTROL DEVICES IN A TIMELY AND RESPONSIBLE MANNER
16. PRIOR TO THE INSTALLATION OF ANY STORMWATER MANAGEMENT PRACTICE, REMOVE AND PROPERLY DISPOSE OF SEDIMENT ACCUMULATED IN ANY PARTIALLY CONSTRUCTED OR TEMPORARY BIORETENTION/DRAINAGE AREA USED FOR SEDIMENT CONTROL DURING CONSTRUCTION. PROVIDE A SURFACE ELEVATION AT A MINIMUM 1-FOOT ABOVE THE BOTTOM OF MEDIA ELEVATION AS SHOWN IN THE BIORETENTION SCHEDULE FOR PARTIALLY CONSTRUCTED BIORETENTION AREAS. THIS ALLOWS FOR AN OVER-DIG OF THE COLLECTED SEDIMENT FROM WITHIN THE BIORETENTION AREA PRIOR TO MEDIA/FABRIC INSTALLATION.
17. CONTROL DUST BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE ENGINEER.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE DURING CONSTRUCTION OF ALL STORMWATER FACILITIES INSTALLED OR AFFECTED BY THE PROJECT. REMOVE SEDIMENT OR DEBRIS COLLECTED WITHIN THESE FACILITIES FROM THE PROJECT WORK PRIOR TO THE OWNER'S ACCEPTANCE.

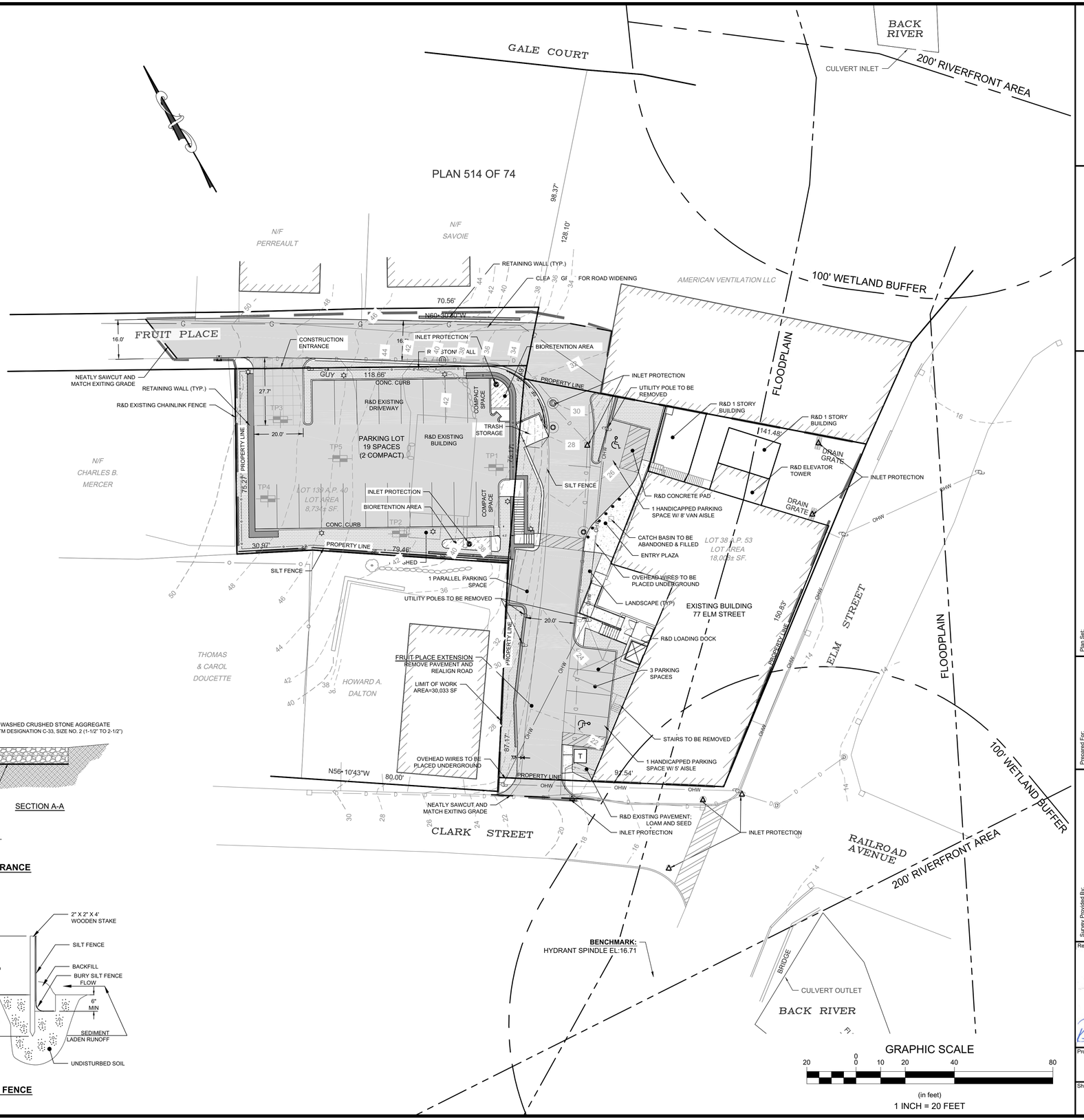
GENERAL DEMOLITION NOTES

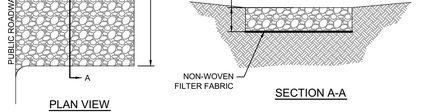
THIS PLAN SET DOES NOT INCLUDE DETAILS & SPECIFICATIONS FOR ALL DEMOLITION WORK REQUIRED WITHIN THE PROPOSED CONSTRUCTION LIMITS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER, PROJECT ARCHITECT, MECHANICAL ENGINEERS AND OTHER PROJECT ENGINEERS INVOLVED WITH THE PROPOSED NEW CONSTRUCTION TO DEVELOP A SUITABLE DEMOLITION PLAN.

1. UNLESS OTHERWISE NOTED, THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION, DEMOLITION, REMOVAL AND DISPOSAL, IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING SITE ELEMENTS AND STRUCTURES INCLUDING, BUT NOT LIMITED TO, BUILDINGS, ROADWAYS, PARKING AREAS, PARKING ISLANDS, BITUMINOUS CONCRETE, CEMENT CONCRETE, GRAVEL, CURBS, WALKWAYS, SIDEWALKS, BERMS, FENCES, UTILITY POLES, POSTS, PLANTING BEDS, TREES, SHRUBS, UTILITIES, DRAINAGE STRUCTURES AND ALL OTHER STRUCTURES SHOWN AND NOT SHOWN WITHIN CONSTRUCTION LIMITS, AND WHERE NEEDED, TO ALLOW FOR NEW CONSTRUCTION. ALL FACILITIES TO BE REMOVED ARE TO BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER SPECIFICATIONS.
2. REMOVE ALL DEBRIS FROM THE SITE AND DISPOSE OF THE DEBRIS IN A PROPER AND LEGAL MANNER.
3. OBTAIN ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
4. COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. COORDINATE WITH THE UTILITY COMPANIES CONCERNING PORTIONS OF THE WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
5. REFER TO MECHANICAL AND UTILITY PLANS AND SPECIFICATIONS FOR ALL WORK WHICH REQUIRES UTILITIES TO BE REMOVED, RELOCATE OR ABANDONED AND LEFT IN PLACE.
6. PROVIDE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL UTILITY LINES, AS REQUIRED, BEFORE PROCEEDING WITH THE WORK.
7. MAINTAIN CONTINUOUS ACCESS AND OPERATION FOR SURROUNDING PROPERTIES, AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
8. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.

PARKING COUNT

FRUIT PLACE PARKING LOT	
PERPENDICULAR	19
FRUIT PLACE EXTENSION	
PERPENDICULAR	3
PARALLEL	1
HANDICAPPED	2
TOTAL PARKING SPACES	25

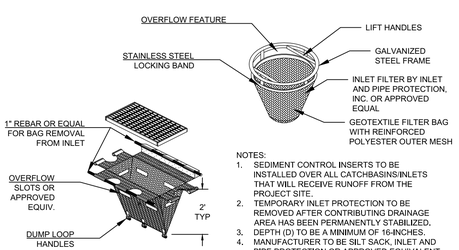




PLAN VIEW — SECTION A-A

NOTE:
1. STONE CONSTRUCTION ENTRANCE(S) TO REMAIN UNTIL INSTALLATION OF PAVEMENT SUB-BASE IS TO BEGIN.
2. SEE SITE PLAN FOR LOCATION & ACTUAL DIMENSIONS

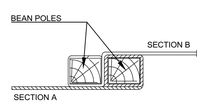
CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTES:
1. SEDIMENT CONTROL INSERTS TO BE INSTALLED OVER ALL CATCHBASINS/INLETS THAT WILL RECEIVE RUNOFF FROM THE PROJECT SITE.
2. TEMPORARY INLET PROTECTION TO BE REMOVED AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
3. DEPTH (D) TO BE A MINIMUM OF 16-INCHES.
4. MANUFACTURER TO BE SILT SACK, INLET AND PIPE PROTECTION OR APPROVED EQUIVALENT.

INLET PROTECTION
NOT TO SCALE

NOTES:
1. FENCE FABRIC TO BE 36-INCHES WIDE MINIMUM AND TO BE SECURELY FASTENED TO BEANPOLES. 6" MIN OF FABRIC TO BE BELOW GROUND SURFACE (BACKFILLED OR TOE-ED INTO GROUND).
2. WOODEN STAKE POST SPACING TO BE 4-FOOT MAX ON CENTER.



JOINING SECTIONS OF FENCE TOP VIEW

SILTATION CONTROL FENCE
NOT TO SCALE

Revisions

Rev.	Date	By	Appr.	Description
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Drawn By: MJC
Designed By: BRK
Date: November 2015

Plan Set:
Plan Title: OVERALL SITE PLAN

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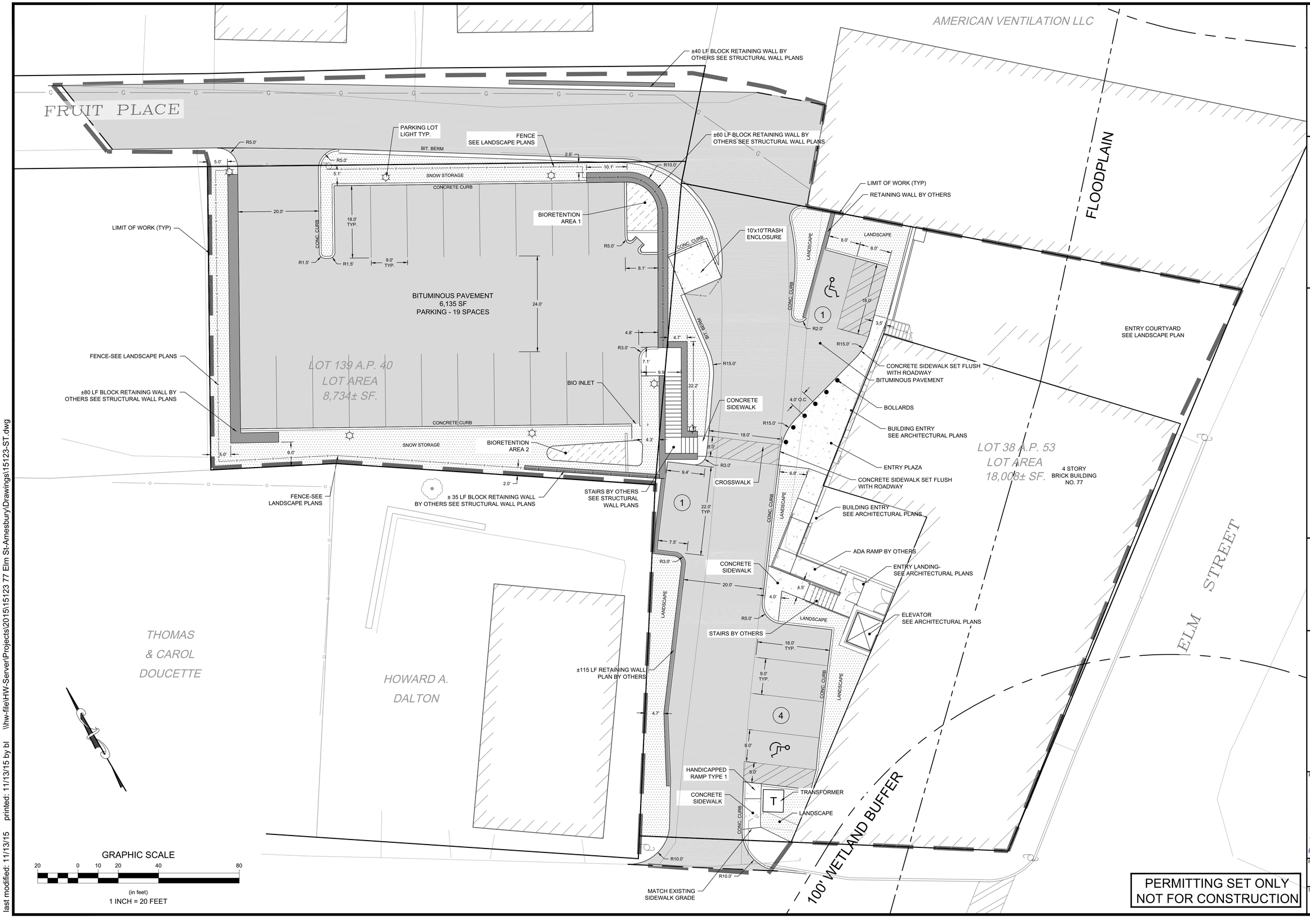
NO. 45116
REGISTERED PROFESSIONAL ENGINEER
11-13-15

Project Number: 15123
Sheet: 4 of 17
Sheet Number: C - 4

last modified: 11/13/15 printed: 11/13/15 by bl \\HW-FILE\HW-Server\Projects\2015\15123 77 Elm St-Amesbury\Drawings\15123-ST.dwg



GRAPHIC SCALE

20 0 10 20 40 80

(in feet)

1 INCH = 20 FEET

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Revisions

Rev.	Date	By	Appr.	Description
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11-13-15

Project Number: 15123

Sheet : 5 of 17

Sheet Number: C - 5

last modified: 11/13/15 printed: 11/13/15 by bl \\HW-FILE\HW-Server\Projects\2015\15123 77 Elm St-Amesbury\Drawings\15123-GD.dwg

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Rev.	Date	By	Appr.	Description
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Revisions

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Date: November 2015
Designed By: BRK
Drawn By: MJC
Checked By: RAC

Plan Set:
MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

Plan Title:
GRADING AND UTILITIES PLAN

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Phone: (978) 531-8121
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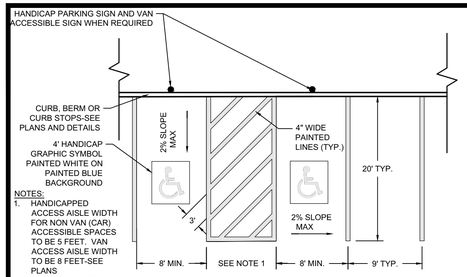
Dated: ---

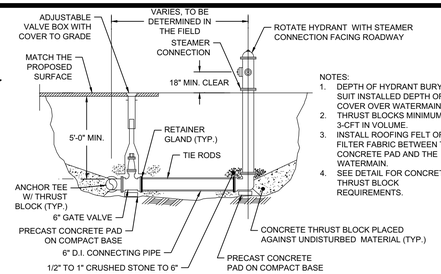
Registration:
COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CLAYTOR
CIVIL
NO. 45116
REGISTERED PROFESSIONAL ENGINEER
[illegible] 11-13-15

Project Number: 15123
Sheet: 6 of 17
Sheet Number: C - 6



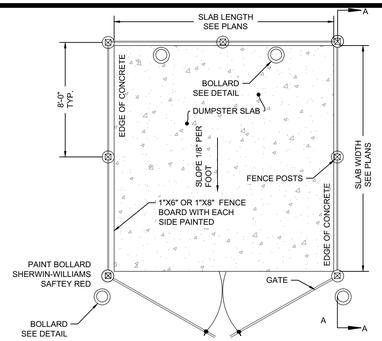
NOTES:
1. HANDICAPPED ACCESS AISLE WIDTH FOR NON VAN (CAR) ACCESSIBLE SPACES TO BE 5 FEET. VAN ACCESS AISLE WIDTH TO BE 8 FEET-SEE PLANS
2. ALL PAINT TO BE NON-SKID.

HANDICAPPED PARKING
NOT TO SCALE

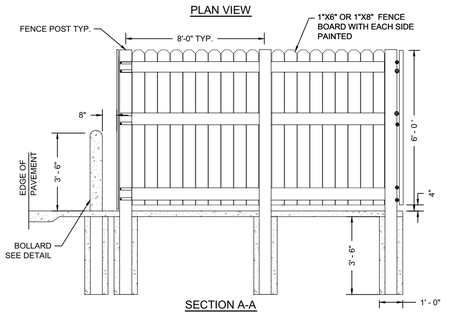


NOTES:
1. DEPTH OF HYDRANT BURY TO SUIT INSTALLED DEPTH OF COVER OVER WATERMAIN.
2. THRUST BLOCKS MINIMUM 3-CFT IN VOLUME.
3. INSTALL ROOFING FELT OR FILTER FABRIC BETWEEN THE CONCRETE PAD AND THE WATERMAIN.
4. SEE DETAIL FOR CONCRETE THRUST BLOCK REQUIREMENTS.

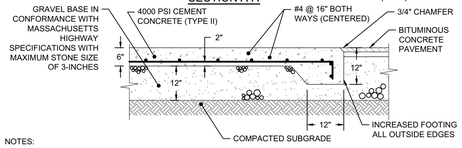
HYDRANT ASSEMBLY
NOT TO SCALE



PLAN VIEW



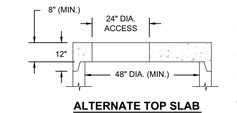
SECTION A-A



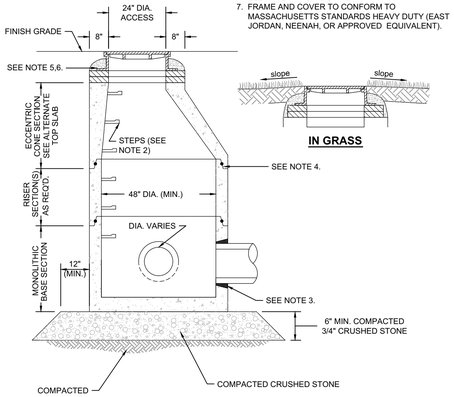
NOTES:
1. SIZE OF DUMPSTER PAD TO BE AS INDICATED ON PLANS. CONSTRUCTION JOINTS TO BE SET AT INTERVALS OF 1/3 OF LENGTH
2. DUMPSTER PAD TO BE SIZED TO SUIT.
3. ENCLOSURE SPECIFICATIONS:
   - THE FENCING TO BE AN OPAQUE TYPE MATERIAL OF EITHER CEDAR OR VINYL.
   - THE FENCE HEIGHT TO FULLY ENCLOSE THE DUMPSTER ANDTO NOT EXCEED 8-FT.
   - THE ENCLOSURE TO BE CONSTRUCTED IN SUCH A MANNER THAT ALL STRUCTURAL MEMBERS, INCLUDING BRACES, POSTS, POLES AND OTHER PROJECTIONS, WILL BE ON THE INTERIOR SIDE OF THE FENCE.
   - THE GATES TO BE CONSTRUCTED WITH COMMERCIAL GRADE HARDWARE.
   - THE SUPPORTING POLES AT THE GATES TO BE METAL WITH THE APPROPRIATE DIAMETER TO SUPPORT THE GATE AT LEAST ONE AND FIVE-EIGHTHS INCHES (1-5/8") IN DIAMETER AND TO HAVE A CLOSING LATCH.
   - TWO BOLLARDS TO BE INSTALLED IN FRONT OF THE FENCE, BOTH SIDES OF GATE.

DUMPSTER PAD & ENCLOSURE
NOT TO SCALE

NOTES:
1. ALL SECTIONS TO BE DESIGNED FOR H-20 LOADING.
2. COPOLYMER MANHOLE STEPS TO BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS TO BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER TO BE SET IN FULL 12" MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER OR BRICK.
6. DO NOT PLACE MORTAR BED AROUND STRUCTURE UNTIL IT IS AT THE REQUIRED FINISH ELEVATION AND ALIGNMENT.
7. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT).

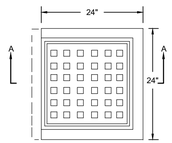


ALTERNATE TOP SLAB

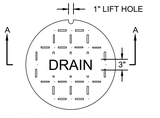


IN GRASS

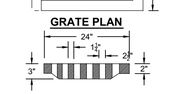
PRECAST DRAIN MANHOLE (DMH)
NOT TO SCALE

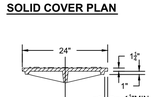


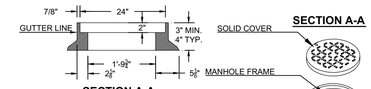
GRATE PLAN



SOLID COVER PLAN





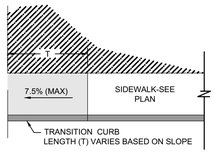


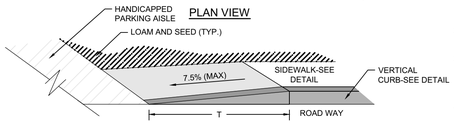
SECTION A-A

NOTES:
1. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT)
2. ALL H20 LOADING
3. MIN. FRAME WEIGHT:
   4" FLANGE 295 LBS
   3" FLANGE 265 LBS
4. MATERIAL-CAST IRON
5. MIN. GRATE WEIGHT: 200LBS.
6. SEE CATCHBASIN AND MANHOLE DETAILS FOR INSTALLATION.

TYPICAL DRAINAGE STRUCTURE FRAME AND COVER/GRATE
NOT TO SCALE

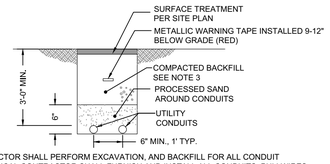
ROADWAY PROFILE GRADE	T (FT.)
0.00	6.0
0.01	7.0
0.02	8.0
0.03	9.5
0.04	11.5
0.05	15.0





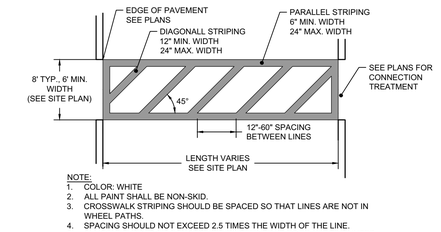
HANDICAPPED ACCESS RAMP - TYPE 1
NOT TO SCALE

NOTE:
DETAIL IS FOR SECONDARY ELECTRICAL SERVICE. PRIMARY SERVICE SHALL BE INSTALLED PER ELECTRICAL COMPANY STANDARDS.



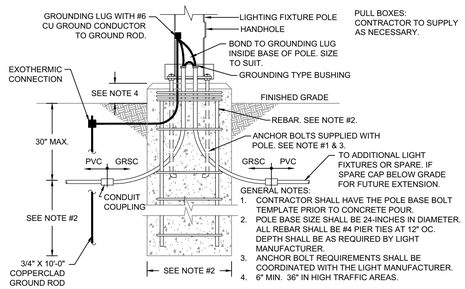
NOTES:
1. SITE WORK SUBCONTRACTOR SHALL PERFORM EXCAVATION, AND BACKFILL FOR ALL CONDUIT INSTALLATIONS. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS, PULLWIRES, HANDHOLES, AND WARNING TAPE AS REQUIRED FOR ELECTRICAL WORK.
2. UTILITY CONDUITS SHALL INCLUDE A COMBINATION OF ONE, TWO, OR ALL OF (1) FOR TELEPHONE, (1) FOR ELECTRICAL, AND (1) FOR CABLE TELEVISION, (1) COMMUNICATION, (1) FOR OTHER AS SHOWN IN THE SITE PLAN.
3. TRENCH COMPACTED BACKFILL:
   BENEATH PAVEMENT: BACKFILL SHALL BE ROADBASE AND COMPACTED TO PAVEMENT SUBBASE REQUIREMENTS-SEE DETAIL.
   OUTSIDE PAVEMENT: GRAVEL BORROW TYPE B (3" MINUS) COMPACTED IN MAXIMUM 8 INCH LIFTS TO TO 95% COMPACTION.
4. UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE UTILITY COMPANY STANDARDS THAT MAY BE MORE STRINGENT THAN THIS DETAIL.

TYPICAL UTILITY TRENCH
NOT TO SCALE



NOTE:
1. COLOR: WHITE
2. ALL PAINT SHALL BE NON-SKID.
3. CROSSWALK STRIPING SHOULD BE SPACED SO THAT LINES ARE NOT IN WHEEL PATHS.
4. SPACING SHOULD NOT EXCEED 2.5 TIMES THE WIDTH OF THE LINE.
5. ALL OTHER ROAD OR PARKING STRIPING TO BE 6" SOLID WHITE PAINTED LINES, UNLESS NOTED OTHERWISE

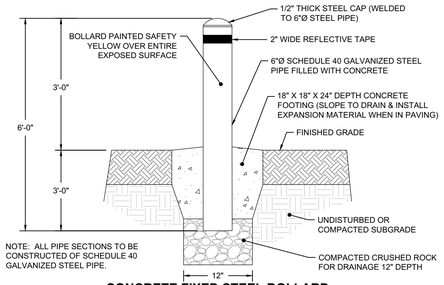
TYPICAL PAINTED CROSSWALK STRIPING
NOT TO SCALE



PULL BOXES: CONTRACTOR TO SUPPLY AS NECESSARY.

GENERAL NOTES:
1. CONTRACTOR SHALL HAVE THE POLE BASE BOLT TEMPLATE PRIOR TO CONCRETE POUR.
2. POLE BASE SIZE SHALL BE 24-INCHES IN DIAMETER. ALL REBAR SHALL BE #4 PIER TIES AT 12" OC. DEPTH SHALL BE AS REQUIRED BY LIGHT MANUFACTURER.
3. ANCHOR BOLT REQUIREMENTS SHALL BE COORDINATED WITH THE LIGHT MANUFACTURER.
4. 6" MIN. 36" IN HIGH TRAFFIC AREAS.

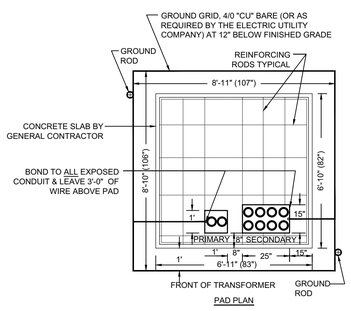
TYPICAL SITE LIGHTING POLE BASE
NOT TO SCALE



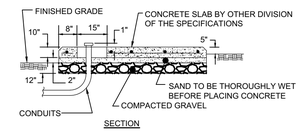
NOTE: ALL PIPE SECTIONS TO BE CONSTRUCTED OF SCHEDULE 40 GALVANIZED STEEL PIPE.

CONCRETE FIXED STEEL BOLLARD
NOT TO SCALE

TRANSFORMER PAD NOTES - 750-2500 Kva 480Y/277V:
1. GROUND RODS, GROUNDING GRID AND TRANSFORMER PAD SHALL BE INSTALLED WITH TYPE OF MATERIALS REQUIRED BY THE UTILITY COMPANY.
2. ALL DIMENSIONS AND CONSTRUCTION DETAILS TO BE VERIFIED WITH THE UTILITY CO. PRIOR TO CONSTRUCTION.
3. ALL WORK SHALL BE IN ACCORDANCE WITH UTILITY CO. STANDARDS.
4. GROUND GRID TO BE INSPECTED BY UTILITY COMPANY PRIOR TO COVERING. ELECTRICAL CONTRACTOR SHALL CHECK WITH UTILITY COMPANY TO SEE WHICH BOLLARDS ARE REQUIRED FOR THE PROJECT



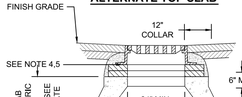
PAD PLAN



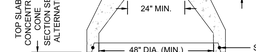
SECTION

UTILITY COMPANY NOTE:
ELECTRIC UTILITY COMPANY MUST PROVIDE FINAL DETAILS. THIS DETAIL IS FOR BIDDING PURPOSES ONLY

TRANSFORMER PAD
NOT TO SCALE

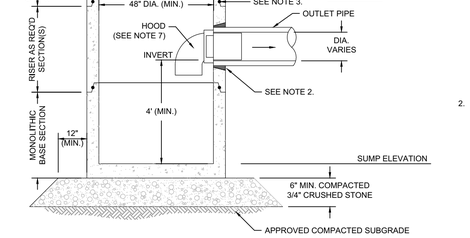


ALTERNATE ECCENTRIC CONE SECTION



ALTERNATE TOP SLAB

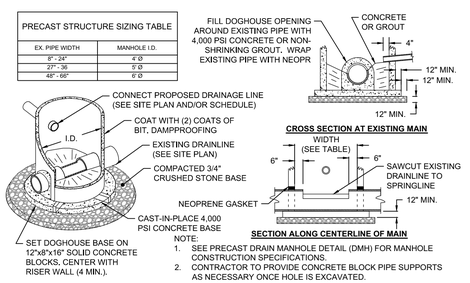
NOTES:
1. ALL SECTIONS TO BE DESIGNED FOR H-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS TO BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE TO BE SET IN FULL 12" WIDE MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER OR BRICK.
5. DO NOT PLACE MORTAR BED AROUND STRUCTURE UNTIL IT IS AT THE REQUIRED FINISH ELEVATION AND ALIGNMENT.
6. FRAME AND COVER TO CONFORM TO MASSACHUSETTS STANDARDS HEAVY DUTY (EAST JORDAN, NEENAH, OR APPROVED EQUIVALENT)
7. HDPE PIPE HOOD TO BE 90° BEND FASTENED TO PIPE WITH SEALANT. BEND TO HAVE 1 INCH PURGE HOLE DRILLED INTO TOP OF ELBOW.



IN GRASS

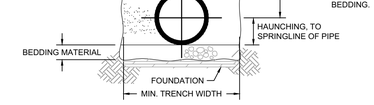
PRECAST CONCRETE CATCH BASIN (CB) WITH HOOD
NOT TO SCALE

PRECAST STRUCTURE SIZING TABLE	
EX. PIPE WIDTH	MANHOLE I.D.
8" - 24"	4' Ø
27" - 36	5' Ø
48" - 66"	6' Ø



NOTE:
1. SEE PRECAST DRAIN MANHOLE DETAIL (DMH) FOR MANHOLE CONSTRUCTION SPECIFICATIONS.
2. CONTRACTOR TO PROVIDE CONCRETE BLOCK PIPE SUPPORTS AS NECESSARY ONCE HOLE IS EXCAVATED.

DOGHOUSE MANHOLE INSTALLATION OVER EX. DRAIN LINE
NOT TO SCALE



NOTES:
1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR TO EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
2. BEDDING, HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL TO CONSIST OF CLEAN, HARD, PARTICLES OF GRAVEL MEETING THE FOLLOWING:

SIEVE SIZE	PERCENT PASSING
3/8"	85-95
NO. 4	5-15
NO. 8	0-2

MATERIAL TO BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

MINIMUM BEDDING THICKNESS TO BE 4" (100mm) FOR 4"-24" PIPE (100-600mm).

3. MINIMUM TRENCH WIDTHS TO BE AS FOLLOWS:

NOMINAL Ø in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
8 (200) 10	25 (630)
(250) 12	28 (710)
(300) 15	31 (790)
(375) 18	34 (860)
(450)	39 (990)

4. MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300) *12
H25 (RIGID PAVEMENT) E80	(300) 24
RAILWAY HEAVY CONSTRUCTION	(610) 48 (1220)

*TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT

TYPICAL HDPE DRAIN PIPE TRENCH
NOT TO SCALE

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Revisions

No.	Date	By	Appr.	Description
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2	---	---	---	---
3	---	---	---	---
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7	---	---	---	---
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9	---	---	---	---
10	---	---	---	---

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Sustainable Environmental Solutions
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508-833-6600 voice
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Checked By: RAC
Drawn By: MAC
Designed By: BRK
Date: November 2015

MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

CONSTRUCTION DETAILS (1)

Plan Set:
Plan Title:

Prepared For:
Martin Development LLC.
77 Elm Street
Amesbury, MA 01913
Phone: (978) 834-0066 x 101
Fax: (508) 830-4081

Survey Provided By:
Eastern Land Survey Assoc., Inc.
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Phone: (978) 531-8121
Fax: (508) 833-3150
Dated: —

Registration:

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CLAYTOR
CIVIL
NO. 45116
REGISTERED PROFESSIONAL ENGINEER

11-13-15

Project Number: 15123
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Sheet Number: C - 7

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

BIORETENTION CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND LANDSCAPE ARCHITECTS AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

1. CONDUCT A PRE-CONSTRUCTION MEETING.
2. CHECK FOR EXISTING UTILITIES PRIOR TO ANY EXCAVATION.
3. CLEAR AND GRUB THE PROPOSED BIORETENTION AREA
4. ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION.
5. EXCAVATE PRETREATMENT CELLS AND/OR SEDIMENT FOREBAYS PRIOR TO BIORETENTION CONSTRUCTION.
6. DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
7. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA.
8. EXCAVATE THE BIORETENTION FACILITY TO THE BOTTOM INVERT OF THE SUBDRAIN SYSTEM.
9. INSTALL THE FILTER FABRIC ALONG THE EXCAVATION SIDE WALLS. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
10. RIP THE BOTTOM SOILS TO A DEPTH OF SIX INCHES TO PROMOTE GREATER INFILTRATION.
11. INSTALL THE OVERFLOW OUTLET STRUCTURE AS SPECIFIED IN THE DRAWINGS.
12. INSTALL UNDERDRAIN AS INDICATED ON DRAWINGS. ENGINEER FIELD VISIT AND REPORT REQUIRED PRIOR TO COVERING THE UNDERDRAIN. SEE NOTE (3) BELOW.
13. INSTALL PEA GRAVEL LAYER AS INDICATED ON DRAWINGS.
14. DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.
15. BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE (UN-COMPACTED) AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A SOIL SAMPLE (1 GALLON) TO THE ENGINEER PRIOR TO SOIL DELIVERY TO THE SITE.
16. STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
17. INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
18. INSTALL MULCH LAYER AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A MULCH SAMPLE (1 GALLON) TO THE ENGINEER PRIOR TO DELIVERY TO THE SITE.
19. CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER. ENGINEER FIELD VISIT AND REPORT REQUIRED SEE NOTE (3) BELOW.
20. REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.

NOTES:
(1.) SEE GENERAL CONSTRUCTION NOTES FOR OVERALL CONSTRUCTION SEQUENCE.
(2.) SEE GENERAL NOTES/SPECIFICATIONS/CONSTRUCTION DETAILS FOR DETAILED CONSTRUCTION REQUIREMENTS.
(3.) MANDATORY NOTIFICATION/APPROVAL OF THE PROJECT ENGINEER IS REQUIRED PRIOR TO PROCEEDING WITH NEXT STAGE. CALL THE ENGINEER (HORSLEY WITTEN GROUP, INC.) AT 508-833-6600 PRIOR TO 12:00 NOON THE PROCEEDING DAY TO ARRANGE FOR ANY REQUESTED FIELD VISITS.

CONSTRUCTION NOTES

1. **EXAMINATION**
   A. VERIFY LAYOUT AND ORIENTATION OF BIORETENTION AREA AND CONNECTIONS.
   B. VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
2. **PREPARATION**
   A. CALL **DIGSAFE** AT ____________________ NOT LESS THAN **THREE** WORKING DAYS BEFORE PERFORMING WORK.
   B. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
   C. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
   D. CLEAR AND GRUB THE PROPOSED BIORETENTION AREA.
3. **EXCAVATION**
   A. EXCAVATE BIORETENTION AREA IN ACCORDANCE WITH GENERAL NOTES AND SPECIFICATIONS.
   B. TO MINIMIZE COMPACTION, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE BIORETENTION AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS. USE EXCAVATING EQUIPMENT WITH ADEQUATE REACH SO THEY DO NOT WORK IN THE FOOTPRINT OF THE BIORETENTION AREA. IF APPLICABLE AND PER THE ENGINEERS DIRECTION USE A CELL CONSTRUCTION APPROACH IN LARGER BIORETENTION BASINS, WHEREBY THE BASIN IS SPLIT INTO 500 TO 1000 SQUARE FOOT TEMPORARY CELLS WITH A 10 TO 15 FOOT EARTH BRIDGE IN BETWEEN, SO THAT CELLS CAN BE EXCAVATED FROM THE SIDE.
   C. EXCAVATE AND SEAL ANY PRETREATMENT CELLS AND/OR SEDIMENT FOREBAYS FIRST AND SEALED TO TRAP SEDIMENTS PER THE DRAWINGS.
   D. ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE BIORETENTION FACILITIES TO WITHIN 1 FOOT OF UNDERDRAIN BOTTOM.
   E. IF THE BIORETENTION AREA IS TO BE USED AS A TEMPORARY DRAINAGE STORAGE BASIN DURING THE EARLY STAGES OF PROJECT CONSTRUCTION, THE SIDE SLOPES SHOULD BE TEMPORARILY STABILIZED AND SILT FENCE INSTALLED ALONG THE TOE OF THE ROUGH GRADED BIORETENTION SLOPES TO MINIMIZE EXCESSIVE SEDIMENTATION OF THE BIORETENTION FLOOR.
4. **COMPACTION**
   A. MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
   B. USE EXCAVATOR OR BACKHOES TO EXCAVATE THE BIORETENTION AREA
   C. IF THE BIORETENTION AREA IS EXCAVATED USING A LOADER, USE ONLY WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND STORAGE VOLUMES AND IS NOT ACCEPTABLE.
   D. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE PERFORMED TO REFRACTURE THE SOIL PROFILE THROUGH THE 12-IN COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
   E. DO NOT COMPACT BIORETENTION SOIL WITH MECHANICAL EQUIPMENT.
5. **EMBANKMENT/BERM FILL**
   A. CONSTRUCT EMBANKMENT/BERM IN ACCORDANCE WITH SPECIFICATIONS AND AS INDICATED ON DRAWINGS.
6. **INSTALLATION**
   A. DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
   B. REMOVE SEDIMENT ACCUMULATED ALONG THE EXCAVATION FLOOR DURING SITE CONSTRUCTION PRIOR TO CONTINUING WITH THE BIORETENTION FACILITY CONSTRUCTION.
   C. FORM BOTTOM OF EXCAVATION TO CORRECT ELEVATION.
   D. IF INFILTRATION IS PROMOTED, THEN RIP THE BOTTOM SOILS TO A DEPTH OF SIX INCHES TO PROMOTE GREATER INFILTRATION.
   E. INSTALL THE FILTER FABRIC ALONG THE EXCAVATION SIDE WALLS AS SPECIFIED IN THE DRAWINGS. IF FILTER FABRIC IS TO BE INSTALLED PLACE THE FILTER FABRIC ON THE SIDES OF THE BIORETENTION AREA WITH A MINIMUM SIX INCH OVERLAP AT ALL JOINTS.
   F. INSTALL ANY TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA DURING FINAL CONSTRUCTION AND UNTIL IT IS COMPLETED. SPECIAL PROTECTION MEASURES SUCH AS EROSION CONTROL FABRICS MAY BE NEEDED TO PROTECT VULNERABLE SIDE SLOPES FROM EROSION DURING THE CONSTRUCTION PROCESS.
   G. ESTABLISH ELEVATIONS AND PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS
   H. INSTALL THE OVERFLOW OUTLET STRUCTURE AS INDICATED ON DRAWINGS.
   I. INSTALL UNDERDRAIN, INCLUDING 4 INCH PERFORATED PIPE, GRAVEL AND FILTER FABRIC ON TOP OF THE UNDERDRAIN GRAVEL AS INDICATED ON DRAWINGS. PLACE GRAVEL AROUND THE UNDERDRAIN PIPE AS INDICATED IN THE DETAILS. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (SEE PLANS FOR LOCATION).
   J. INSTALL PEA GRAVEL LAYER AS INDICTED ON DRAWINGS.
   K. DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.
7. **BACKFILLING**
   A. BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
   B. PLACE SOIL IN 12 INCH LIFTS UNTIL DESIRED TOP ELEVATION OF BIORETENTION SOIL IS ACHIEVED. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. WAIT 3 DAYS TO CHECK FOR SETTLEMENT, AND ADD ADDITIONAL MEDIA AS NEEDED
   C. DO NOT COMPACT BIORETENTION SOIL WITH MECHANICAL EQUIPMENT.
   D. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
   E. STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
8. **PLANTING**
   A. PLANT BIORETENTION AREA IN ACCORDANCE WITH PLANTING PLANS AND SPECIFICATIONS.
   B. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. DO NOT ADD FERTILIZERS OR OTHER SOIL AMENDMENTS TO THE BIORETENTION SOILS UNLESS INSTRUCTED BY THE ENGINEER. THE PLANTING SOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING.
   C. INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. WATER DURING WEEKS OF NO RAIN FOR THE FIRST TWO MONTHS.
   D. DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
   E. REMOVE SEDIMENT ACCUMULATED IN THE BIORETENTION AREA DURING THE PLANTING PHASE.
   F. IF SUITABLE VEGETATIVE COVER HAS NOT BEEN ESTABLISHED ALONG THE BIORETENTION SIDE SLOPES PRIOR TO PLANTING, INSTALL A SILT FENCE PERIMETER AT THE TOE OF THE BIORETENTION SLOPES AND LEAVE IN PLACE UNTIL AN APPROVED VEGETATIVE COVER HAS BEEN ESTABLISHED.
   G. INSTALL MULCH LAYER AS INDICATED ON DRAWINGS. MIX APPROXIMATELY HALF OF THE SPECIFIED MULCH LAYER INTO THE BIORETENTION SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES TO HELP FOSTER A HIGHLY ORGANIC SURFACE LAYER.
   H. REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.
   I. CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER.
9. **CLEAN UP**
   A. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

MATERIAL SPECIFICATIONS

1. **BIORETENTION SOIL**
   A. USDA UNIFIED SOIL CLASSIFICATION: LOAMY SAND CONSISTING OF A UNIFORM MIX, FREE OF NOXIOUS WEEDS AND FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH. A TEXTURAL ANALYSIS IS REQUIRED FOR CONFORMANCE TO THE SOIL COMPOSITION CRITERIA LISTED BELOW.
   85-88% MEDIUM SAND.
   8-12% SOIL FINES (< 2% CLAY).
   3% ORGANIC MATTER (WELL AGED (6-12 MONTHS), WELL AERATED, LEAF COMPOST OR APPROVED EQUIVALENT).
   B. PROVIDE A SOIL TEST OF THE BIORETENTION SOIL FOR CONFORMANCE TO THE FOLLOWING CRITERIA:
   PH RANGE: 5.2-7.0.
   MAGNESIUM: MINIMUM 32 PPM.
   PHOSPHOROUS (P2O5): NOT TO EXCEED 69 PPM.
   POTASSIUM (K2O): MINIMUM 78 PPM.
   SOLUBLE SALTS: NOT TO EXCEED 500 PPM.
   IF THE SOIL PH IS NOT WITHIN THE ACCEPTABLE RANGE, AMEND WITH LIME TO RAISE THE PH OR WITH IRON SULFATE TO LOWER THE PH, AS NECESSARY. ALL TESTING SHOULD BE PERFORMED BY THE SAME TESTING FACILITY TO MAINTAIN CONSISTENT RESULTS. SUBMIT THE SOIL SAMPLE RESULTS TO THE ENGINEER REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE PROJECT SITE.
   C. VOLUME OF FILTER MEDIA BASED ON 110% OF PLAN VOLUME TO ACCOUNT FOR SETTLING OR COMPACTION.
   D. DO NOT MIX, DUMP OR STORE ANY OTHER MATERIALS OR SUBSTANCES THAT MAY B E HARMFUL TO PLANT GROWTH OR PROVE A HINDRANCE TO THE PLANTING MAINTENANCE OR OPERATIONS WITHIN THE BIORETENTION AREA.
2. **MULCH**
   A. FINE SHREDDED WELL AGED (6 MONTH MINIMUM) HARDWOOD MULCH.
   HARDWOOD MULCH IS PREFERRED TO PREVENT FLOATING. IF HARDWOOD MULCH IS NOT AVAILABLE A FINELY DOUBLE SHREDDED, WELL AGED, ORGANIC DARK PINE MULCH MAY BE ACCEPTABLE ON A CASE BY CASE BASIS PER SAMPLE SUBMITTAL AND ENGINEER REVIEW.
   B. A MULCH SAMPLE MUST BE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO DELIVERY TO THE PROJECT SITE.
3. **FILTER FABRIC**
   A. NON-WOVEN GEOTEXTILE FABRIC WITH FLOW RATE OF > 110 GALLON/MINUTES/SQUARE FOOT.
   B. CLASS "C" APPARENT OPENING SIZE (ASTM-D-4751).
   C. GRAB TENSILE STRENGTH (ATSM-D-4632) BURST STRENGTH (ASTM-D-4833).
4. **PEA GRAVEL**
   A. 3/8" WASHED STONE
5. **UNDERDRAIN GRAVEL**
   A. 3/4" CRUSHED WASHED STONE, CLEAN AND FREE OF ALL FINES AND MEETING AASHTO M-43.
6. **PIPE**
   A. UNDERDRAIN
   4" RIGID SCHEDULE 40 PVC PIPE, WITH 3/8" PERFORATIONS @ 6" O.C. MEETING ASTMD 1785 OR AASHTO M-278.
   T'S AND Y'S FITTINGS AS REQUIRED FOR THE UNDERDRAIN CONFIGURATION INDICATED ON DRAWING.
   B. CONNECTIONS TO STORM DRAIN SYSTEM.
   C. UNDERDRAIN CLEANOUTS
   NON PERFORATED SCHEDULE 40 PVC PIPE, PVC ELBOW, CAP, AND ALL ASSOCIATED FITTINGS.
7. **EROSION CONTROL BLANKET (3:1 SIDE SLOPES ONLY)**
   A. WOVEN, 100% BIODEGRADABLE JUTE FIBER 7.70 LBS/1000 SQFT.
   BIONET S150BN OR APPROVED EQUIVALENT.
8. **PLANTS**
   A. AS INDICATED ON DRAWINGS.
9. **SEED (SIDE SLOPES ONLY)**
   A. NEW ENGLAND CONSERVATION/WILDLIFE/MIX OR APPROVED EQUIVALENT.
   B. APPLICATION RATE 25 LBS/ ACRES OR PER SEED MANUFACTURER'S REQUIREMENTS.
10. **OUTLET STRUCTURE**
   A. SIZE AS INDICATED ON DRAWINGS.
   B. FIBERGLASS REINFORCED PLASTIC MANHOLES OF SIZE INDICATED ON DRAWINGS.

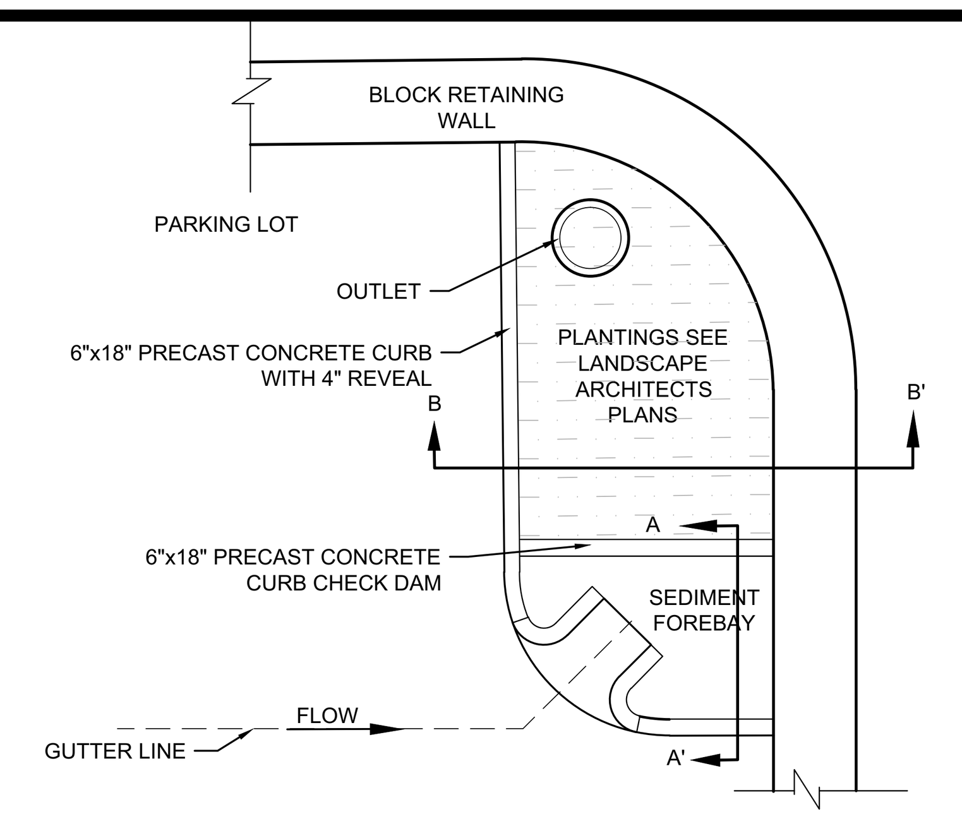
CULTEC RECHARGER 330 SPECIFICATIONS

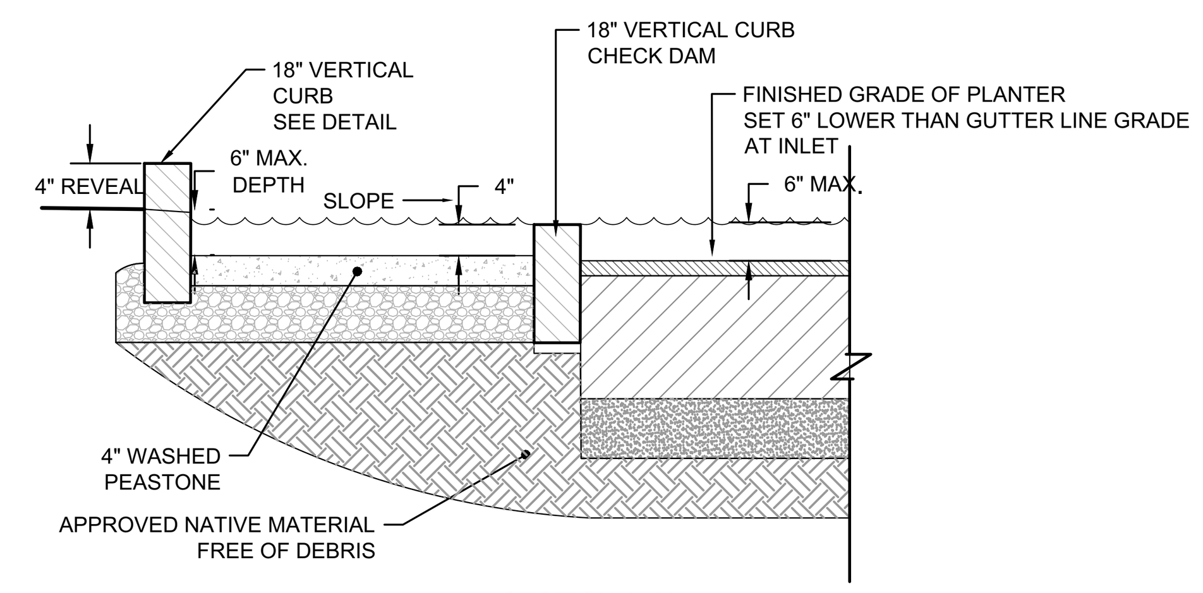
GENERAL
CULTEC RECHARGER 330 CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER AND/OR ON-SITE WASTEWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION, CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF OR AS SEPTIC LEACHFIELDS.

CHAMBER PROPERTIES
1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. BROOKFIELD, CT (203-775-4416).
2. CONTACT CULTEC, INC. AT 203-775-4416 FOR SUBMITTAL PACKAGES AND TO PURCHASE PRODUCT.
3. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 330 SHALL BE 30.5 INCHES TALL, 52 INCHES WIDE AND 7.5 FEET LONG. THE INSTALLED LENGTH OF INTERMEDIATE UNITS SHALL BE 6.25 FEET.
4. THE STANDARD-DUTY VERSION OF THE CHAMBER COMES STANDARD WITH A 4.75 INCH INLET/OUTLET. MAXIMUM INLET OPENING IS 24 INCHES.
5. THE HEAVY-DUTY CHAMBER WILL HAVE 15 CORRUGATIONS THE SATNDARD-DUTY CHAMBER WILL HAVE 14 CORRUGATIONS.
6. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 330HD WILL BE 7.459 CF/LF.
7. THE CHAMBERS WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) IN AN ISO-9001:2000 CERTIFIED FACILITY.
8. CHAMBERS ARE MANUFACTURED WITH AN OPEN BOTTOM, INTEGRALLY FORMED END WALLS AND PERFORATED SIDEWALLS.
9. THE CHAMBERS WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
10. THE CHAMBER'S END WALL WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE INLET OR END PLATES CANNOT BE USED WITH THIS UNIT.
11. THE RECHARGER 330R STAND-ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL END WALLS.
12. THE RECHARGER 330S STARTER CHAMBER MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 10.5 INCHES HIGH X 40.5 INCHES WIDE.
13. THE RECHARGER 330I INTERMEDIATE CHAMBER MUST BE FORMED AS A WHOLE CHAMBER HAVING AT LEAST ONE FULLY FORMED INTEGRAL END WALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 10.5 INCHES HIGH X 40.5 INCHES WIDE.
14. THE RECHARGER 330E END CHAMBER MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL.
15. ALL CHAMBERS WILL BE ARCHED IN SHAPE. THE HEAVY DUTY CHAMBER WILL HAVE SEVENTY-EIGHT ¾ INCH ROUND DISCHARGE HOLES, THE STANDARD-DUTY CAHMBER WILL HAVE SEVENTY-TWO ¾ INCH ROUND DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE INFILTRATION/EXFILTRATION.
16. CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
17. RECHARGER 330HD HEAVY-DUTY CHAMBERS ARE DESIGNED TO WITHSTAND AASHTO H-20 LOAD RATING (32,000 LBS./AXLE) WHEN INSTALLED ACCORDING TO CULTEC'S MOST CURRENT INSTALLATION INSTRUCTIONS. RECHARGER 330HD HEAVY-DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
18. RECHARGER 330 STANDARD-DUTY CHAMBERS ARE DESIGNED TO WITHSTAND AASHTO H-10 LOAD RATING (16,000 LBS./AXLE) WHEN INSTALLED ACCORDING TO CULTEC'S MOST CURRENT INSTALLATION INSTRUCTIONS.
19. POLYETHYLENE CHAMBERS MUST HAVE THE ABILITY TO ACCEPT AND CARRY PIPE THROUGH ITS INTEGRALLY FORMED VERTICAL SUPPORT WALL WITHOUT THE USE OF SEPARATE PIPE HANGERS.
20. UNITS WILL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
21. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
22. REPEATING SUPPORT PANELS AND END WALLS OF THE ELONGATED CHAMBER SHALL BE SPACED EVERY 6.25 FEET.

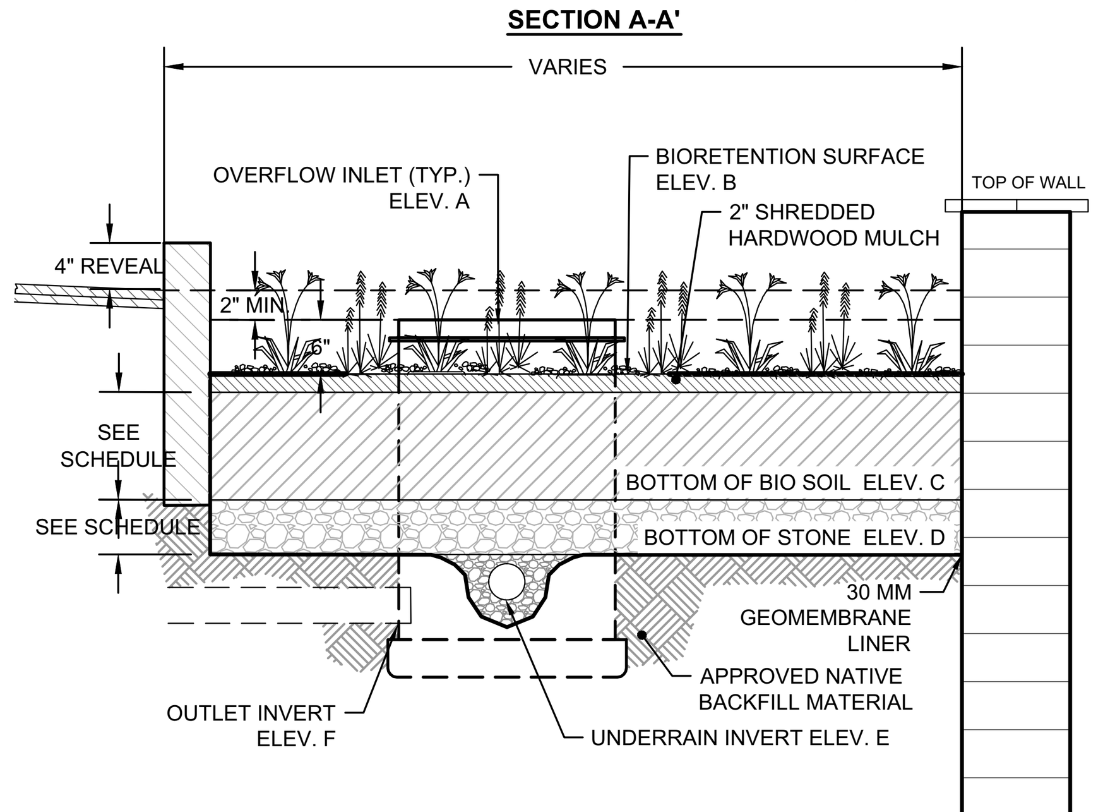
BIORETENTION SCHEDULE:

No.	Bottom Surface Area (sf)	Spillway Elevation (ft)	Design Freeboard (ft)	ELEV. A Overflow Inlet Rim (ft)	Ponding Depth (ft)	Bottom of Bio Area (ft)[1]	Overflow Inlet Type	Depth Mulch (ft)	ELEV. B Top of Bio Soil (ft)	Bio Soil Depth (ft)	ELEV. C Bottom Bio Soil (ft)	Depth Pea Gravel (ft)	ELEV. D Bottom of Bed (ft)	Min. Underdrain Stone cover (in.)	Underdrain Pipe Size (in)	Underdrain Distal Inv (ft)	Length Underdrain (ft)	Slope Underdrain (ft/ft)	ELEV. E Underdrain Pipe Invert (ft)	ELEV. F Outlet Invert (ft)[2]
1	80	39.75	0.17	39.58	0.50	39.08	NYLOPLAST	0.25	38.83	2.00	36.83	0.50	36.33	3.00	4.00	35.71	8	0.005	35.67	35.57
2	114	39.40	0.17	39.23	0.50	38.73	NYLOPLAST	0.25	38.48	2.00	36.48	0.50	35.98	3.00	4.00	35.36	10	0.005	35.31	35.21





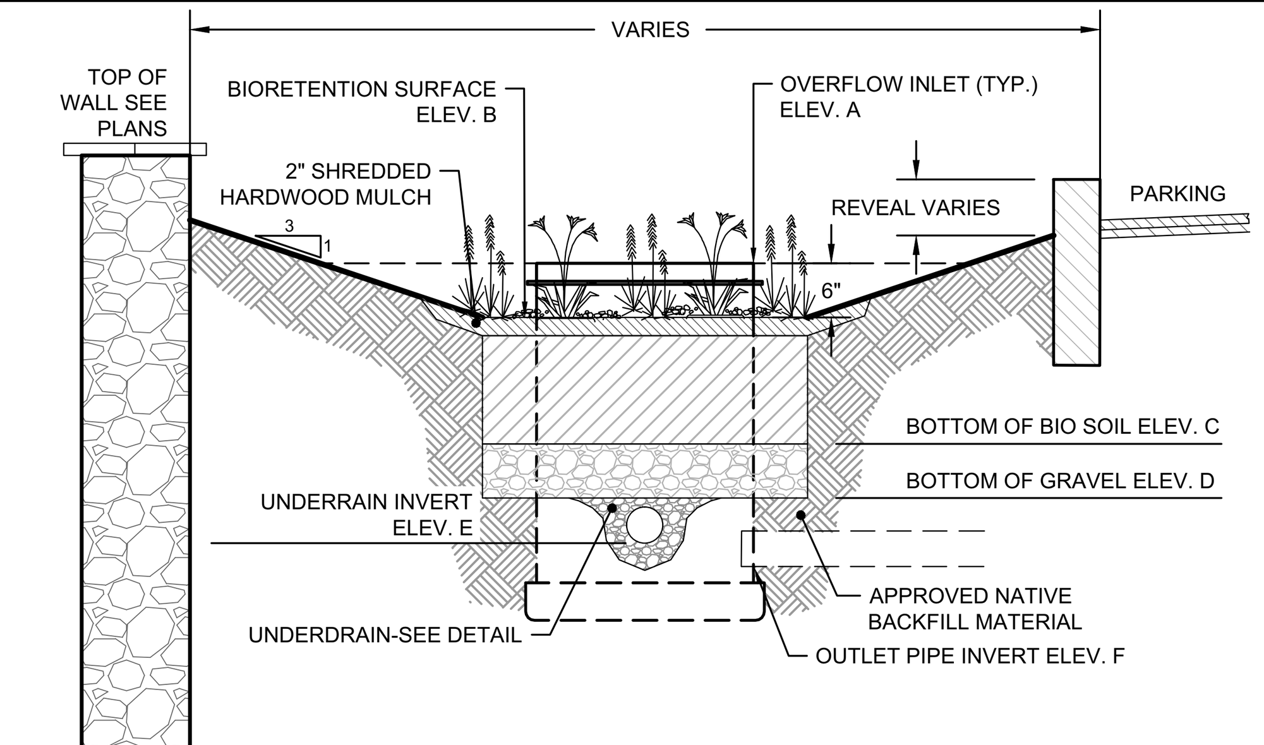
SECTION A-A'



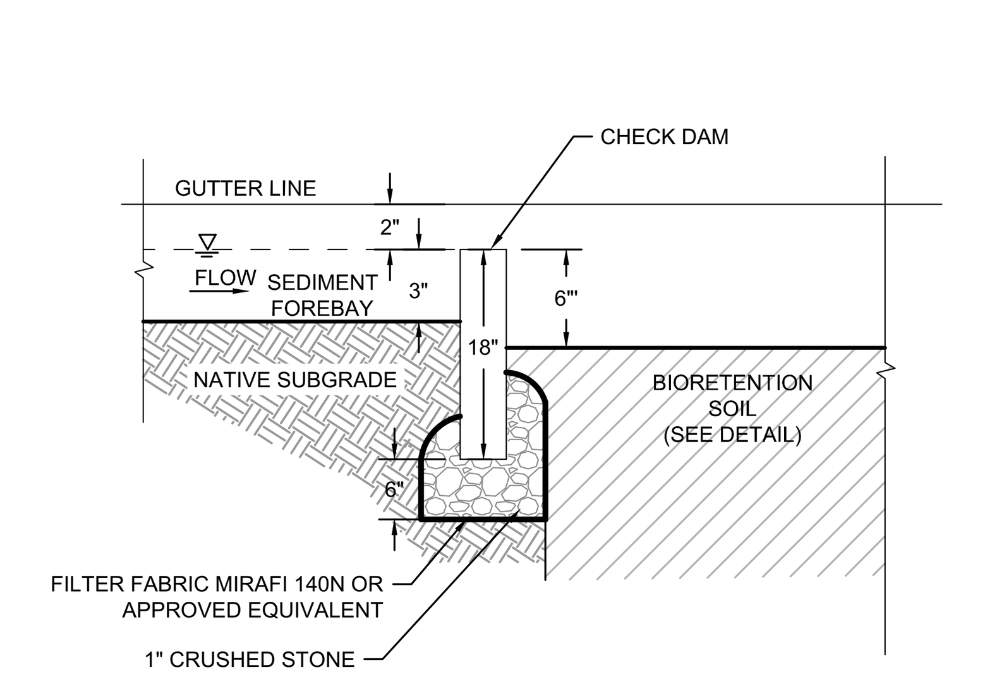
SECTION B-B'

NOTES:
1. SEE BIO SOIL AND PLANTING REQUIREMENTS.
2. INSTALL WASHED RIVER ROCK TO TRANSITION FROM CHECK DAM TO BIOSWALE.
3. BIORETENTION PLANTING: SEE PLANTING PLAN & SCHEDULE

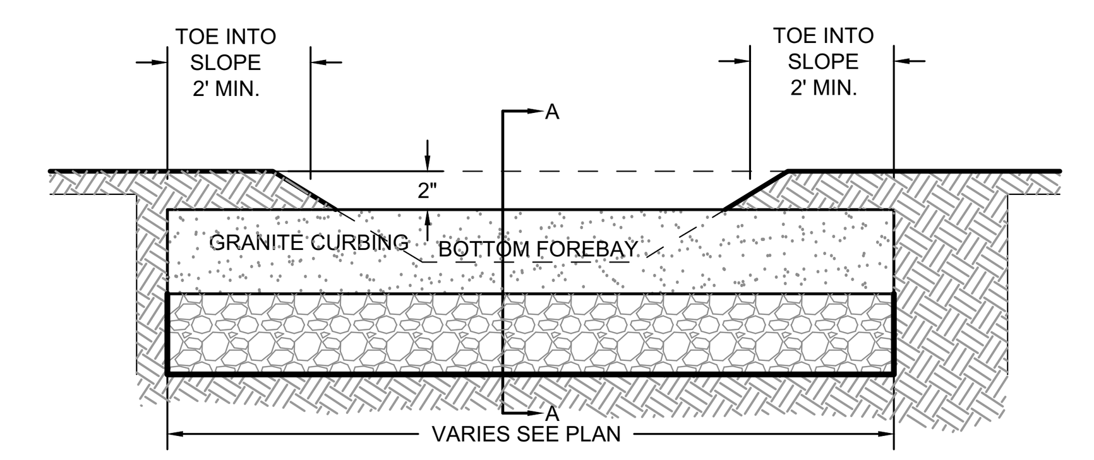
BIORETENTION AREA 1
NOT TO SCALE



BIORETENTION AREA 2
NOT TO SCALE



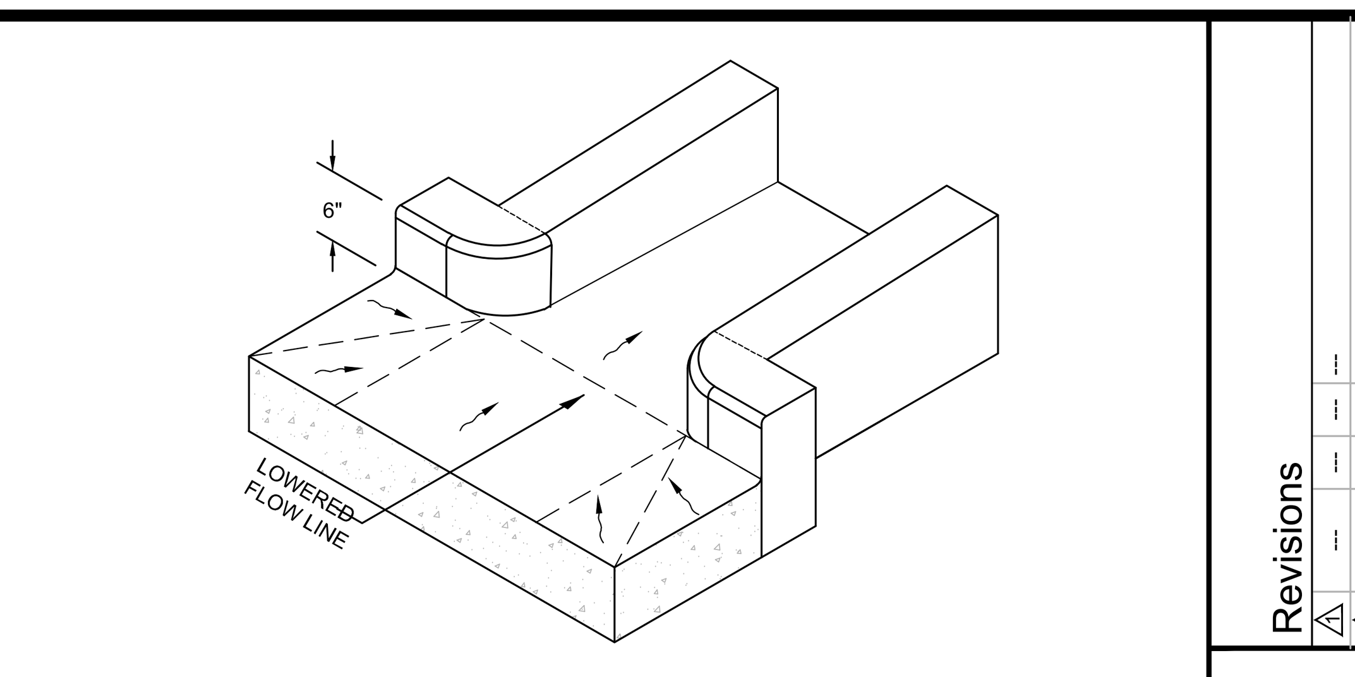
SECTION A-A



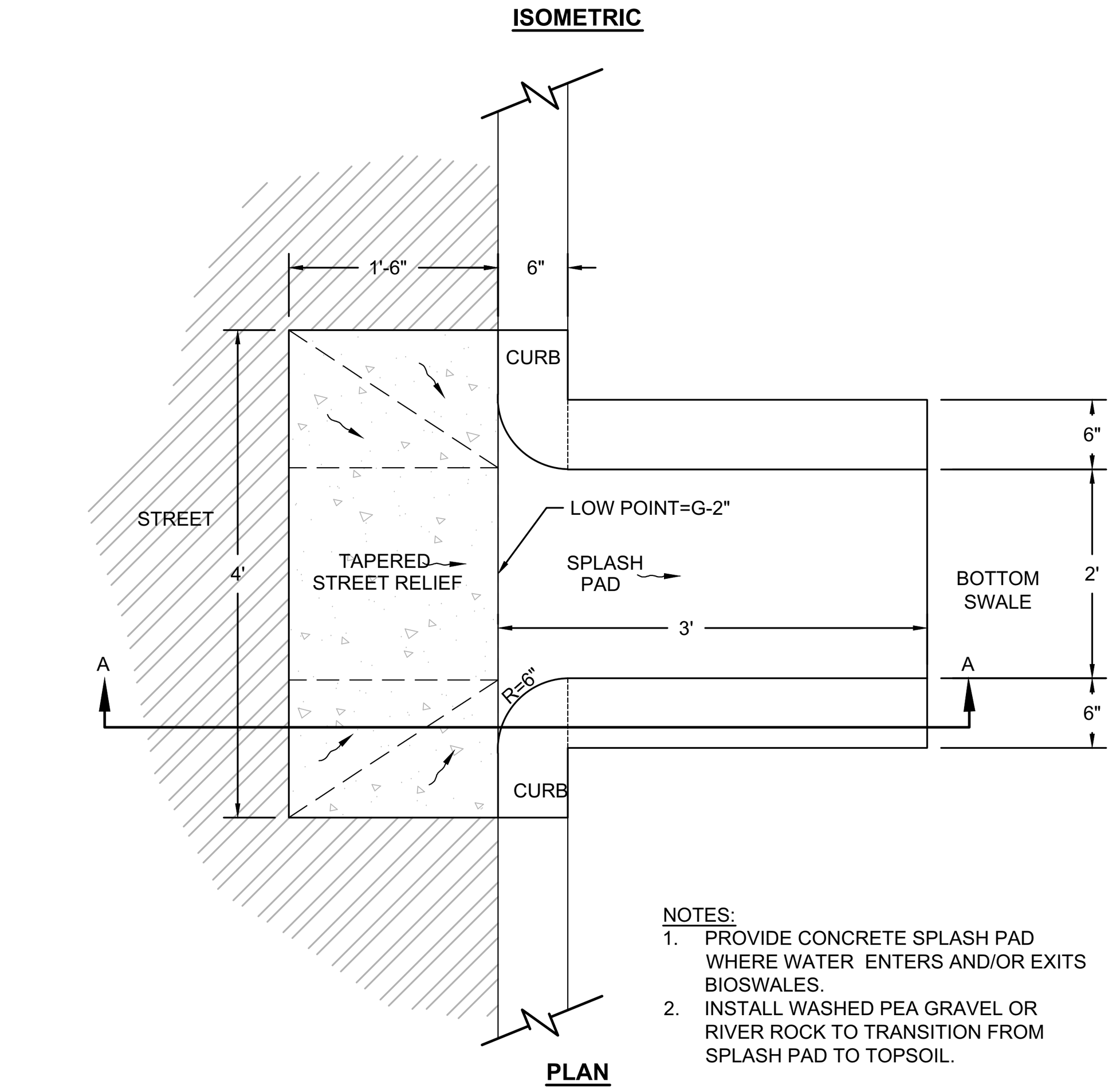
PROFILE

NOTE:
1. KEY CURBING INTO THE FOREBAY BANKS AND EXTEND INTO THE ABUTMENTS A MINIMUM OF 2' TO PREVENT FLOW FROM DIVERTING THE CHECK DAM.
2. IF NECESSARY, GROUT ABUTTING SECTIONS OF GRANITE CURBING.

SEDIMENT FOREBAY CHECKDAM
NOT TO SCALE

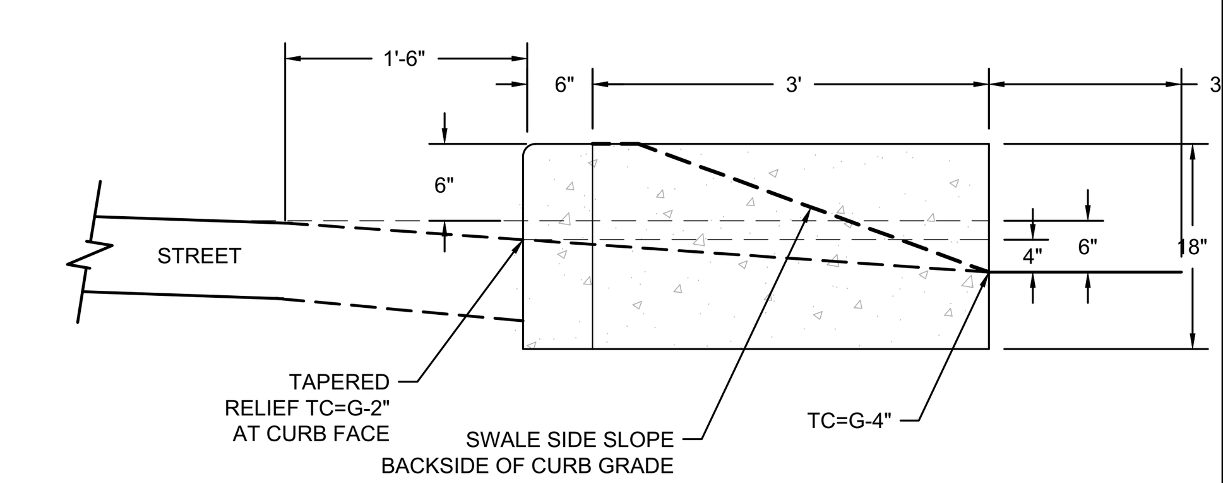


ISOMETRIC



NOTES:
1. PROVIDE CONCRETE SPLASH PAD WHERE WATER ENTERS AND/OR EXITS BIOSWALES.
2. INSTALL WASHED PEA GRAVEL OR RIVER ROCK TO TRANSITION FROM SPLASH PAD TO TOPSOIL.

PLAN

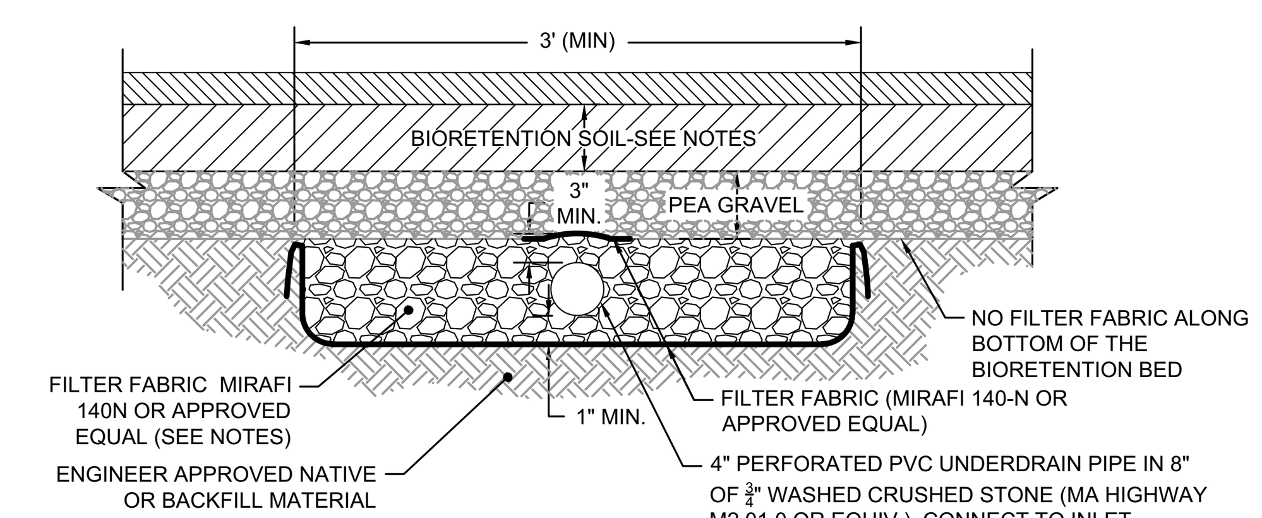


SECTION A-A

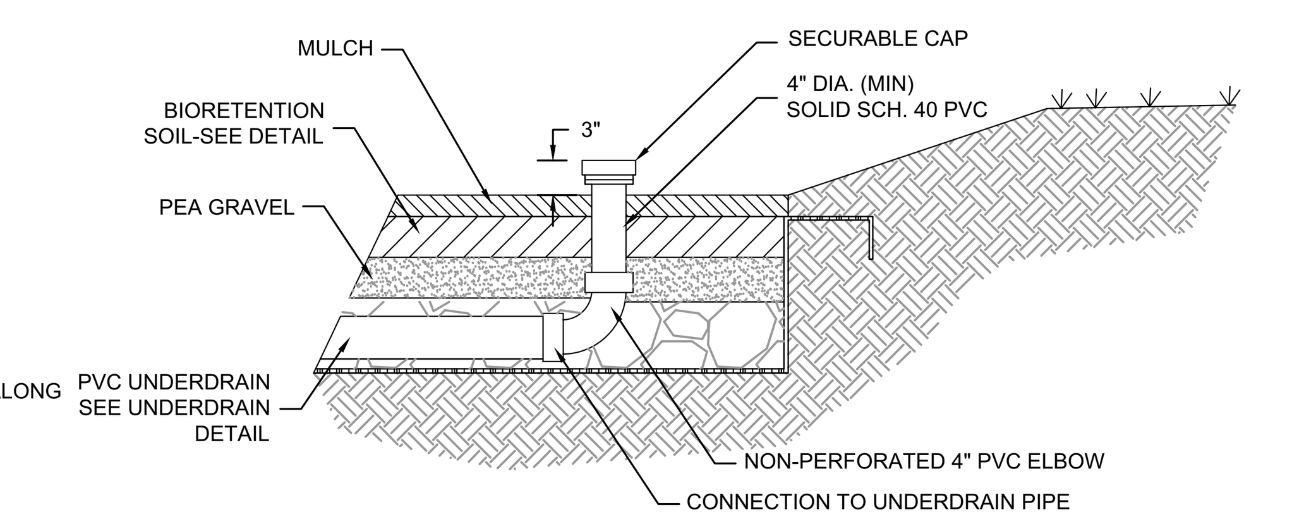
LP = LOW POINT
G = GUTTER

BIO INLET
NOT TO SCALE

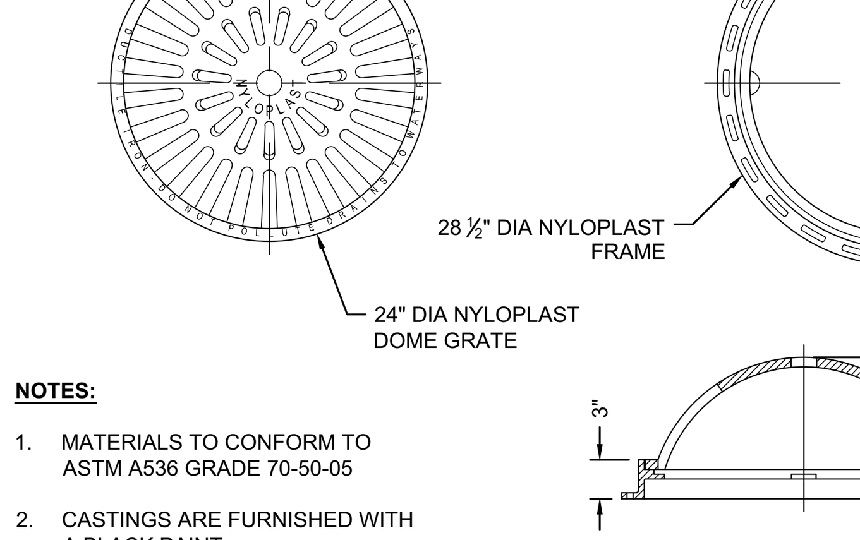
NOTES:
1. FILTER FABRIC AT BOTTOM OF UNDERDRAIN ONLY.
2. FILTER FABRIC ABOVE UNDERDRAIN SHALL EXTEND VERTICALLY 1-INCH± INTO THE PEA GRAVEL LAYER & HORIZONTALLY 1-FOOT OFF THE CENTER OF THE UNDERDRAIN PIPE.



BIORETENTION FACILITY SECTION A-A
NOT TO SCALE

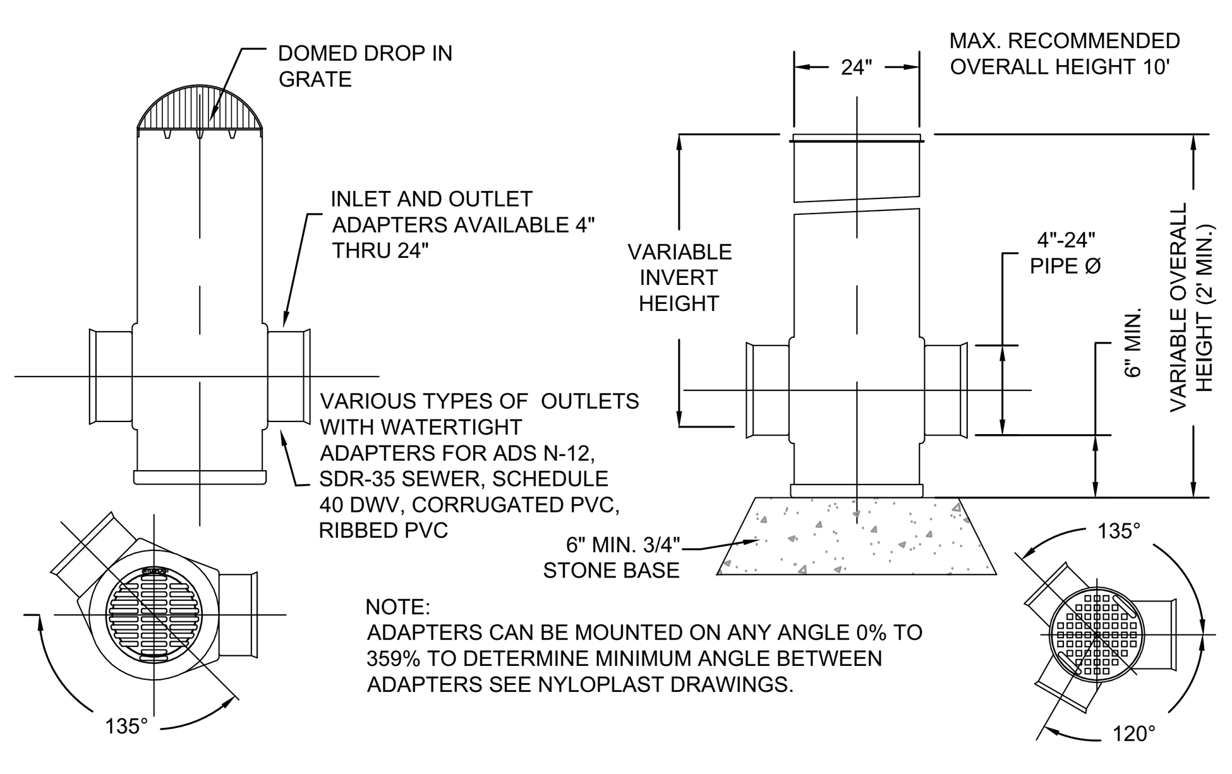


TYPICAL BIORETENTION CLEANOUT
NOT TO SCALE



NOTES:
1. MATERIALS TO CONFORM TO ASTM A536 GRADE 70-50-05
2. CASTINGS ARE FURNISHED WITH A BLACK PAINT

DOME FRAME AND GRATE
NOT TO SCALE



NOTE:
ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0% TO 359% TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE NYLOPLAST DRAWINGS.

BIO OUTLET (BO)
NOT TO SCALE
BY "NYLOPLAST" OR APPROVED EQUIVALENT

Revisions

Rev.	Date	By	Appr.	Description
1	---	---	---	---
2	---	---	---	---
3	---	---	---	---
4	---	---	---	---
5	---	---	---	---
6	---	---	---	---
7	---	---	---	---

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
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508-833-6600 voice
508-833-3150 fax

Date: November 2015 | Designed By: BRK | Drawn By: MJC | Checked By: RAC

Plan Set: MILL 77, 77 ELM STREET, AMESBURY MASSACHUSETTS

Plan Title: CONSTRUCTION DETAILS (2)

Prepared For:
Martin Development LLC.
77 Elm Street
Amesbury, MA 01913
Phone: (978) 834-0066 x 101
Fax: (508) 830-4081

Survey Provided By:
Eastern Land Survey Assoc., Inc.
104 Lowell Street
Peabody, MA 01960
Phone: (978) 531-8121
Fax: (508) 833-3150
Dated: ----

Registration:
COMMONWEALTH OF MASSACHUSETTS RICHARD A. CLAYTOR CIVIL NO. 45116 REGISTERED PROFESSIONAL ENGINEER
11-13-15

Project Number: 15123
Sheet: 8 of 17
Sheet Number: C - 8

StormTech®
Detention • Retention • Recharge
Subsurface Stormwater Management℠

STORMTECH GENERAL NOTES

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96 INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 96 INCHES.
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT WWW.STORMTECH.COM.

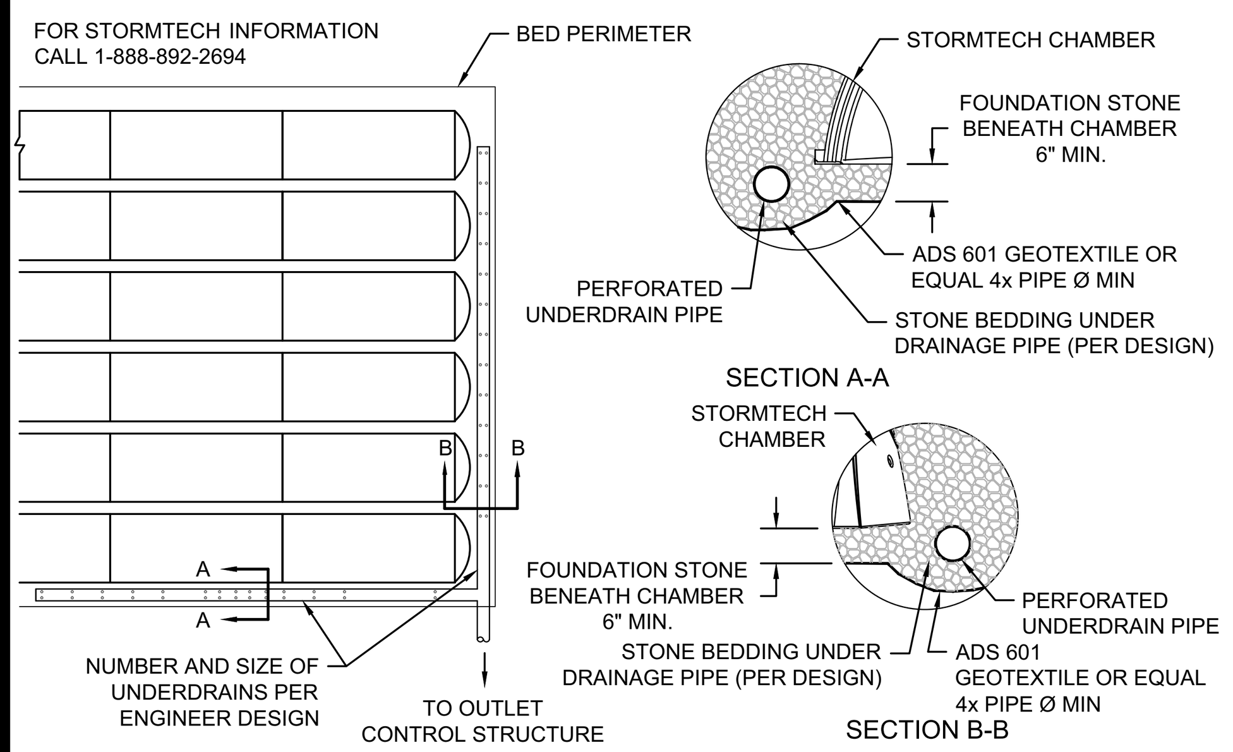
STORMTECH ACCEPTABLE FILL MATERIALS

	MATERIAL LOCATION	DECRIPTION	AASHTO M43 DESIGNATION¹	COMPACTION/DENSITY REQUIREMENT
(D)	FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
(C)	FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (457 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" (305 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (152 mm) LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
(B)	EMBEDMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH (19 - 51 mm).	3, 357, 4, 457, 5, 56, 57	NO COMPACTION REQUIRED.
(A)	FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH (19 - 51 mm).	3, 35, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY².

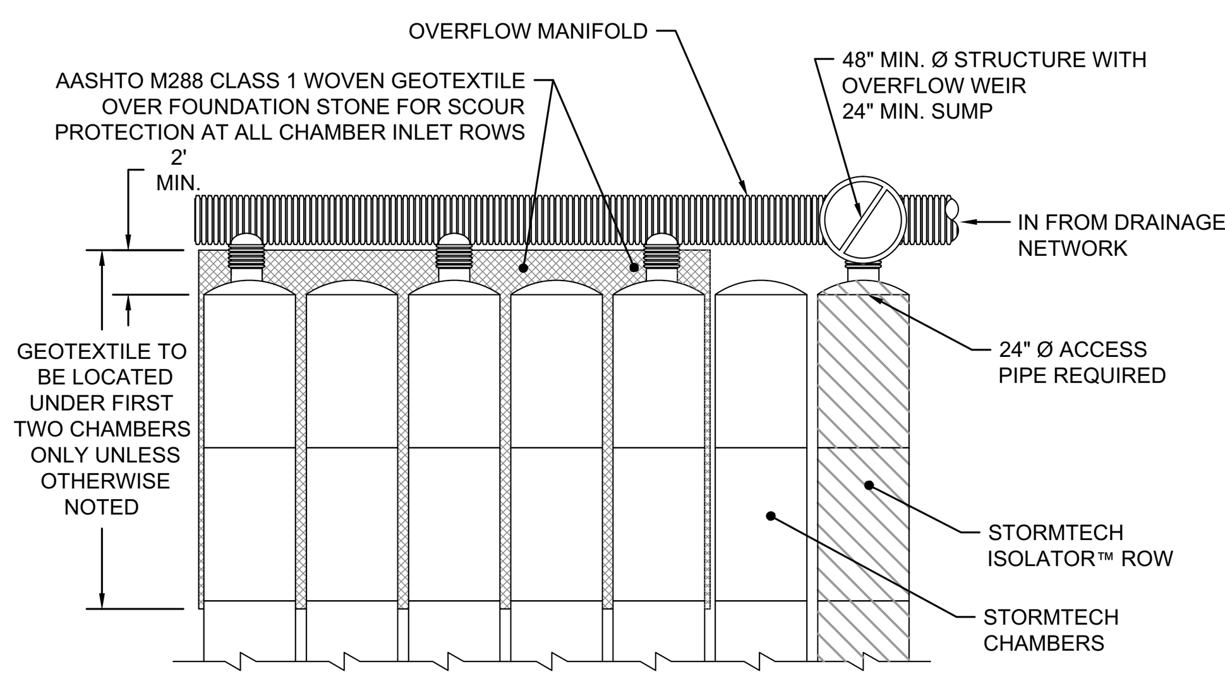
NOTES:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (229 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.

UNDERGROUND STORAGE CHAMBER SCHEDULE

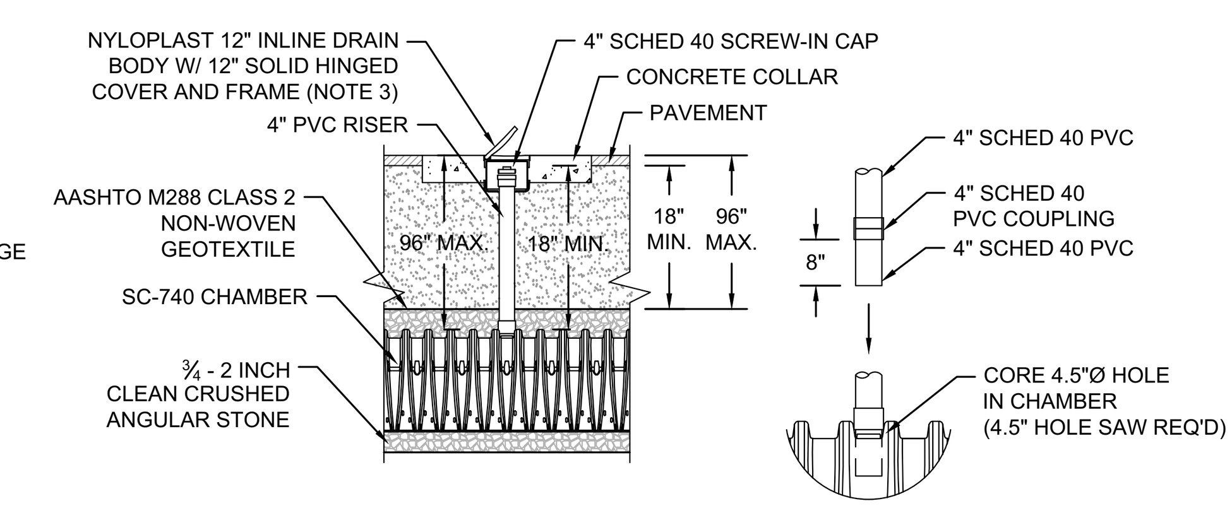
SPECIFICATIONS												INVERTS					
RECHARGE FIELD #	COVER TYPE	NUMBER OF UNITS	CHAMBER TYPE/ MODEL	CHAMBER HEIGHT (IN.)	STONE TOP OF CHAMBER (IN.)	BOTTOM OF CHAMBER TO INVERT IN (IN.)	STONE UNDER CHAMBER (IN.)	DIAMETER HEADER MANIFOLD (IN.)	DIAMETER CHAMBER INLET STUB (IN.)	# OF MANIFOLD INLETS STUBS	ELEV. A INVERT HEADER MANIFOLD (FT)	ELEV. B MANIFOLD STUB INVERT (FT)	ELEV. C BOTTOM OF CHAMBERS (FT)	ELEV. D BOTTOM OF STONE (FT)	ELEV. E TOP OF CHAMBER (FT)	ELEV. F TOP OF STONE (FT)
US-1	ASPHALT	24	STORMTECH SC-310	16.00	12	5.80	12	24	6	6	33.15	34.65	34.17	33.17	35.50	36.50



STORMTECH UNDERDRAIN DETAIL
NOT TO SCALE

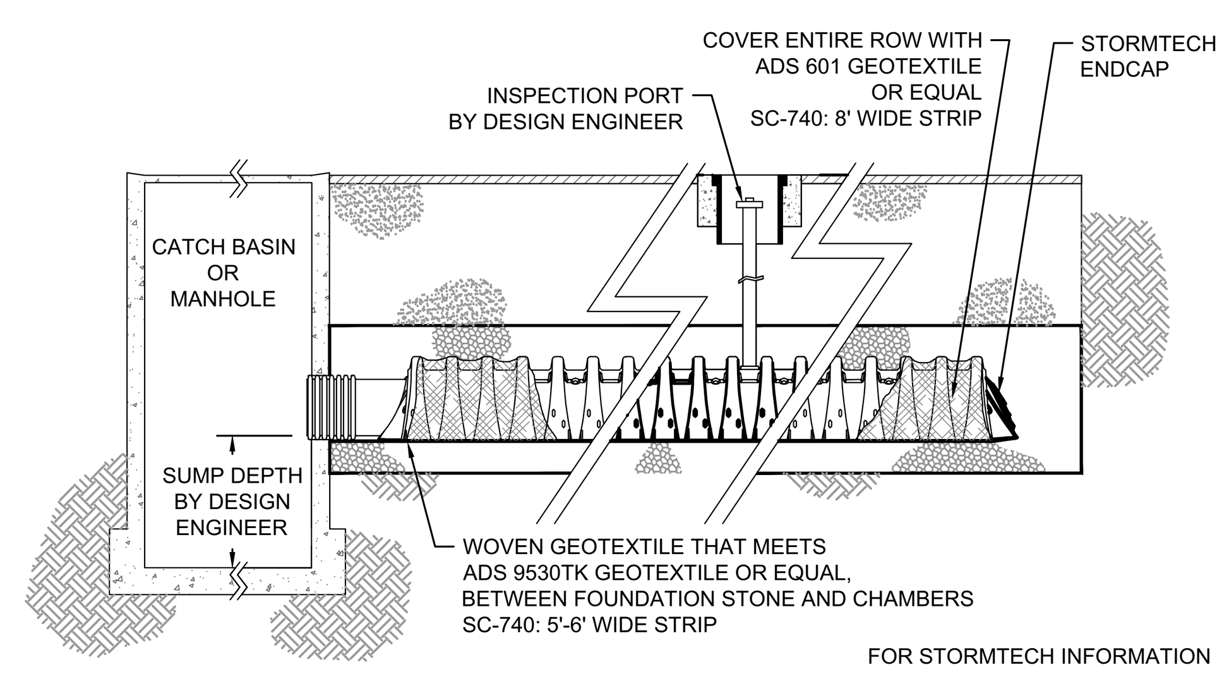


STORMTECH ISOLATOR ROW MANIFOLD DETAIL
NOT TO SCALE



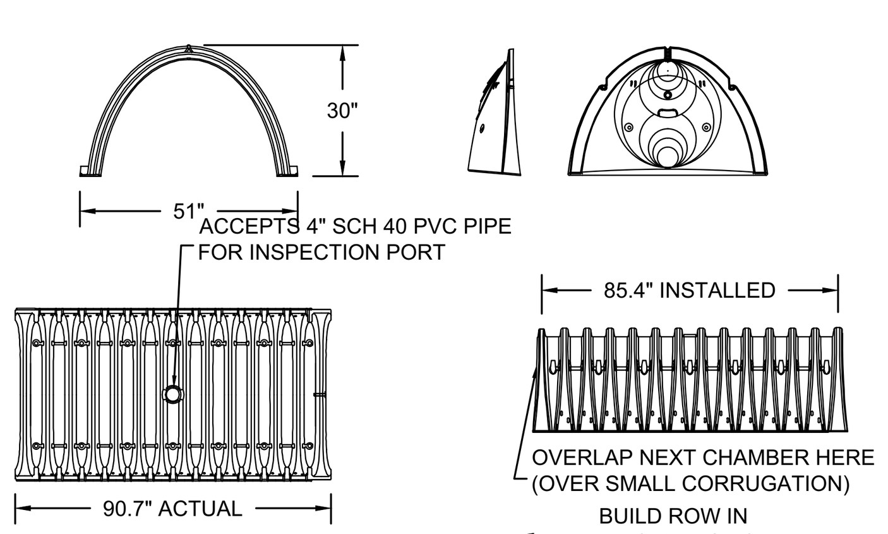
NOTES:
1. INSPECTION PORT MUST BE CONNECTED THROUGH KNOCK-OUT LOCATED AT CENTER OF CHAMBER.
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED.
3. INSPECTION PORTS TO BE INSTALLED IN THE MIDDLE CHAMBER OF EACH CHMABER COLUMN.
4. SEE NYLOPLAST DWG# 7003-110-044 FOR PAVED APPLICATIONS / SEE DWG# 7003-110-045 FOR UNPAVED APPLICATIONS.
5. FOR STORMTECH INFORMATION CALL 1-888-892-2694

STORMTECH INSPECTION PORT DETAIL
NOT TO SCALE



FOR STORMTECH INFORMATION CALL 1-888-892-2694

STORMTECH ISOLATOR ROW 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.

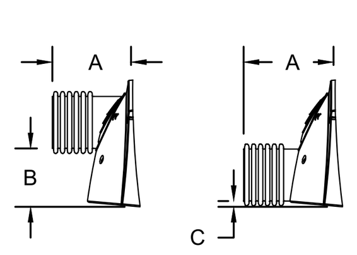
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART#	STUB	A	B	C
SC740EPE06T	6"(150 mm)	10.90" (277 mm)	18.50" (470 mm)	N/A
SC740EPE06B	6"(150 mm)	10.90" (277 mm)	N/A	0.50" (13 mm)
SC740EPE08T	8"(200 mm)	12.20" (310 mm)	16.50" (419 mm)	N/A
SC740EPE08B	8"(200 mm)	12.20" (310 mm)	N/A	0.60" (15 mm)
SC740EPE10T	10"(250 mm)	13.40" (340 mm)	14.50" (368 mm)	N/A
SC740EPE10B	10"(250 mm)	13.40" (340 mm)	N/A	0.70" (18 mm)
SC740EPE12T	12"(300 mm)	14.70" (373 mm)	12.50" (318 mm)	N/A
SC740EPE12B	12"(300 mm)	14.70" (373 mm)	N/A	1.20" (30 mm)
SC740EPE15T	15"(375 mm)	18.40" (467 mm)	9.00" (229 mm)	N/A
SC740EPE15B	15"(375 mm)	18.40" (467 mm)	N/A	1.30" (33 mm)
SC740EPE18T	18"(450 mm)	19.70" (500 mm)	5.00" (127 mm)	N/A
SC740EPE18B	18"(450 mm)	19.70" (500 mm)	N/A	1.60" (41 mm)
SC740EPE24B	24"(600 mm)	18.50" (470 mm)	N/A	0.10" (3 mm)

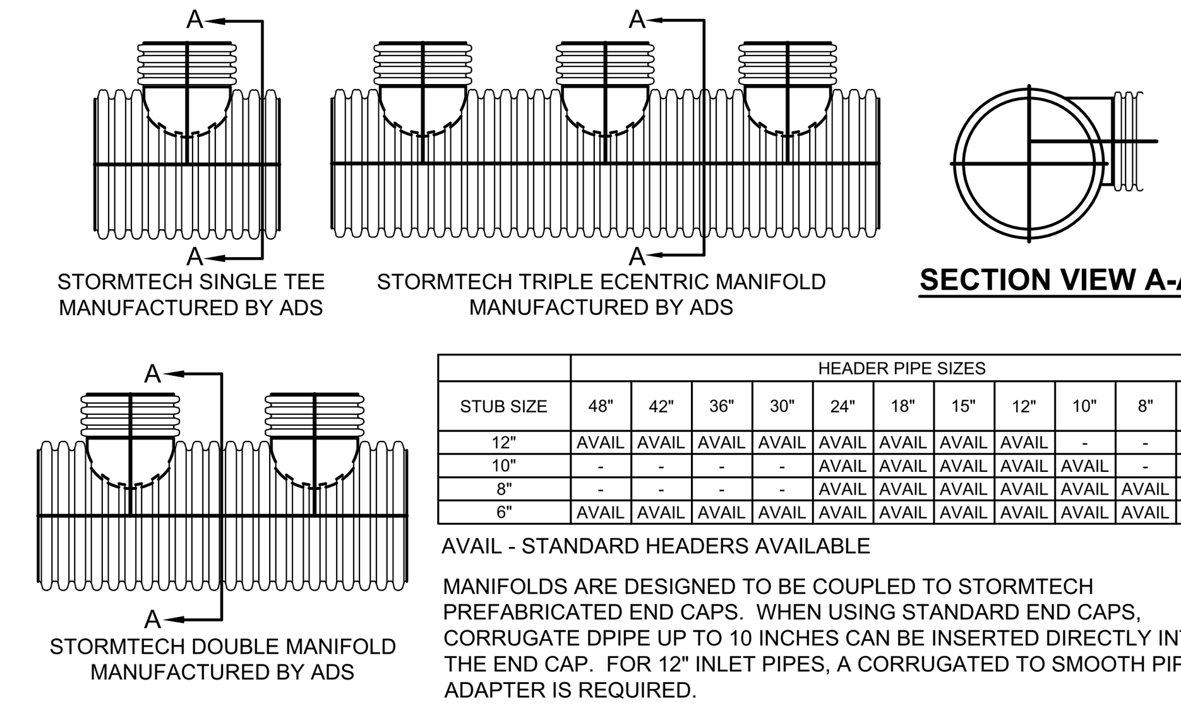
NOTE: ALL DIMENSIONS ARE NOMINAL

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

*FOR THE SC740EPE24B THE 24" STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75". BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.



STORMTECH TECHNICAL DETAILS
NOT TO SCALE



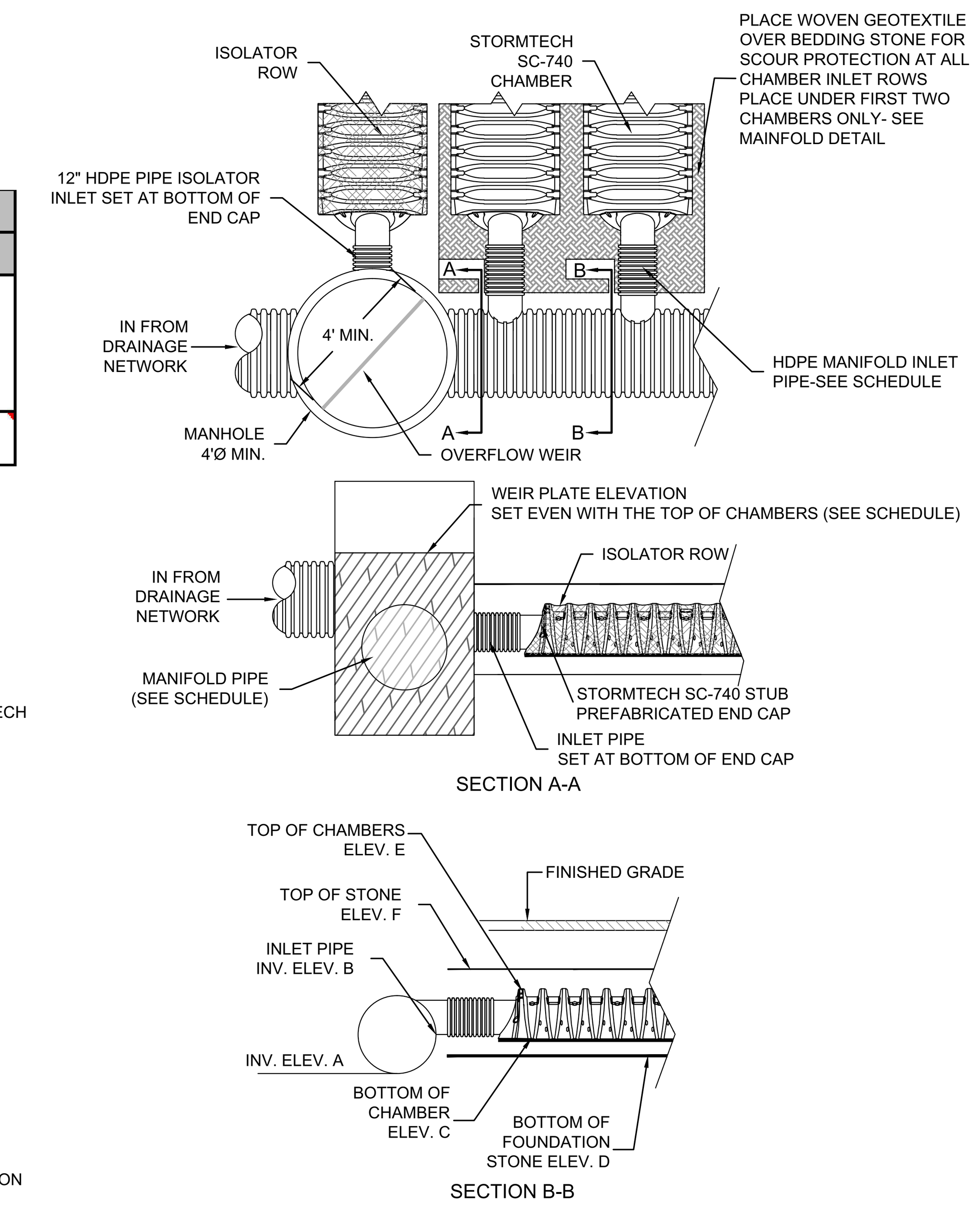
STUB SIZE	HEADER PIPE SIZES 48"	42"	36"	30"	24"	18"	15"	12"	10"	8"	6"
12"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-	-
10"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-
8"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-
6"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL

AVAIL - STANDARD HEADERS AVAILABLE

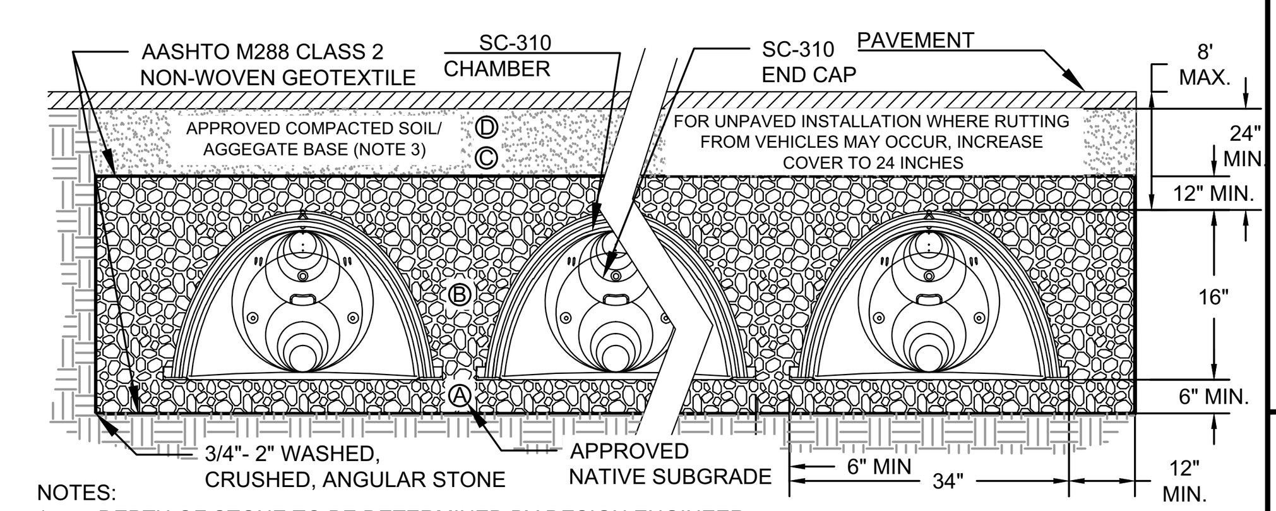
MANIFOLDS ARE DESIGNED TO BE COUPLED TO STORMTECH PREFABRICATED END CAPS. WHEN USING STANDARD END CAPS, CORRUGATE DPIPE UP TO 10 INCHES CAN BE INSERTED DIRECTLY INTO THE END CAP. FOR 12" INLET PIPES, A CORRUGATED TO SMOOTH PIPE ADAPTER IS REQUIRED.

FOR INFORMATION CALL 1-888-892-2694

ADS MANIFOLD DETAIL
NOT TO SCALE

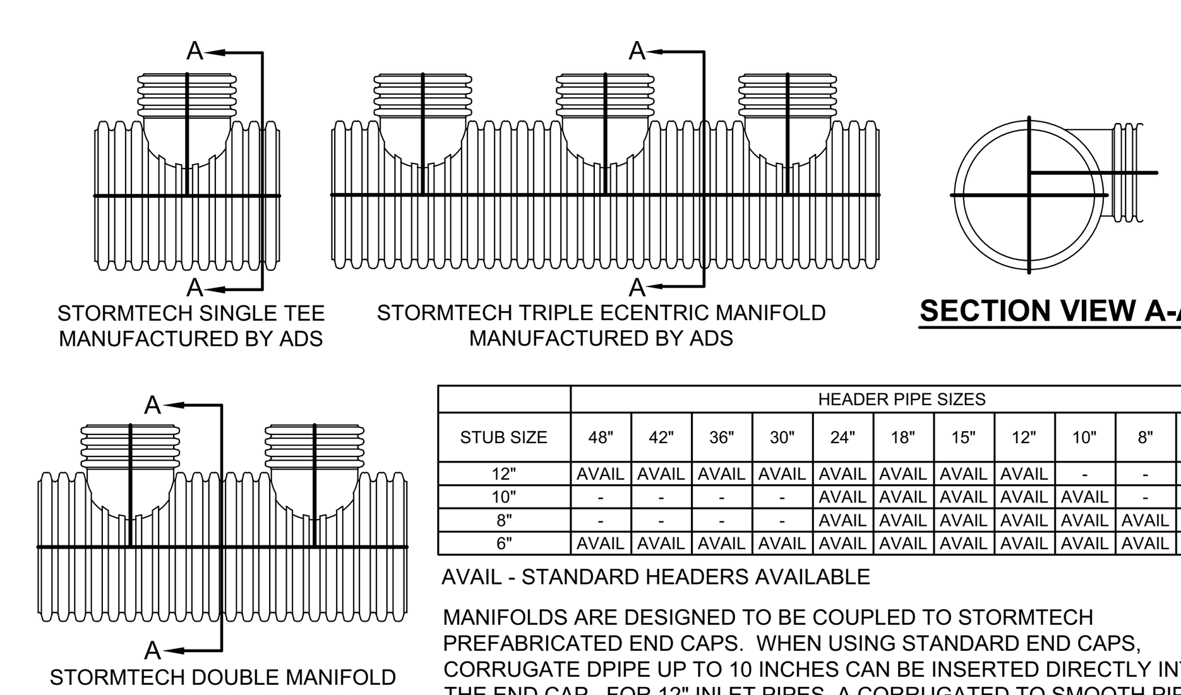


STORMTECH SYSTEM DETAIL
NOT TO SCALE



NOTES:
1. DEPTH OF STONE TO BE DETERMINED BY DESIGN ENGINEER.
2. CHAMBERS TO MEET ASTM F 2418-05 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. APPROVED BASE MATERIAL TO BE GRANULAR WELL GRADED SOIL/AGGREGATE MIXTURES WITH <35% FINES. COMPACT IN 6" LIFTS TO 95% PROCTOR DENSITY. SEE TABLE OF ACCEPTABLE FILL MATERIALS IN STORMTECH'S DESIGN/INSTALLATION MANUAL(S), OR WWW.STORMTECH.COM.
4. THE INSTALLED CHAMBER SYSTEM TO PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
5. FOR INFORMATION, CONTACT STORMTECH AT 1-888-892-2694.

STORMTECH SC-310 CHAMBER TYPICAL CROSS SECTION
NOT TO SCALE



STUB SIZE	HEADER PIPE SIZES 48"	42"	36"	30"	24"	18"	15"	12"	10"	8"	6"
12"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-	-
10"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-
8"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-
6"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL

AVAIL - STANDARD HEADERS AVAILABLE

MANIFOLDS ARE DESIGNED TO BE COUPLED TO STORMTECH PREFABRICATED END CAPS. WHEN USING STANDARD END CAPS, CORRUGATE DPIPE UP TO 10 INCHES CAN BE INSERTED DIRECTLY INTO THE END CAP. FOR 12" INLET PIPES, A CORRUGATED TO SMOOTH PIPE ADAPTER IS REQUIRED.

FOR INFORMATION CALL 1-888-892-2694

ADS MANIFOLD DETAIL
NOT TO SCALE

PERMITTING SET ONLY
NOT FOR CONSTRUCTION

Rev.	Date	By	Appr.	Description
1	---	---	---	---
2	---	---	---	---
3	---	---	---	---
4	---	---	---	---
5	---	---	---	---
6	---	---	---	---
7	---	---	---	---

Revisions

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

Date: November 2015
Designed By: BRK
Drawn By: MJC
Checked By: RAC

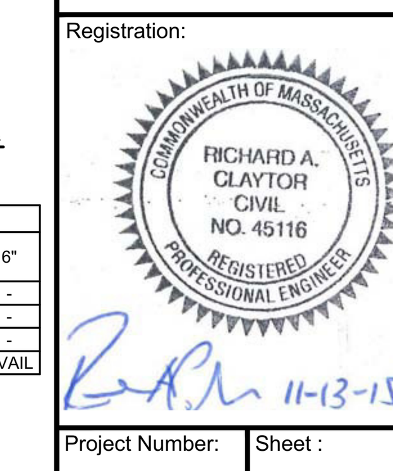
Plan Set:
MILL 77
77 ELM STREET
AMESBURY MASSACHUSETTS

Plan Title:
CONSTRUCTION DETAILS (3)

Prepared For:
Martin Development LLC.
77 Elm Street
Amesbury, MA 01913
Phone: (978) 834-0066 x 101
Fax: (508) 830-4081

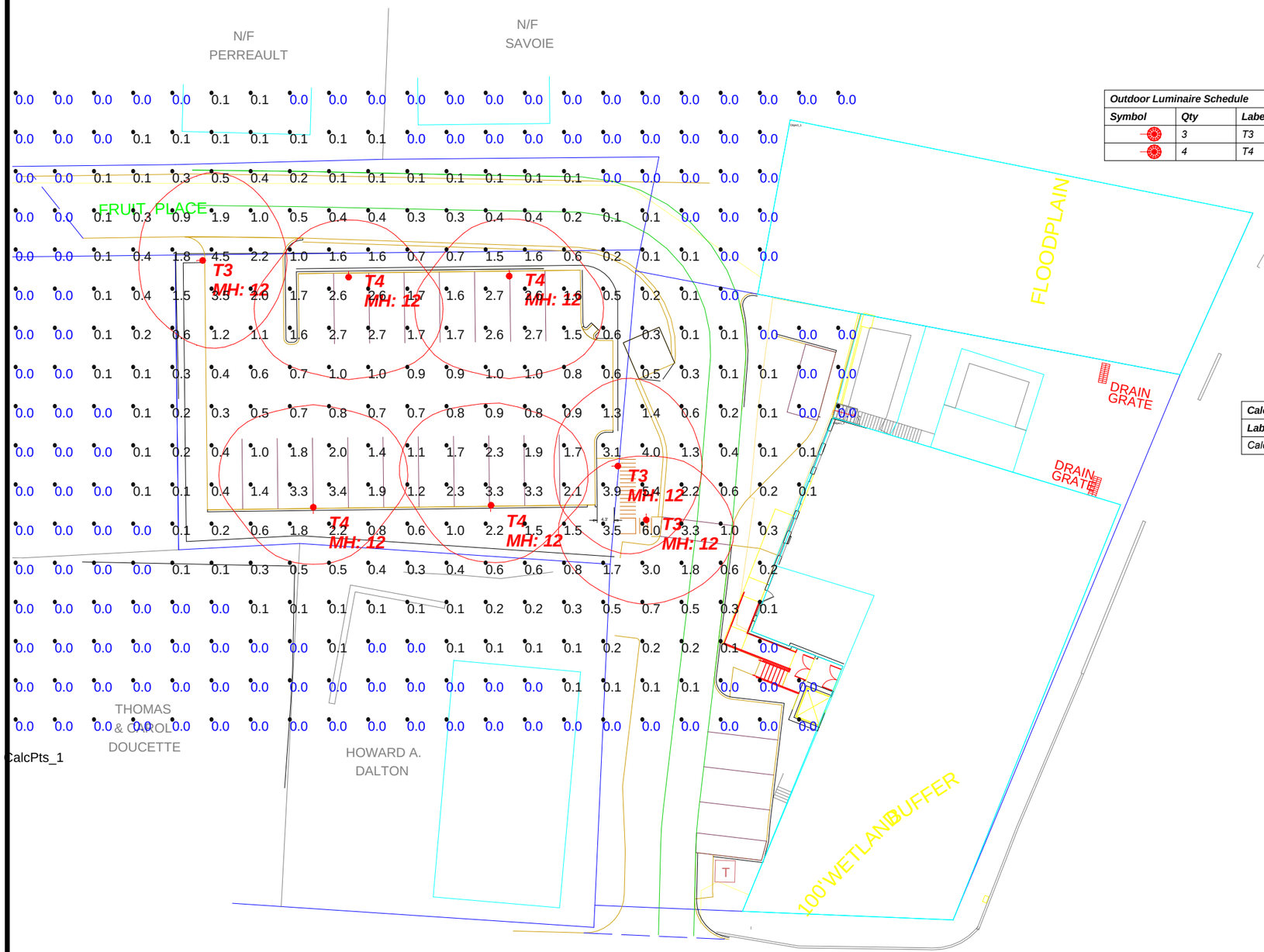
Survey Provided By:
Eastern Land Survey Assoc., Inc.
104 Lowell Street
Peabody, MA 01960
Phone: (978) 531-8121
Fax: (508) 833-3150
Dated: ----

Registration:



Project Number: 15123
Sheet : 9 of 17
Sheet Number: C - 9

last modified: 11/13/15 printed: 11/13/15 by bl \\HW-FILE\HW-Server\Projects\2015\15123 77 Elm St-Amesbury\Drawings\15123-DE.dwg



Outdoor Luminaire Schedule								
Symbol	Qty	Label	Description	Arrangement	Arm	Lum. Lumens	LLF	Filename
	3	T3	1521RLED-SV2-3ARC45T3	SINGLE	1.5	3198	0.900	1521RLED-SV2-3ARC45T3.IES
	4	T4	1521RLED-SV2-3ARC45T4	SINGLE	1.5	3296	0.900	1521RLED-SV2-3ARC45T4.IES

Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	T3	-785.5	-696	12	270	0
2	T4	-870.5	-695.75	12	90	0
3	T4	-825.25	-695.25	12	85.236	0
4	T3	-794.25	-683.75	12	0	0
5	T4	-861.5	-634	12	270	0
6	T4	-820.5	-633.75	12	270	0
7	T3	-900.25	-631.25	12	0	0

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Illuminance	Fc	0.57	6.0	0.0	N.A.	N.A.

0' 15' 30' 60'

OMNI-LITE, INC.
263 WINN STREET BURLINGTON, MA. 01803
PH # 781-272-2300, FAX # 781-272-0759 www.omnilight.com

PROJECT: Mill 77

CLIENT: David Martin LLC

SCALE: FEET

FILE: omni lofts at 77 elm 00.adm

DATE: 10/11/2015

SALES PERSON: Paul Abdella

THESE DRAWINGS ARE FOR CONCEPTUAL USE ONLY AND ARE NOT INTENDED FOR CONSTRUCTION. VALUES REPRESENTED ARE AN APPROXIMATON GENERATED FORM DATA SUPPLIED BY LAMP MFG. AND TESTING LABS.

PLANT LEGEND

EXISTING TREES	SIZE	NOTES	QTY
SHADE TREES	**SIZE**	**NOTES**	**QTY**
Celtis occidentalis Common Hackberry	2.0" - 2.5" Cal.	Zone: 3 Salt: Moderate	-
Liquidambar styraciflua Sweet Gum	2.0" - 2.5" Cal.	Zone: 5 Salt: Low	-
Nyssa sylvatica Black Tupelo	3.0" - 3.5" Cal.	Zone: 4 Salt: Tolerant	-
ORNAMENTAL TREES	**SIZE**	**NOTES**	**QTY**
Cercis canadensis Eastern Redbud	2.0" Cal.	Zone: 4 Salt: Tolerant	-
Styrax americanus American Snowbell	2.0" Cal.	Zone: 5 Salt: Tolerant	-
DECIDUOUS SHRUBS	**SIZE**	**NOTES**	**QTY**
Aronia melanocarpa Black Chokeberry	1 Gallon	Zone: 3 Salt: Tolerant	31
Comptonia peregrina Sweetfern	1 Gallon	Zone: 3 Salt: Moderate	47
Cornus sericea Red Osier Dogwood	1 Gallon	Zone: 5 Salt: Moderate	37
Ilex verticillata 'Nana' Common Winterberry	1 Gallon WPM	Zone: 4 Salt: Tolerant	51
Lindera benzoin Common Spicebush	1 Gallon WPM	Zone: 4 Salt: Moderate	42
Myrica pensylvanica Northern Bayberry	1 Gallon	Zone: 4 Salt: Moderate	36
Sambucus canadensis American Elder	1 Gallon WPM	Zone: 4 Salt: Tolerant	14
Vaccinium corymbosum Highbush Blueberry	1 Gallon WPM	Zone: 4 Salt: Moderate	30
Viburnum trilobum American Cranberrybush	1 Gallon	Zone: 2 Salt: Moderate	10
EVERGREEN SHRUBS	**SIZE**	**NOTES**	**QTY**
Kalmia latifolia Mountain Laurel	1 Gallon	Zone: 5 Salt: Low	-
Pieris floribunda Mountain Andromeda	1 Gallon	Zone: 4 Salt: Low	-
GRASSES	**SIZE**	**NOTES**	**QTY**
Eragrostis spectabilis Purple lovegrass	1 Gallon	Zone: 4 Salt: Low	38
Juncus bufonius Toad Rush	1 Gallon	Zone: 3 Salt: Low	4
Schizachyrium scoparium Little Bluestem	1 Gallon	Zone: 4 Salt: Tolerant	15
GROUNDCOVERS	**SIZE**	**NOTES**	**QTY**
Arctostaphylos uva-ursi Bearberry	1 Gallon	Zone: 3 Salt:	53
Cornus canadensis Bunchberry Dogwood	1 Gallon	Zone: 3 Salt: Moderate	21
Juniperus chinensis sagentii Sargent juniper	1 Gallon	Zone: 3 Salt: Low	36
Vaccinium angustifolium Lowbush Blueberry	1 Gallon	Zone: 4 Salt: Low	54
Vinca minor Periwinkle	1 Flat	Zone: 3 Salt: Low	5
VINES	**SIZE**	**NOTES**	**QTY**
Lonicera sempervirens Coral honeysuckle	1 Gallon	Zone: 3 Salt: None	-
Campsis radicans Trumpet Creeper	1 Gallon	Zone: 4 Salt: Tolerant	-
TURF AND SEED MIX			**QTY**
Wildflower Seed Mix			TBD S.F.
LANDSCAPE MATERIALS			**QTY**
Bark Mulch Shredded Organic Bark Mulch		3" depth all planting areas	TBD S.F.

AMORY LAND DESIGN, LLC
68 PROSPECT STREET
NEWBURYPORT, MA
01950 - 2624

MARTIN DEVELOPMENT, LLC
77 ELM STREET
AMESBURY, MA 01913

0' 10' 20' 40' NORTH

LOFTS AT 77 ELM STREET

LANDSCAPE CONCEPT

Project Address:	ELM STREET Amesbury, Massachusetts
Project Issue Date:	November 9th, 2015
Project Number:	15-01-4.00
Project Status:	First Coordination and Submittal
Reviewed By:	Howard Snyder

DELTA	ISSUE TITLE	DATE

LANDSCAPE CONCEPT PLAN

Not For Construction

L1.0

Shade Trees

Celtis occidentalis
Common Hackberry

Liquidambar styraciflua
Sweetgum

Nyssa sylvatica
Black Gum

Ornamental Trees

Cercis candensis
Eastern Redbud

Styrax americanus
Amercican Snowball

Decidious Shrubs

Aronia melanocarpa
Black Chokeberry

Comptonia peregrina
Sweetfern

Cornus sericea
Red Osier Dogwood

Ilex verticillata 'Nana'
Dwarf Winterberry

Lineria benzoin
Spicebush

Myrica pennsylvanica
Northern Bayberry

Sambucus canadensis
American elder

Vaccinium corymbosum
Highbush blueberry

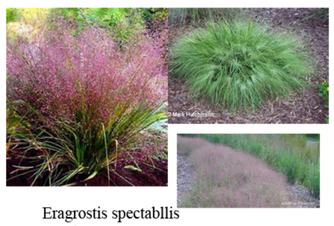
Viburnum trilobum
American Cranberrybush

Evergreen Shrubs

Kalmia latifolia
Mountain Laurel

Taxus canadensis
Canadian Yew

Grasses



Eragrostis spectabllis
Purple Lovegrass

Juncus bufonlus
Toad Rush

Schlzachyrium scoparium
Little Bluestem

Vines

Campsis radicans
Trumpet Creeper

Lonicera sempervirens
Coral Honeysuckle

PLANT LEGEND

EXISTING TREES	SIZE	NOTES	QTY
SHADE TREES			
Celtis occidentalis Common Hackberry	2.0" - 2.5" Cal.	Zone: 3 Salt: Moderate	-
Liquidambar styraciflua Sweet Gum	2.0" - 2.5" Cal.	Zone: 5 Salt: Low	-
Nyssa sylvatica Black Tupelo	3.0" - 3.5" Cal.	Zone: 4 Salt: Tolerant	-
ORNAMENTAL TREES	**SIZE**	**NOTES**	**QTY**
Cercis canadensis Eastern Redbud	2.0" Cal.	Zone: 4 Salt: Tolerant	-
Styrax americanus American Snowbell	2.0" Cal.	Zone: 5 Salt: Tolerant	-
DECIDUOUS SHRUBS	**SIZE**	**NOTES**	**QTY**
Aronia melanocarpa Black Chokeberry	1 Gallon	Zone: 3 Salt: Tolerant	31
Comptonia peregrina Sweetfern	1 Gallon	Zone: 3 Salt: Moderate	47
Cornus sericea Red Osier Dogwood	1 Gallon	Zone: 5 Salt: Moderate	37
Ilex verticillata 'Nana' Common Winterberry	1 Gallon WPM	Zone: 4 Salt: Tolerant	51
Lindera benzoin Common Spicebush	1 Gallon WPM	Zone: 4 Salt: Moderate	42
Myrica pensylvanica Northern Bayberry	1 Gallon	Zone: 4 Salt: Moderate	36
Sambucus canadensis American Elder	1 Gallon WPM	Zone: 4 Salt: Tolerant	14
Vaccinium corymbosum Highbush Blueberry	1 Gallon WPM	Zone: 4 Salt: Moderate	30
Viburnum trilobum American Cranberrybush	1 Gallon	Zone: 2 Salt: Moderate	10
EVERGREEN SHRUBS	**SIZE**	**NOTES**	**QTY**
Kalmia latifolia Mountain Laurel	1 Gallon	Zone: 5 Salt: Low	-
Pieris floribunda Mountain Andromeda	1 Gallon	Zone: 4 Salt: Low	-
GRASSES	**SIZE**	**NOTES**	**QTY**
Eragrostis spectabilis Purple lovegrass	1 Gallon	Zone: 4 Salt: Low	38
Juncus bufonius Toad Rush	1 Gallon	Zone: 3 Salt: Low	4
Schizachyrium scoparium Little Bluestem	1 Gallon	Zone: 4 Salt: Tolerant	15
GROUNDCOVERS	**SIZE**	**NOTES**	**QTY**
Arctostaphylos uva-ursi Bearberry	1 Gallon	Zone: 3 Salt:	53
Cornus canadensis Bunchberry Dogwood	1 Gallon	Zone: 3 Salt: Moderate	21
Juniperus chinensis sagentii Sargent juniper	1 Gallon	Zone: 3 Salt: Low	36
Vaccinium angustifolium Lowbush Blueberry	1 Gallon	Zone: 4 Salt: Low	54
Vinca minor Periwinkle	1 Flat	Zone: 3 Salt: Low	5
VINES	**SIZE**	**NOTES**	**QTY**
Lonicera sempervirens Coral honeysuckle	1 Gallon	Zone: 3 Salt: None	-
Campsis radicans Trumpet Creeper	1 Gallon	Zone: 4 Salt: Tolerant	-
TURF AND SEED MIX			**QTY**
Wildflower Seed Mix			TBD S.F.
LANDSCAPE MATERIALS			**QTY**
Bark Mulch Shredded Organic Bark Mulch		3" depth all planting areas	TBD S.F.

AMORY LAND DESIGN, LLC
68 PROSPECT STREET
NEWBURYPORT, MA
01950 - 2624

MARTIN DEVELOPMENT, LLC
77 ELM STREET
AMESBURY, MA 01913

LOFTS AT 77 ELM STREET

LANDSCAPE CONCEPT

Project Address:	ELM STREET Amesbury, Massachusettes
Project Issue Date:	November 9th, 2015
Project Number:	15-014.00
Project Status:	First Coordination and Submittal
Reviewed By:	Howard Snyder

DELTA	ISSUE TITLE	DATE

LANDSCAPE CONCEPT IMAGES

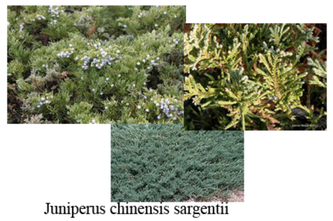
1.1

Not For Construction

Groundcovers

Arctostaphylos uva-ursi
Bearberry

Cornus canadensis
Bunchberry Dogwood



Juniperus chinensis sargentii
Sargent Juniper

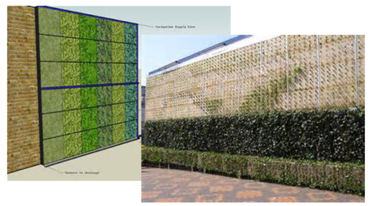
Vaccinium angustifolium
Lowbush Blueberry

Vinca Minor
Vinca

Hardscape Elements

Wire Trellis

Patio Pavers



Living Wall Systems

AMORY LAND DESIGN, LLC
68 PROSPECT STREET
NEWBURYPORT, MA
01950 - 2624

MARTIN DEVELOPMENT, LLC
77 ELM STREET
AMESBURY, MA 01913

LOFTS AT 77 ELM STREET

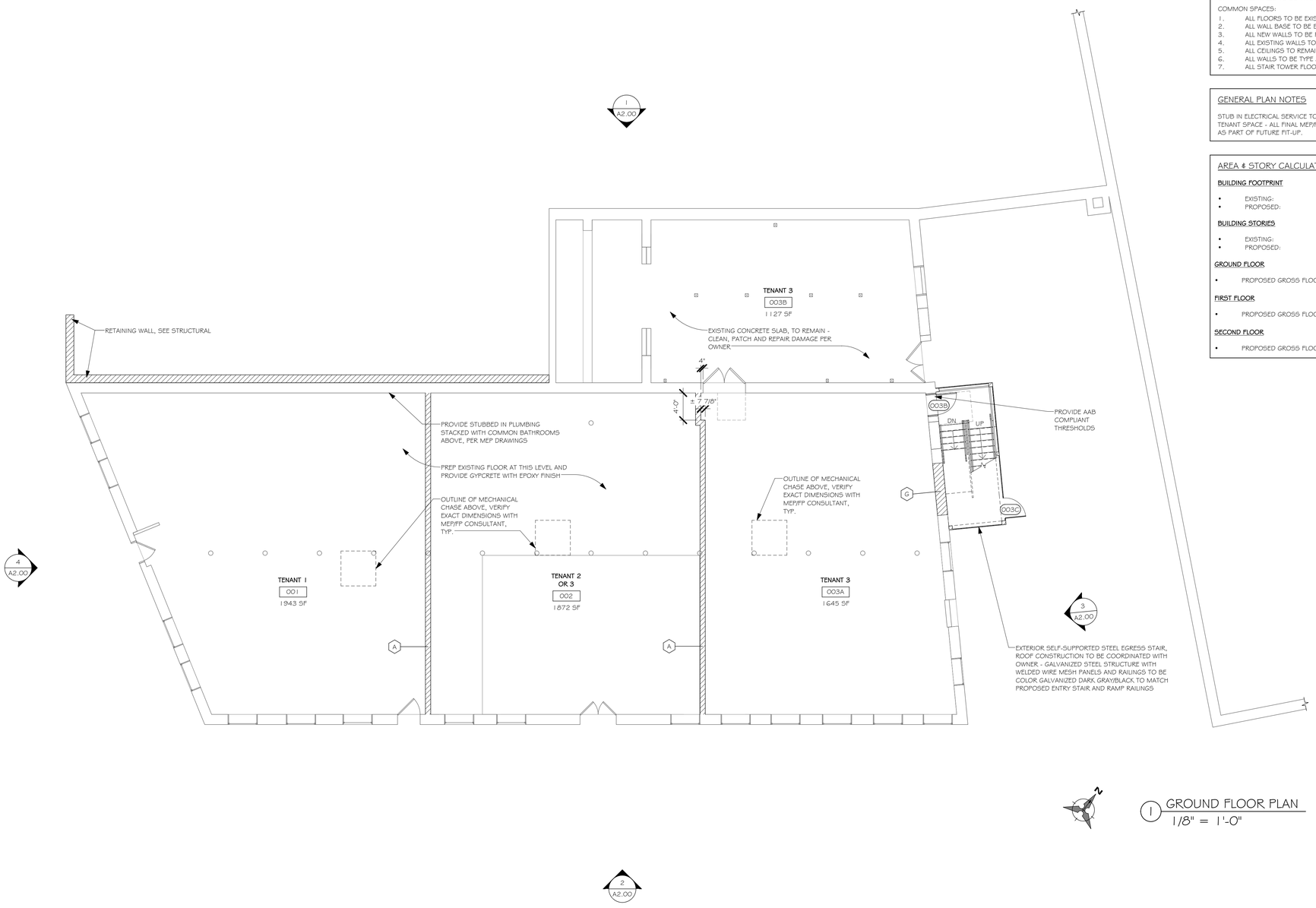
LANDSCAPE CONCEPT

Project Address:	ELM STREET Amesbury, Massachusetts
Project Issue Date:	November 9th, 2015
Project Number:	15-01.4.00
Project Status:	First Coordination and Submittal
Reviewed By:	Howard Snyder

DELTA	ISSUE TITLE	DATE

LANDSCAPE CONCEPT
IMAGES
1.2

Not For Construction



1 GROUND FLOOR PLAN
1/8" = 1'-0"

TYP. FINISH NOTES

TENANT SPACES:

1. ALL FLOORS TO BE EXISTING WOOD TO REMAIN, U.O.N.
2. ALL WALL BASE TO BE BASE-1, U.O.N.
3. ALL NEW WALLS TO BE PAINTED PT-1, U.O.N.
4. ALL EXISTING WALLS TO REMAIN EXISTING MASONRY, U.O.N.
5. ALL CEILINGS TO REMAIN EXISTING EXPOSED, U.O.N.
6. ALL WALLS TO BE TYPE A, U.O.N.

COMMON SPACES:

1. ALL FLOORS TO BE EXISTING WOOD TO REMAIN, U.O.N.
2. ALL WALL BASE TO BE BASE-1, U.O.N.
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5. ALL CEILINGS TO REMAIN EXISTING EXPOSED, U.O.N.
6. ALL WALLS TO BE TYPE A, U.O.N.
7. ALL STAIR TOWER FLOORS/TREADS/RISERS TO BE RB-1 U.O.N.

GENERAL PLAN NOTES

STUB IN ELECTRICAL SERVICE TO POWER AND PLUMBING AT EACH TENANT SPACE - ALL FINAL MEP/FP FOR TENANT SPACES BY TENANT AS PART OF FUTURE FIT-UP.

AREA & STORY CALCULATIONS

BUILDING FOOTPRINT

• EXISTING:	9,119 SF
• PROPOSED:	8,407 SF

BUILDING STORIES

• EXISTING:	3
• PROPOSED:	3

GROUND FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	6,745 SF
FIRST FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	7,500 SF
SECOND FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	6,959 SF

Revisions:

#	Description	Date

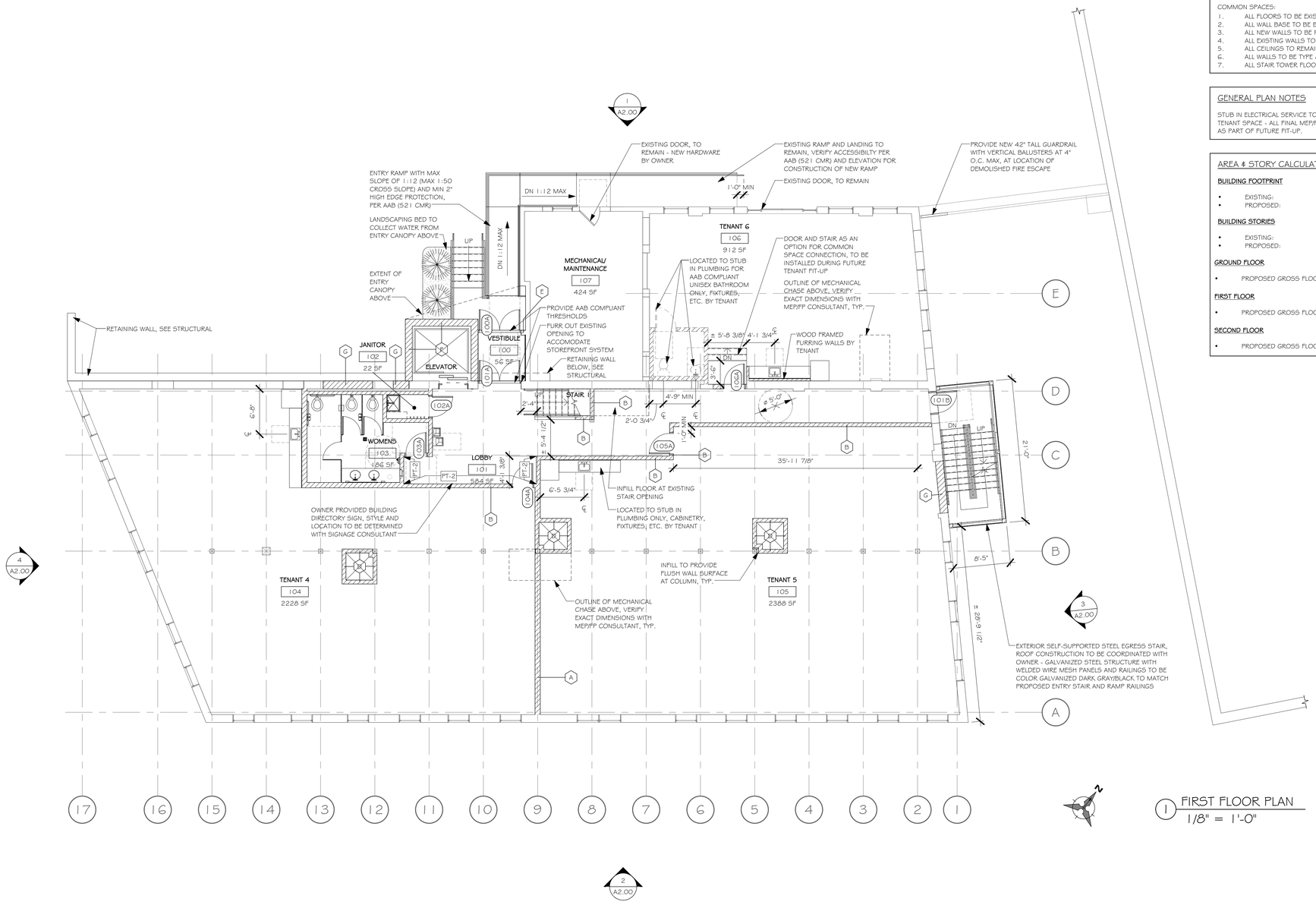
DeSTEFANO ARCHITECTS
23 High Street
Portsmouth NH, 03801
PH: 603.431.6701
FAX: 603.422.8707
www.destefanoarchitects.com

ADDITION AND RENOVATION TO
MILL 77
77 ELM STREET
AMESBURY, MA 01913

Title:
PROPOSED GROUND FLOOR PLAN

Scale:	As indicated
Drawn By:	MRL
Checked By:	RJH
Project No.:	201551
Date:	NOVEMBER 13, 2015

A1.00



1 FIRST FLOOR PLAN
1/8" = 1'-0"

TYP. FINISH NOTES

TENANT SPACES:

1. ALL FLOORS TO BE EXISTING WOOD TO REMAIN, U.O.N.
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COMMON SPACES:

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GENERAL PLAN NOTES

STUB IN ELECTRICAL SERVICE TO POWER AND PLUMBING AT EACH TENANT SPACE - ALL FINAL MEP/FP FOR TENANT SPACES BY TENANT AS PART OF FUTURE FIT-UP.

AREA & STORY CALCULATIONS

BUILDING FOOTPRINT

• EXISTING:	9,119 SF
• PROPOSED:	8,407 SF

BUILDING STORIES

• EXISTING:	3
• PROPOSED:	3

GROUND FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	6,745 SF
FIRST FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	7,500 SF
SECOND FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	6,959 SF

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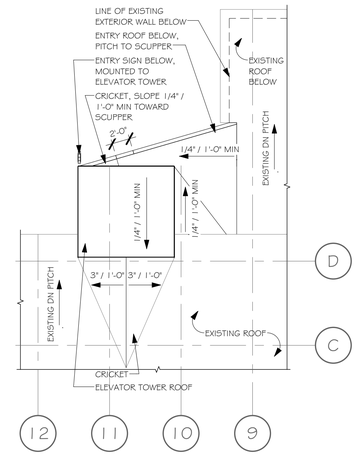
ADDITION AND RENOVATION TO
MILL 77
77 ELM STREET
AMESBURY, MA 01913

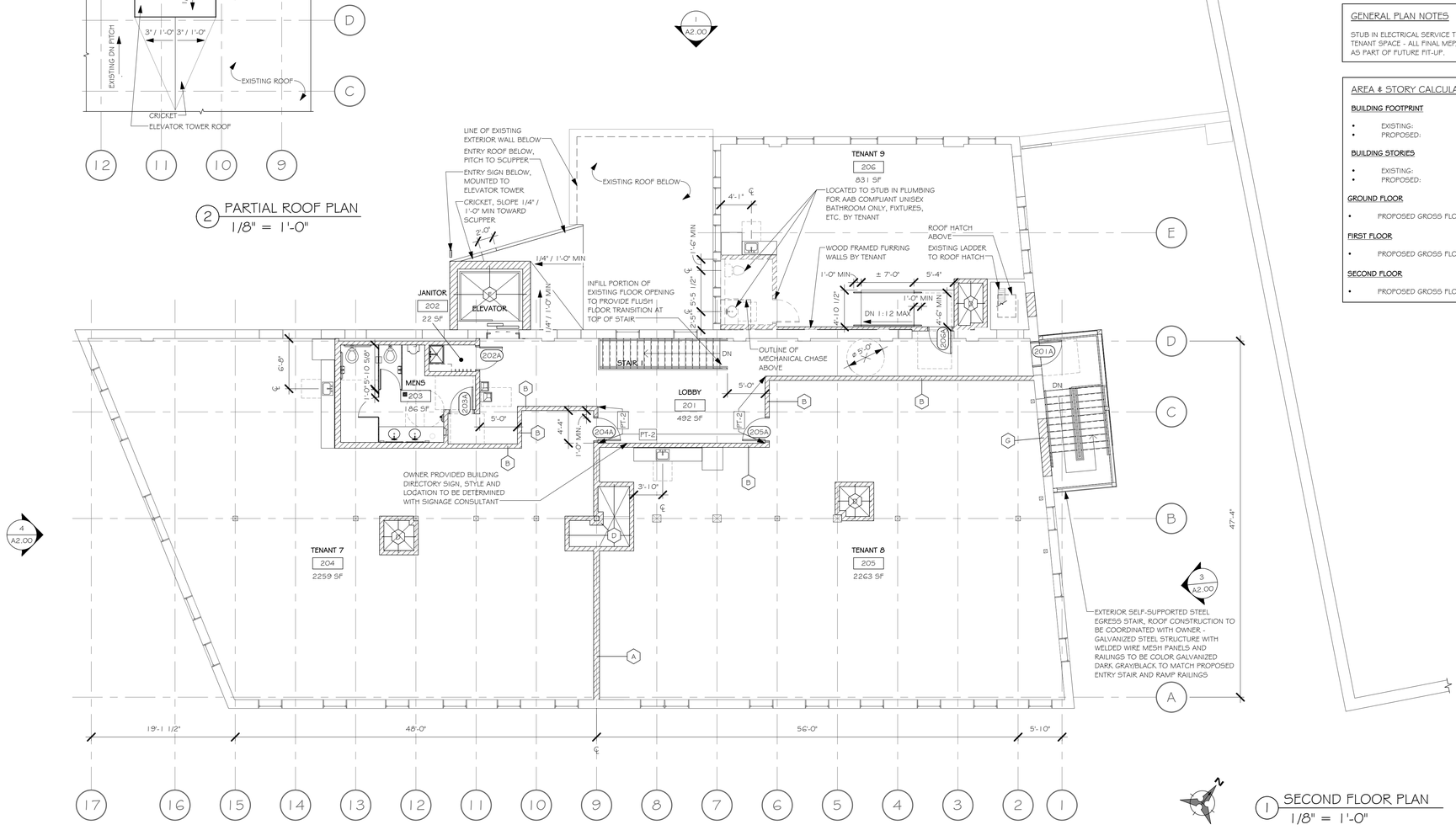
Title:
PROPOSED FIRST FLOOR PLAN

Scale:	As indicated
Drawn By:	MRL
Checked By:	RJH
Project No.:	201551
Date:	NOVEMBER 13, 2015

A1.01



2 PARTIAL ROOF PLAN
1/8" = 1'-0"



1 SECOND FLOOR PLAN
1/8" = 1'-0"

TYP. FINISH NOTES

TENANT SPACES:

1. ALL FLOORS TO BE EXISTING WOOD TO REMAIN, U.O.N.
2. ALL WALL BASE TO BE BASE-1, U.O.N.
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5. ALL CEILINGS TO REMAIN EXISTING EXPOSED, U.O.N.
6. ALL WALLS TO BE TYPE A, U.O.N.

COMMON SPACES:

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6. ALL WALLS TO BE TYPE A, U.O.N.
7. ALL STAIR TOWER FLOORS/TREADS/RISERS TO BE RB-1 U.O.N.

GENERAL PLAN NOTES

STUB IN ELECTRICAL SERVICE TO POWER AND PLUMBING AT EACH TENANT SPACE - ALL FINAL MEP/FP FOR TENANT SPACES BY TENANT AS PART OF FUTURE FIT-UP.

AREA & STORY CALCULATIONS

BUILDING FOOTPRINT

• EXISTING:	9,119 SF
• PROPOSED:	8,407 SF

BUILDING STORIES

• EXISTING:	3
• PROPOSED:	3

GROUND FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	6,745 SF
FIRST FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	7,500 SF
SECOND FLOOR	**TOTALS**
• PROPOSED GROSS FLOOR AREA:	6,959 SF

Revisions:

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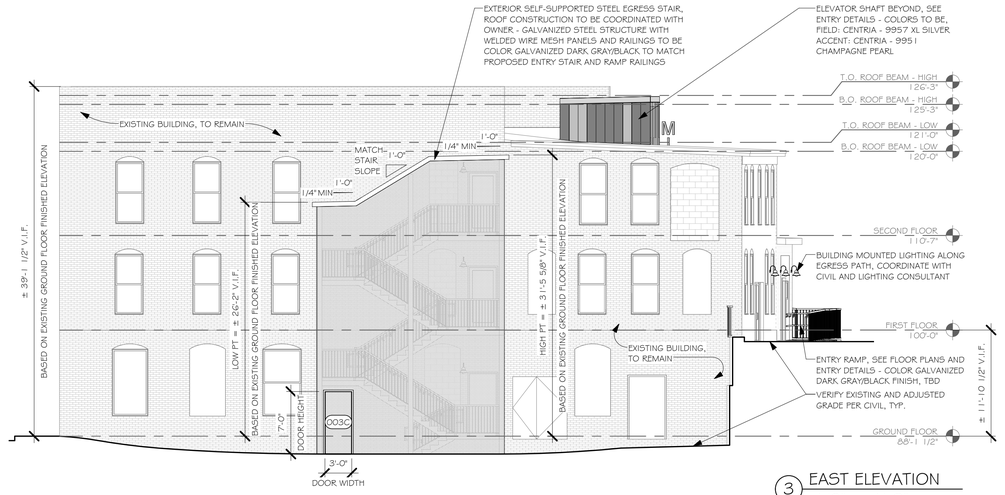
ADDITION AND RENOVATION TO
MILL 77
77 ELM STREET
AMESBURY, MA 01913

Title:
PROPOSED
SECOND FLOOR &
PARTIAL ROOF PLAN

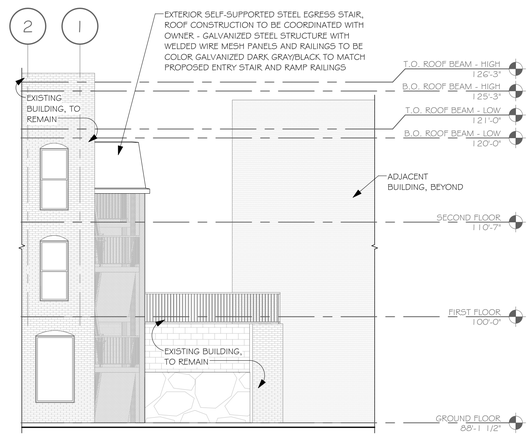
Scale:	As indicated
Drawn By:	MRL
Checked By:	RJH
Project No.:	201551
Date:	NOVEMBER 13, 2015

A1.02

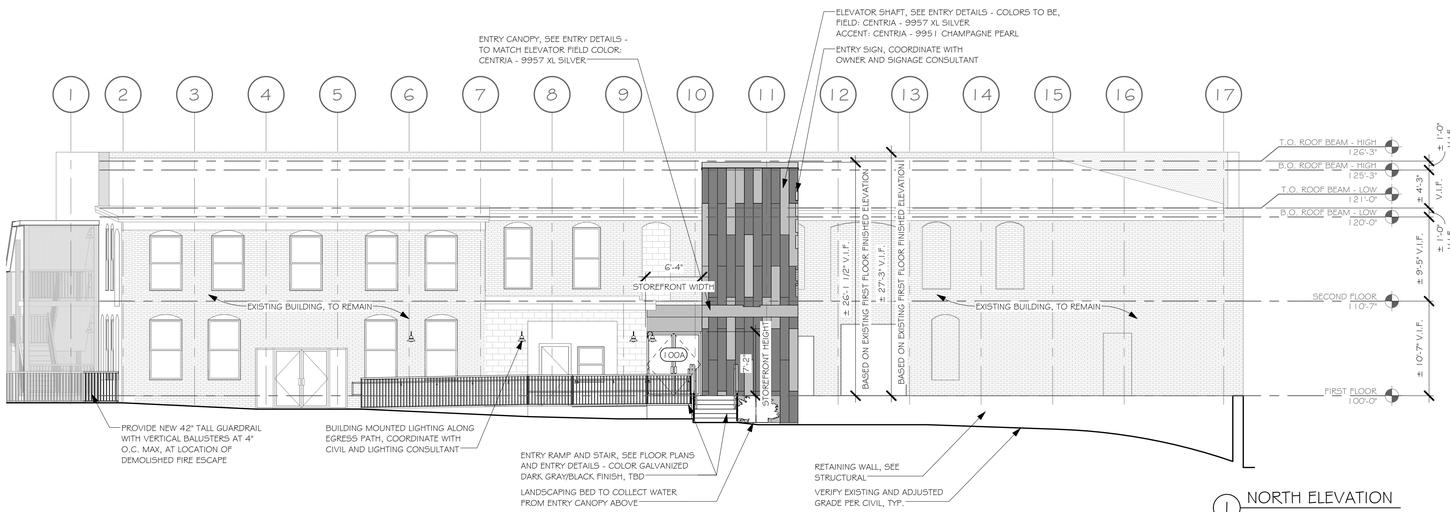
4 WEST ELEVATION
1/8" = 1'-0"



3 EAST ELEVATION
1/8" = 1'-0"



2 SOUTH ELEVATION
1/8" = 1'-0"



1 NORTH ELEVATION
1/8" = 1'-0"

GENERAL BUILDING ELEVATION NOTES

ALL LEVELS AND DIMENSIONS ARE APPROXIMATE AND BASED ON BUILDING DIMENSIONS TAKEN FOR DESIGN PURPOSES ONLY. RELATIONSHIPS TO SITE AND CIVIL DRAWINGS WILL NEED TO BE COORDINATED WITH CIVIL ENGINEER AND V.I.F.

Revisions:

#	Description	Date

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ADDITION AND RENOVATION TO
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77 ELM STREET
AMESBURY, MA 01913

Title:
BUILDING ELEVATIONS

Scale:	As indicated
Drawn By:	MRL
Checked By:	RJH
Project No.:	201551
Date:	NOVEMBER 13, 2015

A2.00