

NOTES

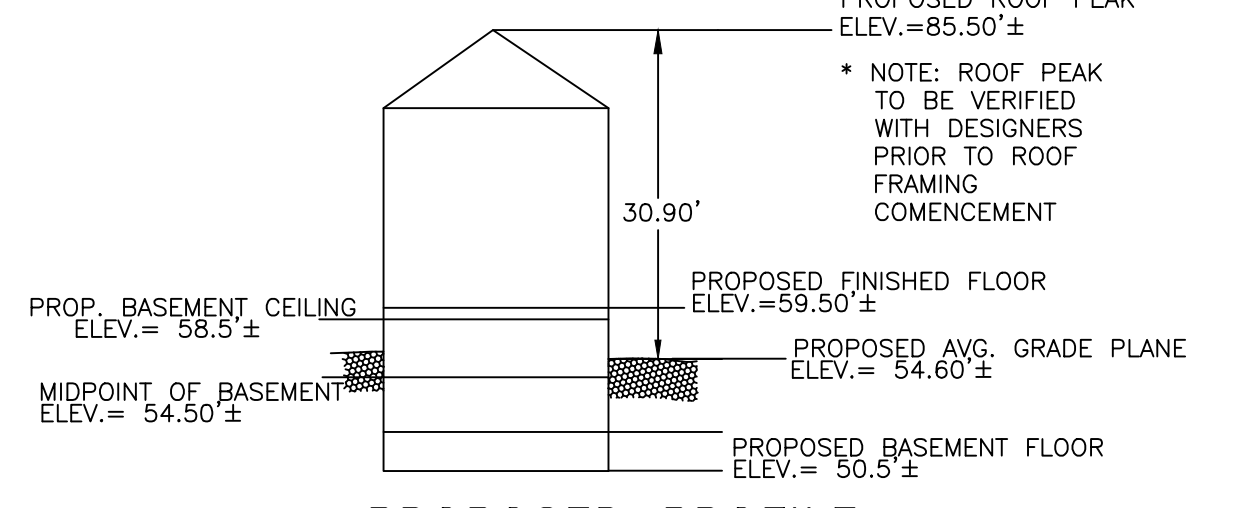
- ELEVATIONS REFER TO CITY OF NEWTON DATUM.
- THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ANY CROSSINGS OF PROPOSED AND EXISTING UTILITIES.
- MASSACHUSETTS 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 NOVEMBER 22, 2016.
- 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 OF THE PROPOSED EXCAVATION 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 ACCESS/MAINTENANCE COVERS, 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 THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE DESIGN ENGINEER FOR INSPECTIONS OR AS-BUILT LOCATIONS. PETER NOLAN & ASSOCIATES, LLC. WILL NOT PROVIDE AS-BUILT CERTIFICATION TO UNSPECTED BACKFILLED 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, LOD, CLAY, GRAVEL OR STONE, OR OTHER SOLID MATERIAL UNLESS A PROPOSED RETAINING WALL OR SWALE 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 ONCE PER 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 I.E. (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 821 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 SILTATION CONTROL NEEDS 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.

LEGEND

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

PROPOSED PROFILE

NOT TO SCALE



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

*AVERAGE ALIGNMENT: CHARLESBANK RD.
 #138 SB = 14.5'
 #152 SB = 21.0'
 THEREFORE AVERAGE ALIGNMENT = (14.5'+21.0')/2 = 17.75'

ZONING LEGEND

ZONING DISTRICT: MULTI RESIDENCE 2 (LOT CREATED AFTER 12/07/1953)		
	REQUIRED	PROPOSED
MIN. AREA	10,000 S.F.	12,370± S.F.
MIN. YARD FRONT	17.75'*/ 25'	21.7'
SIDE	10'	25.8'
REAR	15'	15.7'
MAX. LOT COVERAGE	30%	28.0%
MIN. OPEN SPACE	50%	59.7%
MIN. FRONTAGE	80'	238.0'
MAX. BLDG. HEIGHT	36'	30.90'±

SCALE	1"=10'		
DATE	12/08/17	1/2/18	REVISIONS PER OFFICIAL REQUEST
SHEET			REVISION
PLAN NO.	19-21 ORCHARD STREET NEWTON MASSACHUSETTS		
CIENT:	CIVIL PLAN		
DRAWN BY	HM	PETER NOLAN & ASSOCIATES LLC	
CHKD BY	ETS	LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS	
APPD BY	PJN	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	

ORCHARD STREET

(PUBLIC WAY-VARIABLE WIDTH)

NOTES:

- INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC AS OF 06-22-17.
- DEED REFERENCE BOOK 69326 PAGE 54, MIDDLESEX 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 25017C0556E, PANEL NUMBER 0556E, 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 THAN 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.

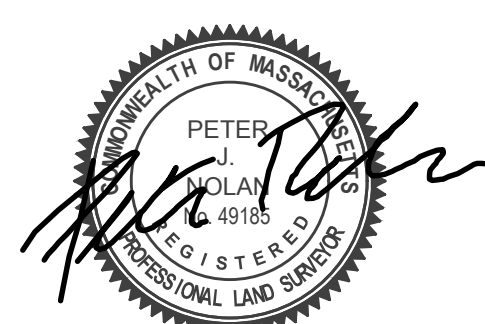
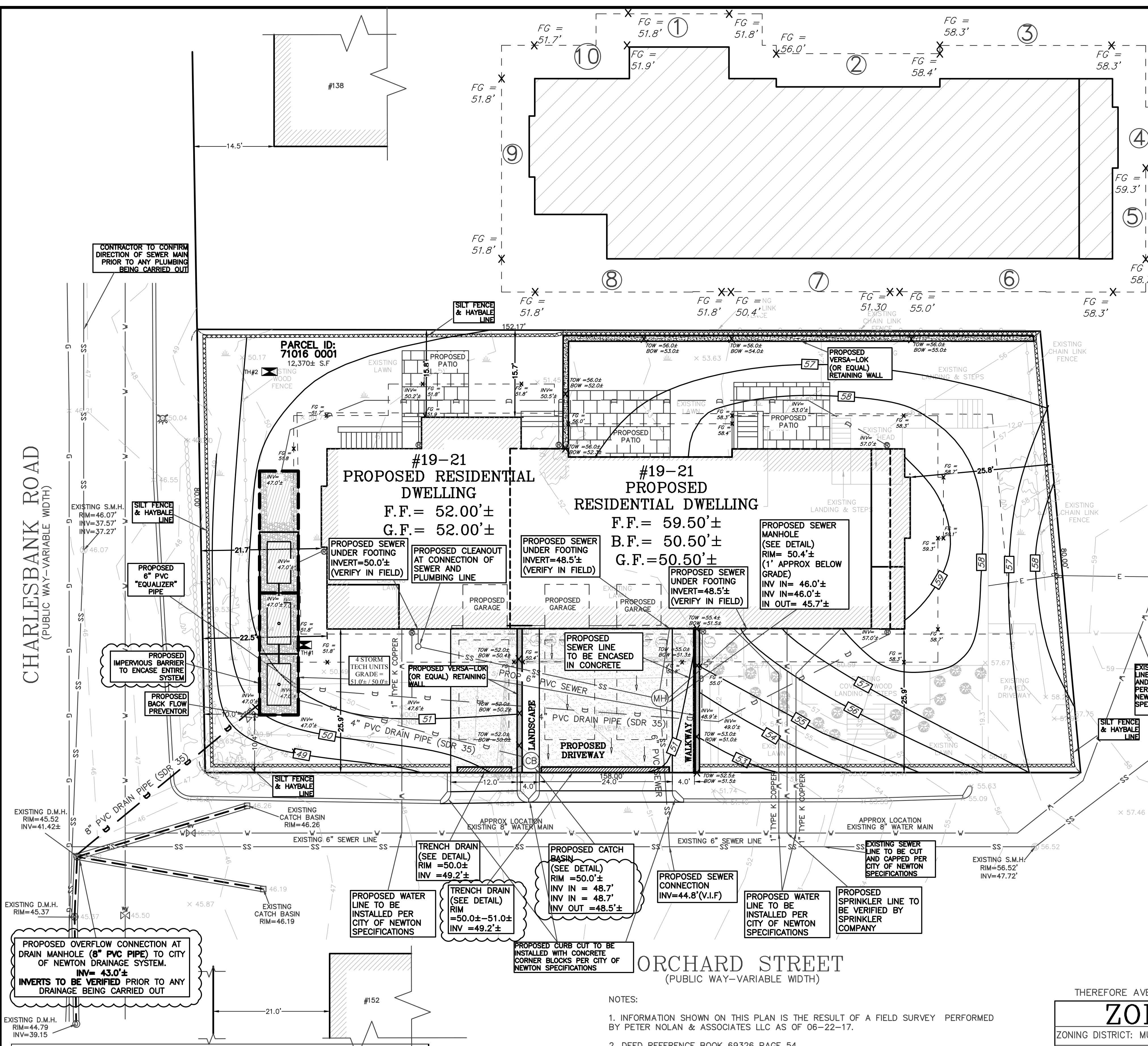
CHARLESBANK ROAD

(PUBLIC WAY-VARIABLE WIDTH)

AVERAGE GRADE PLANE (ALL UNITS IN FEET)

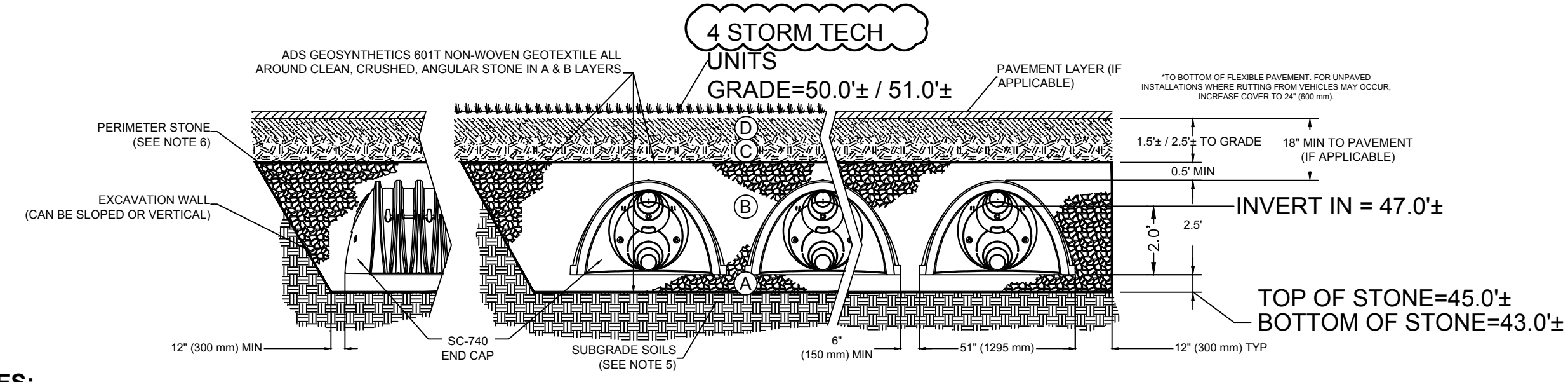
SEGMENT	LENGTH	POINT 1	POINT 2	MEAN 1 & 2	MEAN x LENGTH
1	18.30	51.80	51.80	51.80	947.94
2	29.50	56.00	58.40	57.20	1,687.40
3	31.00	58.30	58.30	58.30	1,807.30
4	11.00	58.70	59.10	58.90	647.90
5	16.40	58.70	59.30	59.00	967.60
6	38.50	55.00	58.30	56.65	2,181.03
7	28.70	50.40	51.30	50.85	1,459.40
8	33.60	51.80	51.80	51.80	1,740.48
9	32.50	51.80	51.80	51.80	1,683.50
10	16.70	51.70	51.90	51.80	865.06
SUM =	256.20				13,987.60

SUM OF MEAN x LENGTH / SUM OF LENGTHS = AVERAGE GRADE PLANE = 54.60



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 1" (25.4 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, 57, 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. 90% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 90% 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.**

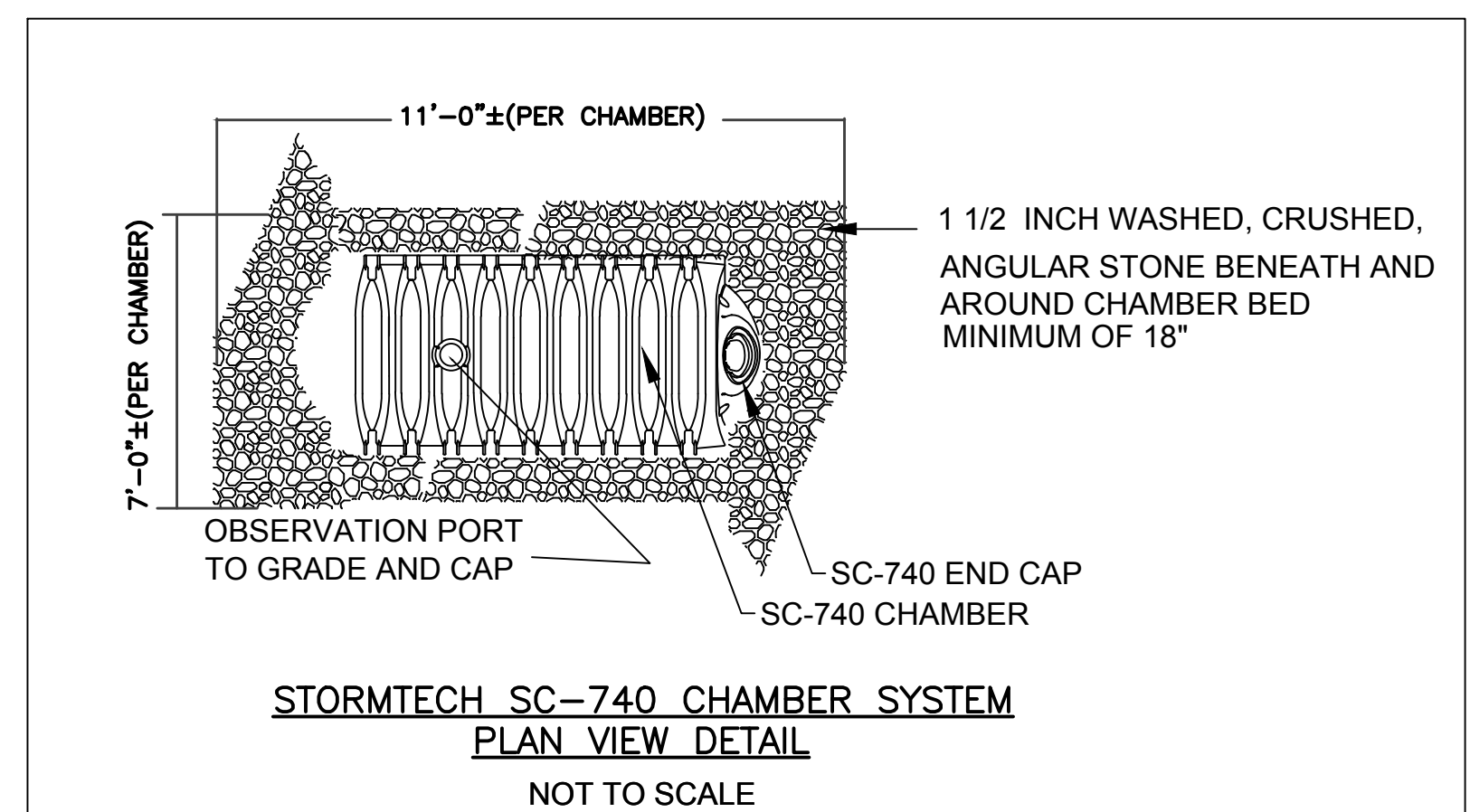
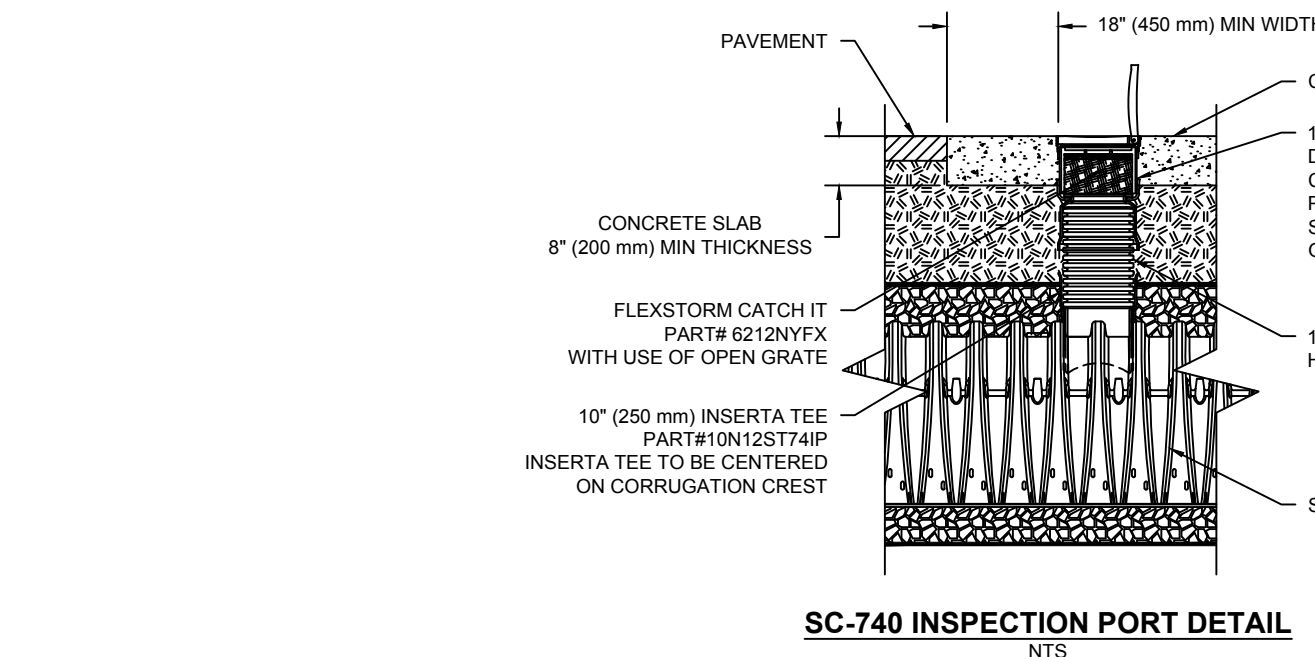
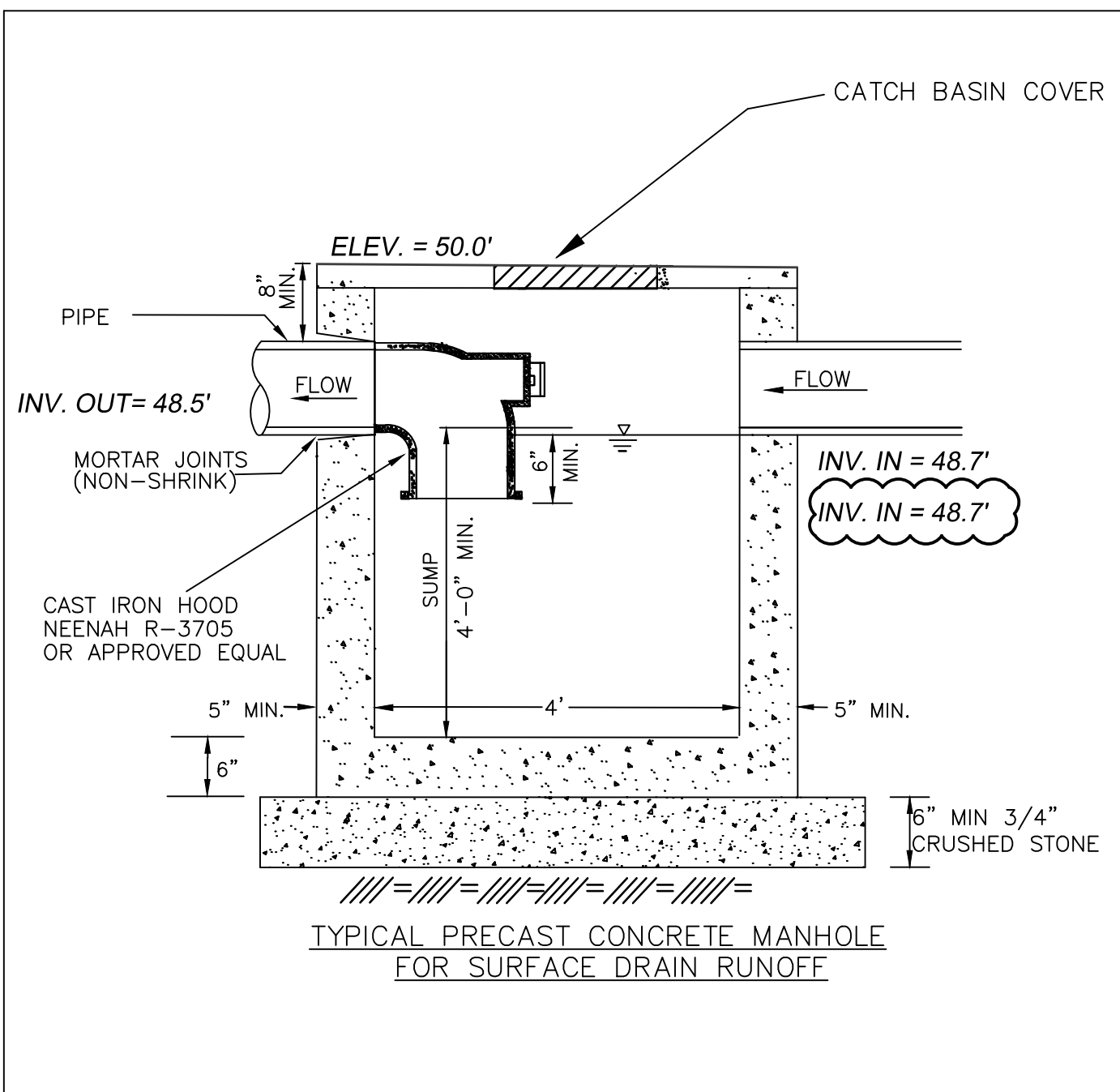


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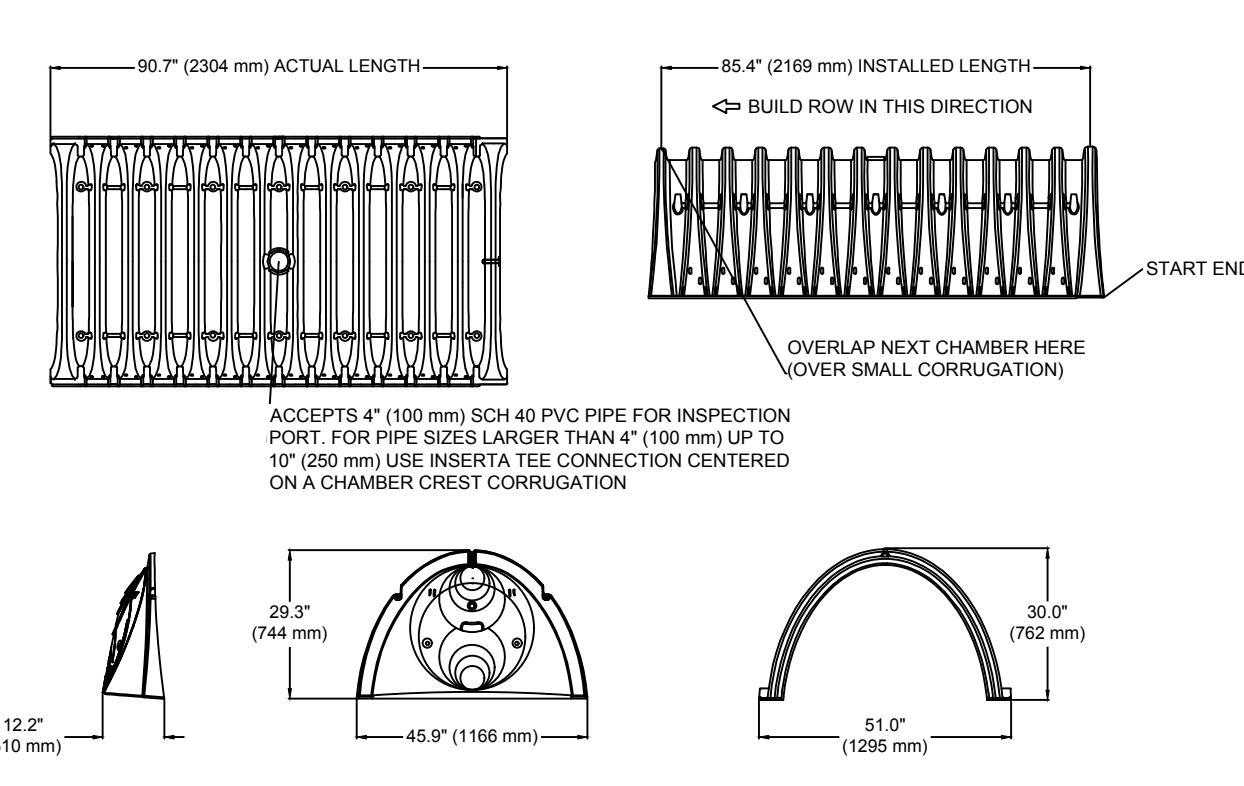
- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED 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 SOIL 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.

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 TRUCKS MAY OCCUR, MINIMUM 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
N.T.S.



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

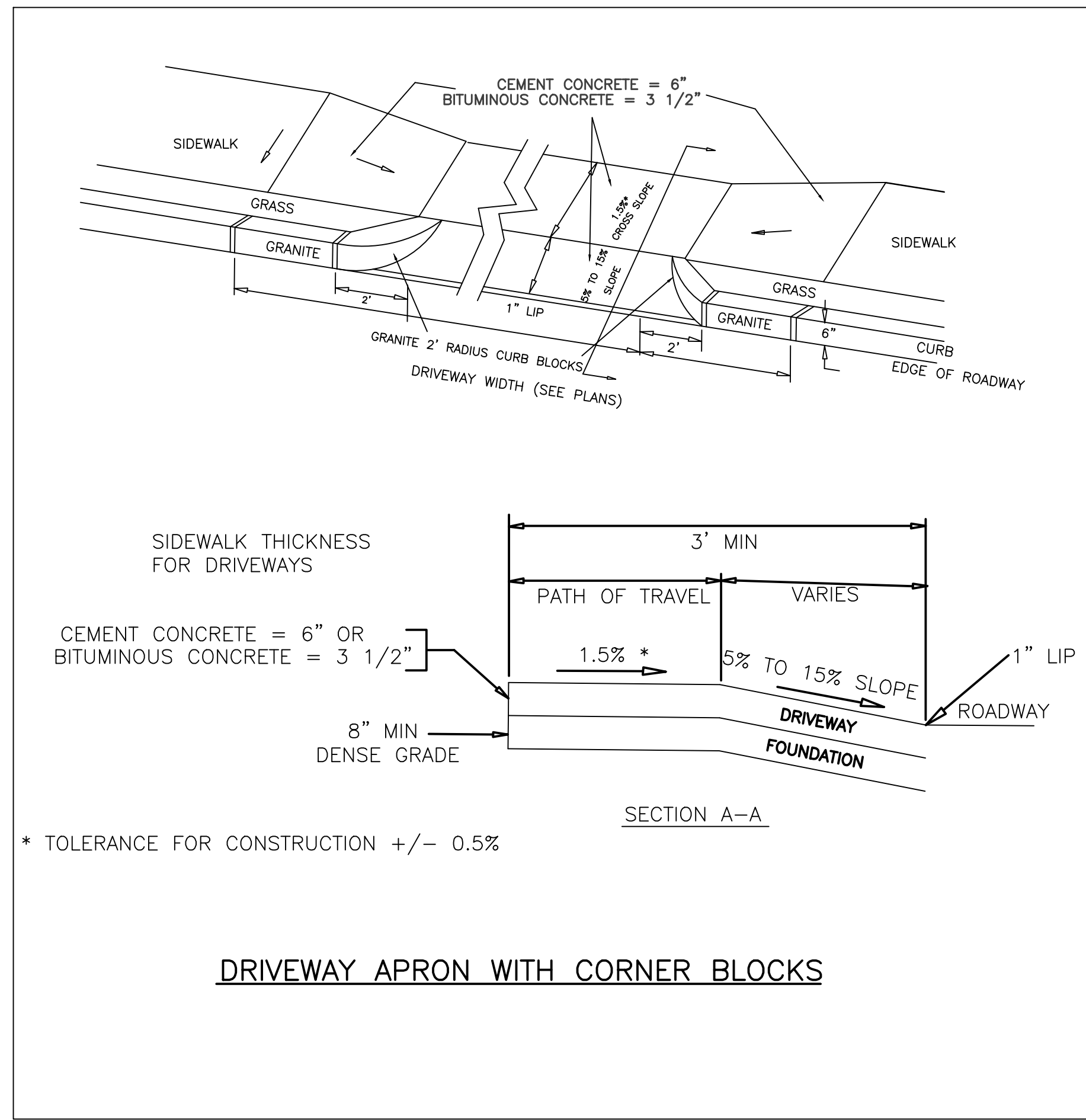
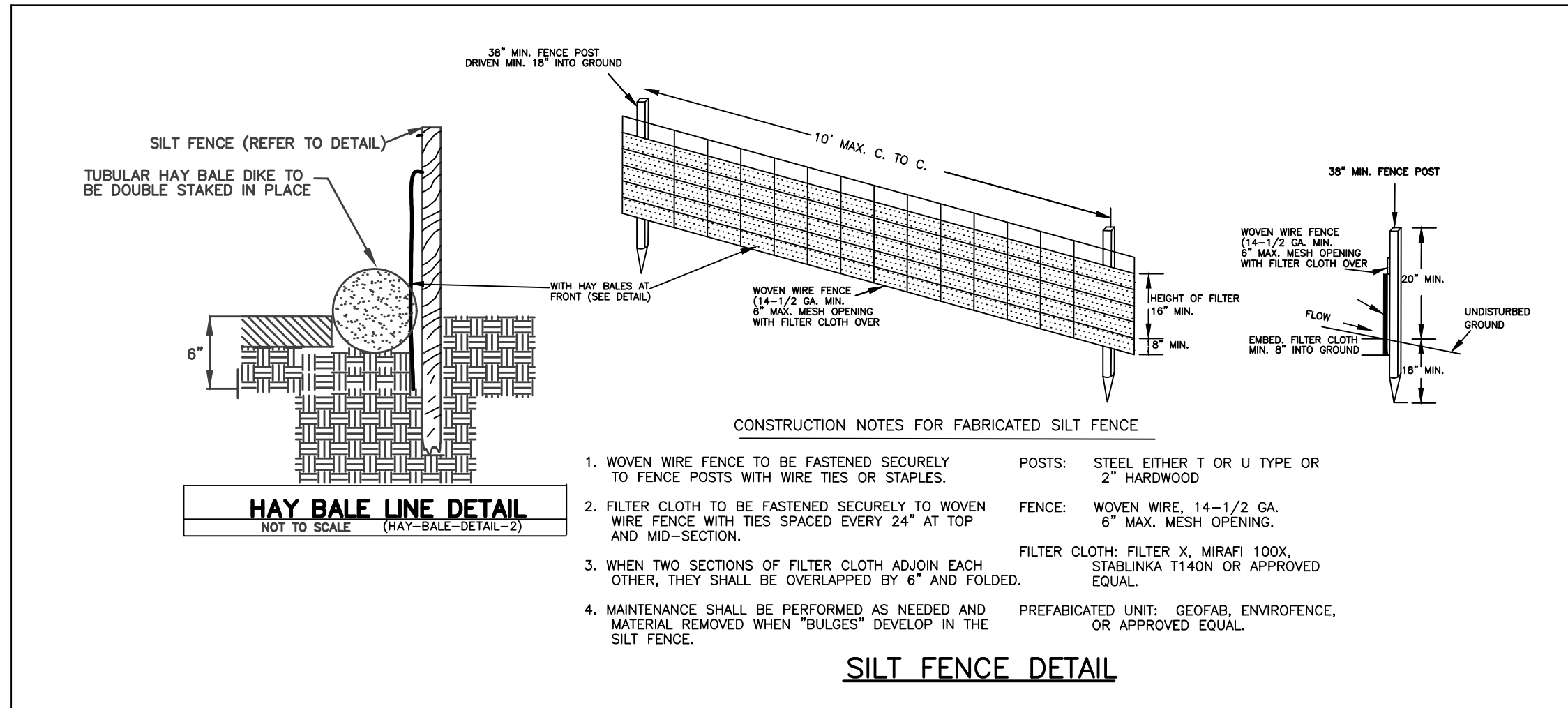
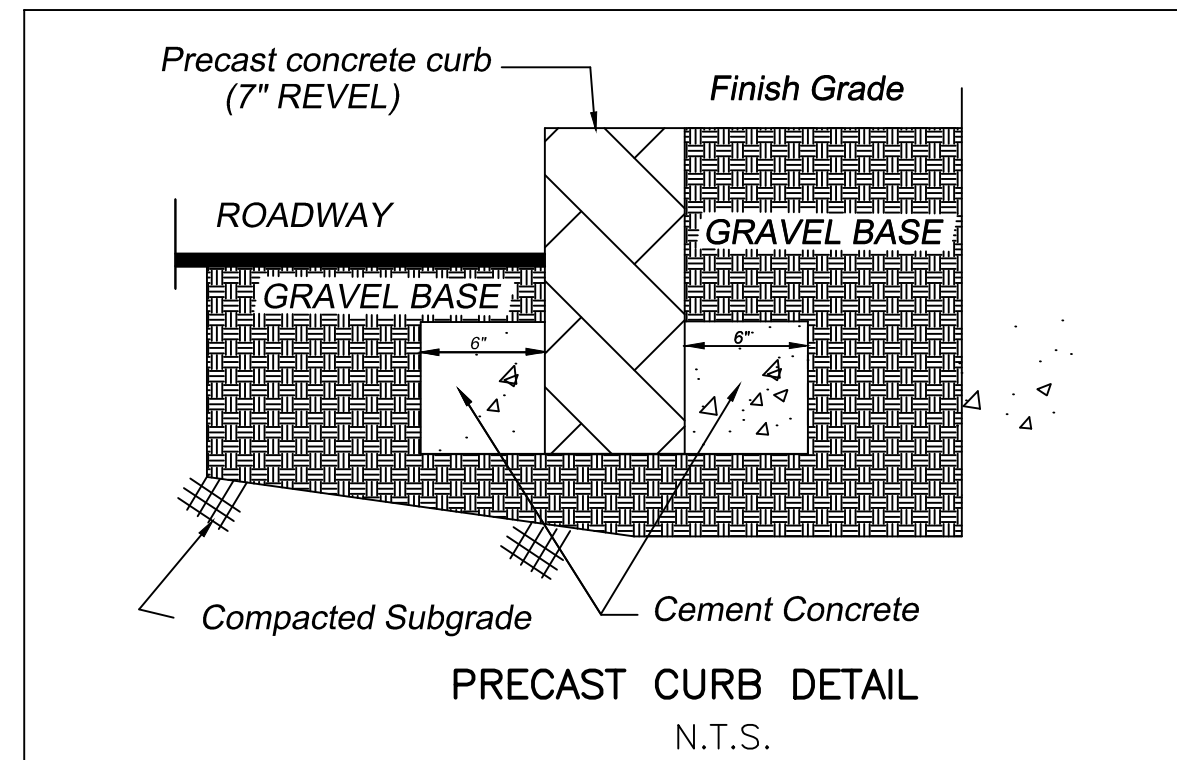
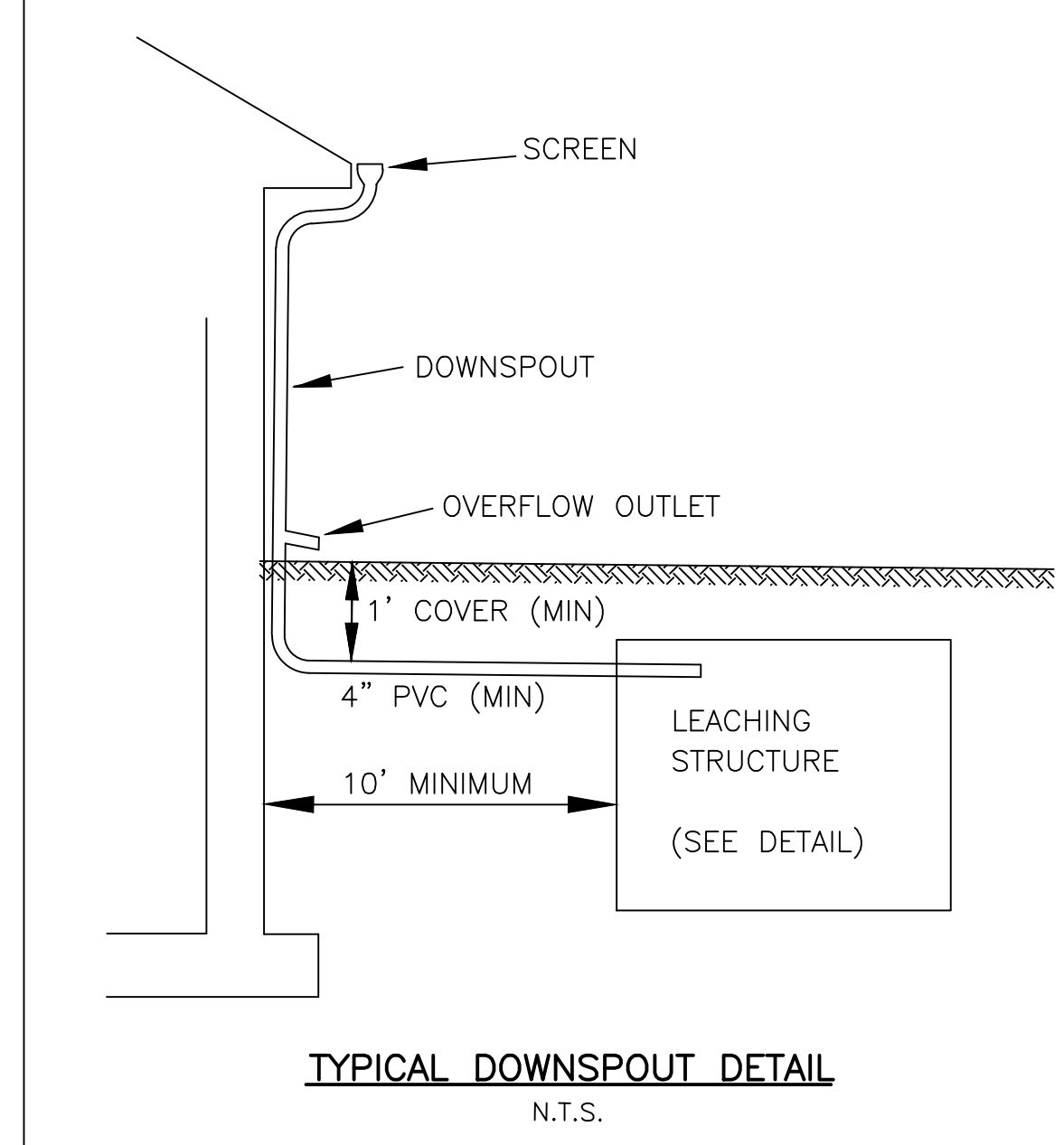
*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	—
SC740EPE08B / SC740EPE08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.5" (13 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	—
SC740EPE12B / SC740EPE12BPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	0.7" (18 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	1.3" (33 mm)
SC740EPE18B / SC740EPE18BPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	—
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)

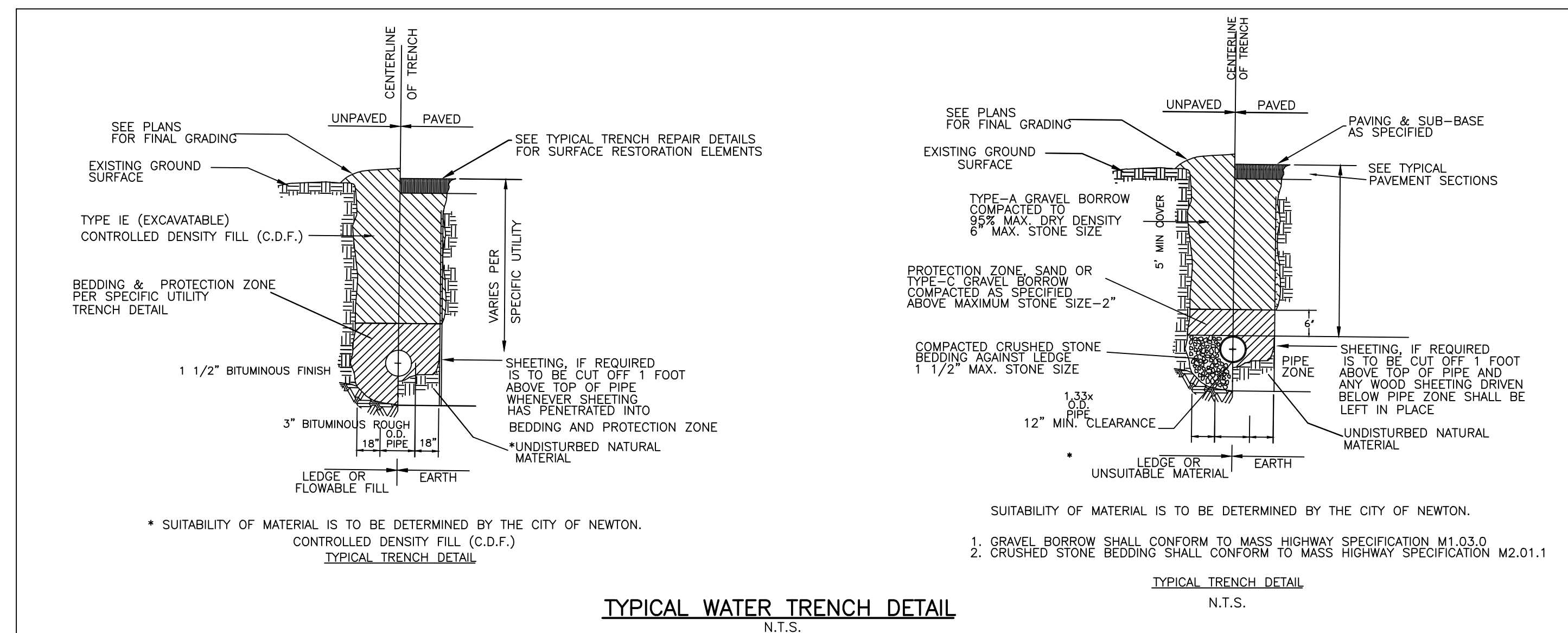
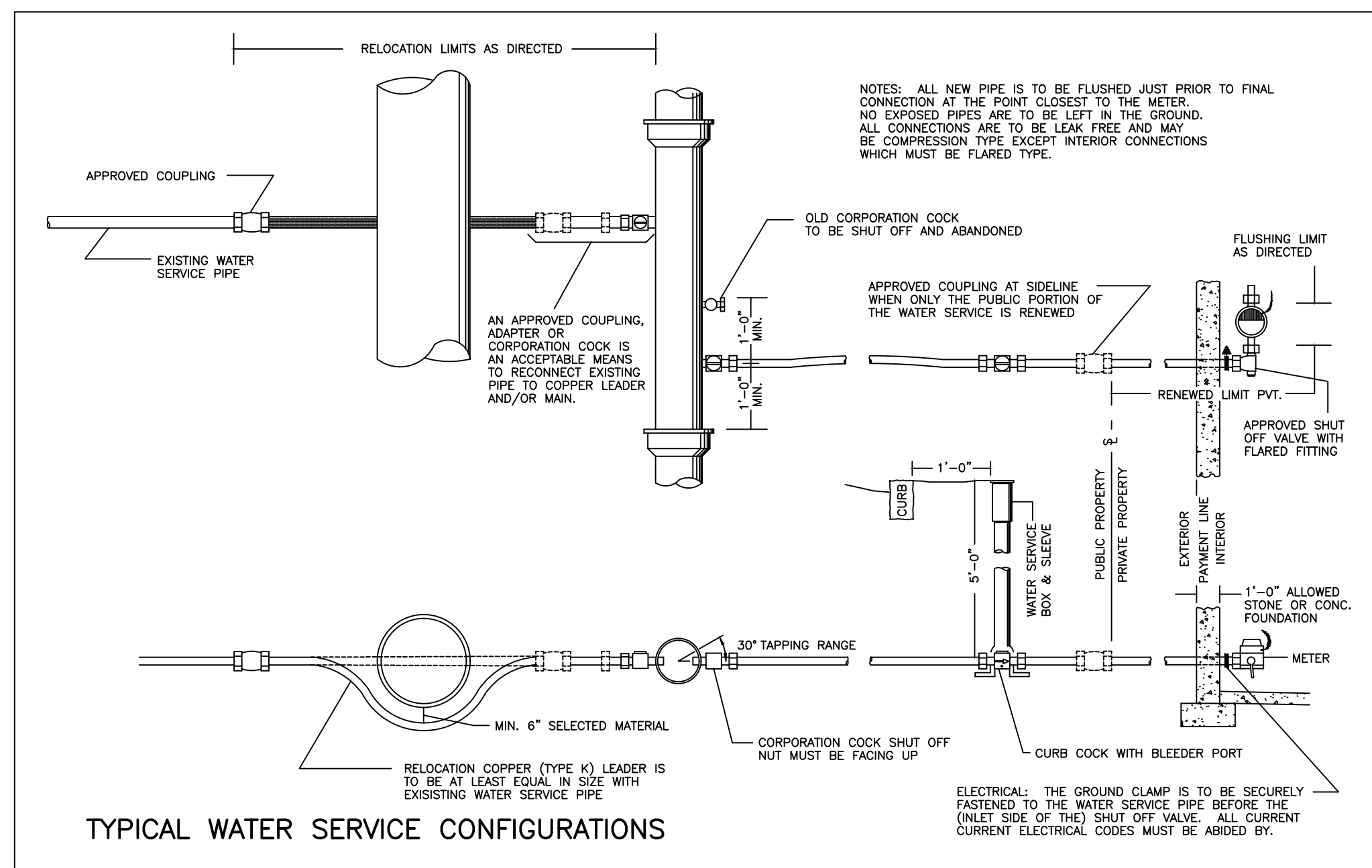
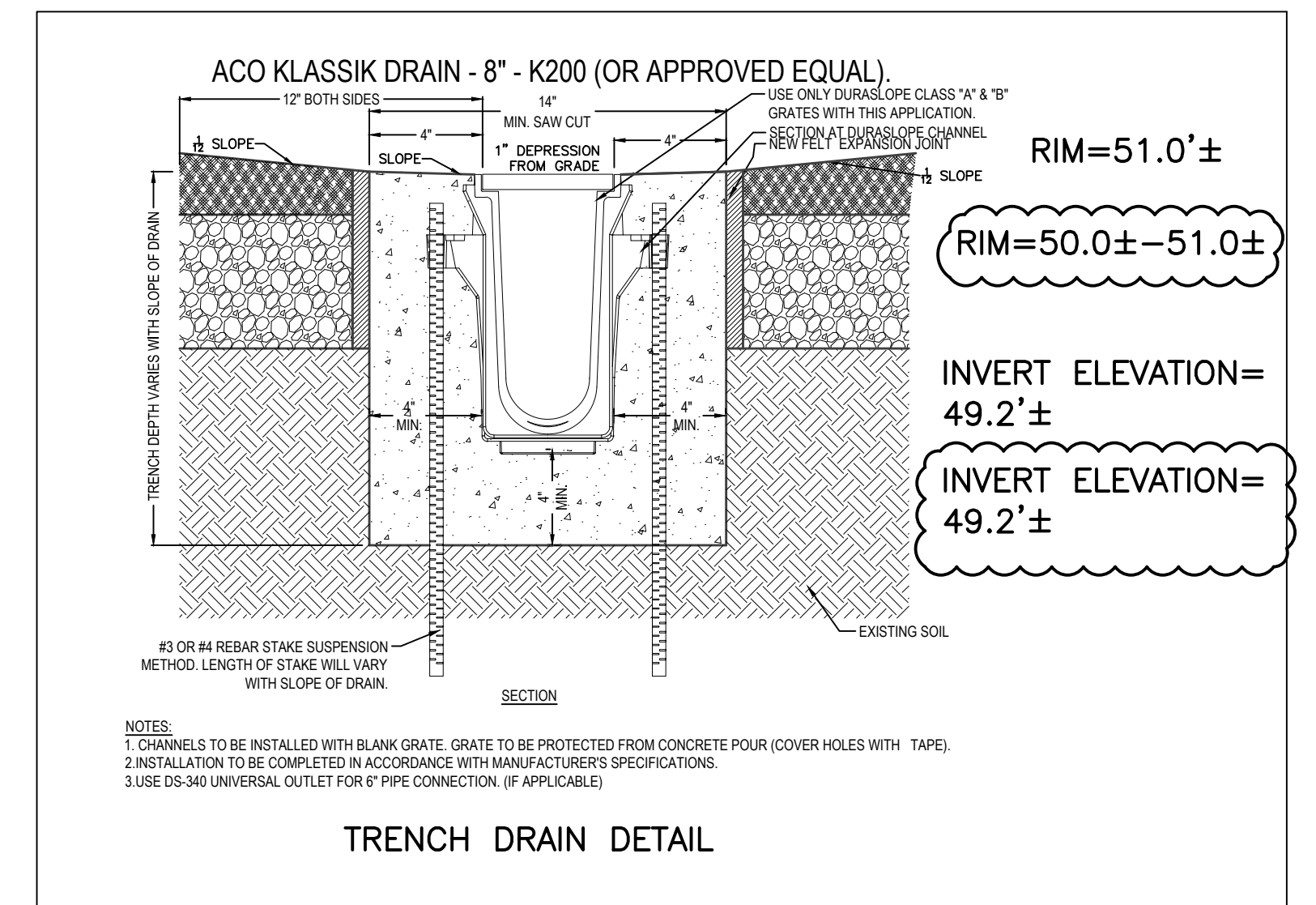
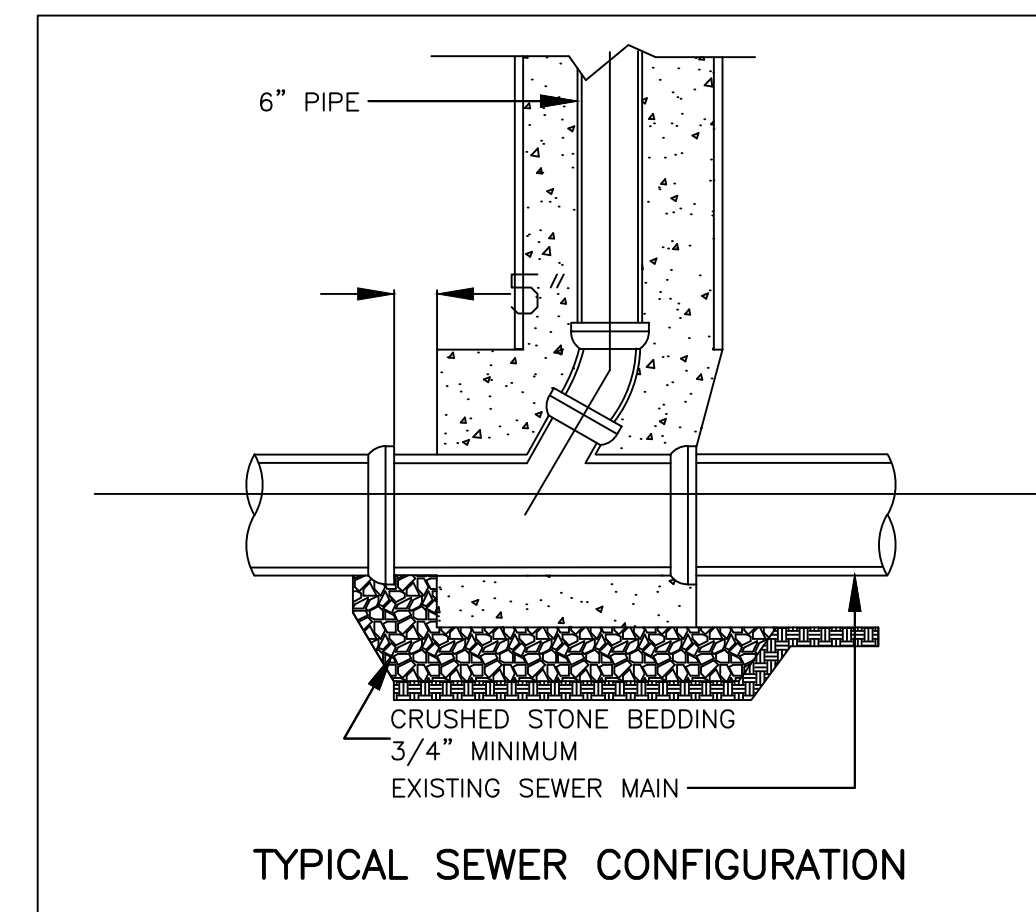
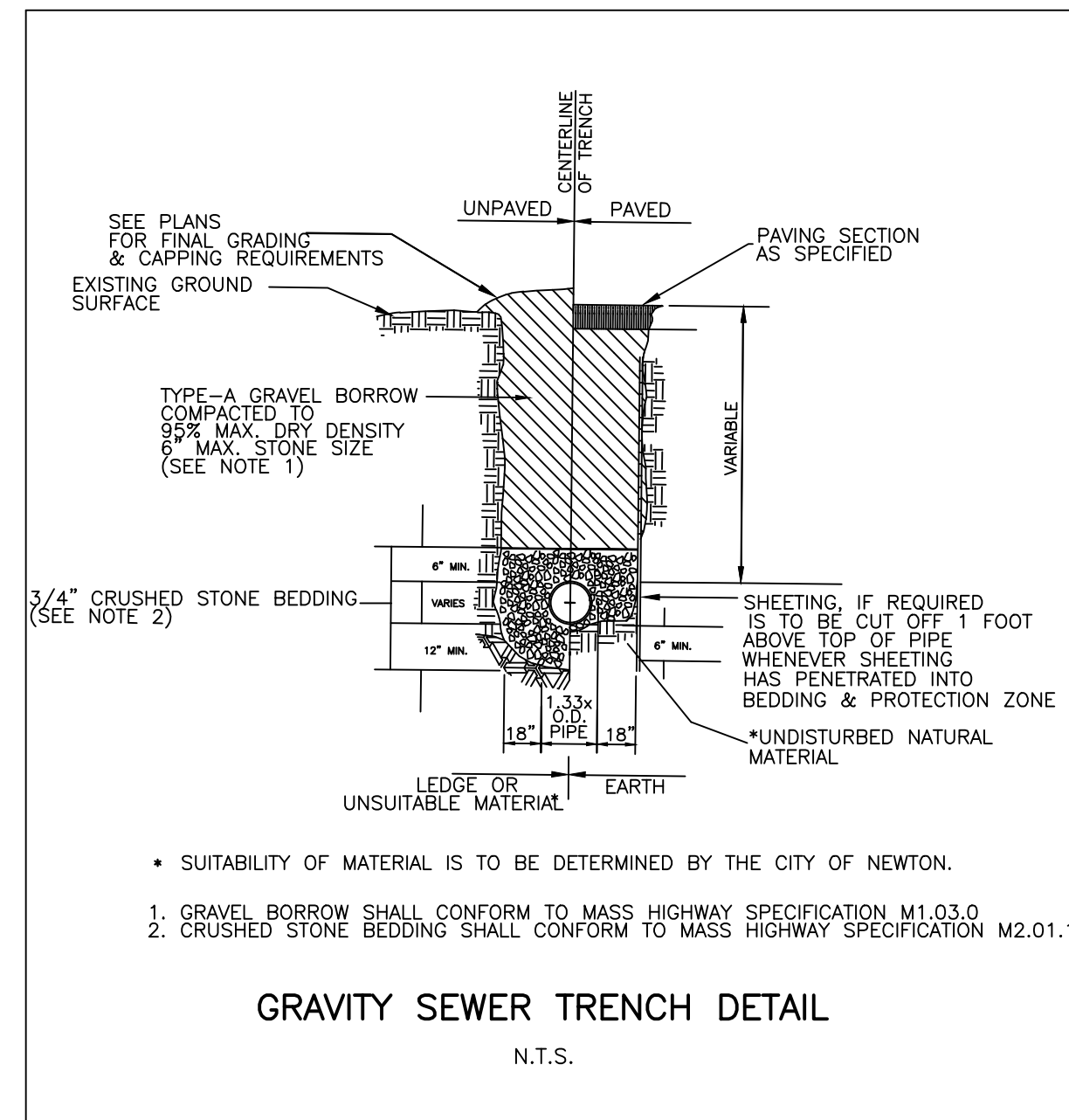
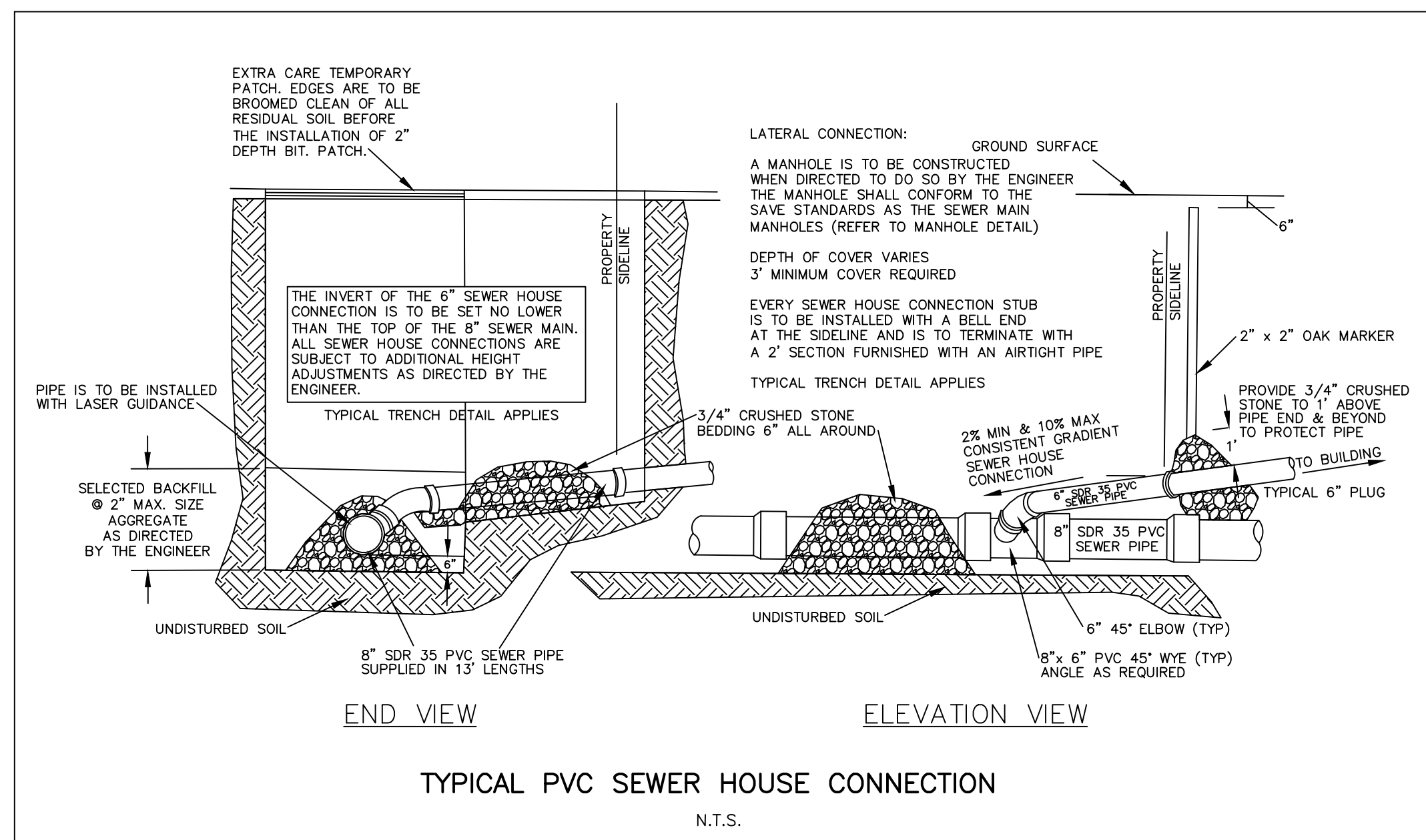
ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (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.



SCALE			
NTS			
DATE	12/08/17	1/2/18	REVISIONS PER OFFICIAL REQUEST
SHEET			REVISION
PLAN NO.	19-21 ORCHARD STREET NEWTON MASSACHUSETTS		
CLIENT:	DETAILS		
DRAWN BY	HM		
CHKD BY	ETS		
APPD BY	PJN		
	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		
			SHEET NO. 2



DEEP OBSERVATION HOLE LOG

GENERAL SOIL CONDITIONS FOR THE AREA PERFORMED AT 19-21 ORCHARD STREET, NEWTON, MA. BY PETER NOLAN & ASSOCIATES, LLC.

HOLE NUMBER: TP-1 AND TP-2 DATED: 12/06/17

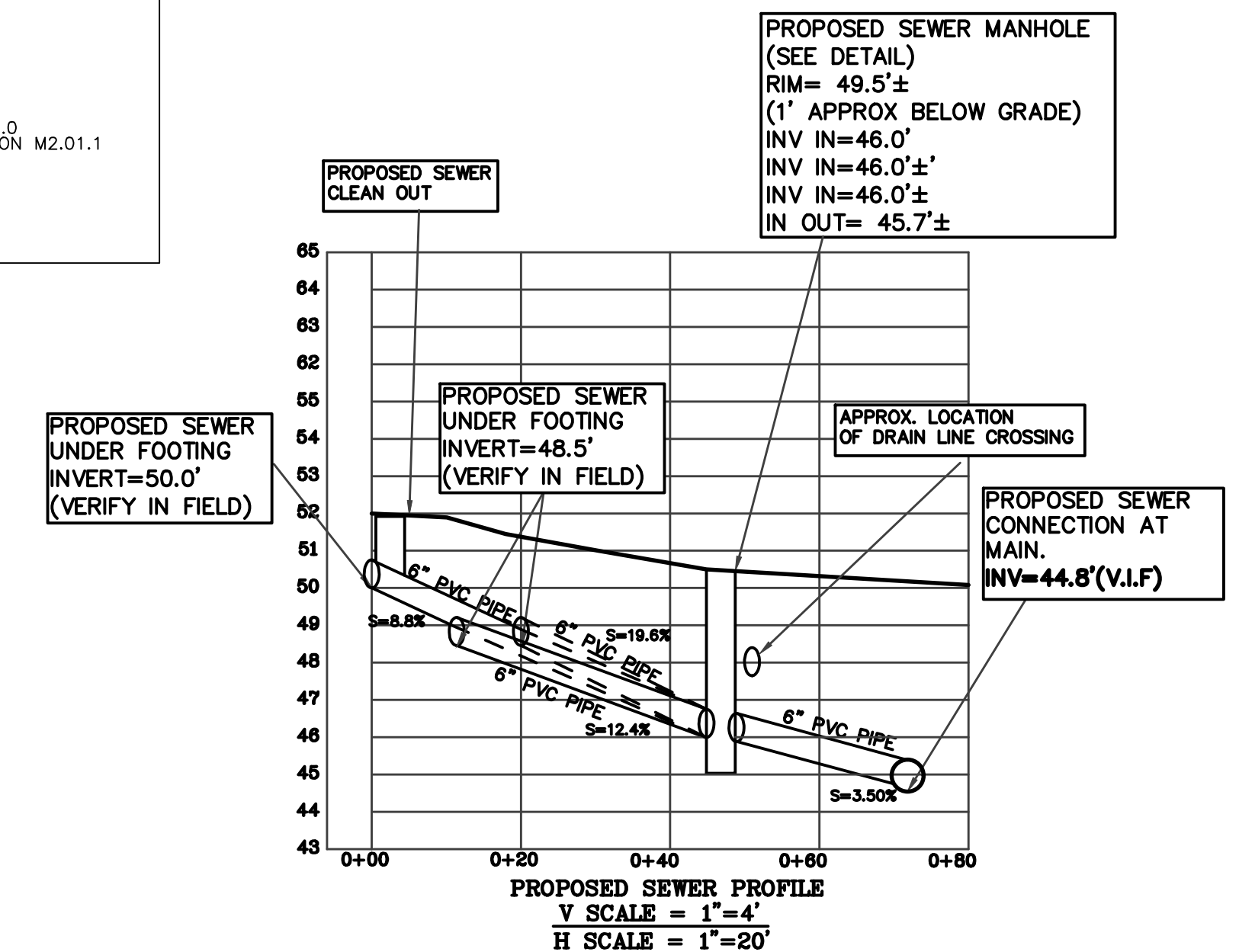
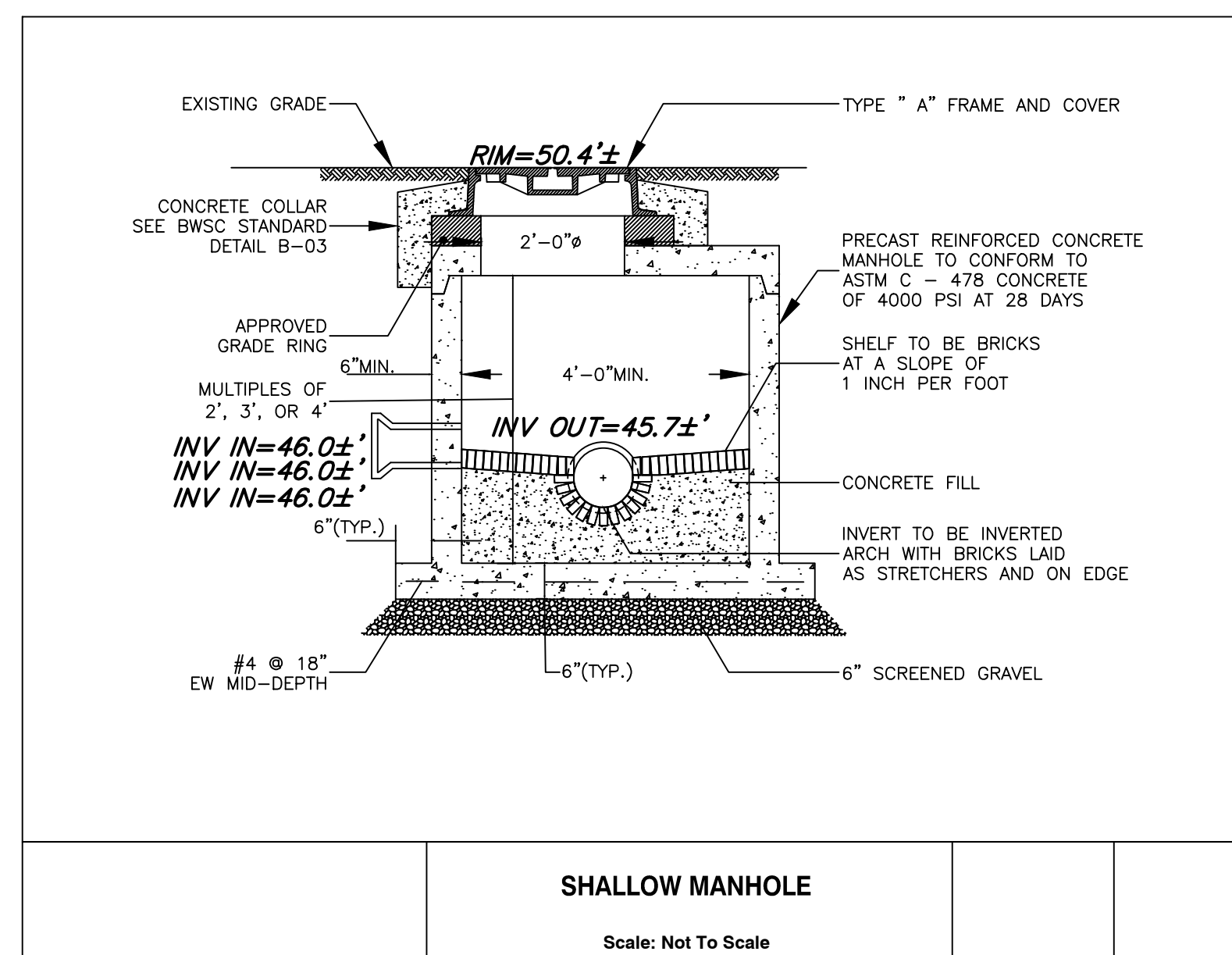
GENERAL SITE CONDITIONS: GRASS AND TREES.

TEST HOLE PT - 1

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	OTHER
0" - 12"	A	L	10 YR 3/2	NO	NONE
12" - 42"	B	SnL	10 YR 4/3	NO	NONE
42" - 54"	C1	FRACTURED LEDGE		NO	NONE
54" -	C2	LEDGE		NO	LEDGE

TEST HOLE PT - 2

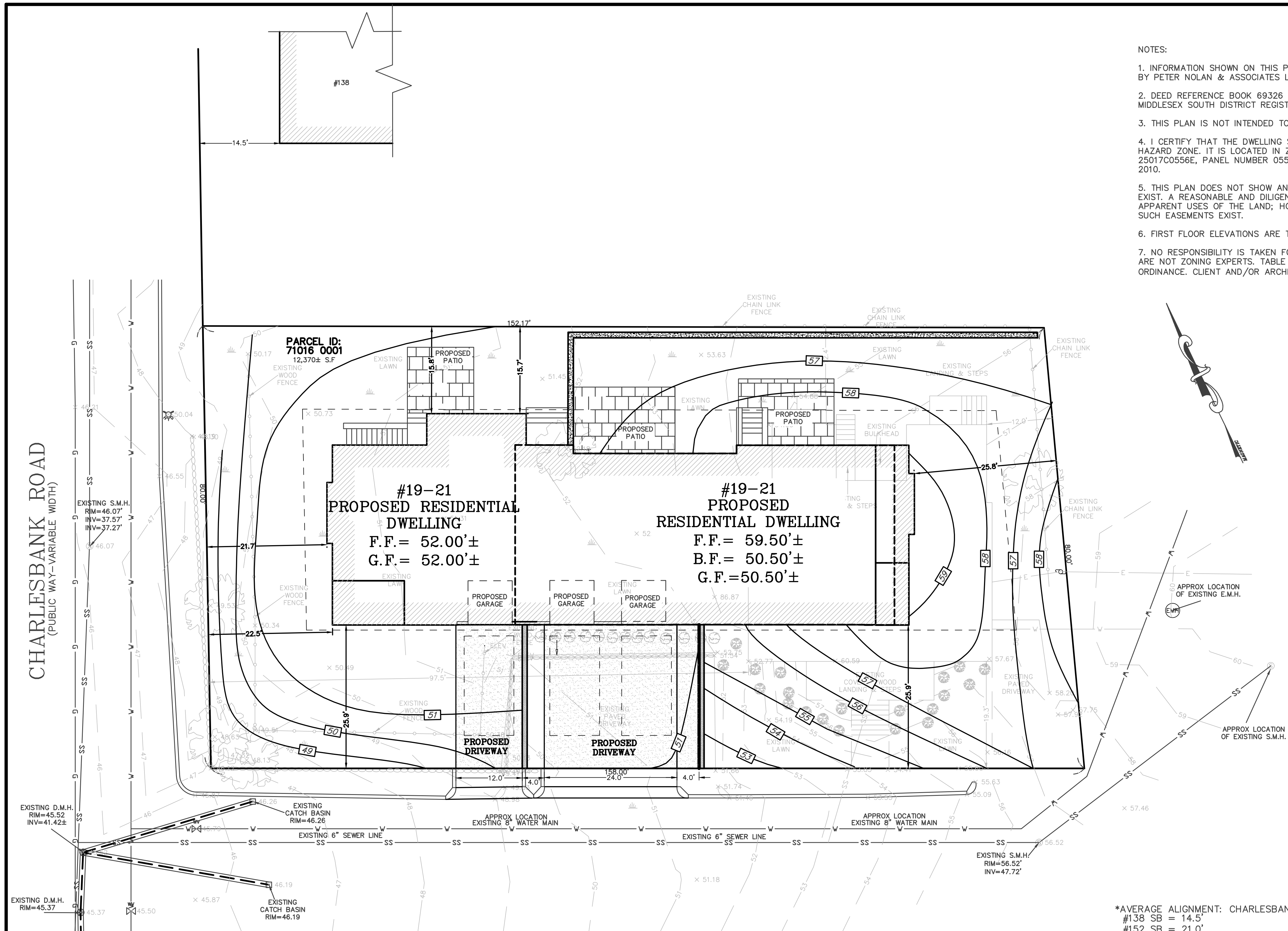
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	OTHER
0" - 18"	A	L	10 YR 3/2	NO	NONE
18" - 30"	B	FILL	10 YR 6/2	NO	SMALL ROCKS
30" - 48"	C1	FRACTURED LEDGE		NO	NONE
48" -	C2	LEDGE		NO	LEDGE



SCALE	NTS		
DATE	12/8/17	REVISIONS PER OFFICIAL REQUEST	CS
SHEET	19-21 ORCHARD STREET NEWTON MASSACHUSETTS		BY
CLIENT:	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		
DRAWN BY	HM		
CHKD BY	ETS		
APPD BY	PJN		

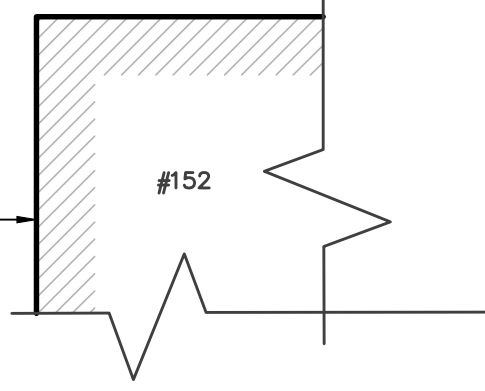
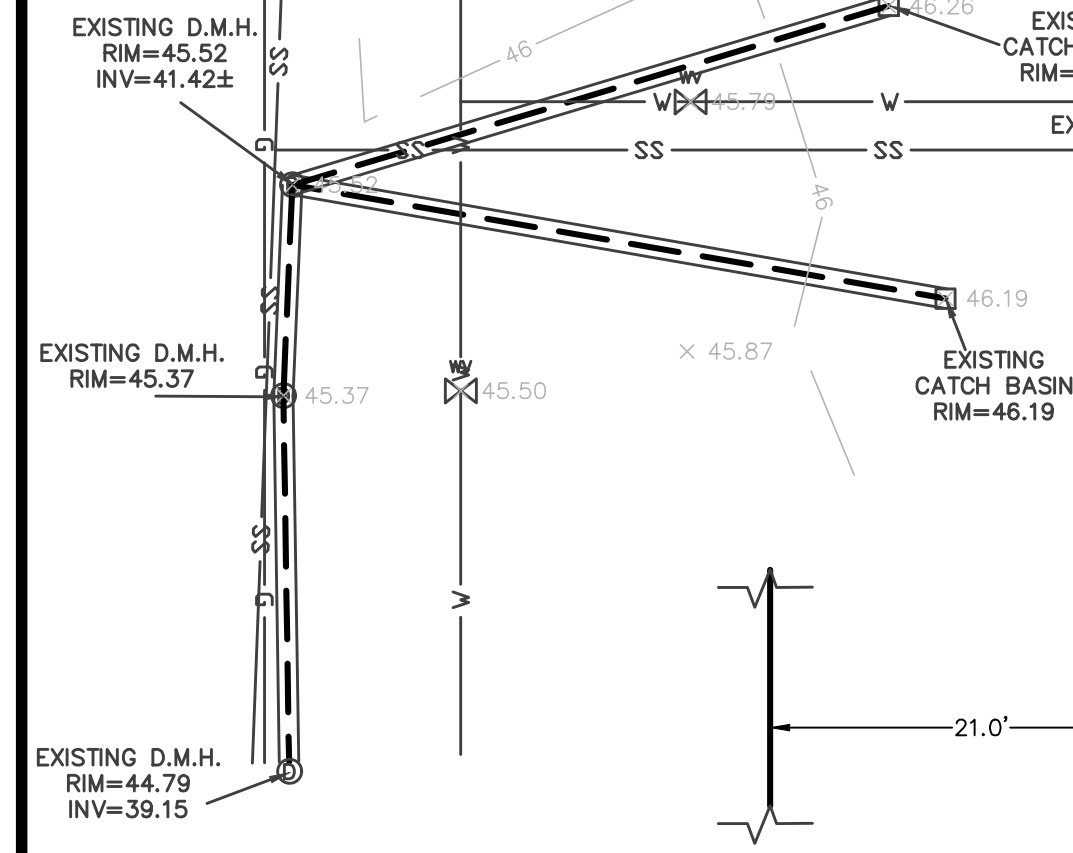
SHEET NO. **3**

CHARLESBANK ROAD
(PUBLIC WAY-VARIABLE WIDTH)



- NOTES:
- INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC AS OF 06-22-17.
 - DEED REFERENCE BOOK 69326 PAGE 54, MIDDLESEX 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 25017C0556E, PANEL NUMBER 0556E, 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 THAN 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.

- LEGEND
- UTILITY POLE
 - WATER GATE
 - HYDRANT
 - GAS GATE
 - SEWER MANHOLE
 - DRAIN MANHOLE
 - CATCH BASIN
 - TREE
 - LIGHT POLE
 - SIGN
 - TO BE REMOVED
 - TO BE ABANDONED
 - TOP OF WALL
 - BOTTOM OF WALL
 - FINISHED GRADE
 - SPOT GRADE
 - DEEP TEST HOLE
 - PERCOLATION TEST
 - SPOT ELEVATION
 - PROPOSED CONTOUR
 - EXISTING CONTOUR
 - DRAIN LINE
 - WATER LINE
 - SEWER LINE
 - GAS LINE
 - FENCE



#19-21
PROPOSED RESIDENTIAL
DWELLING
F.F. = 52.00'±
G.F. = 52.00'±

#19-21
PROPOSED
RESIDENTIAL DWELLING
F.F. = 59.50'±
B.F. = 50.50'±
G.F. = 50.50'±

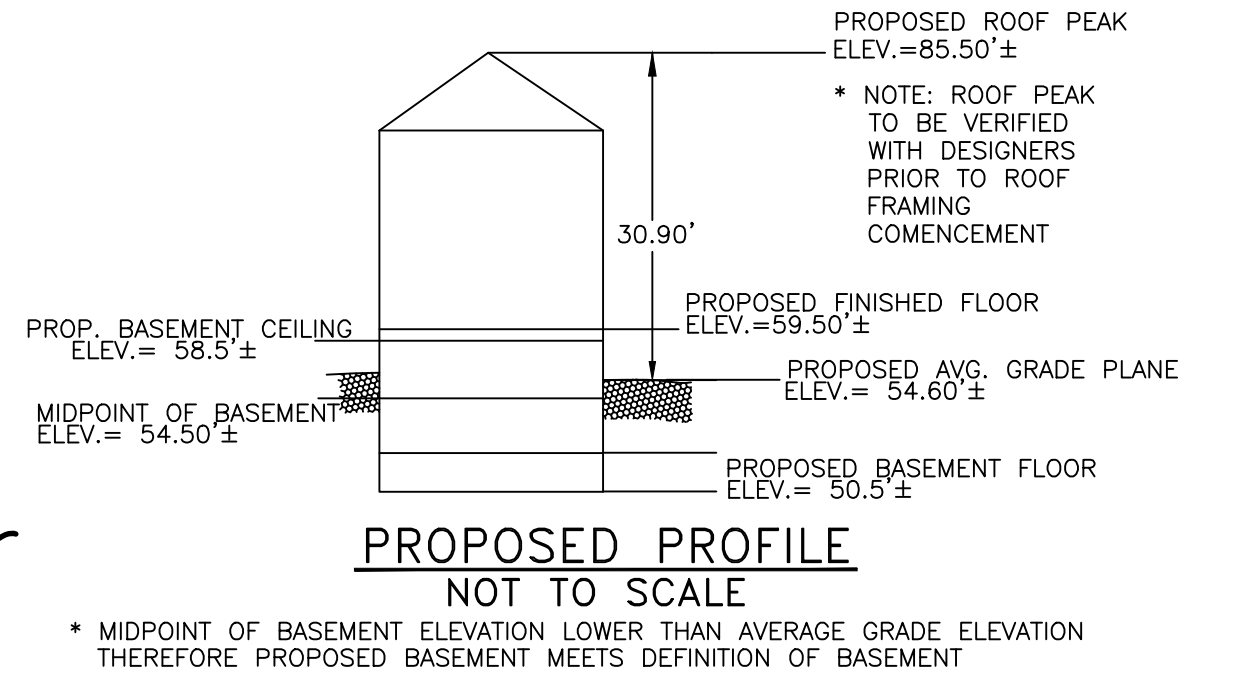
ORCHARD STREET
(PUBLIC WAY-VARIABLE WIDTH)

AVERAGE GRADE PLANE (ALL UNITS IN FEET)					
SEGMENT	LENGTH	POINT 1	POINT 2	MEAN 1 & 2	MEAN x LENGTH
1	18.30	51.80	51.80	51.80	947.94
2	29.50	56.00	58.40	57.20	1,687.40
3	31.00	58.30	58.30	58.30	1,807.30
4	11.00	58.70	59.10	58.90	647.90
5	16.40	58.70	59.30	59.00	967.60
6	38.50	55.00	58.30	56.65	2,181.03
7	28.70	50.40	51.30	50.85	1,459.40
8	33.60	51.80	51.80	51.80	1,740.48
9	32.50	51.80	51.80	51.80	1,683.50
10	16.70	51.70	51.90	51.80	865.06
SUM =	256.20				13,987.60
SUM OF MEAN x LENGTH / SUM OF LENGTHS = AVERAGE GRADE PLANE =					54.60

*AVERAGE ALIGNMENT: CHARLESBANK RD.
#138 SB = 14.5'
#152 SB = 21.0'
THEREFORE AVERAGE ALIGNMENT = (14.5'+21.0')/2 = 17.75'

ZONING LEGEND
ZONING DISTRICT: MULTI RESIDENCE 2 (LOT CREATED AFTER 12/07/1953)

	REQUIRED	PROPOSED
MIN. AREA	10,000 S.F.	12,370± S.F.
MIN. YARD FRONT	17.75'*/ 25'	21.7'
SIDE	10'	25.8'
REAR	15'	15.7'
MAX. LOT COVERAGE	30%	28.0%
MIN. OPEN SPACE	50%	59.7%
MIN. FRONTAGE	80'	238.0'
MAX. BLDG. HEIGHT	36'	30.90'±



SCALE: 1"=10'

DATE: 12/08/17

SHEET: 19-21 ORCHARD STREET, NEWTON, MASSACHUSETTS

CLIENT: PLOT PLAN

DRAWN BY: HM

CHKD BY: ETS

APPD BY: P.J.N.

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

REVISIONS PER OFFICIAL REQUEST

REVISION

SHEET NO. 4

TOTAL EXISTING LANDSCAPED AREA = 6,078 S.F.±

CHARLESBANK ROAD
(PUBLIC WAY-VARIABLE WIDTH)

PARCEL ID: 71016 0001
12,370± S.F.

TOTAL EXISTING ROOF AREA = 2,028 S.F.±

TOTAL APPROXIMATE AREA DRAINING TO CITY MAIN = 7,032 S.F.±

TOTAL EXISTING PAVED AREA = 1,164 S.F.±

ORCHARD STREET
(PUBLIC WAY-VARIABLE WIDTH)

EXISTING WATERSHED MAP

TOTAL PROPOSED LANDSCAPED AREA TO STREET = 7,865 S.F.±

CHARLESBANK ROAD
(PUBLIC WAY-VARIABLE WIDTH)

PARCEL ID: 71016 0001
12,370± S.F.

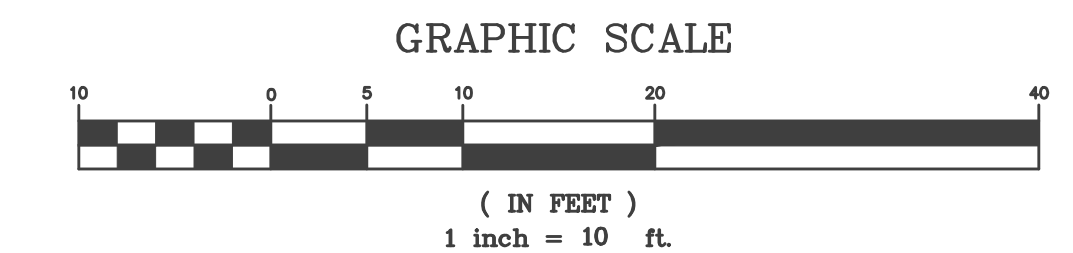
#19-21 PROPOSED RESIDENTIAL DWELLING
F.F. = 52.00'±
G.F. = 52.00'±

#19-21 PROPOSED RESIDENTIAL DWELLING
F.F. = 59.50'±
B.F. = 50.50'±
G.F. = 50.50'±

TOTAL PROPOSED ROOF AREA = 3,466 S.F.±

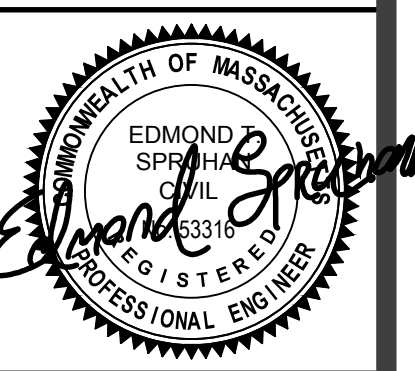
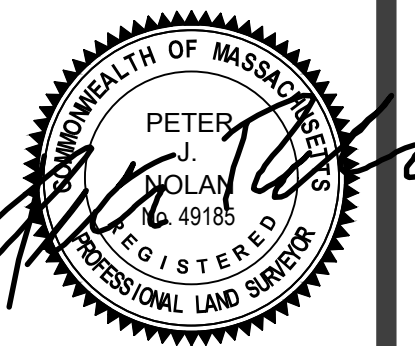
TOTAL PROPOSED PAVED AREA TO SYSTEM = 1,039 S.F.±

PROPOSED WATERSHED MAP



SCALE	1"=10'
DATE	12/29/17
SHEET	
PLAN NO.	
CLIENT:	
DRAWN BY	GS
CHKD BY	ETS
APPD BY	PJN

REV DATE	REVISION	BY
19-21 ORCHARD STREET NEWTON MASSACHUSETTS		
WATERSHED MAPS		
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		



SHEET NO.

5