

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

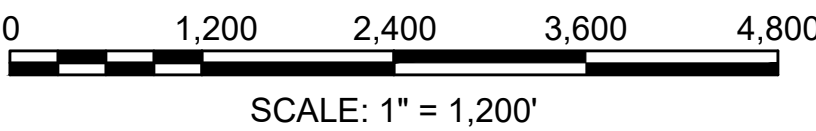
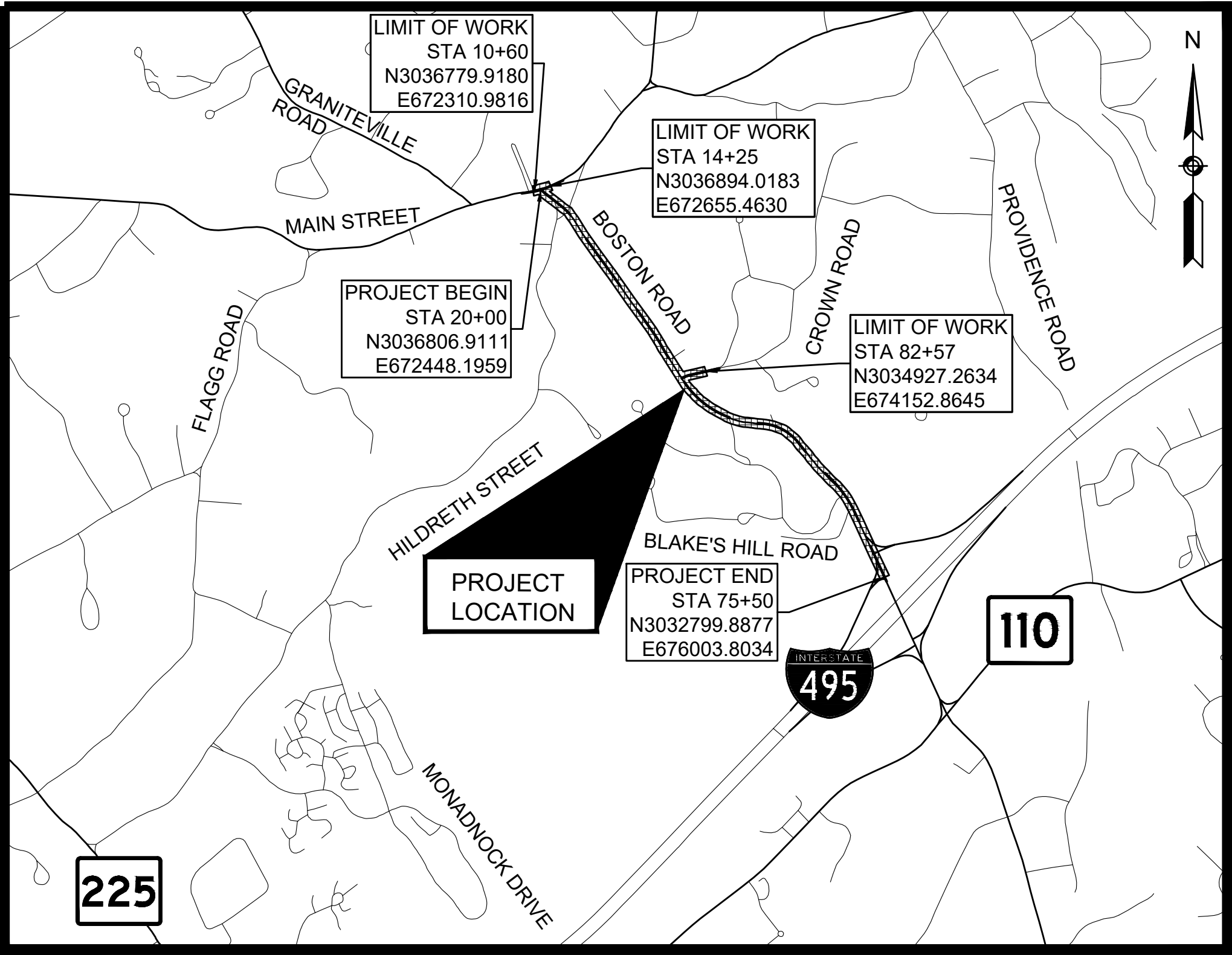
PLAN AND PROFILE OF
BOSTON ROAD

IN THE TOWN OF
WESTFORD
MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. -

NOI SUBMITTAL

INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND, ABBREVIATIONS & DESCRIPTION OF WORK
3-13	CONSTRUCTION PLANS
14-24	UTILITY PLANS
25-30	CONSTRUCTION DETAILS
RESOURCE AREAS ON SHEETS 7, 13, 18, 24 & 29	



LENGTH OF PROJECT = 5,550 FEET = 1.051 MILES

WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	30
PROJECT FILE NO.		609035	
TITLE SHEET & INDEX			

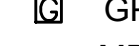
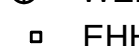
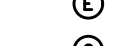
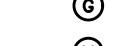
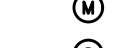
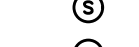
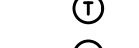
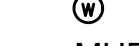
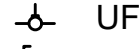
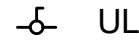
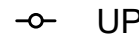
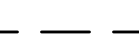
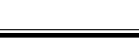
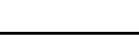
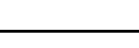
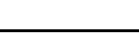
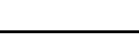
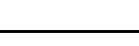
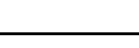
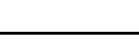
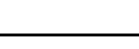
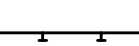
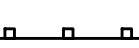
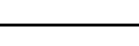
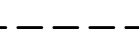
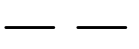
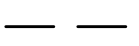
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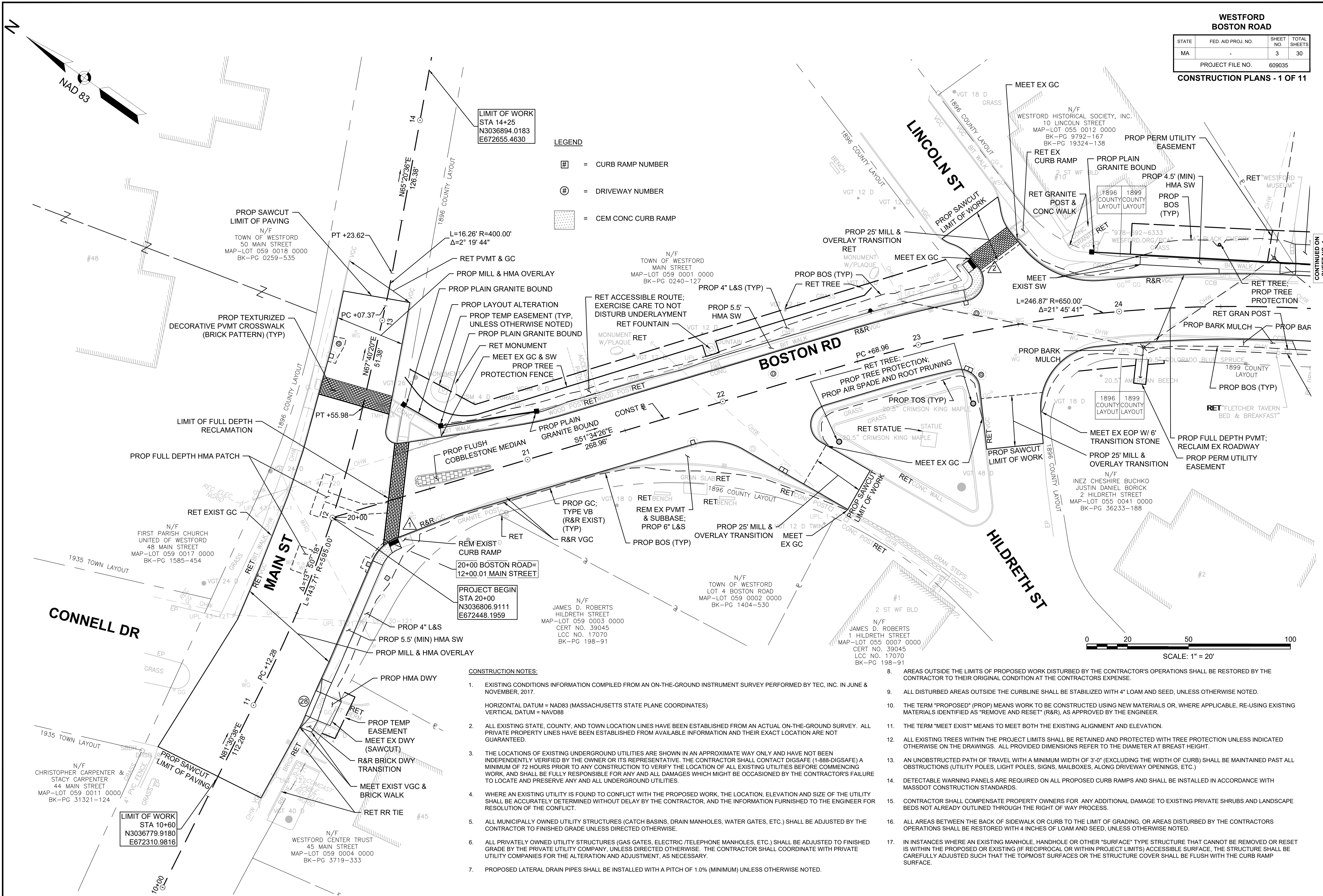
3/20/2023	NOI SUBMITTAL	0
DATE	DESCRIPTION	REV #



282 Merrimack St 2nd Floor Lawrence, MA 01843 978-794-1792	311 Main Street 2nd Floor Worcester, MA 01608 508-868-5104	169 Ocean Blvd, Unit 3 PO Box 249 Hampton, NH 03842 603-601-8154
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GENERAL SYMBOLS			TRAFFIC SYMBOLS			ABBREVIATIONS		WESTFORD BOSTON ROAD													
EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION	GENERAL		<table><tr><th>STATE</th><th>FED. AID PROJ. NO.</th><th>SHEET NO.</th><th>TOTAL SHEETS</th></tr><tr><td>MA</td><td>-</td><td>2</td><td>30</td></tr><tr><td colspan="2">PROJECT FILE NO.</td><td colspan="2">609035</td></tr></table>		STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	MA	-	2	30	PROJECT FILE NO.		609035	
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS																		
MA	-	2	30																		
PROJECT FILE NO.		609035																			
		JERSEY BARRIER			CONTROLLER CABINET, FOUNDATION	AADT	ANNUAL AVERAGE DAILY TRAFFIC	ABBREVIATIONS (cont.)													
		CATCH BASIN OR GUTTER INLET			CONTROLLER CABINET, FOUNDATION, CONC. PAD	ABAN	ABANDON														
		CATCH BASIN OR GUTTER INLET W/ CURB INLET			MAST ARM FOUNDATION (SCALE OF BLOCK = DIAMETER IN INCHES)	ADJ	ADJUST	GENERAL													
		FLAG POLE			MAST ARM (LENGTH NOTED)	APPROX.	APPROXIMATE														
		GAS PUMP			EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT	A.C.	ASPHALT CONCRETE	ABBREVIATIONS (cont.)													
		MAIL BOX			VEHICULAR SIGNAL HEAD	ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE														
		POST SQUARE			PEDESTRIAN SIGNAL HEAD	AP	ANGLE POINT	GENERAL													
		POST CIRCULAR			MAST ARM OR TS POLE MOUNTED SIGN	BIT.	BITUMINOUS														
		WELL			EMERGENCY PRE-EMPTION RECEIVER	BC	BOTTOM OF CURB	ABBREVIATIONS (cont.)													
		ELECTRIC HANDHOLE			EMERGENCY PRE-EMPTION CONFIRMATION STROBE	BD.	BOUND														
		FENCE GATE POST			PEDESTRIAN PUSH BUTTON	BL	BASELINE	GENERAL													
		GAS GATE			YAGI ANTENNA	BLDG	BUILDING														
		BORING HOLE			BICYCLE WIRE LOOP DETECTOR (SIZE AS NOTED)	BM	BENCHMARK	ABBREVIATIONS (cont.)													
		MONITORING WELL			WIRE LOOP DETECTOR (SIZE AND TYPE NOTED)	BO	BY OTHERS														
		TEST PIT			TRAFFIC SIGN (1 POST)	BOS	BOTTOM OF SLOPE	GENERAL													
		HYDRANT			TRAFFIC SIGN (2 POST)	BR.	BRIDGE														
		LIGHT POLE			PULL BOX 12"x12" (OR AS NOTED)	CB	CATCH BASIN	ABBREVIATIONS (cont.)													
		COUNTY BOUND			ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)	CBGI	CATCH BASIN WITH CURB INLET														
		GPS POINT			TRAFFIC SIGNAL CONDUIT	CC	CEMENT CONCRETE	GENERAL													
		CABLE MANHOLE				CCB	CAPE COD BERM														
		DRAINAGE MANHOLE				CCM	CEMENT CONCRETE MASONRY	ABBREVIATIONS (cont.)													
		ELECTRIC MANHOLE				CEM	CEMENT														
		GAS MANHOLE				CI	CURB INLET	GENERAL													
		MISC MANHOLE				CIP	CAST IRON PIPE														
		SEWER MANHOLE				CLF	CHAIN LINK FENCE	ABBREVIATIONS (cont.)													
		TELEPHONE MANHOLE				CL	CENTERLINE														
		WATER MANHOLE				CMP	CORRUGATED METAL PIPE	GENERAL													
		MASSACHUSETTS HIGHWAY BOUND				CSP	CORRUGATED STEEL PIPE														
		MONUMENT				CO.	COUNTY	ABBREVIATIONS (cont.)													
		STONE BOUND				CONC	CONCRETE														
		TOWN OR CITY BOUND				CONT	CONTINUOUS	GENERAL													
		TRAVERSE OR TRIANGULATION STATION				CONST	CONSTRUCTION														
		TROLLEY POLE OR GUY POLE				CR GR	CROWN GRADE	ABBREVIATIONS (cont.)													
		TRANSMISSION POLE				DHV	DESIGN HOURLY VOLUME														
		UTILITY POLE W/ FIREBOX				DI	DROP INLET	GENERAL													
		UTILITY POLE WITH DOUBLE LIGHT				DIA	DIAMETER														
		UTILITY POLE W / 1 LIGHT				DIP	DUCTILE IRON PIPE	ABBREVIATIONS (cont.)													
		UTILITY POLE				DW	STEADY DON'T WALK - PORTLAND ORANGE														
		BUSH				DWY	DRIVEWAY	GENERAL													
		TREE				ELEV (or EL.)	ELEVATION														
		STUMP				EMB	EMBANKMENT	ABBREVIATIONS (cont.)													
		SWAMP / MARSH				EOP (or EP)	EDGE OF PAVEMENT														
		WATER GATE				EXIST (or EX)	EXISTING	GENERAL													
		WATER SHUTOFF/CURB STOP				EXC	EXCAVATION														
		PARKING METER				F&C	FRAME AND COVER	ABBREVIATIONS (cont.)													
		OVERHEAD CABLE/WIRE				F&G	FRAME AND GRATE														
		CURBING				FDN.	FOUNDATION	GENERAL													
		CONTOURS (ON-THE-GROUND SURVEY DATA)				FLDSTN	FIELDSTONE														
		CONTOURS (PHOTOGRAMMETRIC DATA)				GAR	GARAGE	ABBREVIATIONS (cont.)													
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)				GC	GRANITE CURB														
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)				GD	GROUND	GENERAL													
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)				GG	GAS GATE														
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)				GI	GUTTER INLET	ABBREVIATIONS (cont.)													
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)				GIP	GALVANIZED IRON PIPE														
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)				GRAN	GRANITE	GENERAL													
		BALANCED STONE WALL				GRAV	GRAVEL														
		GUARD RAIL - STEEL POSTS				GRD	GUARD	ABBREVIATIONS (cont.)													
		GUARD RAIL - WOOD POSTS				HDW	HEADWALL														
		CHAIN LINK OR METAL FENCE				HMA	HOT MIX ASPHALT	GENERAL													
		WOOD FENCE				HOR	HORIZONTAL														
		SEDIMENT CONTROL BARRIER				HYD	HYDRANT	ABBREVIATIONS (cont.)													
		TREE LINE				INV	INVERT														



- LEGEND
- # = CURB RAMP NUMBER
 - # = DRIVEWAY NUMBER
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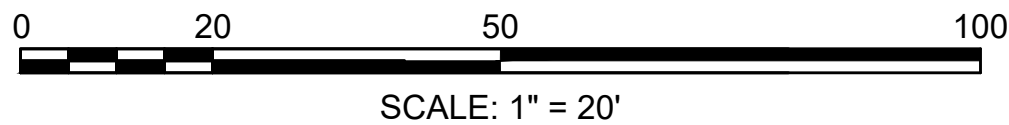
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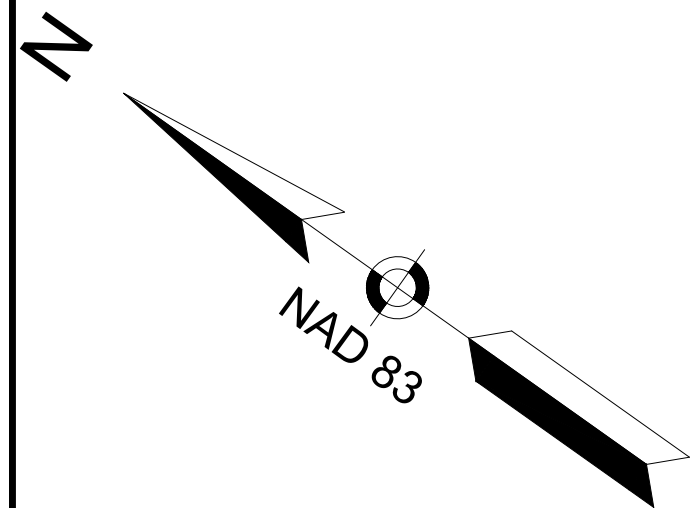
CONSTRUCTION NOTES:

- EXISTING CONDITIONS INFORMATION COMPILED FROM AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY TEC, INC. IN JUNE & NOVEMBER, 2017.
HORIZONTAL DATUM = NAD83 (MASSACHUSETTS STATE PLANE COORDINATES)
VERTICAL DATUM = NAVD88
- ALL EXISTING STATE, COUNTY, AND TOWN LOCATION LINES HAVE BEEN ESTABLISHED FROM AN ACTUAL ON-THE-GROUND SURVEY. ALL PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT DIGSAFE (1-888-DIGSAFE) A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- ALL MUNICIPALLY OWNED UTILITY STRUCTURES (CATCH BASINS, DRAIN MANHOLES, WATER GATES, ETC.) SHALL BE ADJUSTED BY THE CONTRACTOR TO FINISHED GRADE UNLESS DIRECTED OTHERWISE.
- ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC /TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.
- PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (MINIMUM) UNLESS OTHERWISE NOTED.

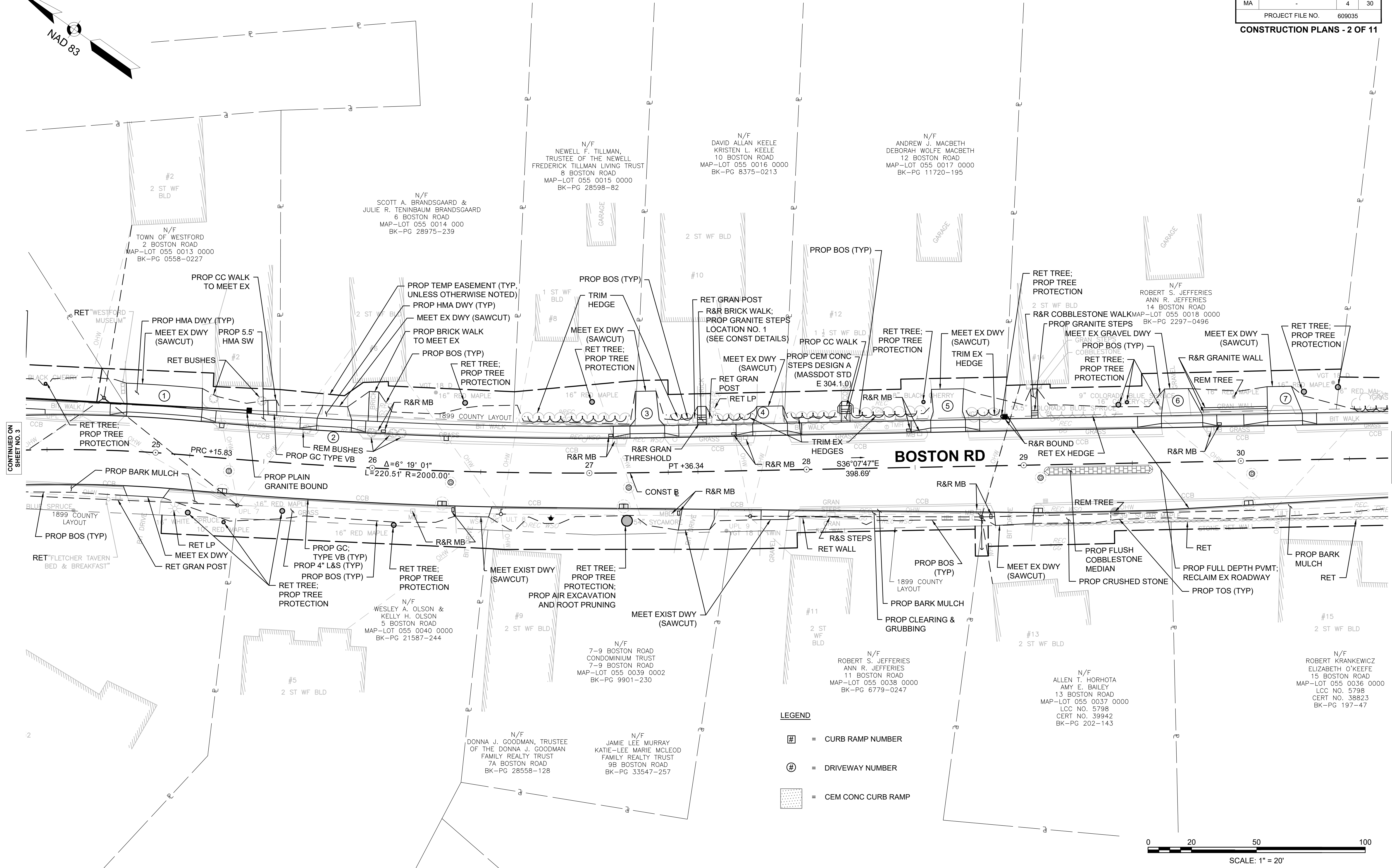
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE.
- ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.
- THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R), AS APPROVED BY THE ENGINEER.
- THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.
- ALL EXISTING TREES WITHIN THE PROJECT LIMITS SHALL BE RETAINED AND PROTECTED WITH TREE PROTECTION UNLESS INDICATED OTHERWISE ON THE DRAWINGS. ALL PROVIDED DIMENSIONS REFER TO THE DIAMETER AT BREAST HEIGHT.
- AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" (EXCLUDING THE WIDTH OF CURB) SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ALONG DRIVEWAY OPENINGS, ETC.)
- DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED CURB RAMP AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARDS.
- CONTRACTOR SHALL COMPENSATE PROPERTY OWNERS FOR ANY ADDITIONAL DAMAGE TO EXISTING PRIVATE SHRUBS AND LANDSCAPE BEDS NOT ALREADY OUTLINED THROUGH THE RIGHT OF WAY PROCESS.
- ALL AREAS BETWEEN THE BACK OF SIDEWALK OR CURB TO THE LIMIT OF GRADING, OR AREAS DISTURBED BY THE CONTRACTORS OPERATIONS SHALL BE RESTORED WITH 4 INCHES OF LOAM AND SEED, UNLESS OTHERWISE NOTED.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.



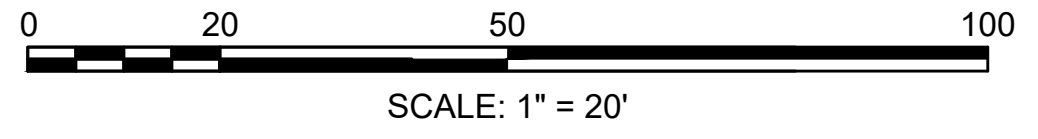
CONTINUED ON
SHEET NO. 4



WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO. 609035			
CONSTRUCTION PLANS - 2 OF 11			

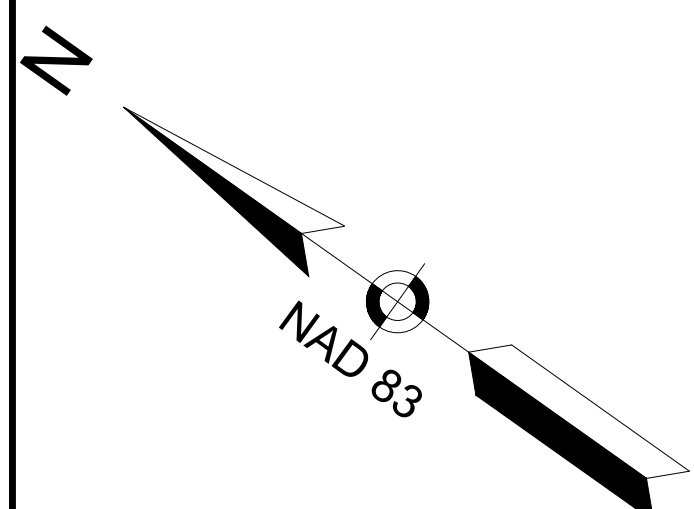


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 - [#] = DRIVEWAY NUMBER
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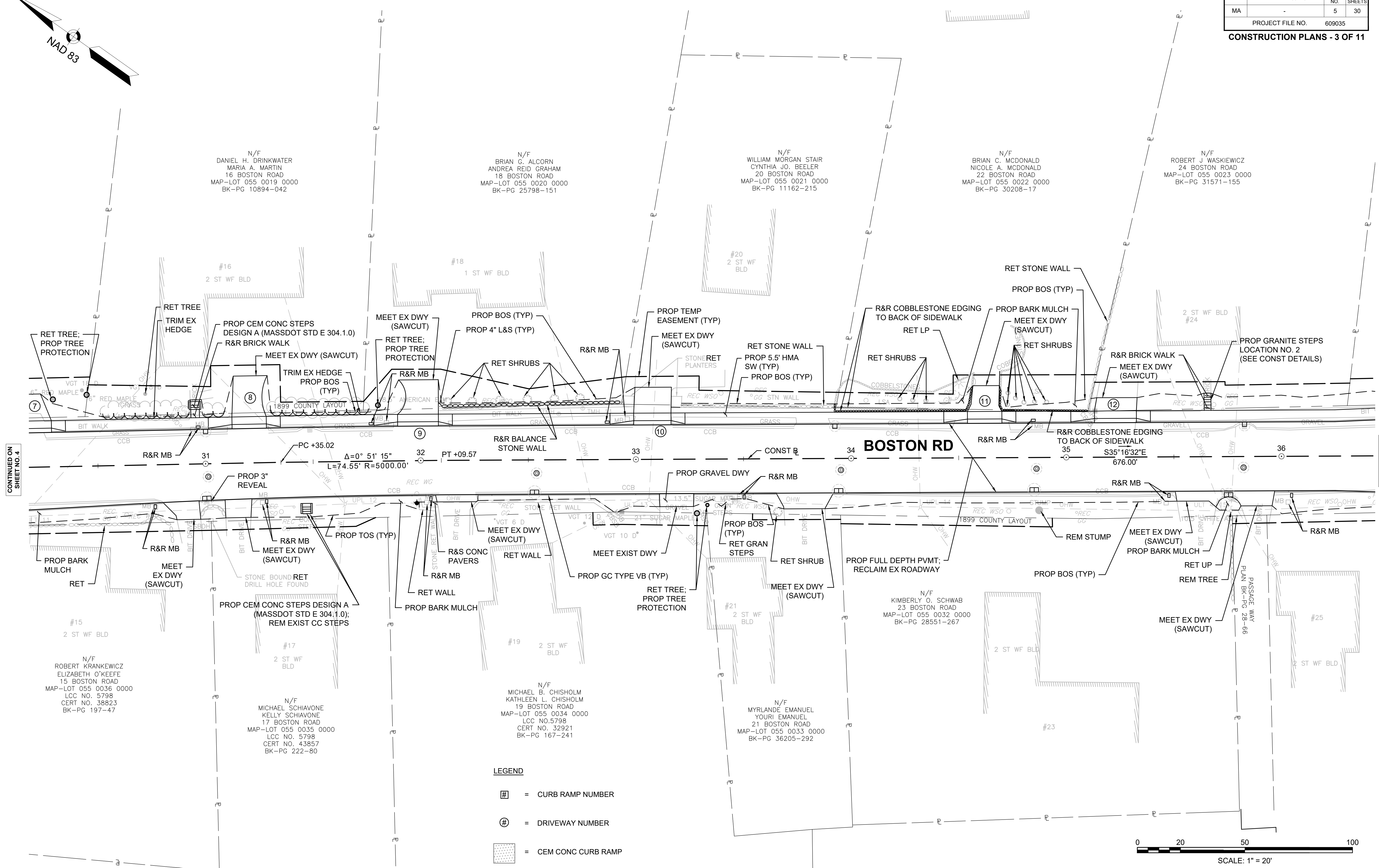


CONTINUED ON
SHEET NO. 3

CONTINUED ON
SHEET NO. 5



WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	30
PROJECT FILE NO.		609035	
CONSTRUCTION PLANS - 3 OF 11			

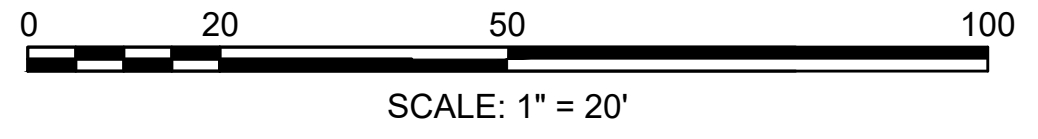


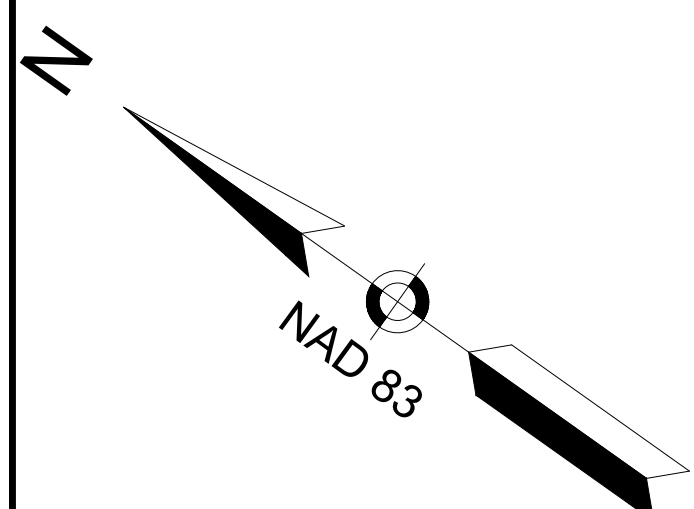
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SHEET NO. 4

CONTINUED ON
SHEET NO. 6

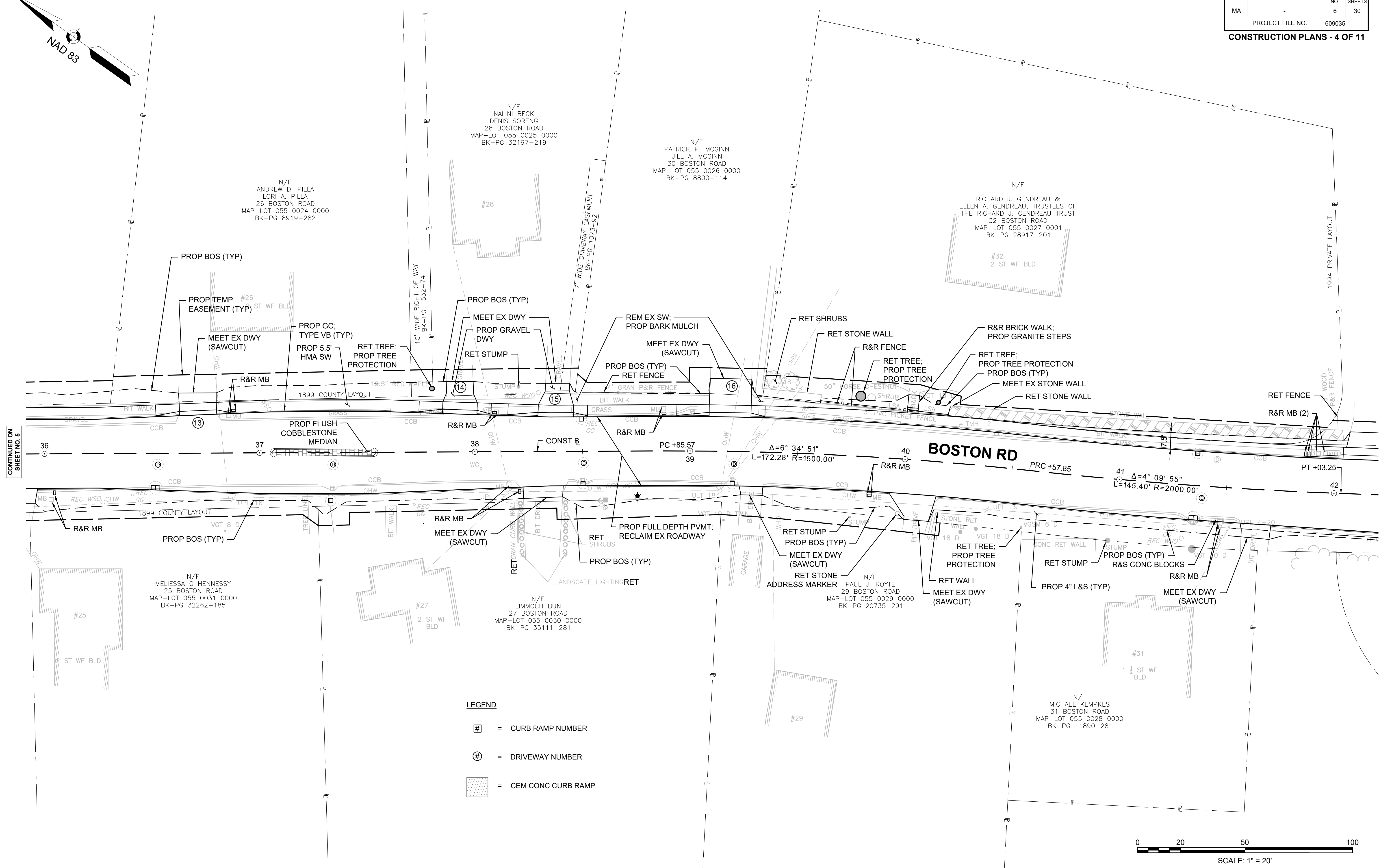
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- = DRIVEWAY NUMBER
- = CEM CONC CURB RAMP





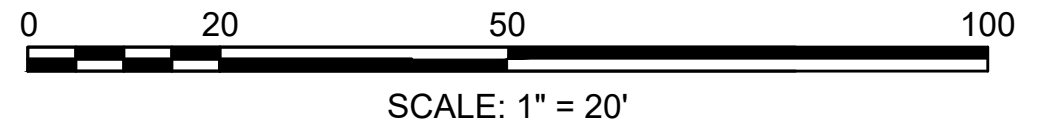
WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	30
PROJECT FILE NO. 609035			
CONSTRUCTION PLANS - 4 OF 11			

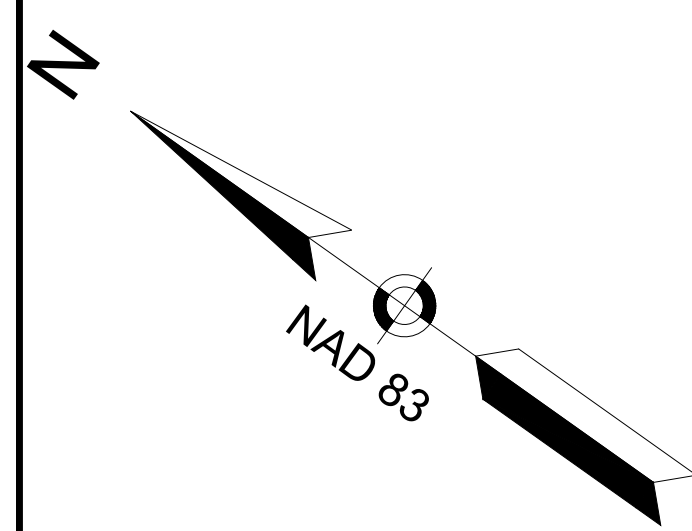


CONTINUED ON
SHEET NO. 5

CONTINUED ON
SHEET NO. 7

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 - [Pattern] = CEM CONC CURB RAMP

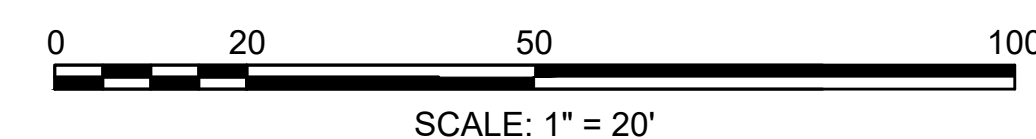
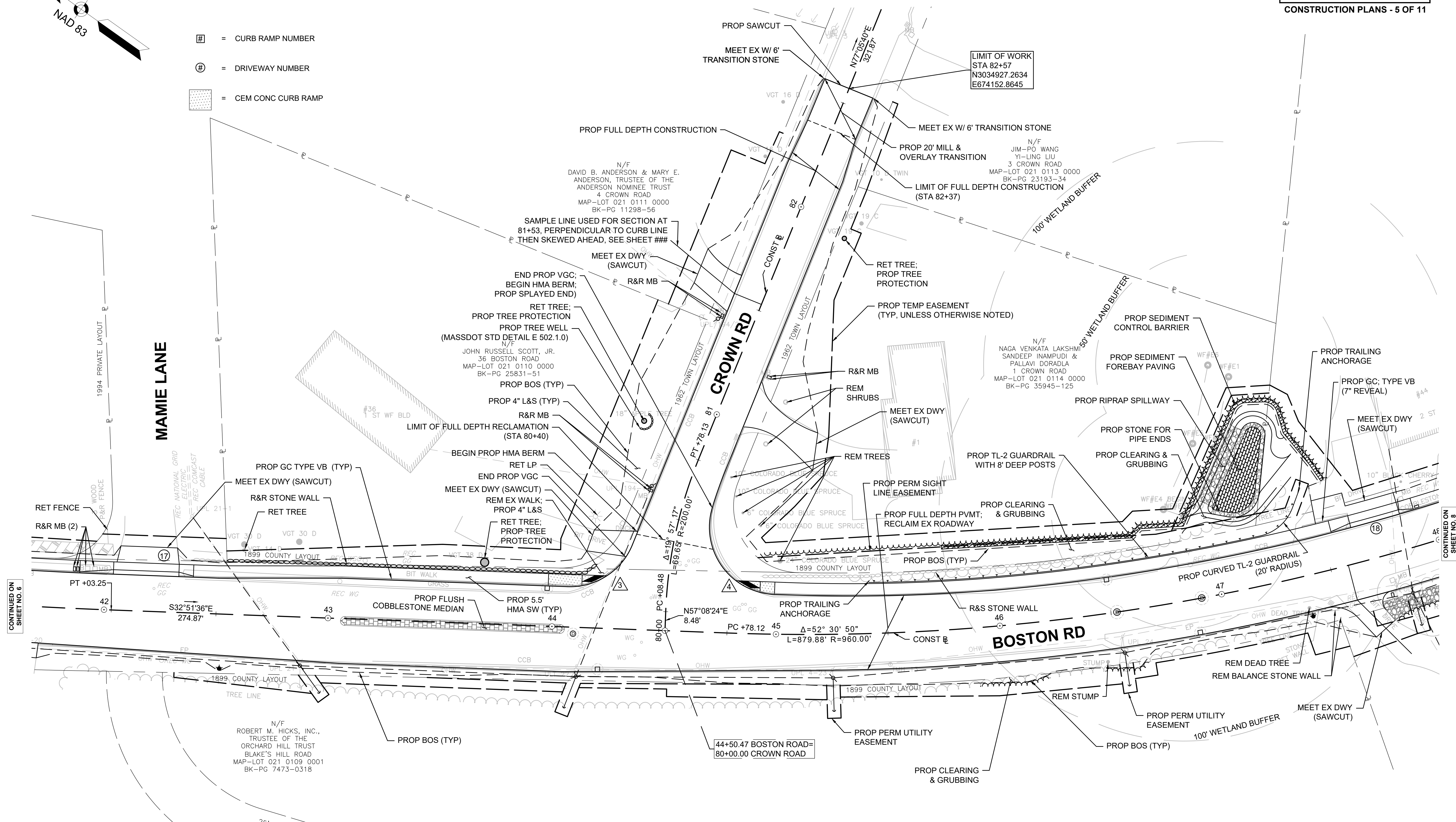




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- [Pattern] = CEM CONC CURB RAMP

DRAINAGE DETAILS

WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	30
PROJECT FILE NO.		609035	
CONSTRUCTION PLANS - 5 OF 11			



CONTINUED ON
SHEET NO. 6

CONTINUED ON
SHEET NO. 8

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	30
PROJECT FILE NO.		609035	



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	30
PROJECT FILE NO.		609035	

LEGEND

⑧ = DRIVEWAY NUMBER

 = CEM CONC CURB RAMP

**CONTINUED ON
SHEET NO. 8**

CONTINUED ON
SHEET NO. 48

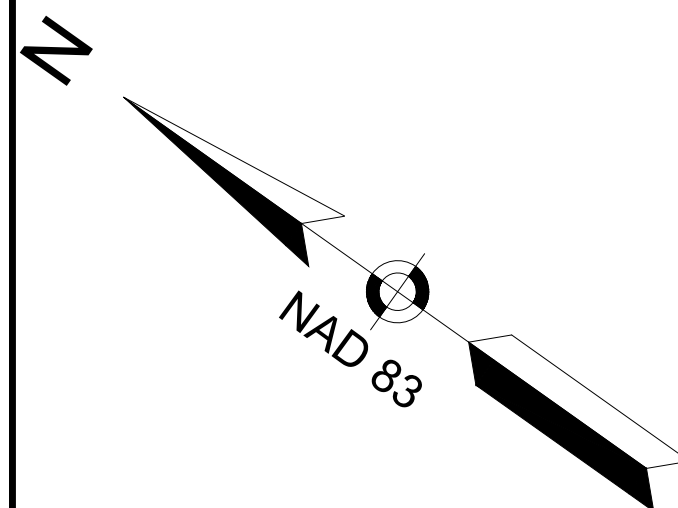
0 20 50 100

SCALE: 1" = 20'

3609035HDE5/CONSTRICTION PIANS) DWIG
Plotted on 13-Mar-2023 11:42 AM

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	30
PROJECT FILE NO.		609035	

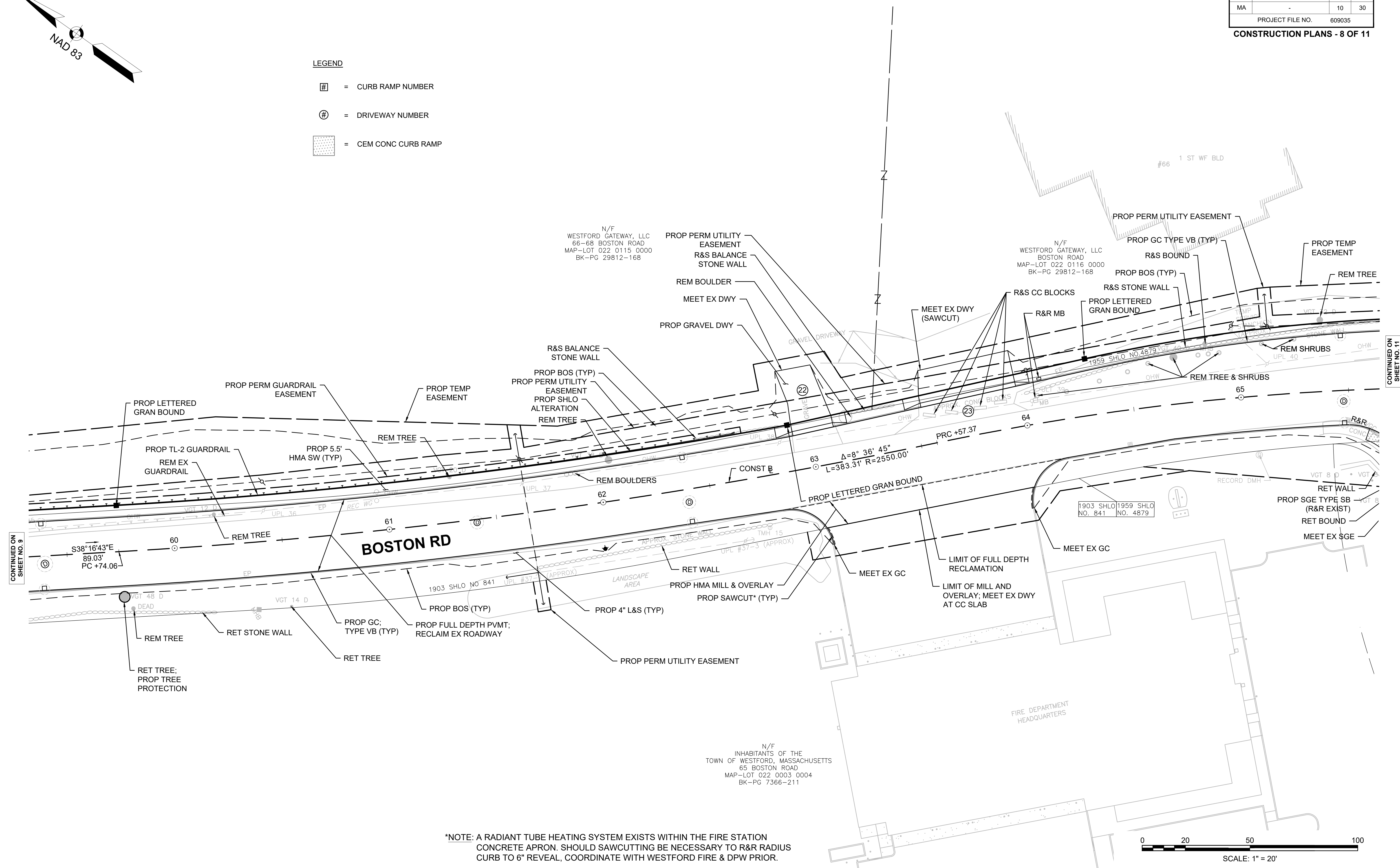
309035HD5(CONSTRICTION PLANS) DWG



= CURB RAMP NUMBER

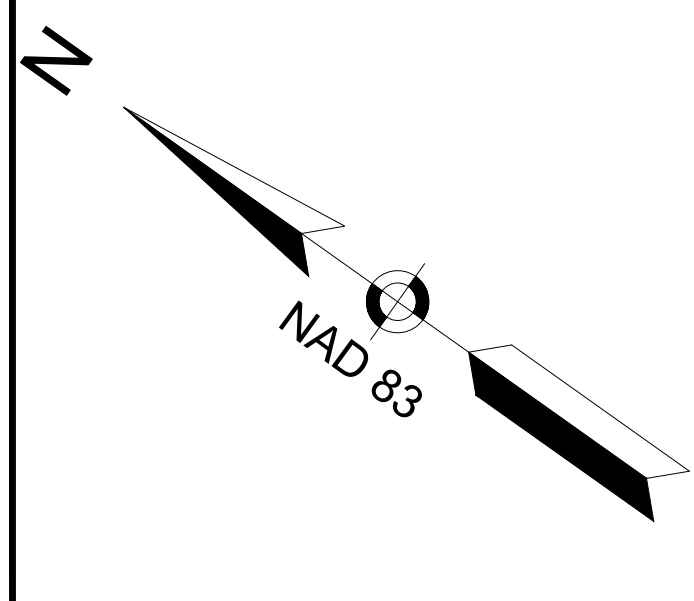
⑧ = DRIVEWAY NUMBER

 = CEM CONC CURB RAMF

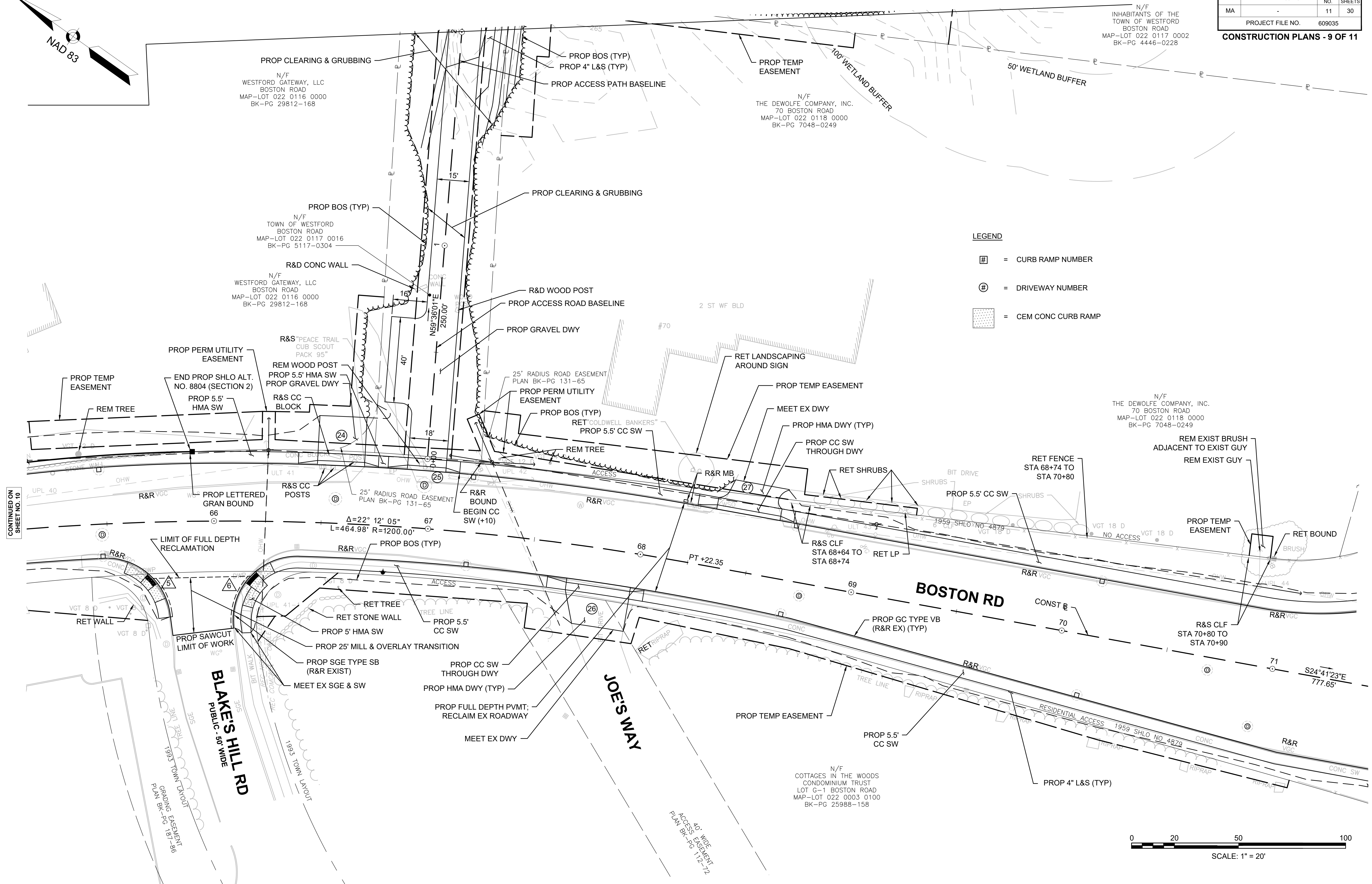


***NOTE:** A RADIANT TUBE HEATING SYSTEM EXISTS WITHIN THE FIRE STATION CONCRETE APRON. SHOULD SAWCUTTING BE NECESSARY TO R&R RADIUS CURB TO 6" REVEAL, COORDINATE WITH WESTFORD FIRE & DPW PRIOR.

SCALE: 1" = 20'



WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	30
PROJECT FILE NO.		609035	
CONSTRUCTION PLANS - 9 OF 11			

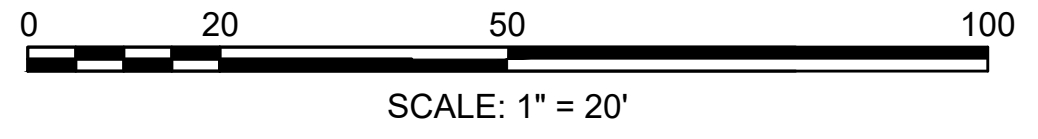


LEGEND

- # = CURB RAMP NUMBER
- Ⓢ = DRIVEWAY NUMBER
- [Pattern] = CEM CONC CURB RAMP

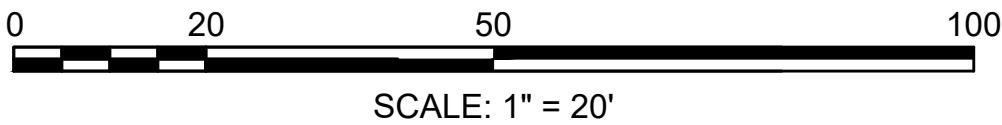
CONTINUED ON
SHEET NO. 10

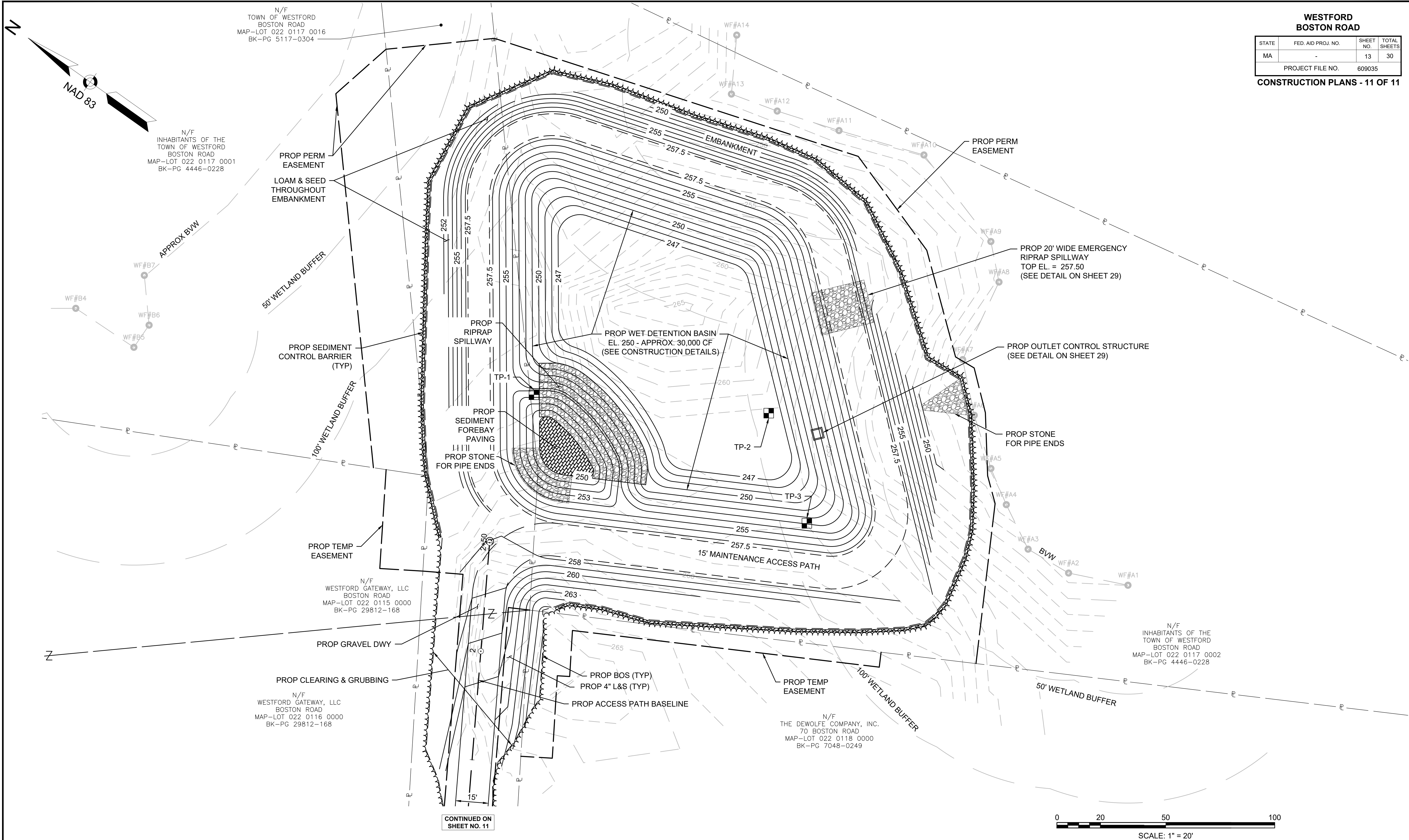
CONTINUED ON
SHEET NO. 12



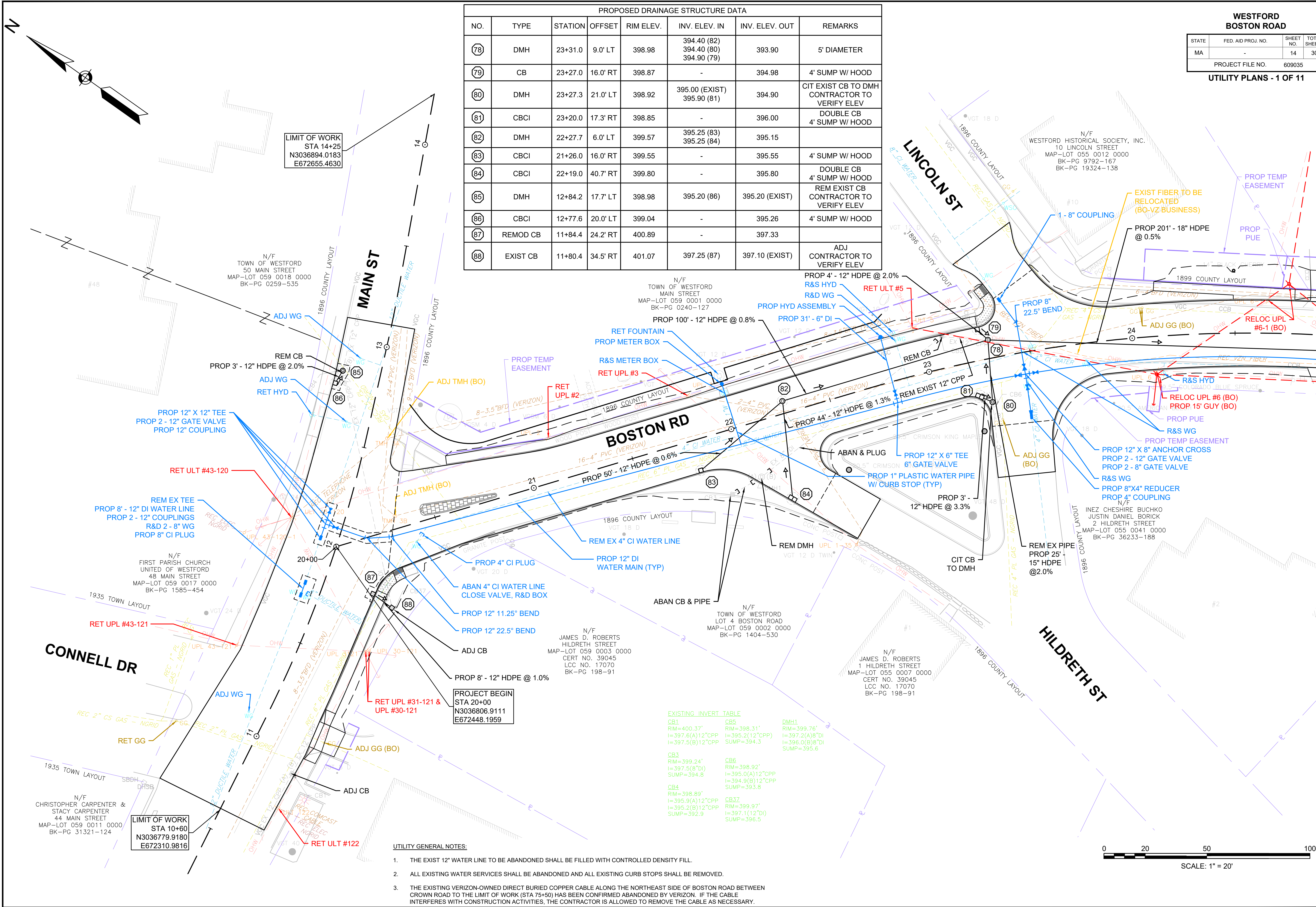
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	30
PROJECT FILE NO.		609035	

609035HD5(CONSTRUCTION PLANS).DWG Plotted on 13-Mar-2023 11:42 AM





WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	30
PROJECT FILE NO.		609035	
CONSTRUCTION PLANS - 11 OF 11			

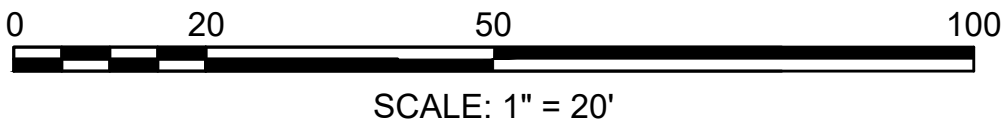


PROPOSED DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
78	DMH	23+31.0	9.0' LT	398.98	394.40 (82) 394.40 (80) 394.90 (79)	393.90
79	CB	23+27.0	16.0' RT	398.87	-	394.98
80	DMH	23+27.3	21.0' LT	398.92	395.00 (EXIST) 395.90 (81)	394.90
81	CBCI	23+20.0	17.3' RT	398.85	-	396.00
82	DMH	22+27.7	6.0' LT	399.57	395.25 (83) 395.25 (84)	395.15
83	CBCI	21+26.0	16.0' RT	399.55	-	395.55
84	CBCI	22+19.0	40.7' RT	399.80	-	395.80
85	DMH	12+84.2	17.7' LT	398.98	395.20 (86)	395.20 (EXIST)
86	CBCI	12+77.6	20.0' LT	399.04	-	395.26
87	REMOD CB	11+84.4	24.2' RT	400.89	-	397.33
88	EXIST CB	11+80.4	34.5' RT	401.07	397.25 (87)	397.10 (EXIST)
				ADJ CONTRACTOR TO VERIFY ELEV		

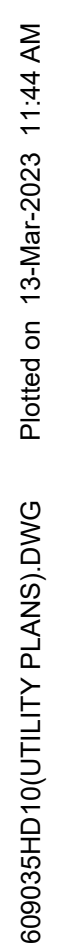
WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	30
PROJECT FILE NO. 609035			
UTILITY PLANS - 1 OF 11			

- UTILITY GENERAL NOTES:
- THE EXIST 12" WATER LINE TO BE ABANDONED SHALL BE FILLED WITH CONTROLLED DENSITY FILL.
 - ALL EXISTING WATER SERVICES SHALL BE ABANDONED AND ALL EXISTING CURB STOPS SHALL BE REMOVED.
 - THE EXISTING VERIZON-OWNED DIRECT BURIED COPPER CABLE ALONG THE NORTHEAST SIDE OF BOSTON ROAD BETWEEN CROWN ROAD TO THE LIMIT OF WORK (STA 75+50) HAS BEEN CONFIRMED ABANDONED BY VERIZON. IF THE CABLE INTERFERES WITH CONSTRUCTION ACTIVITIES, THE CONTRACTOR IS ALLOWED TO REMOVE THE CABLE AS NECESSARY.

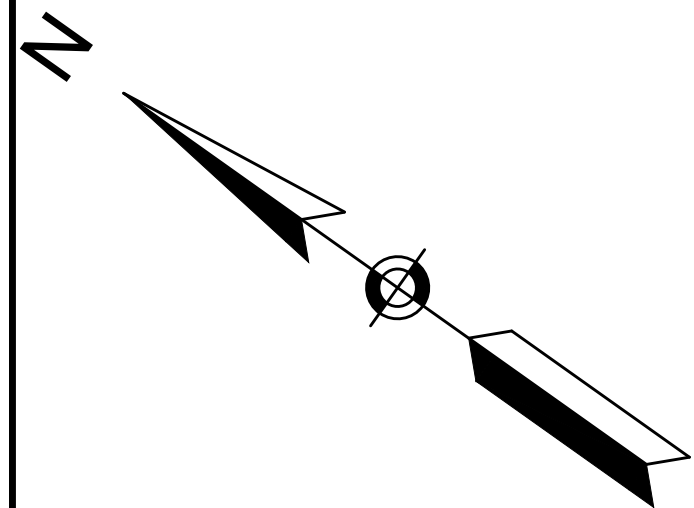
EXISTING INVERT TABLE		
CB1	RIM=400.37'	DMH1
I=397.6(A)12"CPP	I=395.2(12"CPP)	I=397.2(A)8"DI
I=397.5(B)12"CPP	SUMP=394.3	I=396.0(B)8"DI
		SUMP=395.6
CB3	RIM=399.24'	CB6
I=397.5(8"DI)	I=395.0(A)12"CPP	RIM=398.92'
SUMP=394.8	I=394.9(B)12"CPP	I=395.2(12"CPP)
		SUMP=393.8
CB4	RIM=398.89'	CB37
I=395.9(A)12"CPP	RIM=399.97'	I=397.1(12"DI)
I=395.2(B)12"CPP	SUMP=392.9	SUMP=396.5



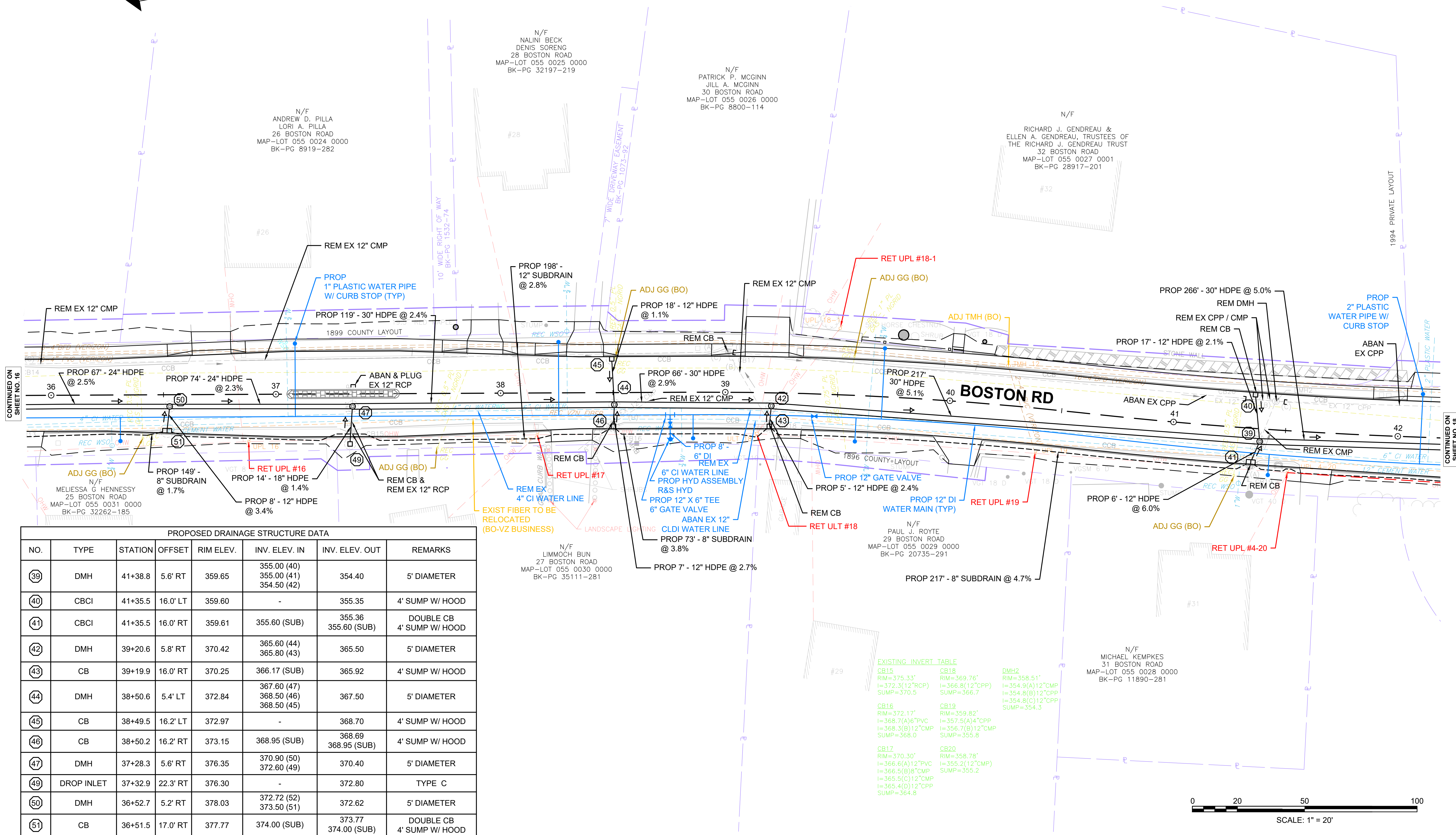
CONTINUED ON
SHEET NO. 15



WESTFORD BOSTON ROAD

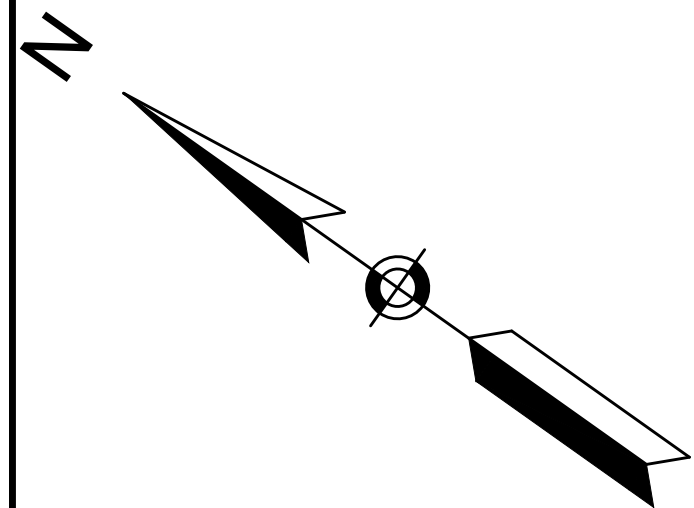


WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	30
PROJECT FILE NO. 609035			
UTILITY PLANS - 4 OF 11			



NOTE:
THERE IS NO DRAINAGE STRUCTURE NUMBER 48.





PROPOSED DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
31	DMH	46+90.9	0' LT/RT	335.28	330.89 (33) 329.00 (34)	328.94 (32) 327.70 (29)
32	OUTLET	47+00.8	34.4' LT	-	-	327.45
33	CBCI	46+87.6	16.0' RT	335.69	331.94 (SUB)	331.69 331.94 (SUB)
34	DMH	46+52.6	0.0'	336.12	330.82 (36) 332.40 (35)	329.70
35	CBCI	46+50.0	16.0' LT	335.63	-	332.50
36	DMH	44+09.5	2.9' RT	346.20	341.10 (39) 341.10 (38) 341.10 (37)	340.60
37	CB	43+97.3	18.0' LT	346.48	-	341.90
38	CBCI	44+21.0	19.4' RT	345.42	341.55 (SUB)	341.30 341.55 (SUB)

WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	30
PROJECT FILE NO.		609035	
UTILITY PLANS - 5 OF 11			

LIMIT OF WORK
STA 82+57
N3034927.2634
E674152.8645

N/F
DAVID B. ANDERSON & MARY E.
ANDERSON, TRUSTEE OF THE
ANDERSON NOMINEE TRUST
4 CROWN ROAD
MAP-LOT 021 0111 0000
BK-PG 11298-56

N/F
JOHN RUSSELL SCOTT, JR.
36 BOSTON ROAD
MAP-LOT 021 0110 0000
BK-PG 25831-51

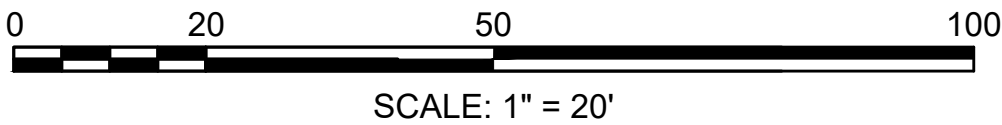
N/F
JIM-PO WANG
YI-LING LIU
3 CROWN ROAD
MAP-LOT 021 0113 0000
BK-PG 23193-34

N/F
NAGA VENKATA LAKSHMI
SANDEEP INAMPUDI &
PALLAVI DORADLA
1 CROWN ROAD
MAP-LOT 021 0114 0000
BK-PG 35945-125

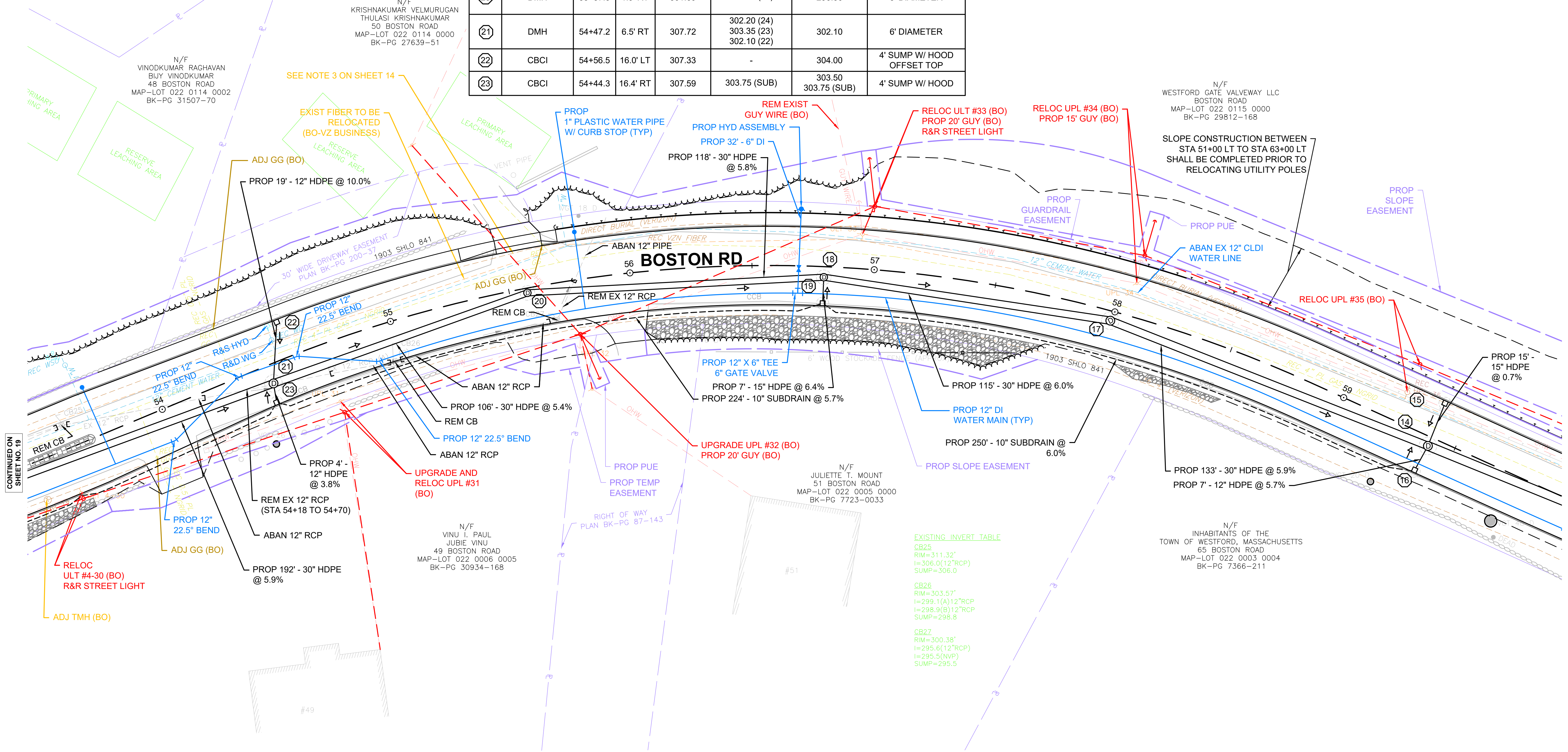
N/F
ROBERT M. HICKS, INC.,
TRUSTEE OF THE
ORCHARD HILL TRUST
BLAKE'S HILL ROAD
MAP-LOT 021 0109 0001
BK-PG 7473-0318

EXISTING INVERT TABLE
CB21
RIM=333.30'
I=330.3(12"CPP)
SUMP=328.5

SLOPE CUT BETWEEN
STA 46+00 RT TO STA 51+00 RT
SHALL BE COMPLETED PRIOR TO
RELOCATING UTILITY POLES



CONTINUED ON
SHEET NO. 19

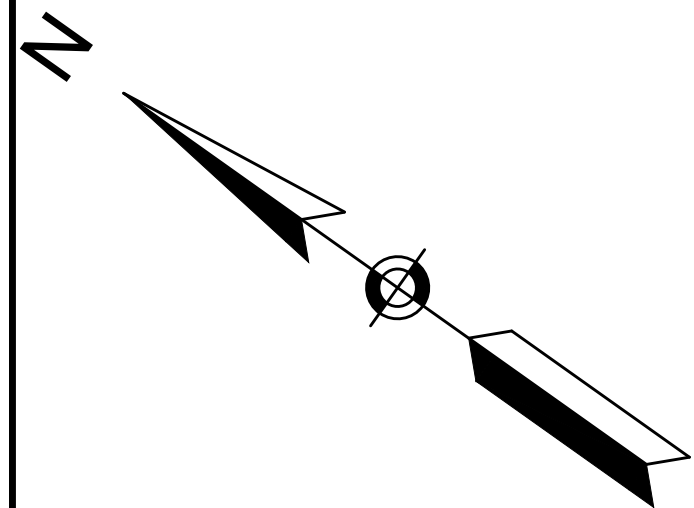


PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
14	DMH	59+35.3	3.9' RT	280.22	274.50 (17) 274.60 (16) 275.90 (15)	274.00	5' DIAMETER
15	CBCI	59+35.0	16.0' LT	280.19	-	276.00	4' SUMP W/ HOOD
16	CBCI	59+35.0	16.0' RT	280.17	275.10 (SUB)	275.00	4' SUMP W/ HOOD OFFSET TOP
17	DMH	57+99.1	3.9' RT	287.81	282.40 (18)	282.30	5' DIAMETER
18	DMH	56+79.5	4.3' RT	294.76	289.40 (20) 289.30 (19)	289.30	
19	CBCI	56+80.0	16.0' RT	294.30	290.00 (SUB)	289.75 290.00 (SUB)	4' SUMP W/ HOOD
20	DMH	55+57.3	1.9' RT	301.69	296.40 (21)	296.30	5' DIAMETER
21	DMH	54+47.2	6.5' RT	307.72	302.20 (24) 303.35 (23) 302.10 (22)	302.10	6' DIAMETER
22	CBCI	54+56.5	16.0' LT	307.33	-	304.00	4' SUMP W/ HOOD OFFSET TOP
23	CBCI	54+44.3	16.4' RT	307.59	303.75 (SUB)	303.50 303.75 (SUB)	4' SUMP W/ HOOD

WESTFORD BOSTON ROAD

UTILITY PLANS - 7 OF 11

609035HD10/UTILITY PI ANS) DWG Plotted on 13-Mar-2023 11:46 AM



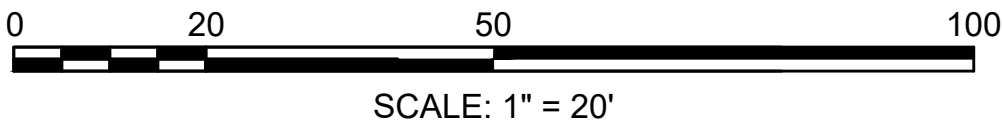
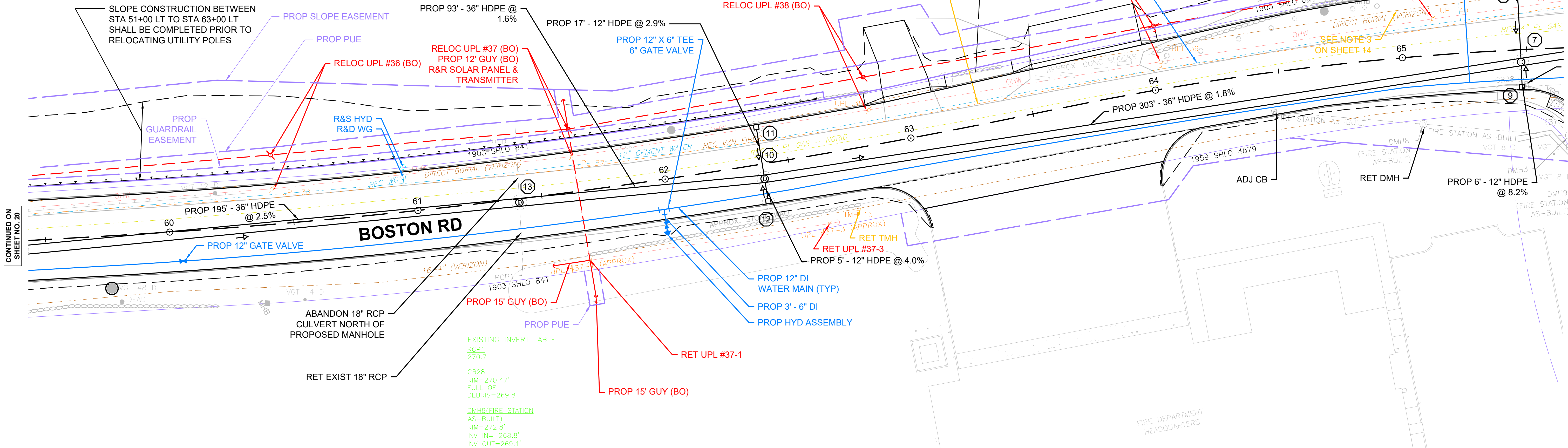
WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	30
PROJECT FILE NO.		609035	
UTILITY PLANS - 8 OF 11			

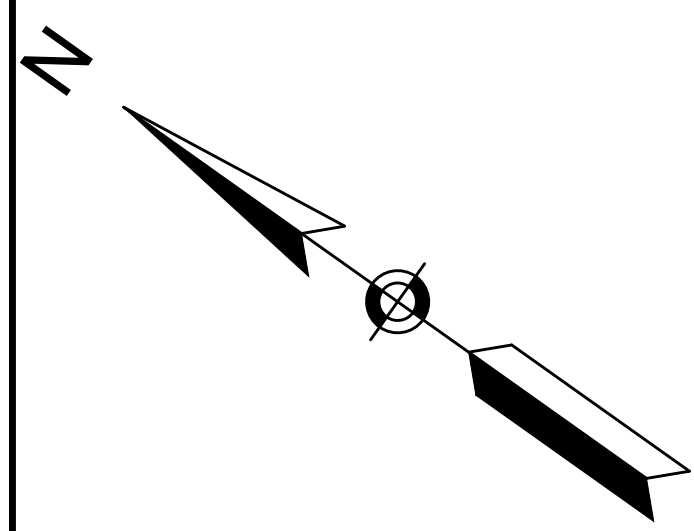
PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
7	DMH	65+47.5	5.0' RT	271.28	262.10 (10) 265.50 (9) 265.50 (8)	262.00	6' DIAMETER
8	CBCI	65+48.0	26.5' LT	272.08	-	265.91	4' SUMP W/ HOOD
9	CBCI	65+48.0	16.0' RT	270.92	-	265.99	4' SUMP W/ HOOD REM EX CB OFFSET TOP
10	DMH	62+39.4	6.0' RT	273.38	267.60 (13) 268.50 (12) 268.50 (11)	267.50	5' DIAMETER
11	CBCI	62+40.0	16.0' LT	272.87	-	269.00	4' SUMP W/ HOOD
12	CBCI	62+40.0	16.1' RT	273.43	-	268.70	4' SUMP W/ HOOD OFFSET TOP
13	DMH	61+40.8	1.4' RT	274.10	269.20 (14) 269.63 (EXIST)	269.10	5' DIAMETER CONTRACTOR TO VERIFY EXIST INVERT

N/F
WESTFORD GATEWAY, LLC
66-68 BOSTON ROAD
MAP-LOT 022 0115 0000
BK-PG 29812-168

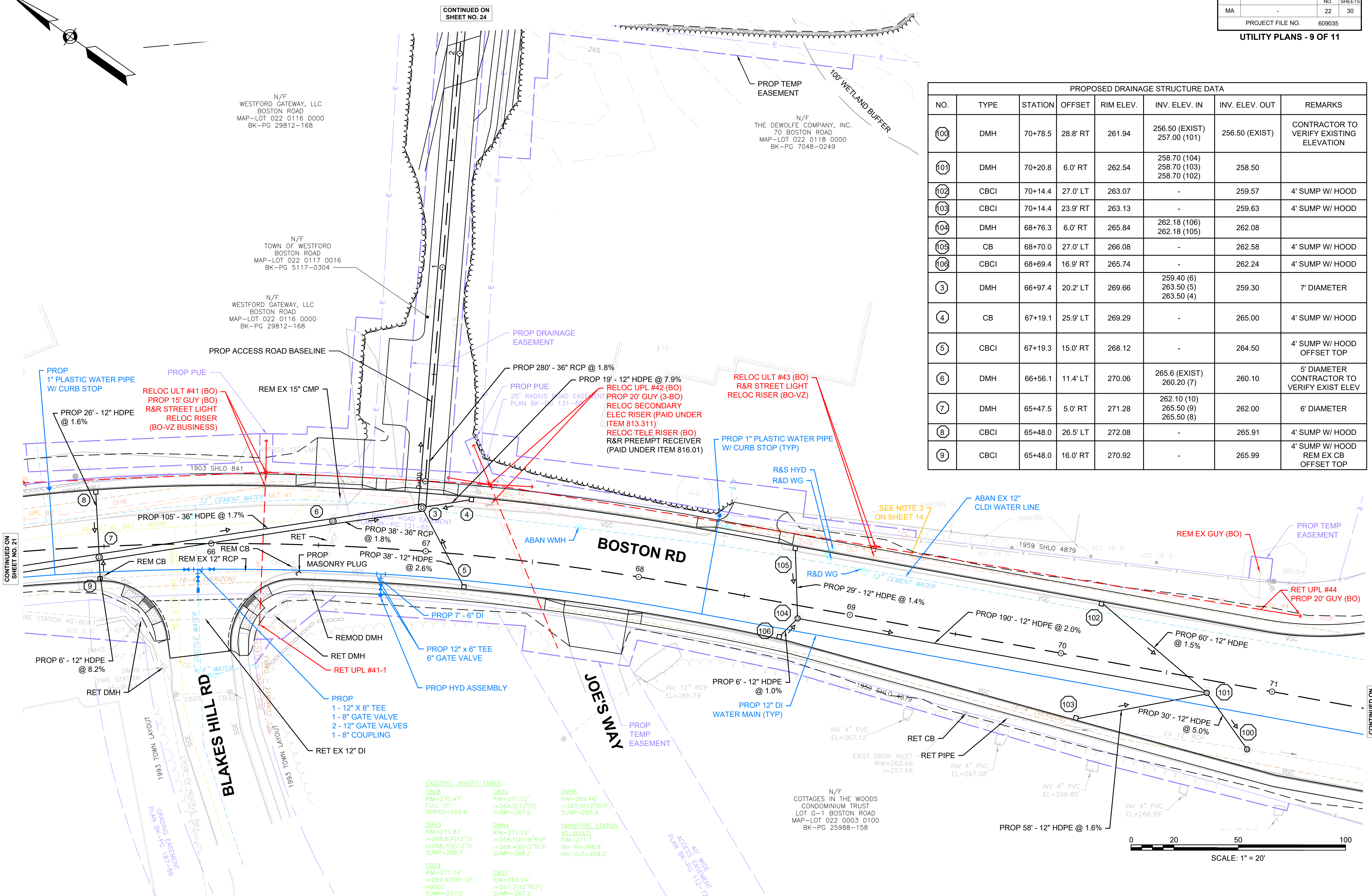
N/F
WESTFORD GATEWAY, LLC
BOSTON ROAD
MAP-LOT 022 0116 0000
BK-PG 29812-168

N/F
INHABITANTS OF THE
TOWN OF WESTFORD, MASSACHUSETTS
65 BOSTON ROAD
MAP-LOT 022 0003 0004
BK-PG 7366-211



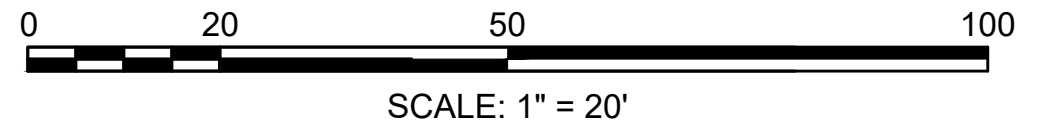


WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	30
PROJECT FILE NO. 609035			
UTILITY PLANS - 9 OF 11			



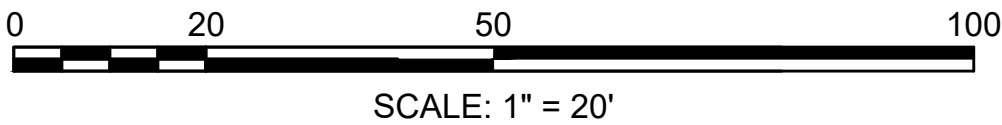
PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
100	DMH	70+78.5	28.8' RT	261.94	256.50 (EXIST) 257.00 (101)	256.50 (EXIST)	CONTRACTOR TO VERIFY EXISTING ELEVATION
101	DMH	70+20.8	6.0' RT	262.54	258.70 (104) 258.70 (103) 258.70 (102)	258.50	
102	CBCI	70+14.4	27.0' LT	263.07	-	259.57	4' SUMP W/ HOOD
103	CBCI	70+14.4	23.9' RT	263.13	-	259.63	4' SUMP W/ HOOD
104	DMH	68+76.3	6.0' RT	265.84	262.18 (106) 262.18 (105)	262.08	
105	CB	68+70.0	27.0' LT	266.08	-	262.58	4' SUMP W/ HOOD
106	CBCI	68+69.4	16.9' RT	265.74	-	262.24	4' SUMP W/ HOOD
3	DMH	66+97.4	20.2' LT	269.66	259.40 (6) 263.50 (5) 263.50 (4)	259.30	7' DIAMETER
4	CB	67+19.1	25.9' LT	269.29	-	265.00	4' SUMP W/ HOOD
5	CBCI	67+19.3	15.0' RT	268.12	-	264.50	4' SUMP W/ HOOD OFFSET TOP
6	DMH	66+56.1	11.4' LT	270.06	265.6 (EXIST) 260.20 (7)	260.10	5' DIAMETER CONTRACTOR TO VERIFY EXIST ELEV
7	DMH	65+47.5	5.0' RT	271.28	262.10 (10) 265.50 (9) 265.50 (8)	262.00	6' DIAMETER
8	CBCI	65+48.0	26.5' LT	272.08	-	265.91	4' SUMP W/ HOOD
9	CBCI	65+48.0	16.0' RT	270.92	-	265.99	4' SUMP W/ HOOD REM EX CB OFFSET TOP

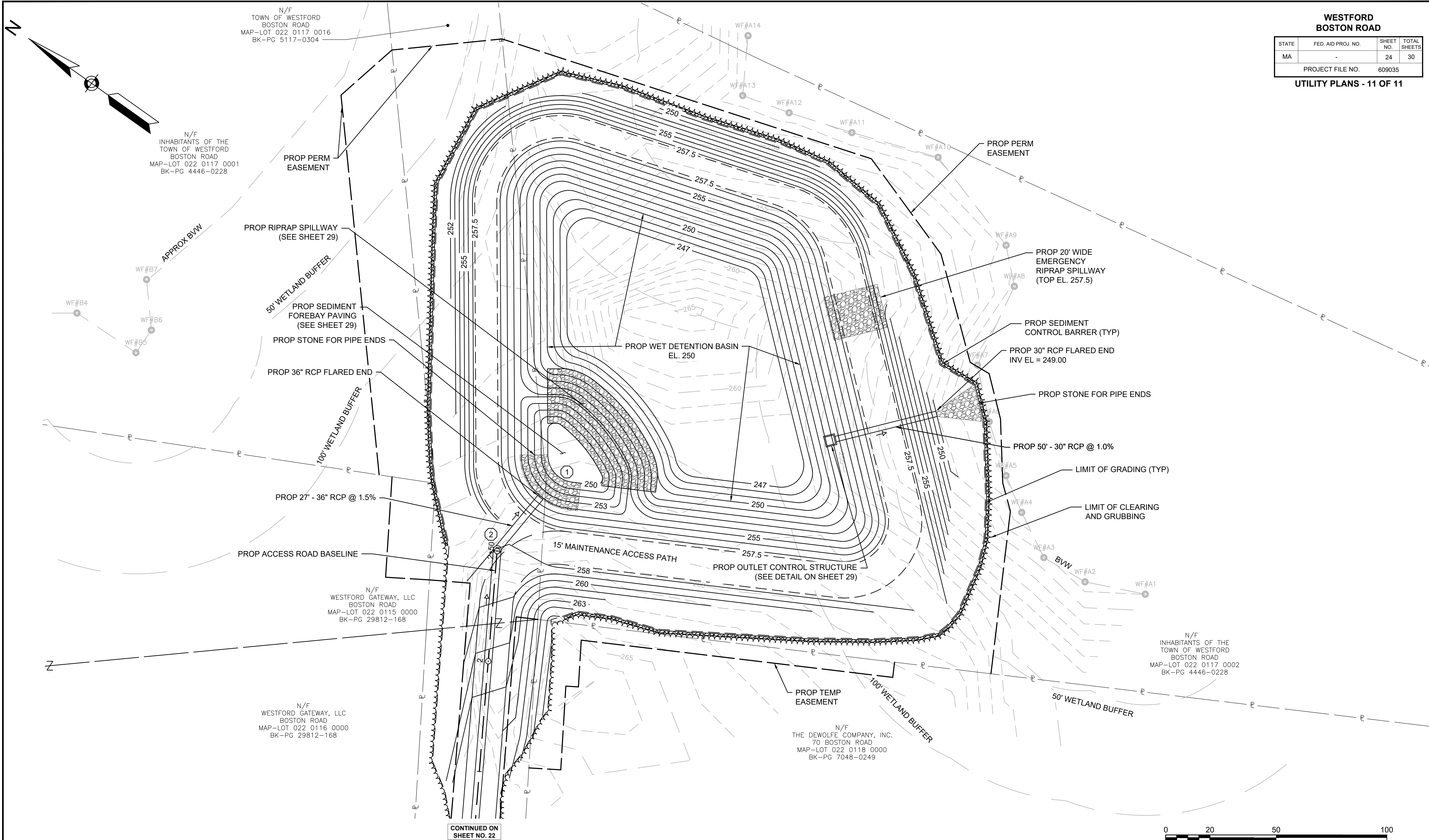
EXISTING INVERT TABLE			
CB28	RIM=270.47'	CB30	RIM=271.22'
FULL OF	I=269.2(12"DI)	FULL OF	I=269.2(12"DI)
DEBRIS=269.8	SUMP=267.6	DEBRIS=269.8	SUMP=267.6
DMH3	RIM=271.83'	DMH4	RIM=271.22'
I=268.8(A)12"DI	I=268.5(A)18"RCP	I=268.8(A)12"DI	I=268.5(A)18"RCP
I=268.7(B)12"DI	I=268.4(B)12"RCP	I=268.7(B)12"DI	I=268.4(B)12"RCP
SUMP=268.7	SUMP=268.3	SUMP=268.7	SUMP=268.3
CB29	RIM=271.14'	CB31	RIM=269.04'
I=269.9(TOP OF HOOD)	I=267.2(12"RCP)	I=269.9(TOP OF HOOD)	I=267.2(12"RCP)
SUMP=267.0	SUMP=267.2	SUMP=267.0	SUMP=267.2
DMH5	RIM=269.46'	DMH9(FIRE STATION AS-BUILT)	RIM=271.7
I=265.9(12"RCP)	SUMP=265.9	I=265.9(12"RCP)	SUMP=265.9
INV IN=268.9'	INV OUT=268.5'	INV IN=268.9'	INV OUT=268.5'



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	30
PROJECT FILE NO.		609035	

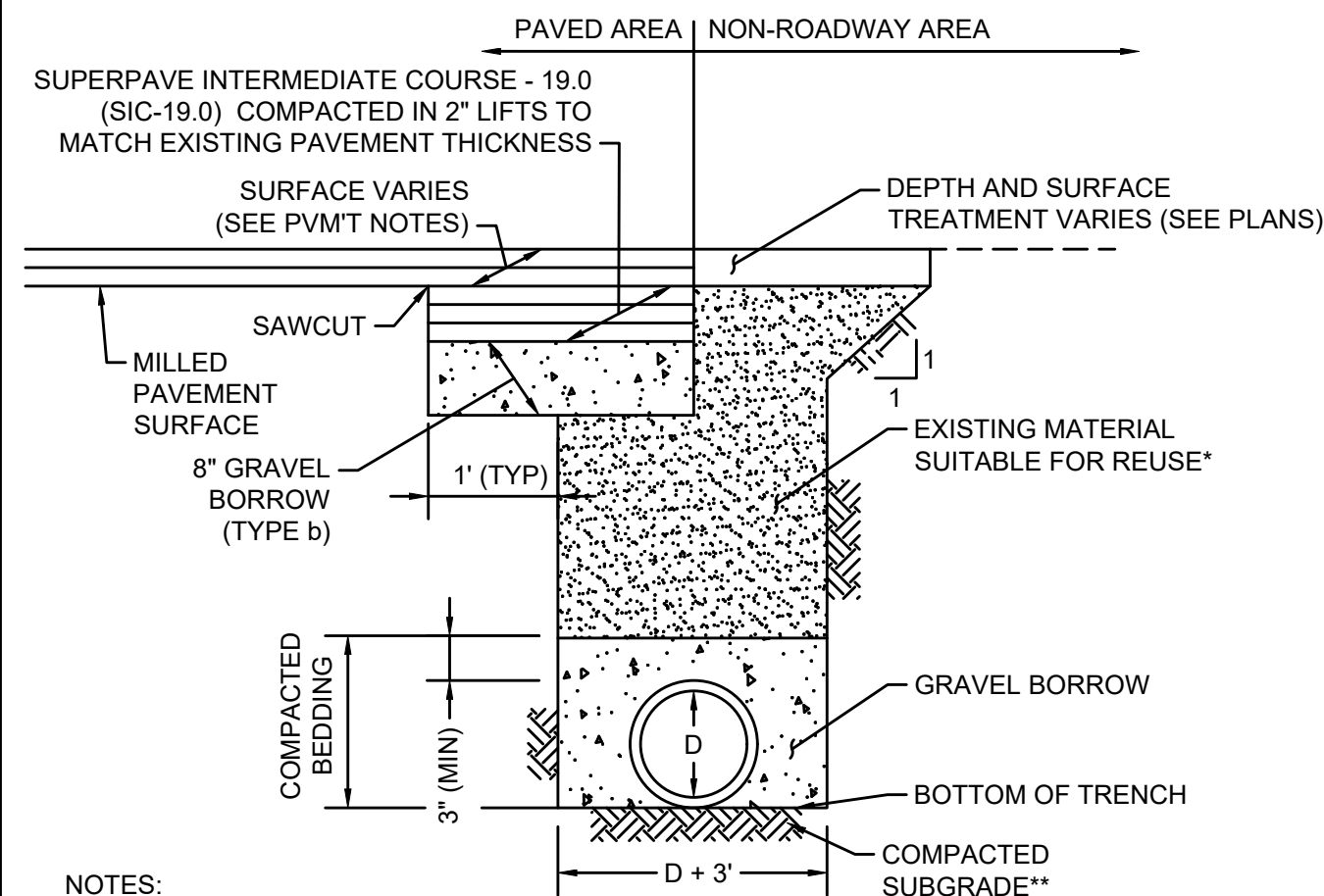
609035HD10(UTILITY PLANS).DWG Plotted on 13-Mar-2023 11:47 AM





PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
①	OUTLET	67+12.8	301.9' LT	-	-	254.20	36" FES
②	DMH	66+98.3	283.2' LT	258.00	254.70 (3)	254.60	6' DIAMETER

WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	30
PROJECT FILE NO.		609035	
UTILITY PLANS - 11 OF 11			



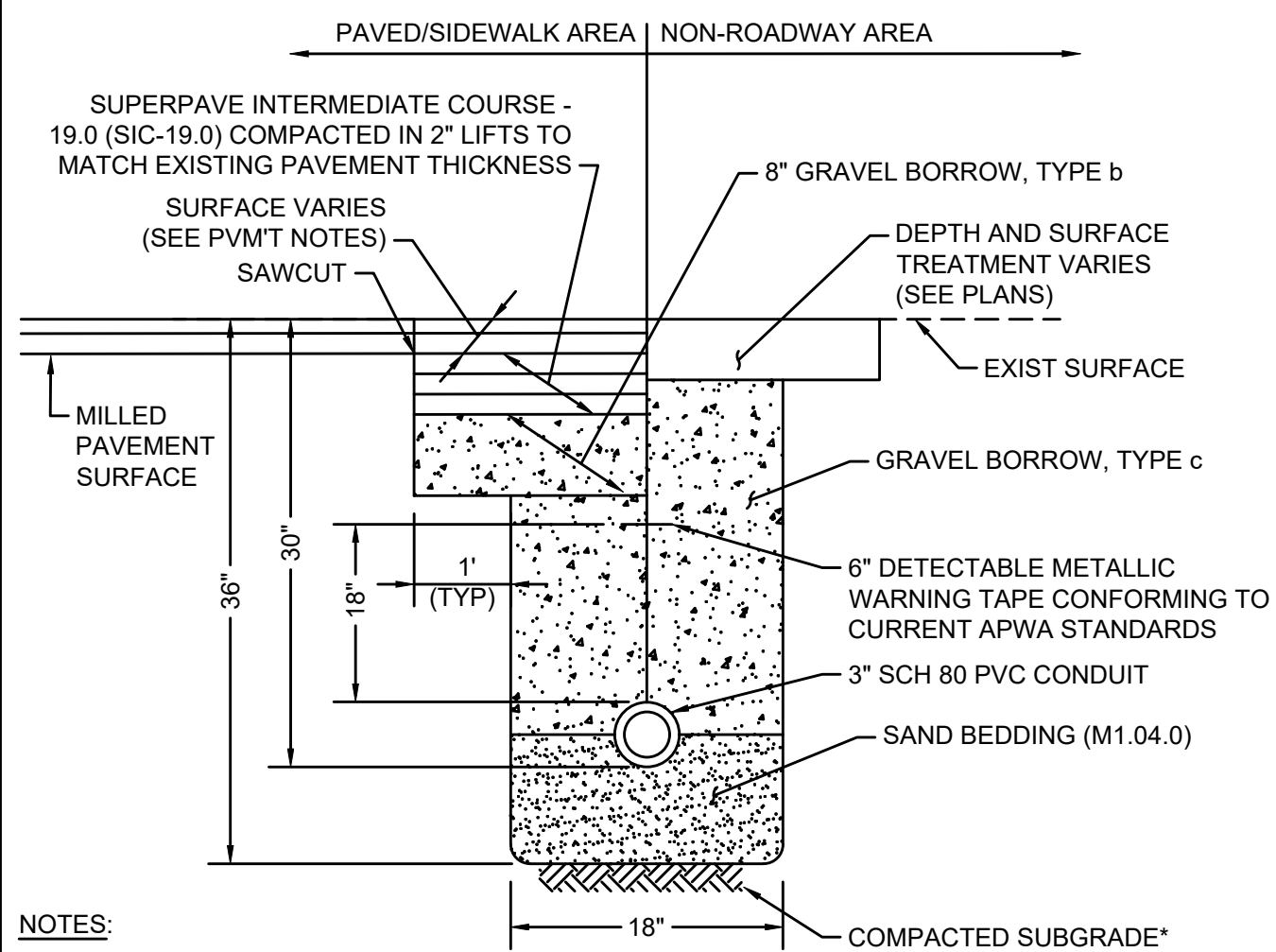
NOTES:

* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".

**SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

UTILITY TRENCH

N.T.S.

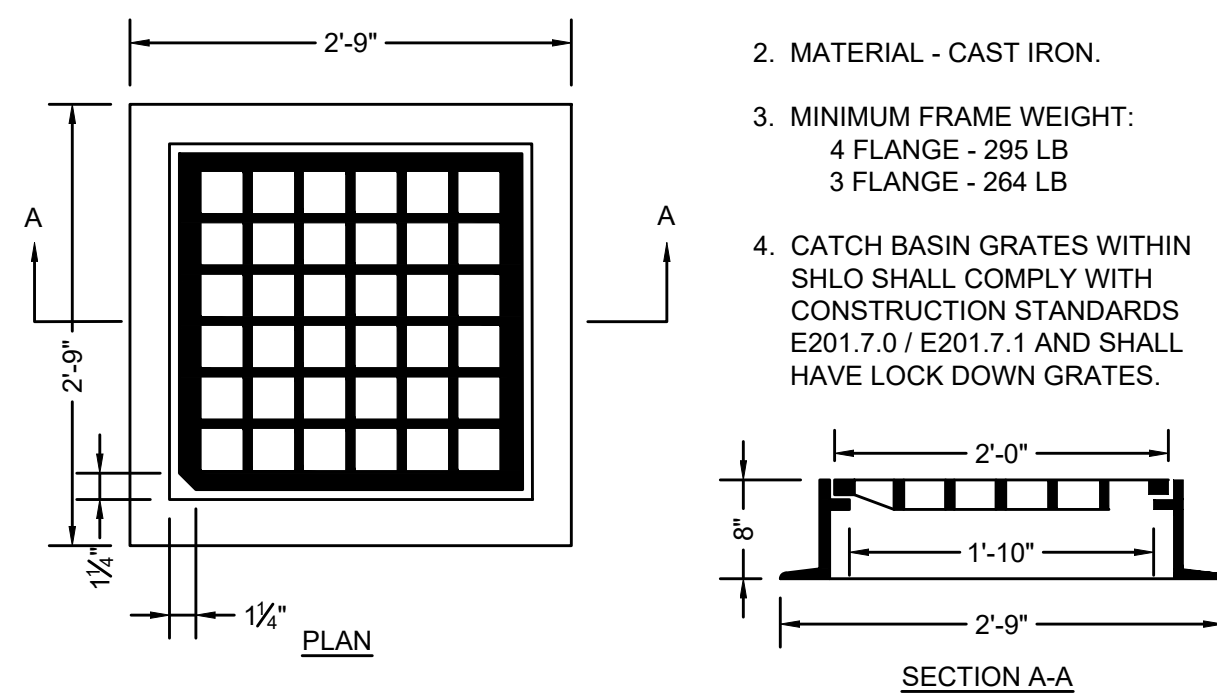


NOTES:

* SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

CONDUIT TRENCH

N.T.S.

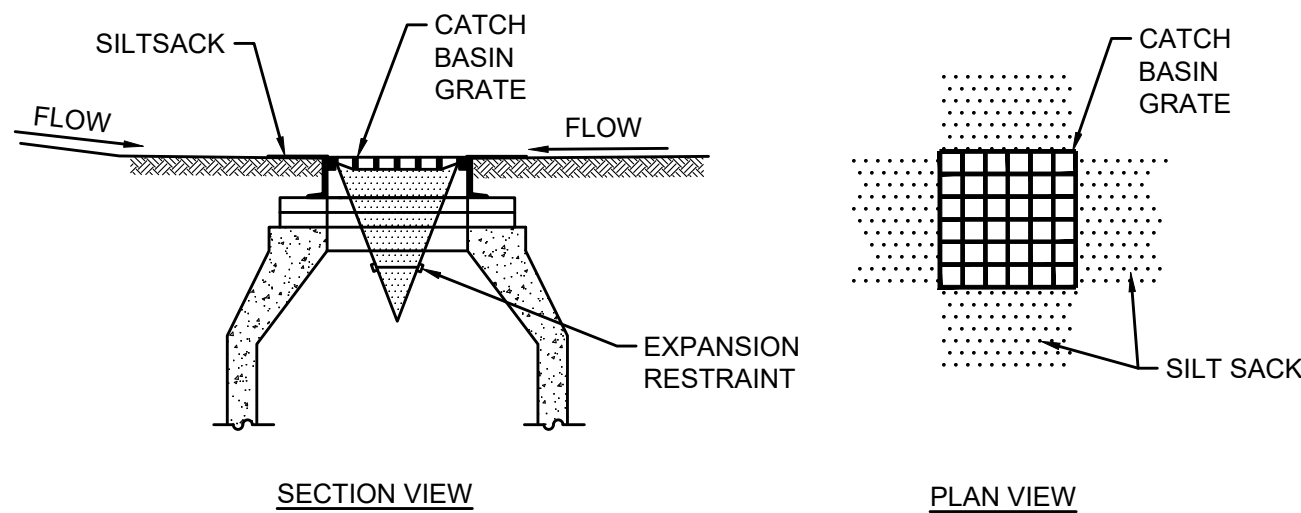


CATCH BASIN FRAME & GRATE (MUNICIPAL STANDARD)

N.T.S.

NOTES:

1. FRAME AND COVER SHALL BE RATED FOR HL-93 LOADING.
2. MATERIAL - CAST IRON.
3. MINIMUM FRAME WEIGHT:
4 FLANGE - 295 LB
3 FLANGE - 264 LB
4. CATCH BASIN GRATES WITHIN SHLO SHALL COMPLY WITH CONSTRUCTION STANDARDS E201.7.0 / E201.7.1 AND SHALL HAVE LOCK DOWN GRATES.

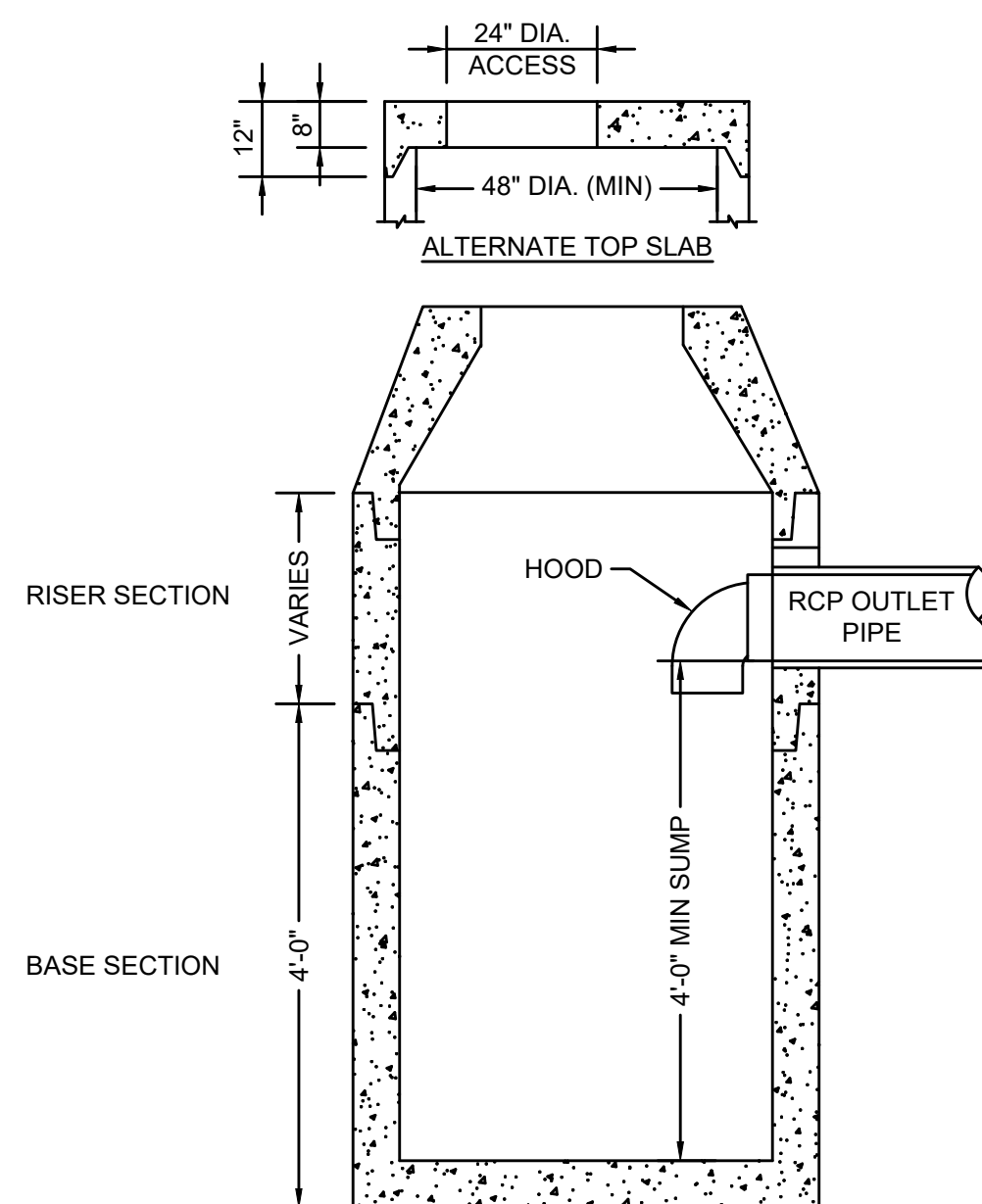


NOTES:

1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

INLET PROTECTION SILT SACK IN CATCH BASIN

N.T.S.

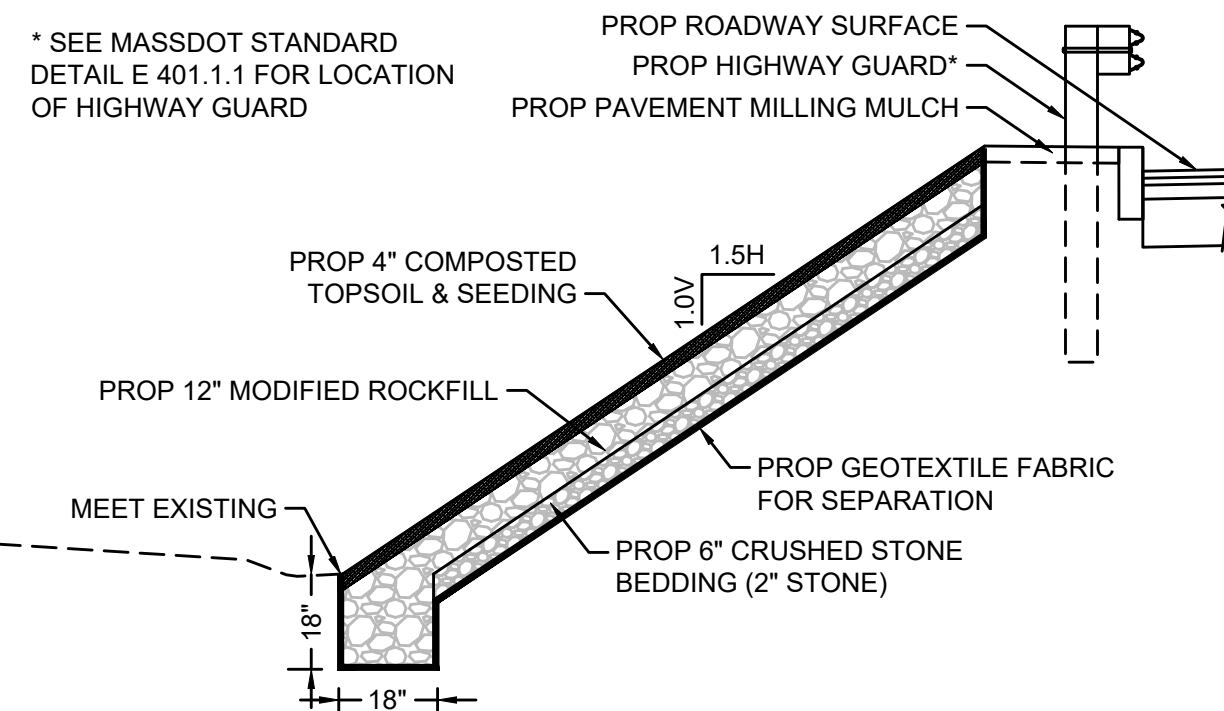


NOTE:

ALL CATCH BASINS SHALL CONFORM TO MASSDOT CONSTRUCTION STANDARD E 201.4.0 EXCEPT FOR 4' SUMP DEPTH AND HOOD AS SHOWN

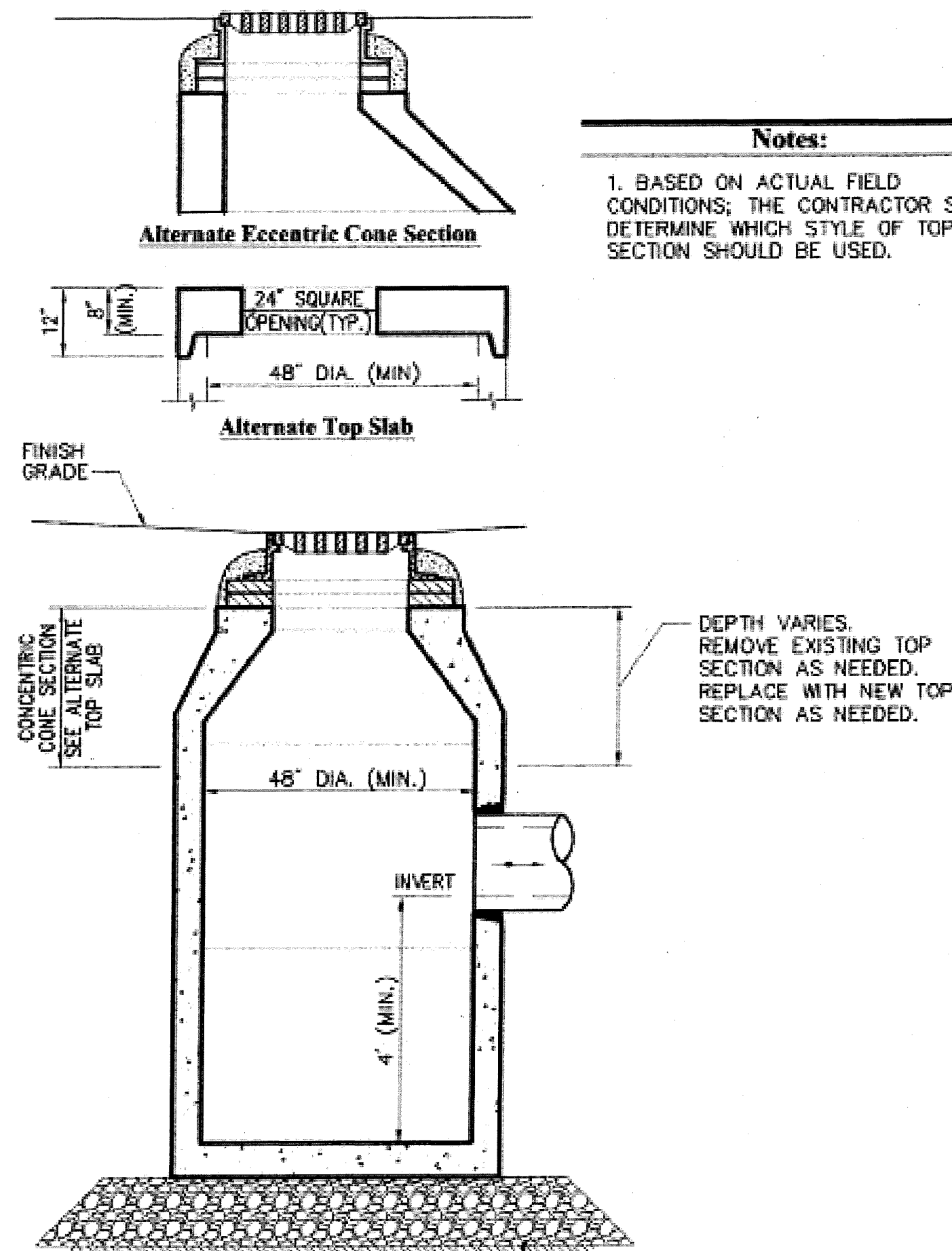
DEEP SUMP CATCH BASIN WITH HOOD

N.T.S.



MODIFIED ROCKFILL SLOPE STABILIZATION

N.T.S.



Notes:

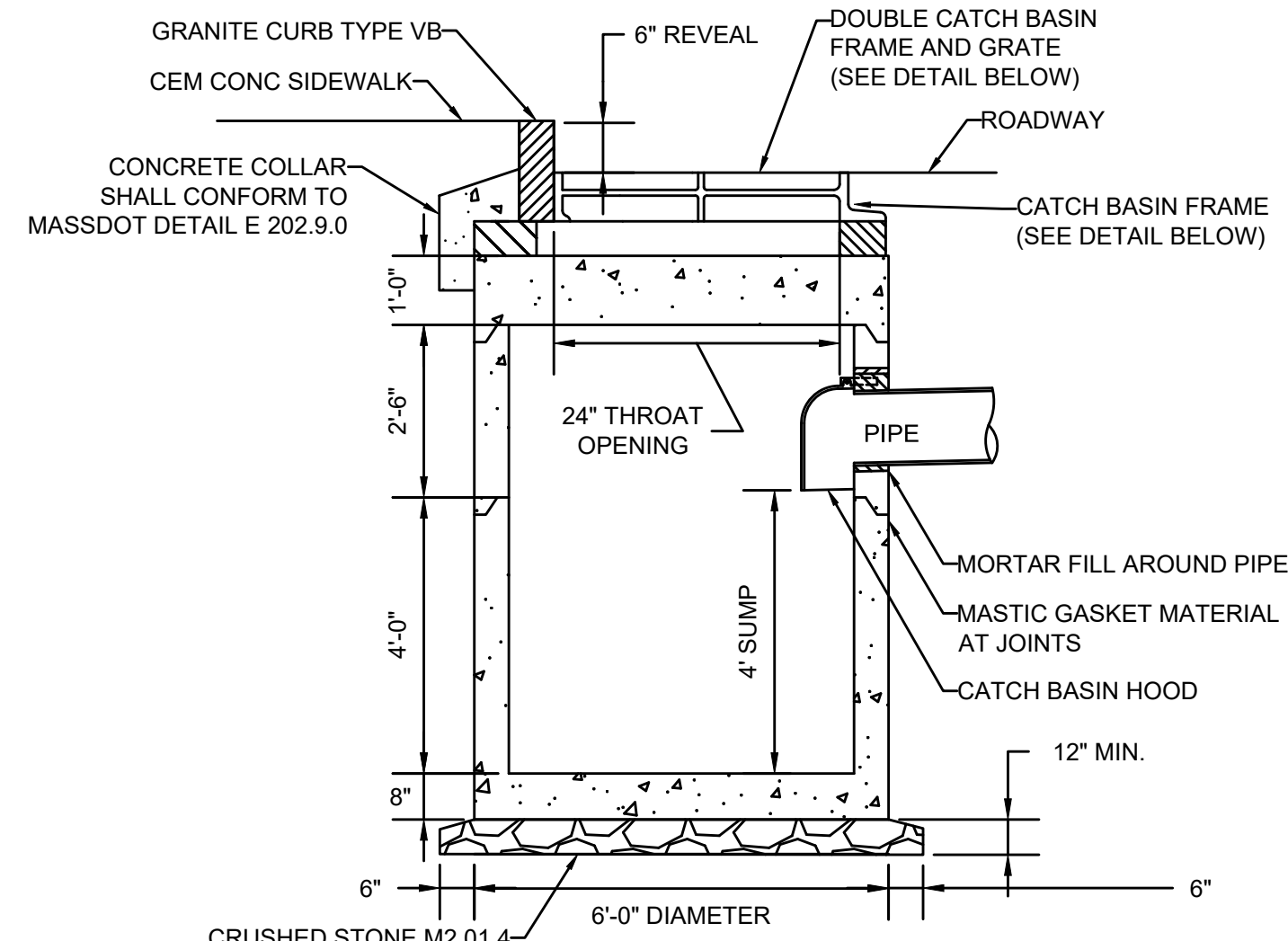
1. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

OFFSET CATCH BASIN

N.T.S.

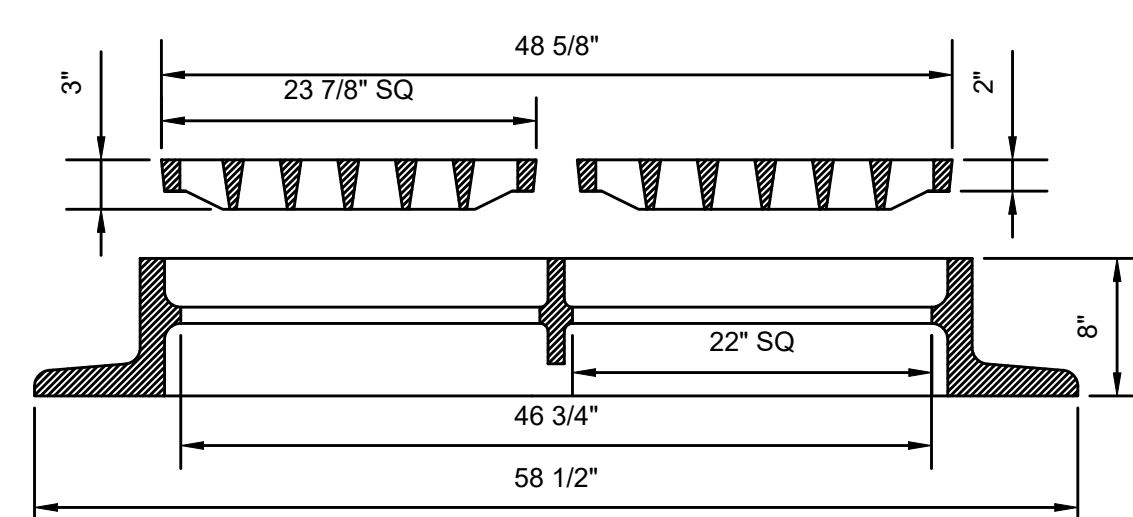
NOTES:

1. PAY LIMITS IN ROCK EXCAVATION SHALL BE 6" BEYOND THE OUTSIDE FACE AND BOTTOM OF PROPOSED STRUCTURE.
2. INSTALL CB FRAME AND GRATE WITH 48" SIDE ALONG GRANITE CURB.



DOUBLE CATCH BASIN (ITEM 201.1)

N.T.S.

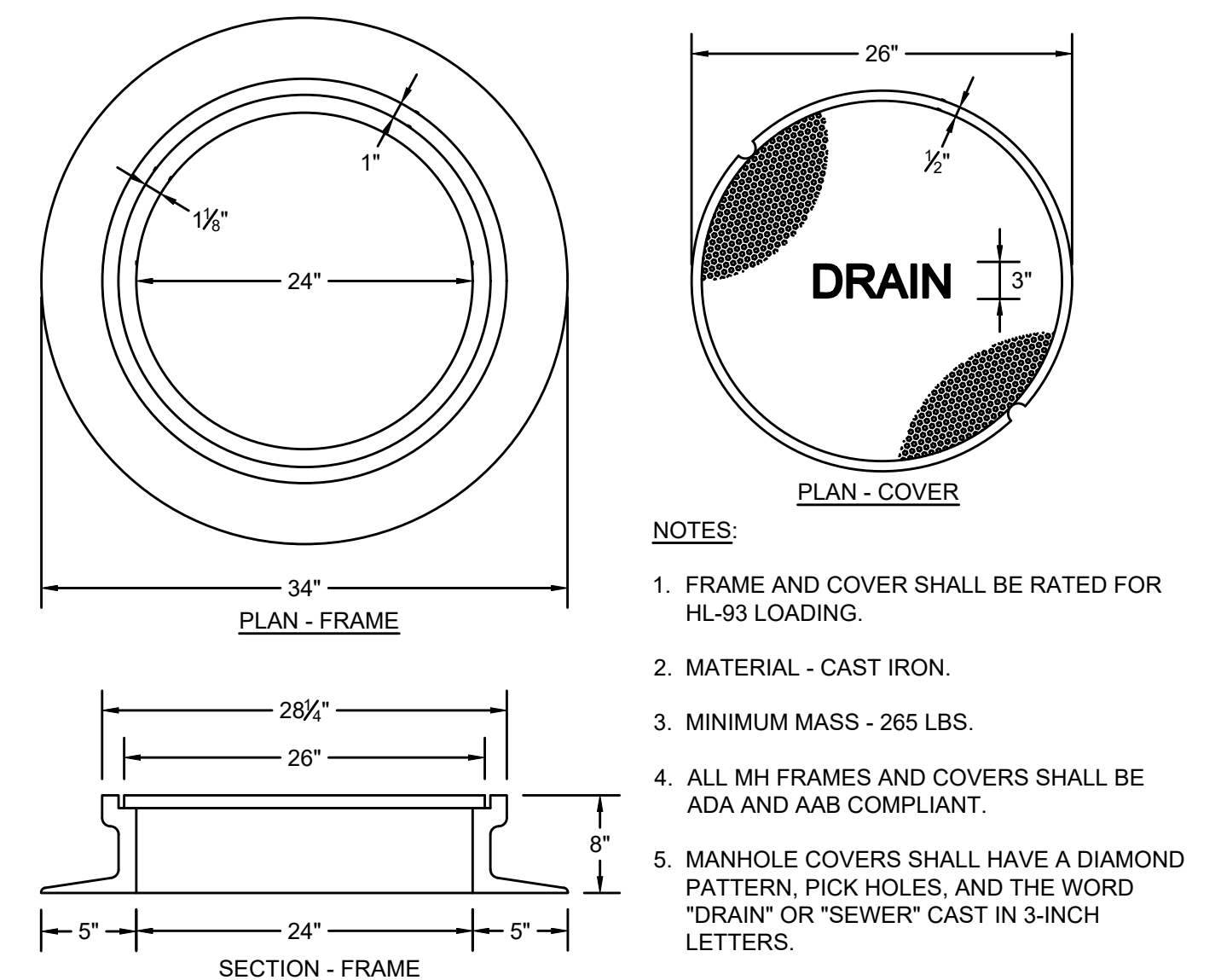


DOUBLE CATCH BASIN FRAME AND GRATE

N.T.S.

WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	30
PROJECT FILE NO.		609035	

CONSTRUCTION DETAILS - 1 OF 6

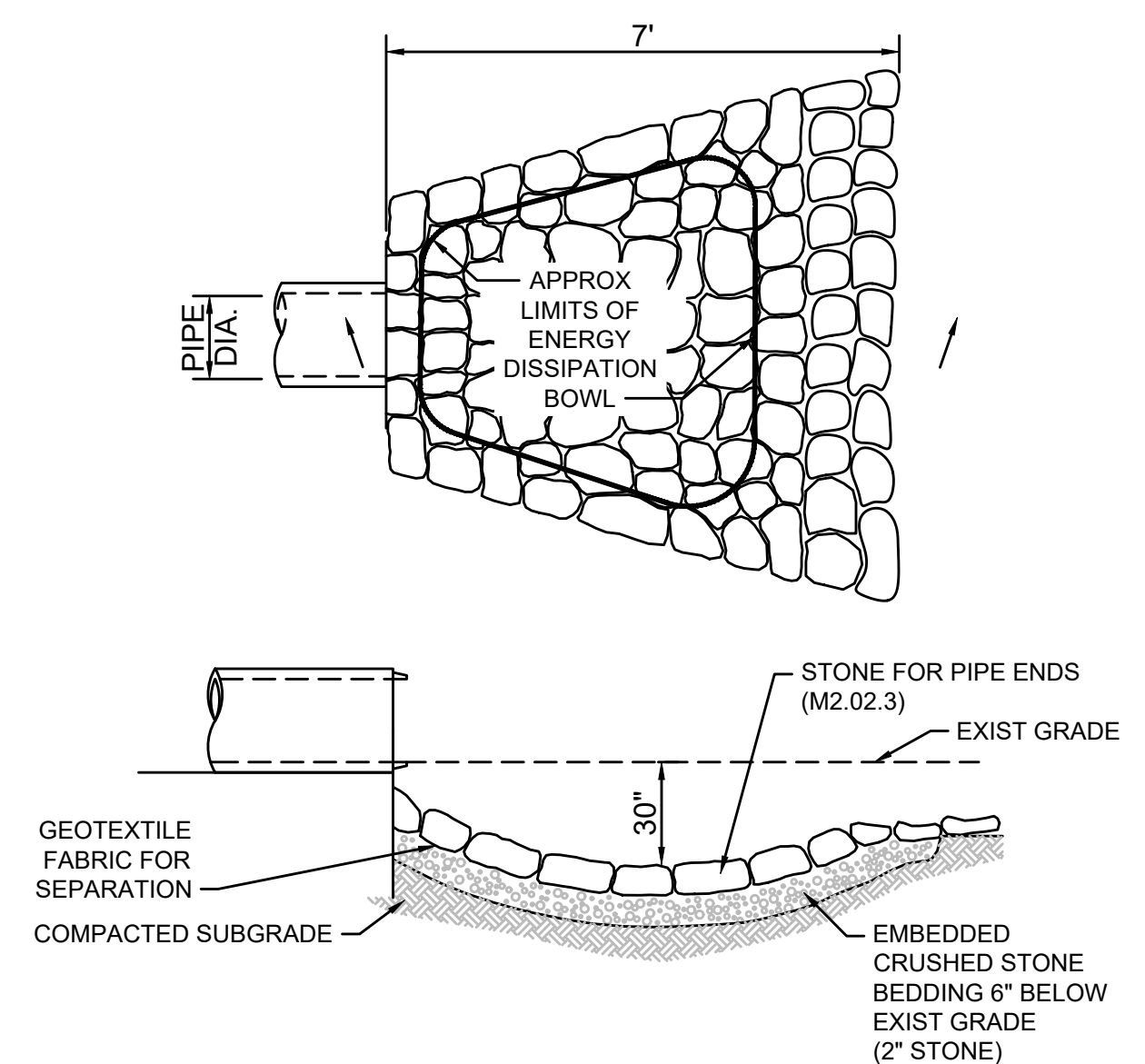


NOTES:

1. FRAME AND COVER SHALL BE RATED FOR HL-93 LOADING.
2. MATERIAL - CAST IRON.
3. MINIMUM MASS - 265 LBS.
4. ALL MH FRAMES AND COVERS SHALL BE ADA AND AAB COMPLIANT.
5. MANHOLE COVERS SHALL HAVE A DIAMOND PATTERN, PICK HOLES, AND THE WORD "DRAIN" OR "SEWER" CAST IN 3-INCH LETTERS.
6. MANHOLE COVERS WITHIN SHLO SHALL COMPLY WITH CONSTRUCTION STANDARD E202.6.0.

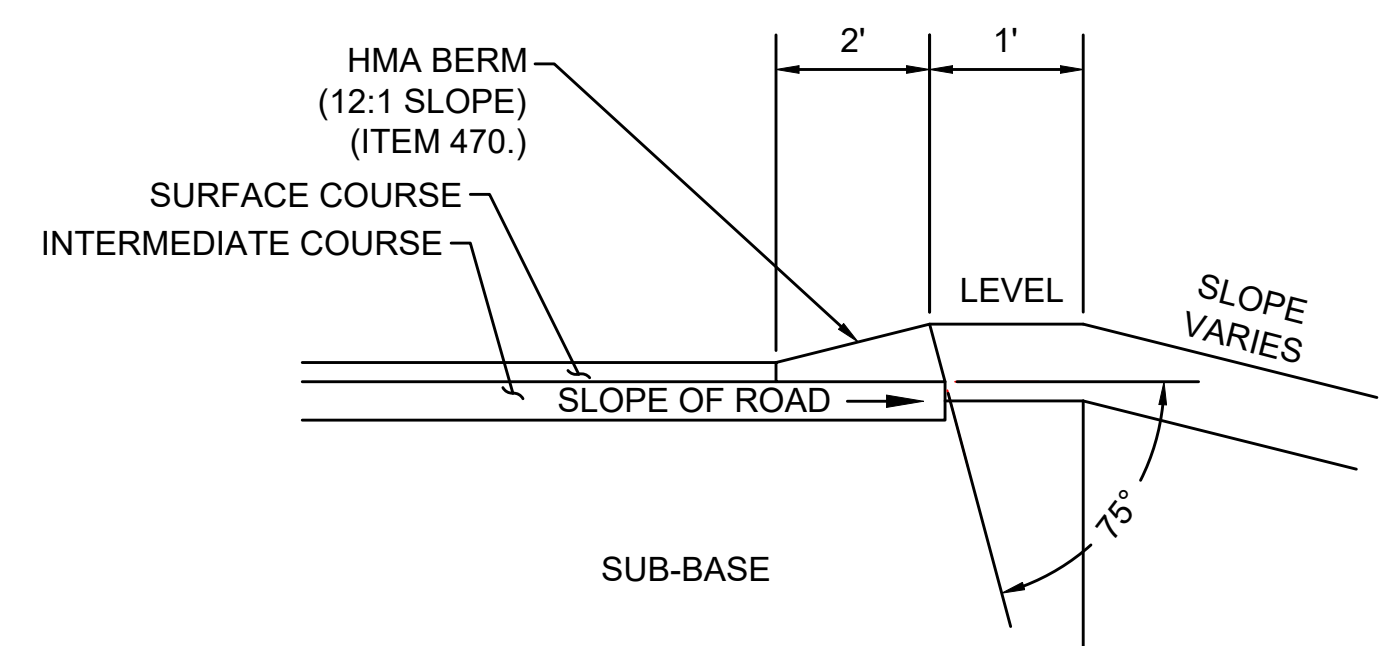
MANHOLE FRAME & COVER (MUNICIPAL STANDARD)

N.T.S.



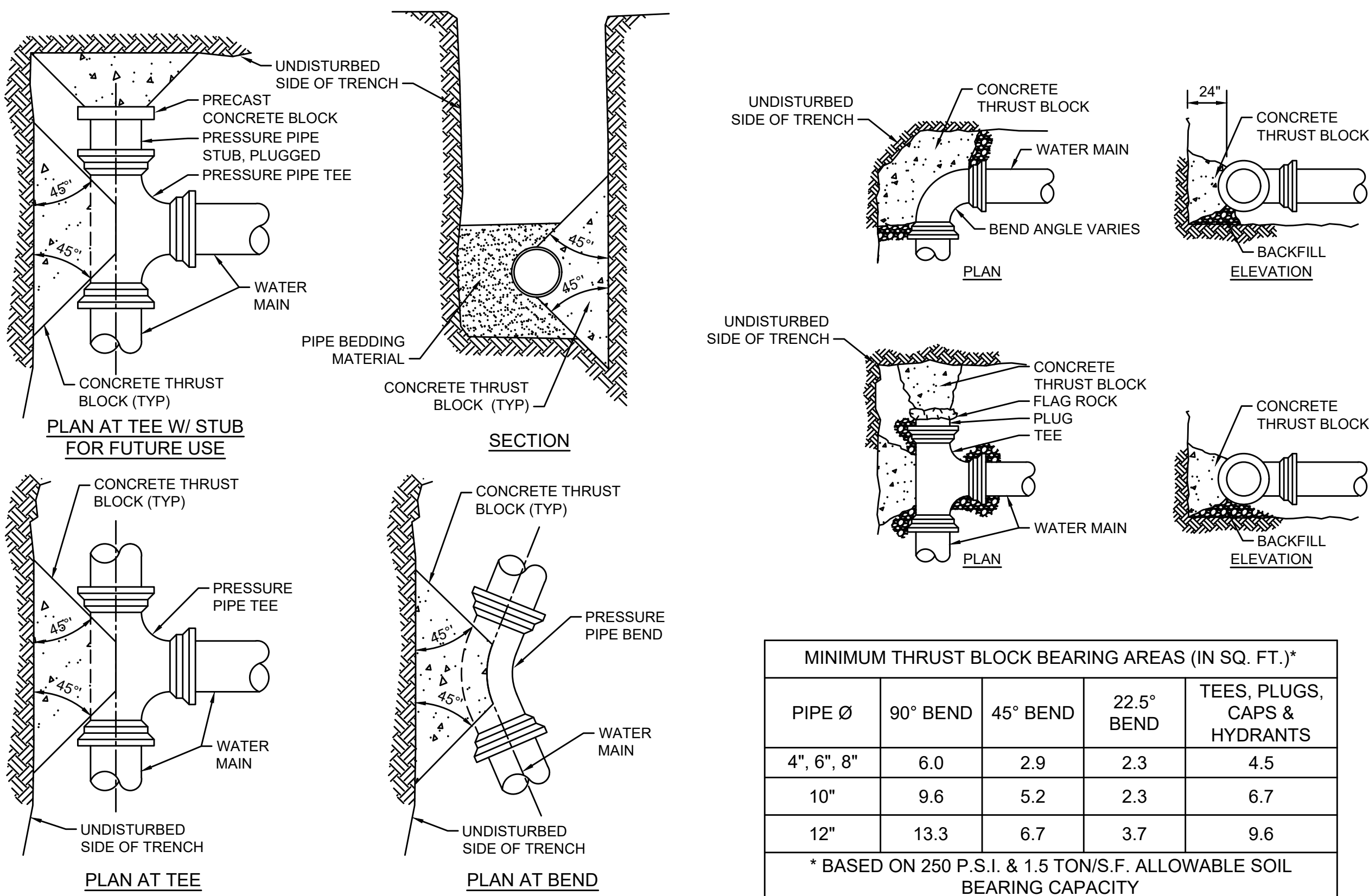
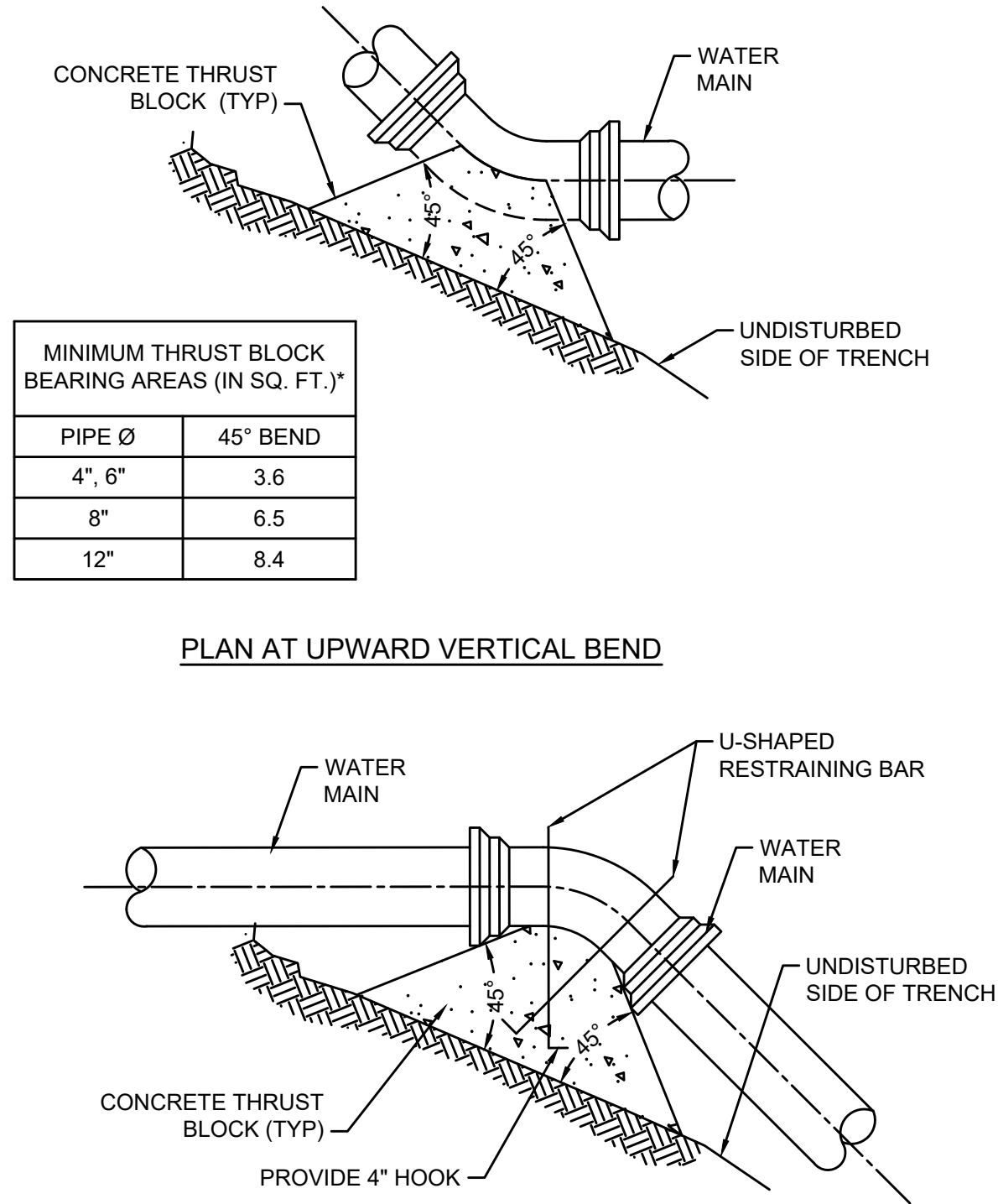
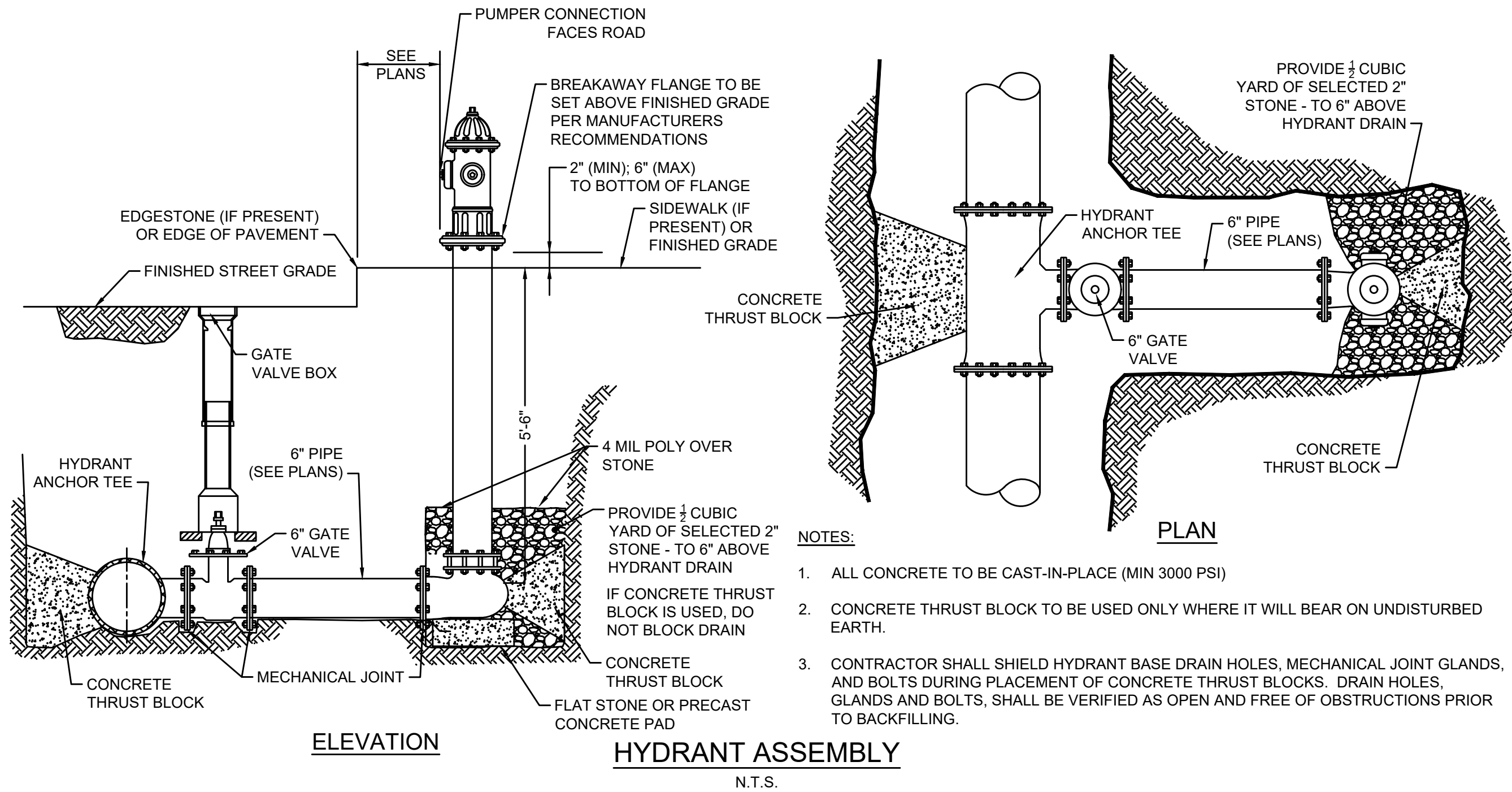
STONE FOR PIPE ENDS

N.T.S.



HOT MIX ASPHALT BERM

N.T.S.



- NOTES:**
- ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
 - ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
 - MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
 - KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
 - MINIMUM BEARING AREAS ARE BASED ON 250 P.S.I. INTERNAL PIPE PRESSURE & 1.5 TON/S.F. ALLOWABLE SOIL BEARING CAPACITY.
 - MINIMUM PIPE RESTRAINT LENGTH IS BASED ON DUCTILE IRON PIPE WITH A 150 P.S.I. INTERNAL PIPE PRESSURE WITH 5.0' OF BURY IN UNIFIED SOIL CLASSIFICATION SM.

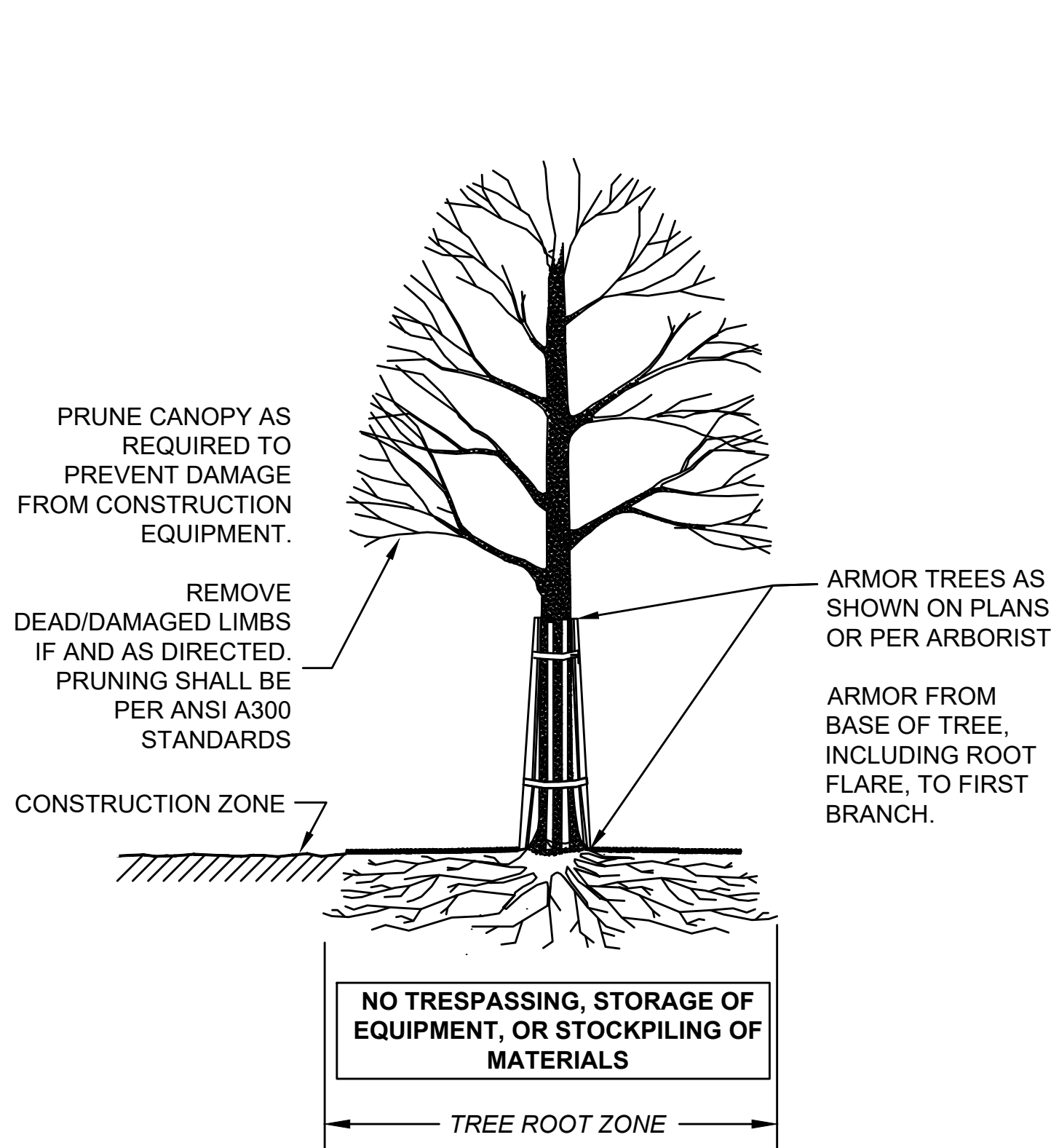
THRUST BLOCK - HORIZONTAL BENDS & PIPE RESTRAINT DETAILS
N.T.S.

THRUST BLOCK DETAILS - VERTICAL BENDS
N.T.S.

- NOTES:**
- ALL WATER MAIN BENDS SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
 - ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
 - MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
 - KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
 - MINIMUM BEARING AREAS ARE BASED ON 250 P.S.I. INTERNAL PIPE PRESSURE & 1.5 TON/S.F. ALLOWABLE SOIL BEARING CAPACITY.

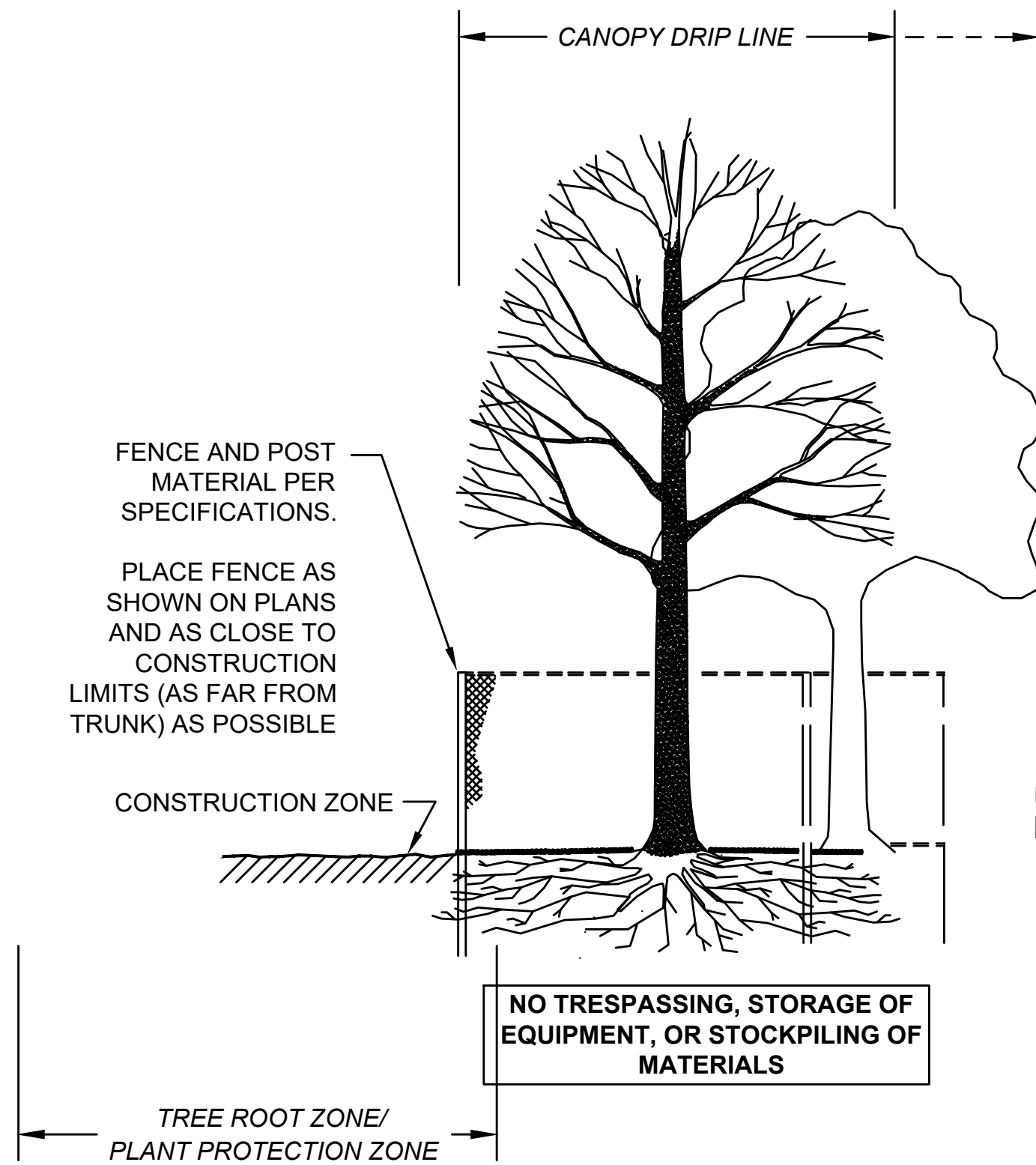
WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	30
PROJECT FILE NO.		609035	

CONSTRUCTION DETAILS - 3 OF 6



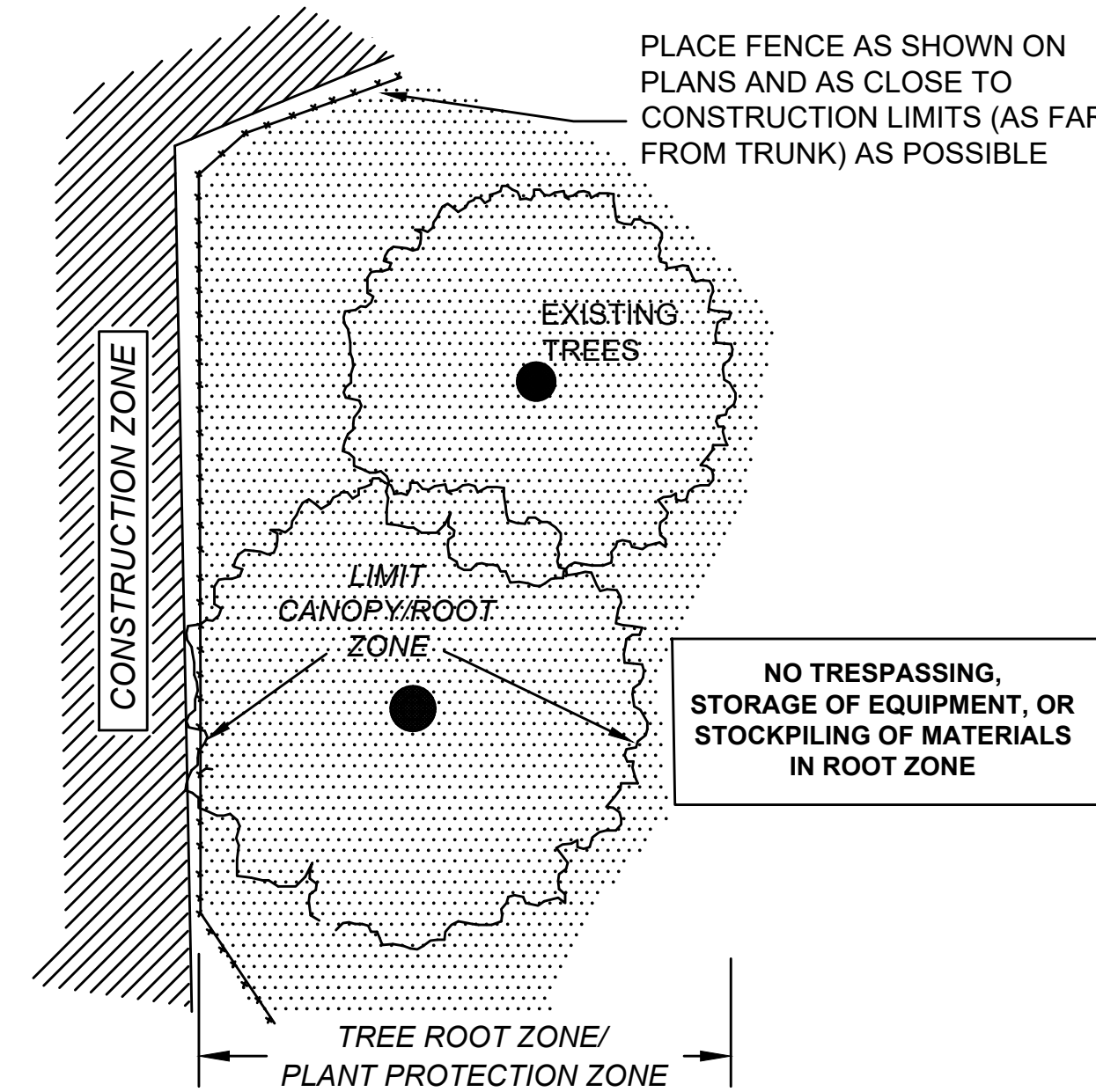
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK
N.T.S.

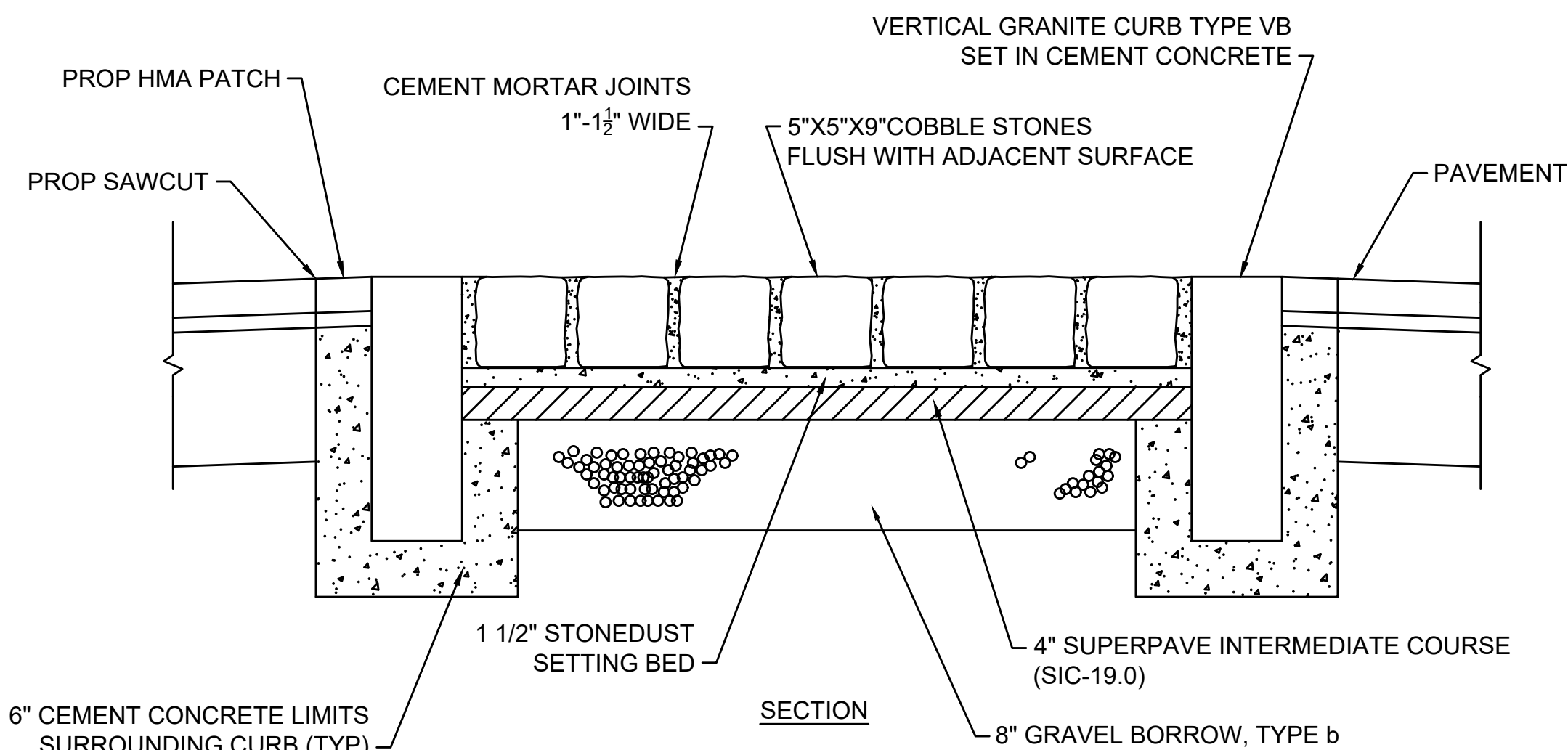


SECTION - FENCE PROTECTION OF ROOT ZONE

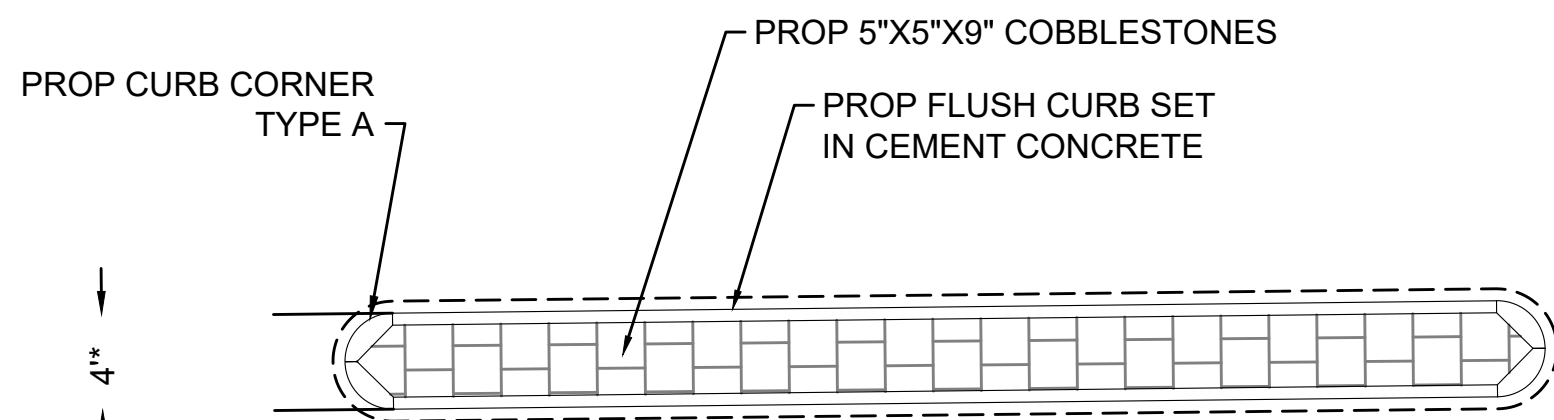
TREE PROTECTION - ROOT ZONE
N.T.S.



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



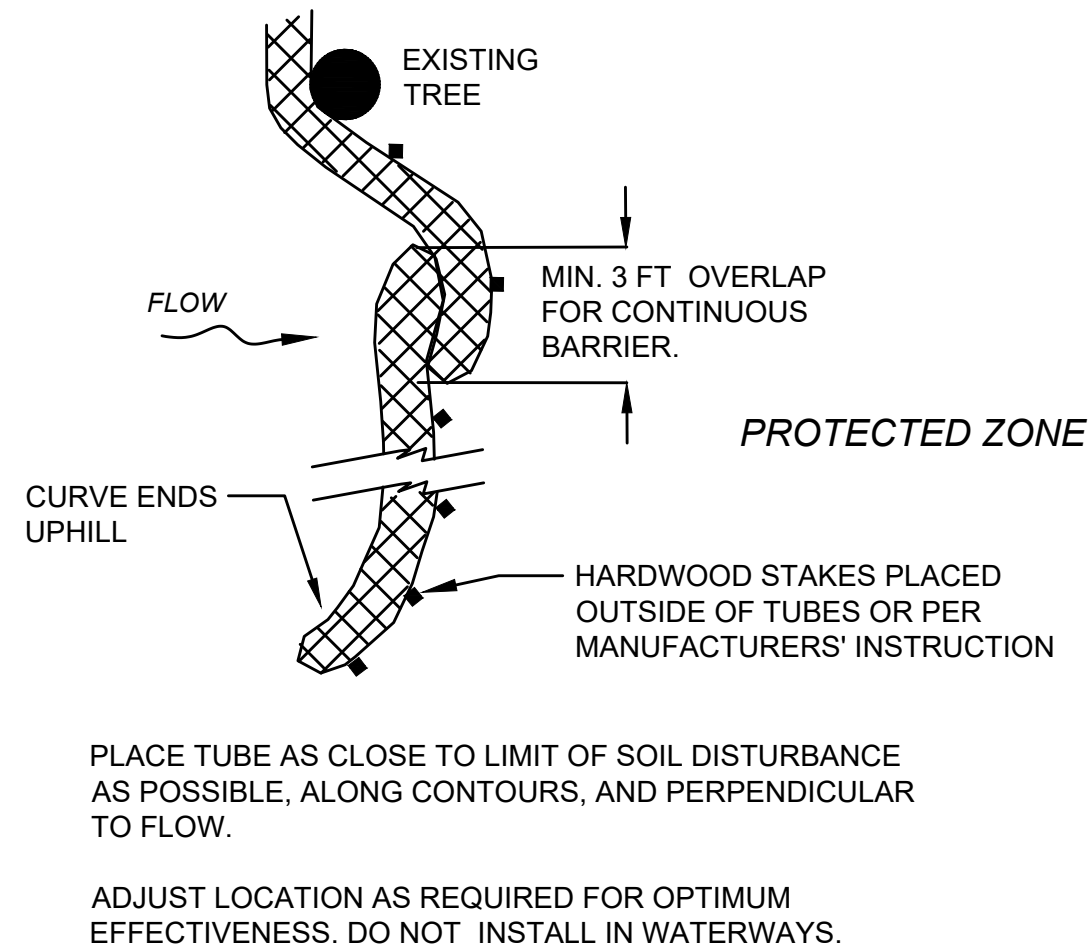
SECTION



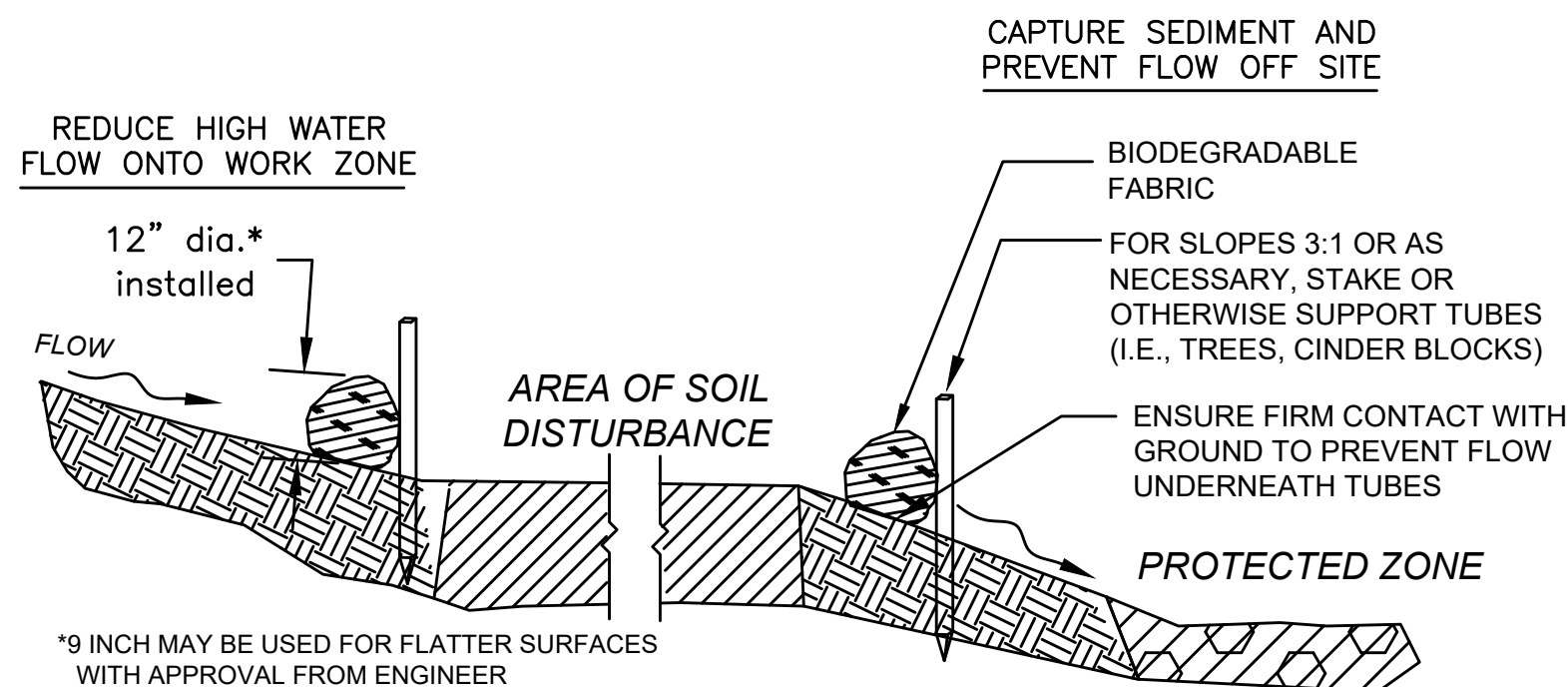
NOTES:

* DIMENSIONS VARY BY LOCATION

COBBLESTONE ISLAND DETAIL
N.T.S.



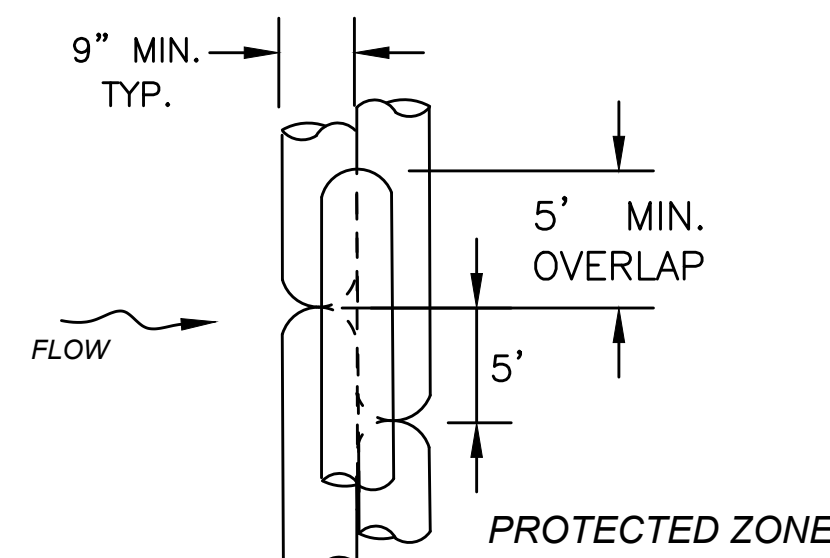
PLAN VIEW



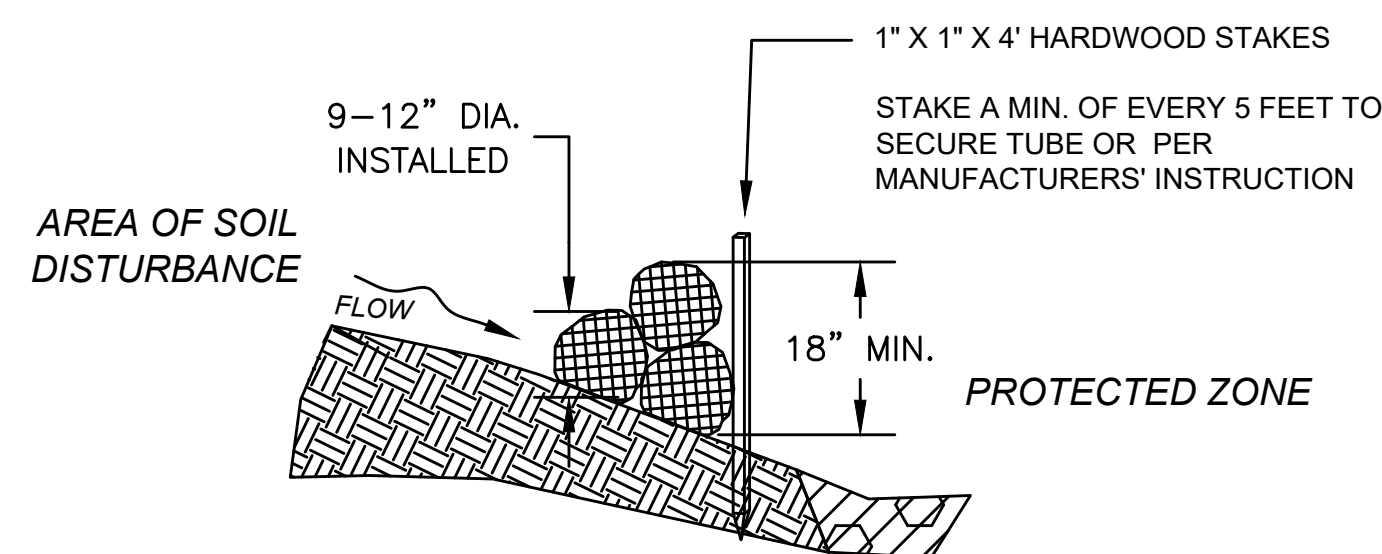
SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE
N.T.S.

WHERE SPECIFIED ON CONSTRUCTION PLANS OR AS REQUIRED

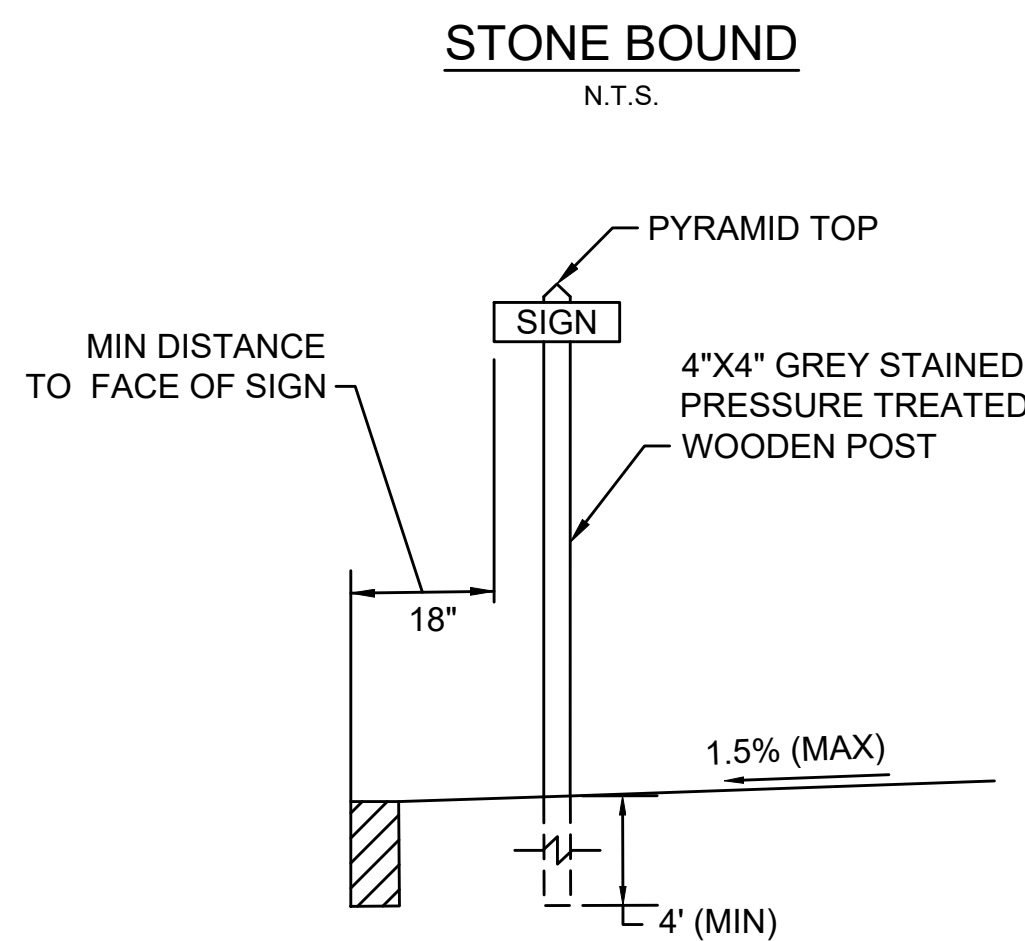
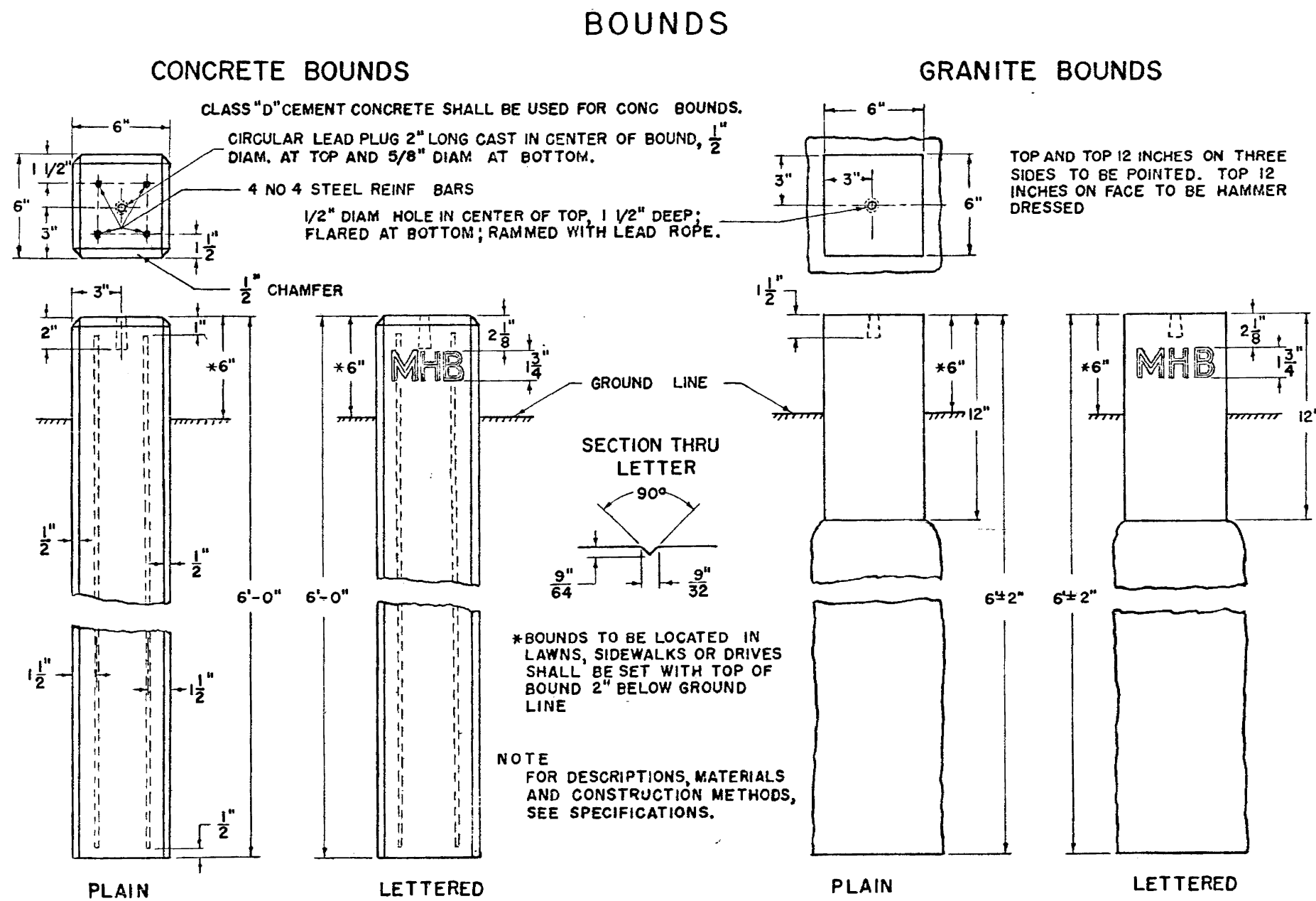


PLAN VIEW



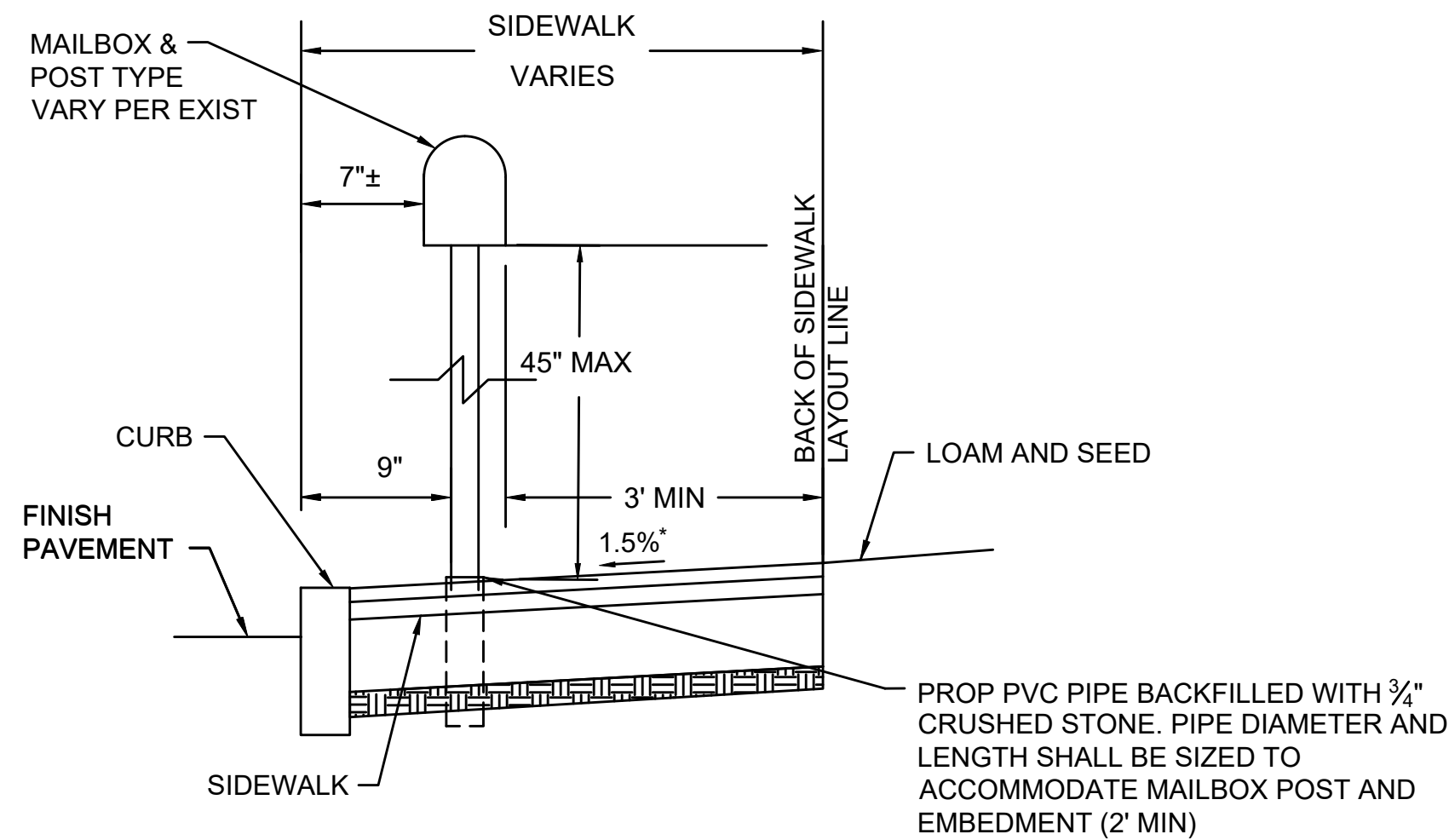
SECTION

COMPOST FILTER TUBES STACKED
N.T.S.



HISTORIC DISTRICT SIGN POST

N.T.S.

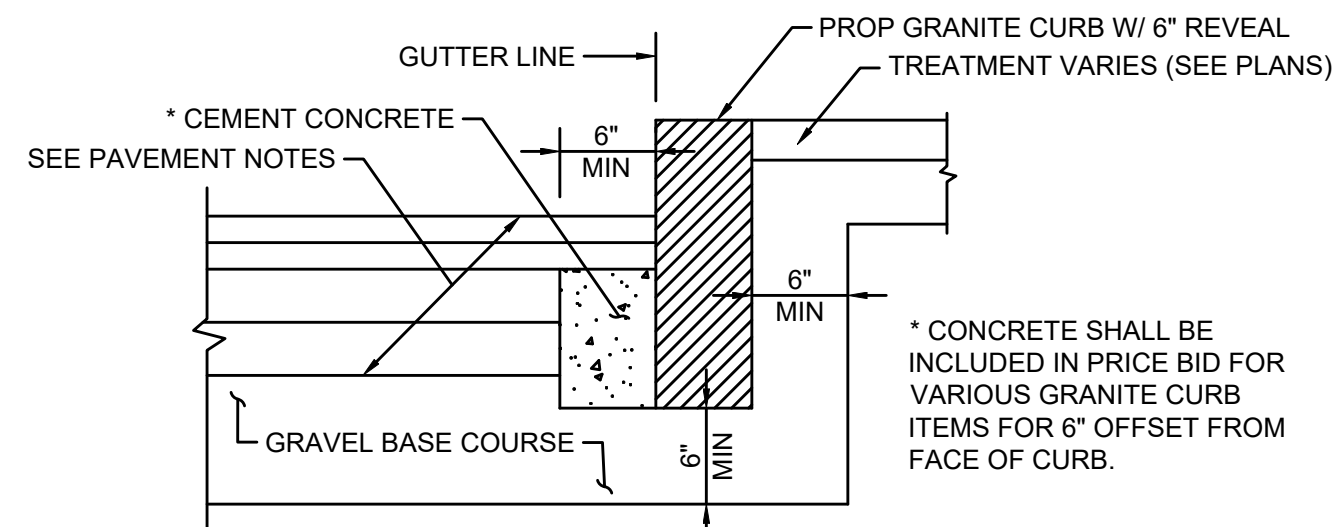


NOTES:

1. MINIMUM CLEAR PATH ON ALL SIDEWALK SHALL BE 36" EXCLUDING THE CURB. THE CLEAR PATH SHALL BE MEASURED TO FIRST VERTICAL FACE ENCOUNTERED ON THE MAILBOX OR PAPER TUBE (INCLUDING ALL PROTRUSIONS LESS THAN 6'-8" IN HEIGHT).
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL MAILBOXES AND PAPER TUBES TO BE SET WITHIN THE SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36". CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION THAT CANNOT MEET THE CLEARANCE REQUIREMENTS.
3. REFER TO MASSDOT STANDARD DETAIL E504.1.0 FOR ADDITIONAL INFORMATION.

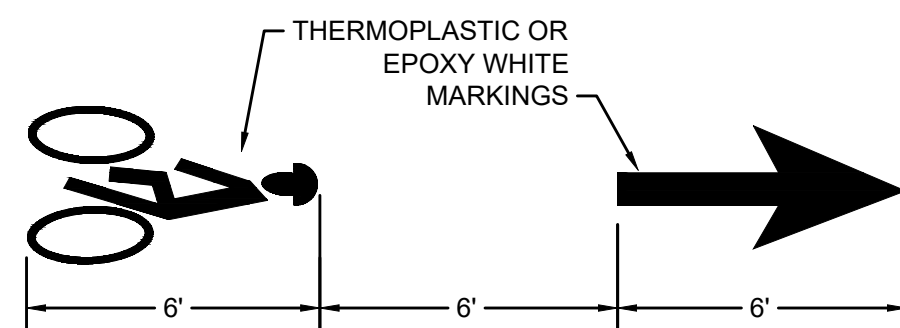
MAILBOX PARALLEL TO CURB

N.T.S.



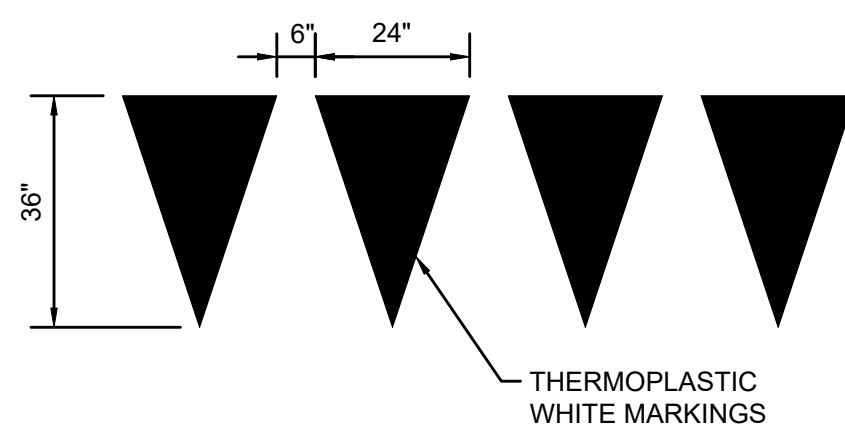
GRANITE CURB IN FULL DEPTH PAVEMENT

N.T.S.



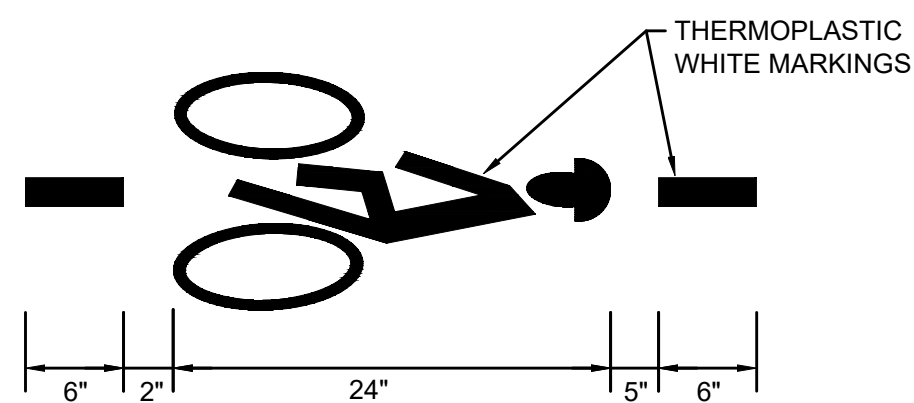
BICYCLE LANE PAVEMENT MARKING

N.T.S.



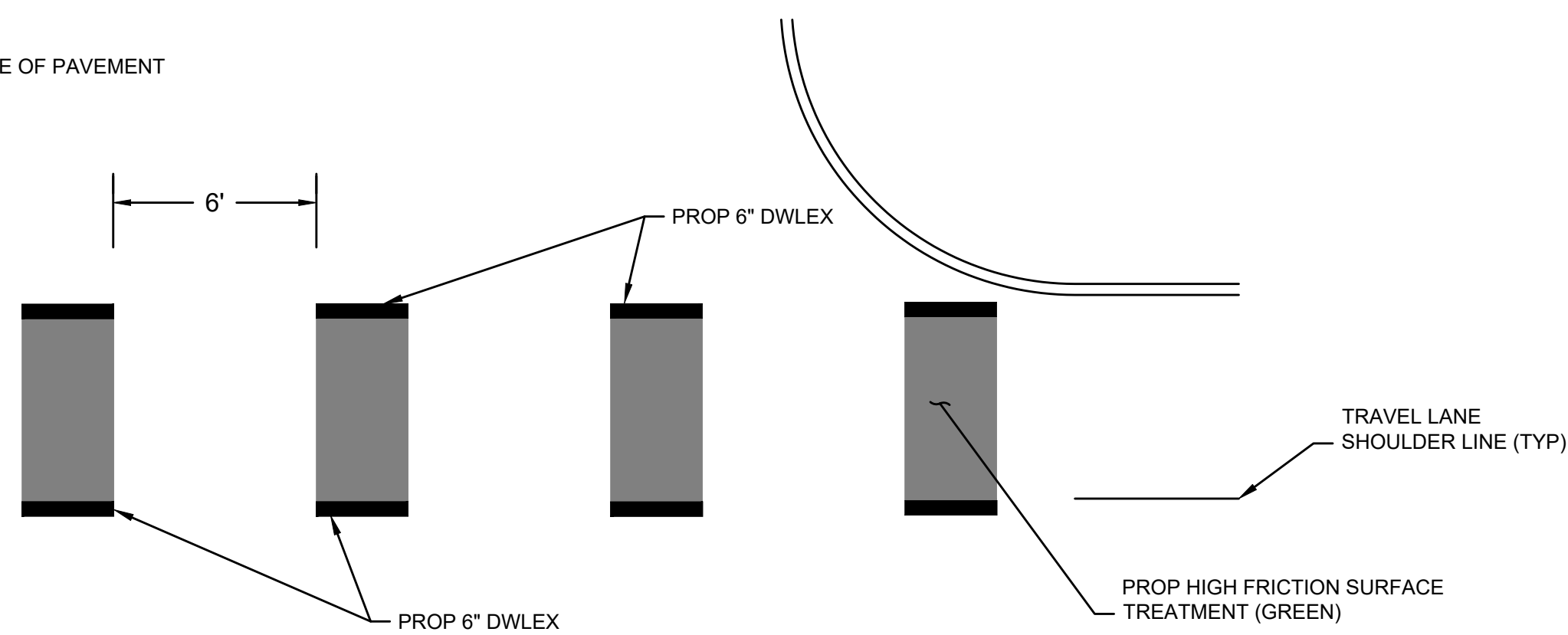
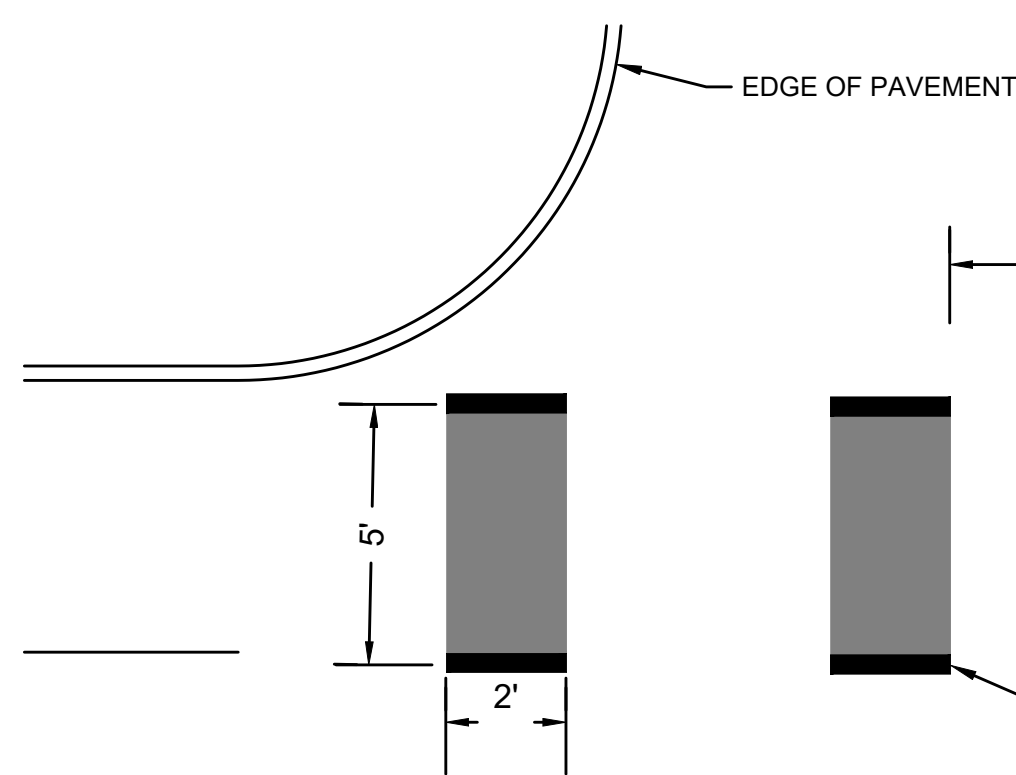
YIELD LINE PAVEMENT MARKING

N.T.S.



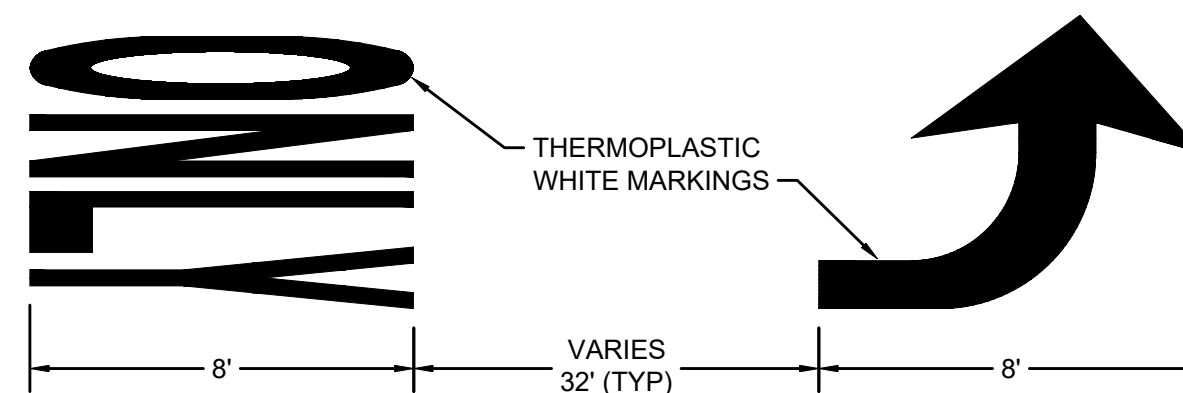
BICYCLE DETECTOR PAVEMENT MARKING

N.T.S.



BIKE LANE THROUGH INTERSECTION

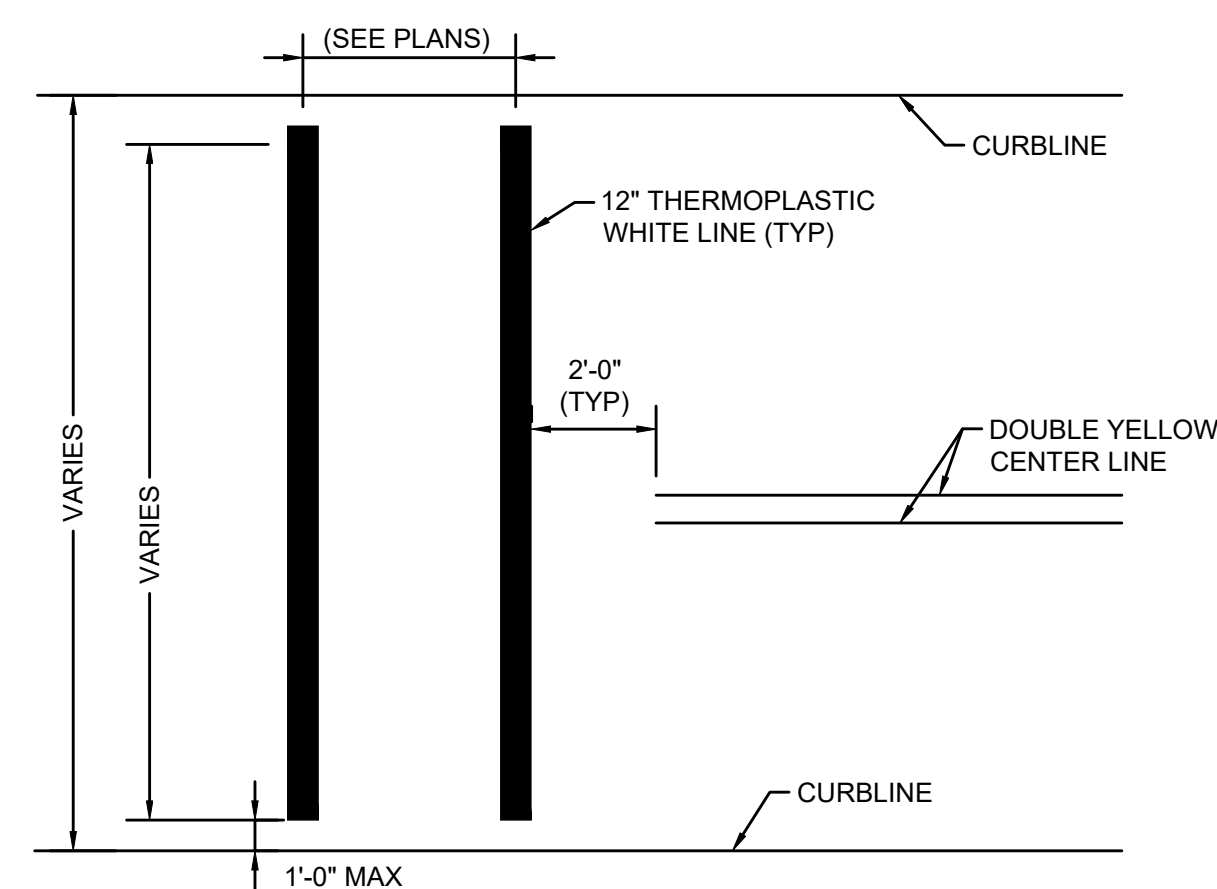
N.T.S.



NOTE: SPACING SHALL BE SAME FOR RIGHT TURN LANE AND THRU ONLY PAVEMENT MARKING (REFER TO MASSDOT STANDARD DRAWING TR.6.1)

LEFT TURN LANE PAVEMENT MARKING

N.T.S.

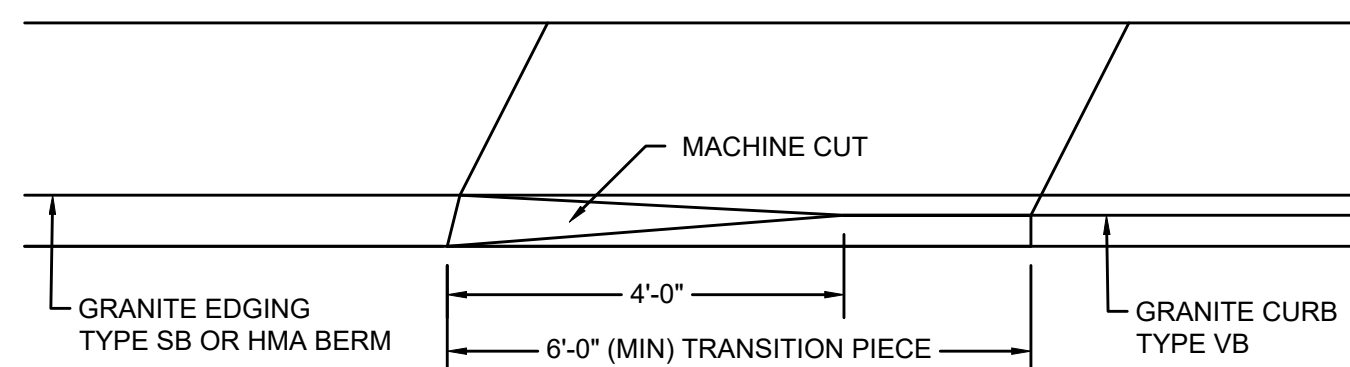


NOTES:

1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.

CROSSWALK PAVEMENT MARKING

N.T.S.

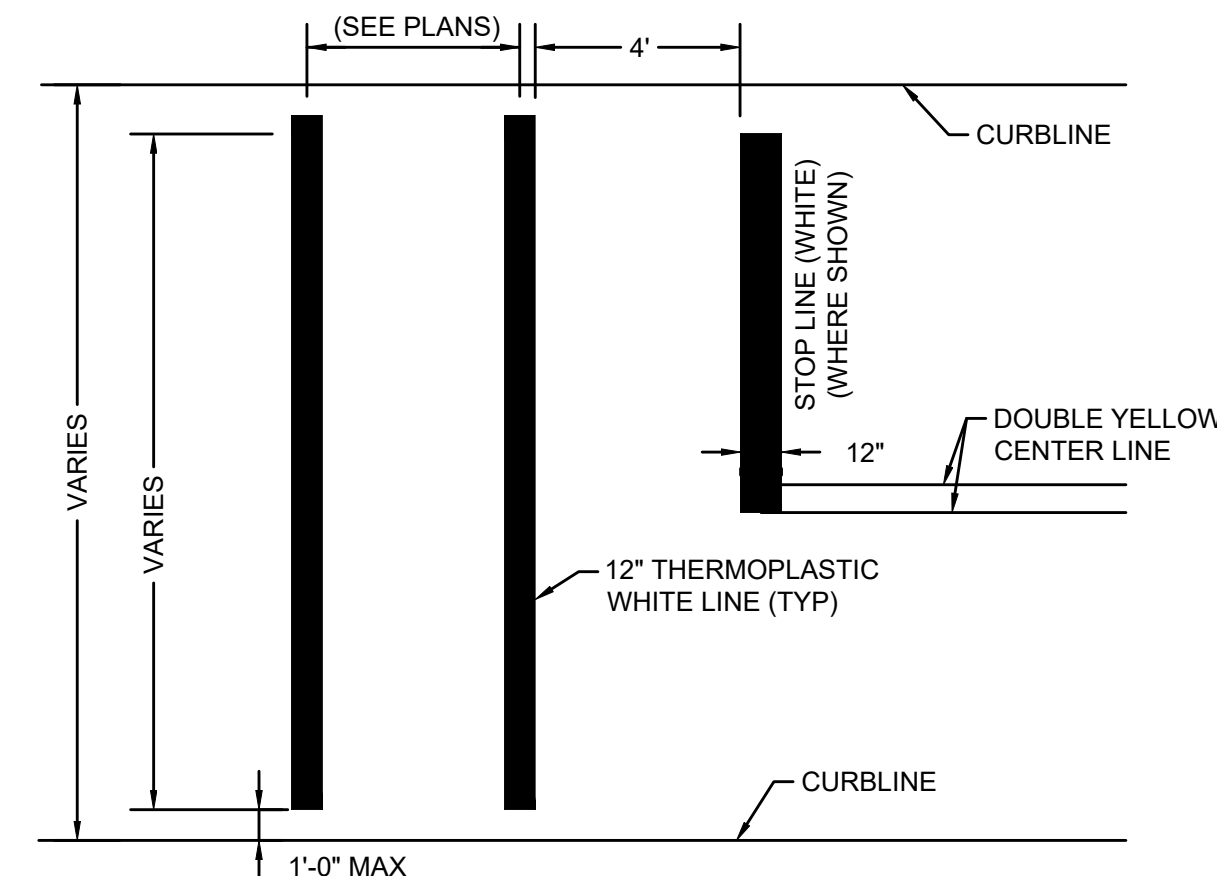


GRANITE CURB SPLAYED END

N.T.S.

WESTFORD BOSTON ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	30
PROJECT FILE NO.		609035	

CONSTRUCTION DETAILS - 4 OF 6

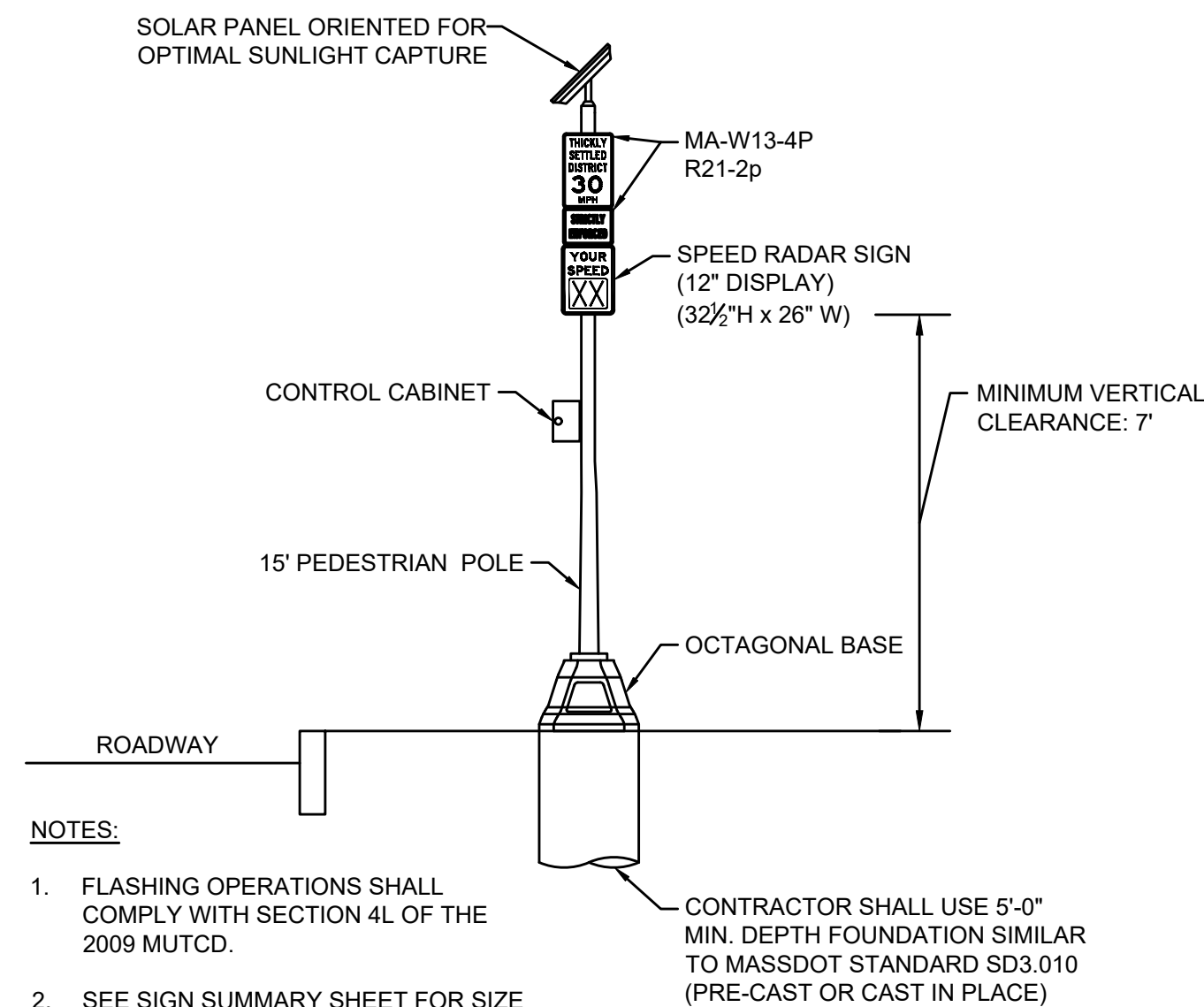


NOTES:

1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.

CROSSWALK PAVEMENT MARKING

N.T.S.

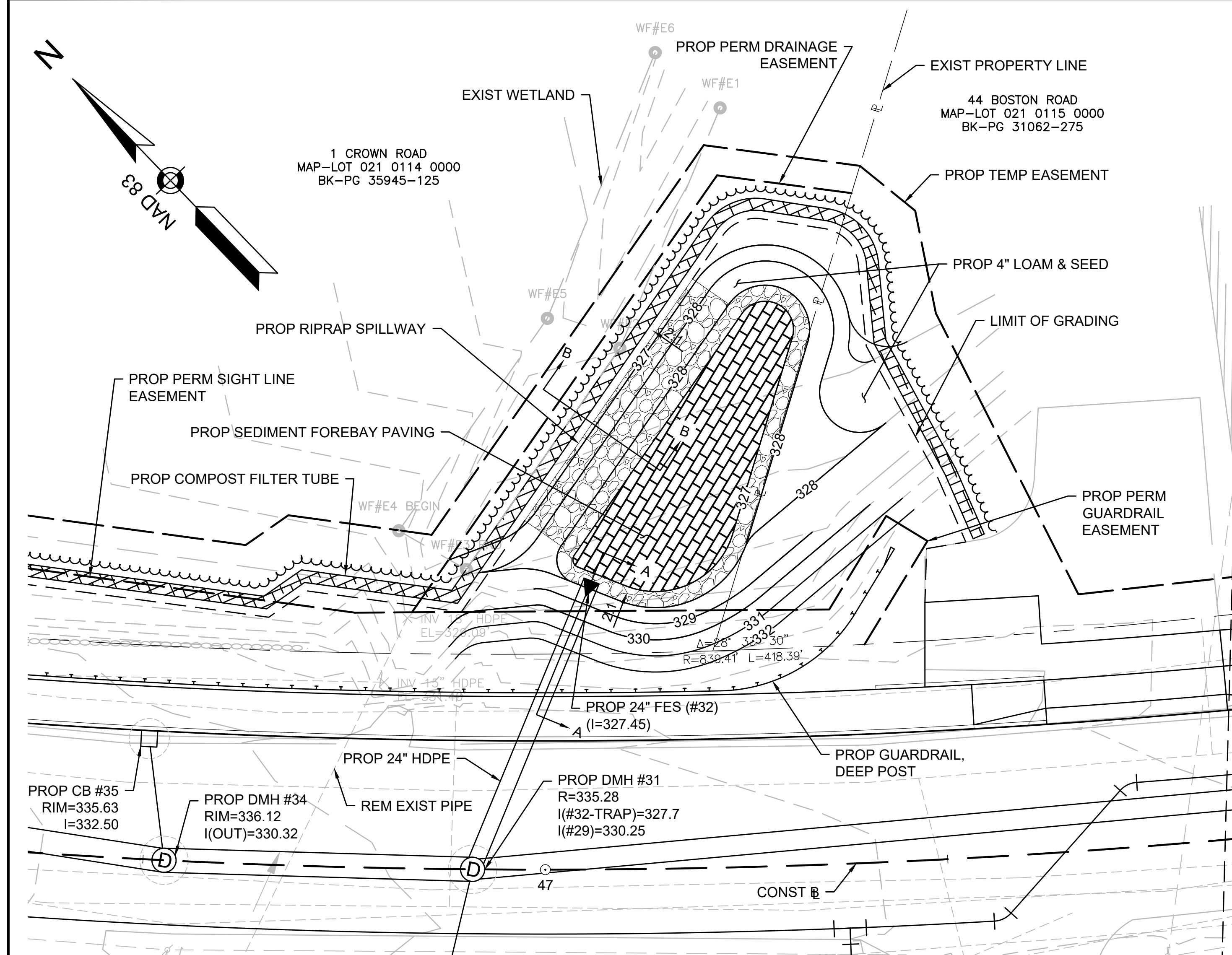


NOTES:

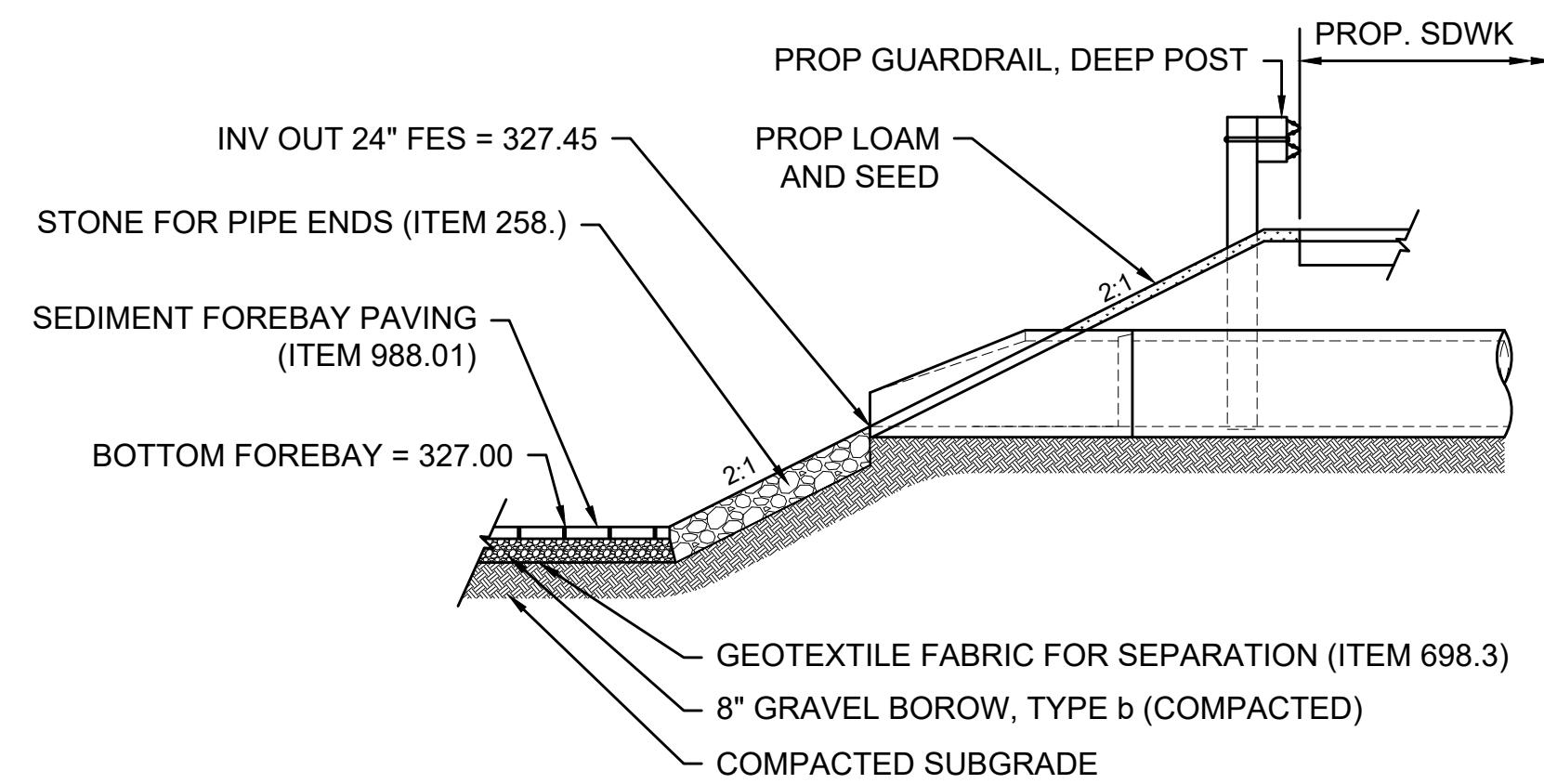
1. FLASHING OPERATIONS SHALL COMPLY WITH SECTION 4L OF THE 2009 MUTCD.
2. SEE SIGN SUMMARY SHEET FOR SIZE AND LEGEND DETAILS.

RADAR SPEED FEEDBACK SIGN ASSEMBLY

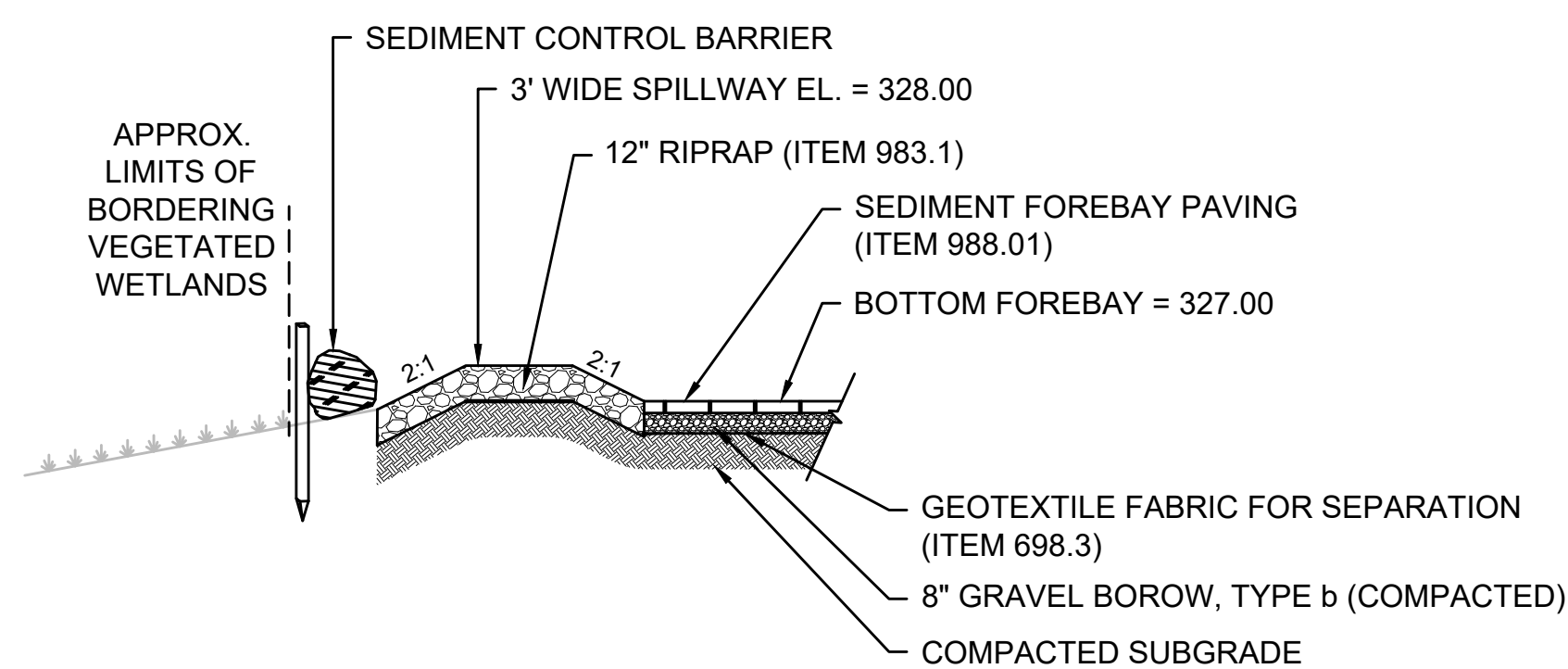
N.T.S.



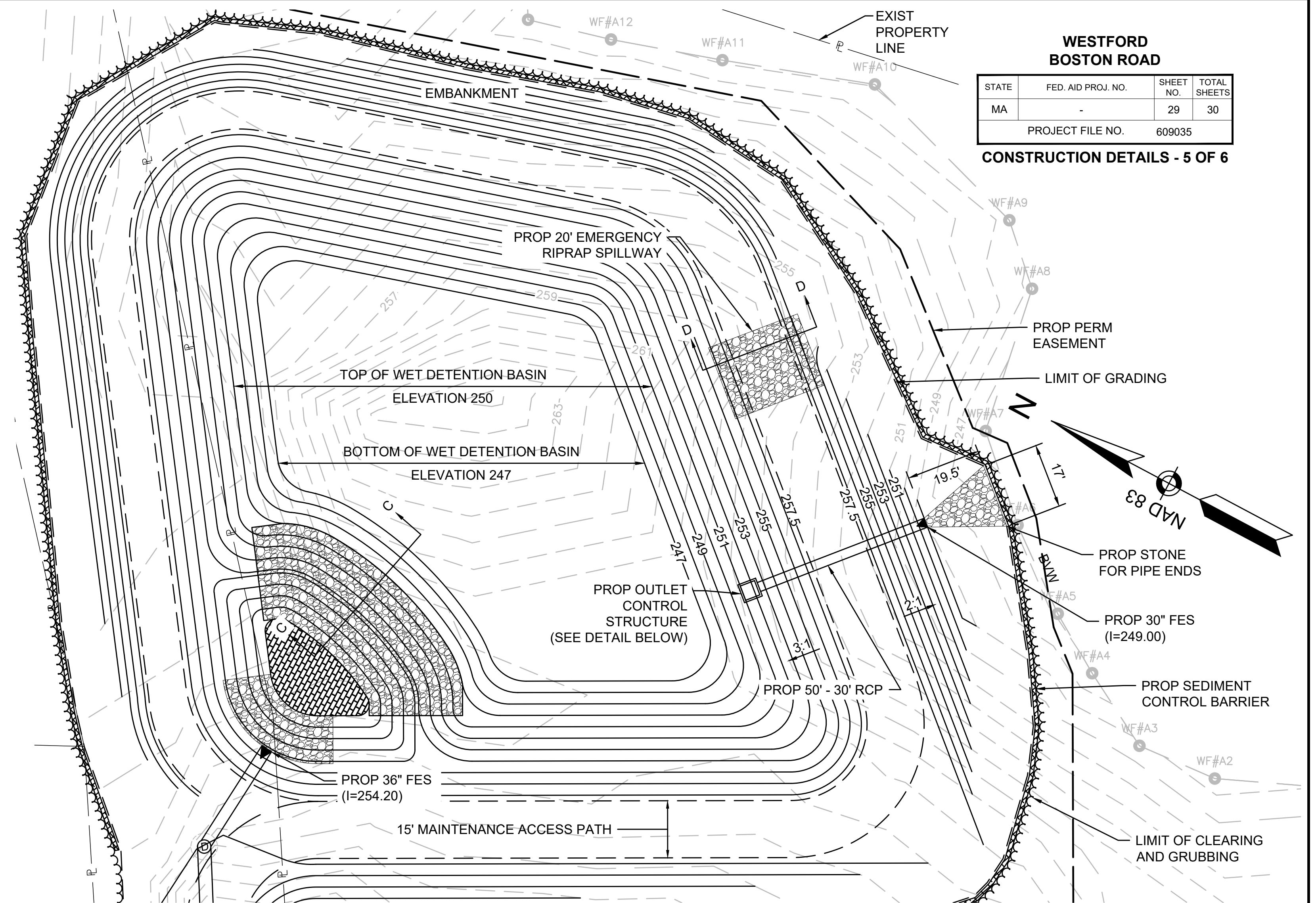
PLAN (OUTLET SEDIMENT TRAP)
SCALE: 1" = 10'



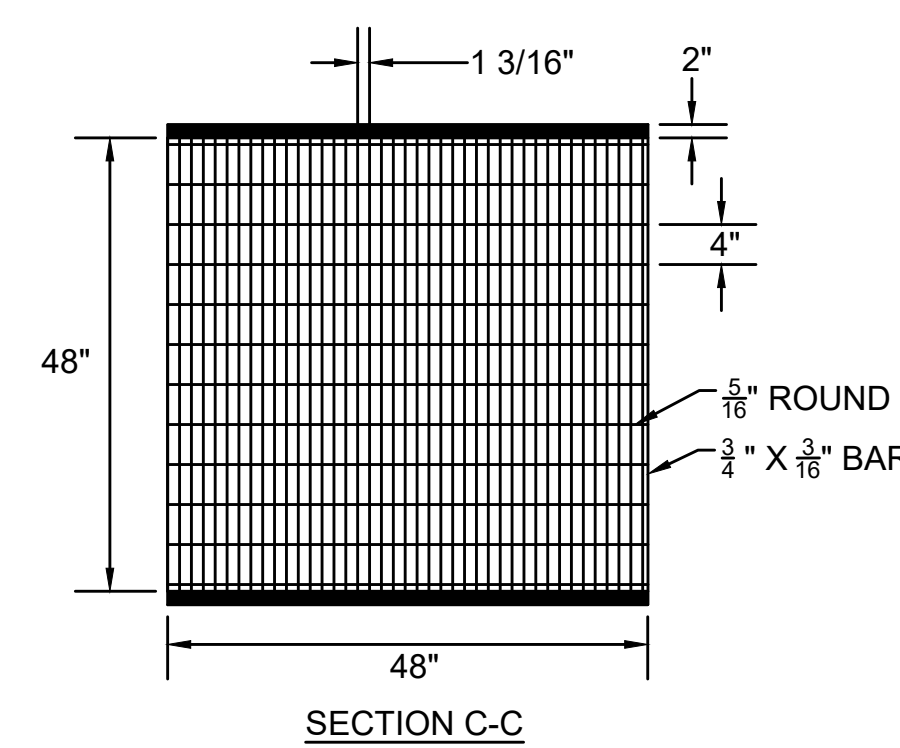
SECTION A-A (OUTLET SEDIMENT TRAP)
N.T.S.



SECTION B-B (OUTLET SEDIMENT TRAP)
N.T.S.



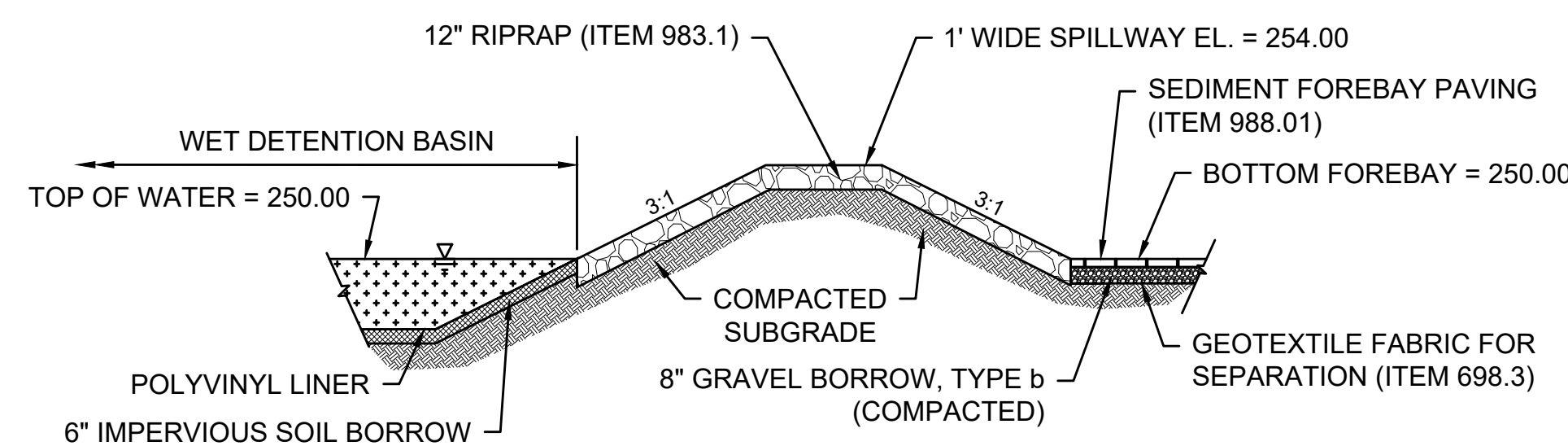
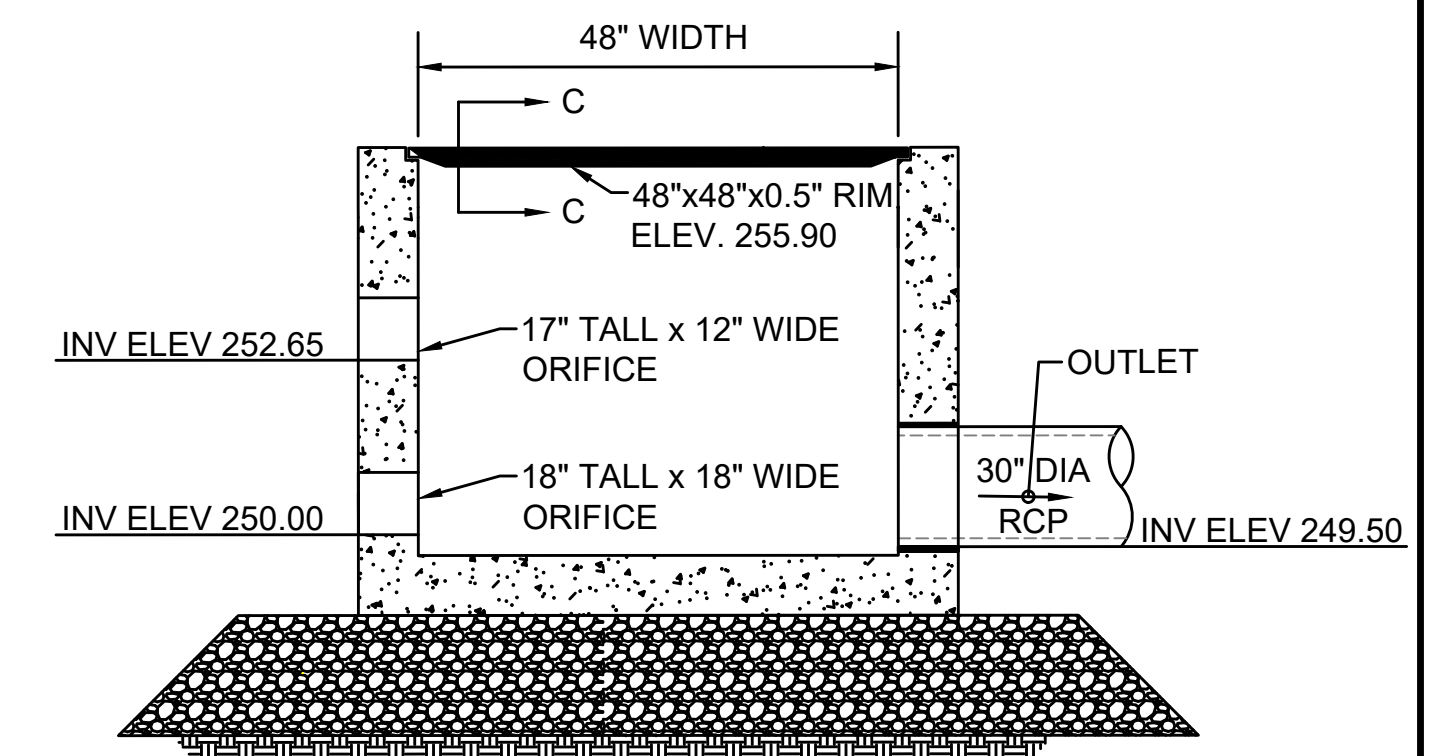
PLAN (WET DETENTION BASIN)
SCALE: 1" = 10'



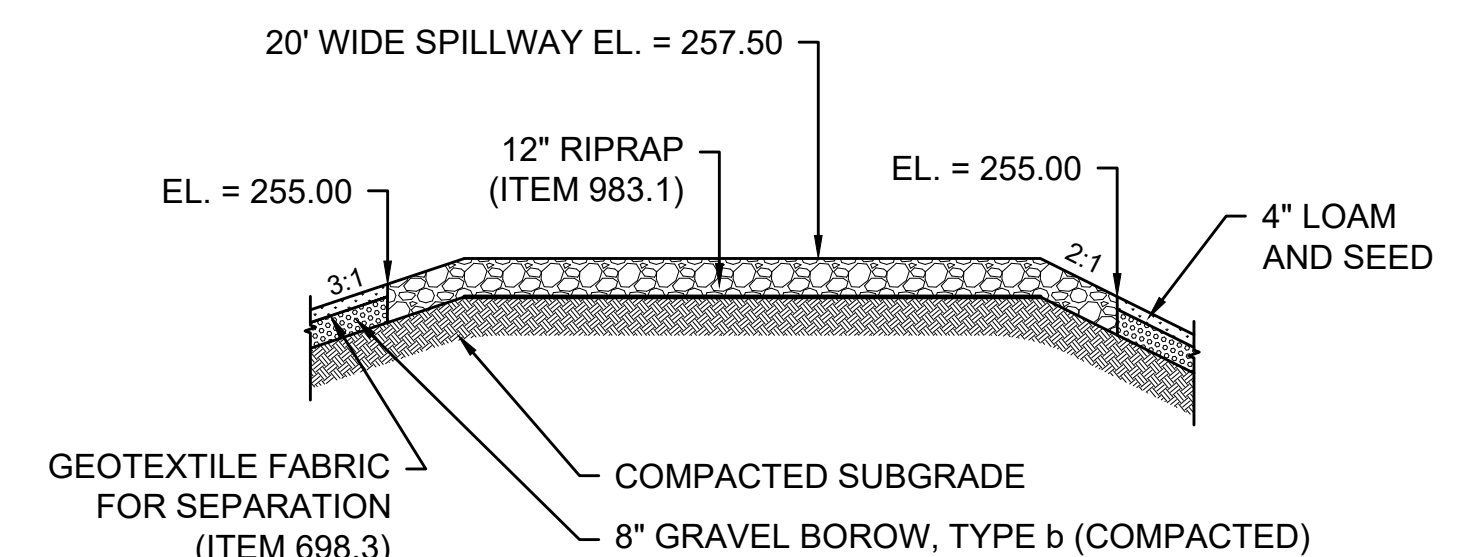
- SECTION C-C NOTES:
1. GRATE SHALL BE 48"x48" (INNER DIMENSIONS) WITH A 2" WIDE X 3/8" THICK (MIN) LIP ON TWO SIDES THAT ARE BOLTED TO THE PRECAST CONCRETE BOX STRUCTURE USING BOLTS THAT ARE 0.5" THICK X 2" LONG (MIN).
 2. GRATE SHALL BE MADE OF ASTM-A36 MATERIAL WITH A GALVANIZED COATING.
 3. GRATE SHALL HAVE A PEDESTRIAN LOAD RATING

- GENERAL NOTES:
1. STRUCTURE SHALL BE 48"x48" (INNER DIMENSIONS) PRECAST CONCRETE BOX STRUCTURE
 2. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
 3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
 4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.

OUTLET CONTROL STRUCTURE DETAIL
N.T.S.



SECTION C-C (WET DETENTION BASIN)
N.T.S.

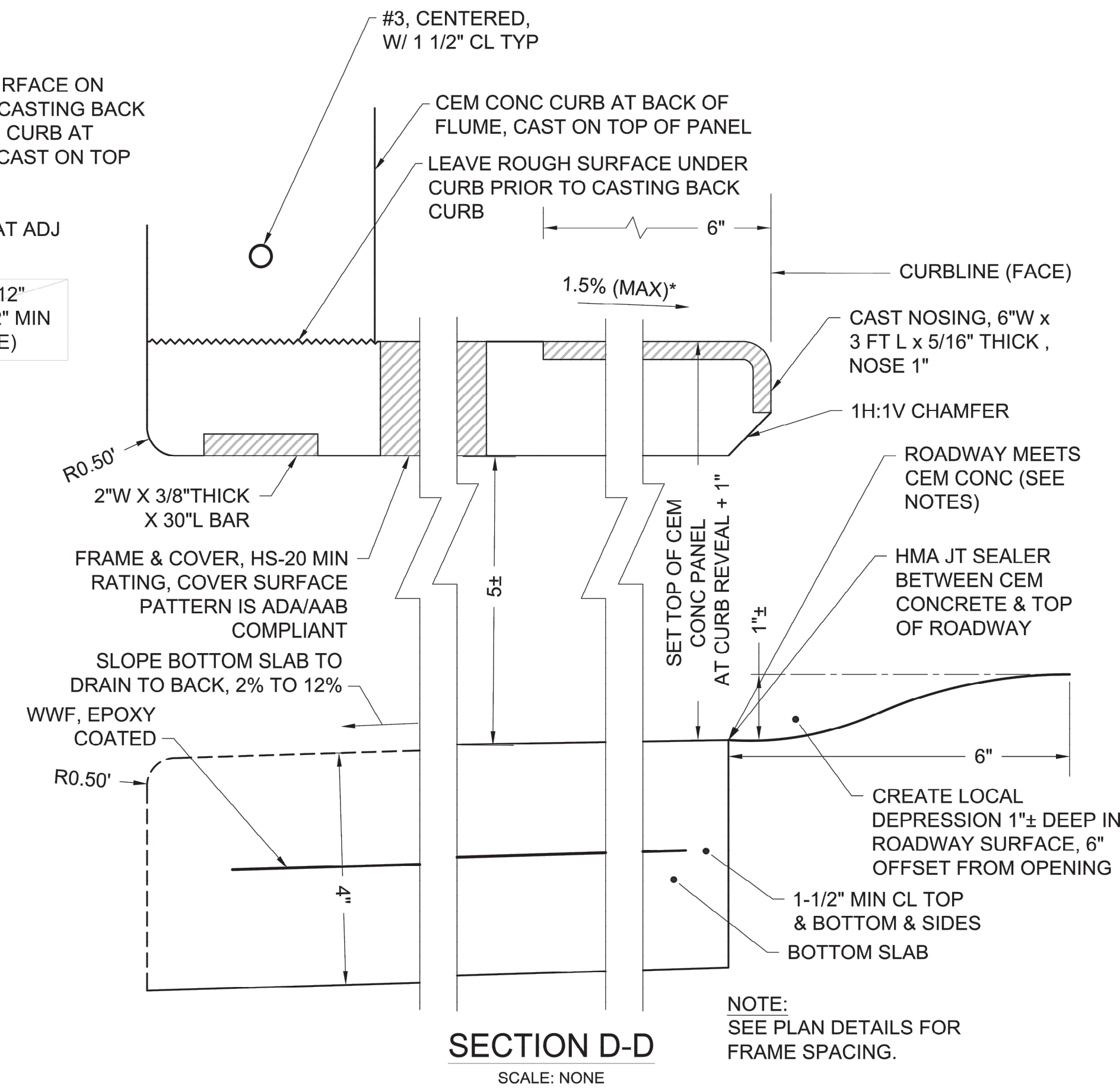
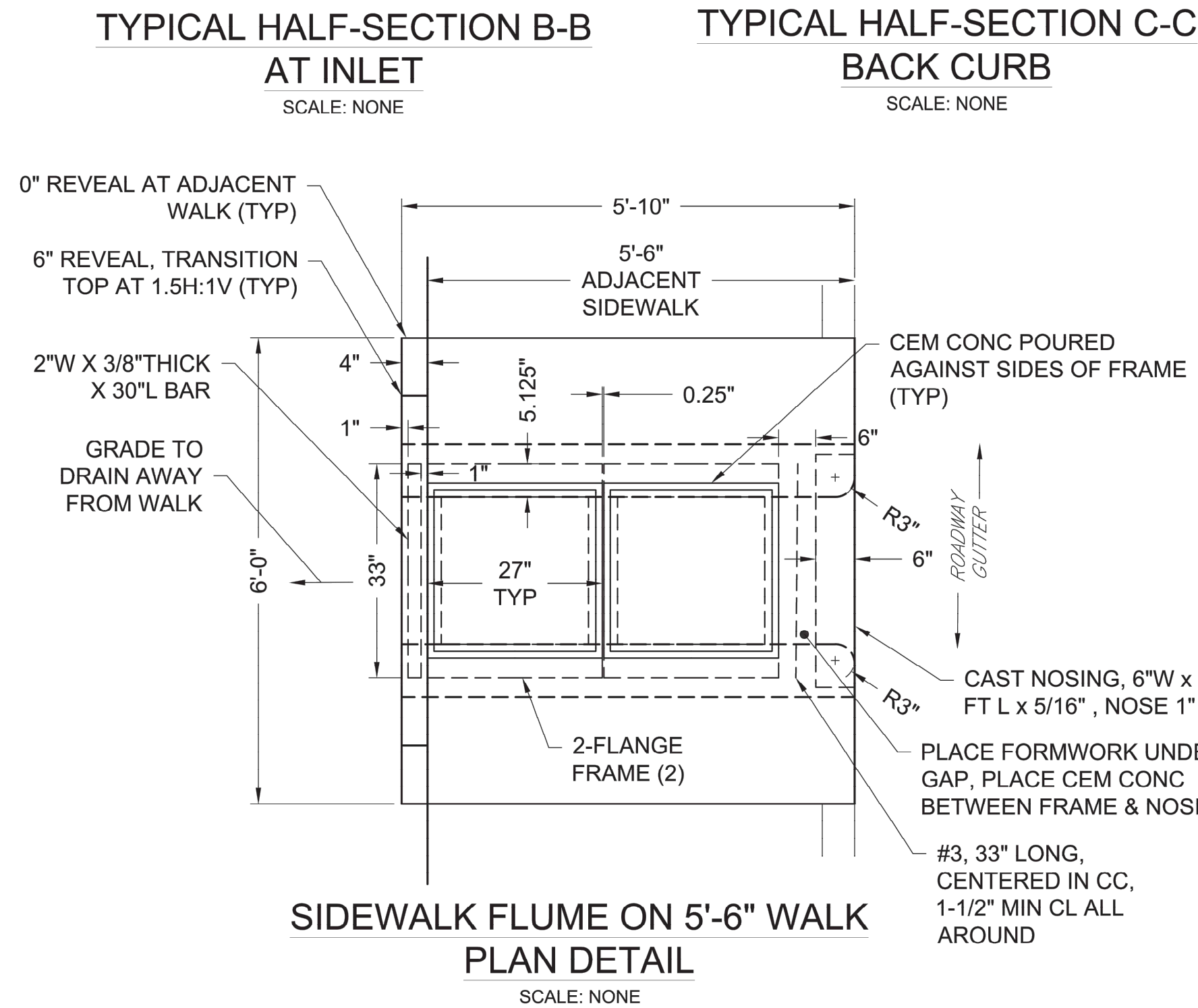
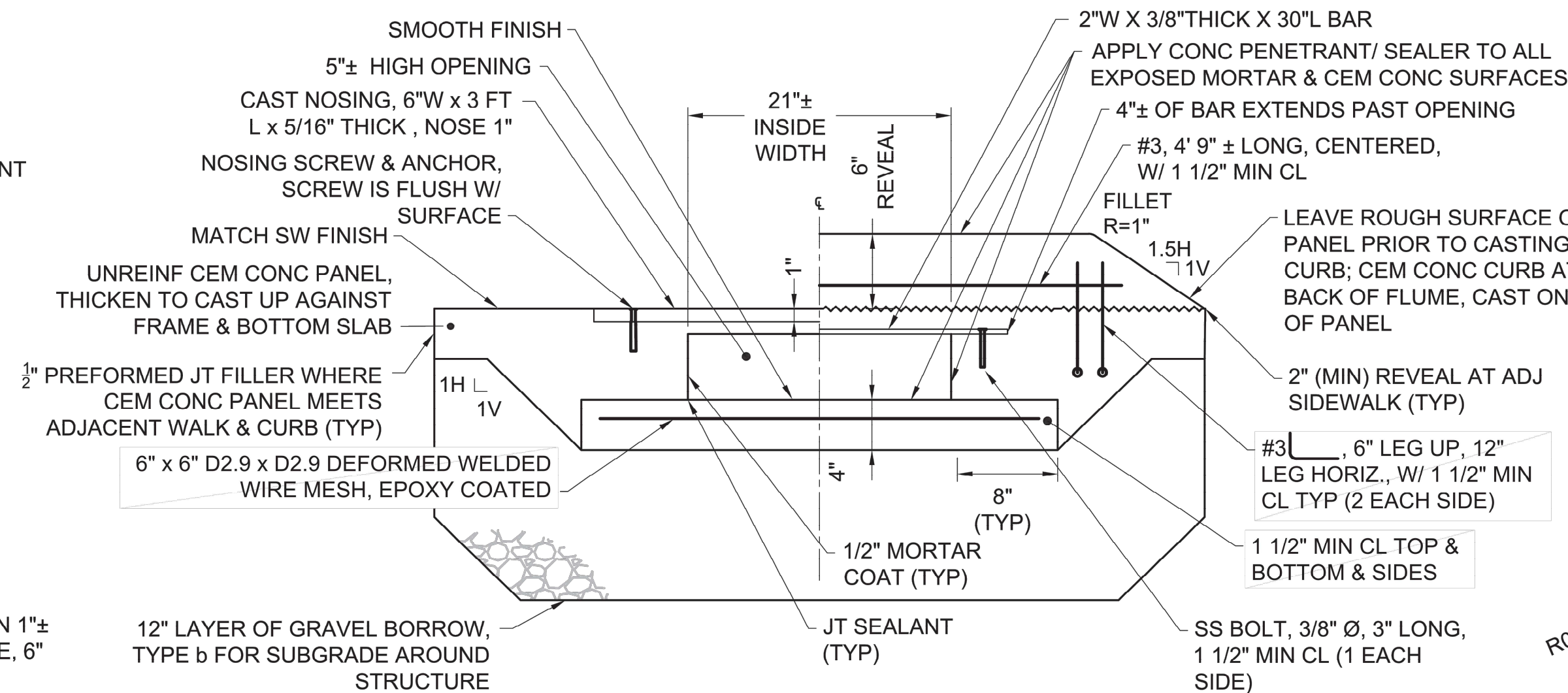
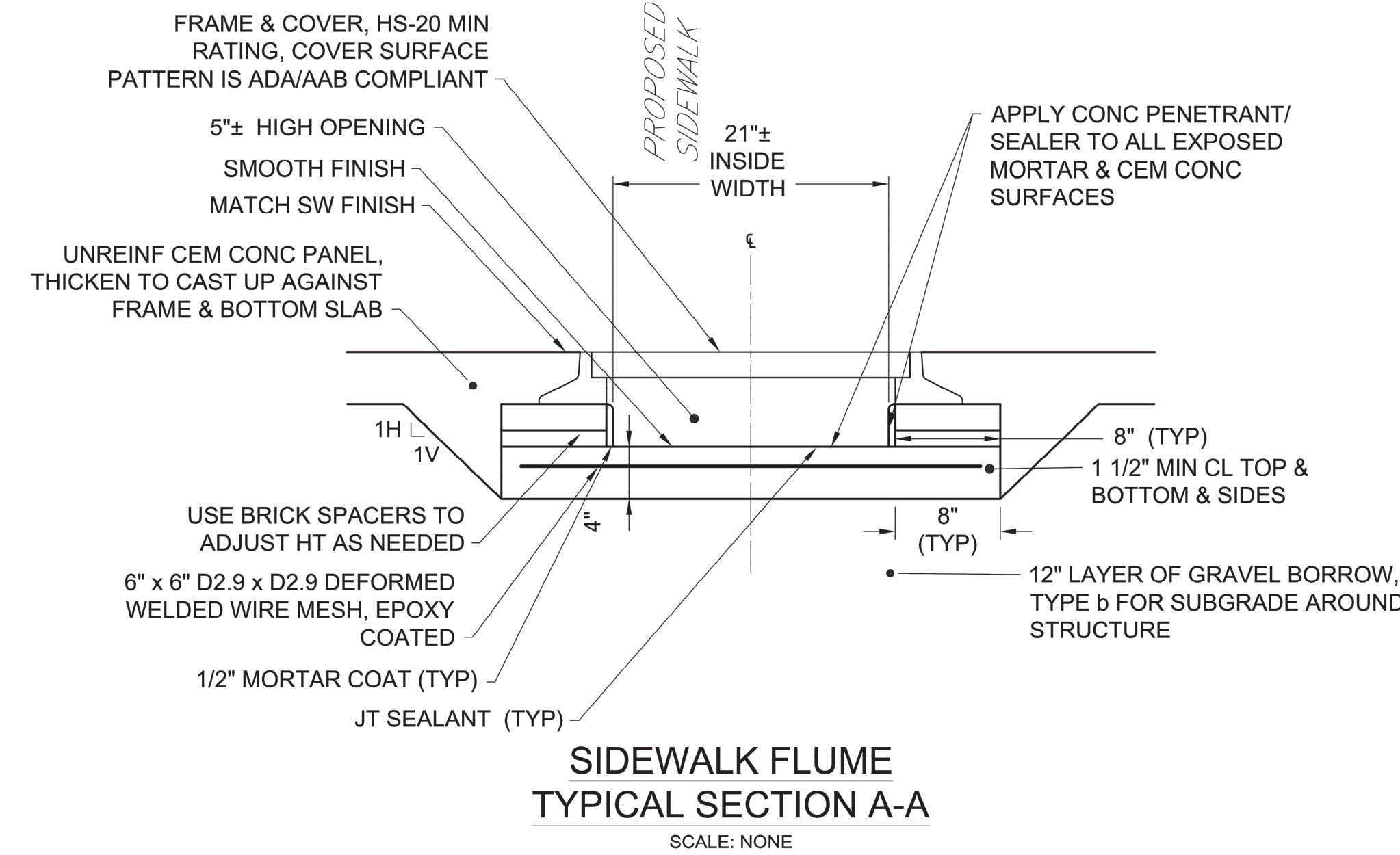
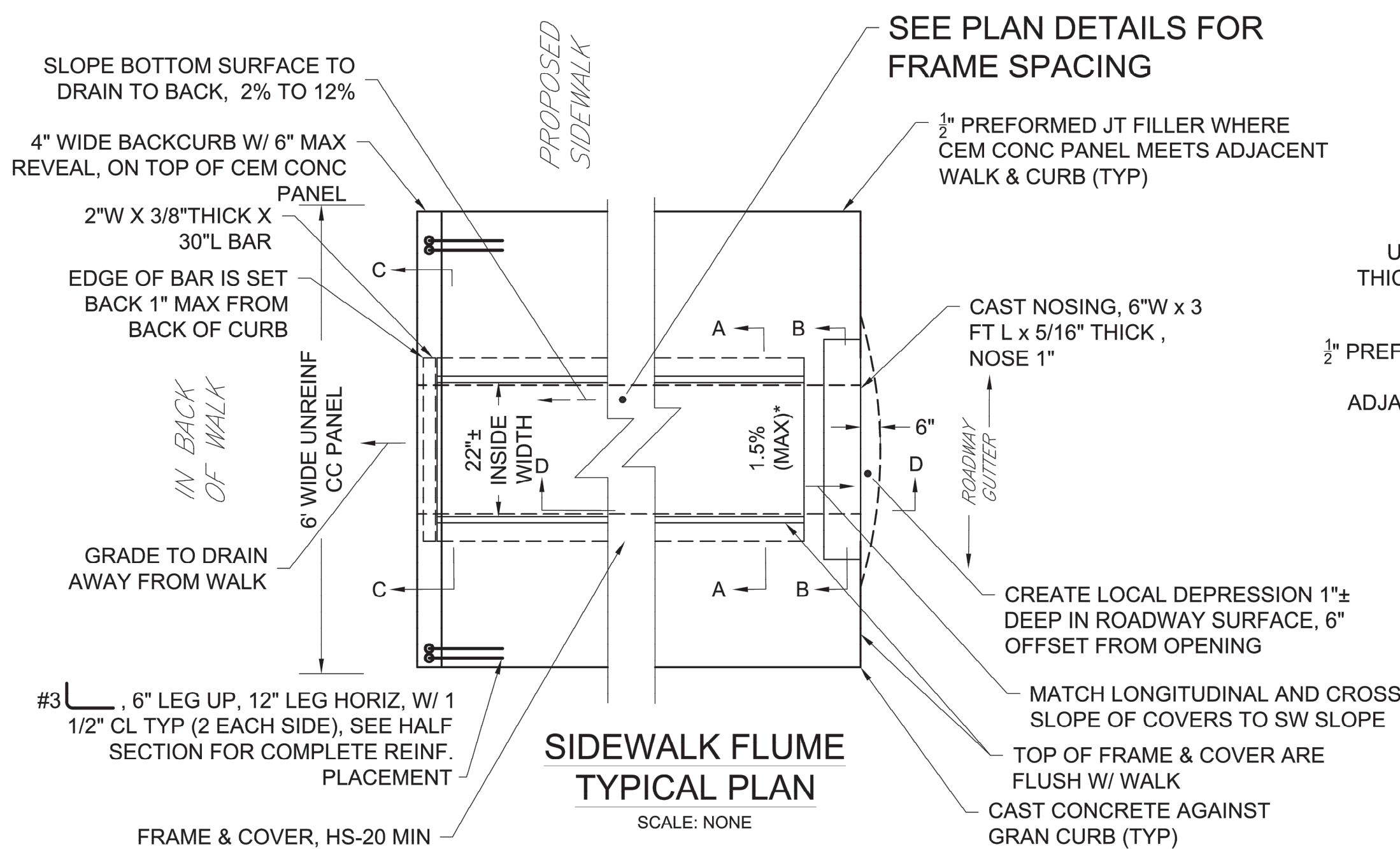


SECTION D-D (WET DETENTION BASIN)
N.T.S.

WESTFORD
BOSTON ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	30
PROJECT FILE NO.		609035	

CONSTRUCTION DETAILS - 6 OF 6



* TOLERANCE FOR CONSTRUCTION OF ±0.5%

SIDEWALK FLUME NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS FOR THE CONSTRUCTABILITY OF THE SIDEWALK FLUME. ONLY AFTER VERIFICATION SHALL ANY REINFORCEMENT, STRUCTURAL STEEL, FRAMES, OR COVERS BE ORDERED.
2. MINIMUM SPACING BETWEEN FRAMES AND CAST NOSING IS 1/4 INCH.
3. CAST NOSING - INSTALL PER MANUFACTURER'S INSTRUCTIONS. SURFACE OF CAST NOSING SHALL BE NON-SKID.
4. SUBMIT SHOP DRAWINGS FOR FRAME & COVERS FOR ENGINEER'S APPROVAL. MINIMUM LOAD RATING FOR FRAME & COVER IS HS-20. SHOW INSTALLATION OF FRAME & COVER ON CEMENT CONCRETE FLUME STRUCTURE.
5. IN WET AREAS, WRAP SUB-BASE IN GEOTEXTILE FABRIC FOR STABILIZATION AS DIRECTED BY ENGINEER.
6. ADJUST FORMWORK TO ADJUST HEIGHT OF INLET OPENING AND SIDEWALLS TO MEET CURB REVEAL.
7. ADJUST SLOPE OF BOTTOM SLAB FOR POSITIVE DRAINAGE.
8. USE 4000 PSI, 3/4 INCH, 610 LB CEMENT CONCRETE.
9. FOR BARS, ANGLES, AND RODS, USE Fy 36 ksi MINIMUM STRENGTH, GALVANIZED STEEL.
10. FOR DEFORMED WELDED WIRE FABRIC, USE Fy 60 ksi MINIMUM STRENGTH, EPOXY COATED.
11. APPLY PENETRANT/SEALER TO MORTAR & CEM CONC SURFACES INSIDE OF FLUME PRIOR TO INSTALLING COVERS.