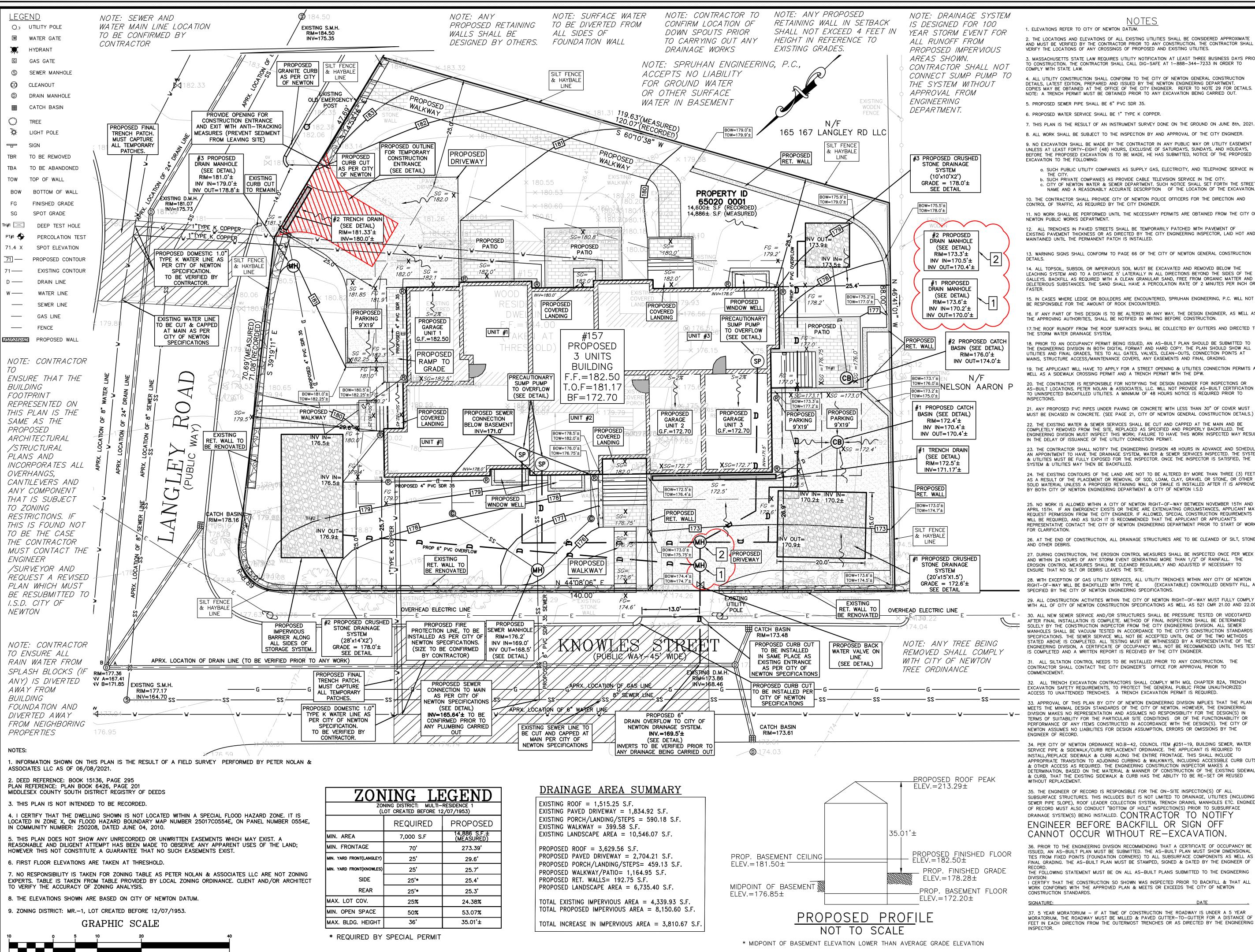
LEGEND  BOUND	EXISTING S.M.H.  RIM=184.50 INV=175.35
O IRON PIN/PIPE	
STONE POST  TREE	N/F 165 167 LANGLEY RD LLC
TREE STUMP  SHRUBS/FLOWERS	182.33 Marian Friedrick Control of the Control of t
SIGN BOLLARD	EXISTING WODEN FENCE  POST  182.35  EXISTING WODEN FENCE  PAVED DRIVEWAY
© SEWER MANHOLE  DRAIN MANHOLE	X 181.16 X 181.16 X 181.10 X 1
CATCH BASIN  W WATER MANHOLE	181.24
WATER VALVE HYDRANT	EXISTING PAVED DRIVEWAY  ** EXISTING WALKWAY  ** EXISTING WALKWAY  ** EXISTING WALKWAY  ** EXISTING WALKWAY  ** EXISTING ** WALKWAY  ** TWO 5.73
GAS VALVE  (E) ELECTRIC MANHOLE	Existing D.M.H.  RIM=181.07  *** 180.53  *** 180.53  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51  *** 180.51
ELECTRIC HANDHOLE	** 181.39 *
APRX. LOC OF WATER CONNECT	STEPS
X148.00 SPOT GRADE × 180.76	EXISTING EXISTING
TW TOP OF WALL  BW BOTTOM OF WALL	EXISTING COVERED COVER
EXISTING BUILDING  RETAINING WALL	F.F.=184.00  TAKEN AT
STONE WALL  — O FENCE	THRESHOLD)  THRESHOLD)  EXISTING STEPS:
TREE LINE  SEWER LINE	VALUE 1/3 1/3 1/3 1/3 1/3 1/3 1/3 1/3 1/3 1/3
DRAIN LINE WATER LINE	The state of the s
GAS LINE UNDERGROUND ELECTRIC LINE	EXISTING N/F NELSON AARON P
OHW—OHW—OVERHEAD WIRES  ——145—CONTOUR LINE (MJR)	179.44 175.56 175.56
146 CONTOUR LINE (MNR)	EXISTING WALKWAY  Y9.20  X 178.57  EXISTING PAVED DRIVEWAY  X 178.57  EXISTING WALKWAY  WALKWAY
	CATCH BASIN RIM=178.16
6	× 178.87  × 174.84  174.84  174.84  4.55
<b>×</b> 17	EXISTING STONE WALL  7.9 WALL  7.9 WALL  7.9 WALL
	N 44'08'06" E  N 44'08'06" E  X 175.05  X 175.07
	EXISTING STONE WALL STONE WALL E STONE WALL
	KNOWLES STREET  EXISTING D.M.H. RIM=173.86  EXISTING D.M.H. RIM=173.86
	APRX. LOCATION OF DRAIN LINE (TO BE VERIFIED PRIOR TO ANY WORK)    APRX. LOCATION OF DRAIN LINE (TO BE VERIFIED PRIOR TO ANY WORK)    APRX. LOCATION OF DRAIN LINE (TO BE VERIFIED PRIOR TO ANY WORK)
	EXISTING S.M.H. RIM=177.17 INV B=171.85    FXISTING S.M.H. RIM=177.17   RIM=177.17
	APRX. LOCATION OF 6" WATER LINE W
	CONNECTION  RIM=173.61  × 174.74  × 174.74  × 174.74  × 174.74
	NOTES:  EXISTING ROOF PEAK  1. INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC  AS OF 06 (08 (2021)
	AS OF 06/08/2021.  2. DEED REFERENCE: BOOK 15136, PAGE 295 PLAN REFERENCE: PLAN BOOK 6426, PAGE 201
CDADUIC SCALE	MIDDLESEX COUNTY SOUTH DISTRICT REGISTRY OF DEEDS  3. THIS PLAN IS NOT INTENDED TO BE RECORDED.  SCALE  1"=10'  1"=10'
GRAPHIC SCALE	4. 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 25017C0554E, ON PANEL NUMBER 0554E, IN COMMUNITY NUMBER: 250208, DATED  UNE 04, 2010.  EXISTING FINISHED FLOOR ELEV.=184.00±  SHFT.  1.5.7.1.0.N.O.L.T.V.D.O.0.D.  SHFT.  1.5.7.1.0.N.O.L.T.V.D.O.0.D.  SHFT.  1.5.7.1.0.N.O.L.T.V.D.O.0.D.  1.5.7.1.0.
( IN FEET ) 1 inch = 10 ft.	5. 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  APPROX. FINISHED GRADE  BASED ON BUILDING CORNER SHOTS
	6. FIRST FLOOR ELEVATIONS ARE TAKEN AT THRESHOLD.
	7. 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.  TAKEN FOR ZONING TABLE AS PETER NOLAN & ASSOCIATES LLC ARE NOT ZONING EXPERTS. TABLE IS  LXIS IING CONDITIONS  LXIS IING CONDITIONS  DRAWN BY
PETER NOLAN & ASSOCIATES LLC SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, OR PROCEDURES UTILIZED BY THE CONTRACTOR, NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES; OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORKING ACCORDANCE WITH THE CONTRACT DOCUMENTS.  THE EXTENT OF PETER NOLAN & ASSOCIATES LIABILITY FOR THIS PLAN IS LIMITED TO THE EXTENT OF ITS FEE LESS THIRD PARTY COST	8. THE ELEVATIONS SHOWN ARE BASED ON CITY OF NEWTON DATUM.  9. ZONING DISTRICT: MR1, LOT CREATED BEFORE 12/07/1953.    ASSOCIATES LLC   PETER NOLAN & ASSOCIATES LLC   LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS
COPYRIGHT 2021 PETER NOLAN & ASSOCIATES LLC  All Rights Reserved  NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE, WITHOUT THE PRIOR WRITTEN PERMISSION OF PETER NOLAN & ASSOCIATES LLC ANY MODIFICATIONS TO THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF PETER NOLAN & ASSOCIATES LLC SHALL RENDER IT INVALID AND UNUSABLE.	80 JEWETT STREET, SUITE 1, NEWTON MA 02458  APPD BY PHONE: 857 891 7478/617 782 1533 FAX: 617 202 5691  EMAIL: pnolan@pnasurveyors.com
MODIFICATIONS TO THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF PETER NOLAN & ASSOCIATES LLC SHALL RENDER IT INVALID AND UNUSABLE.	LMAIL. Pholanephasurveyors.com



( IN FEET ) 1 inch = 10 ft.

2. 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.

3. 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. 4. ALL UTILITY CONSTRUCTION SHALL CONFORM TO THE CITY OF NEWTON GENERAL CONSTRUCTION

NOTE: A TRENCH PERMIT MUST BE OBTAINED PRIOR TO ANY EXCAVATION BEING CARRIED OUT. 5. PROPOSED SEWER PIPE SHALL BE 6" PVC SDR 35.

7. THIS PLAN IS THE RESULT OF AN INSTRUMENT SURVEY DONE ON THE GROUND ON JUNE 8th, 2021 8. ALL WORK SHALL BE SUBJECT TO THE INSPECTION BY AND APPROVAL OF THE CITY ENGINEER. 9. 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

a. SUCH PUBLIC UTILITY COMPANIES AS SUPPLY GAS, ELECTRICITY, AND TELEPHONE SERVICE IN

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 ACCURATE DESCRIPTION OF THE LOCATION OF THE EXCAVATION.

10. THE CONTRACTOR SHALL PROVIDE CITY OF NEWTON POLICE OFFICERS FOR THE DIRECTION AND CONTROL OF TRAFFIC, AS REQUIRED BY THE CITY ENGINEER. 11. NO WORK SHALL BE PERFORMED UNTIL THE NECESSARY PERMITS ARE OBTAINED FROM THE CITY O

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.

13. WARNING SIGNS SHALL CONFORM TO PAGE 66 OF THE CITY OF NEWTON GENERAL CONSTRUCTION

14. 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 15. IN CASES WHERE LEDGE OR BOULDERS ARE ENCOUNTERED, SPRUHAN ENGINEERING, P.C. WILL NOT

16. 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. 17.THE ROOF RUNOFF FROM THE ROOF SURFACES SHALL BE COLLECTED BY GUTTERS AND DIRECTED TO

18. 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

19. 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. WILL NOT PROVIDE AS-BUILT CERTIFICATION TO UNINSPECTED BACKFILLED UTILITIES. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED PRIOR TO 21. ANY PROPOSED PVC PIPES UNDER PAVING OR CONCRETE WITH LESS THAN 30" OF COVER MUST

MUST BE ENCASED IN CONCRETE. (SEE PAGE 21, CITY OF NEWTON GENERAL CONSTRUCTION DETAILS.) 22. 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.

23. 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.

24. 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 I.S.D

25. 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

26. AT THE END OF CONSTRUCTION, ALL DRAINAGE STRUCTURES ARE TO BE CLEANED OF SILT, STONES 27. 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. 28. 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.

WITH ALL OF CITY OF NEWTON CONSTRUCTION SPECIFICATIONS AS WELL AS 521 CMR 21.00 AND 22.00 30. ALL NEW SEWER SERVICE AND/OR STRUCTURES 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. ALL SEWER MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE TO THE CITY'S CONSTRUCTION STANDARDS & SPECIFICATIONS. THE SEWER SERVICE WILL NOT BE ACCEPTED UNTIL ONE OF THE TWO METHODS STATED ABOVE IS COMPLETED. ALL TESTING MUST BE WITHNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION, A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL THIS TEST IS COMPLETED AND A WRITTEN REPORT IS RECEIVED BY THE CITY ENGINEER.

CONTRACTOR SHALL CONTACT THE CITY ENGINEER'S OFFICE FOR APPROVAL PRIOR TO

32. 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.

33. APPROVAL OF THIS PLAN BY CITY OF NEWTON FNGINFFRING 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 ERMS 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.

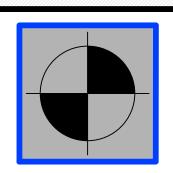
SERVICE PIPE & SIDEWALK/CURB REPLACEMENT ORDINANCE. THE APPLICANT IS REQUIRED TO INSTALL/REPLACE SIDEWALK & CURB ALONG THE ENTIRE FRONTAGE. THIS SHALL INCLUDE APPROPRIATE TRANSITION TO ADJOINING CURBING & WALKWAYS, INCLUDING ACCESSIBLE CURB CUT & OTHER ACCESS AS REQUIRED. THE ENGINEERING CONSTRUCTION INSPECTOR MAKES A DETERMINATION, BASED ON THE MATERIAL & MANNER OF CONSTRUCTION OF THE EXISTING SIDEWALK & CURB, THAT THE EXISTING SIDEWALK & CURB HAS THE ABILITY TO BE RE-SET OR REUSED

35. THE ENGINEER OF RECORD IS RESPONSIBLE FOR THE ON-SITE INSPECTION(S) OF ALL SUBSURFACE STRUCTURES. THIS INCLUDES BUT IS NOT LIMITED TO DRAINAGE, UTILITIES (INCLUDING SEWER PIPE SLOPE), ROOF LEADER COLLECTION SYSTEM, TRENCH DRAINS, MANHOLES ETC. ENGINEER OF RECORD MUST ALSO CONDUCT "BOTTOM OF HOLE" INSPECTION(S) PRIOR TO SUBSURFACE DRAINAGE SYSTEM(S) BEING INSTALLED. CONTRACTOR TO NOTIFY ENGINEER BEFORE BACKFILL OR SIGN OFF CANNOT OCCUR WITHOUT RE-EXCAVATION

36. PRIOR TO THE ENGINEERING DIVISION RECOMMENDING THAT A CERTIFICATE OF OCCUPANCY BE SSUED, AN AS—BUILT PLAN MUST BE SUBMITTED. THE AS—BUILT PLAN MUST 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 & DATED BY THE ENGINEER OF THE FOLLOWING STATEMENT MUST BE ON ALL AS-BUILT PLANS SUBMITTED TO THE ENGINEERING I CERTIFY THAT THE CONSTRUCTION SO SHOWN WAS INSPECTED PRIOR TO BACKFILL & THAT ALL WORK CONFORMS WITH THE APPROVED PLAN & MEETS OR EXCEEDS THE CITY OF NEWTON CONSTRUCTION STANDARDS.

THEREFORE PROPOSED BASEMENT MEETS DEFINITION OF BASEMENT

37. 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 2 FEET IN EACH DIRECTION FROM THE OUTERMOST TRENCHES OR AS DIRECTED BY THE ENGINEERING



(SUIT103)

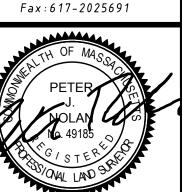
Tel:857-891-7478

617-782-1533



 $ENGINEERING,\;\;P.C$ ASSOCIATES, LL

LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS 80 JEWETT ST, (SUITE 1 697 CAMBRIDGE STREET. NEWTON, MA 02458 BRIGHTON, MA 02135 Tel: 617-816-0722





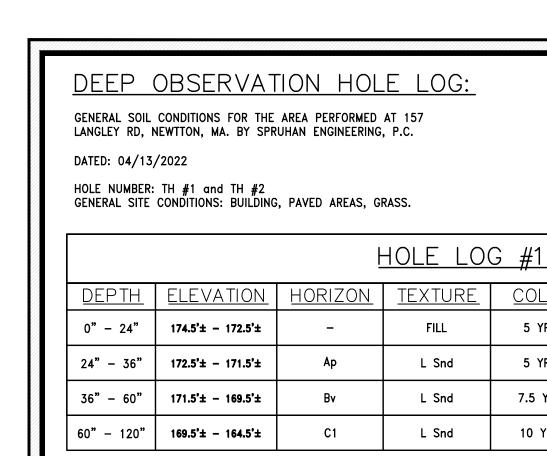
mail:edmond@spruhaneng.com

157 LANGLEY ROAD NEWTON **MASSACHUSETTS** 

REVISION BLC	)CK
DESCRIPTION	DATE
REVISED AS PER CLIENT	5/13/2022

All legal rights including, but not limited to, copyright and design patent rights, in the designs, arrangements and plans shown on this document are the property of Peter Nolan & Associates, LLC, or Spruhan Engineering, P.C. They may not be used or reused in whole or in part, except in connection with this project, without the prior Spruhan consent of Engineering, Written dimensions on these drawings shall precedence scaled dimensions. Contractors shall verify responsible for dimensions and conditions on this project, and Spruhan Engineering, P.C., must be notified of any variation from the dimensions and conditions shown by drawings.

5	SCALE:	1"=10'
	DATE:	5/9/2022
	DRAWN BY:	OG
	CHECKED BY:	PN
	APPROVED BY:	ES
	///	



HOLE LOG #2						
<u>DEPTH</u>	ELEVATION	<u>HORIZON</u>	<u>TEXTURE</u>	<u>COLOR</u>	<u>MOTTLING</u>	<u>OTHER</u>
0" - 24"	179'± - 177'±	-	FILL	5 YR 🔞	-	
24" – 36"	177'± - 176'±	Ар	L Snd	5 YR 4	-	
36" - 60"	176'± - 174'±	Bv	L Snd	7.5 YR 74	<b>@</b> 173.0'	GLACIAL OUTWASH
60" - 120"	174'± - 169'±	C1	L Snd	10 YR §		

<u>COLOR</u>

5 YR 🖁

5 YR 🔏

7.5 YR 🖁

10 YR 🖁

MOTTLING

**@**171.0'

<u>OTHER</u>

GLACIAL OUTWASH

STANDING WATER

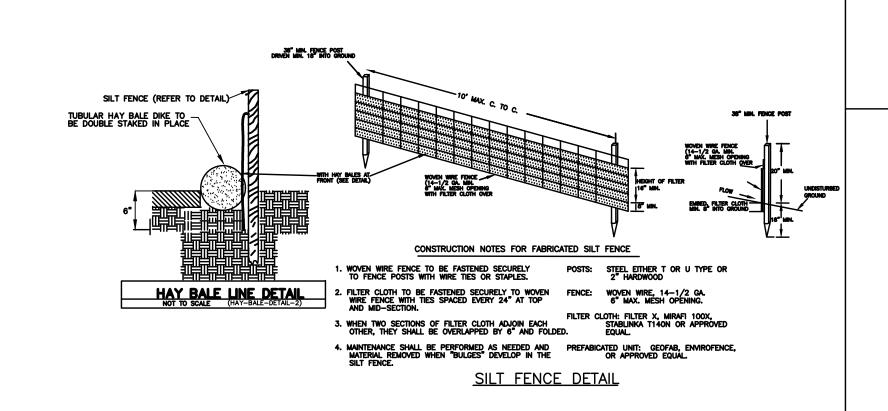
**@**84"

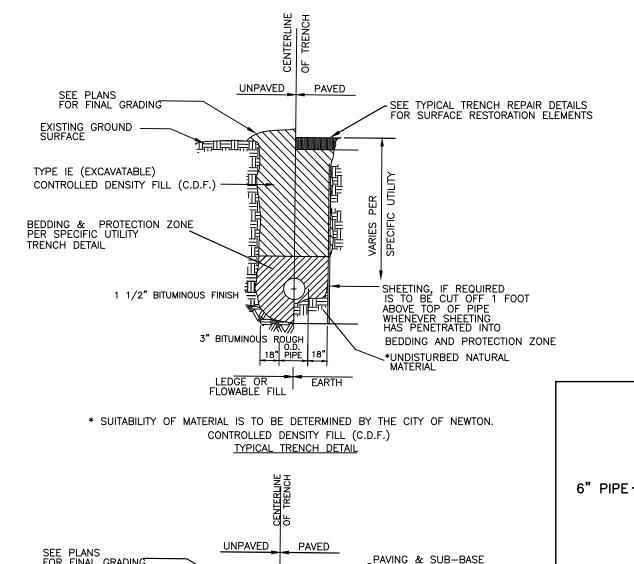
CRUSHED STONE BEDDING

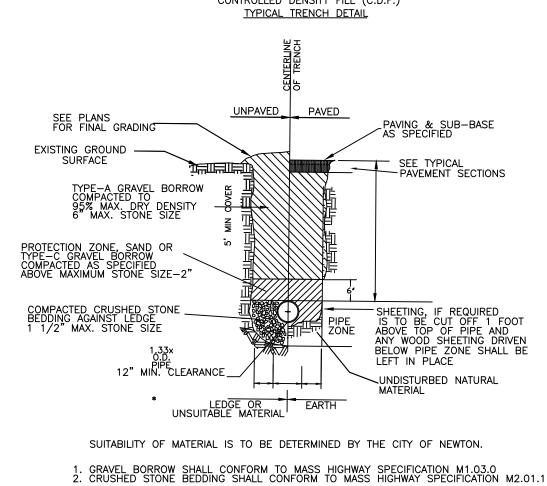
EXISTING SEWER MAIN ----

3/4" MINIMUM

PERCOLATION TEST HOLE PT - 1 PERCOLATION RATE = 5 MIN/INCH

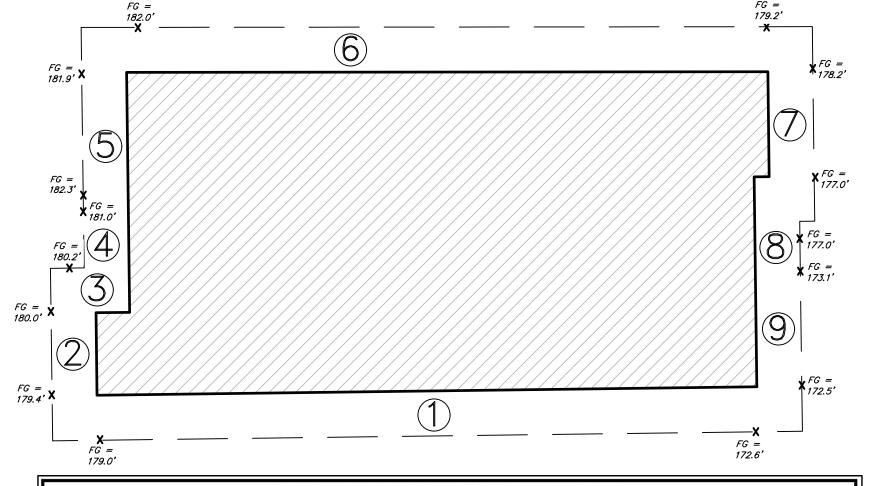






TYPICAL TRENCH DETAIL N.T.S.

TYPICAL WATER TRENCH DETAIL N.T.S.



			/ A	\	
	AVERAGE GRADE PLANE (ALL UNITS IN FEET)				
SEGMENT	LENGTH	POINT 1	POINT 2	MEAN 1 & 2	MEAN x LENGTH
1	88.00	172.60	179.00	175.80	15,470.40
2	11.00	179.40	180.00	179.70	1,976.70
3	4.50	180.20	181.00	180.60	812.70
4	2.00	181.00	182.30	181.65	363.30
5	30.00	182.30	181.90	182.10	5,463.00
6	85.50	182.00	179.20	180.60	15,441.30
7	20.10	178.20	177.00	177.60	3,569.76
8	3.00	177.00	173.10	175.05	525.15
9	18.90	173.10	172.50	172.80	3,265.92
SUM =	263.00				46,888.23
SUM OF MEAN x LENGTH/SUM OF LENGTHS = AVERAGE GRADE PLANE =				178.28	

### DETAIL FOR DRAINAGE SYSTEM INV #1=170.2± -INLET 4" PVC PIPE INV #2=176.5± -INLET 4" PVC PIPE \INV #3=173.5± TOP SOIL -— 4" PVC PERFORATED - FILTER CLOTH LOWEST GRADE ELEV #1 = 172.6'± MIRAFI 140N OR EQUAL ON TOP OF GRAVEL LOWEST GRADE ELEV #2 = 178.0'± ELEV #1=171.0'± - TOP OF SYSTEM LOWEST GRADE ELEV #3 = 178.0'± - 3/4"-1½" DRAIN ROCK ELEV #2=177.0'± - TOP OF SYSTEM ELEV #3=174.0'± -OVERFLOW 6" PVC PIPE INV #1=170.9± -OVËRFLOW 6" PVC PIPE INV #2=176.9± -OVËRFLOW 6" PVC PIPE FILTER CLOTH INV #3=173.9± MIRAFI 140N OR EQUAL ON SIDES OF GRAVEL - FILTER CLOTH MIRAFI 140N OR EQUAL MOTTLING FOUND ELEV #1= 171.0'± **BOTTOM OF SYSTEM** ON SIDES OF GRAVEL ELEV #1=169.5'± MOTTLING FOUND ELEV #2= 173.0'± **BOTTOM OF SYSTEM** ELEV #2=175.0'± - ESTIMATED SEASONAL HIGH GROUNDWATER BOTTOM OF SYSTEM ELEV #3=172.0'± BOTTOM OF TEST PIT ELEV #1= 167.5'± SECTION A-A VIEW

SECTION DETAIL FOR DRAINAGE SYSTEMS

N.T.S.

FILTER CLOTH

**DRAINAGE SYSTEM NOTES:** 

PRIOR TO BACKFILLING.

2. LOCATION OF SYSTEM PER PLANS.

1. ENTIRE SYSTEM SHALL BE ENCASED IN FILTER FABRIC.

#1=15'

#2=14

#3=10'

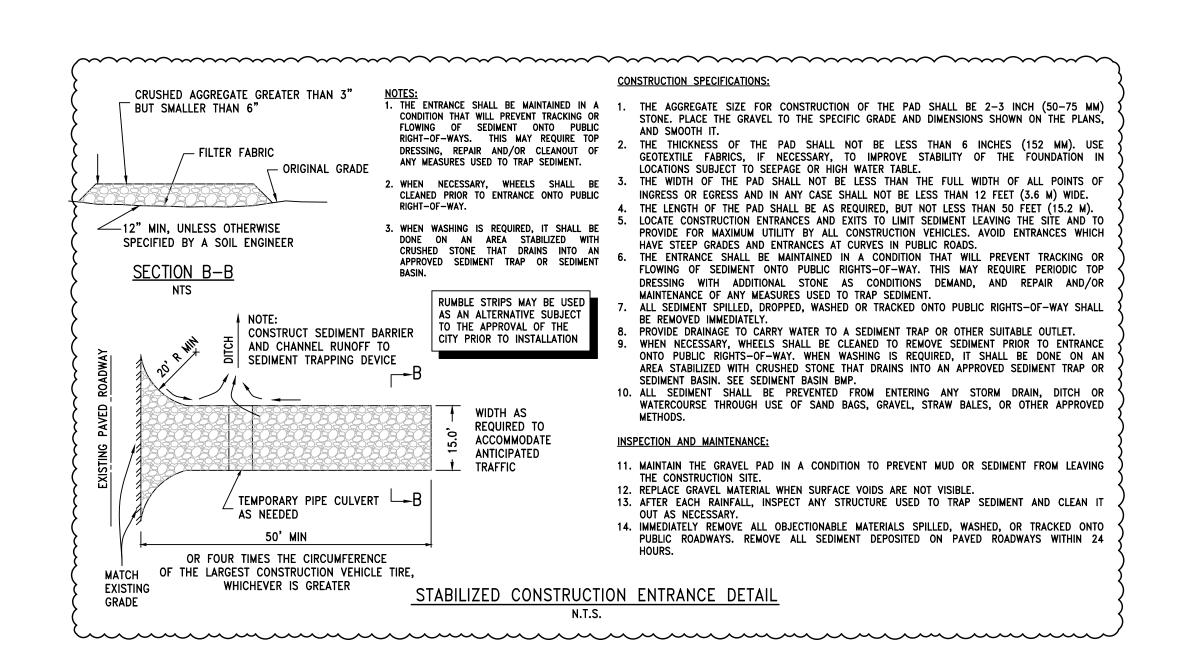
3. DESIGN ENGINEER WILL INSPECT AND CERTIFY IN WRITING THAT

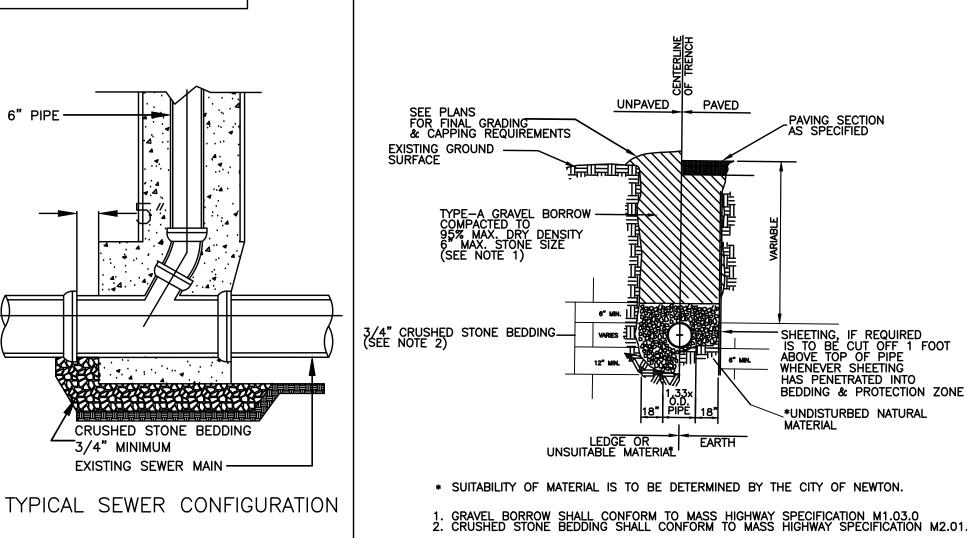
ALL DRAINAGE WORK WAS INSTALLED IN ACCORDANCE WITH

72 HOURS IN ADVANCE FOR DRAINAGE SYSTEM INSPECTION

APPROVED PLANS. CONTRACTOR TO NOTIFY ENGINEER AT LEAST

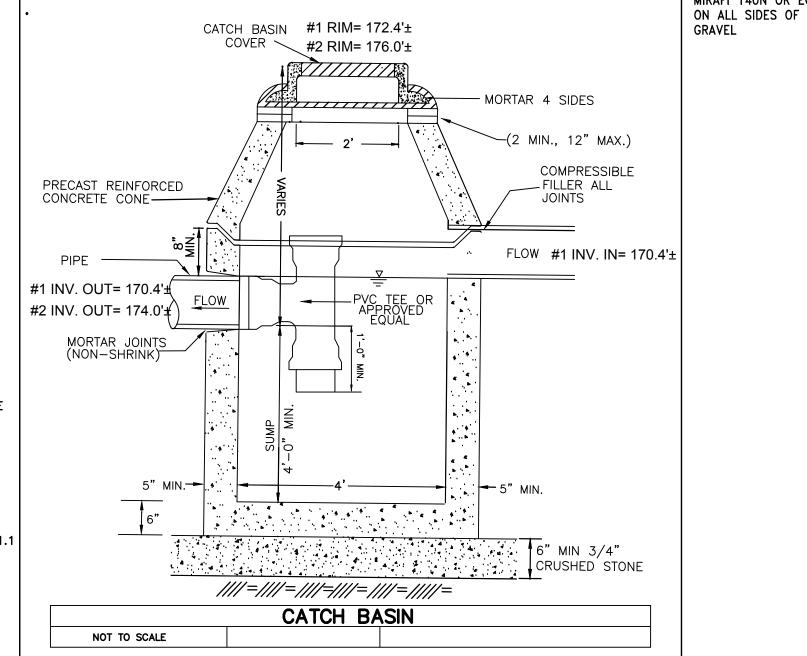
\_\_ 3/4"-1½" DRAIN ROCK

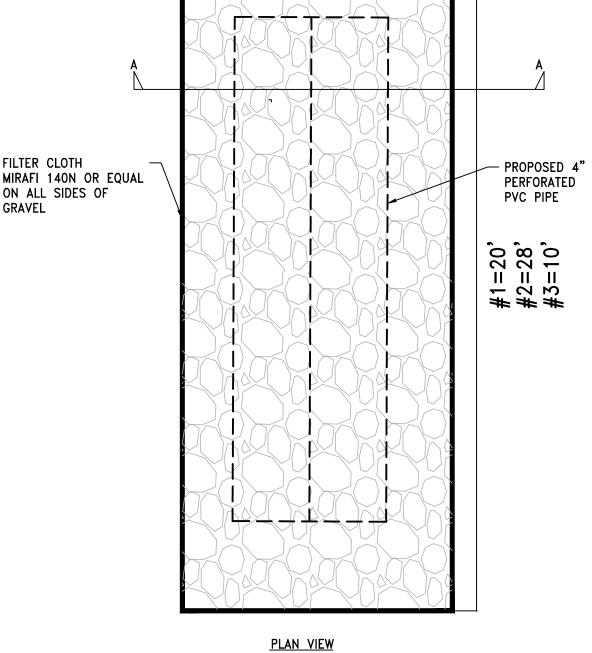




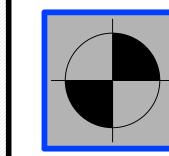
1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0 2. CRUSHED STONE BEDDING SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M2.01.

GRAVITY SEWER TRENCH DETAIL N.T.S.





DRAINAGE SYSTEM DETAIL



PETER NOLAN & ASSOCIATES, LLC

SPRUHAN ENGINEERING, P.C LAND SURVEYORS/CIVIL

(SUIT103), BRIGHTON, MA 02135 Tel:857-891-7478 617-782-1533 Fax:617-2025691

**ENGINEERING CONSULTANTS** 

697 CAMBRIDGE STREET.

80 JEWETT ST, (SUITE 1, NEWTON, MA 02458 Tel: 617-816-0722 īmail:edmond@spruhaneng.com



157 LANGLEY ROAD NEWTON *MASSACHUSETTS* 

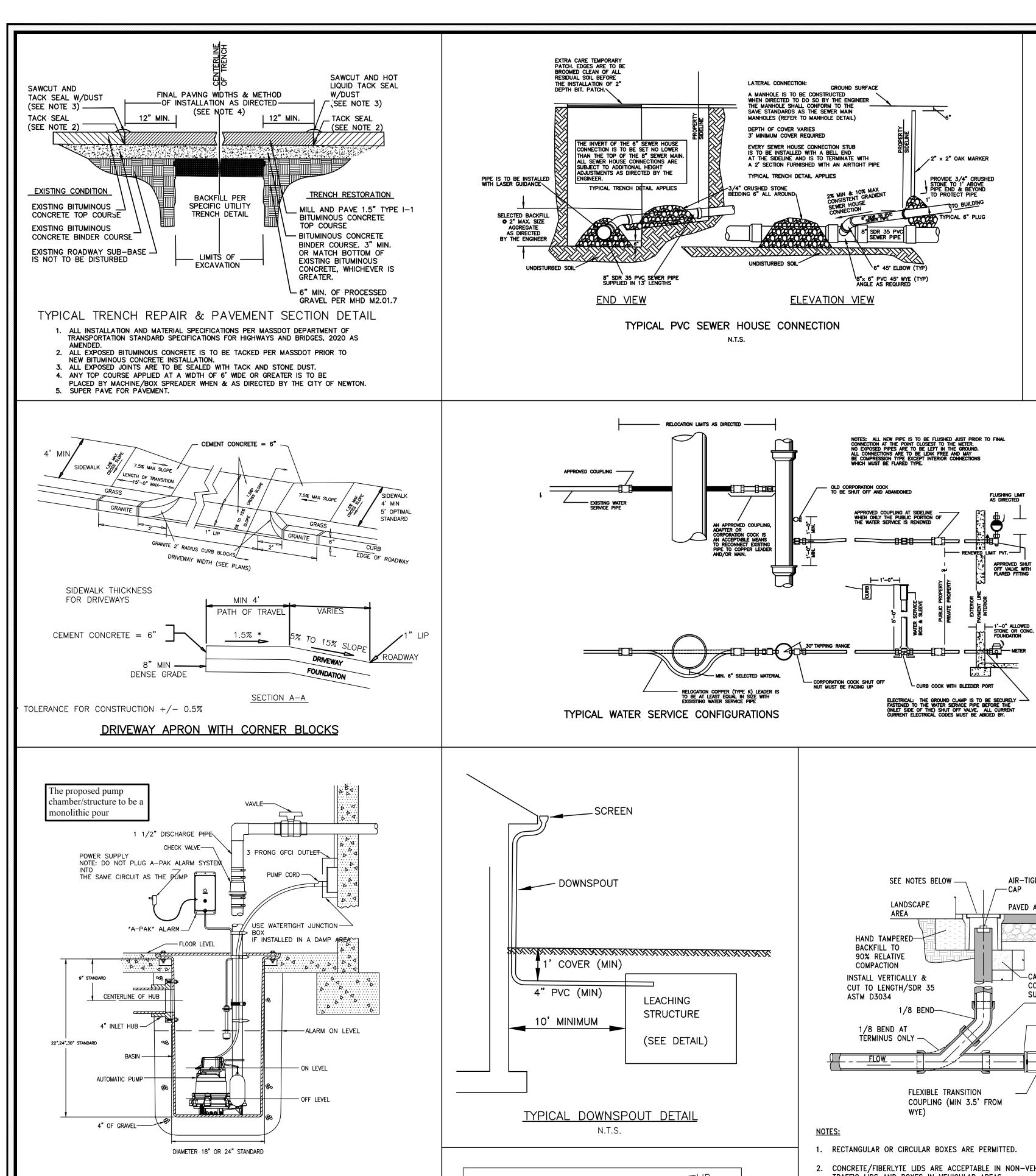
# **REVISION BLOCK** DESCRIPTION DATE 5/13/2022 REVISED AS PER CLIENT

All legal rights including, but not limited to, copyright and design patent rights, in the designs, arrangements and plans shown on this document are the property of Peter Nolan & Associates, LLC, or Spruhan Engineering, P.C. They may not be used or reused in whole or in part, except in connection with this project, without the prior Spruhan Engineering, dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for dimensions and conditions on this project, and Spruhan Engineering, P.C., must be notified of any variation from the dimensions and conditions shown by these drawings.

## DETAILS

SCALE:	N/A
DATE:	5/9/2022
DRAWN BY:	OG
CHECKED BY:	PN
APPROVED BY:	ES

SHEET:



BACKWATER

FLAPPER

6" PVC BACKWATER VALVE

VALVE

SERIES

EQUAL)

NOT TO SCALE

869

(OR

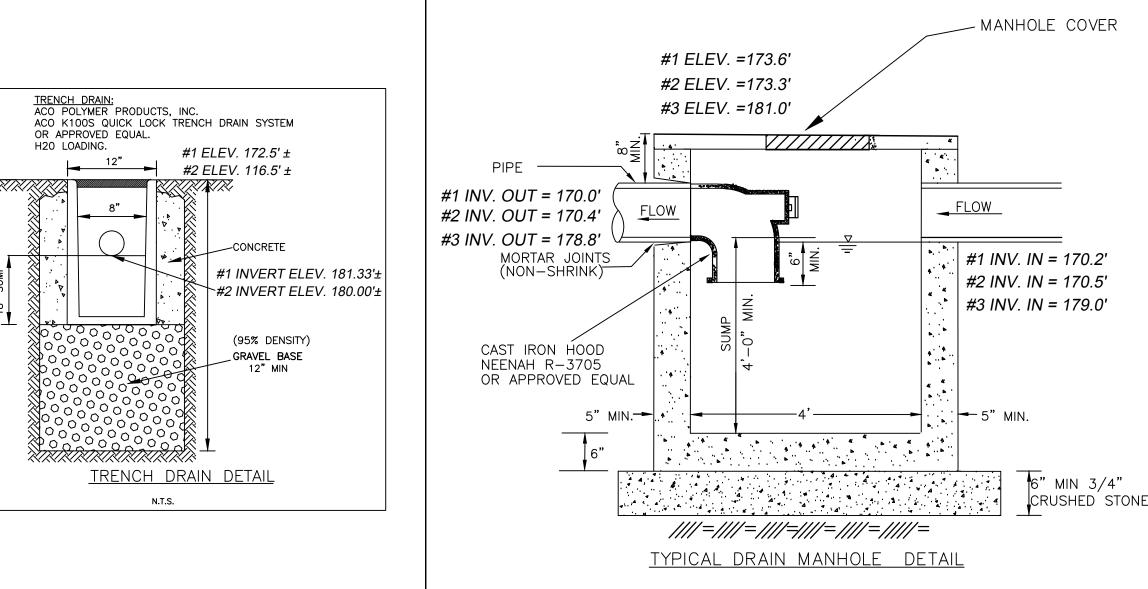
TYPICAL SUMP PUMP DETAIL

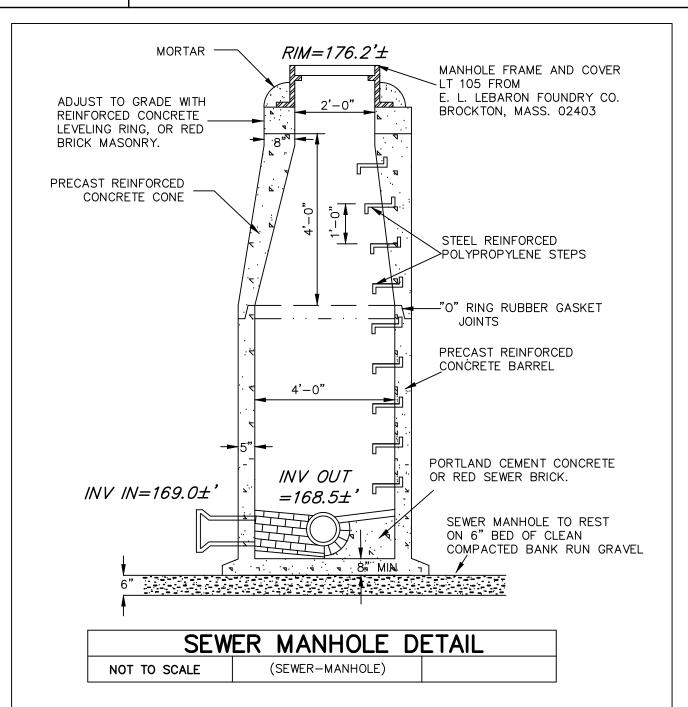
NOT TO SCALE

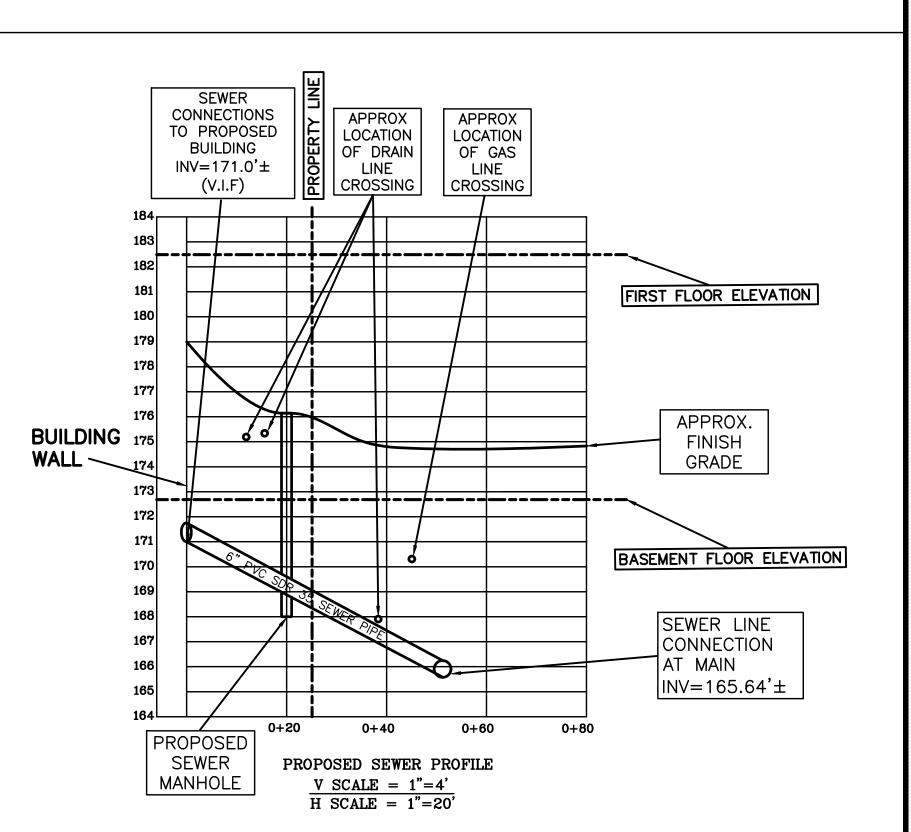
1. COMPRESSED FILLER ALL JOINTS JOINTS TO BE WATER TIGHT WITH 1-2
CEMENT MORTAR OR TYLOX TYPE C RUBBER GASKET OR NEOPRENE

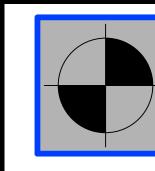
2. CONTRACTOR TO VERIFY SIZE OF PUMP PRIOR TO ANY DRAINAGE BEING

3. PUMPS TO BE CONNECTED TO EMERGENCY BACKUP GENERATOR.









NOLAN &

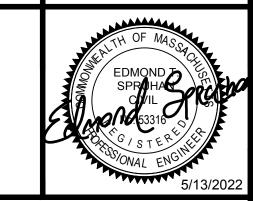
PETER NOLAN & SPRUHAN ASSOCIATES, LLC ENGINEERING, P.C.

LAND SURVEYORS/CIVIL
ENGINEERING CONSULTANTS
697 CAMBRIDGE STREET,
(SUIT103),
BRIGHTON, MA 02135
Tel:857-891-7478

617-782-1533

Fax:617-2025691

80 JEWETT ST, (SUITE 1) NEWTON, MA 02458 Tel: 617-816-0722 Email:edmond@spruhaneng.com



### 157 LANGLEY ROAD NEWTON MASSACHUSETTS

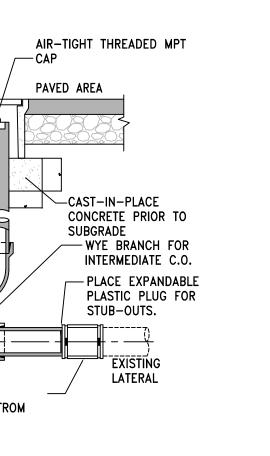
# REVISION BLOCK DESCRIPTION DATE REVISED AS PER CLIENT 5/13/2022

All legal rights including, but not limited to, copyright and design patent rights, in the designs, arrangements and plans shown on this document are the property of Peter Nolan & Associates, LLC, or Spruhan Engineering, P.C. They may not be used or reused in whole or in part, except in connection with this project, without the prior written consent of Spruhan Written P.C.. Engineering, dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on this project, and Spruhan Engineering, P.C., must be notified of any variation from the dimensions and conditions shown by these drawings.

# DETAILS

SCALE:	N/A
DATE:	5/9/2022
DRAWN BY:	OG
CHECKED BY:	PN
APPROVED BY:	ES

SHEET:



- 2. CONCRETE/FIBERLYTE LIDS ARE ACCEPTABLE IN NON-VEHICULAR AREAS. H-20 CAST IRON TRAFFIC LIDS AND BOXES IN VEHICULAR AREAS.
- 3. ALL CLEANOUT LIDS SHALL BE MARKED WITH AN "S" OR THE WORD "SEWER" FOR SANITARY SEWER CLEANOUTS
- 4. CLEANOUT PIPE SHALL BE THE SAME DIAMETER AS THE CONNECTED SITE PIPE.
- . TERMINATE C.O. AT CLOSEST JOINT TO SURFACE WITH TEMPORARY PLUG. AFTER ALL BACKFILL IS COMPLETE AND SUB-GRADE MADE IN AREAS TO BE PAVED, THE FINAL RISER PIPE AND BOX SHALL BE INSTALLED AS SHOWN.

CLEANOUT TO GRADE

NTS