

# TRANSPORTATION IMPROVEMENT PROJECT

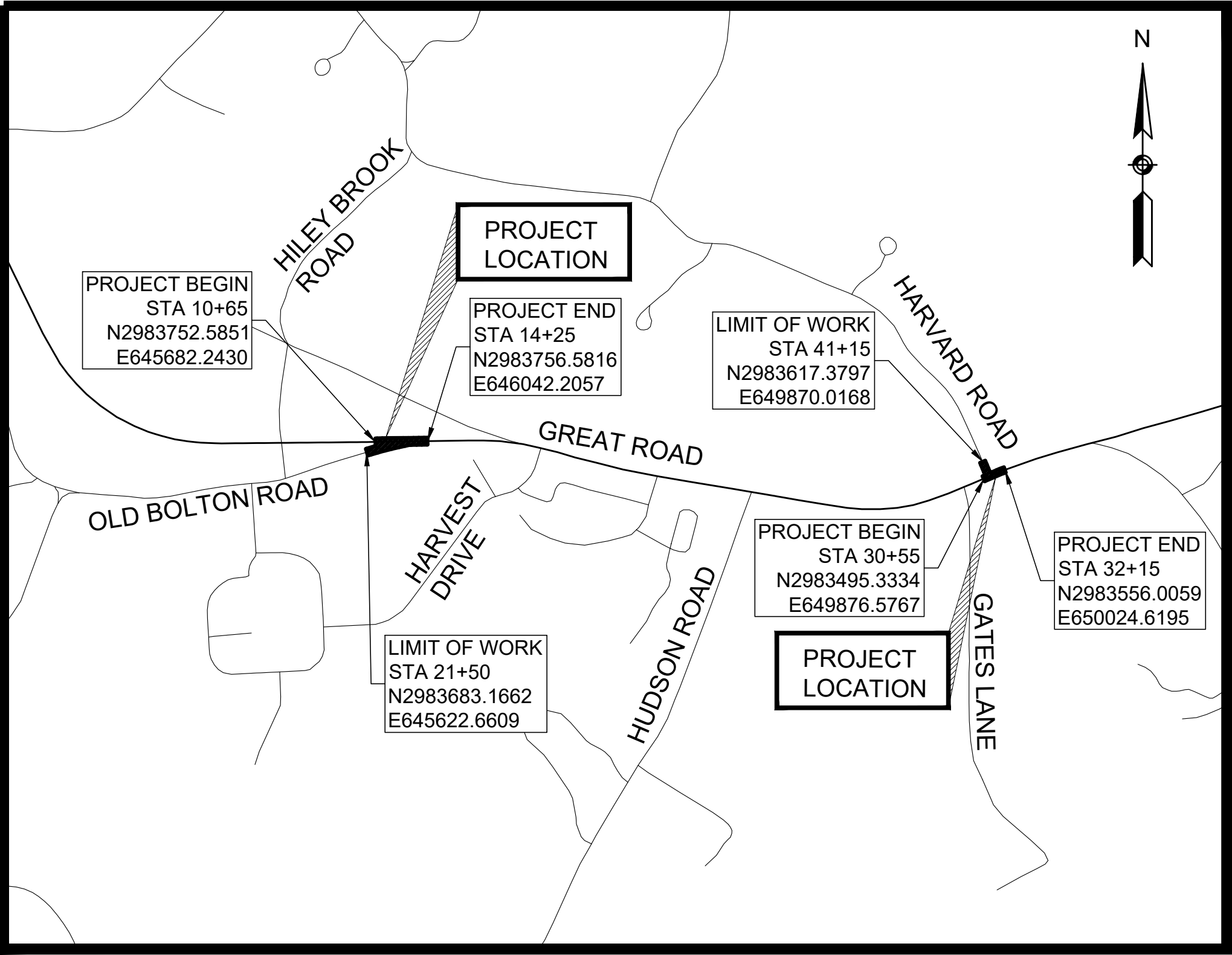
STOW  
COMPLETE STREETS  
TITLE SHEET & INDEX  
SHEET 1 OF 19

PLAN AND PROFILE OF  
GREAT ROAD / OLD BOLTON ROAD  
GREAT ROAD / HARVARD ROAD  
IN THE TOWN OF  
STOW  
MIDDLESEX COUNTY

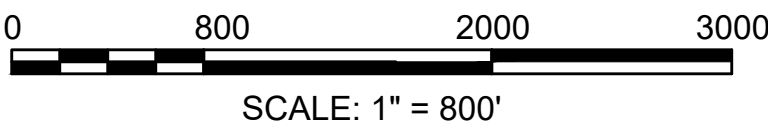
THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

## 100% SUBMITTAL

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	KEY PLAN & CONSTRUCTION NOTES
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8-9	TRAFFIC SIGN & PAVEMENT MARKINGS
10-12	TEMPORARY TRAFFIC CONTROL PLANS
13-14	CONSTRUCTION DETAILS
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









































































































































































































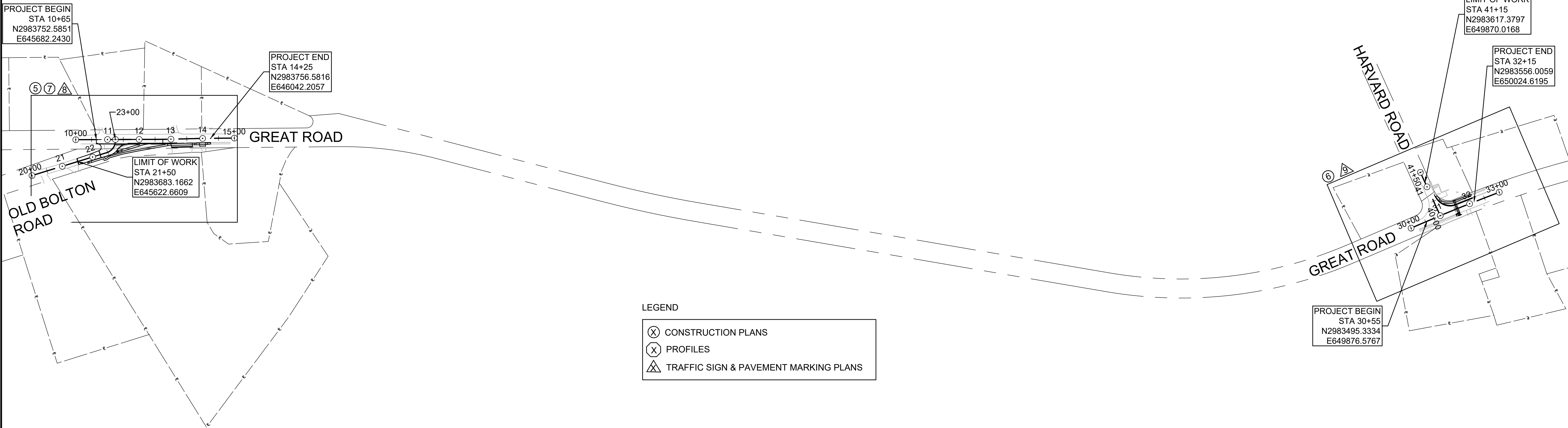
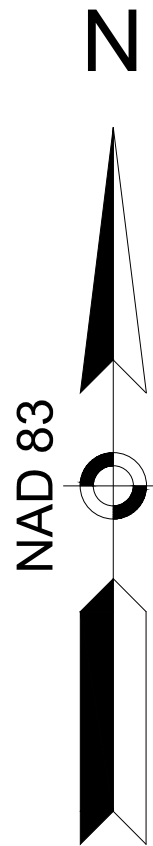
DESIGN SPEED	DESIGN DESIGNATION		
	GREAT ROAD	OLD BOLTON ROAD	HARVARD ROAD
	40 MPH	30 MPH	30 MPH
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL	URBAN COLLECTOR	URBAN COLLECTOR



LENGTH OF PROJECT	
<u>GREAT ROAD / OLD BOLTON ROAD</u>	
GREAT ROAD = 360.00 FEET = 0.068 MILES	
OLD BOLTON ROAD = 150.00 FEET = 0.028 MILES	
<u>GREAT ROAD / HARVARD ROAD</u>	
GREAT ROAD = 160.00 FEET = 0.030 MILES	
HARVARD ROAD = 115.00 FEET = 0.022 MILES	

05/04/2020	REVISED FINAL SUBMITTAL	2
04/21/2020	FINAL SUBMITTAL	1
11/01/2019	100% SUBMITTAL	-
DATE	DESCRIPTION	
<div><div></div><div><div>146 Dascomb Road Andover, MA 01810 978-794-1792</div><div>311 Main Street 2nd Floor Worcester, MA 01608 508-868-5104</div><div>169 Ocean Blvd, Unit 3 PO Box 249 Hampton, NH 03842 603-601-8154</div></div><div>www.TheEngineeringCorp.com</div></div>		
DESIGNED BY RLC	CHECKED BY LSA	DATE 04/21/2020
DRAWN BY RLC	APPROVED BY JAR	PROJECT NO. T0867

GENERAL SYMBOLS			TRAFFIC SYMBOLS			ABBREVIATIONS		STOW COMPLETE STREETS LEGEND & ABBREVIATIONS SHEET 2 OF 19	
EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION	GENERAL			
 JB	 JB	JERSEY BARRIER	 		CONTROLLER CABINET, FOUNDATION	AADT	ANNUAL AVERAGE DAILY TRAFFIC		
 CB	 CB/GI	CATCH BASIN OR GUTTER INLET	 		CONTROLLER CABINET, FOUNDATION, CONC. PAD	ABAN	ABANDON		
 CIBC/GICI	 CIBC/GICI	CATCH BASIN OR GUTTER INLET W/ CURB INLET	 		MAST ARM FOUNDATION (SCALE OF BLOCK = DIAMETER IN INCHES)	ADJ	ADJUST		
 FP	 FP	FLAG POLE	 		MAST ARM (LENGTH NOTED)	APPROX.	APPROXIMATE		
 GP	 GP	GAS PUMP	 		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT	A.C.	ASPHALT CONCRETE		
 MB	 MB	MAIL BOX	 		VEHICULAR SIGNAL HEAD	ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE		
 		POST SQUARE	 		PEDESTRIAN SIGNAL HEAD	BL	BASELINE		
 		POST CIRCULAR	 		MAST ARM OR TS POLE MOUNTED SIGN	BLDG	BUILDING		
 WELL	 WELL	WELL	 		EMERGENCY PRE-EMPTION RECEIVER	BM	BENCHMARK		
 EHH	 EHH	ELECTRIC HANDHOLE	 		EMERGENCY PRE-EMPTION CONFIRMATION STROBE	BO	BY OTHERS		
 		FENCE GATE POST	 		PEDESTRIAN PUSH BUTTON	BOS	BOTTOM OF SLOPE		
 GG	 GG	GAS GATE	 		YAGI ANTENNA	BR.	BRIDGE		
 BHL #	 BHL #	BORING HOLE	 		BICYCLE WIRE LOOP DETECTOR (SIZE AS NOTED)	CB	CATCH BASIN		
 MW #	 MW #	MONITORING WELL	 		WIRE LOOP DETECTOR (SIZE AND TYPE NOTED)	CBCI	CATCH BASIN WITH CURB INLET		
 TP #	 TP #	TEST PIT	 		TRAFFIC SIGN (1 POST)	CC	CEMENT CONCRETE		
 		HYDRANT	 		TRAFFIC SIGN (2 POST)	CCM	CEMENT CONCRETE MASONRY		
 		LIGHT POLE	 		PULL BOX 12"x12" (OR AS NOTED)	CEM	CEMENT		
 CO.BD.		COUNTY BOUND	 		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)	CI	CURB INLET		
 		GPS POINT	 		TRAFFIC SIGNAL CONDUIT	CIP	CAST IRON PIPE		
 		CABLE MANHOLE				CLF	CHAIN LINK FENCE		
 		DRAINAGE MANHOLE				CL	CENTERLINE		
 		ELECTRIC MANHOLE				CMP	CORRUGATED METAL PIPE		
 		GAS MANHOLE				CSP	CORRUGATED STEEL PIPE		
 		MISC MANHOLE				CO.	COUNTY		
 		SEWER MANHOLE				CONC	CONCRETE		
 		TELEPHONE MANHOLE				CONT	CONTINUOUS		
 		WATER MANHOLE				CONST	CONSTRUCTION		
 MHB	 MHB	MASSACHUSETTS HIGHWAY BOUND				CR GR	CROWN GRADE		
 MON		MONUMENT				DHV	DESIGN HOURLY VOLUME		
 SB		STONE BOUND				DI	DROP INLET		
 TB		TOWN OR CITY BOUND				DIA	DIAMETER		
 		TRAVERSE OR TRIANGULATION STATION				DIP	DUCTILE IRON PIPE		
 TPL or GUY	 TPL or GUY	TROLLEY POLE OR GUY POLE				DW	STEADY DON'T WALK - PORTLAND ORANGE		
 HTP		TRANSMISSION POLE				DWP	DETECTABLE WARNING PANEL		
 UFB	 UFB	UTILITY POLE W/ FIREBOX				DWY	DRIVEWAY		
 UPDL	 UPDL	UTILITY POLE WITH DOUBLE LIGHT				ELEV (or EL.)	ELEVATION		
 ULT	 ULT	UTILITY POLE W / 1 LIGHT				EMB	EMBANKMENT		
 UPL	 UPL	UTILITY POLE				EOP	EDGE OF PAVEMENT		
 		BUSH				EXIST (or EX)	EXISTING		
 		TREE				EXC	EXCAVATION		
 		STUMP				F&C	FRAME AND COVER		
 		SWAMP / MARSH				F&G	FRAME AND GRATE		
 WG	 WG	WATER GATE				FDN.	FOUNDATION		
 WSO	 WSO	WATER SHUTOFF/CURB STOP				FLDSTN	FIELDSTONE		
 PM	 PM	PARKING METER				GAR	GARAGE		
		OVERHEAD CABLE/WIRE				GC	GRANITE CURB		
		CURBING				GD	GROUND		
 100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)				GG	GAS GATE		
 100 99		CONTOURS (PHOTOGRAMMETRIC DATA)				GI	GUTTER INLET		
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)				GIP	GALVANIZED IRON PIPE		
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)				GRAN	GRANITE		
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)				GRAV	GRAVEL		
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)				GRD	GUARD		
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)				HDW	HEADWALL		
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)				HMA	HOT MIX ASPHALT		
		BALANCED STONE WALL				HOR	HORIZONTAL		
		GUARD RAIL - STEEL POSTS				HYD	HYDRANT		
		GUARD RAIL - WOOD POSTS				INV	INVERT		
		CHAIN LINK OR METAL FENCE				JCT	JUNCTION		
		WOOD FENCE				L	LENGTH OF CURVE		
		SEDIMENT CONTROL BARRIER				LB	LEACH BASIN		
		TREE LINE				LOG	LIMIT OF GRADING		
									



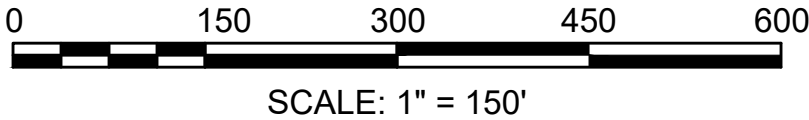
LEGEND

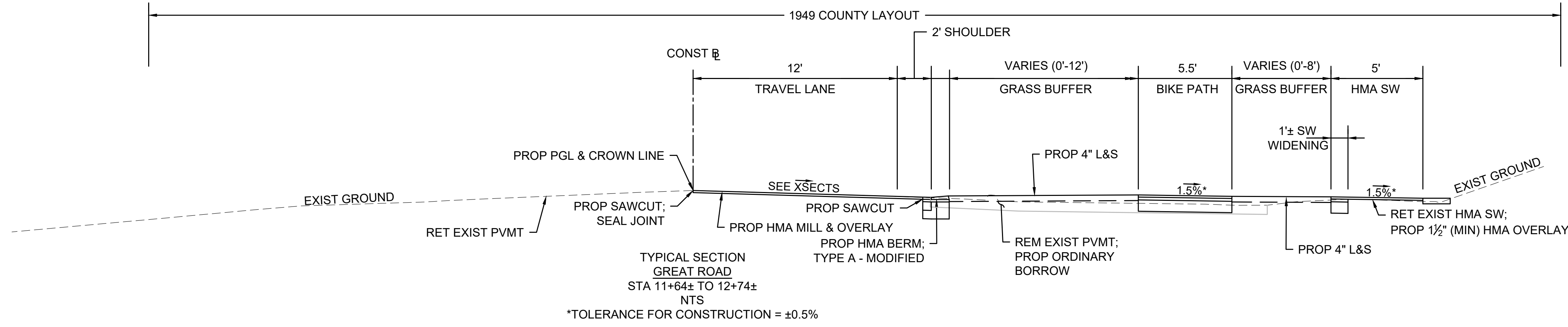
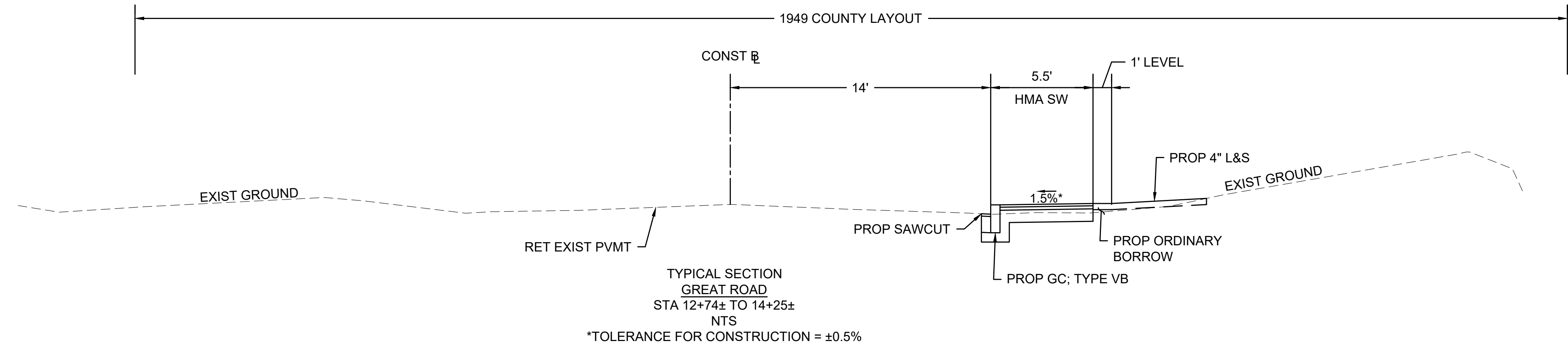
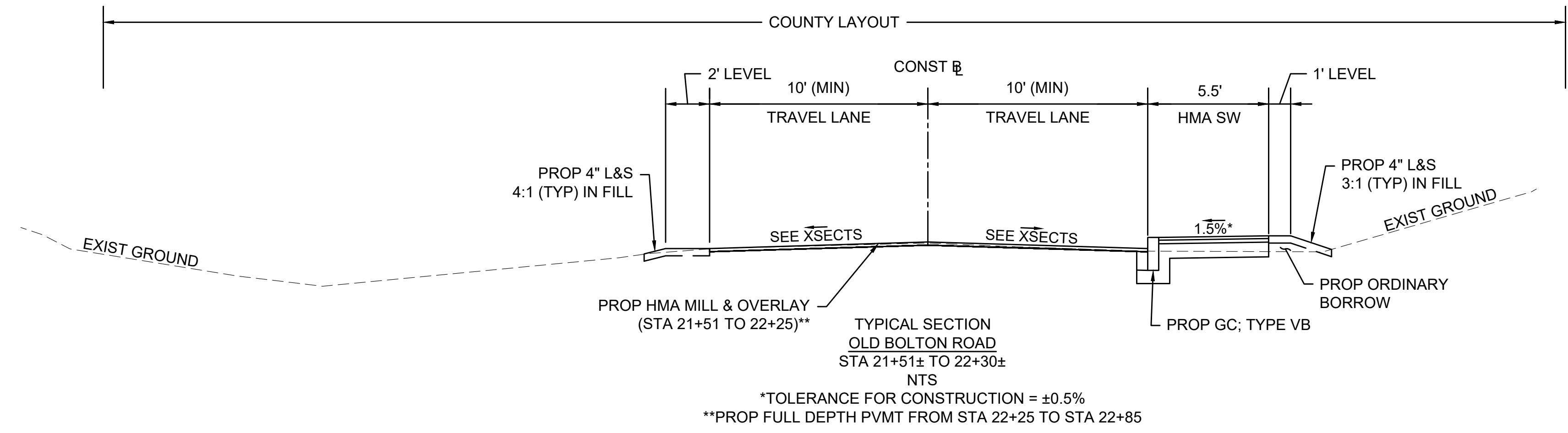
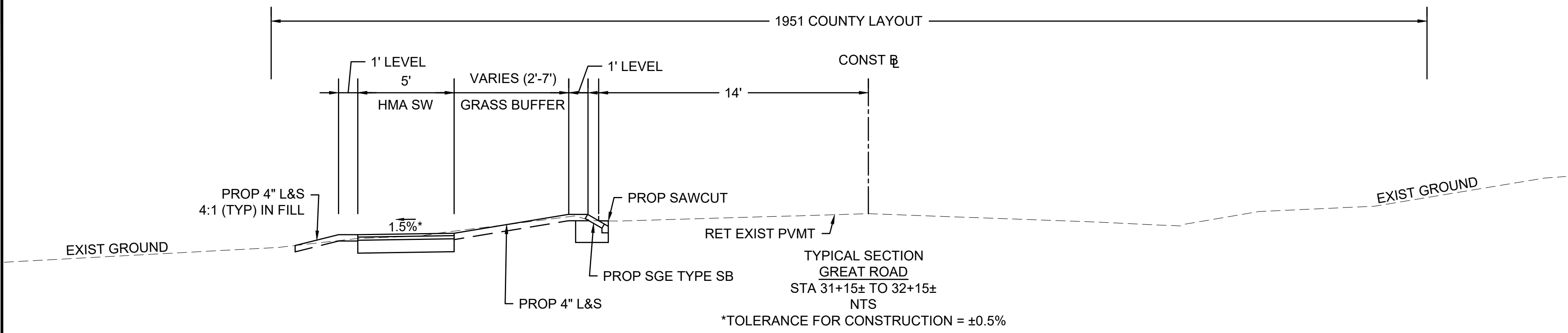
- ⊗ CONSTRUCTION PLANS
- ⊗ PROFILES
- ⚠ TRAFFIC SIGN & PAVEMENT MARKING PLANS

CONSTRUCTION NOTES:

- EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY TEC, INC, ANDOVER, MA PERFORMED IN FEBRUARY 2019 AND APRIL 2019.  
  
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. THE CONTRACTOR SHALL COORDINATE WITH THE STOW HIGHWAY DEPARTMENT TO ALLOW FOR THE REPLACEMENT OF EXISTING UTILITY STRUCTURES IN POOR CONDITION.
- 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 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 VERTICAL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ETC.)
- DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED WHEELCHAIR RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTIONS STANDARDS. DETECTABLE WARNING PANELS SHALL BE YELLOW IN COLOR AS APPROVED BY THE STOW HIGHWAY DEPARTMENT.
- ALL EXISTING GRANITE CURB/EDGING THAT MEETS SPECIFICATIONS SHALL BE RE-USED WITHIN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN THAT PROPOSED.





PAVEMENT NOTES

PROPOSED HMA MILL & OVERLAY

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER  
VARIABLE DEPTH LEVELING INTERMEDIATE COURSE - BINDER  
(AS REQUIRED TO MEET PROPOSED GRADES SHOWN ON CROSS SECTIONS) OVER  
VARIABLE DEPTH PAVEMENT MICROMILLING (SEE GENERAL PAVEMENT NOTE 5)

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER  
1¾" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC 19.0) OVER

BASE: 3¼" SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) OVER

SUBBASE: 12" GRAVEL BORROW, TYPE b

PROPOSED HMA DRIVEWAY

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER  
2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC 19.0) OVER

BASE: 8" SUITABLE EXISTING GRAVEL;  
ADD GRAVEL BORROW, TYPE b AS REQUIRED

PROPOSED HMA SIDEWALK / HMA SIDEWALK WIDENING / HMA BIKE PATH

SURFACE: 1½" (MIN) SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER  
2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC 19.0E) OVER

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED HMA SIDEWALK OVERLAY

SURFACE: VARIABLE DEPTH SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) (AS REQUIRED  
TO MEET PROPOSED GRADES ) (1½" MIN) OVER  
EXISTING HMA SIDEWALK

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMPS

SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED, 4000 PSI, ¾", 610)

BASE: 8" GRAVEL BORROW, TYPE b (COMPACTED)

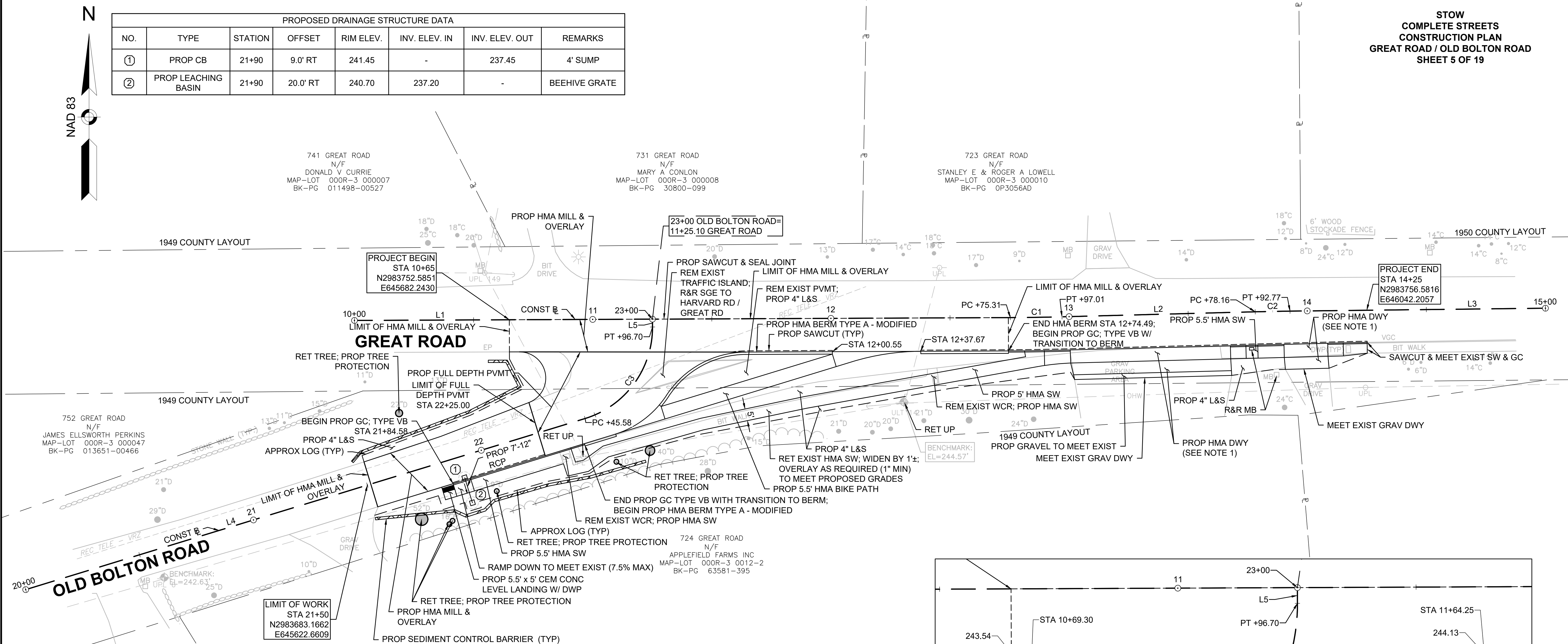
GENERAL PAVEMENT NOTES:

1. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA JOINT SEALANT SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY, EXCEPT OVER MILLED AND CEMENT CONCRETE SURFACES, WHERE THE APPLICATION RATE SHALL BE 0.07 GAL/SY. ALL SURFACES SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
2. ALL HMA SHALL BE IN ACCORDANCE WITH SECTION 450.
3. ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
4. HMA FOR WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 700.
5. ALL GRAVEL BORROW MEETING SPECIFICATION SHALL BE RETAINED IN PLACE, COMPACTED, AND LEVELED AS REQUIRED.
6. VARIABLE DEPTH MILLING AS REQUIRED TO MEET PROPOSED LINES AND GRADES WITH RESURFACING OVERLAY.



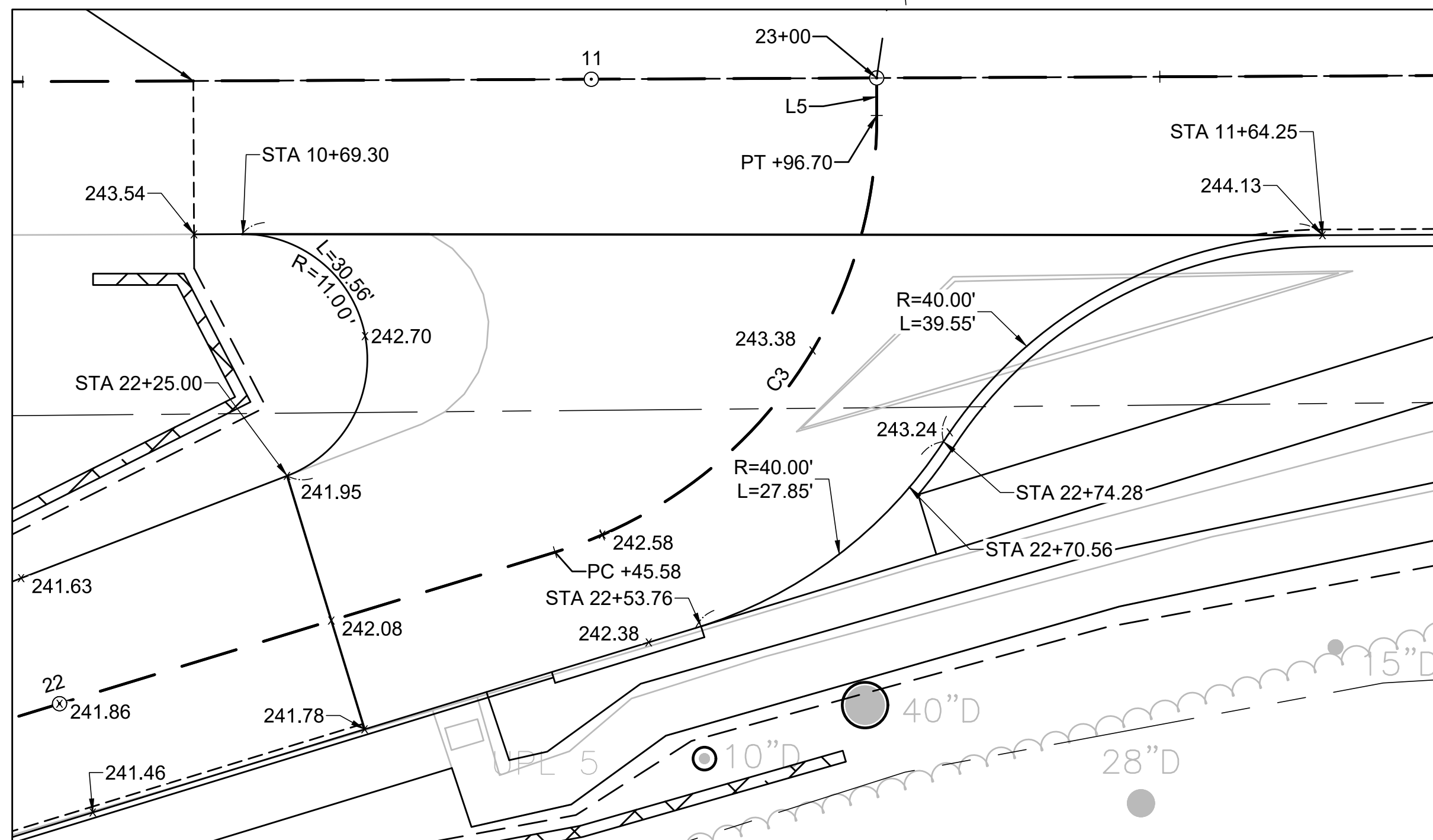
STOW  
COMPLETE STREETS  
CONSTRUCTION PLAN  
GREAT ROAD / OLD BOLTON ROAD  
SHEET 5 OF 19

PROPOSED DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
①	PROP CB	21+90	9.0' RT	241.45	-	237.45
②	PROP LEACHING BASIN	21+90	20.0' RT	240.70	237.20	-
				REMARKS		
				4' SUMP		
				BEEHIVE GRATE		



GREAT ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	2983752.303	645617.244		N89°45'06"E 275.31'	12+75.31	2983753.497	645892.547
C1	12+75.31	2983753.497	645892.547	R=1000.00' Δ=1°14'36" L=21.70' T=10.85'		12+97.01	2983753.827	645914.246
L2	12+97.01	2983753.827	645914.246		N88°30'29"E 81.15'	13+78.16	2983755.939	645995.370
C2	13+78.16	2983755.939	645995.370	R=1000.00' Δ=0°50'13" L=14.61' T=7.30'		13+92.77	2983756.213	646009.973
L3	13+92.77	2983756.213	646009.973		N89°20'42"E 107.23'	15+00.00	2983757.439	646117.199

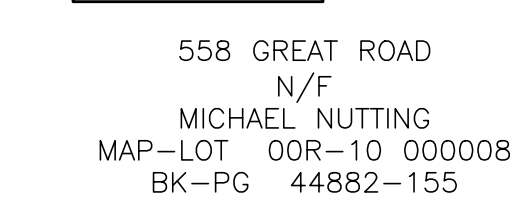
OLD BOLTON ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	20+00.00	2983639.281	645479.224		N72°59'18"E 245.58'	22+45.58	2983711.129	645714.057
C3	22+45.58	2983711.129	645714.057	R=40.00' Δ=73°13'43" L=51.12' T=29.72'		22+96.70	2983749.547	645742.354
L5	22+96.70	2983749.547	645742.354		N0°14'25"W 3.30'	23+00.00	2983752.846	645742.340



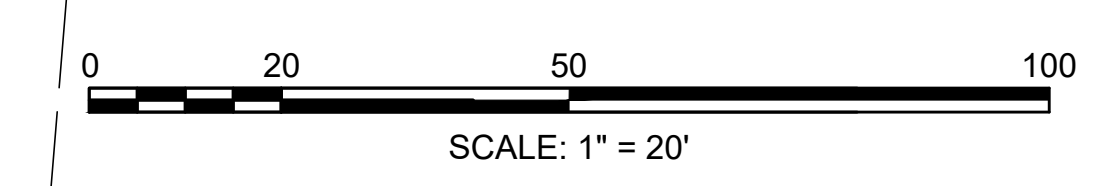
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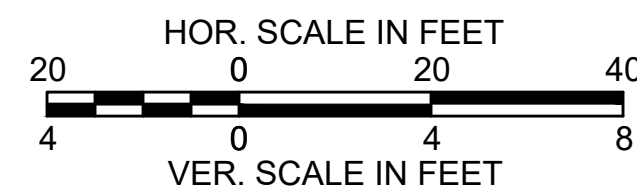
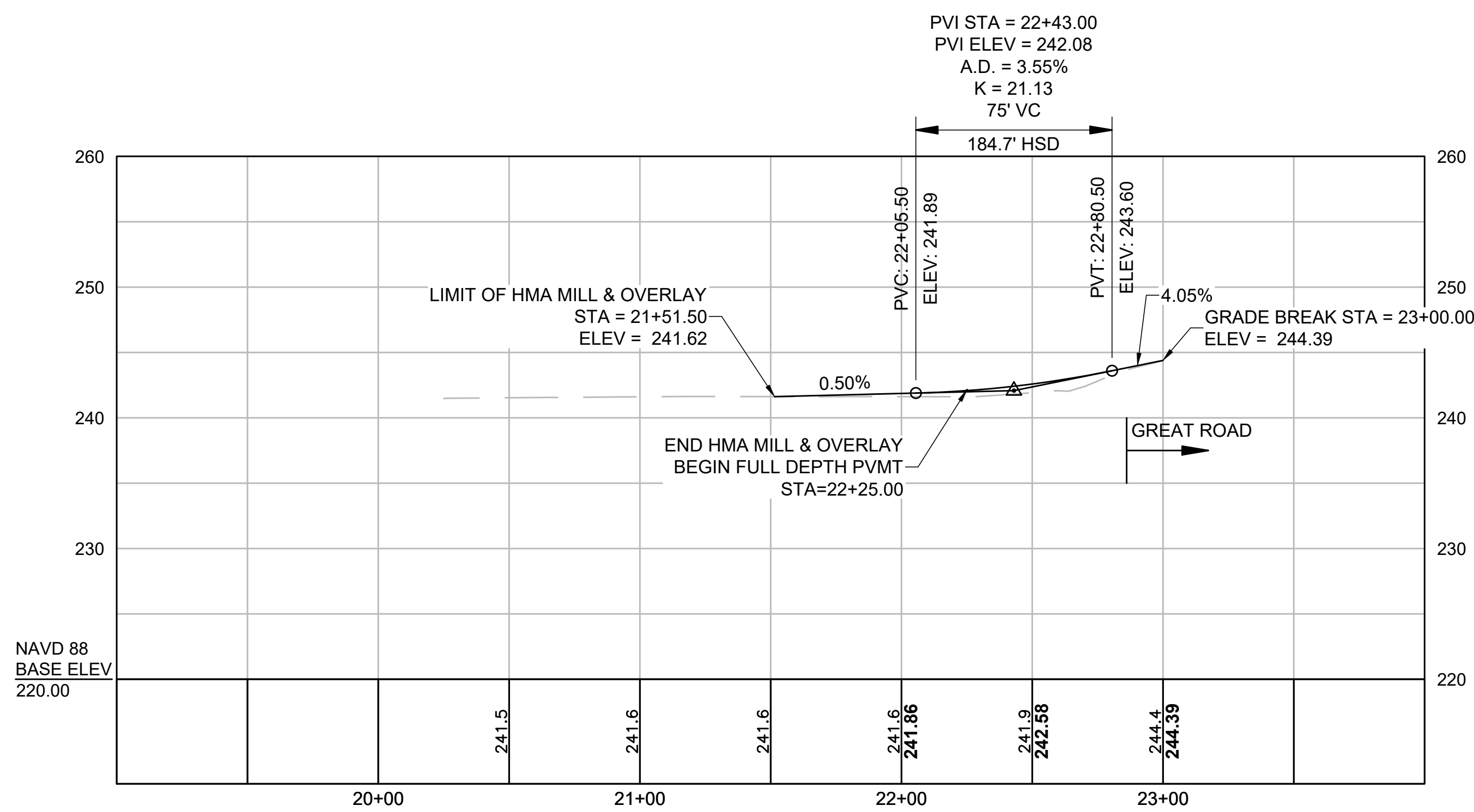
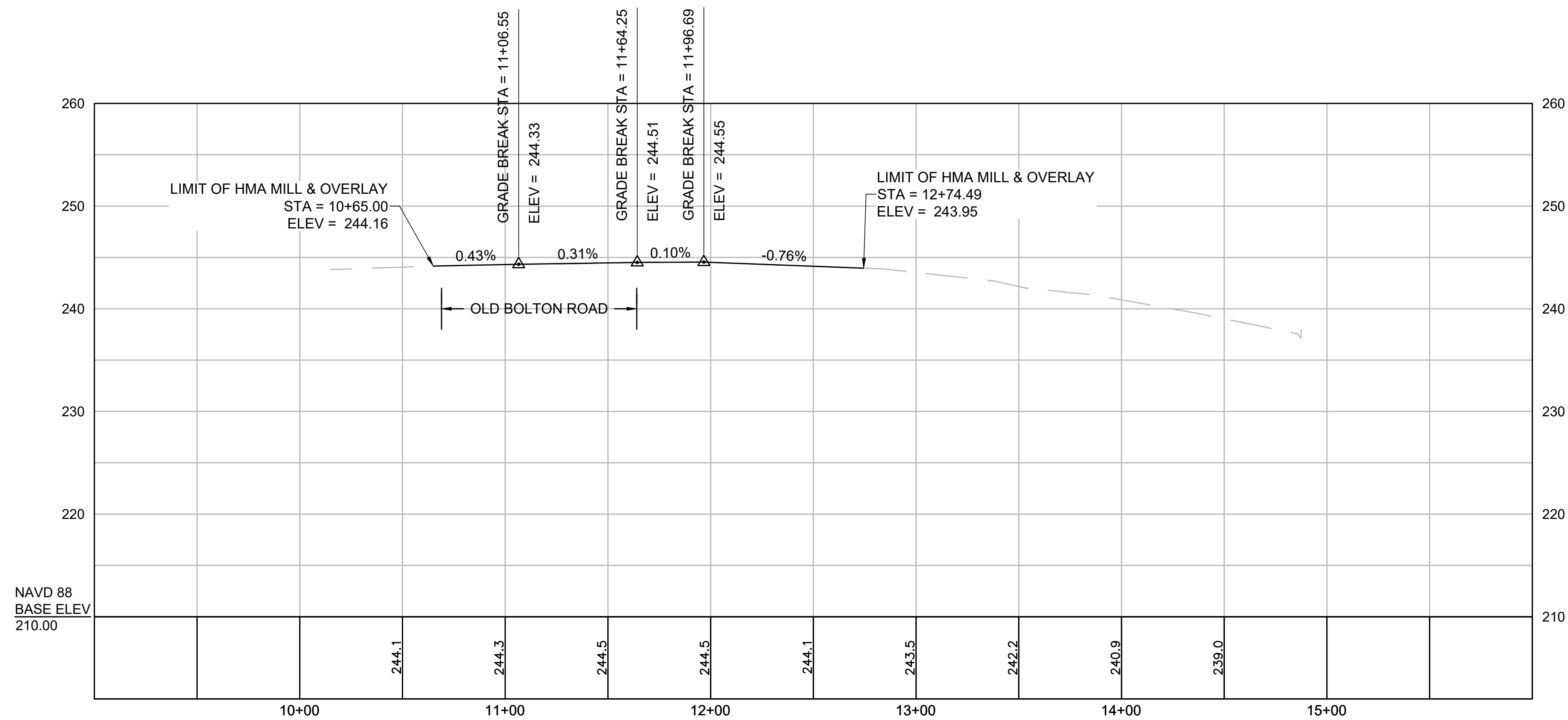
FOR PROFILES: SEE SHEET 7

T08671100%HD5(CONSTR|CTION PI ANS| DWG Plotted on 4-May-2020 11:00 AM



HARVARD ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	40+00.00	2983512.875	649918.015		N24°40'09"W 150.00'	41+50.00	2983649.185	649855.409





N

NAD 83

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE EPOXY UNLESS OTHERWISE INDICATED.
3. A MINIMUM OF 3'-0" PEDESTRIAN PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS
4. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.

STOW  
COMPLETE STREETS  
TRAFFIC SIGN & PAVEMENT MARKING PLAN  
GREAT ROAD / OLD BOLTON ROAD  
SHEET 8 OF 19

741 GREAT ROAD  
N/F  
DONALD V. CURRIE  
MAP-LOT 000R-3 000007  
BK-PG 011498-00527

PROJECT BEGIN  
STA 10+65  
N2983752.5851  
E645682.2430

731 GREAT ROAD  
N/F  
MARY A. CONLON  
MAP-LOT 000R-3 000008  
BK-PG 30800-099

723 GREAT ROAD  
N/F  
STANLEY E. & ROGER A. LOWELL  
MAP-LOT 000R-3 000010  
BK-PG 0P3056AD




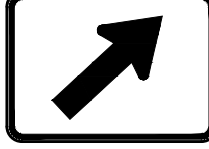


752 GREAT ROAD  
N/F  
JAMES ELLSWORTH PERKINS  
MAP-LOT 000R-3 000047  
BK-PG 013651-00466

OLD BOLTON ROAD

12 OLD BOLTON ROAD  
N/F  
BRIAN PETTIS  
MAP-LOT 000R-3 0013  
BK-PG 36620-612

LIMIT OF WORK  
STA 21+50  
N2983683.1662  
E645622.6609

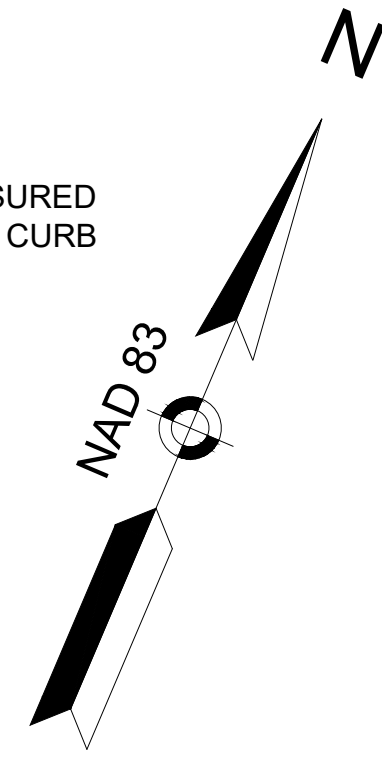
724 GREAT ROAD  
N/F  
APPLEFIELD FARMS INC  
MAP-LOT 000R-3 0012-2  
BK-PG 63581-395








TRAFFIC SIGN SUMMARY													
IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			SIZE AND NUMBER OF POSTS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT		LEGEND	LETTER HEIGHT	VERTICAL SPACING		ARROW RTE. MKR	BACK-GROUND	LEGEND			
MA-D3-1a	33	12		6C / 4C	3 3	-	2	GREEN	WHITE	WHITE	MOUNT W/ MA-D3-1b	PAID UNDER ITEM 874.	
MA-D3-1b	48	12		6C / 4C	3 3	-	2	GREEN	WHITE	WHITE	P5 2	PAID UNDER ITEM 874.	
D11-1	24	18		SEE 2009 MUTCD			1	GREEN	WHITE	WHITE	P5 1	3.00	3.00
M6-2	12	9		SEE 2009 MUTCD			1	GREEN	WHITE	WHITE	MOUNT W/ D11-1	0.75	0.75
R1-1	30	30		SEE 2009 MUTCD			1	RED	WHITE	WHITE	MOUNT W/ MA-D3-1b	6.25	6.25
R1-1a	18	18		SEE 2009 MUTCD			1	RED	WHITE	WHITE	P5 1	2.25	2.25

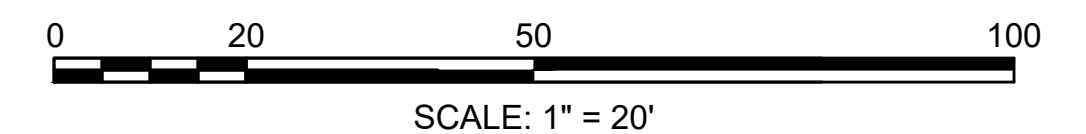
0 20 50 100  
SCALE: 1" = 20'



1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE EPOXY UNLESS OTHERWISE INDICATED.
3. A MINIMUM OF 3'-0" PEDESTRIAN PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS
4. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.



TRAFFIC SIGN SUMMARY													
IDENTIFICATION NUMBER	SIZE OF SIGN (in)		LEGEND	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			SIZE AND NUMBER OF POSTS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK- GROUND	LEGEND	BORDER			
MA-D3-1a	33	12		6C / 4C	3 3	-	2	GREEN	WHITE	WHITE	P5 1	PAID UNDER ITEM 874.	
MA-D3-1c	39	12		6C / 4C	3 3	-	2	GREEN	WHITE	WHITE	MOUNT W/ MA-D3-1a	PAID UNDER ITEM 874.	
R10-25	9	12		SEE 2009 MUTCD			1	WHITE	BLACK	BLACK	MOUNT ON RRFB	PAID UNDER ITEM 824.221	
W3-1	30	30		SEE 2009 MUTCD			1	YELLOW	BLACK/ RED	BLACK	P5 1	6.25	6.25
W11-2	30	30		SEE 2009 MUTCD			4	YELLOW	BLACK	BLACK	MOUNT ON RRFB	PAID UNDER ITEM 824.221	
W16-7pL	24	12		SEE 2009 MUTCD			2	YELLOW	BLACK	BLACK	MOUNT ON RRFB	PAID UNDER ITEM 824.221	
W16-7pR	24	18		SEE 2009 MUTCD			2	YELLOW	BLACK	BLACK	MOUNT ON RRFB	PAID UNDER ITEM 824.221	



NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN THE "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE

P/F POLICE/FLAGGER DETAIL

TYPE III BARRICADE

CHANGEABLE MESSAGE SIGN

ARROW BOARD
- WORK ZONE

DIRECTION OF TRAFFIC

IMPACT ATTENUATOR

MEDIAN BARRIER

MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE

TRUCK MOUNTED ATTENUATOR

TRAFFIC OR PEDESTRIAN SIGNAL

SIGN

SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1,000	1,500	2,640

\* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

\*\* DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2-10a, R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN. 100 FT MAX.
DOWNSTREAM TAPER	50 FT MIN. 100 FT MAX. PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

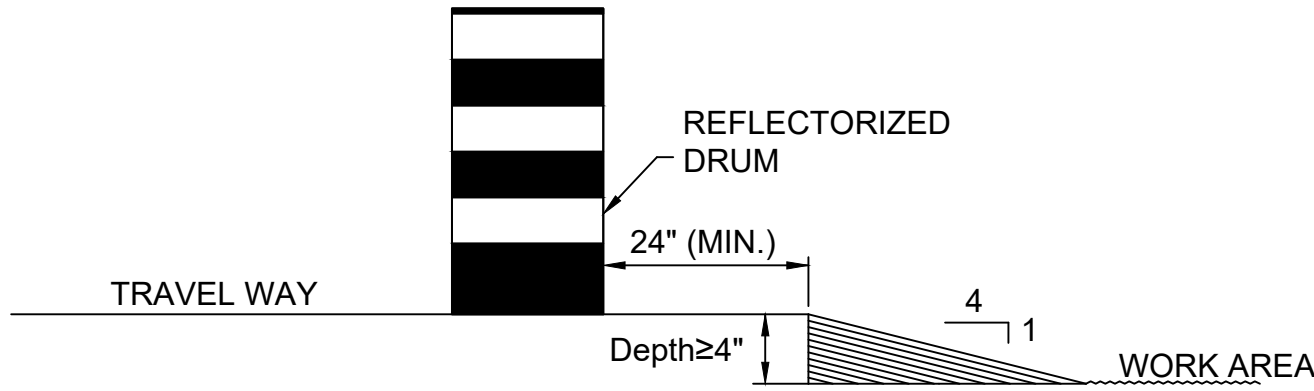
SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

WHERE: L = TAPER LENGTH IN FEET

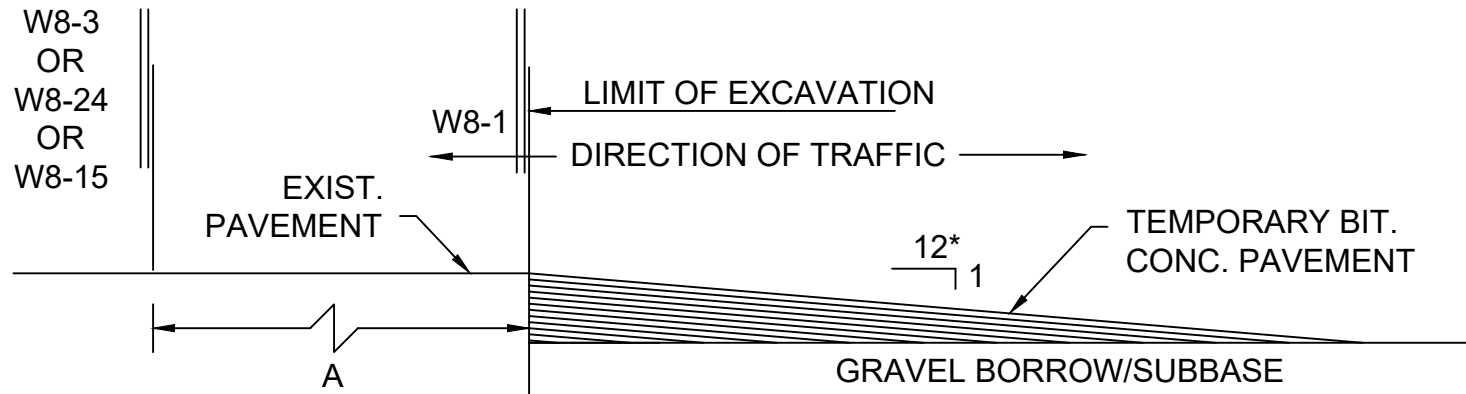
W = WIDTH OF OFFSET IN FEET

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

Source: Table 6C-4 MUTCD LATEST EDITION



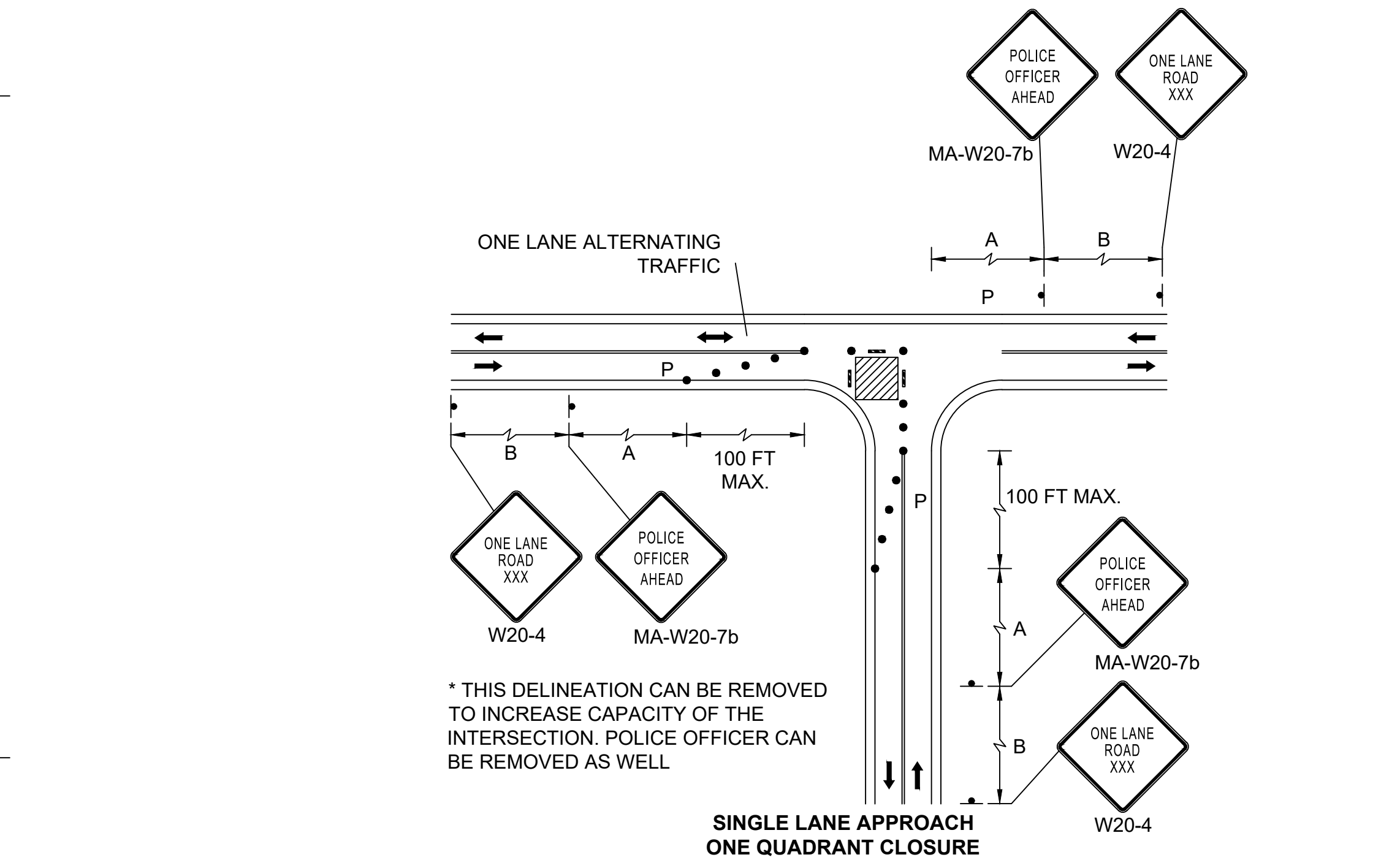
LATERAL DROP-OFF DETAIL  
NOT TO SCALE



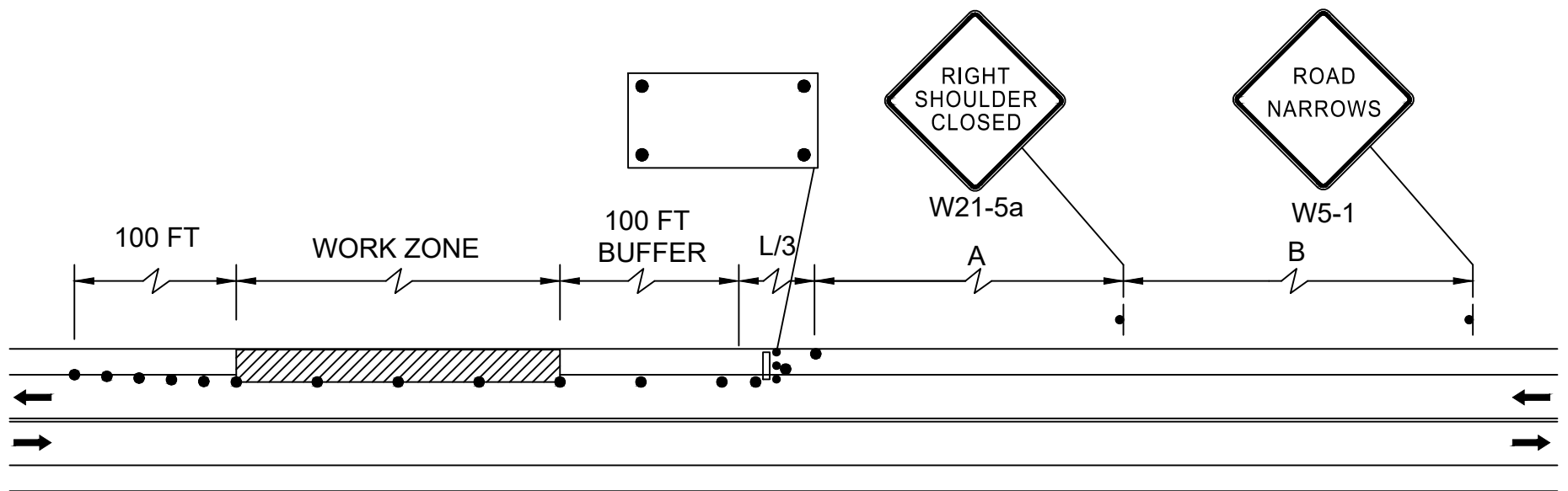
LONGITUDINAL DROP-OFF DETAIL  
NOT TO SCALE

\* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

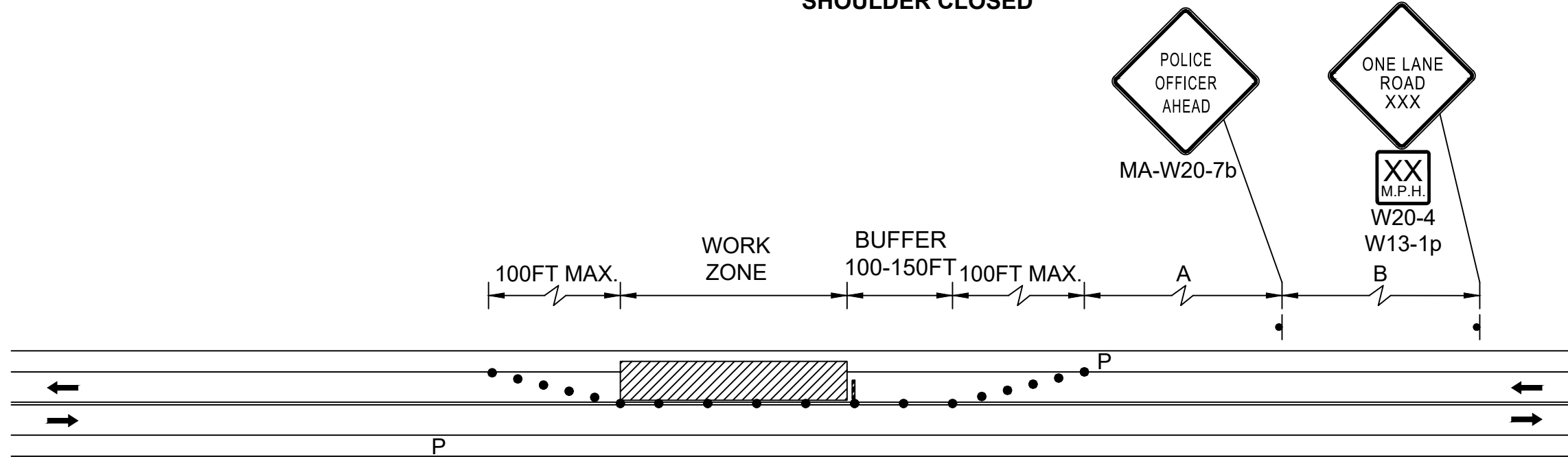
STOW  
COMPLETE STREETS  
TEMPORARY TRAFFIC CONTROL PLAN - 1 OF 3  
SHEET 10 OF 19



\* THIS DELINEATION CAN BE REMOVED TO INCREASE CAPACITY OF THE INTERSECTION. POLICE OFFICER CAN BE REMOVED AS WELL



TWO LANE ROAD  
SHOULDER CLOSED

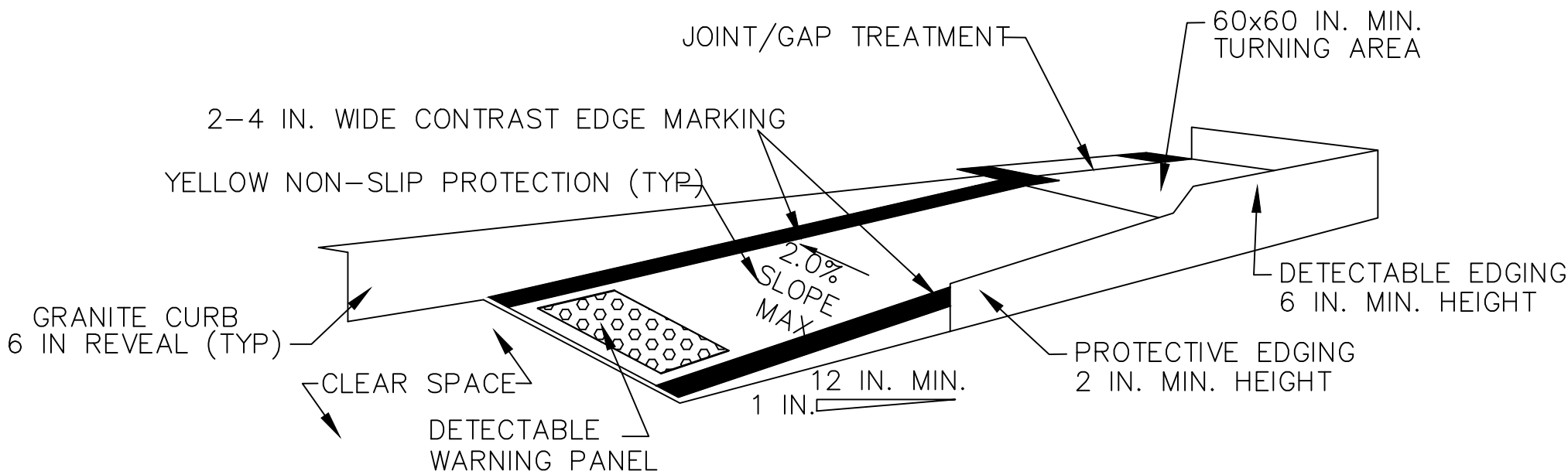


TWO LANE ROAD ONE LANE  
ALTERNATING TRAFFIC

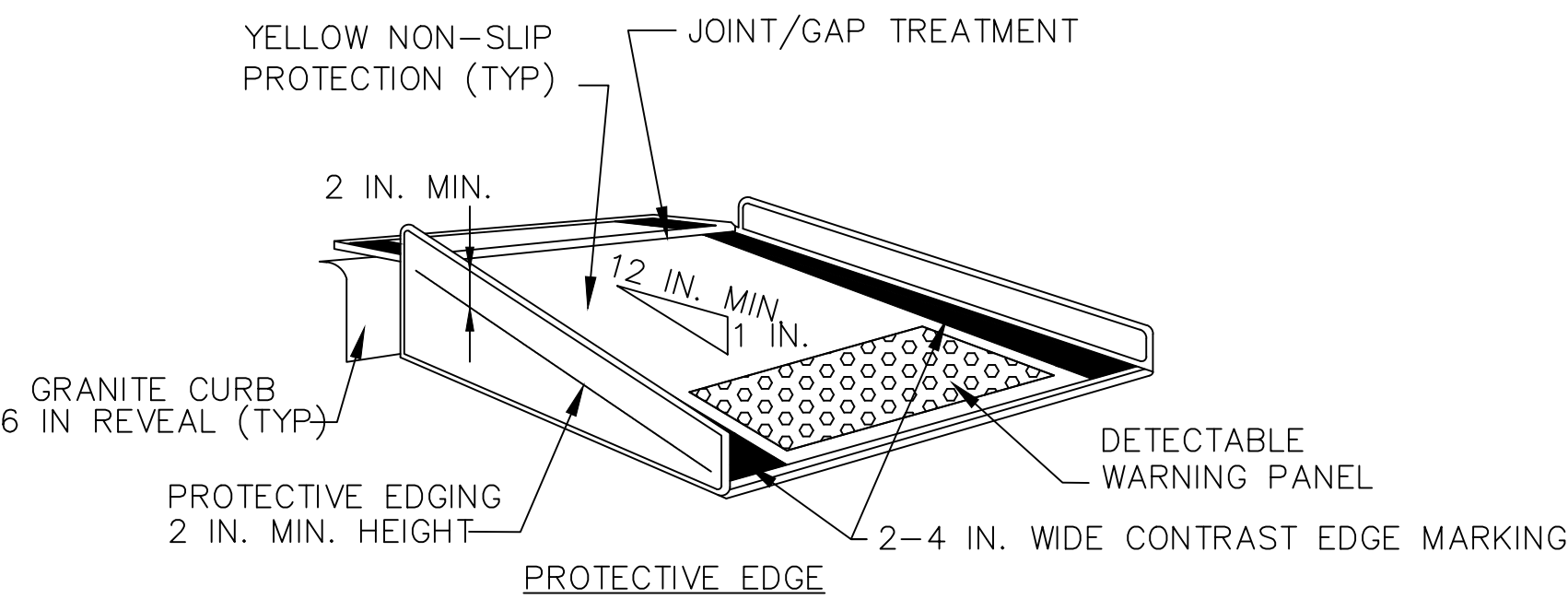
PEDESTRIAN TYPICAL DETAILS

NOTES:

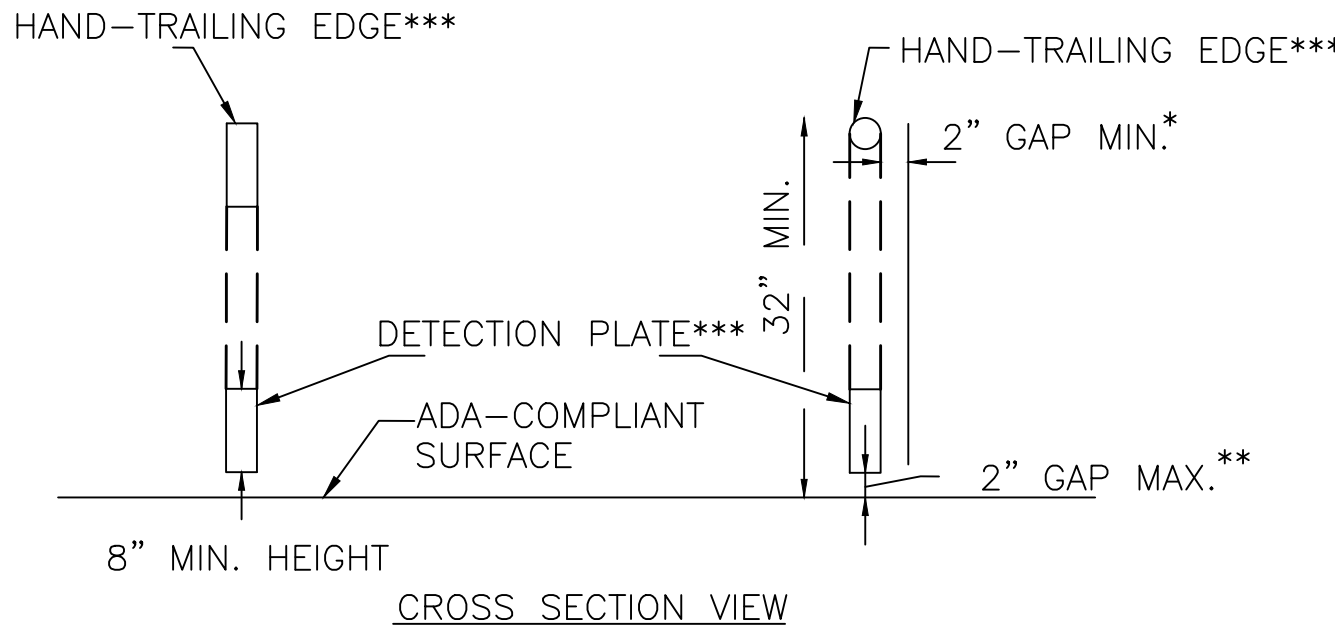
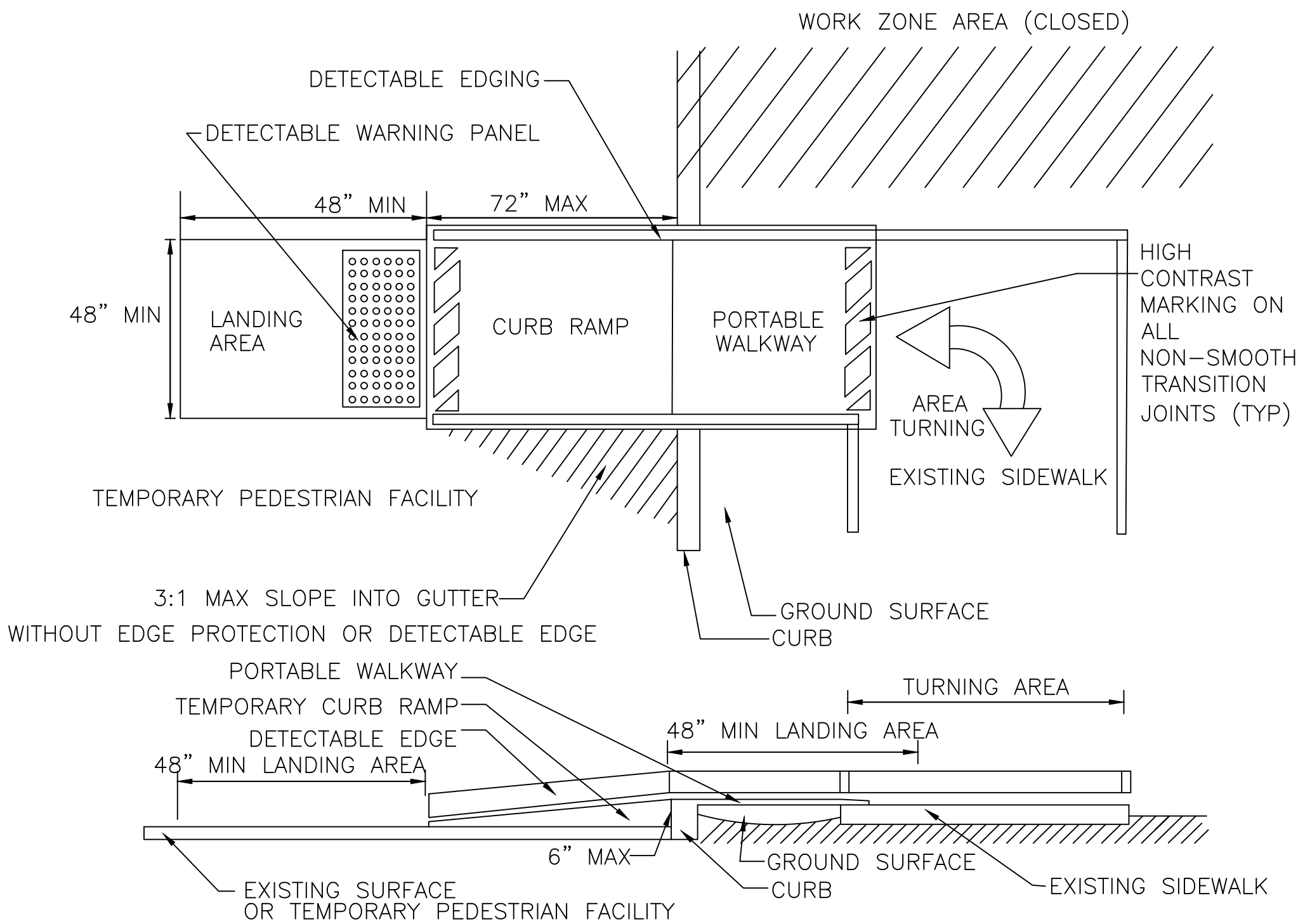
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



TEMPORARY CURB RAMP-PARALLEL TO CURB



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB



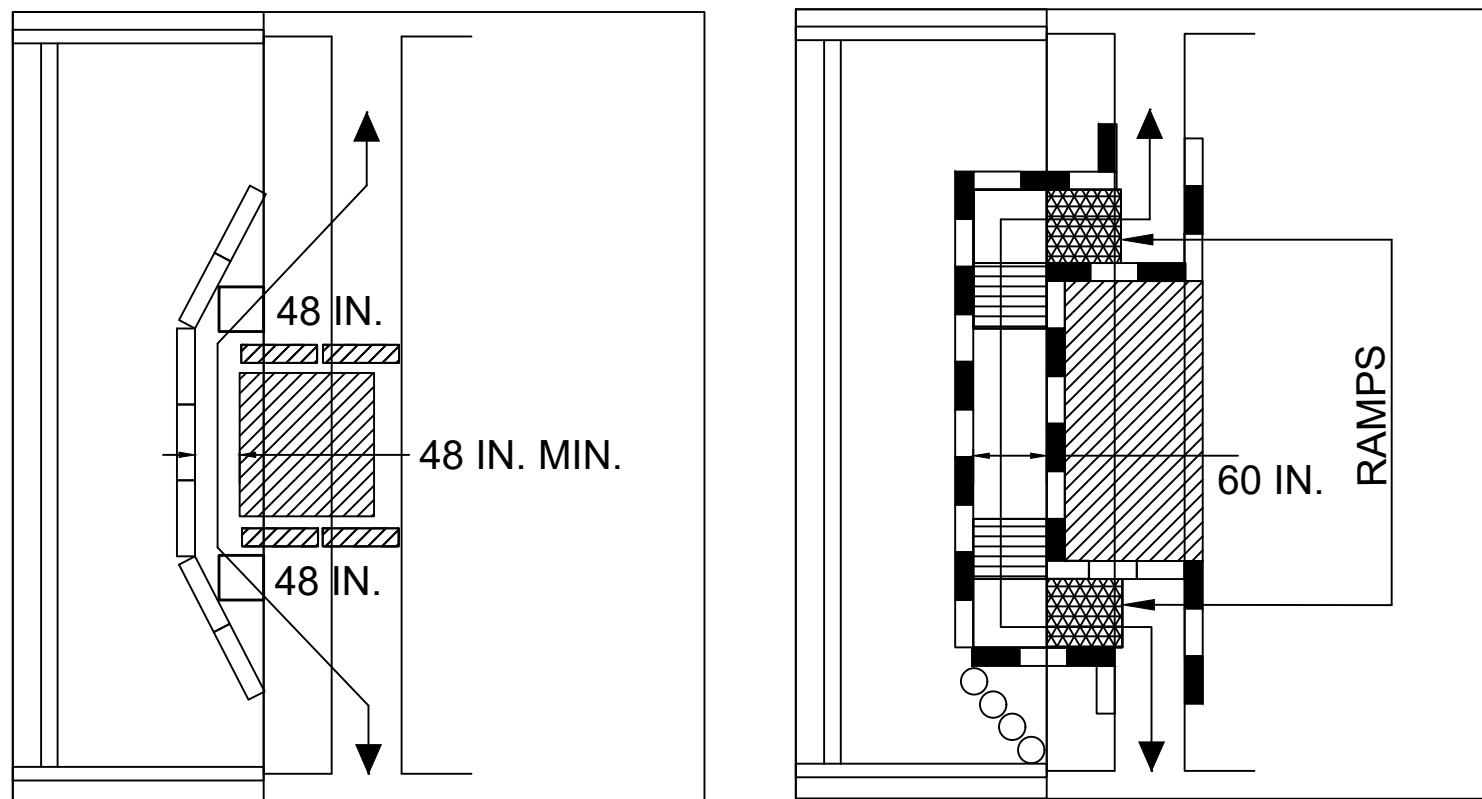
CROSS SECTION VIEW

PEDESTRIAN CHANNELIZING DEVICE

NOTES:

- \* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- \*\* A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
- \*\*\* THE HAND TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.

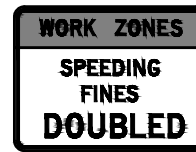
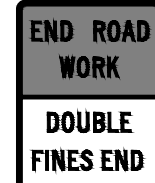










TEMPORARY PEDESTRIAN DETOUR

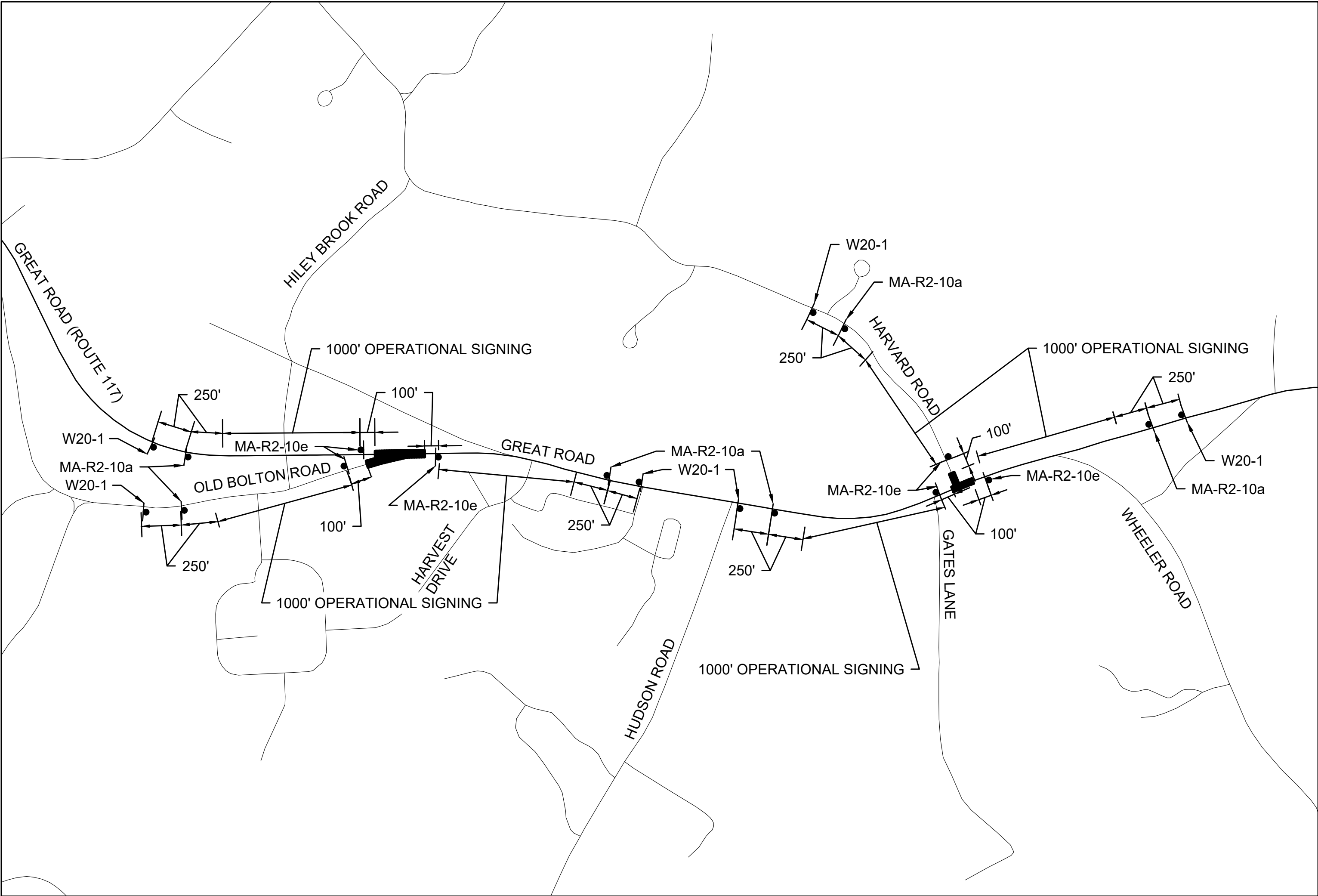


- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES PED-1 & PED-2).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE PROTECTIVE REQUIREMENTS OF A TTC SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.

AUDIBLE DEVICES

FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

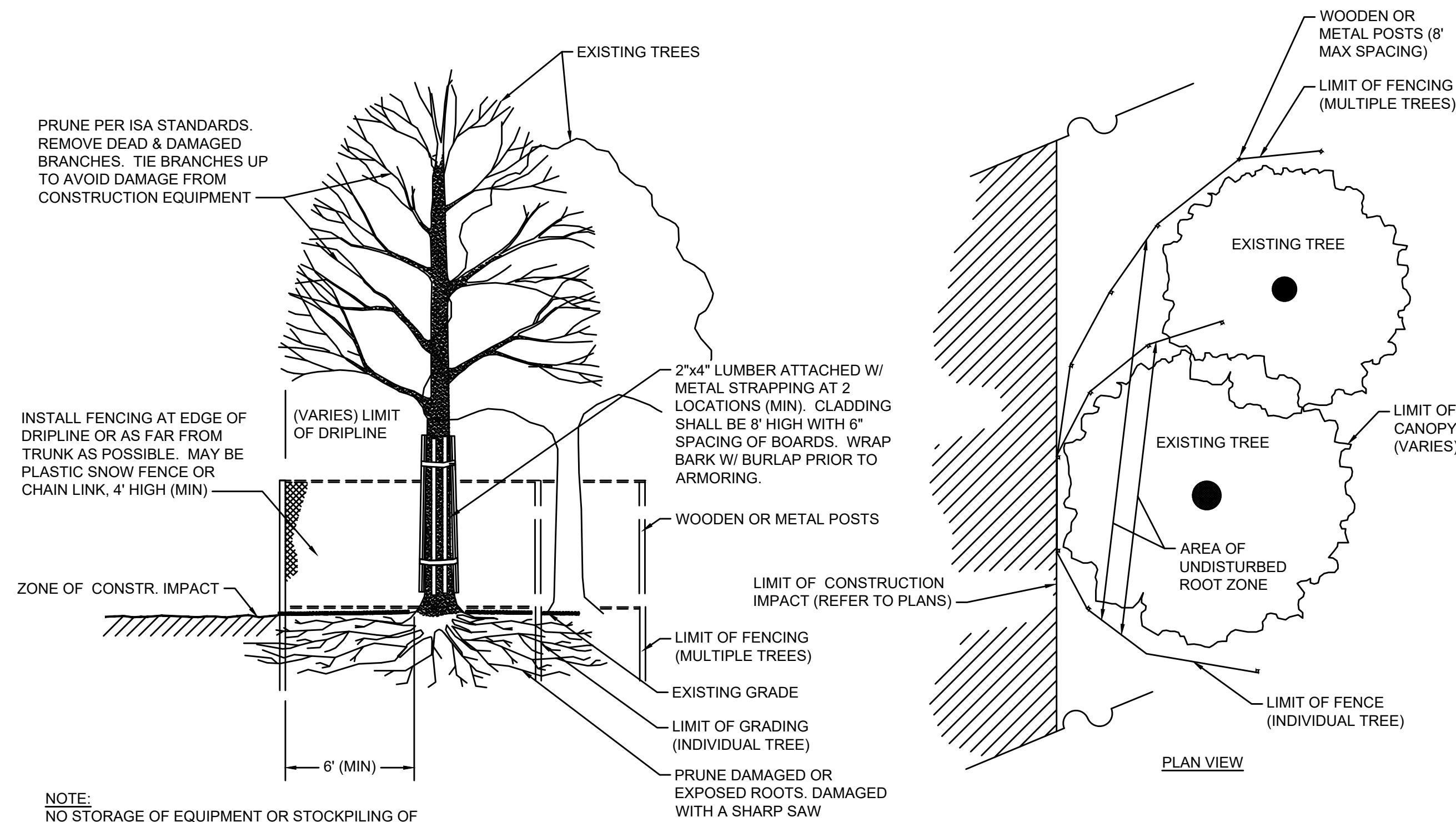
TEMPORARY TRAFFIC CONTROL SIGN SUMMARY												
IDENTIFICATION NUMBER	SIZE OF SIGN (in)		LEGEND	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK- GROUND	LEGEND	BORDER		
MA-R2-10a	48	36		MASSDOT STANDARD SIGN			6	ORANGE WHITE	BLACK BLACK	BLACK BLACK	12.00	72.00
MA-R2-10e	36	48		MASSDOT STANDARD SIGN			6	ORANGE WHITE	BLACK BLACK	BLACK BLACK	12.00	72.00
W5-1	36	36		SEE 2009 MUTCD FOR DIMENSIONS			2	ORANGE	BLACK	BLACK	9.00	18.00
W8-1	36	36					3	ORANGE	BLACK	BLACK	9.00	27.00
W8-3	36	36					3	ORANGE	BLACK	BLACK	9.00	27.00
W8-15	36	36					3	ORANGE	BLACK	BLACK	9.00	27.00
W13-1p	24	24					2	ORANGE	BLACK	BLACK	4.00	8.00
W20-1	36	36					6	ORANGE	BLACK	BLACK	9.00	54.00
W20-4	36	36					3	ORANGE	BLACK	BLACK	9.00	27.00
MA-W20-7b	36	36		MASSDOT STANDARD SIGN			3	ORANGE	BLACK	BLACK	9.00	27.00
W21-5a	36	36		SEE 2009 MUTCD FOR DIMENSIONS			2	ORANGE	BLACK	BLACK	9.00	18.00



ADVANCED WARNING SCHEMATIC  
N.T.S.

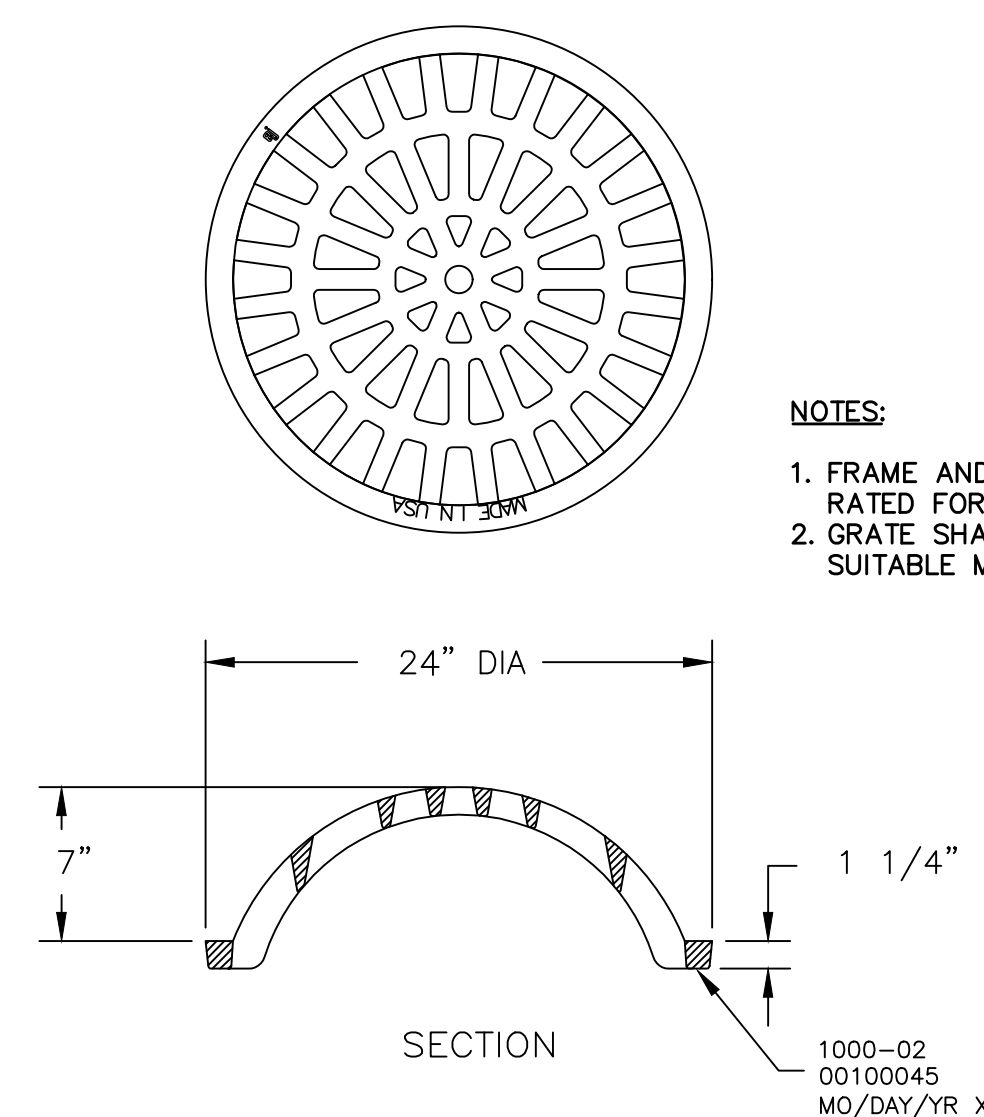


**STOW  
COMPLETE STREETS  
CONSTRUCTION DETAILS - 1 OF 2  
SHEET 13 OF 19**



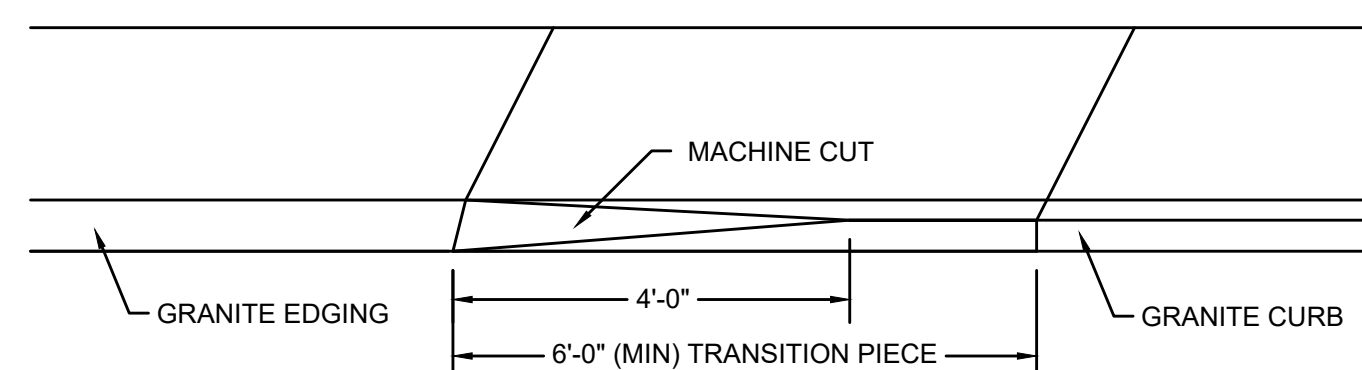
## TREE PROTECTION

N.T.S.



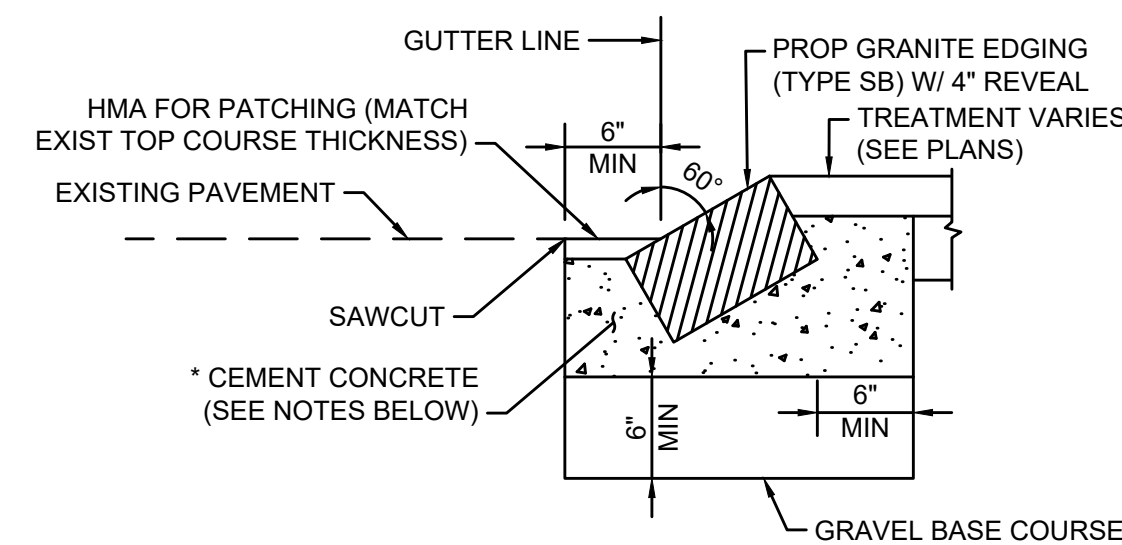
### FRAME AND GRATE (BEEHIVE)

N.T.S



GRANITE CURB SPLAYED END

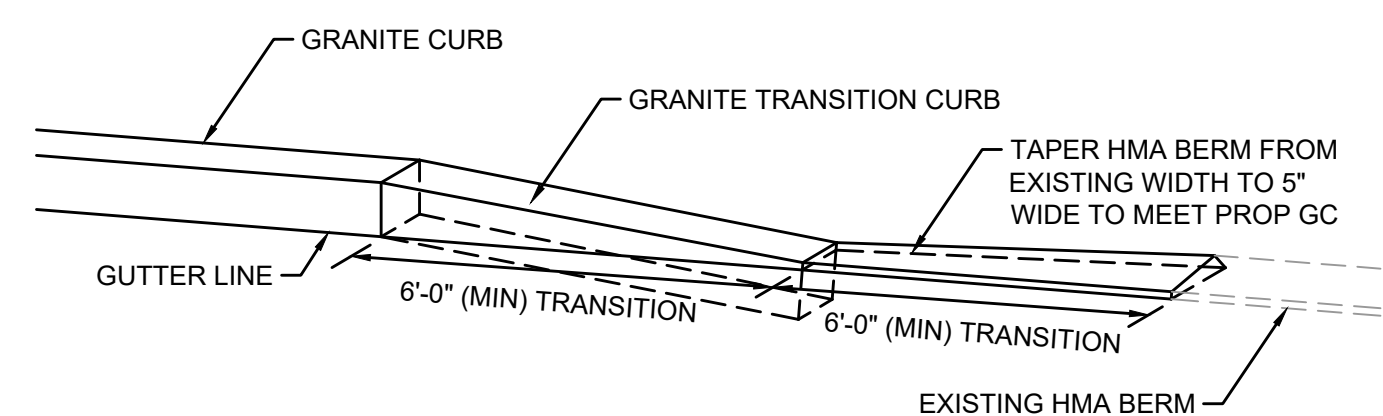
N.T.S.



1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR VARIOUS GRANITE EDGING ITEMS.
2. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE MASSDOT STANDARD SPECIFICATIONS MAY BE USED; ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.
3. FOR ALL OTHER DIMENSIONS, SEE MASSDOT CONSTRUCTION STANDARD E106.5.0

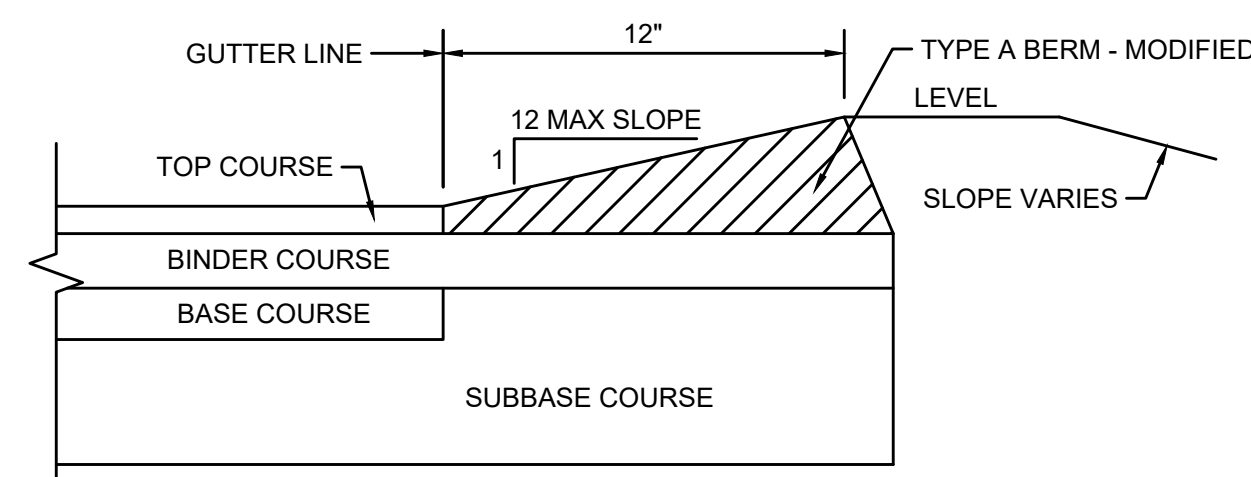
## GRANITE EDGING IN EXISTING PAVEMENT

N.T.S



### GRANITE CURB TRANSITION TO HMA BERM

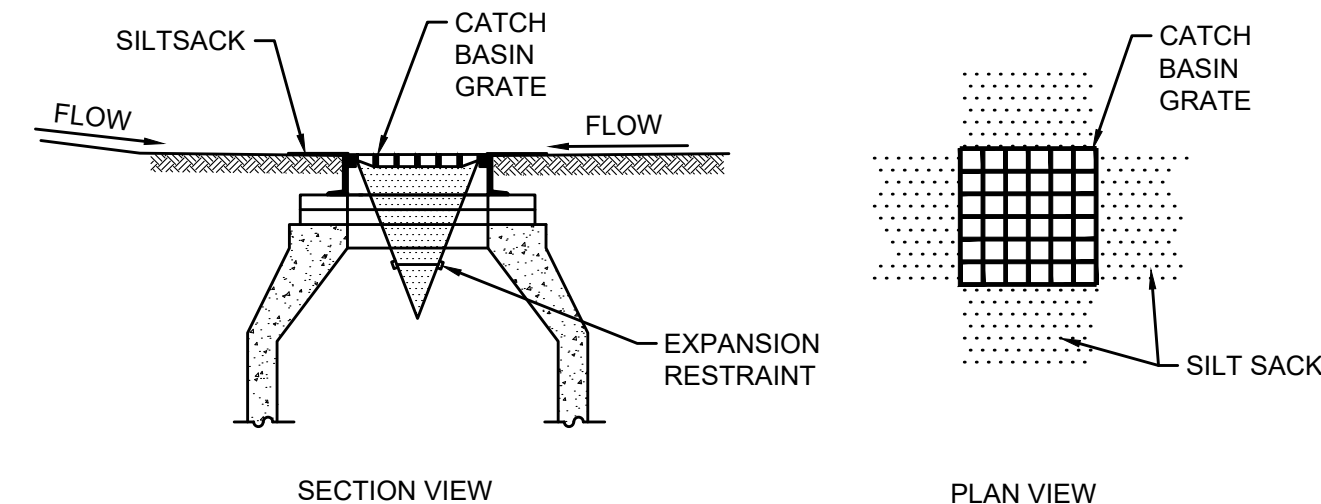
N.T.S.



FOR ALL OTHER DIMENSIONS, SEE MASSDOT E 106.1.0

HOT MIX ASPHALT BERM, TYPE A - MODIFIED

N.T.S.

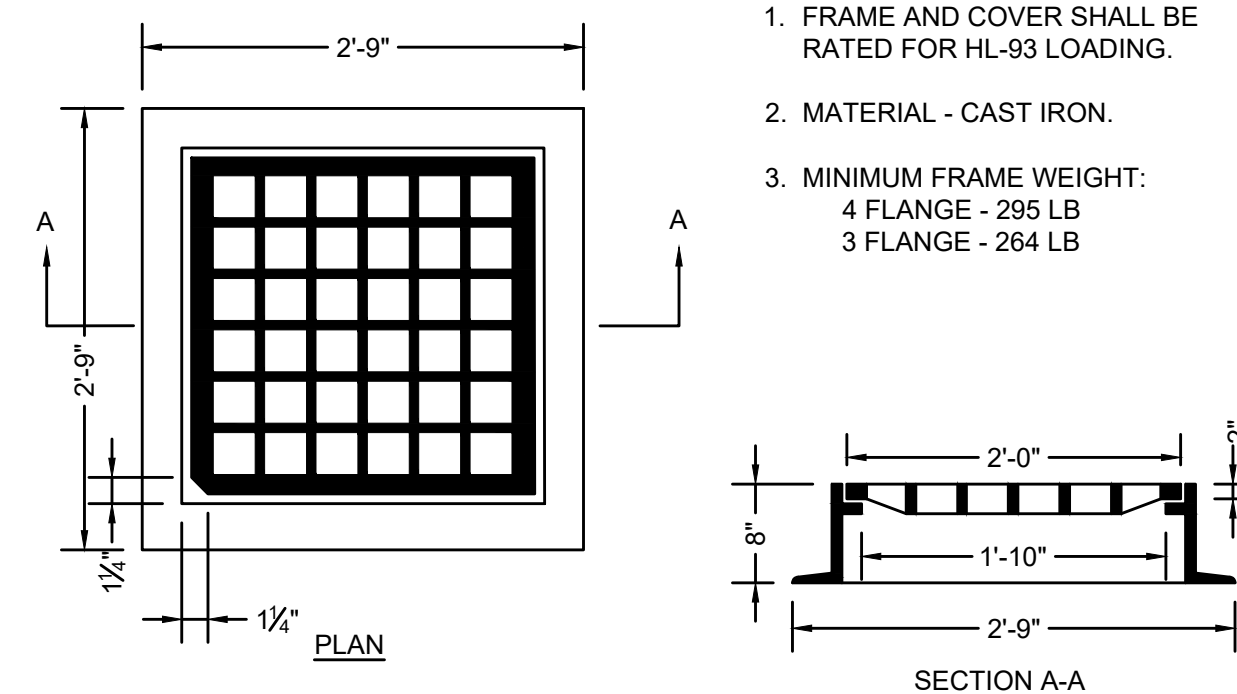


NOTES:

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

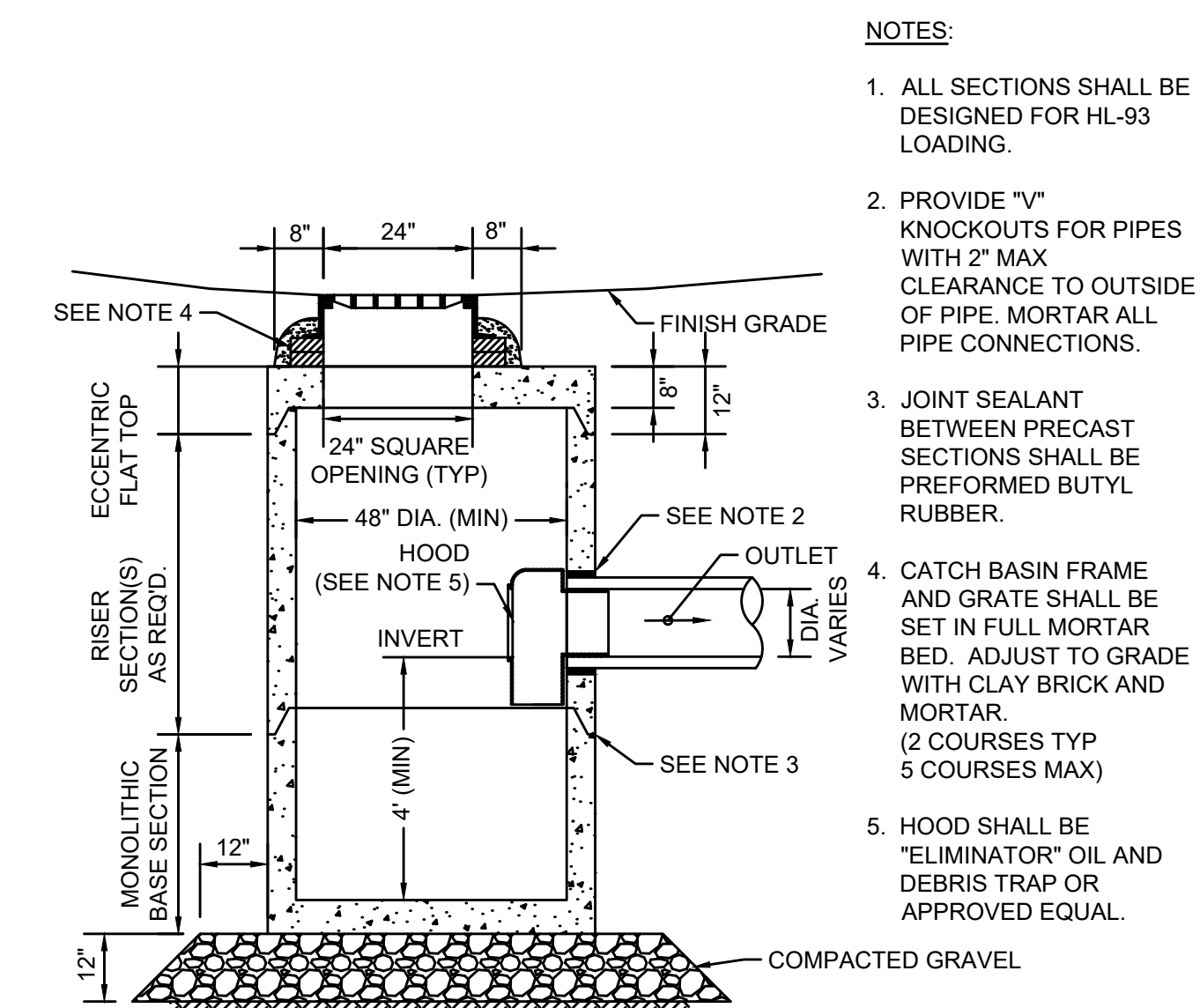
N.T.S.



### CATCH BASIN FRAME & GRATE (MUNICIPAL STANDARD)

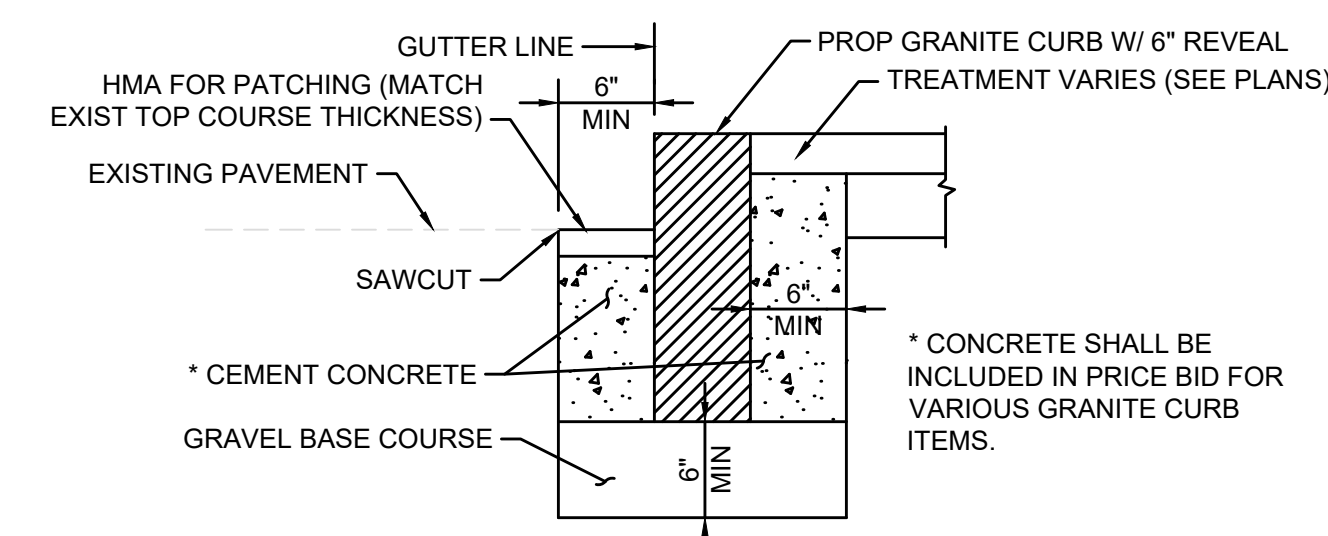
N.T.S.

- 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



DEEP SUMP CATCH BASIN WITH HOOD

N.T.S

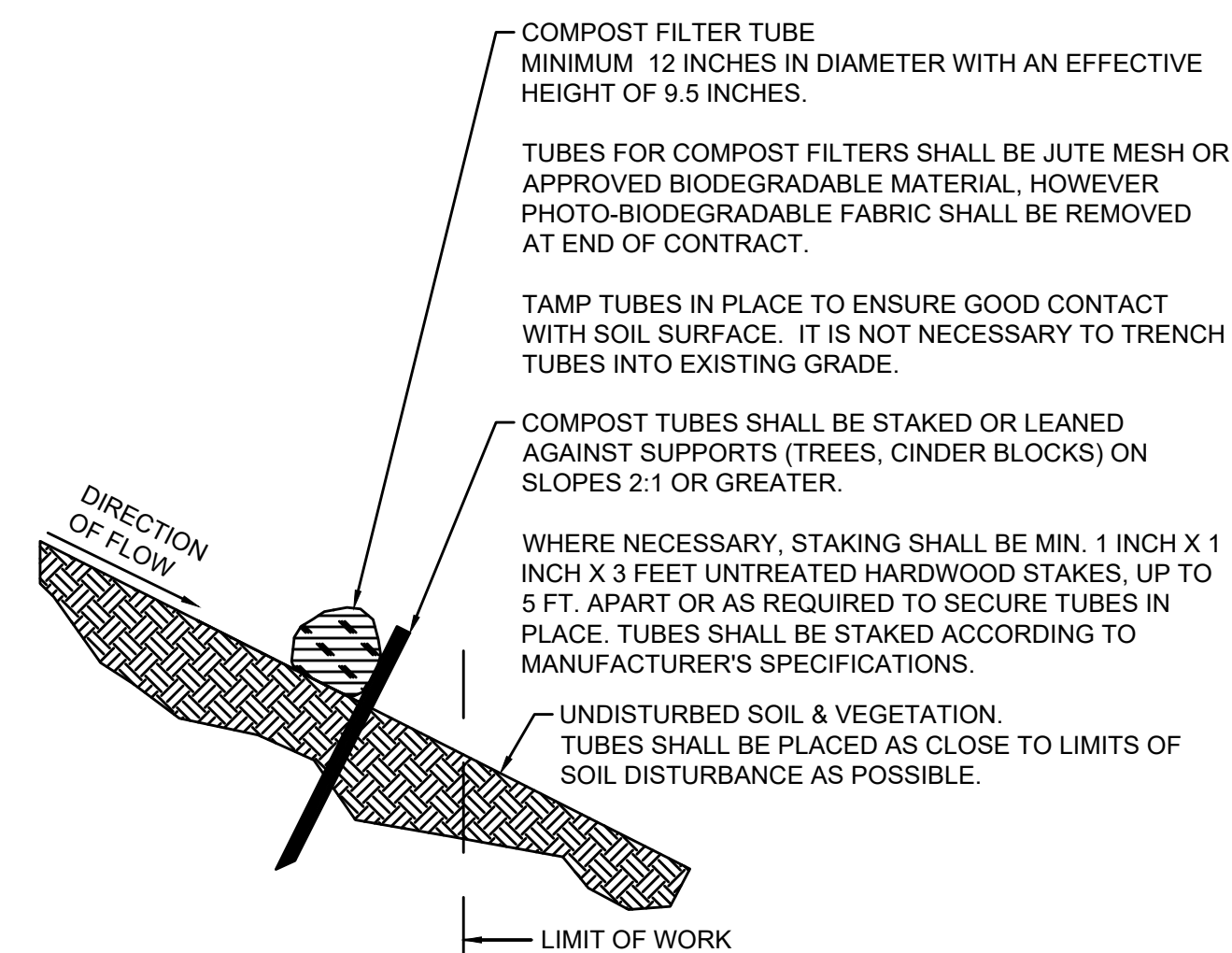


### GRANITE CURB IN EXISTING PAVEMENT

N.T.S

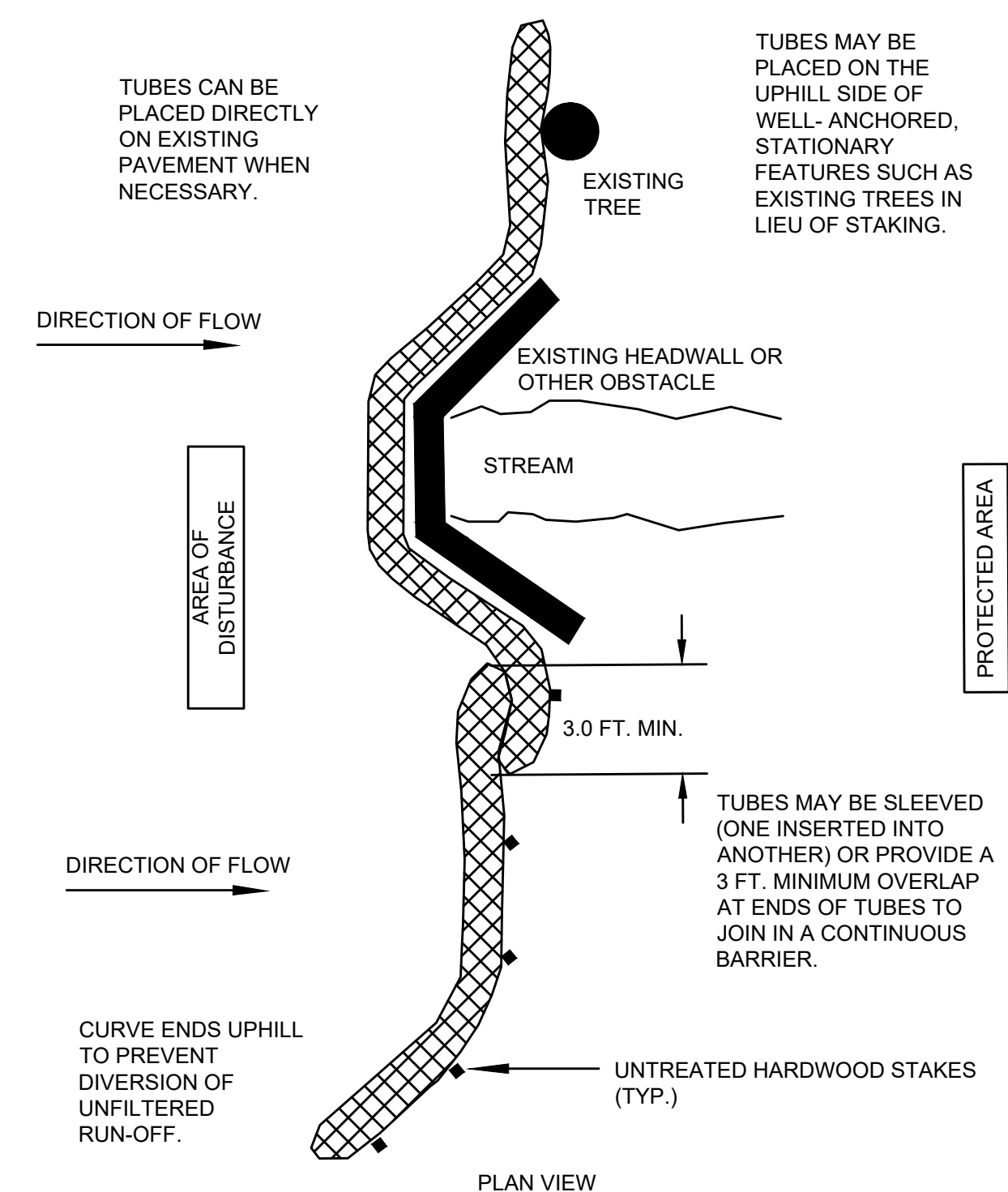
- NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED TO DIRECT FLOW TO DESIRED LOCATIONS.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

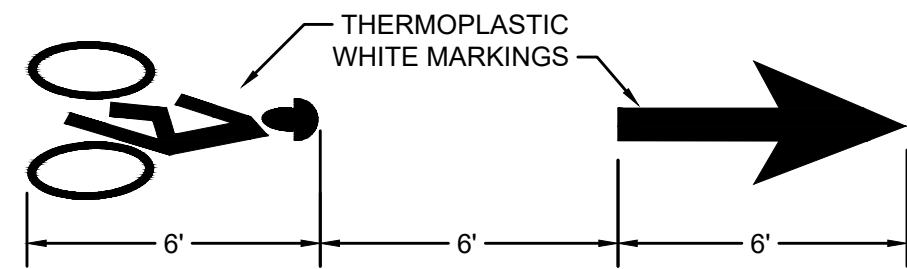


## COMPOST FILTER TUBE

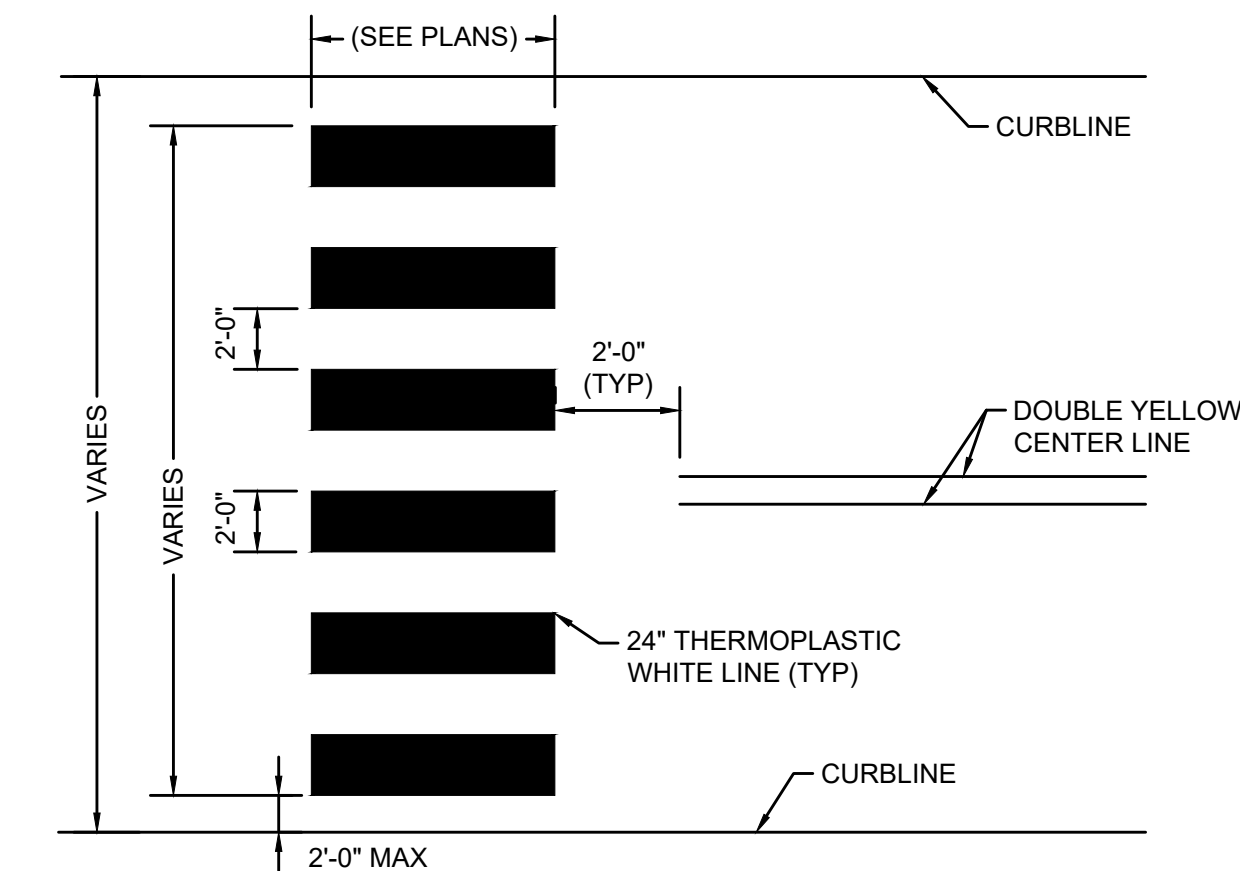
N.T.S





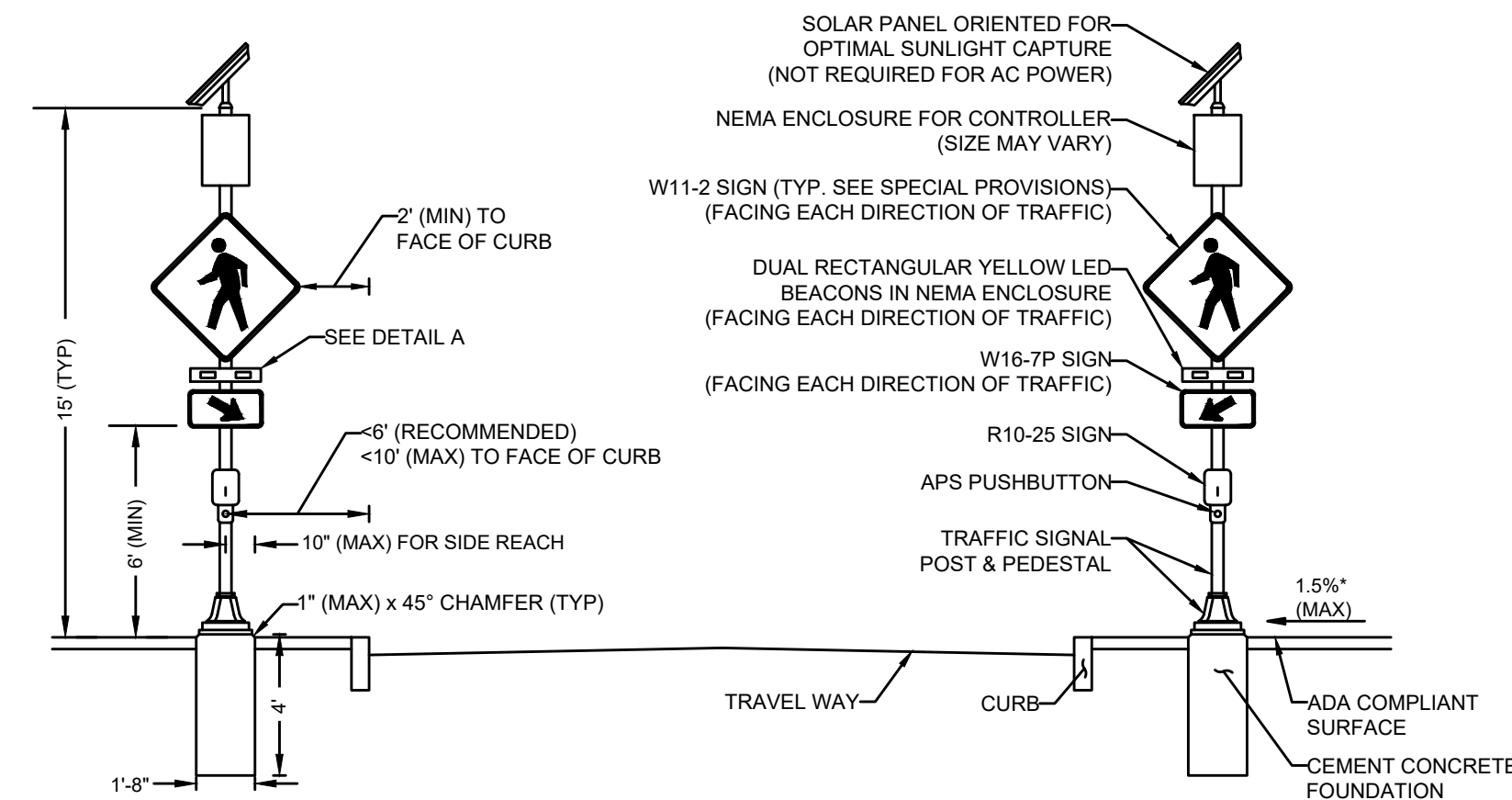


BICYCLE LANE PAVEMENT MARKING  
N.T.S.

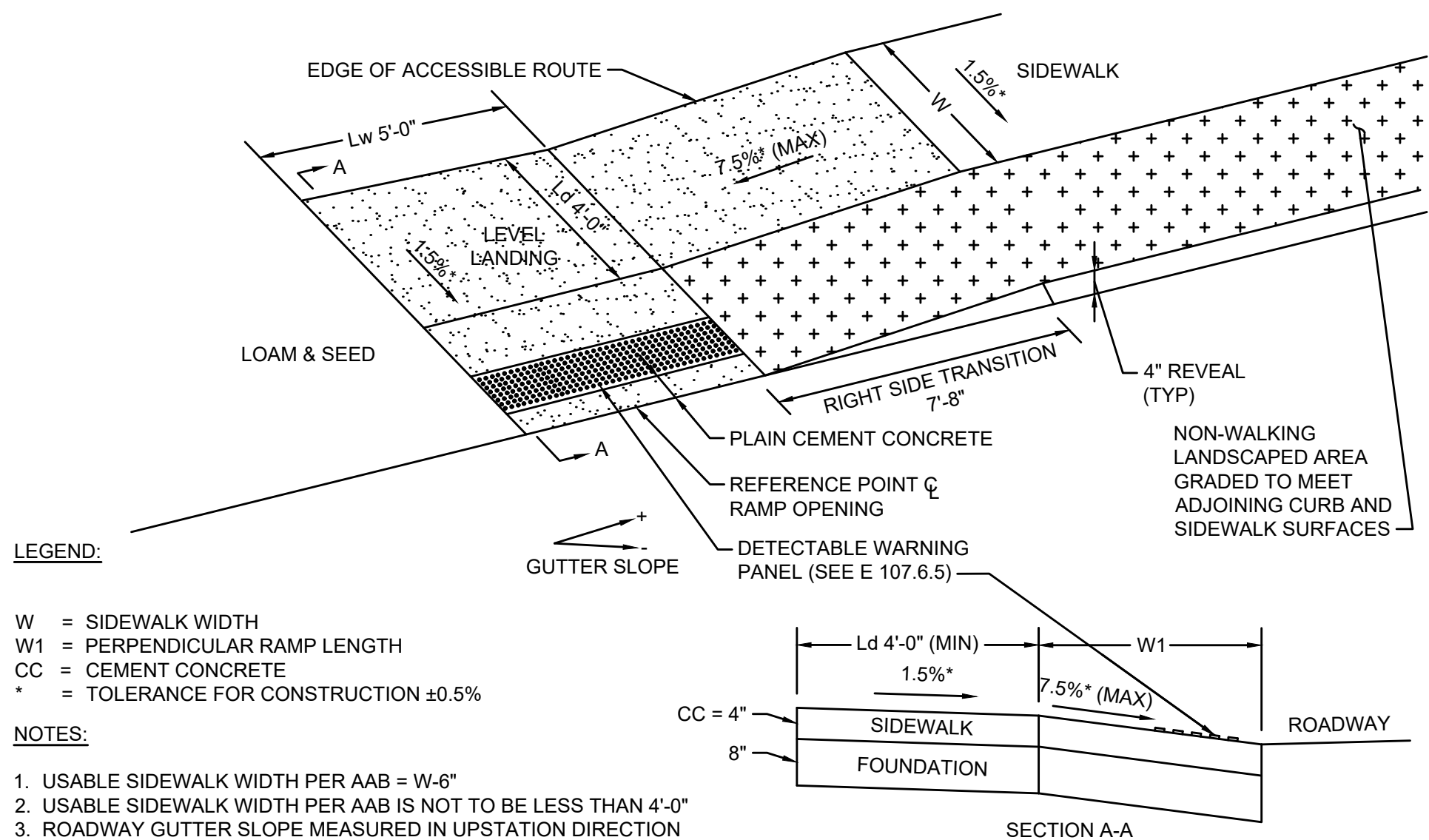


- NOTES:
- ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED. ALL 24" LINES MAY BE EITHER ONE 24" LINE OR A COMBINATION OF TWO - 12" LINES.
  - LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
  - CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.

CROSSWALK PAVEMENT MARKING  
N.T.S.



RECTANGULAR RAPID FLASHING BEACON (RRFB)  
N.T.S.



- LEGEND:
- W = SIDEWALK WIDTH
  - W1 = PERPENDICULAR RAMP LENGTH
  - CC = CEMENT CONCRETE
  - \* = TOLERANCE FOR CONSTRUCTION  $\pm 0.5\%$

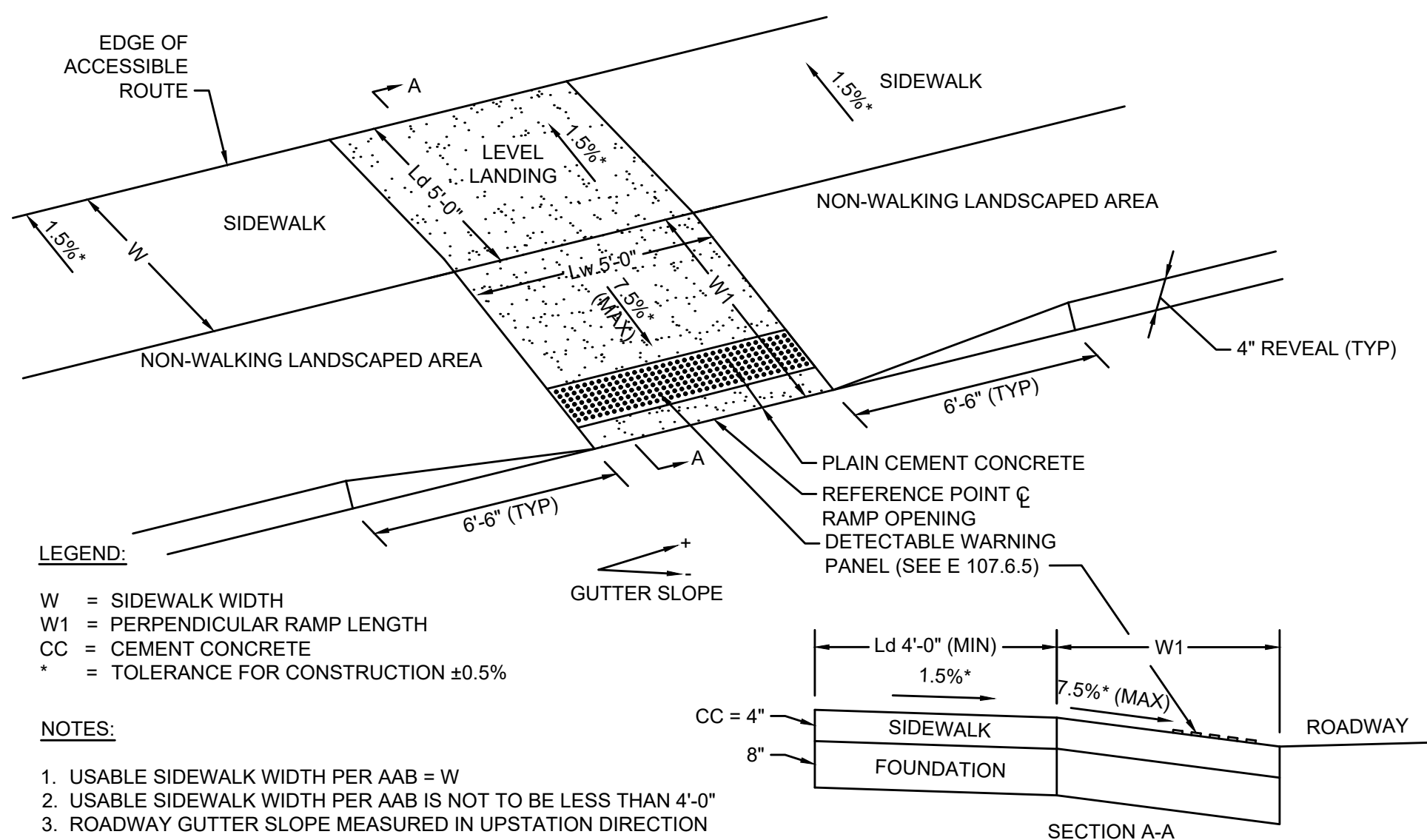
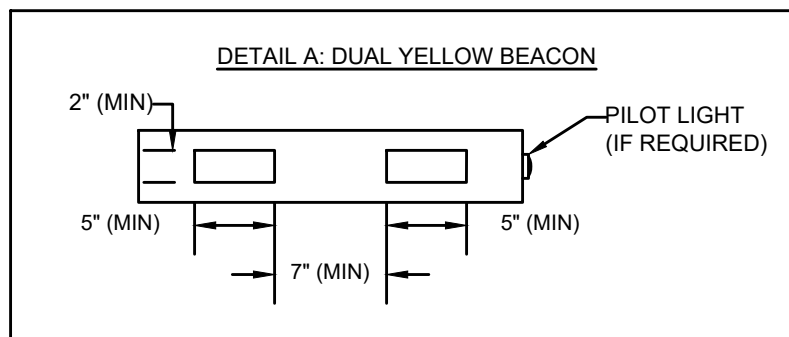
- NOTES:
- USABLE SIDEWALK WIDTH PER AAB = W-6"
  - USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
  - ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
  - SEE E 107.6.5 FOR DETECTABLE WARNING PANEL DETAILS

WHEELCHAIR RAMP TYPE B  
N.T.S.

- NOTES:
- CROSSWALK AND ADA-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
  - REFER TO THE SPECIAL PROVISIONS FOR SIGN DIMENSIONS.
  - ALL CONDUIT, PULL BOXES, SERVICE CONNECTIONS, AND EQUIPMENT GROUNDING REQUIRED FOR AC POWER IS NOT SHOWN IN THIS DETAIL AND SHALL BE PAID FOR SEPARATELY UNDER THEIR RESPECTIVE PAY ITEMS.
  - ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT
  - \*0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE

- MAJOR ITEMS LIST
- 2 CEMENT CONCRETE FOUNDATIONS PER 812.30.1
  - 2 15' TRAFFIC SIGNAL POSTS & PEDESTALS
  - 2 APS PUSHBUTTON SYSTEMS
  - 2 DUAL RECTANGULAR YELLOW LED BEACONS IN NEMA ENCLOSURES
  - 2 R10-25 SIGNS
  - 4 W11-2 SIGNS
  - 2 W16-7pL SIGNS
  - 2 W16-7pR SIGNS
  - 2 SOLAR PANEL SYSTEMS (NOT REQUIRED FOR AC POWER)
  - 2 NEMA ENCLOSURES FOR ALL COMPONENTS NEEDED TO MEET FUNCTIONAL REQUIREMENTS PER SPECIAL PROVISIONS
  - 2 BATTERY SYSTEMS (NOT REQUIRED FOR AC POWER)

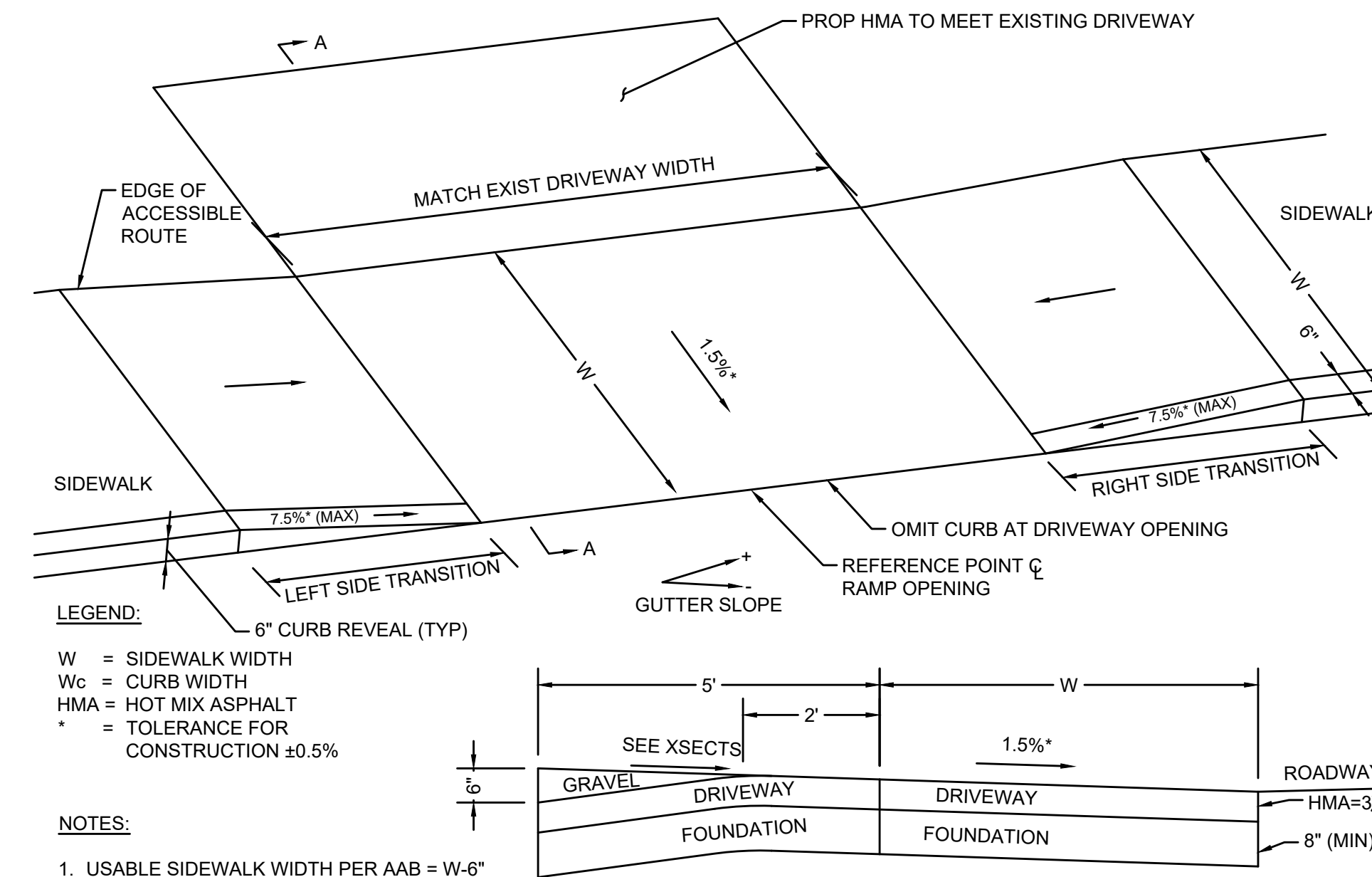
PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM.



- LEGEND:
- W = SIDEWALK WIDTH
  - W1 = PERPENDICULAR RAMP LENGTH
  - CC = CEMENT CONCRETE
  - \* = TOLERANCE FOR CONSTRUCTION  $\pm 0.5\%$

- NOTES:
- USABLE SIDEWALK WIDTH PER AAB = W
  - USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
  - ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
  - SEE E 107.6.5 FOR DETECTABLE WARNING PANEL DETAILS

WHEELCHAIR RAMP TYPE A  
N.T.S.



- LEGEND:
- W = SIDEWALK WIDTH
  - Wc = CURB WIDTH
  - HMA = HOT MIX ASPHALT
  - \* = TOLERANCE FOR CONSTRUCTION  $\pm 0.5\%$

- NOTES:
- USABLE SIDEWALK WIDTH PER AAB = W-6"
  - USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
  - ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
  - SURFACE TREATMENT VARIES; SEE PLANS

SIDEWALK THROUGH DRIVEWAY TYPE A  
N.T.S.

