

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

PLAN AND PROFILE OF INTERSTATE 91

IN THE CITIES OF HOLYOKE-WEST SPRINGFIELD HAMPDEN COUNTY

FEDERAL AID PROJECT NO. NHP(IM)-0912(004)X

HOLYOKE-WEST SPRINGFIELD INTERSTATE 91

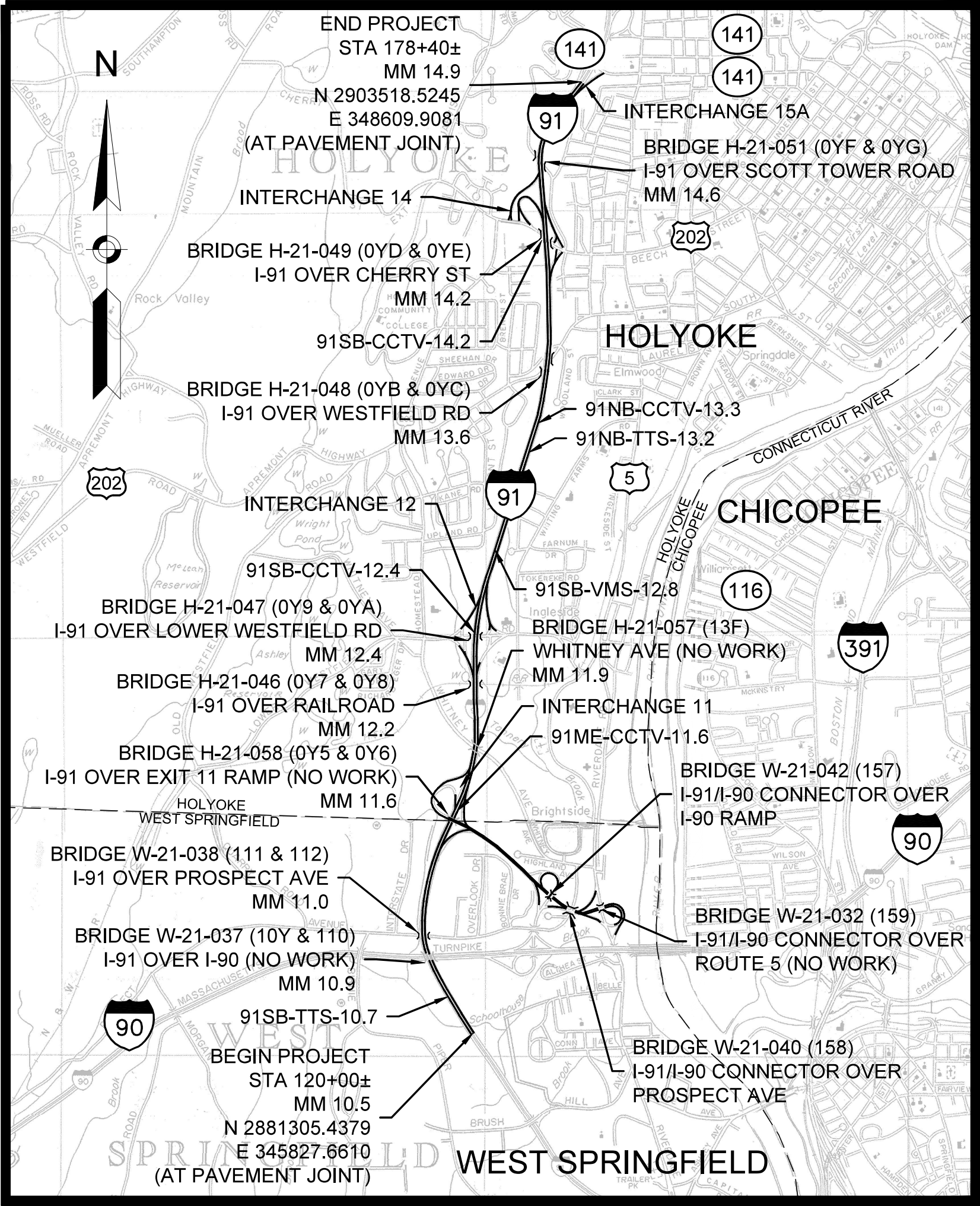
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	1	24
PROJECT FILE NO.		613314	

TITLE SHEET & INDEX

THESE PLANS ARE SUPPLEMENTED BY THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS, AS IDENTIFIED IN THE CONTRACT SPECIAL PROVISIONS: THE MASSDOT CONSTRUCTION STANDARD DETAILS, THE MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE MASSDOT OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, AND THE ANSI AMERICAN STANDARD FOR NURSERY STOCK.

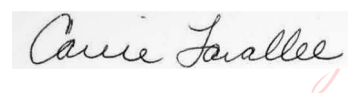
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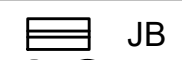
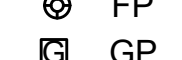
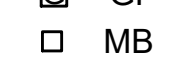
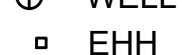
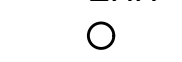
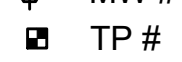
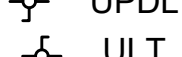
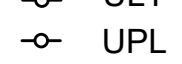
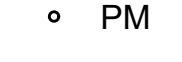
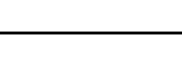
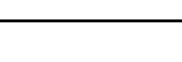
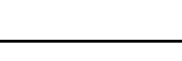
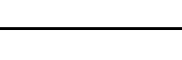
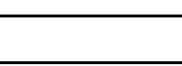
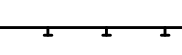
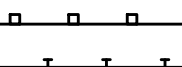
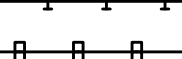
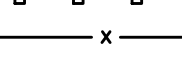
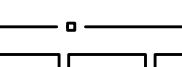
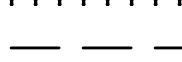
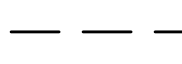
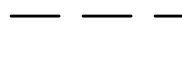
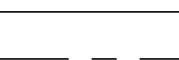
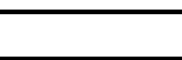
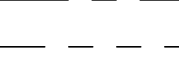
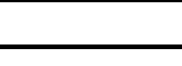
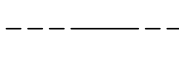
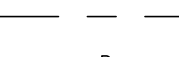
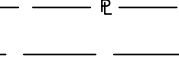
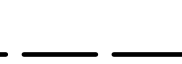
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3 - 5	TYPICAL SECTIONS
6 - 8	TEMPORARY TRAFFIC CONTROL PLANS
9 - 10	SIGN AND PAVEMENT MARKINGS SKETCH
11	CONSTRUCTION DETAILS & SIGN SUMMARY SHEET
12 - 17	CONSTRUCTION DETAILS
18	BRIDGE DETAILS: PLAN VIEW W-21-038 I-91 OVER PROSPECT AVE H-21-046 I-91 OVER RAILROAD
19	BRIDGE DETAILS: PLAN VIEW H-21-047 I-91 OVER LOWER WESTFIELD ROAD H-21-048 I-91 OVER WESTFIELD ROAD
20	BRIDGE DETAILS: PLAN VIEW H-21-049 I-91 OVER CHERRY STREET H-21-051 I-91 OVER SCOTT TOWER ROAD
21	BRIDGE DETAILS: PLAN VIEW W-21-042 OVER I-90 RAMP W-21-040 OVER PROSPECT AVE W-21-032 OVER ROUTE 5
22	BRIDGE DETAILS: BRIDGE DECK DETAILS
23 - 24	BRIDGE DETAILS: BRIDGE JOINT DETAILS

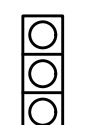


DESIGN DESIGNATION (INTERSTATE 91)

DESIGN SPEED	POSTED SPEED LIMIT: 65 MPH
ADT (2024)	76,141
ADT (2044)	92,907
K	9%
D	50%
T (PEAK HOUR)	5.1%
T (AVERAGE DAY)	11.6%
DHV	6,853
DDHV	3,426
FUNCTIONAL CLASSIFICATION	INTERSTATE

DATE	DESCRIPTION	REV #
 Massachusetts Department of Transportation Highway Division		
APPROVED		
 Digitally signed by Carrie Lavallee, P.E. Date: 2026.08.11 09:20:03 -04'00'		
CHIEF ENGINEER		DATE

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
		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
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE 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 PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		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
		CROSSWALK
		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

ITS ABBREVIATIONS	
CCTV	CLOSED CIRCUIT TELEVISION
ITS	INTELLIGENT TRANSPORTATION SYSTEM
TTR	TRAVEL TIME READER
TTS	TRAVEL TIME SIGN
VMS/VMSG	VARIABLE MESSAGE SIGN

ABBREVIATIONS		
GENERAL		
AADT	ANNUAL AVERAGE DAILY TRAFFIC	
ABAN	ABANDON	
ADJ	ADJUST	
APPROX.	APPROXIMATE	
A.C.	ASPHALT CONCRETE	
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE	
BIT.	BITUMINOUS	
BC	BOTTOM OF CURB	
BD.	BOUND	
BL	BASELINE	
BLDG	BUILDING	
BM	BENCHMARK	
BO	BY OTHERS	
BOS	BOTTOM OF SLOPE	
BR.	BRIDGE	
CB	CATCH BASIN	
CBCI	CATCH BASIN WITH CURB INLET	
CC	CEMENT CONCRETE	
CCM	CEMENT CONCRETE MASONRY	
CEM	CEMENT	
CI	CURB INLET	
CIP	CAST IRON PIPE	
CLF	CHAIN LINK FENCE	
CL	CENTERLINE	
CMP	CORRUGATED METAL PIPE	
CSP	CORRUGATED STEEL PIPE	
CO.	COUNTY	
CONC	CONCRETE	
CONT	CONTINUOUS	
CONST	CONSTRUCTION	
CR GR	CROWN GRADE	
DHV	DESIGN HOURLY VOLUME	
DI	DROP INLET	
DIA	DIAMETER	
DIP	DUCTILE IRON PIPE	
DW	STEADY DON'T WALK - PORTLAND ORANGE	
DWY	DRIVEWAY	
ELEV (or EL.)	ELEVATION	
EMB	EMBANKMENT	
EOP	EDGE OF PAVEMENT	
EXIST (or EX)	EXISTING	
EXC	EXCAVATION	
F&C	FRAME AND COVER	

MAINLINE PAVEMENT - TRAVEL LANES

SHIM MILLING:	0.00 TO 0.75 INCHES PAVEMENT MILLING FOR INLAY WITHIN 7 FEET OF EDGE OF OUTSIDE LANES OVER
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MAINLINE PAVEMENT AT TRANSITIONS AT BRIDGES, PROJECT LIMITS, AND TAPERS AT ENTRANCE AND EXIT RAMP:

FINE MILLING: 0.00 TO 0.75 INCHES PAVEMENT FINE MILLING OVER

MAINLINE PAVEMENT - SHOULDERS GREATER THAN 4 FEET:

CRACK SEALING: PAVEMENT CRACK SEALING - HIGH PERFORMANCE CRACK SEALER

SURFACE: 2.00 INCHES SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC-12.5-P) OVER

CRACK SEALING: PAVEMENT CRACK SEALING - HIGH PERFORMANCE CRACK SEALER

ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACE.

SURFACE: 2.50 INCHES SUPERPAVE WATERPROOFING SURFACE COURSE - 12.5 (SSC-W-12.5) OVER

ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT 0.06 TO 0.08 GAL/SY OVER ALL BRIDGE DECKS.

FOR PAVEMENT TRANSITION AREAS:

FINE MILLING: 2.50 INCHES FINE MILLING

CRACK SEALING: PAVEMENT CRACK SEALING - HIGH PERFORMANCE CRACK SEALER

ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACES.

SURFACE: 1.50 INCHES SUPERPAVE WATERPROOFING SURFACE COURSE - 9.5 (SSC-W-9.5) OVER

FOR BRIDGE DECK:

BRIDGE MILLING: 1.50 INCHES BRIDGE MILLING

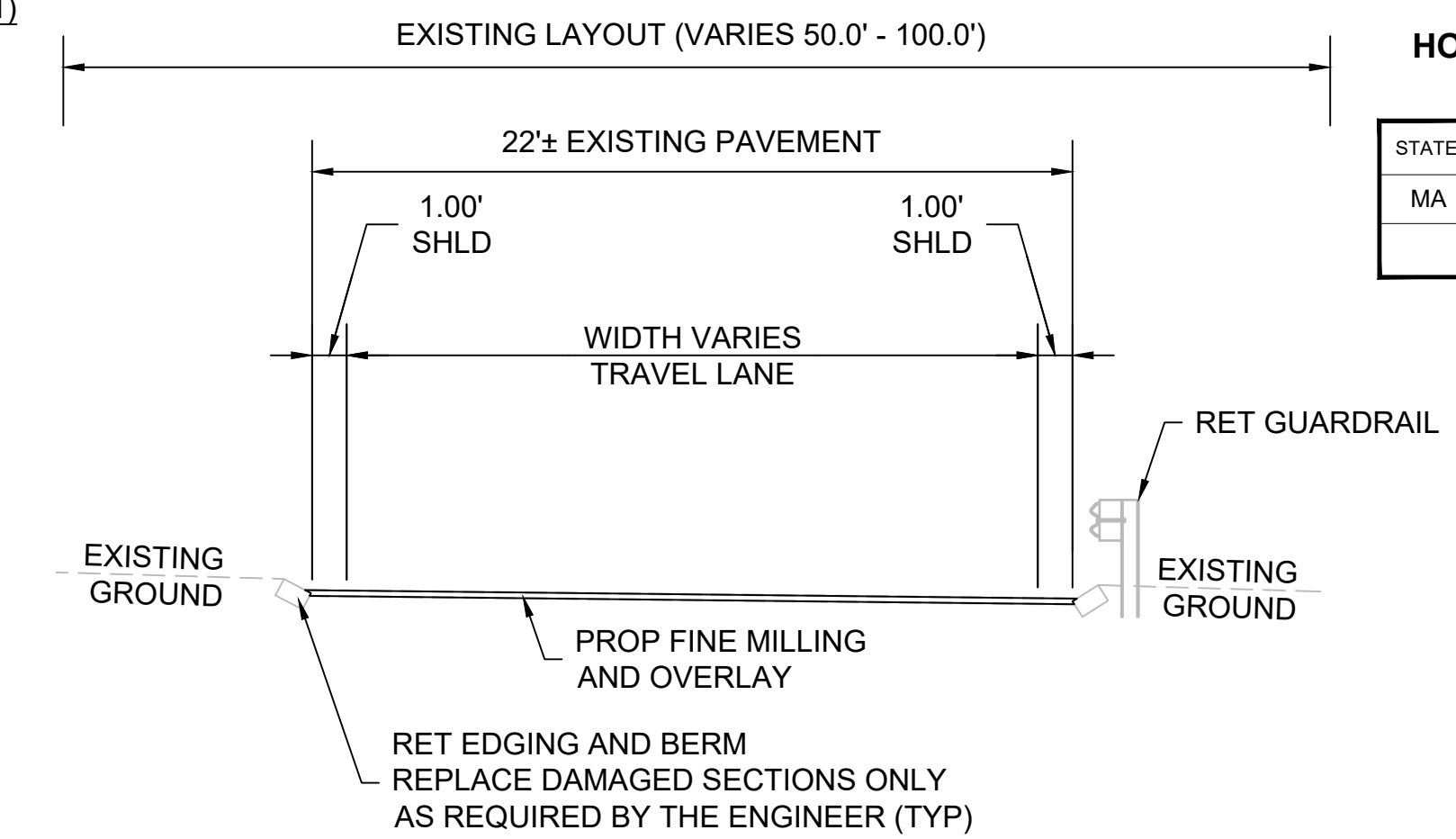
ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACE.

FOR PAVEMENT TRANSITION AREAS:

FINE MILLING: 1.50 INCHES FINE MILLING

CRACK SEALING: PAVEMENT CRACK SEALING - HIGH PERFORMANCE CRACK SEALER

ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACES.



NOT TO SCALE

INTERCHANGE 11

INTERCHANGE 11

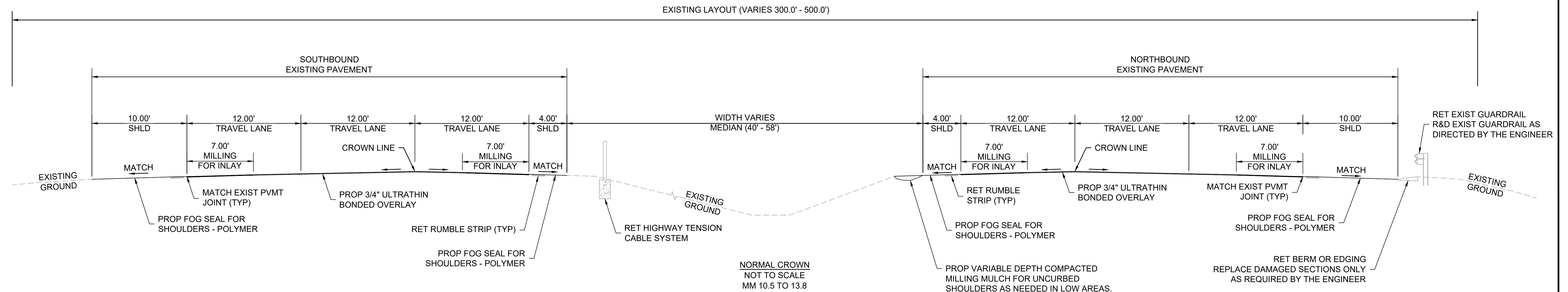
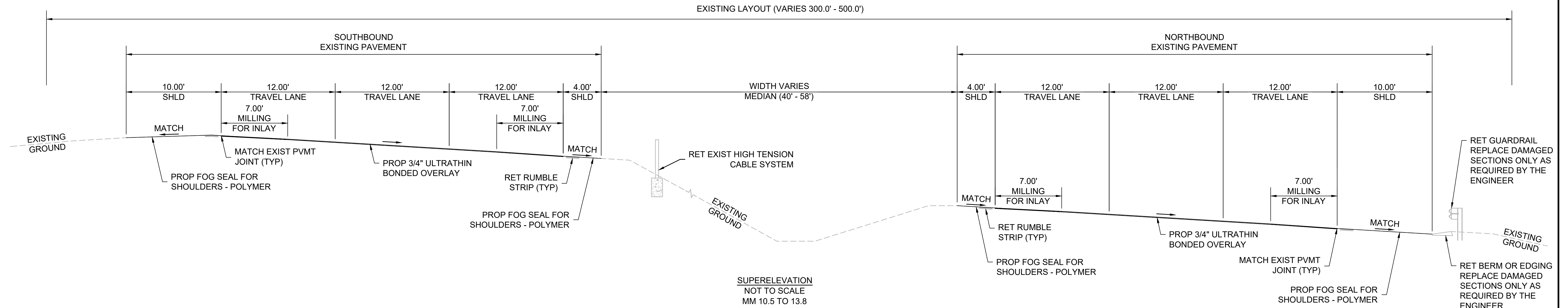
INTERCHANGE 12

INTERCHANGE 12
INTERCHANGE 12

INTERCHANGE 14

INTERCHANGE 14

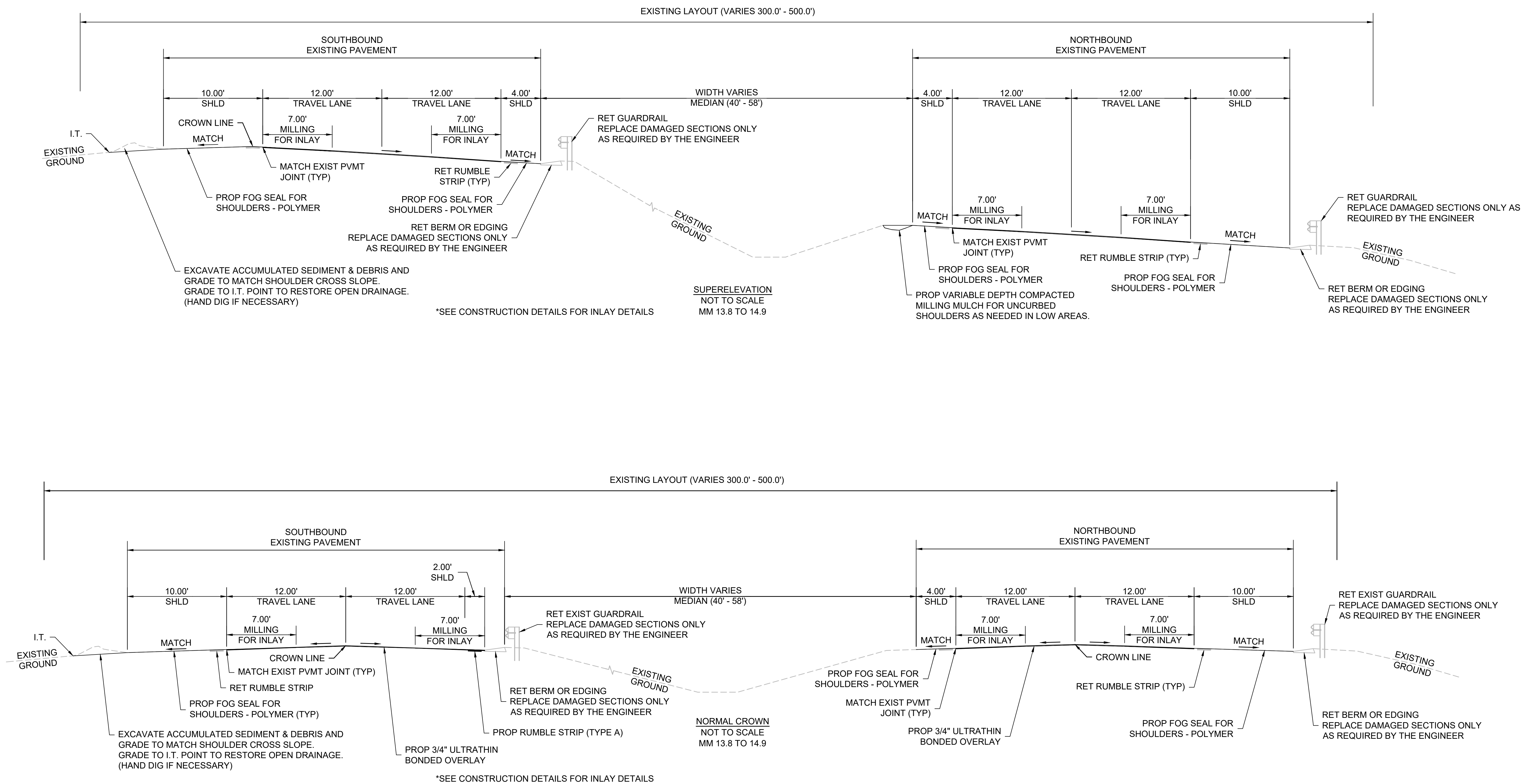
INTERCHANGE 15A



HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	4	24
PROJECT FILE NO.		613314	

TYPICAL SECTIONS

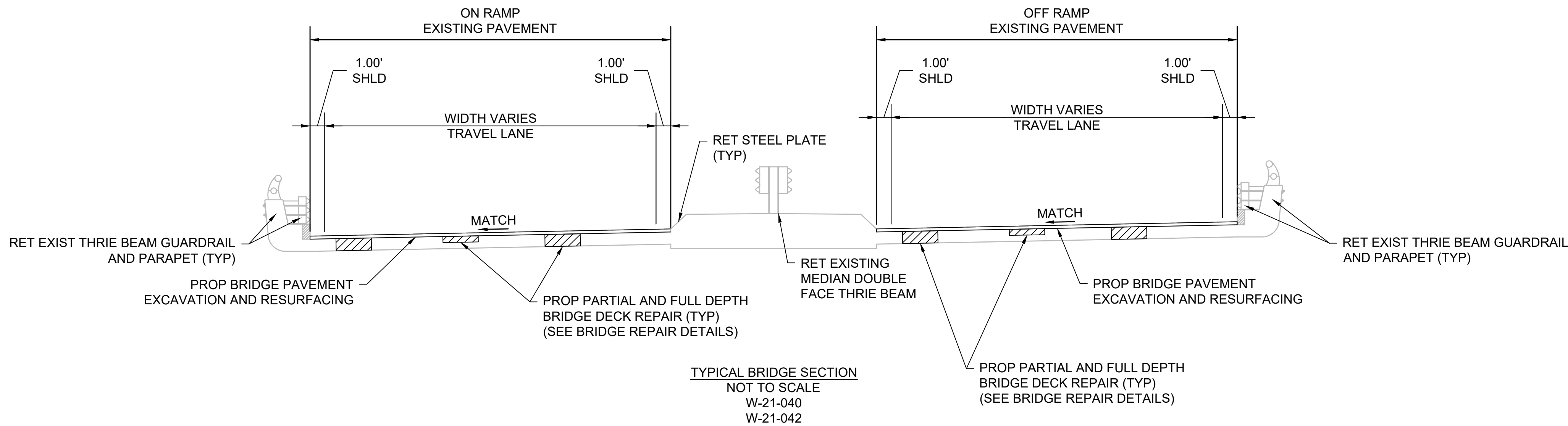
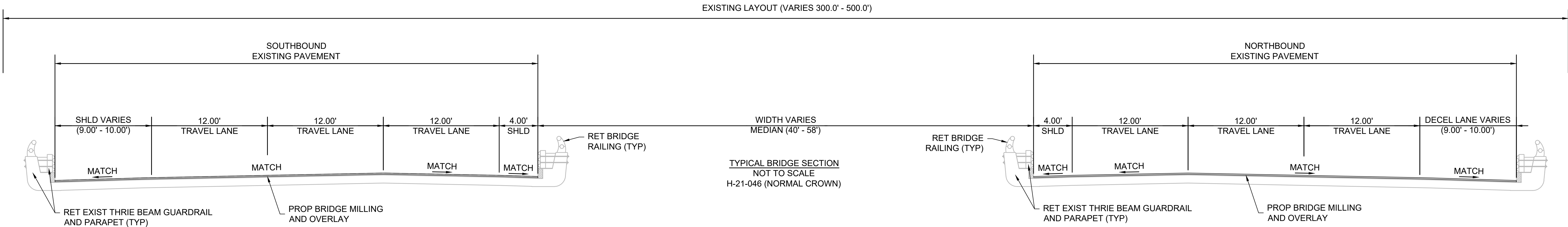
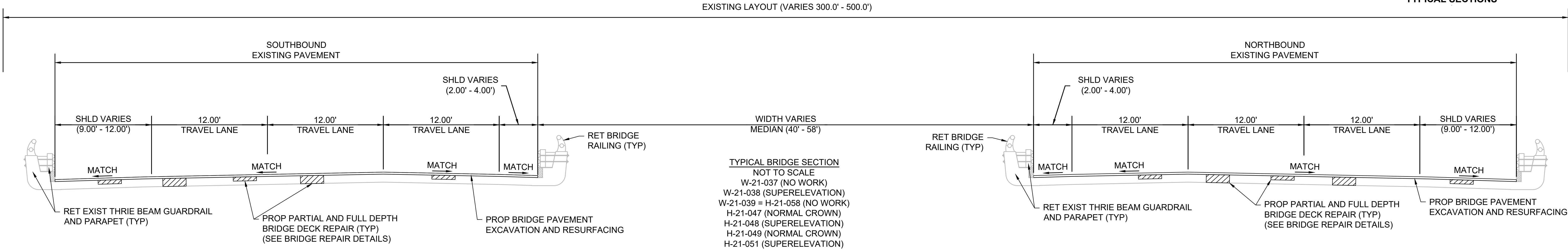


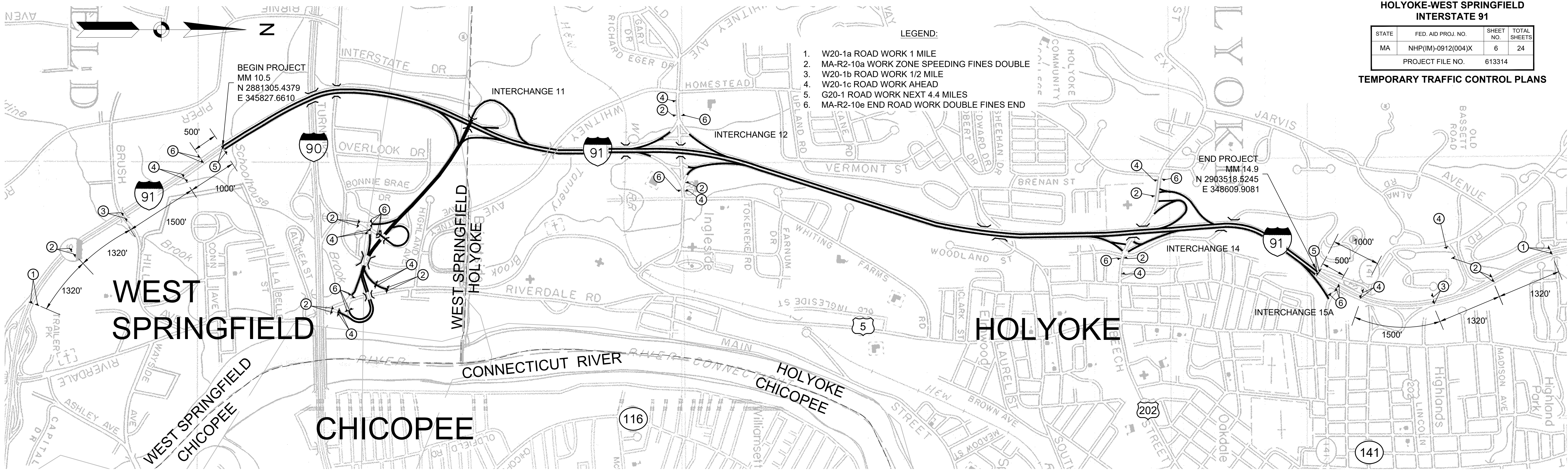
HOLYOKE-WEST SPRINGFIELD

INTERSTATE 91

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	5	24
PROJECT FILE NO.		613314	

TYPICAL SECTIONS





NOTES:

- ADA COMPLIANT PEDESTRIAN BYPASS ROUTES MUST BE MAINTAINED BENEATH BRIDGES DURING CONSTRUCTION.
- THE TRAFFIC SIGN SUMMARY WAS CREATED FOR THE FOLLOWING:

DETAIL NUMBER	DETAIL NAME	CURRENT VERSION
852.7.1	DIVIDED HIGHWAY RIGHT SHOULDER CLOSURE (SHORT TERM)	JANUARY 2025
852.7.2	DIVIDED HIGHWAY LEFT SHOULDER CLOSURE (SHORT TERM)	JANUARY 2025
852.7.3	DIVIDED HIGHWAY RIGHT LANE CLOSURE (SHORT TERM)	JANUARY 2025
852.7.4	DIVIDED HIGHWAY LEFT LANE CLOSURE (SHORT TERM)	JANUARY 2025
852.7.7	DIVIDED HIGHWAY CENTER LANE CLOSURE (SHORT TERM)	JANUARY 2025
852.7.8	DIVIDED HIGHWAY RIGHT TWO LANES CLOSURE (SHORT TERM)	JANUARY 2025
852.7.9	DIVIDED HIGHWAY LEFT TWO LANES CLOSURE (SHORT TERM)	JANUARY 2025
852.7.11	DIVIDED HIGHWAY SCARIFIED PAVEMENT / STEEL PLATE	JANUARY 2025
852.8.1	EXIT RAMP RIGHT SIDE OF RAMP CLOSURE	JANUARY 2025
852.8.2	EXIT RAMP LEFT SIDE OF RAMP CLOSURE	JANUARY 2025
852.8.5	EXIT RAMP WORK WITHIN VICINITY OF RAMP (DEPARTURE SIDE)	JANUARY 2025
852.8.6	EXIT RAMP WORK WITHIN VICINITY OF RAMP (APPROACH SIDE)	JANUARY 2025
852.9.1	ENTRANCE RAMP PARTIAL CLOSURE	JANUARY 2025
852.9.2	ENTRANCE RAMP WORK WITHIN VICINITY OF RAMP	JANUARY 2025
852.9.3	ENTRANCE RAMP WORK DOWNSTREAM	JANUARY 2025

PROJECT LIMIT SIGNS TO REMAIN IN PLACE FOR PROJECT DURATION (SEE SIGNS AT PROJECT LIMITS DETAIL)

TRAFFIC SIGN SUMMARY 1 OF 2

IDENTIFI- CATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQ'D	COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK- GROUND	LEGEND	BORDER		
E5-2	48	36	EXIT OPEN	SEE FHWA STANDARD HIGHWAY SIGNS PUBLICATION, 2024 EDITION			2	ORANGE	BLACK	BLACK	12.00	24.00
G20-1	48	24	ROAD WORK NEXT 4.4 MILES				4	ORANGE	BLACK	BLACK	8.00	32.00
R1-2	48		YIELD				1	WHITE	RED	RED	6.93	6.93
R2-12	36	54	END WORK ZONE SPEED LIMIT				9	WHITE	BLACK	BLACK	13.50	121.50
W3-5	48	48	55				9	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	144.00

TRAFFIC SIGN SUMMARY 2 OF 2

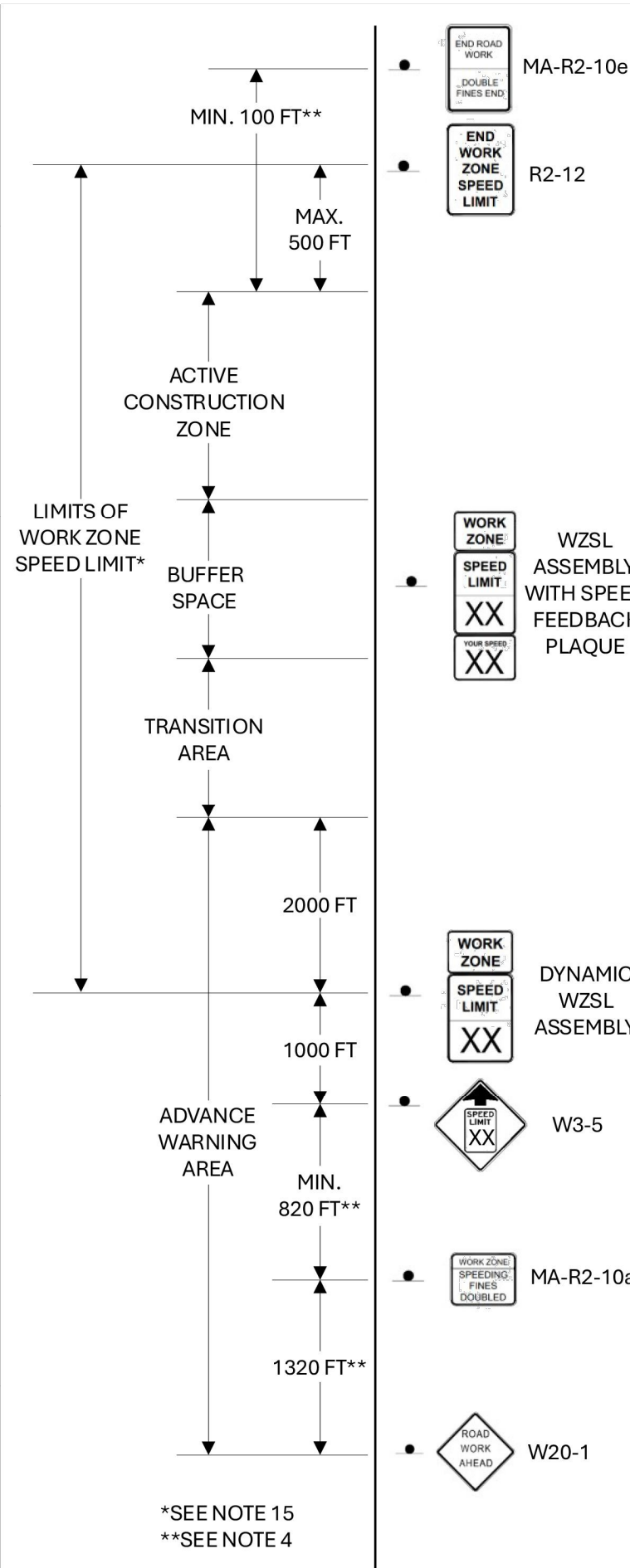
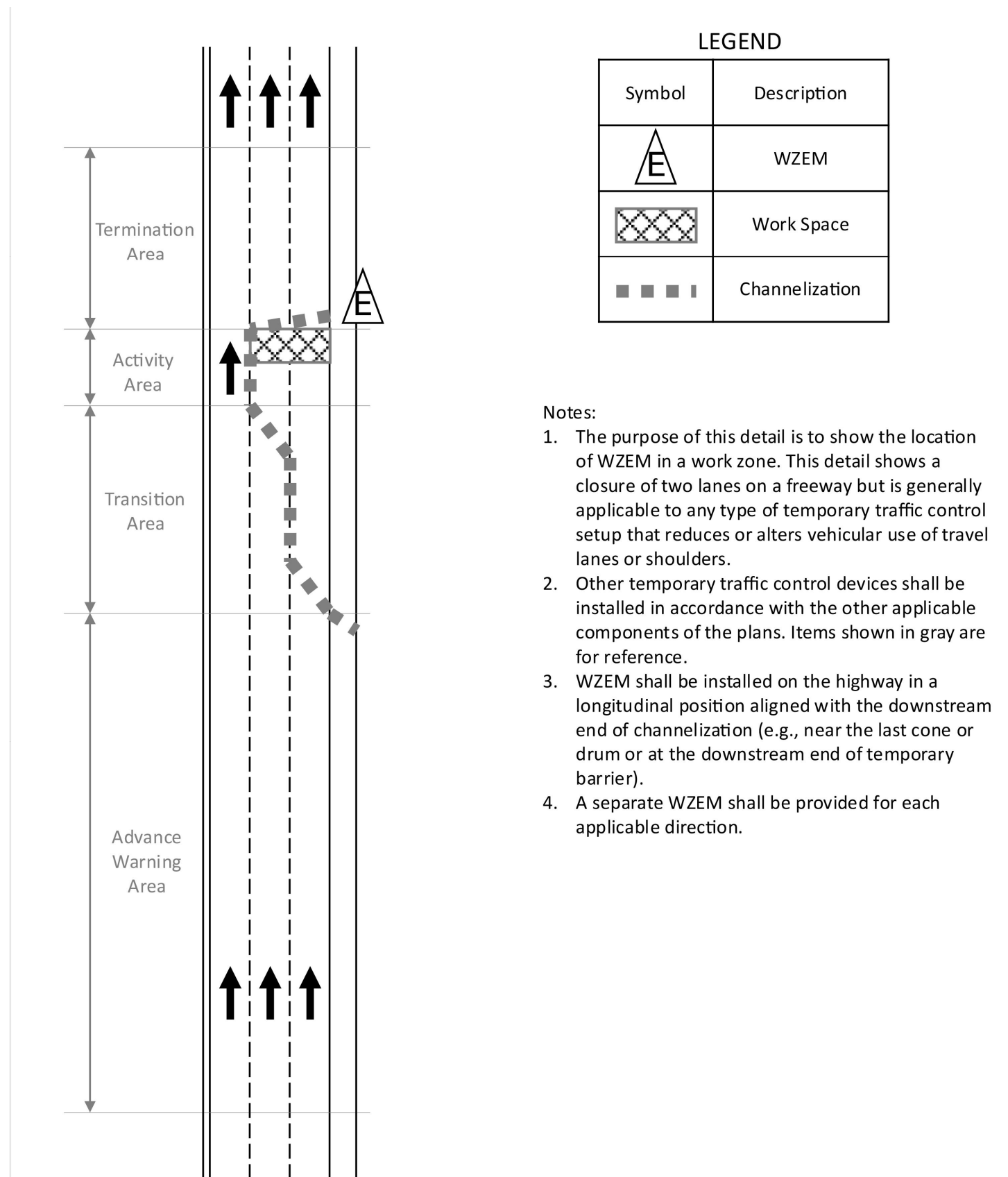
IDENTIFI- CATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQ'D	COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK- GROUND	LEGEND	BORDER		
W3-2	48	48		SEE FHWA STANDARD HIGHWAY SIGNS PUBLICATION, 2024 EDITION			1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W4-1R	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W4-2L	48	48					6	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	96.00
W4-2R	48	48					6	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	96.00
W4-3	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W5-1	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W5-4	48	48					3	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	48.00
W8-1	48	48					8	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	128.00
W8-3	48	48					6	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	96.00
W8-15	48	48					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	32.00
W8-15P	30	24					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	5.00	10.00
W9-3	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W12-1	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W20-1	48	48					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	32.00
W20-1a	48	48					4	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	64.00
W20-1b	48	48					4	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	64.00

IDENTIFI- CATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQ'D	COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK- GROUND	LEGEND	BORDER		
W20-1c	48	48		SEE FHWA STANDARD HIGHWAY SIGNS PUBLICATION, 2024 EDITION			15	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	240.00
W20-5L	48	48					4	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	64.00
W20-5R	48	48					4	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	64.00
W21-5aL	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W21-5aR	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W21-5bL	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
W21-5bR	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00
MA-E5-1wz	48	48		SEE MassDOT STANDARD SIGNS BOOK			2	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	32.00
MA-R2-10a	60	48					15	FLUOR- ESCENT ORANGE /WHITE	BLACK	BLACK	20.00	300.00
MA-R2-10e	48	60					18	FLUOR- ESCENT ORANGE /WHITE	BLACK	BLACK	20.00	360.00
MA-W20-5bL	48	48					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	32.00
MA-W20-5bR	48	48					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	32.00
MA-W28-1	48	48					4	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	64.00
MA-W30-8L	48	48					2	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	32.00
MA-W30-8R	48	48					1	FLUOR- ESCENT ORANGE	BLACK	BLACK	16.00	16.00

HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	8	24
PROJECT FILE NO.		613314	

TEMPORARY TRAFFIC CONTROL PLANS



EXISTING POSTED SPEED LIMIT (MPH):	
WORK ZONE SPEED LIMIT (MPH):	

DEFINITIONS:

- ADVANCE WARNING AREA — ROADWAY SEGMENT WHERE WARNING SIGNS ARE POSTED; LENGTH VARIES, MINIMUM 1 MILE.
- TRANSITION AREA — ROADWAY SEGMENT WHERE THE MERGING TAPER(S) (LANE(S) CLOSURE) OR A SHOULDER TAPER (SHOULDER CLOSURE) ARE DEPLOYED; SEE TABLE FOR TYPICAL LENGTHS.
- BUFFER SPACE — ROADWAY SEGMENT BETWEEN TRANSITION AREA AND ACTIVE CONSTRUCTION ZONE; SEE TABLE FOR TYPICAL LENGTHS.
- ACTIVE CONSTRUCTION ZONE — ROADWAY SEGMENT WHERE WORK IS TAKING PLACE, WHERE WORKERS AND WORK VEHICLES ARE PRESENT, THE LENGTH DEPENDS ON THE WORK BEING DONE.

TYPICAL TRANSITION AREA LENGTH IN FEET,
ASSUMING LANE WIDTH OF 12 FEET

EXISTING POSTED SPEED LIMIT (MPH)	SHOULDER CLOSED	1 LANE CLOSED	2 LANES CLOSED
45	180	540	2160
50	200	600	2400
55	220	660	2640
60	240	720	2880
65	260	780	3120

NOTE: TRANSITION LENGTHS MAY BE ADJUSTED AT THE DIRECTION OF THE ENGINEER. SEE CONSTRUCTION STANDARD DETAILS FOR OTHER TYPES OF TEMPORARY TRAFFIC CONTROL OR FOR DIFFERENT LANE WIDTHS.

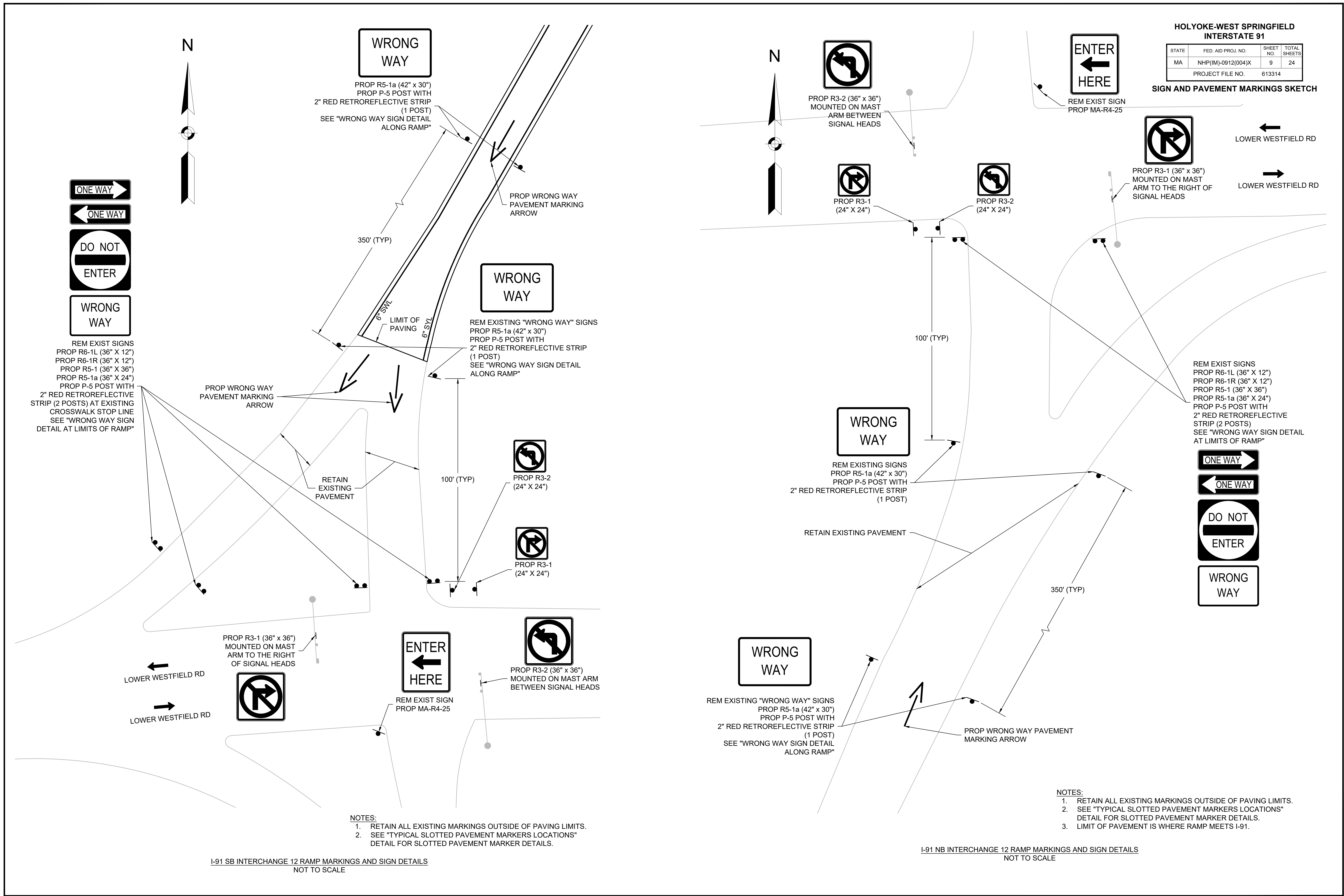
TYPICAL MINIMUM BUFFER
SPACE LENGTH

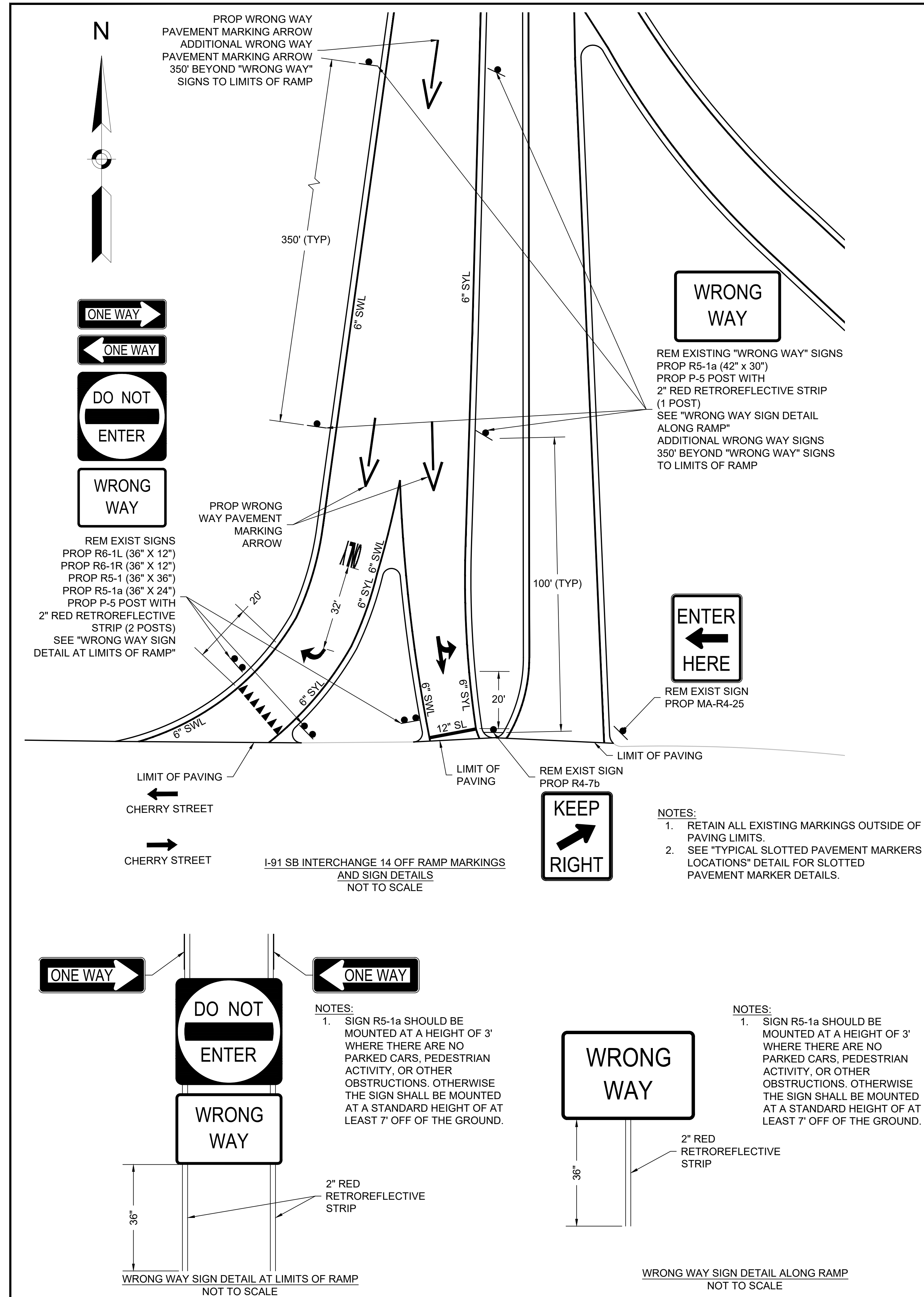
EXISTING POSTED SPEED LIMIT (MPH)	MIN. LENGTH (FEET)
45	360
50	425
55	495
60	570
65	645

NOTE: BUFFER LENGTHS MAY BE ADJUSTED AT THE DIRECTION OF THE ENGINEER.

NOTES:

- THE WORK ZONE SPEED LIMIT (WZSL) SHALL ONLY BE IN EFFECT WHEN THE FOLLOWING CONDITIONS ARE MET:
 - A LANE CLOSURE OR SHOULDER CLOSURE SETUP LASTING NO LONGER THAN 72 HOURS AT A TIME HAS BEEN DEPLOYED ON THE MAIN ROADWAY (EXCLUDING WORK CONFINED TO A RAMP),
 - WORKERS ARE PRESENT IN THE SETUP ON FOOT OR OPERATING MACHINERY, AND
 - SIGNS HAVE BEEN POSTED AS SHOWN ON THIS PLAN.
- WHERE AND WHEN WZSL CONDITIONS LISTED IN NOTE 1 ARE NOT MET, THE EXISTING POSTED SPEED LIMIT SHALL APPLY.
- BEFORE IMPLEMENTING THE WZSL, THE CONTRACTOR SHALL COVER OR REMOVE EXISTING SPEED LIMIT (R2-1) SIGNS ON THE ROADWAY FROM 500 FT UPSTREAM FROM THE W3-5 SIGN TO THE DOWNSTREAM END OF THE ACTIVE CONSTRUCTION ZONE. THE CONTRACTOR SHALL THEN RESTORE EXISTING R2-1 SIGNS TO THEIR ORIGINAL CONDITION WHEN THE WZSL IS NO LONGER IN EFFECT.
- W20-1, MA-R2-10a, AND MA-R2-10e SIGNS ARE ONLY SHOWN HERE FOR REFERENCE; THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS.
- THE DYNAMIC WZSL ASSEMBLY SHALL BE INSTALLED IN THE ADVANCE WARNING AREA, 2000 FT UPSTREAM FROM THE TRANSITION AREA.
- THE W3-5 SIGN SHALL BE INSTALLED 1000 FT UPSTREAM FROM THE DYNAMIC WZSL ASSEMBLY.
- THE WZSL ASSEMBLY WITH SPEED FEEDBACK PLAQUE SHALL BE INSTALLED WITHIN THE BUFFER SPACE.
- IF AN ENTRANCE RAMP ENTERS THE ACTIVE CONSTRUCTION ZONE ON THE MAIN ROADWAY, THEN THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL DYNAMIC WZSL ASSEMBLY TO INFORM ENTERING TRAFFIC OF THE WZSL.
- THE W3-5 SIGN IS OPTIONAL IF THE WZSL IS EXACTLY 5 MPH LESS THAN THE EXISTING POSTED SPEED LIMIT; IT IS REQUIRED OTHERWISE.
- THE W3-5 SIGN SHALL DISPLAY THE SAME WZSL THAT IS DISPLAYED ON THE DYNAMIC WZSL ASSEMBLY.
- THE R2-12 SIGN MAY BE OMITTED IF THE MA-R2-10e SIGN IS 1000 FT OR LESS FROM THE DOWNSTREAM END OF THE ACTIVE CONSTRUCTION ZONE.
- A SPEED LIMIT (R2-1) SIGN DISPLAYING THE EXISTING POSTED SPEED LIMIT 500 FT OR LESS FROM THE DOWNSTREAM END OF THE ACTIVE CONSTRUCTION ZONE MAY BE SUBSTITUTED FOR THE R2-12 SIGN.
- WHEN THE WZSL IS NOT IN EFFECT, THE W3-5 SIGN AND R2-12 SIGN SHALL BE REMOVED, COVERED, OR TURNED AWAY FROM TRAFFIC.
- THE UPSTREAM LIMIT OF THE WZSL SHALL BE THE LOCATION OF THE DYNAMIC WZSL ASSEMBLY (SEE NOTE 5).
- THE DOWNSTREAM LIMIT OF THE WZSL SHALL BE THE LOCATION OF THE R2-12 SIGN; IF THE R2-12 SIGN IS OMITTED, THEN THE DOWNSTREAM LIMIT SHALL BE THE MA-R2-10e SIGN (SEE NOTE 11) OR THE R2-1 SIGN (SEE NOTE 12).





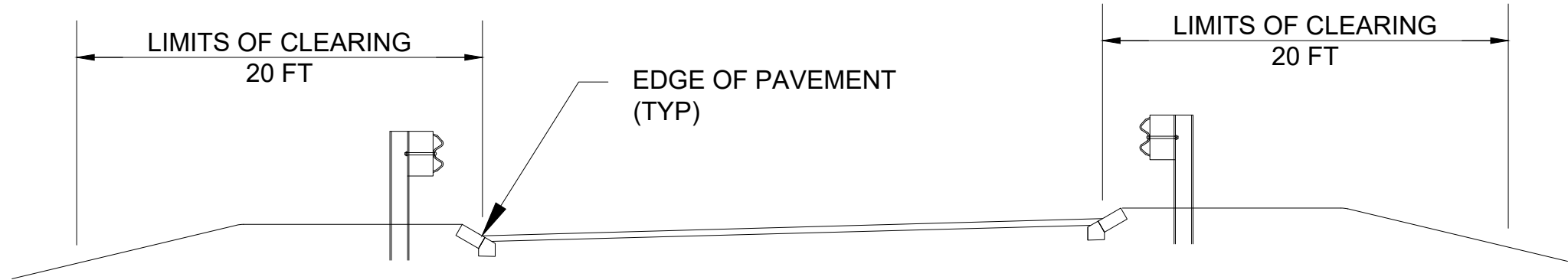
IDENTIFI- CATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQ'D	COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK- GROUND	LEGEND	BORDER		
R5-1a	36	24		SEE FHWA STANDARD HIGHWAY SIGNS PUBLICATION, 2024 EDITION			13	RED	WHITE	WHITE	6.00	78.00
R5-1a	42	30					24	RED	WHITE	WHITE	8.75	210.00
R5-1	36	36					13	RED	WHITE	WHITE	9.00	117.00
R6-1L	36	12					13	BLACK	WHITE	WHITE	3.00	39.00
R6-1R	36	12					13	BLACK	WHITE	WHITE	3.00	39.00
R3-1	24	24					3	WHITE	RED / BLACK	BLACK	4.00	12.00
R3-1	36	36					3	WHITE	RED / BLACK	BLACK	9.00	27.00
R3-1	24	24					2	WHITE	RED / BLACK	BLACK	4.00	8.00
R3-2	36	36					3	WHITE	RED / BLACK	BLACK	9.00	27.00
R4-7b	24	30					1	WHITE	BLACK	BLACK	5.00	5.00
MA-R4-25	24	30		SEE MassDOT STANDARD SIGNS BOOK			3	WHITE	BLACK	BLACK	5.00	15.00

HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91

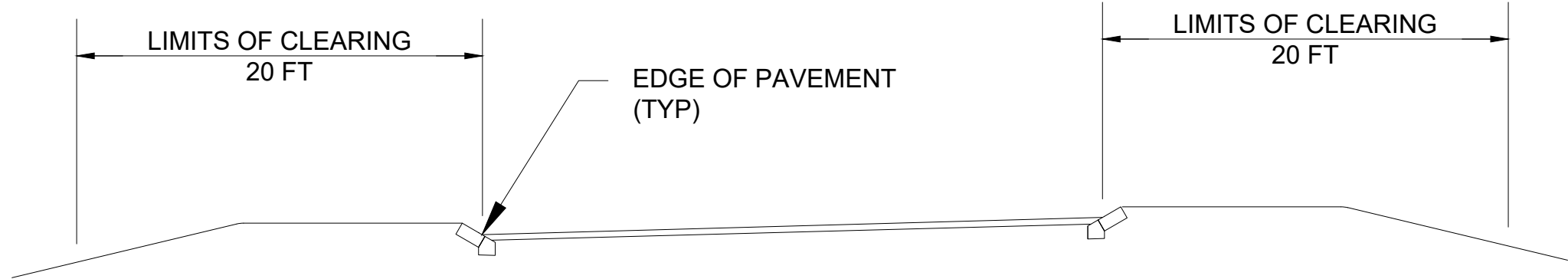
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	11	24

PROJECT FILE NO. 613314

CONSTRUCTION DETAILS
& SIGN SUMMARY SHEET

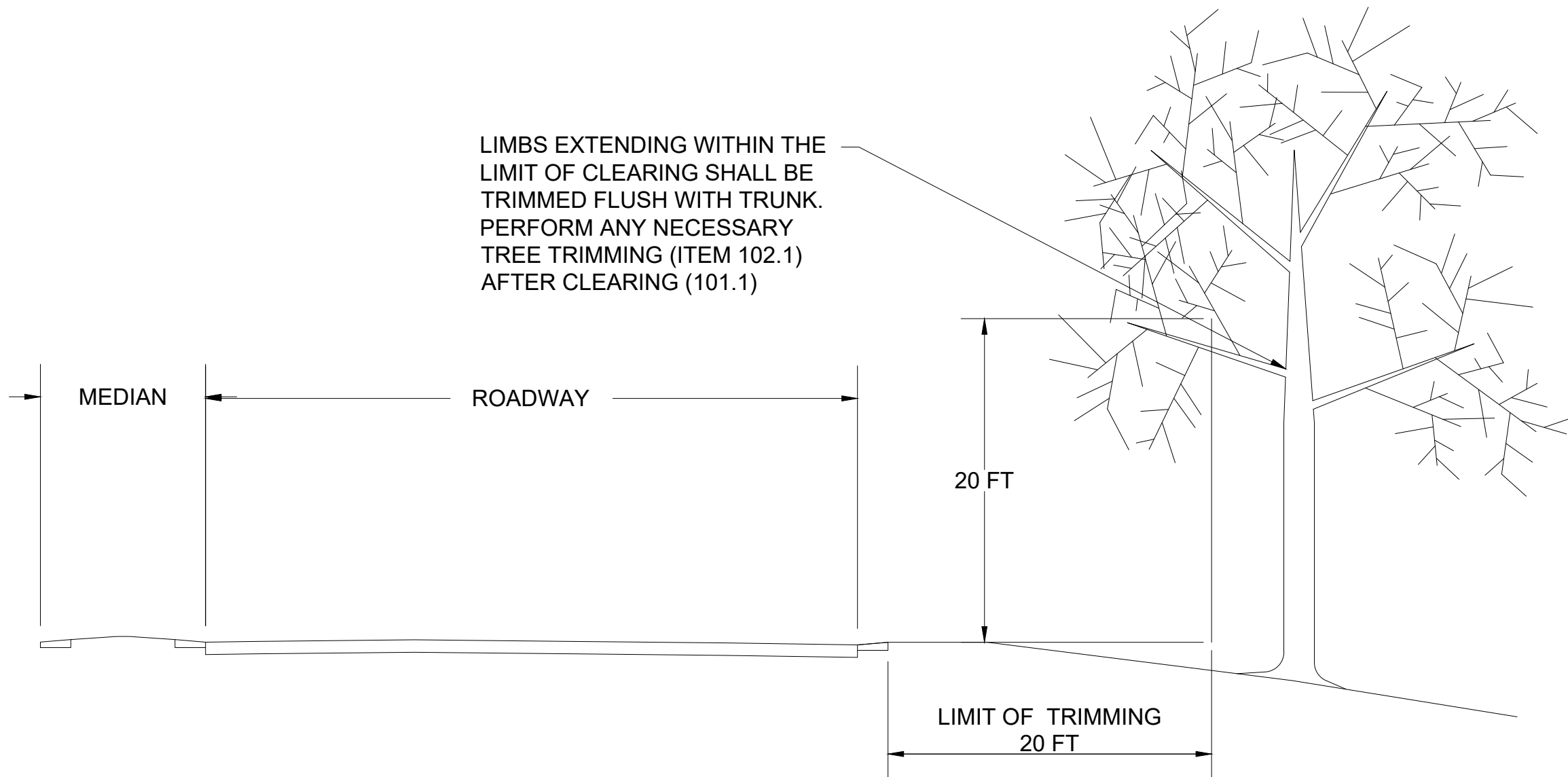


LIMITS OF CLEARING ON MAINLINE/RAMP AREAS
WITH GUARDRAIL

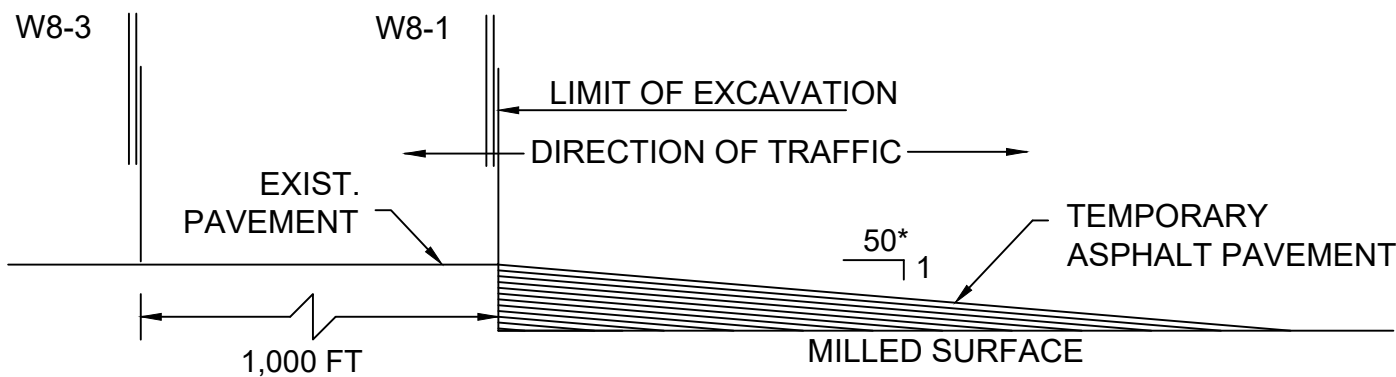


LIMITS OF CLEARING ON MAINLINE/RAMP AREAS
WITHOUT GUARDRAIL

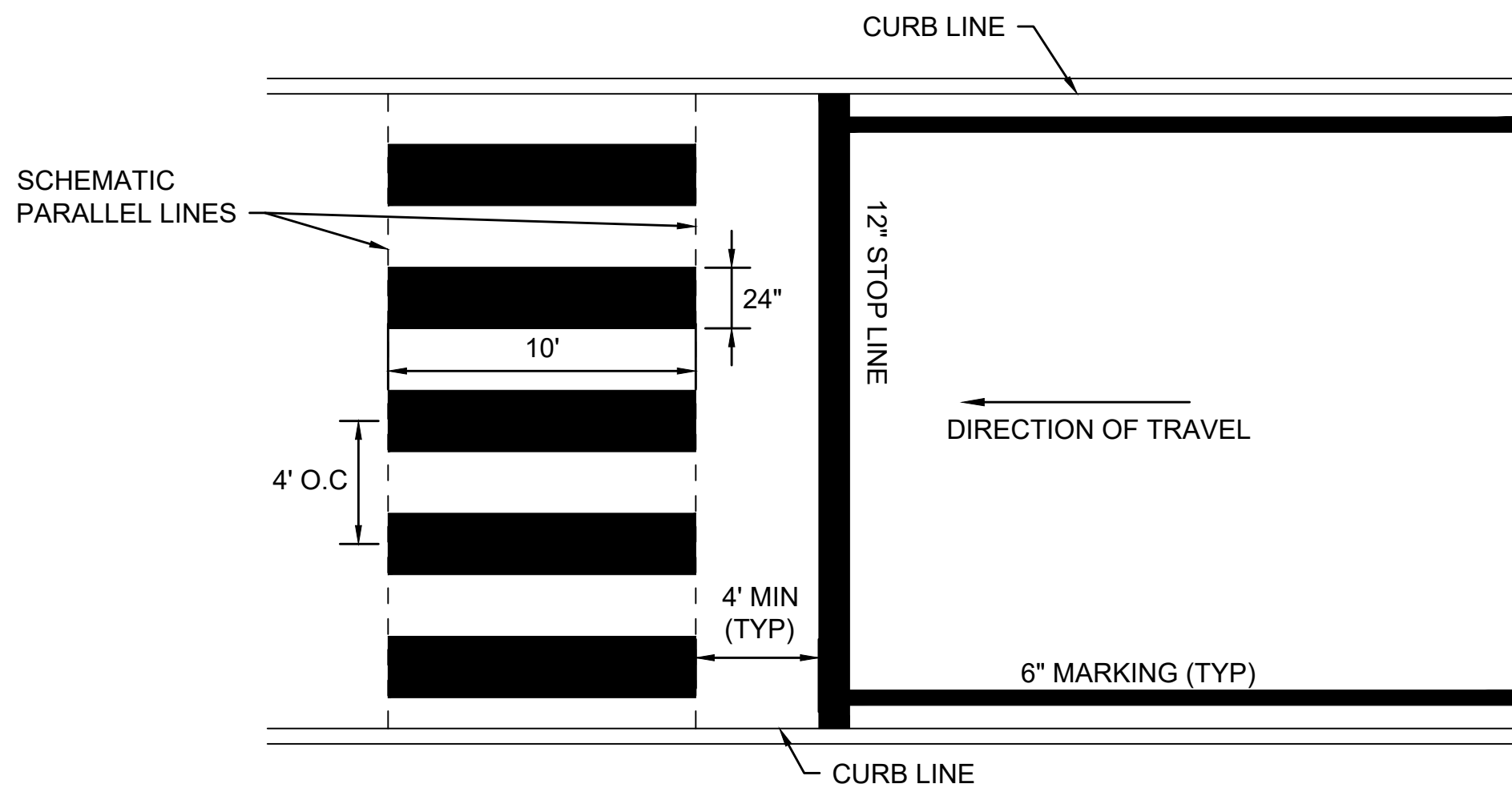
LIMITS OF CLEARING
NOT TO SCALE



TREE TRIMMING
NOT TO SCALE

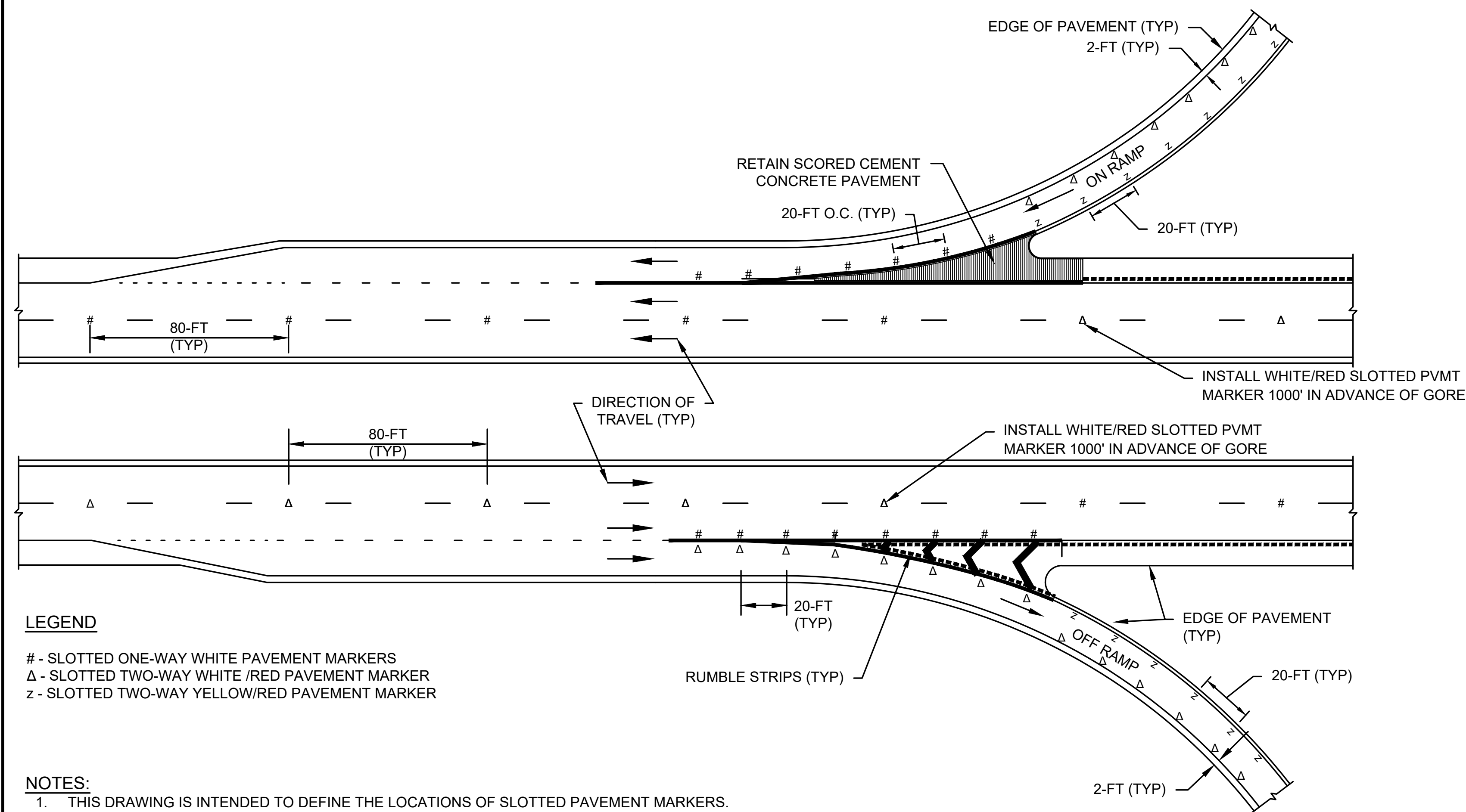


LONGITUDINAL DROP OFF DETAIL
NOT TO SCALE



- NOTES:
- ALL 24" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (FOUR - 6" LINES) WILL BE ACCEPTED.
 - LAYOUT OF CROSSWALKS SHALL BE ORIENTATED IN THE DIRECTION OF TRAVEL AND LOCATED OUTSIDE OF THE WHEEL PATH OF VEHICLES.

DIMENSIONS FOR CROSSWALK PAVEMENT MARKINGS WITH STOP LINE
NOT TO SCALE

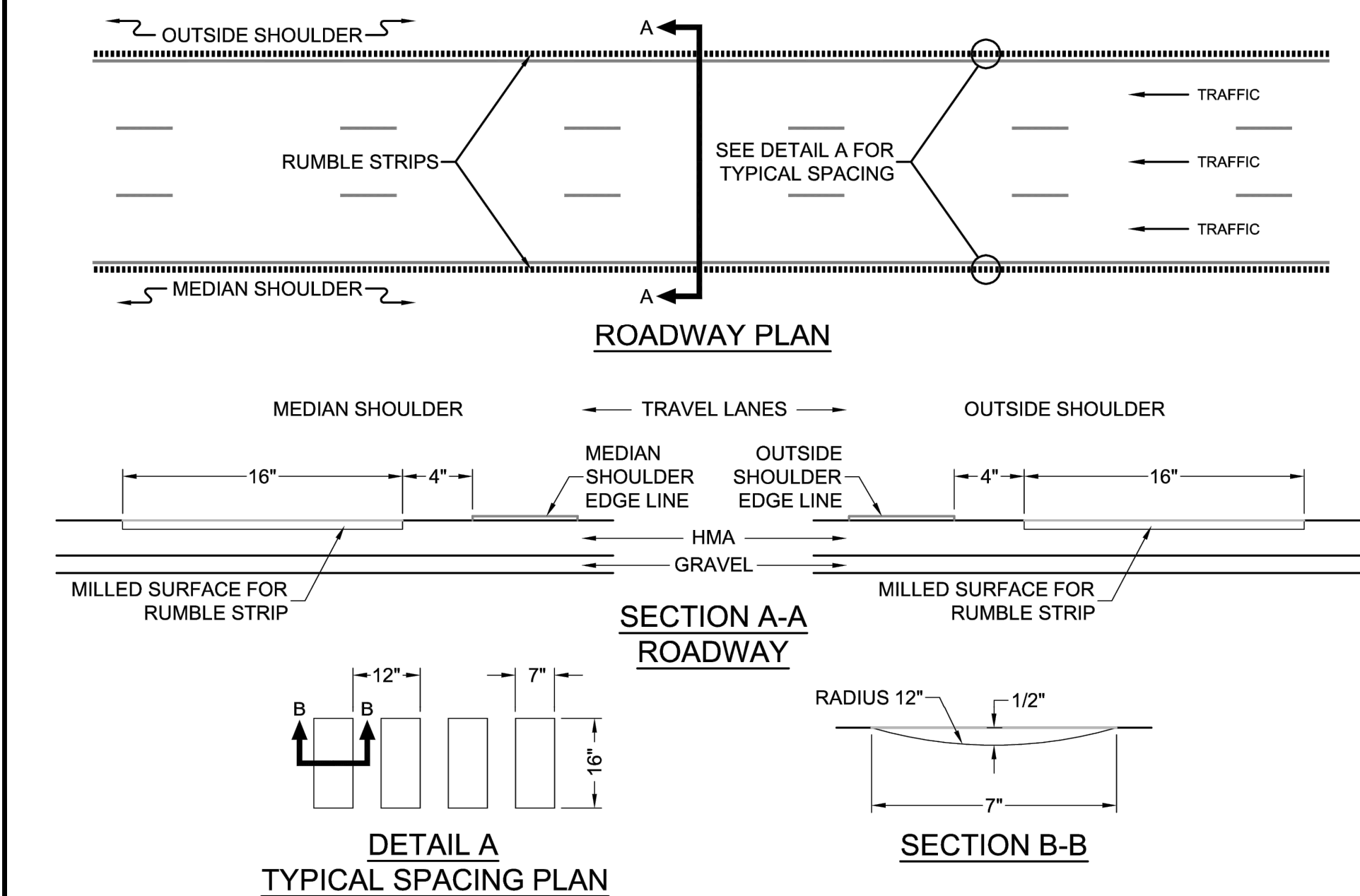


LEGEND

- SLOTTED ONE-WAY WHITE PAVEMENT MARKERS
Δ - SLOTTED TWO-WAY WHITE /RED PAVEMENT MARKER
z - SLOTTED TWO-WAY YELLOW/RED PAVEMENT MARKER

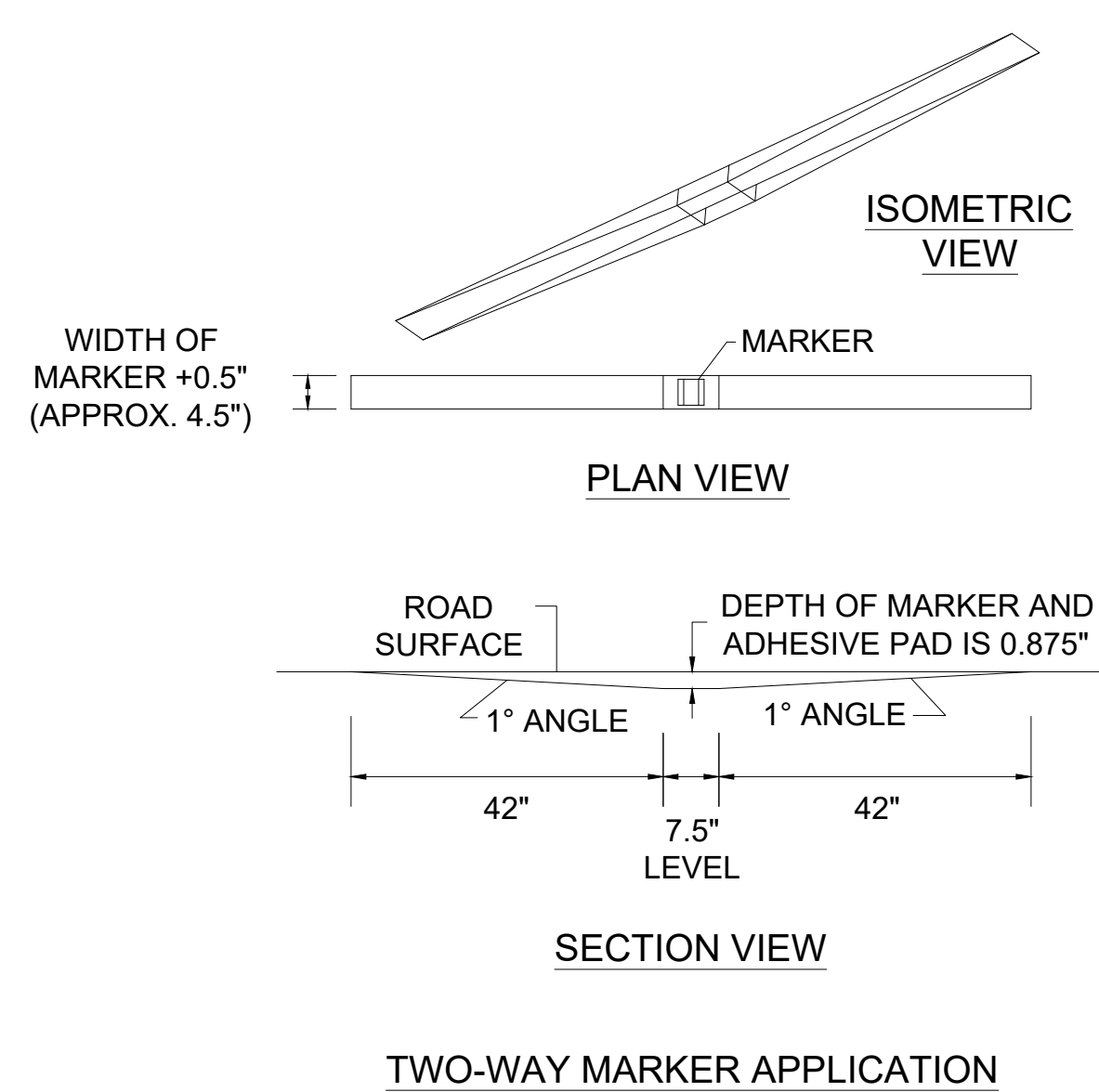
- NOTES:**
- THIS DRAWING IS INTENDED TO DEFINE THE LOCATIONS OF SLOTTED PAVEMENT MARKERS.
 - ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARD DETAILS AND M.U.T.C.D.
 - RED REFLECTORS SHALL FACE AWAY FROM ONCOMING TRAFFIC.
 - SLOTTED PAVEMENT MARKERS SHALL NOT BE INSTALLED ON BRIDGE DECKS.

TYPICAL SLOTTED PAVEMENT MARKERS LOCATIONS
NOT TO SCALE



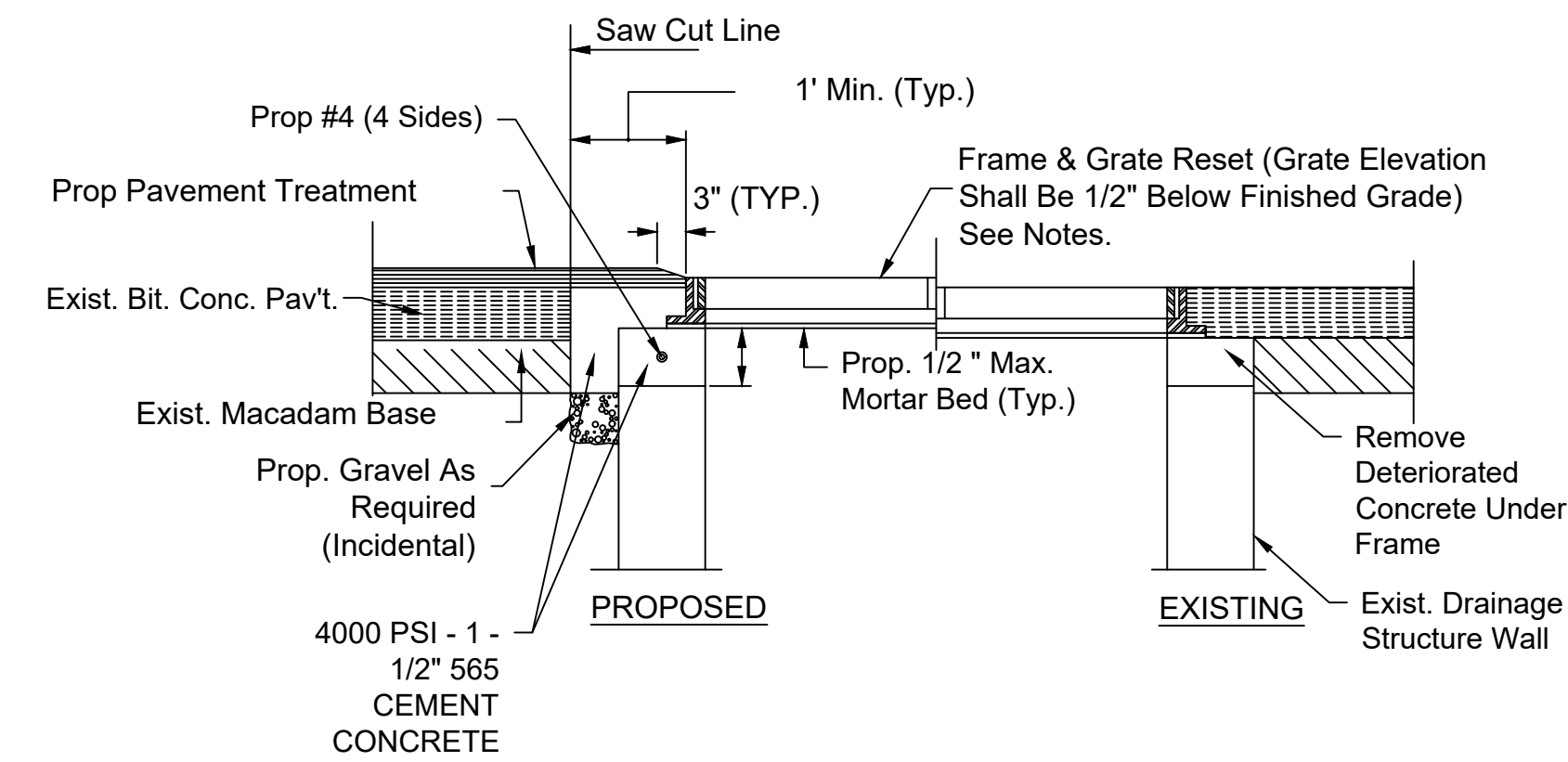
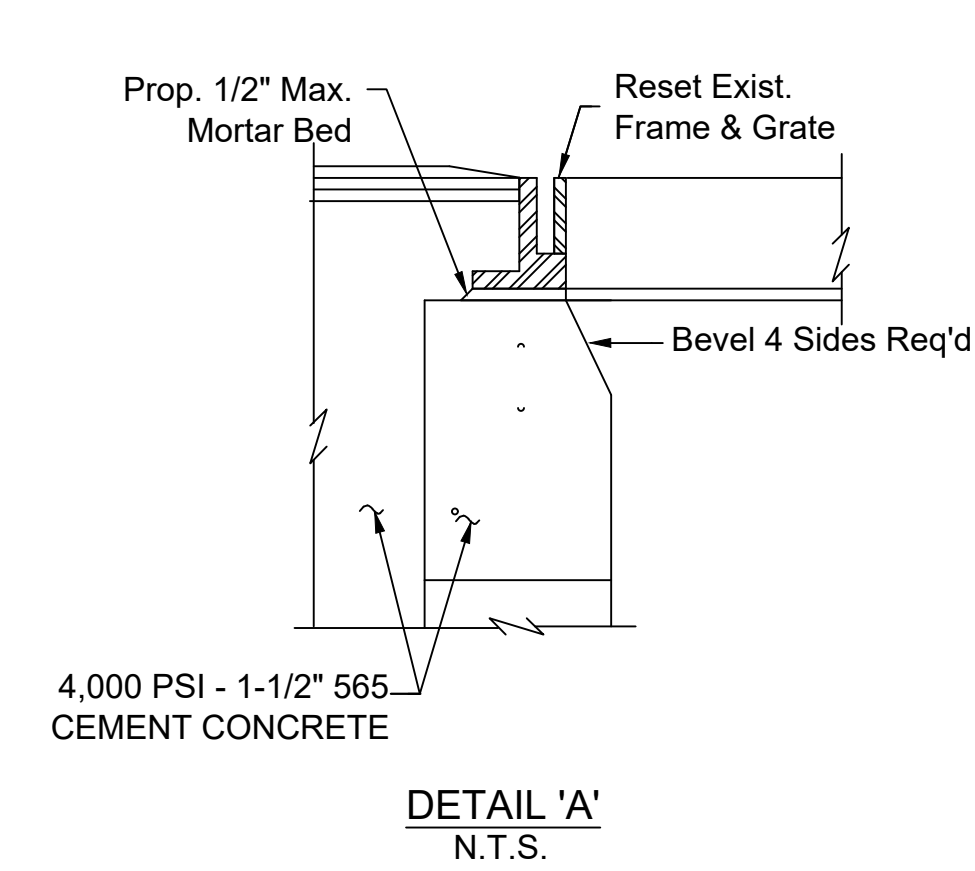
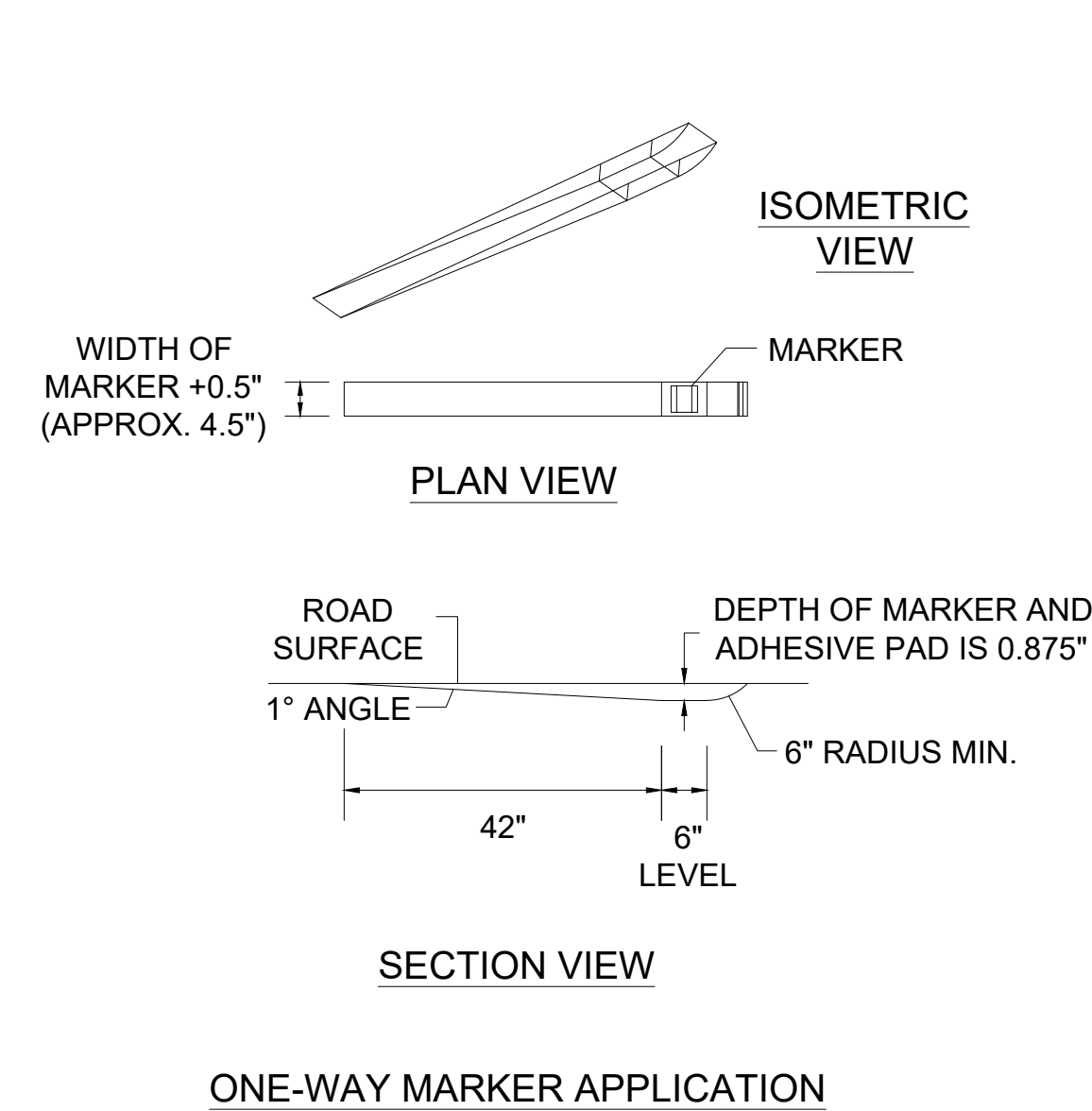
- NOTES FOR RUMBLE STRIPS:**
- NOT TO BE INSTALLED ON SHOULDERS LESS THAN 2' WIDE.
 - NOT TO BE INSTALLED ON BRIDGE DECKS.

RUMBLE STRIP INSTALLATION DETAILS
BICYCLES PROHIBITED
NOT TO SCALE

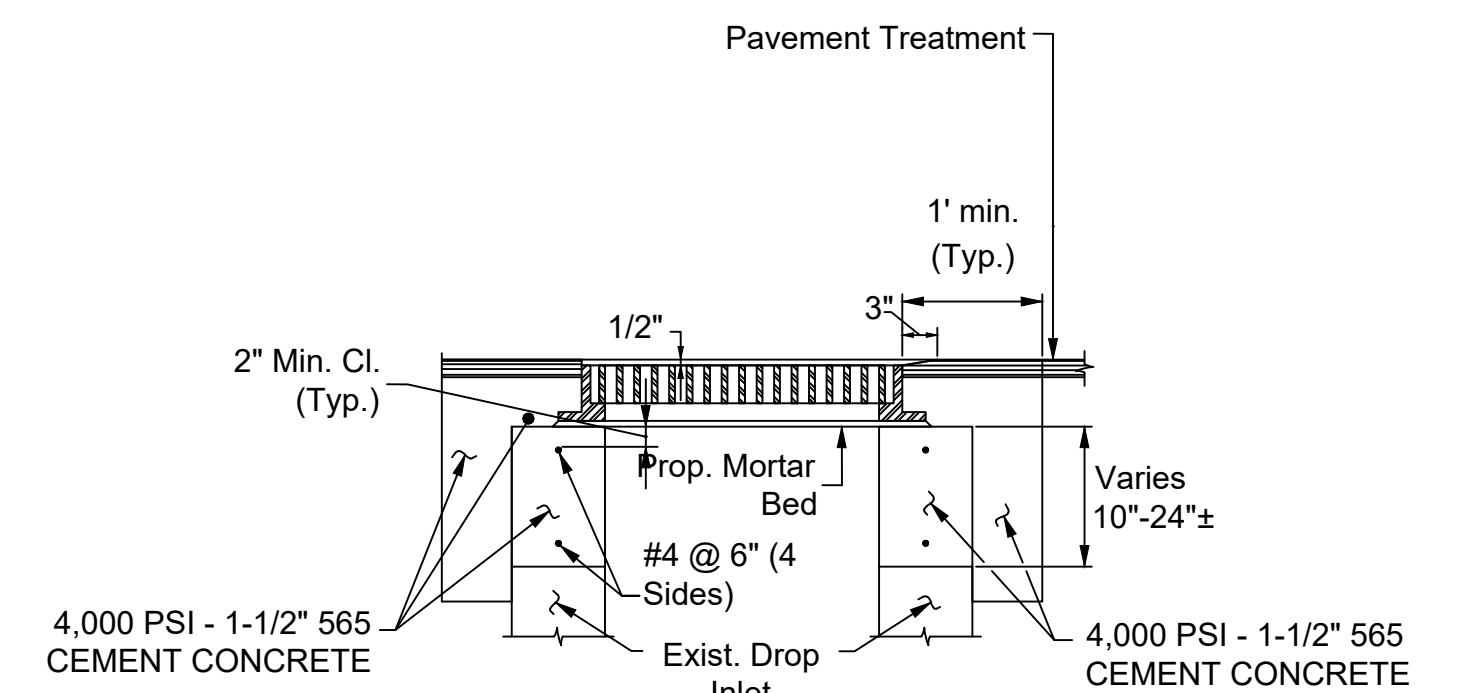
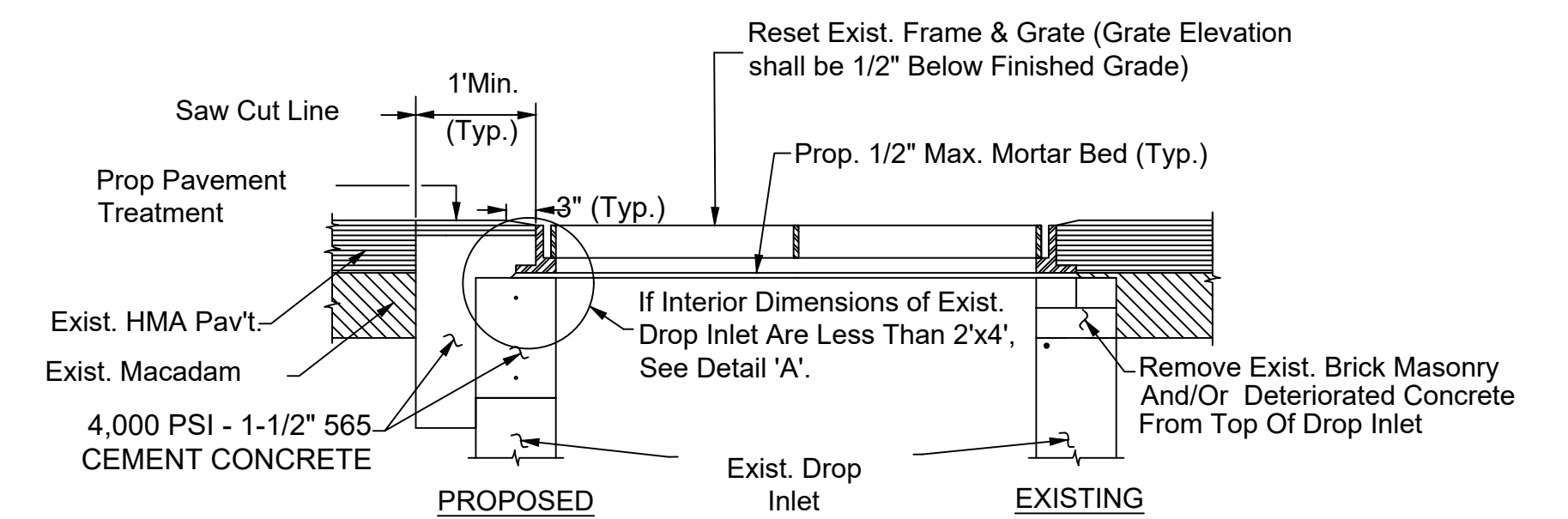


- NOTES:**
- THE SLOT MUST BE DRY AND FREE OF DUST, DIRT, OR ANY MATERIAL WHICH WILL ADVERSELY AFFECT THE BOND OF THE ADHESIVE.
 - INSTALL MARKERS WITH APPROVED ADHESIVE. DO NOT ALLOW ADHESIVE TO BUILD UP IN FRONT OF MARKER LENS.
 - THE MARKER AND THE ADHESIVE PAD SHALL BE 1/8" BELOW THE TOP OF THE PAVEMENT SURFACE.

RECESSED GROOVE DETAILS
NOT TO SCALE



- NOTES:**
- EXISTING EDGING/CURB TO BE ADJUSTED AS NEEDED FOR ITEM 220.01, SEE DETAIL MASSDOT E106.5.0 FOR SECTION AT GUTTER LINE, BOTH ITEMS ARE SIMILAR.



SECTION AT GUTTER LINE

DROP INLET - TOP REBUILT
NOT TO SCALE

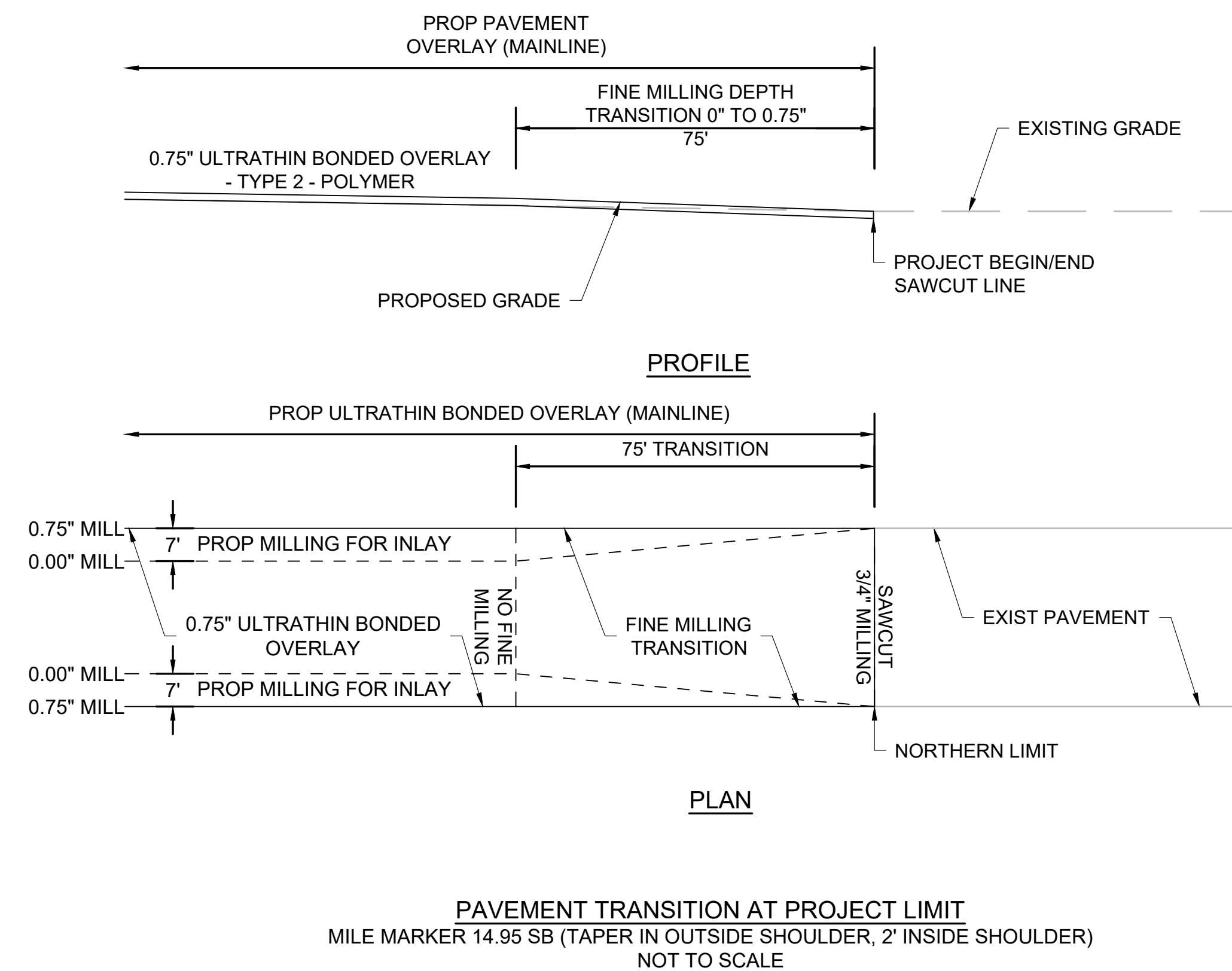
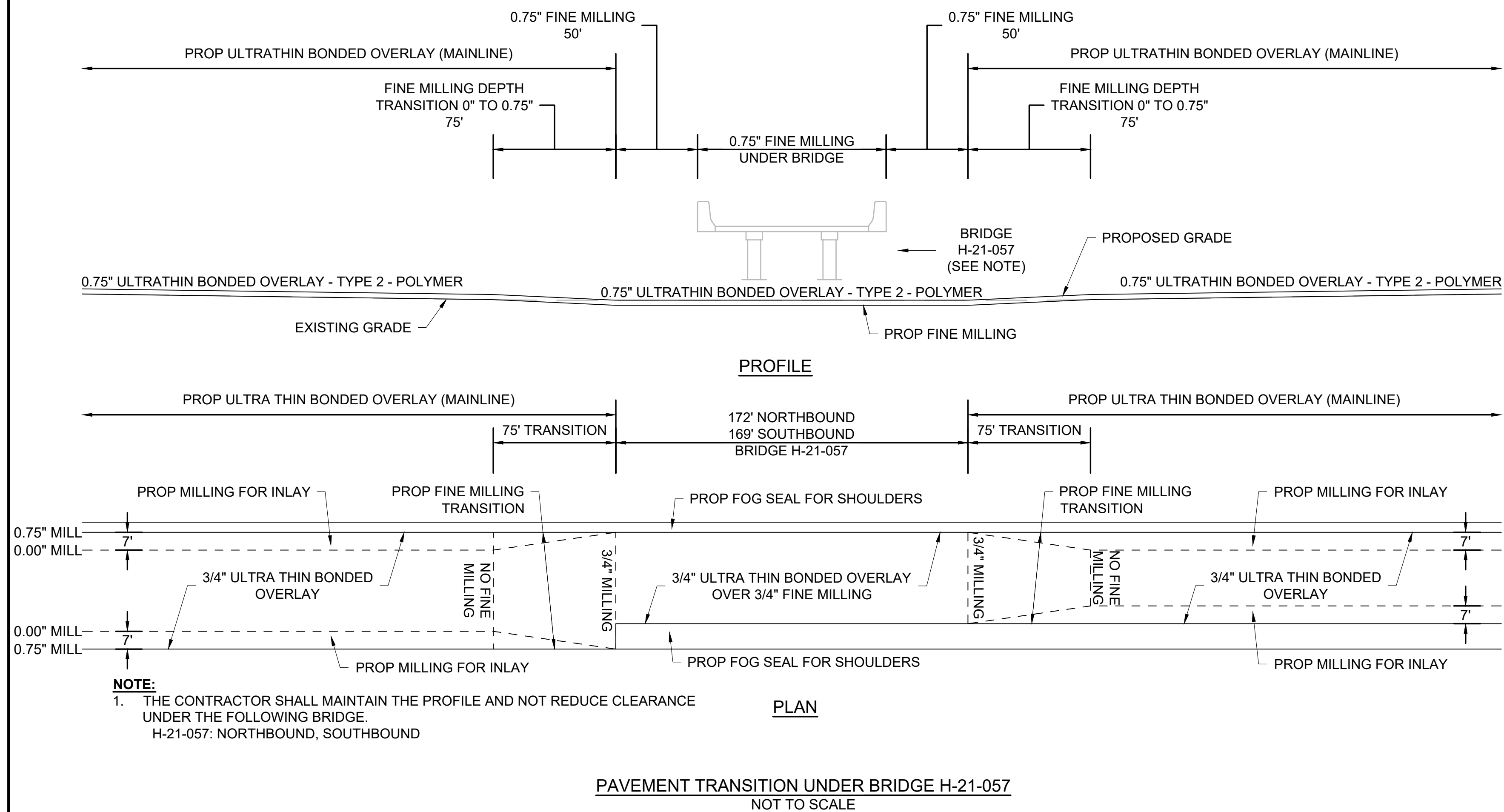
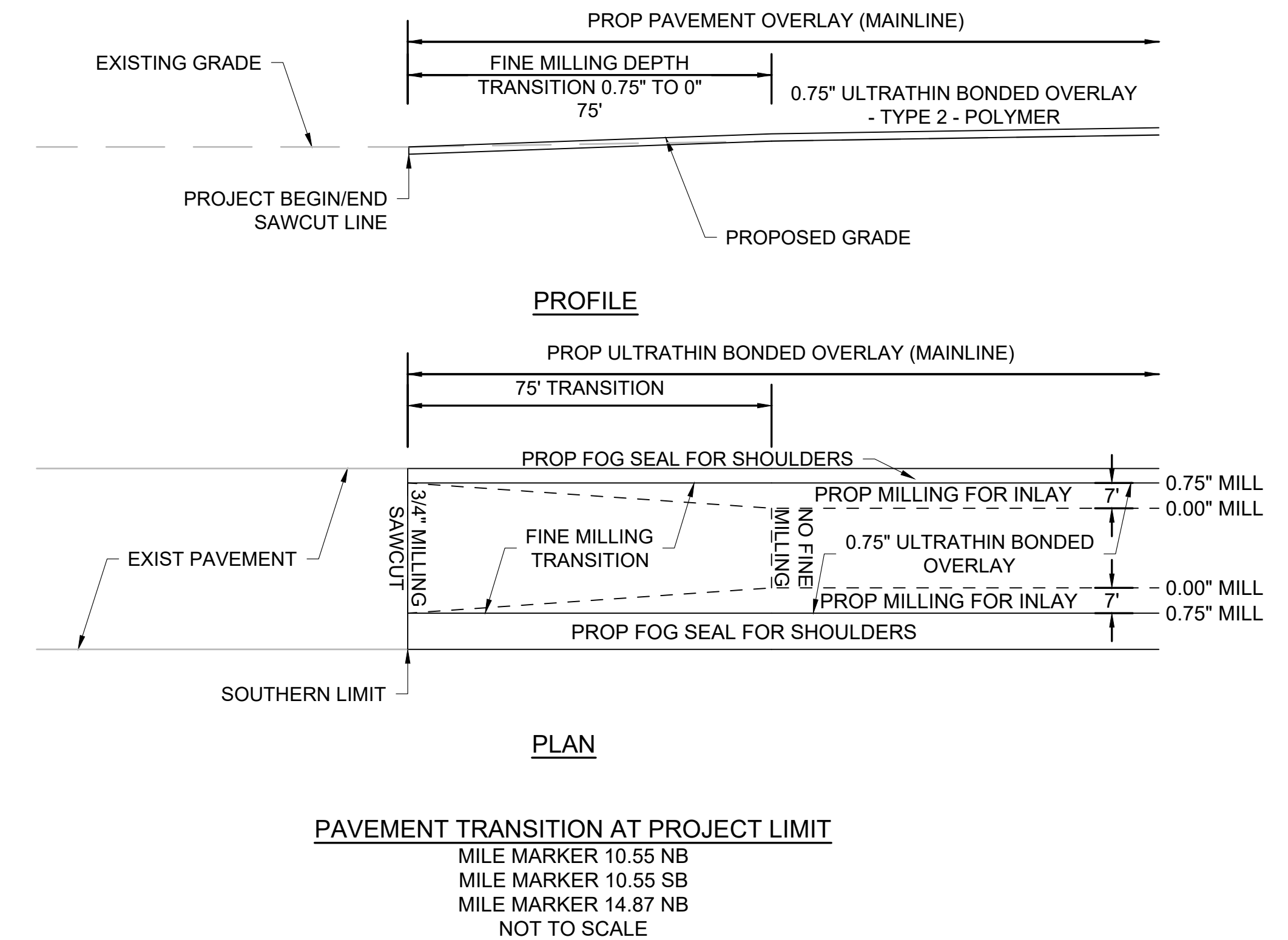
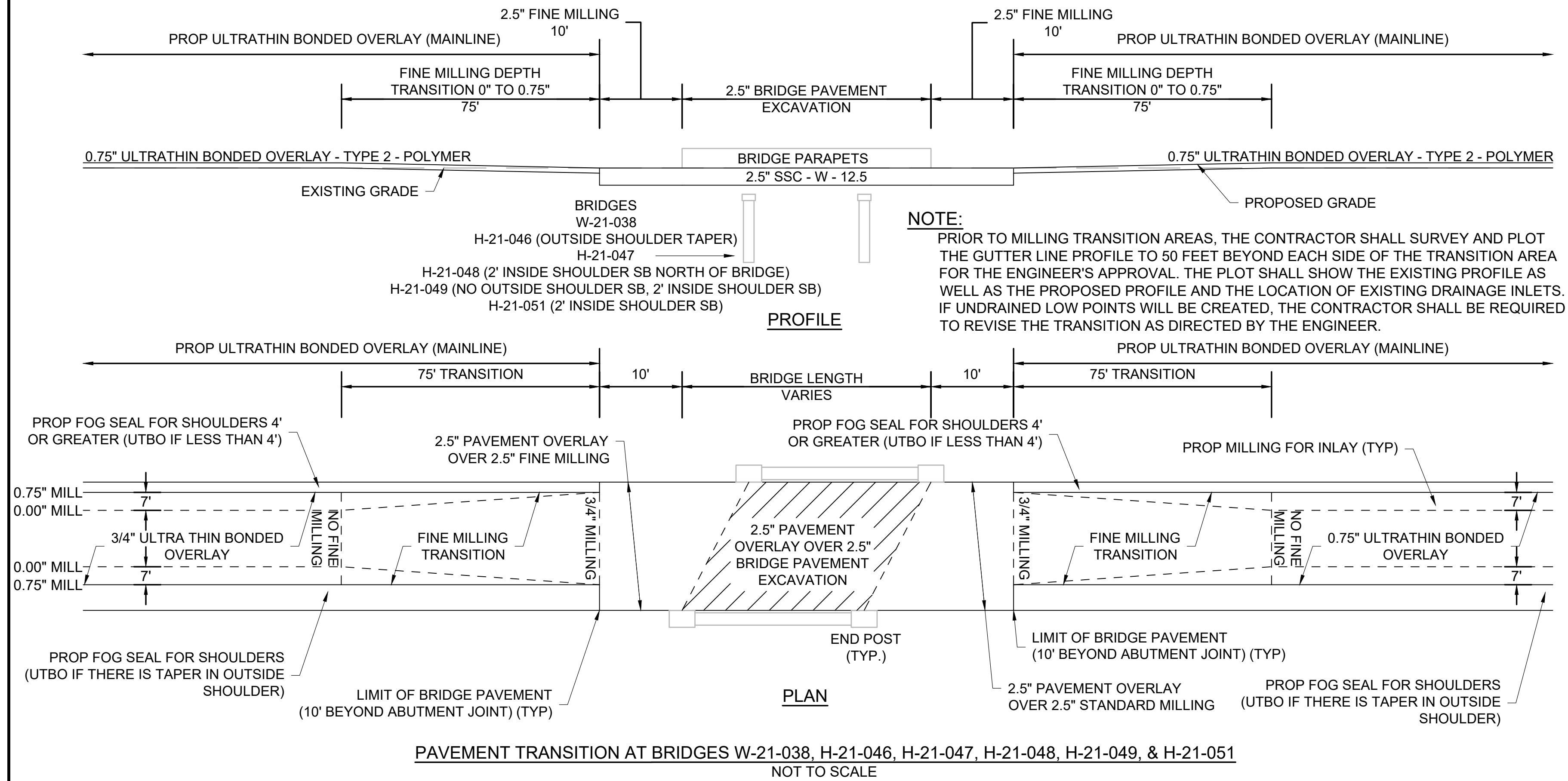
HOLYOKE-WEST SPRINGFIELD INTERSTATE 91			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	12	24
PROJECT FILE NO.		613314	

CONSTRUCTION DETAILS

HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	13	24
PROJECT FILE NO.		613314	

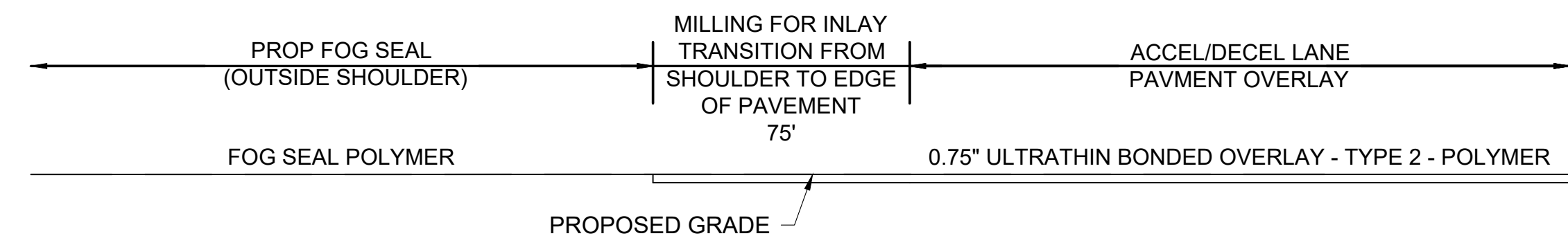
CONSTRUCTION DETAILS



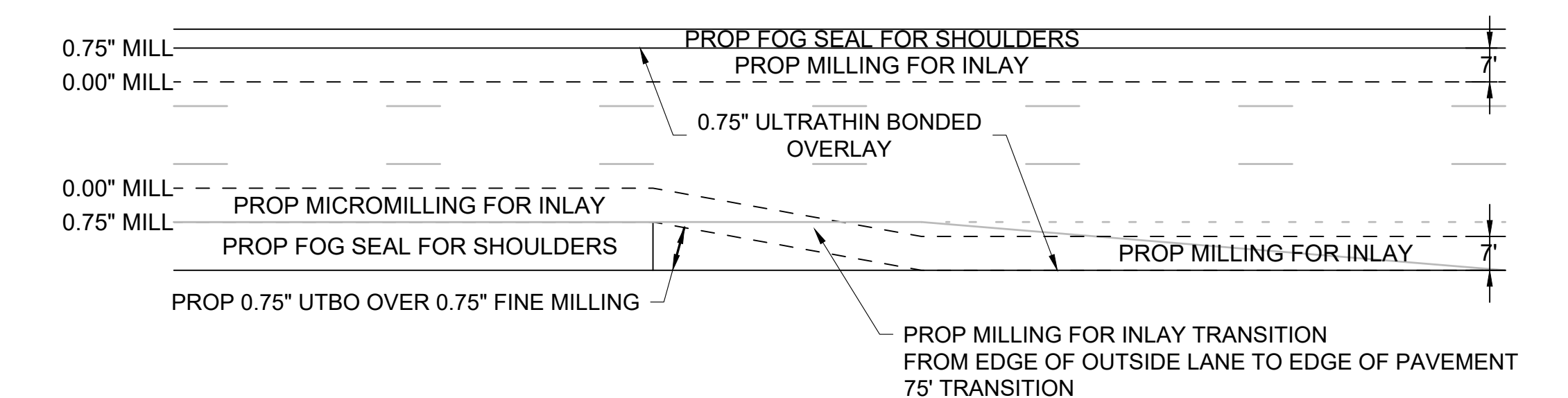
HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	14	24
PROJECT FILE NO.		613314	

CONSTRUCTION DETAILS

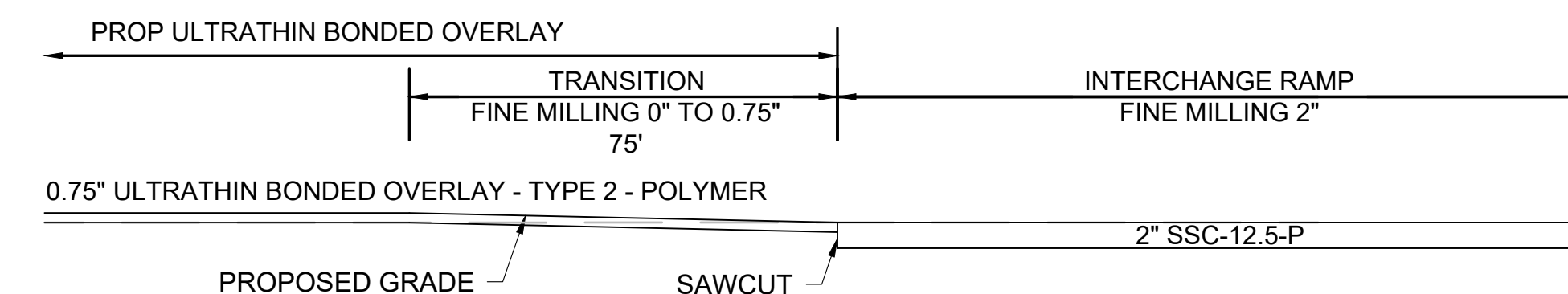


PROFILE AT TRANSITION SIDE
EDGE OF PAVEMENT



PLAN

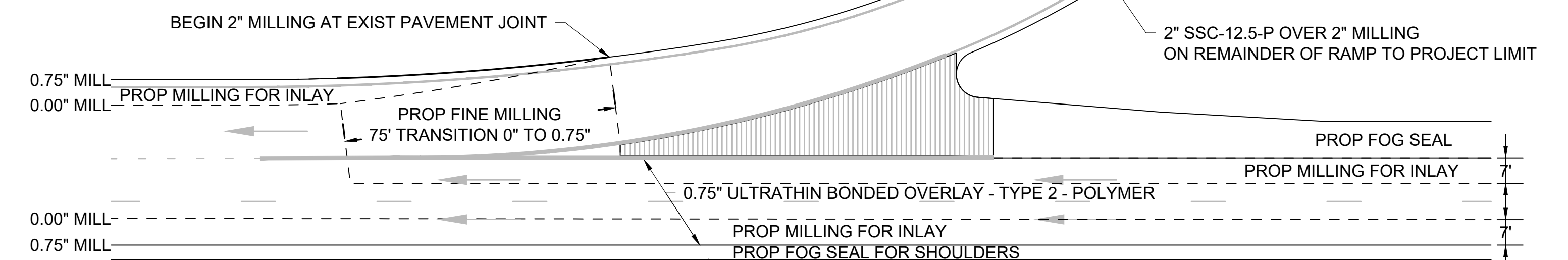
OUTSIDE SHOULDER TRANSITION AT INTERCHANGE TAPERS
NOT TO SCALE



ON-RAMP PROFILE

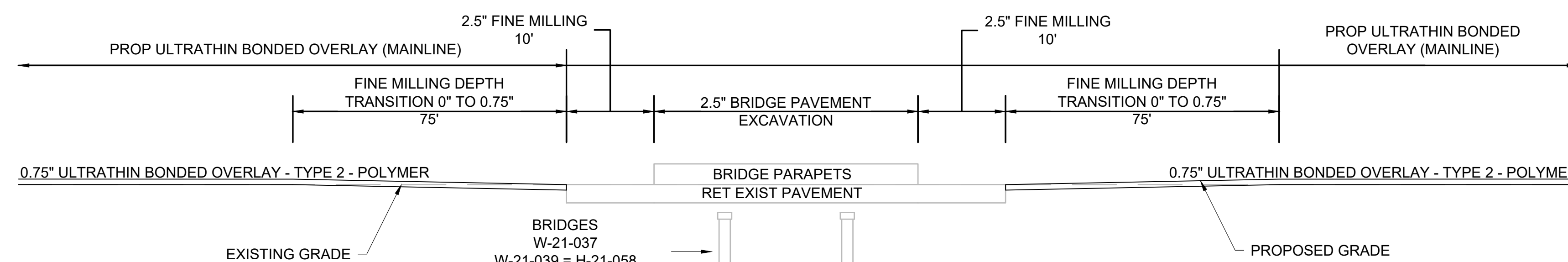
NOTE:

PRIOR TO MILLING TRANSITION AREAS, THE CONTRACTOR SHALL SURVEY AND PLOT THE GUTTER LINE PROFILE TO 50 FEET BEYOND EACH SIDE OF THE TRANSITION AREA FOR THE ENGINEER'S APPROVAL. THE PLOT SHALL SHOW THE EXISTING PROFILE AS WELL AS THE PROPOSED PROFILE AND THE LOCATION OF EXISTING DRAINAGE INLETS. IF UNDRAINED LOW POINTS WILL BE CREATED, THE CONTRACTOR SHALL BE REQUIRED TO REVISE THE TRANSITION AS DIRECTED BY THE ENGINEER.

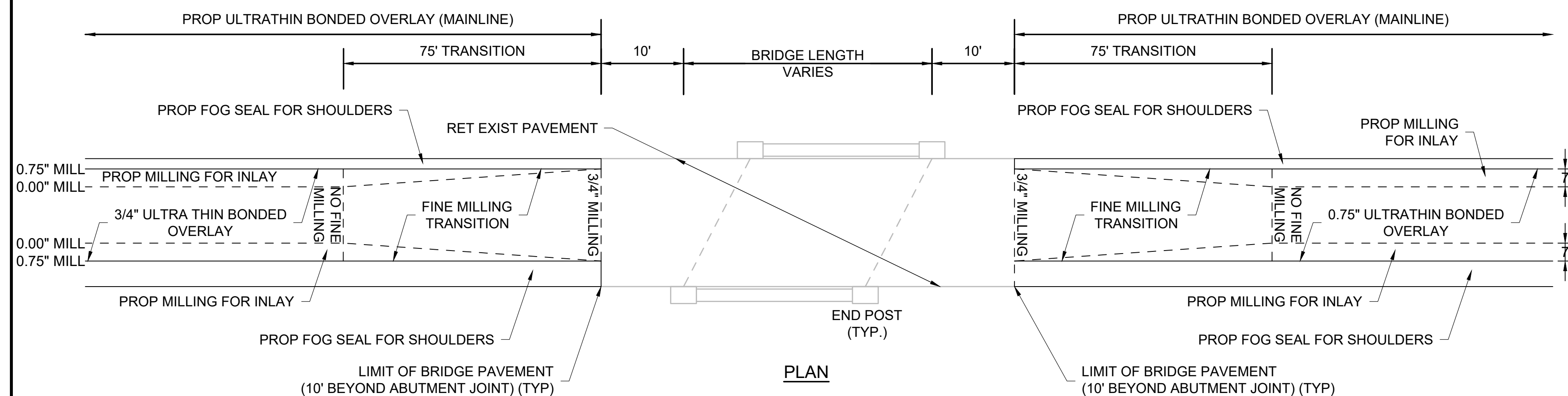


PLAN

PAVEMENT TRANSITION AT INTERCHANGE ON RAMPS
NOT TO SCALE

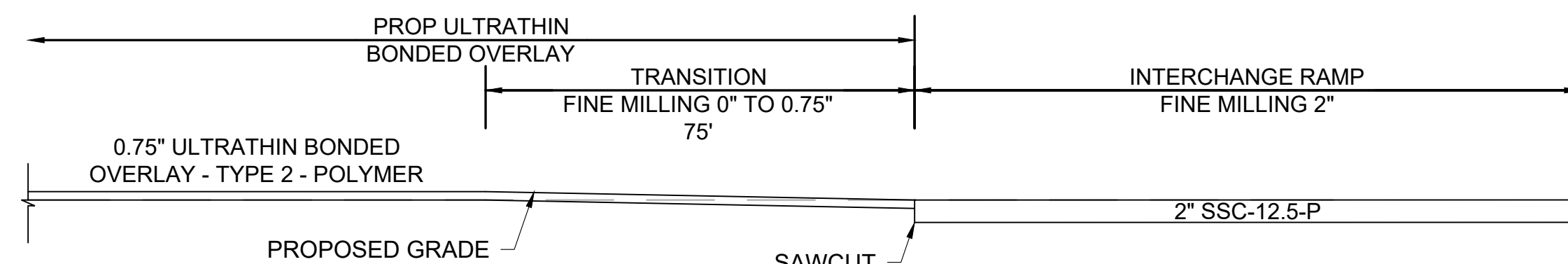


PROFILE

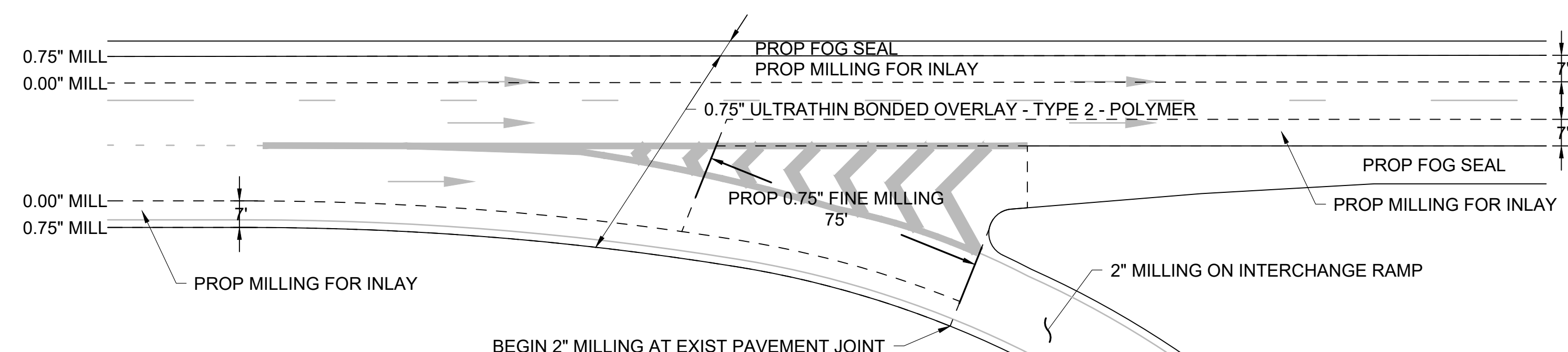


PLAN

PAVEMENT TRANSITION AT BRIDGES W-21-037 AND W-21-039=H-21-058
NOT TO SCALE



OFF-RAMP PROFILE

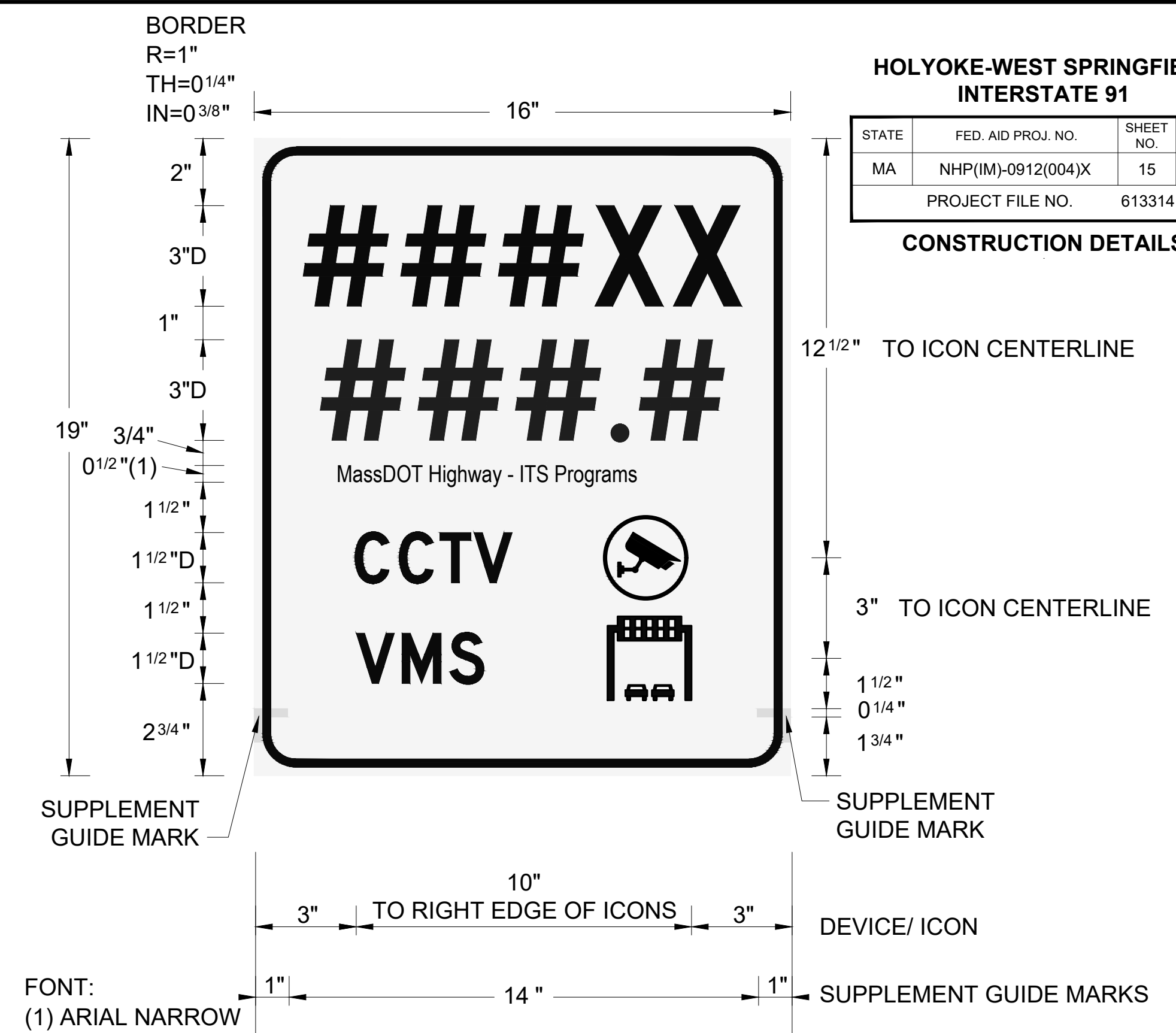
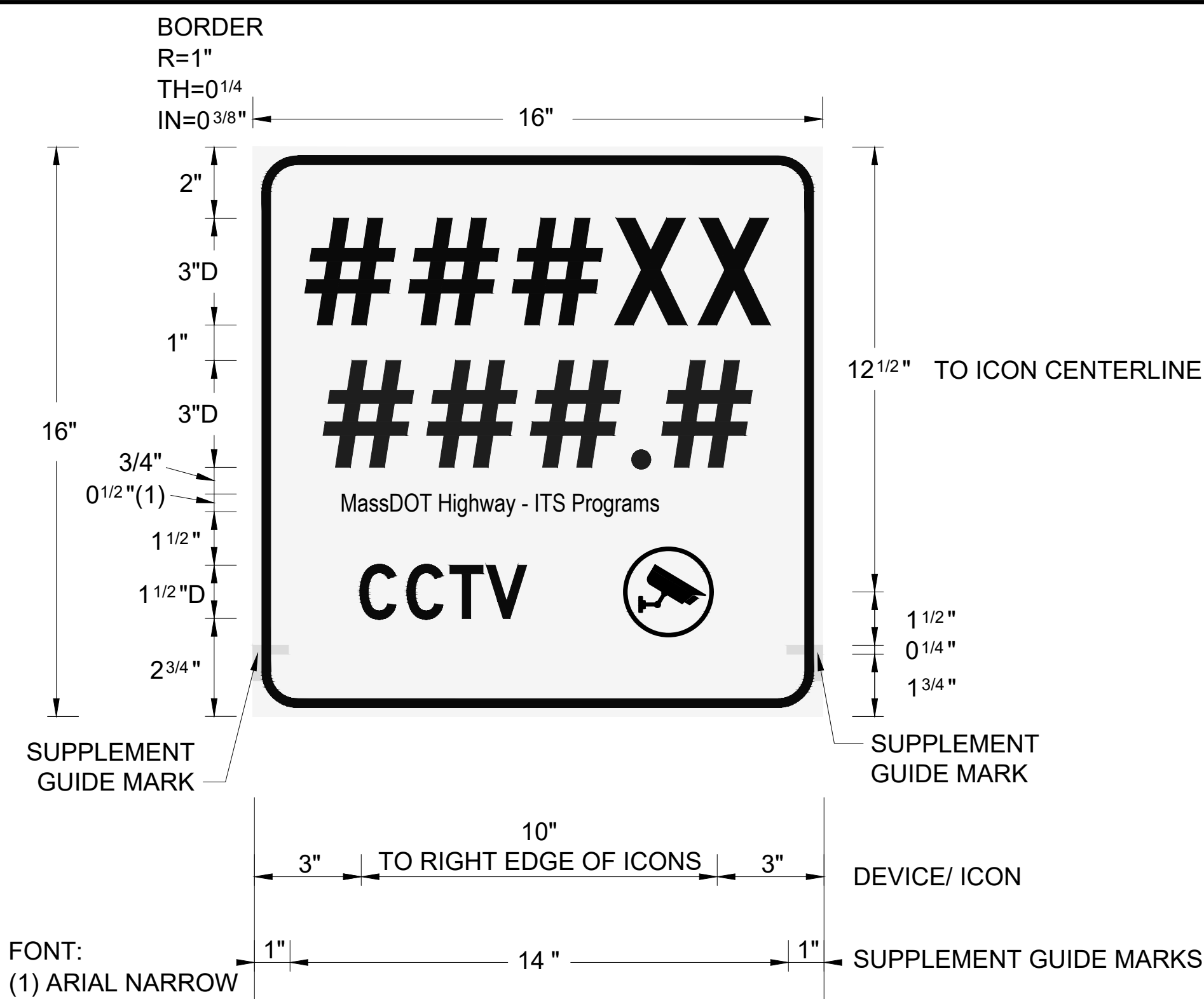
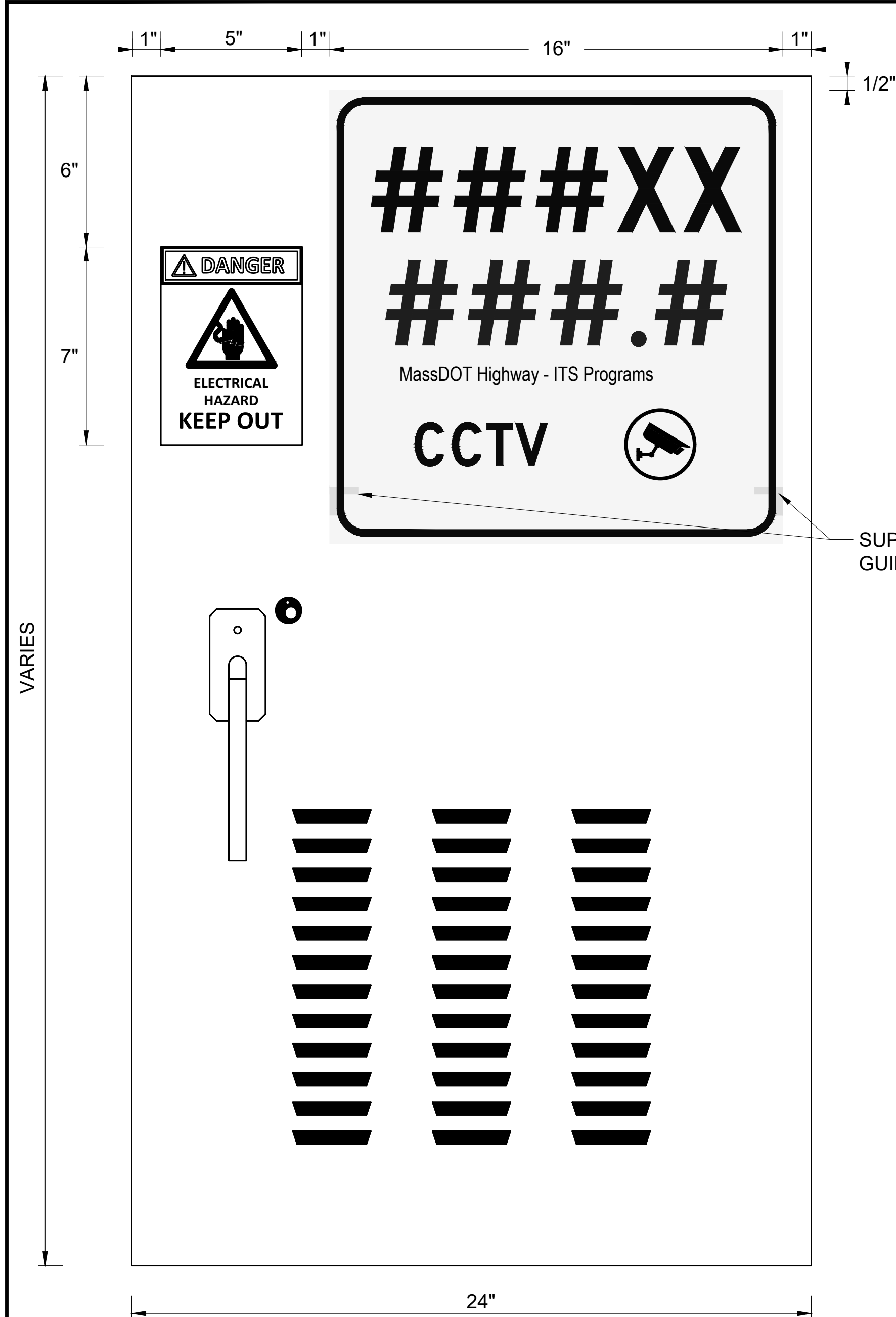


PLAN

PAVEMENT TRANSITION AT INTERCHANGE OFF RAMPS
NOT TO SCALE

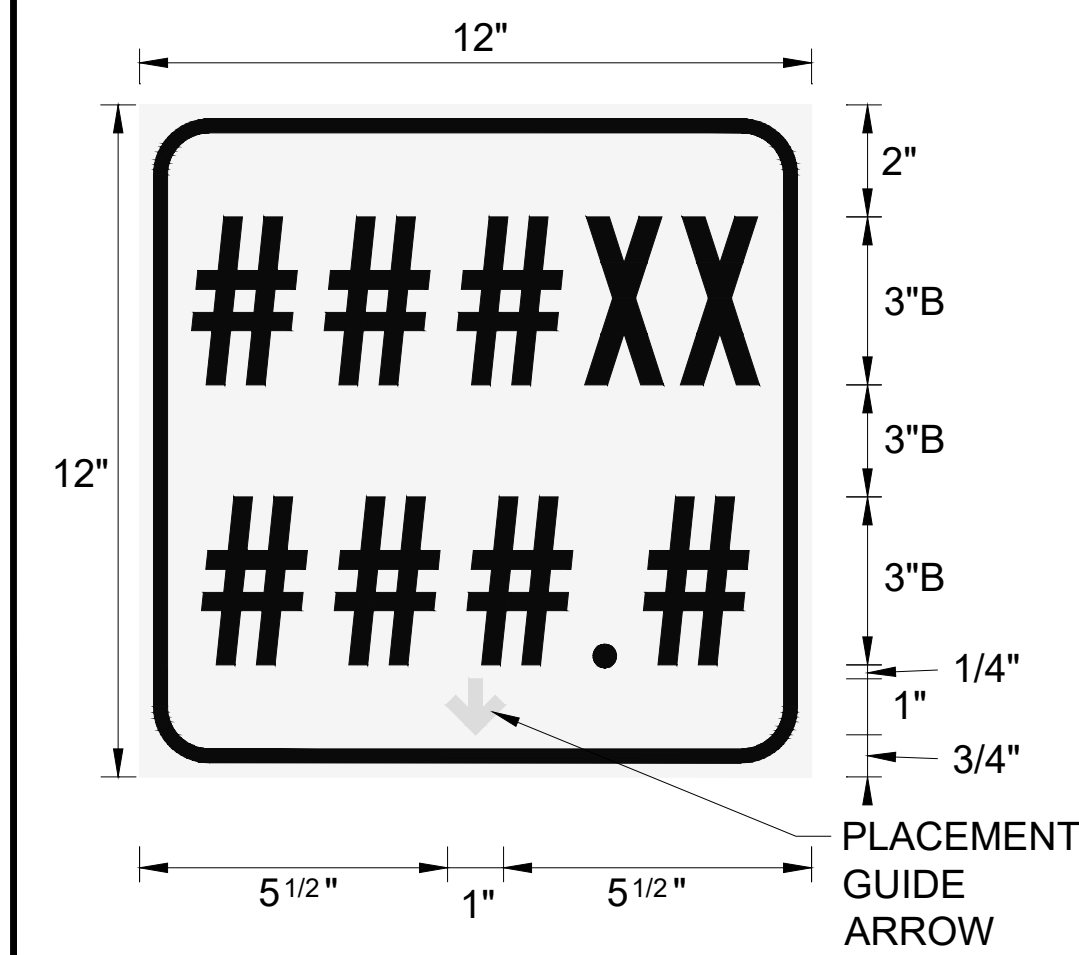
NOTE:

PRIOR TO MILLING TRANSITION AREAS, THE CONTRACTOR SHALL SURVEY AND PLOT THE GUTTER LINE PROFILE TO 50 FEET BEYOND EACH SIDE OF THE TRANSITION AREA FOR THE ENGINEER'S APPROVAL. THE PLOT SHALL SHOW THE EXISTING PROFILE AS WELL AS THE PROPOSED PROFILE AND THE LOCATION OF EXISTING DRAINAGE INLETS. IF UNDRAINED LOW POINTS WILL BE CREATED, THE CONTRACTOR SHALL BE REQUIRED TO REVISE THE TRANSITION AS DIRECTED BY THE ENGINEER.



ITEM	DIMENSION
1 DEVICE CABINET FACE LABEL	16" x 16"
2 DEVICE CABINET FACE LABEL	16" x 19"
WAYFINDING TEXT HEIGHT	3"
ICON AREA	6.25 in ²

PERMANENT ITS CABINET FACE LABEL
NOT TO SCALE

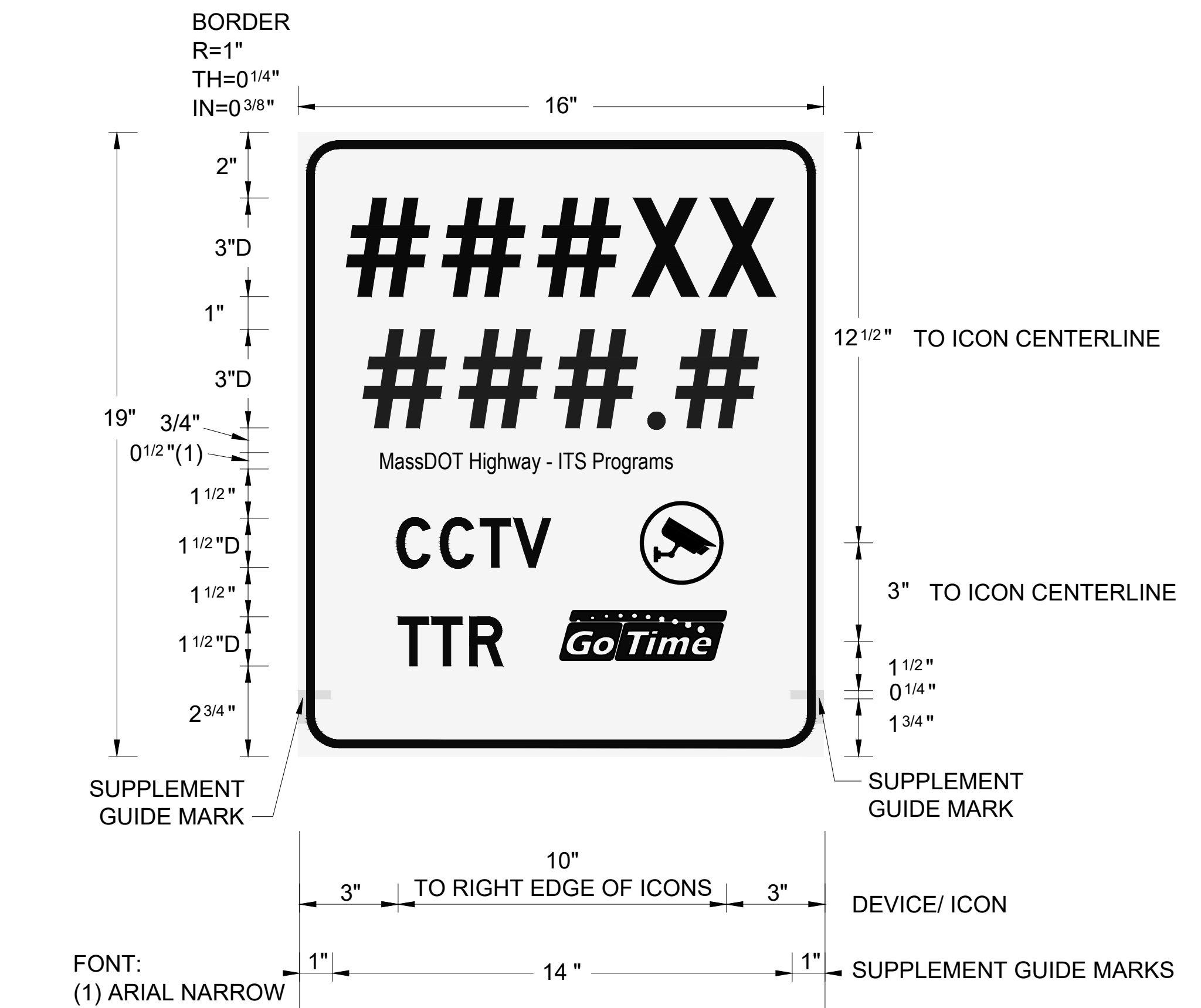


ITS CABINET TOP LABEL DETAIL
NOT TO SCALE

HOLYOKE-WEST SPRINGFIELD INTERSTATE 91 PAVEMENT PRESERVATION AND RELATED WORK ITS LABEL SUMMARY					
DEVICE NO.	LOCATION DESCRIPTION	PERMANENT ITS CABINET FACE LABEL	PERMANENT ITS POLE LABEL	PERMANENT ITS DEVICE CABINET LABEL	PERMANENT ITS ELECTRICAL LABEL
91ME-CCTV-11.6 WITH CO-LOCATED TTR	NORTH OF BRIDGE H-21-058 OVER I-91/I-90/ROUTE 5 CONNECTOR	1	1	1	2
91SB-CCTV-12.4 (SHARES CABINET WITH 91SB-VMS-12.8)	NORTH OF BRIDGE H-21-047 OVER LOWER WESTFIELD ROAD	1	1	1	2
91NB-VMS-13.3	NORTH OF MM 13.2 SIGN	1	0	0	1
91SB-CCTV-14.2	SOUTH OF BRIDGE H-21-049 OVER CHERRY STREET	1	1	1	2

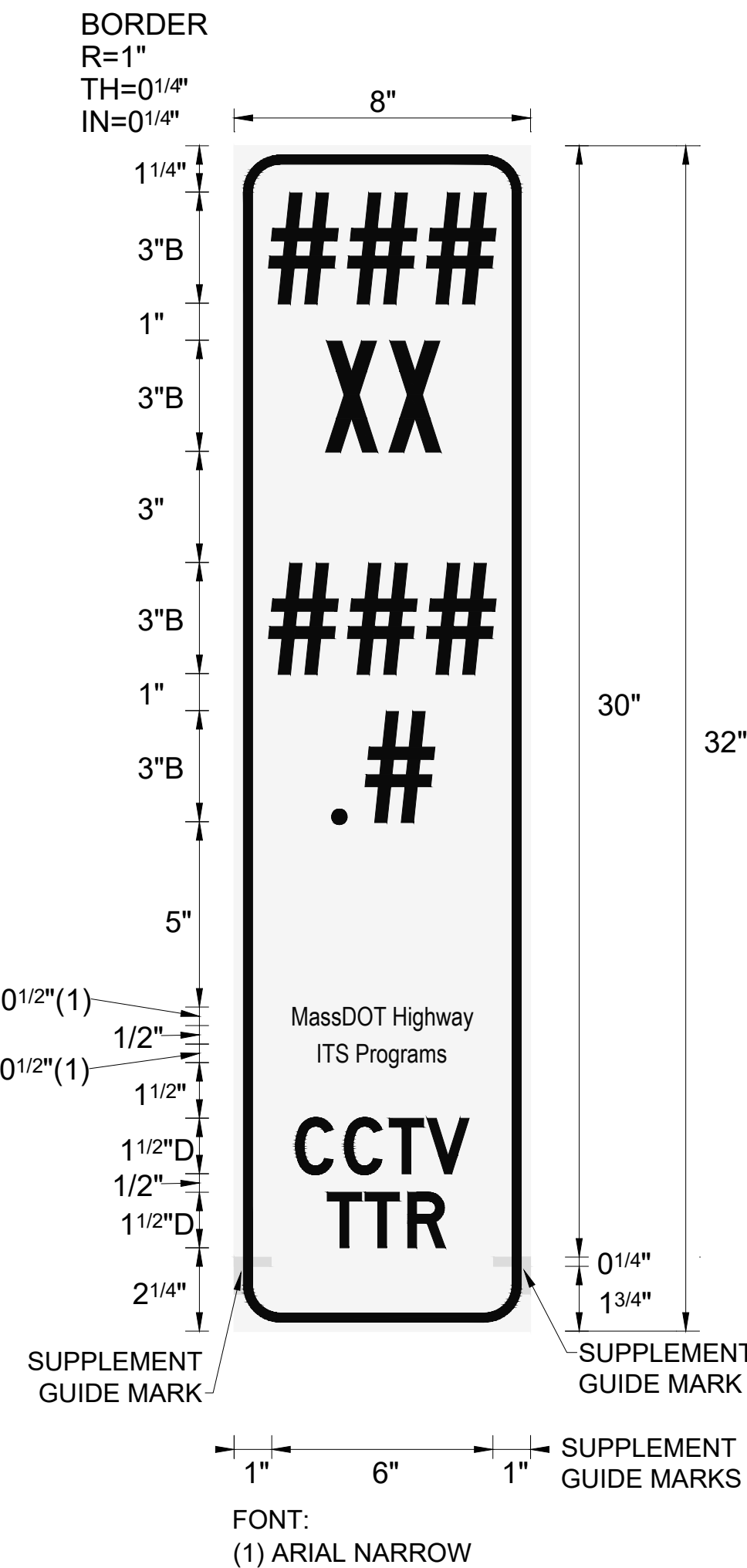
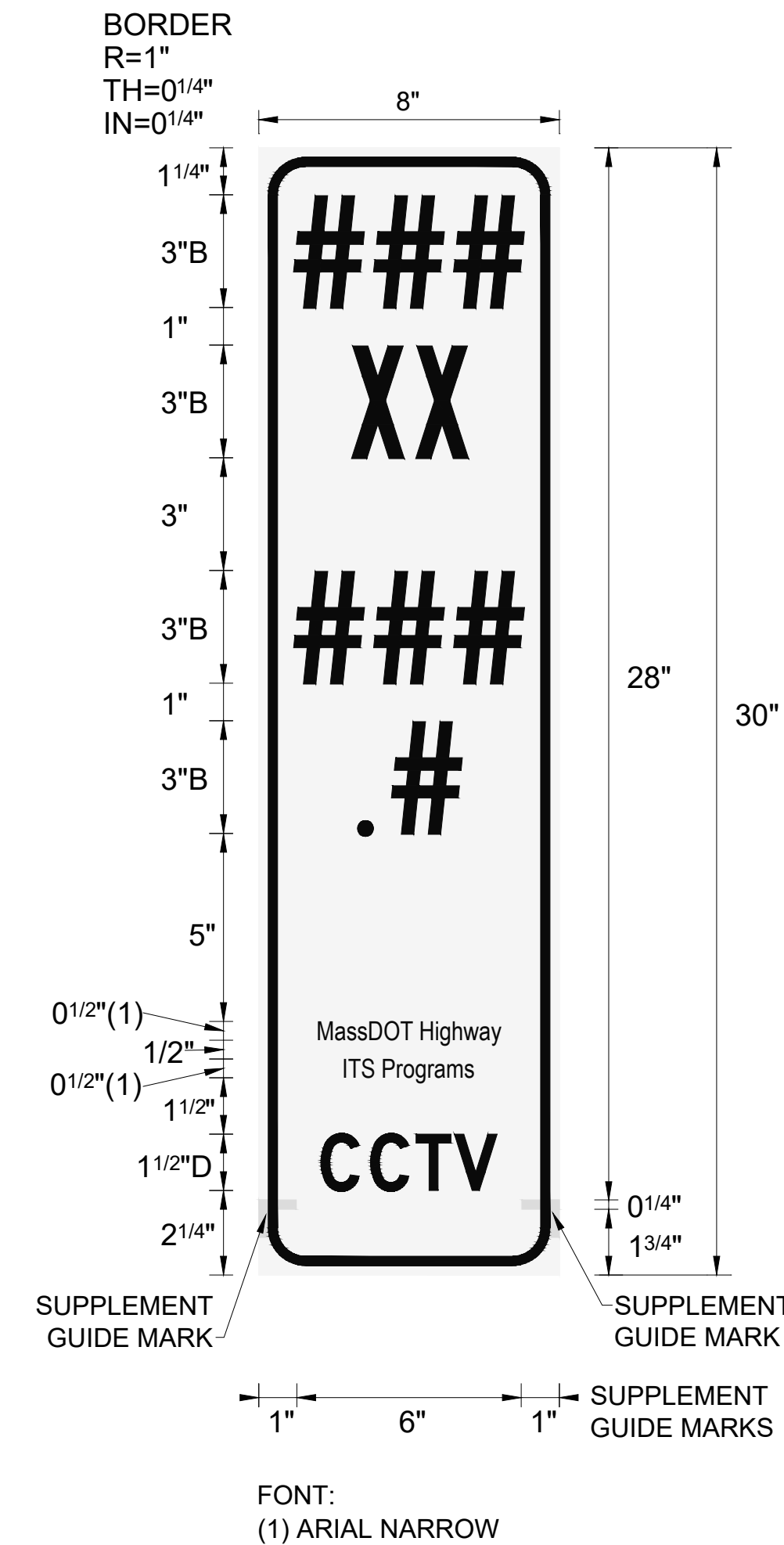
HOLYOKE-WEST SPRINGFIELD INTERSTATE 91			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	15	24
PROJECT FILE NO.		613314	

CONSTRUCTION DETAILS



- NOTES:
- LABEL DETAILS SHOWN ARE TO PROVIDE POSSIBLE SCENARIOS WHERE THE LABELS ARE TO BE PLACED. A SCENARIO DIFFERENT FROM GRAPHICS SHOWN MAY EXIST. GRAPHICS SHALL BE FABRICATED TO THE SPECIFIC SITE NAME AND EQUIPMENT TO WHICH THE LABELS ARE PROPOSED.
 - SPACING BETWEEN THE GENERIC '#', 'X' SYMBOLS ARE REPRESENTATIVE ONLY. REFER TO THE SPECIAL PROVISIONS FOR SPACING REQUIREMENTS.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	16	24
PROJECT FILE NO.			613314

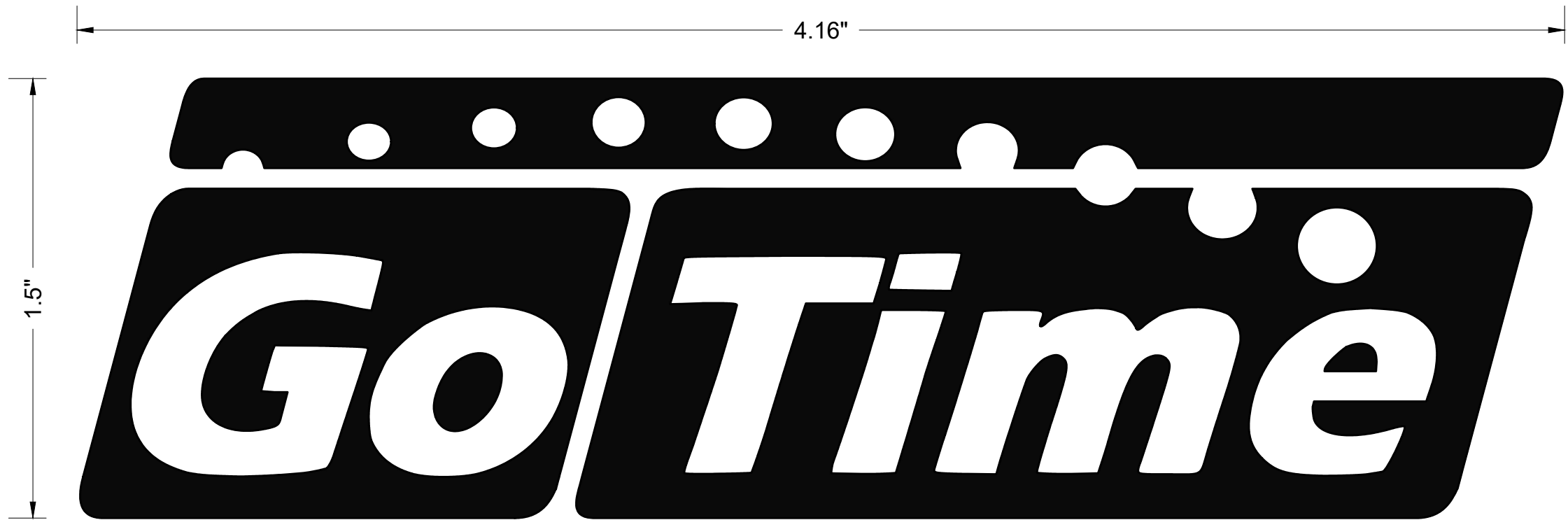


PERMANENT ITS POLE LABEL DETAIL
NOT TO SCALE

ITEM	DIMENSION
1 DEVICE POLE LABEL	8" x 30"
2 DEVICE POLE LABEL	8" x 32"

LEGEND	
###	REPRESENTS THE ROADWAY/HIGHWAY SUCH AS 6, 195, 495, 295, ETC.
XX	REPRESENTS THE TRAVEL DIRECTION. (NB, SB, ETC.)
###.#	REPRESENTS THE MILE MARKER AT WHICH THE DEVICE IS INSTALLED TO THE NEAREST TENTH OF A MILE, SUCH AS 65.4. ROADS WITH NO MILE MARKERS ARE TO HAVE ESTIMATED MILE MARKERS STARTING FROM WEST TO EAST OR SOUTH TO NORTH TO THE NEAREST TENTH OF A MILE.
DEVICE TYPE	
CCTV	CLOSED CIRCUIT TELEVISION
RWIS	ROAD WEATHER INFORMATION SYSTEM
TTR	TRAVEL TIME READER
TCS	TRAFFIC COUNTING STATION
VMS	VARIABLE MESSAGE SIGN

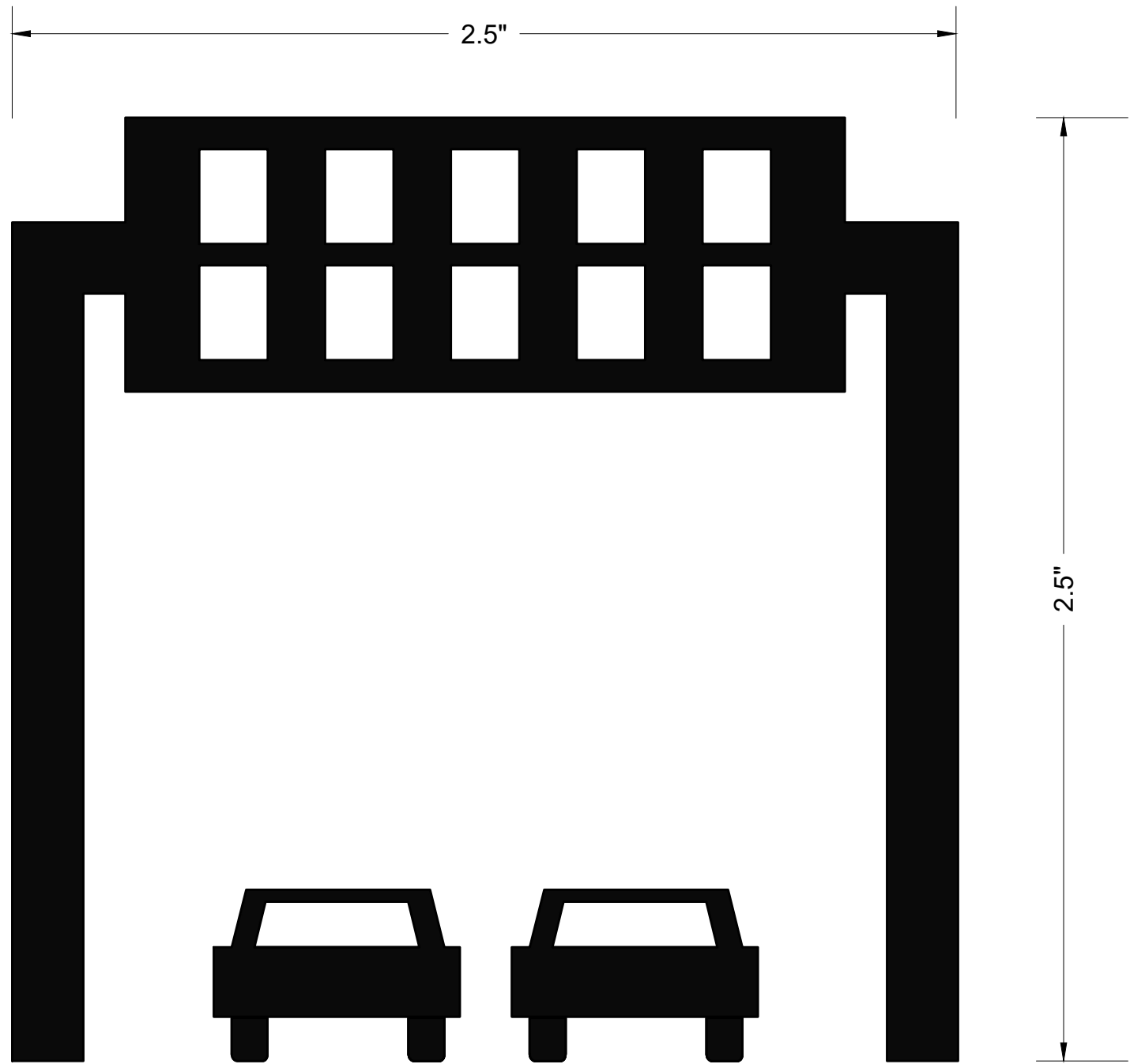
- NOTES:
- LABEL DETAILS SHOWN ARE TO PROVIDE POSSIBLE SCENARIOS WHERE THE LABELS ARE TO BE PLACED. A SCENARIO DIFFERENT FROM GRAPHICS SHOWN MAY EXIST. GRAPHICS SHALL BE FABRICATED TO THE SPECIFIC SITE NAME AND EQUIPMENT TO WHICH THE LABELS ARE PROPOSED.
 - SPACING BETWEEN THE GENERIC #, 'X' SYMBOLS ARE REPRESENTATIVE ONLY. REFER TO THE SPECIAL PROVISIONS FOR SPACING REQUIREMENTS.



TTR



CCTV

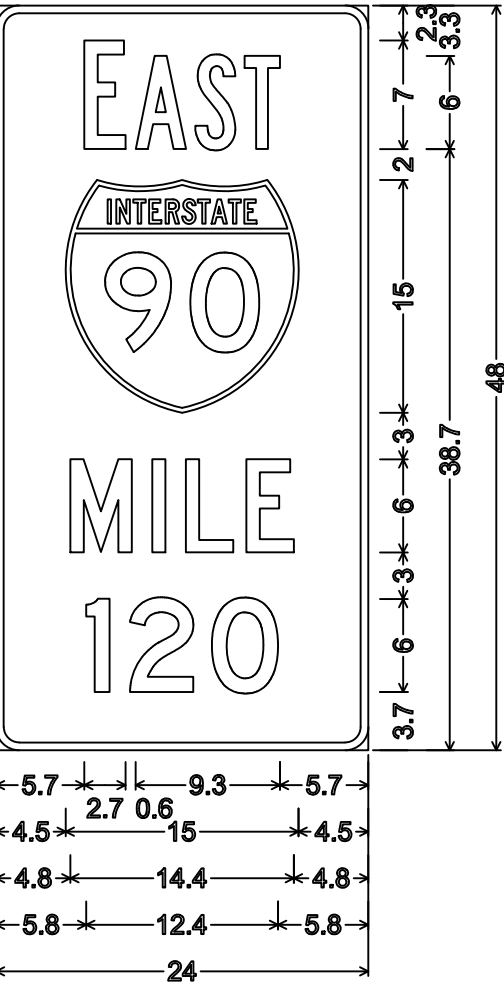


VMS

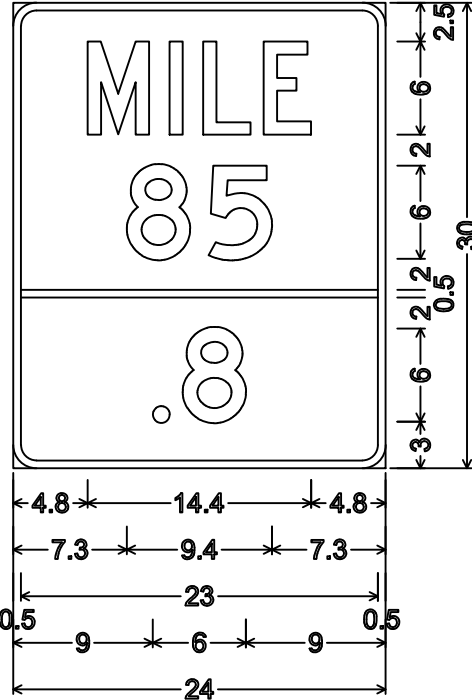
ITS DEVICE DETAILS
NOT TO SCALE



PERMANENT ITS ELECTRICAL LABEL DETAIL
NOT TO SCALE



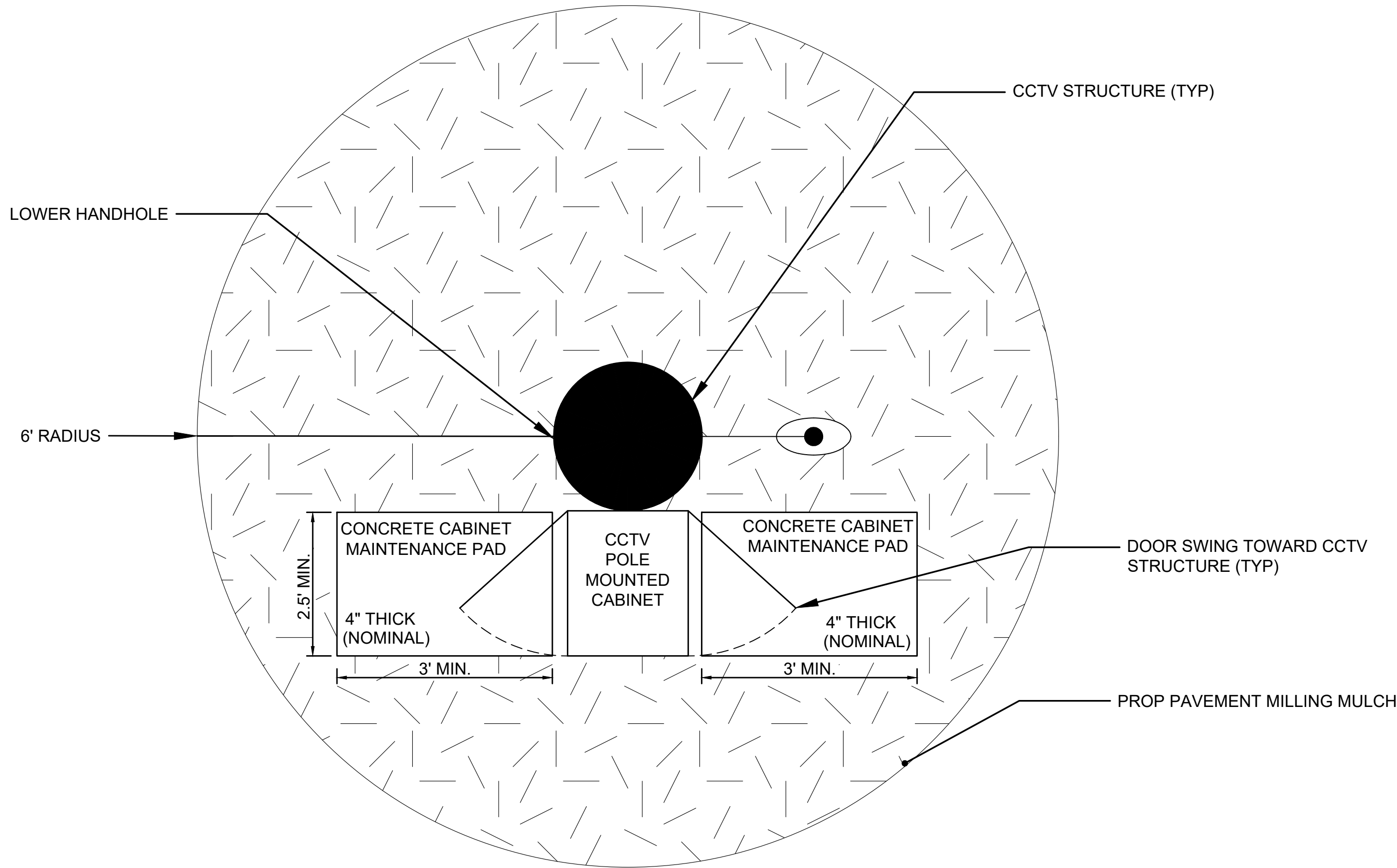
MA-D10-4a (MassDOT);
0.5" Border, White on Green;
"EAST" B 2K 125% spacing;
"MILE" C 2K; "120" D 2K;



MA-D10-2b (MassDOT);
0.5" Border, White on Green;
"MILE" C 2K; "85" D 2K;
".8" D 2K;

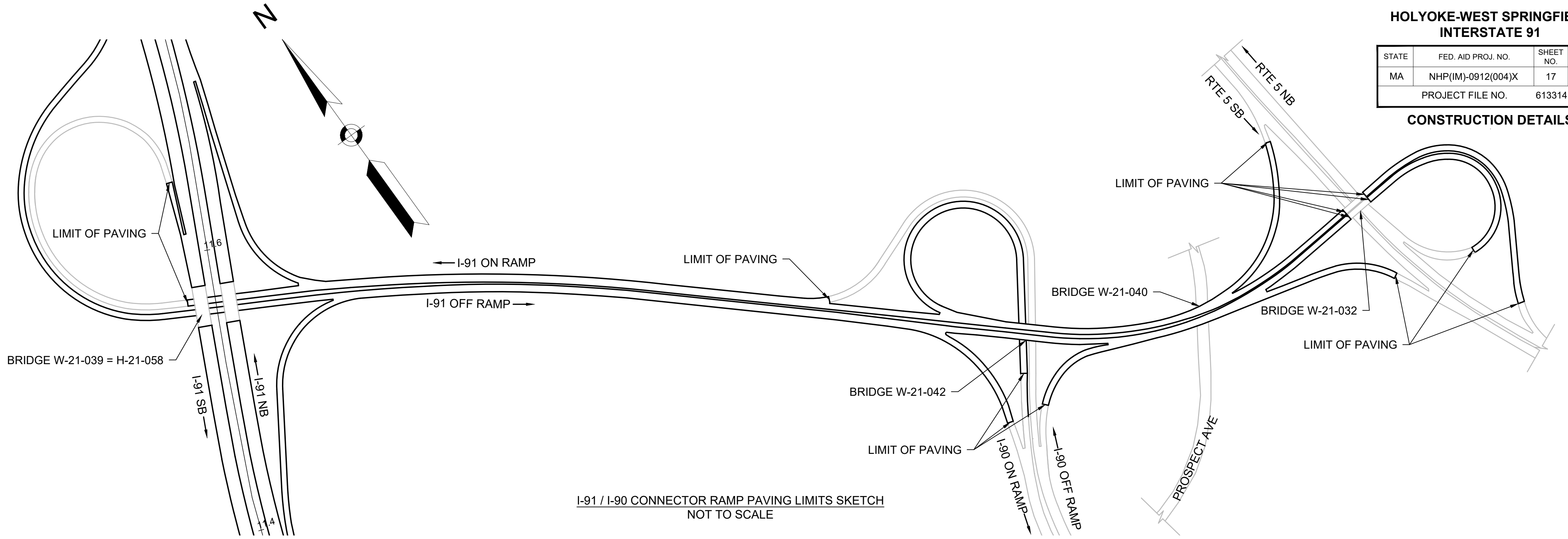
MILE AND TENTH-OF-MILE MARKER SIGN
NOT TO SCALE

NOTE: THIS DETAIL IS FOR DIMENSIONS ONLY. SIGNS ON THIS PROJECT WILL REFLECT DIRECTION OF TRAVEL (NORTH OR SOUTH) AND THE I-91 SHIELD.

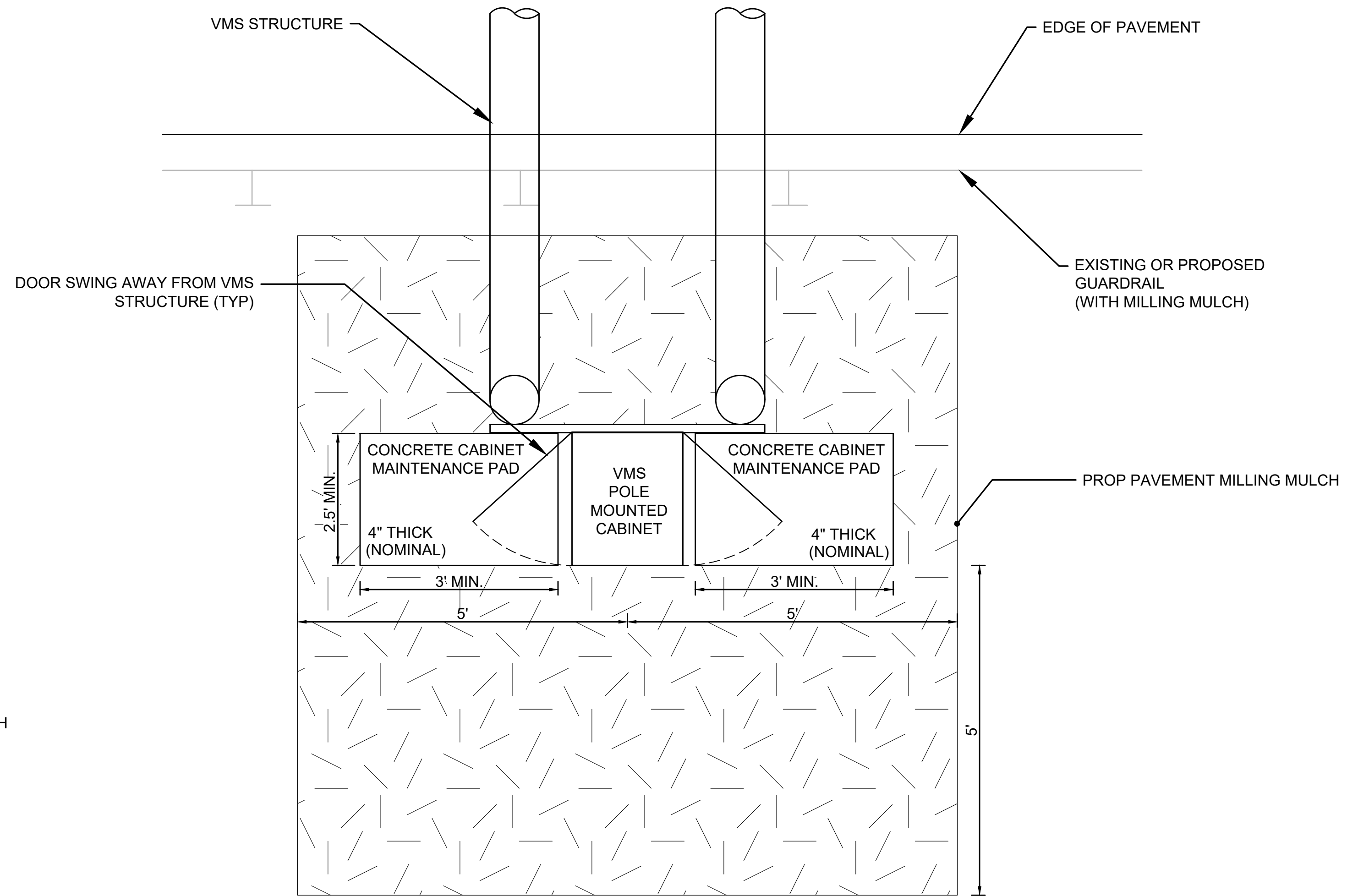


CCTV CAMERA POLE AND CABINET TOP VIEW
NOT TO SCALE

NOTE:
1. THIS DETAIL IS MEANT TO INDICATE GENERAL INTENT FOR THE PAVEMENT MILLING MULCH PLACEMENT. FINAL CONSTRUCTION MUST CONFORM TO SITE-SPECIFIC CONDITIONS. COORDINATE WITH ITS PROGRAMS IF NECESSARY.



I-91 / I-90 CONNECTOR RAMP PAVING LIMITS SKETCH
NOT TO SCALE



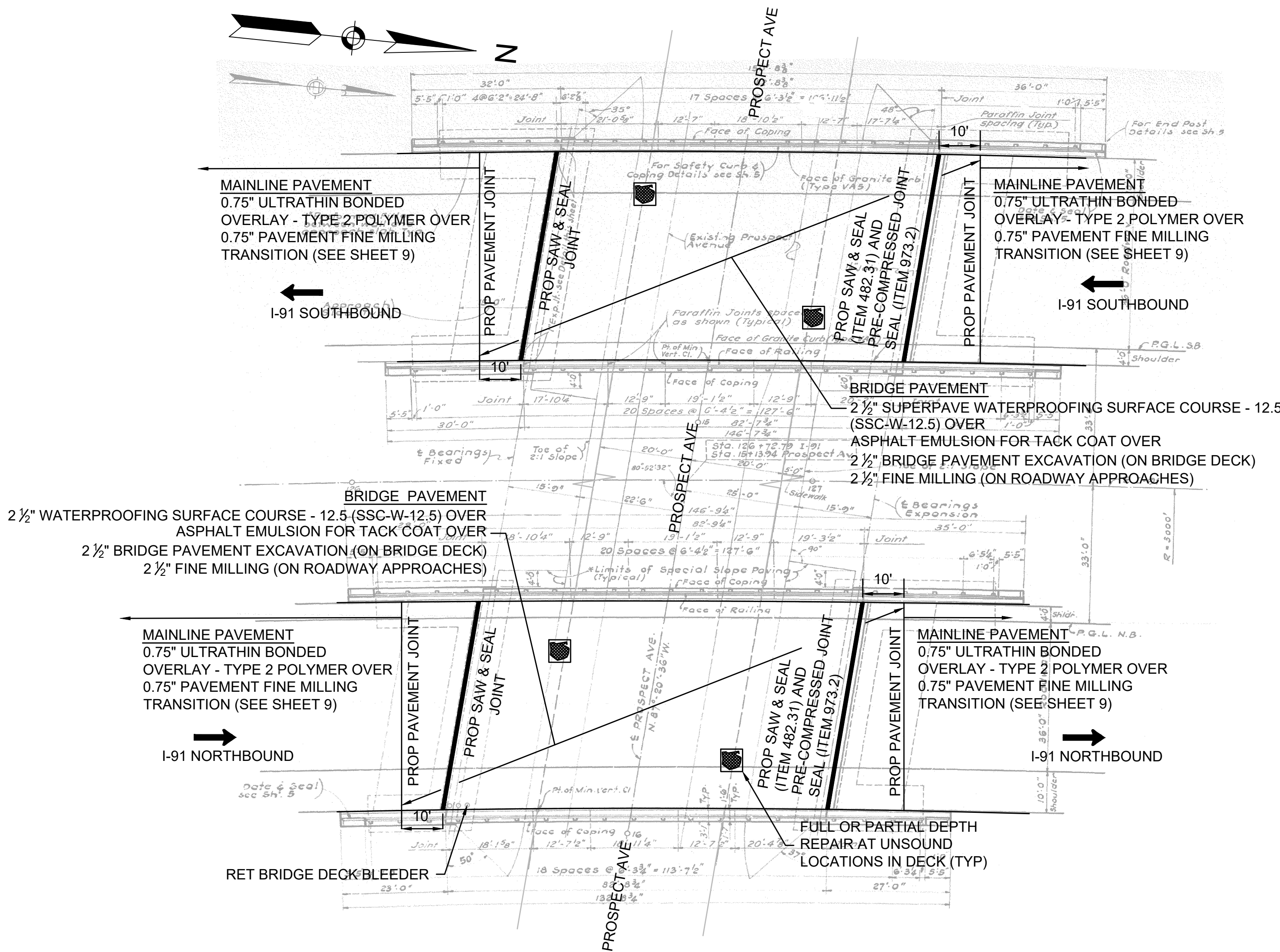
VMS CABINET - TOP VIEW
NOT TO SCALE

NOTE:
1. THIS DETAIL IS MEANT TO INDICATE GENERAL INTENT FOR THE PAVEMENT MILLING MULCH PLACEMENT. FINAL CONSTRUCTION MUST CONFORM TO SITE-SPECIFIC CONDITIONS. COORDINATE WITH ITS PROGRAMS IF NECESSARY.

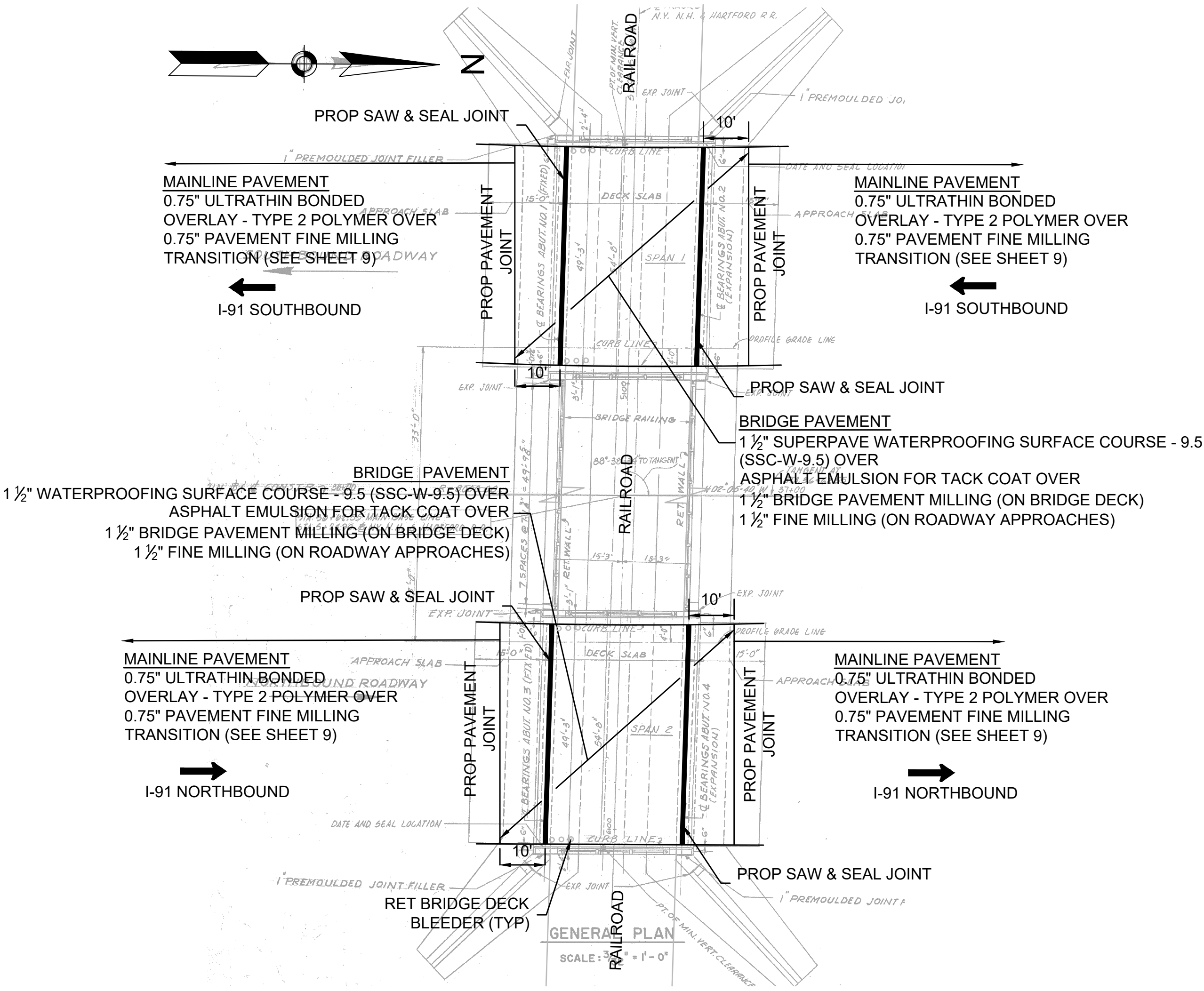
HOLYOKE-WEST SPRINGFIELD INTERSTATE 91			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	17	24
PROJECT FILE NO.		613314	
CONSTRUCTION DETAILS			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	18	24
PROJECT FILE NO.		613314	

BRIDGE DETAILS:PLAN VIEW
W-21-038 I-91 OVER PROSPECT AVE
W-21-046 I-91 OVER RAILROAD



W-21-038 I-91 OVER PROSPECT AVE PLAN VIEW
NOT TO SCALE

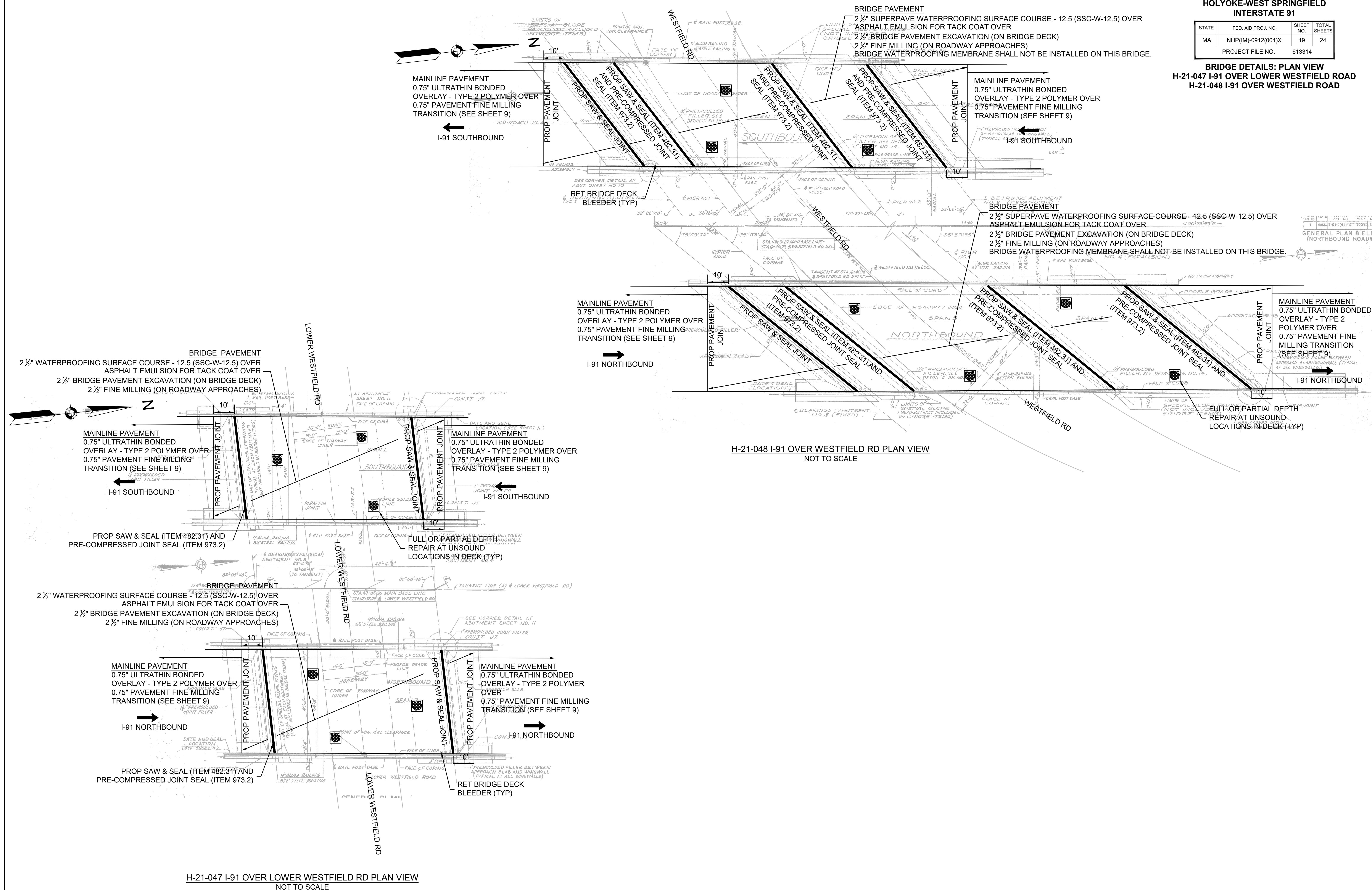


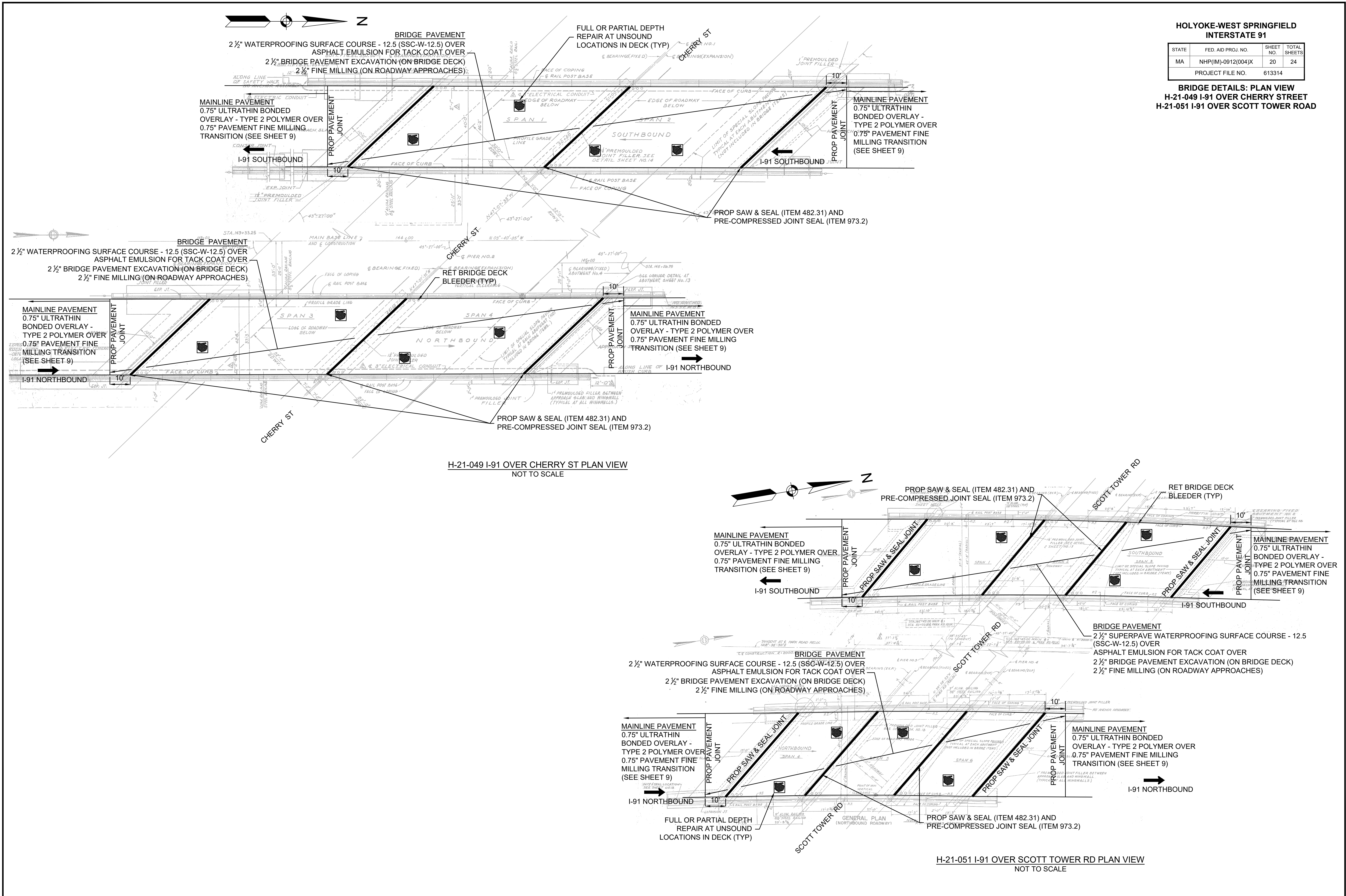
H-21-046 I-91 OVER RAILROAD PLAN VIEW
NOT TO SCALE

**HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOT. SHEETS
MA	NHP(IM)-0912(004)X	19	24
PROJECT FILE NO.		613314	

BRIDGE DETAILS: PLAN VIEW
H-21-047 I-91 OVER LOWER WESTFIELD ROAD
H-21-048 I-91 OVER WESTFIELD ROAD

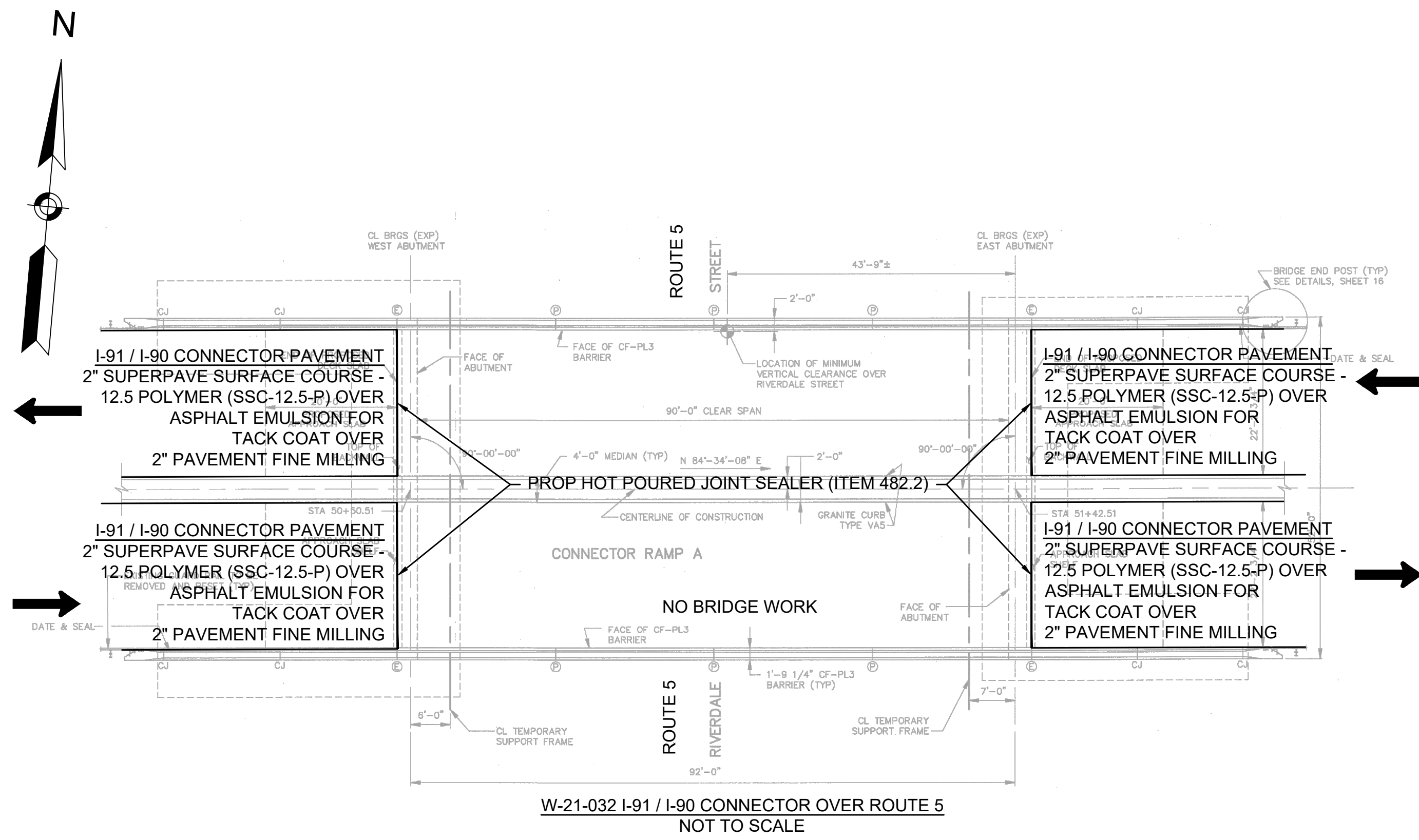
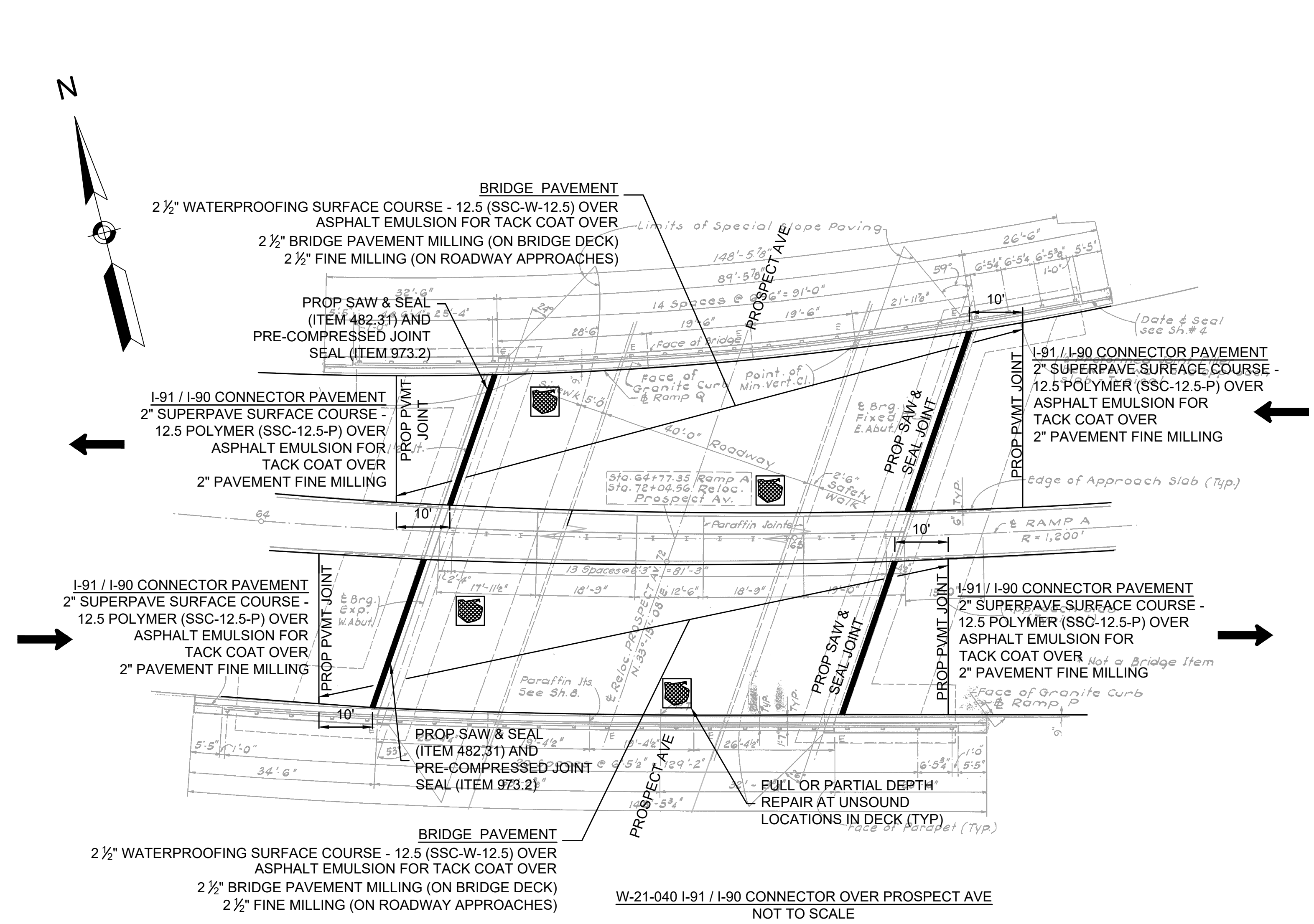
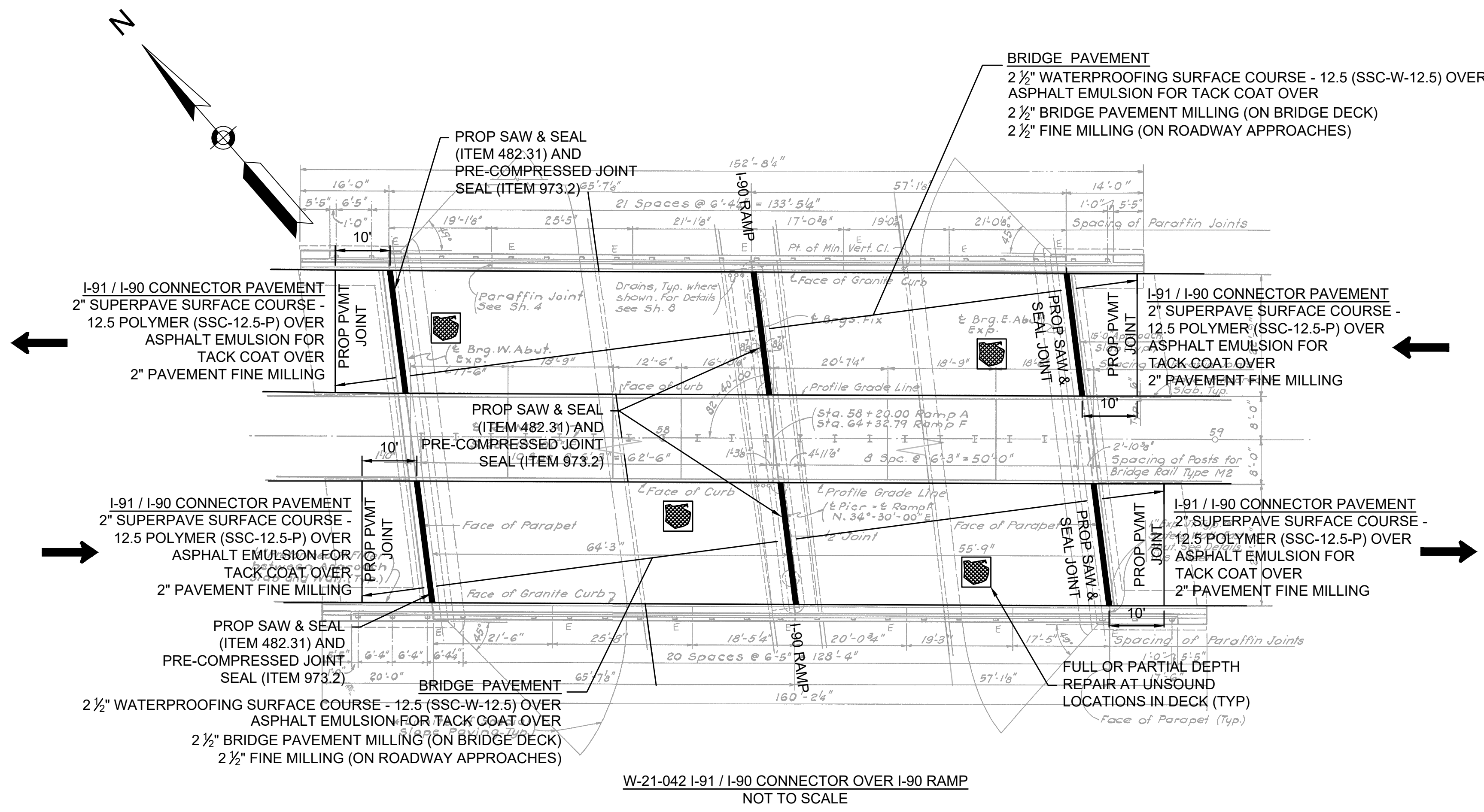


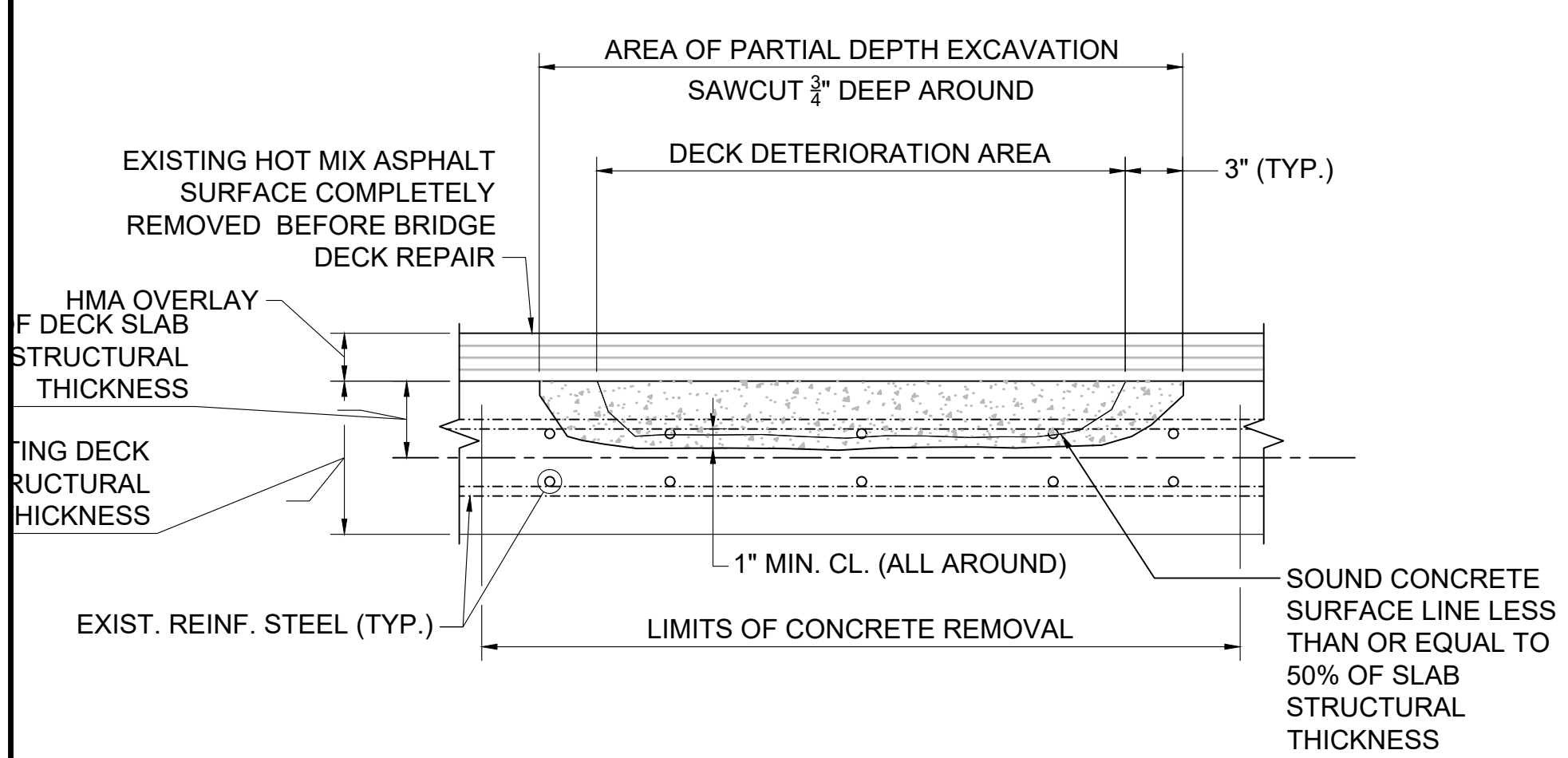


HOLYOKE-WEST SPRINGFIELD
INTERSTATE 91

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	21	24
PROJECT FILE NO.		613314	

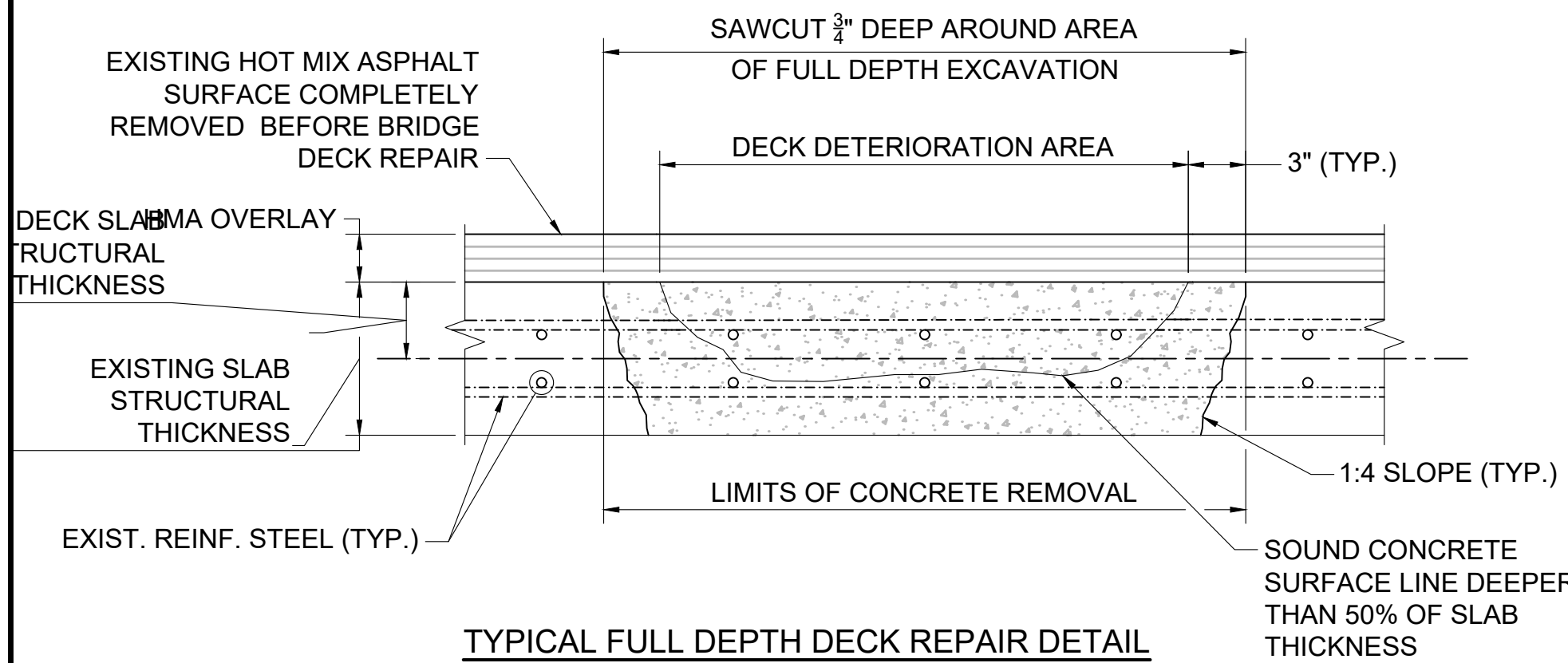
BRIDGE DETAILS: PLAN VIEW
W-21-042 OVER I-90 RAMP
W-21-032 OVER ROUTE 5





TYPICAL PARTIAL DEPTH DECK REPAIR DETAIL

SCALE: 1½" = 1'-0"



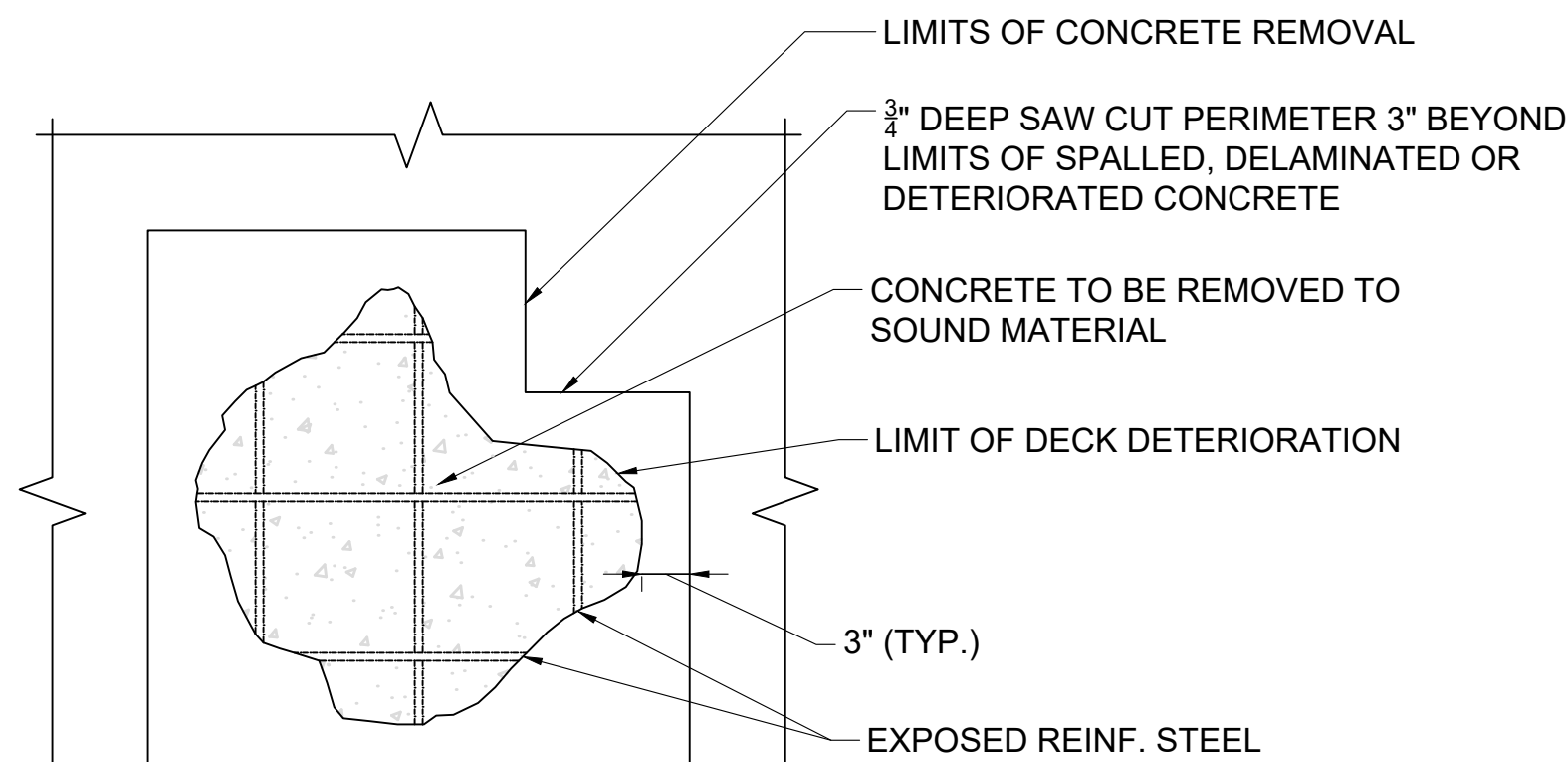
TYPICAL FULL DEPTH DECK REPAIR DETAIL

SCALE: 1½" = 1'-0"

- NOTES:
1. DECK FORMS SHALL BE FLUSH WITH EXISTING DECK UNDERSIDE AND SHALL BE REMOVED AFTER CURING IS COMPLETE.

BRIDGE DECK REPAIR NOTES:

1. SPALLED, DELAMINATED, AND DETERIORATED CONCRETE DECK AREAS SHALL BE REPAIRED USING AN APPROVED RAPID HARDENING CONCRETE FOR REPAIRS (ITEM 909.3) AS DIRECTED BY THE ENGINEER.
2. PARTIAL DEPTH REPAIRS: ALL DETERIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED TO A MINIMUM DEPTH OF 1" BELOW THE BOTTOM OF THE TOP LAYER OF EXISTING TRANSVERSE REINFORCEMENT STEEL TO A MAXIMUM OF 50% OF THE THICKNESS OF THE EXISTING CONCRETE DECK.
3. FULL DEPTH REPAIRS: ALL DETERIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED, AND IF THE SOUND CONCRETE SURFACE IS LOCATED AT A DEPTH GREATER THAN 50% OF THE DECK THICKNESS WHEN MEASURED FROM THE TOP OF DECK, A FULL DEPTH DECK REPAIR SHALL BE PERFORMED.
4. ALL EXISTING REINFORCING STEEL AND CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH REPAIR CONCRETE SHALL BE ABRASIVELY BLAST CLEANED IN ORDER TO REMOVE ALL RUST, OIL, AND DEBRIS THAT IS NOT TIGHTLY ADHERED, FOLLOWED BY APPLICATION OF COMPRESSED AIR TO REMOVE ALL DUST. EXISTING CONCRETE REPAIR SURFACES THAT WILL BE IN CONTACT WITH REPAIR CONCRETE SHALL BE PRE-WETTED FOR A MINIMUM OF 24 HOURS USING POTABLE WATER IN ORDER TO ACHIEVE A SATURATED SURFACE DRY CONDITION IMMEDIATELY PRIOR TO PLACEMENT OF REPAIR CONCRETE.
5. NEW EPOXY COATED STEEL REINFORCEMENT SHALL BE PLACED TO SUPPLEMENT EXISTING REINFORCEMENT THAT HAS A SECTION LOSS OF 25% OR MORE OF THE ORIGINAL CROSS SECTION AREA OR HAS BROKEN, AS DETERMINED BY THE ENGINEER. NEW REINFORCEMENT SHALL EXTEND 30 BAR DIAMETERS IN EACH DIRECTION FROM WHERE THE SECTION LOSS OR BREAK ENDS. THE LIMITS OF THE REPAIR SHALL BE MODIFIED TO MEET THE REINFORCEMENT STEEL LAP SPLICE REQUIREMENTS. NEW REINFORCING STEEL SHALL BE PLACED AT THE SAME LEVEL ALONGSIDE THE EXISTING DETERIORATED OR BROKEN REINFORCING STEEL.

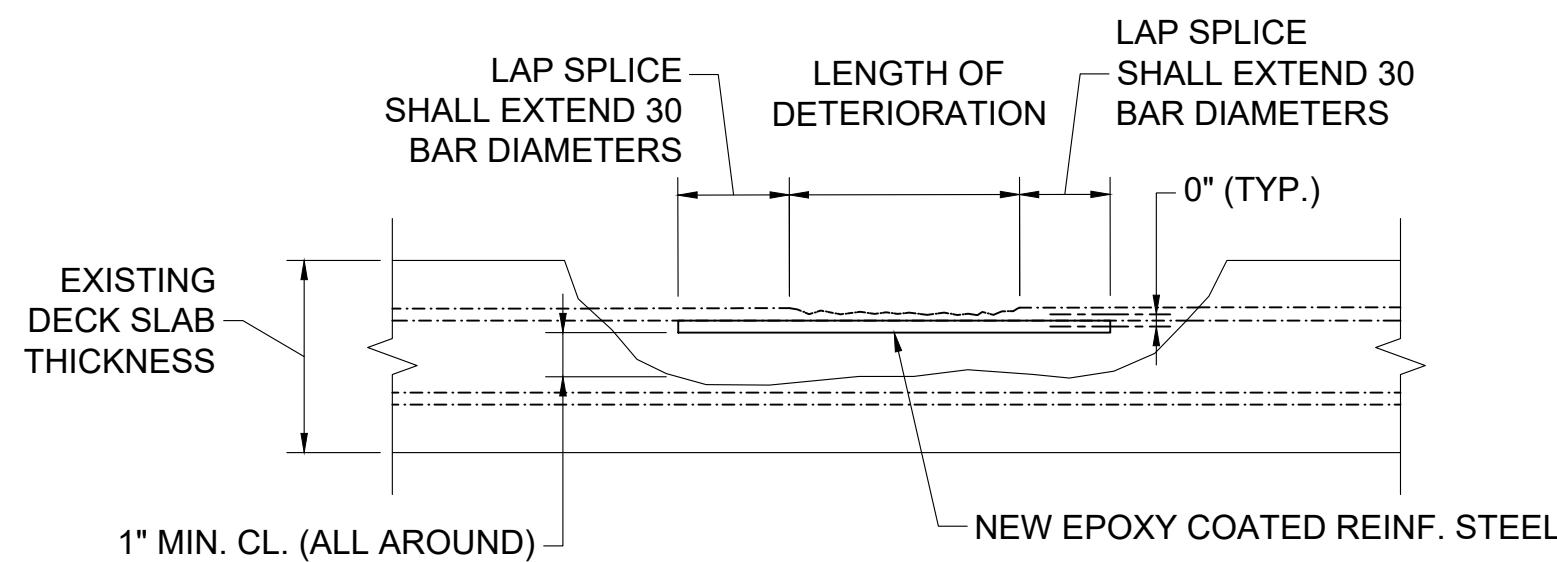


LIMITS OF REPAIR AREA

SCALE: 1" = 1'-0"

BRIDGE DECK REPAIR SEQUENCE NOTES:

1. PRIOR TO ANY DECK EXCAVATION, THE CONTRACTOR MUST FURNISH A SHIELDING PLAN TO PREVENT EXCAVATED CONCRETE FROM FALLING ONTO THE ROADWAY BELOW. THIS PLAN MUST BE DESIGNED AND STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER OF THE APPROPRIATE DISCIPLINE. THE FURNISHING, INSTALLATION, AND REMOVAL OF SHIELDING SHALL BE PAID UNDER ITEM 994.1. AT THE DISCRETION OF THE ENGINEER, THE CONTRACTOR MAY UTILIZE CONSTRUCTION VEHICLES PARKED BELOW AREAS OF DECK EXCAVATION TO CATCH FALLING DEBRIS IN LIEU OF TRADITIONAL SHIELDING METHODS.
2. ALL EXISTING HOT MIX ASPHALT WEARING SURFACE AND MEMBRANE WATERPROOFING MATERIAL SHALL BE REMOVED IN EACH CONSTRUCTION STAGE PRIOR TO PERFORMING DECK REPAIRS. THE EXPOSED DECK SURFACE SHALL BE INSPECTED BY THE ENGINEER TO DETERMINE APPROXIMATE LIMITS OF REPAIR. IN ADDITION AREAS OF THE UNDERSIDE WITH EVIDENCE OF DETERIORATION SHALL BE SOUNDED IN THE PRESENCE OF THE CONTRACTOR AND THE ENGINEER TO IDENTIFY AREAS IN NEED OF FULL DEPTH REPAIRS.
3. THE TOP SURFACE OF THE DECK REPAIRS SHALL BE FINISHED FLUSH WITH THE ADJACENT TOP OF DECK SLAB AND SHALL MAINTAIN THE EXISTING GRADES AND CROSS SLOPES.
4. UPON COMPLETION OF EACH STAGE OF DECK REPAIRS, THE DECK SHALL BE ABRASIVELY BLAST CLEANED, FOLLOWED BY PLACEMENT OF THE HOT MIX ASPHALT WEARING SURFACE. BRIDGE WATERPROOFING MEMBRANE SHALL NOT BE INSTALLED ON THIS BRIDGE.

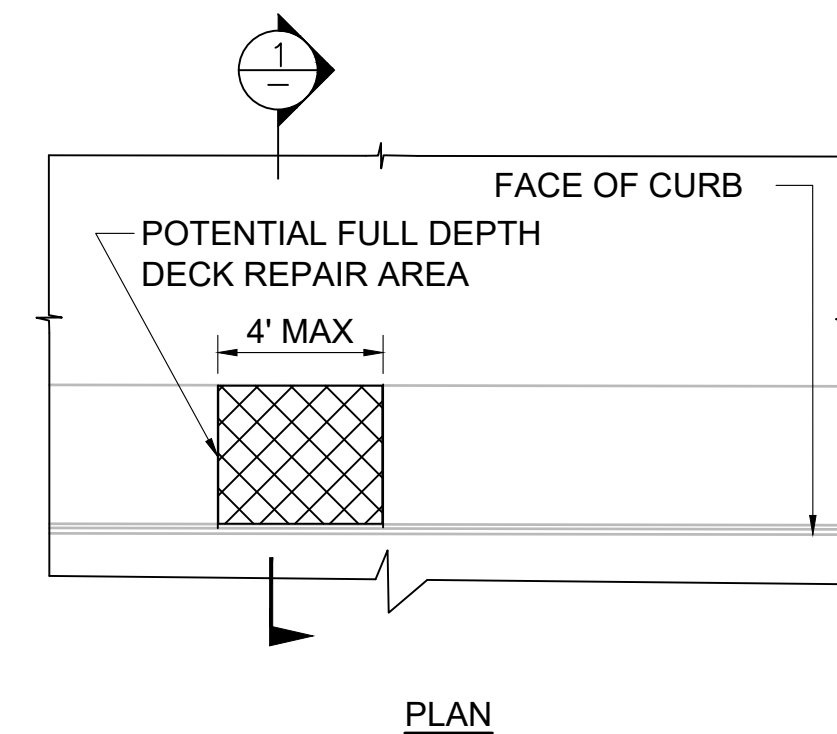


TYPICAL DETERIORATED REINFORCEMENT STEEL REPAIR

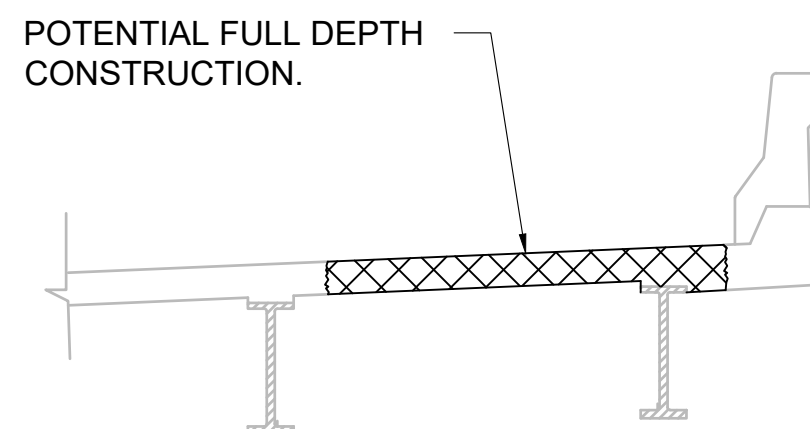
SCALE: 1½" = 1'-0"

TEMPORARY TRAFFIC CONTROL AND CONSTRUCTION SEQUENCE

1. ALL WORK ON THIS BRIDGE SHALL BE DONE AT NIGHT USING SHORT TERM LANE CLOSURES. TEMPORARY BARRIER WILL NOT BE UTILIZED UNLESS REQUIRED BY THE ENGINEER.
2. AT LEAST ONE LANE OF TRAFFIC MUST BE KEPT OPEN AT ALL TIMES DURING THE WORK SHIFT. ALL LANES MUST BE OPEN AT THE END OF THE WORK SHIFT IN THEIR ORIGINAL CONFIGURATION.
3. THE CONTRACTOR MAY REMOVE ONLY AS MUCH CONCRETE AS CAN BE PLACED AND CURED IN ONE WORK SHIFT. RAPID HARDENING CONCRETE PLACEMENTS SHALL BE COMPLETED NO LATER THAN 2:00 AM FOR NIGHT-TIME OPERATIONS SO THAT THE REQUIRED COMPRESSIVE STRENGTH OF 2000 PSI IS ATTAINED BEFORE THE AREA IS OPENED TO TRAFFIC.
4. TEMPORARY HMA RAMPS SHALL BE USED AT ALL TRANSVERSE AND LONGITUDINAL DROP-OFFS TO TRANSITION TRAFFIC TO THE BRIDGE DECK.
5. FOR THE CONVENIENCE OF THE TRAVELING PUBLIC THE CONTRACTOR IS LIMITED TO WORKING ON NO MORE THAN THREE BRIDGE DECKS AT A TIME. ALL BRIDGE WORK INCLUDING FINAL SURFACE COURSE PAVING MUST BE COMPLETED BEFORE ANY WORK CAN BEGIN ON ADDITIONAL BRIDGES. FOR THIS PURPOSE, A BRIDGE DECK IS DEFINED AS A SINGLE BRIDGE IN A SINGLE DIRECTION, REGARDLESS OF IF THE BRIDGE NUMBER INCLUDES A DECK IN EACH DIRECTION OF TRAVEL.
6. WATERPROOFING COURSE SHALL NOT BE APPLIED BEFORE 14 DAYS AFTER REPAIRS TO ENSURE WATER IS NOT TRAPPED DURING THE CURING PROCESS. BRIDGE DECKS SHALL NOT BE EXPOSED TO TRAFFIC WITHOUT SURFACE COURSE PAVEMENT FOR LONGER THAN 30 DAYS. BRIDGE WORK SHALL BE STAGED LANE BY LANE WHEN NECESSARY TO MEET 14 DAYS MINIMUM EXPOSURE AND 30 DAYS MAXIMUM EXPOSURE.



PLAN

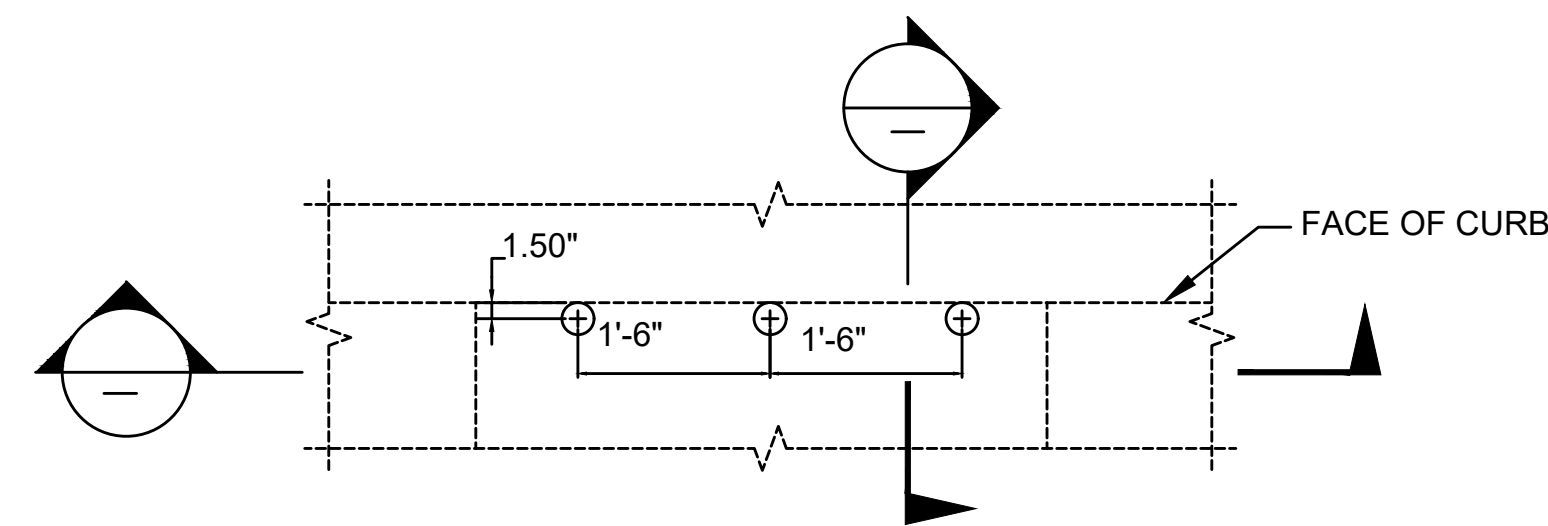


SECTION 1

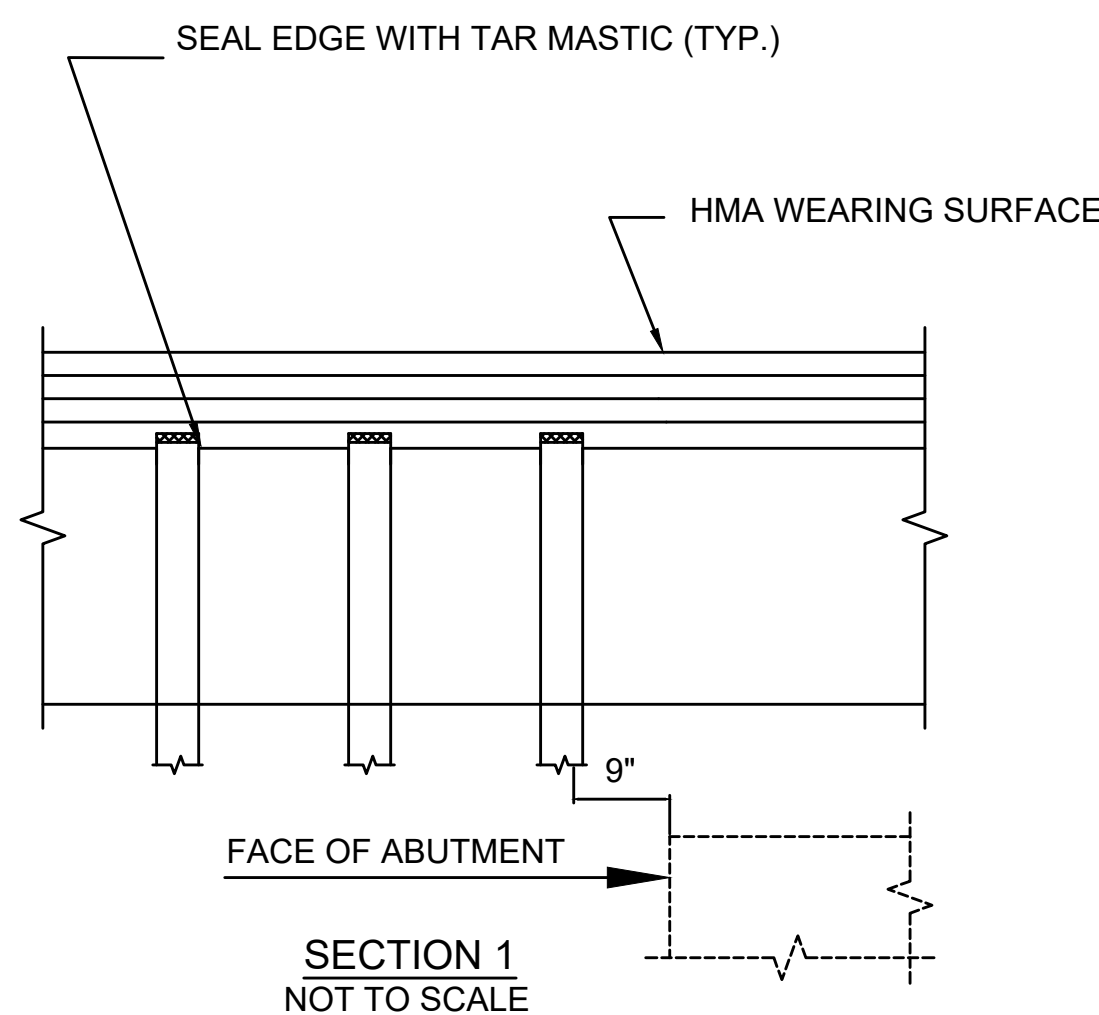
FULL DEPTH OVERHANG DECK REPAIR

NOT TO SCALE

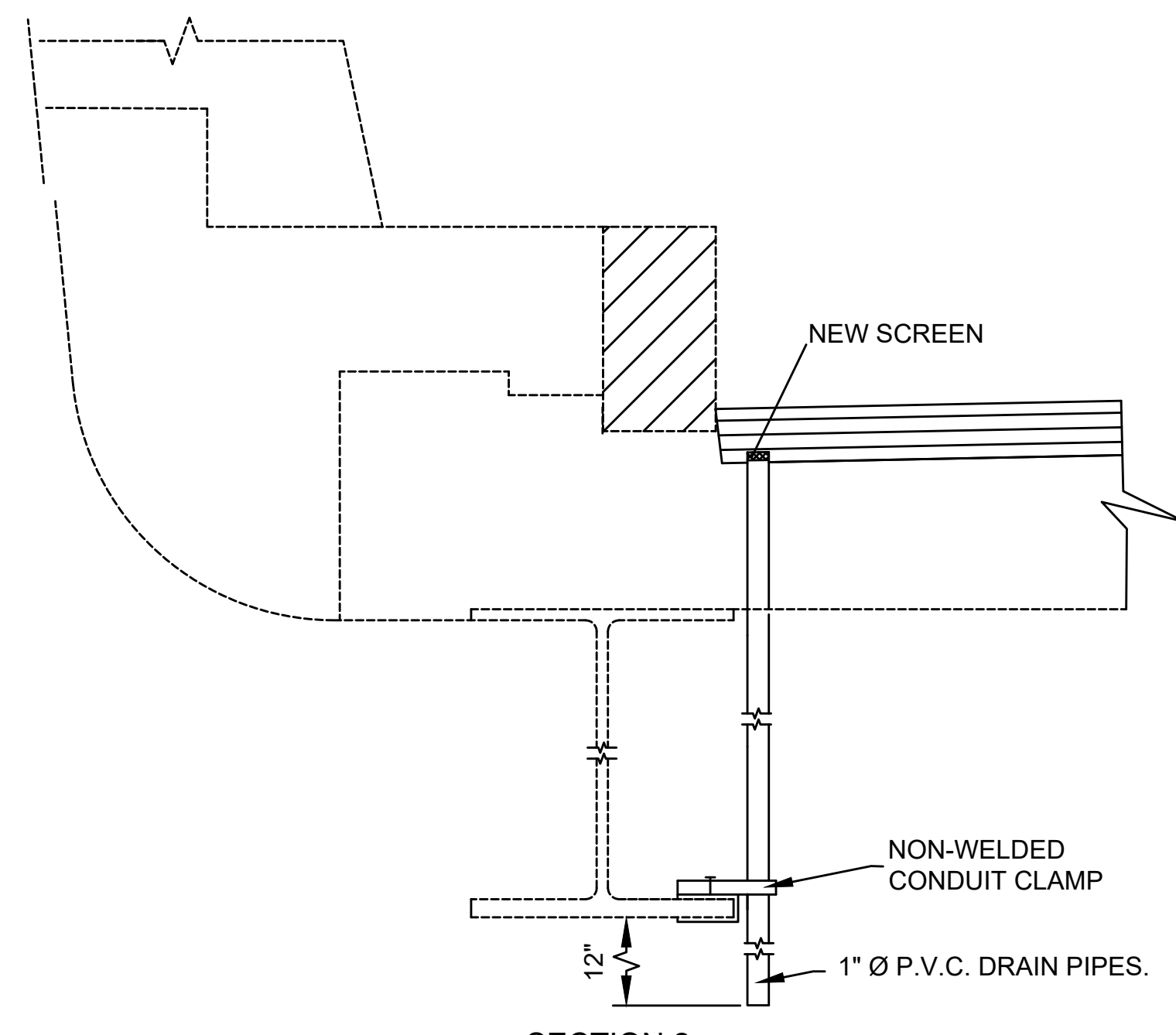
- NOTE
1. OVERHANG SUPPORT MUST BE PROVIDED WHEN CONSTRUCTION WIDTHS EXCEED 4' (FOUR FEET). IF THE CONTRACTOR EXTENDS THE EXCAVATION BEYOND 4' THEN THEY MUST FURNISH A SHIELDING DESIGN CAPACITY CHECK. THIS CHECK MUST BE DESIGNED AND STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER OF THE APPROPRIATE DISCIPLINE.



DECK PLAN
NOT TO SCALE



SECTION 1
NOT TO SCALE



SECTION 2
NOT TO SCALE

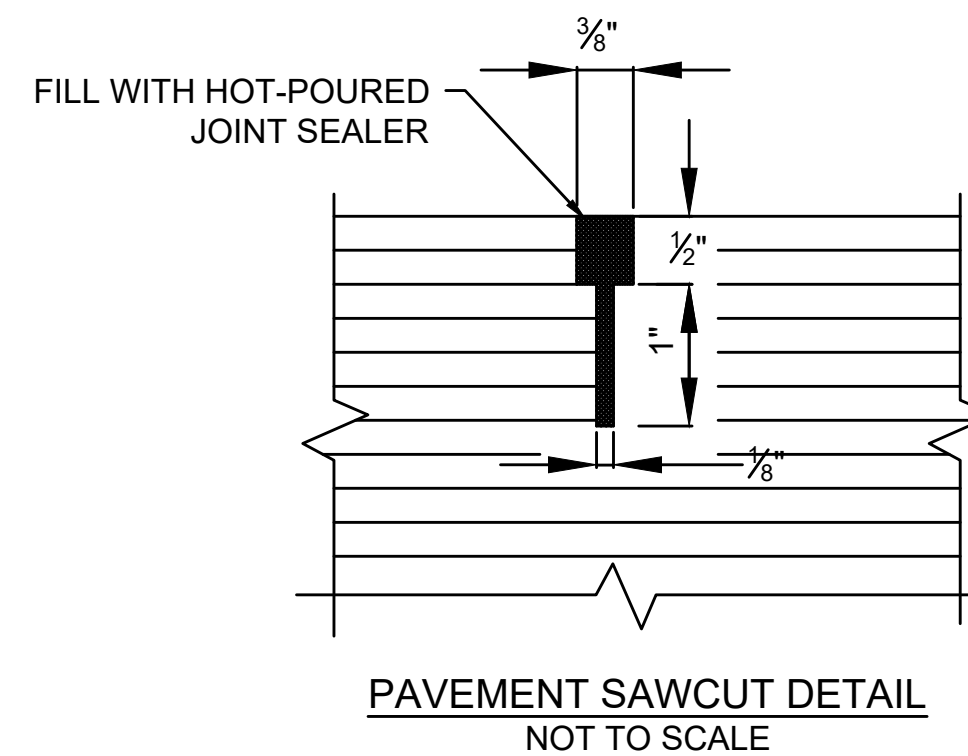
DECK BLEEDER
NOT TO SCALE

HOLYOKE-WEST SPRINGFIELD INTERSTATE 91			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	22	24
PROJECT FILE NO.		613314	

BRIDGE DETAILS:BRIDGE DECK DETAILS

PROPOSED SAW & SEAL JOINT REPLACEMENT AT BRIDGE ABUTMENT
NOT TO SCALE

EXISTING SAW & SEAL JOINT EXCAVATION FOR FULL DEPTH RECONSTRUCTION
NOT TO SCALE

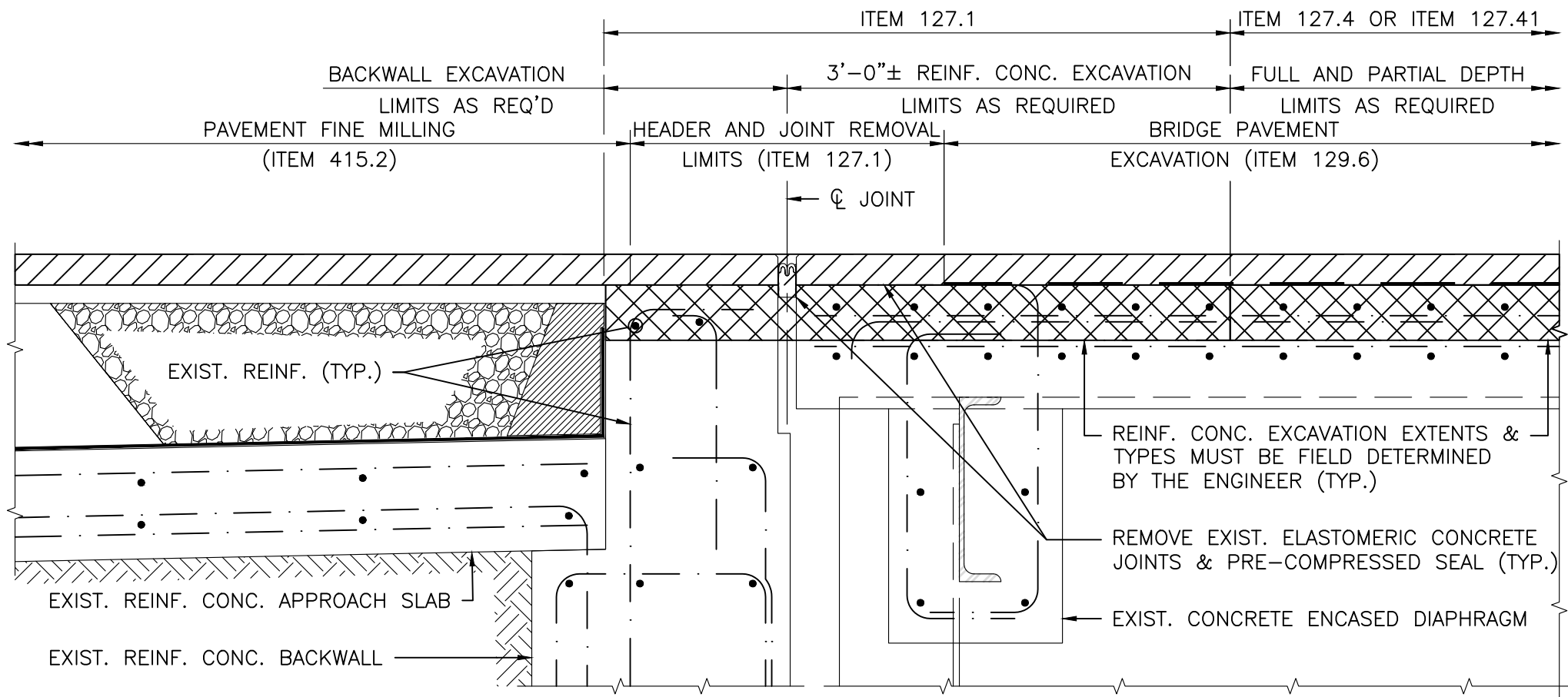


LIMITS OF PAVING AT BRIDGE W-21-032
NOT TO SCALE

PROPOSED SAW & SEAL JOINT WITH FULL DEPTH RECONSTRUCTION
NOT TO SCALE

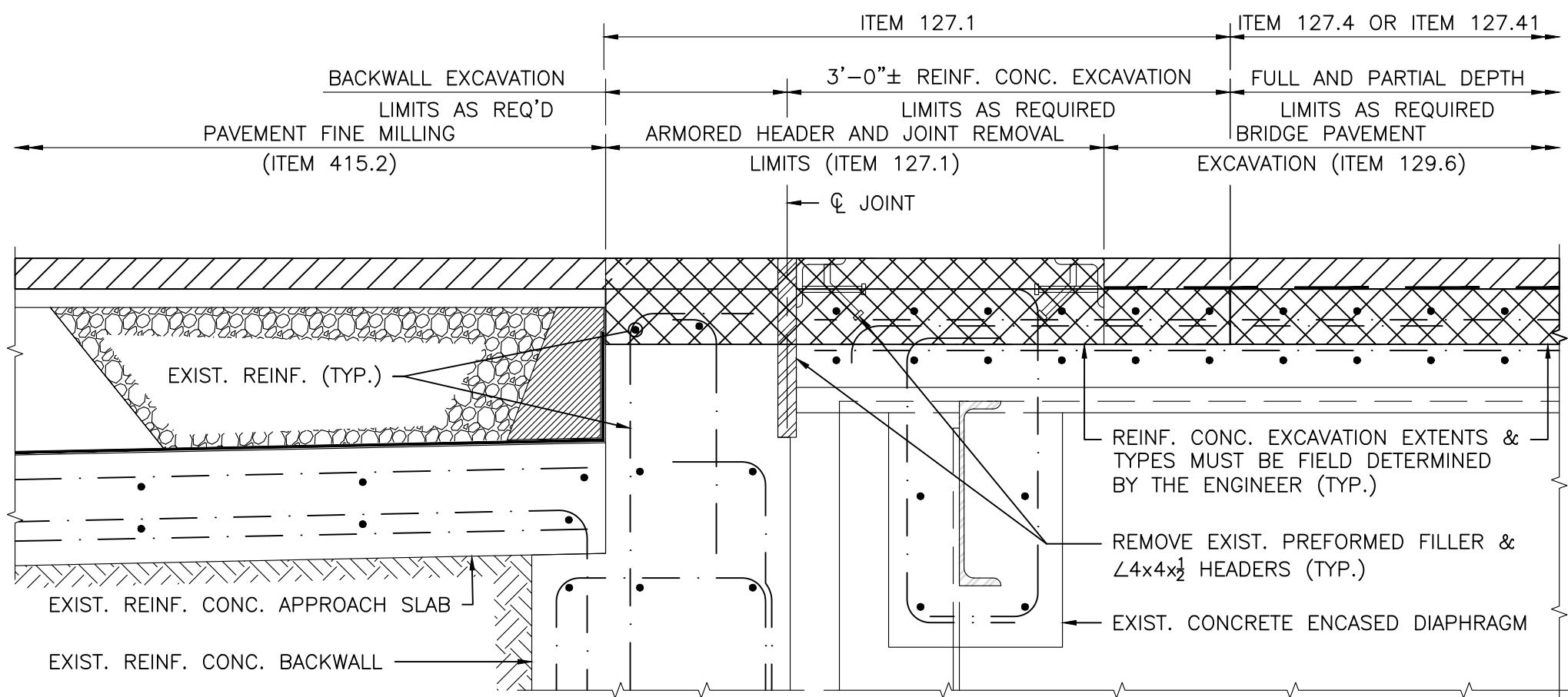
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	NHP(IM)-0912(004)X	24	24
PROJECT FILE NO.		613314	

BRIDGE DETAILS: BRIDGE JOINT DETAILS
2 OF 2



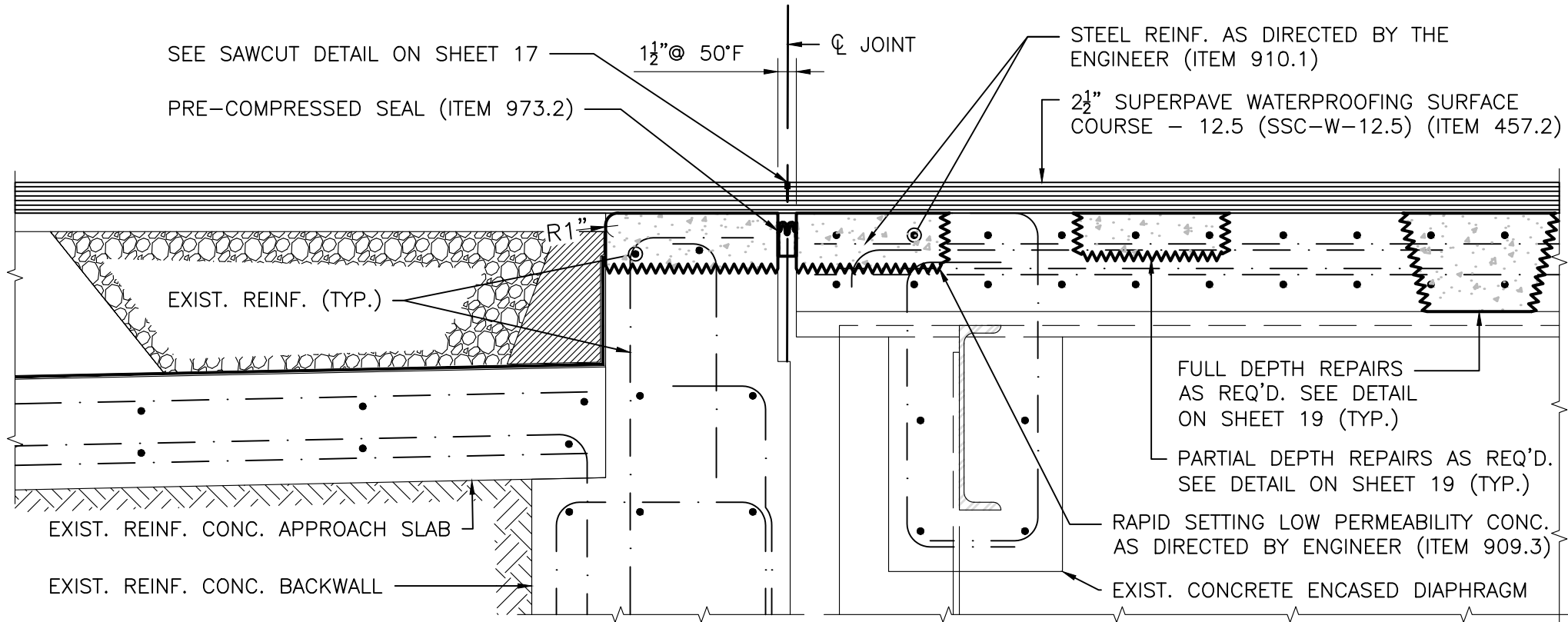
EXCAVATION LIMITS AT EXISTING ABUTMENT JOINTS

SCALE: 1" = 1'-0"



EXCAVATION LIMITS AT EXISTING ABUTMENT JOINTS FOR W-21-042

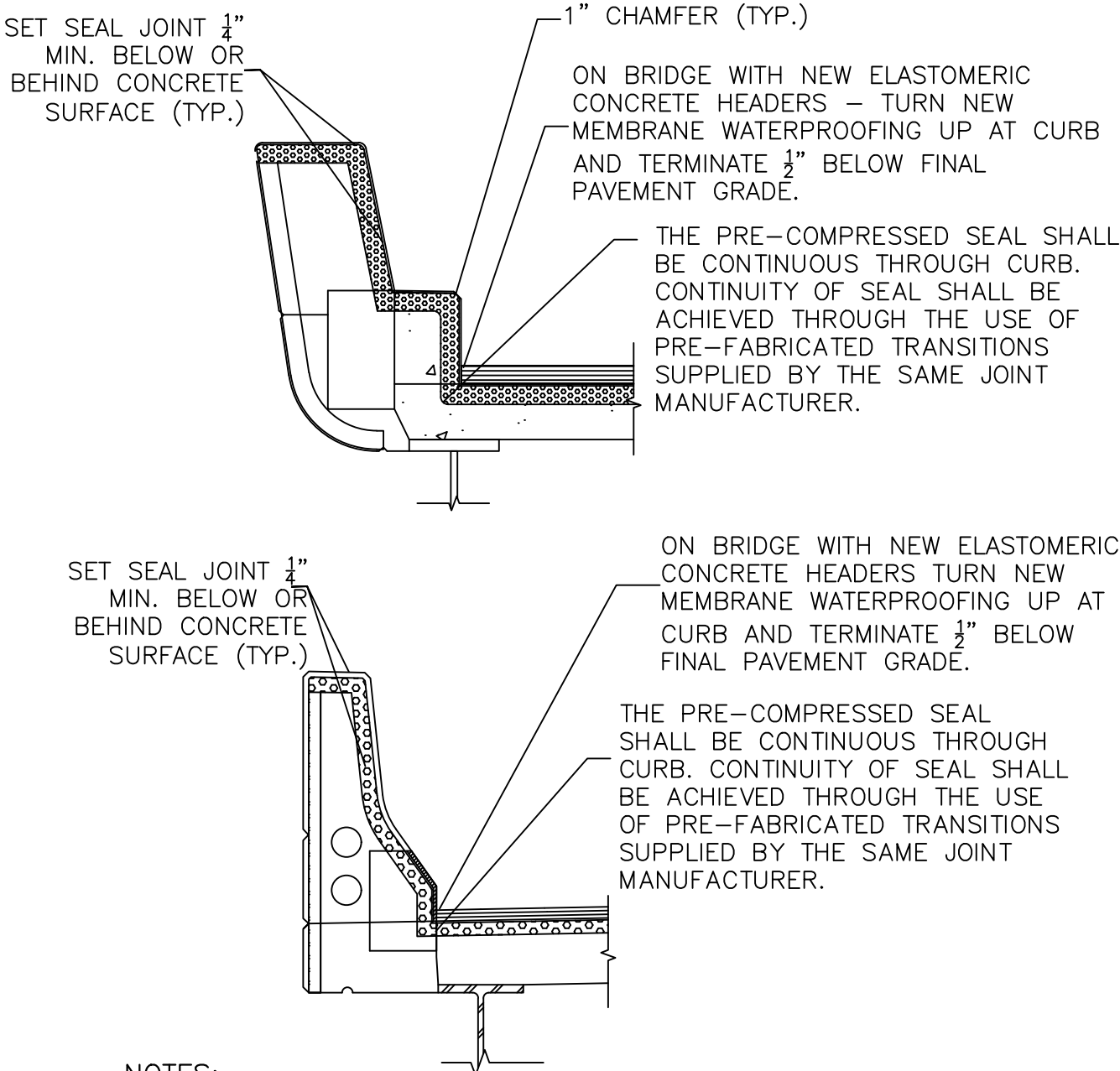
SCALE: 1" = 1'-0"



SAWCUT AND SEAL BRIDGE JOINT AT EXISTING ABUTMENT JOINTS

SCALE: 1" = 1'-0"

SAWCUT AND SEAL BRIDGE EXPANSION JOINT AT ABUTMENTS			
BRIDGE NO.	BIN NO.	LOCATION	JOINT LENGTH
H-21-049	OYD	ABUTMENT 3	96'
	OYE	ABUTMENT 1	96'
H-21-048	OYB	ABUTMENT 4	63.16'
	OYC	ABUTMENT 2	44.42'
H-21-047	OY9	ABUTMENT 3	85.10'
	OYA	ABUTMENT 1	85.10'
W-21-038	111	NORTH ABUTMENT	85.10'
	112	NORTH ABUTMENT	85.10'
W-21-040	158	EB WEST ABUTMENT	28.75'
		WB WEST ABUTMENT	25.25'
W-21-042	157	EB WEST ABUTMENT	22.94'
		WB WEST ABUTMENT	22.94'

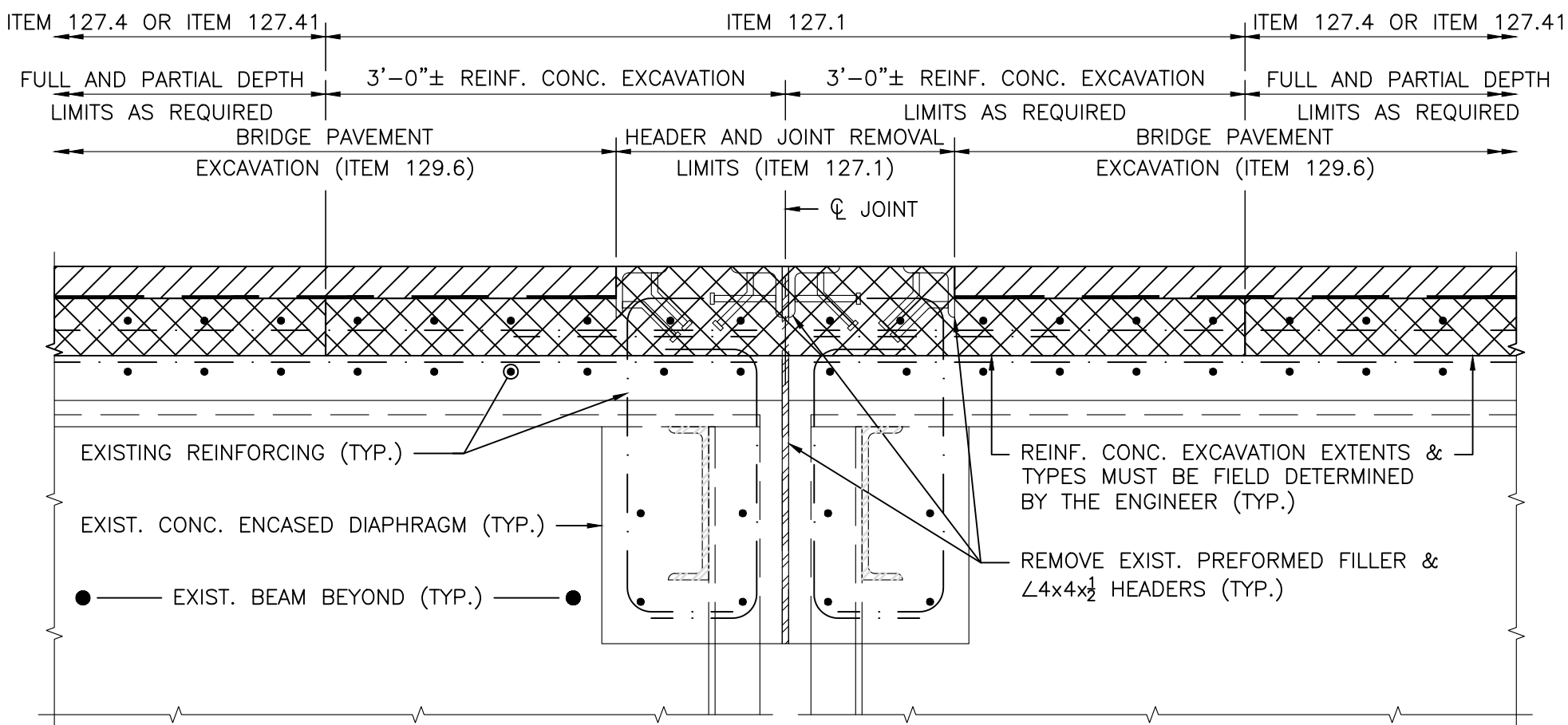


NOTES:

1. PRIOR TO INSTALLATION, REMOVE THE EXISTING JOINT SEAL AND CLEAN THE JOINT PRIOR TO INSTALLATION OF THE NEW PRE-COMPRESSED JOINT SEAL.

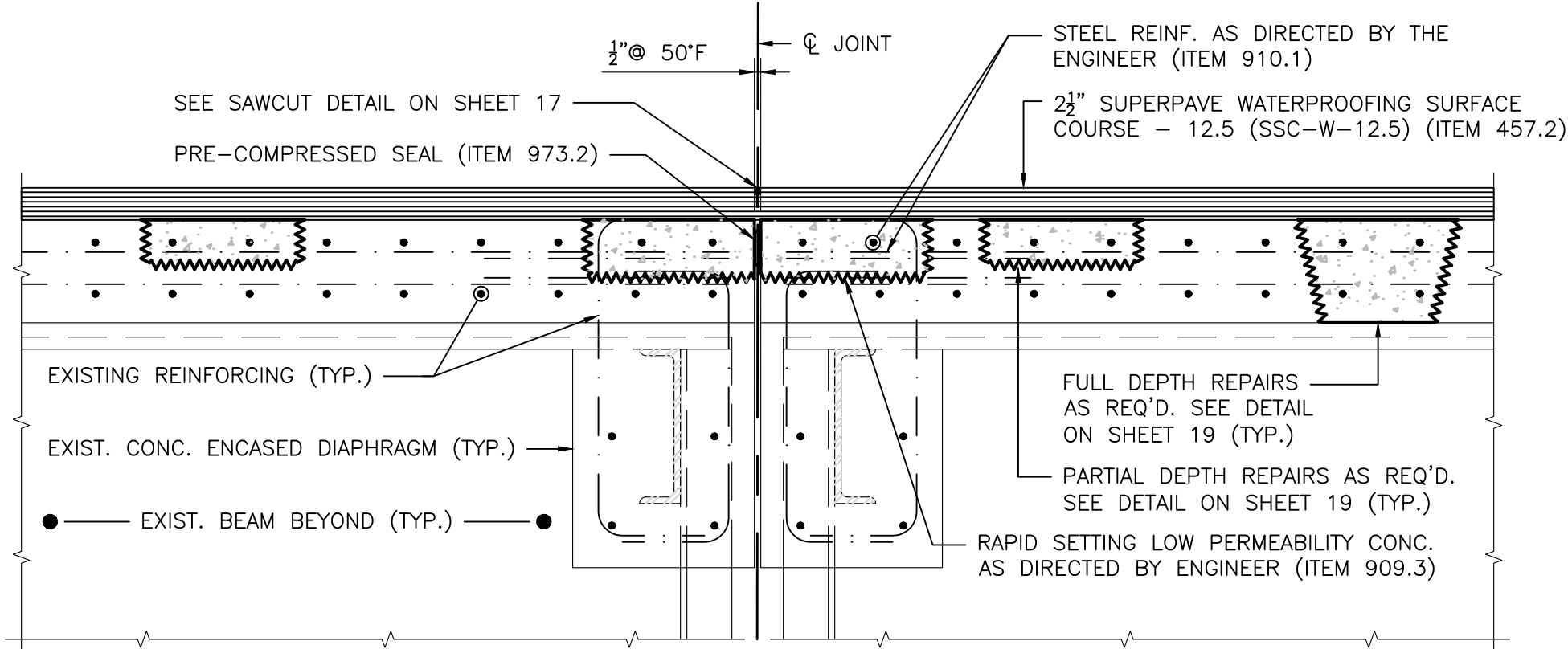
PRE-COMPRESSED SEAL SECTION AT BARRIER/CURB

NOT TO SCALE



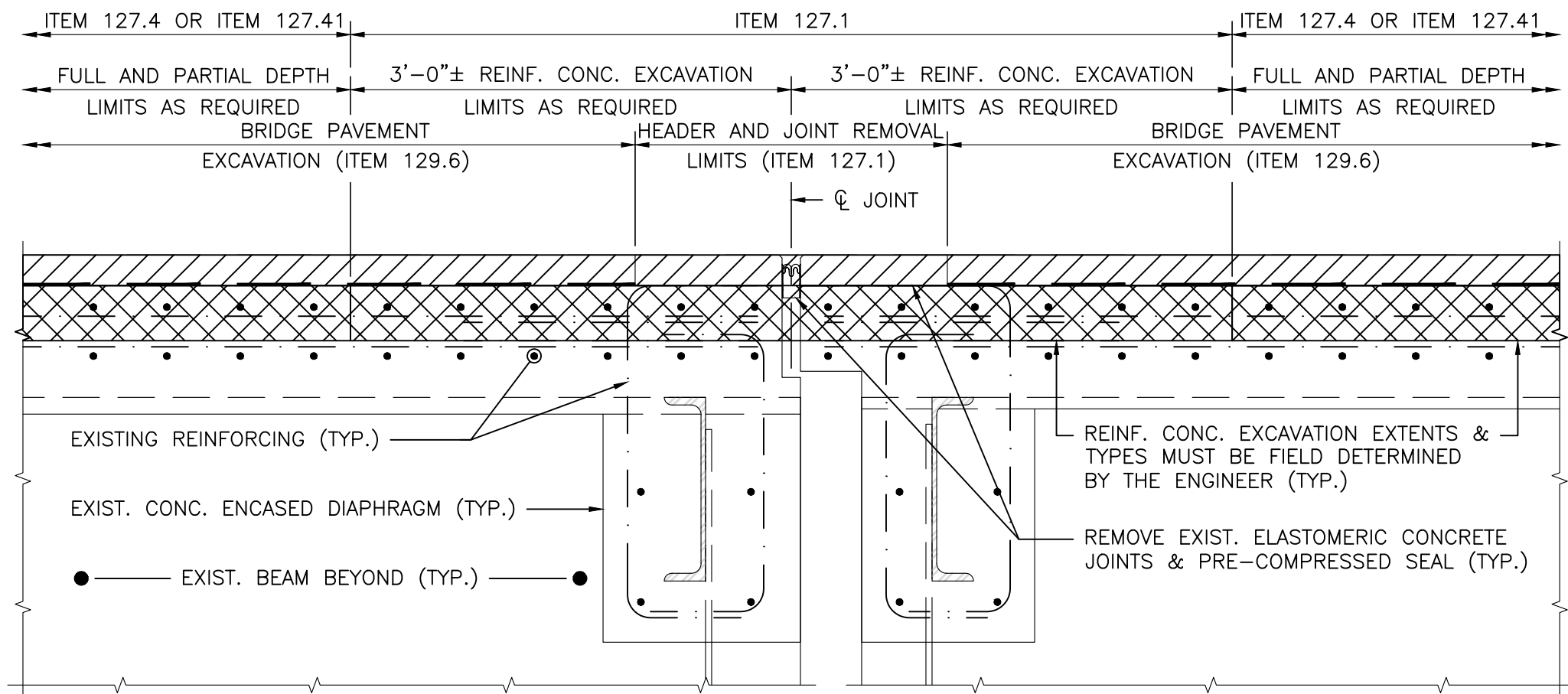
EXCAVATION LIMITS AT EXISTING PIER JOINTS FOR W-21-042

SCALE: 1" = 1'-0"



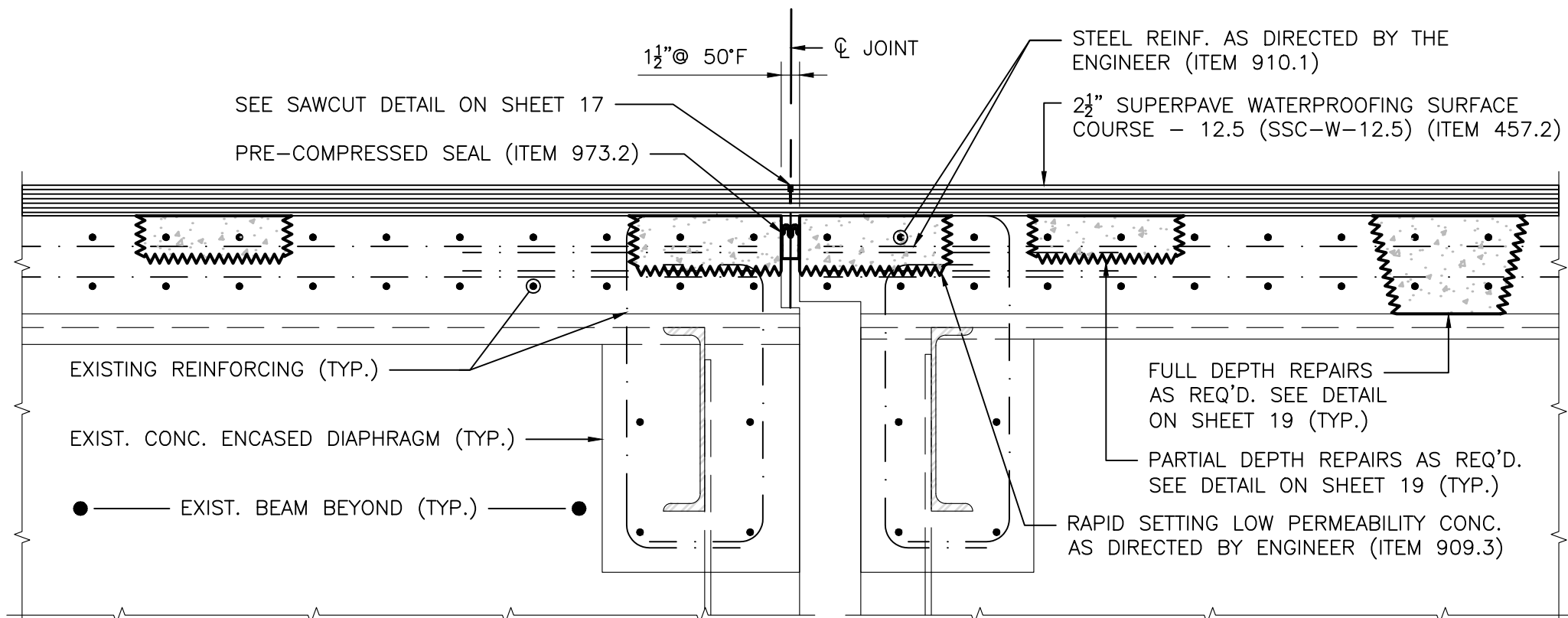
SAWCUT AND SEAL BRIDGE JOINT AT EXISTING PIER FOR W-21-042

SCALE: 1" = 1'-0"



EXCAVATION LIMITS AT EXISTING PIER JOINTS

SCALE: 1" = 1'-0"



SAWCUT AND SEAL BRIDGE JOINT AT EXISTING PIER JOINTS

SCALE: 1" = 1'-0"

SAWCUT AND SEAL BRIDGE EXPANSION JOINT AT PIERS			
BRIDGE NO.	BIN NO.	LOCATION	JOINT LENGTH
H-21-051	OYF	PIER 3	37.29'
		PIER 4	76.25'
H-21-049	OYG	PIER 1	60'
		PIER 2	93.48'
H-21-048	OYD	PIER 2	96'
		PIER 1	96'
H-21-048	OYB	PIER 3	26.31'
		PIER 4	95.33'
W-21-042	OYC	PIER 1	26.06'
		PIER 2	75.40'
W-21-042	157	EASTBOUND PIER	22.94'
		WESTBOUND PIER	22.94'