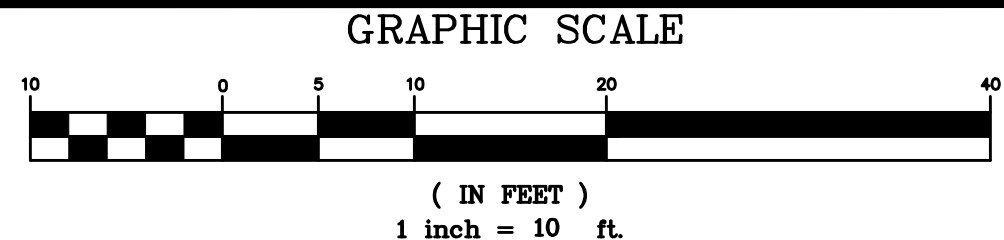


EXISTING LEGEND

SS	SEWER LINE
⊙	SEWER MANHOLE
—V—	WATER LINE
—G—	GAS LINE
⊕	UTILITY POLE
⊗	GAS VALVE
—E—	OVERHEAD ELECTRIC SERVICE
—WV—	WATER VALVE
□	CATCH BASIN
○	FENCE
-205-	CONTOUR LINE (MJR)
-195-	CONTOUR LINE (MNR)
X	SPOT GRADE
⊕	DRAIN MANHOLE
⊗	HYDRANT
⊗	TREE

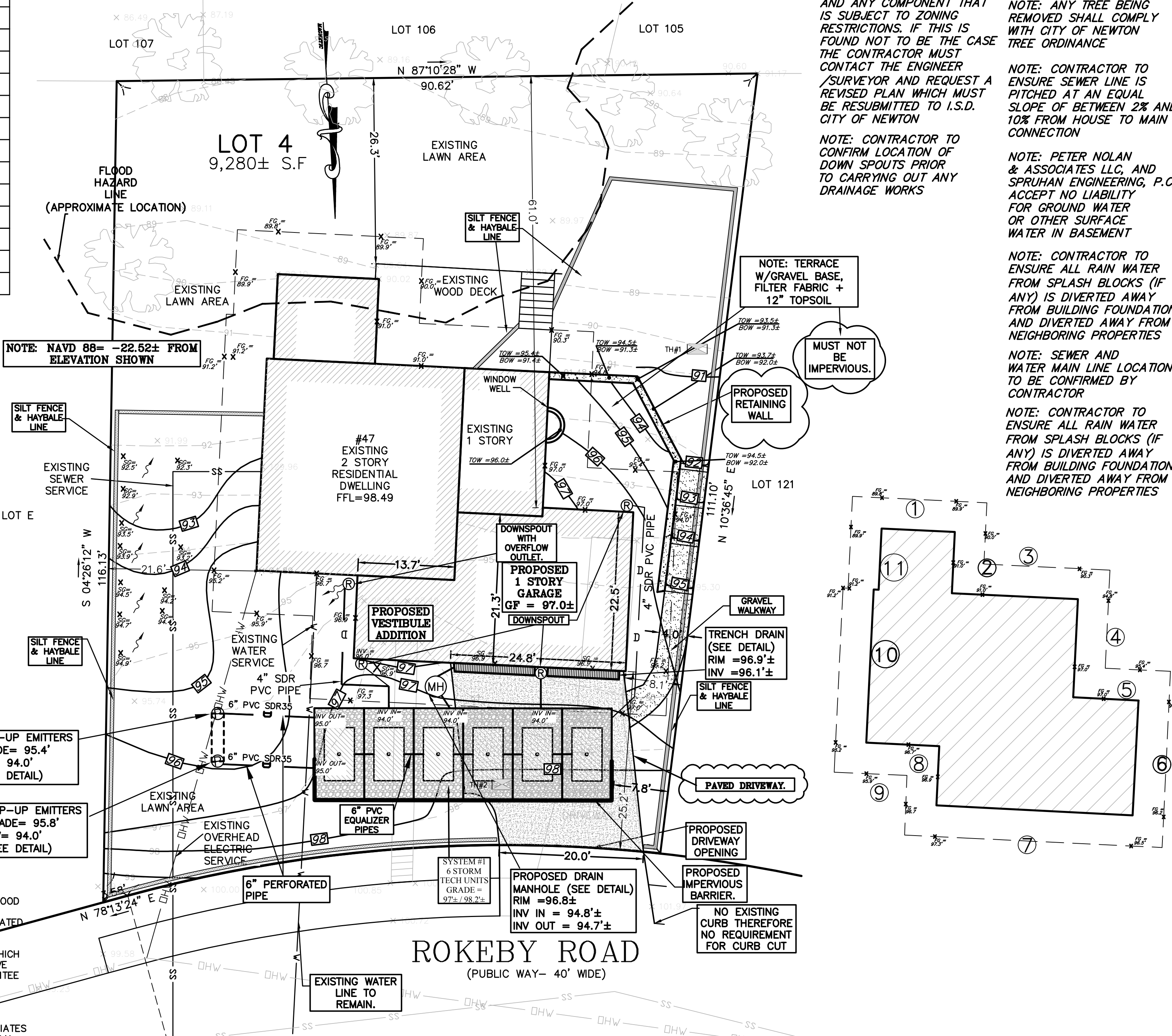


NOTE: ADDITION TO BE STAKED IN FIELD BY SURVEY COMPANY PRIOR TO CONCRETE BEING POURED

ZONING LEGEND

ZONING DISTRICT: SINGLE RESIDENCE 2 (LOT CREATED BEFORE 12/07/1953)

	REQUIRED	PROPOSED
MIN. AREA	10,000 S.F.	9,280 S.F.±
MIN. FRONTAGE	80'	79.57'
MIN. YARD FRONT	25'	25.2'
SIDE	7.5'	8.1'
REAR	15'	61.0'
MAX. LOT COV.	30%	21.1% ±
MIN. OPEN SPACE	50%	72.5% ±
MAX. BLDG. HEIGHT	36'	16.09'±



NOTE: CONTRACTOR TO ENSURE THAT THE BUILDING FOOTPRINT REPRESENTED ON THIS PLAN IS THE SAME AS THE PROPOSED ARCHITECTURAL / STRUCTURAL PLANS AND INCORPORATES ALL OVERHANGS, CANTILEVERS AND ANY COMPONENT THAT IS SUBJECT TO ZONING RESTRICTIONS. IF THIS IS FOUND NOT TO BE THE CASE THE CONTRACTOR MUST CONTACT THE ENGINEER / SURVEYOR AND REQUEST A REVISED PLAN WHICH MUST BE RESUBMITTED TO I.S.D. CITY OF NEWTON

NOTE: CONTRACTOR TO CONFIRM LOCATION OF DOWN SPOUTS PRIOR TO CARRYING OUT ANY DRAINAGE WORKS

NOTE: SURFACE WATER TO BE DIVERTED FROM ALL SIDES OF FOUNDATION WALL

NOTE: ANY TREE BEING REMOVED SHALL COMPLY WITH CITY OF NEWTON TREE ORDINANCE

NOTE: CONTRACTOR TO ENSURE SEWER LINE IS PITCHED AT AN EQUAL SLOPE OF BETWEEN 2% AND 10% FROM HOUSE TO MAIN CONNECTION

NOTE: PETER NOLAN & ASSOCIATES LLC, AND SPRUHAN ENGINEERING, P.C. ACCEPT NO LIABILITY FOR GROUND WATER OR OTHER SURFACE WATER IN BASEMENT

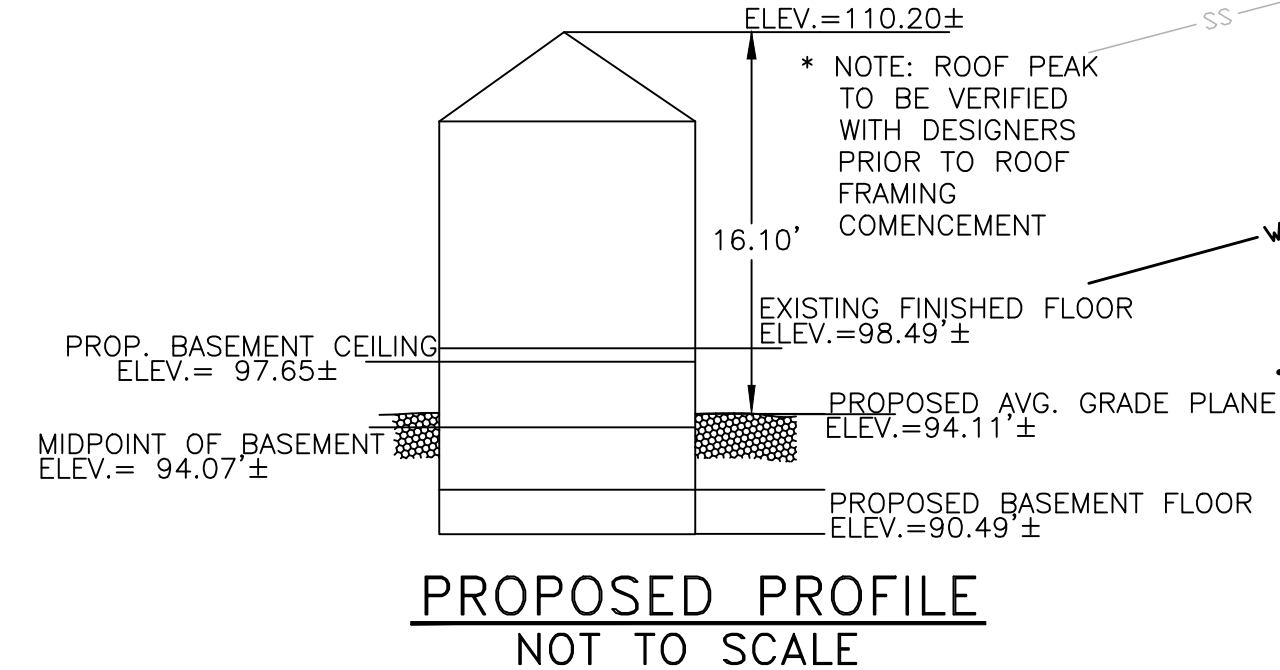
NOTE: CONTRACTOR TO ENSURE ALL RAIN WATER FROM SPLASH BLOCKS (IF ANY) IS DIVERTED AWAY FROM BUILDING FOUNDATION AND DIVERTED AWAY FROM NEIGHBORING PROPERTIES

NOTE: SEWER AND WATER MAIN LINE LOCATION TO BE CONFIRMED BY CONTRACTOR

NOTE: CONTRACTOR TO ENSURE ALL RAIN WATER FROM SPLASH BLOCKS (IF ANY) IS DIVERTED AWAY FROM BUILDING FOUNDATION AND DIVERTED AWAY FROM NEIGHBORING PROPERTIES

- ### NOTES
- ELEVATIONS REFER TO CITY OF NEWTON DATUM.
 - THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ANY CROSSINGS OF PROPOSED AND EXISTING UTILITIES.
 - MASSACHUSETTS STATE LAW REQUIRES UTILITY NOTIFICATION AT LEAST THREE BUSINESS DAYS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL DIG-SAFE AT 1-888-344-7233 IN ORDER TO COMPLY WITH STATE LAW.
 - ALL UTILITY CONSTRUCTION SHALL CONFORM TO THE CITY OF NEWTON GENERAL CONSTRUCTION DETAILS, LATEST EDITION, PREPARED AND ISSUED BY THE NEWTON ENGINEERING DEPARTMENT. COPIES MAY BE OBTAINED AT THE OFFICE OF THE CITY ENGINEER. REFER TO NOTE 29 FOR DETAILS. NOTE: A TRENCH PERMIT MUST BE OBTAINED PRIOR TO ANY EXCAVATION BEING CARRIED OUT.
 - PROPOSED SEWER PIPE SHALL BE 6" PVC SDR 35.
 - PROPOSED WATER SERVICE SHALL BE 1" TYPE K COPPER.
 - THIS PLAN IS THE RESULT OF AN INSTRUMENT SURVEY DONE ON THE GROUND JULY 20, 2015.
 - ALL WORK SHALL BE SUBJECT TO THE INSPECTION BY AND APPROVAL OF THE CITY ENGINEER.
 - NO EXCAVATION SHALL BE MADE BY THE CONTRACTOR IN ANY PUBLIC WAY OR UTILITY EASEMENT UNLESS AT LEAST FORTY-EIGHT (48) HOURS, EXCLUSIVE OF SATURDAYS, SUNDAYS, AND HOLIDAYS, BEFORE THE PROPOSED EXCAVATION IS TO BE MADE, HE HAS SUBMITTED, BY REGISTERED MAIL, WRITTEN NOTICE TO THE FOLLOWING:
 - SUCH PUBLIC UTILITY COMPANIES AS SUPPLY GAS, ELECTRICITY, AND TELEPHONE SERVICE IN THE CITY.
 - SUCH PRIVATE COMPANIES AS PROVIDE CABLE TELEVISION SERVICE IN THE CITY.
 - CITY OF NEWTON WATER & SEWER DEPARTMENT. SUCH NOTICE SHALL SET FORTH THE STREET NAME AND A REASONABLY ACCURATE DESCRIPTION OF THE LOCATION OF THE EXCAVATION.
 - THE CONTRACTOR SHALL PROVIDE CITY OF NEWTON POLICE OFFICERS FOR THE DIRECTION AND CONTROL OF TRAFFIC, AS REQUIRED BY THE CITY ENGINEER.
 - NO WORK SHALL BE PERFORMED UNTIL THE NECESSARY PERMITS ARE OBTAINED FROM THE CITY OF NEWTON PUBLIC WORKS DEPARTMENT.
 - ALL TRENCHES IN PAVED STREETS SHALL BE TEMPORARILY PATCHED WITH 1.5 INCH DEPTH OF BITUMINOUS CONCRETE, LAID HOT AND MAINTAINED UNTIL THE PERMANENT PATCH IS INSTALLED.
 - WARNING SIGNS SHALL CONFORM TO PAGE 12 OF THE CITY OF NEWTON GENERAL CONSTRUCTION DETAILS.
 - ALL TOPSOIL, SUBSOIL, OR IMPERVIOUS SOIL MUST BE EXCAVATED AND REMOVED BELOW THE LEACHING SYSTEM AND TO A DISTANCE 5' LATERALLY IN ALL DIRECTIONS BEYOND THE SIDES OF THE GALLEYS BACKFILL AS REQUIRED WITH A CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES. THE SAND SHALL HAVE A PERCOLATION RATE OF 2 MINUTES PER INCH OR FASTER.
 - IN CASES WHERE LEDGE OR BouldERS ARE ENCOUNTERED, PETER NOLAN & ASSOCIATES, INC. WILL NOT BE RESPONSIBLE FOR THE AMOUNT OF ROCK ENCOUNTERED.
 - IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE DESIGN ENGINEER, AS WELL AS THE APPROVING AUTHORITIES, SHALL BE NOTIFIED IN WRITING BEFORE CONSTRUCTION.
 - THE ROOF RUNOFF FROM THE ROOF SURFACES SHALL BE COLLECTED BY GUTTERS AND DIRECTED TO THE STORM WATER DRAINAGE SYSTEM.
 - PRIOR TO AN OCCUPANCY PERMIT BEING ISSUED, AN AS-BUILT PLAN SHOULD BE SUBMITTED TO THE ENGINEERING DIVISION IN BOTH DIGITAL FORMAT AND HARD COPY. THE PLAN SHOULD SHOW ALL UTILITIES AND FINAL GRADES, TIES TO ALL GATES, VALVES, CLEAN-OUTS, CONNECTION POINTS AT MAINS, STRUCTURE EXCAVATIONS, ANY EASEMENTS AND FINAL GRADING.
 - THE APPLICANT WILL HAVE TO APPLY FOR A STREET OPENING & UTILITIES CONNECTION PERMITS AS WELL AS A SIDEWALK CROSSING PERMIT AND A TRENCH PERMIT WITH THE DPW.
 - THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE DESIGN ENGINEER FOR INSPECTIONS OR AS-BUILT LOCATIONS. PETER NOLAN & ASSOCIATES, LLC AND SPRUHAN ENGINEERING, P.C. WILL NOT PROVIDE AS-BUILT CERTIFICATION TO UNSPECTED BACKLIDG UTILITIES. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED PRIOR TO INSPECTIONS.
 - ANY PROPOSED PVC PIPES UNDER PAVING OR CONCRETE WITH LESS THAN 30" OF COVER MUST BE ENCASED IN CONCRETE. (SEE PAGE 21, CITY OF NEWTON GENERAL CONSTRUCTION DETAILS.)
 - THE EXISTING WATER & SEWER SERVICES SHALL BE CUT AND CAPPED AT THE MAIN AND BE COMPLETELY REMOVED FROM THE SITE, REPLACED AS SPECIFIED AND PROPERLY BACKFILLED. THE ENGINEERING DIVISION MUST INSPECT THIS WORK; FAILURE TO HAVE THIS WORK INSPECTED MAY RESULT IN THE DELAY OF ISSUANCE OF THE UTILITY CONNECTION PERMIT.
 - THE CONTRACTOR SHALL NOTIFY THE ENGINEERING DIVISION 48 HOURS IN ADVANCE AND SCHEDULE AN APPOINTMENT TO HAVE THE DRAINAGE SYSTEM, WATER & SEWER SERVICES INSPECTED. THE SYSTEM & UTILITIES MUST BE FULLY EXPOSED FOR THE INSPECTOR. ONCE THE INSPECTOR IS SATISFIED, THE SYSTEM & UTILITIES MAY THEN BE BACKFILLED.
 - THE EXISTING CONTOURS OF THE LAND ARE NOT TO BE ALTERED BY MORE THAN THREE (3) FEET AS A RESULT OF THE PLACEMENT OR REMOVAL OF SOIL, LOAM, CLAY, GRAVEL OR STONE, OR OTHER SOLID MATERIAL UNLESS A PROPOSED RETAINING WALL OR SLOPE IS INSTALLED AFTER IT IS APPROVED BY BOTH CITY OF NEWTON ENGINEERING DEPARTMENT & CITY OF NEWTON I.S.D.
 - IF A CERTIFICATE OF OCCUPANCY IS REQUESTED PRIOR TO ALL SITE WORK BEING COMPLETED, THE APPLICANT WILL BE REQUIRED TO POST A CERTIFIED BANK CHECK IN THE AMOUNT TO COVER THE REMAINING WORK. THE CITY ENGINEER SHALL DETERMINE THE VALUE OF THE UNCOMPLETED WORK.
 - NO WORK IS ALLOWED WITHIN A CITY OF NEWTON RIGHT-OF-WAY BETWEEN NOVEMBER 15TH AND APRIL 15TH. IF AN EMERGENCY EXISTS OR THERE ARE EXTENUATING CIRCUMSTANCES, APPLICANT MAY REQUEST PERMISSION FROM THE CITY ENGINEER. IF ALLOWED, SPECIAL CONSTRUCTION REQUIREMENTS WILL BE REQUIRED, AND AS SUCH IT IS RECOMMENDED THAT THE APPLICANT OR APPLICANT'S REPRESENTATIVE CONTACT THE CITY OF NEWTON ENGINEERING DEPARTMENT PRIOR TO START OF WORK FOR CLARIFICATION.
 - AT THE END OF CONSTRUCTION, ALL DRAINAGE STRUCTURES ARE TO BE CLEANED OF SILT, STONES AND OTHER DEBRIS. 28. DURING CONSTRUCTION, THE EROSION CONTROL MEASURES SHALL BE INSPECTED EVERY WEEK AND WITHIN 24 HOURS OF ANY STORM EVENT GENERATING MORE THAN 1/2" OF RAINFALL. THE EROSION CONTROL MEASURES SHALL BE CLEANED REGULARLY AND ADJUSTED IF NECESSARY TO ENSURE THAT NO SILT OR DEBRIS LEAVES THE SITE.
 - WITH EXCEPTION OF GAS UTILITY SERVICES, ALL UTILITY TRENCHES WITHIN ANY CITY OF NEWTON RIGHT-OF-WAY WILL BE BACKFILLED WITH TYPE IE (EXCAVATABLE) CONTROLLED DENSITY FILL, AS SPECIFIED BY THE CITY OF NEWTON ENGINEERING SPECIFICATIONS.
 - ALL CONSTRUCTION ACTIVITIES WITHIN THE CITY OF NEWTON RIGHT-OF-WAY MUST FULLY COMPLY WITH ALL OF CITY OF NEWTON CONSTRUCTION SPECIFICATIONS AS WELL AS 521 CMR 21.00 AND 22.00.
 - THE NEW SEWER SERVICE LINE MUST BE PRESSURE TESTED PRIOR TO USE. THE RESULT OF THE TEST MUST BE PROVIDED TO THE ENGINEERING DIVISION PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. THE CONTRACTOR NEEDS TO NOTIFY THE ENGINEERING DIVISION 48 HOURS IN ADVANCE AND SCHEDULE AN APPOINTMENT TO HAVE THE PRESSURE TEST WITNESSED BY A CITY OF NEWTON ENGINEERING DEPARTMENT REPRESENTATIVE.
 - THE CONTRACTOR NEEDS TO NOTIFY THE ENGINEERING DIVISION 48 HOURS IN ADVANCE AND SCHEDULE AN APPOINTMENT TO HAVE THE DRAINAGE SYSTEM INSPECTED. THE SYSTEM MUST BE FULLY EXPOSED FOR THE INSPECTOR. ONCE THE INSPECTOR IS SATISFIED, THE SYSTEM MAY THEN BE CONSTRUCTED. 33. ALL SLOTTION CONTROL MEASURES TO BE INSTALLED PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE CITY ENGINEER'S OFFICE FOR APPROVAL PRIOR TO COMMENCEMENT.
 - ALL TRENCH EXCAVATION CONTRACTORS SHALL COMPLY WITH MGL CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES. A TRENCH EXCAVATION PERMIT IS REQUIRED.
 - APPROVAL OF THIS PLAN BY CITY OF NEWTON ENGINEERING DIVISION IMPLIES THAT THE PLAN MEETS THE MINIMAL DESIGN STANDARDS OF THE CITY OF NEWTON. HOWEVER, THE ENGINEERING DIVISION MAKES NO REPRESENTATION AND ASSUMES NO RESPONSIBILITY FOR THE DESIGN(S) IN TERMS OF SUITABILITY FOR THE PARTICULAR SITE CONDITIONS OR OF THE FUNCTIONABILITY OR PERFORMANCE OF ANY ITEMS CONSTRUCTED IN ACCORDANCE WITH THE DESIGN(S). THE CITY OF NEWTON ASSUMES NO LIABILITIES FOR DESIGN ASSUMPTION, ERRORS OR OMISSIONS BY THE ENGINEER OF RECORD.

- ### NOTES
- INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC AS OF 07-20-2015.
 - DEED REFERENCE BOOK 62110 PAGE 372, MIDDLESEX COUNTY SOUTH DISTRICT REGISTRY OF DEEDS.
 - THIS PLAN IS NOT INTENDED TO BE RECORDED.
 - I CERTIFY THAT THE DWELLING SHOWN IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN ZONE X, ON FLOOD HAZARD BOUNDARY MAP NUMBER 25017C0552E, PANEL NUMBER 0552E, COMMUNITY NUMBER: 250208, DATED JUNE 4, 2010.
 - THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT USES OF THE LAND; HOWEVER THIS NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.
 - FIRST FLOOR ELEVATIONS ARE TAKEN AT THRESHOLD.
 - NO RESPONSIBILITY IS TAKEN FOR ZONING TABLE AS PETER NOLAN & ASSOCIATES LLC ARE NOT ZONING EXPERTS. TABLE IS TAKEN FROM TABLE PROVIDED BY LOCAL ZONING ORDINANCE. CLIENT AND/OR ARCHITECT TO VERIFY THE ACCURACY OF ZONING ANALYSIS.



* MIDPOINT OF BASEMENT ELEVATION LOWER THAN AVERAGE GRADE ELEVATION THEREFORE PROPOSED BASEMENT MEETS DEFINITION OF BASEMENT

LEGEND

⊕	UTILITY POLE	⊗	TREE	FG	FINISHED GRADE	—W—	WATER LINE
⊕	WATER GATE	⊗	LIGHT POLE	SG	SPOT GRADE	—SS—	SEWER LINE
⊕	HYDRANT	⊗	SIGN	TH#1	DEEP TEST HOLE	—G—	GAS LINE
⊕	GAS GATE	TBR	TO BE REMOVED	PT#1	PERCOLATION TEST	—X—	FENCE
⊕	SEWER MANHOLE	TBA	TO BE ABANDONED	71.4 X	SPOT ELEVATION		
⊕	DRAIN MANHOLE	TOW	TOP OF WALL	—71—	PROPOSED CONTOUR		
⊕	CATCH BASIN	BOW	BOTTOM OF WALL	—71—	EXISTING CONTOUR		
				—D—	DRAIN LINE		

AVERAGE GRADE PLANE (ALL UNITS IN FEET)

SEGMENT	LENGTH	POINT 1	POINT 2	MEAN 1 & 2	MEAN x LENGTH
1	14.50	89.80	89.90	89.85	1,302.83
2	12.00	90.00	91.00	90.50	1,086.00
3	24.70	91.00	90.30	90.65	2,239.06
4	19.20	97.00	94.80	95.90	1,841.28
5	12.80	97.00	95.40	96.20	1,231.36
6	22.50	94.00	96.20	95.10	2,139.75
7	38.50	97.30	96.90	97.10	3,738.35
8	11.60	96.70	96.70	96.70	1,121.72
9	14.00	95.90	96.90	96.40	1,349.60
10	30.30	91.20	95.20	93.20	2,823.96
11	12.00	91.20	89.80	90.50	1,086.00
SUM =	212.10				19,959.90
SUM OF MEAN x LENGTH / SUM OF LENGTHS = AVERAGE GRADE PLANE =					94.11

5	3/12/2019	ENGINEERING DIVISION: REVISED DRIVEWAY (PAVED)	HM
4	2/20/2019	ENGINEERING DIVISION: DATE OF REV. & DRIVEWAY SPEC.	AS
3	2/4/2019	ENGINEERING DIVISION: DRAINAGE AND RUNOFF UPDATE	AS
2	11/16/2018	COMMENTS FROM ENGINEERING DIVISION.	HM
1	8/7/2018	COMMENTS FROM ENGINEERING DIVISION.	HM

47 ROKEBY ROAD
NEWTON
MASSACHUSETTS

CIVIL PLAN

PETER NOLAN & ASSOCIATES LLC
LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS
697 CAMBRIDGE STREET, SUITE 103 BRIGHTON MA 02135
PHONE: 857 891 7478/617 782 1533 FAX: 617 202 5691
EMAIL: pnolan@pnasurveyors.com



SHEET NO. **1**

Calculations by: HM
Date: November 16, 2018

STORMWATER MANAGEMENT CALCULATIONS SYSTEM #1

Design Criteria:

Proposed Roof = 702 SF
Impervious Pavement = 593 SF
Existing Paved Driveway = 354 SF

Total = 702+593+354 = 941 SF (Use 702+593=1295 - CONSERVATIVE)

Design For 8.78" Rainstorm (100 YR Storm Event)

Storage Volume Required:

$V_R = (0.732)(1,295 \text{ SF}) = 947.94 \text{ CF}$

CAPACITY OF PROPOSED STORM TECH SYSTEM

Storage Capacity of single UNIT = 49 CF

Void Ratio = 0.4

Total Volume Of Crushed Stone = $(42' \times 13' \times 4'_{\text{depth}}) = 2,184 \text{ CF}$

Capacity for 6 UNITS = 49 CF x 6 = 294 CF

Storage Capacity In Crushed Stone = $(\text{Total Volume} - \text{Capacity of Units}) \times \text{Void Ratio} = (2,184 - 294) \times 0.4 = 756 \text{ CF}$

Total Storage Provided = Capacity in Crushed Stone + Total Capacity in Units = 756 CF + 294 CF = 1050 CF

Since Total Storage Provided (1050 CF) > Total Storage Required (947.94 CF/D) Therefore, the system is in compliance with Newton storage requirements.

TEST HOLE #1

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	OTHER
0" - 12"	Ap	L	10 YR 3/4	NONE	NONE
12" - 24"	Bw	LSnd	10 YR 6/4	NONE	NONE
24" - 48"	-	PEAT	-	-	WATER @ 4'

DEEP OBSERVATION HOLE LOG

GENERAL SOIL CONDITIONS FOR THE AREA PERFORMED AT 47 ROKEBY ROAD BY PETER NOLAN & ASSOCIATES, LLC. HOLE NUMBER: TH - 2 DATED: 03/23/16
GENERAL SITE CONDITIONS: GRASS AND TREES.

TEST HOLE #2

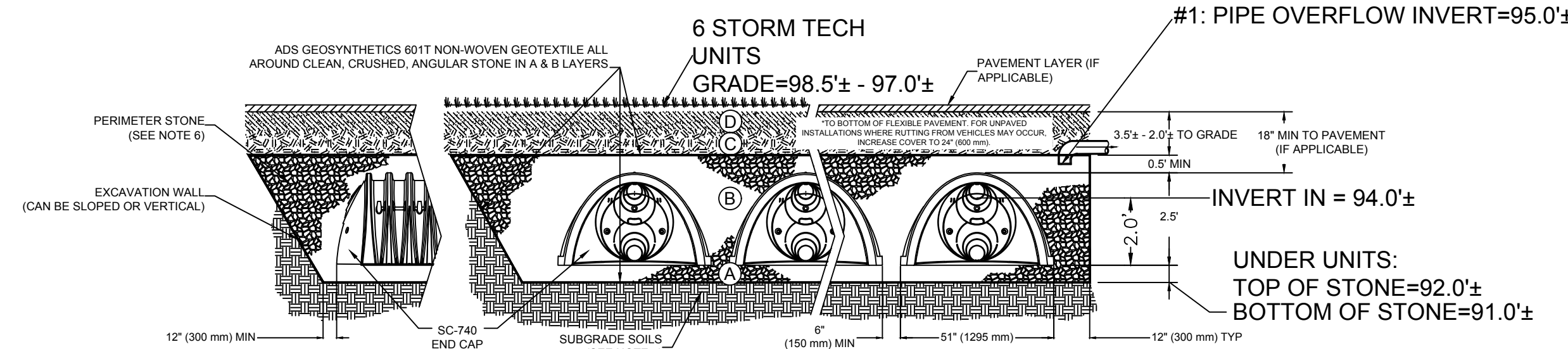
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	OTHER
0" - 12"	Ap1	L	10 YR 3/4	NONE	NONE
12" - 36"	Bw	LS	10 YR 5/4	NONE	FILL
36" - 48"	2AP	L	10 YR 3/4	NONE	NONE
48" - 66"	2Bw	SnL	10 YR 6/4	NONE	FINE SAND
66" - 105"	C1	SnL	10 YR 6/2 @ BELOW 6'	NONE	NONE

DEEP OBSERVATION HOLE LOG

GENERAL SOIL CONDITIONS FOR THE AREA PERFORMED AT 47 ROKEBY ROAD BY PETER NOLAN & ASSOCIATES, LLC. HOLE NUMBER: TH - 2 DATED: 10/14/18
GENERAL SITE CONDITIONS: GRASS AND TREES.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145' A-1, A-2-4, A-3 OR AASHTO M43' 3, 357, 4, 467, 5, 56, 67, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. 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: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43' 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43' 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. 1



NOTES:

- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

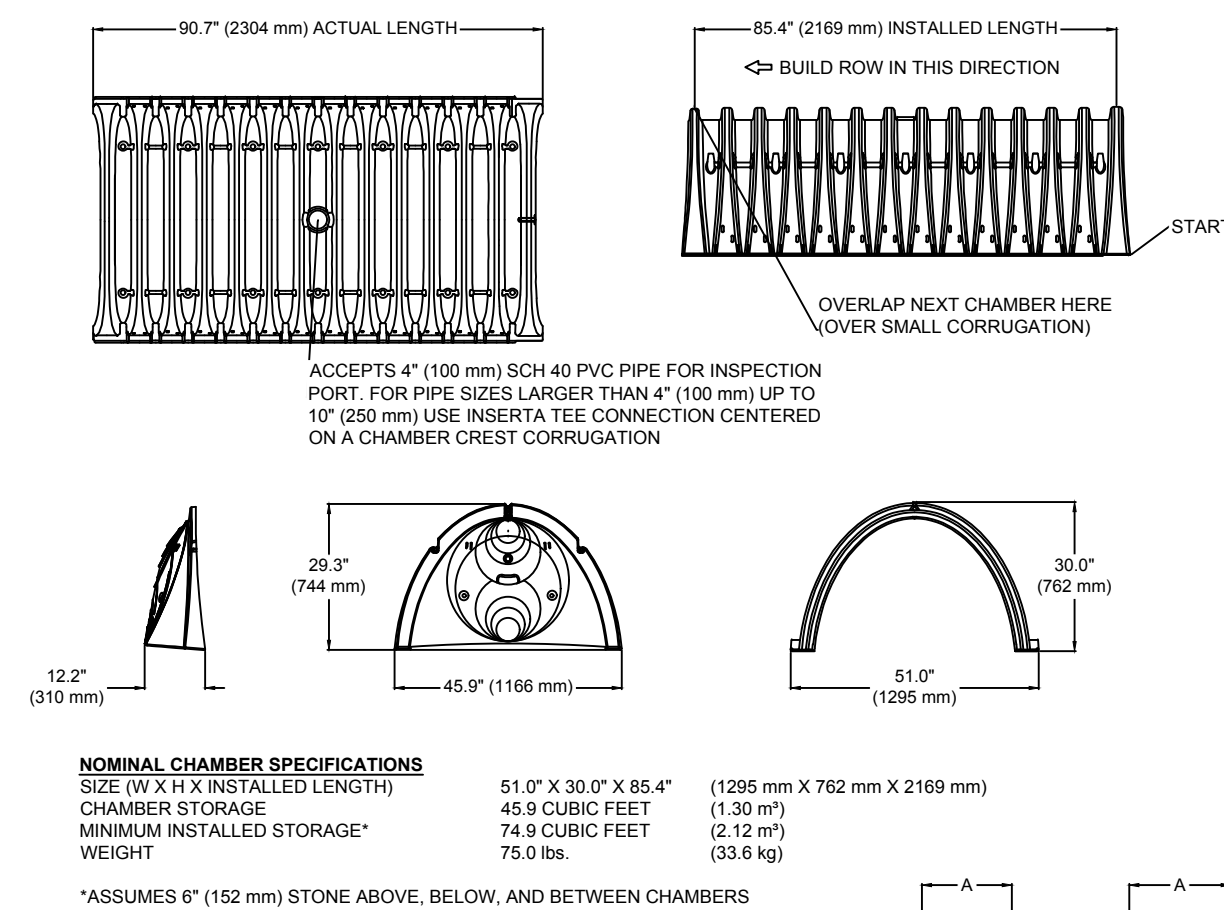
*** NOTE FROM SC-740 STORMTECH SPECS:**

THE STORM SYSTEM IS DESIGNED PRIMARILY TO BE USED UNDER PARKING LOTS, THUS MAXIMIZING LAND USAGE FOR PRIVATE (COMMERCIAL) AND PUBLIC APPLICATIONS. (REFER TO STORMTECH GENERAL NOTES: #2)

STORMTECH GENERAL NOTES

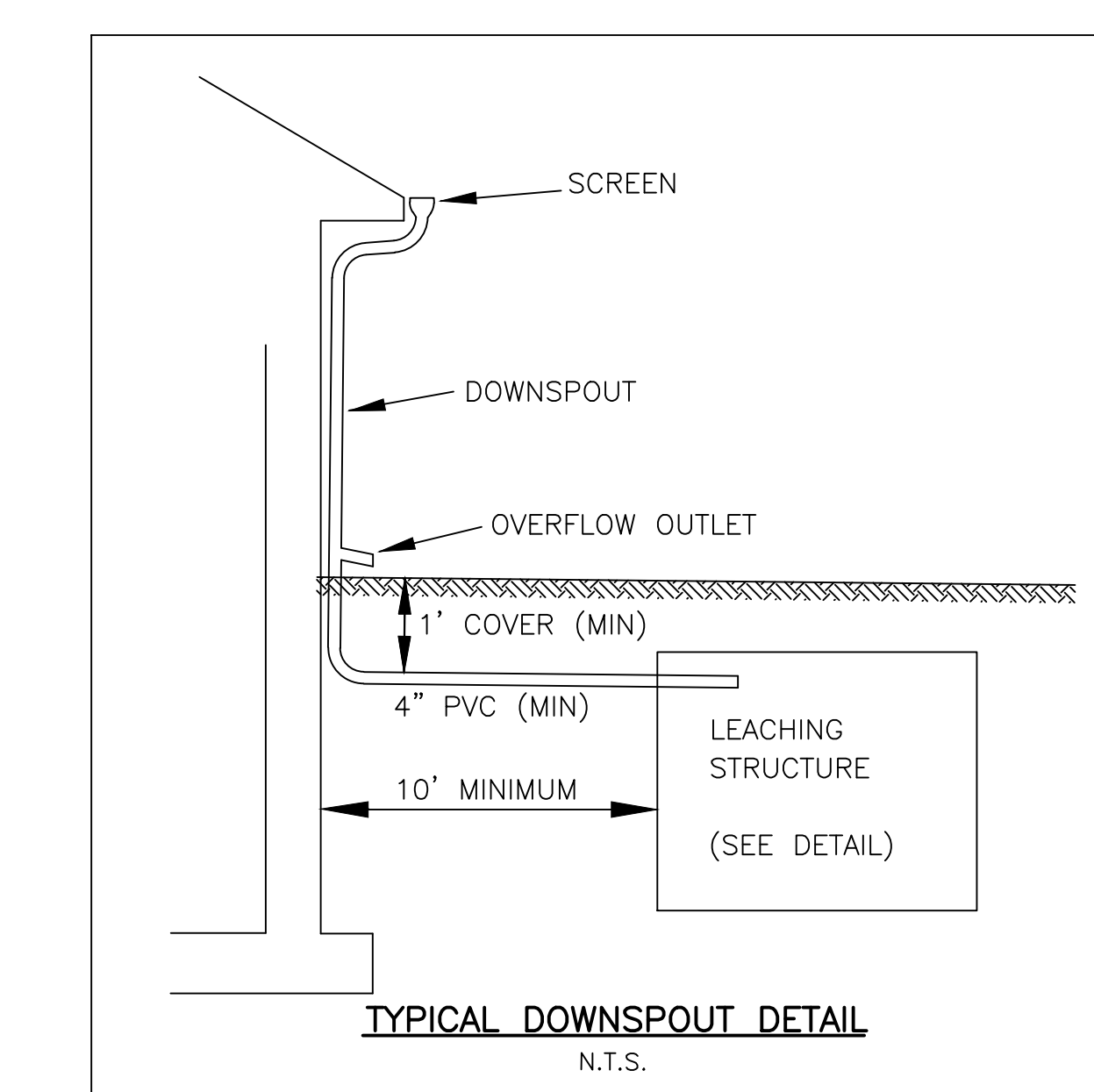
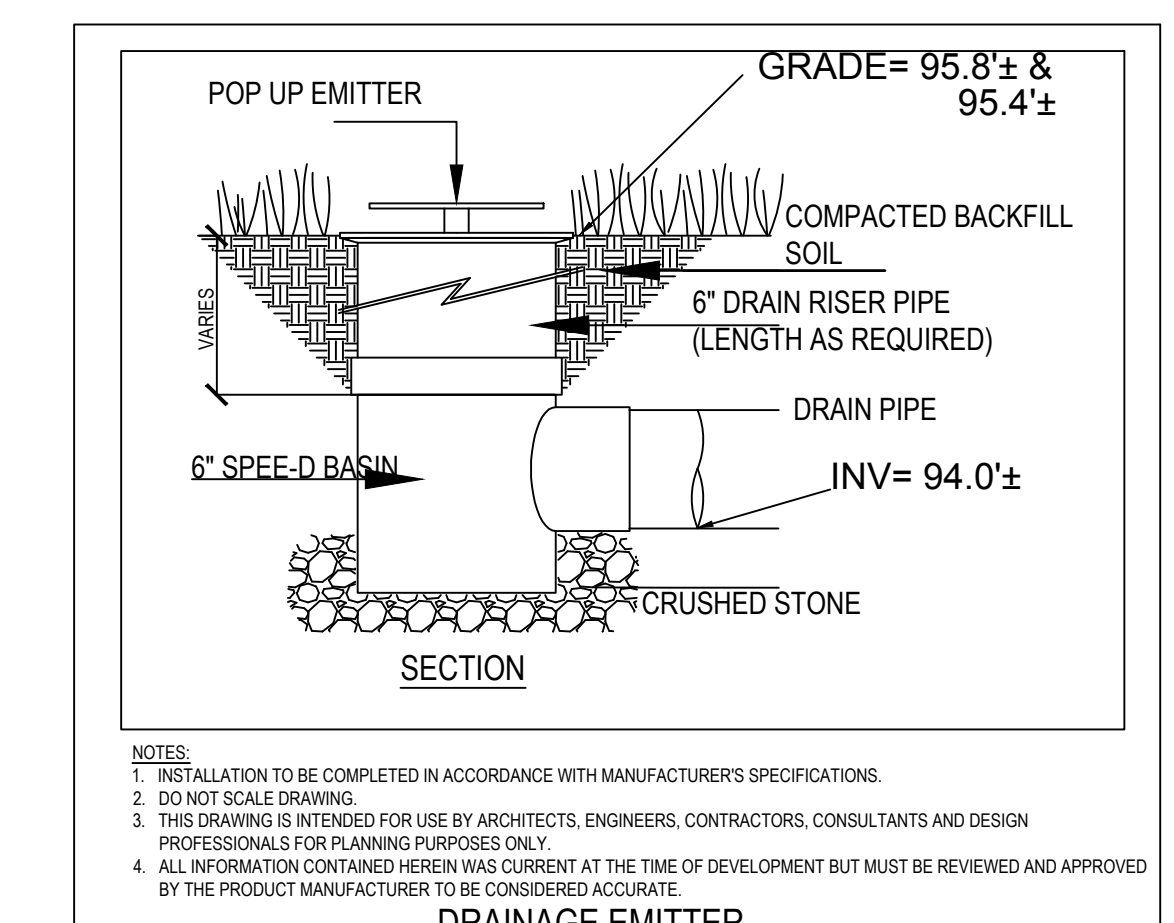
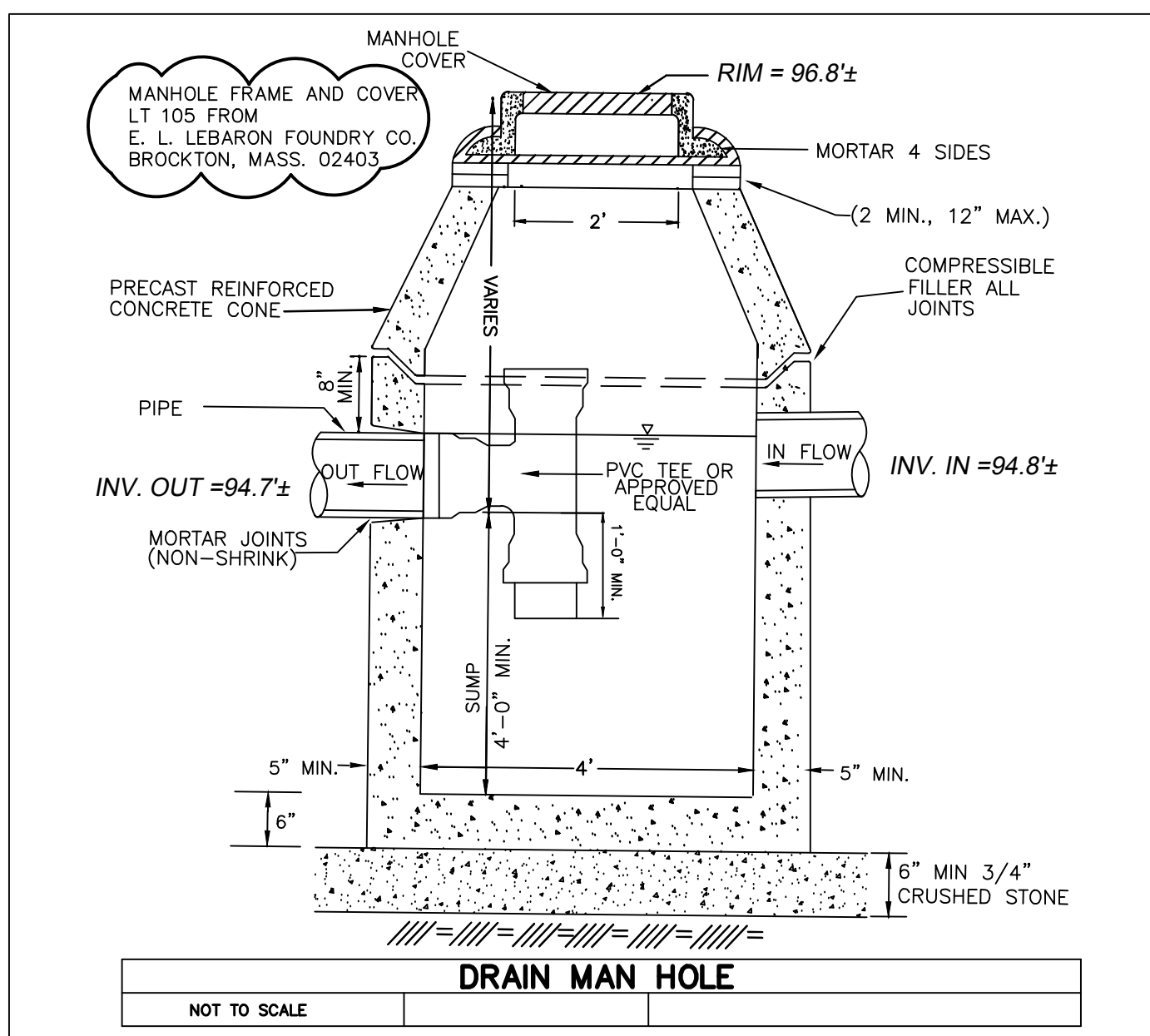
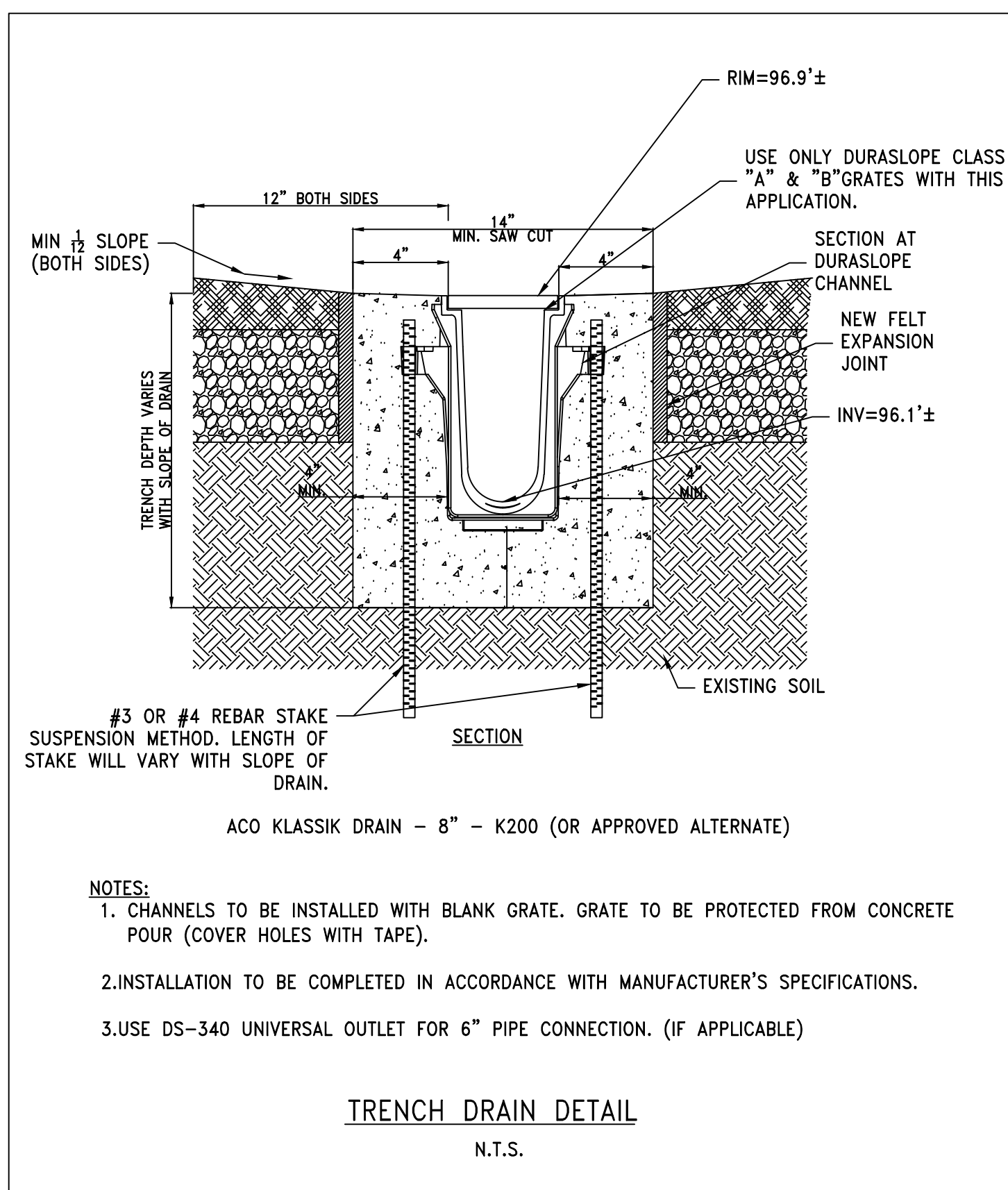
- STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
- STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18 INCHES NOT INCLUDING 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.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
- AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
- STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
- BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
- 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. 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.
- 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.

SC-740 TECHNICAL SPECIFICATION



PART #	STUB	A	B	C
SC740EP001 / SC740EP001PC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EP006 / SC740EP006PC	---	---	16.5" (419 mm)	0.5" (13 mm)
SC740EP008 / SC740EP008PC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EP008 / SC740EP008PC	---	---	14.5" (368 mm)	0.6" (15 mm)
SC740EP101 / SC740EP101PC	10" (250 mm)	13.4" (340 mm)	---	0.7" (18 mm)
SC740EP108 / SC740EP108PC	---	---	12.5" (318 mm)	---
SC740EP121 / SC740EP121PC	12" (300 mm)	14.7" (373 mm)	---	1.2" (30 mm)
SC740EP129 / SC740EP129PC	---	---	9.0" (229 mm)	---
SC740EP131 / SC740EP131PC	15" (375 mm)	18.4" (467 mm)	---	1.3" (33 mm)
SC740EP158 / SC740EP158PC	---	---	5.0" (127 mm)	1.8" (41 mm)
SC740EP187 / SC740EP187PC	18" (450 mm)	19.7" (500 mm)	---	0.1" (3 mm)
SC740EP188 / SC740EP188PC	---	---	---	---
SC740EP248*	24" (600 mm)	18.5" (470 mm)	---	---

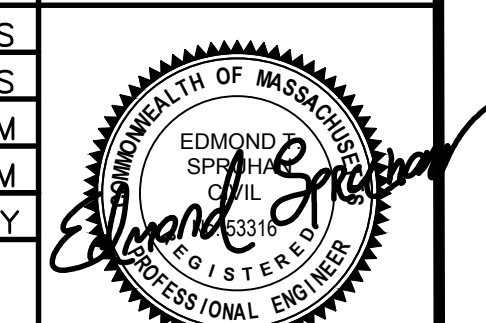
ALL STUBS, EXCEPT FOR THE SC740EP248 ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-992-2684.
* FOR THE SC740EP248 THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.
NOTE: ALL DIMENSIONS ARE NOMINAL.



REV	DATE	REVISION	BY
5	3/12/2019	ENGINEERING DIVISION: REVISED DRIVEWAY (PAVED)	HM
4	2/20/2019	ENGINEERING DIVISION: DATE OF REV. & DRIVEWAY SPEC.	AS
3	2/4/2019	ENGINEERING DIVISION: DRAINAGE AND RUNOFF UPDATE	AS
2	11/16/2018	COMMENTS FROM ENGINEERING DIVISION.	HM
1	03/12/2018	COMMENTS FROM ENGINEERING DIVISION.	HM

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DETAILS

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SHEET NO.
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