





- NOTES:
1. INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY SPRUHAN ENGINEERING, P.C. AS OF 12/29/2022.
  2. DEED REFERENCE: BOOK 80894, PAGE 369 MIDDLESEX COUNTY SOUTH DISTRICT REGISTRY OF DEEDS
  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 ZONE X, ON FLOOD HAZARD BOUNDARY MAP NUMBER 25017C0552E, IN COMMUNITY NUMBER: 250208, DATED 6/4/2010.
  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 THAT NO SUCH EASEMENTS EXIST.
  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 BASED ON CITY OF NEWTON DATUM.

### ZONING LEGEND

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

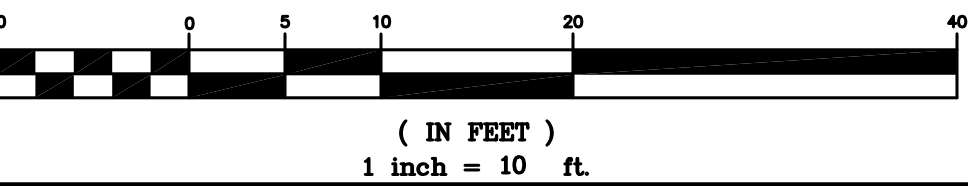
	REQUIRED	EXISTING	PROPOSED
MIN. AREA	10,000 S.F.	10,268 S.F.± (M)	10,268 S.F.± (M)
MAX LOT COVERAGE	30%	10.11%	33.49%
MIN. OPEN SPACE	50%	78.61%	51.0%
MIN. FRONTAGE	80'	--	--
SETBACKS			
FRONT (MIN)	25'	13.4'	26.7'
SIDE (MIN)	7.5'	56.6' / 11.4"	11.0'
REAR (MIN)	15'	49.9'	20.3'
MAX. BLDG. HEIGHT	36'	25.13'±	34.83'±

- ### LEGEND
- BOUND
  - TREE
  - SHRUBS/FLOWERS
  - BOLLARD
  - SEWER MANHOLE
  - DRAIN MANHOLE
  - CATCH BASIN
  - WATER MANHOLE
  - WATER VALVE
  - GAS VALVE
  - UTILITY POLE
  - MANHOLE
  - SPOT GRADE
  - FENCE
  - TREE LINE
  - SEWER LINE
  - DRAIN LINE
  - WATER LINE
  - GAS LINE
  - UNDERGROUND ELECTRIC LINE
  - CONTOUR LINE (MJR)
  - CONTOUR LINE (MNR)
  - PROP CONTOUR LINE
  - PROPOSED DOWNSPOUT
  - TEST PIT #X
  - INSPECTION CLEAOUTS
  - SUMP PUMP
  - FIRST FLOOR ELEV.
  - TOP OF FOUNDATION ELEV.
  - GARAGE FLOOR ELEV.
  - BASEMENT FLOOR ELEV.
  - OVERHANG
- NOTE: ANY TREE BEING REMOVED SHALL COMPLY WITH CITY OF NEWTON TREE ORDINANCE
- NOTE: SURFACE WATER TO BE DIVERTED FROM ALL SIDES OF FOUNDATION WALL
- IF THE CURB-CUT IS PROPOSED WITHIN THE CITY STREET TREE BUFFER ZONE OF (8) FEET, THEN APPROVAL FROM THE CITY OF NEWTON SUPERINTENDENT OF URBAN FORESTRY WILL BE REQUIRED
- NOTE: ANY PROPOSED RETAINING WALLS SHALL BE DESIGNED BY OTHERS. ALSO, ANY PROPOSED RETAINING WALL IN SETBACK SHALL NOT EXCEED 4 FEET IN HEIGHT IN REFERENCE TO EXISTING GRADES.
- NOTE: CONTRACTOR TO REGULARLY INSPECT AND MAINTAIN THE EROSION AND SEDIMENT CONTROLS MEASURES.
- NOTE: CONTRACTOR TO CONFIRM LOCATION OF DOWN SPOUTS PRIOR TO CARRYING OUT ANY DRAINAGE WORKS

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

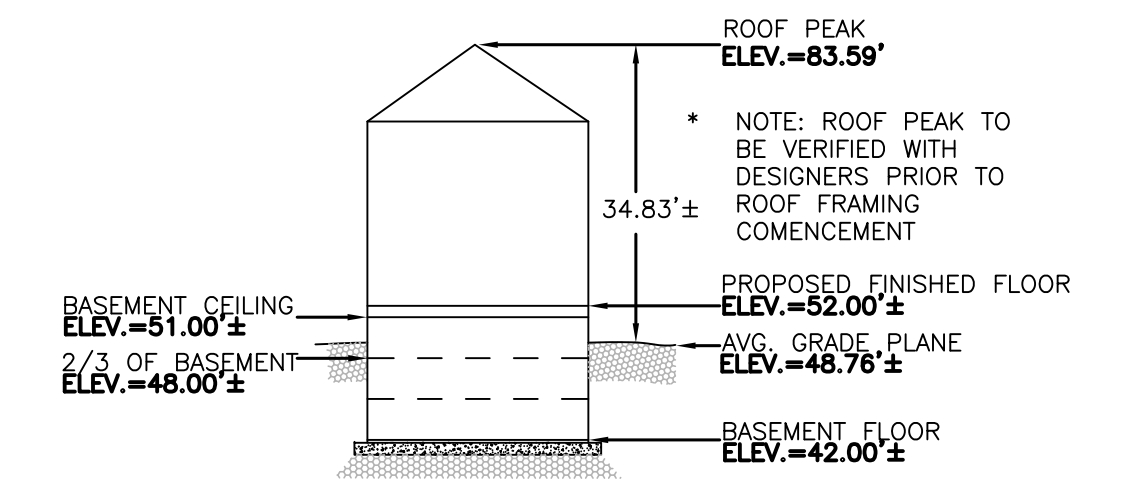
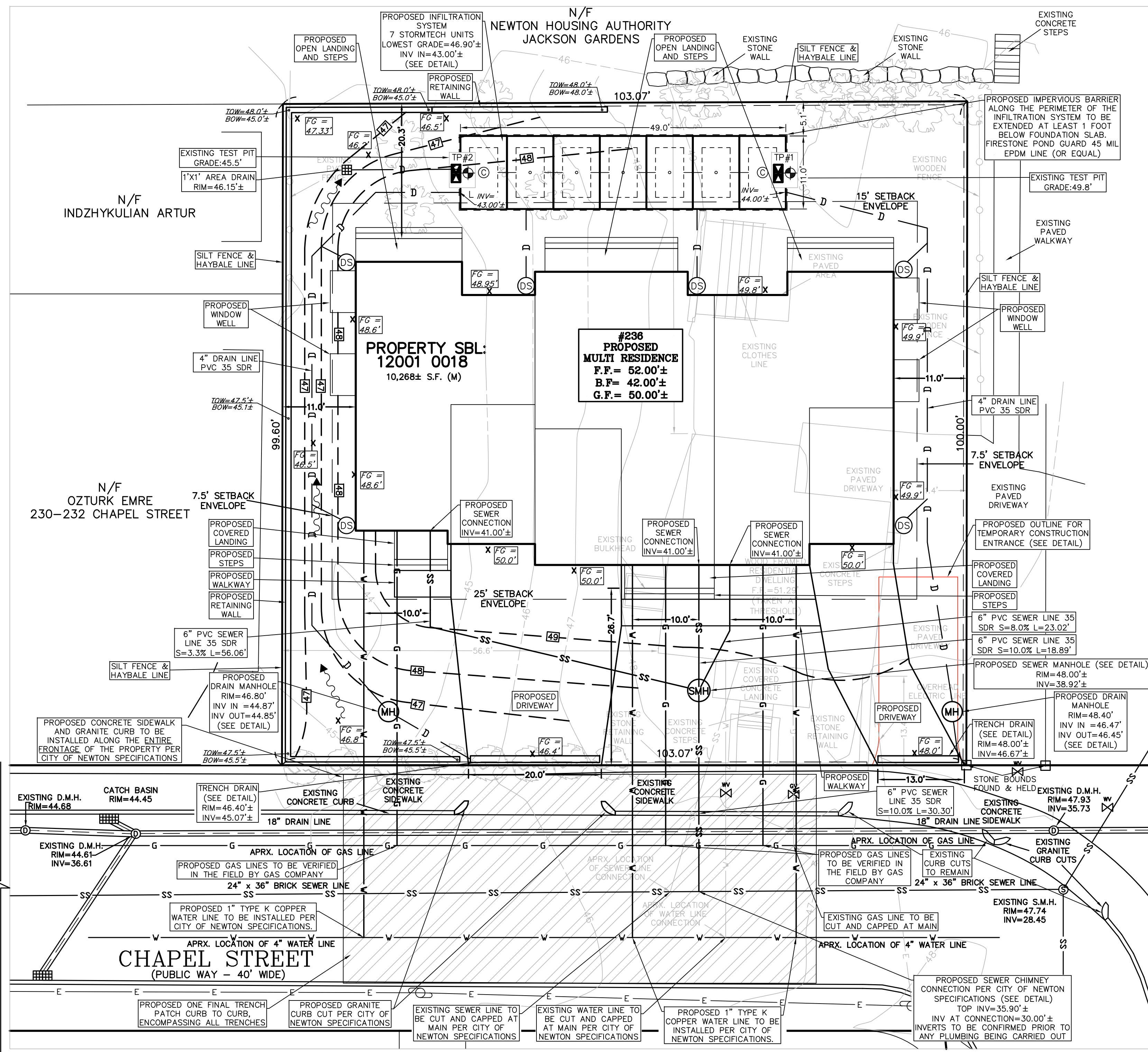
NOTE: CONTRACTOR TO ENSURE ALL RAIN WATER FROM SPLASH BLOCKS (IF ANY) IS DIVERTED AWAY FROM BUILDING FOUNDATION AND DIVERTED AWAY FROM NEIGHBORING PROPERTIES

GRAPHIC SCALE



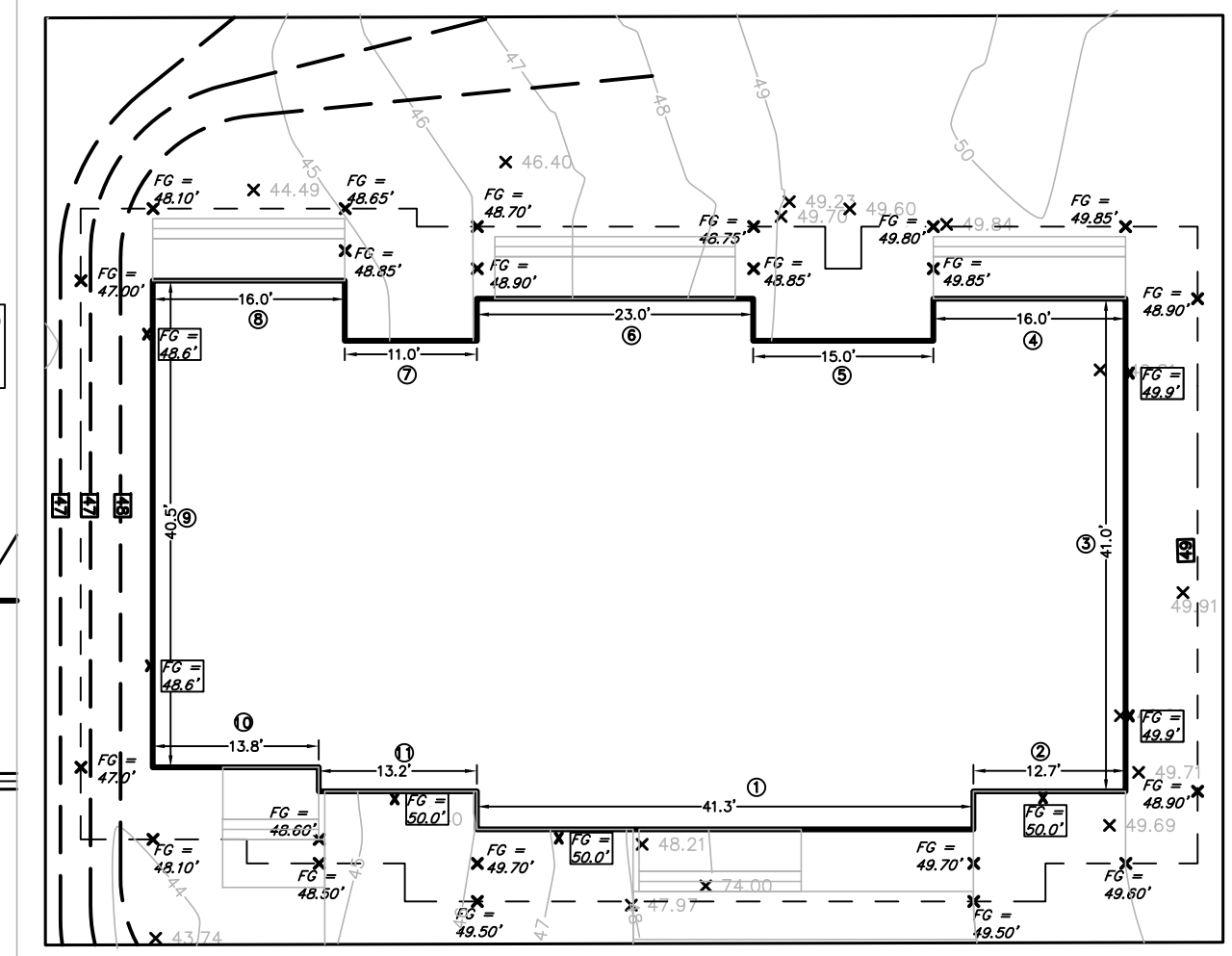
NOTE: SPRUHAN ENGINEERING, P.C., ACCEPTS NO LIABILITY FOR GROUND WATER OR OTHER SURFACE WATER IN BASEMENT

A MINIMUM OF (3) OFFSETS TO ANY EXISTING STONE BOUND MUST BE SET IN THE GROUND EVENLY AROUND THE STONE BOUND PRIOR TO ANY WORK THAT COULD DISTURB THE BOUND. IF DISTURBED THE BOUND MUST BE RE-SET IN THE ORIGINAL LOCATION



PROPOSED PROFILE NOT TO SCALE

EXISTING AREAS		PROPOSED AREAS	
LOT AREA	10,268.00 S.F.	LOT AREA	10,268.00 S.F.
<b>EXISTING IMPERVIOUS AREA</b>		<b>PROPOSED IMPERVIOUS AREA</b>	
ROOF HOUSE	953.79 S.F.	ROOF HOUSE AND GARAGE	3,357.22 S.F.
DRIVEWAY	788.46 S.F.	DRIVEWAY	1,172.67 S.F.
WALKWAY	28.05 S.F.	WALKWAY	151.71 S.F.
PAVED AREA	208.64 S.F.	COVERED LANDINGS	81.92 S.F.
COVERED LANDING	84.56 S.F.	OPEN LANDINGS	182.00 S.F.
WALLS (STONE)	72.59 S.F.	STEPS (CONCRETE)	122.50 S.F.
BULKHEAD	31.04 S.F.	WINDOW WELLS	96.55 S.F.
STEPS (CONCRETE)	29.21 S.F.	WALLS	137.26 S.F.
<b>TOTAL</b>	<b>2,156.34 S.F.</b>	<b>TOTAL</b>	<b>5,301.83 S.F.</b>
<b>EXISTING PERVIOUS AREAS</b>		<b>PROPOSED PERVIOUS AREA</b>	
N/A	0.00 S.F.	N/A	0.00 S.F.
<b>TOTAL</b>	<b>0.00 S.F.</b>	<b>TOTAL</b>	<b>0.00 S.F.</b>
LANDSCAPE AREA		LANDSCAPE AREA	
8,071.66 S.F.		4,966.17 S.F.	
TOTAL EXISTING IMPERVIOUS AREA = 2,196.34 S.F.		TOTAL PROPOSED IMPERVIOUS AREA = 5,302.83 S.F.	
TOTAL INCREASE IN IMPERVIOUS AREA = 3,105.49 S.F.			



### PROP. AVERAGE GRADE PLANE

SEGMENT	LENGTH	POINT 1	POINT 2	MEAN 1 & 2	MEAN x LENGTH
1	41.30	49.50	49.70	49.60	2,048.48
2	12.70	49.70	49.60	49.65	630.56
3	41.00	48.90	48.90	48.90	2,004.90
4	16.00	49.90	49.80	49.85	797.60
5	15.00	49.85	48.85	49.35	740.25
6	23.00	48.75	48.70	48.73	1,120.68
7	11.00	48.90	48.85	48.88	537.63
8	16.00	48.65	48.10	48.38	774.00
9	40.50	47.00	47.00	47.00	1,903.50
10	13.80	48.10	48.60	48.35	667.23
11	13.20	48.50	49.70	49.10	648.12
SUM	243.50				11,872.94
AVERAGE GRADE PLANE = SUM OF MEAN x LENGTH / SUM OF LENGTHS					48.76

### AVERAGE GRADE CALCULATION

PHOSPHORUS LOADS / REDUCTIONS
TP = A*L
Where: A = Total impervious area of post-development (acres)
L = Load of a pollutant in pounds per acre per year
Ac = Captured impervious area of post-development (acres)
PRE-DEVELOPMENT PHOSPHORUS LOADING (Lpre)
TPpre = A*L
TPpre = 0.0504 Acres x 1.96 lbs/acre/year
TPpre = 0.099 lbs/year
POST-DEVELOPMENT PHOSPHORUS LOADING (Lpost)
TPpost = A*L
TPpost = 0.1217 Acres x 1.96 lbs/acre/year
TPpost = 0.239 lbs/year
REDUCED TP LOAD
REDUCED TP = Ac*L
REDUCED TP = 0.1040 Acres x 1.96 lbs/acre/year
REDUCED TP = 0.204 lbs/year
TOTAL PHOSPHORUS REDUCTION % (TP)
TP RED. (%) = 85.44 %
PRE-/POST-DEVELOPMENT PHOSPHORUS LOAD AND PHOSPHORUS LOAD REDUCTION

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Location: 236 CHAPEL ST. NEWTON, MA

BMP	TSS Removal Rate	D Starting TSS Load	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	0.80	1.00	0.80	0.20
Deep Sump and Hooded Catch Basin	0.25	0.20	0.05	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15
<b>Total TSS Removal</b>			<b>88%</b>	

Project: SPRUHAN ENGINEERING

Prepared By: ENGINEERING

Date: 15-May-23

Total Suspended Solids Reduction

**Spruhan Engineering, P.C.**

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

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

236 CHAPEL STREET  
NEWTON  
MASSACHUSETTS

CIVIL PLAN

REVISION BLOCK

BY	DESCRIPTION	DATE

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06/06/23

DATE: 06/06/23

DRAWN BY: E.R.G.

CHECKED BY: H.M.S.

APPROVED BY: E.S.





Spruhan Engineering, P.C.

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

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

236 CHAPEL STREET NEWTON MASSACHUSETTS

CIVIL PLAN

REVISION BLOCK

Table with 3 columns: BY, DESCRIPTION, DATE. Contains revision entries.

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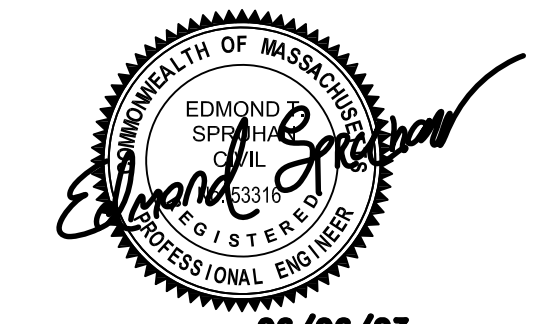


Table with 2 columns: DATE, DRAWN BY, CHECKED BY, APPROVED BY. Contains project details.

DETAIL SHEET 1

SHEET 3 OF 5

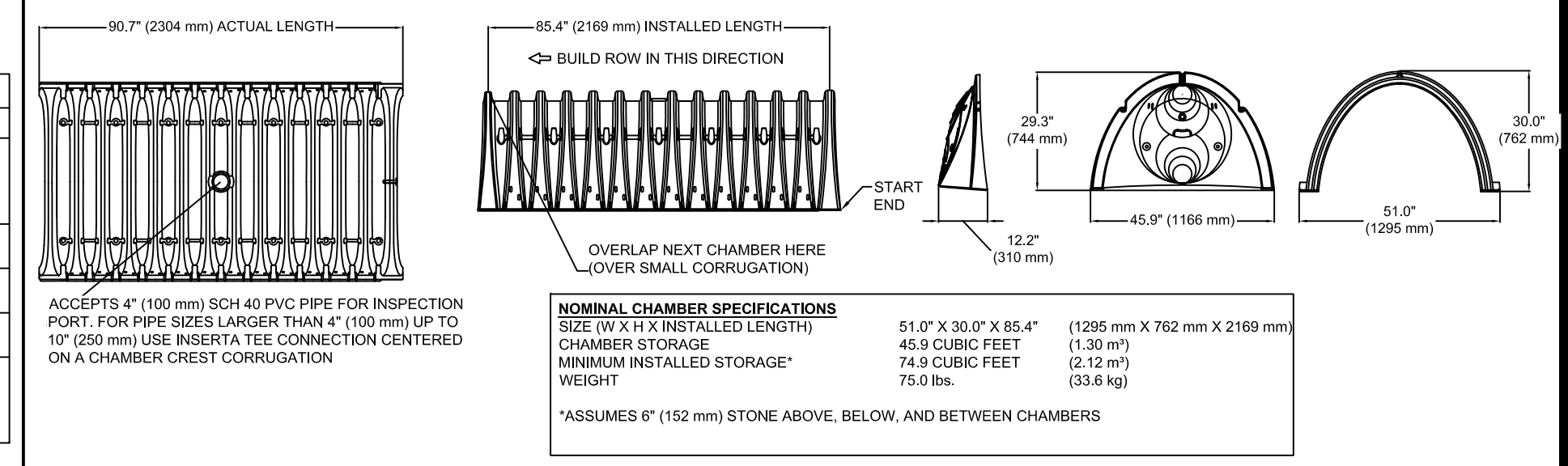


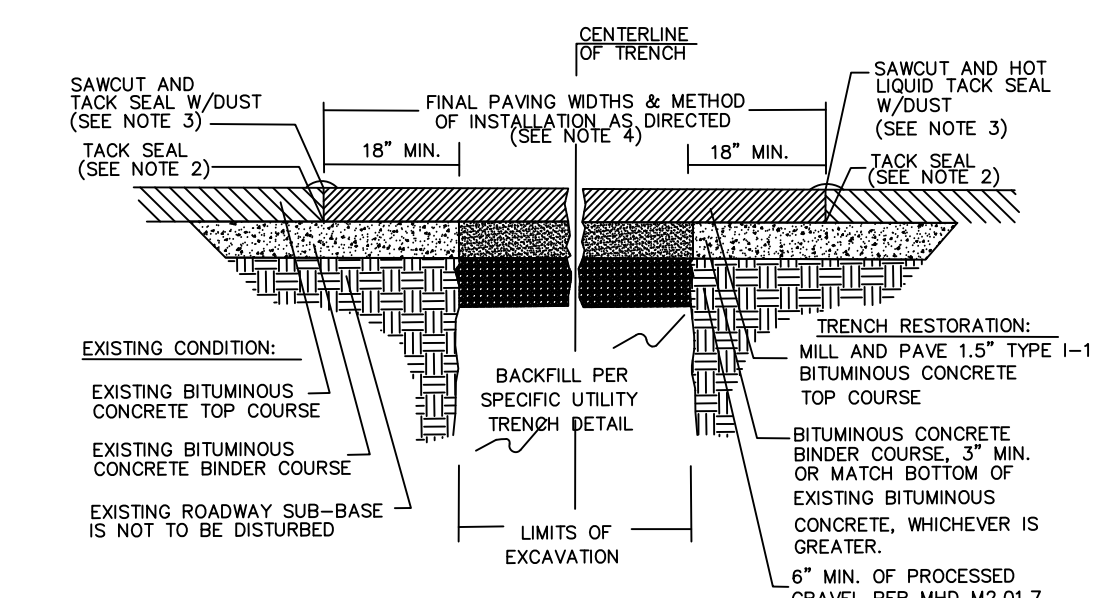
Table with columns: PART #, STUB, A, B, C. Lists chamber specifications for various parts.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

SC-740 TECHNICAL SPECIFICATION N.T.S.

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

SC-740 TECHNICAL SPECIFICATION



- 1. ALL INSTALLATION AND MATERIAL SPECIFICATIONS PER MASSDOT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 2020 AS AMENDED.

TYPICAL TRENCH REPAIR & PAVEMENT SECTION DETAIL N.T.S.

DEEP OBSERVATION HOLE LOG TP-2 GROUND ELEVATION: 45.5±

DEEP OBSERVATION HOLE LOG TP-1 GROUND ELEVATION: 49.8±

GENERAL SOIL CONDITIONS FOR THE AREA PERFORMED AT 236 CHAPEL ST, NEWTON, MA BY SPRUHAN ENGINEERING, P.C.

DEEP OBSERVATION HOLE LOG

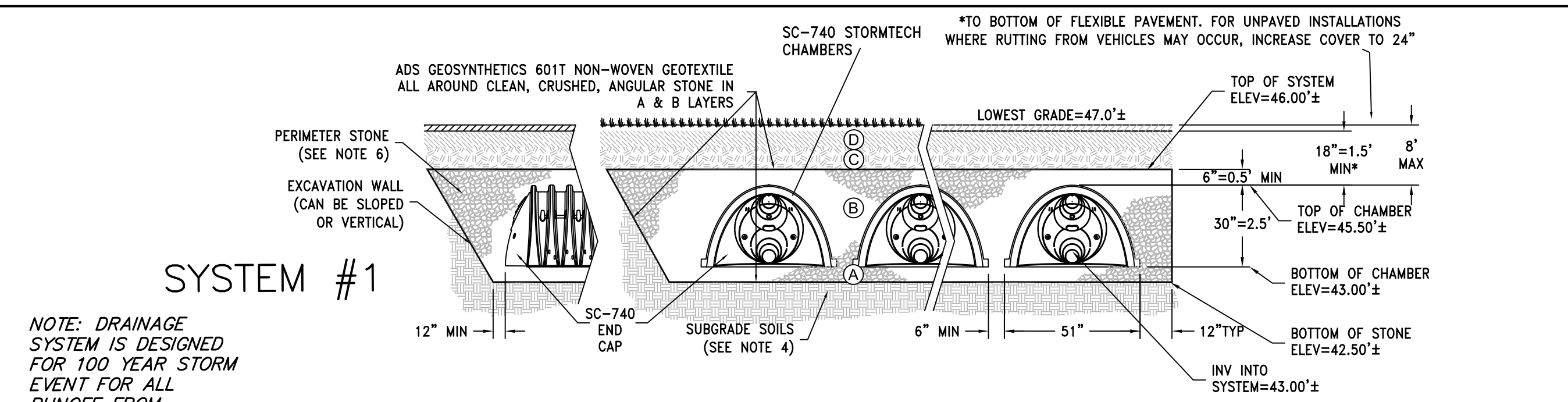
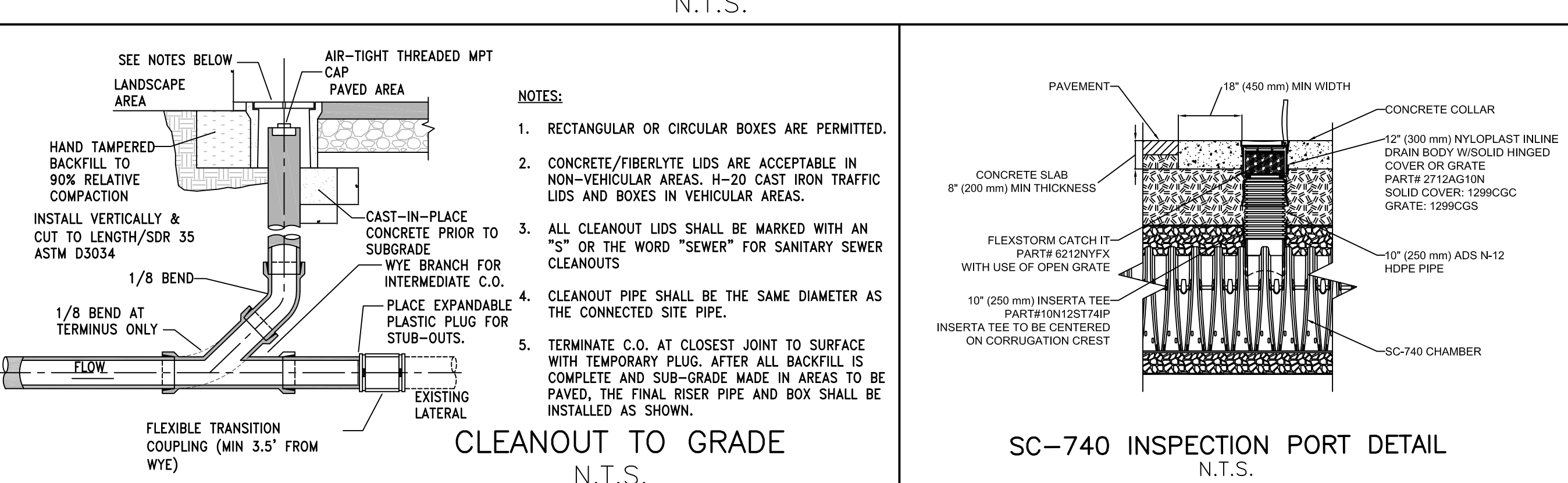


Table with columns: MATERIAL LOCATION, DESCRIPTION, AASHTO MATERIAL CLASSIFICATIONS, COMPACTION / DENSITY REQUIREMENT.

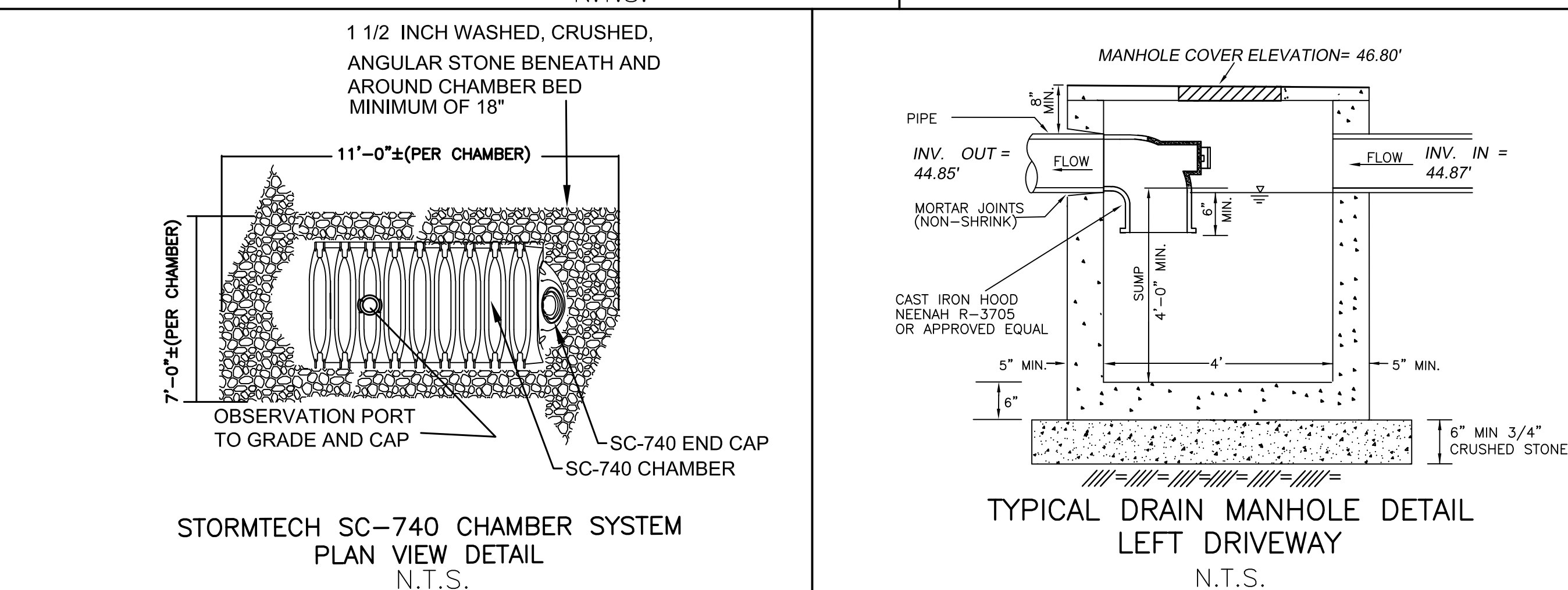
- NOTES: 1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

DRAINAGE SYSTEM N.T.S.

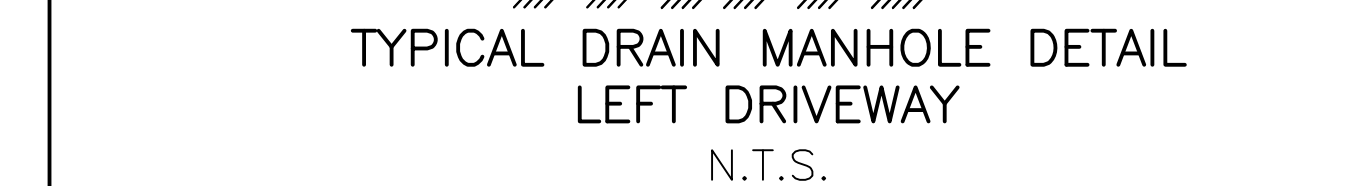


CLEANOUT TO GRADE N.T.S.

SC-740 INSPECTION PORT DETAIL N.T.S.



STORMTECH SC-740 CHAMBER SYSTEM PLAN VIEW DETAIL N.T.S.



TYPICAL DRAIN MANHOLE DETAIL LEFT DRIVEWAY N.T.S.



TYPICAL DRAIN MANHOLE DETAIL RIGHT DRIVEWAY N.T.S.

- NOTES: 1. ELEVATIONS REFER TO CITY OF NEWTON DATUM. THIS PLAN IS THE RESULT OF AN INSTRUMENT SURVEY DONE ON THE GROUND ON DECEMBER 20TH, 2022.





Spruhan  
Engineering, P.C.

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

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

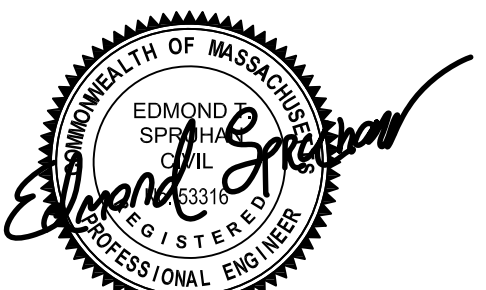
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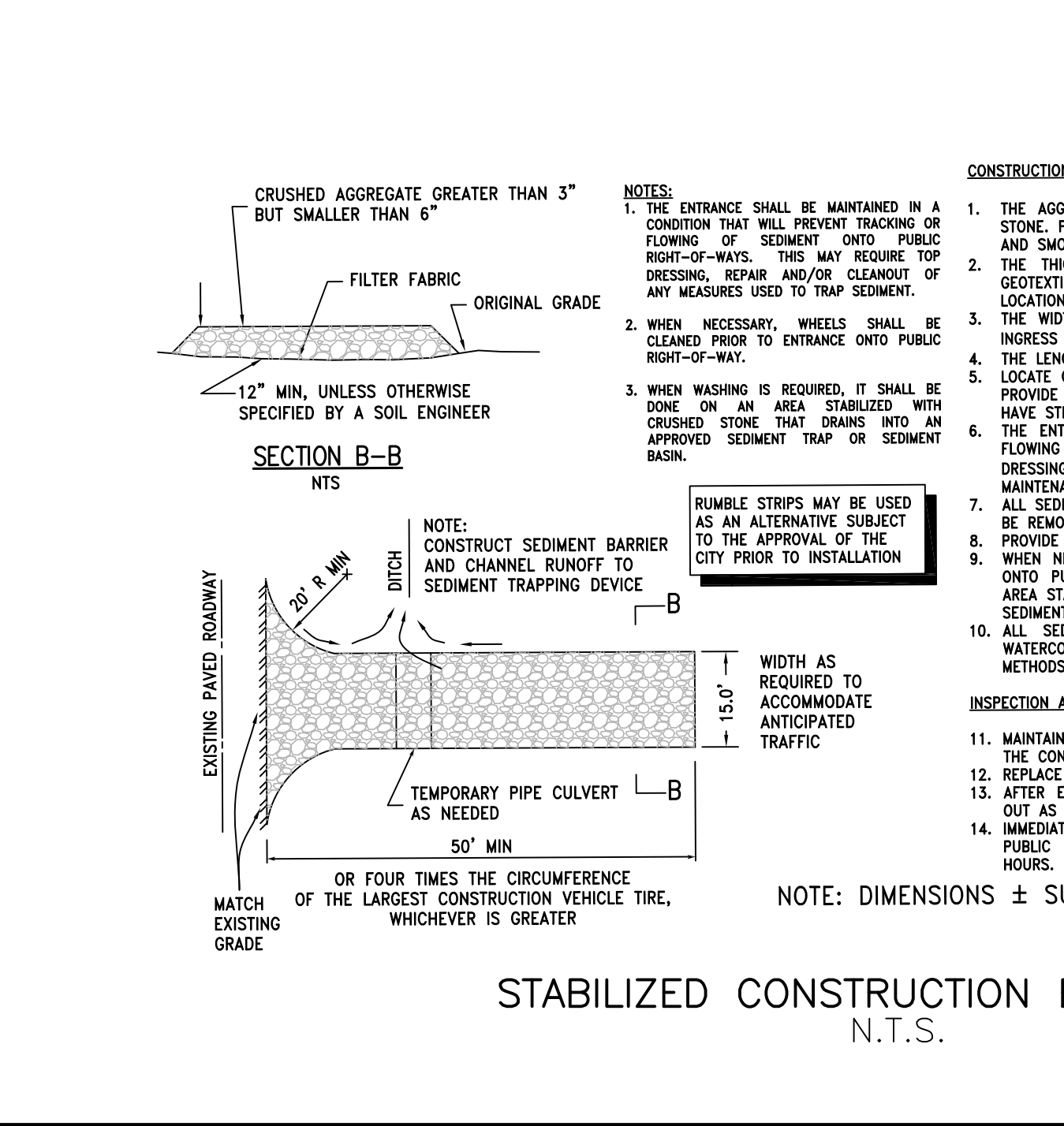
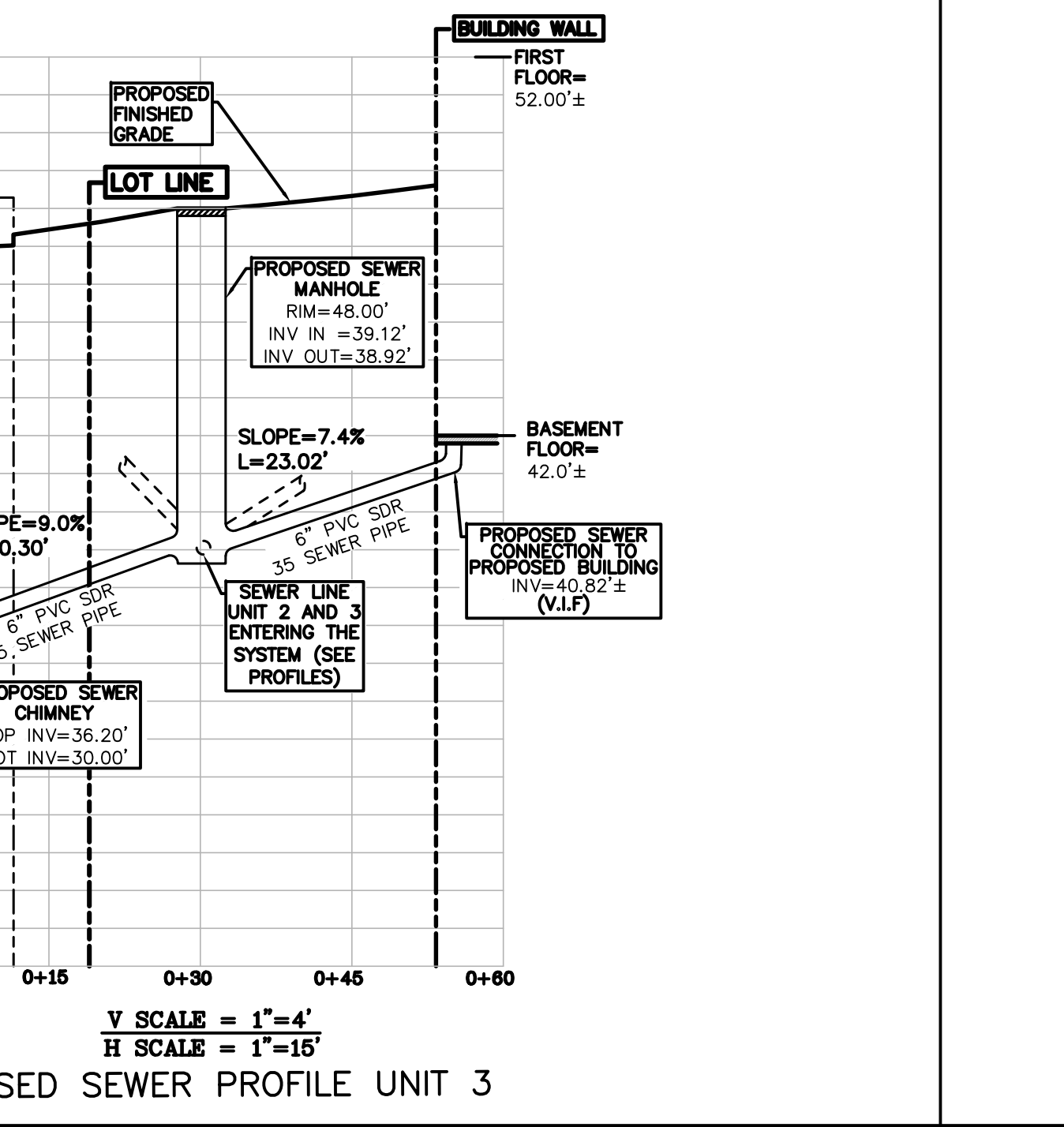
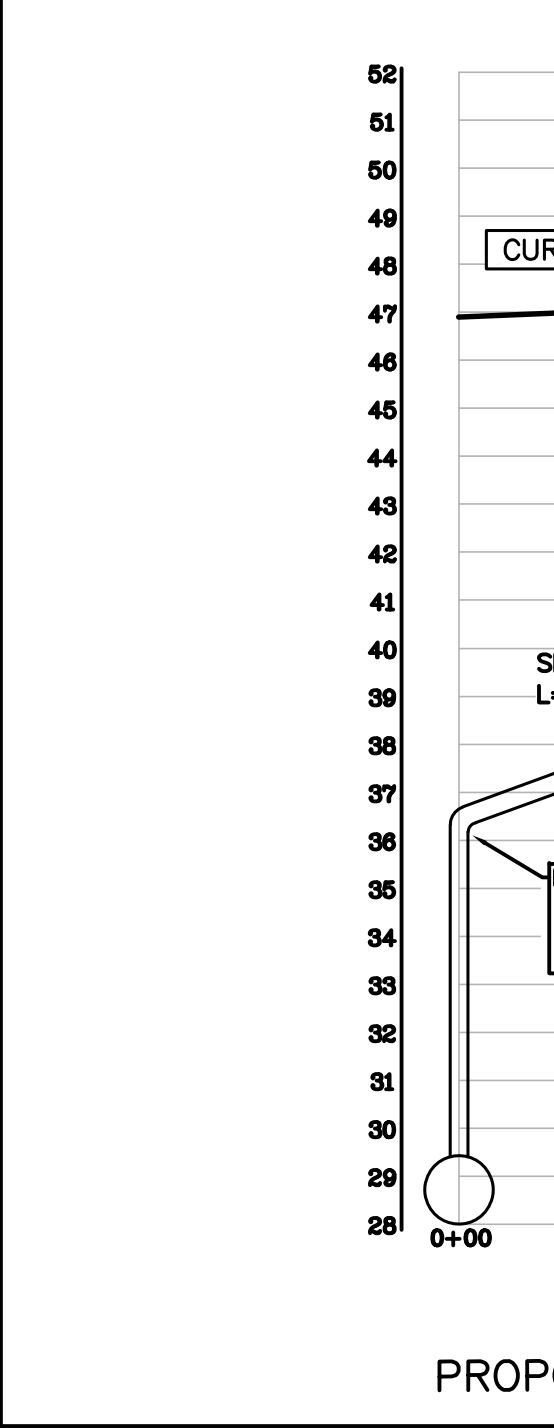
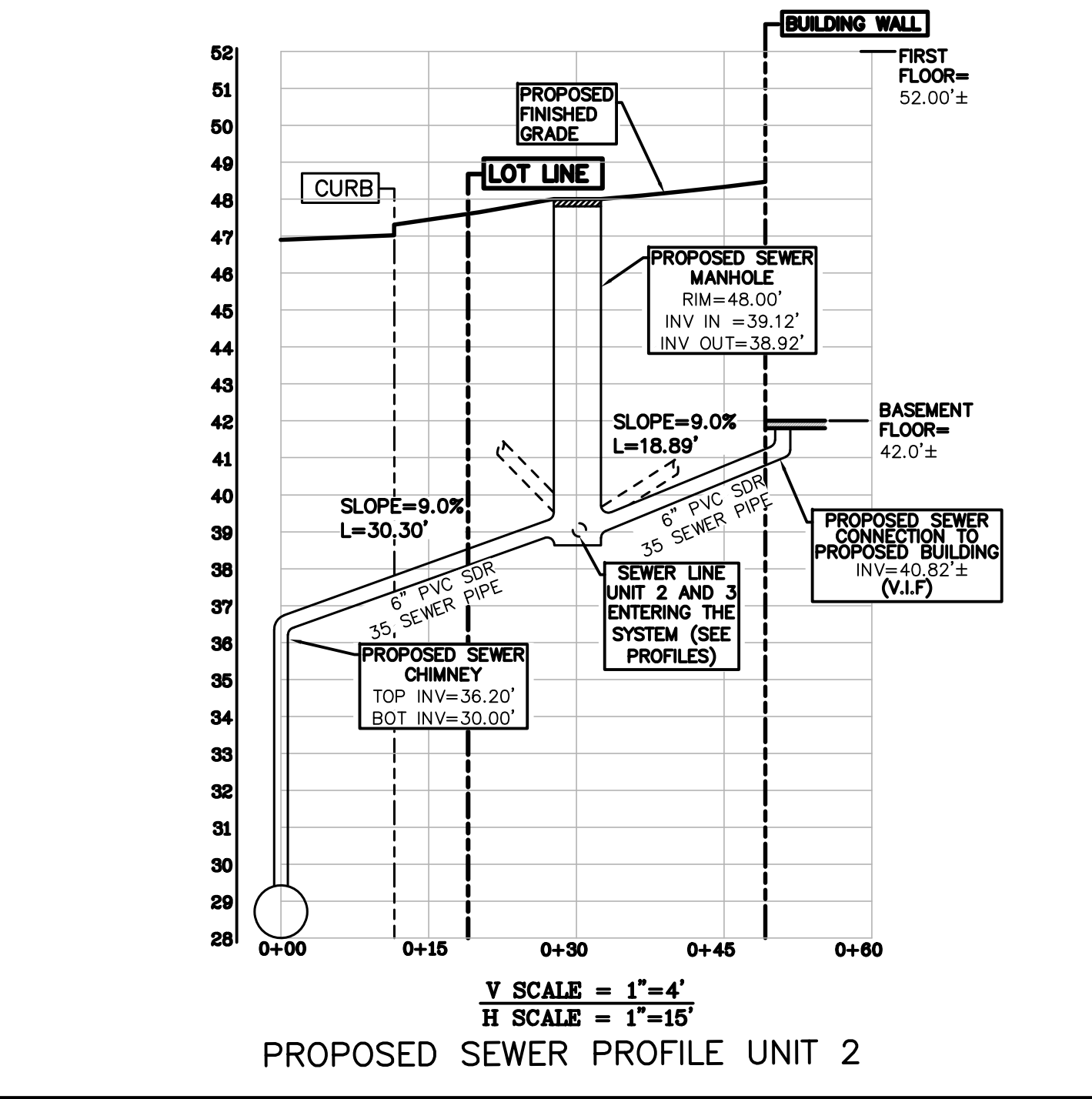
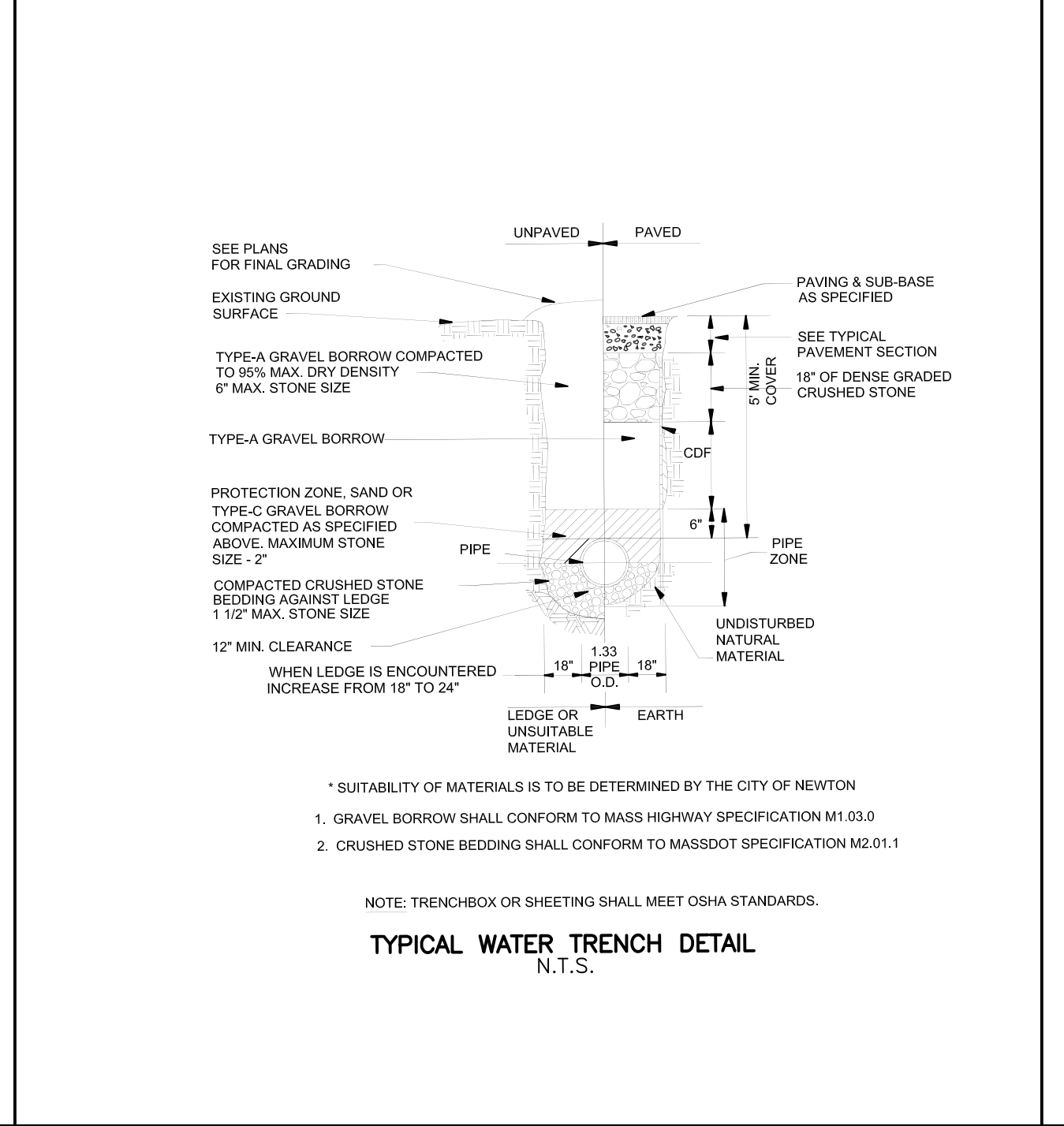
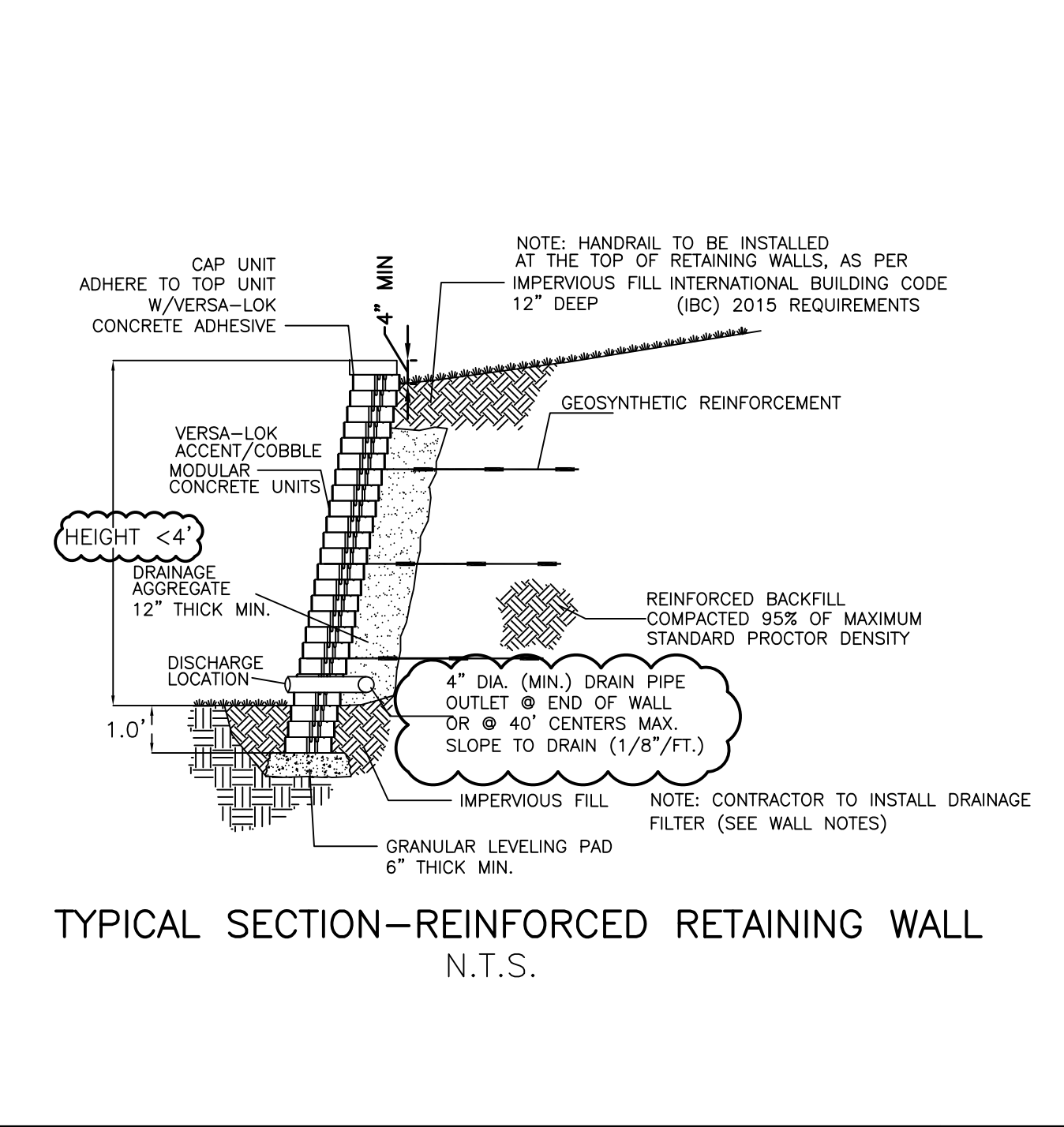
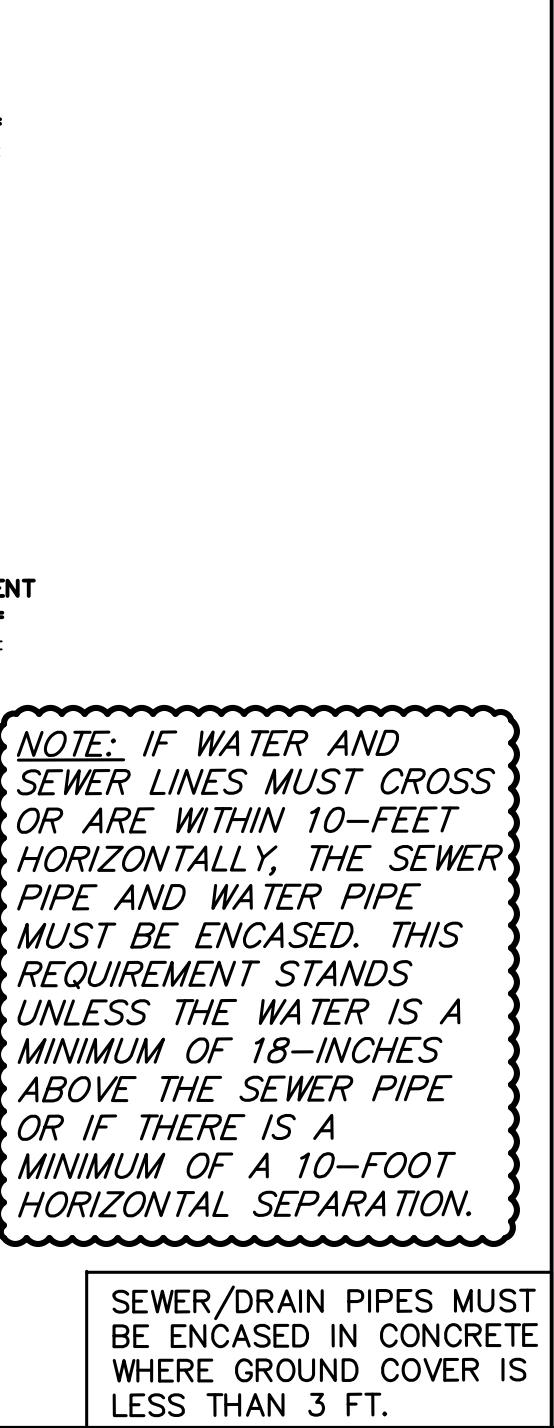
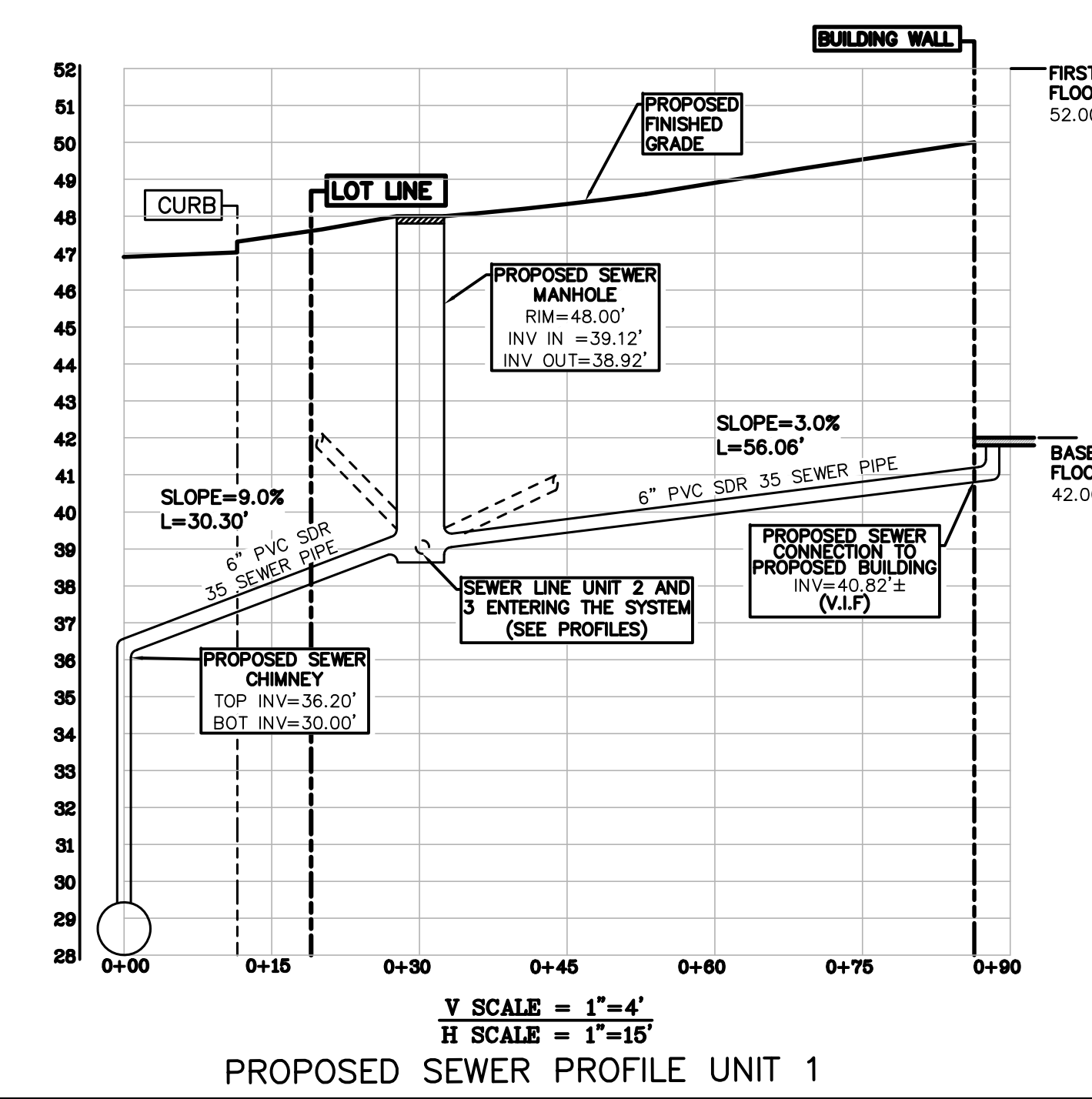
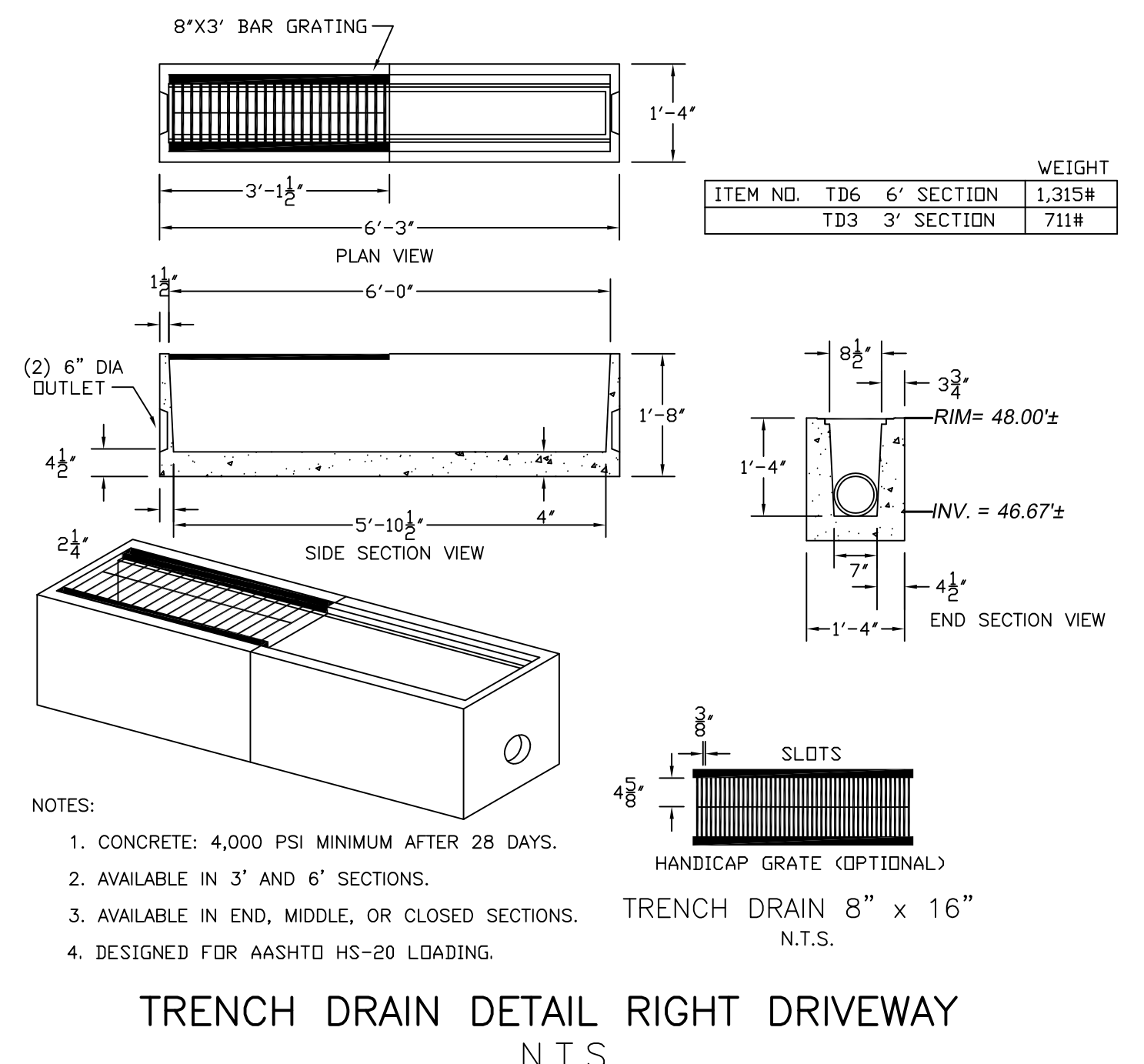
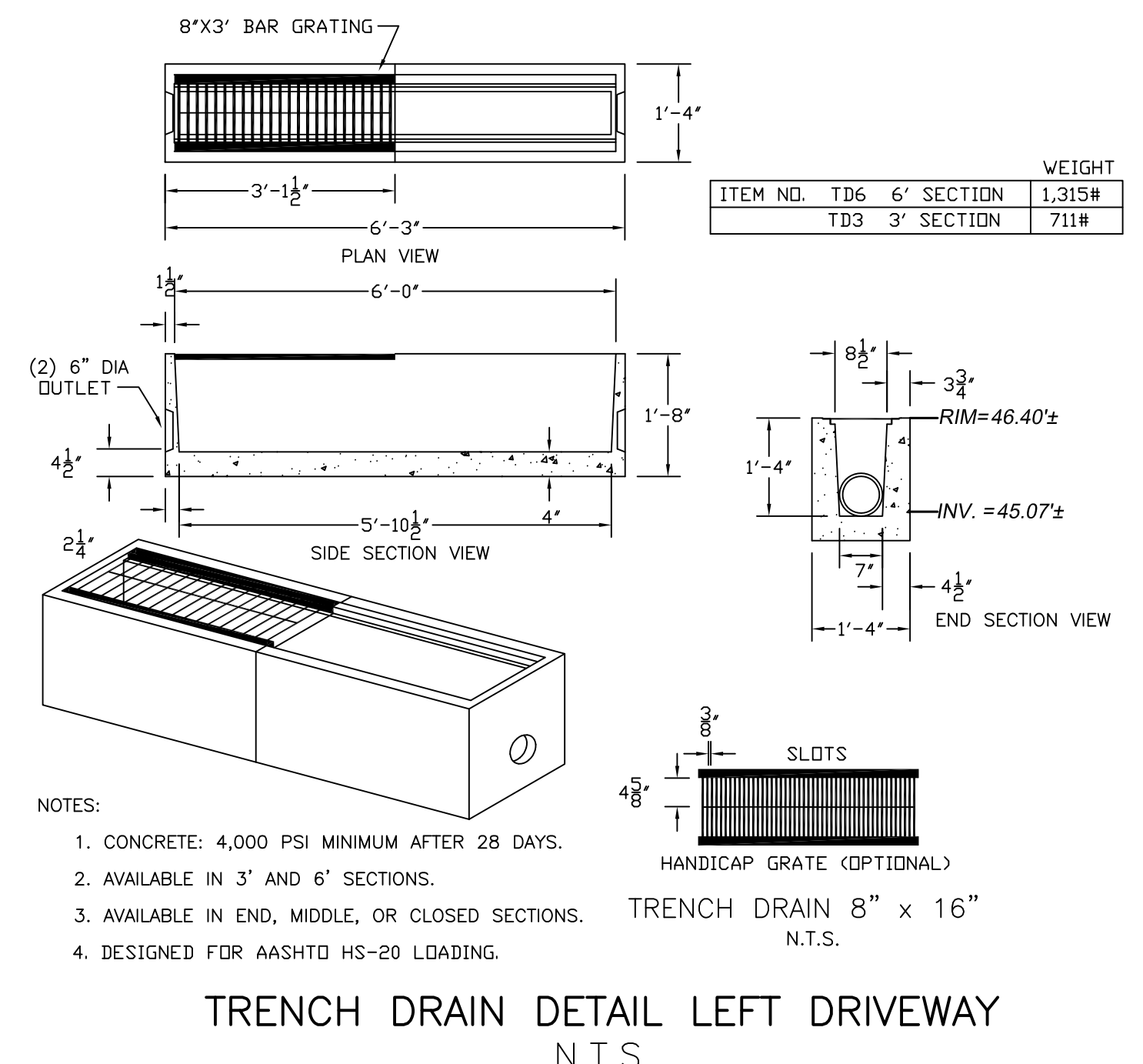
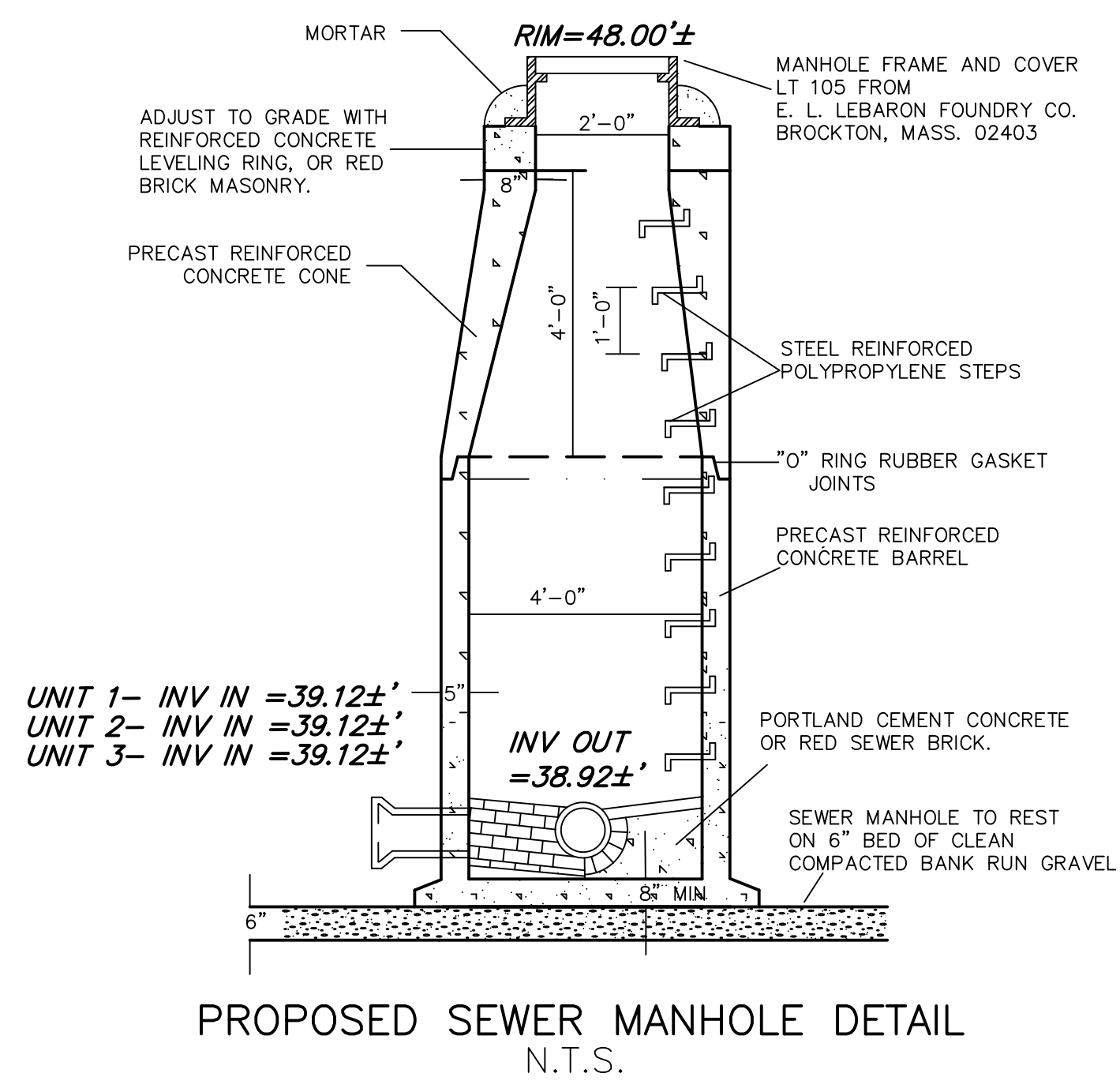


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DETAIL SHEET 2

SHEET 4 OF 5







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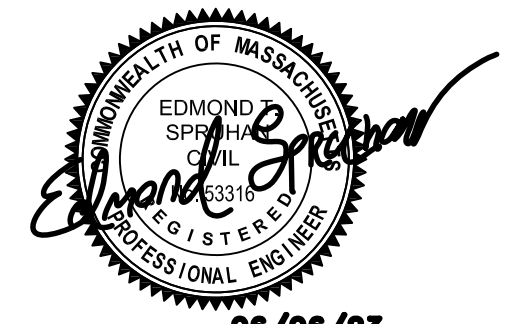
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DETAIL SHEET 3

SHEET 5 OF 5

