

PEDESTRIAN IMPROVEMENTS

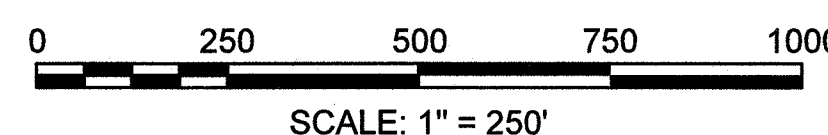
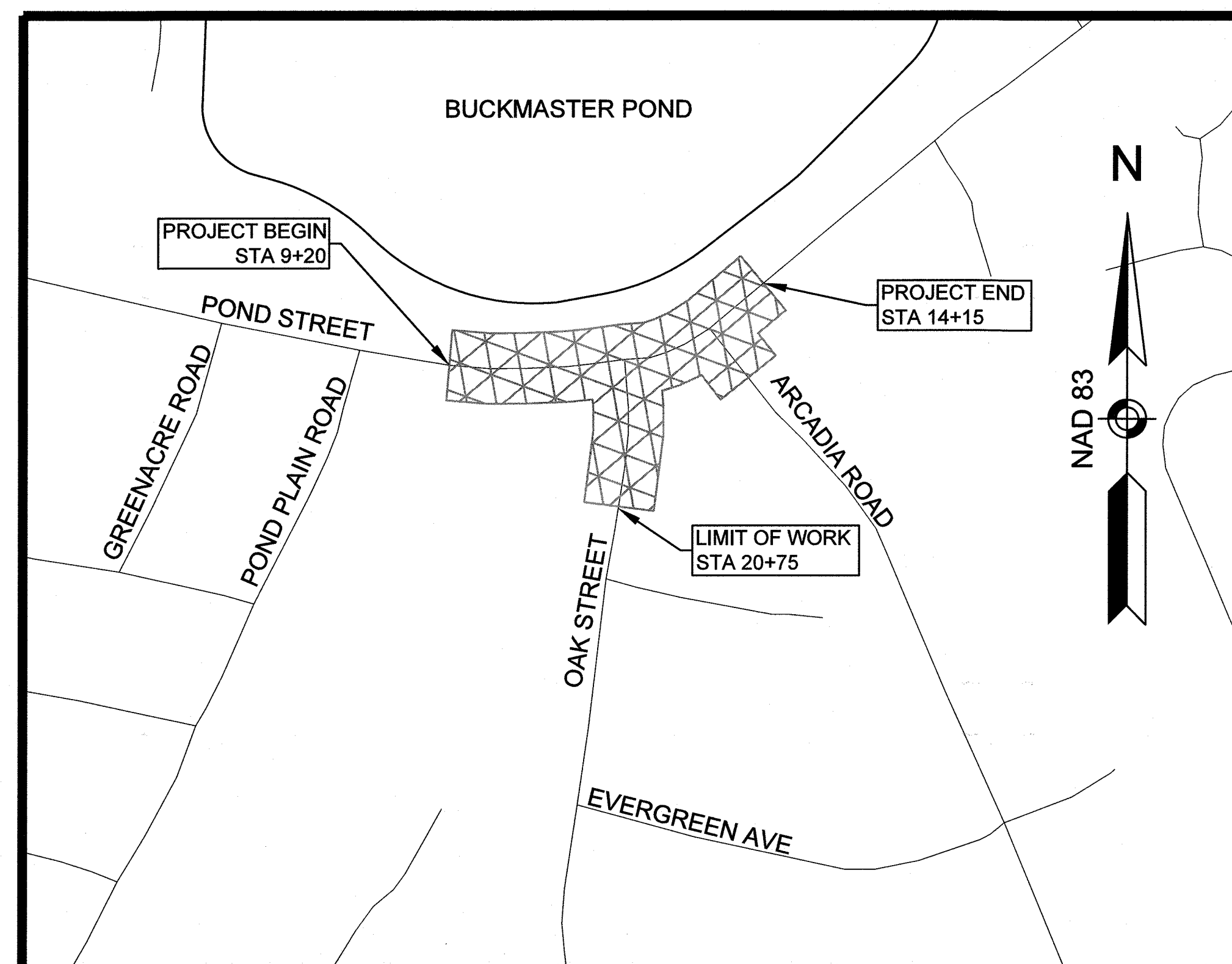
WESTWOOD
POND STREET & OAK STREET
TITLE SHEET & INDEX
SHEET 1 OF 11

PLAN OF
POND STREET AND OAK STREET

IN THE TOWN OF
WESTWOOD
NORFOLK COUNTY

THESE PLANS ARE SUPPLEMENTED BY THE MASSDOT 2017 CONSTRUCTION STANDARD DETAILS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE MASSDOT WORKZONE SAFETY TEMPORARY TRAFFIC CONTROL, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO THE PAVEMENT MARKING DETAILS ONLY), THE MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH MASSACHUSETTS AMMENDMENTS AND THE STANDARD MUNICIPAL TRAFFIC CODE, THE MASSDOT 1988 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	TYPICAL SECTIONS & PAVEMENT NOTES
4	CONSTRUCTION PLAN
5	TRAFFIC SIGN & PAVEMENT MARKING PLAN
6	TRAFFIC SIGN SUMMARY
7-9	TEMPORARY TRAFFIC CONTROL PLANS
10-11	CONSTRUCTION DETAILS

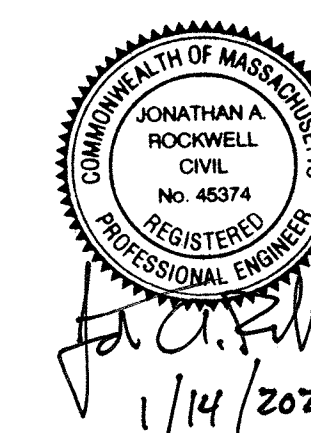


TOTAL LENGTH OF PROJECT = 540 FEET = 0.102 MILES
POND STREET = 415 FEET = 0.079 MILES
OAK STREET = 125 FEET = 0.024 MILES

DESIGN DESIGNATION

	OAK STREET	POND STREET
DESIGN SPEED	35 MPH	35 MPH
ADT (2019)	6,150 VPD	10,420 VPD
ADT (2029)	6,800 VPD	11,510 VPD
K	9.4%	9.0%
D	67.0% SB	67.0% WB
T (PEAK HOUR)	1.7%	2.0%
T (AVERAGE DAY)	1.3%	1.4%
DHV	640 VPH	1035 VPH
DDHV	430 VPH	695 VPH
FUNCTIONAL CLASSIFICATION	URBAN COLLECTOR	URBAN COLLECTOR

DATE	DESCRIPTION	REV #
1/14/2021	ISSUED FOR BIDDING	-



TEC
The Engineering Corp

146 Dascomb Road
Andover, MA 01810
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

www.TheEngineeringCorp.com

DESIGNED BY LAK	CHECKED BY LSA	DATE 01/08/2021
DRAWN BY LAK	APPROVED BY JAR	PROJECT NO. T0642.04

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		WATER SHUTOFF/CURB STOP
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		EDGE OF PAVEMENT
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF MICROMILLING AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

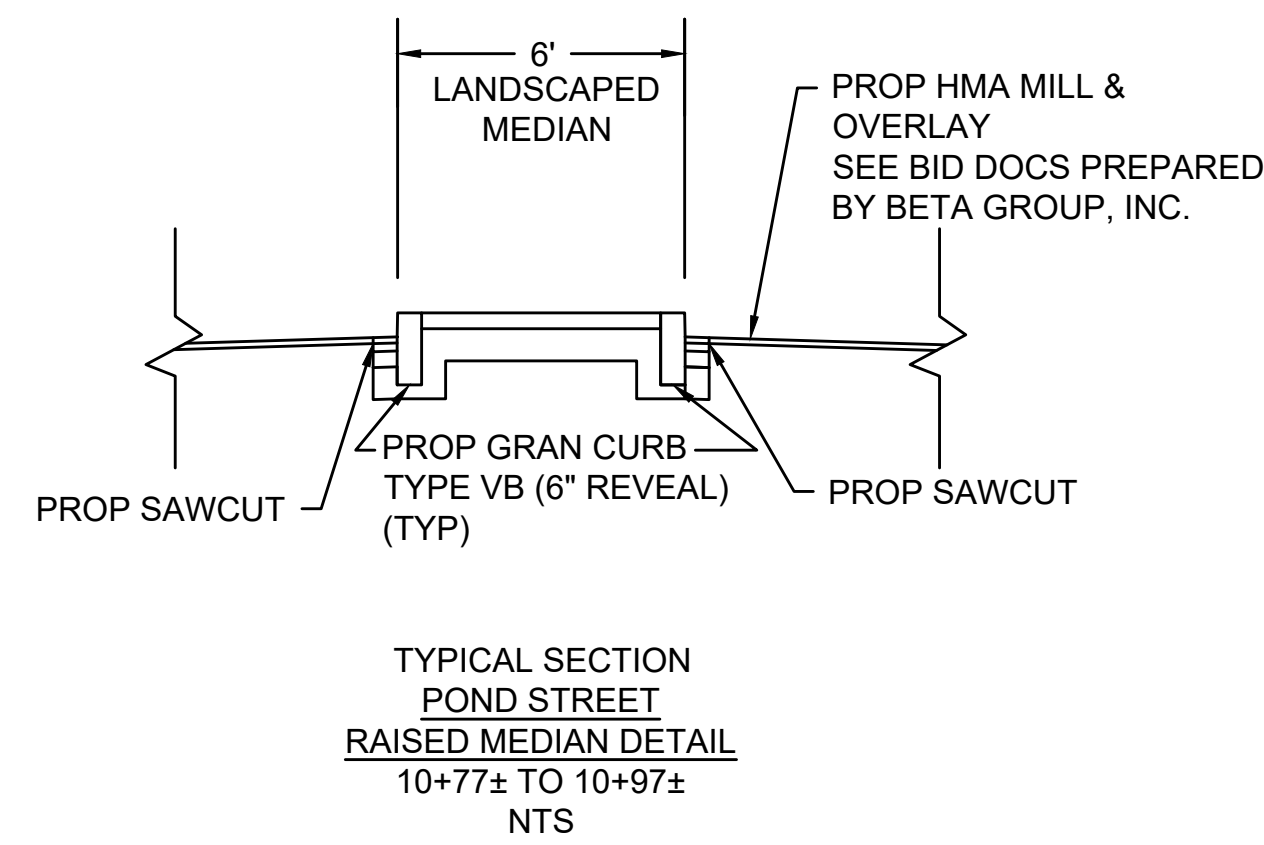
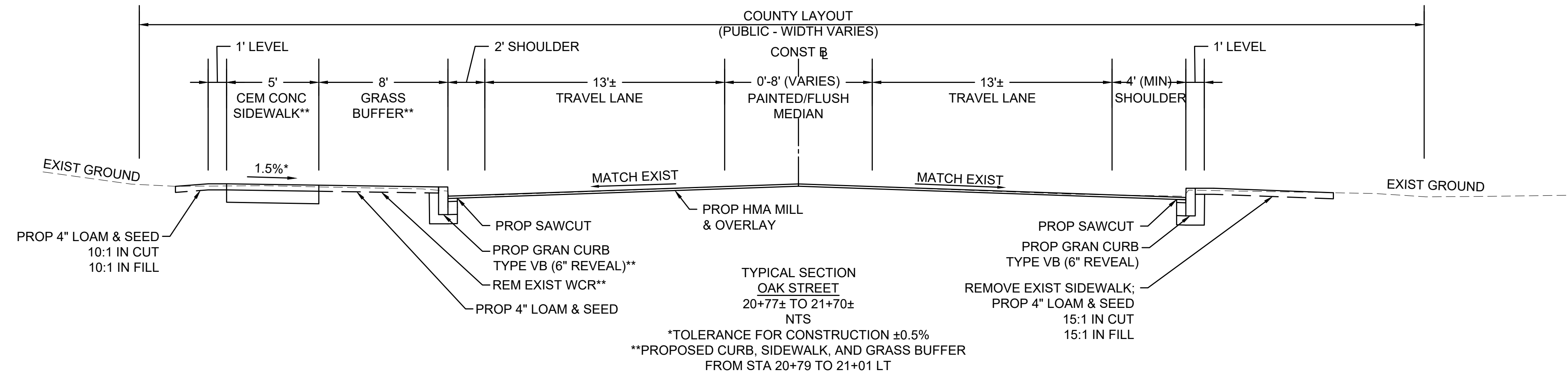
EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER CABINET, FOUNDATION
		CONTROLLER CABINET, FOUNDATION, CONC. PAD
		MAST ARM FOUNDATION (SCALE OF BLOCK = DIAMETER IN INCHES)
		MAST ARM (LENGTH NOTED)
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		PEDESTRIAN SIGNAL HEAD
		MAST ARM OR TS POLE MOUNTED SIGN
		VIDEO DETECTION CAMERA
		EMERGENCY PRE-EMPTION RECEIVER
		EMERGENCY PRE-EMPTION CONFIRMATION STROBE
		PEDESTRIAN PUSH BUTTON
		YAGI ANTENNA
		BICYCLE WIRE LOOP DETECTOR (SIZE AS NOTED)
		WIRE LOOP DETECTOR (SIZE AND TYPE NOTED)
		TRAFFIC SIGN (1 POST)
		TRAFFIC SIGN (2 POST)
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE - 12" WIDE
		CROSSWALK - 12" WIDE
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

ABBREVIATIONS

GENERAL		WESTWOOD POND STREET & OAK STREET LEGEND & ABBREVIATIONS SHEET 2 OF 11	
AADT	ANNUAL AVERAGE DAILY TRAFFIC	ABBREVIATIONS (cont.)	
ABAN	ABANDON	GENERAL	
ADJ	ADJUST	PRC	POINT OF REVERSE CURVATURE
APPROX.	APPROXIMATE	PROJ	PROJECT
A.C.	ASBESTOS CEMENT	PROP	PROPOSED
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE	PSB	PLANTABLE SOIL BORROW
BIT.	BITUMINOUS	PT	POINT OF TANGENCY
BC	BOTTOM OF CURB	PUE	PERMANENT UTILITY EASEMENT
BD.	BOUND	PVC	POINT OF VERTICAL CURVATURE
BL	BASELINE	PVI	POINT OF VERTICAL INTERSECTION
BLDG	BUILDING	PVT	POINT OF VERTICAL TANGENCY
BM	BENCHMARK	PVMT	PAVEMENT
BO	BY OTHERS	R	RADIUS OF CURVATURE
BOS	BOTTOM OF SLOPE	R&D	REMOVE AND DISPOSE
BR.	BRIDGE	RCP	REINFORCED CONCRETE PIPE
CB	CATCH BASIN	RD	ROAD
CBCI	CATCH BASIN WITH CURB INLET	RDWY	ROADWAY
CC	CEMENT CONCRETE	REM	REMOVE
CCB	CAPE COD BERM	RET	RETAIN
CCM	CEMENT CONCRETE MASONRY	RET WALL	RETAINING WALL
CEM	CEMENT	ROW	RIGHT OF WAY
CI	CURB INLET	RR	RAILROAD
CIP	CAST IRON PIPE	R&R	REMOVE AND RESET
CLF	CHAIN LINK FENCE	R&S	REMOVE AND STACK
CL	CENTERLINE	RT	RIGHT
CMP	CORRUGATED METAL PIPE	SB	STONE BOUND
CSP	CORRUGATED STEEL PIPE	SHLD	SHOULDER
CO.	COUNTY	SMH	SEWER MANHOLE
CONC	CONCRETE	ST	STREET
CONT	CONTINUOUS	STA	STATION
CONST	CONSTRUCTION	SSD	STOPPING SIGHT DISTANCE
CR GR	CROWN GRADE	SHLO	STATE HIGHWAY LAYOUT LINE
DHV	DESIGN HOURLY VOLUME	SW	SIDEWALK
DI	DROP INLET	T	TANGENT DISTANCE OF CURVE/TRUCK %
DIA	DIAMETER	TAN	TANGENT
DIP	DUCTILE IRON PIPE	TEMP	TEMPORARY
DSCB	DEEP SUMP CATCH BASIN	TC	TOP OF CURB
DW	STEADY DON'T WALK - PORTLAND ORANGE	TOS	TOP OF SLOPE
DWY	DRIVEWAY	TS	TRAFFIC SIGNAL
ELEV (or EL.)	ELEVATION	TYP	TYPICAL
EMB	EMBANKMENT	UP	UTILITY POLE
EOP	EDGE OF PAVEMENT	VAR	VARIES
EXIST (or EX)	EXISTING	VERT	VERTICAL
EXC	EXCAVATION	VC	VERTICAL CURVE
F&C	FRAME AND COVER	WCR	WHEEL CHAIR RAMP
F&G	FRAME AND GRATE	WG	WATER GATE
FDN.	FOUNDATION	WIP	WROUGHT IRON PIPE
FDP	FULL DEPTH PAVEMENT	WM	WATER METER/WATER MAIN
FES	FLARED END SECTION	X-SECT	CROSS SECTION
FLDSTN	FIELDSTONE	TRAFFIC SIGNAL ABBREVIATIONS	
GAR	GARAGE	CAB.	CABINET
GC	GRANITE CURB	CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
GD	GROUND	DW	STEADY DON'T WALK
GG	GAS GATE	FDW	FLASHING DON'T WALK
GI	GUTTER INLET	FR	FLASHING CIRCULAR RED
GIP	GALVANIZED IRON PIPE	FRL	FLASHING RED LEFT ARROW
GRAN	GRANITE	FRR	FLASHING RED RIGHT ARROW
GRAV	GRAVEL	FY	FLASHING CIRCULAR YELLOW
GRD	GUARD	FYL	FLASHING YELLOW LEFT ARROW
HDW	HEADWALL	FYR	FLASHING YELLOW RIGHT ARROW
HMA	HOT MIX ASPHALT	G	STEADY CIRCULAR GREEN
HOR	HORIZONTAL	GL	STEADY GREEN LEFT ARROW
HYD	HYDRANT	GR	STEADY GREEN RIGHT ARROW
IH	IRRIGATION HEAD	GSL	STEADY GREEN SLASH LEFT ARROW
INV	INVERT	GSR	STEADY GREEN SLASH RIGHT ARROW
JCT	JUNCTION	GV	STEADY GREEN VERTICAL ARROW
L	LENGTH OF CURVE	OL	OVERLAP
LB	LEACH BASIN	PED	PEDESTRIAN
LOG	LIMIT OF GRADING	PTZ	PAN, TILT, ZOOM
LP	LIGHT POLE	R	STEADY CIRCULAR RED
L&S	LOAM & SEED	RL	STEADY RED LEFT ARROW
LT	LEFT	RR	STEADY RED RIGHT ARROW
MAX	MAXIMUM	TR SIG	TRAFFIC SIGNAL
MB	MAILBOX	TSC	TRAFFIC SIGNAL CONDUIT
MH	MANHOLE	W	STEADY WALKING PERSON
MHB	MASSACHUSETTS HIGHWAY BOUND	Y	STEADY CIRCULAR YELLOW
MIN	MINIMUM	YL	STEADY YELLOW LEFT ARROW
NIC	NOT IN CONTRACT		
NO.	NUMBER		
OCS	OUTLET CONTROL STRUCTURE		
PC	POINT OF CURVATURE		
PCC	POINT OF COMPOUND CURVATURE		
PERM	PERMANENT		
P.G.L.	PROFILE GRADE LINE		
PI	POINT OF INTERSECTION		
POC	POINT ON CURVE		
POT	POINT ON TANGENT		



PAVEMENT NOTES

PROPOSED MILL & HOT MIX ASPHALT (HMA) OVERLAY

SURFACE: 2" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER
2" PAVEMENT MICROMILLING

PROPOSED CEMENT CONCRETE SIDEWALKS / WHEELCHAIR RAMPS / WALKWAYS / MEDIANS

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

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT SIDEWALK

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5) OVER
1¾" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC - 12.5) OVER

BASE: 8" GRAVEL BORROW, TYPE b

GENERAL PAVEMENT NOTES:

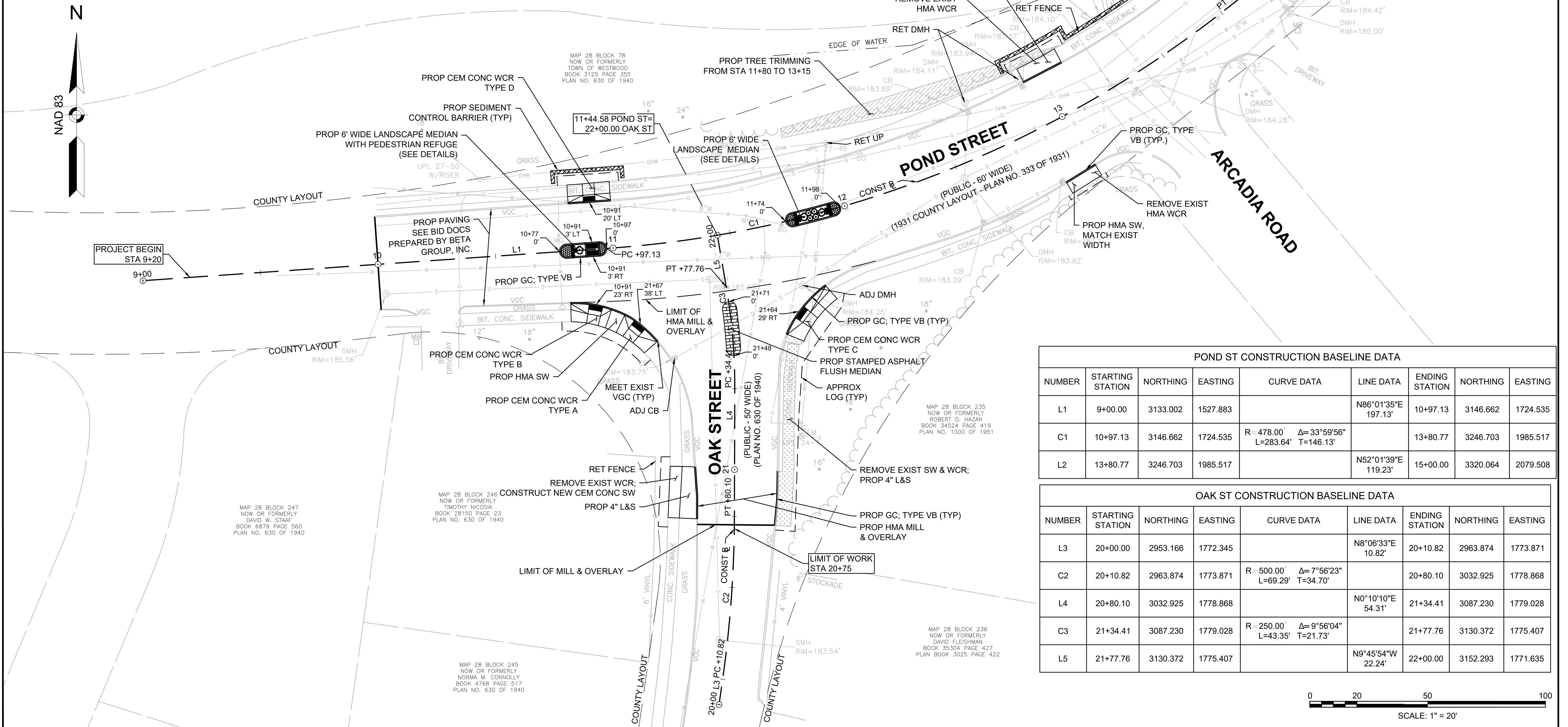
1. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA JOINT SEALANT SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT A RATE CONSISTENT WITH STANDARD SPECIFICATION 450.43G2. ALL SURFACES SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
2. ALL HMA SHALL BE PRODUCED WITH WMA ADDITIVE.
3. ALL HMA SHALL BE IN ACCORDANCE WITH SECTION 460.
4. ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
5. HMA FOR WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 700.
6. ALL GRAVEL BORROW MEETING SPECIFICATION SHALL BE RETAINED IN PLACE, COMPACTED, AND LEVELED AS REQUIRED.

CONSTRUCTION NOTES:

- EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY HANCOCK ASSOCIATES, BOSTON, MA PERFORMED IN AUGUST AND SEPTEMBER 2019.

THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). SAID DATUM WAS ESTABLISHED VIA GPS OBSERVATIONS UTILIZING REALIZATION NAD83(2011) AND GEOID 12A.
- 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 WESTWOOD DEPARTMENT OF PUBLIC WORKS (WDPW) 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.
- 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 CONSTRUCTION STANDARDS. DETECTABLE WARNING PANELS SHALL BE YELLOW IN COLOR AS APPROVED BY THE WESTWOOD DPW.
- ALL EXISTING GRANITE CURB THAT MEETS SPECIFICATIONS SHALL BE RE-USED WITHIN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN THAT PROPOSED.
- 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.

**WESTWOOD
POND STREET & OAK STREET
CONSTRUCTION PLAN
SHEET 4 OF 11**

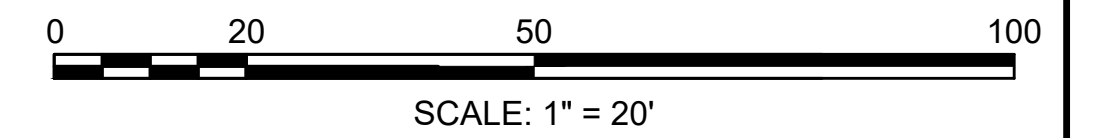


POND ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	9+00.00	3133.002	1527.883		N86°01'35"E 197.13'	10+97.13	3146.662	1724.535
C1	10+97.13	3146.662	1724.535	R=478.00' Δ=33°59'56" L=263.64' T=146.13'		13+80.77	3246.703	1985.517
L2	13+80.77	3246.703	1985.517		N52°01'39"E 119.23'	15+00.00	3320.064	2079.508

OAK ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	20+00.00	2953.166	1772.345		N8°06'33"E 10.82'	20+10.82	2963.874	1773.871
C2	20+10.82	2963.874	1773.871	R=500.00' Δ=7°56'23" L=69.29' T=34.70'		20+80.10	3032.925	1778.868
L4	20+80.10	3032.925	1778.868		N0°10'10"E 54.31'	21+34.41	3087.230	1779.028
C3	21+34.41	3087.230	1779.028	R=250.00' Δ=9°56'04" L=43.35' T=21.73'		21+77.76	3130.372	1775.407
L5	21+77.76	3130.372	1775.407		N9°45'54"W 22.24'	22+00.00	3152.293	1771.635



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			
OM4-2	18	18			①		1	BLACK	RED	RED	MOUNT W/ W1-7	2.25	2.25
R4-7c	18	30					4	WHITE	BLACK	BLACK	4	3.75	15.00
W1-7	48	24					1	YELLOW	BLACK	BLACK	1	8.00	8.00
W11-2	30	30					6	FL. YELLOW-GREEN	BLACK	BLACK	5	6.25	37.50
W16-9p	24	12					2	FL. YELLOW-GREEN	BLACK	BLACK	MOUNT W/ W11-2	2.00	4.00
W16-7pL	24	12					4	FL. YELLOW-GREEN	BLACK	BLACK	MOUNT W/ W11-2	2.00	8.00
W16-7pR	24	12					2	FL. YELLOW-GREEN	BLACK	BLACK	MOUNT W/ W11-2	2.00	4.00
MA-D3-1a	36	12	SEE RIGHT	6C / 4C	3 3	-	2	GREEN	WHITE	WHITE	2	3.00	6.00
MA-D3-1b	33	12	SEE RIGHT	6C / 4C	3 3	-	2	GREEN	WHITE	WHITE	MOUNT W/ MA-D3-1a	2.75	5.50

NOTES:

- ① SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR TEXT AND LEGEND DIMENSIONS.
2. THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF CURB OR SIDEWALK, OR THE ELEVATION OF THE NEAR EDGE OF TRAVEL WAY, SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED.
3. A MINIMUM OF 3'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.



NOTES:

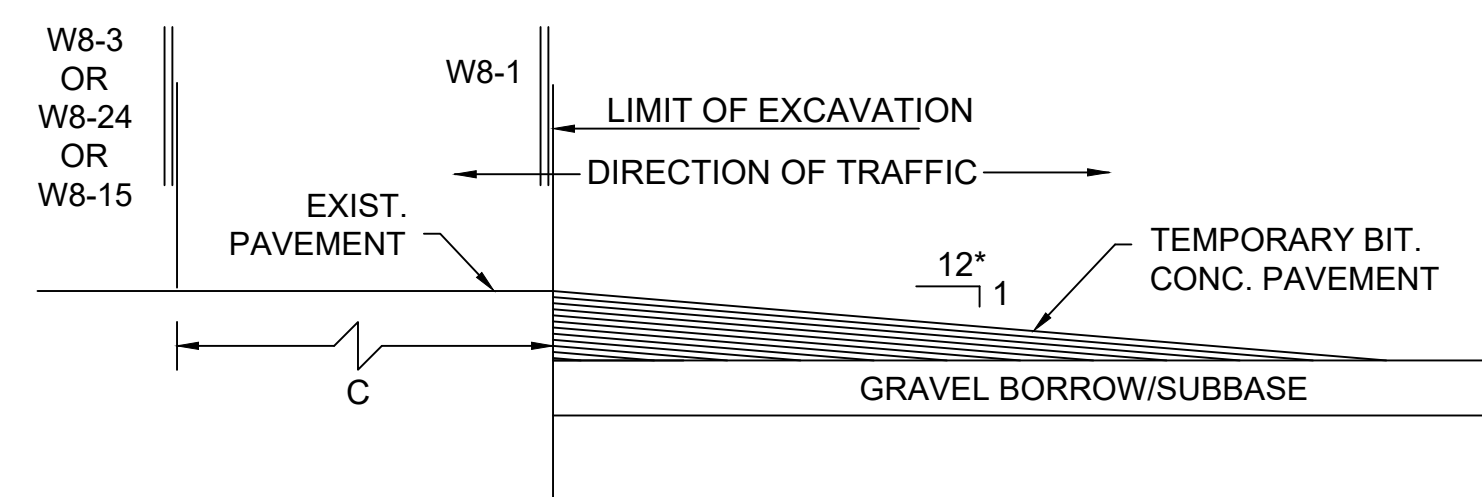
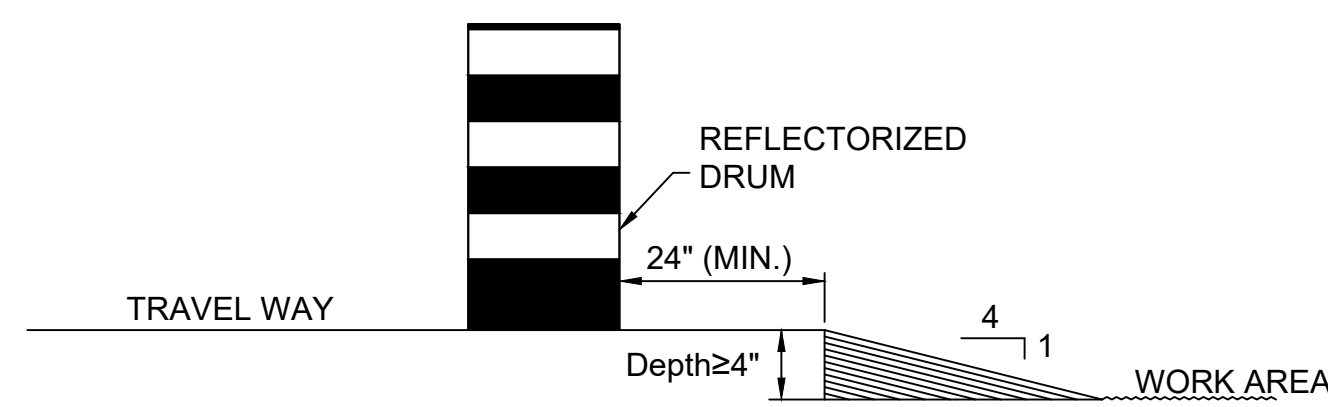
- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
- ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- 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.
- 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).
- CONTRACTORS SHALL NOTIFY EACH ADJUTTER 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.
- THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A SEQUENTIAL WARNING LIGHTS.
- THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- MINIMUM LANE WIDTH IS TO BE 10 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND:

- | | | |
|--|------------------------------------|------------------------------|
| REFLECTORIZED PLASTIC DRUM OR 36" CONE | WORK ZONE | WORK VEHICLE |
| POLICE/FLAGGER DETAIL | DIRECTION OF TRAFFIC | TRUCK MOUNTED ATTENUATOR |
| TYPE III BARRICADE | IMPACT ATTENUATOR | TRAFFIC OR PEDESTRIAN SIGNAL |
| CHANGEABLE MESSAGE SIGN | MEDIAN BARRIER | SIGN |
| ARROW BOARD | MEDIAN BARRIER WITH WARNING LIGHTS | |

SUGGESTED WORK ZONE WARNING SIGN SPACING

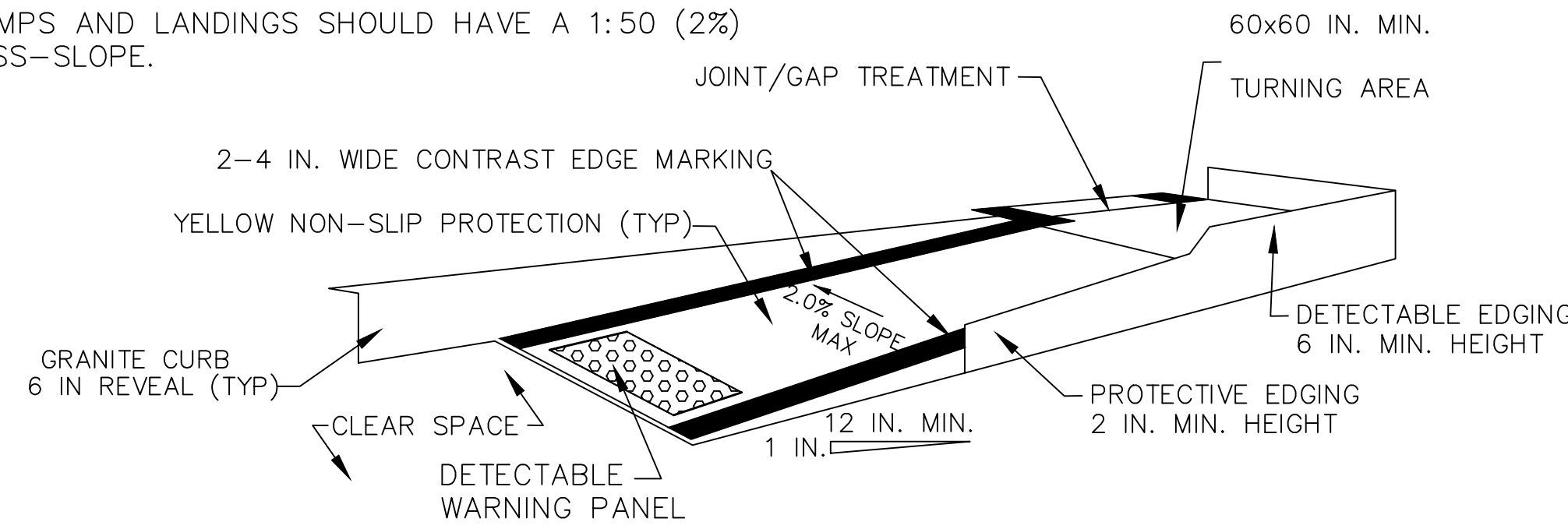
ROAD TYPE	DISTANCE BETWEEN SIGNS (FEET)		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS	350	350	350
MOST OTHER ROADWAYS	500	500	500
FREEWAYS AND EXPRESSWAYS	1,000	1,500	2,640



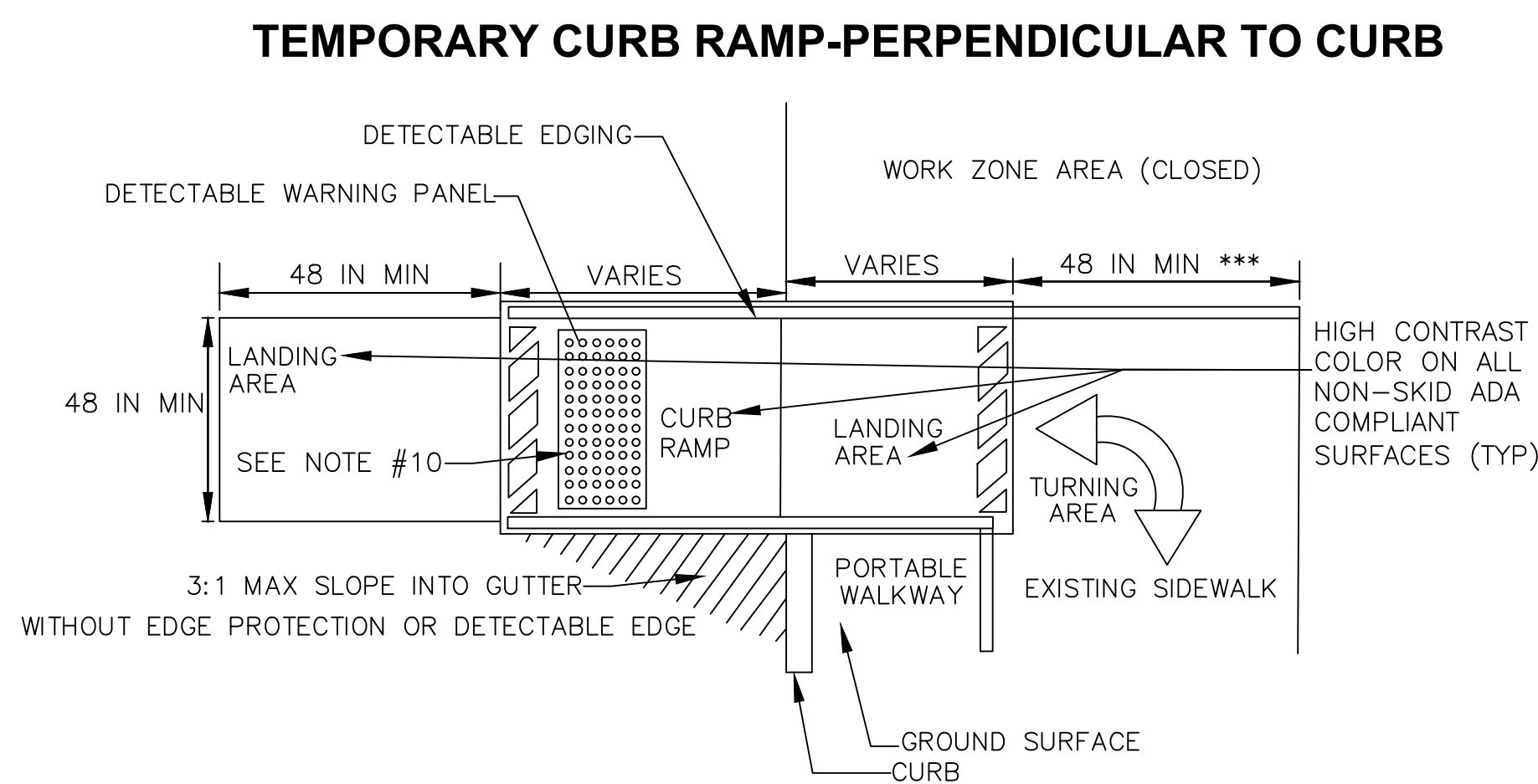
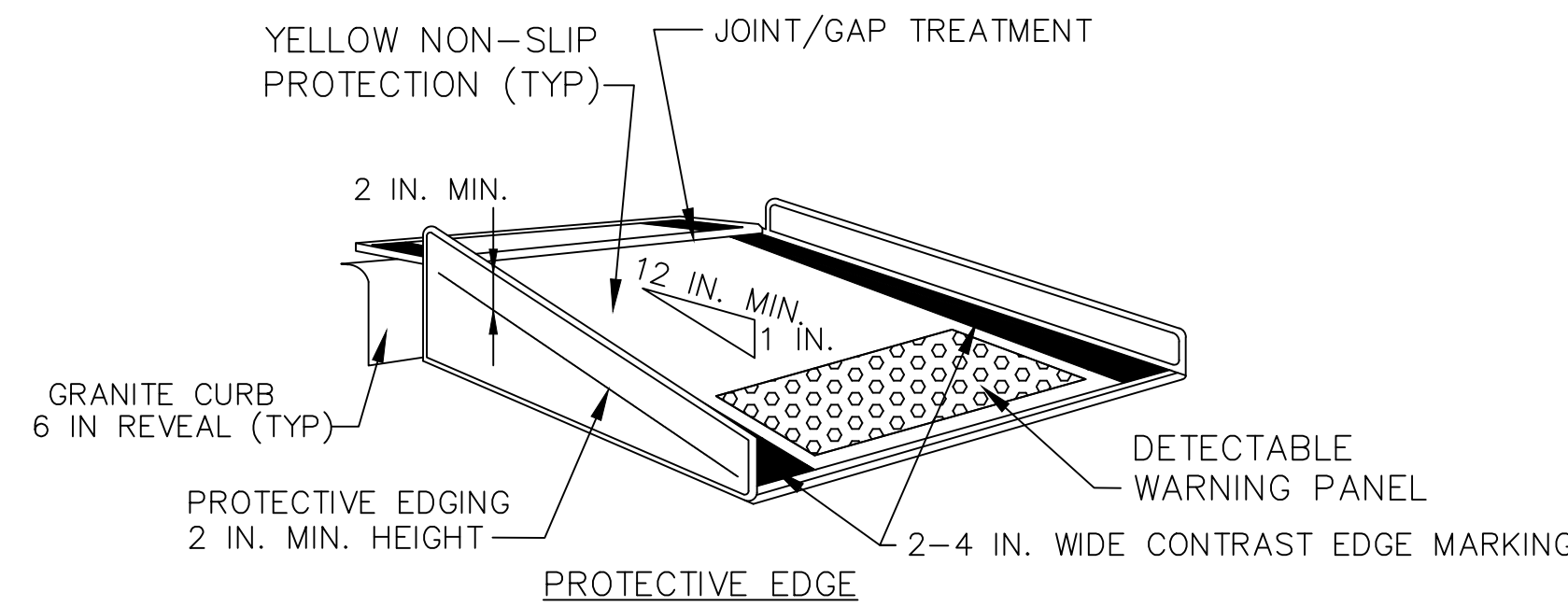
PEDESTRIAN TYPICAL DETAILS

NOTES:

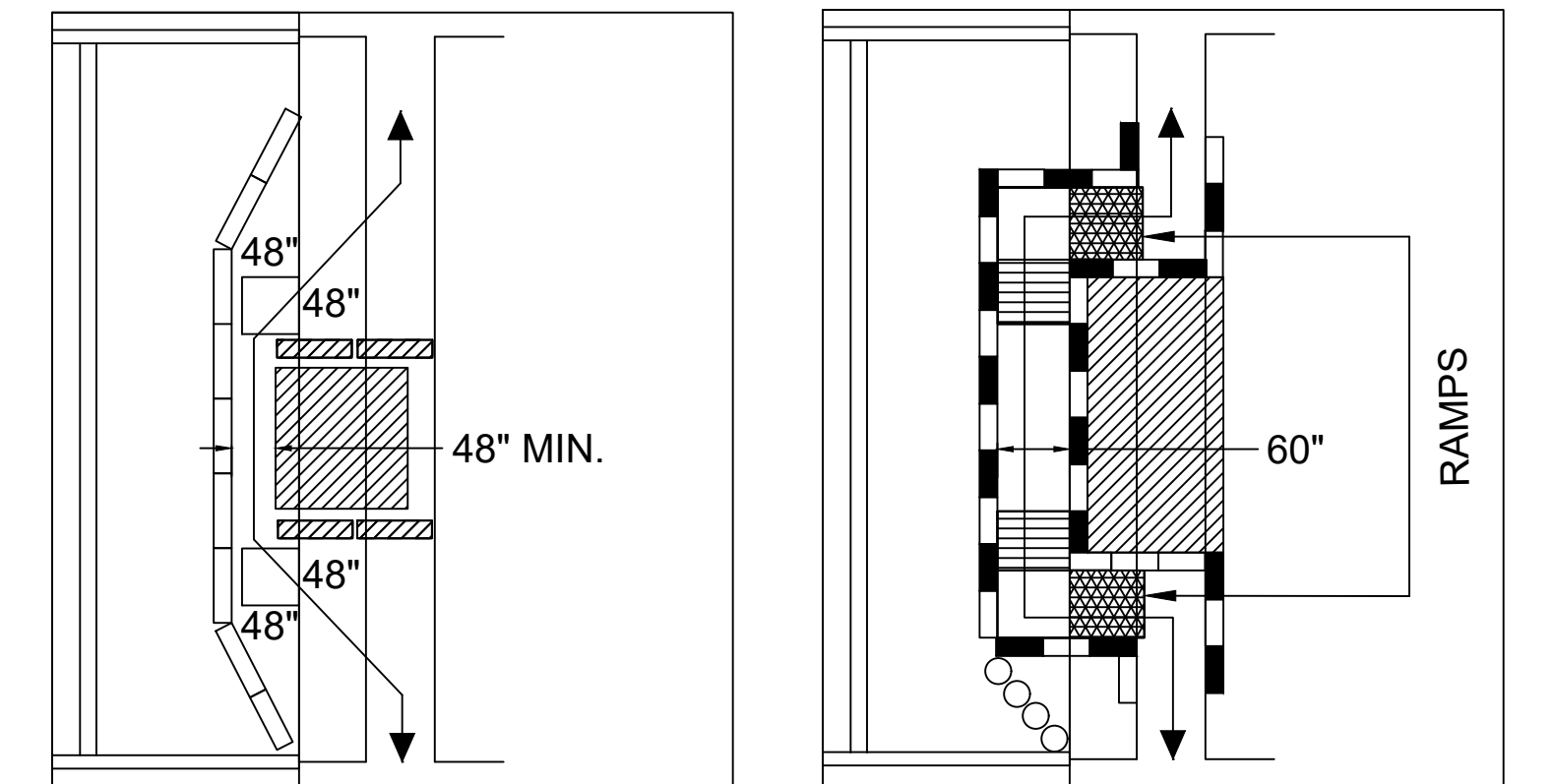
- CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
- PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
- DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
- CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
- CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
- LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
- 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.
- 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-PERPENDICULAR TO CURB



- * -LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- ** -DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- *** -60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK



- 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 TEMPORARY CURB RAMP DETAILS).
- 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.

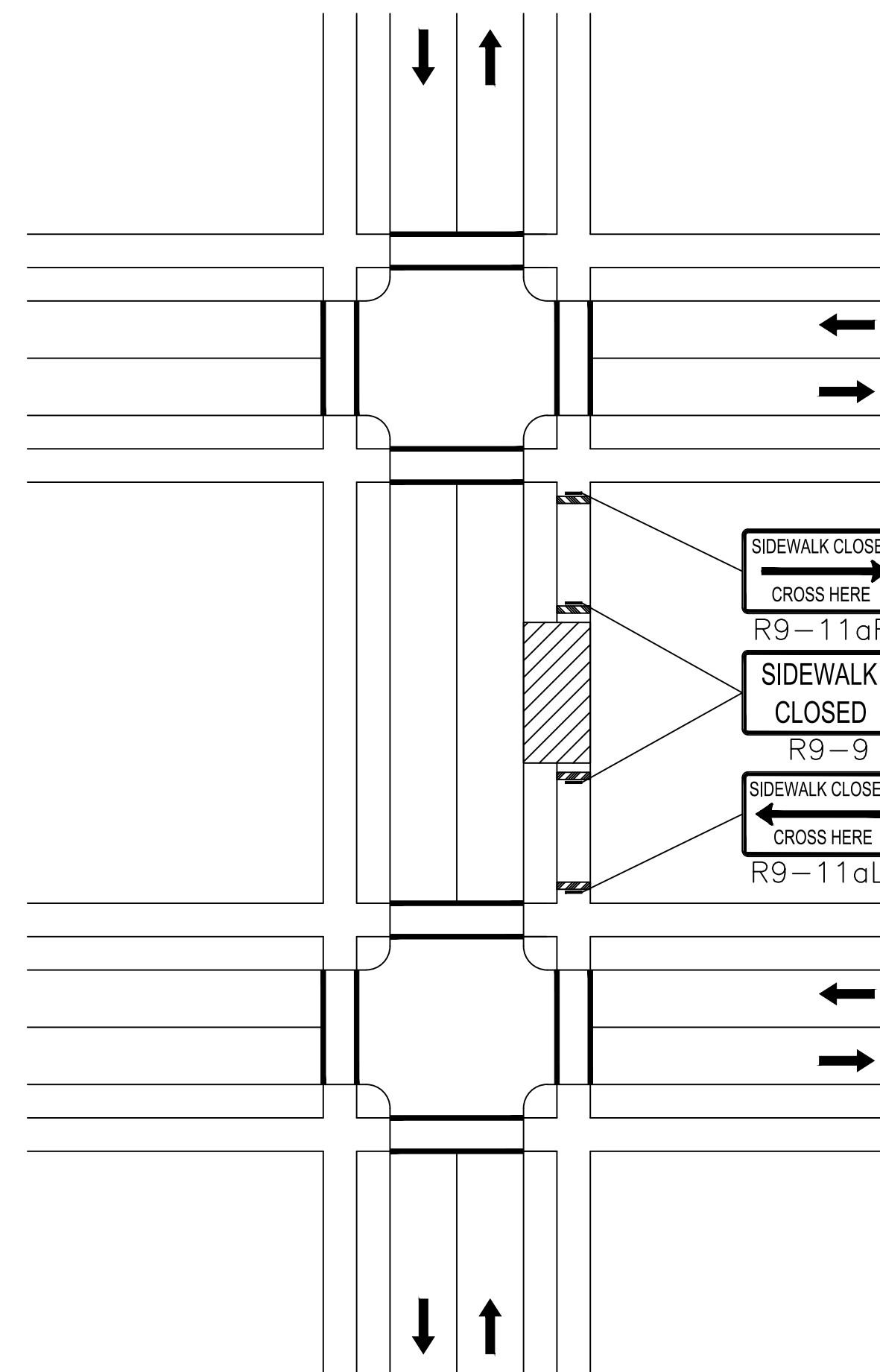
TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

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

FORMULAS FOR DETERMINING TAPER LENGTHS

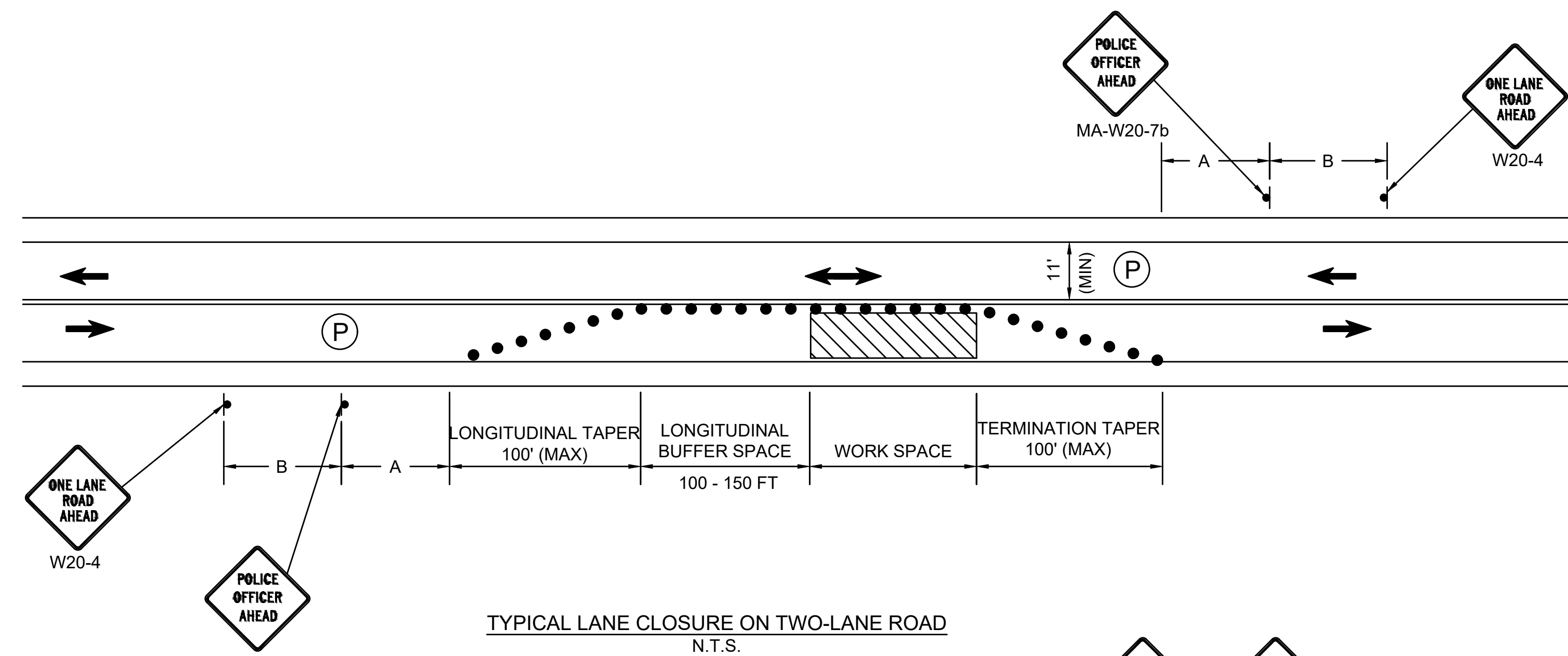
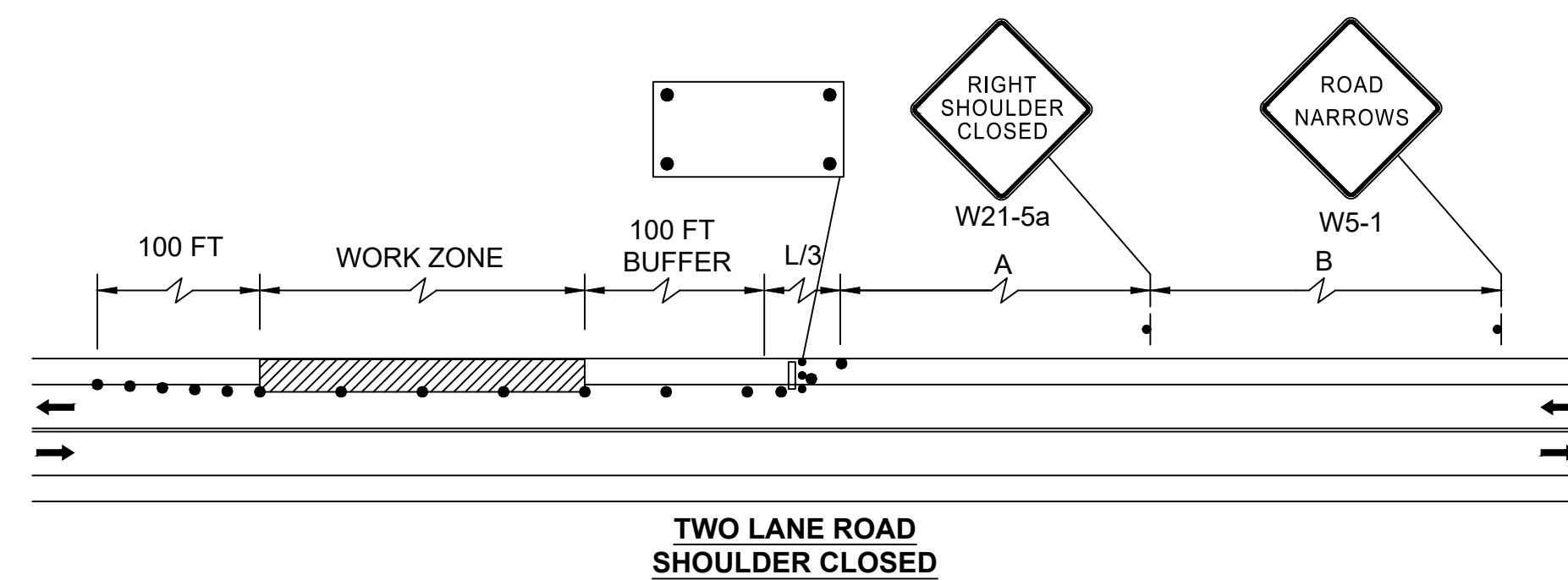
SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

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

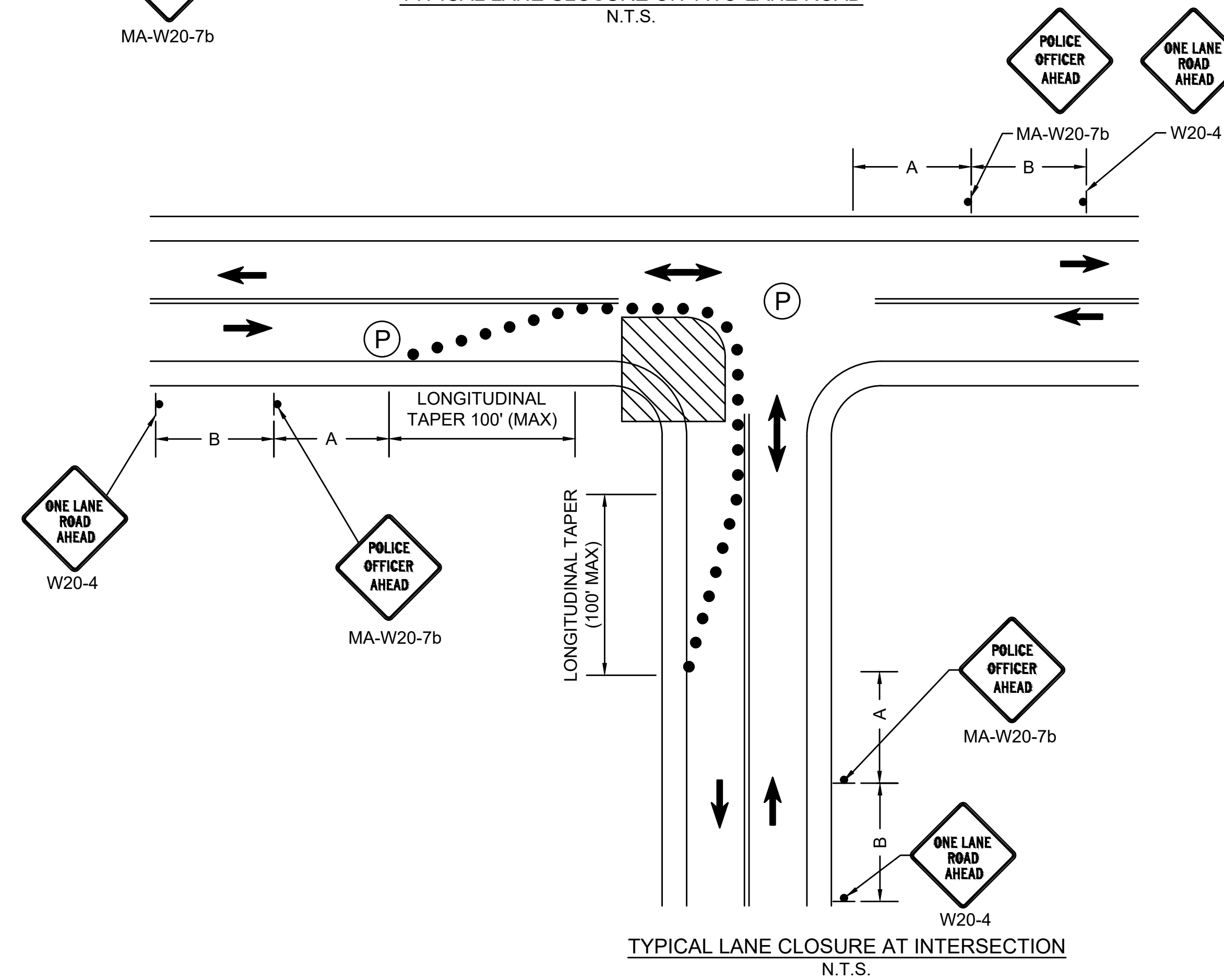


NOTE: IF A MINIMUM WIDTH OF 48" OF SOLID SMOOTH UNOBSTRUCTED SURFACE REMAINS ALONG THE WORK AREA THEN THE DETAIL CAN BE DISREGARDED. DELINEATION OF THE WORK AREA WILL STILL BE REQUIRED. ALL PEDESTRIAN DETOUR ROUTES SHALL BE ADA/MAAB COMPLIANT IN THEIR ENTIRETY.

SIDEWALK CLOSED WITHOUT DETOUR



TYPICAL LANE CLOSURE ON TWO-LANE ROAD
N.T.S.

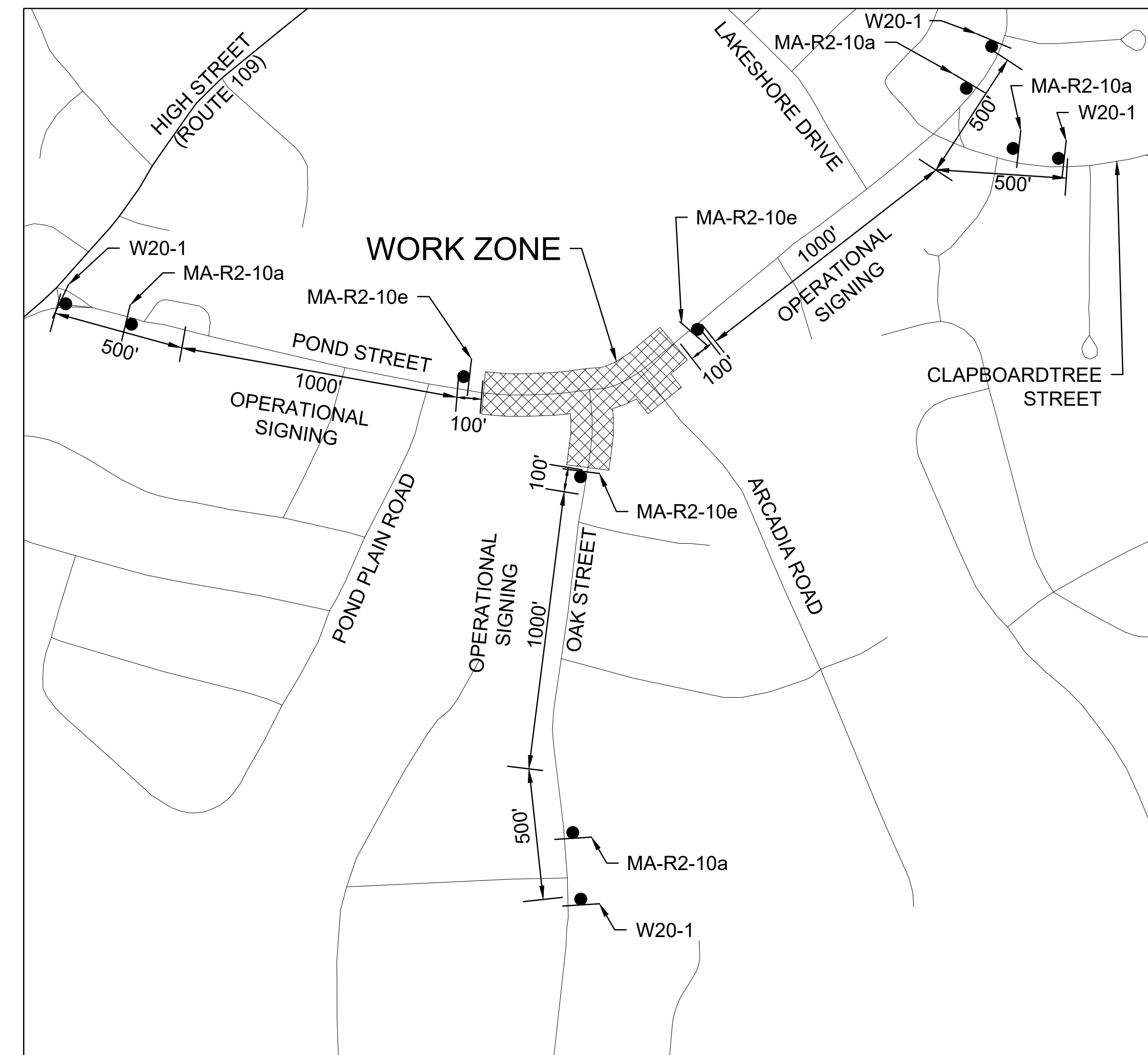


TYPICAL LANE CLOSURE AT INTERSECTION
N.T.S.

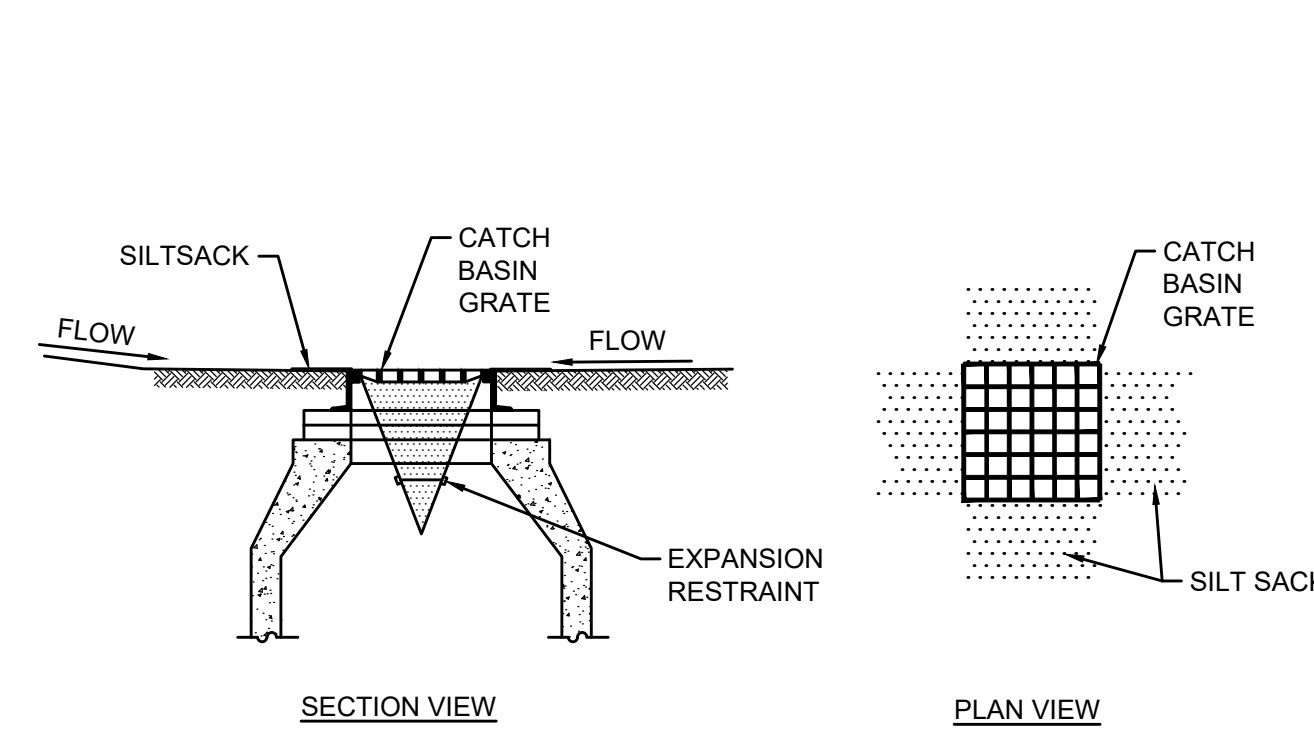
NOTES:

1. DRUM SPACING FOR LONGITUDINAL TAPER SECTION SHALL NOT EXCEED A DISTANCE IN FEET EQUAL TO THE POSTED SPEED.
2. DRUM SPACING FOR TANGENT SECTION SHALL NOT EXCEED A DISTANCE IN FEET EQUAL TO TWICE THE POSTED SPEED.
3. DRUM SPACING FOR TERMINATION TAPER SECTION SHALL NOT EXCEED 20 FEET.

TRAFFIC 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			4	FL. ORANGE WHITE	BLACK BLACK	BLACK BLACK	12.00	48.00
MA-R2-10e	36	48		↓			3	FL. ORANGE WHITE	BLACK BLACK	BLACK BLACK	12.00	36.00
R9-9	24	12		SEE 2009 MUTCD			2	WHITE	BLACK	BLACK	2.00	4.00
R9-11aL	24	12					1	WHITE	BLACK	BLACK	2.00	2.00
R9-11aR	24	12					1	WHITE	BLACK	BLACK	2.00	2.00
W5-1	36	36					1	FL. ORANGE	BLACK	BLACK	9.00	9.00
W8-1	36	36					2	FL. ORANGE	BLACK	BLACK	9.00	18.00
W8-15	36	36					2	FL. ORANGE	BLACK	BLACK	9.00	18.00
W20-1	36	36					4	FL. ORANGE	BLACK	BLACK	9.00	36.00
W20-4	36	36		↓			3	FL. ORANGE	BLACK	BLACK	9.00	27.00
MA-W20-7b	36	36		MASSDOT STANDARD SIGN			3	FL. ORANGE	BLACK	BLACK	9.00	27.00
W21-5a	36	36		SEE 2009 MUTCD			1	FL. ORANGE	BLACK	BLACK	9.00	9.00

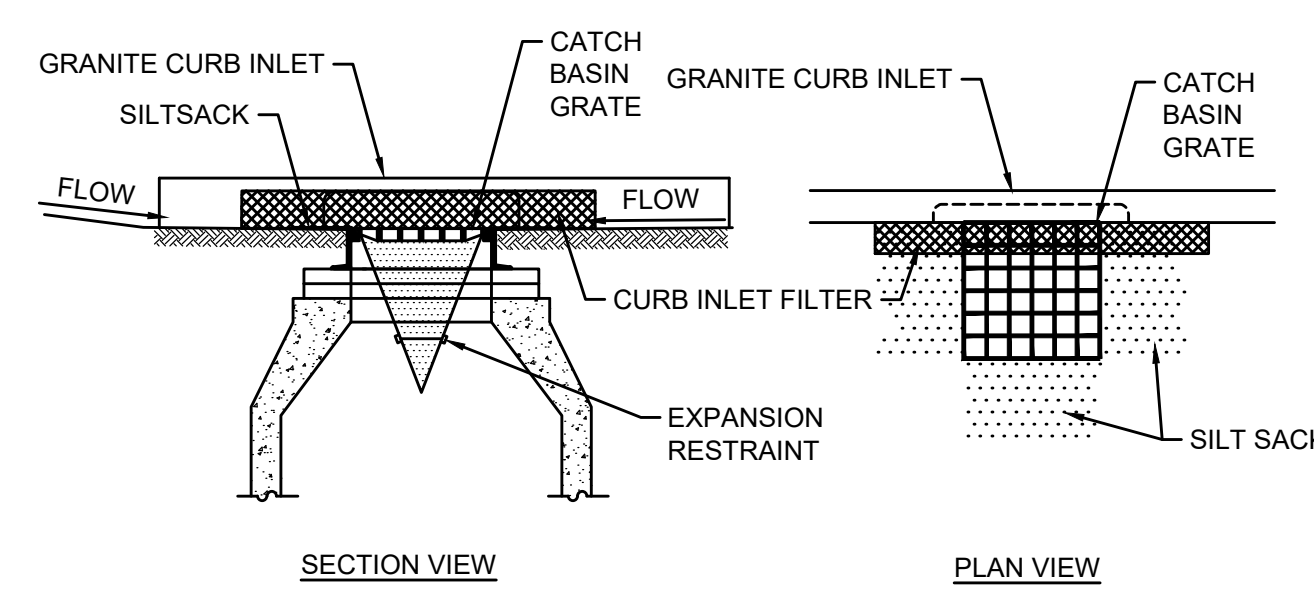


ADVANCE WARNING SIGN MAP
N.T.S.



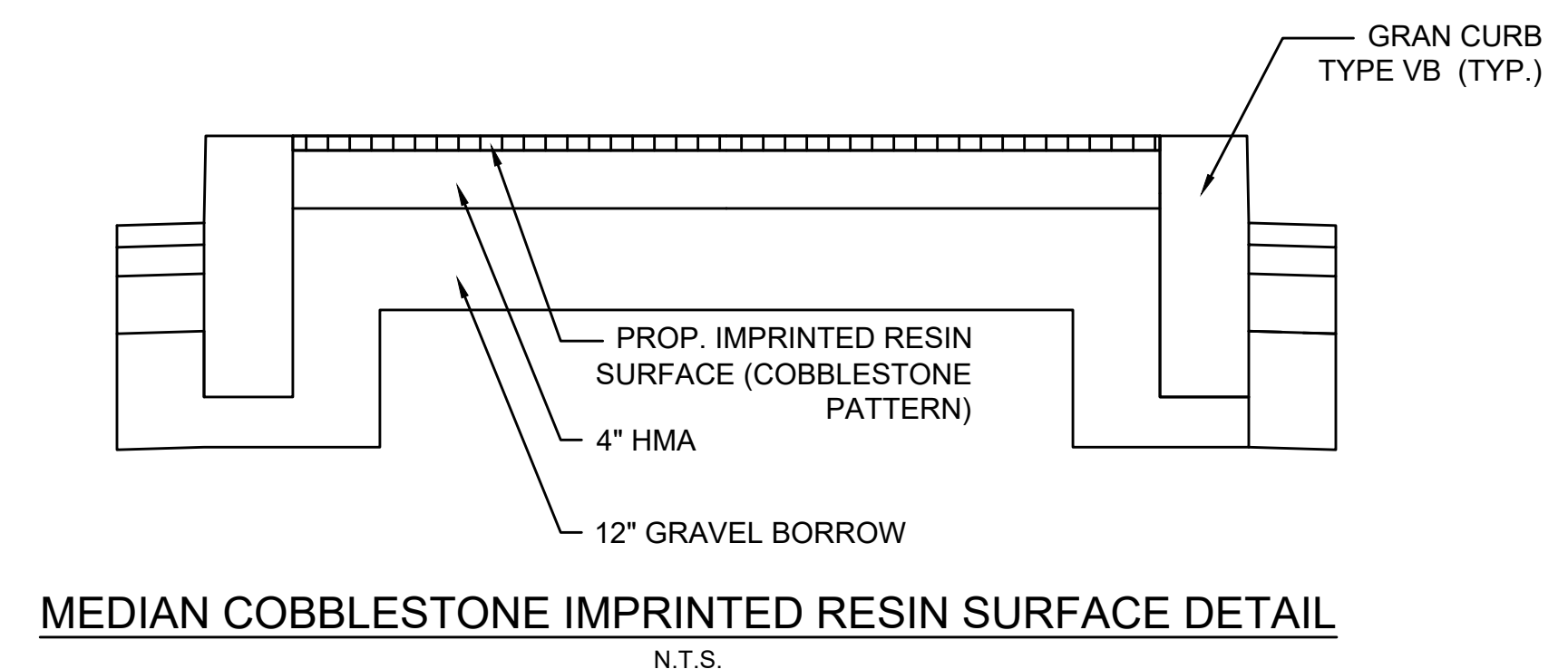
- NOTES:**
1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
 2. GRATE TO BE PLACED OVER SILT SACK.
 3. SILT SACK 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.

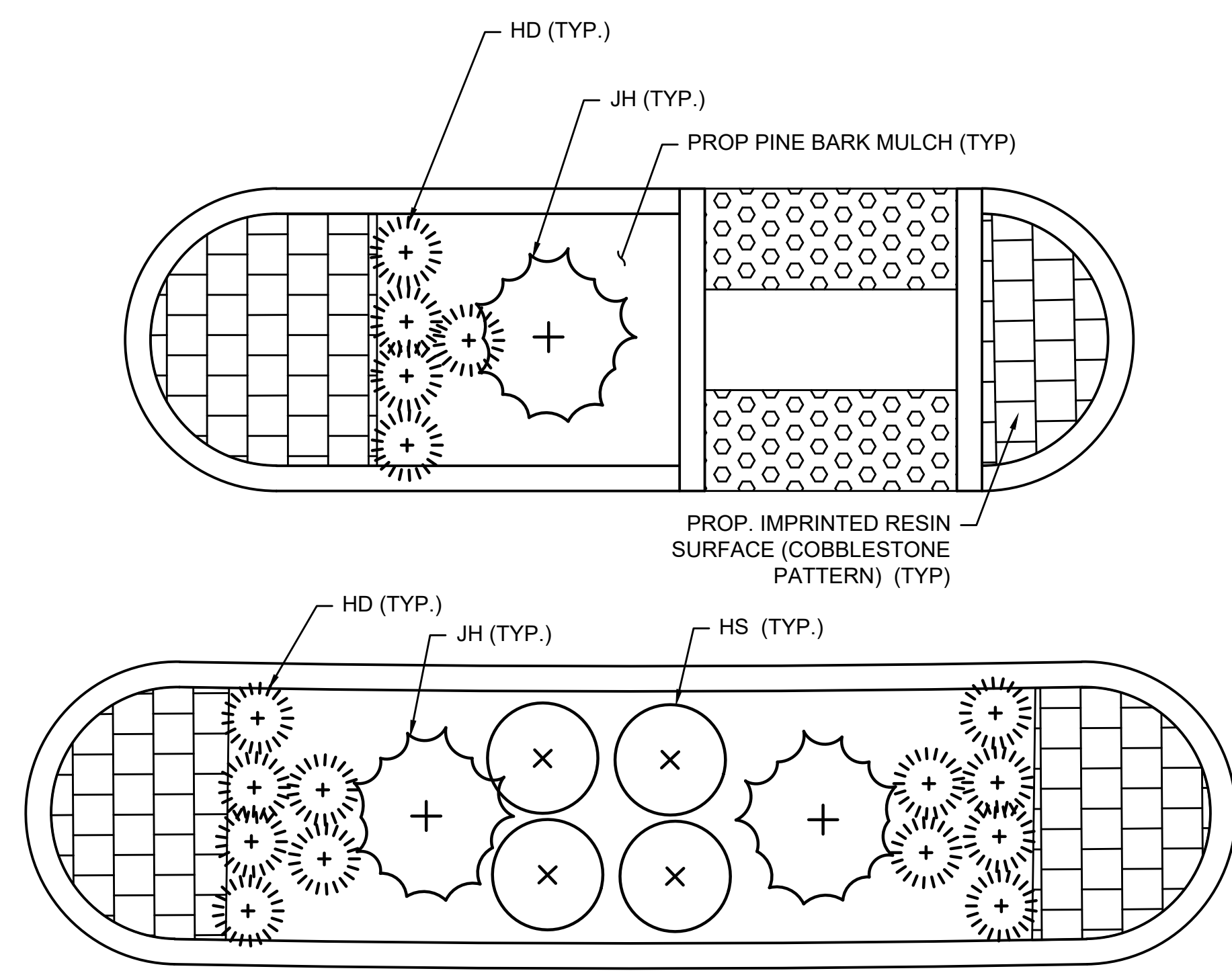


- NOTES:**
1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
 2. GRATE TO BE PLACED OVER SILT SACK.
 3. SILT SACK 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 WITH CURB INLET
N.T.S.



MEDIAN COBBLESTONE IMPRINTED RESIN SURFACE DETAIL
N.T.S.



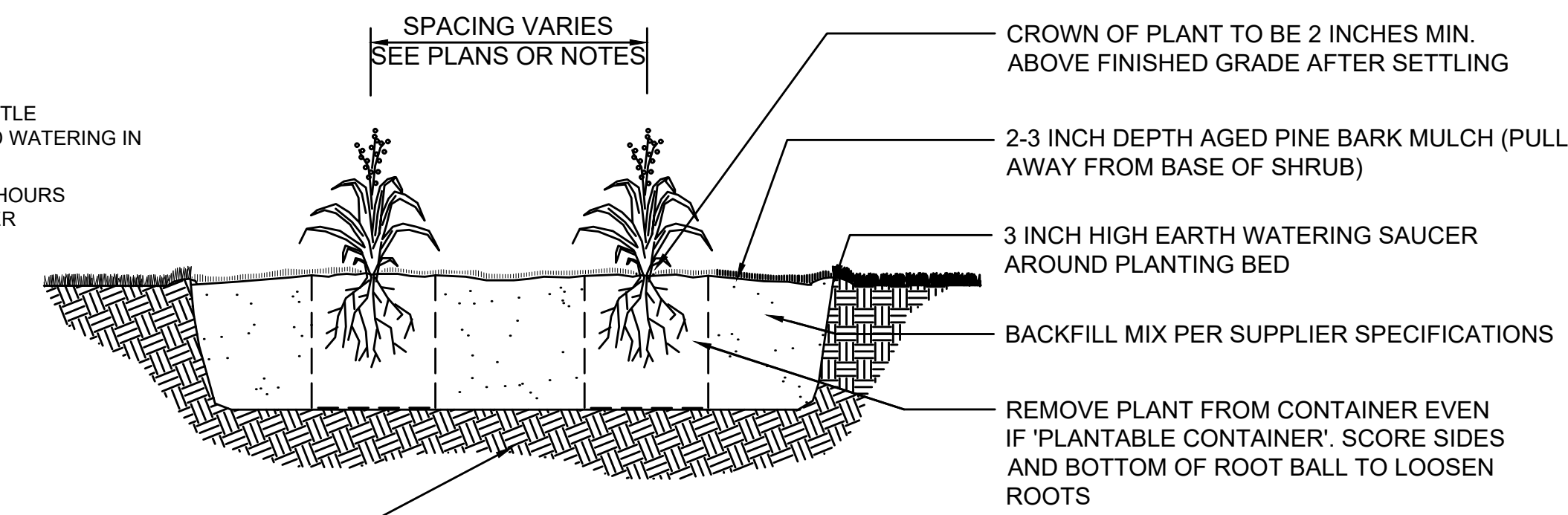
MEDIAN LANDSCAPE DETAILS
N.T.S.

PROPOSED PLANTING SCHEDULE						
SYMBOL	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
☼	HD	17	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	1 GAL	12" SPACING
⊙	JH	3	JUNIPERUS HORIZONTALIS 'WILTONII'	BLUE RUG JUNIPER	12"-15"	3' SPACING
⊙	HS	4	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	1 GAL	18" SPACING

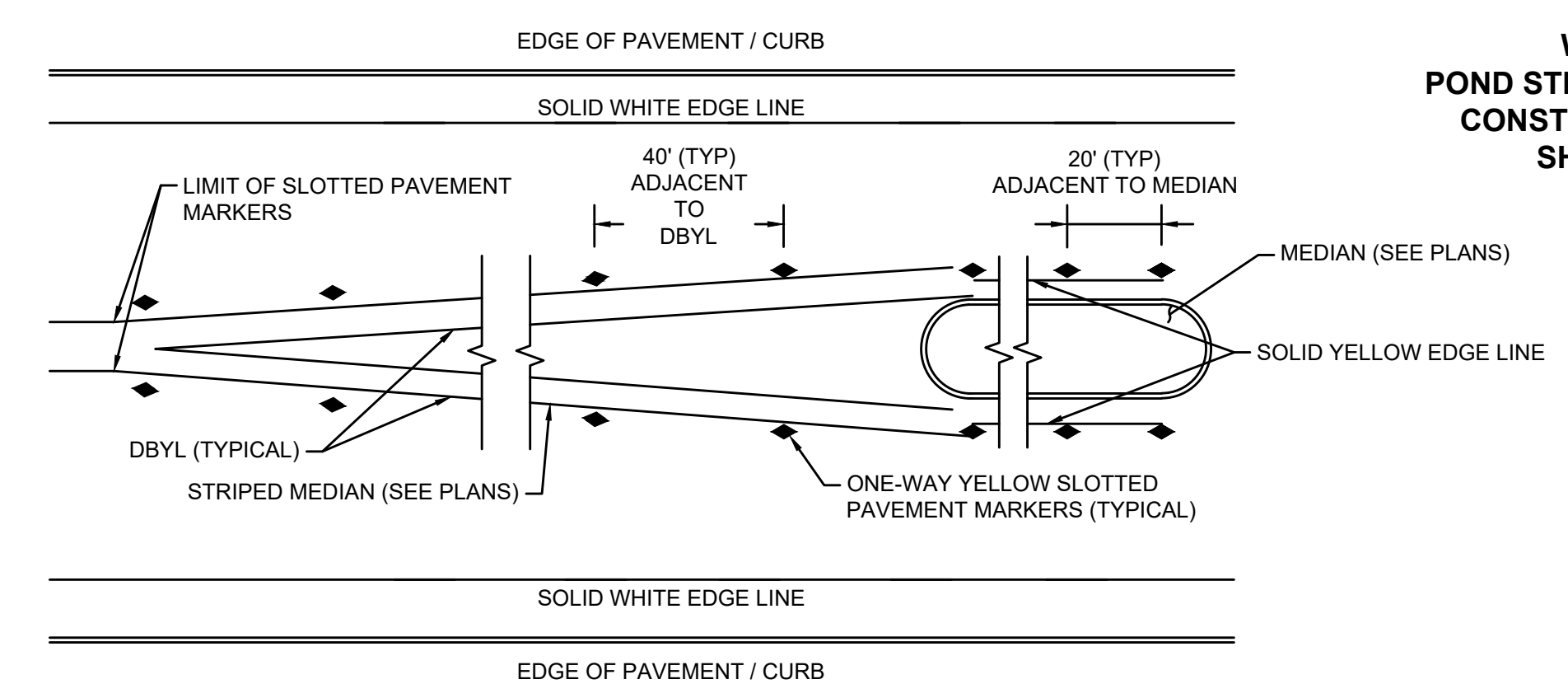
EXCAVATE TO REQUIRED DEPTH AND BACKFILL WITH PLANTING MIX

RAISE AND REPLANT AND PLANTS THAT SETTLE MORE THAN 3 INCHES AFTER PLANTING AND WATERING IN

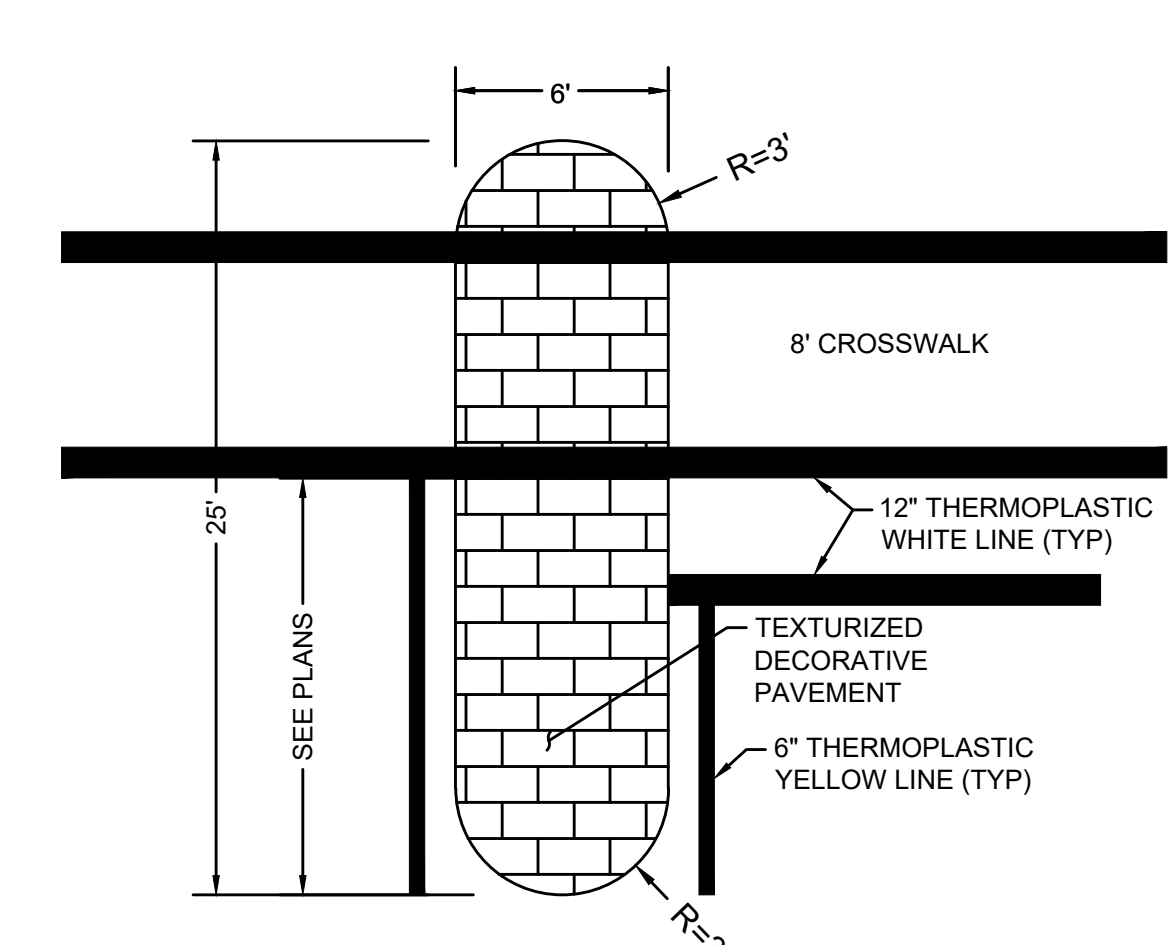
WATER BY FLOODING TWICE IN FIRST TWO HOURS AFTER PLANTING. WATER & MAINTAIN AS PER STANDARD SPECIFICATIONS



PERENNIAL PLANTING
N.T.S.

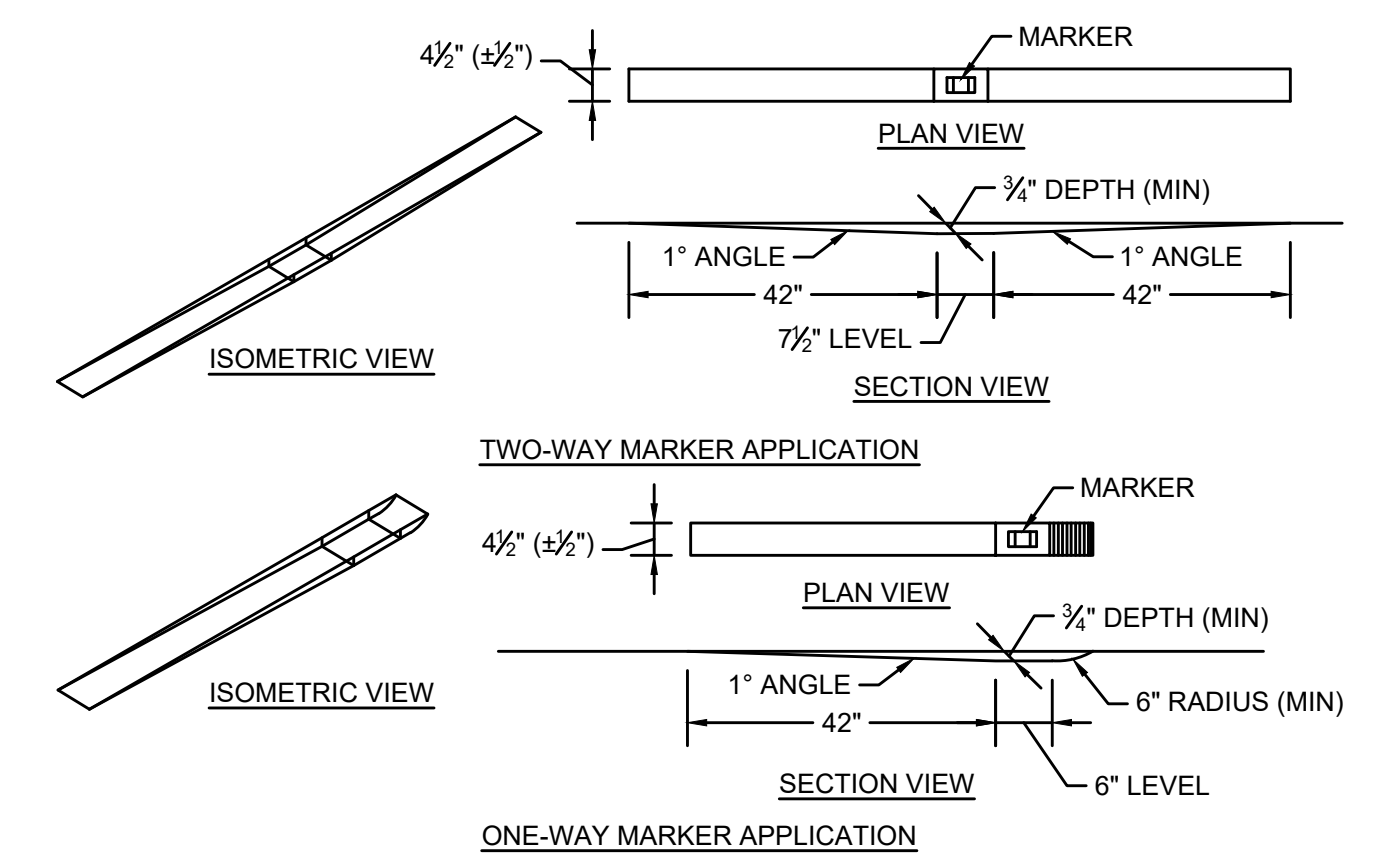


SLOTTED PAVEMENT MARKER - LAYOUT AT MEDIAN
N.T.S.



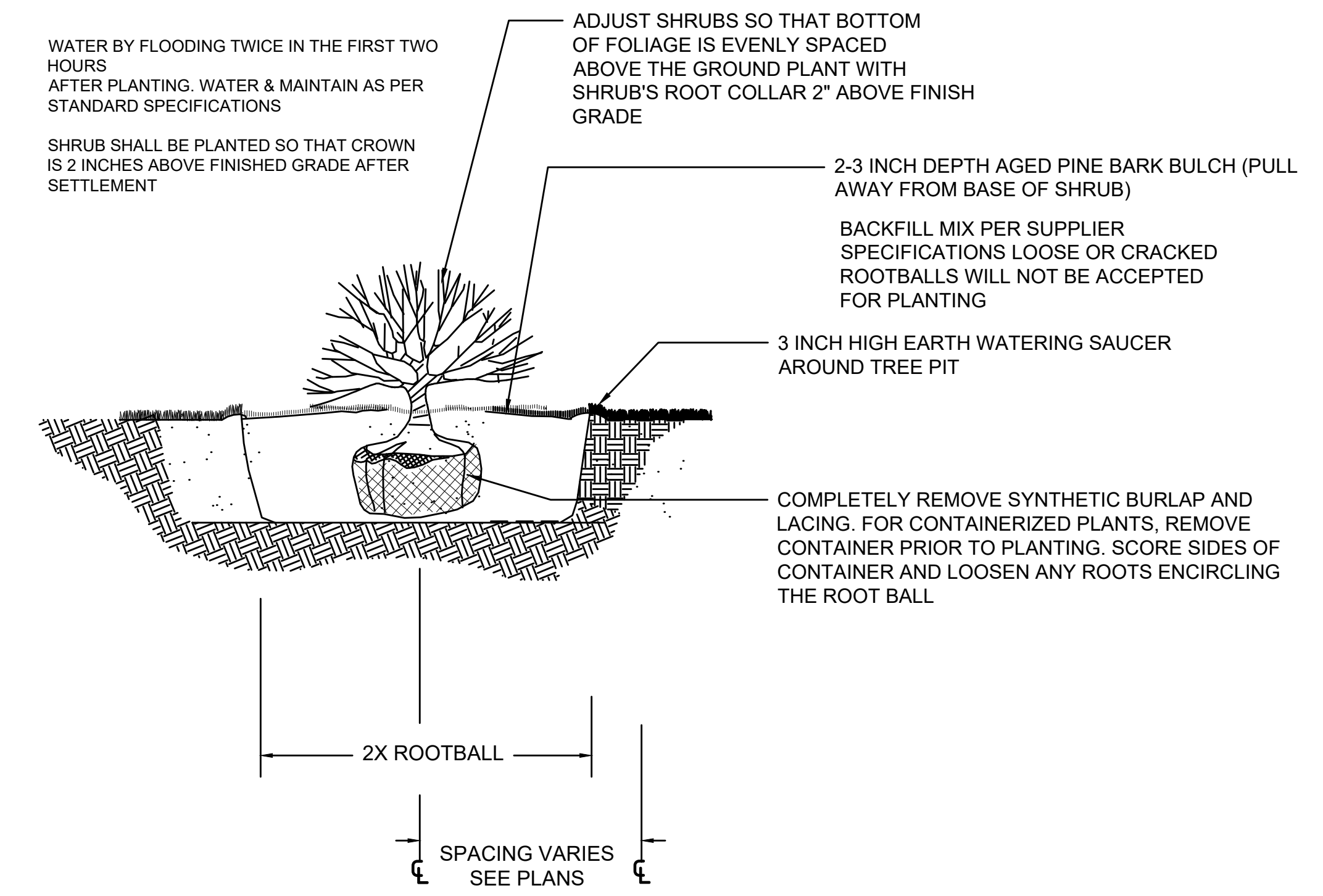
- NOTES:**
1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
 2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION AND/OR MILLING OF PAVEMENT.

STAMPED ASPHALT MEDIAN
N.T.S.



- NOTES:**
1. THE GROOVE AREA MUST BE DRY AND FREE OF DUST, DIRT, OR ANY MATERIAL WHICH WILL ADVERSELY AFFECT THE BOND OF THE ADHESIVE.
 2. INSTALL MARKERS WITH APPROVED ADHESIVE. ADHESIVE SHOULD NOT BE ALLOWED TO BUILD UP IN FRONT OF MARKER LENS.
 3. THE MARKER AND THE ADHESIVE PAD SHALL NOT EXCEED THE TOP OF THE PAVEMENT SURFACE. DEPTH = .75" MINIMUM.
 4. THIS DETAIL IS PROVIDED TO SHOW TYPICAL SPACING AND APPLICATION DETAILS. CONTRACTOR SHALL VERIFY LAYOUT WITH TOWN STAFF AND THE ENGINEER PRIOR TO INSTALLING SLOTTED PAVEMENT MARKERS.

SLOTTED PAVEMENT MARKER - RECESSED GROOVE
N.T.S.



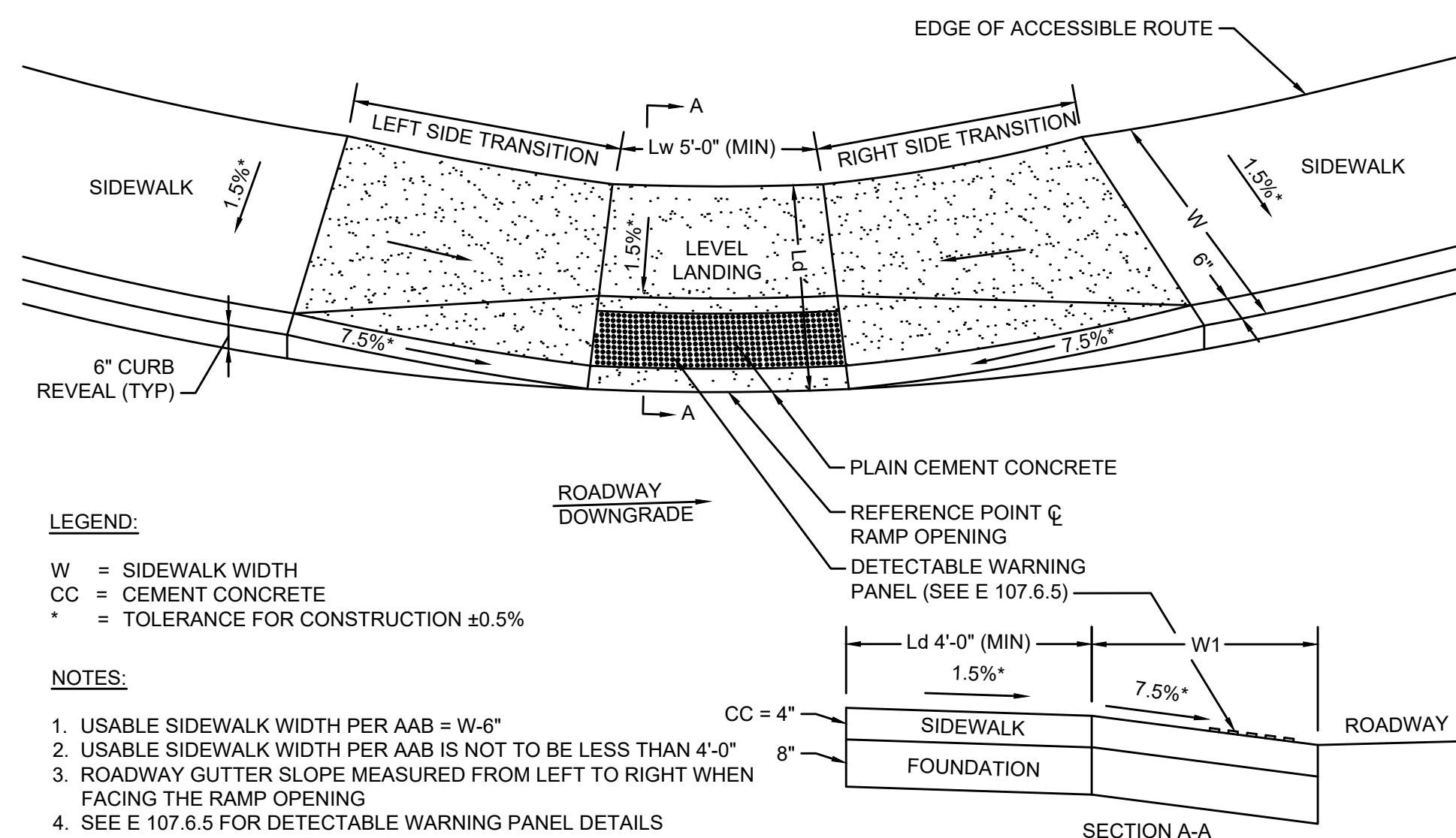
CONTAINERIZED SHRUB PLANTING
N.T.S.

WHEELCHAIR RAMP NOTES:

1. MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE DESIGNED TO 4.5% ±0.5% (7.5% ±0.5% FOR CURB RAMPS)
2. A MINIMUM OF 3'-0" CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
3. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
4. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY.
5. DETECTABLE WARNING PANELS ARE REQUIRED ON ALL OF THE PROPOSED WHEELCHAIR RAMPS AND PEDESTRIAN REFUGE ISLANDS ARE TO BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STANDARD E 107.6.5 (OCTOBER 2017). CONTRACTOR SHALL PROVIDE 6" BETWEEN DETECTABLE WARNING PANEL AND EDGE OF CONCRETE WHERE IT ABUTS LOAM & SEED.
6. WHEELCHAIR RAMP SLOPES AND CROSS SLOPES SHALL HAVE A CONSTRUCTION TOLERANCE OF ±0.5%.
7. DETECTABLE WARNING PANELS SHALL BE YELLOW IN COLOR AS APPROVED BY THE TOWN DPW.

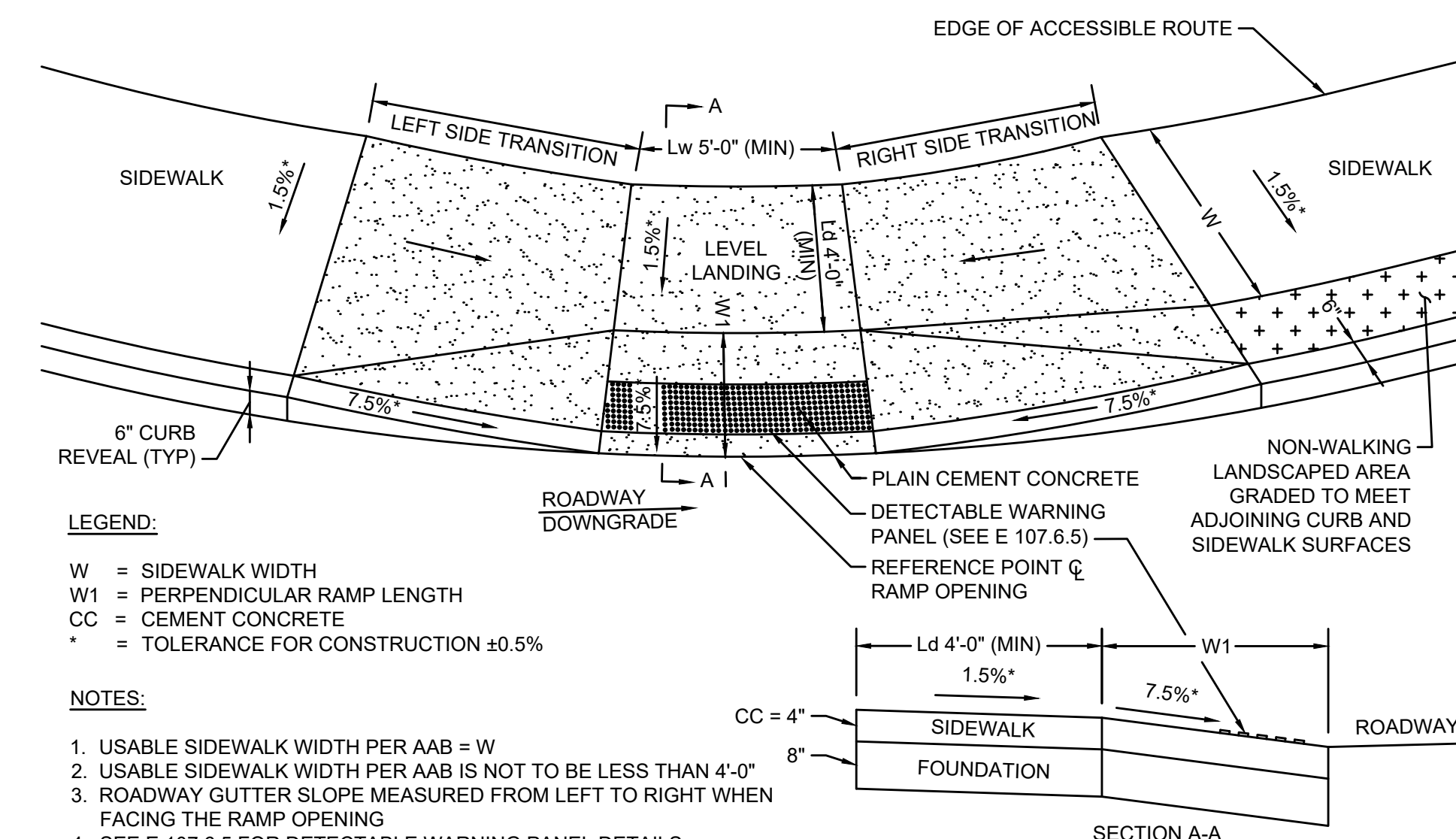
WHEELCHAIR RAMP NOTES

N.T.S.



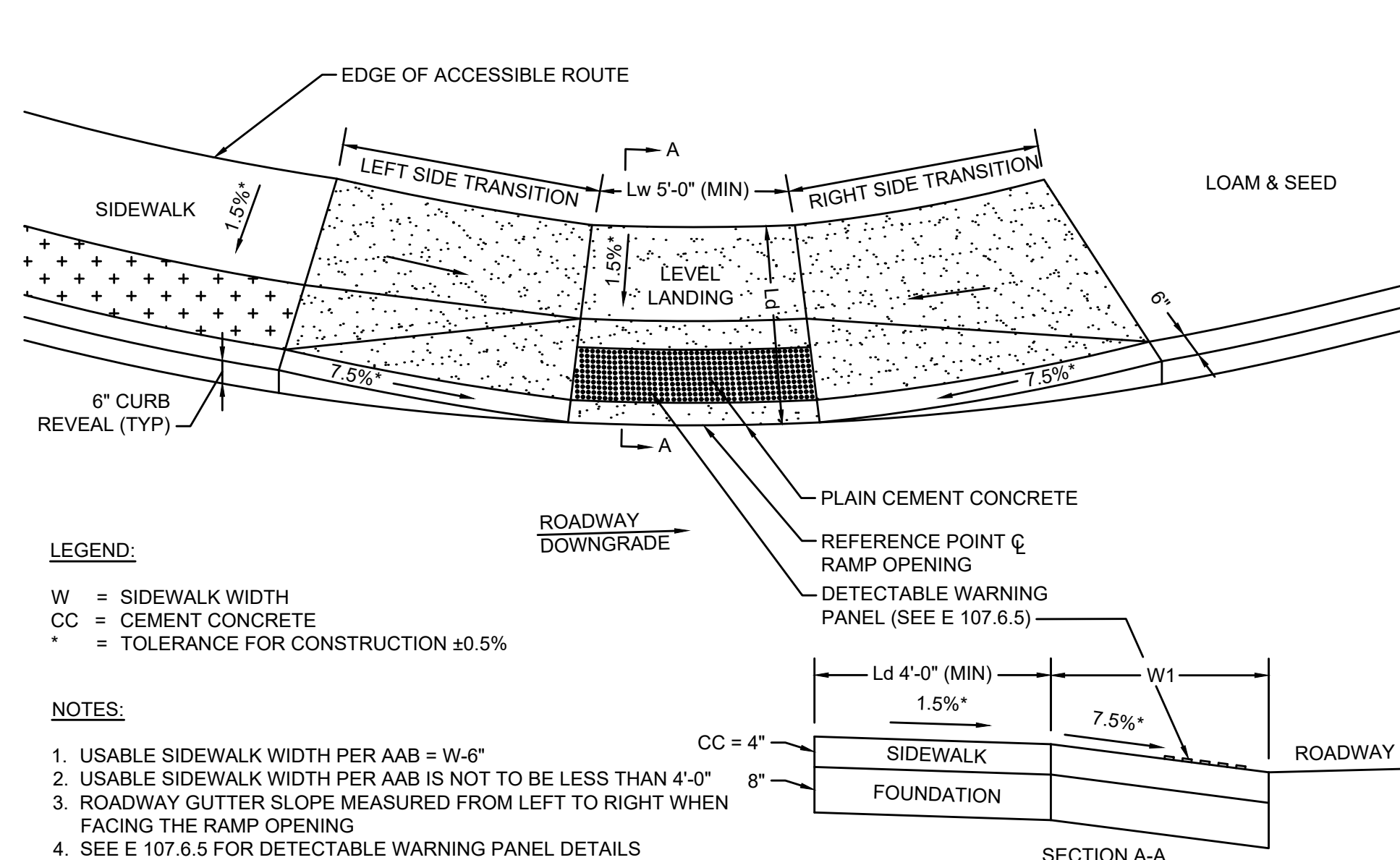
WHEELCHAIR RAMP TYPE A

N.T.S.



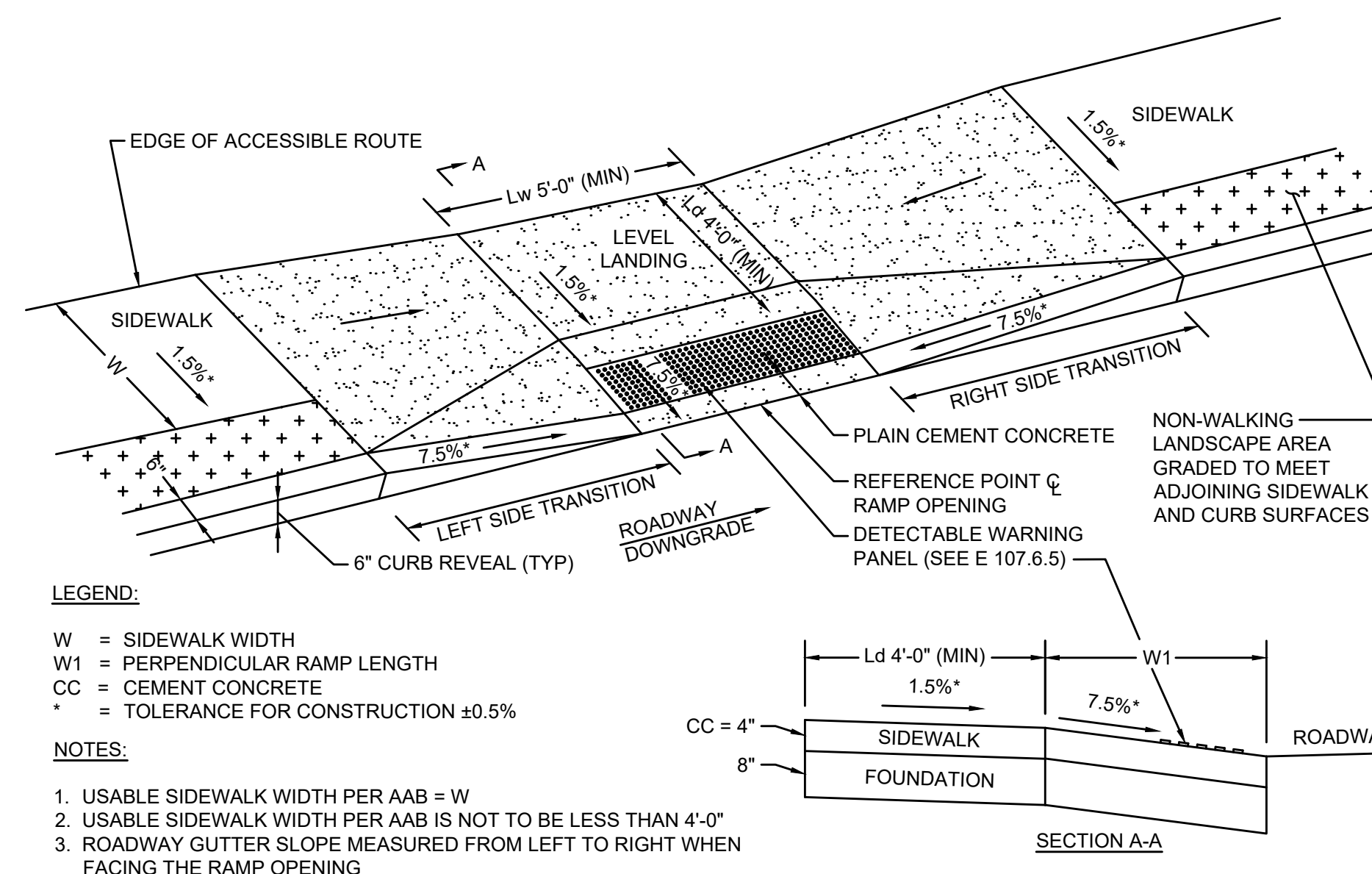
WHEELCHAIR RAMP TYPE B

N.T.S.



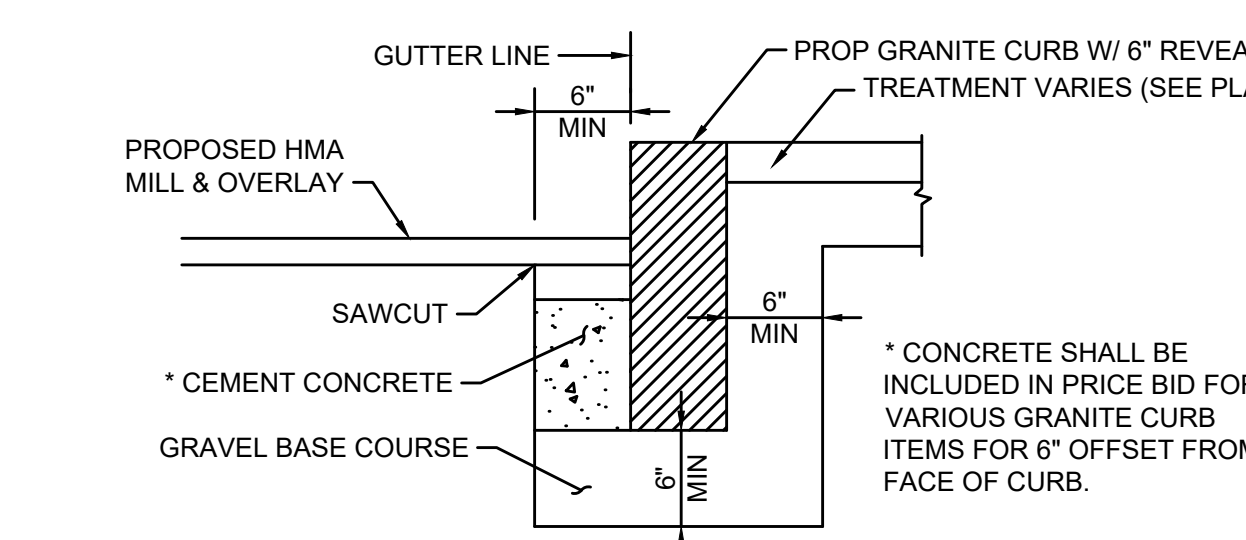
WHEELCHAIR RAMP TYPE C

N.T.S.



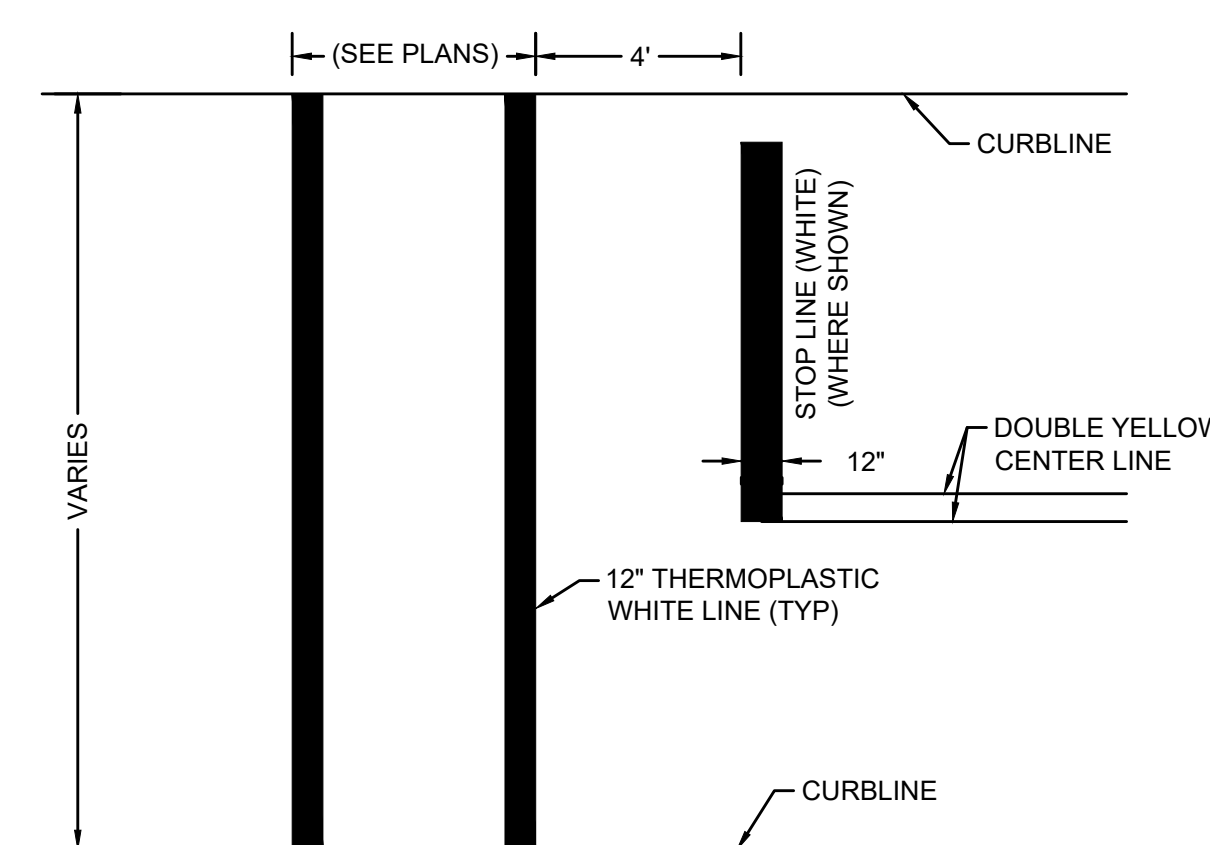
WHEELCHAIR RAMP TYPE D

N.T.S.



GRANITE CURB IN HMA MILL & OVERLAY

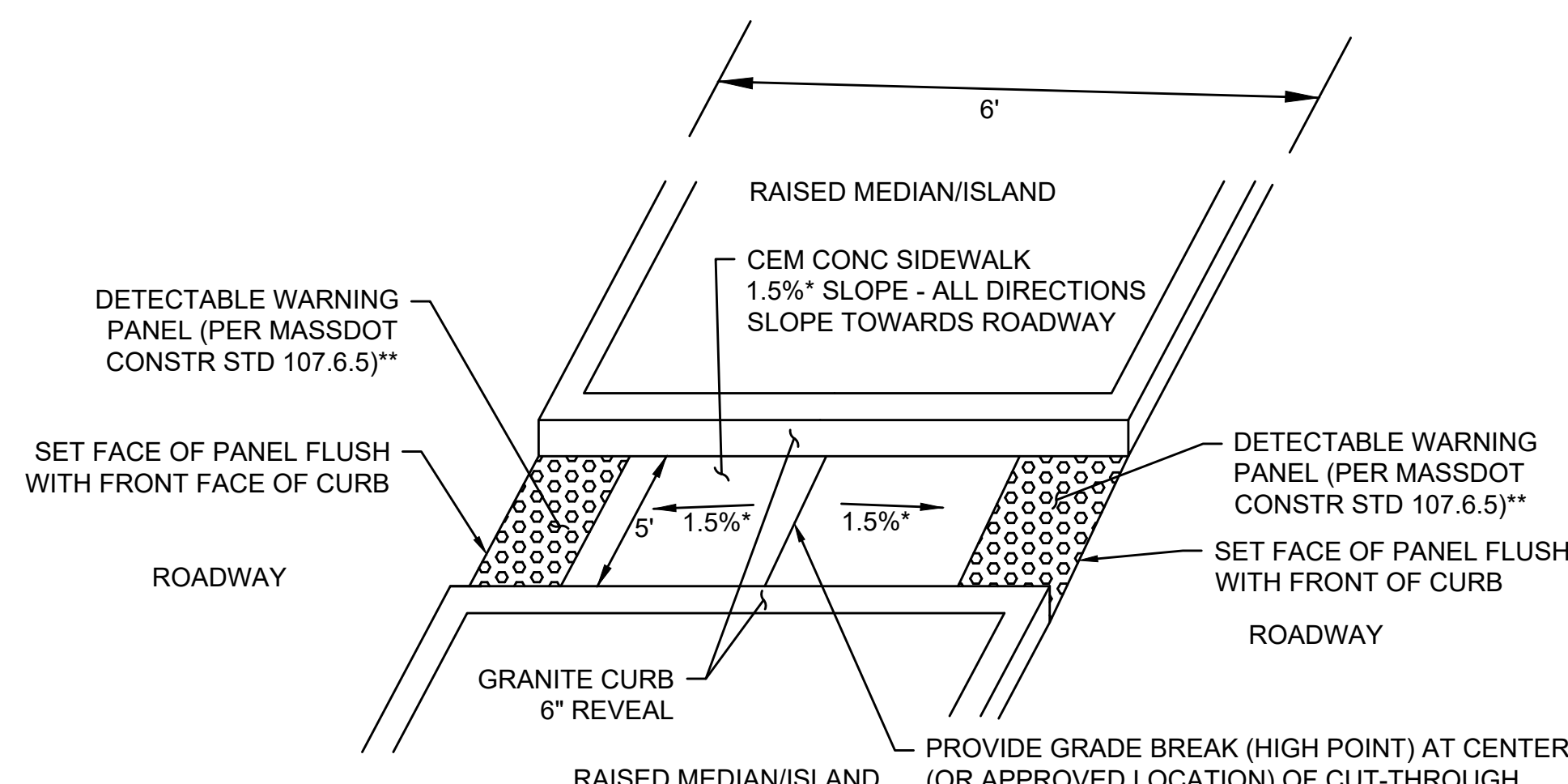
N.T.S.



CROSSWALK PAVEMENT MARKING

N.T.S.

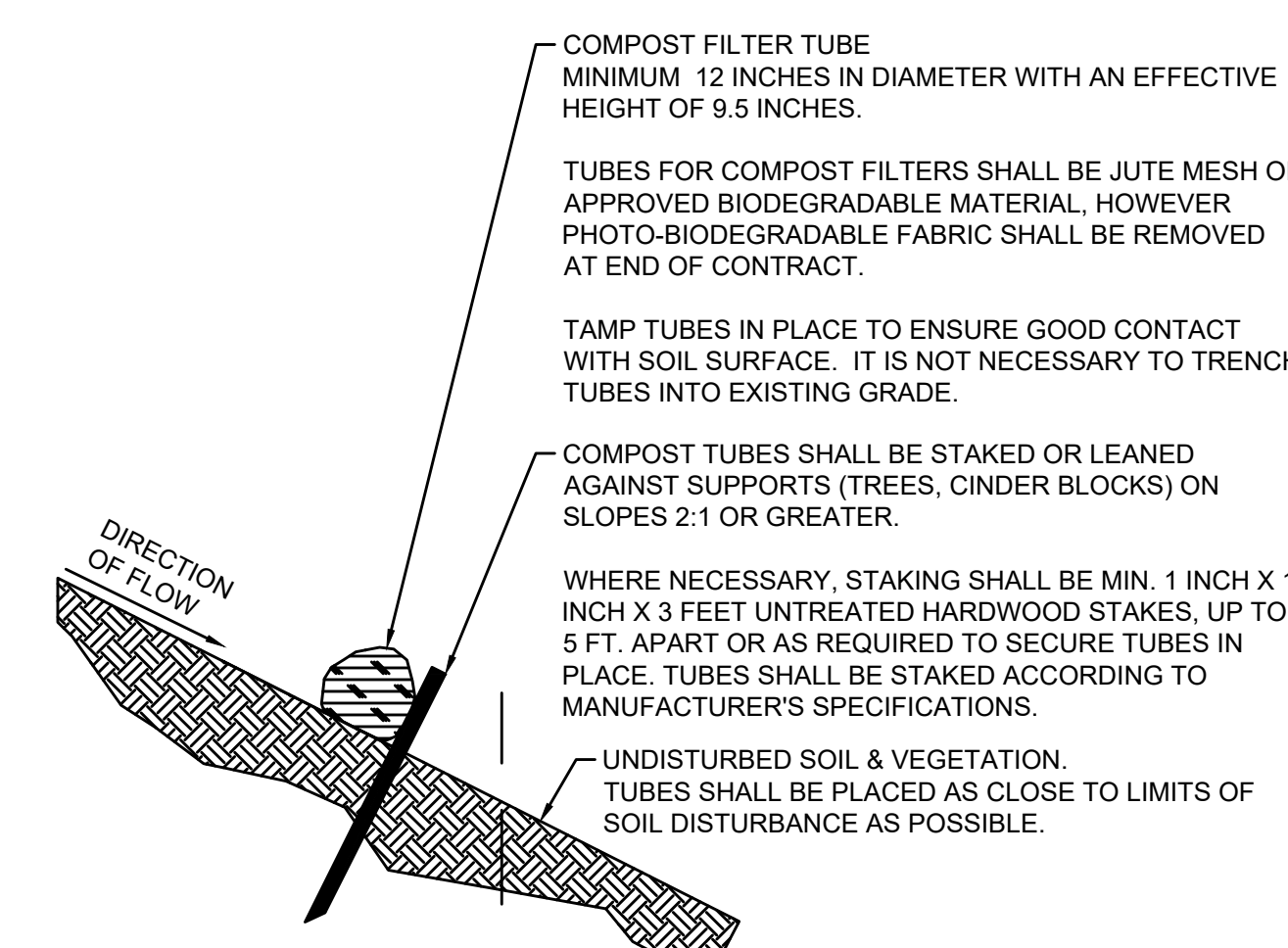
1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.



MEDIAN CUT-THROUGH DETAIL

N.T.S.

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 IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.



SEDIMENT CONTROL BARRIER

N.T.S.

