

2024 ROAD IMPROVEMENTS PROJECT

HAMILTON
BRIDGE STREET & MILES RIVER ROAD
TITLE SHEET & INDEX
SHEET 1 OF 14

PLAN OF

BRIDGE STREET & MILES RIVER ROAD

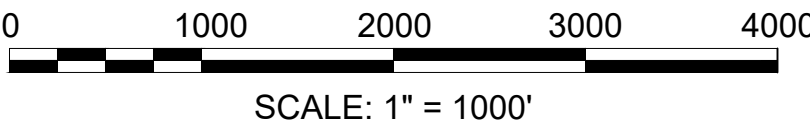
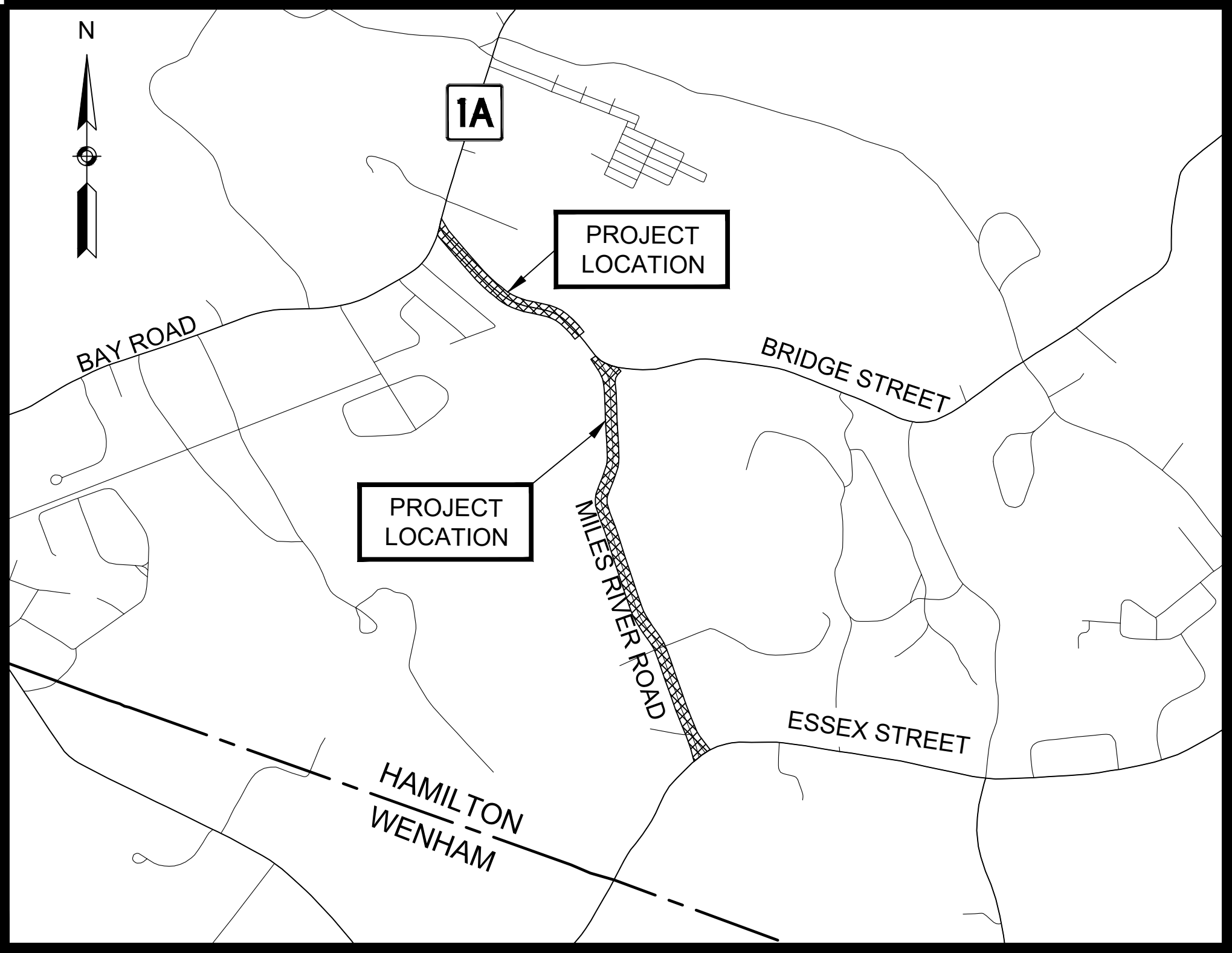
IN THE TOWN OF

HAMILTON
ESSEX COUNTY

THESE PLANS ARE SUPPLEMENTED BY THE MASSDOT OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE MASSDOT 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE MASSDOT WORKZONE SAFETY TEMPORARY TRAFFIC CONTROL, THE MASSDOT 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO THE PAVEMENT MARKING DETAILS ONLY), THE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE STANDARD MUNICIPAL TRAFFIC CODE, THE MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.


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LENGTH OF PROJECT ALONG BRIDGE STREET = 1385 FEET = 0.262 MILES
LENGTH OF PROJECT ALONG MILES RIVER ROAD = 3545 FEET = 0.671 MILES

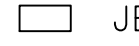
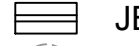
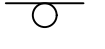

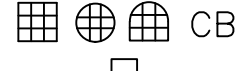

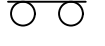
















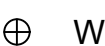
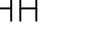



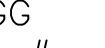

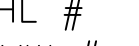

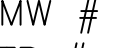

































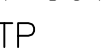
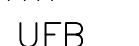

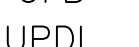
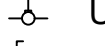

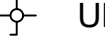
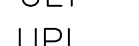
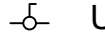









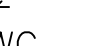

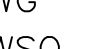
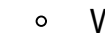


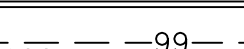
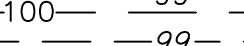
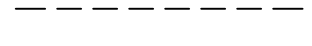
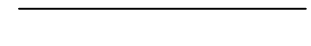


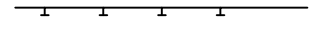
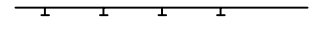
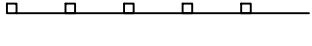
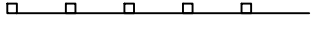
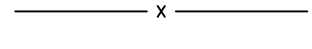
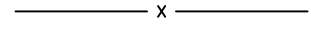
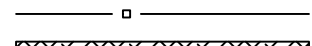
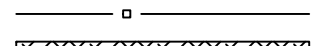
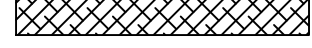

2/28/2025	NOI SUBMITTAL	-
DATE	DESCRIPTION	REV #



TEC, Inc.

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GENERAL SYMBOLS			TRAFFIC SYMBOLS			ABBREVIATIONS		
EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION	GENERAL	HAMILTON BRIDGE STREET & MILES RIVER ROAD LEGEND & ABBREVIATIONS SHEET 2 OF 14	
 JB	 JB	JERSEY BARRIER			TRAFFIC SIGN (1 POST)	AADT	ANNUAL AVERAGE DAILY TRAFFIC	ABBREVIATIONS (cont.)
 CB	 CB	CATCH BASIN			TRAFFIC SIGN (2 POST)	ABAN	ABANDON	
 CBCI	 CBCI	CATCH BASIN CURB INLET				ADJ	ADJUST	
 GI	 GI	GUTTER INLET				APPROX.	APPROXIMATE	
 FP	 FP	FLAG POLE				A.C.	ASBESTOS CEMENT	
 GP	 GP	GAS PUMP				ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE	
 MB	 MB	MAIL BOX				BIT.	BITUMINOUS	
		POST SQUARE				BC	BOTTOM OF CURB	
		POST CIRCULAR				BD.	BOUND	
 WELL	 WELL	WELL				BL	BASELINE	
 EHH	 EHH	ELECTRIC HANDHOLE				BLDG	BUILDING	
		FENCE GATE POST				BM	BENCHMARK	
 GG	 GG	GAS GATE				BO	BY OTHERS	
 BHL #	 BHL #	BORING HOLE				BOS	BOTTOM OF SLOPE	
 MW #	 MW #	MONITORING WELL				BR.	BRIDGE	
 TP #	 TP #	TEST PIT				BW	BOTTOM OF WALL	
		HYDRANT				CB	CATCH BASIN	
		LIGHT POLE				CBCI	CATCH BASIN WITH CURB INLET	
 CO.BD.		COUNTY BOUND				CC	CEMENT CONCRETE	
		GPS POINT				CCB	CAPE COD BERM	
		CABLE MANHOLE				CCM	CEMENT CONCRETE MASONRY	
		DRAINAGE MANHOLE				CEM	CEMENT	
		ELECTRIC MANHOLE				CI	CURB INLET	
		GAS MANHOLE				CIP	CAST IRON PIPE	
		MISC MANHOLE				CLF	CHAIN LINK FENCE	
		SEWER MANHOLE				CL	CENTERLINE	
		TELEPHONE MANHOLE				CMP	CORRUGATED METAL PIPE	
		WATER MANHOLE				CSP	CORRUGATED STEEL PIPE	
 MHB	 MHB	MASSACHUSETTS HIGHWAY BOUND				CO.	COUNTY	
 MON		MONUMENT				CONC	CONCRETE	
 SB		STONE BOUND				CONT	CONTINUOUS	
 TB		TOWN OR CITY BOUND				CONST	CONSTRUCTION	
		TRAVERSE OR TRIANGULATION STATION				CR GR	CROWN GRADE	
		TROLLEY POLE OR GUY POLE				DHV	DESIGN HOURLY VOLUME	
 HTP		TRANSMISSION POLE				DI	DROP INLET	
 UFB	 UFB	UTILITY POLE W/ FIREBOX				DIA	DIAMETER	
 UPDL	 UPDL	UTILITY POLE WITH DOUBLE LIGHT				DIP	DUCTILE IRON PIPE	
 ULT	 ULT	UTILITY POLE W / 1 LIGHT				DSCB	DEEP SUMP CATCH BASIN	
 UPL	 UPL	UTILITY POLE				DW	STEADY DON'T WALK - PORTLAND ORANGE	
		BUSH				DWY	DRIVEWAY	
•SIZE & TYPE		TREE				ELEV (or EL.)	ELEVATION	
		SHRUB / PLANTING				EMB	EMBANKMENT	
		STUMP				EOP	EDGE OF PAVEMENT	
		TREE PROTECTION				EXIST (or EX)	EXISTING	
		SWAMP / MARSH				EXC	EXCAVATION	
 WG	 WG	WATER GATE				F&C	FRAME AND COVER	
 WSO	 WSO	WATER SHUTOFF/CURB STOP				F&G	FRAME AND GRATE	
 PM	 PM	PARKING METER				FDN.	FOUNDATION	
		OVERHEAD CABLE/WIRE				FDP	FULL DEPTH PAVEMENT	
		CURBING				FG	FINISHED GRADE	
		CONTOURS (ON-THE-GROUND SURVEY DATA)				FES	FLARED END SECTION	
		CONTOURS (PHOTOGRAMMETRIC DATA)				FLDSTN	FIELDSTONE	
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)				GAR	GARAGE	
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)				GC	GRANITE CURB	
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)				GCC	GRANITE CURB CORNER	
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)				GD	GROUND	
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)				GG	GAS GATE	
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)				GI	GUTTER INLET	
		BALANCED STONE WALL				GIP	GALVANIZED IRON PIPE	
		GUARD RAIL - STEEL POSTS				GRAN	GRANITE	
		GUARD RAIL - WOOD POSTS				GRAV	GRAVEL	
		CHAIN LINK OR METAL FENCE				GRD	GUARD	
		WOOD FENCE				HDW	HEADWALL	
		SEDIMENT CONTROL BARRIER				HMA	HOT MIX ASPHALT	
		TREE LINE				HOR	HORIZONTAL	
		EDGE OF PAVEMENT				HYD	HYDRANT	
		SAWCUT LINE				IH	IRRIGATION HEAD	
		TOP OR BOTTOM OF SLOPE				INV	INVERT	
		DRAINAGE SWALE				JCT	JUNCTION	
		LIMIT OF EDGE OF MICROMILLING AND OVERLAY				L	LENGTH OF CURVE	
		BANK OF RIVER OR STREAM				LB	LEACH BASIN	
		BORDER OF WETLAND				LOG	LIMIT OF GRADING	
		100 FT WETLAND BUFFER				LP	LIGHT POLE OR LOW POINT	
		200 FT RIVERFRONT BUFFER				L&S	LOAM & SEED	
		STATE HIGHWAY LAYOUT				LT	LEFT	
		TOWN OR CITY LAYOUT				MAX	MAXIMUM	
		COUNTY LAYOUT				MB	MAILBOX	
		RAILROAD SIDELINE				MH	MANHOLE	
		TOWN OR CITY BOUNDARY LINE				MHB	MASSACHUSETTS HIGHWAY BOUND	
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE				MIN	MINIMUM	
		EASEMENT				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	

CONSTRUCTION NOTES:

- EXISTING CONDITIONS INFORMATION COMPILED FROM ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY HANCOCK ASSOCIATES IN MARCH THROUGH MAY OF 2021.

HORIZONTAL DATUM = NAD83, MAINLAND ZONE (MASSACHUSETTS STATE PLANE COORDINATES)
VERTICAL DATUM = NAVD88

SAID DATUMS WERE ESTABLISHED VIA GPS OBSERVATIONS UTILIZING REALIZATION NAD83 (2011) AND GEOID 12A
- 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 & SEWER 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.
- 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.
- DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED PEDESTRIAN CURB RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARDS.
- 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 CONTRACTOR'S EXPENSE.
- ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.
- AN UNOBSTRUCTED PEDESTRIAN PATH OF TRAVEL WITH A MINIMUM WIDTH OF 4'-0" (EXCLUDING THE WIDTH OF THE CURB) SHALL BE MAINTAINED PAST ALL VERTICAL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ETC.)
- SEDIMENT CONTROL BARRIERS ARE TO BE USED AS DIRECTED BY THE TOWN OF HAMILTON AND THE TOWN ENGINEER ONLY.

PAVEMENT NOTES

PROPOSED MILL & HOT MIX ASPHALT (HMA) OVERLAY

SURFACE: 2" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER
ASPHALT EMULSION TACK COAT OVER
2" PAVEMENT FINE MILLING

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 2" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER
ASPHALT EMULSION TACK COAT OVER
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
ASPHALT EMULSION TACK COAT OVER

BASE: 3.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" GRAVEL BORROW , TYPE b

PROPOSED PERMANENT PAVEMENT TRENCH PATCH

SURFACE: VARIABLE DEPTH HMA FOR PATCHING TO MATCH EXISTING PAVEMENT PER SECTION 450.53
(COMPACTED IN 2" (MAX) LIFTS TO MATCH EXIST PAVEMENT THICKNESS)
BASE: 8" GRAVEL BORROW, TYPE b OVER

SUBBASE: EXISTING MATERIAL SUITABLE FOR RE-USE (SEE VARIOUS TRENCH DETAILS)

PROPOSED TEMPORARY PAVEMENT TRENCH PATCH

SURFACE: 2½" TEMPORARY ASPHALT PATCHING

BASE: EXISTING MATERIAL SUITABLE FOR RE-USE (SEE VARIOUS TRENCH DETAILS)

PROPOSED HMA SIDEWALK

SURFACE: 1¼" SUPERPAVE SURFACE COURSE 9.5 (SSC -9.5) OVER
1¾" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC - 12.5) OVER

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

PROPOSED DRIVEWAY APRON REPAIR

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

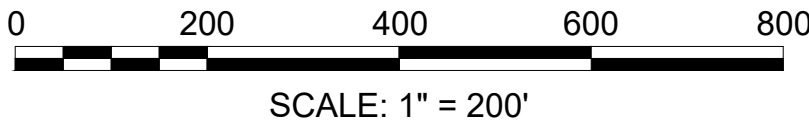
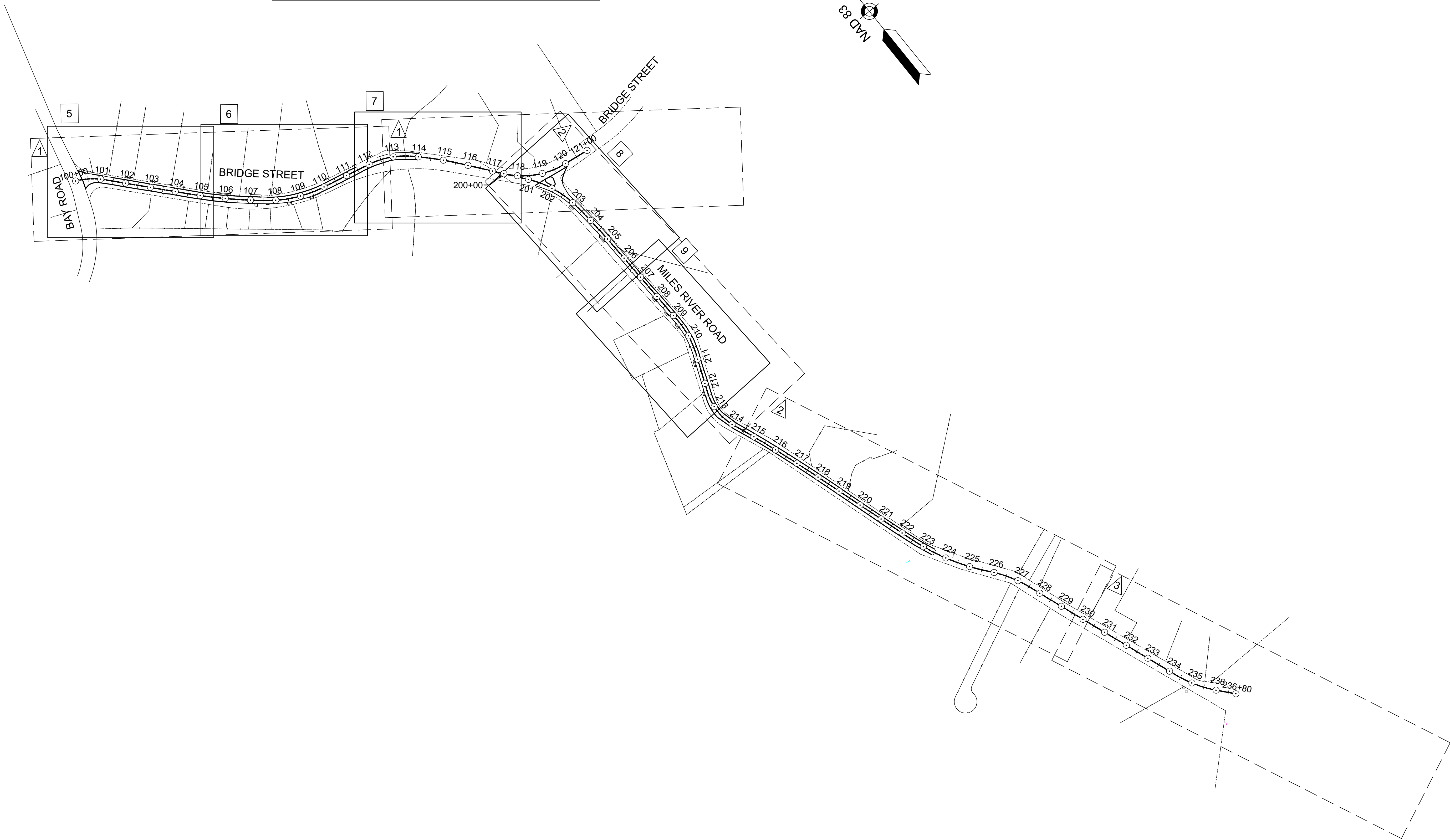
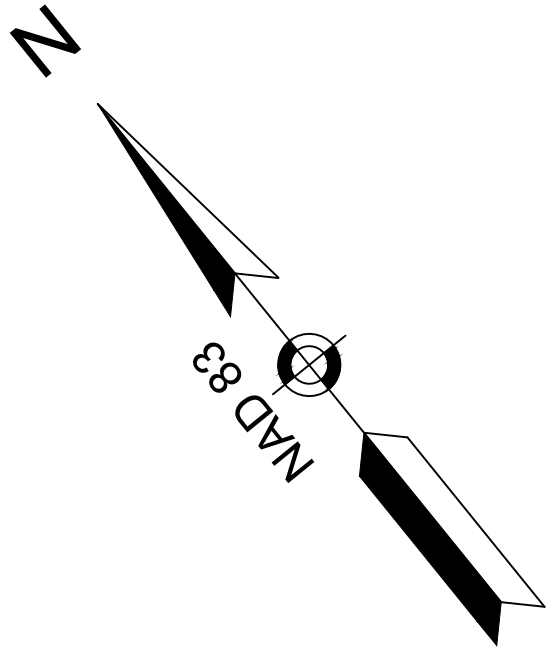
BASE: 8" SUITABLE EXISTING GRAVEL;
ADD GRAVEL BORROW, TYPE b AS REQUIRED

GENERAL PAVEMENT NOTES:

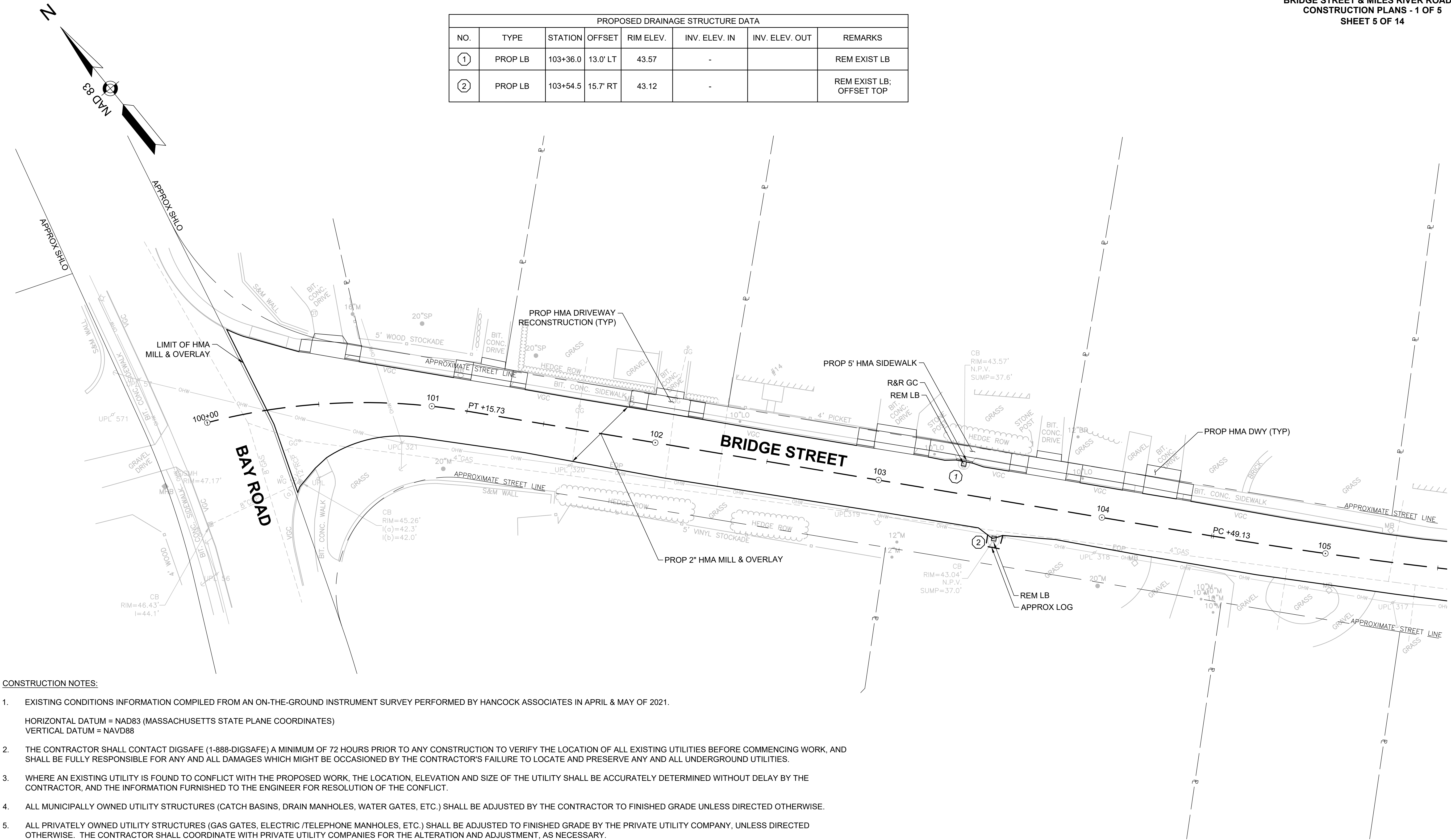
- ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA JOINT SEALANT SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED IN ACCORDANCE WITH SUBSECTION 450.43. ALL SURFACES SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
- ALL HMA SHALL BE IN ACCORDANCE WITH SECTION 460.
- ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
- HMA FOR WALKS SHALL BE IN ACCORDANCE WITH SECTION 702.
- ALL GRAVEL BORROW MEETING SPECIFICATION SHALL BE RETAINED IN PLACE, COMPACTED, AND LEVELED AS REQUIRED.

LEGEND

- CONSTRUCTION PLANS
- PAVING OVERVIEW PLANS (SEE PROJECT MANUAL)

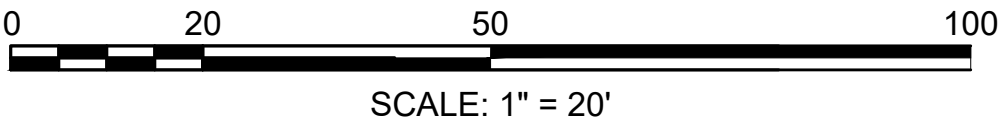


PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
①	PROP LB	103+36.0	13.0' LT	43.57	-		REM EXIST LB
②	PROP LB	103+54.5	15.7' RT	43.12	-		REM EXIST LB; OFFSET TOP



CONSTRUCTION NOTES:

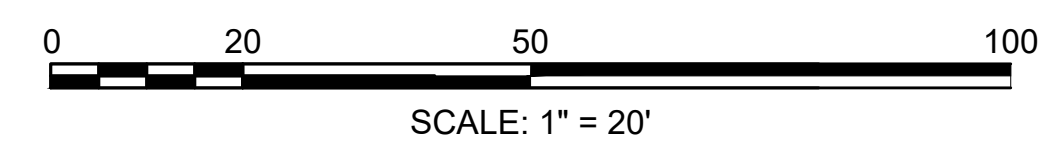
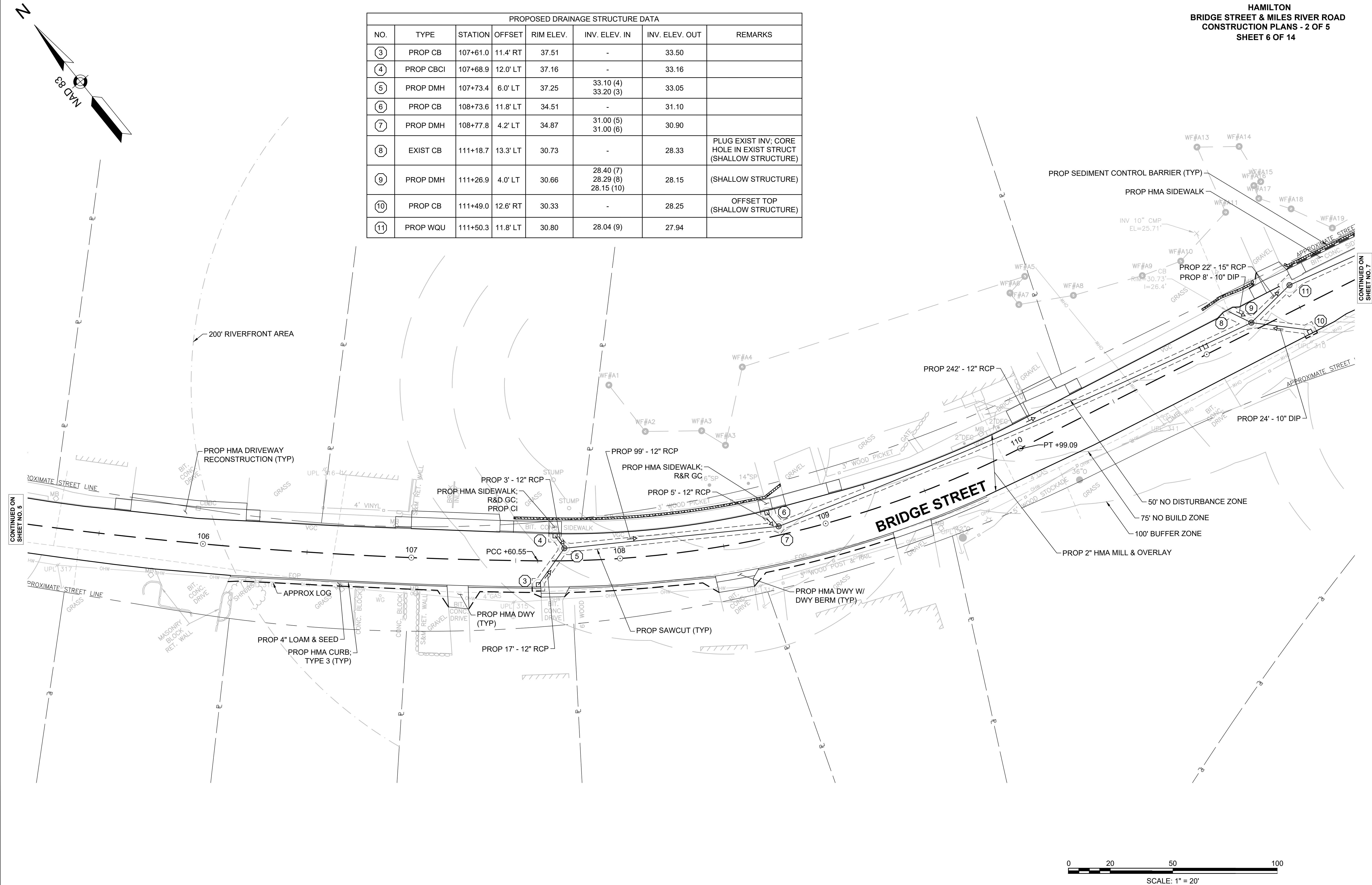
- EXISTING CONDITIONS INFORMATION COMPILED FROM AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY HANCOCK ASSOCIATES IN APRIL & MAY OF 2021.
HORIZONTAL DATUM = NAD83 (MASSACHUSETTS STATE PLANE COORDINATES)
VERTICAL DATUM = NAVD88
- THE CONTRACTOR SHALL CONTACT DIGSAFE (1-888-DIGSAFE) A MINIMUM OF 72 HOURS 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.
- 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.
- 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.
- 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.



CONTINUED ON
SHEET NO. 6

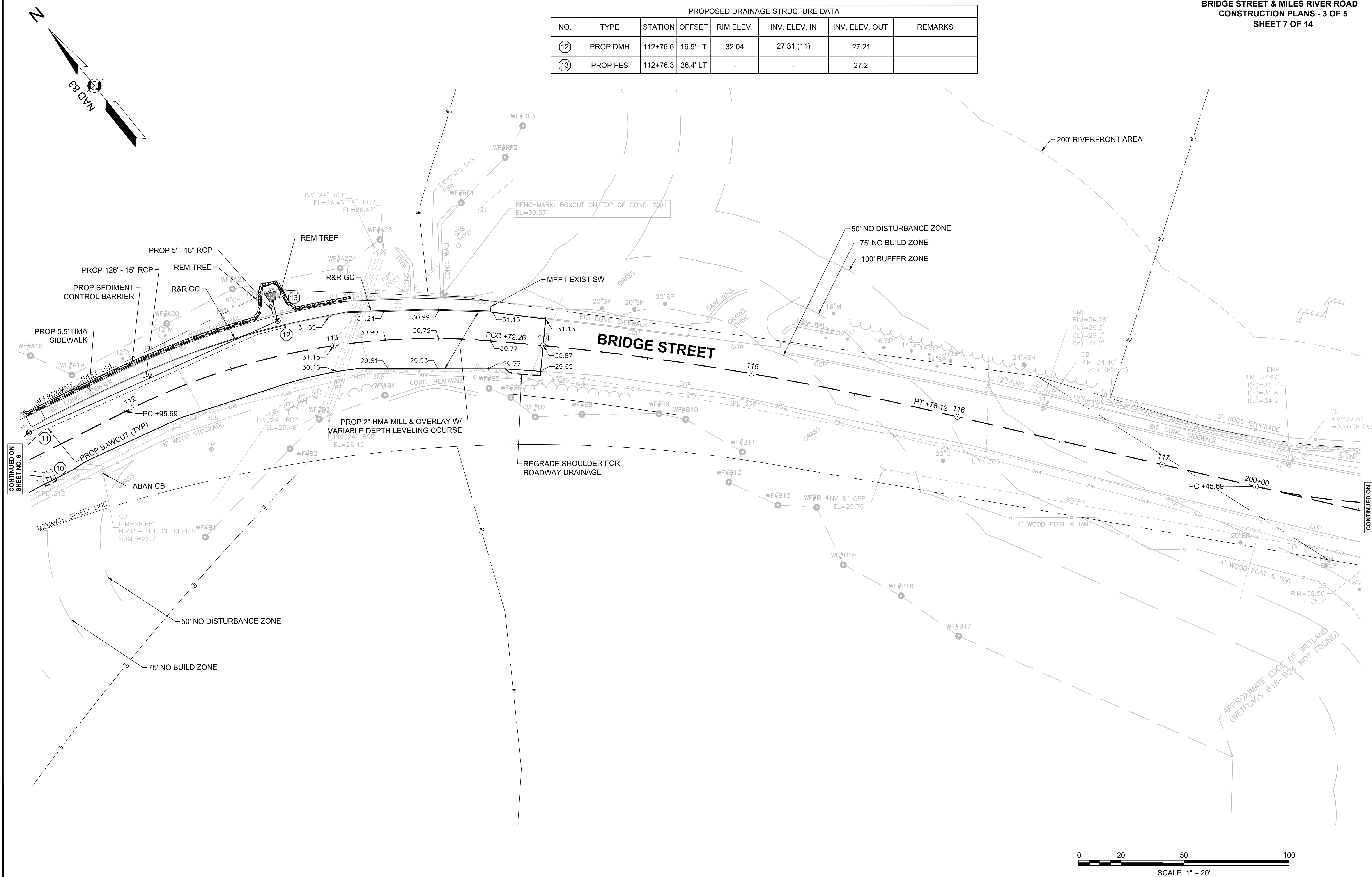
HAMILTON
BRIDGE STREET & MILES RIVER ROAD
CONSTRUCTION PLANS - 2 OF 5
SHEET 6 OF 14

PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
3	PROP CB	107+61.0	11.4' RT	37.51	-	33.50	
4	PROP CBCI	107+68.9	12.0' LT	37.16	-	33.16	
5	PROP DMH	107+73.4	6.0' LT	37.25	33.10 (4) 33.20 (3)	33.05	
6	PROP CB	108+73.6	11.8' LT	34.51	-	31.10	
7	PROP DMH	108+77.8	4.2' LT	34.87	31.00 (5) 31.00 (6)	30.90	
8	EXIST CB	111+18.7	13.3' LT	30.73	-	28.33	PLUG EXIST INV; CORE HOLE IN EXIST STRUCT (SHALLOW STRUCTURE)
9	PROP DMH	111+26.9	4.0' LT	30.66	28.40 (7) 28.29 (8) 28.15 (10)	28.15	(SHALLOW STRUCTURE)
10	PROP CB	111+49.0	12.6' RT	30.33	-	28.25	OFFSET TOP (SHALLOW STRUCTURE)
11	PROP WQU	111+50.3	11.8' LT	30.80	28.04 (9)	27.94	

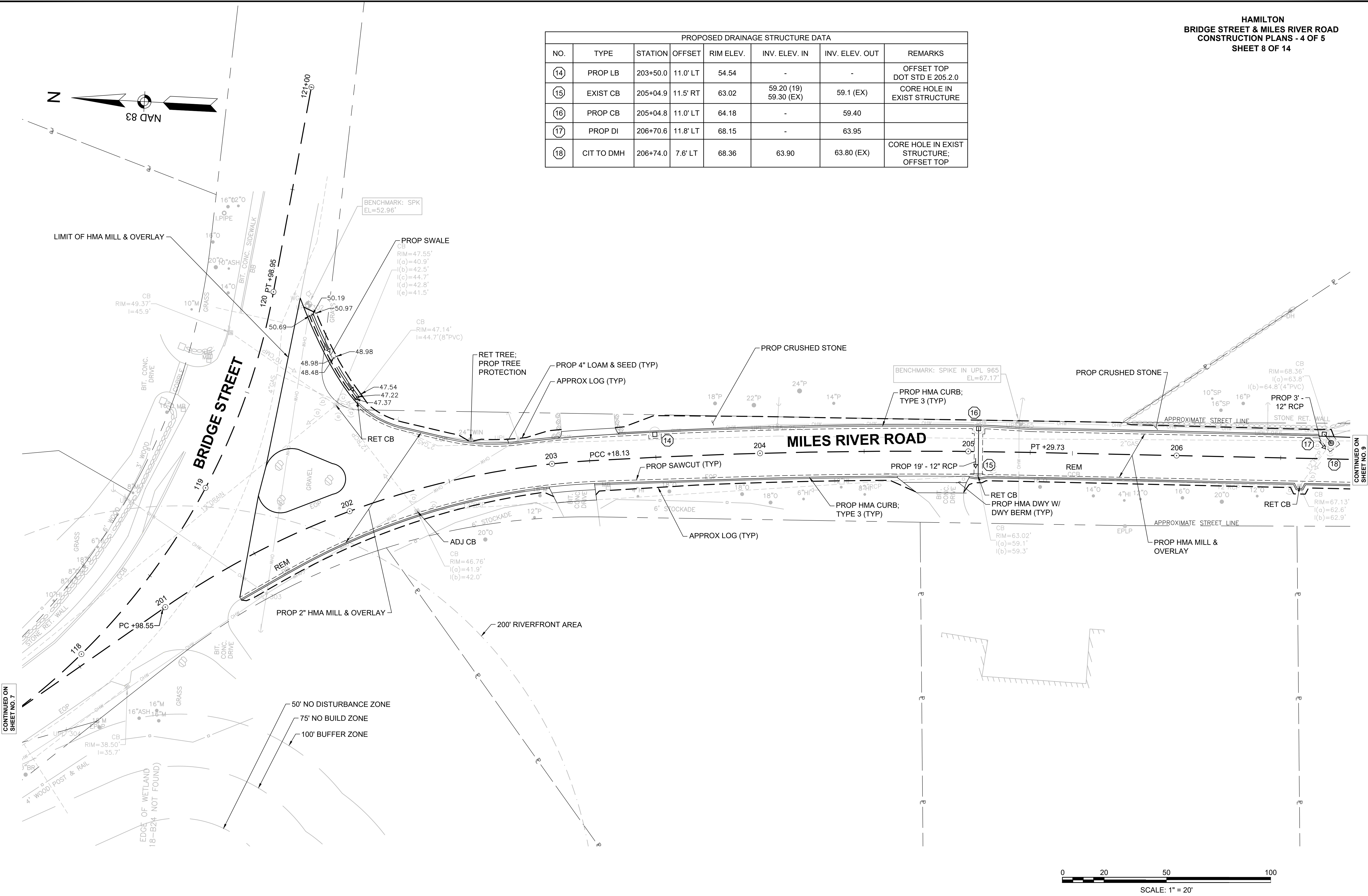


HD4(CONS)RIBITION PI ANS) DWG Plotted on 28-Feb-2025 11:05 AM

PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
⑫	PROP DMH	112+76.6	16.5' LT	32.04	27.31 (11)	27.21	
⑬	PROP FES	112+76.3	26.4' LT	-	-	27.2	



PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
14	PROP LB	203+50.0	11.0' LT	54.54	-	-	OFFSET TOP DOT STD E 205.2.0
15	EXIST CB	205+04.9	11.5' RT	63.02	59.20 (19) 59.30 (EX)	59.1 (EX)	CORE HOLE IN EXIST STRUCTURE
16	PROP CB	205+04.8	11.0' LT	64.18	-	59.40	
17	PROP DI	206+70.6	11.8' LT	68.15	-	63.95	
18	CIT TO DMH	206+74.0	7.6' LT	68.36	63.90	63.80 (EX)	CORE HOLE IN EXIST STRUCTURE; OFFSET TOP



HD4(CONS)RIBITION PI ANS) DWG Plotted on 28-Feb-2025 11:06 AM



TEMPORARY TRAFFIC CONTROL 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 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.
- THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING 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 11 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.
- NO LANE CLOSURES SHALL BE PERMITTED DURING PEAK HOUR TRAFFIC. PEAK HOUR IS CONSIDERED TO BE FROM 7-9:00 AM AND 4-6:00 PM ON WEEKDAYS.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A CONSTRUCTION PHASING DIAGRAM FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

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 TYPE	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.

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

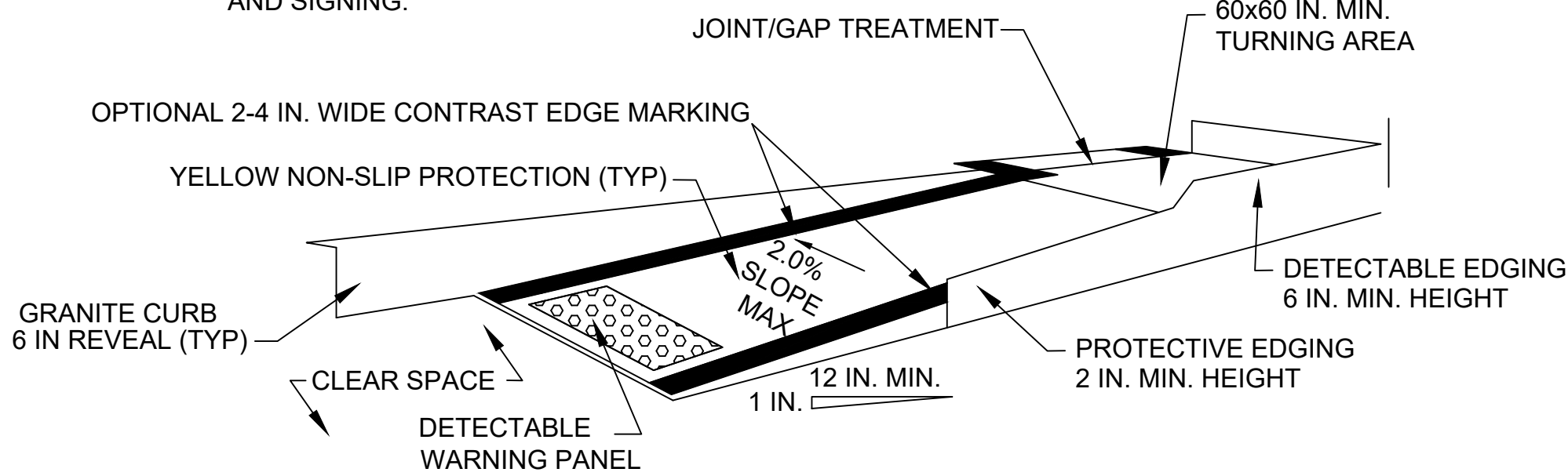
W = WIDTH OF OFFSET IN FEET

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

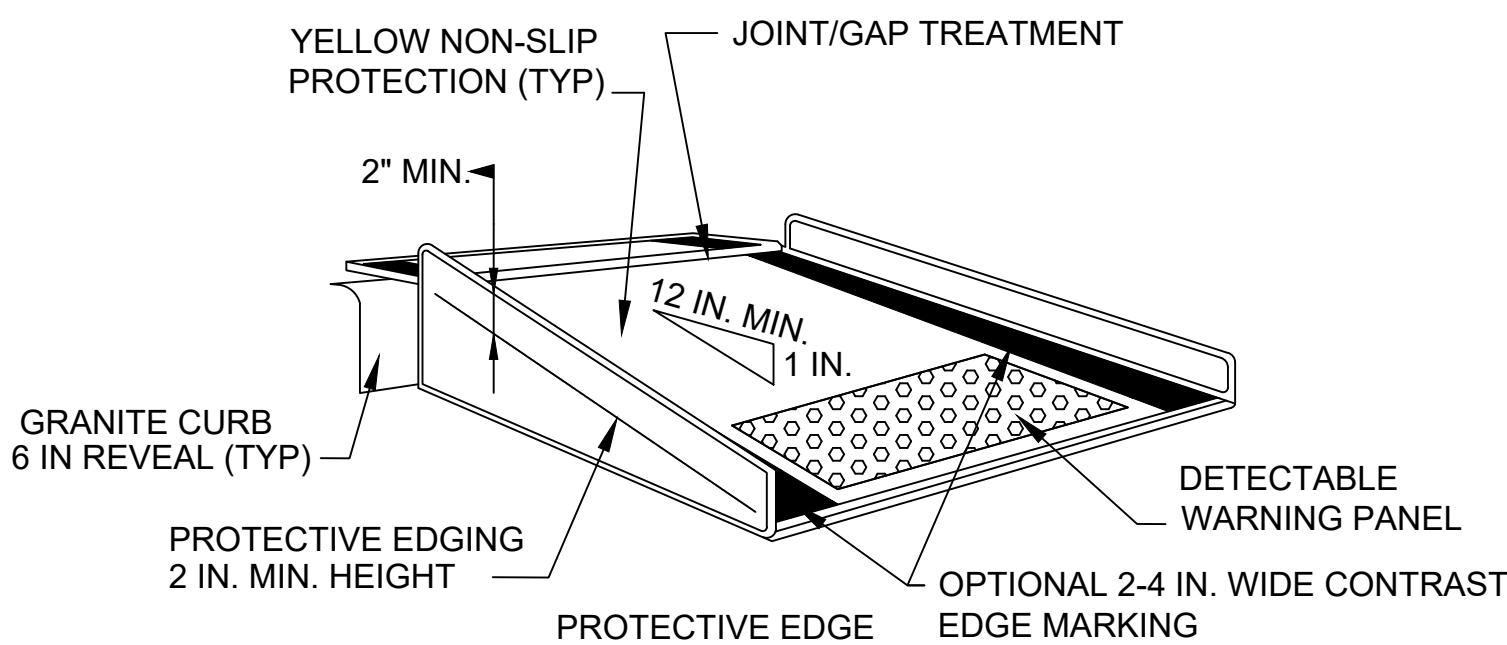
TYPICAL PEDESTRIAN DETAILS:

NOTES:

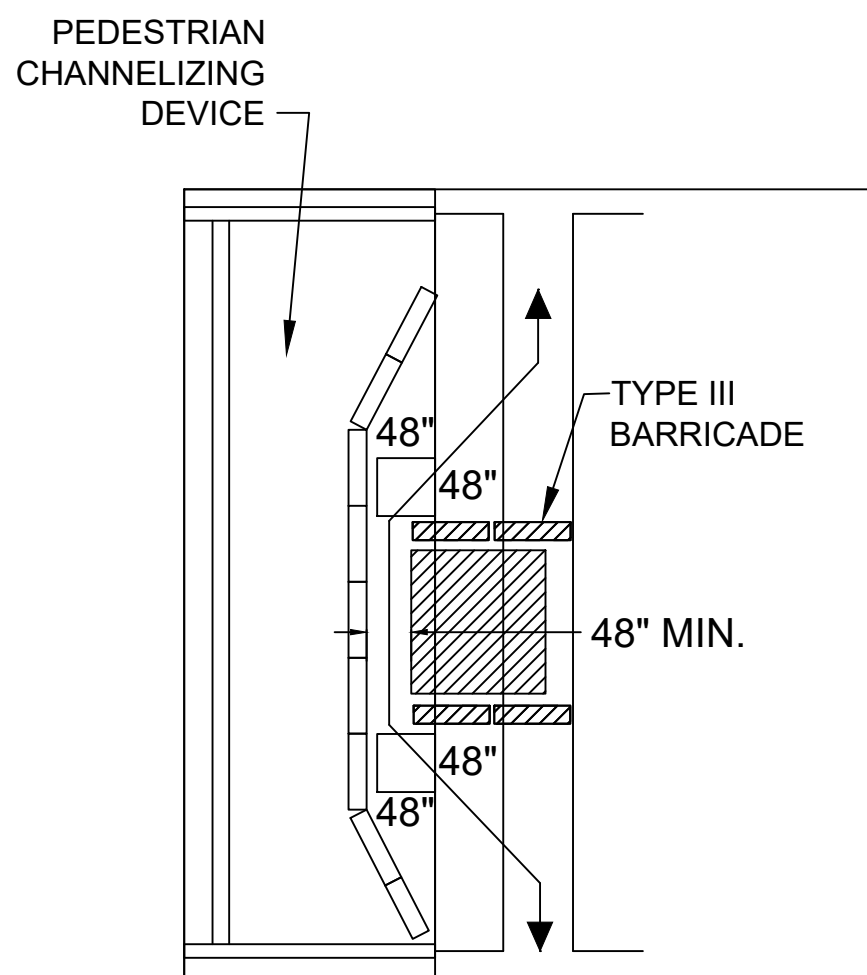
- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ALONG THE FULL LENGTH OF THE TEMPORARY PEDESTRIAN ROUTE.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT.
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXCEEDS 200 FEET THEN A 5 FOOT BY 5 FOOT PASSING ZONE SHALL BE PROVIDED NEAR THE MIDPOINT OF THE CLOSURE.
- THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGEMENT.
- ON-DEMAND PEDESTRIAN ASSISTANCE PERSONNEL TO ASSIST WITH NAVIGATION AROUND THE CLOSURE/WORK AREA MAY BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES FOR WORK CLOSURES LASTING 4 HOURS OR LESS.
- CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.
- ADA COMPLIANT ACCESS SHALL BE MAINTAINED AT ALL TIMES, INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. PEDESTRIAN DETOURS OR BYPASSES SHALL INCLUDE AN ADA COMPLIANT ROUTE WITH PROPER BARRICADES, RAILINGS, RAMPS, AND SIGNING.



TEMPORARY CURB RAMP PARALLEL TO CURB



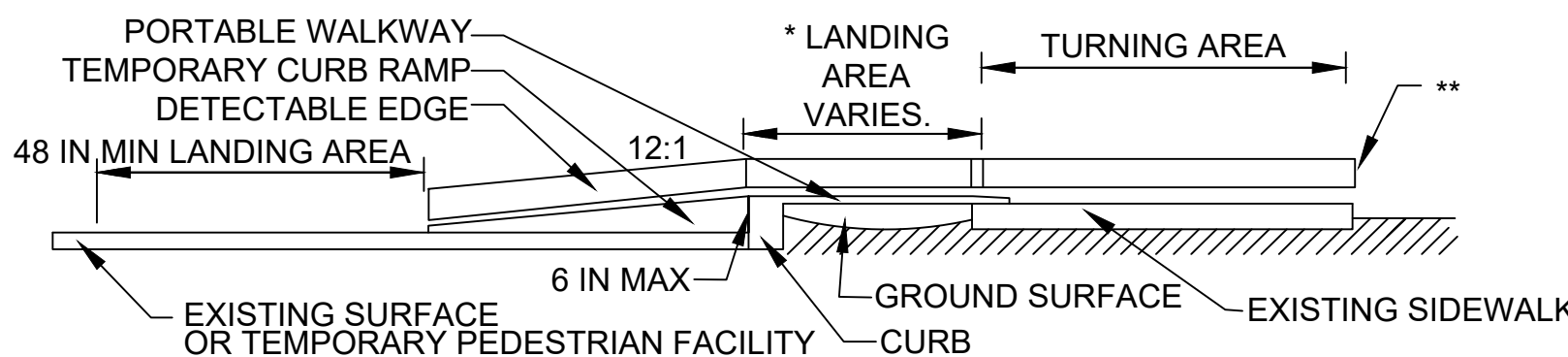
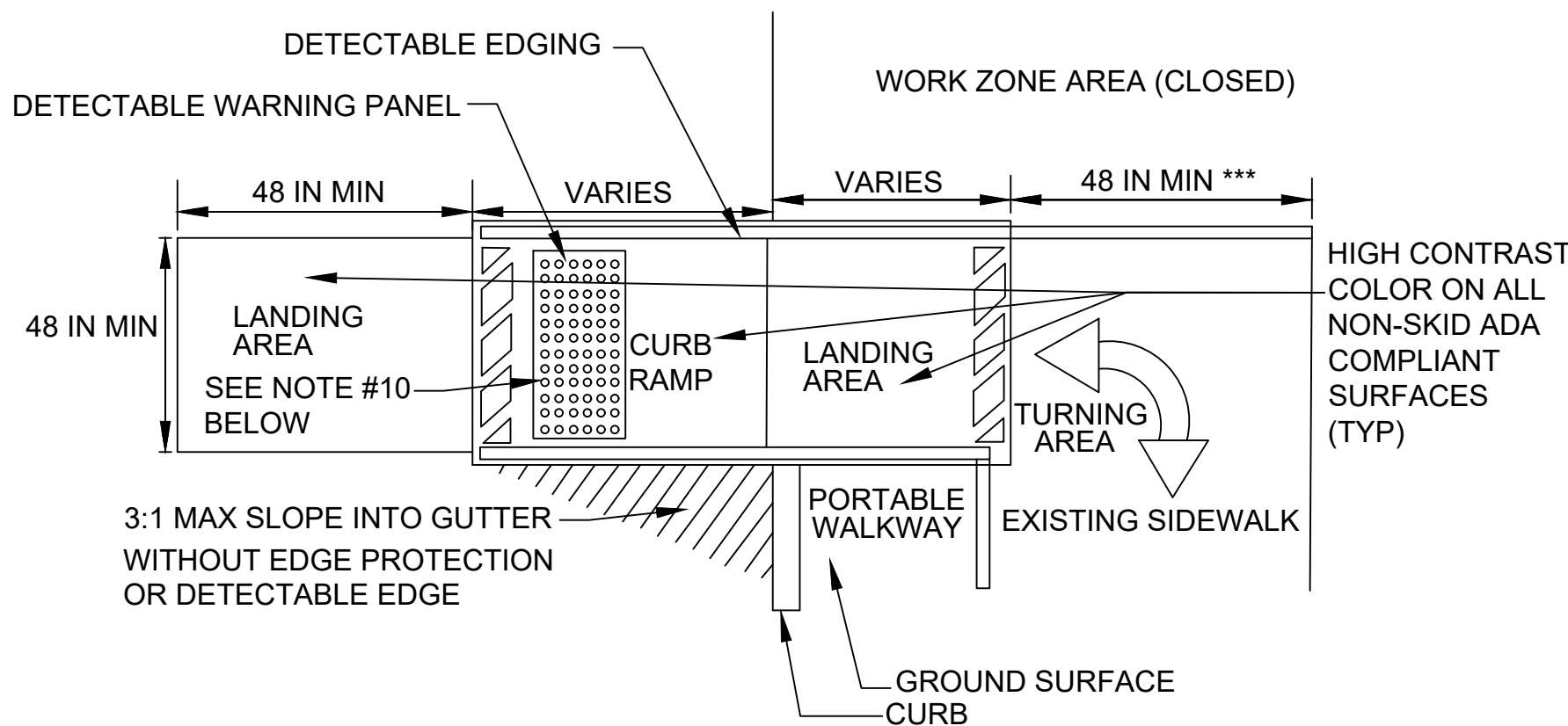
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB



PEDESTRIAN BYPASS

HAMILTON
BRIDGE STREET & MILES RIVER ROAD
TEMPORARY TRAFFIC CONTROL PLANS - 1 OF 3
SHEET 10 OF 14

TYPICAL PEDESTRIAN DEVICES:

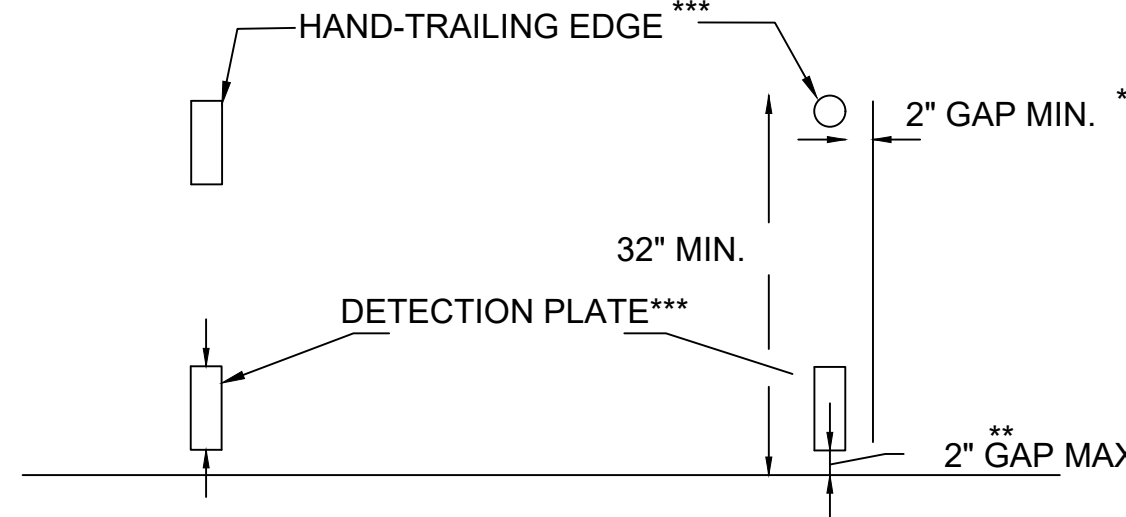


* -LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.

** -DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.

*** -60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK

TEMPORARY CURB RAMP-TYPE 2



CROSS SECTION VIEW

NOTES:

* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.

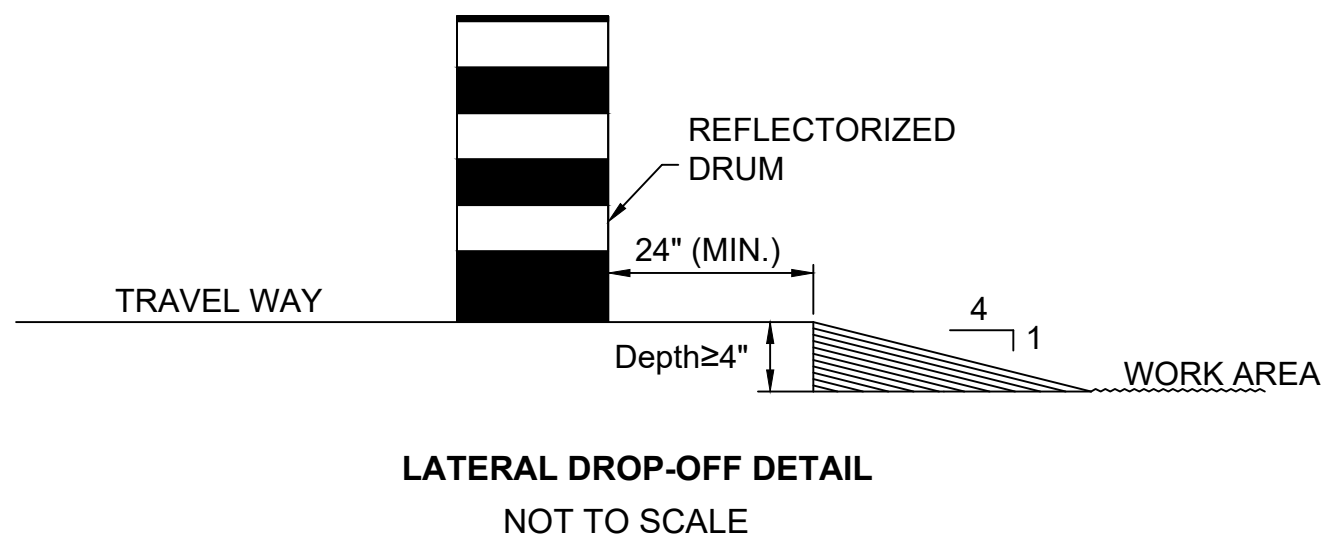
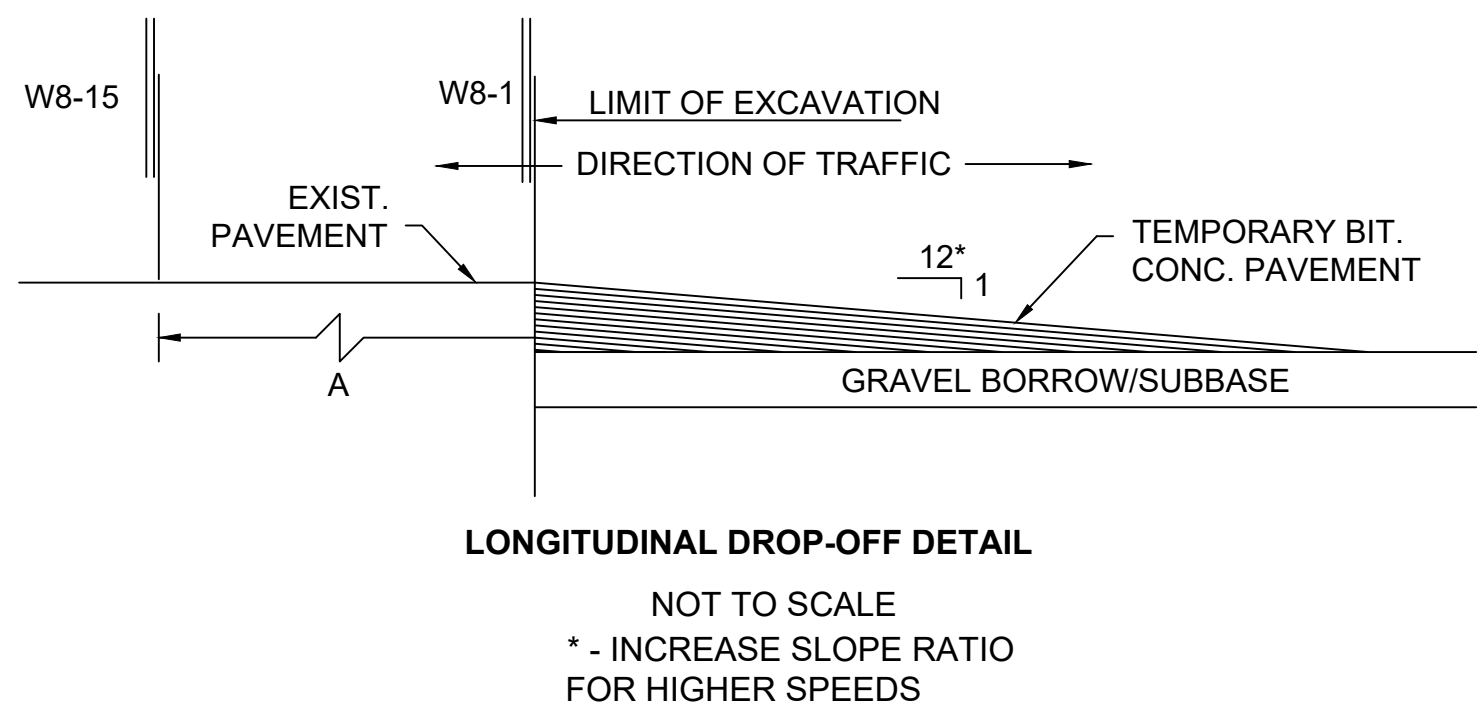
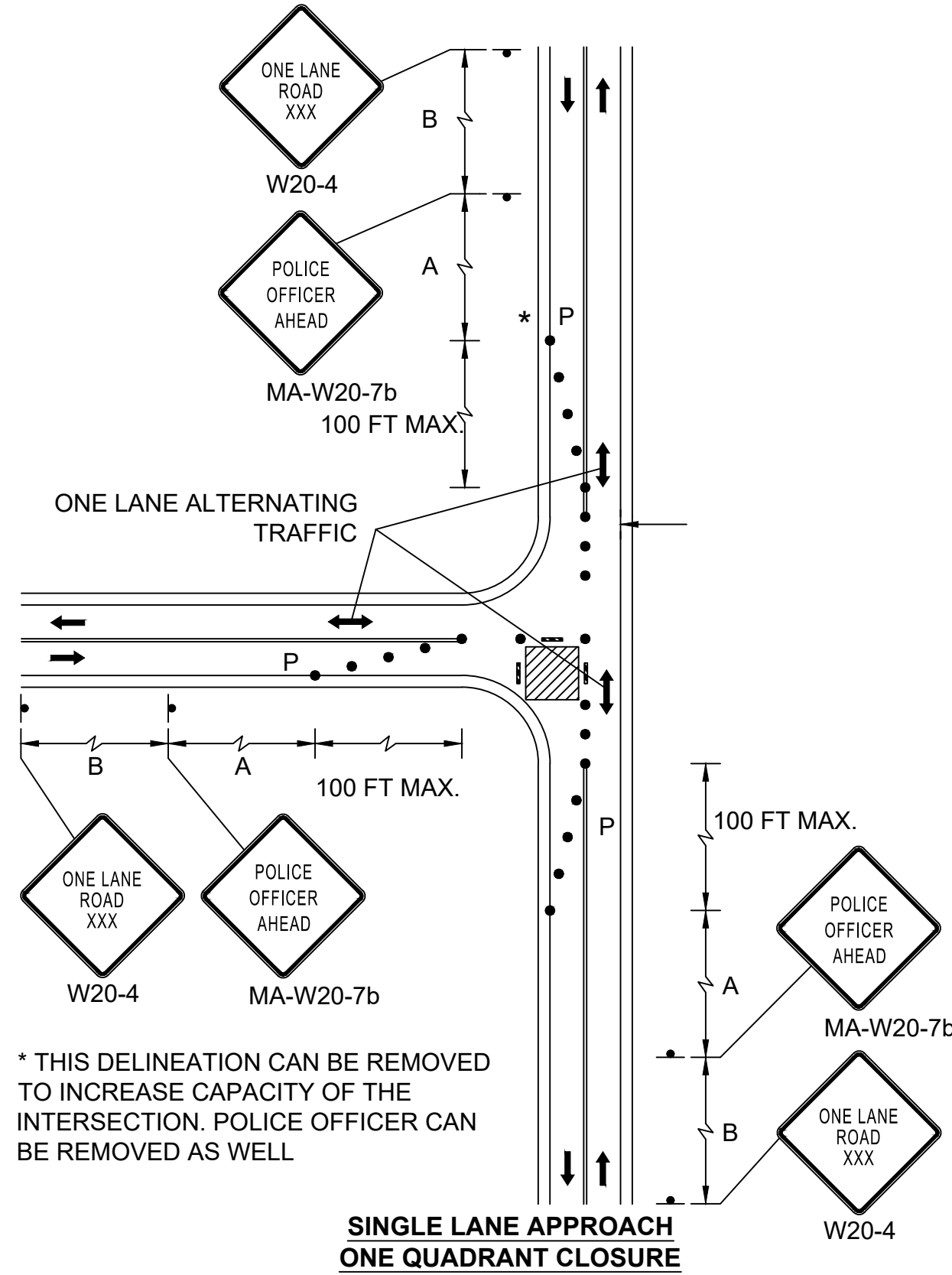
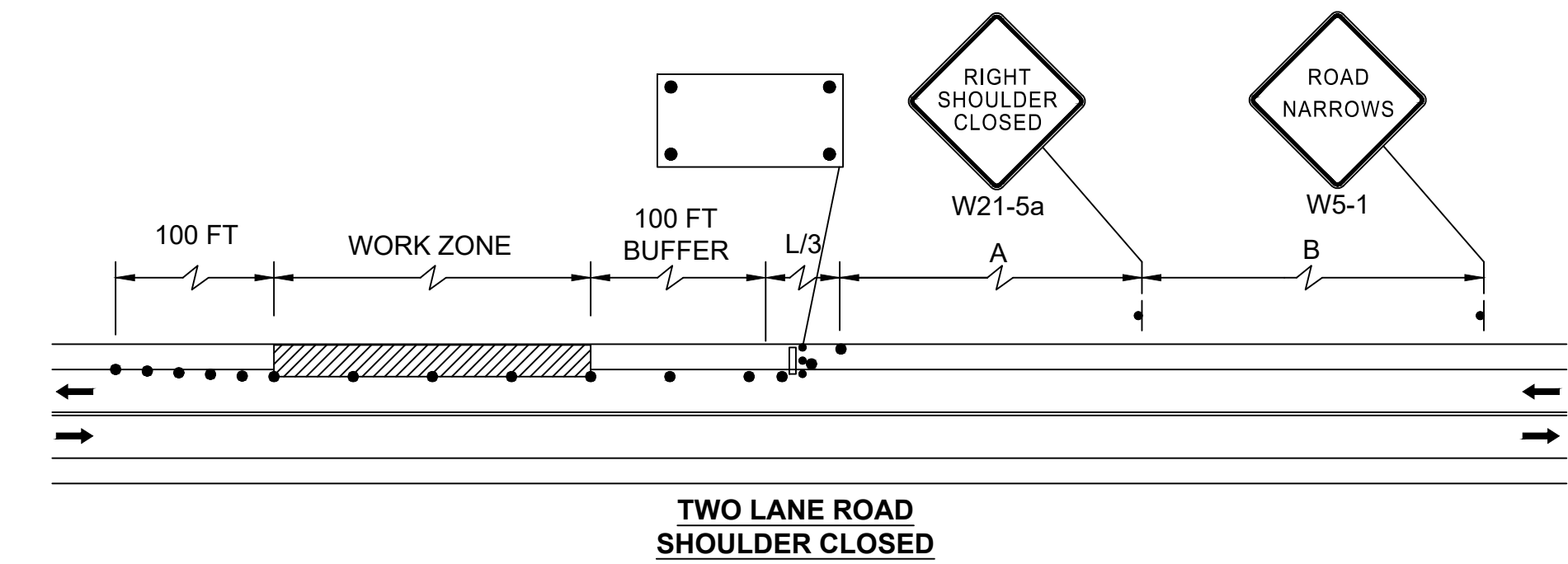
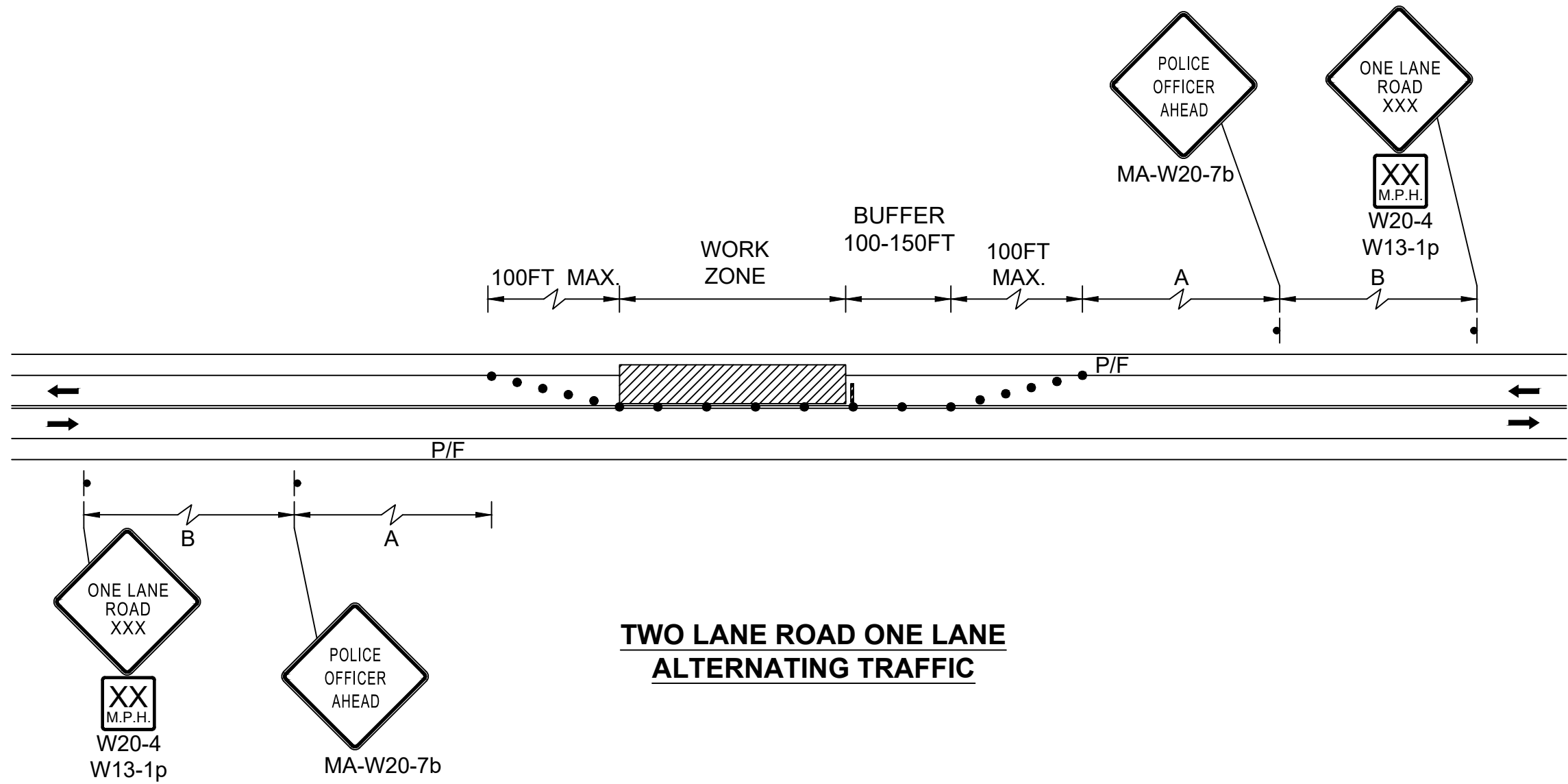
** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.

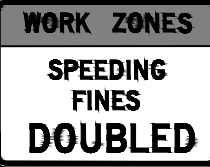
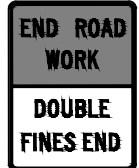



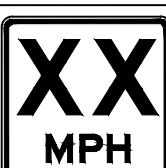




*** THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.

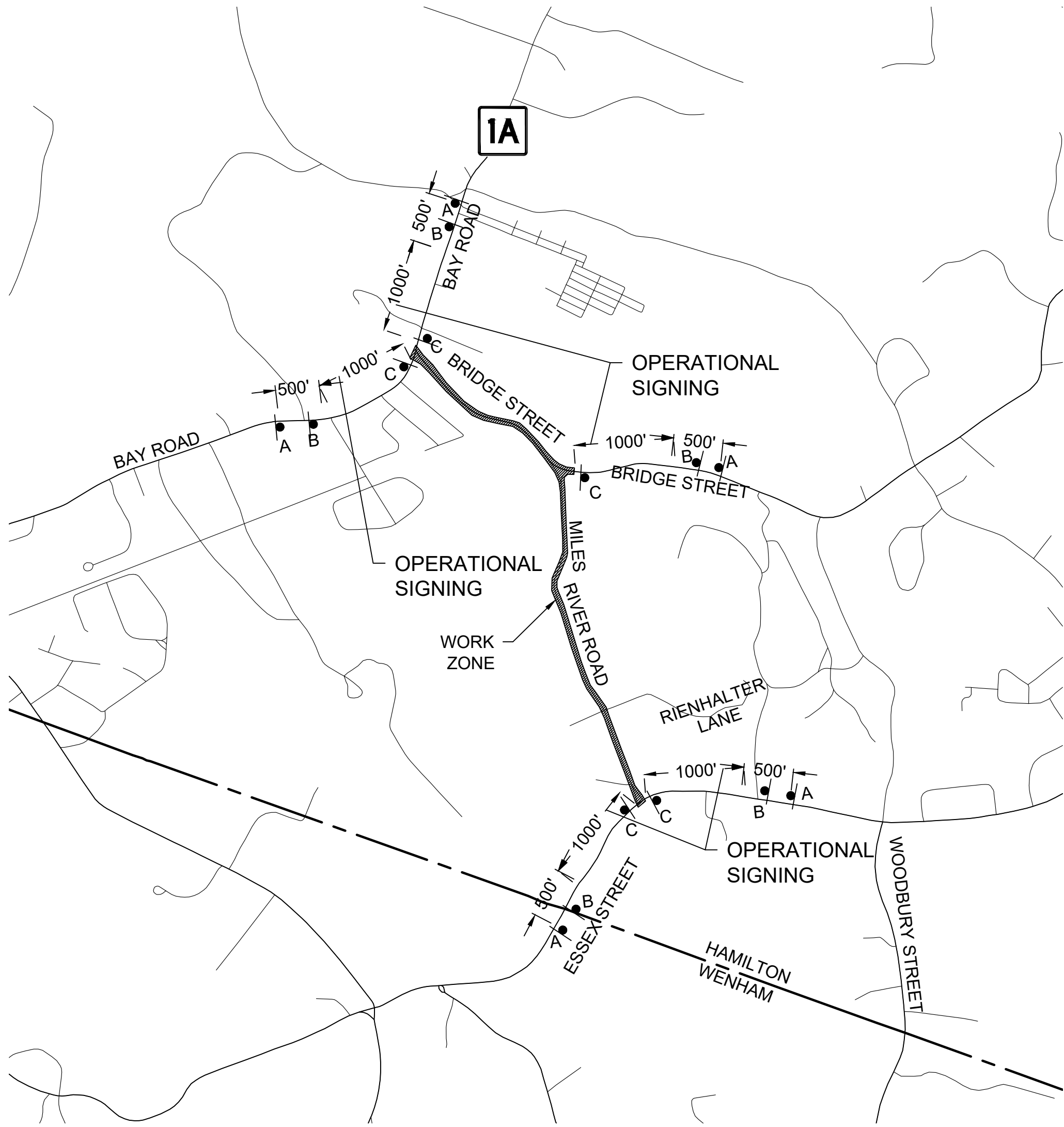
PEDESTRIAN CHANNELIZING DEVICE

TYPICAL PEDESTRIAN DEVICE NOTES:

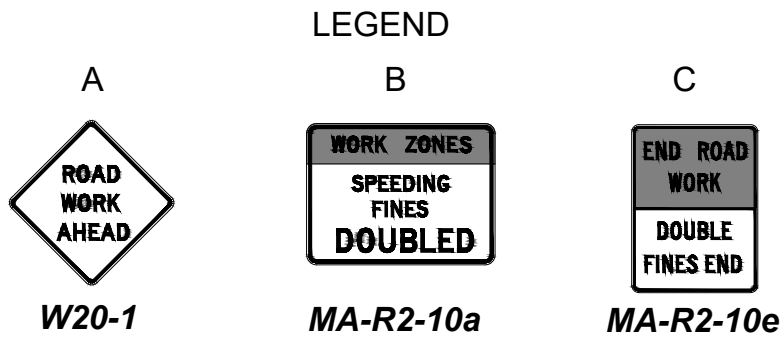
- CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
- PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD 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.



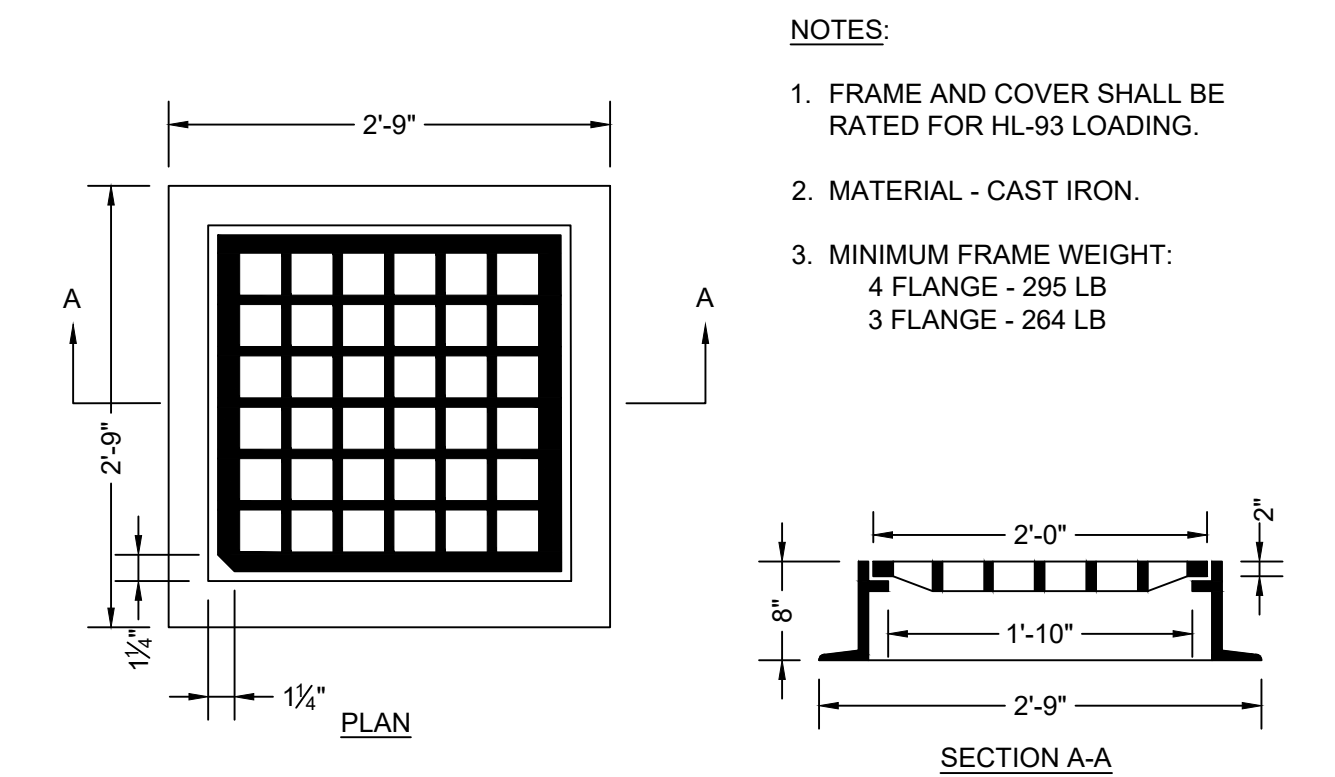
TEMPORARY TRAFFIC CONTROL SIGN SUMMARY												
IDENTIFICATION NUMBER	SIZE OF SIGN (in)		LEGEND	TEXT DIMENSIONS (in)			COLOR			NUMBER OF SIGNS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR	BACK-GROUND	LEGEND	BORDER			
MA-R2-10a	48	36		MASSDOT STANDARD SIGN			FL. ORANGE WHITE	BLACK BLACK	BLACK BLACK	5	12.00	60.00
MA-R2-10e	36	48		↓			FL. ORANGE WHITE	BLACK BLACK	BLACK BLACK	5	12.00	60.00
W5-1	36	36		SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			FL. ORANGE	BLACK	BLACK	1	9.00	9.00
W8-1	36	36					FL. ORANGE	BLACK	BLACK	5	9.00	45.00
W8-15	36	36					FL. ORANGE	BLACK	BLACK	5	9.00	45.00
W13-1p	24	24					FL. ORANGE	BLACK	BLACK	2	4.00	8.00
W20-1	36	36					FL. ORANGE	BLACK	BLACK	5	9.00	45.00
W20-4	36	36		↓			FL. ORANGE	BLACK	BLACK	3	9.00	27.00
MA-W20-7b	36	36		MASSDOT STANDARD SIGN			FL. ORANGE	BLACK	BLACK	3	9.00	27.00
W21-5a	36	36		SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			FL. ORANGE	BLACK	BLACK	1	9.00	9.00



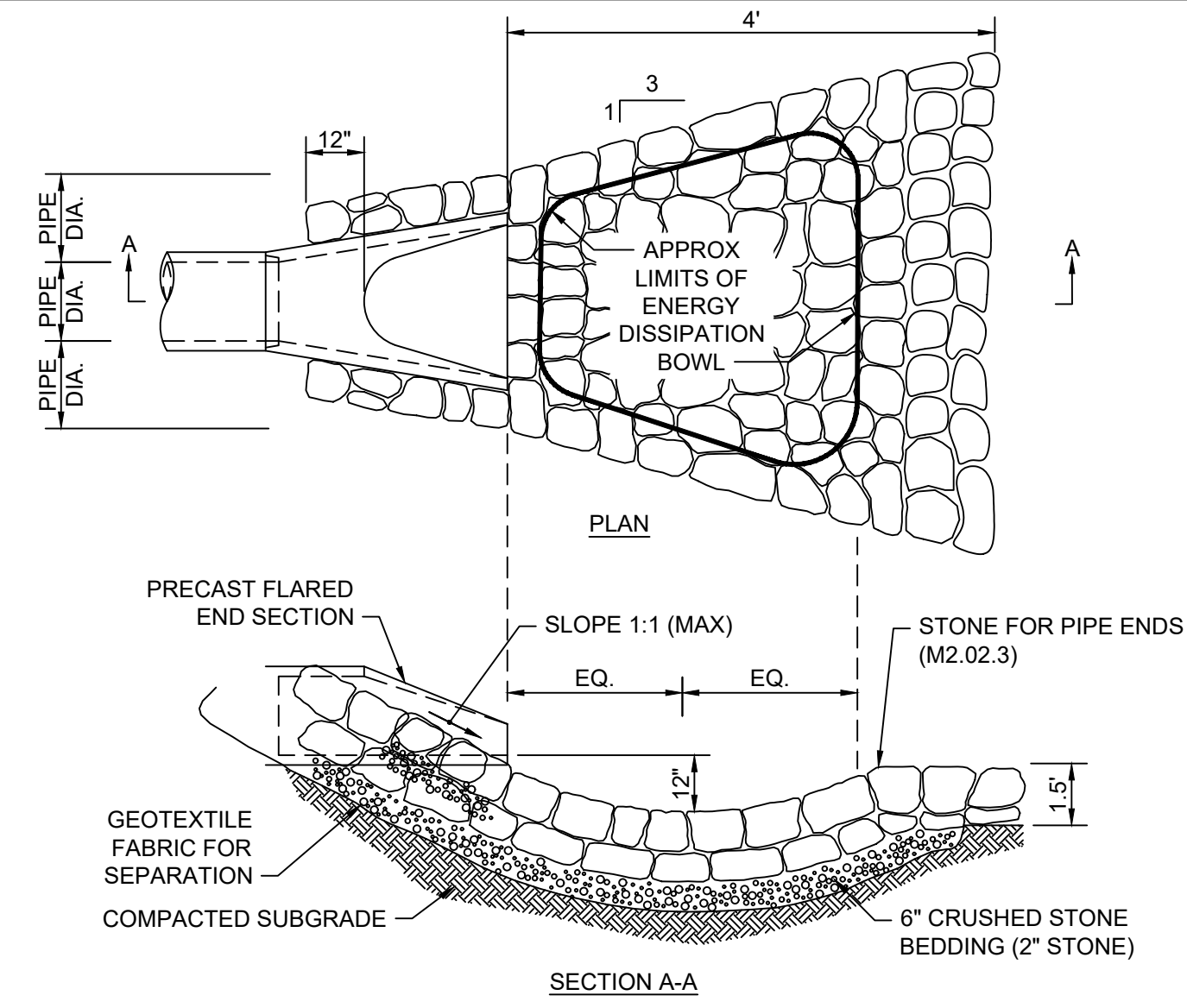
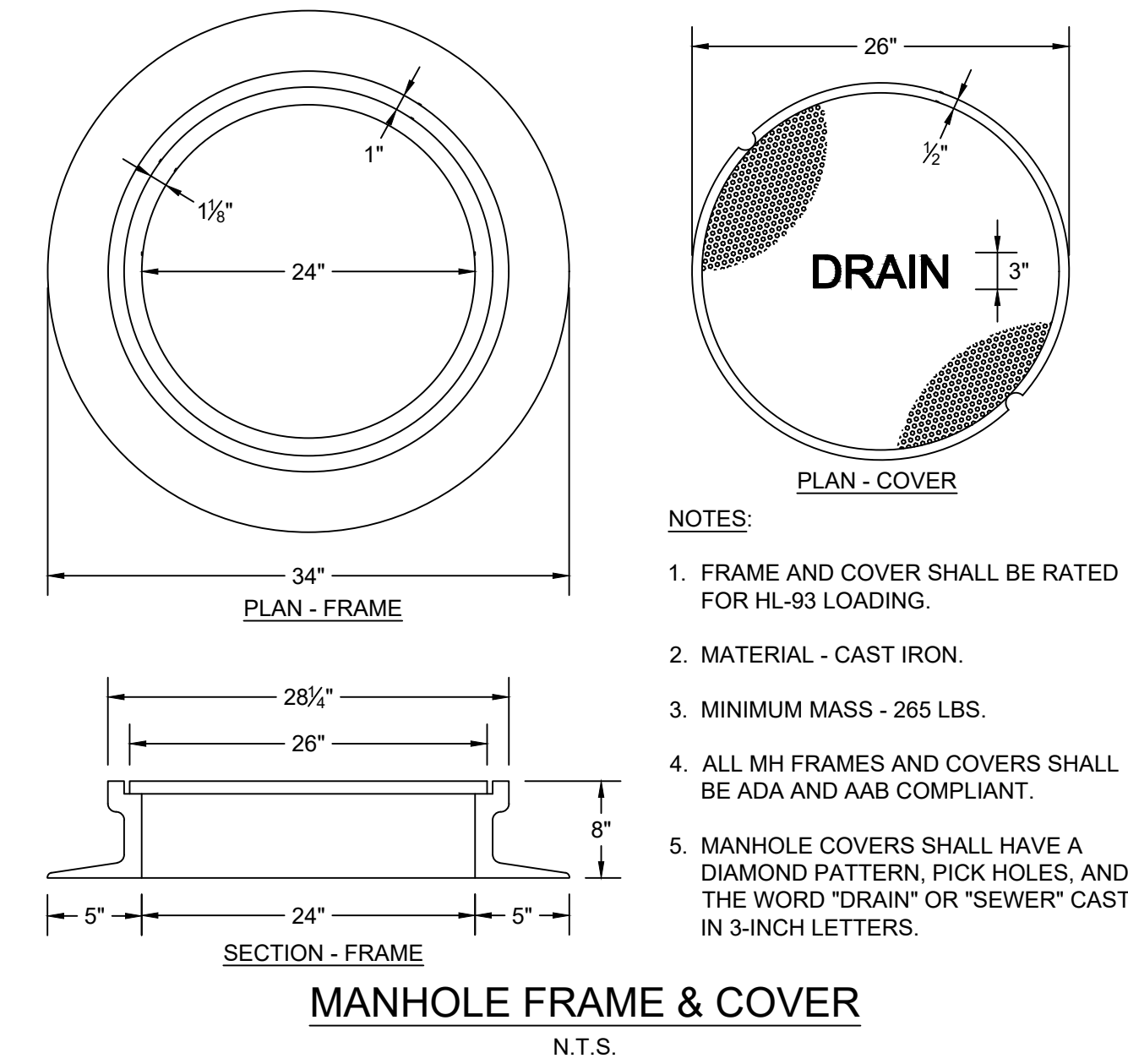
ADVANCE SIGNING SCHEMATIC
N.T.S.



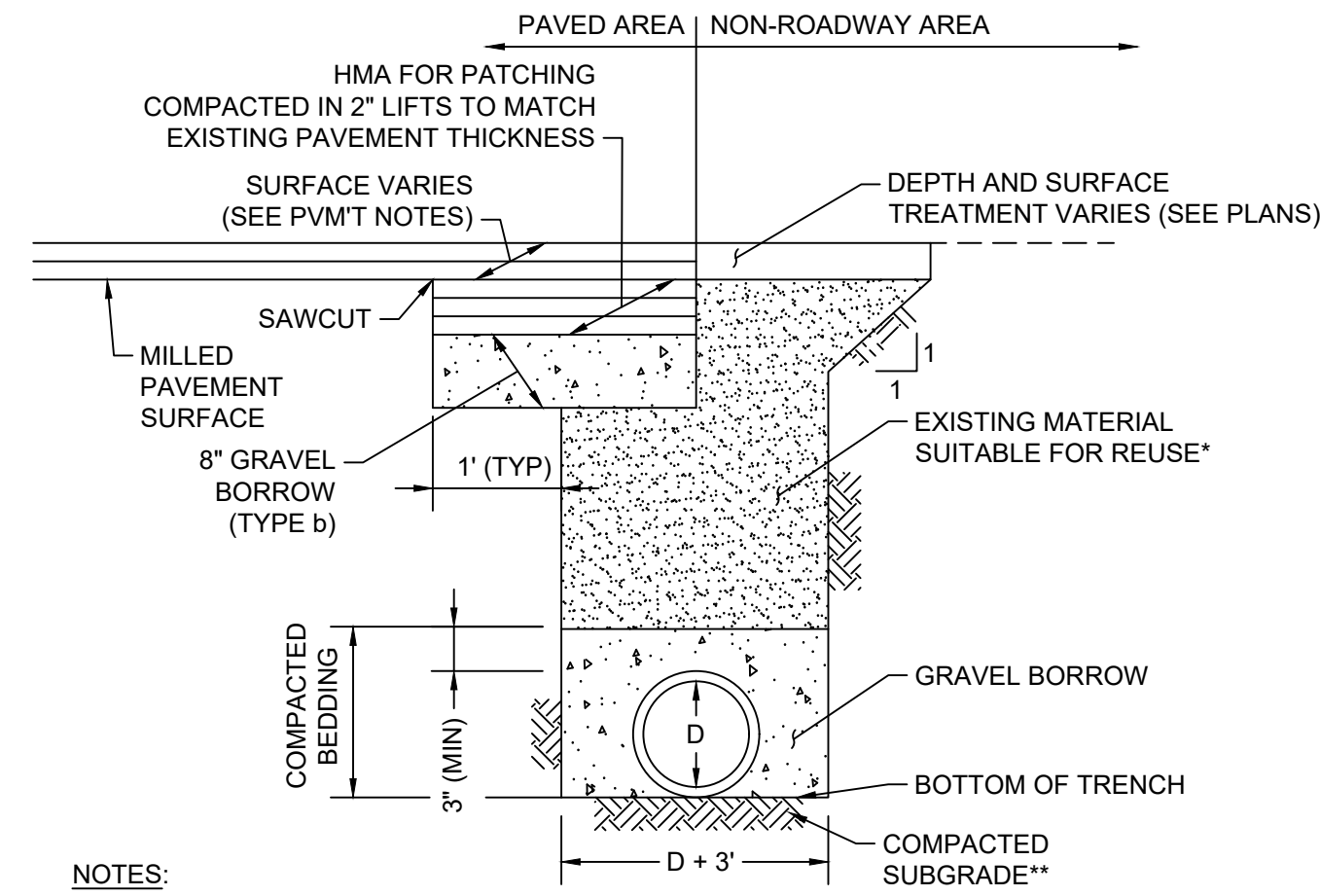
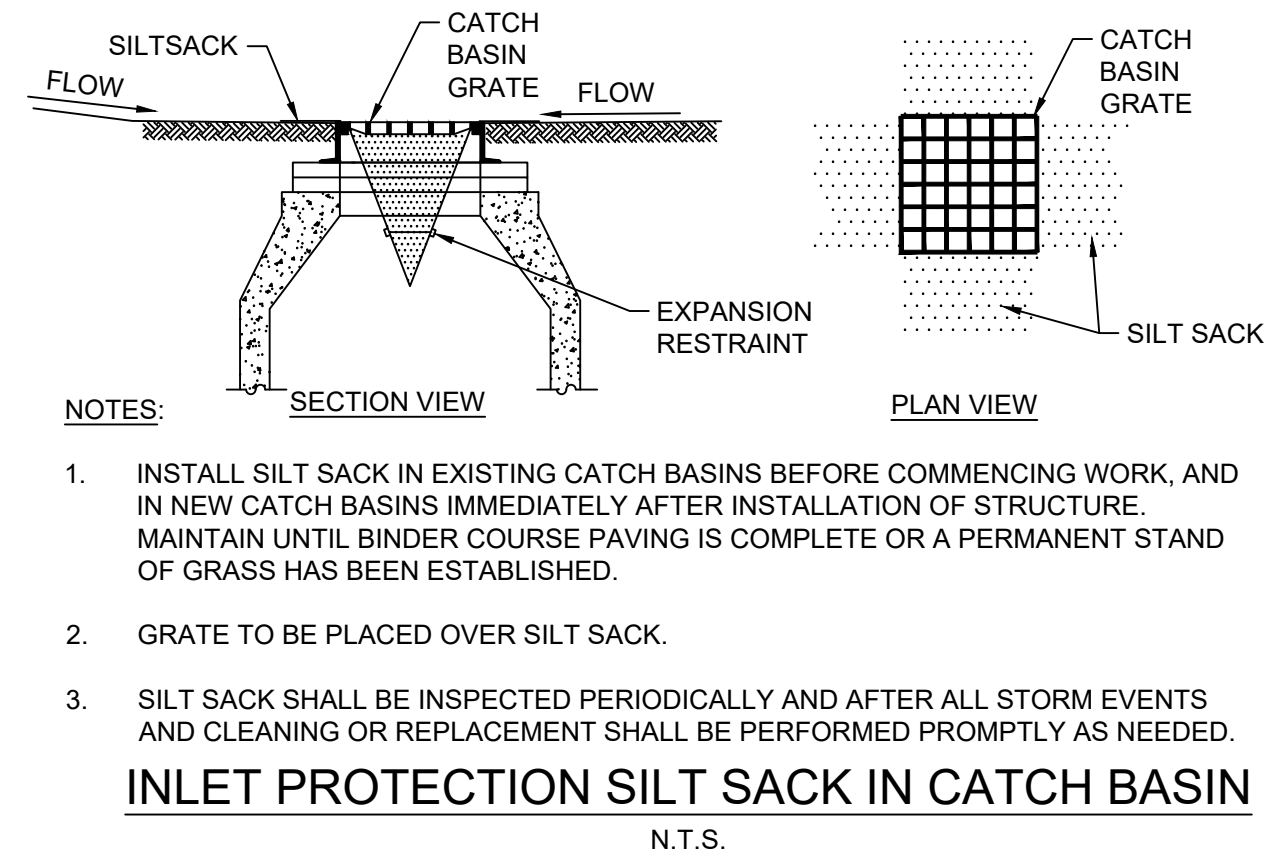
- NOTE:
1. THE DISTANCE BETWEEN "A" AND "B" SIGN SHALL BE APPROXIMATELY 250' ON BAY ROAD, BRIDGE STREET, AND ESSEX STREET. 175' ON ALL OTHER (LOCAL) ROADWAYS.
 2. "C" SIGNS SHALL BE PLACED APPROXIMATELY 100' BEYOND THE LIMIT OF WORK.



CATCH BASIN FRAME & GRATE (MUNICIPAL STANDARD)
N.T.S.



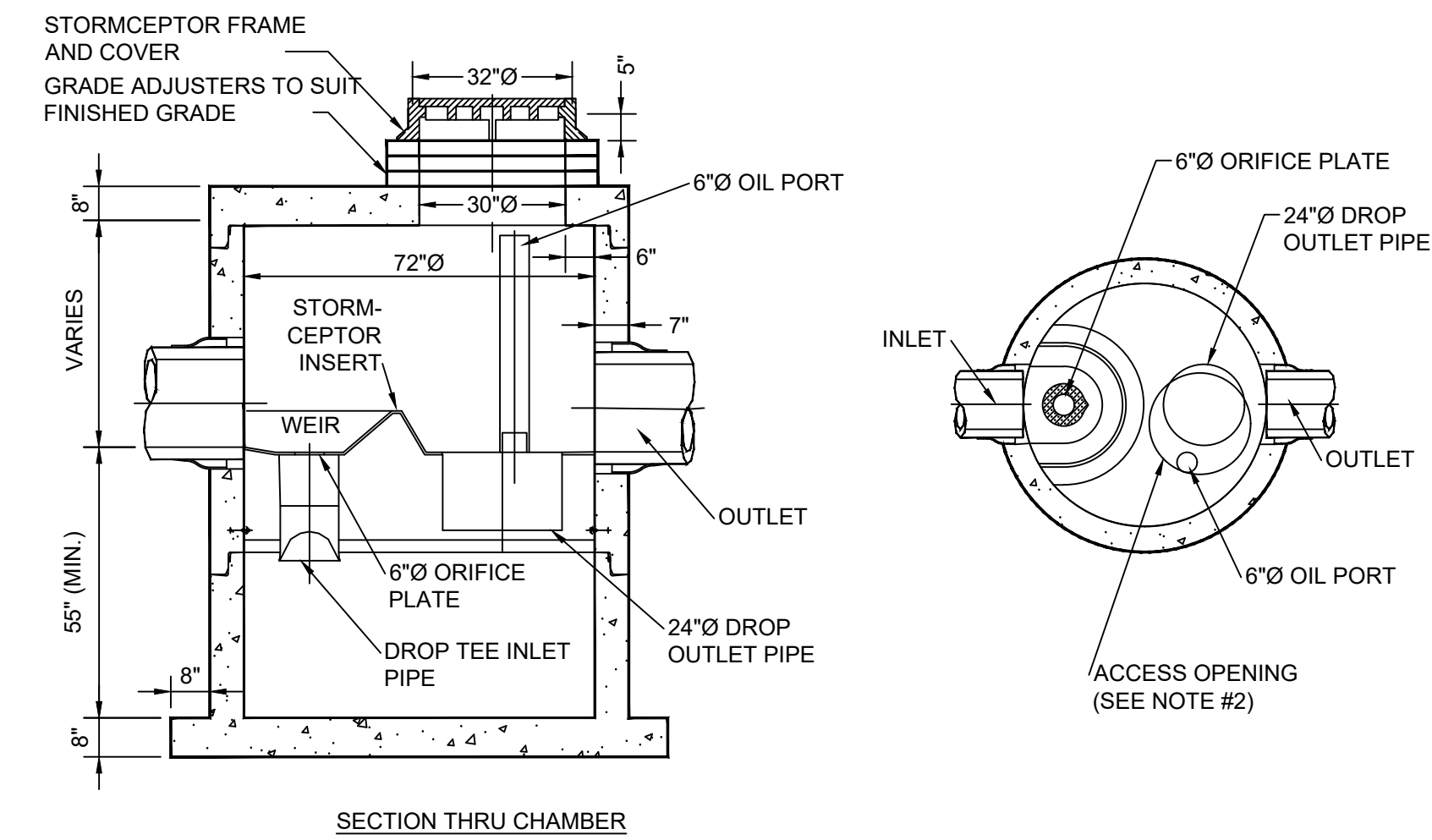
STONE AT FLARED END SECTION
N.T.S.



NOTES:

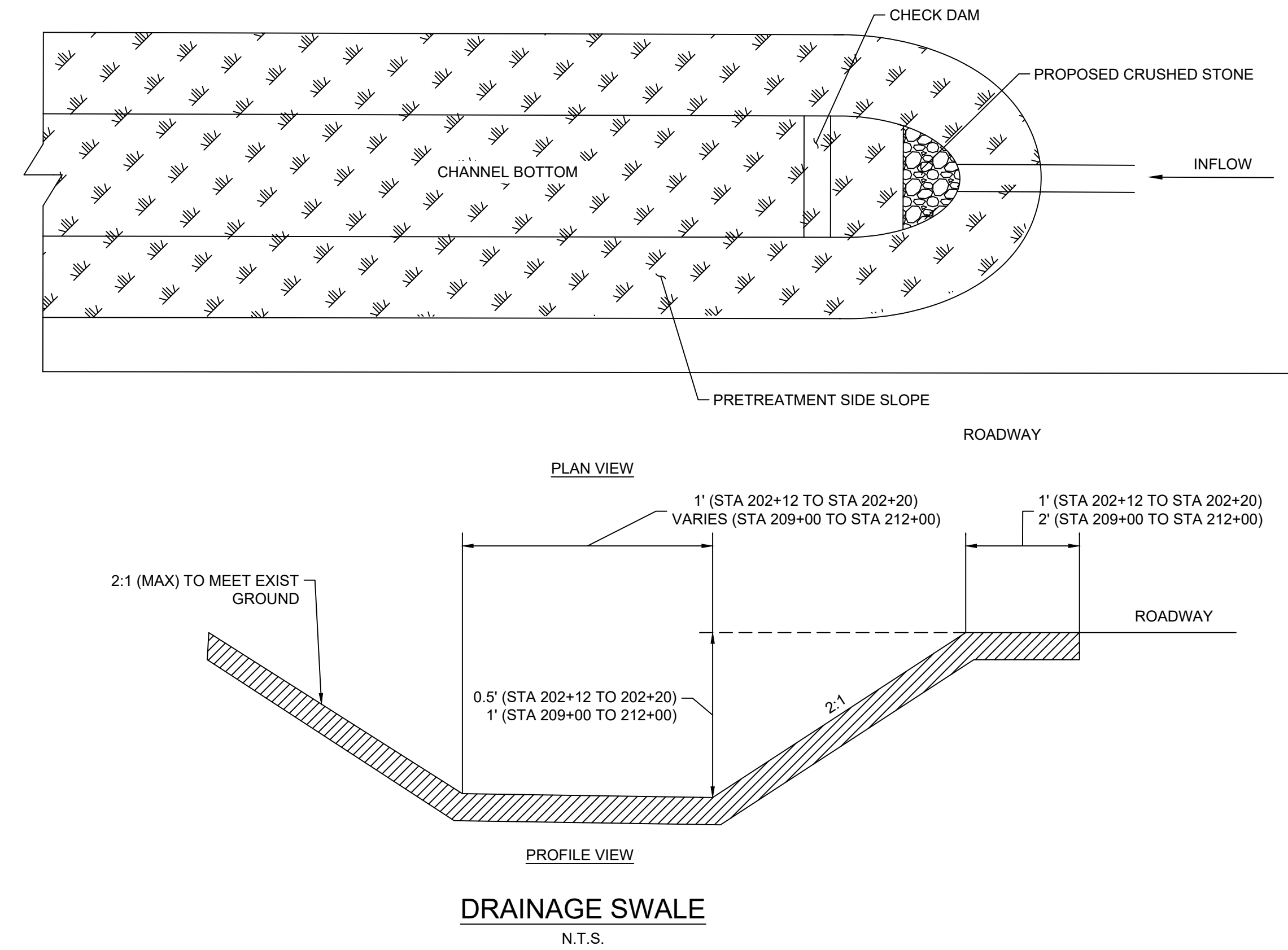
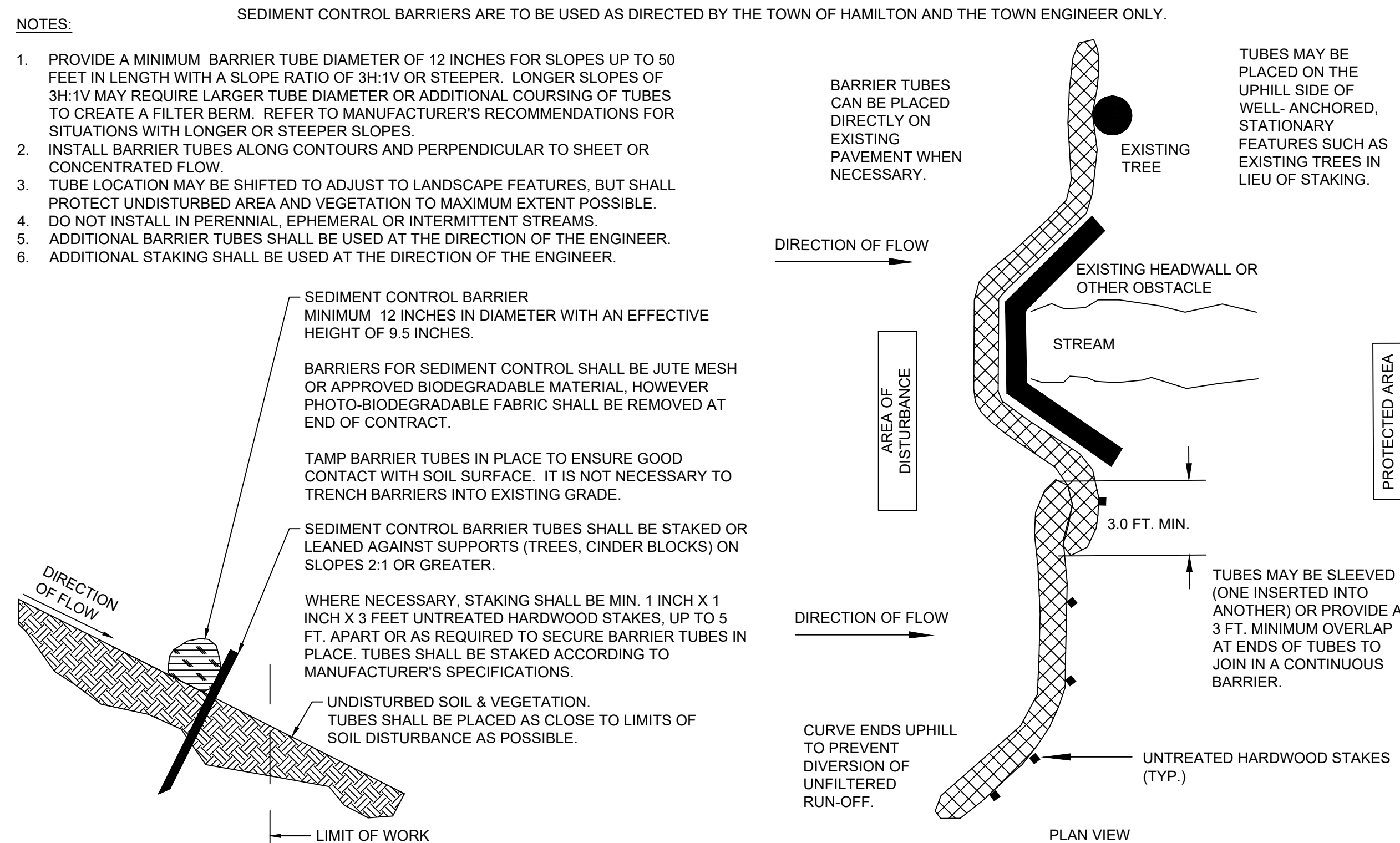
* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".

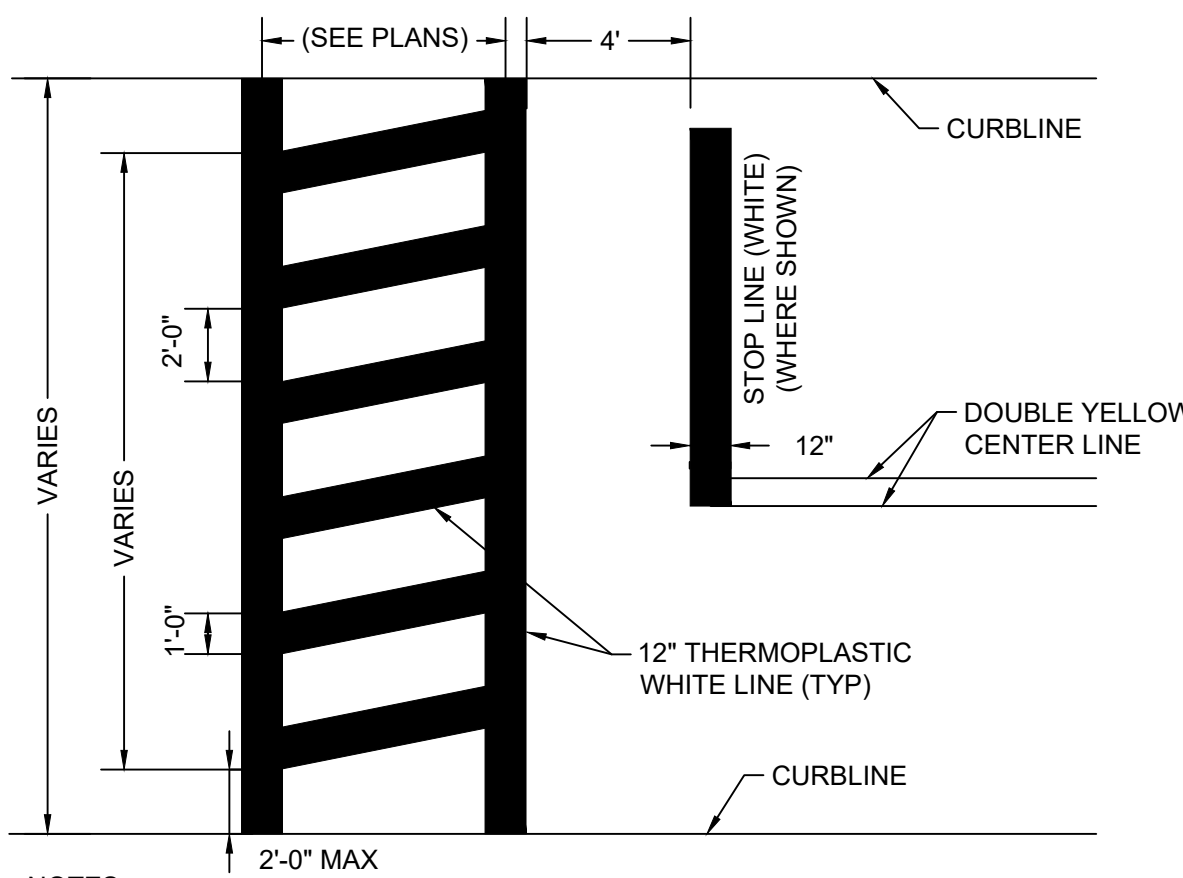
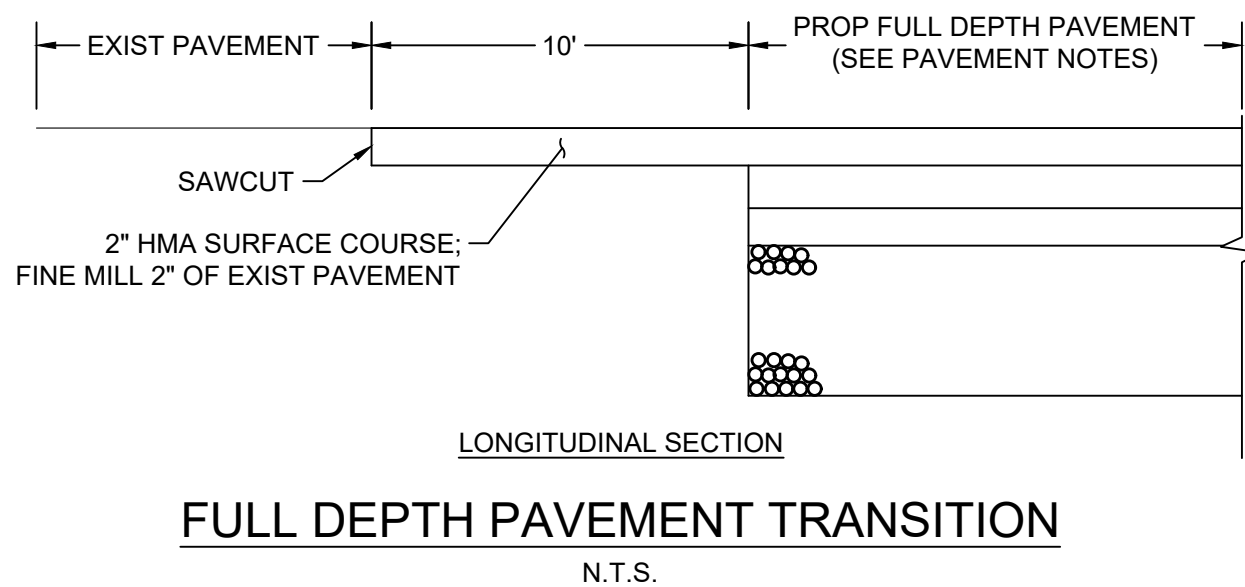
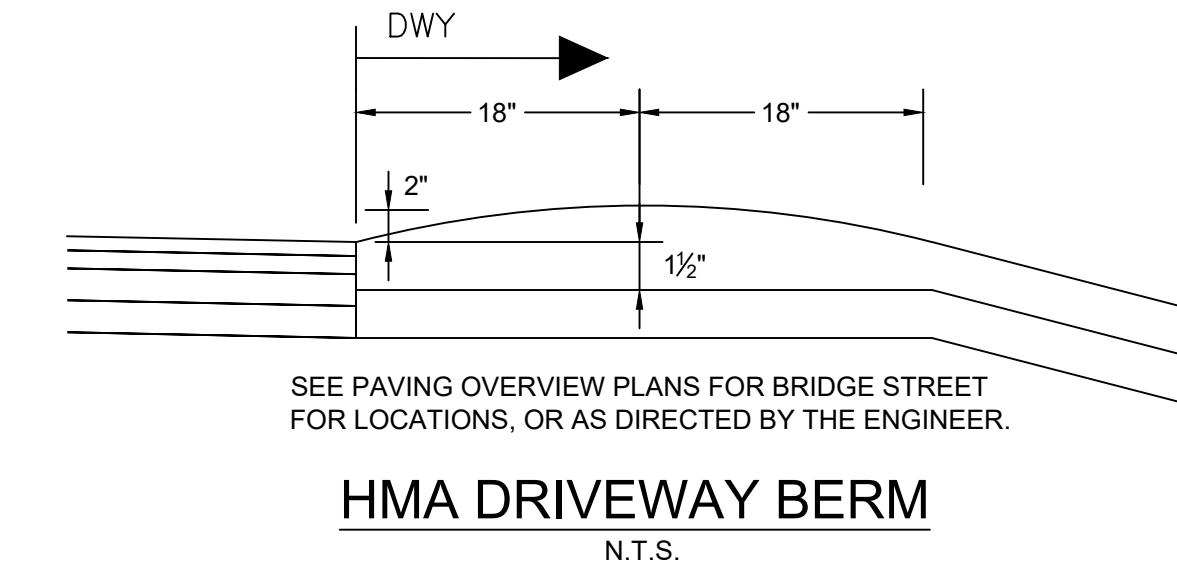
**SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.



- NOTES:
1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
 2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.
 3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: # 4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
 4. CONTACT A CONCRETE PIPE DIVISION REPRESENTATIVE FOR FURTHER DETAILS NOT LISTED ON THIS DRAWING.
 5. A COMPARABLE PRODUCT MAY BE PROPOSED BY THE CONTRACTOR, BUT ITS USE REQUIRES APPROVAL BY THE ENGINEER OF RECORD.

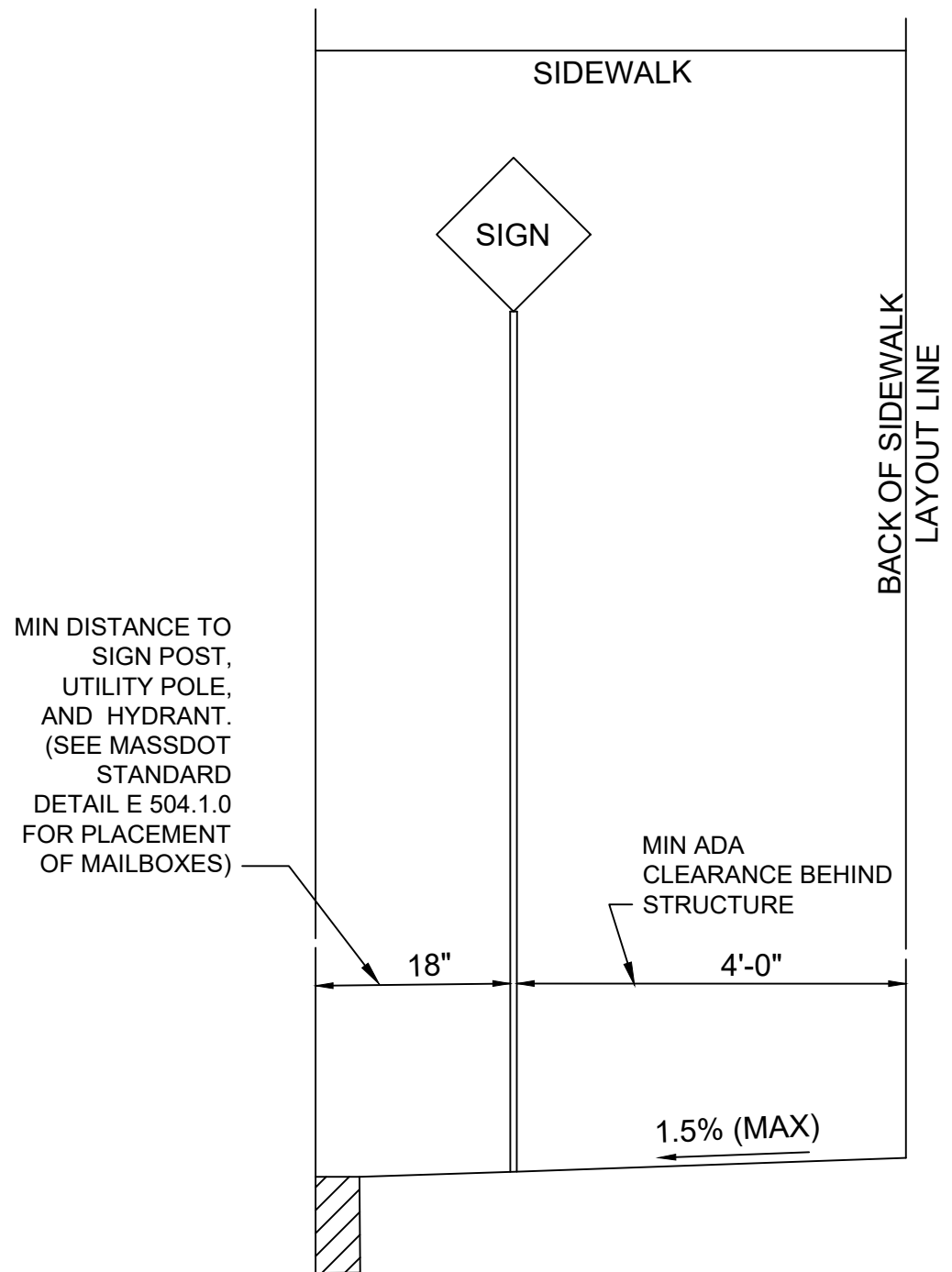
SOURCE:
WWW.STORMCEPTOR.COM



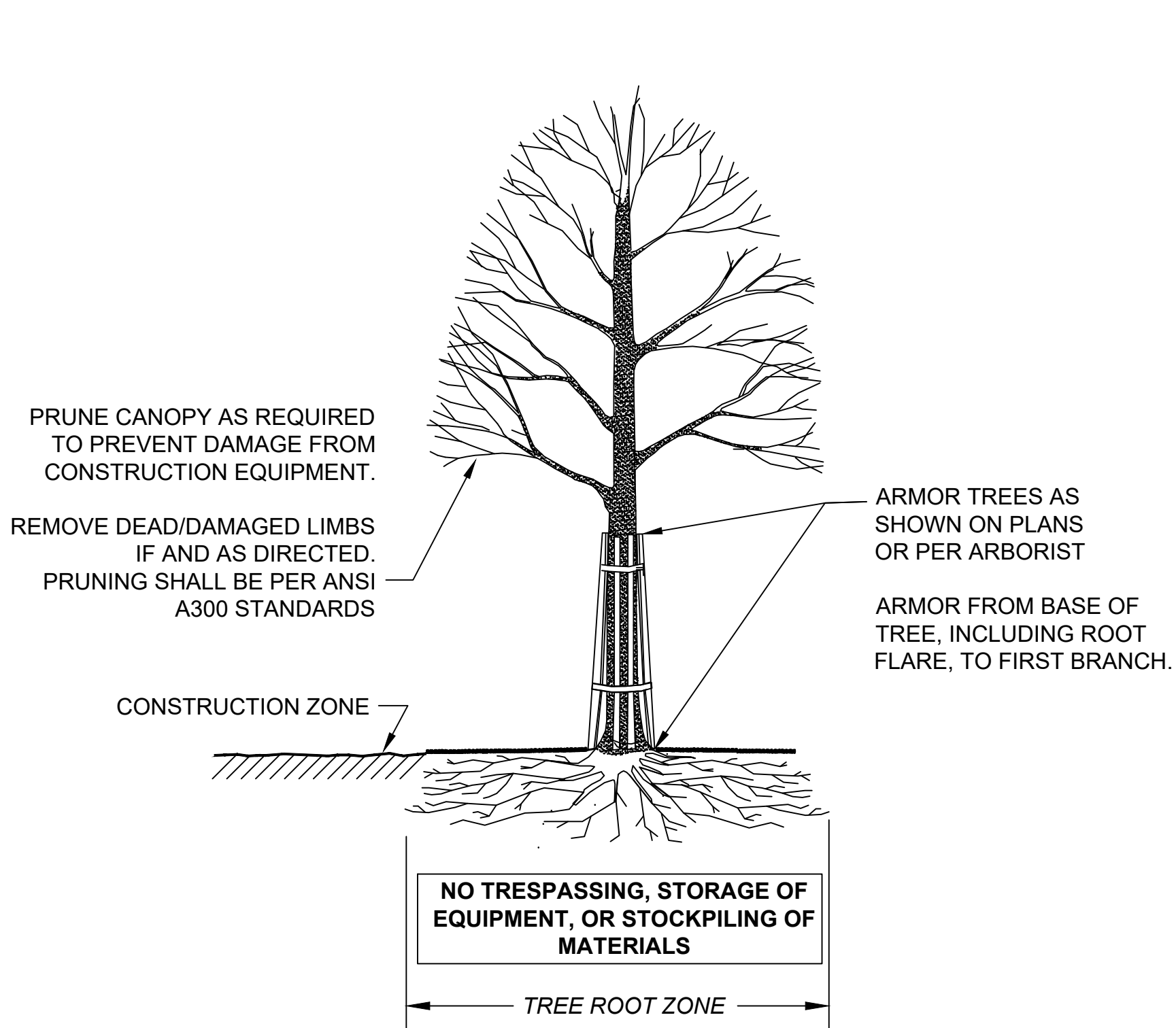


- NOTES:
1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
 2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
 3. CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.
 4. OMIT STOP BAR WHERE NOT SHOWN ON TRAFFIC SIGN & PAVEMENT MARKING PLANS.

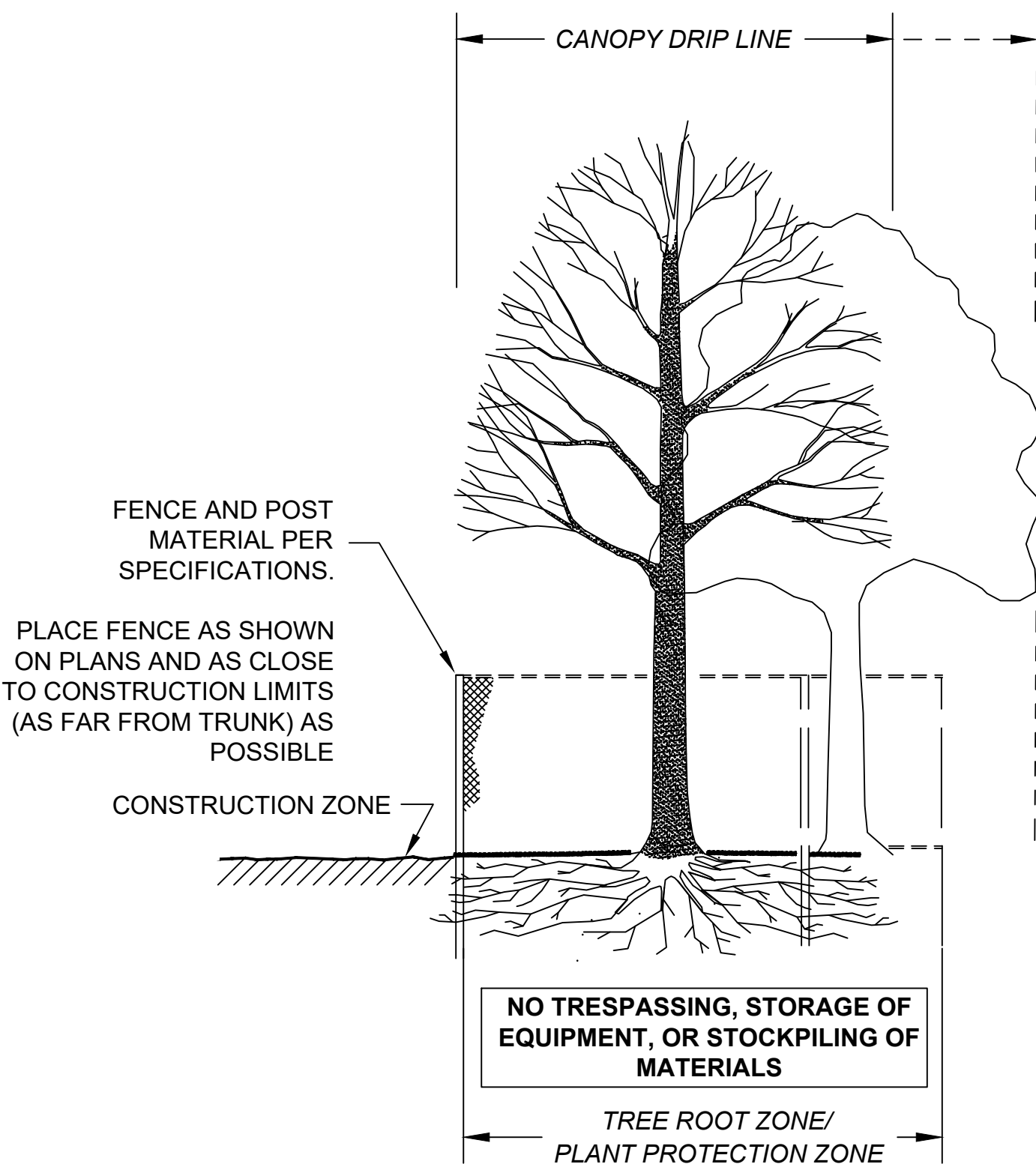
CROSSWALK PAVEMENT MARKING (LADDER)
N.T.S.



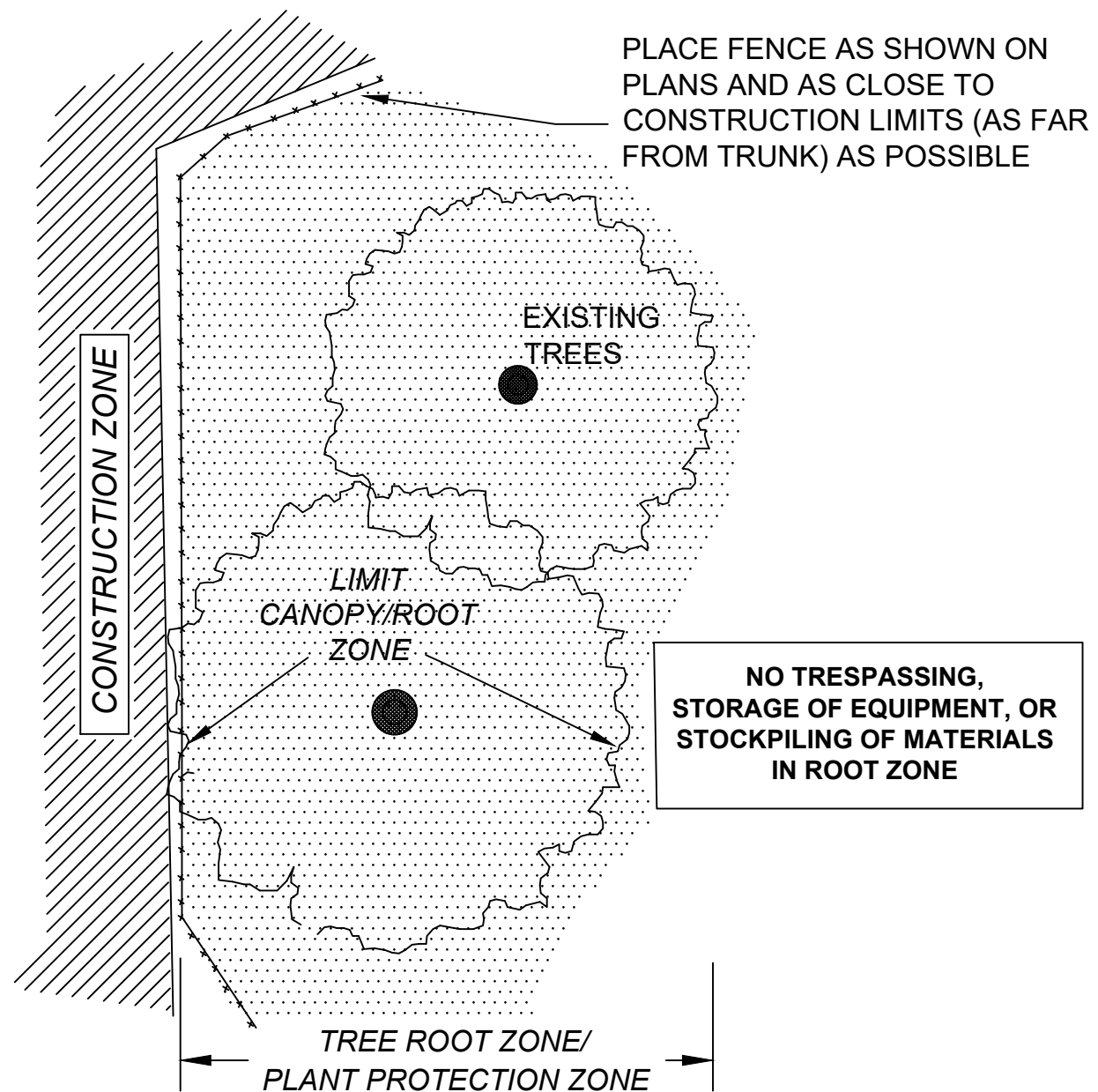
R&R VERTICAL OBSTRUCTION WITHIN SIDEWALK
N.T.S.



SECTION - TRUNK ARMORING & PRUNING
TREE PROTECTION - TRUNK



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE
NOT TO SCALE