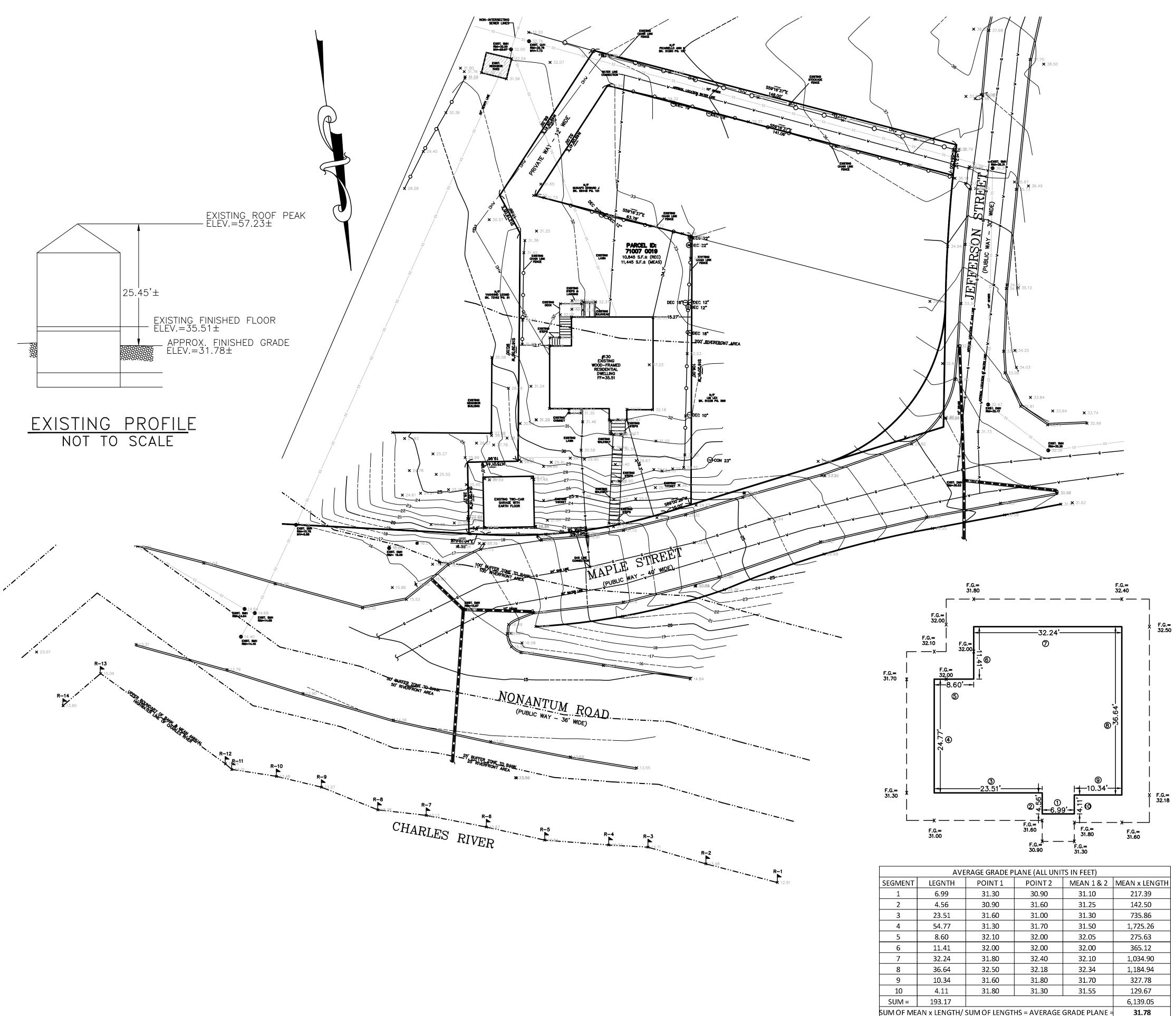
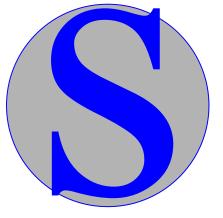
#### NOTES

- 1. INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY SPRUHAN ENGINEERING, P.C. AS OF 07/27/2022.
- 2. DEED REFERENCE: BOOK 28031, PAGE 81
  PLAN REFERENCE 1: PLAN BOOK 10368, PLAN 236
  MIDDLESEX COUNTY SOUTH DISTRICT REGISTRY OF
- 3. THIS PLAN IS NOT INTENDED TO BE RECORDED.
- 4. I CERTIFY THAT THE DWELLING SHOWN IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN OTHER AREAS, ZONE X, ON FLOOD HAZARD BOUNDARY MAP NUMBER 25017C0556E, IN COMMUNITY NUMBER: 250208, DATED 06/04/2010.
- 5. TOGETHER WITH A RIGHT TO USE IN COMMON WITH OTHERS ENTITLED THERETO A PRIVATE WAY OF TWELVE AND 13/100 (12.13) FEET WIDE, EXTENDING NORTHEASTERLY FROM THE END OF THE FIRST CITED PRIVATE WAY.
- 6. FIRST FLOOR ELEVATIONS ARE TAKEN AT THRESHOLD.
- 7. NO RESPONSIBILITY IS TAKEN FOR ZONING TABLE AS SPRUHAN ENGINEERING, P.C. 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.
- 8. THE ELEVATIONS SHOWN ARE ON A CITY OF NEWTON DATUM.
- 9. ZONING DISTRICT: MR2. NEW LOT.

LEGEND			
⊡	BOUND		
0	IRON PIN/PIPE		
<b>O</b>	STONE POST		
	TREE		
2	TREE STUMP		
9	SHRUBS/FLOWERS		
0	SIGN		
0	BOLLARD		
§	SEWER MANHOLE		
0	DRAIN MANHOLE		
<b>=</b>	CATCH BASIN		
<b>w</b>	WATER MANHOLE		
₩ ⊠	WATER VALVE		
₩ ₩	HYDRANT		
ĠV 	GAS VALVE		
Œ	ELECTRIC MANHOLE		
ELECTRIC HANDHOLE			
UTILITY POLE			
LIGHT POLE			
M MANHOLE			
<b>X</b> 148.00	SPOT GRADE		
TW	TOP OF WALL		
BW	BOTTOM OF WALL		
	EXISTING BUILDING		
	RETAINING WALL		
	STONE WALL		
· · · ·	FENCE		
	TREE LINE		
S	SEWER LINE		
D_	DRAIN LINE		
	WATER LINE		
G G	GAS LINE		
Е ——— Е ————	UNDERGROUND ELECTRIC LINE		
OHW	OVERHEAD WIRES		
145	CONTOUR LINE (MJR)		
146	CONTOUR LINE (MNR)		





# Spruhan Engineering, P.C.

80 JEWETT ST, (SUITE 2) NEWTON, MA 02458

Tel: 617-816-0722 Email:edmond@spruhaneng.com

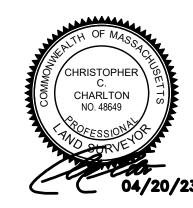
130 NONANTUM RD NEWTON MASSACHUSETTS

SURVEY PLAN

#### REVISION BLOCK

DESCRIPTION	DATE

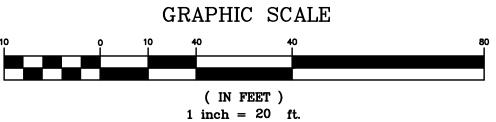
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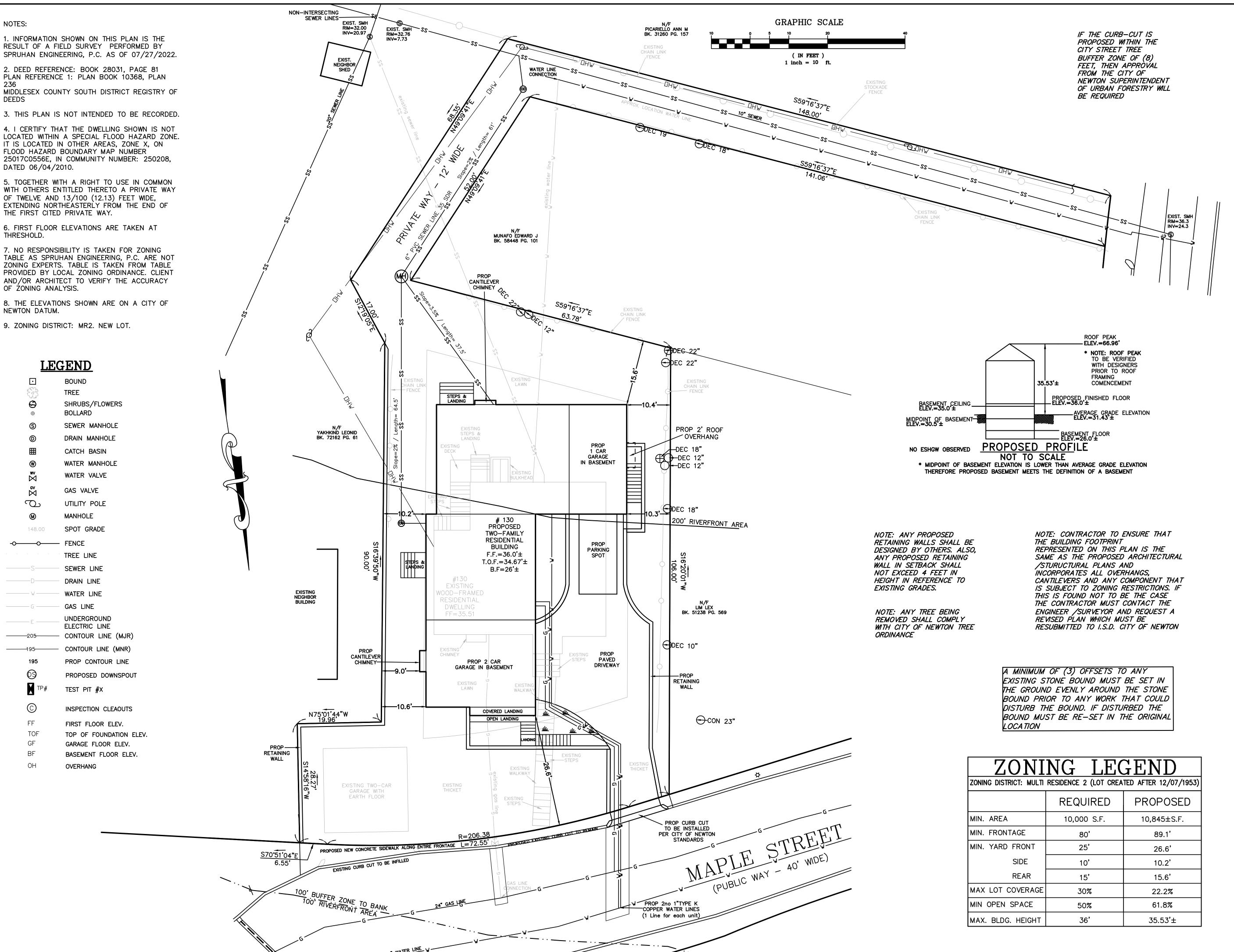


DATE:	04/20/2023
DRAWN BY:	M.G.
CHECKED BY:	c.c.
APPROVED BY:	E.S.

EXISTING CONDITIONS

SHEET 1 OF 1







# Spruhan Engineering, P.C.

80 JEWETT ST, (SUITE 1) NEWTON, MA 02458

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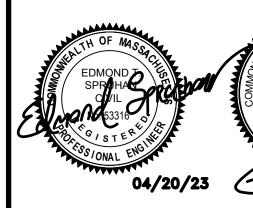
130 NONANTUM RD, NEWTON MASSACHUSETTS

CIVIL PLAN

#### REVISION BLOCK

DESCRIPTION	DATE

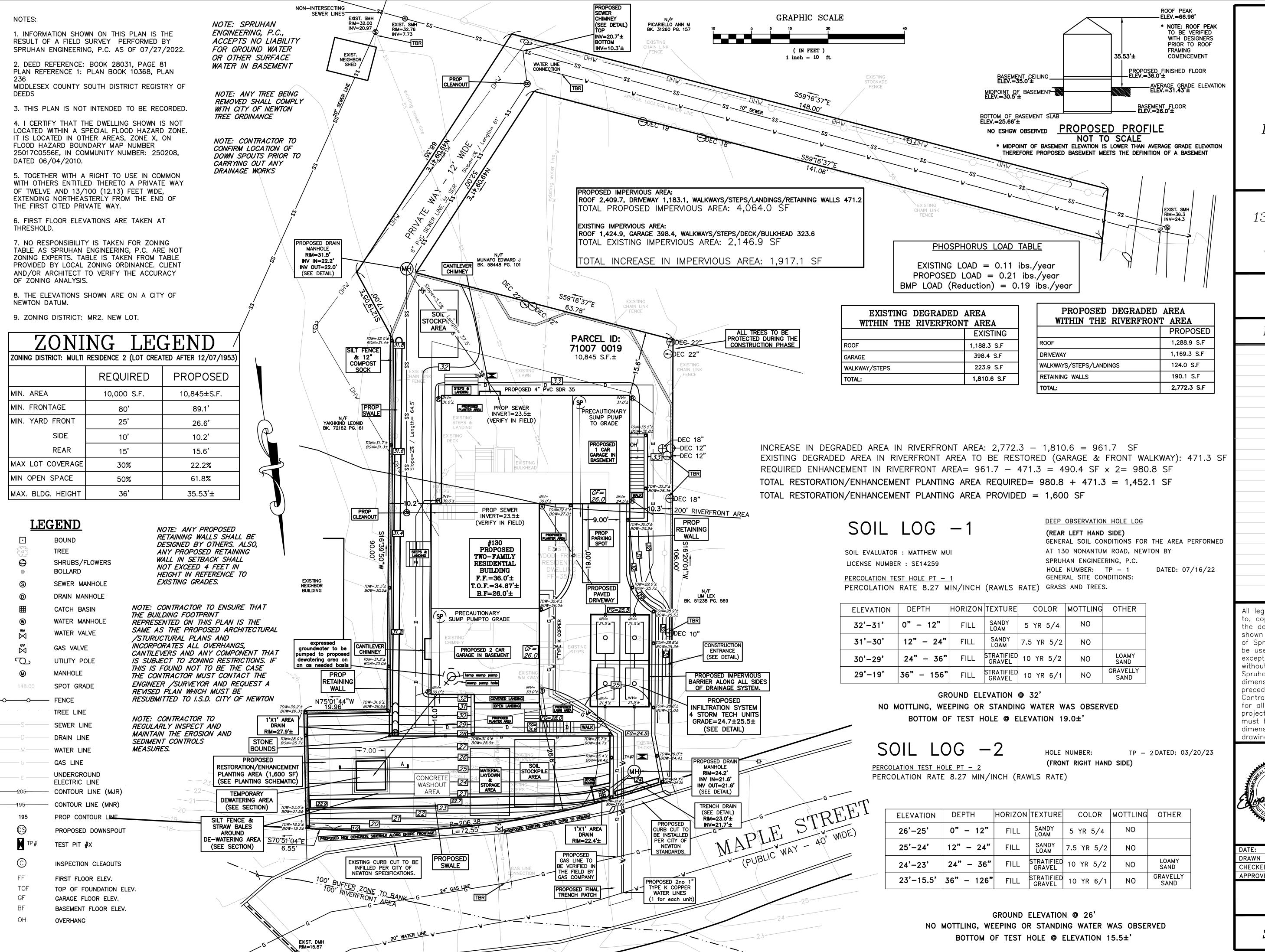
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APPROVED BY:	EDMOND SPRUHAN
CHECKED BY:	EDMOND SPRUHAN
DRAWN BY:	SEAN SPRUHAN
DATE:	04/20/2023

ZONING & MATERIALS
PLAN

SHEET 1 OF 5





Spruhan Engineering, P.C.

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Tel: 617-816-0722 Email:edmond@spruhaneng.com

130 NONANTUM RD, NEWTON MASSACHUSETTS

CIVIL PLAN

REVISION BLOCK

DESCRIPTION DATE

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DATE:	04/20/2023
DRAWN BY:	SEAN SPRUHAN
CHECKED BY:	EDMOND SPRUHAN
APPROVED BY:	EDMOND SPRUHAN

CHARLTON NO. 48649

CIVIL PLAN

SHEET 2 OF 5

- 1. ELEVATIONS REFER TO CITY OF NEWTON DATUM.
- 2. THIS PLAN IS THE RESULT OF AN INSTRUMENT SURVEY DONE ON THE GROUND ON JULY 27TH, 2022.
- 3. 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
- 4. 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
- 6. PROPOSED SEWER PIPE SHALL BE 6" PVC SDR 35. CONTRACTOR TO ENSURE SEWER LINE IS PITCHED AT AN EQUAL SLOPE OF BETWEEN 2% AND 10% FROM HOUSE TO MAIN CONNECTION.
- 7. PROPOSED WATER SERVICE SHALL BE 1" TYPE K COPPER.
- 8. ALL WORK SHALL BE SUBJECT TO THE INSPECTION BY AND APPROVAL OF THE CITY ENGINEER.
- 9. ALL WORK MUST BE DONE IN ACCORDANCE WITH "CITY OF NEWTON STANDARD SPECIFICATIONS" AND "CITY OF NEWTON CONSTRUCTION DETAILS", COPIES OF WHICH MAY BE OBTAINED AT THE ENGINEERING OFFICE. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF NEWTON ENGINEERING DEPARTMENT.
- 10. AS OF JANUARY 1, 2009, ALL TRENCH EXCAVATION CONTRACTORS SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, TO PROTECT THE PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES. TRENCH EXCAVATION PERMIT REQUIRED. THIS APPLIES TO ALL TRENCHES, BOTH ON PUBLIC AND/OR PRIVATE PROPERTY.
- 11. 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, NOTICE OF THE PROPOSED EXCAVATION TO THE FOLLOWING:
- a. SUCH PUBLIC UTILITY COMPANIES AS SUPPLY GAS, ELECTRICITY, AND TELEPHONE SERVICE IN THE CITY. b. SUCH PRIVATE COMPANIES AS PROVIDE CABLE TELEVISION SERVICE IN THE CITY. C. CITY OF NEWTON WATER & SEWER DEPARTMENT. SUCH NOTICE SHALL SET FORTH THE STREET NAME AND A REASONABLY
- THE CONTRACTOR MUST PROVIDE POLICE DETAILS, SCHEDULED 48 HOURS IN ADVANCE, FOR THE DIRECTION AND CONTROL OF TRAFFIC, AS REQUIRED BY THE CITY ENGINEER. ALL ROADS AFFECTED BY CONSTRUCTION SHALL ALWAYS REMAIN OPEN TO
- EMERGENCY VEHICLES. CONTRACTOR IS TO COORDINATE WITH POLICE AND FIRE DEPARTMENT TO ENSURE PUBLIC SAFETY. 13. NO WORK SHALL BE PERFORMED UNTIL THE NECESSARY PERMITS ARE OBTAINED FROM THE CITY OF NEWTON PUBLIC WORKS
- DEPARTMENT 14. ALL TRENCHES IN PAVED STREETS SHALL BE TEMPORARILY PATCHED WITH PAVEMENT OF EXISTING PAVEMENT THICKNESS OR AS
- DIRECTED BY THE CITY ENGINEERING INSPECTOR, LAID HOT AND MAINTAINED UNTIL THE PERMANENT PATCH IS INSTALLED. 15. WARNING SIGNS SHALL CONFORM TO 2020 MUTCD STANDARD HIGHWAY SIGNS.

SATISFIED. THE SYSTEM & UTILITIES MAY BE BACKFILLED

ACCURATE DESCRIPTION OF THE LOCATION OF THE EXCAVATION.

- 16. 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
- 17. IN CASES WHERE LEDGE OR BOULDERS ARE ENCOUNTERED, SPRUHAN ENGINEERING, P.C. WILL NOT BE RESPONSIBLE FOR THE
- 18. IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE DESIGN ENGINEER, AS WELL AS THE APPROVING AUTHORITIES,
- 19. THE ROOF RUNOFF FROM THE ROOF SURFACES SHALL BE COLLECTED BY GUTTERS AND DIRECTED TO THE STORM WATER DRAINAGE SYSTEM. CONTRACTOR TO CONFIRM LOCATION OF DOWNSPOUTS PRIOR TO CARRYING OUT ANY DRAINAGE WORKS. SURFACE WATER TO BE DIVERTED FROM ALL SIDES OF FOUNDATION WALL.
- 20. 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, SHOW DIMENSIONAL TIES FROM FIXED POINTS (FOUNDATION CORNERS) TO ALL SUBSURFACE COMPONENTS AS WELL AS FINAL GRADING. THE AS-BUILT PLAN MUST BE STAMPED, SIGNED, AND DATED BY THE ENGINEER OF RECORD.
- 21. THE APPLICANT WILL HAVE TO APPLY FOR STREET OPENING, UTILITIES CONNECTION, SIDEWALK CROSSING AND AN INSTALL CURB & SIDEWALK PERMIT WITH THE DPW PRIOR TO START OF WORK.
- 22. AFTER ALL ENGINEERING PERMITS ARE OBTAINED, THE CONTRACTOR NEEDS TO NOTIFY THE ENGINEERING DIVISION CONSTRUCTION INSPECTOR A MINIMUM OF <u>48-HOURS</u> IN ADVANCE AND SCHEDULE AN APPOINTMENT TO HAVE SITE UTILITIES AND STORMWATER COMPONENTS INSPECTED. THE SYSTEM & UTILITIES MUST BE FULLY EXPOSED FOR THE INSPECTOR. ONCE THE INSPECTOR IS
- 23. 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 UNINSPECTED BACKFILLED UTILITIES. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED PRIOR TO INSPECTIONS.
- 24. 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.)
- 25. THE EXISTING WATER SERVICE MUST BE COMPLETELY REMOVED FROM THE DWELLING TO THE CORPORATION AT THE MAIN. THE CORPORATION SHALL BE CAPPED, AND A NEW TAP SHALL BE MADE FOR THE NEW SERVICE. EACH PHASE OF THIS PROCESS MUST BE INSPECTED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. FAILURE TO HAVING THIS INSPECTION PERFORMED, MAY RESULT IN THE DELAY OR DENIAL OF A WATER SERVICE PERMIT.
- 26. THE EXISTING CESSPOOL ABANDONMENT MUST BE WITNESSED BY THE CITY OF NEWTON HEALTH DEPARTMENT PER REGULATIONS, THE REMAINING PORTIONS OF THE SERVICE MUST BE COMPLETELY REMOVED FROM THE CESSPOOL TO THE DWELLING. THE NEW SEWER SERVICE CONNECTION TO CITY MAIN SEWER MUST BE INSPECTED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. FAILURE TO HAVING THESE INSPECTIONS PERFORMED, MAY RESULT IN THE DELAY OR DENIAL OF A SEWER SERVICE PERMIT.
- THE EXISTING SEWER SERVICE MUST BE COMPLETELY REMOVED FROM THE DWELLING TO THE MAIN. THE REMOVAL, ALONG WITH THE NEW CONNECTION MUST BE INSPECTED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. FAILURE TO HAVING THESE INSPECTIONS PERFORMED, MAY RESULT IN THE DELAY OR DENIAL OF A SEWER SERVICE PERMIT.
- THE NEW SEWER SERVICE(S) AND/OR STRUCTURE(S) SHALL BE PRESSURE TESTED OR VIDEOTAPED AFTER FINAL INSTALLATION IS COMPLETE. METHOD OF FINAL INSPECTION SHALL BE DETERMINED SOLELY BY THE CONSTRUCTION INSPECTOR FROM THE CITY ENGINEERING DIVISION. THE SEWER SERVICE WILL NOT BE ACCEPTED UNTIL ONE OF THE TWO METHODS STATED ABOVE IS COMPLETED. A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL ALL PIPING AND STRUCTURES ARE TESTED AND
- 29. THE NEW WATER SERVICE SHALL BE INSTALLED IN CONJUNCTION WITH THE CITY OF NEWTON UTILITIES DIVISION. THE OWNER/CONTRACTOR MAY OBTAIN A WATER SERVICE APPLICATION BY CONTACTING THE UTILITIES DIVISION (617) 796-1640 OR BY VISITING THE CITY OF NEWTON WEBSITE AND CLICK THE LINK FOR PUBLIC WORKS / UTILITIES DIVISION. AFTER THE APPLICATION IS PAID IN FULL THE OWNER/CONTRACTOR SHALL FOLLOW THE INSTRUCTIONS PLAN NOTES MENTIONED AND FOLLOWING.
- 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 SOD, LOAM, 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
- 32. NO EXCAVATION IS ALLOWED WITHIN ANY CITY RIGHT-OF-WAY BETWEEN NOVEMBER 15<sup>TH</sup> AND APRIL 15<sup>TH</sup>. IF AN EMERGENCY EXISTS OR THERE ARE EXTENUATING CIRCUMSTANCES, APPLICANT MAY SEEK PERMISSION FOR SUCH WORK FROM THE CITY DPW COMMISSIONER VIA THE CITY ENGINEER. IF PERMISSION IS GRANTED, SPECIAL CONSTRUCTION STANDARDS WILL BE APPLIED. APPLICANT OR APPLICANT'S REPRESENTATIVE MUST CONTACT THE CITY OF NEWTON ENGINEERING DEPARTMENT PRIOR TO START OF
- 33. AT THE END OF CONSTRUCTION, ALL DRAINAGE STRUCTURES ARE TO BE CLEANED OF SILT, STONES AND OTHER DEBRIS.
- 34. 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.
- 35. EXCEPT FOR GAS SERVICES, ALL UTILITY TRENCHES WITHIN THE CITY OF NEWTON RIGHT-OF-WAY WILL BE BACK FILLED WITH TYPE IE (EXCAVATABLE) CONTROLLED DENSITY FILL AS SPECIFIED BY THE CITY OF NEWTON ENGINEERING SPECIFICATIONS. EXCAVATABLE FLOW FILL WITH EXTEND TO WITHIN 18" OF ROADWAY ASPHALT.
- 36. 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.
- 37. 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. 38. 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 39. APPROVAL OF THIS PLAN BY CITY OF NEWTON ENGINEERING DIVISION IMPLIES THAT THE PLAN MEETS THE MINIMAL DESIGN

RESPONSIBILITY FOR THE DESIGN(S) IN TERMS OF SUITABILITY FOR THE PARTICULAR SITE CONDITIONS OR OF THE

BE RE-SET OR REUSED WITHOUT REPLACEMENT.

STANDARDS OF THE CITY OF NEWTON. HOWEVER, THE ENGINEERING DIVISION MAKES NO REPRESENTATION AND ASSUMES NO

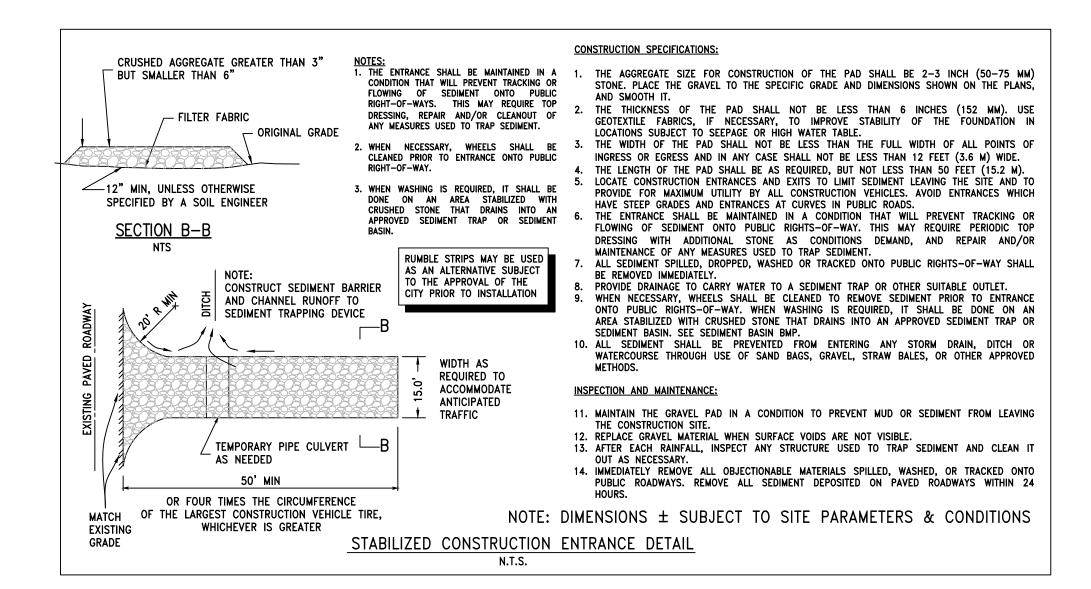
FUNCTIONABILITY OR PERFORMANCE OF ANY ITEMS CONSTRUCTED IN ACCORDANCE WITH THE DESIGN(S). THE CITY OF NEWTON ASSUMES NO LIABILITIES FOR DESIGN ASSUMPTION, ERRORS OR OMISSIONS BY THE ENGINEER OF RECORD. 40. PER CITY OF NEWTON ORDINANCE NO.B-42, COUNCIL ITEM #251-19, BUILDING SEWER, WATER SERVICE PIPE & SIDEWALK/CURB REPLACEMENT ORDINANCE. THE APPLICANT IS REQUIRED TO INSTALL/REPLACE SIDEWALK & CURB ALONG THE ENTIRE FRONTAGE. THIS SHALL INCLUDE APPROPRIATE TRANSITION TO ADJOINING CURBING & WALKWAYS, INCLUDING ACCESSIBLE CURB CUTS & OTHER ACCESS AS REQUIRED. THE ENGINEERING CONSTRUCTION INSPECTOR MAKES A DETERMINATION, BASED ON THE MATERIA

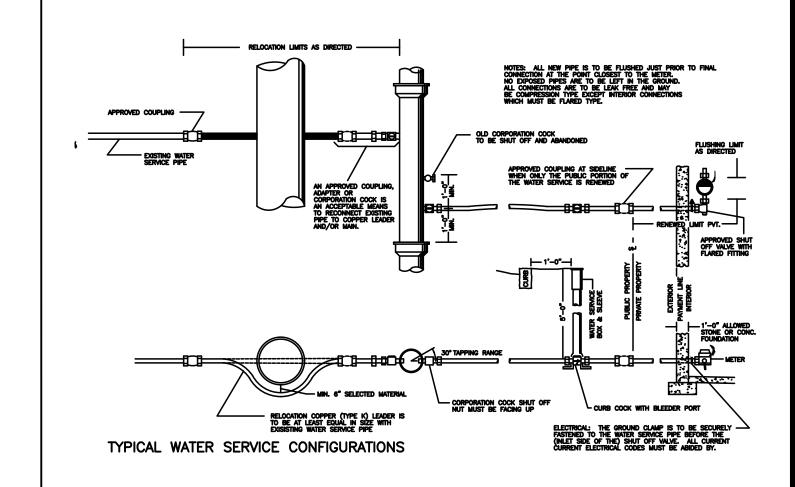
& MANNER OF CONSTRUCTION OF THE EXISTING SIDEWALK & CURB, THAT THE EXISTING SIDEWALK & CURB HAS THE ABILITY TO

- 41. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE DESIGN ENGINEER FOR INSPECTIONS AND AS-BUILT LOCATIONS; THE ENGINEER OF RECORD IS RESPONSIBLE FOR THE ON-SITE INSPECTION(S) OF ALL SUBSURFACE STRUCTURES. THIS INCLUDES BUT NOT LIMITED TO DRAINAGE, UTILITIES (INCLUDING SEWER PIPE SLOPE), ROOF LEADER COLLECTION SYSTEM, TRENCH DRAINS, SYSTEM(S) BEING INSTALLED. -CONTRACTOR TO NOTIFY ENGINEER BEFORE

  BACKFILL OR SIGN OFF CANNOT OCCUR WITHOUT RE-EXCAVATION
- 42. PLEASE SEE SECTION 6-C REQUIREMENT #6 OF THE STORMWATER MANAGEMENT AND EROSION CONTROL RULES & REGULATIONS PAGE 11 OF 17, POST CONSTRUCTION OPERATION AND MAINTENANCE PLAN (O&M). THE O & M PLAN MUST BE RECORDED AT THE APPROPRIATE REGISTRY OF DEEDS AND THAT PROOF OF RECORDING MUST BE PROVIDED TO THE ENGINEERING DIVISION PRIOR TO THE RECOMMENDATION OF THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- 43. 5 YEAR MORATORIUM IF AT TIME OF CONSTRUCTION THE ROADWAY IS UNDER A 5 YEAR MORATORIUM, THE ROADWAY MUST BE MILLED & PAVED GUTTER—TO—GUTTER FOR A DISTANCE OF 25 FEET IN EACH DIRECTION FROM THE OUTERMOST TRENCHES OR AS DIRECTED BY THE ENGINEERING INSPECTOR.

NOTE: IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO CONTACT THE ENGINEER OF RECORD FOR ALL INSPECTIONS OUTLINED IN NOTE 41 ON THIS PLAN





GROUND SURFACE

**ELEVATION VIEW** 

6" 45" ELBOW (TYP

<sup>1</sup>8"x 6" PVC 45" WYE (TYP) ANGLE AS REQUIRED



80 JEWETT ST, (SUITE 1)

NEWTON, MA 02458 Tel: 617-816-0722 Email:edmond@spruhaneng.com

130 NONANTUM RD, NEWTON *MASSACHUSETTS* 

CIVIL PLAN

# REVISION BLOCK



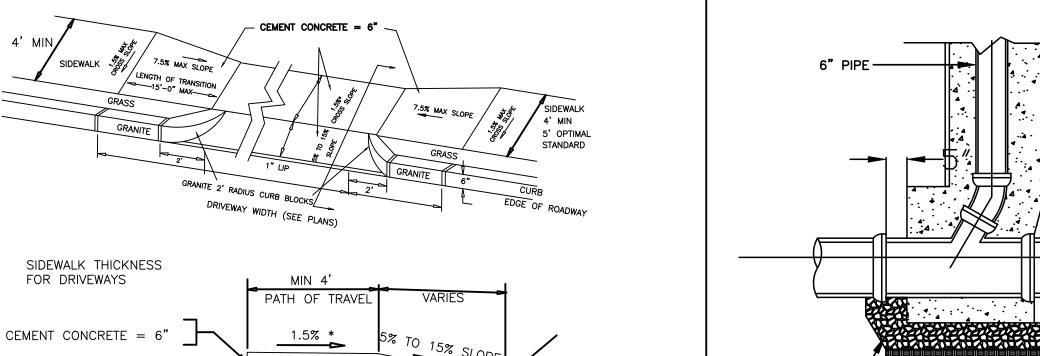
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DATE:	04/20/2023
DRAWN BY:	SEAN SPRUHAN
CHECKED BY:	EDMOND SPRUHAN
APPROVED BY:	EDMOND SPRUHAN

DETAIL SHEET

SHEET 3 OF 5

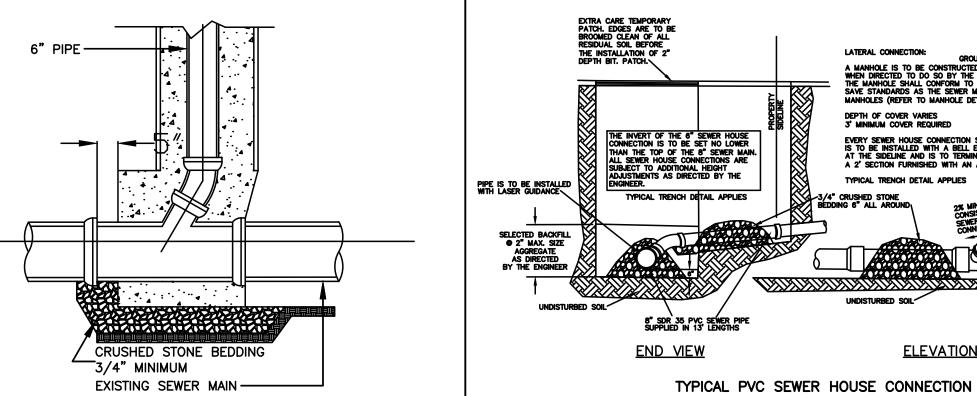


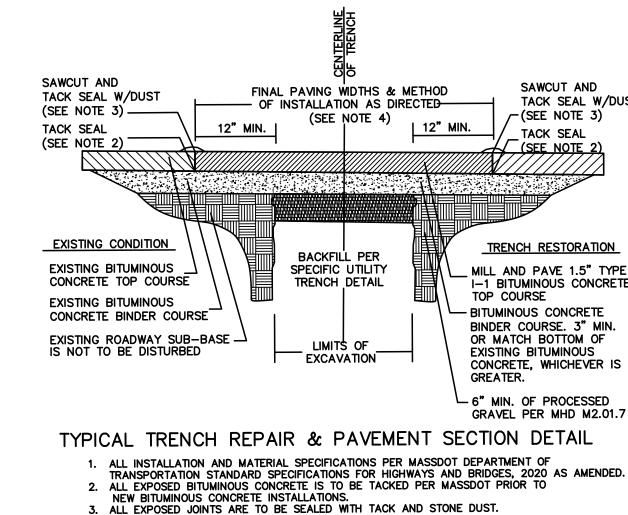
**★**ROADWAY

DRIVEWAY

FOUNDATION

SECTION A-A TYPICAL SEWER CONFIGURATION \* TOLERANCE FOR CONSTRUCTION +/- 0.5%

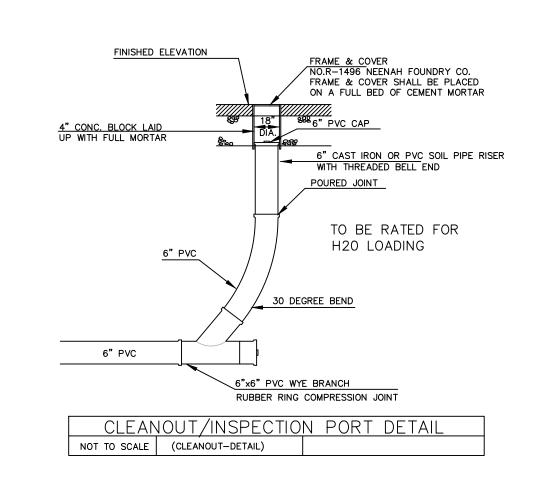




MACHINE/BOX SPREADER WHEN & AS DIRECTED BY THE CITY OF NEWTON.

5. SUPER PAVE FOR PAVEMENT

UNPAVED PAVED SEE PLANS FOR FINA SAWCUT AND RESTORATION ELEMENTS TACK SEAL W/DUST EXISTING GROUND ←(SEE NOTE 3) TACK SEAL (SEE NOTE 2 TYPE A GRAVEL -CONTROLLED DENSITY FILLED (C.D.F.) TRENCH RESTORATION MILL AND PAVE 1.5" TYPE BEDDING & PROTECTION ZONE - I-1 BITUMINOUS CONCRETE PER SPECIFIC UTILITY TRENCH DETAIL - BITUMINOUS CONCRETE BINDER COURSE. 3" MIN WHEN LEDGE IS ENCOUNTERED OR MATCH BOTTOM OF INCREASE FROM 18" TO 24" UNDISTURBED NATURAL MATERIAL EXISTING BITUMINOUS CONCRETE, WHICHEVER IS LEDGE OR UNSUITABLE MATERIAL \* - 6" MIN. OF PROCESSED GRAVEL PER MHD M2.01.7 \* SUITABILITY OF MATERIAL IS TO BE DETERMINED BY THE CITY OF NEWTON NOTE: TRENCHBOX OR SHEETING SHALL MEET OSHA STANDARDS. TYPICAL C.D.F. (CONTROL DENSITY FILL) 4. ANY TOP COURSE APPLIED AT A WIDTH OF 6' WIDE OR GREATER IS TO BE PLACED BY TRENCH SECTION



8" MIN —

DENSE GRADE

DRIVEWAY APRON WITH CORNER BLOCKS

### ROOF & DRIVEWAY DRAINAGE SYSTEM

	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.
С	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.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	OR	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).
В	EMBEDMENT STONE: FILL 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 (20-50 mm)	AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
А	FOUNDATION STONE: FILL 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 (20-50 mm)	AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. 23

# 4 STORM TECH UNITS

GRADE FROM=24.7'± 25.5'±

(150 mm) MIN

DESIGNED FOR 100 YEAR STORM EVENT FOR ALL RUNOFF FROM PROPOSED *IMPERVIOUS* AREAS SHOWN. CONTRACTOR SHALL NOT CONNECT SUMP PUMP TO THE APPROVAL FROM **ENGINEERING** DEPARTMENT.

PROPOSED **IMPERVIOUS** 

BARRIER ALONG

ALL SIDES OF

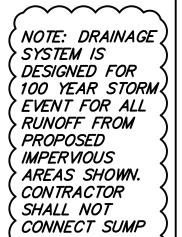
STORAGE SYSTEM

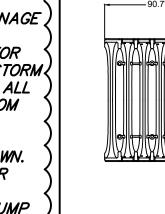
FIRESTONE POND **GUARD 45 MIL** 

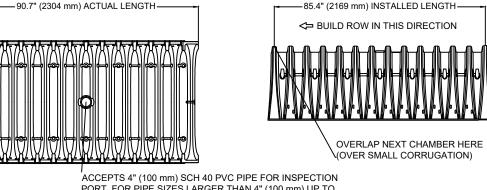
EPDM LINE (OR

EQUAL)

NOTE: DRAINAGE SYSTEM IS SYSTEM WITHOUT

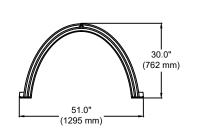






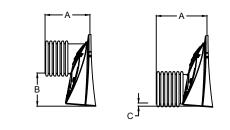
SC-740 TECHNICAL SPECIFICATION

PORT. FOR PIPE SIZES LARGER THAN 4" (100 mm) UP TO 10" (250 mm) USE INSERTA TEE CONNECTION CENTERED ON A CHAMBER CREST CORRUGATION



51.0" X 30.0" X 85.4" (1295 mm X 762 mm X 2169 mm) MINIMUM INSTALLED STORAGE<sup>4</sup> 74.9 CUBIC FEET

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



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	Α	В	С
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	
SC740EPE06B / SC740EPE06BPC	0 (130 11111)	10.9 (277 11111)		0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	
SC740EPE08B / SC740EPE08BPC	] 0 (200 11111)	12.2 (31011111)		0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm) 13.4" (340 mm)	13 /l" (3/10 mm)	14.5" (368 mm)	
SC740EPE10B / SC740EPE10BPC		13.4 (340 11111)		0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm) 14.7" (373 mm)	1/1 7" (373 mm)	12.5" (318 mm)	
SC740EPE12B / SC740EPE12BPC		14.7 (3/3/11111)		1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm) 18.4" (467 mm)	9.0" (229 mm)		
SC740EPE15B / SC740EPE15BPC	13 (3/311111)	10.4 (407 11111)		1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	
SC740EPE18B / SC740EPE18BPC	10 (430 11111)	19.7 (300 11111)		1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)		0.1" (3 mm)

\* 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

THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT

PERIMETER STONE 2.2'± TO 3.0'± TO GRADE 18" MIN TO PAVEMENT INVERT IN =  $21.5'\pm$ OP OF STONE=19.5'± EXCAVATION WALL\_ (CAN BE SLOPED OR VERTICAL) BOTTOM OF STONE=17.5'±

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"

SUBGRADE SOILS

. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL

SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER

. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE

4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.

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

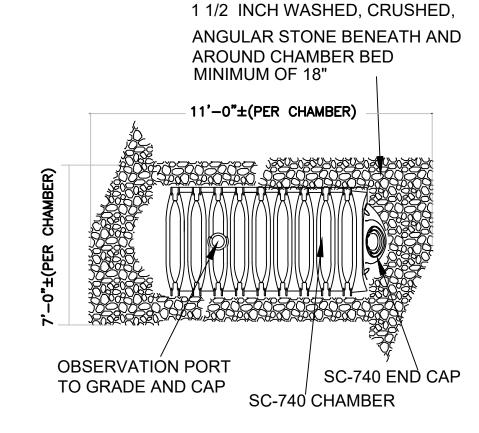
ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL

#### STORMTECH GENERAL NOTES

STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.

ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE ALL

- 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
- 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.



STORMTECH SC-740 CHAMBER SYSTEM PLAN VIEW DETAIL NOT TO SCALE

18" OF DENSE GRADED

SEE PLANS

FOR FINAL GRADING

TO 95% MAX. DRY DENSITY

TYPE-A GRAVEL BORROW

PROTECTION ZONE, SAND OR TYPE-C GRAVEL BORROW COMPACTED AS SPECIFIED

ABOVE. MAXIMUM STONE

COMPACTED CRUSHED STONE BEDDING AGAINST LEDGE 1 1/2" MAX. STONE SIZE

WHEN LEDGE IS ENCOUNTERED INCREASE FROM 18" TO 24"

> LEDGE OR MATERIAL

\* SUITABILITY OF MATERIALS IS TO BE DETERMINED BY THE CITY OF NEWTON

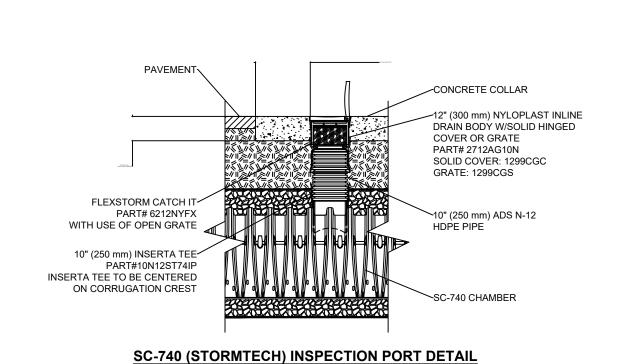
1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0

NOTE: TRENCHBOX OR SHEETING SHALL MEET OSHA STANDARDS.

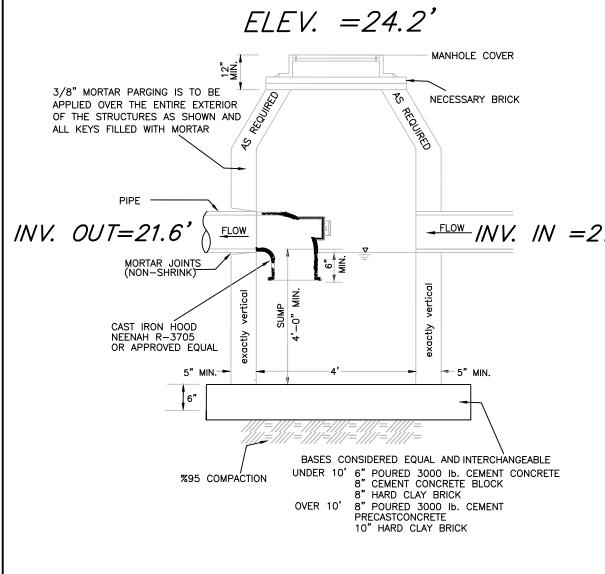
TYPICAL WATER TRENCH DETAIL

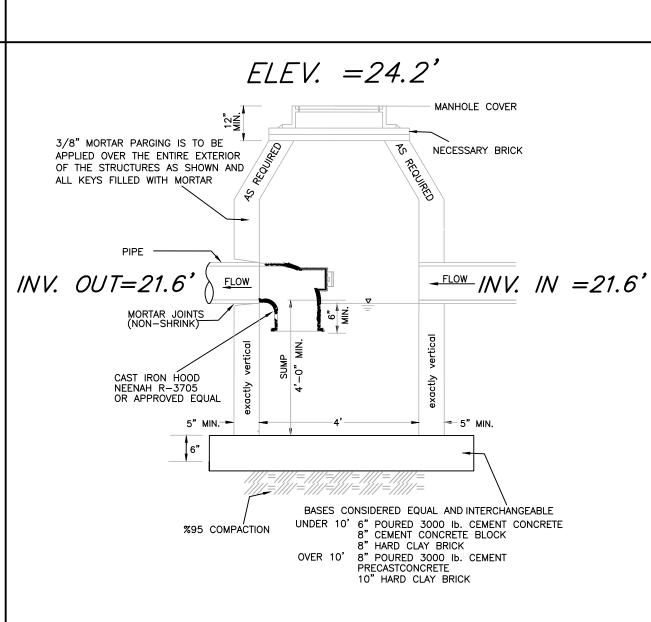
2. CRUSHED STONE BEDDING SHALL CONFORM TO MASSDOT SPECIFICATION M2.01.

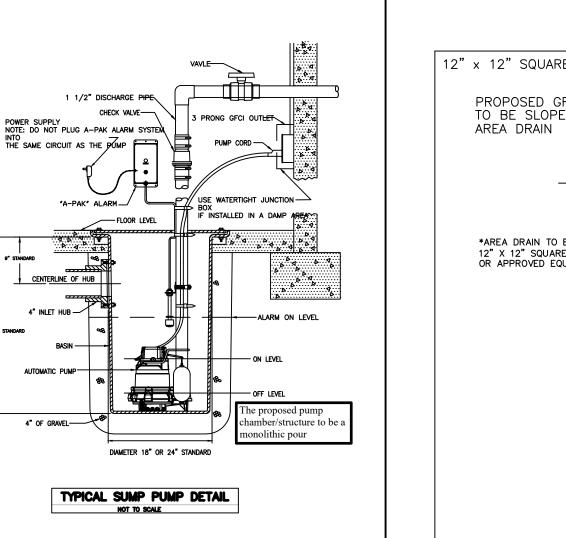
TYPE-A GRAVEL BORROW COMPACTED











A-A

SEGMENT

3

5

6

7

8

SUM =

SILT FENCE WITH

STRAW BALES

LEGNTH

45.20

26.00

21.70

47.80

15.60

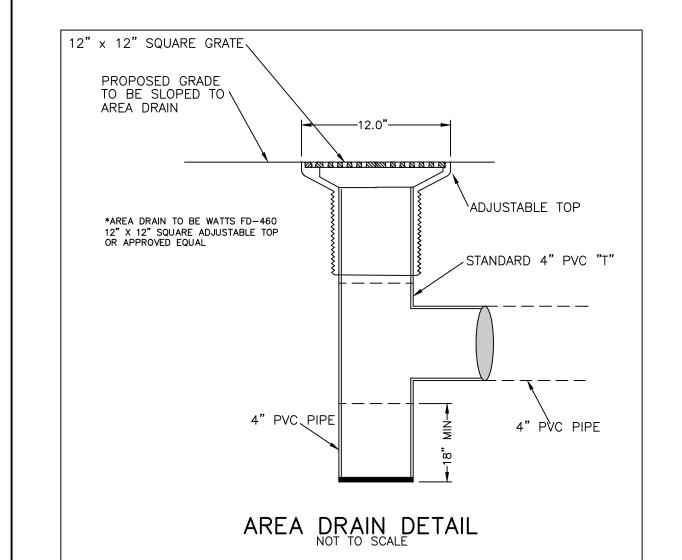
10.40

45.80

26.00

238.50

CARRIED OUT.
3. PUMPS TO BE CONNECTED TO EMERGENCY BACKUP GENERATOR





Spruhan Engineering, P.C.

80 JEWETT ST, (SUITE 1)

NEWTON, MA 02458

Tel: 617-816-0722 Email:edmond@spruhaneng.com

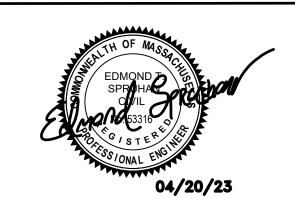
130 NONANTUM RD, NEWTON*MASSACHUSETTS* 

CIVIL PLAN

# REVISION BLOCK

BY	DESCRIPTION	DATE

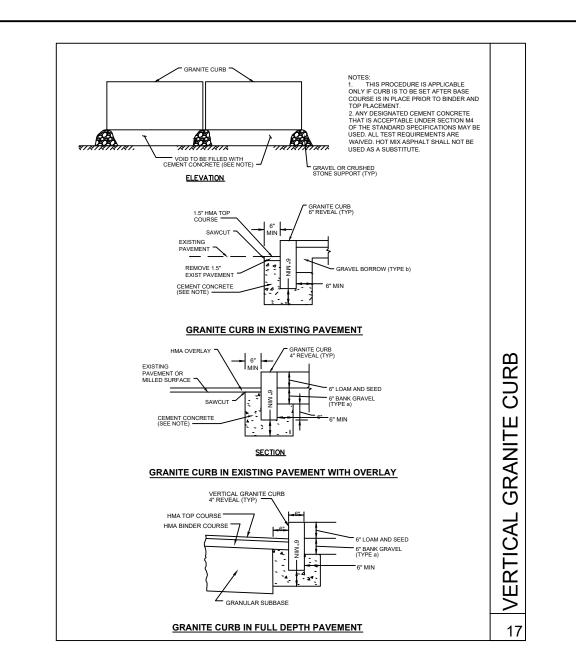
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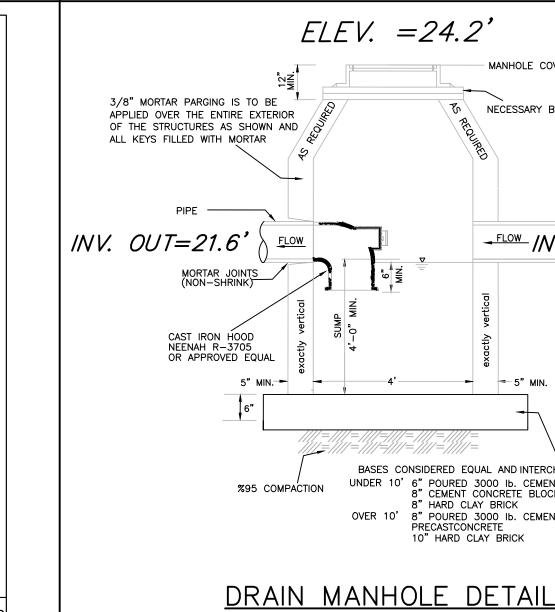


DATE:	04/20/2023
DRAWN BY:	SEAN SPRUHAN
CHECKED BY:	EDMOND SPRUHAN
APPROVED BY:	EDMOND SPRUHAN

DETAILS SHEET

SHEET 4 OF 5





*30.0* 

AVERAGE GRADE PLANE

**SECTION** 

AVERAGE GRADE PLANE (ALL UNITS IN FEET)

POINT 2

32.90

32.50

33.00

26.30

31.90

29.70

31.50

31.80

AVERAGE GRADE CALCULATION

POINT 1

32.20

32.90

30.00

32.50

31.90

32.60

31.30

31.80

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

STRAW BALES

-TEMPORARY

32.55

32.70

31.50

29.40

31.90

31.15

31.40

31.80

**DEWATERING AREA** 

MEAN 1 & 2 | MEAN x LENGTH

1,471.26

850.20

683.55

1,405.32

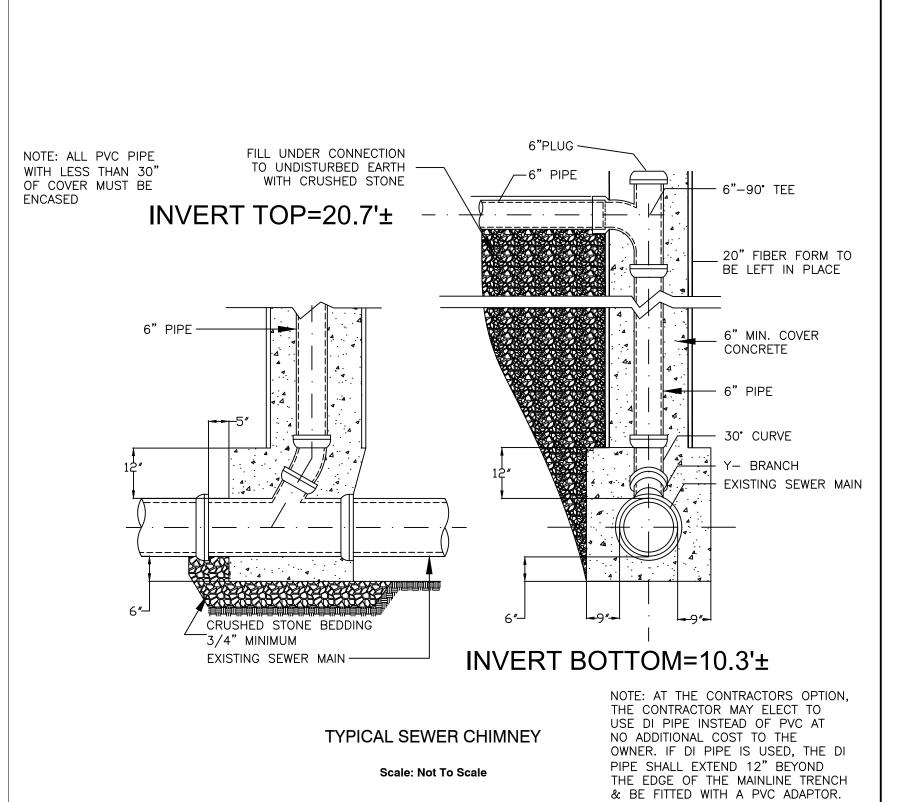
497.64

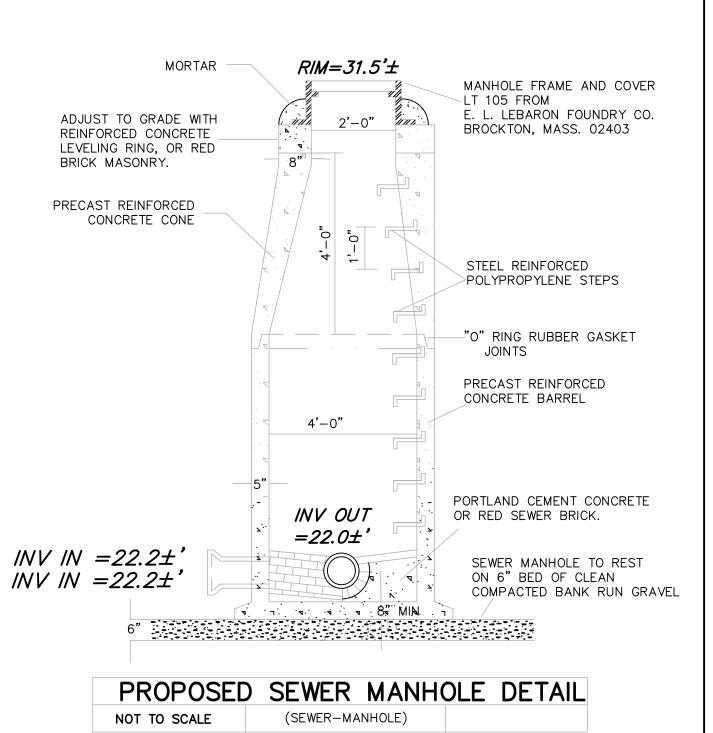
323.96

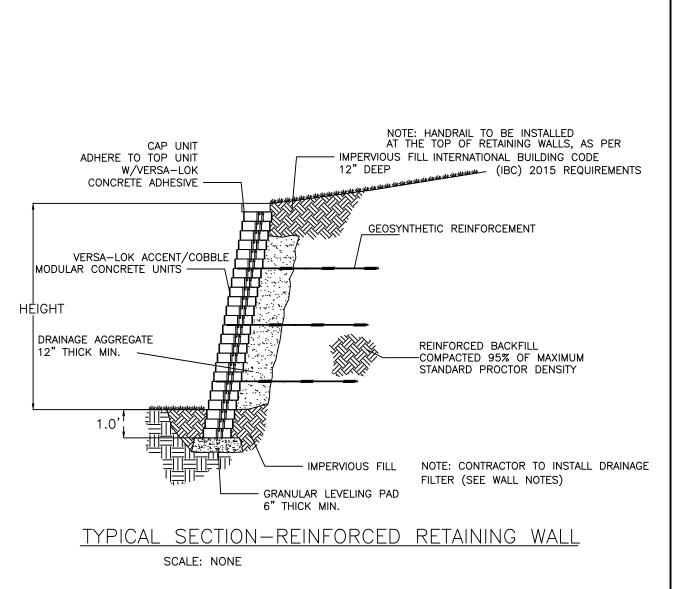
1,438.12

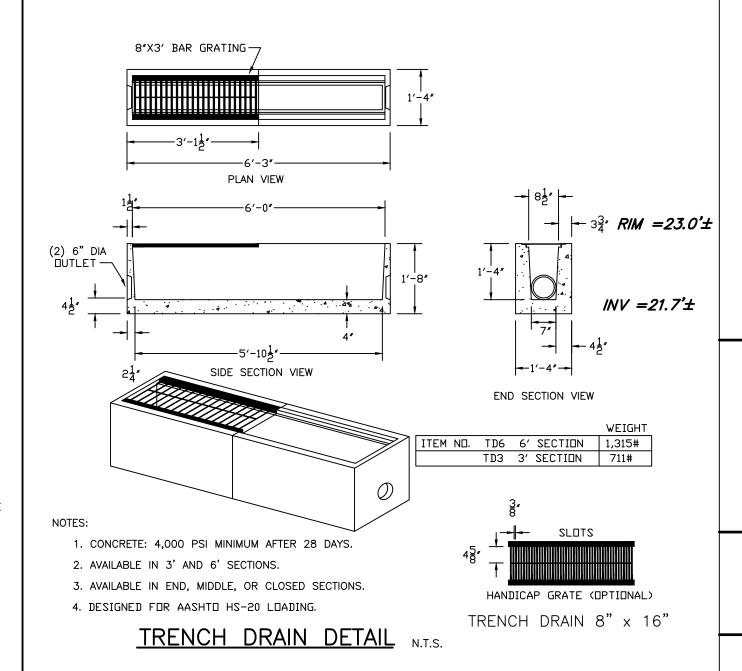
826.80

7,496.85











Spruhan Engineering, P.C.

> 80 JEWETT ST, (SUITE 1) NEWTON, MA 02458 Tel: 617-816-0722

Email:edmond@spruhaneng.com

130 NONANTUM RD, NEWTON MASSACHUSETTS

CIVIL PLAN

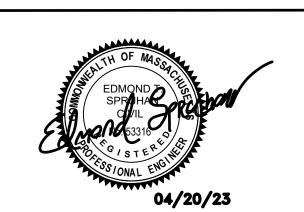
# REVISION BLOCK

DESCRIPTION

BY

DATE

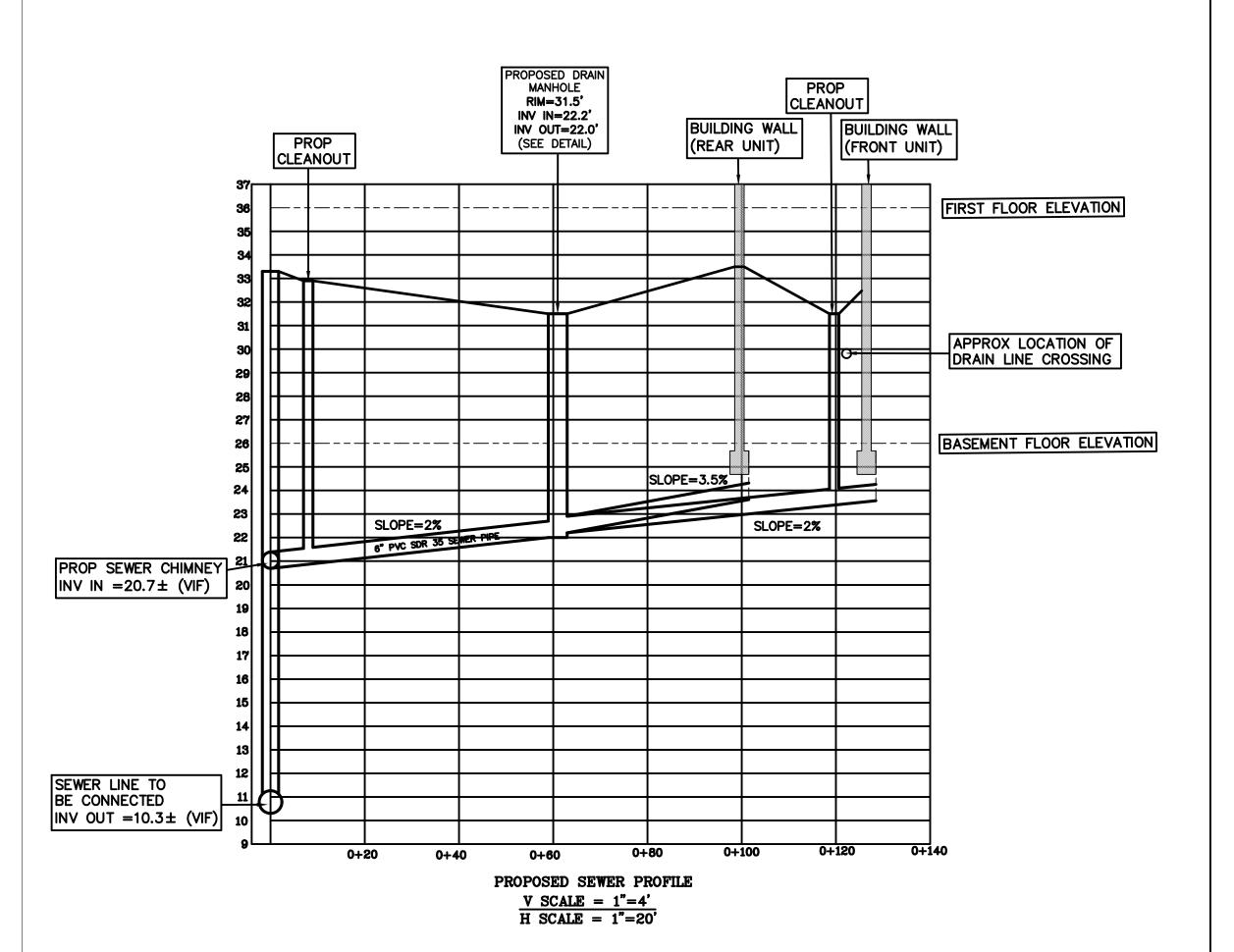

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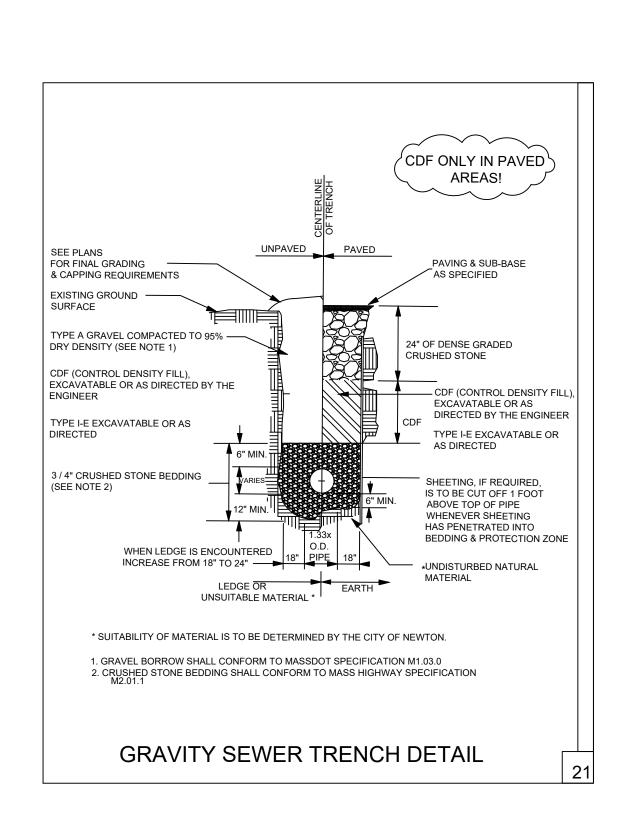


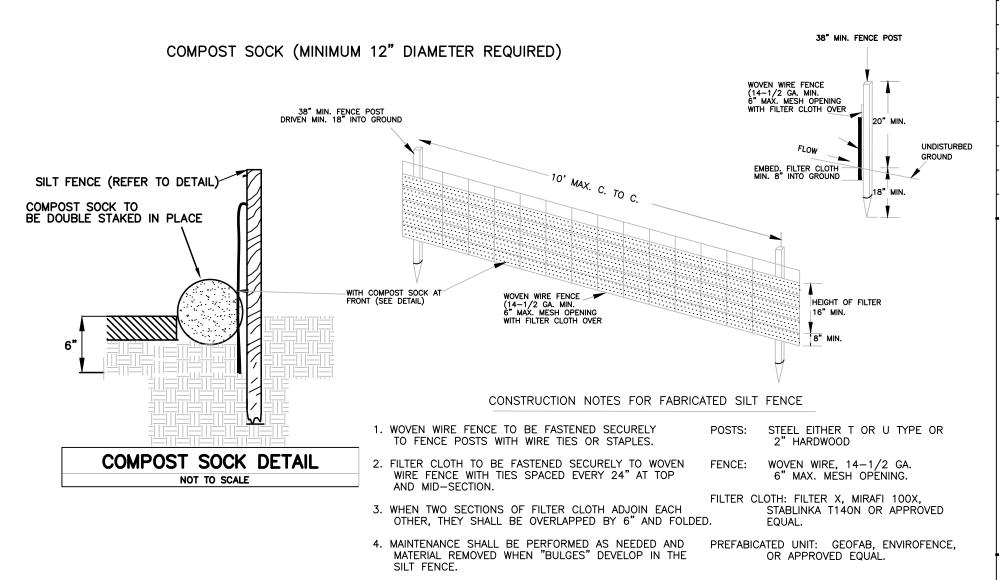
DATE:	04/20/2023
DRAWN BY:	SEAN SPRUHAN
CHECKED BY:	EDMOND SPRUHAN
APPROVED BY:	EDMOND SPRUHAN

DETAILS SHEET

SHEET 5 OF 5







SILT FENCE DETAIL