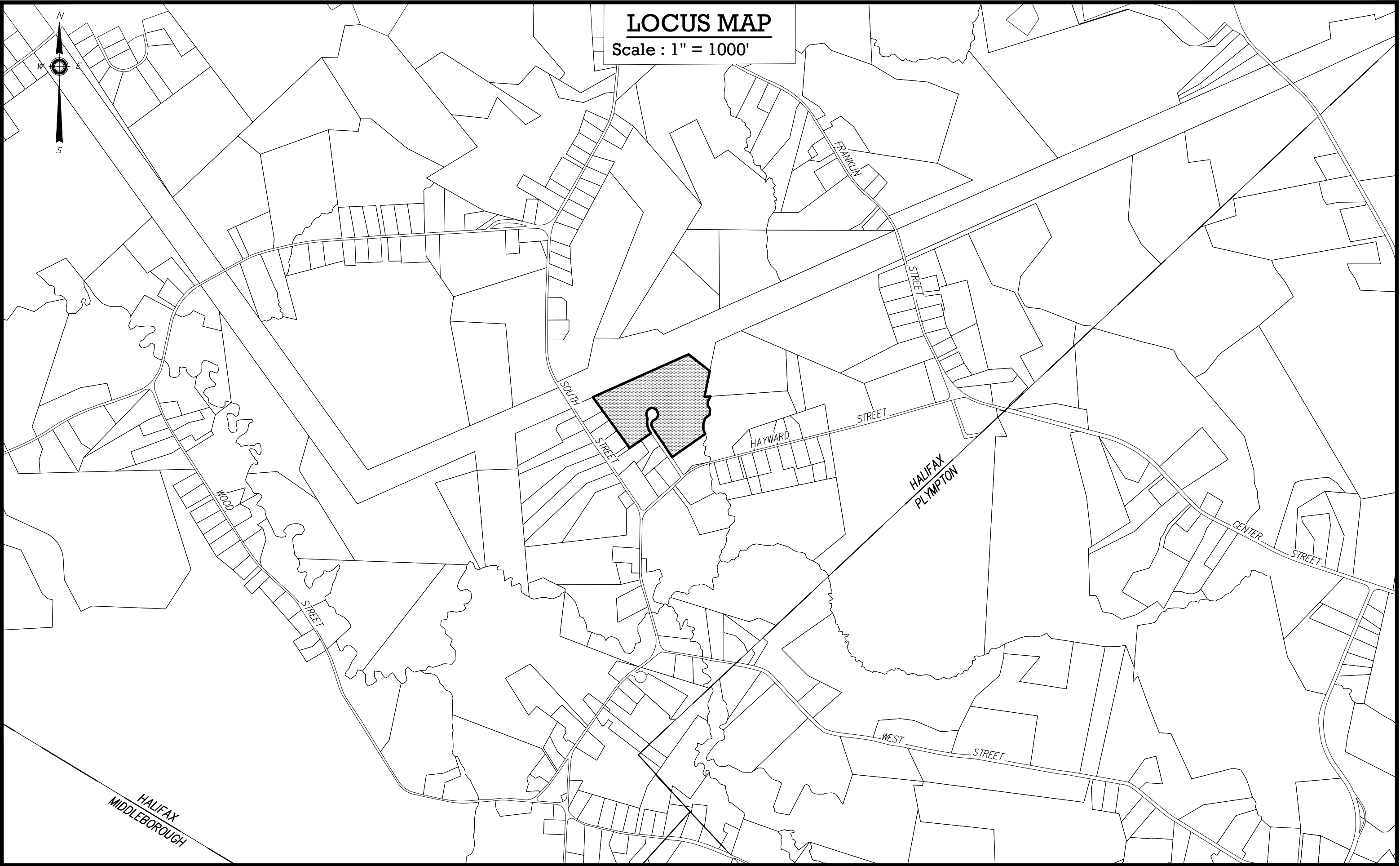


"BROOKSIDE FARM"  
A  
MULTIFAMILY DEVELOPMENT  
IN  
HALIFAX, MASSACHUSETTS  
11/20/20

PAGE	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS PLAN
3	LAYOUT PLAN
4	GRADING & DRAINAGE PLAN
5	UTILITY PLAN
6	CONSTRUCTION NOTES & DETAILS

EXISTING		PROPOSED	
---100---	MINOR CONTOUR	100	MAJOR/MINOR CONTOUR
---99---	MAJOR CONTOUR	99.99	SPOT ELEVATION
100x1	SPOT ELEVATION	~~~~~	LIMIT OF WORK/ EDGE OF CLEARING
TP #1	TEST PITS	-x-x-	SILT FENCE
~~~~~	EDGE OF CLEARING	-w-w-	WATER SERVICE
-w-w-	WATER SERVICE	-w-w-	WATER GATE
-w-w-	WATER GATE	-w-w-	HYDRANT
-w-w-	HYDRANT	-w-w-	UTILITY POLE
-w-w-	UTILITY POLE	-w-w-	UNDERGROUND ELECTRIC
-OHW-OHW-	OVERHEAD WIRES	-E-E-	TRANSFORMER
-D-D-	DRAIN LINE	-E-E-	ELECTRIC MANHOLE
-D-D-	DRAIN MANHOLE	-E-E-	DRAIN LINE
-S-S-	CATCH BASIN	-E-E-	DRAIN MANHOLE
-S-S-	SEWER MAIN	-E-E-	CATCH BASIN
		-E-E-	SEWER MAIN FORCEMAIN
		-E-E-	12" CAPE COD BERM



OWNER / APPLICANT:

8 HILDA LANE REALTY TRUST  
c/o SCOTT BURGESS, TRUSTEE  
841 NORTH BEDFORD STREET  
EAST BRIDGEWATER, MA 02333

CIVIL ENGINEER / LAND SURVEYOR:

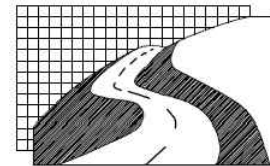


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MANSFIELD, MA 02048  
(Tel) 508.618.3029

EXISTING CONDITIONS PREPARED BY:



LAND PLANNING, INC.  
1115 MAIN STREET  
HANSON, MA 02341  
(781) 294-4144

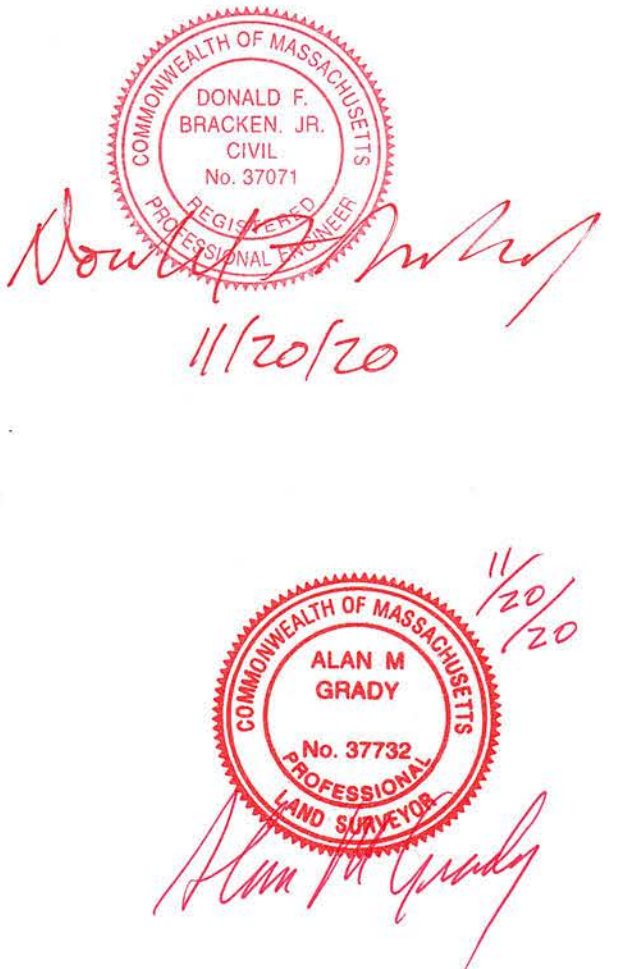




PLANT SCHEDULE						
SYMB.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS	SPACING	QUANTITY
SHADE & ORNAMENTAL TREES						
ARF	Acer rubrum 'Fairview Flame'	Fairview Flame Red Maple	3" Cal.	B & B	AS SHOWN	4
ACG	Amelanchier canadensis x grandiflora	Autumn Brilliance Apple Serviceberry	7"-8" HT.	B & B	AS SHOWN	9
GTS	Gleditsia triacanthos inermis 'Skycole'	Skyline Thornless Seedless Honeylocust	3" Cal.	B & B	AS SHOWN	4
SR	Syringa reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	3" Cal.	B & B	AS SHOWN	9
EVERGREEN TREES						
PA	Picea abies	Norway Spruce	7"-8" HT.	B & B	plant 12' o.c.	5
PPG	Pinus parviflora 'Glaucous'	Silver Japanese White Pine	6"-7" HT.	B & B	plant 12' o.c.	6

MULTIFAMILY ZONING SUMMARY		
ZONE: AGRICULTURAL-RESIDENTIAL DISTRICT		
DESCRIPTION	REQUIRED	PROPOSED
MINIMUM PARCEL SIZE	10 Acres	21.75 Acres
MAXIMUM MULTIFAMILY UNIT COUNT	1 UNIT/ACRE	21 UNITS
MINIMUM FRONTAGE	150'	1056.96'
MINIMUM FRONT YARD	75'	53'
MINIMUM SIDE YARD	30'	182'
MINIMUM REAR YARD	100'	100'
MIN. BUILDING SEPARATION	100'	43'
MAX. BUILDING HEIGHT	2.5 STORIES	2 STORIES
MULTIFAMILY PARKING	2.5 SPACES PER UNIT	53 SPACES

- \*WAIVER REQUESTS:
- §167-12.A.5 TO ALLOW A 53' FRONT YARD SETBACK WHERE A 75' FRONT YARD SETBACK IS REQUIRED.
  - §167-12.A.5 TO ALLOW A 43' SEPARATION BETWEEN BUILDINGS WHERE A 100' BUILDING SEPARATION IS REQUIRED.



PROJECT NOTES:

- LOCUS: #8 HILDA LANE MAP 120 PARCEL 1T
- OWNER: 8 HILDA LANE REALTY TRUST C/O SCOTT P. BURGESS, TRUSTEE 841 N. BEDFORD STREET EAST BRIDGEWATER, MA 02333
- DEED REF: BK: 51353 PG: 177
- PLAN REF: BK: 54 PG: 205
- A PORTION OF THE LOCUS DOES FALL WITHIN SPECIAL FLOOD HAZARD ZONE "AE" (EL. 28.4 ON NAVD83 and EL. 28.2 ON NAVD29) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP NO. 25023C-0328-J DATED 07/17/2012.
- LOCUS DOES FALL WITHIN THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE AND PRIORITY HABITATS OF RARE SPECIES.
- RESOURCES AREAS SHOWN ON THIS PLAN ARE TAKEN FROM AN APPROVED ANRAD PLAN, APPROVED BY THE HALIFAX CONSERVATION COMMISSION ON FEBRUARY 26, 2019.
- REFER TO APPROVED SUBDIVISION PLANS RECORDED AT THE PLYMOUTH REGISTRY OF DEEDS IN PLAN BK: 51 PG: 417 FOR MORE INFORMATION.

Prepared By:

**BRACKEN ENGINEERING, INC.**

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Sheet Title:

**LAYOUT & LANDSCAPING PLAN**

Project:

**PROPOSED MULTIFAMILY DEVELOPMENT IN HALIFAX, MASSACHUSETTS**

PREPARED FOR:

**8 HILDA LANE REALTY TRUST**

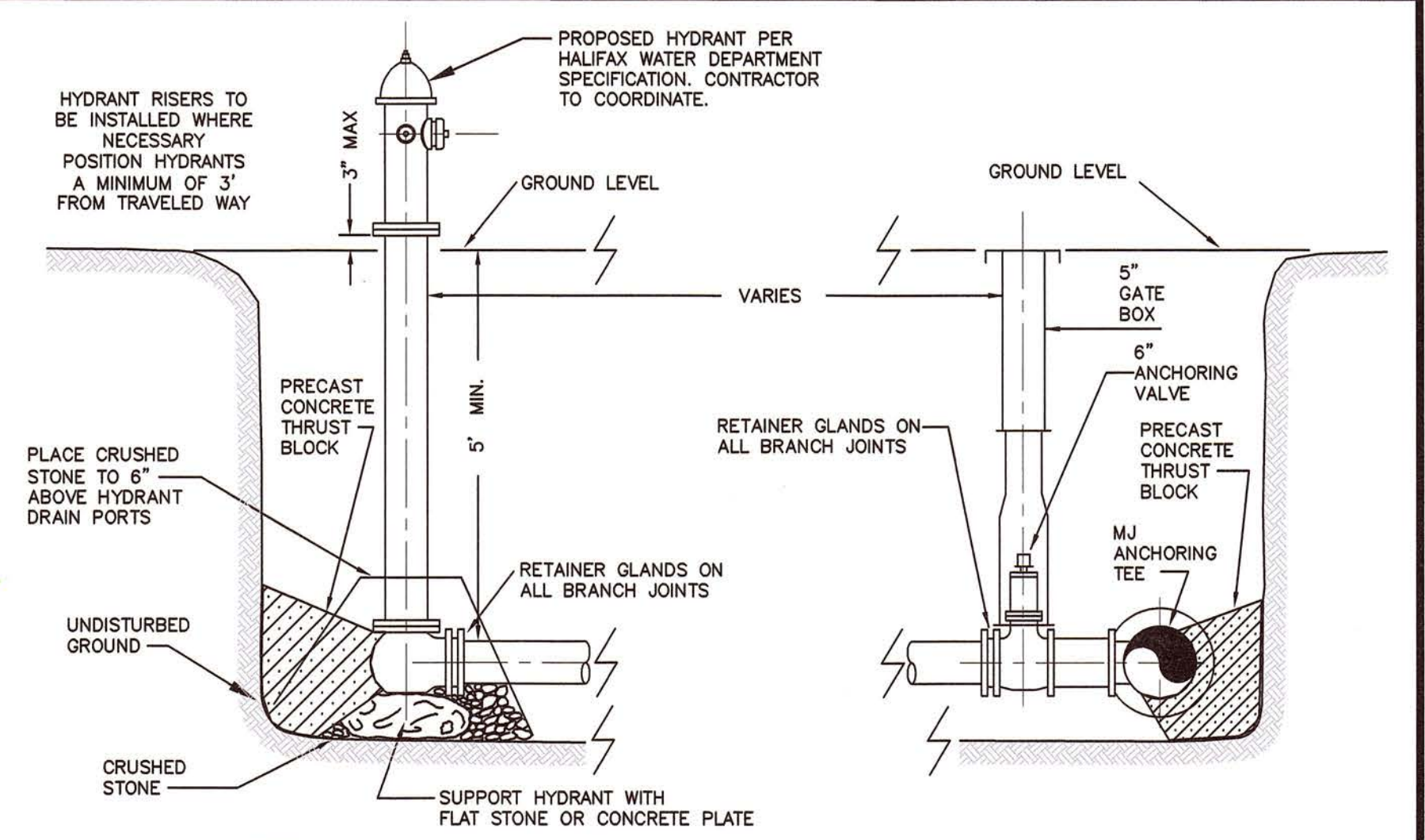
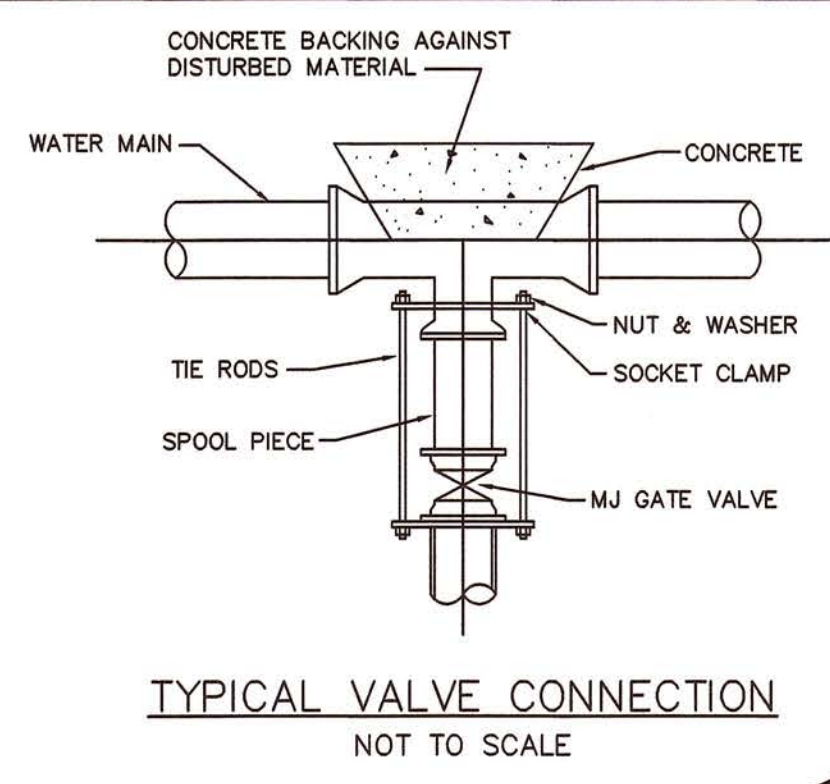
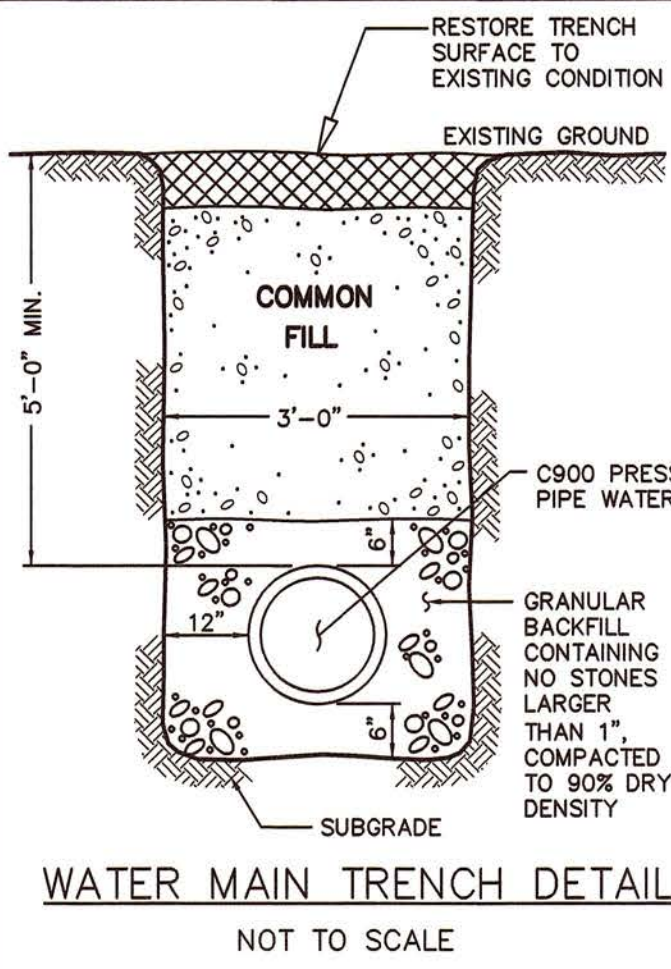
#8 HILDA LANE  
MAP 18 LOT 28

No.	Date	Revision	Description	By
1	NOVEMBER 20, 2020			
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3				
4				
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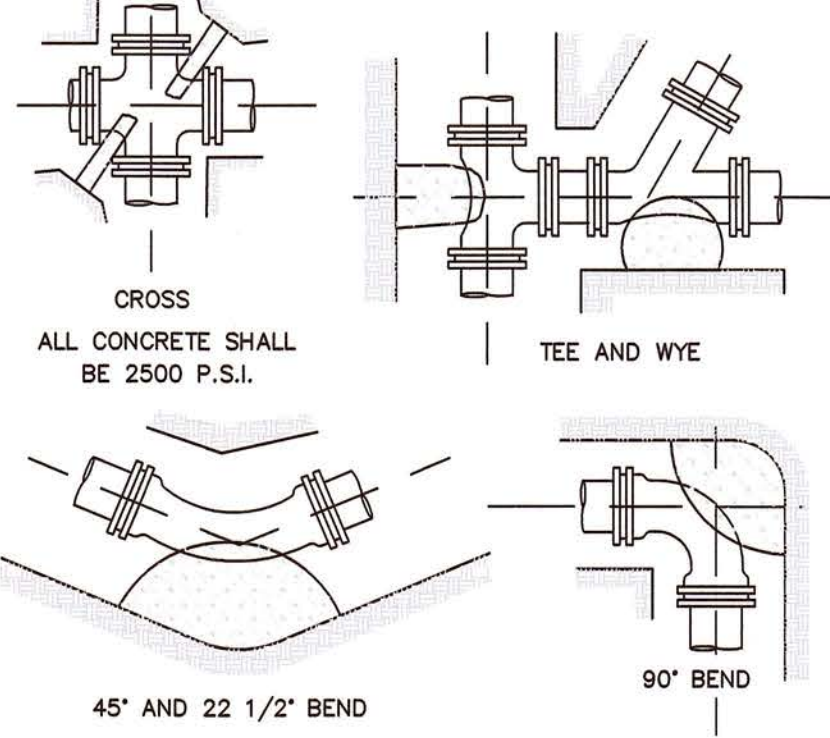


NOTES:  
1. HYDRANTS ARE TO BE INSTALLED AS SHOWN ON PLAN OR AS DIRECTED BY THE FIRE DEPARTMENT.  
2. ALL CONSTRUCTION TO COMPLY WITH THE HALIFAX WATER DEPARTMENT SPECIFICATIONS.  
3. HYDRANTS TO BE CONSTRUCTED WITH REQUIRED ANCHOR TEE.

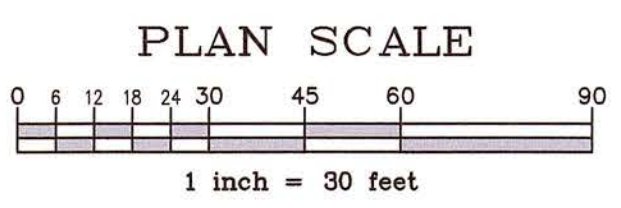
TYPICAL HYDRANT ASSEMBLY INSTALLATION  
NOT TO SCALE

TABLE OF MINIMUM BEARING AREA IN SQ. IN. AGAINST UNDISTURBED SOIL FOR 8 IN. DIA. PIPE			
SOIL BEARING CAPACITY (PSF)	90 DEGREE BEND	TEE	45 DEGREE BEND
1000	849	874	518
1500	630	450	344
2000	473	337	258
3000	315	225	172

NOTE: FOR FITTINGS W/LESS THAN 45° DEFLECTION USE BEARING AREA FOR 45° BEND BASED ON INTERNAL PRESSURE OF 80 PSI



TYPICAL THRUST BLOCK DETAILS  
NOT TO SCALE

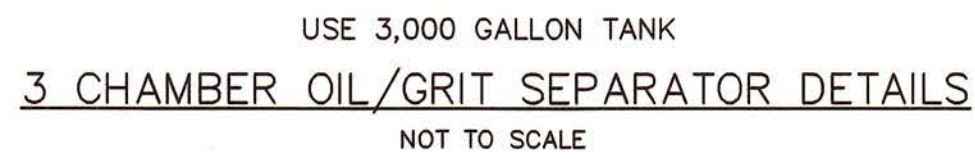
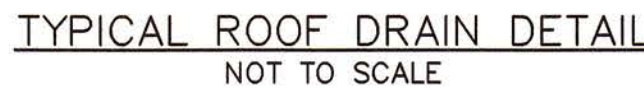


- WATER SYSTEM NOTES:**
1. THE CONTRACTOR SHALL CONSTRUCT THE WATER LINE AND ITS APPURTENANCE IN ACCORDANCE WITH THE HALIFAX WATER DEPARTMENT'S STANDARDS AND SPECIFICATIONS.
  2. ALL NEWLY INSTALLED WATER SYSTEM COMPONENTS SHALL BE CLEARED OF ALL FOREIGN MATERIALS SUCH AS DIRT AND MISCELLANEOUS DEBRIS PRIOR TO SYSTEM TESTING AND SHALL BE WITNESSED BY THE LOCAL WATER DEPARTMENT. NO TESTING IS ALLOWED WITHOUT REMOVAL OF ALL FOREIGN MATERIALS.
  3. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL AND REMOVE ALL NECESSARY BLOW-OFFS REQUIRED FOR THIS PROJECT.
  4. A PRESSURE TEST AND DISINFECTION TEST OF ALL WATER LINES SHALL BE CONDUCTED BY THE CONTRACTOR AND WITNESSED BY THE APPROVED INSPECTOR OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A MINIMUM OF 48-HOUR ADVANCE NOTICE TO THE LOCAL WATER DEPARTMENT PRIOR TO THE PRESSURE AND DISINFECTION TESTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY EQUIPMENT AND CHEMICALS TO PROPERLY CONDUCT THE TESTS.
  5. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UP-TO-DATE AS-BUILT DRAWINGS AND NOTES INDICATE THE HORIZONTAL AND VERTICAL LOCATION WITHIN TWO TIES OFF ALL SYSTEM COMPONENTS INSTALLED. THESE AS-BUILT DRAWINGS AND NOTES WILL BE UTILIZED BY THE ENGINEER FOR THE PREPARATION OF RECORD PLANS.



- ALL NECESSARY POLICE DETAIL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS.
3. ALL EXISTING CONDITIONS SHOWN SHALL BE CONSIDERED APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOW EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLING ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS 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. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST 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. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD LOCATED UTILITIES AND SHALL 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 SHALL BE RESPONSIBLE FOR MAINTAINING 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.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER, INCLUDING THE SEPTIC SYSTEM, AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. ALL COST RELATED TO THE REPAIR OF UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
6. THE CONTRACTOR SHALL UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONNEL, AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING BARRICADES, SAFETY LIGHTING, CONES, POLICE DETAIL AND/OR FLAG MEN AS DETERMINED NECESSARY BY THE ENGINEER AND/OR TOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF POLICE DETAIL AND FOR COORDINATING WITH THE LOCAL OR STATE POLICE DEPARTMENT FOR ALL REQUIRED POLICE DETAIL.
7. ALL TRENCHING WORK WITHIN A ROADWAY SHALL BE COORDINATED WITH THE PROPER LOCAL & STATE AGENCY. TRENCH SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING ANY LOCAL AND/OR STATE PERMITS REQUIRED FOR THE TRENCH WORK. THIS WORK MAY BE REQUIRED TO TAKE PLACE OUTSIDE OF NORMAL HOURS OF OPERATION FOR THE FACILITY, THE CONTRACTOR SHALL PLAN ACCORDINGLY.
8. THE CONTRACTOR SHALL MAKE ALL CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS REQUIRED.
9. ALL IMPORTED MATERIAL, IF REQUIRED, SHALL BE CLEAN. NO MATERIAL WILL BE ACCEPTED FROM AN EXISTING OR FORMER 21E SITE AS DEFINED BY THE MASSACHUSETTS CONTINGENCY PLAN 310 CMR 40.0000.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS SHALL BE COORDINATED WITH THE ENGINEER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES SHALL REMAIN UNTIL A FINAL INSPECTION OF THE ITEM HAS BEEN COMPLETED BY THE ENGINEER. ANY RE-STAKING OF PREVIOUSLY SURVEYED SITE FEATURES SHALL BE THE RESPONSIBILITY (INCLUDING COSTS) OF THE CONTRACTOR.
12. UNLESS OTHERWISE SPECIFIED ON THE PLANS AND DETAILS/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 SPECIFICATION FOR HIGHWAYS AND BRIDGES, THE 2002 SUPPLEMENTAL SPECIFICATIONS AND THE 2006 SPECIAL PROVISIONS).
13. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION CONTAINMENT, AND TRENCH WORK.
14. SOLID WASTES SHALL BE COLLECTED AND STORED IN A SECURED DUMPSTER. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
15. THE CONTRACTOR SHALL RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE. AREAS NOT DISTURBED BY CONSTRUCTION SHALL BE LEFT NATURAL. THE CONTRACTOR SHALL 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.
16. ALL UNPAVED AREAS DISTURBED BY THE WORK SHALL HAVE A MINIMUM OF 6-INCHES OF LOAM INSTALLED AND BE SEEDED WITH GRASS SEED AS SHOWN ON THE PLAN AND/OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ANY LOAM AND SEEDED AREAS UNTIL LAWN GROWTH IS ESTABLISHED AND APPROVED BY THE ENGINEER AND/OR OWNER.
17. PRECAST STRUCTURES SHALL BE DESIGNED BY THEIR MANUFACTURERS FOR ASHTO H-20 LOADING. PRECAST CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED HEREIN.
18. ALL WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 521 CMR 5.00 ARCHITECTURAL ACCESS BOARD REQUIREMENTS. CONTRACTOR IS TO REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL DETAILED INFORMATION.
19. LEDGE OR BOUNDER EXCAVATION IS NOT ANTICIPATED FOR THIS SITE. HOWEVER, THE CONTRACTOR SHALL PROVIDE A UNIT PRICE COST IN CUBIC YARD MEASURE FOR LEDGE AND/OR BOUNDER REMOVAL. LEDGE AND/OR BOUNDERS LESS THAN 1 CUBIC YARD IN SIZE BASED ON THE AVERAGE DIMENSIONS WILL NOT BE CONSIDERED PAYABLE ROCK. UNIT PRICE SHALL BE GIVEN FOR BOTH ON AND OFF SITE DISPOSAL. COST OF REPLACEMENT MATERIAL SHALL BE INCLUDED IF ADDITIONAL FILL MATERIAL IS REQUIRED.
20. THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO AN APPROVED DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED.
21. CONCRETE TRUCKS SHALL NOT BE WASHED ONSITE. ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE.
22. BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOULDERS ONSITE IS PROHIBITED. NO ROAD SALT OR OTHER DE-ICING CHEMICALS SHALL BE USED ON THE PARKING AREAS, DURING OR AFTER CONSTRUCTION.
23. IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED, THE CONTRACTOR IS TO IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER.
24. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF ALL THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED AND REMOVED FROM THE SITE.

1. ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 NURSERY STOCK, LATEST EDITION (AMERICAN ASSOCIATION OF NURSERYMEN, INC.)
2. 4" AGED PINEBARK MULCH SHALL BE APPLIED TO ALL SHRUB & GROUND COVER BEDS.
3. PLANT PIT BACKFILL SHALL BE MIXED AT A RATE OF 7 PARTS OF TOPSOIL TO 1 PART OF DEHYDRATED COG MANURE. USE EXISTING ON SITE TOPSOIL AS PART OF BACKFILL WHEN AVAILABLE.
4. ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUND COVER SHALL BE RESTORED WITH SEEDING OR SODDING AS INDICATED ON PLANS.
5. ALL SOD, SEED, SHRUB AND TREE AREAS SHALL RECEIVE 6"pH CORRECTED TOPSOIL. AFTER TOP SOIL IS SPREAD EVENLY OVER ENTIRE AREA, ALL CLODS, LUMPS, STONES AND OTHER DELETERIOUS MATERIAL SHALL BE RAKED UP AND REMOVED.
6. APPLICATION OF GRASS SEED, FERTILIZERS, LIME AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED.
7. NEWLY GRADED AREAS REQUIRING SLOPE PROTECTION OUTSIDE OF NORMAL SEEDING SEASON SHALL RECEIVE HAY MULCH AT THE APPROXIMATE RATE OF NO MORE THAN 3 TONS PER ACRE.
8. ANY CHANGES IN PLANT LOCATIONS OR TYPE SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
9. CLEAR AND GRUB (TO LIMITS SHOWN ON GRADING PLAN) TO REMOVE TREES, ROCKS, DEBRIS, ROOTS, ETC. STUMPS SHALL BE REMOVED AND DISPOSED OF OFF SITE IN ACCORDANCE WITH STATE REGULATIONS. AFTER CLEARING, ROTOTILL, STRIP AND STOCKPILE ALL ON-SITE TOPSOIL FOR REUSE TO THE MAXIMUM EXTENT POSSIBLE.
10. FOR SEED AND SOD AREAS G.C. TO USE EXISTING TOPSOIL, IF AVAILABLE, FOR A 4" DEPTH AND TOP DRESS WITH 2" OF SCREENED TOPSOIL, UNLESS OTHERWISE NOTED ON PLAN.
11. ALL TREES, SHRUBS AND SOD SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER ACCEPTANCE.



1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL 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 & INITIAL BACKFILL:  
SUITABLE MATERIAL SHALL CONSIST OF CLEAN, HARD PARTICLES OF GRAVEL MEETING THE FOLLOWING:

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

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

MINIMUM BEDDING THICKNESS SHALL BE 4" (100MM) FOR 4"-24" (100-600MM) AND 42"-48" (1050-1200MM) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150MM) FOR 30"-36" (750-900MM) CPEP.

4. MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

<u>NOMINAL <math>\phi</math></u> <u>in (mm)</u>	<u>MIN. RECOMMENDED</u> <u>TRENCH WIDTH, in (mm)</u>
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)

5. 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.

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

\*TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION

CAPE COD BERM  
NOT TO SCALE



- NOTES:

CHAMBERS SHALL MEET ASTM F 2418-05 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

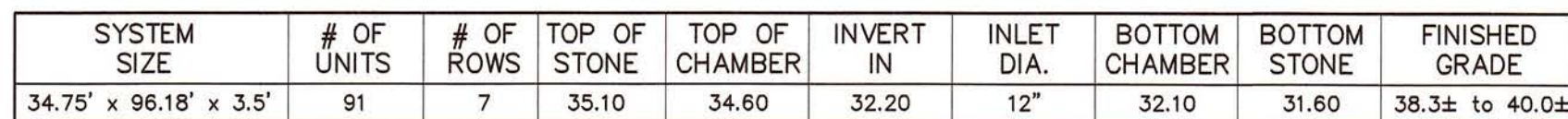
THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE SAFETY FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

THIS CROSS SECTION DETAILS THE REQUIREMENTS NECESSARY TO SATISFY THE SAFETY FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS USING STORMTECH CHAMBERS.

**UNSUITABLE SOILS** : SURFICIAL ORGANICS, SURFICIAL OR BURIED TOP SOIL/SUB SOIL, OLD FOUNDATION, UTILITIES, PAVEMENT, FILL AND ALL OTHER DELETERIOUS MATERIAL.

**SOIL INSPECTION:** THE DESIGN ENGINEER SHALL CONDUCT A BOTTOM OF EXCAVATION TEST, TO VERIFY THE UNSUITABLE MATERIALS HAVE BEEN REMOVED PRIOR TO BACKFILL OF SAND AND PRIOR TO THE INSTALLATION OF THE CRUSHED STONE BASE.

**PROTECTION:** INFILTRATION AREAS ARE TO BE PROTECTED DURING CONSTRUCTION AND AVOID OVER COMPACTION TO INSURE THE INFILTRATION CAPACITY IS MAINTAINED.



STORMWATER MANAGEMENT AREA CROSS-SECTION  
NOT TO SCALE



- NOTE:

1. SANDY LOAM AND/OR LOAMY SAND TOPSOIL MATERIAL SHALL BE EXCAVATED FROM ALL PAVED AREAS PRIOR TO SUB-BASE INSTALLATION.
2. 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 FEET BELOW THE FINISH PAVEMENT SURFACE.
3. SUBGRADE FILL SHALL BE COMPACTED TO 95% COMPACTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. SEE SITE LAYOUT PLAN FOR PAVEMENT WIDTH AND LOCATION.
5. SEE GRADING PLAN FOR PAVEMENT SLOPE AND CROSS SLOPE.
6. PRIOR TO INSTALLING THE WEARING COURSE, THE EXISTING UNDER COURSE SURFACE SHALL BE SWEEP COMPLETELY CLEAN BY A STREET SWEEPING MACHINE AND A TACK COAT SHALL BE INSTALLED TO A LEVEL APPROVED BY THE ENGINEER.