MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	1	146
PROJECT FILE NO.	612159		

TITLE SHEET & INDEX

PLAN AND PROFILE OF

RT 10

(BRIDGE NO. B-10-001 (CLA) & B-10-018 (12C))

IN THE TOWN OF

BERNARDSTON

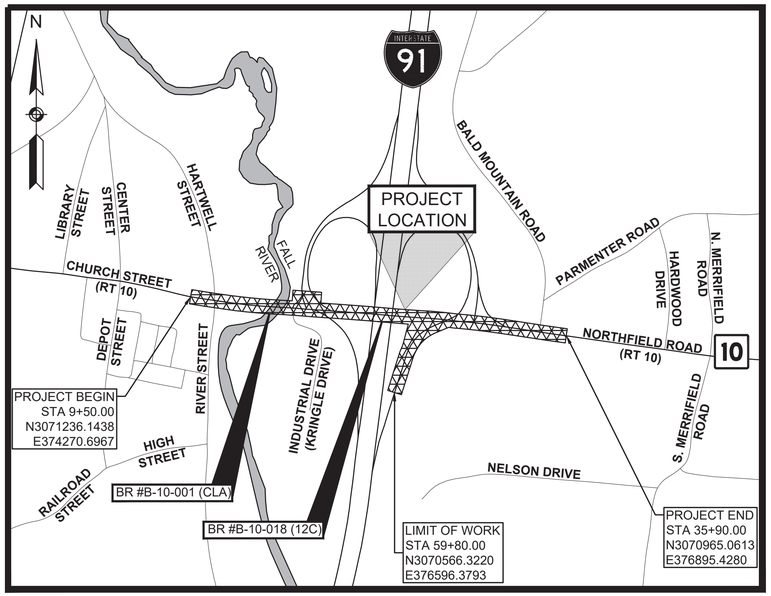
FRANKLIN COUNTY

HIP(NGB)/FHG(BIP2)-003S(915)

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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0 500 1000 1500 2000

SCALE: 1" = 500'

TOTAL LENGTH OF PROJECT = 3,180.00 FEET = 0.602 MILES
RT 10 = 2,640.00 FEET = 0.500 MILES
I-91 NB OFF-RAMP (SE) = 540.00 FEET = 0.102 MILES

DESIGN DESIGNATION (RT 10)	
DESIGN SPEED	40 MPH (STA 9+50± TO STA 13+85±) 45 MPH (STA 13+85± TO STA 36+50±)
ADT (2023)	8,386
ADT (2043)	10,233
K	9.5%
D	58.2% WB
T (PEAK HOUR)	7.9%
T (AVERAGE DAY)	5.0%
DHV	880
DDHV	512
FUNCTIONAL CLASSIFICATION	RURAL MAJOR COLLECTOR (STA 10+25± TO STA 23+00±) RURAL MINOR ARTERIAL (STA 23+00± TO STA 36+25±)

DESIGN DESIGNATION (I-91 NB OFF-RAMP (SE))	
DESIGN SPEED	30 MPH (STA 61+00± TO STA 65+25±)
ADT (2023)	2,382
ADT (2043)	2,910
K	9.9%
D	100% (ONE-WAY OFF-RAMP)
T (PEAK HOUR)	14.9%
T (AVERAGE DAY)	6.1%
DHV	290
DDHV	290
FUNCTIONAL CLASSIFICATION	INTERSTATE RAMP

COMMONWEALTH OF MASSACHUSETTS
JONATHAN J. SHIKES
CIVIL
No. 45512
PROFESSIONAL ENGINEER

Jonathan Shikes Digitally signed by Jonathan Shikes Date: 2026.08.04 10:00:13 -04'00'

FOR SHEETS 1-59 & 127-146

COMMONWEALTH OF MASSACHUSETTS
ROBERT NICCOLI
CIVIL
No. 49871
PROFESSIONAL ENGINEER

Robert Niccoli Digitally signed by Robert Niccoli Date: 2026.08.04 09:50:21 -04'00'

FOR SHEETS 60-126

TEC The Engineering Corp
282 Merrimack St, 2nd Floor, Lawrence, MA 01843, 978-794-1792
100 Front Street, 10th Floor, Worcester, MA 01608, 508-868-5104
2 Monument Square, Suite 301, Portland, ME 04101, 207-370-5838
www.TECinc.com

massDOT Massachusetts Department of Transportation Highway Division

APPROVED

Carrie Lavallee Digitally signed by Carrie Lavallee, P.E. Date: 2026.08.05 14:00:29 -04'00'

08/05/2026

CHIEF ENGINEER **DATE**

T1217.01_HD1_TITLE SHEET.DWG Plotted on 27-Jul-2026 11:04 AM

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
	CBCI	CATCH BASIN W/ CURB INLET
CB	GI	GUTTER INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		POST W/ CAMERAS
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		DETECTIBLE WARNING PANEL
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		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
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		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 CABINET, FOUNDATION
		CONTROLLER CABINET, FOUNDATION, CONC. PAD
		MAST ARM FOUNDATION (SCALE OF BLOCK = DIAMETER IN INCHES)
		MAST ARM (LENGTH NOTED)
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		PEDESTRIAN SIGNAL HEAD
		MAST ARM OR TS POLE MOUNTED SIGN
		EMERGENCY PRE-EMPTION RECEIVER
		EMERGENCY PRE-EMPTION CONFIRMATION STROBE
		PEDESTRIAN PUSH BUTTON
		YAGI ANTENNA
		BICYCLE WIRE LOOP DETECTOR (SIZE AS NOTED)
		WIRE LOOP DETECTOR (SIZE AND TYPE NOTED)
		TRAFFIC SIGN (1 POST)
		TRAFFIC SIGN (2 POST)
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
		BIKE LANE LEGEND - WHITE
		LEGEND "WRONG WAY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE (10' LINE W/ 30' GAP)
	BYL	BROKEN YELLOW LINE (10' LINE W/ 30' GAP)
	DWL	DOTTED WHITE LINE (3' LINE W/ 9' GAP)
	DYL	DOTTED YELLOW LINE (3' LINE W/ 9' GAP)
	DWLEx	DOTTED WHITE LINE EXTENSION (2' LINE W/ 6' GAP)
	DYLEx	DOTTED YELLOW LINE EXTENSION (2' LINE W/ 6' GAP)
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE
		YELLOW/YELLOW TWO-WAY SLOTTED PAVEMENT MARKER
		YELLOW/RED TWO-WAY SLOTTED PAVEMENT MARKER
		MILLED RUMBLE STRIP TYPE C

ABBREVIATIONS

GENERAL	DESCRIPTION
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
AP	ANGLE POINT
BC	BOTTOM OF CURB
BCB	BITUMINOUS CURB
BD.	BOUND
BIT.	BITUMINOUS
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
CCB	CAPE COD BERM
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
CPP	CORRUGATED PLASTIC PIPE
DBYL	DOUBLE YELLOW LINE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWP	DETECTABLE WARNING PANEL
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN	FOUNDATION
FDP	FULL DEPTH PAVEMENT
FES	FLARED END SECTION
FLDSTN	FIELDSTONE
GAR	GARAGE
GC	GRANITE CURB
GCC	GRANITE CURB CORNER
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDWL	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HP	HIGH POINT
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LOG	LIMIT OF GRADING
LP	LIGHT POLE / LOW POINT
L&S	LOAM AND SEED
LSA	LANDSCAPE AREA
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
OCS	OUTLET CONTROL STRUCTURE
PB	PULL BOX
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	2	146
	PROJECT FILE NO. 612159		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL	DESCRIPTION
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PTH	PLANIMETER TO HERE
PUE	PUBLIC UTILITY EASEMENT
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATERWAY
R	RADIUS OF CURVATURE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
RRFB	RECTANGULAR RAPID FLASHING BEACON
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SGE	SLOPED GRANITE EDGING
SHLD	SHOULDER
SHLO	STATE HIGHWAY LAYOUT LINE
SMC	SLOPED METAL CURB
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SUP	SHARED USE PATH
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TMH	TELEPHONE MANHOLE
TOS	TOP OF SLOPE
TRANS	TRANSITION
TYP	TYPICAL
UPL	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VGC	VERTICAL GRANITE CURB
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

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BERNARDSTON
RT 10

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MA	HIP(NGB)/FHG(BIP2)-003S(915)	3	146
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CONSTRUCTION NOTES

CONSTRUCTION NOTES:

1. EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY HANCOCK ASSOCIATES, PERFORMED IN SEPTEMBER 2022 THROUGH FEBRUARY 2023.

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

2. ALL EXISTING STATE, COUNTY, AND TOWN LOCATION LINES HAVE BEEN ESTABLISHED FROM AN ACTUAL ON-THE-GROUND SURVEY. ALL PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.

3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT DIGSAFE (1-888-DIGSAFE) A MINIMUM OF 72 BUSINESS 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.

4. 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.

5. ALL MUNICIPALLY OWNED UTILITY STRUCTURES (CATCH BASINS, DRAIN MANHOLES, WATER GATES, ETC.) SHALL BE ADJUSTED BY THE CONTRACTOR TO FINISHED GRADE UNLESS DIRECTED OTHERWISE.

6. 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.

7. PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (MINIMUM) UNLESS OTHERWISE NOTED.

8. 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.

9. ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.

10. 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.

11. THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.

12. 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.

13. AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 4'-0" (EXCLUDING THE WIDTH OF CURB) SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ALONG DRIVEWAY OPENINGS, ETC.)

14. DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED PEDESTRIAN CURB RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARDS.

15. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE, OR OTHER "SURFACE" TYPE STRUCTURE THAT IS NOT CALLED OUT TO BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOP MOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.

16. IN AREAS OF EXISTING AND TEMPORARY ROADWAY / SIDEWALK WHERE LOAM AND SEED IS PROPOSED, THE CONTRACTOR SHALL REMOVE EXISTING ROADWAY / SIDEWALK AND SUBBASE, AND REPLACE WITH SUITABLE EXCAVATED MATERIAL AND PROPOSED 4" LOAM AND SEED TO MEET FINAL GRADE.

17. CONTRACTOR TO TAKE CARE TO ENSURE PROPOSED GUARDRAIL POSTS DO NOT CONFLICT WITH UNDERGROUND UTILITIES (E.G. PROPOSED DRAINAGE STRUCTURES AND PIPES AND RELOCATED WATER LINES) AND PROPOSED TRAFFIC SIGNAL EQUIPMENT (E.G. RRFB POSTS AND FOUNDATIONS).

18. CONTRACTOR SHALL COORDINATE WITH THE BERNARDSTON WATER COMMISION (BWC) ON ALL WATER WORK.

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KEY PLAN

N

HARTWELL STREET

FALL RIVER FLOW

CHURCH STREET (RT 10)

NORTHFIELD ROAD (RT 10)

PARMENTER ROAD

BALD MOUNTAIN ROAD

I-91 SB OFF-RAMP (NW)

I-91 SB ON-RAMP (NW)

I-91 SOUTHBOUND

I-91 NORTHBOUND

I-91 NB OFF-RAMP (NE)

I-91 NB ON-RAMP (NE)

RIVER STREET

INDUSTRIAL DRIVE (KRINGLE DRIVE)

I-91 SB ON-RAMP (SW)

I-91 NB OFF-RAMP (SE)

B–10–001(CLA)

B–10–018(12C)

PROJECT BEGIN
STA 9+50.00
N3071236.1438
E374270.6967

26+04.82 CHURCH STREET (ROUTE 10) BL=
65+50.00 I-91 NB OFF-RAMP EB

PROJECT END
STA 35+90.00
N3070965.0613
E376895.4280

LIMIT OF WORK
STA 59+80.00
N3070566.3220
E375696.3793

LEGEND

- CONSTRUCTION PLANS
- CONSTRUCTION PROFILES
- GRADING PLANS
- CURB TIE PLANS
- TRAFFIC SIGN & PAVEMENT MARKING PLANS
- UTILITY PLANS
- LANDSCAPE PLANS

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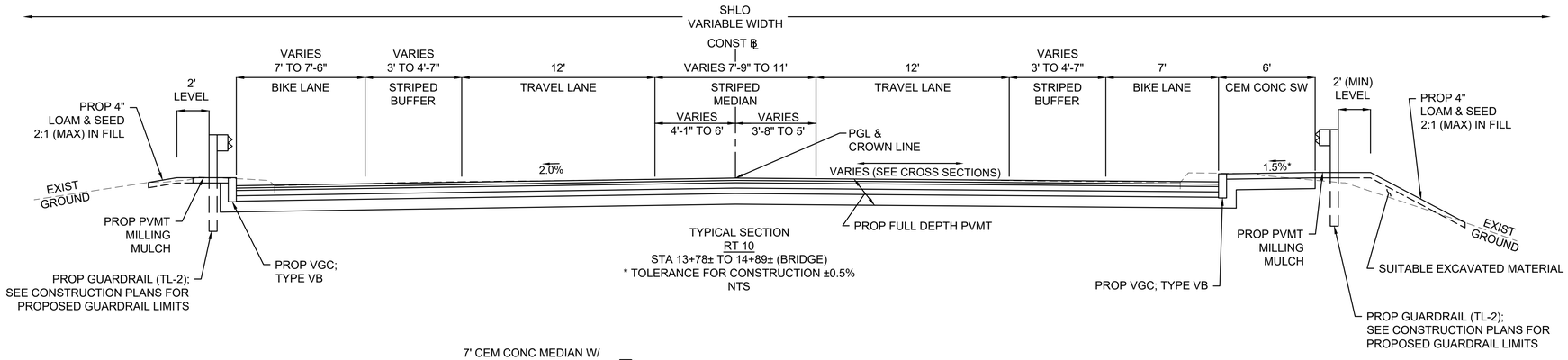
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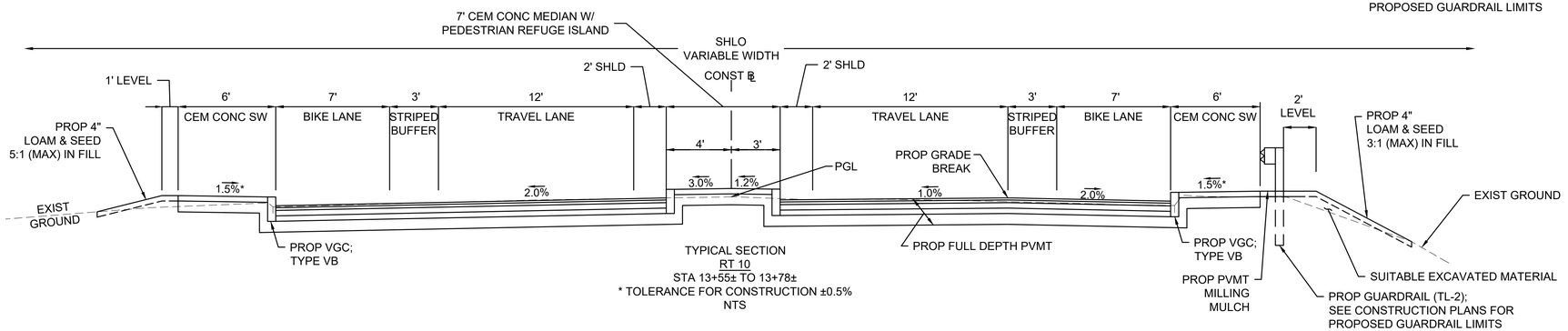
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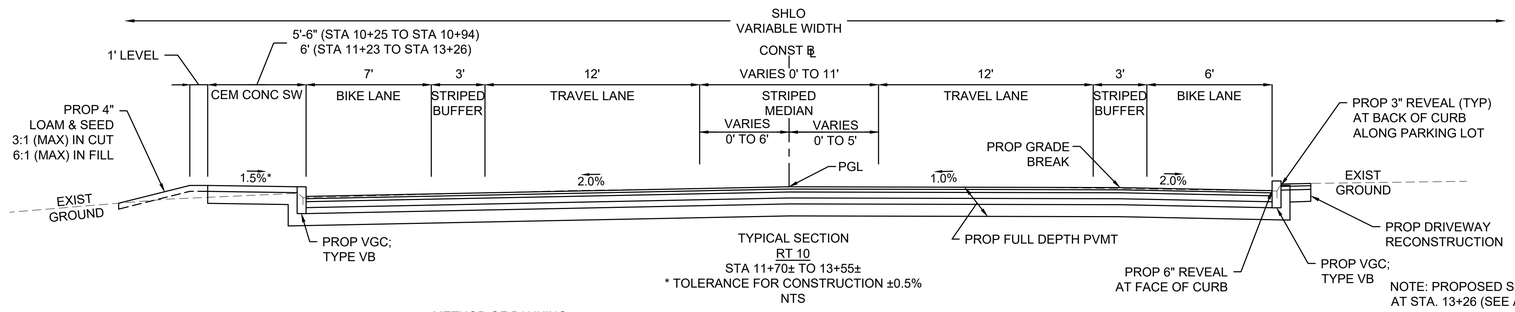
BERNARDSTON
RT 10

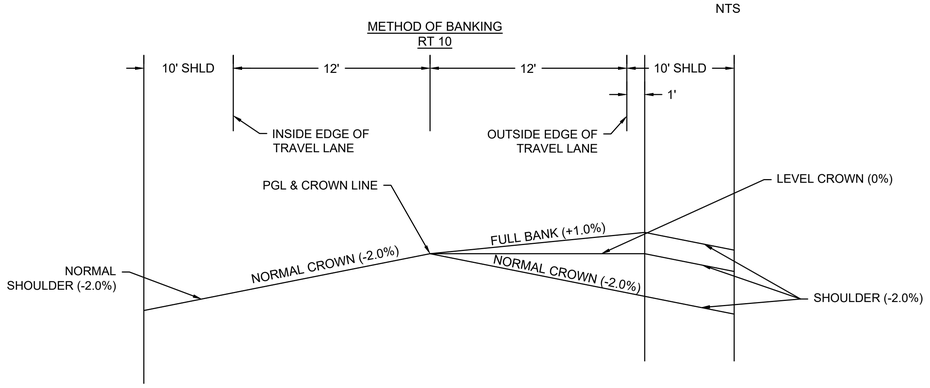
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TYPICAL SECTIONS & PAVEMENT NOTES - 1 OF 2









PAVEMENT NOTES

PROPOSED HMA MILL & OVERLAY (STA. 26+60 TO STA. 35+85)

SURFACE: 2" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5 - P) OVER
2" PAVEMENT FINE MILLING

PROPOSED FULL DEPTH PAVEMENT (I-91 NB OFF-RAMP (SE); ROUTE 10: STA. 10+35 TO STA. 14+89, STA. 15+94 TO STA. 21+77, STA. 24+41 TO STA. 26+60)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5) OVER

BASE: 4" SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" (VARIABLE DEPTH OVER APPROACH SLABS) GRAVEL BORROW, TYPE b

PROPOSED FULL DEPTH PAVEMENT LESS THAN 4' WIDE

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC - B - 9.5 - P) OVER
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5) OVER

BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE OVER

SUBBASE: 8" GRAVEL BORROW, TYPE b

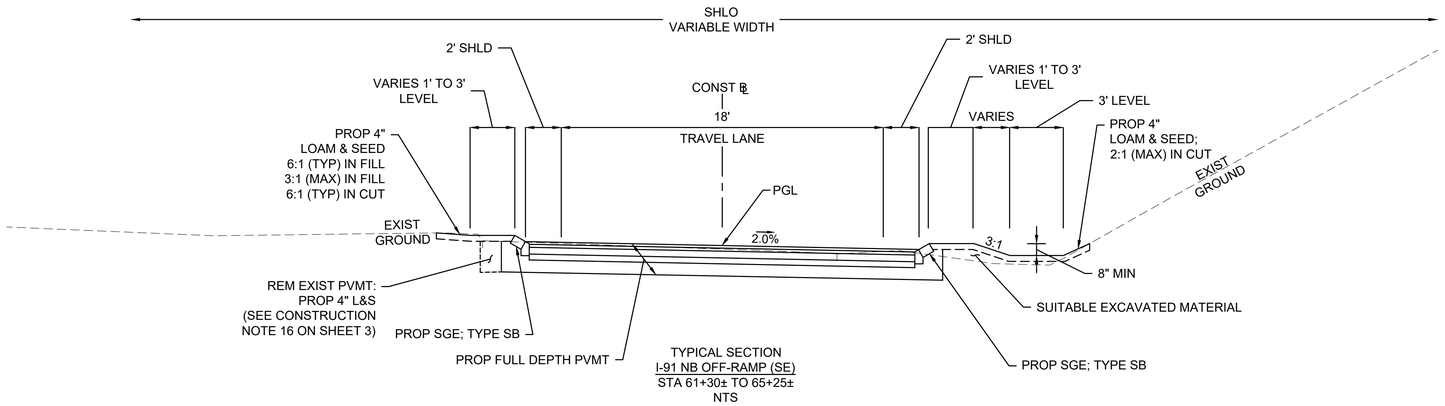
PROPOSED BRIDGE PAVEMENT (STA 14+89 TO STA 15+94, STA 21+77 TO STA 24+41)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER
1 ½" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P) OVER
MEMBRANE WATERPROOFING

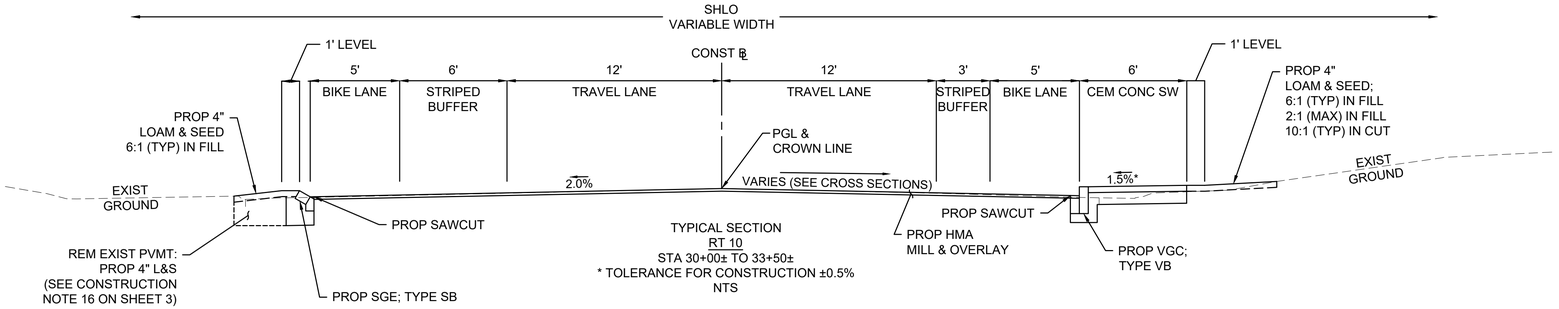
CONTINUED ON SHEET 6

NOTE: SEE BRIDGE SHEET 35 FOR FALL RIVER BRIDGE TYPICAL SECTION, AND BRIDGE SHEET 16 FOR I-91 BRIDGE TYPICAL SECTION.

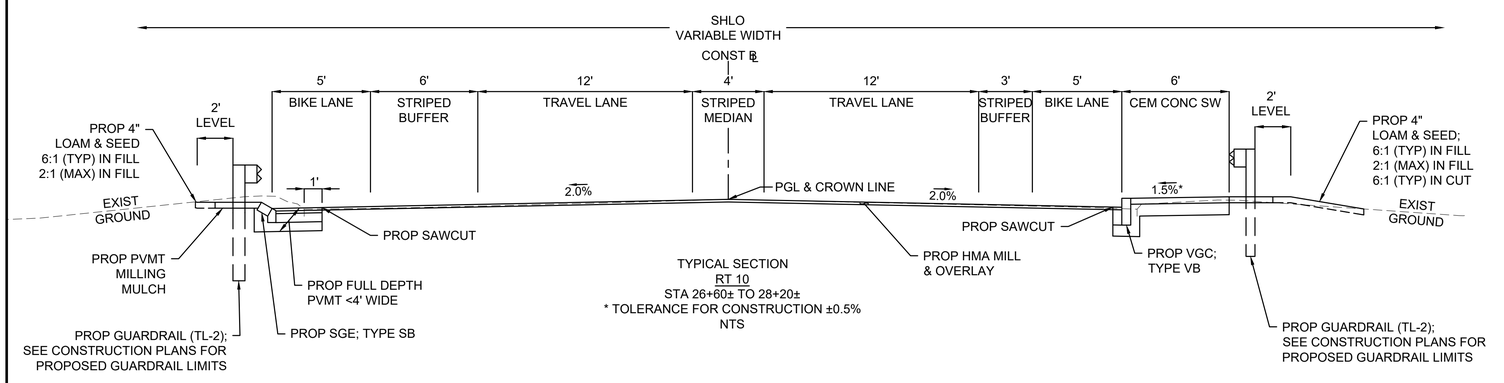
T1217.01_HD4_TYPICAL SECTIONS.DWG Plotted on 27-Jul-2026 11:04 AM



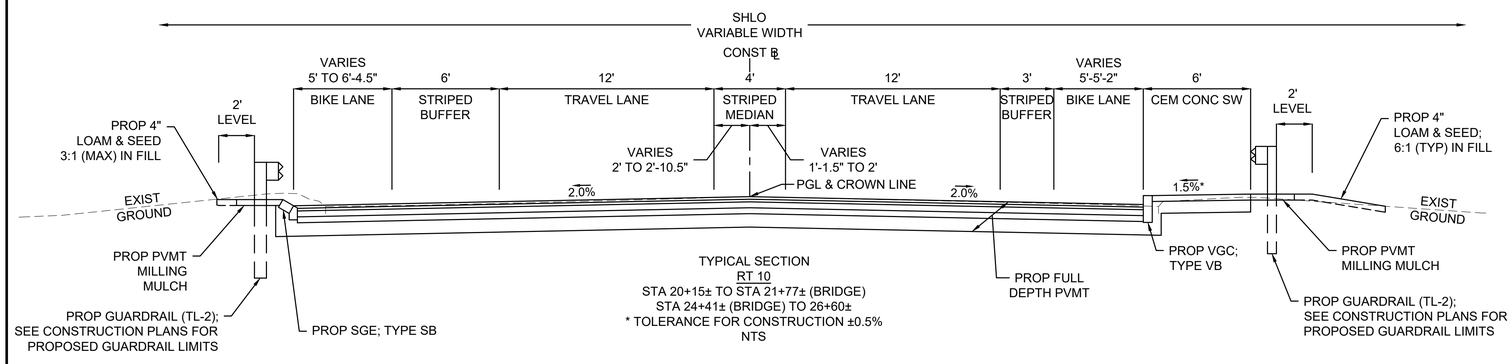
TYPICAL SECTION
I-91 NB OFF-RAMP (SE)
STA 61+30± TO 65+25±
NTS



TYPICAL SECTION
RT 10
STA 30+00± TO 33+50±
* TOLERANCE FOR CONSTRUCTION ±0.5%
NTS



TYPICAL SECTION
RT 10
STA 26+60± TO 28+20±
* TOLERANCE FOR CONSTRUCTION ±0.5%
NTS



TYPICAL SECTION
RT 10
STA 20+15± TO STA 21+77± (BRIDGE)
STA 24+41± (BRIDGE) TO 26+60±
* TOLERANCE FOR CONSTRUCTION ±0.5%
NTS

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	6	146
	PROJECT FILE NO. 612159		

TYPICAL SECTIONS & PAVEMENT NOTES - 2 OF 2

PAVEMENT NOTES (CONTINUED FROM SHEET 5)

PROPOSED TEMPORARY TRENCH PATCH

SURFACE: 3½" HMA FOR TEMPORARY ASPHALT PATCHING

BASE: EXISTING MATERIAL SUITABLE FOR RE-USE

PROPOSED PERMANENT PAVEMENT TRENCH PATCH

SURFACE: 2" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC - 12.5 - P) OVER
VARIABLE DEPTH SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)
(COMPACTED IN 2¼" (MIN) TO 3½" (MAX) LIFTS)
(SEE GENERAL PAVEMENT NOTE 6 BELOW) OVER

BASE: 8" GRAVEL BORROW, TYPE b OVER

SUBBASE: EXISTING MATERIAL SUITABLE FOR RE-USE SUPPLEMENTED WITH
GRAVEL BORROW AS NECESSARY TO MATCH GRADE
(SEE VARIOUS TRENCH DETAILS)

PROPOSED CEMENT CONCRETE PEDESTRIAN CURB RAMPS / SIDEWALKS / PEDESTRIAN REFUGE ISLAND

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

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY

SURFACE: 6" CEMENT CONCRETE (4000 PSI, ¾", 610) OVER

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED HMA DRIVEWAY - (RESIDENTIAL)

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

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

PROPOSED HMA DRIVEWAY - (COMMERCIAL / PUBLIC)

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

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

PROPOSED TEMPORARY PAVEMENT

SURFACE: 7½" HMA FOR TEMPORARY ASPHALT PATCHING

BASE: 12" (MIN) GRAVEL BORROW AS NECESSARY TO MEET GRADE

PROPOSED TEMPORARY HMA SW

SURFACE: 3" HMA FOR TEMPORARY ASPHALT PATCHING

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

GENERAL PAVEMENT NOTES:

1. ALL HMA SHALL BE IN ACCORDANCE WITH SECTION 450.
2. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA JOINT ADHESIVE SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT A RATE CONSISTENT WITH STANDARD SPECIFICATION 450.43.G.2. ALL SURFACES SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
3. ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
4. ALL EMBANKMENT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SECTIONS 100, 400 AND SECTION M MATERIALS. ALL EXISTING GRAVEL MEETING MATERIAL SPECIFICATIONS SHALL BE RETAINED IN-PLACE, COMPACTED, AND LEVELED AS REQUIRED.
5. HMA FOR WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 702.
6. TOTAL DEPTH OF PROPOSED PAVEMENT IN PERMANENT TRENCH PATCH SHALL BE 7" OR SHALL MATCH EXISTING PAVEMENT DEPTH, WHICHEVER DEPTH IS DEEPER.

T1217.01_HD4_TYPICAL SECTIONS.DWG Plotted on 27-Jul-2026 11:04 AM

GUARDRAIL DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 42

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	7	146
	PROJECT FILE NO. 612159		

CONSTRUCTION PLANS - 1 OF 5

T1217.01_HDS_CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:05 AM

N

N/F
TRUSTEES OF THE UNITED CHURCH OF BERNARDSTON
62 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.1)
BK-PG 2021-108
PLAN BK-PG 62-13

DEBORAH A. DELABRUERE
68 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.0)
BK-PG 6687-202
PLAN BK-PG 130-40

GABRIEL F. HMIELESKI AND
KRISTIN A. HMIELESKI
76 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0011.0)
BK-PG 8062-215

N/F
CELT GRANT
78 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0014.0)
BK-PG 6464-3
PLAN BK-PG 135-39

CHURCH STREET (RT 10)

HARTWELL STREET

RIVER STREET

1921 SHLO NO 1910

1923 SHLO NO 2139

1958 SHLO NO 4698

1938 COUNTY LAYOUT

TOWN LAYOUT

PROJECT BEGIN
STA 9+50.00
N3071236.1438
E374270.6967

MASSDOT CURB RAMP ID: PED-5410

R&R STONE WALL (33')

PROP AGED BARK MULCH

RET FLAGSTONE WALK

PROP TEMP EASEMENT

PROP AGED BARK MULCH

R&R STONE WALL (28')

RET WALL

MEET EXIST SW & CURB

MEET EXIST CURB

RET STONE WALL & HMA WALL

LIMIT OF PROP HMA MILL & OVERLAY

APPROX LOG (TYP)

PROP TEMP EASEMENT

MASSDOT CURB RAMP ID: PED-21086

APPROX. LOCATION OF WATER MAIN (INSUFFICIENT RECORDS FROM TOWN)

RESIDENTIAL ACCESS (PER 1958 SHLO NO. 4698)

PROP HMA DWY

MATCH EXIST DWY (SAWCUT)

PROP 6' CEM CONC SW

PROP 5.5' CEM CONC SW

LIMIT OF PROP FDP; PROP SAWCUT

PROP VGC; TYPE VB

R&R CURB INLET

PROP CC SW THRU DWY

TRANSITION CURB REVEAL TO 0"

PROP SAWCUT (TYP)

CONST B

PROP FDP (TYP)

PROP 3" REVEAL

PROP VGC; TYPE VB

R&D CURB INLET

LIMIT OF PROP FDP; PROP SAWCUT

PROP CEM CONC

PROP 6" REVEAL

PROP 6" REVEAL AT FACE OF CURB; PROP 3" REVEAL AT BACK OF CURB

PROP CURB INLET

LIMIT OF PROP HMA MILL & OVERLAY

LIMIT OF PROP FDP STA 10+35; PROP SAWCUT

LIMIT OF PROP HMA MILL & OVERLAY STA 10+25

9+50

10

11

12

13

PC +71.54

44'±

1921 SHLO NO. 1910

1923 SHLO NO. 2139

1958 SHLO NO. 4698

CONTINUED ON SHEET NO. 8

RET FENCE

PROP HMA DWY

PROP TEMP EASEMENT

PROP TEMP EASEMENT

N/F
CLARENCE RANDALL
69 CHURCH STREET
(PARCEL ID: 029/009.A-0003-0003.0)
BK-PG 2328-203

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

BIT. CONC. PARKING LOT

20"MAP

24"MAP

GRASS

4"WIRE

FF=358.14'

40"OAK

WOOD DECK

PORCH

GRAVEL

BIT. CONC. SIDEWALK

BCB

UPL 4

(3)4"DUCTS

WOOD TIE WALL

BIT. CONC.

12"RCP

OHW

WG

WC

SGE

UPL 1

UPL 2

UPL 3

CONC. DRIVE

CONC. PAD

CONC. WALL

15"RCP

4 POST SIGN

FF=356.48' (THRESH)

#68

#69

#77

200' RIVERFRONT AREA

100' WETLAND BUFFER ZONE

LEGEND

#	=	DRIVEWAY NUMBER
#	=	PEDESTRIAN CURB RAMP NUMBER
	=	CEM CONC PEDESTRIAN CURB RAMP

0 20 50 100

SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE: SEE SHEET NO. 12

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	8	146
	PROJECT FILE NO. 612159		

CONSTRUCTION PLANS - 2 OF 5

T1217.01_HDS_CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:05 AM

GUARDRAIL DETAILS

STA 13+39 RT TO STA 13+76 RT TANGENT END TREATMENT, TL-2
STA 13+76 RT TO STA 14+10 RT TRANSITION TO BRIDGE RAIL

STA 14+36 LT TO STA 14+45 LT TRAILING ANCHORAGE
STA 14+45 LT TO STA 14+79 LT TRANSITION TO BRIDGE RAIL

STA 15+97 RT TO STA 16+31 RT TRANSITION TO BRIDGE RAIL
STA 16+31 RT TO STA 16+43 RT GUARDRAIL TL-2 (CURVED, R=50')
STA 16+43 RT TO STA 16+53 RT TRAILING ANCHORAGE

STA 16+40 LT TO STA 16+73 LT TRANSITION TO BRIDGE RAIL (CURVED, R=60')
STA 16+73 LT TO STA 17+03 LT GUARDRAIL, TL-2 (CURVED, R=60')
STA 17+03 LT TO STA 17+12 LT TRANSITION TO NCHRP 350

STA 18+62 LT TO STA 18+70 LT TRAILING ANCHORAGE
STA 18+70 LT TO STA 18+85 LT GUARDRAIL, TL-2
STA 18+75 LT TO STA 19+54 LT GUARDRAIL, TL-2 (CURVED, R=145')

TRAFFIC SIGNAL CONDUIT
SEE BELOW

WATER SUPPLY ALTERATIONS
SEE SHEET 43

DRAINAGE DETAILS
SEE SHEET 43

LEGEND

- # = DRIVEWAY NUMBER
- #/4 = PEDESTRIAN CURB RAMP NUMBER
- = CEM CONC PEDESTRIAN CURB RAMP

REBECCA HARRISON & AUSTIN MILLER
90 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0013.0)
BK-PG 8290-126

(SUBJECT TO A WATER PIPE EASEMENT RESERVED IN BK/PG 255/164)
(EXACT LOCATION NOT SPECIFIED)

JOHAN D. LIVINGSTONE & CATRIN D. LIVINGSTONE
84 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0012.0)
BK-PG 8479-59

GABRIEL F. HMIELESKI AND KRISTIN A. HMIELESKI
94 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0015.0)
BK-PG 8062-215

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

DAVID E. STREETER, AN UNDIVIDED ONE-HALF INTEREST AND THE ESTATE OF ELMORE J. STREETER, AN UNDIVIDED ONE-HALF INTEREST
1 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0001-0001.0)
BK-PG 1204-249
BK-PG 2752-129

NORTHFIELD ROAD (RT 10)

INDUSTRIAL DRIVE (KRINGLE DRIVE)

I-91 SB OFF-RAMP (NW)

I-91 SB ON-RAMP (NW)

FALL RIVER FLOW

1958 SHLO NO. 4698 NO ACCESS

1923 SHLO NO 2139 NO ACCESS

1959 SHLO NO 4774 NO ACCESS

1977 TOWN LAYOUT

1896 TOWN LAYOUT

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 7
CONTINUED ON SHEET NO. 9
FOR CONSTRUCTION PROFILE: SEE SHEET NO. 12

GUARDRAIL DETAILS

STA 18+62 LT TO STA 18+70 LT TRAILING ANCHORAGE
STA 18+70 LT TO STA 18+85 LT GUARDRAIL, TL-2 (STRAIGHT)
STA 18+75 LT TO STA 19+54 LT GUARDRAIL, TL-2 (CURVED, R=145')
STA 19+54 LT TO STA 21+33 LT GUARDRAIL, TL-2 (STRAIGHT)
STA 21+33 LT TO STA 21+67 LT TRANSITION TO BRIDGE RAIL

STA 20+54 RT TO STA 20+92 RT TANGENT END TREATMENT, TL-2
STA 20+92 RT TO STA 21+29 RT GUARDRAIL, TL-2
STA 21+29 RT TO STA 21+63 RT TRANSITION TO BRIDGE RAIL

STA 24+55 RT TO STA 24+88 RT TRANSITION TO BRIDGE RAIL (CURVED, R=150')
STA 24+88 RT TO STA 24+97 RT TRAILING ANCHORAGE

STA 24+55 LT TO STA 24+89 LT TRANSITION TO BRIDGE RAIL
STA 24+89 LT TO STA 26+89 LT GUARDRAIL, TL-2
STA 26+89 LT TO STA 27+26 LT TANGENT END TREATMENT, TL-2

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 44

LEGEND

- # = DRIVEWAY NUMBER
- # = PEDESTRIAN CURB RAMP NUMBER
- = CEM CONC PEDESTRIAN CURB RAMP

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	9	146
PROJECT FILE NO. 612159			

CONSTRUCTION PLANS - 3 OF 5

N

WF#WFD-7 WF#WFD-8 WF#WFD-9 WF#WFD-10 WF#WFD-11 WF#WFD-12 WF#WFD-13 WF#WFD-14 WF#WFD-15 WF#WFD-16 WF#WFD-17 WF#WFD-18 WF#WFD-19 WF#WFD-20 WF#WFD-21 WF#WFD-22

WF#WFE-11 WF#WFE-12 WF#WFE-13 WF#WFE-14 WF#WFE-15 END

REM EXIST GUARDRAIL (313')
INV 12" CMP EL=336.46
R&R CURB INLET
MEET EXIST SGE
PROP SGE; TYPE SB
PROP SPLAYED END
PROP SEDIMENT CONTROL BARRIER (TYP)
APPROX LOG (TYP)
WOODED AREA
R&R SGE
PROP FDP
CONST ℄
PI +00.00
PROP VGC; TYPE VB
R&R CURB INLET
PROP SPLAYED END
METAL GUARDRAIL (TYP.)
RET FENCE
PROP APPROACH SLAB
PROP BRIDGE PAVEMENT
RET POST W/CAMERAS
CONC. "SIDEWALK"
(12)4"DUCTS
(12)4"DUCTS/FARAM
B-10-018(12C)
PROP CC CURB SEE BRIDGE PLANS SHEET 16
R&R CURB INLET
REM EXIST GUARDRAIL (105')
PROP GUARDRAIL (TYP); SEE DETAILS ABOVE
RET FENCE
100' WETLAND BUFFER ZONE
I-91 SOUTHBOUND
I-91 NORTHBOUND
DMH RIM=343.55
CB RIM=343.06
TCB
EHH
20"RCP
12"RCP
15"RCP
INV 20" RCP EL=333.46
INV 12" RCP EL=333.59
INV 15" RCP EL=333.54
PROP SPLAYED END
RET FENCE
PROP APPROACH SLAB
R&R CURB INLET
PROP VGC; TYPE VB
PROP FDP
PROP VGC; TYPE VB
NORTHFIELD ROAD (RT 10)
PROP CC CURB SEE BRIDGE PLANS SHEET 16
R&R EXIST SAFETY CLF
PROP TEMP CLF
R&R CURB INLET
REM EXIST GUARDRAIL (102')
RET FENCE
WOODED AREA
UE WITNESS POST #1
UE WITNESS POST #2
UE WITNESS POST #3

PROP VGC; TYPE VB
MASSDOT CURB RAMP ID: PED-86781
PROP RRFB
PROP 3" PVC CONDUIT
PROP 6' CEM CONC SW
PROP PB
MEET EXIST SGE
PROP SGE; TYPE SB
LIMIT OF PROP HMA MILL & OVERLAY
RET EXIST PVMT
PROP 3" PVC CONDUIT
PROP 6' CEM CONC SW
MEET EXIST SGE
LIMIT OF PROP FDP; PROP SAWCUT
MASSDOT CURB RAMP ID: PED-86780
PROP PB
PROP RRFB
I-91 SB ON-RAMP (SW)
1959 SHLO NO. 4774 NO ACCESS
1896 TOWN LAYOUT
GRAVEL
GRASS
EOP
N/F
KITTREDGE INDUSTRIES, LLC
31 KRINGLE DRIVE
(PARCEL ID: 029/009.0-0001-0003.0)
BK-PG 6079-57
PLAN BK-PG 118-66

CONTINUED ON SHEET NO. 8
CONTINUED ON SHEET NO. 10

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE: SEE SHEET NO. 12 & 13

T1217.01_HDS_CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:05 AM

GUARDRAIL DETAILS

STA 24+56 RT TO STA 24+90 RT TRANSITION TO BRIDGE RAIL
STA 24+90 RT TO STA 25+00 RT TRAILING ANCHORAGE

STA 24+55 LT TO STA 24+89 LT TRANSITION TO BRIDGE RAIL
STA 24+89 LT TO STA 26+89 LT GUARDRAIL, TL-2
STA 26+89 LT TO STA 27+26 LT TANGENT END TREATMENT, TL-2

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

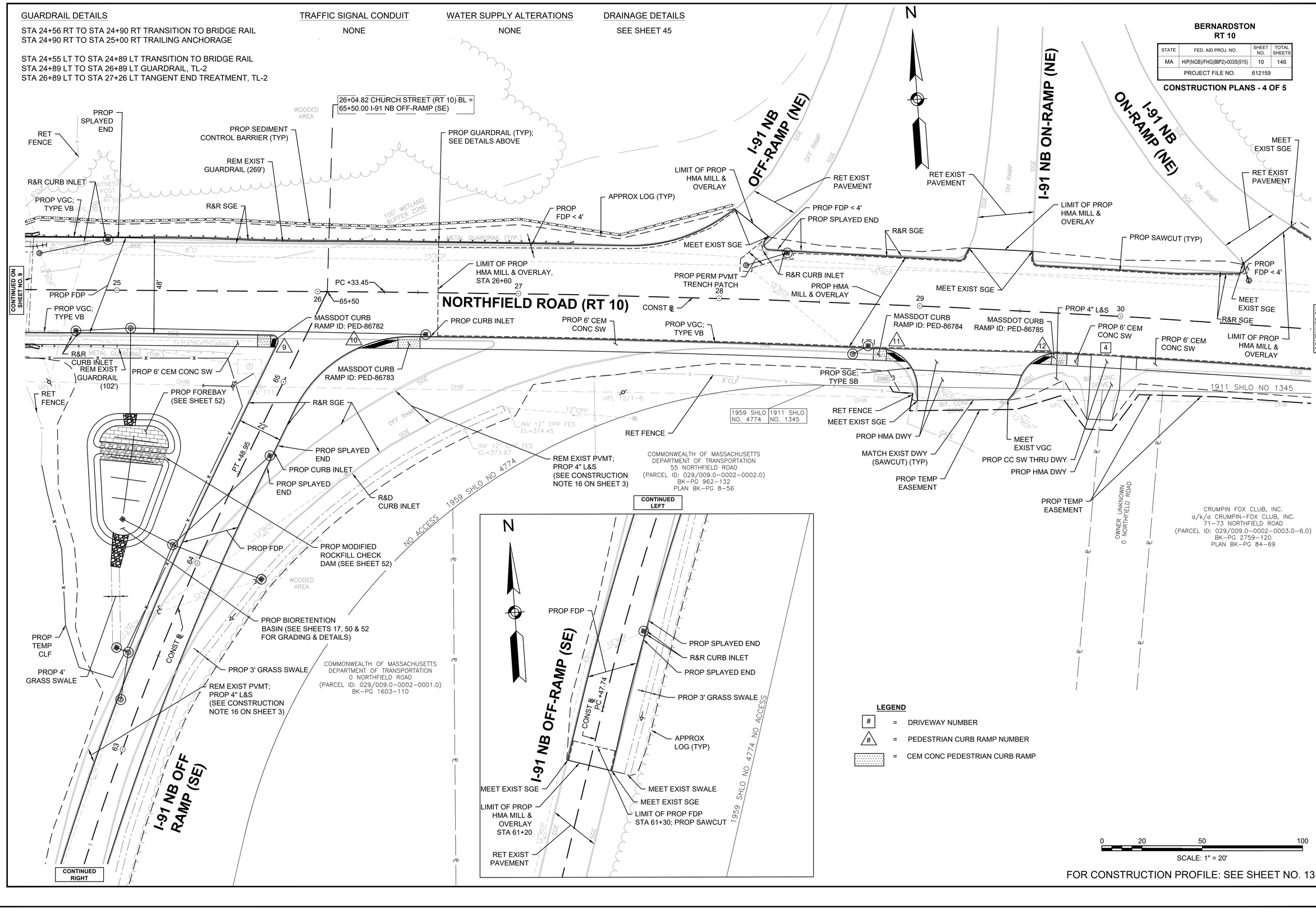
SEE SHEET 45

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	10	146
PROJECT FILE NO.	612159		

CONSTRUCTION PLANS - 4 OF 5

T1217.01_HD5_CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:05 AM



FOR CONSTRUCTION PROFILE: SEE SHEET NO. 13

GUARDRAIL DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	SEE BELOW	NONE	SEE SHEET 46

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	11	146
PROJECT FILE NO. 612159			

CONSTRUCTION PLANS - 5 OF 5

LEGEND
- [#] = DRIVEWAY NUMBER
- [#] = PEDESTRIAN CURB RAMP NUMBER
- = CEM CONC PEDESTRIAN CURB RAMP

N

WOODED AREA

N/F
STEVEN S. HEAN
12 BALD MOUNTAIN ROAD
(PARCEL ID: 029/014.0-0005-0018.3)
BK-PG 6423-240
PLAN BK-PG 86-95

PARMENTER ROAD

BALD MOUNTAIN ROAD

1958 SHLO NO 4698

NO ACCESS

N/F
ANNEMARIE C. MASON
2 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0003-0001.0)
BK-PG 6498-328

1958 TOWN LAYOUT NO. 4698

HEIRS, DEVISEES AND LEGAL REPRESENTATIVES OF THE ESTATE OF COLA R. NELSON
5 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0004-0001.0)
BK-PG 1321-213

NEAL R. BARDWELL
210 PARMENTER ROAD
(PARCEL ID: 029/009.0-0004-0002.0)
BK-PG 2568-16

1958 SHLO NO. 4698	1966 SHLO NO. 5556

MEET EXIST SGE

RET EXIST PAVEMENT

PROP FDP < 4'

MEET EXIST SGE

R&R SGE

PROP HMA MILL & OVERLAY

REM EXIST PVMT; PROP 4" L&S (SEE CONSTRUCTION NOTE 16 ON SHEET 3)

RET FENCE

6'WOOD STOCKADE

1958 SHLO NO 4698 NO ACCESS

R&R SGE

PROP FDP < 4'

72"HW

36"HW

RET POST

PROP PB

CONTINUED ON SHEET NO. 10

31

PT +03.93

LIMIT OF PROP HMA MILL & OVERLAY

32

CONST ℄

PROP VGC; TYPE VB

43'

NORTHFIELD ROAD (RT 10)

5

PROP SAWCUT (TYP)

33

PI +00.00

PROP CURB INLET

1911 SHLO NO 1345

1927 SHLO NO 2456

1966 SHLO NO 5556

PROP 6' CEM CONC SW (TYP)

RET LP

PROP TEMP EASEMENT

PROP CC SW THRU DWY

PROP HMA DWY

MATCH EXIST DWY (SAWCUT)

RET BUSHES

APPROX LOG (TYP)

PROP AGED BARK MULCH

PROP PERM EASEMENT

1911 SHLO NO. 1345	1927 SHLO NO. 2456

CRUMPIN FOX CLUB, INC. a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

13

LIMIT OF PROP HMA MILL & OVERLAY

PROP 5.5' CEM CONC SW

14

34

MASSDOT CURB RAMP ID: PED-86786

MASSDOT CURB RAMP ID: PED-86787

PROP RRFB

PROP TEMP EASEMENT

35

PROP EOP

PROP PERM PVMT TRENCH PATCH

PROP 3" PVC CONDUIT

15

PROP PB

LIMIT OF PROP HMA MILL & OVERLAY STA 35+85; PROP SAWCUT

36

PROJECT END
STA 35+90.00
N3070965.0613
E376895.4280

R&D WOOD POST (4)

PROP RRFB

REM EXIST PVMT; PROP 4" L&S (SEE CONSTRUCTION NOTE 16 ON SHEET 3)

PROP TEMP EASEMENT

1927 SHLO NO. 2456	1966 SHLO NO. 5556

PROP TREE PROTECTION FENCE

THE HEIRLOOM COLLECTIVE, INC.
87 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0009.0)
BK-PG 8077-122
PLAN BK-PG 150-96

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE: SEE SHEET NO. 13

T1217.01_HDS_CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:05 AM

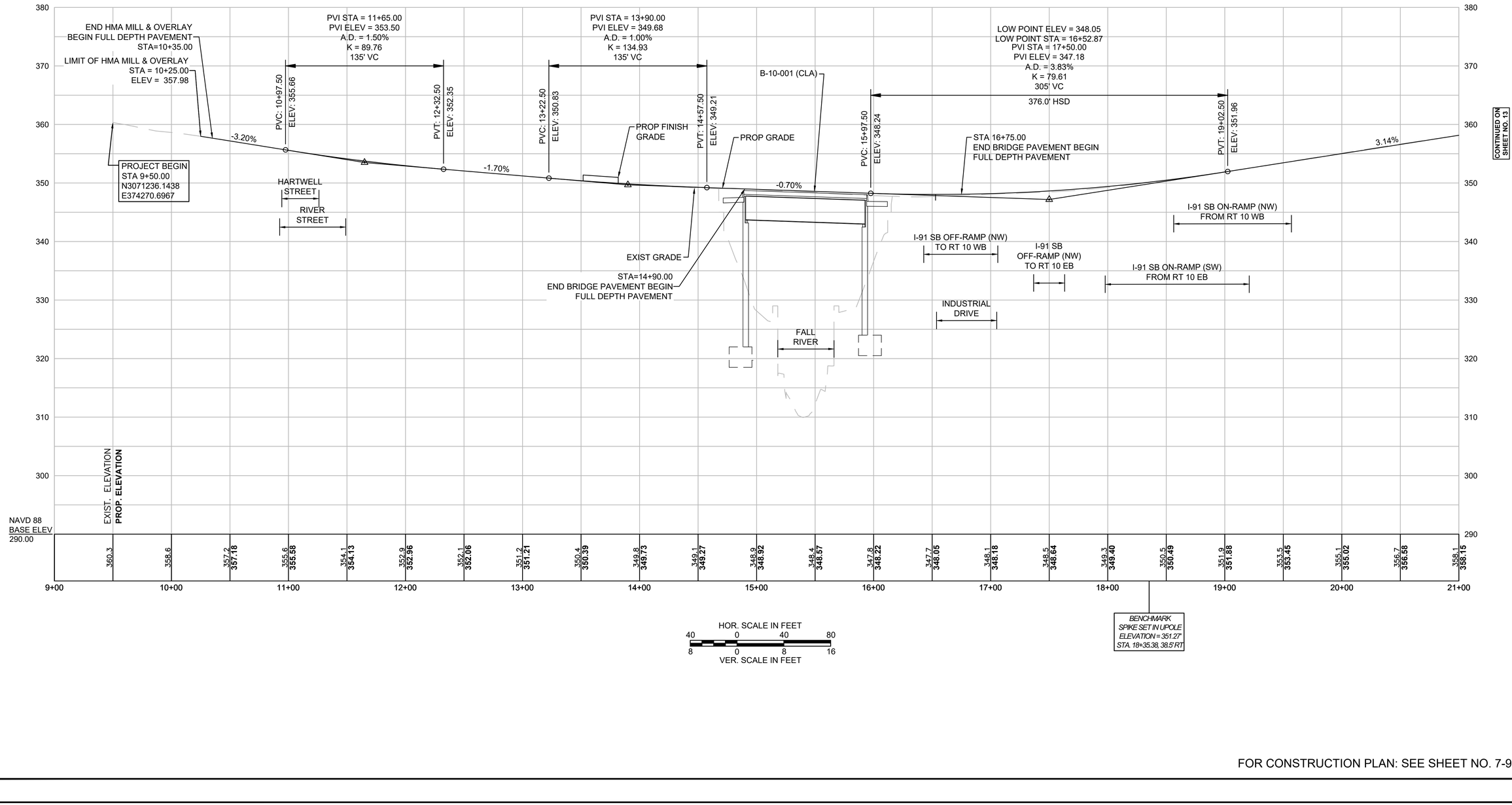
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	12	146
PROJECT FILE NO.	612159		

CONSTRUCTION PROFILES - 1 OF 2

T1217.01_HD6_CONSTRUCTION PROFILES.DWG Plotted on 27-Jul-2026 11:05 AM

CHURCH STREET (RT 10) BL



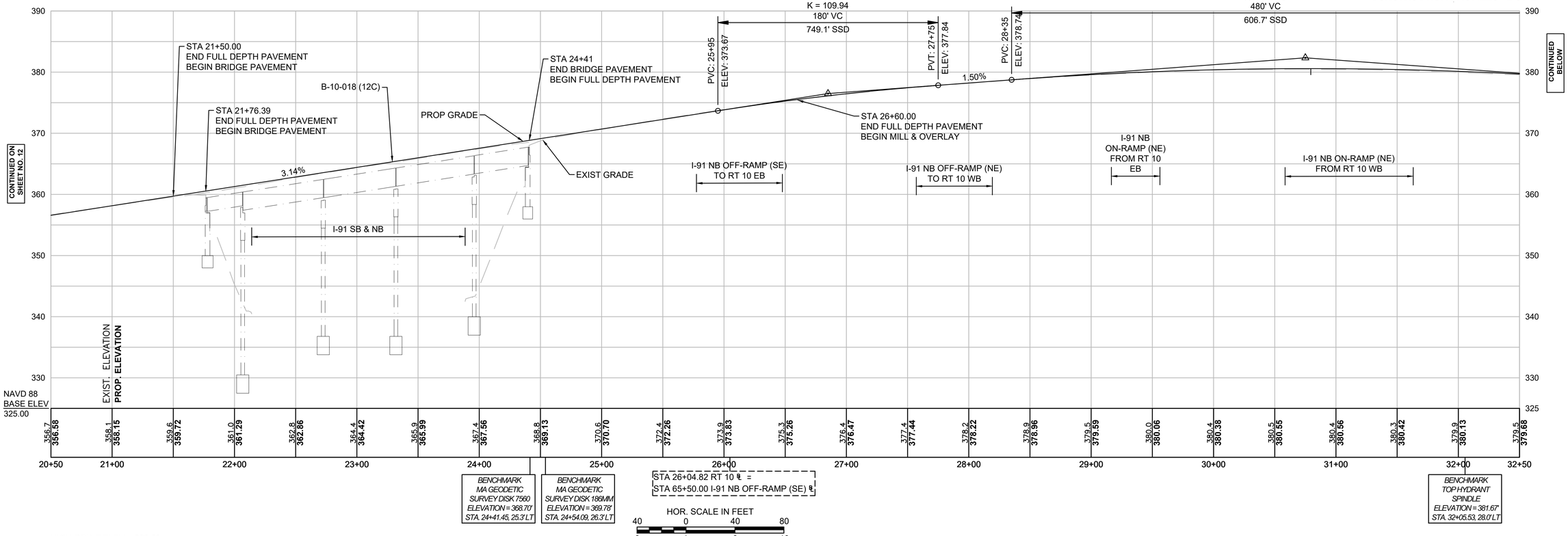
FOR CONSTRUCTION PLAN: SEE SHEET NO. 7-9

BERNARDSTON
RT 10

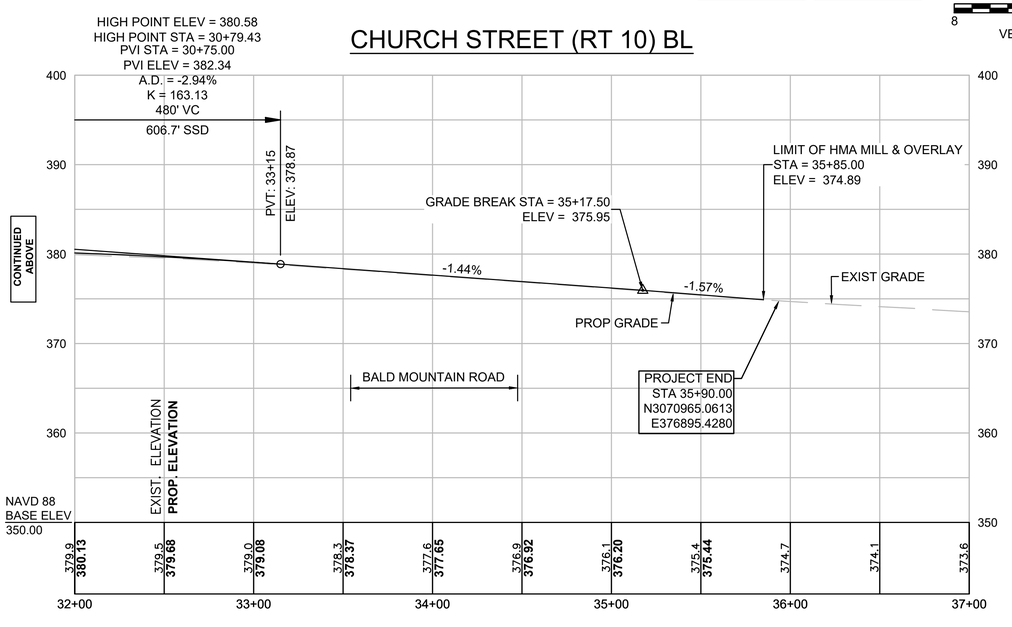
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	13	146
	PROJECT FILE NO. 612159		

CONSTRUCTION PROFILES - 2 OF 2

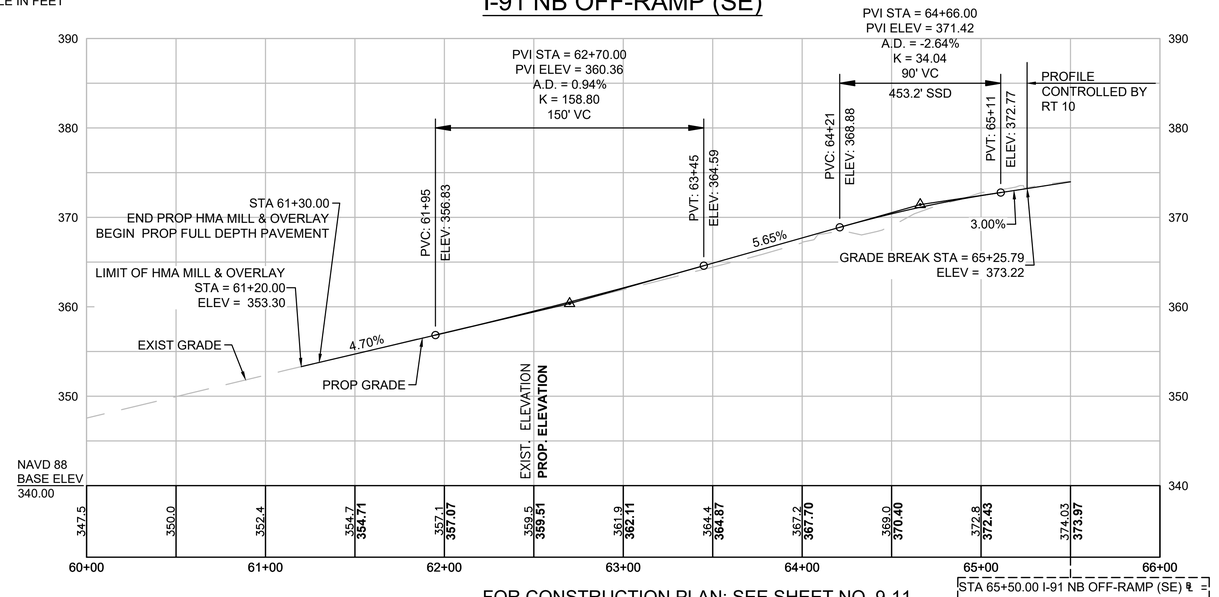
CHURCH STREET (RT 10) BL



CHURCH STREET (RT 10) BL



I-91 NB OFF-RAMP (SE)



FOR CONSTRUCTION PLAN: SEE SHEET NO. 9-11

T1217.01_HD6_CONSTRUCTION PROFILES.DWG Plotted on 27-Jul-2026 11:06 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	14	146
	PROJECT FILE NO. 612159		

GRADING PLANS - 1 OF 5

T1217.01_HD7_GRADING PLANS.DWG Plotted on 27-Jul-2026 11:06 AM

N

N/F
TRUSTEES OF THE UNITED CHURCH OF BERNARDSTON
62 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.1)
BK-PG 2021-108
PLAN BK-PG 62-13

DEBORAH A. DELABRUERE
68 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.0)
BK-PG 6687-202
PLAN BK-PG 130-40

GABRIEL F. HMIELESKI AND KRISTIN A. HMIELESKI
76 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0011.0)
BK-PG 8062-215

N/F
CELT GRANT
78 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0014.0)
BK-PG 6464-3
PLAN BK-PG 135-39

HARTWELL STREET

TOWN LAYOUT

TOWN LAYOUT

CHURCH STREET (RT 10)

1921 SHLO NO 1910

1921 SHLO NO 1910

PROJECT BEGIN
STA 9+50.00
N3071236.1438
E374270.6967

9+50

BIT. CONC. PARKING LOT

UPL 4

BCB

BIT. CONC. SIDEWALK

WOOD DECK

GRAVEL

PORCH

#68

PROPANE TANKS

GATE

1921 SHLO NO. 1910 | 1923 SHLO NO. 2139

1923 SHLO NO 2139

PROP CB
RIM ELEV = 356.39

1923 SHLO NO. 2139 | 1958 SHLO NO. 4698

APPROX LOG (TYP)

RESIDENTIAL ACCESS
(PER 1958 SHLO NO. 4698)

PROP GICI
RIM ELEV = 352.91

PROP CB W/ MH COVER
RIM ELEV = 353.06

UPL 65T/37/1

BIT. CONC. DRIVE

UPL 1-2/1

356.63

355.05

355.09

354.60

355.42

354.92

354.14

355.49

354.07

353.68

352.49

351.55

350.67

357.38

357.98

357.86

357.65

357.18

357.11

356.93

355.58

355.58

355.41

355.46

355.26

354.13

354.20

354.04

354.00

354.24

353.09

352.96

352.93

352.06

352.20

352.04

351.21

351.37

351.21

354.29

PC +71.54

10

11

12

13

BCB

BIT. CONC.

GRAVEL

WOOD TIE WALL

WG

VGC

UPL 9

BIT. CONC.

CONC. PAD

CONC. WALL

1923 SHLO NO 2139

PROP CBCI
RIM ELEV = 356.26

PROP DMH
RIM ELEV = 356.28

APPROX LOG (TYP)

1921 SHLO NO. 1910 | 1923 SHLO NO. 2139

PROP DMH
RIM ELEV = 353.36

PROP DMH
RIM ELEV = 350.88

PROP CB
RIM ELEV = 350.66

PROP CBCI
RIM ELEV = 353.31

PROP GRADE BREAK

#69

200' RIVERFRONT AREA

#77

1938 COUNTY LAYOUT

RIVER STREET

1938 COUNTY LAYOUT

100' WETLAND BUFFER ZONE

N/F
CLARENCE RANDALL
69 CHURCH STREET
(PARCEL ID: 029/009.A-0003-0003.0)
BK-PG 2328-203

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

CONTINUED ON SHEET NO. 15

LEGEND

[#] = DRIVEWAY NUMBER

<#> = PEDESTRIAN CURB RAMP NUMBER

0 20 50 100

SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	15	146
PROJECT FILE NO.	612159		

GRADING PLANS - 2 OF 5

T1217.01_HD7_GRADING PLANS.DWG Plotted on 27-Jul-2026 11:06 AM

N

REBECCA HARRISON & AUSTIN MILLER
90 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0013.0)
BK-PG 8290-126

(SUBJECT TO A WATER PIPE EASEMENT
RESERVED IN BK/PG 255/164)
(EXACT LOCATION NOT SPECIFIED)

JOHAN D. LIVINGSTONE &
CATRIN D. LIVINGSTONE
84 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0012.0)
BK-PG 8479-59

GABRIEL F. HMIELESKI AND
KRISTIN A. HMIELESKI
94 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0015.0)
BK-PG 8062-215

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

DAVID E. STREETER,
AN UNDIVIDED ONE-HALF INTEREST
AND THE ESTATE OF ELMORE J. STREETER,
AN UNDIVIDED ONE-HALF INTEREST
1 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0001-0001.0)
BK-PG 1204-249
BK-PG 2752-129

I-91 SB OFF-RAMP (NW)

I-91 SB ON-RAMP (NW)

FALL RIVER FLOW

NORTHFIELD ROAD (RT 10)

INDUSTRIAL DRIVE (KRINGLE DRIVE)

RESIDENTIAL ACCESS (1958 SHLO NO. 4698)

PROP CB
RIM ELEV = 344.57

APPROX LOG (TYP)

TEMP ACCESS ROAD CONSTRUCTION BASELINE

END ACCESS, BEGIN NO ACCESS

1958 SHLO NO. 4698 NO ACCESS

100' WETLAND BUFFER ZONE

200' RIVERFRONT AREA

GRAVESTONE

1923 SHLO NO. 2139 NO ACCESS

1959 SHLO NO 4774 NO ACCESS

1923 SHLO NO. 2139 | 1959 SHLO NO. 4774

ACCESS (PER 1967 SHLO NO. 5662)

1959 TOWN LAYOUT NO 4774

1896 TOWN LAYOUT

LIMIT OF NO ACCESS PER 1959 SHLO NO. 4774

OWNER UNKNOWN

APPROXIMATE

PROP CB W/ MH COVER
RIM ELEV = 349.87

PROP GI
RIM ELEV = 349.73

GRADE BREAK END AT STA 14+25

PT +65.83

PROP DMH
RIM ELEV = 350.88

PROP CBCI
RIM ELEV = 350.37

PROP CB
RIM ELEV = 350.66

PROP DMH
RIM ELEV = 349.50

PROP CB
RIM ELEV = 345.67

PROP DMH
RIM ELEV = 346.17

PROP CBCI
RIM ELEV = 347.58

PROP GICI
RIM ELEV = 347.41

PROP DMH
RIM ELEV = 347.75

PROP CB W/ MH COVER
RIM ELEV = 347.72

CIT TO DMH
RIM ELEV = 347.56

PROP CB W/ MH COVER
RIM ELEV = 348.59

PROP GICI
RIM ELEV = 348.45

PI +00.00

PROP CBCI
RIM ELEV = 347.92

PROP LEACHING BASIN W/ MH COVER
RIM ELEV = 348.49

PROP DMH
RIM ELEV = 346.51

PROP CB
RIM ELEV = 346.02

PROP LEACHING BASIN
RIM ELEV = 344.05

PROP DMH
RIM ELEV = 344.15

CONTINUED ON SHEET NO. 14

CONTINUED ON SHEET NO. 16

LEGEND

[#] = DRIVEWAY NUMBER

<#> = PEDESTRIAN CURB RAMP NUMBER

NOTE: * TEMPORARY GRADES

0 20 50 100

SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	16	146
PROJECT FILE NO.	612159		

GRADING PLANS - 3 OF 5

T1217.01_HD7_GRADING PLANS.DWG Plotted on 27-Jul-2026 11:06 AM

N

200' RIVERFRONT AREA

WF#WFD-7 WF#WFD-8 WF#WFD-9 WF#WFD-10 WF#WFD-11 WF#WFD-12 WF#WFD-13 WF#WFD-14 WF#WFD-15 WF#WFD-16 WF#WFD-17 WF#WFD-18 WF#WFD-19 WF#WFD-20 WF#WFD-21 WF#WFD-22

WF#WFE-11 WF#WFE-12 WF#WFE-13 WF#WFE-14 WF#WFE-15 END

I-91 SOUTHBOUND

I-91 NORTHBOUND

100' WETLAND BUFFER ZONE

NORTHFIELD ROAD (RT 10)

PROP CBCI
RIM ELEV = 351.44

CIT TO DMH
RIM ELEV = 351.92

APPROX LOG (TYP)

PROP CBCI
RIM ELEV = 358.11

PROP DMH
RIM ELEV = 357.92

ADJ DMH
RIM ELEV = 369.12

PROP CBCI
RIM ELEV = 370.05

PROP CBCI
RIM ELEV = 351.77

PROP CBCI
RIM ELEV = 357.98

PROP CBCI RIM
ELEV = 369.65

CONTINUED ON SHEET NO. 15

CONTINUED ON SHEET NO. 17

CONC. SIDEWALK

I-91 SB ON-RAMP (SW)

ON RAMP

1959 SHLO NO. 4774 NO ACCESS

1896 TOWN LAYOUT

GRAVEL

N/F
KITTREDGE INDUSTRIES, LLC
31 KRINGLE DRIVE
(PARCEL ID: 029/009.0-0001-0003.0)
BK-PG 6079-57
PLAN BK-PG 118-66

LEGEND

[#] = DRIVEWAY NUMBER

△# = PEDESTRIAN CURB RAMP NUMBER

0 20 50 100
SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	17	146
PROJECT FILE NO.	612159		

GRADING PLANS - 4 OF 5

T1217.01_HD7_GRADING PLANS.DWG Plotted on 27-Jul-2026 11:06 AM

N

NORTHFIELD ROAD (RT 10)

I-91 NB OFF-RAMP (NE)

I-91 NB ON-RAMP (NE)

26+04.82 CHURCH STREET (RT 10) BL=
65+50.00 I-91 NB OFF-RAMP (SE)

ADJ DMH
RIM ELEV = 369.12

PROP CBCI
RIM ELEV = 370.05

APPROX LOG (TYP)

100' WETLAND BUFFER ZONE

PC +33.45
65+50

PROP CBCI
RIM ELEV = 374.95

PROP CB
RIM ELEV = 378.24

ADJ DMH
RIM ELEV = 378.08

PROP CB
RIM ELEV = 378.88

ADJ DMH
RIM ELEV = 380.06

PROP CBCI RIM
ELEV = 369.65

PROP DMH
RIM ELEV = 370.54

PROP DMH
RIM ELEV = 379.30

1911 SHLO NO 1345

1959 SHLO NO 4774

1959 SHLO NO. 4774	1911 SHLO NO. 1345

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
55 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0002.0)
BK-PG 962-132
PLAN BK-PG 8-56

CRUMPIN FOX CLUB, INC.
a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

OWNER UNKNOWN
0 NORTHFIELD ROAD

PROP DMH W/ F&G
RIM ELEV = 365.75

APPROX LOG (TYP)

PROP CB
RIM ELEV = 364.26

PROP DMH
RIM ELEV = 365.02

PROP DMH
RIM ELEV = 363.55

PROP CB, RIM ELEV = 366.73

PROP DMH
RIM ELEV = 368.39

PROP BIORETENTION
BASIN (SEE SHEETS 50
& 52)

PROP 3' GRASS
SWALE

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
0 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0001.0)
BK-PG 1603-110

NO ACCESS

I-91 NB OFF-RAMP (SE)

CONTINUED ON SHEET NO. 16

CONTINUED ON SHEET NO. 18

CONTINUED RIGHT

CONTINUED LEFT

N

ADJ DMH
RIM ELEV = 356.25

PROP CB
RIM ELEV = 356.47

I-91 NB OFF-RAMP (SE)

NO ACCESS

1959 SHLO NO 4774

LEGEND

[#] = DRIVEWAY NUMBER

<#> = PEDESTRIAN CURB RAMP NUMBER

0 20 50 100
SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	18	146
PROJECT FILE NO.	612159		

GRADING PLANS - 5 OF 5

T1217.01_HD7_GRADING PLANS.DWG Plotted on 27-Jul-2026 11:06 AM

N

N/F
STEVEN S. HEAN
12 BALD MOUNTAIN ROAD
(PARCEL ID: 029/014.0-0005-0018.3)
BK-PG 6423-240
PLAN BK-PG 86-95

1958 SHLO NO 4698
NO ACCESS

PARMENTER ROAD

BALD MOUNTAIN ROAD

N/F
ANNEMARIE C. MASON
2 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0003-0001.0)
BK-PG 6498-328

HEIRS, DEVISEES AND LEGAL REPRESENTATIVES OF THE ESTATE OF COLA R. NELSON
5 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0004-0001.0)
BK-PG 1321-213

NEAL R. BARDWELL
210 PARMENTER ROAD
(PARCEL ID: 029/009.0-0004-0002.0)
BK-PG 2568-16

NORTHFIELD ROAD (RT 10)

1958 SHLO NO 4698 NO ACCESS

1958 TOWN LAYOUT NO. 4698

1966 SHLO NO. 5556

1911 SHLO NO 1345

1927 SHLO NO 2456

APPROX LOG (TYP)

ADJ DMH
RIM ELEV = 380.06

PT +03.93

PI +00.00

PROJECT END
STA 35+90.00
N3070965.0613
E376895.4280

PROP CBCI
RIM ELEV = 378.12

PROP DMH
RIM ELEV = 378.56

PROP DROP INLET, TYPE DF
RIM ELEV = 376.45

BEGIN PROP GRADE
BREAK STA 34+00

PROP GRADE BREAK

1911 SHLO NO. 1345 | 1927 SHLO NO. 2456

1958 SHLO NO. 4698 | 1966 SHLO NO. 5556

1927 SHLO NO. 2456 | 1966 SHLO NO. 5556

CRUMPIN FOX CLUB, INC. a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

THE HEIRLOOM COLLECTIVE, INC.
87 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0009.0)
BK-PG 8077-122
PLAN BK-PG 150-96

CONTINUED ON SHEET NO. 17

LEGEND

[#] = DRIVEWAY NUMBER

<#> = PEDESTRIAN CURB RAMP NUMBER

0 20 50 100

SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	19	146
PROJECT FILE NO.	612159		

CURB TIE PLANS - 1 OF 5

T1217.01_HD8_CURB TIE PLANS.DWG Plotted on 27-Jul-2026 11:07 AM

N

N/F
TRUSTEES OF THE UNITED CHURCH OF BERNARDSTON
62 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.1)
BK-PG 2021-108
PLAN BK-PG 62-13

DEBORAH A. DELABRUERE
68 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.0)
BK-PG 6687-202
PLAN BK-PG 130-40

GABRIEL F. HMIELESKI AND KRISTIN A. HMIELESKI
76 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0011.0)
BK-PG 8062-215

N/F
CELT GRANT
78 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0014.0)
BK-PG 6464-3
PLAN BK-PG 135-39

HARTWELL STREET

CHURCH STREET (RT 10)

RIVER STREET

1938 COUNTY LAYOUT

TOWN LAYOUT

1921 SHLO NO. 1910 | 1923 SHLO NO. 2139

1923 SHLO NO. 2139 | 1958 SHLO NO. 4698

1923 SHLO NO 2139

1921 SHLO NO 1910

PROJECT BEGIN
STA 9+50.00
N3071236.1438
E374270.6967

92.36' (TO 20"MAP)
60.58' (TO UPL)
113.93' (TO 24"MAP)
S76°34'57"E 348.25' (TO 2)
172.83' (TO BL)
156.10' (TO WG)
132.95' (TO UPL)
67.98' (TO CB)
30.81' (TO BL)
40.89' (TO CB)
34.47' (TO WG)
N9°24'58"W 214.01' (TO 3)
S85°11'27"E 413.19' (TO 4)

PC +17.62 39.01 LT
PCC +37.82 22.42 LT
PT +97.75 37.54 LT
PC +82.60 22.00 LT
PC +71.54
PT +89.25.80 LT
PT +53.84 21.00 RT
PT +62.87 29.68 RT
PC +48.88 26.00 RT
PC +48.57 22.00 RT
PT +90.51 35.00 RT
PC +58.95 31.71 RT
PT +51.90 31.82 RT
PC +48.88 28.82 RT
ANGLE POINT +19.57 21.00 RT

+25.00 OFFSET: 21.94
+25.00 OFFSET: 21.68
+42.74
+75.54
9+50
10
11
12
13
L1
C1
22'

CONST ℄

RESIDENTIAL ACCESS (PER 1958 SHLO NO. 4698)

BIT. CONC. PARKING LOT
BIT. CONC. SIDEWALK
BIT. CONC. DRIVE
CONC. PAD
CONC. WALL
GRAVEL
GRASS
WOOD DECK
PORCH
SLATE
PROPANE TANK
WOOD TIE WALL
4' WIRE
4" POST & RAIL
20"MAP
24"MAP
40"OAK
#68
#69
#77
UPL 65T/37/1
UPL 1-2/1
UPL 11
UPL 9
BCB
VGC
WG
SGE

1921 SHLO NO. 1910 | 1923 SHLO NO. 2139

1938 COUNTY LAYOUT

N/F
CLARENCE RANDALL
69 CHURCH STREET
(PARCEL ID: 029/009.A-0003-0003.0)
BK-PG 2328-203

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

CONTINUED ON SHEET NO. 20

LEGEND

- [#] = DRIVEWAY NUMBER
- <#> = PEDESTRIAN CURB RAMP NUMBER
- (C#) = CURVE NUMBER

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C1	34° 10' 25"	75.00'	44.73'	23.05'
C2	92° 10' 26"	15.00'	24.13'	15.58'
C3	81° 05' 02"	20.00'	28.30'	17.11'
C4	3° 38' 43"	2078.00'	132.21'	66.13'
C5	90° 59' 30"	3.00'	4.76'	3.05'
C6	89° 55' 08"	5.00'	7.85'	4.99'
C7	52° 44' 22"	5.00'	4.60'	2.48'

Survey Traverse Point Table				
Point #	Northing	Easting	Elevation	Raw Description
1	3071256.6167	374118.1116	365.460	MTRV PK 2/GPS 10003
2	3071175.8072	374456.8522	354.330	MTRV PK 1/GPS 10002
3	3071386.9331	374421.8393		MTRV PK 7/PK FD

CHURCH STREET (RT 10) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	9+50.00	3071236.1438	374270.6967		S80°53'03"E 121.54'	10+71.54	3071216.8879	374390.7014
C1	10+71.54	3071216.8879	374390.7014	R=3500.00' Δ=4°49'04" L=294.29' T=147.23'		13+65.83	3071182.5262	374682.8952

0 20 50 100
SCALE: 1" = 20'

Survey Traverse Point Table				
Point #	Northing	Easting	Elevation	Raw Description
4	3071141.1668	374868.5835	348.630	MTRV DH 4
5	3071189.1327	374939.9314	347.650	MTRV DH 21
6	3071125.3104	375092.2517	348.690	MTRV PK 22/GPS 10001
7	3071347.8214	375041.4348	345.321	MTRV SPK 6027
8	3071319.4209	374995.7333	321.898	MTRV SPK 6029

LEGEND

[#] = DRIVEWAY NUMBER

<#> = PEDESTRIAN CURB RAMP NUMBER

(C#) = CURVE NUMBER

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C8	4° 01' 05"	380.00'	26.65'	13.33'
C9	179° 59' 58"	3.50'	11.00'	758892.35'
C10	180° 00' 00"	3.50'	11.00'	INFINITY'
C11	68° 40' 35"	6.00'	7.19'	4.10'
C12	48° 11' 23"	12.00'	10.09'	5.37'
C13	83° 23' 33"	35.00'	50.94'	31.18'
C14	70° 01' 27"	60.00'	73.33'	42.03'
C15	88° 57' 00"	30.00'	46.57'	29.46'
C16	9° 53' 15"	150.00'	25.89'	12.97'

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C17	110° 01' 52"	3.00'	5.76'	4.29'
C18	140° 25' 09"	3.00'	7.35'	8.34'
C19	109° 32' 59"	3.00'	5.74'	4.25'
C20	58° 54' 02"	3.00'	3.08'	1.69'
C21	141° 19' 12"	3.00'	7.40'	8.55'
C22	27° 25' 50"	260.00'	124.48'	63.45'
C23	28° 38' 27"	145.00'	72.48'	37.01'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	20	146
	PROJECT FILE NO. 612159		

CURB TIE PLANS - 2 OF 5

N

JOHAN D. LIVINGSTONE & CATRIN D. LIVINGSTONE 84 CHURCH STREET (PARCEL ID: 029/014.0-0004-0012.0) BK-PG 8479-59

GABRIEL F. HMIELESKI AND KRISTIN A. HMIELESKI 94 CHURCH STREET (PARCEL ID: 029/014.0-0004-0015.0) BK-PG 8062-215

N/F REBECCA HARRISON & AUSTIN MILLER 90 CHURCH STREET (PARCEL ID: 029/014.0-0004-0013.0) BK-PG 8290-126

SENECA REALTY, INC. 77 CHURCH STREET (PARCEL ID: 029/009.0-0001-0006.0) BK-PG 6835-256 PLAN BK-PG 127-29

TEMP ACCESS ROAD CONSTRUCTION BASELINE

END ACCESS, BEGIN NO ACCESS

FALL RIVER FLOW

I-91 SB OFF-RAMP (NW)

I-91 SB ON-RAMP (NW)

NORTHFIELD ROAD (RT 10)

INDUSTRIAL DRIVE (KRINGLE DRIVE)

1958 SHLO NO. 4698 NO ACCESS

(1958 SHLO NO. 4698)

RESIDENTIAL ACCESS

1923 SHLO NO. 2139

1923 SHLO NO. 2139 NO ACCESS

1959 SHLO NO 4774 NO ACCESS

1923 SHLO NO. 2139 | 1959 SHLO NO. 4774

1959 TOWN LAYOUT NO 4774

1896 TOWN LAYOUT

ACCESS (PER 1967 SHLO NO. 5662)

LIMIT OF NO ACCESS PER 1959 SHLO NO. 4774

OWNER UNKNOWN

APPROXIMATE

BENCHMARK: SPIKE SET IN UPOLE EL=351.27'

CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 21

CHURCH STREET (RT 10) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	10+71.54	3071216.8879	374390.7014	R=3500.00' Δ=4°49'04" L=294.29' T=147.23'		13+65.83	3071182.5262	374682.8952
L2	13+65.83	3071182.5262	374682.8952		S85°42'06"E 334.17'	17+00.00	3071157.4807	375016.1216
L3	17+00.00	3071157.4807	375016.1216		S85°43'59"E 400.00'	21+00.00	3071127.7186	375415.0128

TEMPORARY ACCESS ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	300+00.00	3071224.7411	374708.2969		S85°42'06"E 200.00'	302+00.00	3071209.7513	374907.7343

0 20 50 100

SCALE: 1" = 20'

T1217.01_HD8_CURB TIE PLANS.DWG Plotted on 27-Jul-2026 11:07 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	21	146
	PROJECT FILE NO. 612159		

CURB TIE PLANS - 3 OF 5

T1217.01_HD8_CURB TIE PLANS.DWG Plotted on 27-Jul-2026 11:07 AM

N

WF#WFD-22 WF#WFD-21 WF#WFD-20 WF#WFD-19 WF#WFD-18 WF#WFD-17 WF#WFD-16 WF#WFD-15 WF#WFD-14 WF#WFD-13 WF#WFD-12 WF#WFD-11 WF#WFD-10 WF#WFD-9 WF#WFD-8 WF#WFD-7

WF#WFE-15 END WF#WFE-14 WF#WFE-13 WF#WFE-12 WF#WFE-11 WF#WFE-

I-91 SOUTHBOUND

I-91 NORTHBOUND

+70.89
OFFSET: 51.55

PC
+84.51
44.12 LT

PT
+54.01
26.37 LT

ANGLE POINT
+99.82
26.38 LT

WOODED AREA

6'CLF

VGC

METAL GUARDRAIL (TYP.)

BENCHMARK: MA GEODETIC SURVEY DISK 186MM
EL=369.78'

BENCHMARK: MA GEODETIC SURVEY DISK 7560
EL=368.70'

POST W/CAMERAS

CONC.

10'CLF

17.01'
(TO EHH)

14.52'
(TO UPL)

11.48'
(TO EMTR)

UE WITNESS POST

TCB

EHH

EMTR

PL 1/1

SMC SGE WG

N88°13'33"E
459.43' (TO 10)

CONTINUED ON SHEET NO. 20

CONTINUED ON SHEET NO. 22

L3 19 20 21 22 23 24 L4 25

26.375'

+33.64

CONST ℄

26.208'

21.292'

PI +00.00

20.36'
(TO BL)

20.66'
(TO TMH)

BRIDGE JOINT

CONC. SIDEWALK

28.84'
(TO BL)

+90.45

NORTHFIELD ROAD (RT 10)

C23 C24 C22

PT
+24.26
24.00 RT

S87°05'28"E
255.40' (TO 9)

PC
+22.87
29.58 RT

ANGLE POINT
+52.91
22.00 RT

21.89'
(TO UPL)

62.20'
(TO CB)

EOP

GRASS

UPL 9M

UPL 10

UPL 11

ANGLE POINT
+49.90
21.99 RT

ANGLE POINT
+99.90
21.28 RT

PT
+17.56
55.23 RT

+48.79
OFFSET: 44.93

+37.91
OFFSET: 65.80

ON RAMP

I-91 SB ON-RAMP (SW)

S11°36'04"W
204.25' (TO 11)

1959 SHLO NO. 4774 NO ACCESS

1896 TOWN LAYOUT

GRAVEL

N/F
KITTREDGE INDUSTRIES, LLC
31 KRINGLE DRIVE
(PARCEL ID: 029/009.0-0001-0003.0)
BK-PG 6079-57
PLAN BK-PG 118-66

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C22	27° 25' 50"	260.00'	124.48'	63.45'
C23	28° 38' 27"	145.00'	72.48'	37.01'
C24	146° 38' 51"	3.00'	7.68'	10.02'

Survey Traverse Point Table				
Point #	Northing	Easting	Elevation	Raw Description
9	3071112.3500	375347.3190	355.560	MTRV PK 24/GPS 10000
10	3071126.5730	375806.5290	370.050	MTRV RB/CAP 2956

CHURCH STREET (RT 10) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	17+00.00	3071157.4807	375016.1216		S85°43'59"E 400.00'	21+00.00	3071127.7186	375415.0128
L4	21+00.00	3071127.7186	375415.0128		S85°36'28"E 533.45'	26+33.45	3071086.8648	375946.8912

LEGEND

[#] = DRIVEWAY NUMBER

<#> = PEDESTRIAN CURB RAMP NUMBER

(C#) = CURVE NUMBER

0 20 50 100

SCALE: 1" = 20'

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C25	1° 59' 30"	1000.00'	34.76'	17.38'
C26	1° 59' 30"	1000.00'	34.76'	17.38'
C27	115° 00' 00"	3.00'	6.02'	4.71'
C28	64° 36' 35"	65.00'	73.30'	41.10'
C29	35° 08' 42"	80.00'	49.07'	25.34'
C30	134° 03' 56"	3.00'	7.02'	7.08'

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C31	86° 12' 22"	20.00'	30.09'	18.72'
C32	69° 02' 19"	3.00'	3.61'	2.06'
C33	30° 19' 25"	20.00'	10.58'	5.42'
C34	86° 34' 24"	3.00'	4.53'	2.83'
C35	76° 25' 46"	20.00'	26.68'	15.75'
C36	129° 14' 06"	3.00'	6.77'	6.32'

LEGEND

- [#] = DRIVEWAY NUMBER
- [#] = PEDESTRIAN CURB RAMP NUMBER
- (C#) = CURVE NUMBER

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	22	146
	PROJECT FILE NO. 612159		

CURB TIE PLANS - 4 OF 5

CONTINUED ON SHEET NO. 21

CONTINUED ON SHEET NO. 23

CONTINUED RIGHT

CONTINUED LEFT

RT 10 (NORTHFIELD ROAD)

I-91 NB OFF-RAMP (NE)

I-91 NB ON-RAMP (NE)

I-91 NB OFF-RAMP (SE)

26+04.82 CHURCH STREET (RT 10) BL=
65+50.00 I-91 NB OFF-RAMP (SE)

CONST BL

S76°38'48"E
418.36' (TO 12)

S83°06'03"E
541.57' (TO 13)

S11°36'04"W
204.25' (TO 11)

1911 SHLO NO 1345

1959 SHLO NO 4774

1959 SHLO NO. 4774 | 1911 SHLO NO. 1345

NO ACCESS

METAL GUARDRAIL (TYP.)

6'CLF

BIT. CONC. DRIVE

CONC. DRIVE

GATE

WOODED AREA

OFF RAMP

ON RAMP

SGE

UPL 11

UPL 12/1–8

UPL 131

UPL 111

UE WITNESS POST @ EHH

EMH

EMT

WG

VCC

CCB

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
55 NORTHFIELD ROAD
(PARCEL ID: 029/009.0–0002–0002.0)
BK–PG 962–132
PLAN BK–PG 8–56

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
0 NORTHFIELD ROAD
(PARCEL ID: 029/009.0–0002–0001.0)
BK–PG 1603–110

OWNER UNKNOWN
0 NORTHFIELD ROAD

CRUMPIN FOX CLUB, INC.
a/k/a CRUMPIN–FOX CLUB, INC.
71–73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0–0002–0003.0–6.0)
BK–PG 2759–120
PLAN BK–PG 84–69

Survey Traverse Point Table				
Point #	Northing	Easting	Elevation	Raw Description
10	3071126.5730	375806.5290	370.050	MTRV RB/CAP 2956
11	3070926.4954	375765.4552	365.920	MTRV SPK 5295
12	3071029.9500	376213.5830	379.240	MTRV PK 2959

CHURCH STREET (RT 10) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	21+00.00	3071127.7186	375415.0128		S85°36'28"E 533.45'	26+33.45	3071086.8648	375946.8912
C2	26+33.45	3071086.8648	375946.8912	R=7000.00' Δ=3°51'04" L=470.49' T=235.33'		31+03.93	3071035.1008	376414.4330

I-91 NB OFF-RAMP (SE) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L7	59+50.00	3070537.7210	375687.3249		N17°33'59"E 197.74'	61+47.74	3070726.2416	375747.0059
C3	61+47.74	3070726.2416	375747.0059	R=1400.00' Δ=12°19'38" L=301.21' T=151.19'		64+48.95	3071001.4514	375867.9868
L8	64+48.95	3071001.4514	375867.9868		N29°53'37"E 101.05'	65+50.00	3071089.0571	375918.3494

0 20 50 100

SCALE: 1" = 20'

T1217.01_HD8_CURB TIE PLANS.DWG Plotted on 27-Jul-2026 11:08 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	23	146
	PROJECT FILE NO. 612159		

CURB TIE PLANS - 5 OF 5

T1217.01_HD8_CURB TIE PLANS.DWG Plotted on 27-Jul-2026 11:08 AM

N

WOODED AREA

N/F
STEVEN S. HEAN
12 BALD MOUNTAIN ROAD
(PARCEL ID: 029/014.0-0005-0018.3)
BK-PG 6423-240
PLAN BK-PG 86-95

PARMENTER ROAD

BALD MOUNTAIN ROAD

1958 SHLO NO 4698 NO ACCESS

N/F
ANNEMARIE C. MASON
2 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0003-0001.0)
BK-PG 6498-328

1958 TOWN LAYOUT NO. 4698

HEIRS, DEVISEES AND LEGAL REPRESENTATIVES OF THE ESTATE OF COLA R. NELSON
5 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0004-0001.0)
BK-PG 1321-213

NEAL R. BARDWELL
210 PARMENTER ROAD
(PARCEL ID: 029/009.0-0004-0002.0)
BK-PG 2568-16

1958 SHLO NO. 4698 | 1966 SHLO NO. 5556

BENCHMARK: TOP HYDRANT SPINDLE
EL=381.67'

PC +86.97 47.44 LT
+81.75 OFFSET: 50.33
PT +59.18 30.09 LT
PC +57.33 25.00 LT
PT +82.63 23.00 LT
PC +62.63 20.00 RT
PT +81.93 34.76 RT
PC +11.45 38.00 RT
PT +31.35 20.00 RT
PI +00.00
PC +54.19 23.00 LT
PT +82.48 43.01 LT
+83.95 OFFSET: 47.18
+14.14 OFFSET: 47.18
PC +15.22 44.59 LT
PT +47.55 23.00 LT
+47.35
21.01' (TO BL)
PC +64.73 20.00 RT
PRC +29.50 27.07 RT
PT +83.49 33.95 RT
+85.00 OFFSET: 34.01
52.38' (TO UPL)
22.12' (TO 5" HW)
30.54' (TO 5"HW)

ANGLE POINT +99.90 23.12 LT
ANGLE POINT +30.20 22.78 LT
ANGLE POINT +82.24 22.76 LT
+85.00 OFFSET: 22.76

PROJECT END
STA 35+90.00
N3070965.0613
E376895.4280

C36 C37 C38 C39 C40 C41 C42 C43

CONTINUED ON SHEET NO. 22

PT +03.93
S83°06'03"E 541.57' (TO 13)
CONST ℄
L5 L6
20'

1911 SHLO NO 1345
1927 SHLO NO 2456
1966 SHLO NO. 5556

6'WOOD STOCKADE
6'GLF
CCB
BIT. CONC. DRIVE
MULCH
UPL 15T/32B/14
UPL 32/15
UPL 32/16
1 RAMP
5"HW
5"MAP
72"HW
36"HW
6" CONC POST
8"CLSTR
GPL
WG
SCE

1911 SHLO NO. 1345 | 1927 SHLO NO. 2456

1927 SHLO NO. 2456 | 1966 SHLO NO. 5556

RT 10 (NORTHFIELD ROAD)

LEGEND

- # = DRIVEWAY NUMBER
- △# = PEDESTRIAN CURB RAMP NUMBER
- C# = CURVE NUMBER

CRUMPIN FOX CLUB, INC. a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

THE HEIRLOOM COLLECTIVE, INC.
87 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0009.0)
BK-PG 8077-122
PLAN BK-PG 150-96

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C36	129° 14' 06"	3.00'	6.77'	6.32'
C37	28° 36' 44"	200.00'	99.88'	51.00'
C38	74° 48' 32"	20.00'	26.11'	15.29'
C39	84° 16' 25"	20.00'	29.42'	18.09'
C40	70° 32' 59"	30.00'	36.94'	21.22'
C41	67° 28' 18"	35.00'	41.22'	23.37'
C42	12° 28' 01"	300.00'	65.28'	32.77'
C43	10° 24' 34"	300.00'	54.50'	27.33'

Survey Traverse Point Table				
Point #	Northing	Easting	Elevation	Raw Description
13	3070964.8950	376751.2360	376.270	MTRV PK 2961

CHURCH STREET (RT 10) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C2	26+33.45	3071086.8648	375946.8912	R=7000.00' Δ=3°51'04" L=470.49' T=235.33'		31+03.93	3071035.1008	376414.4330
L5	31+03.93	3071035.1008	376414.4330		S81°45'24"E 196.07'	33+00.00	3071006.9893	376608.4750
L6	33+00.00	3071006.9893	376608.4750		S81°41'14"E 450.00'	37+50.00	3070941.9286	377053.7470

0 20 50 100
SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	24	146
PROJECT FILE NO.	612159		

TRAFFIC SIGN & PAVEMENT MARKING PLANS - 1 OF 5

T1217.01_HD9_TRAFFIC SIGN & PAVEMENT MARKING PLANS.DWG Plotted on 27-Jul-2026 11:08 AM

N

N/F
TRUSTEES OF THE UNITED CHURCH OF BERNARDSTON
62 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.1)
BK-PG 2021-108
PLAN BK-PG 62-13

DEBORAH A. DELABRUERE
68 CHURCH STREET
(PARCEL ID: 029/014.A-0002-0013.0)
BK-PG 6687-202
PLAN BK-PG 130-40

GABRIEL F. HMIELESKI AND
KRISTIN A. HMIELESKI
76 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0011.0)
BK-PG 8062-215

N/F
CELT GRANT
78 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0014.0)
BK-PG 6464-3
PLAN BK-PG 135-39

HARTWELL STREET

CHURCH STREET (RT 10)

RIVER STREET

1921 SHLO NO. 1910 | 1923 SHLO NO. 2139

1923 SHLO NO. 2139 | 1958 SHLO NO. 4698

1921 SHLO NO. 1910 | 1923 SHLO NO. 2139

1921 SHLO NO 1910

1923 SHLO NO 2139

BIT. CONC. PARKING LOT

20"MAP

24"MAP

SIGN

GRASS

"STATE HIGHWAY PARKING PROHIBITED"

4"WIRE

40"OAK

WOOD DECK

PORCH

GRAVEL

#68

SLATE

PROPANE TANKS

"PEDESTRIAN X-ING AHEAD"

UPL 4

BCB

SWL

DBYL

BIT. CONC. SIDEWALK

VGC

CONC.

RET "NO PARKING"

R&D "STOP"

R1-1

TOWN LAYOUT

PROP GREEN COLORIZED PVMT MARKINGS (TYP)

"HARTWELL ST" R&D
"RIVER ST" R&D

MA-D3-1a (2)
MA-D3-1e (2)

R&D "SLOW BLIND PERSON"

UPL 35T/37/1

PROP BICYCLE BUFFER PAVEMENT MARKINGS (TYP); (SEE DETAIL ON SHEET 54)

PROP YELLOW/YELLOW TWO-WAY SLOTTED PAVEMENT MARKER (TYP)

R7-9

R&D "STATE HIGHWAY PARKING PROHIBITED"

RESIDENTIAL ACCESS (PER 1958 SHLO NO. 4698)

BIT. CONC. DRIVE

UPL 2/1

GRASS

SGE

MEET EXISTING PVMT MARKINGS (TYP)

12" SL

10' CW

6" SWL

6" DBYL

6" DWLEx (2' LINE W/ 6' GAP)

12'

7'

3'

9+50

10

11

12

13

+25

+36

+38

+53

+54

+51

+61

+68

+69

+83

+84

+20

R=40'

R&R "INTERSECTION AHEAD"

CONTINUED ON SHEET NO. 25

PROJECT BEGIN
STA 9+50.00
N3071236.1438
E374270.6967

M2-1
M1-1 (91)

R&S "I-91"
R&S "JUNCTION"

R3-17
R3-17aP

20"MAP

MA-D3-1b (2)

MA-D3-1e (2)

"WEIGHT LIMIT AHEAD" R&S

GRASS

GRAVEL

BIT. CONC.

WOOD TIE WALL

UPL 11

UPL 9

CONC. PAD

CONC. WALL

4" POST & RAIL

PROP HMA DWY

R&D "STOP"

REM EXIST STOP LINE

#77

#69

1938 COUNTY LAYOUT

PROP BICYCLE LANE PAVEMENT MARKING (TYP); (SEE DETAIL ON SHEET 54)

PROP MILLED RUMBLE STRIP; TYPE C (TYP) (SEE DETAIL ON SHEET 54)

RET EXISTING PAVEMENT MARKINGS

N/F
CLARENCE RANDALL
69 CHURCH STREET
(PARCEL ID: 029/009.A-0003-0003.0)
BK-PG 2328-203

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL LEGEND AND ARROW PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC MATERIALS. ALL 6" AND 12" PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE MULTI-COMPONENT, ULTRA-FAST DRY, WET REFLECTIVE, RECESSED MATERIALS.
3. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING RETAINED, ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY APPROVED METHODS.
4. A MINIMUM OF 4'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.
6. RUMBLE STRIPS SHALL BE TERMINATED WITHIN 20 FEET OF BRIDGE JOINTS.
7. RUMBLE STRIPS SHALL BE GAPPED FOR BICYCLE BUFFER PAVEMENT MARKING GORE LINES AND CHEVRONS.

FOR SIGN SUMMARY: SEE SHEET 29 & 30

0 20 50 100

SCALE: 1" = 20'

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL LEGEND AND ARROW PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC MATERIALS. ALL 6" AND 12" PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE MULTI-COMPONENT, ULTRA-FAST DRY, WET REFLECTIVE, RECESSED MATERIALS.
3. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING RETAINED, ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY APPROVED METHODS.
4. A MINIMUM OF 4'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.
6. RUMBLE STRIPS SHALL BE TERMINATED WITHIN 20 FEET OF BRIDGE JOINTS.
7. RUMBLE STRIPS SHALL BE GAPPED FOR BICYCLE BUFFER PAVEMENT MARKING GORE LINES AND CHEVRONS.

FOR SIGN SUMMARY: SEE SHEET 29 & 30

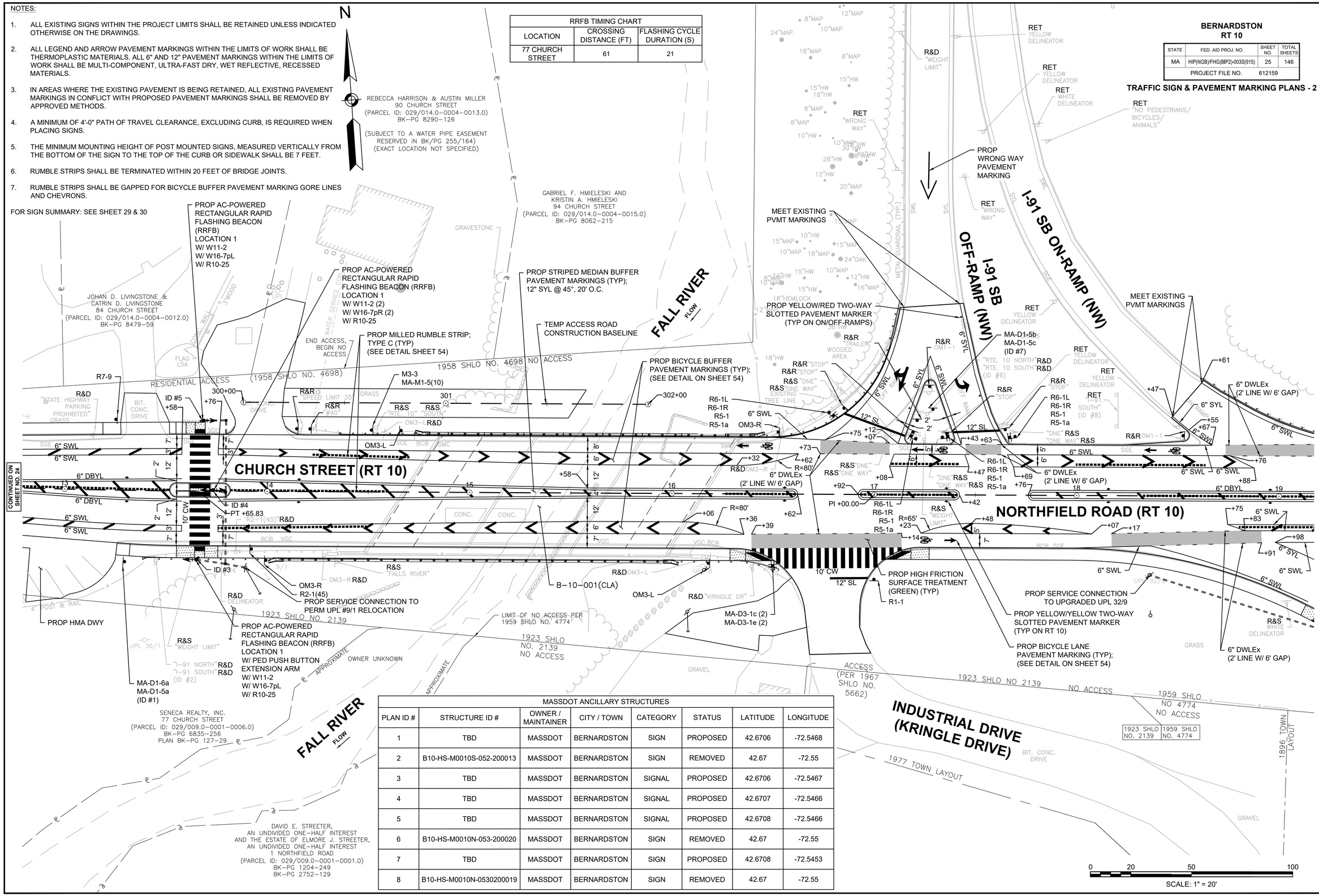
RRFB TIMING CHART		
LOCATION	CROSSING DISTANCE (FT)	FLASHING CYCLE DURATION (S)
77 CHURCH STREET	61	21

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	25	146
PROJECT FILE NO.	612159		

TRAFFIC SIGN & PAVEMENT MARKING PLANS - 2 OF 5

T1217.01_HD9_TRAFFIC SIGN & PAVEMENT MARKING PLANS.DWG Plotted on 27-Jul-2026 11:08 AM



MASSDOT ANCILLARY STRUCTURES							
PLAN ID #	STRUCTURE ID #	OWNER / MAINTAINER	CITY / TOWN	CATEGORY	STATUS	LATITUDE	LONGITUDE
1	TBD	MASSDOT	BERNARDSTON	SIGN	PROPOSED	42.6706	-72.5468
2	B10-HS-M0010S-052-200013	MASSDOT	BERNARDSTON	SIGN	REMOVED	42.67	-72.55
3	TBD	MASSDOT	BERNARDSTON	SIGNAL	PROPOSED	42.6706	-72.5467
4	TBD	MASSDOT	BERNARDSTON	SIGNAL	PROPOSED	42.6707	-72.5466
5	TBD	MASSDOT	BERNARDSTON	SIGNAL	PROPOSED	42.6708	-72.5466
6	B10-HS-M0010N-053-200020	MASSDOT	BERNARDSTON	SIGN	REMOVED	42.67	-72.55
7	TBD	MASSDOT	BERNARDSTON	SIGN	PROPOSED	42.6708	-72.5453
8	B10-HS-M0010N-0530200019	MASSDOT	BERNARDSTON	SIGN	REMOVED	42.67	-72.55

N

NOTES:

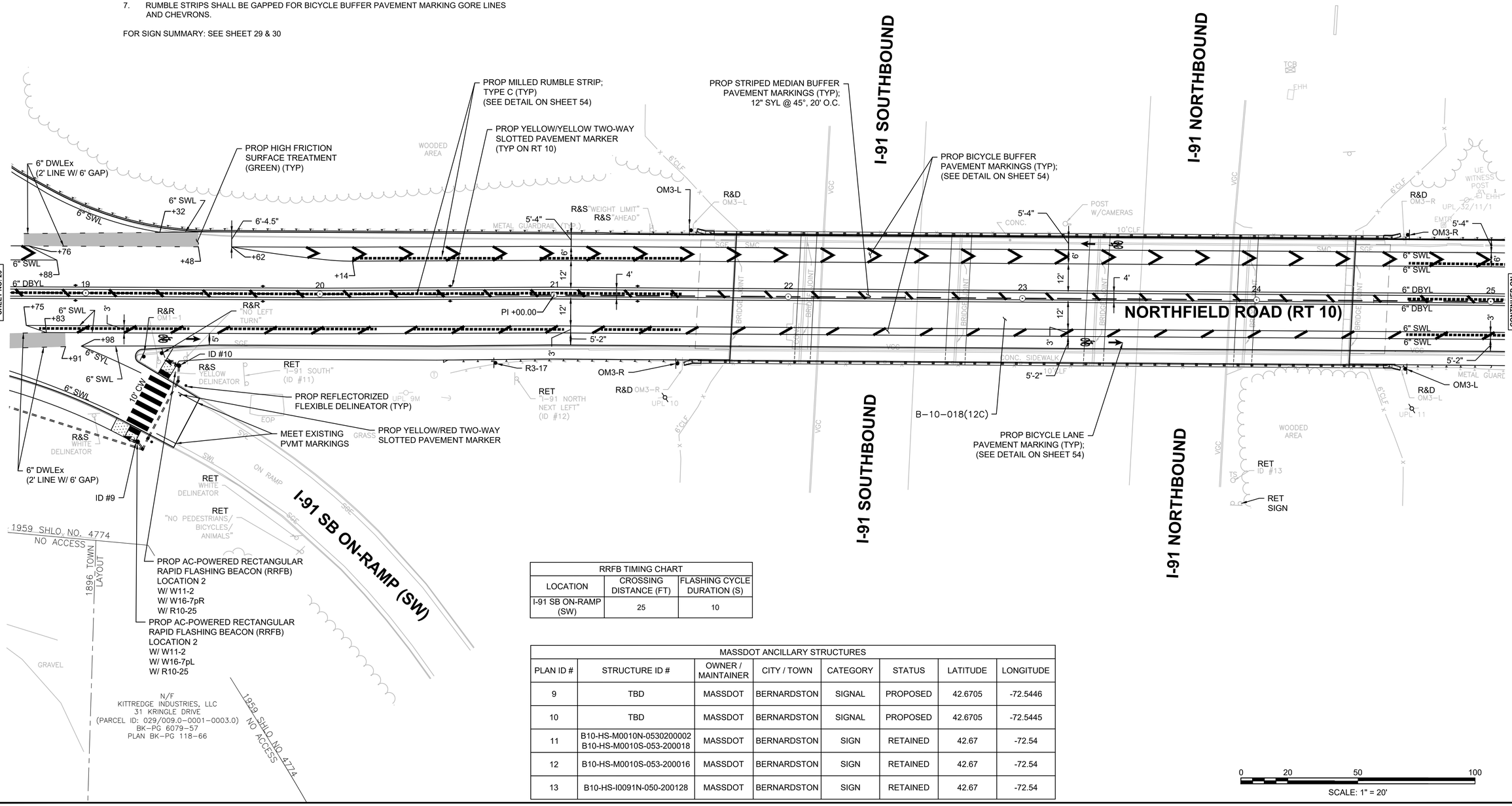
1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL LEGEND AND ARROW PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC MATERIALS. ALL 6" AND 12" PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE MULTI-COMPONENT, ULTRA-FAST DRY, WET REFLECTIVE, RECESSED MATERIALS.
3. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING RETAINED, ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY APPROVED METHODS.
4. A MINIMUM OF 4'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.
6. RUMBLE STRIPS SHALL BE TERMINATED WITHIN 20 FEET OF BRIDGE JOINTS.
7. RUMBLE STRIPS SHALL BE GAPPED FOR BICYCLE BUFFER PAVEMENT MARKING GORE LINES AND CHEVRONS.

FOR SIGN SUMMARY: SEE SHEET 29 & 30

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	26	146
	PROJECT FILE NO. 612159		

TRAFFIC SIGN & PAVEMENT MARKING PLANS - 3 OF 5


PROP MILLED RUMBLE STRIP; TYPE C (TYP) (SEE DETAIL ON SHEET 54)
PROP YELLOW/YELLOW TWO-WAY SLOTTED PAVEMENT MARKER (TYP ON RT 10)
PROP STRIPED MEDIAN BUFFER PAVEMENT MARKINGS (TYP); 12" SYL @ 45°, 20' O.C.
PROP BICYCLE BUFFER PAVEMENT MARKINGS (TYP); (SEE DETAIL ON SHEET 54)
PROP HIGH FRICTION SURFACE TREATMENT (GREEN) (TYP)
I-91 SOUTHBOUND
I-91 NORTHBOUND
NORTHFIELD ROAD (RT 10)
I-91 SB ON-RAMP (SW)
CONTINUED ON SHEET NO. 25
CONTINUED ON SHEET NO. 27
6" DWLEx (2' LINE W/ 6' GAP)
6" SWL
6" DBYL
6" SYL
OM3-L
OM3-R
R&D OM3-L
R&D OM3-R
R&S "WEIGHT LIMIT" AHEAD"
R&R "NO LEFT TURN"
OM1-1
R&S YELLOW DELINEATOR
R&S WHITE DELINEATOR
RET "I-91 SOUTH" (ID #11)
RET "I-91 NORTH NEXT LEFT" (ID #12)
RET WHITE DELINEATOR
RET "NO PEDESTRIANS/ BICYCLES/ ANIMALS"
RET ID #13
RET SIGN
ID #9
ID #10
R3-17
PI +00.00
B-10-018(12C)
PROP REFLECTORIZED FLEXIBLE DELINEATOR (TYP)
PROP YELLOW/RED TWO-WAY SLOTTED PAVEMENT MARKER
MEET EXISTING PVMT MARKINGS
PROP BICYCLE LANE PAVEMENT MARKING (TYP); (SEE DETAIL ON SHEET 54)
PROP AC-POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) LOCATION 2 W/ W11-2 W/ W16-7pR W/ R10-25
PROP AC-POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) LOCATION 2 W/ W11-2 W/ W16-7pL W/ R10-25
1959 SHLO, NO. 4774 NO ACCESS
1896 TOWN LAYOUT
N/F KITTREDGE INDUSTRIES, LLC 31 KRINGLE DRIVE (PARCEL ID: 029/009.0-0001-0003.0) BK-PG 6079-57 PLAN BK-PG 118-66
WOODED AREA
METAL GUARDRAIL (TYP.)
CONC. SIDEWALK
POST W/CAMERAS
UE WITNESS POST
UPL 32/11/1
UPL 11
UPL 10
GRAVEL
SWL
ON RAMP
EOP
SGE
SMC
VGC
6'CLF
10'CLF
BRIDGE JOINT
+76
+88
+48
+62
+14
+75
+83
+98
+91
+32
+00
+25
+50
+75
+00
+25
+50
+75
+00
+25
+50
+75

MASSDOT ANCILLARY STRUCTURES							
PLAN ID #	STRUCTURE ID #	OWNER / MAINTAINER	CITY / TOWN	CATEGORY	STATUS	LATITUDE	LONGITUDE
14	TBD	MASSDOT	BERNARDSTON	SIGN	PROPOSED	42.6706	-72.5422
15	B10-HS-M0010S-053-200017	MASSDOT	BERNARDSTON	SIGN	REMOVED	42.67	-72.54
16	B10-HS-M0010N-053-200024 B10-HS-M0010N-053-200003	MASSDOT	BERNARDSTON	SIGN	RETAINED	42.67	-72.54
17	B10-HS-M0010S-053-200021 B10-HS-M0010N-053-200004	MASSDOT	BERNARDSTON	SIGN	RETAINED	42.67	-72.54

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	27	146
PROJECT FILE NO.	612159		

TRAFFIC SIGN & PAVEMENT MARKING PLANS - 4 OF 5

N

NORTHFIELD ROAD (RT 10)

I-91 NB OFF-RAMP (NE)

I-91 NB ON-RAMP (SE)

I-91 NB OFF-RAMP (SE)

PROP BICYCLE BUFFER PAVEMENT MARKINGS (TYP); (SEE DETAIL ON SHEET 54)

PROP STRIPED MEDIAN BUFFER PAVEMENT MARKINGS (TYP); 12" SYL @ 45°, 20' O.C.

PROP YELLOW/YELLOW TWO-WAY SLOTTED PAVEMENT MARKER (TYP ON RT 10)

PROP HIGH FRICTION SURFACE TREATMENT (GREEN) (TYP)

PROP MILLED RUMBLE STRIP; TYPE C (TYP) (SEE DETAIL ON SHEET 54)

PROP WRONG WAY PAVEMENT MARKING

PROP YIELD PAVEMENT MARKINGS

PROP YELLOW/RED TWO-WAY SLOTTED PAVEMENT MARKER (TYP ON RAMP)

PROP REFLECTORIZED FLEXIBLE DELINEATOR, 80' O.C (TYP)

PROP REFLECTORIZED FLEXIBLE DELINEATOR, 100' O.C (TYP)

PROP BICYCLE LANE PAVEMENT MARKING (TYP); (SEE DETAIL ON SHEET 54)

MEET EXISTING PVMT MARKINGS

MA-D1-6b (ID #14)

R&S "I-91 SOUTH NEXT RIGHT" (ID #15)

R&S "I-91 NORTH" (ID #16)

R&S "I-91 NORTH" (ID #17)

R&S "ENTER HERE"

R&S "WRONG WAY"

R&S "ONE WAY(2)"

R&S "ONE WAY"

R&S "DNE"

R&S "YIELD"

R&S "NO LEFT TURN"

R&S YELLOW DELINEATOR

R&S WHITE DELINEATOR

R&D DELINEATOR

R&D OM3-R

R&D OM3-L

R&R OM3-R

R&R OM3-L

R&R OM1-1

R&R "WRONG WAY"

R&R "TRUCKS ENTERING RIGHT"

R&R "TWO WAY TRAFFIC"

R&R "597/3"

RET "WRONG WAY"

RET WHITE DELINEATOR

RET YELLOW DELINEATOR

RET "YIELD"

RET "ONE WAY(2)"

RET "DNE"

RET "ENTER HERE"

RET "MASSDOT MAINTENANCE FACILITY"

R3-17

R3-2

R1-1

R6-1L
R6-1R
R5-1
R5-1a

6" SWL

6" SYL

6" DBYL

6" DWLEx (2' LINE W/ 6' GAP)

10' CW

12" SL

PC +33.45

PT +48.95

METAL GUARDRAIL (TYP.)

6'CLF

UE WITNESS POST

UPL 32/11/1

UPL 111

UPL 12/1-8

UPL 131

EMTR

EHH

VGC

SGE

CCB

OFF RAMP

ON RAMP

BIT. CONC. DRIVE

GATE

WOODED AREA

1959 SHLO NO 4774

1911 SHLO NO 1345

1959 SHLO NO 4774 NO ACCESS

CONTINUED ON SHEET NO. 26

CONTINUED ON SHEET NO. 28

CONTINUED RIGHT

CONTINUED LEFT

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
55 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0002.0)
BK-PG 962-132
PLAN BK-PG 8-56

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
0 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0001.0)
BK-PG 1603-110

CRUMPIN FOX CLUB, INC.
a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

OWNER UNKNOWN
0 NORTHFIELD ROAD

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
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3. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING RETAINED, ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY APPROVED METHODS.
4. A MINIMUM OF 4'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.
6. RUMBLE STRIPS SHALL BE TERMINATED WITHIN 20 FEET OF BRIDGE JOINTS.
7. RUMBLE STRIPS SHALL BE GAPPED FOR BICYCLE BUFFER PAVEMENT MARKING GORE LINES AND CHEVRONS.

FOR SIGN SUMMARY: SEE SHEET 29 & 30

0 20 50 100
SCALE: 1" = 20'

T1217.01_HD9_TRAFFIC SIGN & PAVEMENT MARKING PLANS.DWG Plotted on 27-Jul-2026 11:09 AM

MASSDOT ANCILLARY STRUCTURES							
PLAN ID #	STRUCTURE ID #	OWNER / MAINTAINER	CITY / TOWN	CATEGORY	STATUS	LATITUDE	LONGITUDE
18	TBD	MASSDOT	BERNARDSTON	SIGNAL	PROPOSED	42.6702	-72.5389
19	TBD	MASSDOT	BERNARDSTON	SIGNAL	PROPOSED	42.6703	-72.5389
20	B10-HS-M0010S-053-200023	MASSDOT	BERNARDSTON	SIGN	RETAINED	42.67	-72.54

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	28	146
PROJECT FILE NO.	612159		

TRAFFIC SIGN & PAVEMENT MARKING PLANS - 5 OF 5

T1217.01_HD9_TRAFFIC SIGN & PAVEMENT MARKING PLANS.DWG Plotted on 27-Jul-2026 11:09 AM

N

WOODED AREA

N/F
STEVEN S. HEAN
12 BALD MOUNTAIN ROAD
(PARCEL ID: 029/014.0-0005-0018.3)
BK-PG 6423-240
PLAN BK-PG 86-95

1958 SHLO NO 4698

NO ACCESS

PARMENTER ROAD

BALD MOUNTAIN ROAD

N/F
ANNEMARIE C. MASON
2 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0003-0001.0)
BK-PG 6498-328

1958 TOWN LAYOUT NO. 4698

HEIRS, DEVISEES AND LEGAL REPRESENTATIVES OF THE ESTATE OF COLA R. NELSON
5 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0004-0001.0)
BK-PG 1321-213

NEAL R. BARDWELL
210 PARMENTER ROAD
(PARCEL ID: 029/009.0-0004-0002.0)
BK-PG 2568-16

MEET EXISTING PVMT MARKINGS

R&R OM1-1

RET WHITE DELINEATOR

6" SWL

PROP HIGH FRICTION SURFACE TREATMENT (GREEN) (TYP)

PROP BICYCLE BUFFER PAVEMENT MARKINGS (TYP); (SEE DETAIL ON SHEET 54)

PROP YELLOW/YELLOW TWO-WAY SLOTTED PAVEMENT MARKER (TYP)

R1-1
MA-D3-1d (2)

R&D "BALD MOUNTAIN ROAD"

R&D "STOP"

R&D SIGN POST 72"HW

MA-D3-1f (2)

6"WOOD STOCKADE

1958 SHLO NO 4698 NO ACCESS

12" SL

6" DWLEx (2' LINE W/ 6' GAP)

R=60'

PROP SERVICE CONNECTION TO ULT 15/32

1958 SHLO NO. 4698	1966 SHLO NO. 5556

PROP AC-POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) LOCATION 3
W/ W11-2 (2)
W/ W16-7pL
W/ W16-7pR
W/ R10-25

PROP BICYCLE LANE PAVEMENT MARKING (TYP); (SEE DETAIL ON SHEET 54)

RET "I-91 NORTH/SOUTH" (ID #20)

R3-17
R3-17aP

1966 SHLO NO. 5556

ID #19

ID #18

10' CW

6" CONC POST

8"CLSTR

UPL 32/16

UPL 32

MET

SIGN POST R&D

GPL

36"HW

CONTINUED ON SHEET NO. 27

PT +03.93

PI +00.00

NORTHFIELD ROAD (RT 10)

1911 SHLO NO 1345

1927 SHLO NO 2456

R&S "MOTORISTS GIVE 4 FT"

PROP MILLED RUMBLE STRIP; TYPE C (TYP) (SEE DETAIL ON SHEET 54)

UPL 15T/32B/14

BIT. CONC. DRIVE

MULCH

M3-1
MA-M1-5 (10)

R&S "RTE 10 NORTH"

R&R "SCENIC BYWAY"

RET "THE INN AT CRUMPIN-FOX"

RET "VERMONT WOODS STUDIOS"

R&D "SIGN POST"

UPL 32/15

CCB

6" DBYL

6" SWL

6" DBYLEx

5"HW

5"MAP

MEET EXISTING PVMT MARKINGS

PROJECT END
STA 35+90.00
N3070965.0613
E376895.4280

PROP AC-POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) LOCATION 3
W/ W11-2 (2)
W/ W16-7pL
W/ W16-7pR
W/ R10-25

1927 SHLO NO. 2456	1966 SHLO NO. 5556

CRUMPIN FOX CLUB, INC. a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

THE HEIRLOOM COLLECTIVE, INC.
87 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0009.0)
BK-PG 8077-122
PLAN BK-PG 150-96

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL LEGEND AND ARROW PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC MATERIALS. ALL 6" AND 12" PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE MULTI-COMPONENT, ULTRA-FAST DRY, WET REFLECTIVE, RECESSED MATERIALS.
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4. A MINIMUM OF 4'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET.
6. RUMBLE STRIPS SHALL BE TERMINATED WITHIN 20 FEET OF BRIDGE JOINTS.
7. RUMBLE STRIPS SHALL BE GAPPED FOR BICYCLE BUFFER PAVEMENT MARKING GORE LINES AND CHEVRONS.

FOR SIGN SUMMARY: SEE SHEET 29 & 30

RRFB TIMING CHART		
LOCATION	CROSSING DISTANCE (FT)	FLASHING CYCLE DURATION (S)
87 NORTHFIELD ROAD	43	17

0 20 50 100

SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	29	146
	PROJECT FILE NO. 612159		

TRAFFIC SIGN SUMMARY - 1 OF 2

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			SIZE AND NUMBER OF POSTS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LEGEND	LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER			
MA-M1-5 (10)	24	24	10	MASSDOT STANDARD SIGN			2	WHITE	BLACK	BLACK	P5 2	4.00	8.00
M1-1 (91)	24	24	INTERSTATE 91	(1)			1	RED / BLUE	WHITE	WHITE	P5 1	4.00	4.00
M2-1	21	15	JCT				1	BLUE	WHITE	WHITE	0 MOUNT W/ M1-1 (91)	2.19	2.19
M3-1	24	12	NORTH				1	WHITE	BLACK	BLACK	0 MOUNT W/ MA-M1-5 (10)	2.00	2.00
M3-3	24	12	SOUTH				1	WHITE	BLACK	BLACK	0 MOUNT W/ MA-M1-5 (10)	2.00	2.00
OM3-L	12	36					4	YELLOW	BLACK	-	P5 4	3.00	12.00
OM3-R	12	36					4	YELLOW	BLACK	-	P5 4	3.00	12.00
R1-1	30	30	STOP				6	RED	WHITE	WHITE	P5 6	6.25	37.50
R2-1(45)	24	30	SPEED LIMIT 45				1	WHITE	BLACK	BLACK	P5 1	5.00	5.00
R3-2	36	36					2	WHITE	BLACK RED	BLACK	P5 2	9.00	18.00
R3-17	24	18	BIKE LANE				5	BLACK / WHITE	WHITE / BLACK	BLACK	P5 5	3.00	15.00
R3-17aP	24	8	AHEAD				2	WHITE	BLACK	BLACK	0 MOUNT W/ R3-17 (2)	1.33	2.67
R5-1	30	30	DO NOT ENTER				6	WHITE	WHITE/ RED	-	6 DOUBLE POST ASSEMBLY	6.25	37.50
R5-1a	36	24	WRONG WAY				6	RED	WHITE	WHITE	0 MOUNT W/ R5-1 (6)	6.00	36.00
R6-1L	36	12	ONE WAY				6	BLACK	BLACK / WHITE	WHITE	0 MOUNT W/ R5-1 (6)	3.00	18.00
R6-1R	36	12	ONE WAY				6	BLACK	BLACK / WHITE	WHITE	0 MOUNT W/ R5-1 (6)	3.00	18.00
R7-9	12	18	NO PARKING BIKE LANE				1	RED / WHITE WHITE	WHITE / RED RED	RED	P5 1	1.50	1.50

NOTES:

(1.) SEE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR TEXT AND LEGEND DIMENSIONS.

2. THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF CURB OR SIDEWALK, OR THE ELEVATION OF THE NEAR EDGE OF TRAVEL WAY, SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED.

3. A MINIMUM OF 4'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			SIZE AND NUMBER OF POSTS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LEGEND	LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER			
R10-25	9	12	PUSH BUTTON FOR WARNING LIGHTS WAIT FOR GAP IN TRAFFIC	(1)			7	WHITE	BLACK	BLACK	0 MOUNT W/ RRFB (7)	PAID UNDER RRFB ITEMS	
W11-2	30	30					10	FL. YELLOW-GREEN	BLACK	BLACK	0 MOUNT W/ RRFB (10)	PAID UNDER RRFB ITEMS	
W16-7pL	21	15					5	FL. YELLOW-GREEN	BLACK	BLACK	0 MOUNT W/ RRFB (5)	PAID UNDER RRFB ITEMS	
W16-7pR	21	15					5	FL. YELLOW-GREEN	BLACK	BLACK	0 MOUNT W/ RRFB (5)	PAID UNDER RRFB ITEMS	

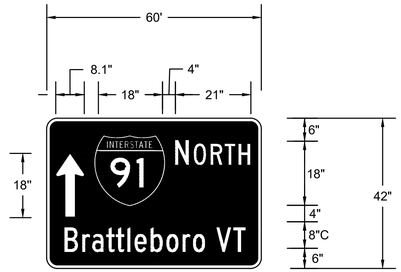
T1217.01_HD9_TRAFFIC SIGN & PAVEMENT MARKING PLANS.DWG Plotted on 27-Jul-2026 11:09 AM

BERNARDSTON
RT 10

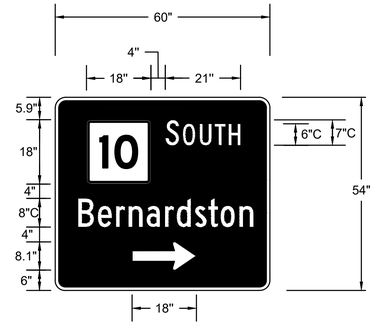
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	30	146
PROJECT FILE NO.	612159		

TRAFFIC SIGN SUMMARY - 2 OF 2

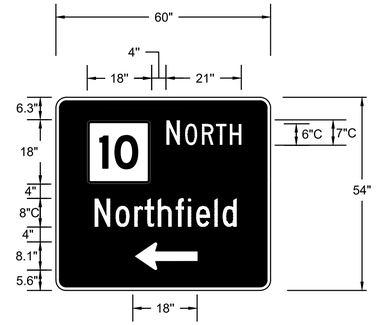
TRAFFIC SIGN SUMMARY												
IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			SIZE AND NUMBER OF POSTS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LEGEND	LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER			
MA-D1-5a	60	42	SEE RIGHT	MASSDOT STANDARD SIGN			1	GREEN	WHITE	WHITE	0 MOUNT W/ MA-D1-6a	17.50	17.50
MA-D1-5b	60	54	SEE RIGHT	MASSDOT STANDARD SIGN			1	GREEN	WHITE	WHITE	1 PAID FOR UNDER ITEMS 841.1	22.50	22.50
MA-D1-6a	60	66	SEE RIGHT	MASSDOT STANDARD SIGN			1	GREEN	WHITE	WHITE	1 PAID FOR UNDER ITEMS 841.1	27.50	27.50
MA-D1-6b	60	66	SEE RIGHT	MASSDOT STANDARD SIGN			1	GREEN	WHITE	WHITE	1 PAID FOR UNDER ITEMS 841.2	27.50	27.50
MA-D1-5c	60	54	SEE RIGHT	MASSDOT STANDARD SIGN			1	GREEN	WHITE	WHITE	0 MOUNT W/ MA-D1-5b	22.50	22.50
MA-D3-1a	48	12	SEE RIGHT	6D/4D	3.00 3.00	N/A	2	GREEN	WHITE	WHITE	1 DOUBLE POST ASSEMBLY	PAID FOR UNDER ITEM 874.	
MA-D3-1b	36	12	SEE RIGHT	6D/4D	3.00 3.00	N/A	2	GREEN	WHITE	WHITE	P5 1	PAID FOR UNDER ITEM 874.	
MA-D3-1c	42	12	SEE RIGHT	6D/4D	2.75 3.25	N/A	2	GREEN	WHITE	WHITE	P5 1	PAID FOR UNDER ITEM 874.	
MA-D3-1d	72	12	SEE RIGHT	6D/4D	3.00 3.00	N/A	2	GREEN	WHITE	WHITE	1 DOUBLE POST ASSEMBLY	PAID FOR UNDER ITEM 874.	
MA-D3-1e	42	12	SEE RIGHT	6D/4D	3.00 3.00	N/A	6	GREEN	WHITE	WHITE	0 MOUNT W/ MA-D3-1a (2) MA-D3-1b (2) MA-D3-1c (2)	PAID FOR UNDER ITEM 874.	
MA-D3-1f	54	12	SEE RIGHT	6D/4D	3.00 3.00	N/A	2	GREEN	WHITE	WHITE	1 DOUBLE POST ASSEMBLY	PAID FOR UNDER ITEM 874.	



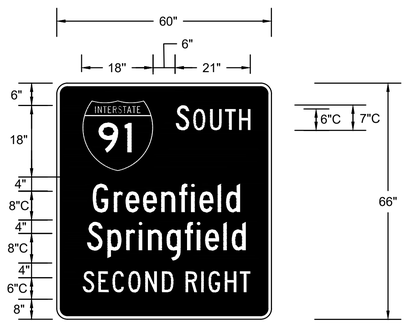
MA-D1-5a



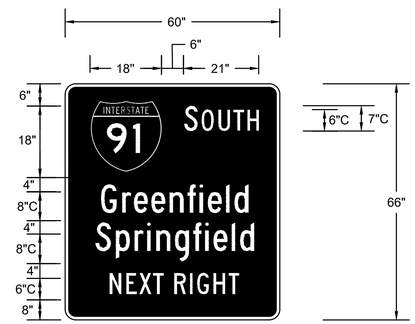
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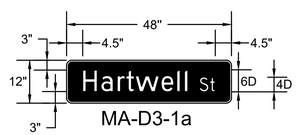
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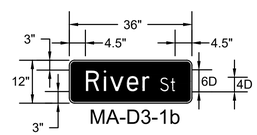
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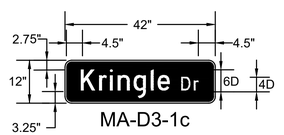
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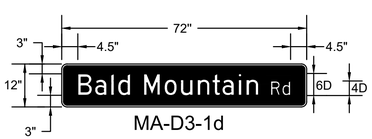
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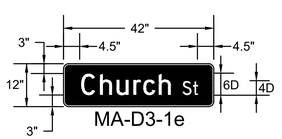
MA-D3-1b



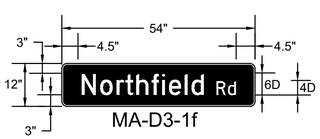
MA-D3-1c



MA-D3-1d



MA-D3-1e



MA-D3-1f

T1217.01_HD9_TRAFFIC SIGN & PAVEMENT MARKING PLANS.DWG Plotted on 27-Jul-2026 11:09 AM

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. THE CONTRACTOR SHALL MAINTAIN SAFE AND REASONABLE ACCESS TO AND FROM ABUTTING PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THE ABUTTER'S PROPERTY.
3. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
4. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
5. 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.
6. 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).
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
13. TEMPORARY FACILITIES, INCLUDING BUT NOT LIMITED TO, TEMPORARY PEDESTRIAN PASSAGEWAYS AROUND A CONSTRUCTION SITE, SHALL COMPLY WITH 521 CMR WHICH STATES, "NO ALTERATION SHALL BE UNDERTAKEN WHICH DECREASES OR HAS THE EFFECT OF DECREASING ACCESSIBILITY OR USABILITY OF A FACILITY BELOW THE REQUIREMENTS FOR NEW CONSTRUCTION."
14. NO WORK THAT IMPACTS THE TRAVELED WAY SHALL BE PERMITTED DURING PEAK HOUR TRAFFIC (7-9AM, 3-6PM).

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	31	146
	PROJECT FILE NO. 612159		

TEMPORARY TRAFFIC CONTROL PLANS - 1 OF 4

TTC CONSTRUCTION STANDARD DETAILS

DRAWING NUMBER	TITLE	VERSION
850.1.1	TEMPORARY CURB RAMP (1 OF 2)	JAN 2025
850.1.2	TEMPORARY CURB RAMP (2 OF 2)	JAN 2025
851.1.1	CONES & DRUMS	JAN 2025
851.2.1	TYPE III BARRICADE	JAN 2025
851.2.2	TYPE III BARRICADE WITH SIGN	JAN 2025
851.3.1	PEDESTRIAN CHANNELIZING DEVICE	JAN 2025
852.1.1	SIDEWALK DETOUR	JAN 2025
852.1.2	SIDEWALK DIVERSION	JAN 2025
852.1.3	PEDESTRIAN DETOUR FOR CROSSWALK CLOSURE	JAN 2025
852.4.4	ALTERNATING ONE-WAY (TRAFFIC OFFICER)	JAN 2025
852.5.1	TWO LANE ROAD CENTER OF ROAD CLOSURE	JAN 2025
852.5.2	TWO LANE ROAD HALF OF ROAD CLOSURE WITH DROP OFF PROTECTION	JAN 2025
852.5.3	TWO LANE ROAD SHOULDER CLOSURE	JAN 2025
852.5.4	TWO LANE ROAD HALF ROAD CLOSURE	JAN 2025
852.5.5	TWO LANE ROAD CENTER OF ROAD CLOSURE WITH DROP OFF PROTECTION	JAN 2025
852.8.1	EXIT RAMP RIGHT SIDE OF RAMP CLOSURE	JAN 2025
852.8.2	EXIT RAMP LEFT SIDE OF RAMP CLOSURE	JAN 2025
852.9.1	ENTRANCE RAMP PARTIAL CLOSURE	JAN 2025
852.10.1	INTERSECTION CENTER CLOSURE	JAN 2025
852.10.2	INTERSECTION QUADRANT CLOSURE	JAN 2025

NOTES:
1. SEE MOST RECENT MASSDOT CONSTRUCTION STANDARD DETAILS
2. POLICE WILL REPLACE FLAGGERS ON TTC CONSTRUCTION STANDARD DETAIL 852.10.2, AND W20-7 SIGNS WILL BE REPLACED WITH MA-W20-7b SIGNS.

TEMPORARY TRAFFIC CONTROL LEGEND

- WORK ZONE
- DIRECTION OF TRAVEL
- SIGN
- POLICE DETAIL
- SIGNAL HOUSING
- ARROW BOARD
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- REFLECTORIZED DRUM W/ SEQUENTIAL FLASHING LIGHTS
- CONSTRUCTION BARRIER
- CONSTRUCTION BARRIER W/ REFLECTORS OR WARNING LIGHTS
- TYPE III BARRICADES
- IMPACT ATTENUATOR
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TAPER TYPE	TAPER LENGTH
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FEET MIN, 100 FEET MAX
DOWNSTREAM TAPER	50 FEET MIN., 100 FEET MAX (PER LANE)
TANGENT LENGTH	AT LEAST 2L

SPEED LIMIT	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = WS^2/60$
45 MPH OR GREATER	$L = WS$

WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

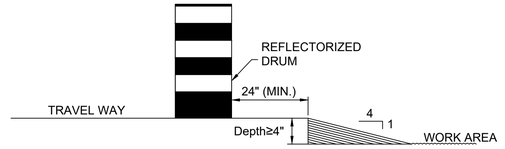
S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

SUGGESTED WORK ZONE WARNING SIGN SPACING

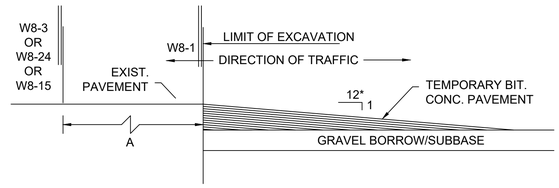
ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (30MPH OR LESS)	100 FEET	100 FEET	100 FEET
URBAN (35MPH OR GREATER)	350 FEET	350 FEET	350 FEET
RURAL	500 FEET	500 FEET	500 FEET
EXPRESSWAY/FREEWAY	1,000 FEET	1,500 FEET	2,640 FEET

SIGN SPACING NOTES:

1. ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING
2. 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.
3. MA-R2-10a SIGNS SHALL BE PLACED HALFWAY BETWEEN THE SECOND AND THIRD SIGNS NOTED ABOVE.
4. SIGN SPACING MAY NEED TO BE INCREASED IF ADDITIONAL SIGNS ARE REQUIRED PER THE DETAIL / TYPICAL SETUP FIGURES.



LATERAL DROP-OFF DETAIL
NOT TO SCALE



* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

LONGITUDINAL DROP-OFF DETAIL
NOT TO SCALE

LATERAL AND LONGITUDINAL DROP-OFF DETAILS

T1217.01_HD10_TTCP & DETOUR.DWG Plotted on 27-Jul-2026 11:09 AM

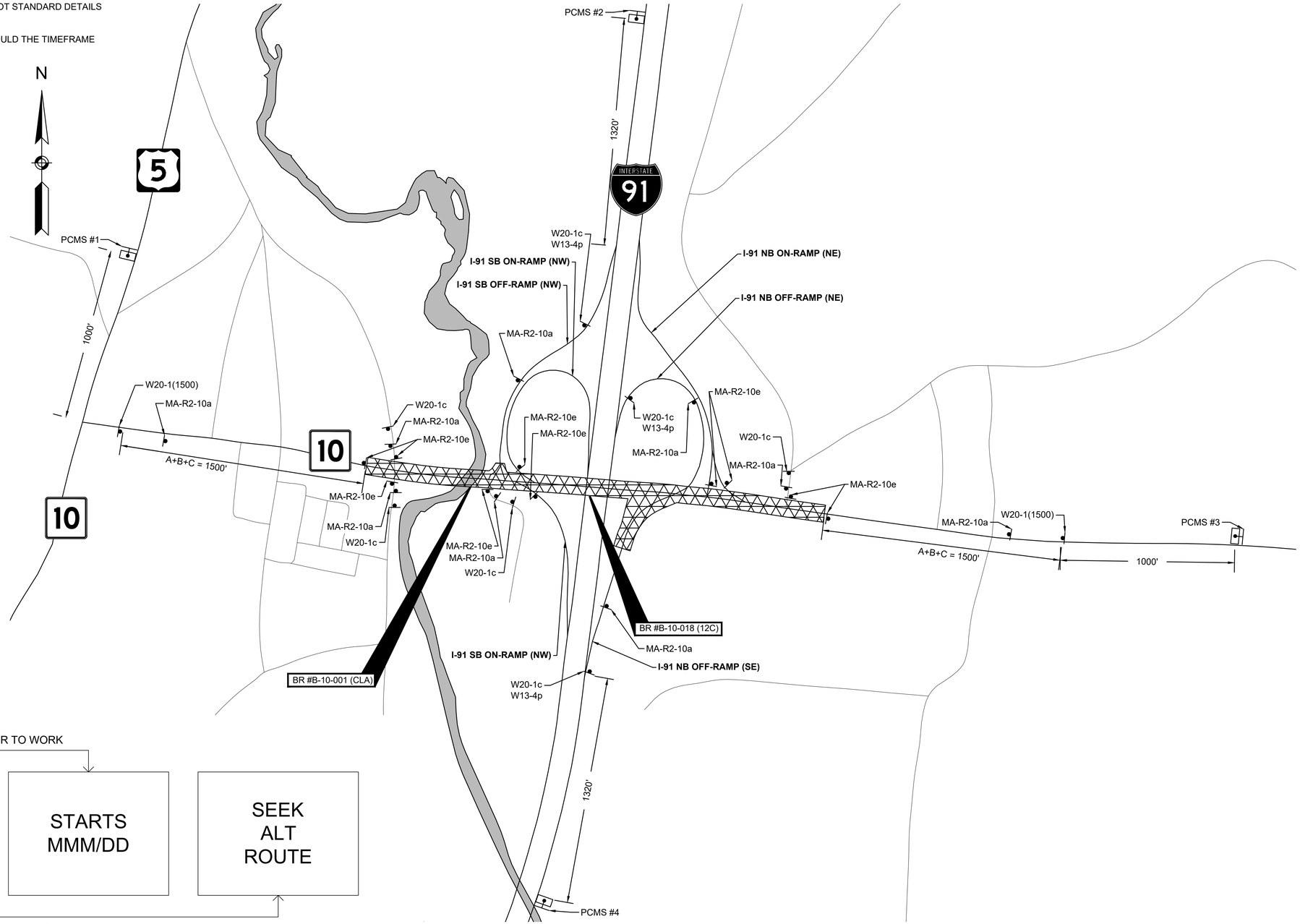
ADVANCED TTC SIGNAGE NOTES:

1. ON SIDE STREETS, W20-1c SIGNS SHALL BE LOCATED 200' FROM THE LIMIT OF WORK AND MA-R2-10a SIGNS SHALL BE LOCATED 100' FROM THE LIMIT OF WORK.
2. ON FREEWAY OFF RAMPS, MA-R2-10a SIGNS SHALL BE LOCATED 500' FROM THE LIMIT OF WORK AND W20-1c & W13-4P SIGNS SHALL BE 1000' FROM THE LIMIT OF WORK.
3. I-91 NB OFF-RAMP (SE); MA-R2-10a SIGN SHALL BE 350' FROM LIMIT OF WORK, ADDITIONALLY W20-1c & W13-4p SIGNS SHALL BE 700' FROM LIMIT OF WORK.
4. FOR OPERATIONAL TTC SIGNAGE BY SET-UP, SEE MASSDOT STANDARD DETAILS AS LIST ON SHEET 31.
5. PCMS #1, #2, #3, and #4 CAN BE USED AS PCMS #5-#10 SHOULD THE TIMEFRAME NOT OVERLAP.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	32	146
	PROJECT FILE NO. 612159		

TEMPORARY TRAFFIC CONTROL PLANS - 2 OF 4



ADVANCED SIGNING SCHEMATIC
N.T.S.

14 DAYS PRIOR TO WORK

BRDG WRK RT 10 OVER I91	STARTS MMM/DD	SEEK ALT ROUTE

DURING WORK

PORTABLE CHANGEABLE MESSAGE SIGNS #1,#2,#3 & #4

T1217.01_HD10_TTCP & DETOUR.DWG Plotted on 27-Jul-2026 11:09 AM

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

ID 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	WORK ZONE SPEEDING FINES DOUBLED	MASSDOT STANDARD SIGN			FL. ORANGE WHITE	BLACK BLACK	BLACK BLACK	6	12.00	72.00
	60	48								3	20.00	60.00
MA-R2-10e	36	48	END ROAD WORK / DOUBLE FINES END				FL. ORANGE WHITE	BLACK BLACK	BLACK BLACK	6	12.00	72.00
	60	48								4	20.00	80.00
MA-W20-7b	36	36	POLICE OFFICER AHEAD				FL. ORANGE	BLACK	BLACK	6	9.00	54.00
MA-W30-8L	36	36	SQUEEZE LEFT				FL. ORANGE	BLACK	BLACK	2	9.00	18.00
MA-W30-8R	36	36	SQUEEZE RIGHT				FL. ORANGE	BLACK	BLACK	2	9.00	18.00
R1-1	30	30	STOP	SEE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			RED	WHITE	WHITE	4	6.25	25.00
R3-2	36	36					WHITE	BLACK/ RED	BLACK	1	9.00	9.00
R4-7	24	30					WHITE	BLACK	BLACK	4	5.00	20.00
R5-1	30	30	DO NOT ENTER				WHITE	WHITE/ RED	-	2	6.25	12.50
R5-1a	36	24	WRONG WAY				RED	WHITE	WHITE	2	6.00	12.00
R6-1L	36	12	ONE WAY				WHITE	BLACK/ WHITE	BLACK	2	3.00	6.00
R6-1R	36	12	ONE WAY				WHITE	BLACK/ WHITE	BLACK	2	3.00	6.00
R9-9	48	18	SIDEWALK CLOSED				FL. ORANGE	BLACK	BLACK	2	6.00	12.00
R9-11aL	24	12	SIDEWALK CLOSED CROSS HERE				WHITE	BLACK	BLACK	2	2.00	4.00
R9-11aR	24	12	SIDEWALK CLOSED CROSS HERE				WHITE	BLACK	BLACK	1	2.00	2.00
R11-2	48	30	ROAD CLOSED				WHITE	BLACK	BLACK	6	10.00	60.00
R11-3a (300)	48	30	ROAD CLOSED 300 FEET AHEAD LOCAL TRAFFIC ONLY				WHITE	BLACK	BLACK	1	10.00	10.00
R11-3a (1800)	48	30	ROAD CLOSED 1800 FEET AHEAD LOCAL TRAFFIC ONLY				WHITE	BLACK	BLACK	1	10.00	10.00
W1-4L	36	36					FL. ORANGE	BLACK	BLACK	2	9.00	18.00
W1-4R	36	36					FL. ORANGE	BLACK	BLACK	2	9.00	18.00

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

ID 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			
W5-1	36	36	ROAD NARROWS	SEE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			FL. ORANGE	BLACK	BLACK	6	9.00	54.00
W5-4	48	48	RAMP NARROWS				FL. ORANGE	BLACK	BLACK	2	16.00	32.00
W8-1	36	36	BUMP				FL. ORANGE	BLACK	BLACK	4	9.00	36.00
W8-3	36	36	PAVEMENT ENDS				FL. ORANGE	BLACK	BLACK	4	9.00	36.00
W8-15	36	36	GROOVED PAVEMENT				FL. ORANGE	BLACK	BLACK	4	9.00	36.00
W8-24	36	36	STEEL PLATE AHEAD				FL. ORANGE	BLACK	BLACK	4	9.00	36.00
W11-1	30	30					FL. YELLOW-GREEN	BLACK	BLACK	2	6.25	12.50
W11-2	30	30					FL. YELLOW-GREEN	BLACK	BLACK	4	6.25	25.00
W13-1p	24	24	XX MPH				FL. ORANGE	BLACK	BLACK	4	4.00	16.00
W13-4p	36	36	ON RAMP				FL. ORANGE	BLACK	BLACK	4	9.00	36.00
W13-4p (25)	24	24	25 MPH				FL. ORANGE	BLACK	BLACK	4	4.00	16.00
W13-4p (35)	24	24	35 MPH				FL. ORANGE	BLACK	BLACK	4	4.00	16.00
W16-7pL	21	15					FL. YELLOW-GREEN	BLACK	BLACK	2	2.19	4.38
W16-7pR	21	15					FL. YELLOW-GREEN	BLACK	BLACK	2	2.19	4.38
W16-9P	24	12	AHEAD				FL. YELLOW-GREEN	BLACK	BLACK	3	2.00	6.00
W20-1c	36	36	ROAD WORK AHEAD				FL. ORANGE	BLACK	BLACK	6	9.00	54.00
	48	48								3	16.00	48.00
W20-2	36	36	DETOUR AHEAD				FL. ORANGE	BLACK	BLACK	4	9.00	36.00
	48	48								2	16.00	32.00
W20-4	36	36	ONE LANE ROAD AHEAD				FL. ORANGE	BLACK	BLACK	6	9.00	54.00
W21-5	36	36	SHOULDER WORK				FL. ORANGE	BLACK	BLACK	2	9.00	18.00
M1-1(I-91)	24	24	INTERSTATE 91				RED BLUE	WHITE	WHITE	1	4.00	4.00
	36	36								2	9.00	18.00

CONTINUED ON SHEET 34

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	33	146
	PROJECT FILE NO. 612159		

TEMPORARY TRAFFIC CONTROL PLANS - 3 OF 4

T1217.01_HD10_TTCP & DETOUR.DWG Plotted on 27-Jul-2026 11:10 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	34	146
PROJECT FILE NO.	612159		

TEMPORARY TRAFFIC CONTROL PLANS - 4 OF 4

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

ID 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			
M1-4(5)	24	24		SEE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			WHITE	BLACK	BLACK	1	4.00	4.00
	36	36								18	9.00	162.00
M1-5 (10)	24	24					WHITE	BLACK	BLACK	4	4.00	16.00
	36	36								39	9.00	351.00
M3-1P	24	12					WHITE	BLACK	BLACK	3	2.00	6.00
	36	18								27	4.50	121.50
M3-3P	24	12					WHITE	BLACK	BLACK	3	2.00	6.00
	36	18								16	4.50	72.00
M4-4P	36	18					WHITE	BLACK	BLACK	47	4.50	211.50
M4-4aP	36	18					WHITE	BLACK	BLACK	10	4.50	45.00
M4-5P	24	12					WHITE	BLACK	BLACK	3	2.00	6.00
	36	18								22	4.50	99.00
M4-8a	24	18					ORANGE	BLACK	BLACK	4	3.00	12.00
M4-8P	24	12					ORANGE	BLACK	BLACK	4	2.00	8.00
	30	15								57	3.13	178.13
M5-1PL	21	15					ORANGE	BLACK	BLACK	2	2.19	4.38
	30	21								2	4.38	8.75
M5-1PR	21	15					ORANGE	BLACK	BLACK	2	2.19	4.38
	30	21								1	4.38	4.38
M5-2PL	30	21					ORANGE	BLACK	BLACK	4	4.38	17.50
M5-2PR	30	21					ORANGE	BLACK	BLACK	7	4.38	30.63
M6-1PL	21	15					ORANGE	BLACK	BLACK	1	2.19	2.19
	30	21								4	4.38	17.50
M6-1PR	21	15					ORANGE	BLACK	BLACK	1	2.19	2.19
	30	21								3	4.38	13.13
M6-2PL	30	21					ORANGE	BLACK	BLACK	4	4.38	17.50
M6-2PR	21	15					ORANGE	BLACK	BLACK	1	2.19	2.19
	30	21								7	4.38	30.63
M6-3P	30	21					ORANGE	BLACK	BLACK	25	4.38	109.38

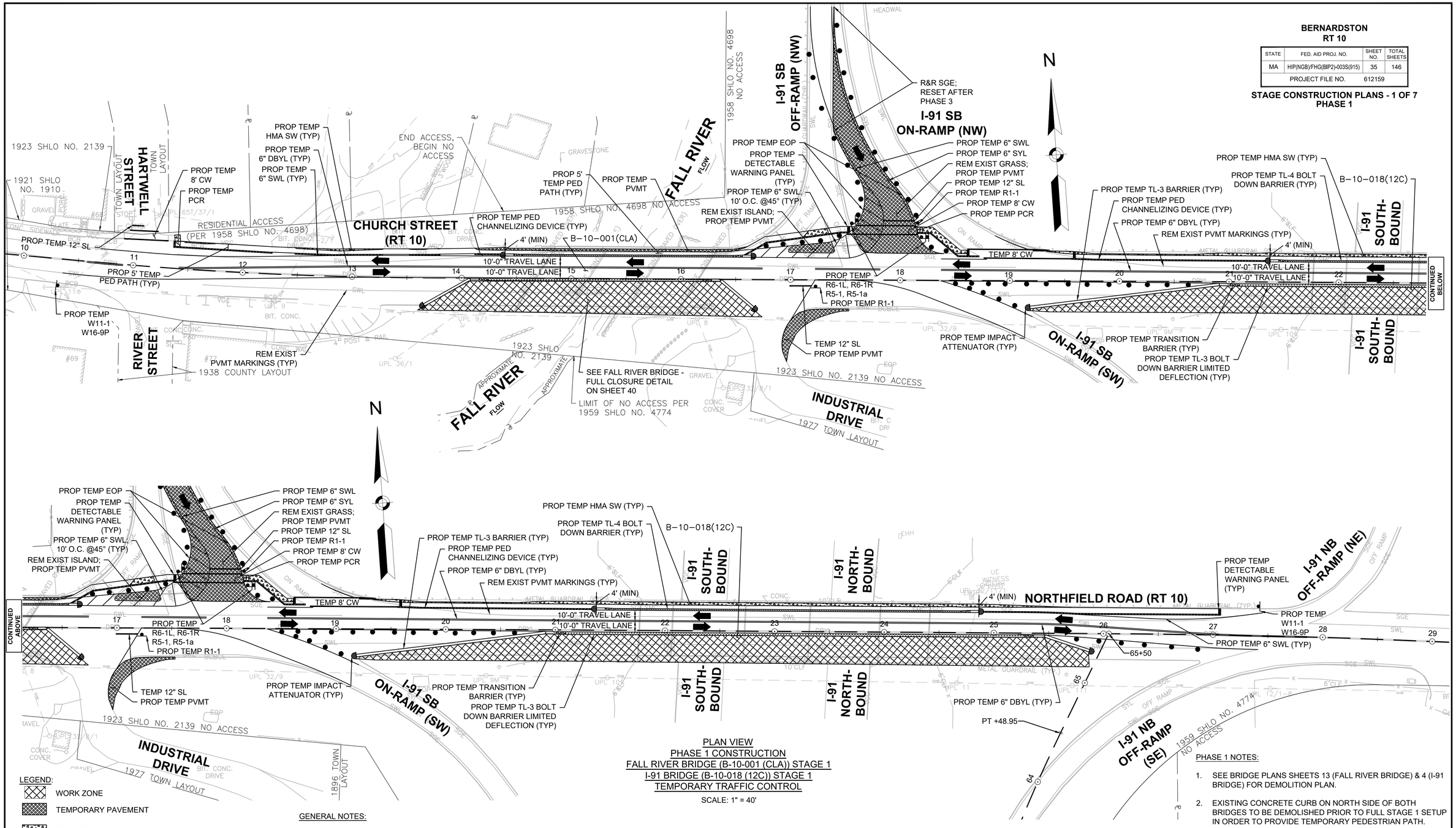
T1217.01_HD10_TTCP & DETOUR.DWG Plotted on 27-Jul-2026 11:10 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	35	146
	PROJECT FILE NO. 612159		

STAGE CONSTRUCTION PLANS - 1 OF 7
PHASE 1

T1217.01_HD11_STAGE CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:10 AM



PLAN VIEW
PHASE 1 CONSTRUCTION
FALL RIVER BRIDGE (B-10-001 (CLA)) STAGE 1
I-91 BRIDGE (B-10-018 (12C)) STAGE 1
TEMPORARY TRAFFIC CONTROL

SCALE: 1" = 40'

LEGEND:

- WORK ZONE
- TEMPORARY PAVEMENT
- TEMPORARY HMA SW
- VEHICULAR DIRECTION OF TRAVEL
- REFLECTORIZED PLASTIC DRUM
- IMPACT ATTENUATOR
- PEDESTRIAN CHANNELIZING DEVICE
- TL-4 BOLT DOWN BARRIER
- TL-3 BOLT DOWN BARRIER LIMITED DEFLECTION
- TL-3 BARRIER
- TRANSITION BARRIER

GENERAL NOTES:

1. REFER TO TEMPORARY TRAFFIC CONTROL PLAN DETAILS AND MASSDOT CONSTRUCTION STANDARD DETAILS FOR ADDITIONAL INFORMATION.
2. RELOCATE OR INSTALL TEMPORARY SIGNS, DRUMS, AND OTHER TRAFFIC MANAGEMENT DEVICES AS REQUIRED BY THE ENGINEER.
3. REFER TO ADVANCED WARNING SCHEMATIC FOR SIGNING IN ADVANCE OF WORK AREA.
4. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AND ACCESS TO ALL ABUTTING PROPERTIES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. WORK ZONE HATCH REPRESENTS POTENTIAL WORK ZONE. ACCESS TO ALL ABUTTING PROPERTIES AND BUSINESSES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

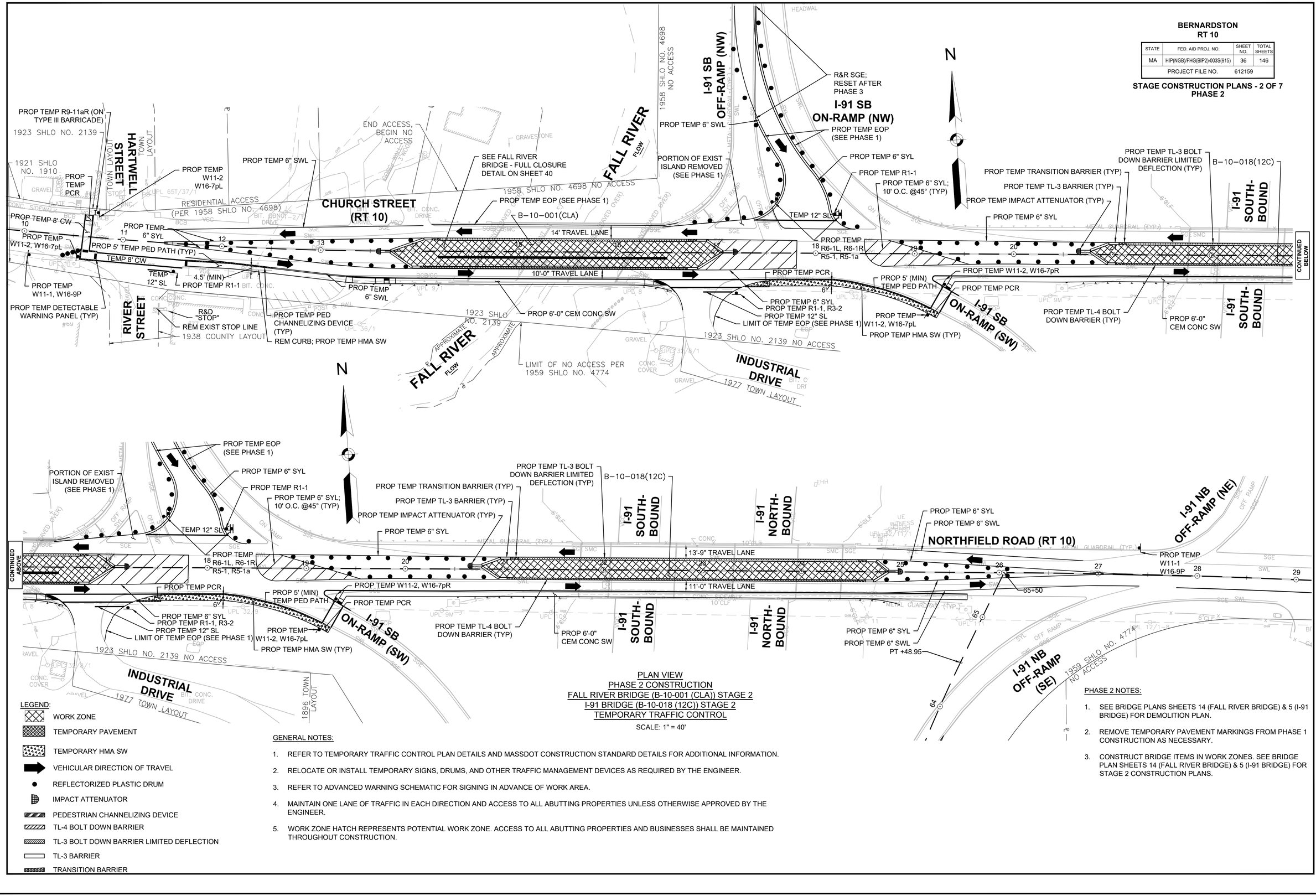
PHASE 1 NOTES:

1. SEE BRIDGE PLANS SHEETS 13 (FALL RIVER BRIDGE) & 4 (I-91 BRIDGE) FOR DEMOLITION PLAN.
2. EXISTING CONCRETE CURB ON NORTH SIDE OF BOTH BRIDGES TO BE DEMOLISHED PRIOR TO FULL STAGE 1 SETUP IN ORDER TO PROVIDE TEMPORARY PEDESTRIAN PATH.
3. PROPOSED TEMPORARY UTILITY POLE RELOCATIONS ADJACENT TO THE FALL RIVER BRIDGE SHALL BE COMPLETED PRIOR TO FULL STAGE 1 SETUP.
4. CONSTRUCT BRIDGE ITEMS IN WORK ZONES. SEE BRIDGE PLAN SHEETS 13 (FALL RIVER BRIDGE) & 4 (I-91 BRIDGE) FOR STAGE 1 CONSTRUCTION PLANS.
5. CONSTRUCT HIGHWAY ITEMS IN WORK ZONES INCLUDING, BUT NOT LIMITED TO, GUARDRAIL, CURBING, SIDEWALK AND LOAM AND SEED.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	36	146
	PROJECT FILE NO. 612159		

STAGE CONSTRUCTION PLANS - 2 OF 7
PHASE 2



PLAN VIEW
PHASE 2 CONSTRUCTION
FALL RIVER BRIDGE (B-10-001 (CLA)) STAGE 2
I-91 BRIDGE (B-10-018 (12C)) STAGE 2
TEMPORARY TRAFFIC CONTROL

SCALE: 1" = 40'

LEGEND:

- WORK ZONE
- TEMPORARY PAVEMENT
- TEMPORARY HMA SW
- VEHICULAR DIRECTION OF TRAVEL
- REFLECTORIZED PLASTIC DRUM
- IMPACT ATTENUATOR
- PEDESTRIAN CHANNELIZING DEVICE
- TL-4 BOLT DOWN BARRIER
- TL-3 BOLT DOWN BARRIER LIMITED DEFLECTION
- TL-3 BARRIER
- TRANSITION BARRIER

GENERAL NOTES:

1. REFER TO TEMPORARY TRAFFIC CONTROL PLAN DETAILS AND MASSDOT CONSTRUCTION STANDARD DETAILS FOR ADDITIONAL INFORMATION.
2. RELOCATE OR INSTALL TEMPORARY SIGNS, DRUMS, AND OTHER TRAFFIC MANAGEMENT DEVICES AS REQUIRED BY THE ENGINEER.
3. REFER TO ADVANCED WARNING SCHEMATIC FOR SIGNING IN ADVANCE OF WORK AREA.
4. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AND ACCESS TO ALL ABUTTING PROPERTIES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. WORK ZONE HATCH REPRESENTS POTENTIAL WORK ZONE. ACCESS TO ALL ABUTTING PROPERTIES AND BUSINESSES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

PHASE 2 NOTES:

1. SEE BRIDGE PLANS SHEETS 14 (FALL RIVER BRIDGE) & 5 (I-91 BRIDGE) FOR DEMOLITION PLAN.
2. REMOVE TEMPORARY PAVEMENT MARKINGS FROM PHASE 1 CONSTRUCTION AS NECESSARY.
3. CONSTRUCT BRIDGE ITEMS IN WORK ZONES. SEE BRIDGE PLAN SHEETS 14 (FALL RIVER BRIDGE) & 5 (I-91 BRIDGE) FOR STAGE 2 CONSTRUCTION PLANS.

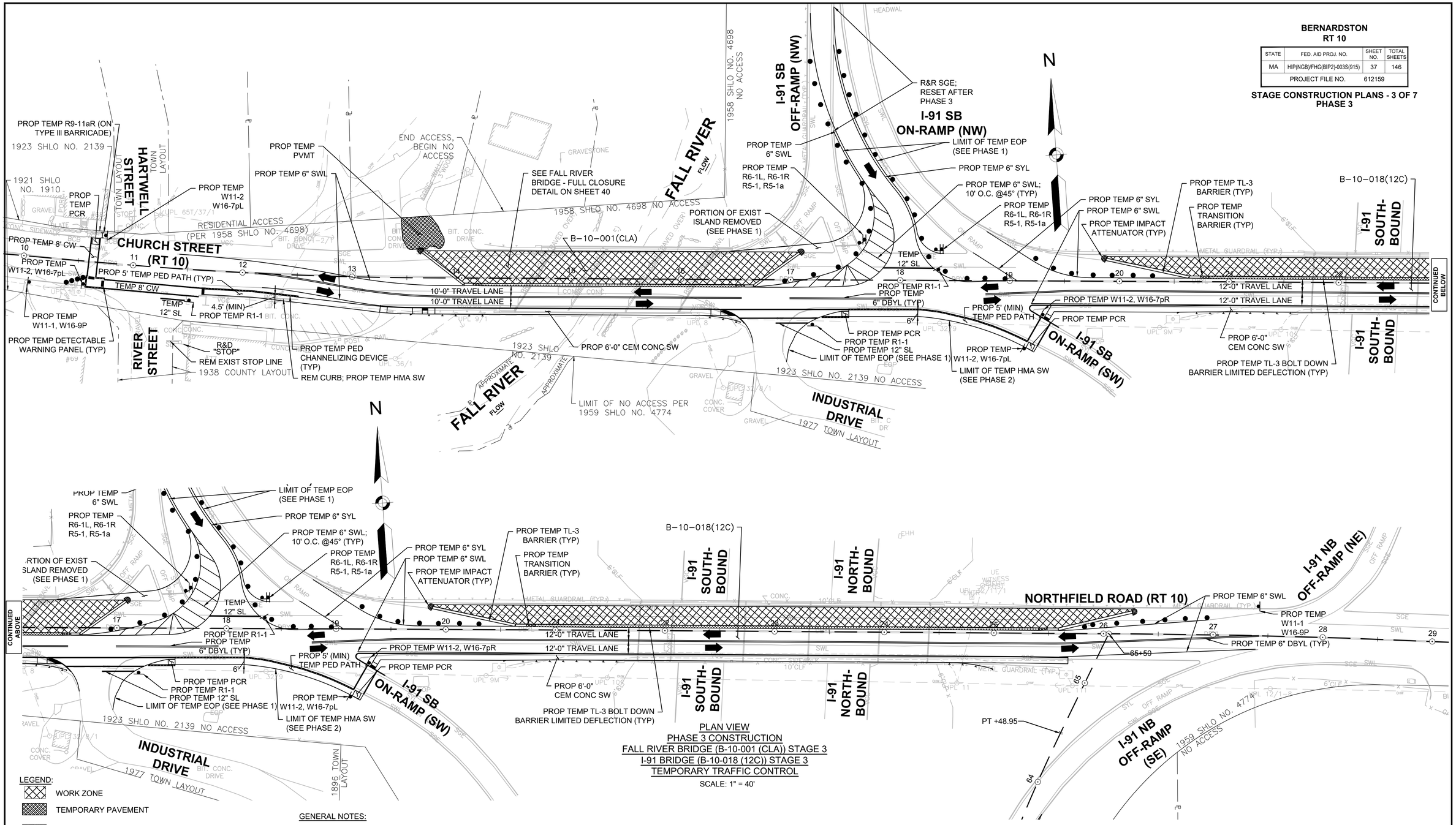
T1217.01_HD11_STAGE CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:10 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	37	146
	PROJECT FILE NO. 612159		

STAGE CONSTRUCTION PLANS - 3 OF 7
PHASE 3

T:\217\01_HD11_STAGE CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:10 AM



PLAN VIEW
PHASE 3 CONSTRUCTION
FALL RIVER BRIDGE (B-10-001 (CLA)) STAGE 3
I-91 BRIDGE (B-10-018 (12C)) STAGE 3
TEMPORARY TRAFFIC CONTROL
SCALE: 1" = 40'

LEGEND:

- WORK ZONE
- TEMPORARY PAVEMENT
- TEMPORARY HMA SW
- VEHICULAR DIRECTION OF TRAVEL
- REFLECTORIZED PLASTIC DRUM
- IMPACT ATTENUATOR
- PEDESTRIAN CHANNELIZING DEVICE
- TL-4 BOLT DOWN BARRIER
- TL-3 BOLT DOWN BARRIER LIMITED DEFLECTION
- TL-3 BARRIER
- TRANSITION BARRIER

GENERAL NOTES:

1. REFER TO TEMPORARY TRAFFIC CONTROL PLAN DETAILS AND MASSDOT CONSTRUCTION STANDARD DETAILS FOR ADDITIONAL INFORMATION.
2. RELOCATE OR INSTALL TEMPORARY SIGNS, DRUMS, AND OTHER TRAFFIC MANAGEMENT DEVICES AS REQUIRED BY THE ENGINEER.
3. REFER TO ADVANCED WARNING SCHEMATIC FOR SIGNING IN ADVANCE OF WORK AREA.
4. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AND ACCESS TO ALL ABUTTING PROPERTIES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. WORK ZONE HATCH REPRESENTS POTENTIAL WORK ZONE. ACCESS TO ALL ABUTTING PROPERTIES AND BUSINESSES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

PHASE 3 NOTES:

1. SEE BRIDGE PLAN SHEETS 15 (FALL RIVER BRIDGE) & 6 (I-91 BRIDGE) FOR DEMOLITION PLAN.
2. REMOVE TEMPORARY PAVEMENT MARKINGS FROM PHASE 2 CONSTRUCTION AS NECESSARY.
3. CONSTRUCT BRIDGE ITEMS IN WORK ZONES. SEE BRIDGE PLAN SHEETS 15 (FALL RIVER BRIDGE) & 6 (I-91 BRIDGE) FOR STAGE 3 CONSTRUCTION PLANS.
4. CONSTRUCT HIGHWAY ITEMS IN WORK ZONES INCLUDING, BUT NOT LIMITED TO, GUARDRAIL, EDGING, AND LOAM AND SEED.

LEGEND:

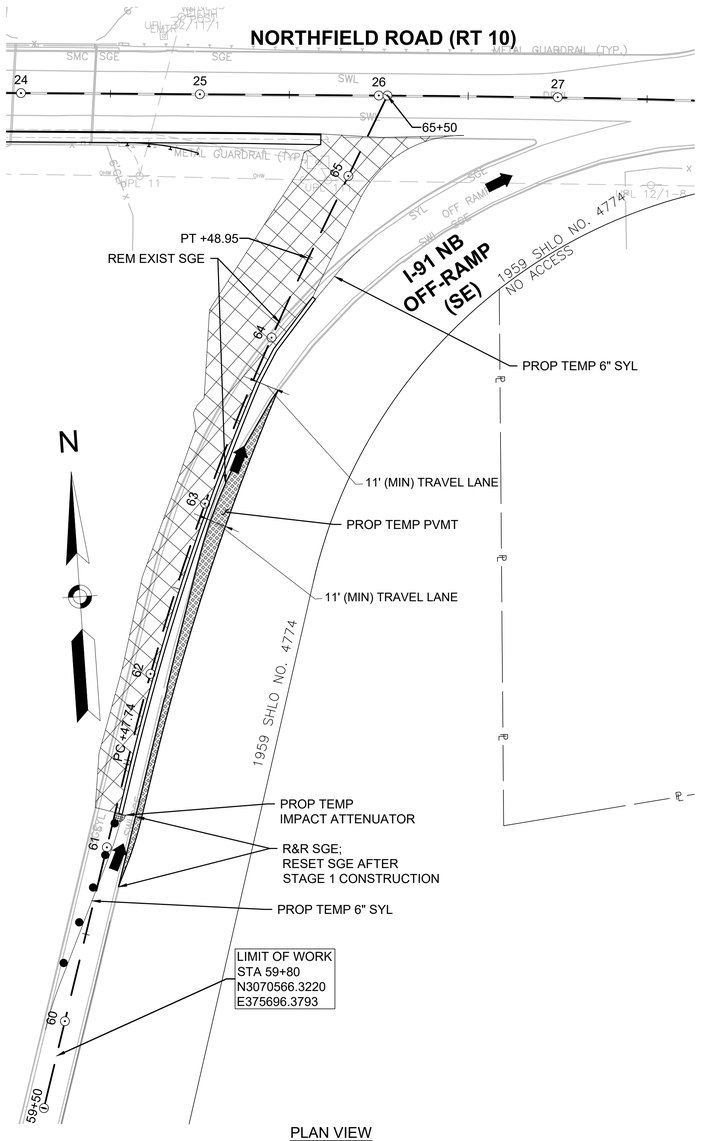
- WORK ZONE
- TEMPORARY PAVEMENT
- VEHICULAR DIRECTION OF TRAVEL
- REFLECTORIZED PLASTIC DRUM
- TL-3 BARRIER
- IMPACT ATTENUATOR

GENERAL NOTES:

1. REFER TO TEMPORARY TRAFFIC CONTROL PLAN DETAILS AND MASSDOT CONSTRUCTION STANDARD DETAILS FOR ADDITIONAL INFORMATION.
2. REFER TO ADVANCED WARNING SCHEMATIC FOR SIGNING IN ADVANCE OF WORK AREA.
3. I-91 NB OFF-RAMP (SE) TO REMAIN OPEN FOR THE DURATION OF CONSTRUCTION.
4. MAINTAIN EXISTING SIGNING ALONG I-91 NB OFF-RAMP (SE).
5. I-91 NB OFF RAMP (SE) TO BE CONSTRUCTED AFTER STAGE 3 OF RTE 10 OVER I-91 BRIDGE (B-10-018(12C)) CONSTRUCTION.

STAGE 1 NOTES:

1. INSTALL TEMPORARY PAVEMENT. REMOVE EXIST SGE WITHIN TEMPORARY PAVEMENT (TO BE RESET IN PHASE 2).
2. INSTALL TEMPORARY SIGNS, TEMPORARY PAVEMENT MARKINGS, REFLECTORIZED DRUMS, AND OTHER TRAFFIC MANAGEMENT DEVICES AS REQUIRED BY THE ENGINEER.
3. CONSTRUCT HIGHWAY ITEMS IN WORK ZONE INCLUDING, BUT NOT LIMITED TO, FULL DEPTH PAVEMENT, SGE, VGC, CC SW, CC PCR, PAVEMENT MARKINGS, LOAM & SEED.

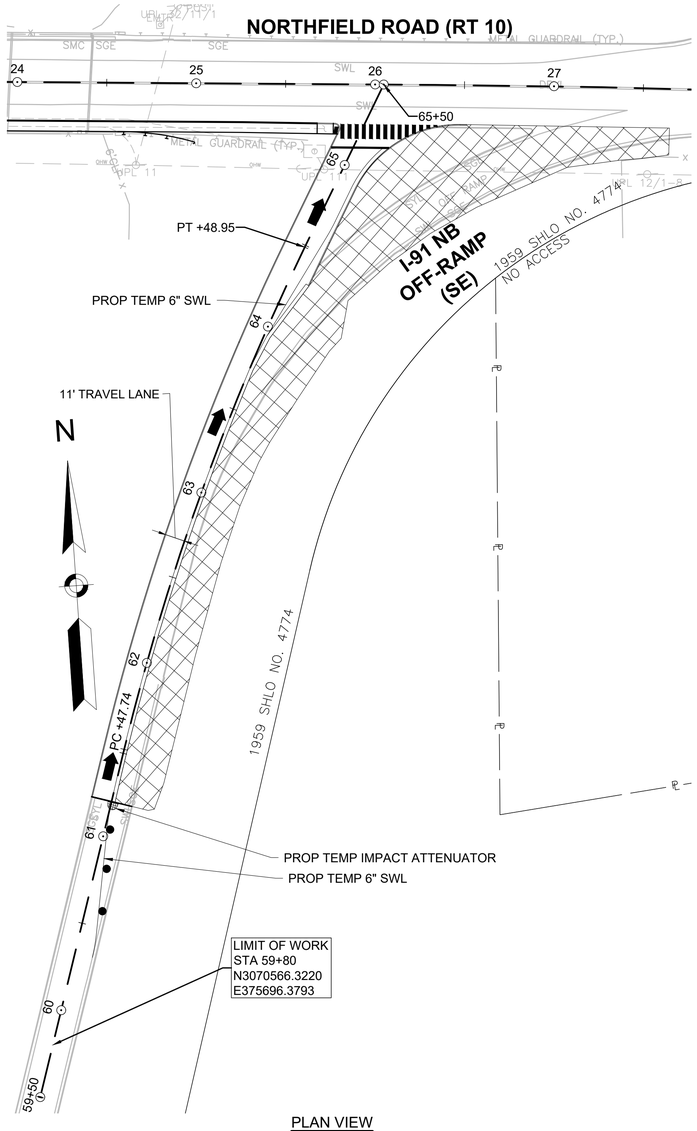


PLAN VIEW
STAGE 1 CONSTRUCTION
I-91 NB OFF-RAMP (SE)
TEMPORARY TRAFFIC CONTROL

SCALE: 1" = 40'

STAGE 2 NOTES:

1. INSTALL TEMPORARY SIGNS, TEMPORARY PAVEMENT MARKINGS, REFLECTORIZED DRUMS, AND OTHER TRAFFIC MANAGEMENT DEVICES AS REQUIRED BY THE ENGINEER.
2. REMOVE TEMPORARY PAVEMENT MARKINGS FROM PHASE 1 CONSTRUCTION AS NECESSARY.
3. CONSTRUCT HIGHWAY ITEMS IN WORK ZONE INCLUDING, BUT NOT LIMITED TO, FULL DEPTH PAVEMENT, SGE, VGC, CC SW, CC PCR, PAVEMENT MARKINGS, LOAM & SEED.
4. REMOVE TEMPORARY PAVEMENT FROM PHASE 1 CONSTRUCTION.



PLAN VIEW
STAGE 2 CONSTRUCTION
I-91 NB OFF-RAMP (SE)
TEMPORARY TRAFFIC CONTROL

SCALE: 1" = 40'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	38	146
	PROJECT FILE NO. 612159		

STAGE CONSTRUCTION PLANS - 4 OF 7
I-91 NB OFF-RAMP (SE)

T1217.01_HD11_STAGE CONSTRUCTION PLANS.DWG Plotted on 27-Jul-2026 11:10 AM

GENERAL NOTES:

1. ALL DETOURS ARE ESTABLISHED, WHEN ENACTED, FOR 24 HOURS A DAY UNLESS SPECIFIED FOR A SHORTER DURATION DURING OTHER NECESSARY CONSTRUCTION ACTIVITIES (E.G. INDIVIDUAL BEAM PLACEMENT). THE DETOUR SHALL ONLY BE IMPLEMENTED WITH APPROVAL FROM MASSDOT AND THE ENGINEER.
2. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM WITH THE 2023 MANUAL ON UNIFORM TRAFFIC CONTROL (M.U.T.C.D.) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
3. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D.
4. TEMPORARY DETOUR SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY DETOUR.
5. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES NECESSARY FOR THE DETOUR CONDITIONS SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR DETOURING OF TRAFFIC.
6. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN THE "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
7. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
8. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
9. ALL DETOUR SIGNS SHALL BE INSTALLED WITHIN THE PUBLIC RIGHT OF WAY.

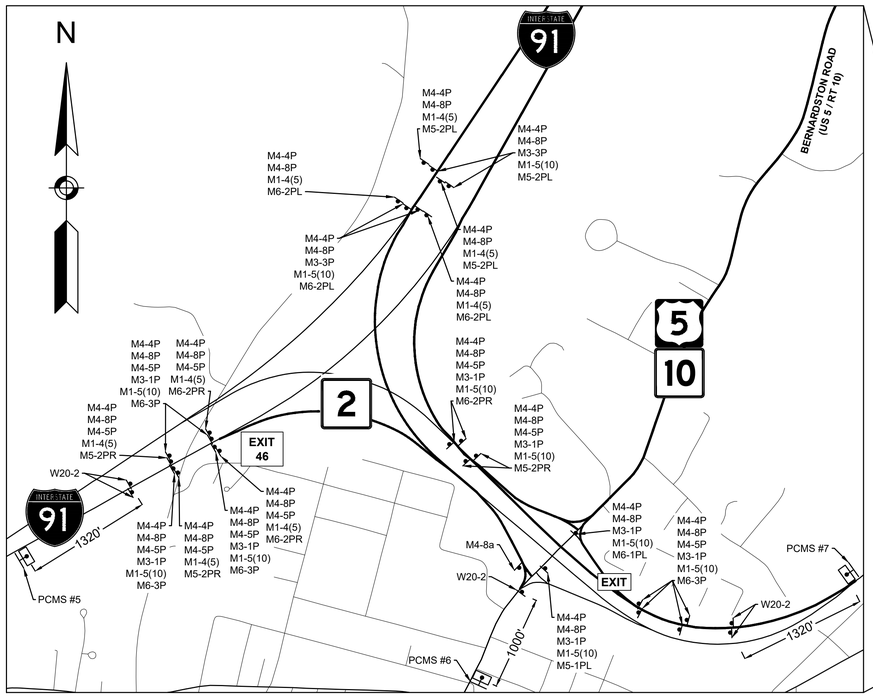
FULL CLOSURE NOTES:

1. ROUTE 10 SHALL BE CLOSED AT THE LOCATION OF FALL RIVER BRIDGE DURING NIGHT TIME / WEEKEND WORK. FULL WEEKEND CLOSURES ARE ANTICIPATED TO BE REQUIRED FOR DECK POURS DURING STAGE 2 AND 3 OF CONSTRUCTION. NIGHTTIME (NON-FULL WEEKEND) CLOSURES ARE ANTICIPATED FOR BEAM ERECTION AND DEMOLITION. THE FULL CLOSURE DETOUR SHALL ONLY BE IMPLEMENTED FROM 9:00 PM FRIDAY NIGHT UNTIL 5:00 AM MONDAY MORNING.

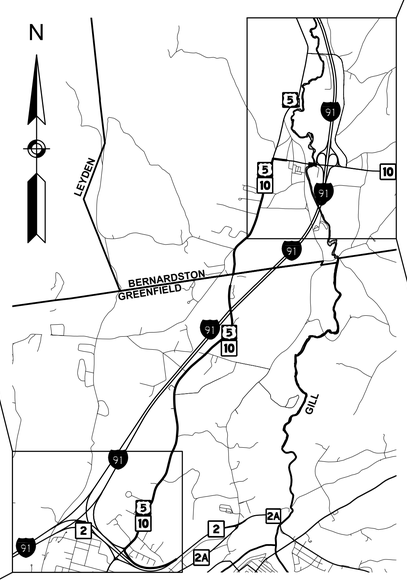
BERNARDSTON
RT 10

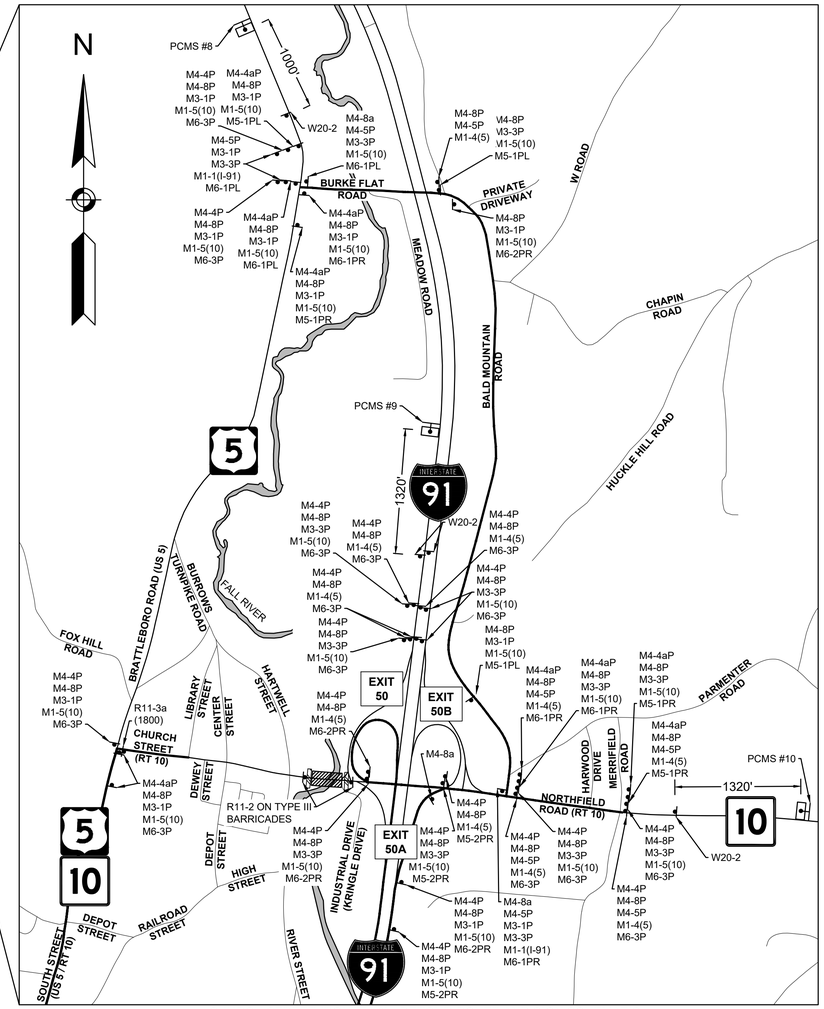
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	39	146
PROJECT FILE NO.	612159		

STAGE CONSTRUCTION PLAN - 5 OF 7
FALL RIVER BRIDGE NIGHT WORK DETOUR - 1 OF 3



CHURCH STREET (ROUTE 10) - DETOUR ROUTE AND SIGN SCHEMATIC
SCALE: 1"=750'

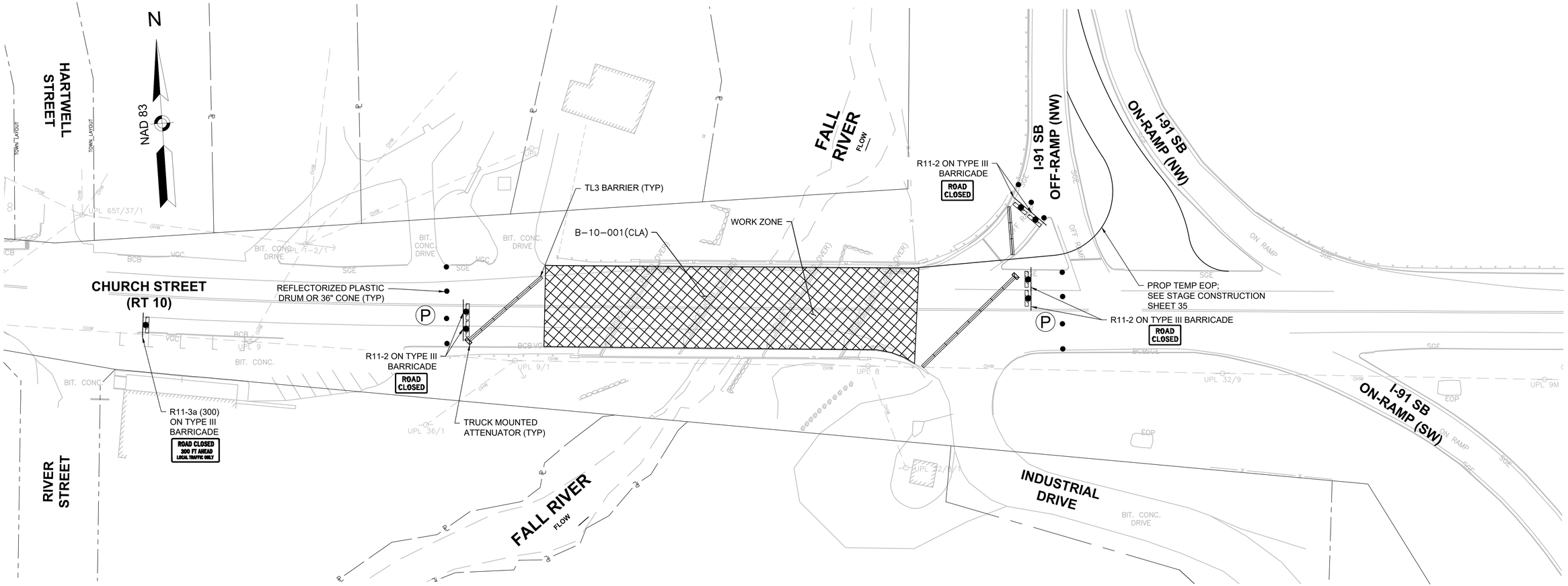



N
PCMS #8
PCMS #9
PCMS #10
1000'
1320'
W20-2
BURKE FLAT ROAD
PRIVATE DRIVEWAY
W ROAD
MEADOW ROAD
BALD MOUNTAIN ROAD
CHAPIN ROAD
HUCKLE HILL ROAD
PARMENTER ROAD
FOX HILL ROAD
BRATTLEBORO ROAD (US 5)
BURROWS TURNPIKE ROAD
FALL RIVER
LIBRARY STREET
CENTER STREET
HARTWELL STREET
CHURCH STREET (RT 10)
DEWEY STREET
DEPOT STREET
HIGH STREET
RAILROAD STREET
INDUSTRIAL DRIVE (KRINGLE DRIVE)
RIVER STREET
SOUTH STREET (UST RT 10)
HARWOOD DRIVE
MERRIFIELD ROAD
NORTHFIELD ROAD (RT 10)
R11-3a (1800)
R11-2 ON TYPE III BARRICADES
EXIT 50
EXIT 50B
EXIT 50A
INTERSTATE 91
5
10
M4-4P M4-8P M3-1P M1-5(10) M6-3P
M4-4P M4-8P M4-5P M1-4(5) M6-3P
M4-4P M4-8P M3-3P M1-5(10) M6-3P
M4-4P M4-8P M1-4(5) M6-3P
M4-4P M4-8P M3-1P M1-5(10) M6-3P
M4-4aP M4-8P M3-1P M1-5(10) M6-1PL
M4-4aP M4-8P M3-1P M1-5(10) M6-1PR
M4-4aP M4-8P M3-1P M1-5(10) M6-1PL
M4-4aP M4-8P M3-1P M1-5(10) M6-1PR
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M4-8P M3-1P M1-5(10) M6-2PR
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M4-8P M3-1P M1-5(10) M5-2PR
M4-8P M3-1P M1-5(10) M6-2PR
M4-8P M3-1P M1-5(10

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	40	146
	PROJECT FILE NO. 612159		

STAGE CONSTRUCTION PLAN - 6 OF 7
FALL RIVER BRIDGE NIGHT WORK DETOUR - 2 OF 3



FALL RIVER BRIDGE - FULL CLOSURE DETAIL

SCALE: 1" = 30'

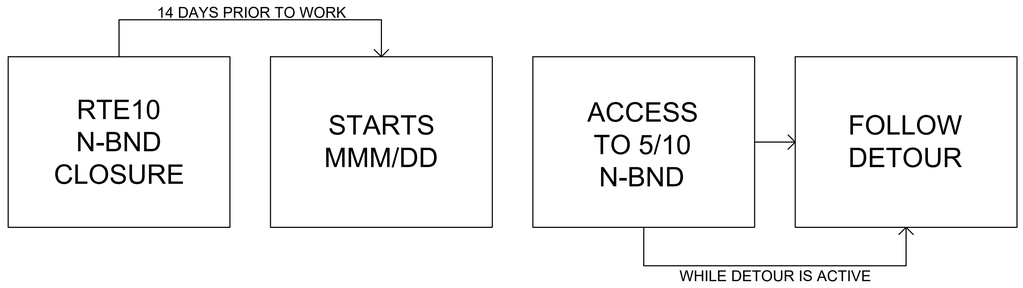
T1217.01_HD10_TTCP & DETOUR.DWG Plotted on 27-Jul-2026 11:11 AM

BERNARDSTON
RT 10

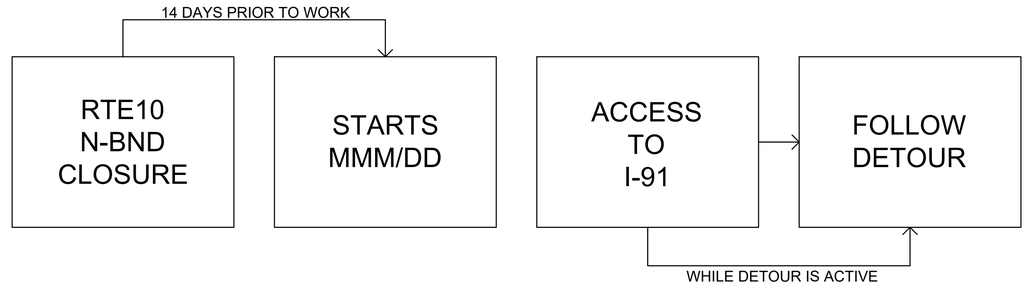
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	41	146
	PROJECT FILE NO. 612159		

STAGE CONSTRUCTION PLAN - 7 OF 7
FALL RIVER BRIDGE NIGHT WORK DETOUR - 3 OF 3

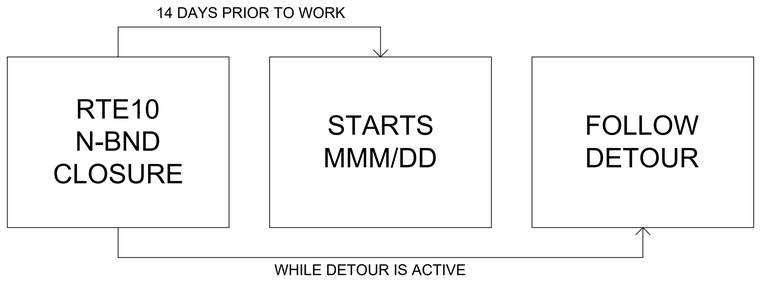
T1217.01_HD10_TTCP & DETOUR.DWG Plotted on 27-Jul-2026 11:11 AM



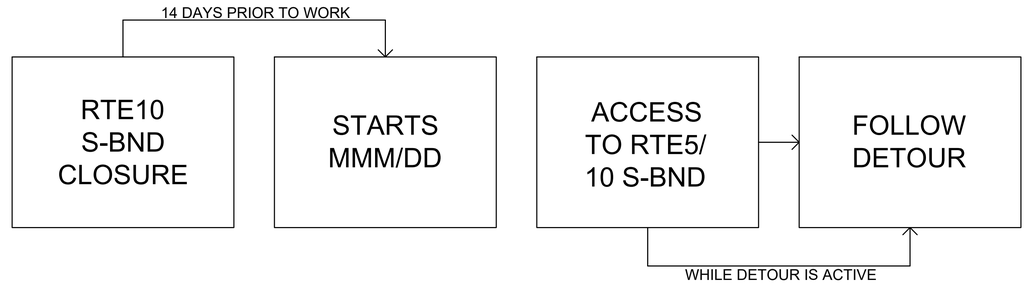
PORTABLE CHANGEABLE MESSAGE SIGNS #5



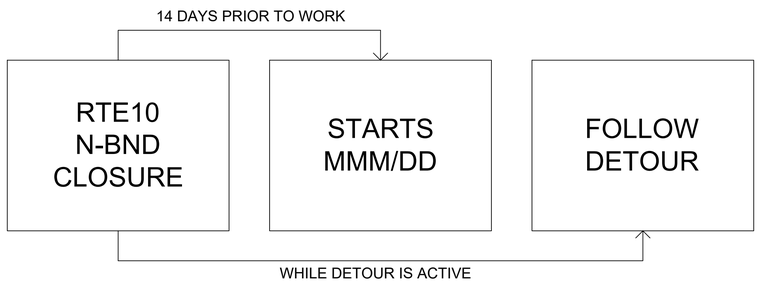
PORTABLE CHANGEABLE MESSAGE SIGNS #8



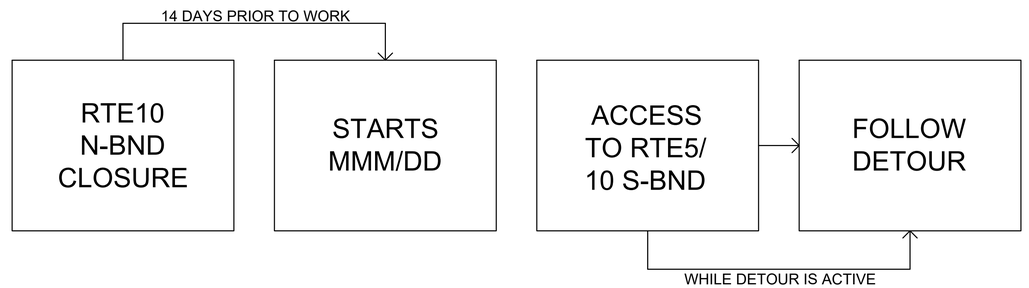
PORTABLE CHANGEABLE MESSAGE SIGNS #6



PORTABLE CHANGEABLE MESSAGE SIGNS #9

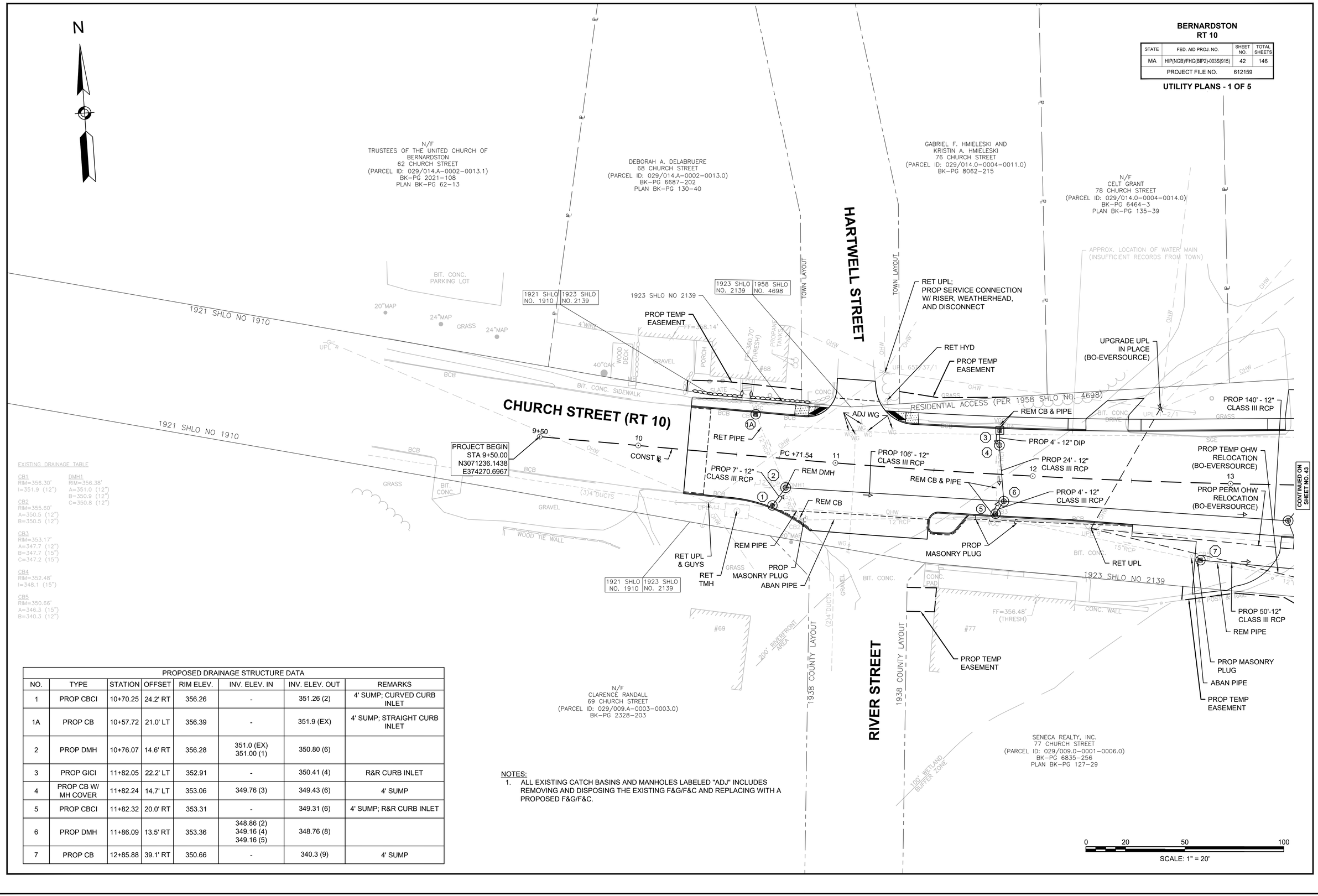


PORTABLE CHANGEABLE MESSAGE SIGNS #7



PORTABLE CHANGEABLE MESSAGE SIGNS #10

DETOUR NOTES:
1. PCMS #1, #2, #3, AND #4 CAN BE USED AS PCMS #5-#10 SHOULD TIMEFRAME NOT OVERLAP.



EXISTING DRAINAGE TABLE

CB1
RIM=356.30'
I=351.9 (12")

CB2
RIM=355.60'
A=350.5 (12")
B=350.5 (12")

CB3
RIM=353.17'
A=347.7 (12")
B=347.7 (15")
C=347.2 (15")

CB4
RIM=352.48'
I=348.1 (15")

CB5
RIM=350.66'
A=346.3 (15")
B=340.3 (12")

DMH1
RIM=356.38'
A=351.0 (12")
B=350.9 (12")
C=350.8 (12")

PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	PROP CBCI	10+70.25	24.2' RT	356.26	-	351.26 (2)	4' SUMP; CURVED CURB INLET
1A	PROP CB	10+57.72	21.0' LT	356.39	-	351.9 (EX)	4' SUMP; STRAIGHT CURB INLET
2	PROP DMH	10+76.07	14.6' RT	356.28	351.0 (EX) 351.00 (1)	350.80 (6)	
3	PROP GICI	11+82.05	22.2' LT	352.91	-	350.41 (4)	R&R CURB INLET
4	PROP CB W/ MH COVER	11+82.24	14.7' LT	353.06	349.76 (3)	349.43 (6)	4' SUMP
5	PROP CBCI	11+82.32	20.0' RT	353.31	-	349.31 (6)	4' SUMP; R&R CURB INLET
6	PROP DMH	11+86.09	13.5' RT	353.36	348.86 (2) 349.16 (4) 349.16 (5)	348.76 (8)	
7	PROP CB	12+85.88	39.1' RT	350.66	-	340.3 (9)	4' SUMP

N/F
CLARENCE RANDALL
69 CHURCH STREET
(PARCEL ID: 029/009.A-0003-0003.0)
BK-PG 2328-203

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

NOTES:
1. ALL EXISTING CATCH BASINS AND MANHOLES LABELED "ADJ" INCLUDES REMOVING AND DISPOSING THE EXISTING F&G/F&C AND REPLACING WITH A PROPOSED F&G/F&C.

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
7	PROP CB	12+85.88	39.1' RT	350.66	-	340.30 (9)	4' SUMP
8	PROP DMH	13+29.39	18.2' RT	350.88	346.38 (6) 344.76 (13)	344.66 (9)	
9	PROP DMH	13+38.96	42.9' RT	349.50	339.78 (7) 344.43 (8) 345.28 (10)	339.68 (11)	5' DIAMETER
10	PROP CBCI	13+52.51	26.0' RT	350.37	-	345.87 (9)	4' SUMP; STRAIGHT CURB INLET
11	PROP FES	14+00.36	55.6' RT	-		337.29 (9)	12"
12	PROP GI	13+58.73	27.0' LT	349.73	-	347.23 (13)	NO CURB INLET
13	PROP CB W/ MH COVER	13+58.73	19.5' LT	349.87	346.57 (12)	345.20 (8)	4' SUMP
14	PROP CB	13+99.22	83.5' LT	344.57	-	340.57 (15) 339.07 (TEMP)	4' SUMP; REM EX CB
15	PROP HDWL	15+41.07	47.0' LT	-	-	319.31 (14)	SEE CONST STD DETAIL 230.0.1
15A	PROP FES	15+53.41	58.4' RT	-	-	328.00 (15D)	12"
15B	PROP CB	16+46.49	74.1' RT	345.67	339.7 (EX)	339.60 (15D)	4' SUMP
15C	PROP CB	16+72.90	66.0' RT	346.02	-	341.70 (15E)	4' SUMP
15D	PROP DMH	16+48.17	62.7' RT	346.17	340.35 (17) 338.40 (15E) 339.50 (15B)	338.30 (15A)	

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
15E	PROP DMH	16+72.66	55.9' RT	346.51	338.70 (48) 341.60 (15C)	338.60 (15D)	
16	PROP CBCI	16+24.53	26.0' RT	347.58	-	343.31 (17)	4' SUMP; STRAIGHT CURB INLET
17	CIT TO DMH	16+53.79	24.5' RT	347.56	343.06 (16) 343.00 (19A) 343.06 (20)	340.70 (15D)	CORE HOLES IN EXIST
18	PROP GICI	16+66.36	29.4' LT	347.41	-	344.91 (19)	STRAIGHT CURB INLET
19	PROP CB W/ MH COVER	16+69.63	17.1' LT	347.72	344.80 (18)	343.50 (19A)	
19A	PROP DMH	16+78.15	17.1' LT	347.75	343.45 (19) 343.55 (19B)	343.35 (17)	
19B	PROP CB W/ MH COVER	17+71.47	17.0' LT	348.59	345.90 (20A)	344.40 (19A)	
20	PROP CBCI	17+30.25	25.0' RT	347.92		*343.29 (50) **343.79 (17)	4' SUMP; STRAIGHT CURB INLET
20A	PROP GICI	17+71.46	24.0' LT	348.46	-	345.96 (19B)	R&R CURB INLET
48	PROP DMH	17+85.93	81.5' RT	344.15	339.90 (49) 342.6 (EX)	339.80 (15E)	REMODEL, REPLACE EXIST DOUBLE HOLE TOP SECTION OF STRUCTURE WITH SINGLE HOLE TOP SECTION (PAID FOR UNDER ITEM 202.), CORE HOLE IN EXIST
49	PROP LEACHING BASIN W/ F&G	17+95.52	80.5' RT	344.05		340.00 (48)	4' SUMP
50	PROP LEACHING BASIN W/ MH COVER	17+30.25	32.0' RT	348.49	343.19 (20)		4' SUMP

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	43	146
PROJECT FILE NO. 612159			

UTILITY PLANS - 2 OF 5

EXISTING DRAINAGE TABLE

CB5
RIM=350.66'
A=346.3 (15")
B=340.3 (12")

CB6
RIM=349.21'
I=346.6 (12")

CB7
RIM=344.57'
A=341.8 (12")
B=341.6 (12")

CB8
RIM=345.67'
A=339.6 (15")
B=339.7 (12")
C=340.1 (12")
D=339.7 (12")

CB9
RIM=346.02'
A=341.4 (12")
B=341.5 (12")

CB10
RIM=347.37'
A=340.7 (12")
B=341.1 (12")

CB11
RIM=346.64'
A=342.8 (12")
B=343.2 (12")

CB12
RIM=348.19'
I=343.4 (12")

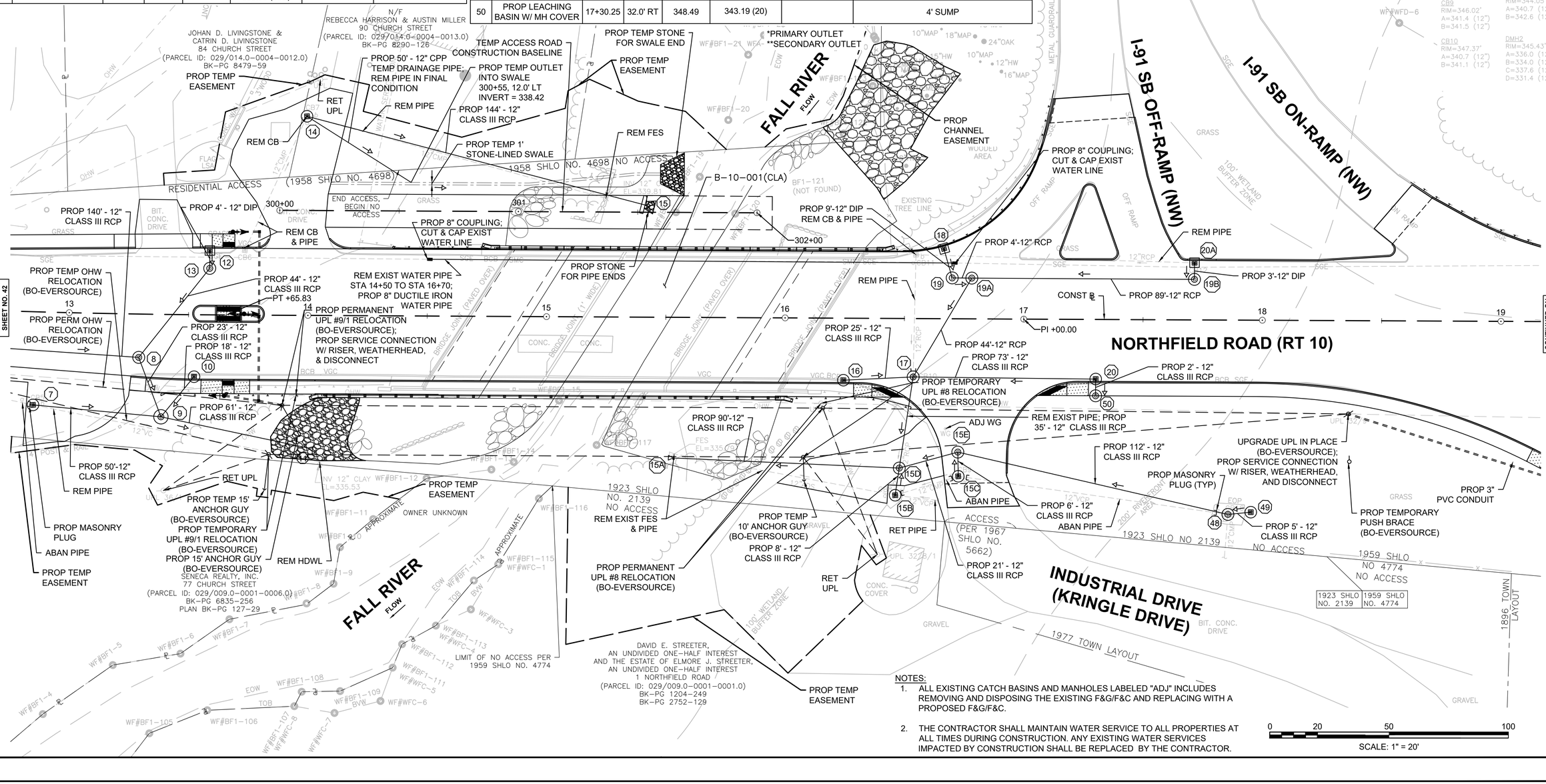
CB13
RIM=345.51'
I=349.4 (12")

CB14
RIM=343.79'
I=338.1 (12")

CB15
RIM=343.24
I=337.3 (12")

CB16
RIM=344.05'
A=340.7 (12")
B=342.6 (12")

DMH2
RIM=345.43'
A=336.0 (12")
B=334.0 (12")
C=337.6 (12")
D=331.4 (12")



NOTES:

1. ALL EXISTING CATCH BASINS AND MANHOLES LABELED "ADJ" INCLUDES REMOVING AND DISPOSING THE EXISTING F&G/F&C AND REPLACING WITH A PROPOSED F&G/F&C.
2. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO ALL PROPERTIES AT ALL TIMES DURING CONSTRUCTION. ANY EXISTING WATER SERVICES IMPACTED BY CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR.

0 20 50 100
SCALE: 1" = 20'

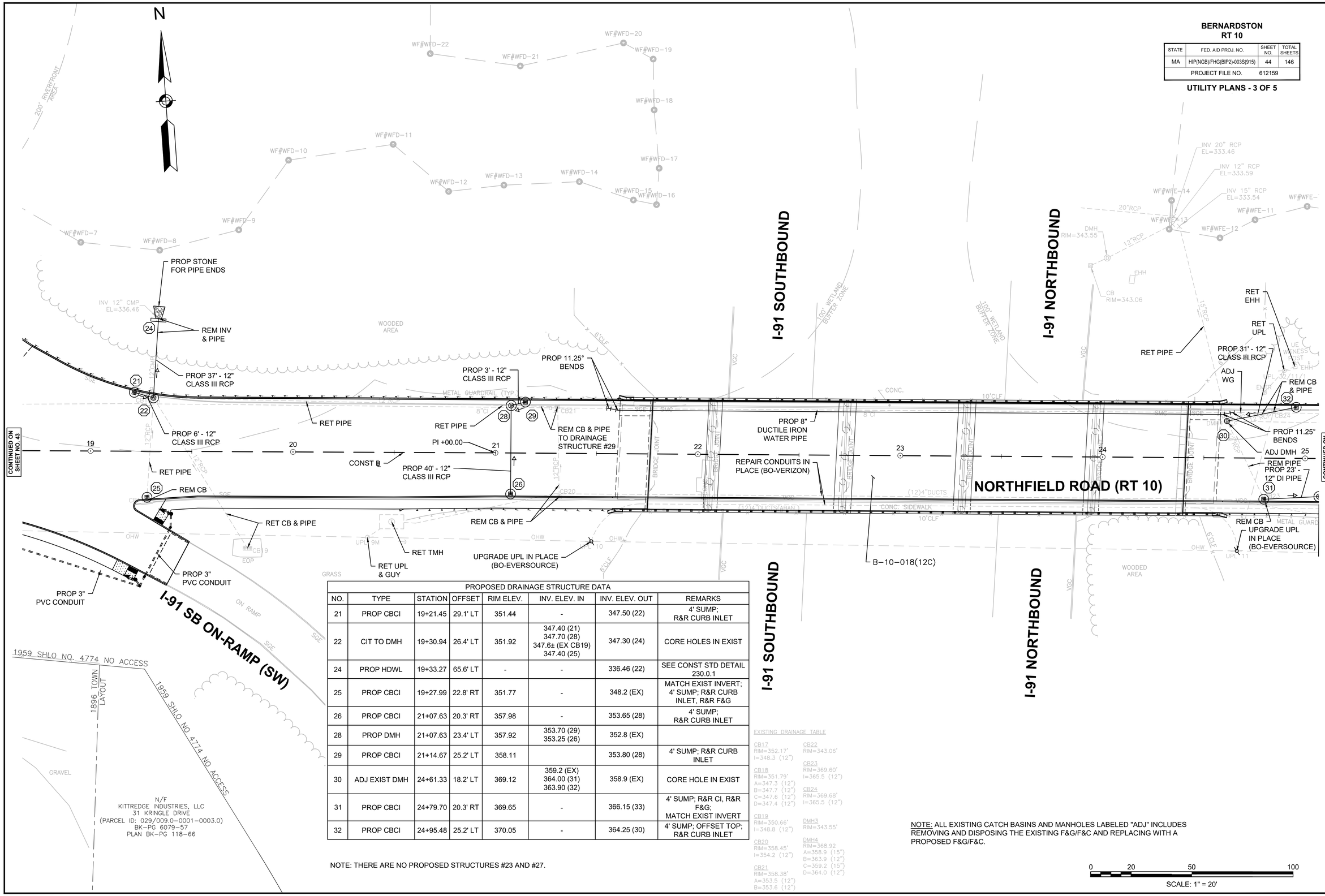
T1217.01_HD12_UTILITY PLANS.DWG Plotted on 27-Jul-2026 11:12 AM

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	44	146
	PROJECT FILE NO. 612159		

UTILITY PLANS - 3 OF 5

T1217.01_HD12_UTILITY PLANS.DWG Plotted on 27-Jul-2026 11:12 AM



PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
21	PROP CBCI	19+21.45	29.1' LT	351.44	-	347.50 (22)	4' SUMP; R&R CURB INLET
22	CIT TO DMH	19+30.94	26.4' LT	351.92	347.40 (21) 347.70 (28) 347.6± (EX CB19) 347.40 (25)	347.30 (24)	CORE HOLES IN EXIST
24	PROP HDWL	19+33.27	65.6' LT	-	-	336.46 (22)	SEE CONST STD DETAIL 230.0.1
25	PROP CBCI	19+27.99	22.8' RT	351.77	-	348.2 (EX)	MATCH EXIST INVERT; 4' SUMP; R&R CURB INLET, R&R F&G
26	PROP CBCI	21+07.63	20.3' RT	357.98	-	353.65 (28)	4' SUMP; R&R CURB INLET
28	PROP DMH	21+07.63	23.4' LT	357.92	353.70 (29) 353.25 (26)	352.8 (EX)	
29	PROP CBCI	21+14.67	25.2' LT	358.11		353.80 (28)	4' SUMP; R&R CURB INLET
30	ADJ EXIST DMH	24+61.33	18.2' LT	369.12	359.2 (EX) 364.00 (31) 363.90 (32)	358.9 (EX)	CORE HOLE IN EXIST
31	PROP CBCI	24+79.70	20.3' RT	369.65	-	366.15 (33)	4' SUMP; R&R CI, R&R F&G; MATCH EXIST INVERT
32	PROP CBCI	24+95.48	25.2' LT	370.05	-	364.25 (30)	4' SUMP; OFFSET TOP; R&R CURB INLET

NOTE: THERE ARE NO PROPOSED STRUCTURES #23 AND #27.

EXISTING DRAINAGE TABLE

CB17
RIM=352.17'
I=348.3 (12")

CB18
RIM=351.79'
A=347.3 (12")
B=347.7 (12")
C=347.6 (12")
D=347.4 (12")

CB19
RIM=350.66'
I=348.8 (12")

CB20
RIM=358.45'
I=354.2 (12")

CB21
RIM=358.38'
A=353.5 (12")
B=353.6 (12")

CB22
RIM=343.06'

CB23
RIM=369.60'
I=365.5 (12")

CB24
RIM=369.68'
I=365.5 (12")

DMH3
RIM=343.55'

DMH4
RIM=368.92
A=358.9 (15")
B=363.9 (12")
C=359.2 (15")
D=364.0 (12")

NOTE: ALL EXISTING CATCH BASINS AND MANHOLES LABELED "ADJ" INCLUDES REMOVING AND DISPOSING THE EXISTING F&G/F&C AND REPLACING WITH A PROPOSED F&G/F&C.

0 20 50 100
SCALE: 1" = 20'

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	45	146
	PROJECT FILE NO. 612159		

UTILITY PLANS - 4 OF 5

T:\217.01_HD\12_UTILITY PLANS.DWG Plotted on 27-Jul-2026 11:12 AM

N

EXISTING DRAINAGE TABLE

CB23 RIM=369.60' I=365.5 (12")
CB24 RIM=369.68' I=365.5 (12")
CB25 RIM=366.92' DI=366.8 I=361.4 (12")
CB26 DI STRUCTURE RIM=364.26' I=361.2 (12")
CB27 RIM=356.41' I=351.3 (12")
CB28 DI STRUCTURE RIM=348.24' I=342.4 (12")
CB29 RIM=342.53' I=336.8 (12")
CB30 RIM=370.42' I=365.9 (12")
CB31 RIM=379.36' I=375.9 (12")
CB32 RIM=377.88' I=373.1 (12")
CB33 RIM=378.68' A=373.4 (15") B=373.9 (12") C=373.9 (12")
CB34 RIM=380.10' A=375.4 (12") B=376.1 (12")
CB35 RIM=379.37' I=374.0 (12")
DMH4 RIM=368.92' A=358.9 (15") B=363.9 (12") C=359.2 (15") D=364.0 (12")
DMH5 RIM=366.02' A=359.9 (12") B=360.0 (12") C=360.0 (12") D=360.3 (12")
DMH6 RIM=356.18' A=350.3 (12") B=350.6 (12") C=350.3 (12")
DMH7 RIM=348.55' A=342.5 (12") B=342.3 (12") C=342.2 (12")
DMH8 RIM=378.03' A=363.8 (15") B=372.2 (12") C=364.0 (15") D=372.2 (15")
DMH9 RIM=380.10' A=365.1 (15") B=365.3 (15")

CONTINUED ON SHEET NO. 44
CONTINUED ON SHEET NO. 46

NORTHFIELD ROAD (RT 10)

I-91 NB OFF-RAMP (NE)
I-91 NB ON-RAMP (SE)
I-91 NB ON-RAMP (SE)
I-91 NB OFF-RAMP (SE)
I-91 NB OFF-RAMP (SE)

RET EHH
RET UPL
PROP 31' - 12" CLASS III RCP
ADJ WG
REM CB & PIPE
PROP 11.25° BENDS
ADJ DMH
REM PIPE
PROP 23' - 12" DI PIPE
REM CB
UPGRADE UPL IN PLACE (BO-EVERSOURCE)
ADJ TMH (BO-VERIZON)
PROP 143' - 12" DI PIPE
PC +33.45
65+50
PROP 40' - 12" CLASS III RCP PIPE
RELOCATE CONDUIT TO UPL #111 RISERS (BO-VERIZON)
RELOCATE UPL #111 (BO-EVERSOURCE); PROP 15' GUY (BO-EVERSOURCE); RELOCATE 2 RISERS (BO-VERIZON)
PROP 6" SLOT PERFORATED CPP (TYP) (ITEM 269.06)
PT +48.95
PROP 62' - 12" CLASS III RCP
REM CB
ABAN PIPE
PROP 54' - 12" CLASS III RCP
PROP MASONRY PLUGS
REM DMH
PROP 2' - 12" CLASS III RCP
REM PIPE
PROP 20' - 12" CLASS III RCP
RET PIPE
PROP 44' - 12" CLASS III RCP
PROP MASONRY PLUG
ABAN PIPE
PROP 24' - 12" CLASS III RCP
REM PIPE
PROP BIORETENTION BASIN (SEE LANDSCAPE PLAN & DETAIL SHEETS 50, 52)
PROP 17' - 12" CLASS III RCP
REM CB & PIPE
ADJ DMH
RET PIPE
RET PIPE
PROP 5' - 12" CLASS III RCP
PROP MASONRY PLUG
REM CB & PIPE
RET CB & PIPES
RET CB & PIPES
RET UPL & GUY
PROP TEMP EASEMENT
PROP TEMP EASEMENT
ADJ DMH
RET
RET CB & PIPE
UPGRADE UPL IN PLACE (BO-EVERSOURCE)
CONST B

1959 SHLO NO. 4774 | 1911 SHLO NO. 1345

1911 SHLO NO 1345

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
55 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0002.0)
BK-PG 962-132
PLAN BK-PG 8-56

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION
0 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0001-0001.0)
BK-PG 1603-110

CRUMPIN FOX CLUB, INC.
a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

OWNER UNKNOWN
0 NORTHFIELD ROAD

NO ACCESS 1959 SHLO NO 4774

CONTINUED RIGHT
CONTINUED LEFT

0 20 50 100
SCALE: 1" = 20'

NOTE: ALL EXISTING CATCH BASINS AND MANHOLES LABELED "ADJ" INCLUDES REMOVING AND DISPOSING THE EXISTING F&G/F&C AND REPLACING WITH A PROPOSED F&G/F&C.

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
30	ADJ EXIST DMH	24+61.33	18.2' LT	369.12	359.2 (EX) 363.90 (32)	358.9 (EX)	CORE HOLE IN EXIST
31	PROP CBCI	24+79.70	20.3' RT	369.65	-	366.15 (33)	4' SUMP; R&R CI, R&R F&G; MATCH EXIST INVERT
32	PROP CBCI	24+95.48	*25.9' LT	370.05	-	364.25 (30)	4' SUMP; OFFSET TOP; R&R CURB INLET
33	PROP DMH	25+07.01	18.8' RT	370.54	366.00 (31) 366.25 (34)	365.90 (33A)	
33A	PROP FES	25+07.00	60.9' RT	-		365.50	12"
34	PROP CBCI	26+54.01	21.0' RT	374.95	-	370.65 (33)	4' SUMP; STRAIGHT CURB INLET
35	PROP CBCI	64+64.00	10.0' RT	370.84	-	366.34 (37)	4' SUMP; STRAIGHT CURB INLET
36	PROP CB	64+05.74	32.4' RT	366.73	-	361.42 (37)	4' SUMP
37	PROP DMH	64+03.44	15.0' LT	368.44	363.44 (35) 360.94 (36) 360.96 (37A)	360.84 (39)	
37A	PROP DMH W/ F&G	64+04.85	43.0' LT	365.75		361.20 (37)	
38	PROP CB	63+46.05	20.8' LT	364.26	-	361.20 (39)	4' SUMP
39	PROP DMH	63+46.00	14.5' LT	365.20	359.20 (37) 361.10 (38)	359.10 (40)	
40	PROP DMH	63+22.95	9.5' LT	363.55	358.05 (39)	357.8± (EX)	MATCH EXIST INVERT OUT
40A	PROP CB	61+91.70	10.0' RT	356.47	-	351.3 (EX)	4' SUMP; R&R CURB INLET
41	ADJ EXIST DMH	28+12.93	16.8' LT	378.08	373.58 (42) 372.2 (EX CB3) 364.0 (EX DMH 9)	363.80 (33)	CORE HOLE IN EXIST
42	PROP CB	28+33.17	23.7' LT	378.24	-	373.74 (41)	4' SUMP
43	PROP DMH	28+67.56	25.4' RT	379.30	374.33 (44) 373.2 (EX)	373.1 (EX)	MATCH EXIST INVERT OUT
44	PROP CB	28+75.14	21.0' RT	378.88		374.38 (43)	4' SUMP

*OFFSET PROVIDED IS TO CENTER OF PROPOSED STRUCTURE

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	46	146
	PROJECT FILE NO. 612159		

UTILITY PLANS - 5 OF 5

T1217.01_HD12_UTILITY PLANS.DWG Plotted on 27-Jul-2026 11:12 AM

N

WOODED AREA

N/F
STEVEN S. HEAN
12 BALD MOUNTAIN ROAD
(PARCEL ID: 029/014.0-0005-0018.3)
BK-PG 6423-240
PLAN BK-PG 86-95

PARMENTER ROAD

1958 SHLO NO 4698 NO ACCESS

N/F
ANNEMARIE C. MASON
2 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0003-0001.0)
BK-PG 6498-328

1958 TOWN LAYOUT NO. 4698

BALD MOUNTAIN ROAD

HEIRS, DEVISEES AND LEGAL REPRESENTATIVES OF THE ESTATE OF COLA R. NELSON
5 BALD MOUNTAIN ROAD
(PARCEL ID: 029/009.0-0004-0001.0)
BK-PG 1321-213

NEAL R. BARDWELL
210 PARMENTER ROAD
(PARCEL ID: 029/009.0-0004-0002.0)
BK-PG 2568-16

I-91 NB ON-RAMP (SE)

ADJ DMH

RET HYD

RET PIPE

6'WOOD STOCKADE

ADJ WG

RET DI & PIPE

72"HW

ADJ DMH

RET GPL

PROP TEMP EASEMENT

RET ULT & GUY; PROP SERVICE CONNECTION W/ RISER, WEATHERHEAD, AND DISCONNECT

1958 SHLO NO. 4698	1966 SHLO NO. 5556

PROP TEMP EASEMENT

CONTINUED ON SHEET NO. 45

31 PT +03.93

CONST ℄

32

33 PI +00.00

34

35

36

NORTHFIELD ROAD (RT 10)

1911 SHLO NO 1345

1927 SHLO NO 2456

1966 SHLO NO. 5556

PROP 5' - 12" CLASS III RCP

PROP 7' -12" CLASS III RCP

RET PIPE

PROP 3" PVC CONDUIT

PROJECT END
STA 35+90.00
N3070965.0613
E376895.4280

PROP TEMP EASEMENT

1911 SHLO NO. 1345	1927 SHLO NO. 2456

RET UPL & GUY

PROP DRAINAGE EASEMENT

REM CB & PIPE

PROP RRFB (TYP)

PROP PB (TYP)

PROP TEMP EASEMENT

RET UPL & GUY

1927 SHLO NO. 2456	1966 SHLO NO. 5556

JMPIN FOX CLUB, INC.
CRUMPIN-FOX CLUB, INC.
-73 NORTHFIELD ROAD
029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
'LAN BK-PG 84-69

CRUMPIN FOX CLUB, INC. a/k/a CRUMPIN-FOX CLUB, INC.
71-73 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0003.0-6.0)
BK-PG 2759-120
PLAN BK-PG 84-69

THE HEIRLOOM COLLECTIVE, INC.
87 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0002-0009.0)
BK-PG 8077-122
PLAN BK-PG 150-96

EXISTING DRAINAGE TABLE

CB36
RIM=376.41'
I=372.4 (18")

CB37
RIM=372.77'
I=367.8 (12")

DI1
RIM=371.6'
I=368.2 (12")

DMH9
RIM=380.10'
A=365.1 (15")
B=365.3 (15")

DMH10
RIM=377.69'
A=367.3 (15")
B=367.9 (12")
C=367.4 (15")
D=NVP (18")

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
45	PROP CBCI	33+41.16	19.0' RT	378.12	-	373.62 (46)	4' SUMP; STRAIGHT CURB INLET
46	PROP DMH	33+48.09	25.0' RT	378.56	373.52 (45) 372.3 (47)	372.2± (EX)	MATCH EXIST PIPE INVERTS
47	PROP DROP INLET, TYPE DF	33+44.68	35.7' RT	376.45		372.40 (46)	SEE CONSTRUCTION DETAIL 209.1.1

NOTE: ALL EXISTING CATCH BASINS AND MANHOLES LABELED "ADJ" INCLUDES REMOVING AND DISPOSING THE EXISTING F&G/F&C AND REPLACING WITH A PROPOSED F&G/F&C.

0 20 50 100

SCALE: 1" = 20'

LEGEND

= AGED BARK MULCH (ITEM 767.6)

= LOAM FOR ROADSIDES (ITEM 751.) (MIX ITEM 765. - SEEDING)

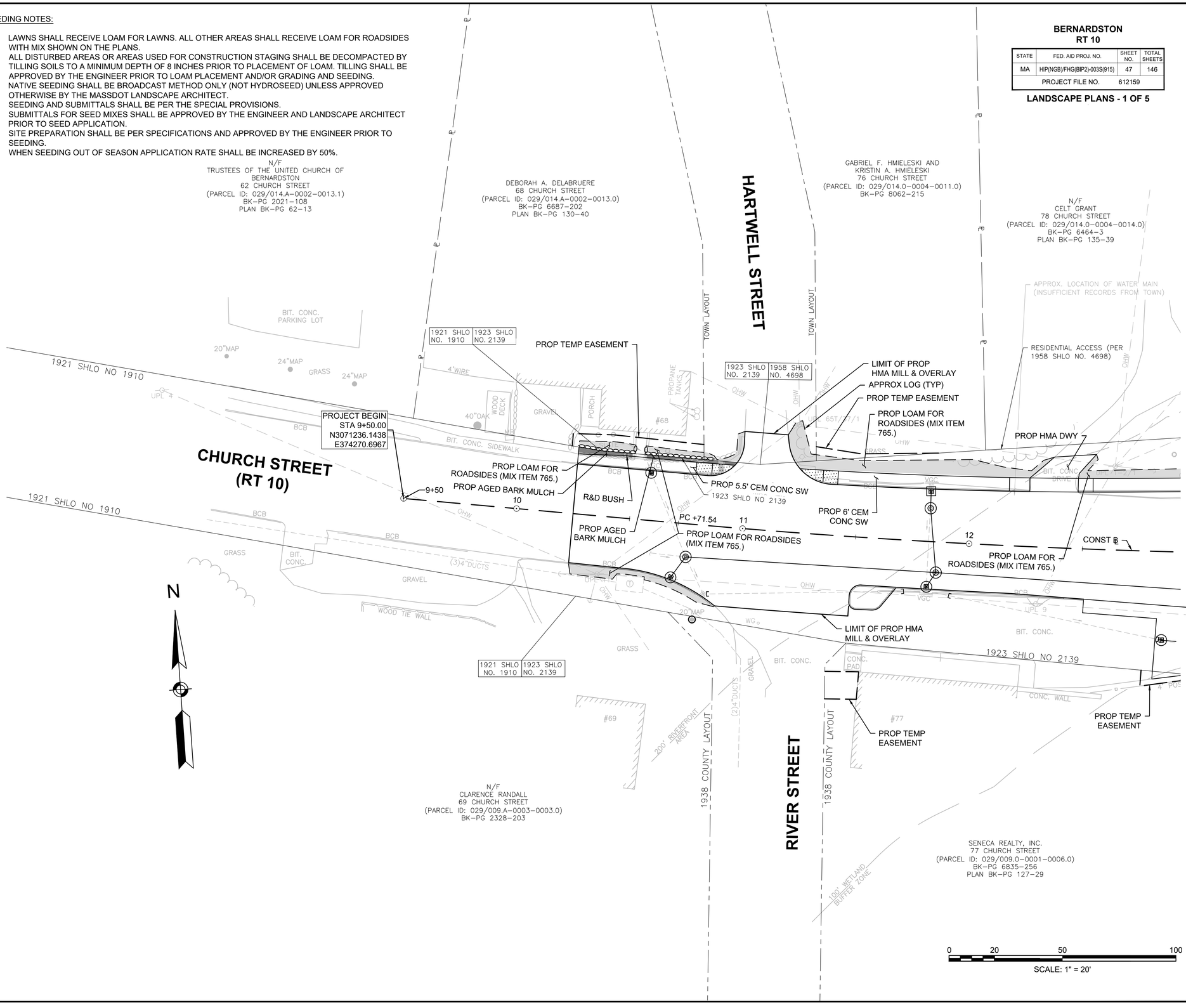
SEEDING NOTES:

1. LAWNS SHALL RECEIVE LOAM FOR LAWNS. ALL OTHER AREAS SHALL RECEIVE LOAM FOR ROADSIDES WITH MIX SHOWN ON THE PLANS.
2. ALL DISTURBED AREAS OR AREAS USED FOR CONSTRUCTION STAGING SHALL BE DECOMPACTED BY TILLING SOILS TO A MINIMUM DEPTH OF 8 INCHES PRIOR TO PLACEMENT OF LOAM. TILLING SHALL BE APPROVED BY THE ENGINEER PRIOR TO LOAM PLACEMENT AND/OR GRADING AND SEEDING.
3. NATIVE SEEDING SHALL BE BROADCAST METHOD ONLY (NOT HYDROSEED) UNLESS APPROVED OTHERWISE BY THE MASSDOT LANDSCAPE ARCHITECT.
4. SEEDING AND SUBMITTALS SHALL BE PER THE SPECIAL PROVISIONS.
5. SUBMITTALS FOR SEED MIXES SHALL BE APPROVED BY THE ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO SEED APPLICATION.
6. SITE PREPARATION SHALL BE PER SPECIFICATIONS AND APPROVED BY THE ENGINEER PRIOR TO SEEDING.
7. WHEN SEEDING OUT OF SEASON APPLICATION RATE SHALL BE INCREASED BY 50%.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	47	146
PROJECT FILE NO.	612159		

LANDSCAPE PLANS - 1 OF 5



T1217.01_HD13_LANDSCAPE PLANS.DWG Plotted on 27-Jul-2026 11:13 AM

LEGEND

- = STREAMBED MATERIAL OVER ROCK (ITEM 983.521)
- = COMPOST AND SEED OVER ROCK (ITEM 751.766) (MIX ITEM 765.442 - ROADSIDE RIVERBANK MIX)
- = LOAM FOR ROADSIDES (ITEM 751.) (MIX ITEM 765. - SEEDING)
- = LOAM AND SEED W/ JUTE MESH (ITEMS 751. & 767.9) (MIX ITEM 765.442 - ROADSIDE RIVERBANK MIX)
- = LOAM FOR LAWNS (ITEM 751.1) (MIX ITEM 765. - SEEDING)
- = LOAM AND SEED (ITEM 751.) (MIX ITEM 765.411 - SHORT GRASSLAND MIX)

NOTES:

1. SEE SHEET 47 FOR SEEDING NOTES.
2. BRIDGE RIPRAP, DUMPED RIPRAP, AND MODIFIED ROCKFILL NOT SHOWN FOR CLARITY. SEE BRIDGE PLANS AND HIGHWAY CONSTRUCTION PLAN.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	48	146
PROJECT FILE NO.	612159		

LANDSCAPE PLANS - 2 OF 5

CONTINUED ON SHEET NO. 47

CONTINUED ON SHEET NO. 49

REBECCA HARRISON & AUSTIN MILLER
90 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0013.0)
BK-PG 8290-126

(SUBJECT TO A WATER PIPE EASEMENT RESERVED IN BK/PG 255/164)
(EXACT LOCATION NOT SPECIFIED)

GABRIEL F. HMIELESKI AND
KRISTIN A. HMIELESKI
94 CHURCH STREET
(PARCEL ID: 029/014.0-0004-0015.0)
BK-PG 8062-215

SENECA REALTY, INC.
77 CHURCH STREET
(PARCEL ID: 029/009.0-0001-0006.0)
BK-PG 6835-256
PLAN BK-PG 127-29

DAVID E. STREETER,
AN UNDIVIDED ONE-HALF INTEREST
AND THE ESTATE OF ELMORE J. STREETER,
AN UNDIVIDED ONE-HALF INTEREST
1 NORTHFIELD ROAD
(PARCEL ID: 029/009.0-0001-0001.0)
BK-PG 1204-249
BK-PG 2752-129

1958 SHLO NO. 4698 NO ACCESS

I-91 SB OFF-RAMP (NW)

I-91 SB ON-RAMP (NW)

NORTHFIELD ROAD (RT 10)

INDUSTRIAL DRIVE (KRINGLE DRIVE)

FALL RIVER FLOW

PROP TEMP EASEMENT
PROP LIMIT OF CLEARING AND GRUBBING
PROP TEMP EASEMENT
PROP HMA DWY
PROP LOAM & SEED W/ JUTE MESH (MIX ITEM 765.442)
END ACCESS, BEGIN NO ACCESS
PROP STREAMBED MATERIAL OVER ROCK
PROP PERM EASEMENT
RET
RESIDENTIAL ACCESS
(1958 SHLO NO. 4698)
PROP HMA DWY
PROP LOAM FOR ROADSIDES (MIX ITEM 765.)
PROP LOAM FOR LAWNS (MIX ITEM 765.)
PROP COMPOST & SEED OVER ROCK (MIX ITEM 765.442)
PT +65.83
PROP 4" LOAM & SEED (MIX ITEM 765.411)
B-10-001(CLA)
PROP COMPOST & SEED OVER ROCK (MIX ITEM 765.442)
PROP 6' CEM CONC SW
PROP HMA DWY
PROP LOAM & SEED W/ JUTE MESH (MIX ITEM 765.442)
PROP TEMP EASEMENT
PROP LIMIT OF CLEARING AND GRUBBING
PROP STREAMBED MATERIAL OVER ROCK
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP LOG
1923 SHLO NO 2139 NO ACCESS
PROP LIMIT OF CLEARING AND GRUBBING
PROP TEMP EASEMENT
LIMIT OF NO ACCESS PER 1959 SHLO NO. 4774
1923 SHLO NO. 2139
PROP TOS
PROP LOAM & SEED (MIX ITEM 765.411)
PROP GRAVEL DWY
PROP LOAM FOR ROADSIDES (MIX ITEM 765.)
PROP COMPOST & SEED OVER ROCK (MIX ITEM 765.442)
PROP LOAM & SEED (MIX ITEM 765.411)
IF EXISTING AREA OF LAWN IS DISTURBED; CONTRACTOR TO SCARIFY SOIL, PROP L&S WITH LAWN MIX
PROP TEMP EASEMENT
1977 TOWN LAYOUT
RET EXIST PVMT
PROP LIMIT OF CLEARING AND GRUBBING
PROP LOAM & SEED W/ JUTE MESH (MIX ITEM 765.442)
PROP SEDIMENT CONTROL BARRIER (TYP)
LIMIT OF PROP HMA MILL & OVERLAY
PROP LOAM FOR ROADSIDES (MIX ITEM 765.)
LIMIT OF PROP MILL & OVERLAY
PROP LOAM & SEED (MIX ITEM 765.411)
CONST ℄
PI +00.00
APPROX LOG (TYP)
PROP LOAM FOR ROADSIDES (MIX ITEM 765.)
PROP 6' CEM CONC SW
LIMIT OF PROP HMA MILL & OVERLAY
ACCESS (PER 1967 SHLO NO. 5662)
1923 SHLO NO 2139 NO ACCESS
1959 SHLO NO 4774 NO ACCESS
1923 SHLO NO. 2139 | 1959 SHLO NO. 4774
1896 TOWN LAYOUT

200' RIVERFRONT AREA
100' WETLAND BUFFER ZONE
APPROXIMATE
OWNER UNKNOWN
UPL 3228/1
GRASS
WOODS
BIT. CONC. DRIVE
GRAVEL

0 20 50 100
SCALE: 1" = 20'

T1217.01_HD13_LANDSCAPE PLANS.DWG Plotted on 27-Jul-2026 11:13 AM

LEGEND

= LOAM FOR ROADSIDES (ITEM 751.)
(MIX ITEM 765. - SEEDING)

NOTES:

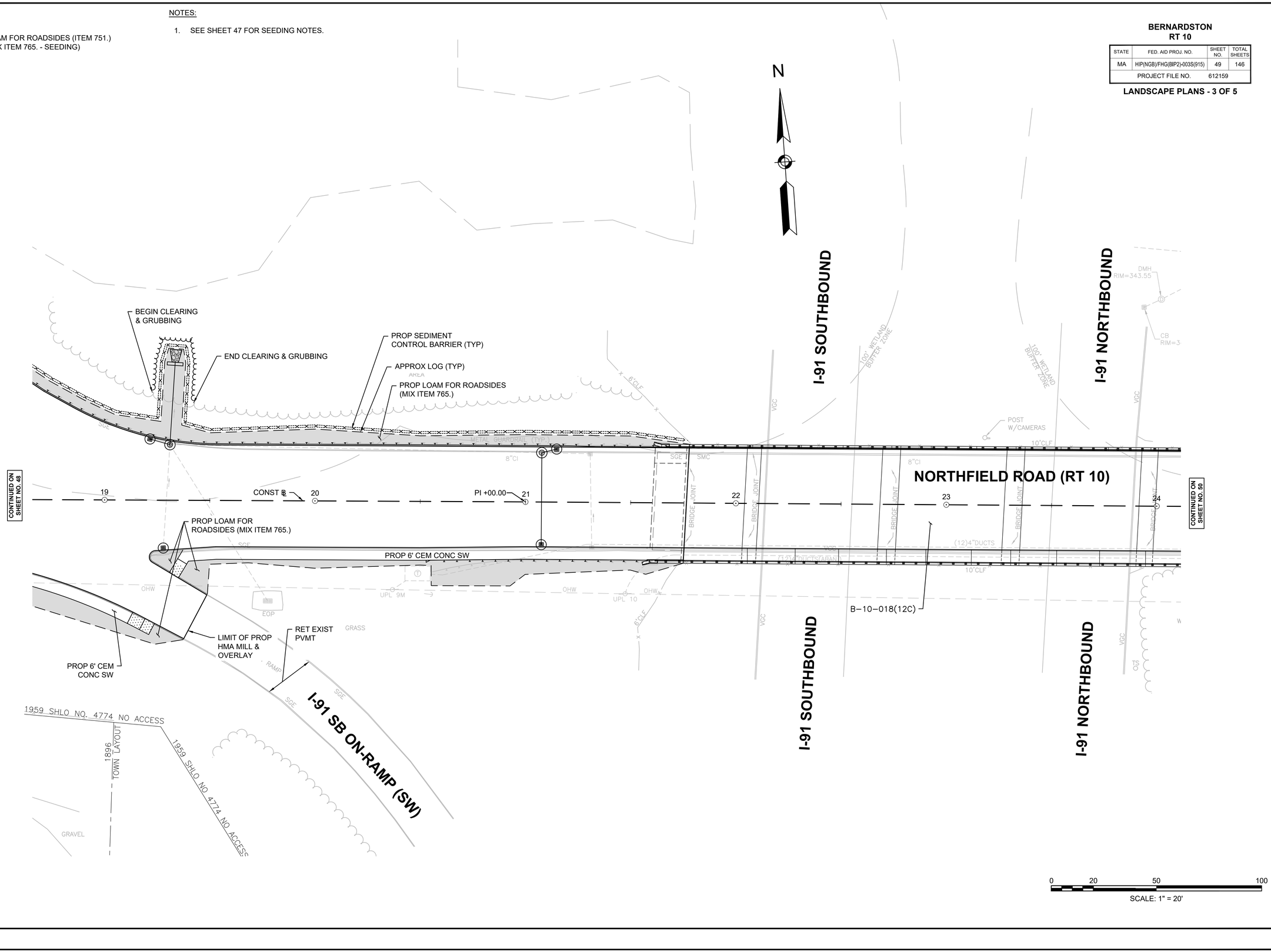
1. SEE SHEET 47 FOR SEEDING NOTES.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	49	146
PROJECT FILE NO.	612159		

LANDSCAPE PLANS - 3 OF 5

T1217.01_HD13_LANDSCAPE PLANS.DWG Plotted on 27-Jul-2026 11:13 AM



LEGEND

SUBSURFACES:

= MODIFIED ROCKFILL (ITEM 986.)

= LOAM FOR ROADSIDES (ITEM 751.)
(MIX ITEM 765. - SEEDING)

= LOAM AND SEED (ITEM 751.)
(MIX ITEM 765.411 - SHORT GRASSLAND MIX)

= BIORETENTION SOIL (ITEM 761.1)
& SEED (ITEM 765.554 - WETLAND SEED -
SEASONALLY FLOODED MIX)

= 6" PLACED GRANITE EDGING TYPE SB (PLACED FLAT) (ITEM 511.1)

NOTES:

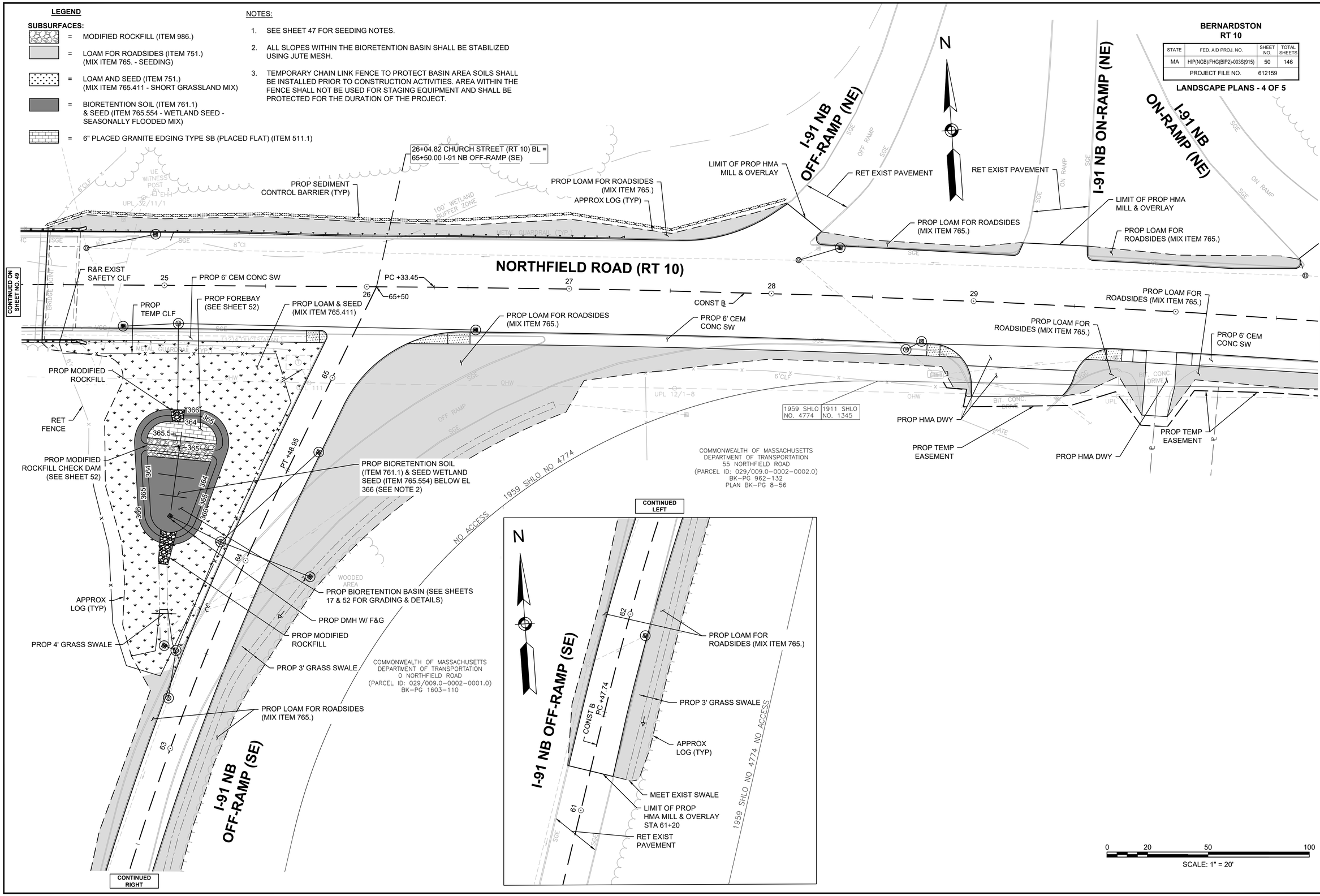
1. SEE SHEET 47 FOR SEEDING NOTES.
2. ALL SLOPES WITHIN THE BIORETENTION BASIN SHALL BE STABILIZED USING JUTE MESH.
3. TEMPORARY CHAIN LINK FENCE TO PROTECT BASIN AREA SOILS SHALL BE INSTALLED PRIOR TO CONSTRUCTION ACTIVITIES. AREA WITHIN THE FENCE SHALL NOT BE USED FOR STAGING EQUIPMENT AND SHALL BE PROTECTED FOR THE DURATION OF THE PROJECT.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	50	146
PROJECT FILE NO. 612159			

LANDSCAPE PLANS - 4 OF 5

T1217.01_HD13_LANDSCAPE PLANS.DWG Plotted on 27-Jul-2026 11:13 AM



LEGEND

= AGED BARK MULCH (ITEM 767.6)

= LOAM FOR ROADSIDES (ITEM 751.) (MIX ITEM 765. - SEEDING)

NOTES:

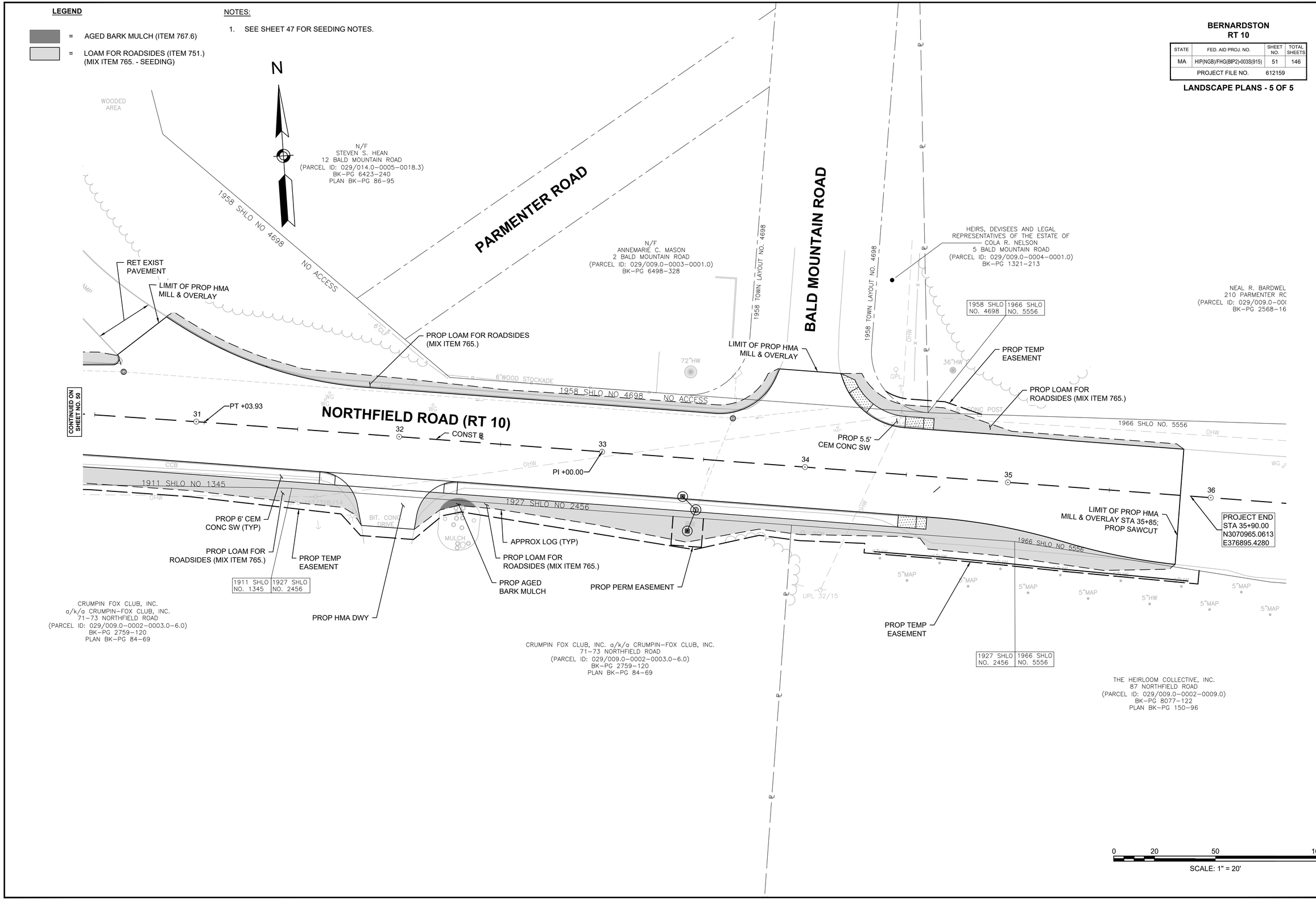
1. SEE SHEET 47 FOR SEEDING NOTES.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	51	146
	PROJECT FILE NO. 612159		

LANDSCAPE PLANS - 5 OF 5

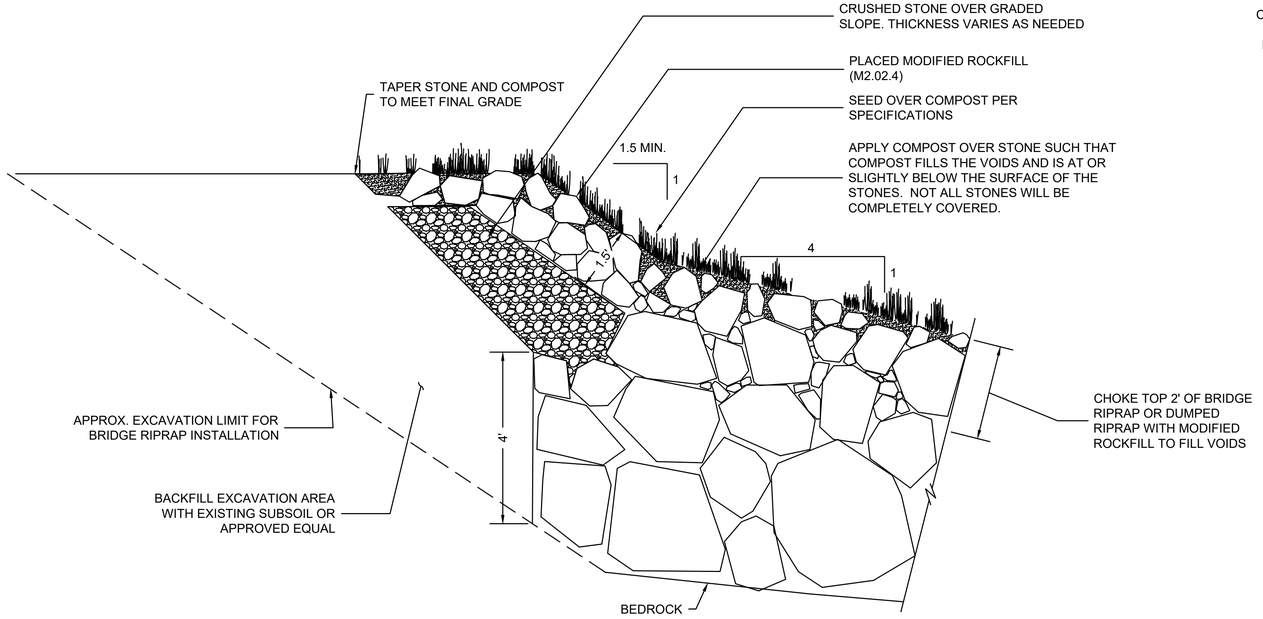
T1217.01_HD13_LANDSCAPE PLANS.DWG Plotted on 27-Jul-2026 11:13 AM



BERNARDSTON
RT 10

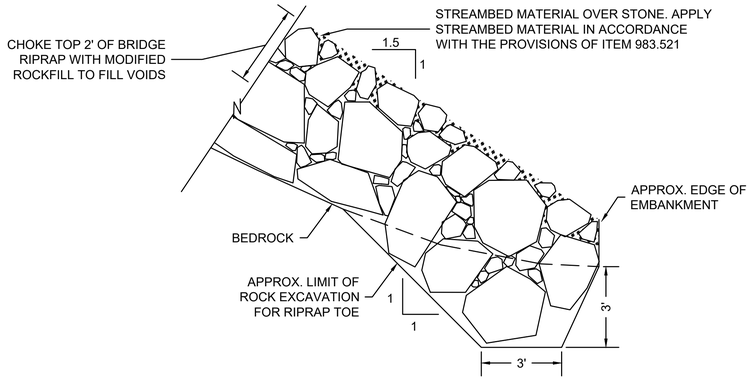
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	52	146
PROJECT FILE NO.	612159		

LANDSCAPE DETAILS



COMPOST AND SEED OVER MODIFIED ROCKFILL (NON-WATERWAY) AND RIPRAP

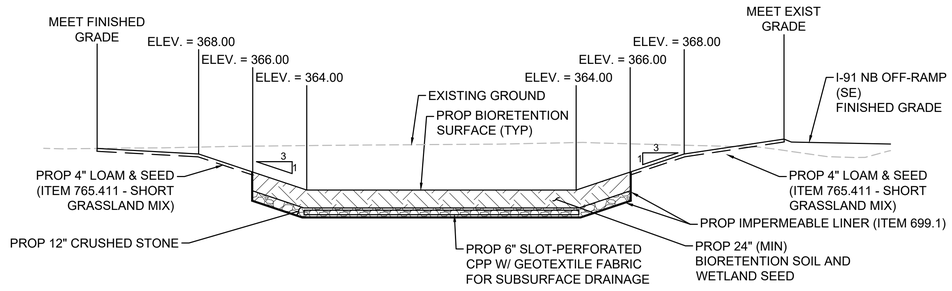
NTS



NOTE: STREAMBED MATERIAL OVER BRIDGE RIPRAP SHOWN. STREAMBED MATERIAL OVER DUMPED RIPRAP SIMILAR, EXCEPT THAT THE VOIDS DO NOT NEED TO BE CHOKED WITH MODIFIED ROCKFILL. SEE SHEET 53 FOR DETAIL OF DUMPED RIPRAP TOE.

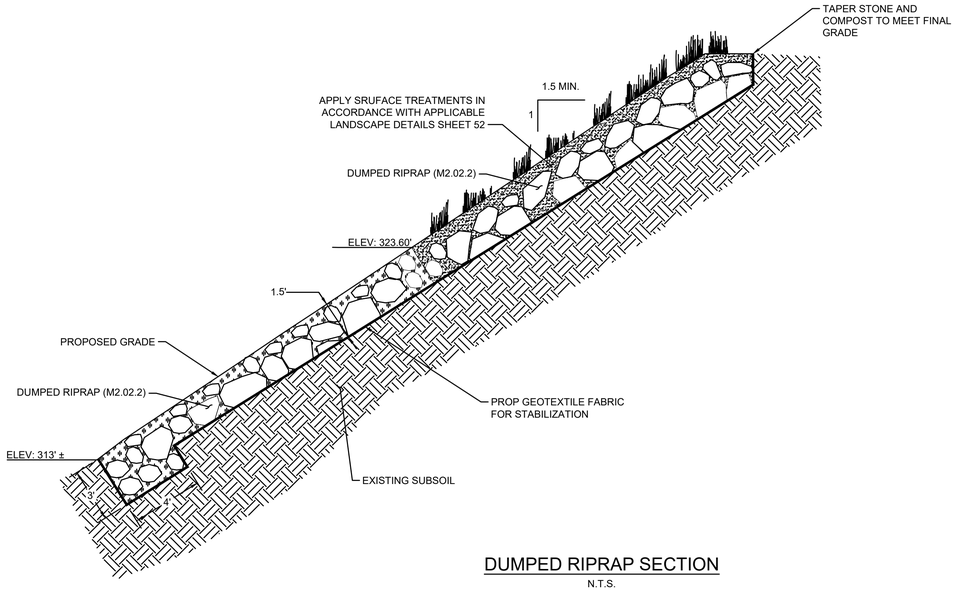
STREAMBED MATERIAL OVER RIPRAP AND BRIDGE RIPRAP TOE

NTS



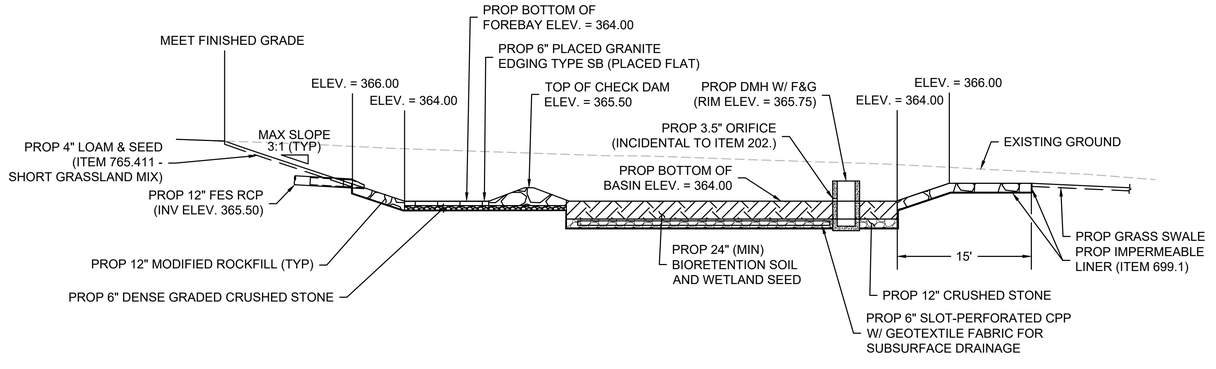
BIORETENTION TYPICAL SECTION (STA 64+10) DETAIL

SCALE: 1" = 8'



DUMPED RIPRAP SECTION

N.T.S.



BIORETENTION BASIN TYPICAL SECTION (STA 25+05)

SCALE: 1" = 8'

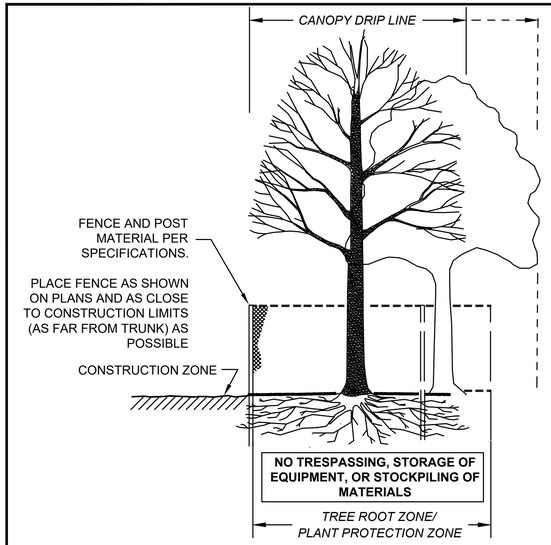
T1217.01_HD13_LANDSCAPE PLANS.DWG Plotted on 27-Jul-2026 11:13 AM

BERNARDSTON
RT 10

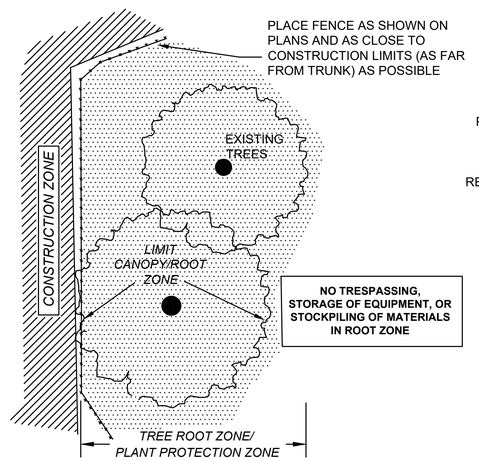
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	53	146
	PROJECT FILE NO. 612159		

CONSTRUCTION DETAILS - 1 OF 4

T1217.01_HD14_CONSTRUCTION DETAILS.DWG Plotted on 27-Jul-2026 11:13 AM



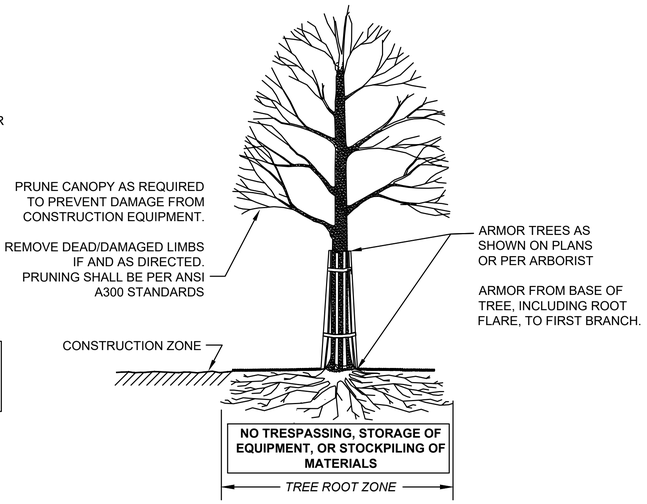
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

N.T.S.



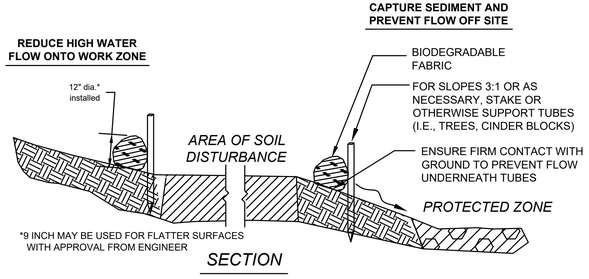
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK

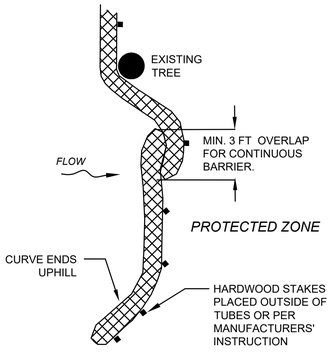
N.T.S.

REDUCE HIGH WATER FLOW ONTO WORK ZONE

CAPTURE SEDIMENT AND PREVENT FLOW OFF SITE



SECTION



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE

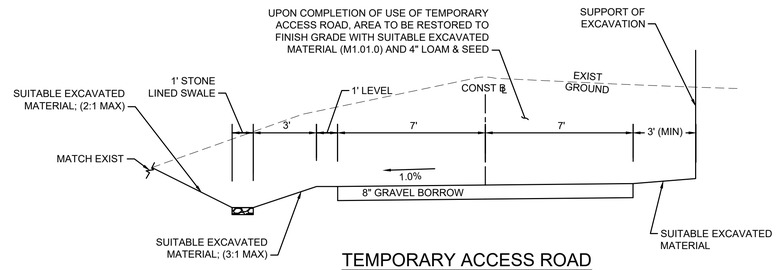
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW

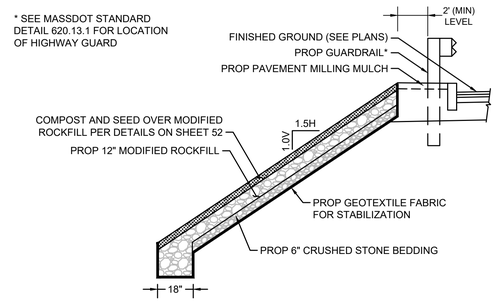
SEDIMENT BARRIER - COMPOST FILTER TUBES

N.T.S.



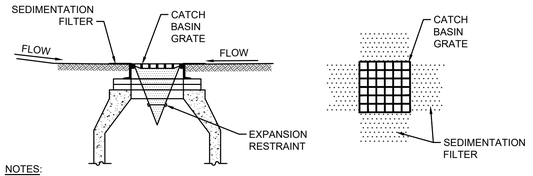
TEMPORARY ACCESS ROAD

N.T.S.



MODIFIED ROCKFILL SLOPE STABILIZATION

N.T.S.

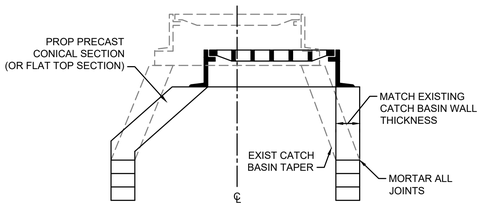


NOTES:

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

INLET SEDIMENTATION FILTER DEVICES IN CATCH BASIN

N.T.S.



CATCH BASIN REMODEL

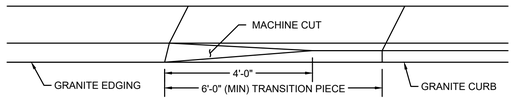
N.T.S.

BERNARDSTON
RT 10

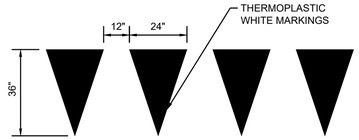
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	54	146
	PROJECT FILE NO. 612159		

CONSTRUCTION DETAILS - 2 OF 4

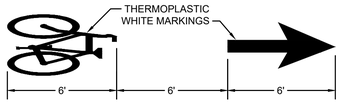
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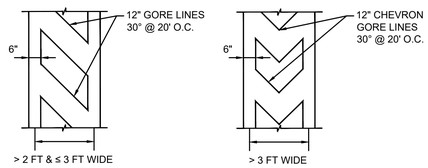
GRANITE CURB SPLAYED END
N.T.S.



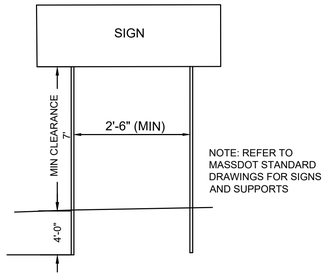
YIELD LINE PAVEMENT MARKING
N.T.S.



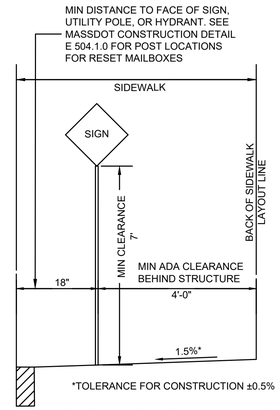
BICYCLE LANE PAVEMENT MARKING
N.T.S.



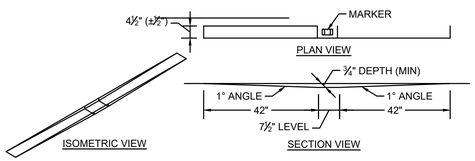
BICYCLE BUFFER PAVEMENT MARKINGS
N.T.S.



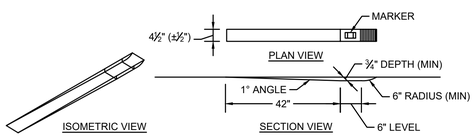
P5 DOUBLE POST ASSEMBLY INSTALLATION
N.T.S.



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



TWO-WAY MARKER APPLICATION

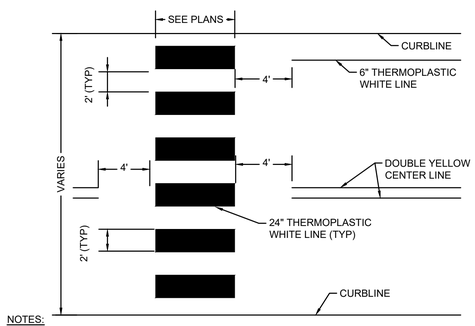


ONE-WAY MARKER APPLICATION

NOTES:

1. THE GROOVE AREA MUST BE DRY AND FREE OF DUST, DIRT, OR ANY MATERIAL WHICH WILL ADVERSELY AFFECT THE BOND OF THE ADHESIVE.
2. INSTALL MARKERS WITH APPROVED ADHESIVE. ADHESIVE SHOULD NOT BE ALLOWED TO BUILD UP IN FRONT OF MARKER LENS.
3. THE MARKER AND THE ADHESIVE PAD SHALL NOT EXCEED THE TOP OF THE PAVEMENT SURFACE. DEPTH = .75" MINIMUM.
4. THIS DETAIL IS PROVIDED TO SHOW TYPICAL SPACING AND APPLICATION DETAILS. CONTRACTOR SHALL VERIFY LAYOUT WITH DISTRICT STAFF AND THE ENGINEER PRIOR TO INSTALLING SLOTTED PAVEMENT MARKERS.
5. SLOTTED PAVEMENT MARKERS SHALL BE TERMINATED WITHIN 20 FEET OF BRIDGE JOINTS.

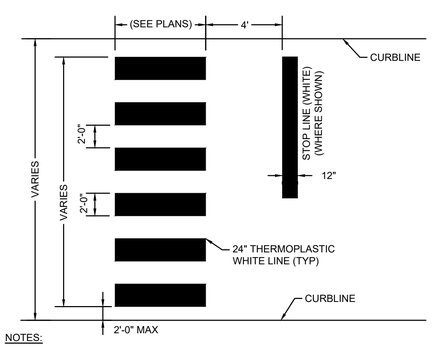
SLOTTED PAVEMENT MARKER - RECESSED GROOVE
N.T.S.



NOTES:

1. ALL 24" LINES MAY BE EITHER ONE 24" LINE OR A COMBINATION OF TWO - 12" LINES.
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.

MIDBLOCK CROSSWALK PAVEMENT MARKING
N.T.S.



NOTES:

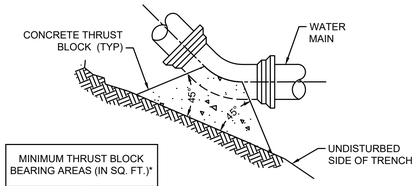
1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED. ALL 24" LINES MAY BE EITHER ONE 24" LINE OR A COMBINATION OF TWO - 12" LINES.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
3. CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.
4. OMIT STOP BAR WHERE NOT SHOWN ON TRAFFIC SIGN & PAVEMENT MARKING PLAN.

CROSSWALK PAVEMENT MARKING
N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	55	146
PROJECT FILE NO.	612159		

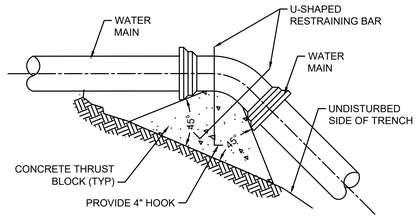
CONSTRUCTION DETAILS - 3 OF 4

T1217.01_HD14_CONSTRUCTION DETAILS.DWG Plotted on 27-Jul-2026 11:13 AM



MINIMUM THRUST BLOCK BEARING AREAS (IN SQ. FT.)*	
PIPE Ø	45° BEND
4", 6"	3.6
8"	6.5
12"	8.4

PLAN AT UPWARD VERTICAL BEND



MINIMUM THRUST BLOCK BEARING AREAS (IN SQ. FT.)*	
PIPE Ø	45° BEND
4", 6"	.9
8"	1.6
12"	3.3

RESTRAINING BAR DIMENSIONS		
PIPE Ø	BAR SIZE	EMBEDMENT LENGTH
4", 6"	#4	15"
8"	#4	15"
12"	#6	2'-0"

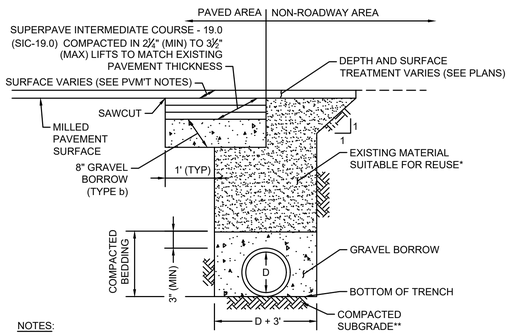
PLAN AT DOWNWARD VERTICAL BEND

NOTES:

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

THRUST BLOCK DETAILS - VERTICAL BENDS

N.T.S.



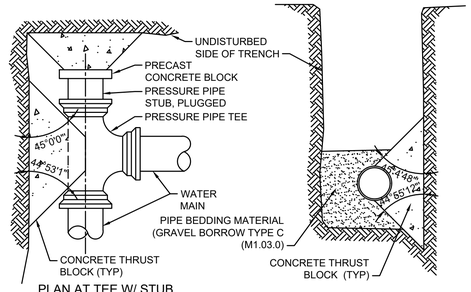
NOTES:

* 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".

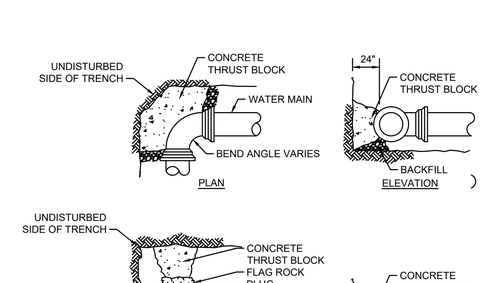
**SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

DRAINAGE TRENCH

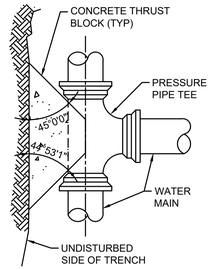
N.T.S.



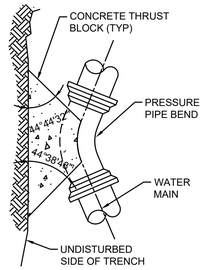
PLAN AT TEE W/ STUB FOR FUTURE USE



SECTION



PLAN AT TEE



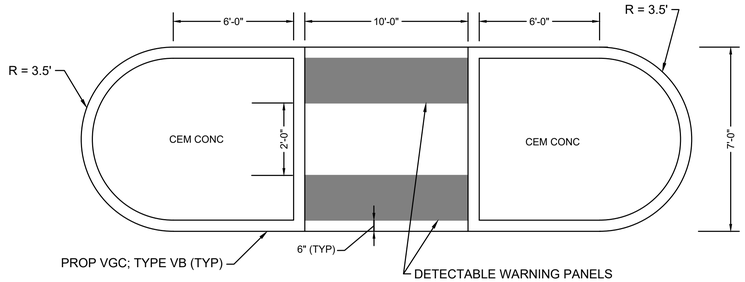
PLAN AT BEND

NOTES:

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

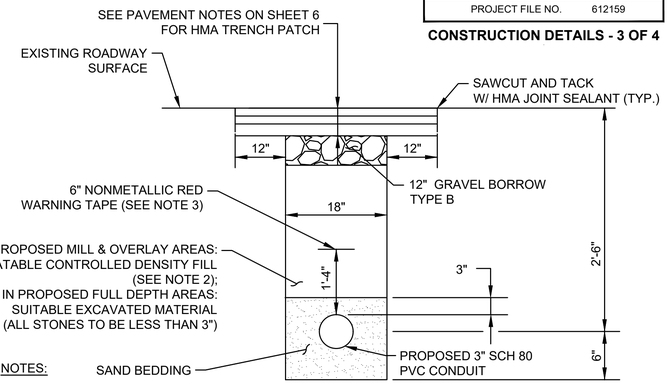
THRUST BLOCK - HORIZONTAL BENDS & PIPE RESTRAINT DETAILS

N.T.S.



CEMENT CONCRETE MEDIAN W/ PEDESTRIAN REFUGE ISLAND

N.T.S.

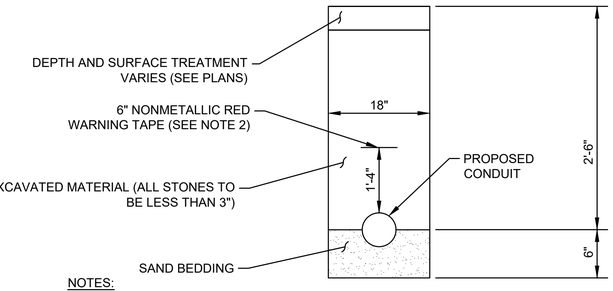


NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. CONTROLLED DENSITY FILL SHALL MEET THE REQUIREMENTS OF SUBSECTION M4.08.0 AND IS ONLY TO BE USED AS DIRECTED BY THE ENGINEER.
3. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

CONDUIT CROSSING ROADWAY

N.T.S.



NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

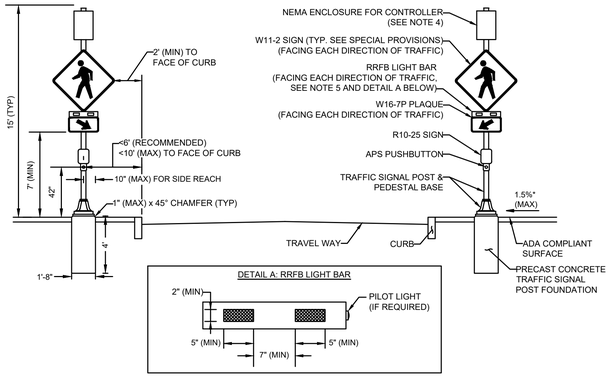
CONDUIT UNDER SIDEWALK / GRASS AREAS

N.T.S.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	56	146
	PROJECT FILE NO. 612159		

CONSTRUCTION DETAILS - 4 OF 4



RECTANGULAR RAPID FLASHING BEACON (RRFB)

N.T.S.

NOTES:
1. REFER TO THE SPECIAL PROVISIONS FOR SIGN DIMENSIONS.
2. ALL CONDUIT, PULL BOXES, SERVICE CONNECTIONS, AND EQUIPMENT GROUNDING REQUIRED FOR AC POWERS IS NOT SHOWN IN THIS DETAIL AND SHALL BE PAID FOR SEPERATELY UNDER THEIR RESPECTIVE PAY ITEMS.
3. APS PUSHBUTTON SHALL BE POSITIONED TO MEET ALL ADA/AAB REQUIREMENTS INCLUDING BEING LOCATED 10 IN. (MAX) FROM LEVEL PEDESTRIAN AREA (SUCH AS SIDEWALK) PER 521 CMR 21.10.4
4. THE NEMA ENCLOSURE SHALL BE POSITIONED TO MEET ALL ADA/AAB CLEARANCE REQUIREMENTS. SIZE AND LOCATION ON POST MAY VARY BY MANUFACTURER.
5. THE RRFB LIGHT BAR, WARNING SIGN, AND W16-7P PLAQUE SHALL BE INSTALLED WITH NO VERTICAL GAP BETWEEN THEM.
6. *0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE

ROUTE 10 - LOCATION 1

LIST OF MAJOR ITEMS REQUIRED

ITEM #	QUANTITY	DESCRIPTION
825.31	3	15' TS POST, BASE, & FDN (PAINTED BLACK)
	3	APS PED PBN & R10-25 (PAINTED BLACK)
	1	PED PBN EXTENSION ARM
	4	DUAL RRFB LED BEACONS [YELLOW] (PAINTED BLACK)
	4	W11-2 SIGNS
	2	W16-7pL SIGNS
	2	W16-7pR SIGNS
	1	SERVICE CONNECTION (W/ RISER, WEATHERHEAD, & DISCONNECT)
	3	RRFB CAB. ENCLOSURES (PAINTED BLACK)

PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM (PAINTED BLACK).

ROUTE 10 - LOCATION 2

LIST OF MAJOR ITEMS REQUIRED

ITEM #	QUANTITY	DESCRIPTION
825.21	2	15' TS POST, BASE, & FDN (PAINTED BLACK)
	2	APS PED PBN & R10-25 (PAINTED BLACK)
	2	DUAL RRFB LED BEACONS [YELLOW] (PAINTED BLACK)
	2	W11-2 SIGNS
	1	W16-7pR SIGNS
	1	W16-7pL SIGNS
	1	SERVICE CONNECTION (W/ RISER, WEATHERHEAD, & DISCONNECT)
	2	RRFB CAB. ENCLOSURES (PAINTED BLACK)

PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM (PAINTED BLACK).

ROUTE 10 - LOCATION 3

LIST OF MAJOR ITEMS REQUIRED

ITEM #	QUANTITY	DESCRIPTION
825.21	2	15' TS POST, BASE, & FDN (PAINTED BLACK)
	2	APS PED PBN & R10-25 (PAINTED BLACK)
	4	DUAL RRFB LED BEACONS [YELLOW] (PAINTED BLACK)
	4	W11-2 SIGNS
	2	W16-7pR SIGNS
	2	W16-7pL SIGNS
	2	W16-7aP SIGNS
	1	SERVICE CONNECTION (W/ RISER, WEATHERHEAD, & DISCONNECT)
	2	RRFB CAB. ENCLOSURES (PAINTED BLACK)

PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM (PAINTED BLACK).

T1217.01_HD14_CONSTRUCTION DETAILS.DWG Plotted on 27-Jul-2026 11:14 AM

BERNARDSTON
RT 10

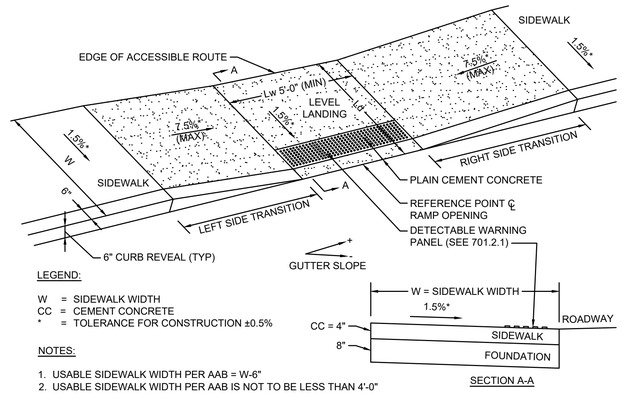
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	57	146
	PROJECT FILE NO. 612159		

PEDESTRIAN CURB RAMP & DRIVEWAY DETAILS
1 OF 3

T1217.01_HD14_CONSTRUCTION DETAILS.DWG Plotted on 27-Jul-2026 11:14 AM

PEDESTRIAN CURB RAMP NOTES:

1. MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE DESIGNED TO 4.5% ±0.5% (7.5% ±0.5% FOR CURB RAMPS).
2. A MINIMUM OF 4'-0" CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
3. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
4. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
5. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FT.
6. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY.
7. DETECTABLE WARNING PANELS ARE REQUIRED ON ALL OF THE PROPOSED PEDESTRIAN CURB RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STANDARD 701.2.1. CONTRACTOR SHALL PROVIDE 6" BETWEEN DETECTABLE WARNING PANEL AND EDGE OF CONCRETE WHERE IT ABUTS LOAM & SEED.
8. PEDESTRIAN RAMP SLOPES AND CROSS SLOPES SHALL HAVE A CONSTRUCTION TOLERANCE OF ±0.5%.



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

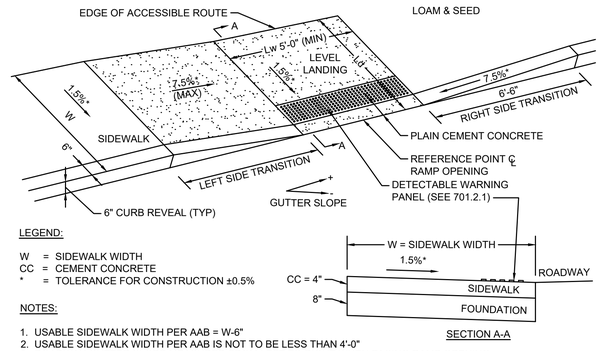
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING RAMP OPENING
4. SEE 701.2.2 FOR ALL OTHER DETAILS

PEDESTRIAN CURB RAMP TYPE A

N.T.S.

PEDESTRIAN CURB RAMP DATA													
RAMP #	MASSDOT ID	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
					WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)
3	PED-86776	RT 10	13+66.77	27.0' RT	5'-0"	6'-0"	+1.4%	6'-6"	6"	6'-0"	9'-0"	6"	6'-0"
4	PED-86777	RT 10	13+66.75	28.0' LT	5'-0"	6'-0"	-1.4%	4'-6"	3"	6'-0"	N/A	N/A	N/A



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

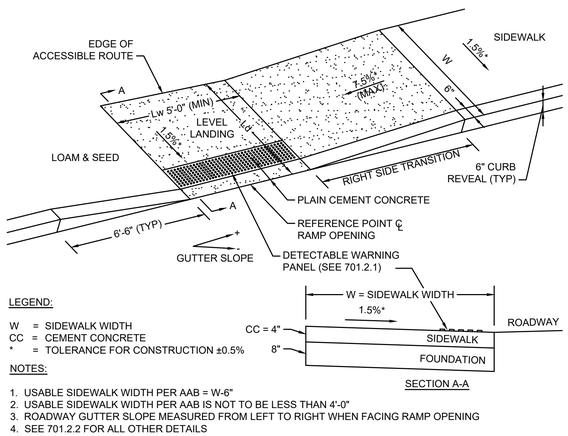
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING RAMP OPENING
4. SEE 701.2.2 FOR ALL OTHER DETAILS

PEDESTRIAN CURB RAMP TYPE B

N.T.S.

PEDESTRIAN CURB RAMP DATA										
RAMP #	MASSDOT ID	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION		
					WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)
14	PED-86786	RT 10	34+59.05	23.0' LT	5'-0"	5'-6"	-1.6%	9'-0"	6"	5'-6"



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

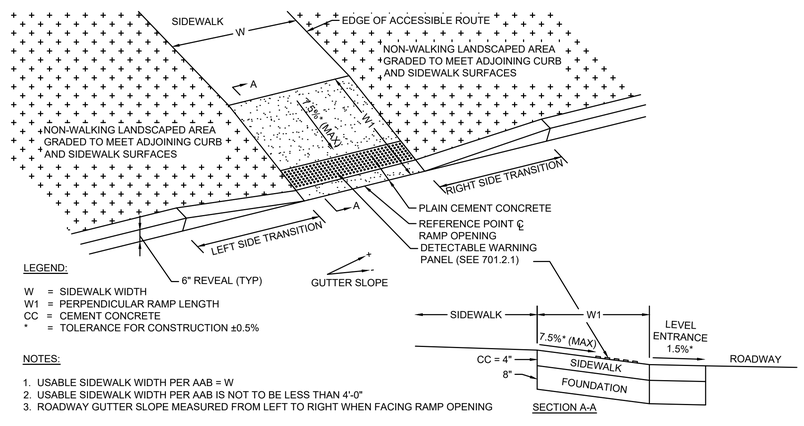
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING RAMP OPENING
4. SEE 701.2.2 FOR ALL OTHER DETAILS

PEDESTRIAN CURB RAMP TYPE C

N.T.S.

PEDESTRIAN CURB RAMP DATA										
RAMP #	MASSDOT ID	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	RIGHT SIDE TRANSITION		
					WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)
7	PED-86780	RT 10	19+21.79	57.4' RT	5'-0"	6'-0"	-2.2%	6'-6"	6"	6'-0"
15	PED-86787	RT 10	34+59.05	22.0' RT	5'-0"	6'-0"	+1.4%	9'-0"	6"	6'-0"



LEGEND:

W = SIDEWALK WIDTH
W1 = PERPENDICULAR RAMP LENGTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

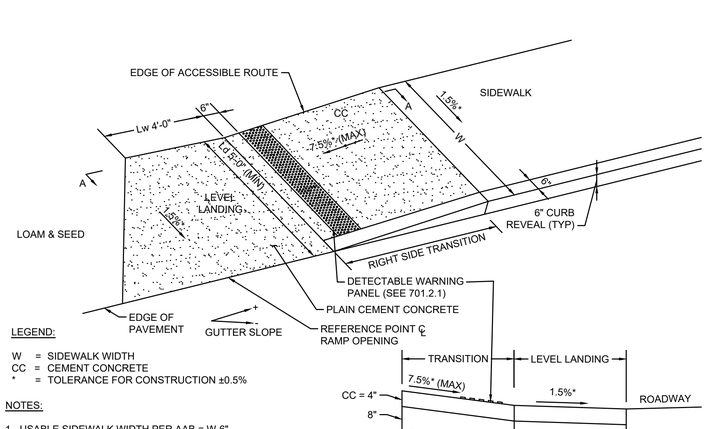
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING RAMP OPENING

PEDESTRIAN CURB RAMP TYPE D

N.T.S.

PEDESTRIAN CURB RAMP DATA												
RAMP #	MASSDOT ID	BASELINE REFERENCE	STATION	OFFSET	ROADWAY GUTTER SLOPE	PERPENDICULAR RAMP LENDTH (W1)	SIDEWALK WIDTH (W)	LEFT SIDE TRANSITION		RIGHT SIDE TRANSITION	
								TRANSITION LENGTH	CURB REVEAL	TRANSITION LENGTH	CURB REVEAL
8	PED-86781	RT 10	19+33.10	35.6' RT	+2.3%	7'-8"	5'-0"	6'-6"	6"	6'-6"	6"



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING RAMP OPENING

PEDESTRIAN CURB RAMP RAMP TYPE E

N.T.S.

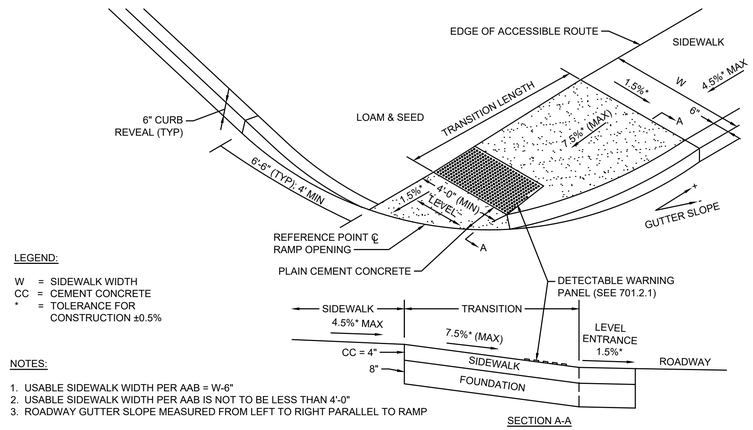
PEDESTRIAN CURB RAMP DATA									
RAMP #	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	RIGHT SIDE TRANSITION		
				WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)
13	RT 10	34+16.18	42.4' LT	4'-0"	5'-6"	+2.0%	11'-0"	6"	5'-6"

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	58	146
	PROJECT FILE NO. 612159		

PEDESTRIAN CURB RAMP & DRIVEWAY DETAILS
2 OF 3

T1217.01_HD14_CONSTRUCTION DETAILS.DWG Plotted on 27-Jul-2026 11:14 AM



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

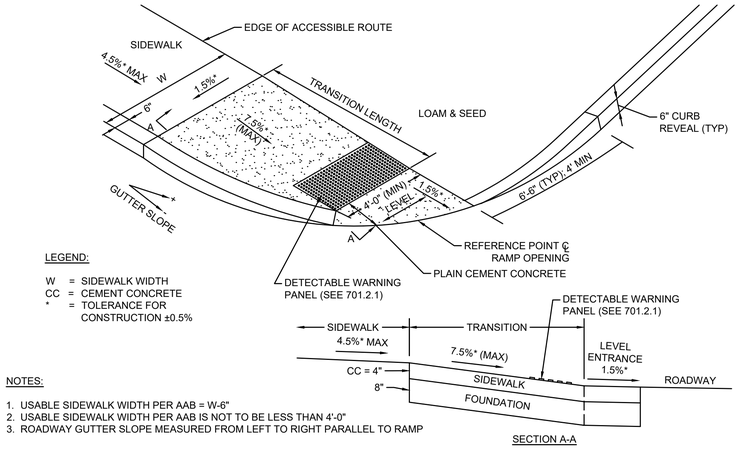
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT PARALLEL TO RAMP

PEDESTRIAN CURB RAMP TYPE G

N.T.S.

PEDESTRIAN CURB RAMP DATA								
RAMP #	MASSDOT ID	BASELINE REFERENCE	STATION	OFFSET	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)
2	PED-21086	RT 10	11+25.63	26.3' LT	-2.9%	6'-6"	6"	6'-0"
5	PED-86778	RT 10	16+47.47	31.0' RT	+0.5%	7'-8"	6"	6'-0"
9	PED-86782	RT 10	25+80.30	25.8' RT	-2.9%	6'-6"	6"	6'-0"
11	PED-86784	RT 10	28+92.63	26.0' RT	-1.3%	6'-6"	6"	6'-0"



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

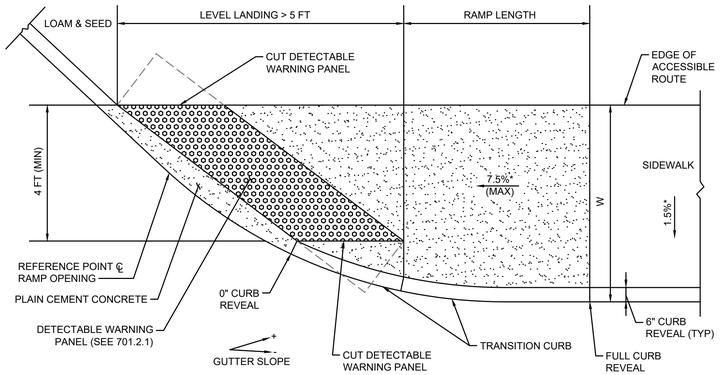
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT PARALLEL TO RAMP

PEDESTRIAN CURB RAMP TYPE H

N.T.S.

PEDESTRIAN CURB RAMP DATA								
RAMP #	MASSDOT ID	BASELINE REFERENCE	STATION	OFFSET	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH (W)
1	PED-5410	RT 10	10+92.32	25.5' LT	-3.3%	7'-0"	3"	5'-6"
6	PED-86779	RT 10	17+08.16	30.0' RT	-1.0%	9'-0"	6"	6'-0"
10	PED-86783	RT 10	26+25.11	26.0' RT	-2.8%	11'-0"	6"	6'-0"
12	PED-86785	RT 10	29+58.30	26.0' RT	-0.7%	7'-8"	6"	6'-0"



PEDESTRIAN CURB RAMP TYPES G & H WHEN LEVEL LANDING > 5 FEET

N.T.S.

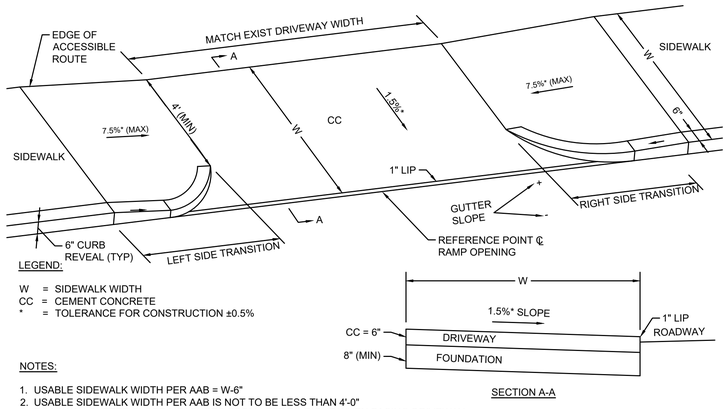
THIS DETAIL INCLUDES RAMP NUMBERS 1,2,5,6,10,11, AND 12. REFERENCE PCR TYPES G & H FOR DETAIL TABLES.

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	59	146
	PROJECT FILE NO. 612159		

PEDESTRIAN CURB RAMP & DRIVEWAY DETAILS
3 OF 3

T1217.01_HD14_CONSTRUCTION DETAILS.DWG Plotted on 27-Jul-2026 11:14 AM



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

SECTION A-A

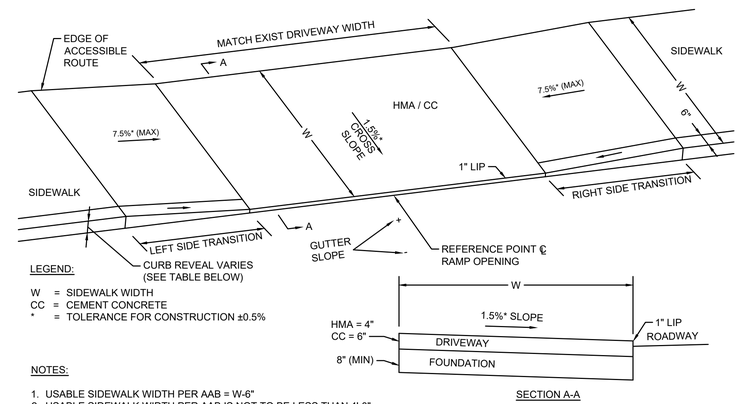
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING DRIVEWAY

SIDEWALK THROUGH DRIVEWAY TYPE A

N.T.S.

DRIVEWAY DATA													
DWY #	BASELINE REFERENCE	STATION	OFFSET	DRIVEWAY SURFACE	DWY WIDTH @ GUTTER	ROADWAY GUTTER SLOPE	WIDTH OF ACCESSIBLE ROUTE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
								LENGTH	CURB REVEAL	SW WIDTH (W)	LENGTH	CURB REVEAL	SW WIDTH (W)
5	RT 10	31+97.16	22.0' RT	CC	66'-0"	+0.8%	5'-6"	6'-6"	6"	6'-0"	7'-8"	6"	6'-0"



LEGEND:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

SECTION A-A

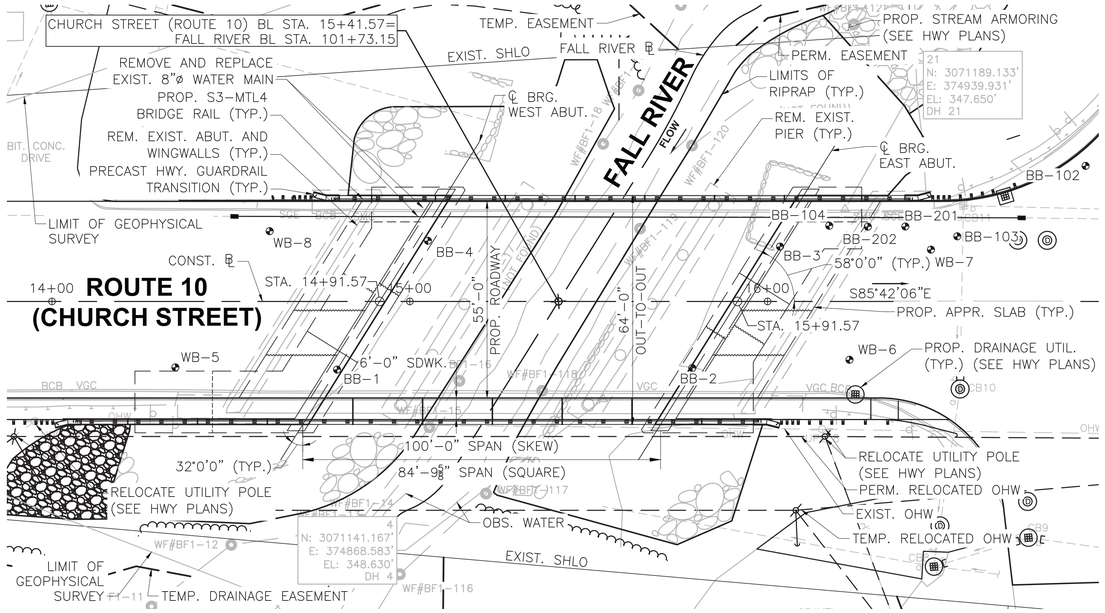
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING DRIVEWAY OPENING
4. FOR HMA DRIVEWAYS, THE 1" LIP SHALL BE OMITTED

SIDEWALK THROUGH DRIVEWAY TYPE B

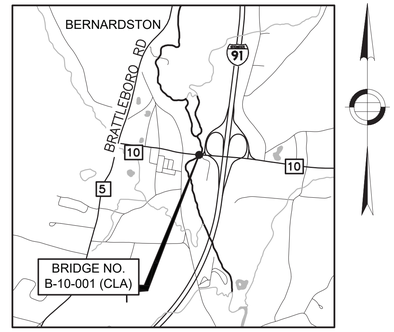
N.T.S.

DRIVEWAY DATA													
DWY #	BASELINE REFERENCE	STATION	OFFSET	DRIVEWAY SURFACE	DWY WIDTH @ GUTTER	ROADWAY GUTTER SLOPE	WIDTH OF ACCESSIBLE ROUTE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
								LENGTH	CURB REVEAL	SW WIDTH (W)	LENGTH	CURB REVEAL	SW WIDTH (W)
1	RT 10	12+36.46	24.6' LT	CC	21'-3"	-1.8%	6'-0"	9'-0"	6"	6'-0"	6'-6"	6"	6'-0"
2	RT 10	12+88.85	23.9' RT	HMA	23'-11"	+1.6%	6'-0"	6'-6"	6"	6'-0"	N/A	N/A	N/A
3	RT 10	13+39.41	27.7' LT	CC	23'-11"	-1.6%	6'-0"	9'-0"	6"	6'-0"	3'-3"	3"	6'-0"
4	RT 10	29+94.25	22.0' RT	CC	15'-0"	-0.5%	6'-0"	7'-8"	6"	6'-0"	6'-6"	6"	6'-0"



KEY PLAN

SCALE: 1" = 20'



LOCUS MAP

SCALE: 1" = 2000'

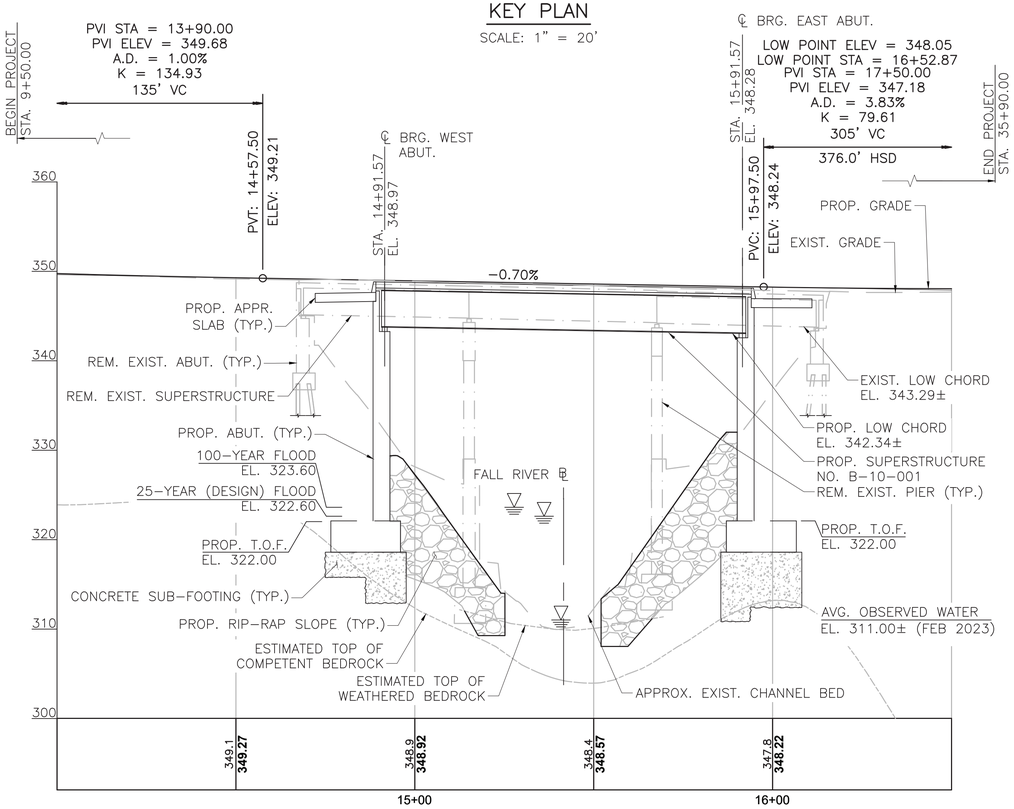
BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	60	146
PROJECT FILE NO. 612159			

KEY PLAN AND PROFILE

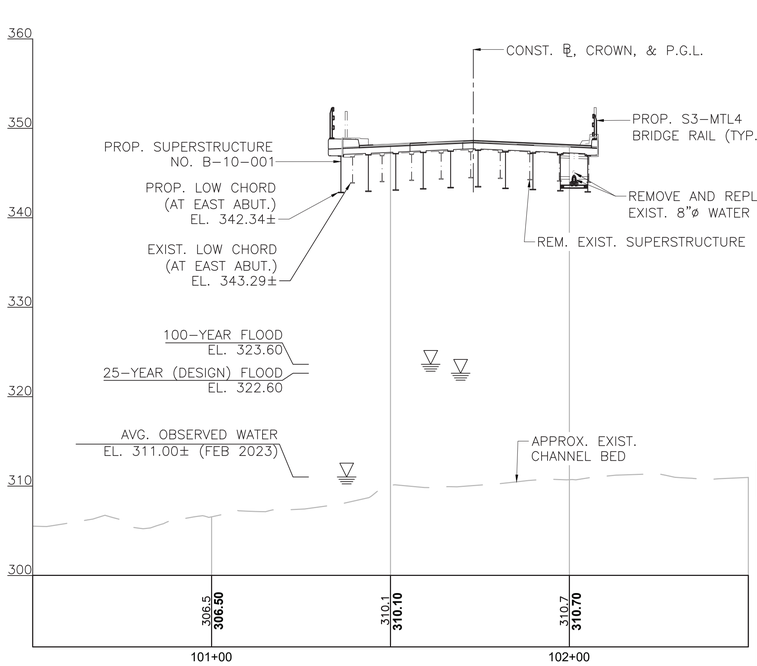
INDEX OF DRAWINGS

SHEET NUMBER	SHEET TITLE
1	KEY PLAN AND PROFILE
2	GENERAL NOTES
3	BORING LOGS (1 OF 8)
4	BORING LOGS (2 OF 8)
5	BORING LOGS (3 OF 8)
6	BORING LOGS (4 OF 8)
7	BORING LOGS (5 OF 8)
8	BORING LOGS (6 OF 8)
9	BORING LOGS (7 OF 8)
10	BORING LOGS (8 OF 8)
11	PLAN AND ELEVATION
12	GRADING PLAN
13	CONSTRUCTION STAGE 1
14	CONSTRUCTION STAGE 2
15	CONSTRUCTION STAGE 3
16	CONTROL OF WATER PLAN (1 OF 2)
17	CONTROL OF WATER PLAN (2 OF 2)
18	FOUNDATION STAGING PLAN (1 OF 2)
19	FOUNDATION STAGING PLAN (2 OF 2)
20	FOUNDATION PLAN
21	WEST ABUTMENT PLAN AND ELEVATION
22	EAST ABUTMENT PLAN AND ELEVATION
23	WINGWALL ELEVATIONS
24	ABUTMENT DETAILS (1 OF 3)
25	ABUTMENT DETAILS (2 OF 3)
26	ABUTMENT DETAILS (3 OF 3)
27	WINGWALL DETAILS
28	MISCELLANEOUS SUBSTRUCTURE DETAILS
29	PIER PATCH REPAIR DETAILS
30	DECK PATCH REPAIR DETAILS
31	FRAMING PLAN
32	FRAMING DETAILS
33	CAMBER DETAILS
34	DECK PLAN
35	DECK DETAILS
36	BEARING DETAILS
37	MISCELLANEOUS DETAILS
38	S3-MTL4 BRIDGE RAILING
39	PRECAST HIGHWAY GUARDRAIL TRANSITION BASE DETAILS
40	PRECAST HIGHWAY GUARDRAIL TRANSITION TOP DETAILS (1 OF 2)
41	PRECAST HIGHWAY GUARDRAIL TRANSITION TOP DETAILS (2 OF 2)



PROFILE – ST 10 (CHURCH ST)

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 8'



PROFILE – FALL RIVER

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 8'

COMMONWEALTH OF MASSACHUSETTS
ROBERT NICCOLI
CIVIL
No. 49871
PROFESSIONAL ENGINEER

Robert Niccoli Digitally signed by Robert Niccoli Date: 2026.08.14 15:07:06 -04'00'

TEC
The Engineering Corp
TEC, INC.
282 MERRIMACK ST
LAWRENCE, MA 01843

AUG 22, 2026 | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE
BERNARDSTON
ST 10 (CHURCH STREET)
OVER FALL RIVER

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Alexander K. Bardow, P.E. — Digitally signed by Alexander K. Bardow, P.E. Date: 2026.08.17 09:48:33 -04'00'
STATE BRIDGE ENGINEER

John Moran — Digitally signed by John Moran Date: 2026.08.17 11:53:44 -04'00'
CHIEF ENGINEER

612159_BR1(B10001).DWG Plotted on 27-Jul-2026 1:55 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	61	146
PROJECT FILE NO. 612159			

GENERAL NOTES

DESIGN
IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, FOR HL-93 LOADING.

MASSDOT BENCH MARK:

BENCHMARK 21:
DH 21
N: 3071189.133'
E: 374939.931'
EL: 347.650'

BENCHMARK 4:
DH4
N: 3071141.167'
E: 374868.583'
EL: 348.630'

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

HORIZONTAL COORDINATES RELATIVE TO THE MASSACHUSETTS STATE PLANE COORDINATION SYSTEM, MASSACHUSETTS MAINLAND ZONE. BASED ON THE NORTH AMERICAN DATUM OF 1983, NAD83 (2011).

DATE:

DATE TO BE PLACED ON THE INSIDE FACE OF THE NORTHEAST AND SOUTHWEST HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS:

EXISTING CONDITIONS SURVEY PREPARED BY HANCOCK ASSOCIATES OF DANVERS, MA DATED MARCH 2023 WITH SUPPLEMENTAL UPDATES DATED JULY 2024. ELECTRONIC SURVEY FILES ARE AVAILABLE FROM MASSDOT.

GEOPHYSICAL SURVEY PREPARED BY HAGER GEOSCIENCE OF WOBURN, MA DATED AUGUST 2023 WITH JULY 2024 AND JULY 2025 REVISIONS. ELECTRONIC SURVEY FILES ARE AVAILABLE FROM MASSDOT. BEDROCK PROFILES NOTED IN THE PLANS ARE AN INTERPRETATION OF THIS SURVEY.

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF SIZE PRINTS (A3).

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED. ALL ANCHOR BOLTS FOR ANCHORING BRIDGE RAILING BASE PLATES TO CONCRETE SHALL BE IN ACCORDANCE WITH ASTM F1554.

CONCRETE:

ALL CONCRETE SHALL BE 5000 HP CONCRETE, EXCEPT AS NOTED BELOW:

CONCRETE SUB-FOOTING SHALL BE 3000 PSI CONCRETE.

CONCRETE FOR SUBSTRUCTURE REPAIRS SHALL BE 4000 PSI CONCRETE.

CONCRETE FOR DECK PATCH REPAIRS SHALL BE RAPID SET CONCRETE, SEE SPECIAL PROVISIONS.

A MASS CONCRETE POUR SHALL BE DEFINED AS ALL C.I.P. CONCRETE POURS SHOWN ON THESE CONSTRUCTION DRAWINGS OF ANY VOLUME IN WHICH A COMBINATION OF THE DIMENSIONS OF THE MEMBER BEING CAST, THE BOUNDARY CONDITIONS, THE CHARACTERISTICS OF THE CONCRETE MIXTURE, AND THE AMBIENT TEMPERATURE CAN LEAD TO UNDESIRABLE THERMAL STRESSES, CRACKING, DELETERIOUS CHEMICAL REACTIONS, OR REDUCTION IN THE LONG-TERM STRENGTH AS A RESULT OF ELEVATED CONCRETE TEMPERATURE DUE TO HEAT OF HYDRATION OR WHEN CEMENT CONCRETE PLACEMENTS ARE SPECIFICALLY DESIGNATED AS MASS CONCRETE PLACEMENTS. MASS CONCRETE PLACEMENTS SHALL REQUIRE A HEAT OF HYDRATION ANALYSIS AND THERMAL CONTROL PLAN, AS SPECIFIED IN THE MASSDOT STANDARD SPECIFICATIONS.

REINFORCEMENT:

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS	#6 BARS
1. NONE	16"	17"	21"
2. 12" OF CONCRETE BELOW BAR	18"	22"	27"
3. EPOXY COATED BARS, COVER<3db, OR CLEAR SPACING<6db	21"	26"	31"
4. COATED BARS, ALL OTHER CASES	17"	21"	25"
5. CONDITION 2. AND 3.	23"	29"	35"
6. CONDITION 2. AND 4.	21"	27"	32"

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

MEMBRANE WATERPROOFING:

ALL MEMBRANE WATERPROOFING USED ON BRIDGE DECKS SHALL BE MEMBRANE WATERPROOFING FOR BRIDGE DECKS – SPRAY APPLIED.

ADDITIONAL INFORMATION:

SEE GEOTECHNICAL REPORT PREPARED BY NOBIS GROUP, DATED OCTOBER 28, 2025.

SEE HYDRAULIC REPORT PREPARED BY BAY COLONY GROUP, INC., DATED MAY 11, 2023; REVISED SEPTEMBER 15, 2023 AND TEMPORARY CONTROL OF WATER MEMORANDUM DATED SEPTEMBER 9, 2023.

EXISTING CONDITIONS:

1. CONFIGURATION AND LAYOUT OF EXISTING BRIDGE STRUCTURE BASED ON THE ORIGINAL 1923 AND 1959 DESIGN DRAWINGS.
2. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM	QTY.	UNIT
PRE AND POST-CONSTRUCTION SURVEY AND GEOTECHNICAL MONITORING AND INSTRUMENTATION	1	LS
DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B-10-001	1	LS
EARTH EXCAVATION	4400	CY
REINFORCED CONCRETE EXCAVATION – BRIDGE NO. B-10-001	950	CY
REINFORCED CONCRETE DECK EXCAVATION (FULL DEPTH)	25	SY
REINFORCED CONCRETE DECK EXCAVATION (PARTIAL DEPTH)	5	CY
BRIDGE EXCAVATION	2900	CY
TIMBER SHORING REMOVED AND STACKED	1	LS
CLASS B ROCK EXCAVATION	300	CY
DREDGING AND DISPOSING OF MATERIAL	9	CY
DREDGING AND STOCKPILING OF MATERIAL	30	CY
GRAVEL BORROW FOR BRIDGE FOUNDATION	90	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	2525	CY
CRUSHED STONE	500	TON
8 INCH DUCTILE IRON WATER PIPE (RUBBER GASKET)	145	FT
16 INCH STEEL PIPE CASING FOR WATER PIPE	10	FT
8 INCH WATER PIPE INSULATION	100	FT
SUPERPAVE BRIDGE SURFACE COURSE – 9.5 POLYMER (SSC-B-9.5-P)	60	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 POLYMER (SPC-B-9.5-P)	60	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – 12.5 (SPC-B-12.5)	15	TON
FLOATING SILT FENCE	350	FT
GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL	550	SY
COMPOST AND SEED OVER RIPRAP	90	CY
TEMPORARY BOLT-DOWN BARRIER REMOVED AND RESET	400	FT
TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3)	240	FT
TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4)	525	FT
TEMPORARY BARRIER TRANSITION	4	EA
3000 PSI CEMENT CONCRETE	1400	CY
4000 PSI, $\frac{3}{8}$ INCH, 660 CEMENT CONCRETE	5	CY
RAPID SETTING CONCRETE	15	CY
TEMPORARY SHORING	1	EA
TEMPORARY EARTH SUPPORT SYSTEM	1	LS
BRIDGE RIPRAP	7400	TON
STREAMBED RESTORATION	1	LS
CONTROL OF WATER – STRUCTURE NO. B-10-001	1	LS
TEMPORARY ACCESS TRESTLE AND SUPPORTS	1	LS
TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. B-10-001	1	LS
BRIDGE STRUCTURE, BRIDGE NO. B-10-001	1	LS

TRAFFIC DATA

	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2043	
AVERAGE DAILY TRAFFIC – PRESENT	8386	
AVERAGE DAILY TRAFFIC – DESIGN YEAR	10233	
DESIGN HOURLY VOLUME	880	
DIRECTIONAL DISTRIBUTION	58.2%	
TRUCK PERCENTAGE – AVERAGE DAY	5%	
TRUCK PERCENTAGE – PEAK HOUR	7.9%	
DESIGN SPEED	45 MPH	
DIRECTIONAL DESIGN HOURLY VOLUME	512	

SEISMIC DESIGN CRITERIA

DESIGN RETURN PERIOD:	2500
DESIGN SPECTRA	
As	0.090
SDs	0.162
SD1	0.098
SITE CLASS	C
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA

DRAINAGE AREA (SQ. MILES)	25.7
DESIGN FLOOD DISCHARGE (C.F.S.)	2,300
DESIGN FLOOD FREQUENCY (YEARS)	25
DESIGN FLOOD VELOCITY (F.P.S.)	9.1
DESIGN FLOOD ELEVATION (FEET, NAVD)	322.6
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	3,340
BASE FLOOD ELEVATION (FEET, NAVD)	323.6
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	15
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	100
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	15.2
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	UNKNOWN
FREQUENCY (IF KNOWN, YEARS)	UNKNOWN
MAXIMUM ELEVATION (FEET, NAVD)	UNKNOWN
DATE (MM/YYYY)	UNKNOWN
HISTORY OF ICE FLOES	N/A
EVIDENCE OF SCOUR AND EROSION	10'

SUBSEQUENT TO THE REMOVAL OF DAM DOWNSTREAM OF THE PROJECT THE STREAMBED THALWEG ELEVATION DECREASED 10' IN THE PROJECT AREA AS DETERMINED BY COMPARING THE 1977 HEC-2 DATA WITH THE 2022 SURVEY DATA.

TEMPORARY WATER CONTROL DESIGN DATA

DESIGN FLOOD DISCHARGE (C.F.S.)	784
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	7.2
DESIGN FLOOD ELEVATION (FEET, NAVD)	320.2

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

612159_BR2(B10001).DWG Plotted on 31-Jul-2026 1:55 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BORING 1 (BB–1)

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 349.00
EL. = 340.00
EL. = 330.00
ELEVATION (FT)
T.O.F. WEST ABUTMENT
EL. = 322.00
EL. = 320.00
EL. = 310.00
EL. = 300.00

BORING LOG

Boring No.: BB-1
Boring Location: N: 3071155.00 E: 374795.00
Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159
Checked by: J. Vanotti
Date Start: March 2, 2023
Date Finish: March 2, 2023
Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer
Ground Surface Elev.: (+/-) 349
Datum: NAVD 88

Drilling Method	Sampler	Groundwater Observations				
Type: Casing	Split-Spoon	Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
Size ID (in.): 4	1-3/8	03/02/23	14:30	Not Encountered			
Advancement: Drive and Wash	140-lb Hammer						

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
1								BRIDGE DECK 348.0 / 1.0	Approximately 1-foot thick concrete bridge deck.	1
2–16								AIR TO RIPRAP		
17								333.0 / 16.0		
18									Riprap and obstruction.	
19	S-1	6	19-19.5	59				BOULDERS & COBBLES	S-1: Very dense, dark gray-brown, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, Inferred riprap materials. Wet.	
20–23										
24								326.0 / 23.0		2
24	S-2	8	24-26	9				GLACIAL TILL	S-2: Medium dense, brown and light gray, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet. [Submitted to laboratory for Particle Size analysis: Gravel =	
25				8						

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) A thin-wall core barrel was used to core through the bridge deck.
2) Ground containing riprap and inferred boulder/cobble obstruction. Driller broke through obstruction at 23 feet below deck, washed down to seat casing and obtained soil sample.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 1 of 2

BORING LOG (duplicate)

Boring No.: BB-1
Boring Location: N: 3071155.00 E: 374795.00
Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159
Checked by: J. Vanotti
Date Start: March 2, 2023
Date Finish: March 2, 2023
Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer
Ground Surface Elev.: (+/-) 349
Datum: NAVD 88

Drilling Method	Sampler	Groundwater Observations				
Type: Casing	Split-Spoon	Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
Size ID (in.): 4	1-3/8	03/02/23	14:30	Not Encountered			
Advancement: Drive and Wash	140-lb Hammer						

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
25				15					31.8%, Sand = 50.9%, Fines = 17.3%).	
26				12						
27–29								GLACIAL TILL		
29	S-3	0	29-29.3	75/4"					S-3: No Recovery.	
30–32								317.0 / 32.0		3
32–34										
35	C-1	60	34-39		100/84	1.6			C-1: Medium Hard to Hard, moderately weathered, slightly fractured to sound, red, fine to coarse, ARKOSE WITH ARKOSIC CONGLOMERATE, close to wide bedding with hoizontal to steep joints. At approximately 36.3 feet bedrock transition from arkosic conglomerate to arkose.	
36						1.6				
37						1.6				
38						1.6		BEDROCK		
39						1.6				
40	C-2	57	39-44		95/88	1.7			C-2: Moderately Hard to Hard, severely weathered, red, medium to coarse grained, ARKOSE, close with horizontal joints. [Laboratory Testing Performed - Bulk Density and Compressive Strength; Density = 162pcf, Compressive Strength = 8,843psi, Failure Type = 1].	
41						1.7				
42						1.7				
43						1.7				
44						1.7		305.0 / 44.0		4
45–49									Boring terminated at 44 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
3) Increase in drilling resistance.
4) Borehole backfilled with drilling spoils and gravel. Bridge deck was restored using a plug of wood, 4 anchors at a 45 degree angle, and grout.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 2 of 2

BORING 4 (BB–4)

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 349.00
EL. = 340.00
EL. = 330.00
OBS. GROUNDWATER
03/06/23
EL. = 329.50
ELEVATION (FT)
T.O.F. WEST ABUTMENT
EL. = 322.00
EL. = 320.00
EL. = 310.00
EL. = 300.00

BORING LOG

Boring No.: BB-4
Boring Location: N: 3071189.00 E: 374823.00
Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159
Checked by: J. Vanotti
Date Start: March 6, 2023
Date Finish: March 6, 2023
Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer
Ground Surface Elev.: (+/-) 349
Datum: NAVD 88

Drilling Method	Sampler	Groundwater Observations					
Type: Casing	Split-Spoon	Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
Size ID (in.): 4	1-3/8	▼ 03/06/23	13:45	19.5	N/A OUT	44	2 hours
Advancement: Drive and Wash	140-lb Hammer						

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
1								BRIDGE DECK 348.0 / 1.0	Approximately 11-inch thick concrete bridge deck.	1
2–18								AIR TO SURFACE		
18								330.5 / 18.5		
19	S-1	4	18.5-20.5	1 2 3 4				FILL	S-1: Loose, dark gray with reddish brown, fine to coarse SAND and Silt, trace fine Gravel. Wet.	
20										
21	S-2	0	20.5-22.5	4 6 5 6					S-2: No Recovery.	
22–23										
24	S-3	5	24-26	6 4					S-3: Medium stiff, gray with reddish brown, SILT and fine Sand, trace fine to medium Gravel. Moist.	
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) A thin-wall core barrel was used to core through the bridge deck.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 1 of 2

BORING LOG (duplicate)

Boring No.: BB-4
Boring Location: N: 3071189.00 E: 374823.00
Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159
Checked by: J. Vanotti
Date Start: March 6, 2023
Date Finish: March 6, 2023
Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer
Ground Surface Elev.: (+/-) 349
Datum: NAVD 88

Drilling Method	Sampler	Groundwater Observations					
Type: Casing	Split-Spoon	Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
Size ID (in.): 4	1-3/8	▼ 03/06/23	13:45	19.5	N/A OUT	44	2 hours
Advancement: Drive and Wash	140-lb Hammer						

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
26				3 4				FILL	S-4A (4"): Medium dense, gray with reddish brown, SILT and fine to medium Sand, trace fine Gravel. Moist.	
27	S-4	10	26-28	3 2				322.0 / 27.0	S-4B (6"): Loose, red with light gray, fine to coarse SAND, some fine Gravel, trace Silt. Dry to Moist.	
28				17						
29	S-5	0.5	29-29	50/0"				GLACIAL TILL	S-5: Very dense, red, fine to coarse SAND, ARKOSE. Moist to Wet.	
30–32								315.0 / 34.0		2
32–34										
35	C-1	60	34-39		100/53	1.6			C-1: Medium Hard, moderately to slightly weathered, moderately fractured, red, coarse-grained, ARKOSE, horizontal to vertical joints and close to wide bedding. Micaceous with quartz. [Laboratory Testing Performed - Bulk Density and Compressive Strength; Density = 160pcf, Compressive Strength = 6,392psi, Failure Type = 1].	
36						1.5				
37						1.2				
38						1.1				
39						1.3		BEDROCK		
40	C-2	60	39-44		100/85	2.1			C-2: Medium Hard, moderately to slightly weathered, slightly fractured to sound, red, coarse-grained, ARKOSE, horizontal to vertical joints and close to wide bedding. Micaceous with quartz.	
41						1.5				
42						1.8				
43						1.5				
44						1.6		305.0 / 44.0		3
45–49									Boring terminated at 44 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
2) Increase in drilling resistance. Top of rock inferred at approximately 32 feet.
3) Borehole backfilled with drilling spoils and gravel. Bridge deck was restored using a plug of wood, 4 anchors at a 45 degree angle, and grout.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 2 of 2

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	62	146
PROJECT FILE NO.	612159		

BORING LOGS (1 OF 8)

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLANS THUS: ◔
2. BORINGS ARE TAKEN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 3/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
6. BORINGS WB–5 AND WB–6 WERE MADE IN FEBRUARY 2023. BORINGS BB–1, BB–2, BB–3, BB–4, WB–7, AND WB–8 WERE MADE IN MARCH 2023. BORINGS BB–102, BB–103, AND BB–104 WERE MADE IN FEBRUARY 2025. BORINGS BB–201 AND BB–202 WERE MADE IN MAY 2025.
7. ALL BORINGS WERE MADE BY GEOLOGIC–EARTH EXPLORATION, INC., 7 SHERWOOD DRIVE, NORFOLK, MA, 02056.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. A GEOPHYSICAL SURVEY WAS CONDUCTED BY HAGER GEOSCIENCE, 596 MAIN STREET, WOBURN, MA 01801 IN JUNE 2023. A SECOND SUPPLEMENTAL GEOPHYSICAL SURVEY WAS CONDUCTED IN MAY 2025.
10. RESULTS OF THE GEOPHYSICAL SURVEY SUGGEST THE PRESENCE OF COMPLEX BEDROCK STRUCTURES EAST OF THE FALL RIVER. THE RESULTING BEDROCK ELEVATION IS WIDELY VARIABLE ACROSS THE PROJECT SITE. SEE GEOTECHNICAL REPORT.

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 8/29/23 14:36 - J:\100313.000-MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE_BERNARDSTON\FIELD DATA\EXPLORATION\BORING\100313.00 - MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE_BERNAR
612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM

BORING 2 (BB–2)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-2
Boring Location: N: 3071148.00 E: 374894.00
Checked by: J. Vanotti
Date Start: February 27, 2023
Date Finish: March 1, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 348
Datum: NAVD 88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations					
Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 03/01/23	10:50	29	30	31	43 hours

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 348.00
EL. = 340.00
EL. = 330.00

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1									BRIDGE DECK 347.0 / 1.0	Approximately 1-foot thick concrete bridge deck.	1
2–17									AIR TO RIPRAP		
18									330.0 / 18.0		
19–23									BOULDERS & COBBLES	Riprap and obstruction.	2
24	S-1	4	24-26	20 11					324.0 / 24.0 FILL	S-1: Medium dense, dark gray-white, fine to coarse GRAVEL, some Silt, Silt, trace Clay, Wet.	
25											

Soil	Percentage
trace	5 - 10
little	10 - 20
some	20 - 35
and	35 - 50

Non-Soil
very few
few
several
numerous

NOTES:
1) A thin-wall core barrel was used to core through the bridge deck.
2) Ground containing riprap and 3 foot obstruction, inferred boulder based on drilling resistance.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual. Page No. 1 of 2

ELEVATION (FT)

BORING 3 (BB–3)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-3
Boring Location: N: 3071180.00 E: 374921.00
Checked by: J. Vanotti
Date Start: March 7, 2023
Date Finish: March 7, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 348
Datum: NAVD 88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations					
Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 03/07/23	11:05	21	27	38.2	10 minutes
▽ 03/07/23	12:00	21	27	38.2	55 minutes

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 348.00
EL. = 340.00
EL. = 330.00
OBS. GROUNDWATER 03/07/23
EL. = 327.00

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1									BRIDGE DECK 347.0 / 1.0	Approximately 1-foot thick concrete bridge deck.	1
2–19									AIR TO RIPRAP		
20									328.0 / 20.0		
21–22							▼		BOULDERS & COBBLES 326.0 / 22.0	Drilled through 2 foot thick riprap layer. Continued drilling four feet to eliminate possible boulder but no surface was able to be sampled.	2 3 4
23–25									INFERRED BEDROCK		

Soil	Percentage
trace	5 - 10
little	10 - 20
some	20 - 35
and	35 - 50

Non-Soil
very few
few
several
numerous

NOTES:
1) A thin-wall core barrel was used to core through the bridge deck.
2) Ground containing riprap and obstruction.
3) Water Level remained at 21 feet and top of rock at 22 feet.
4) Increase in drilling resistance beneath 2-feet of riprap; continued for 4 feet, resistance steady; inferred bedrock.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual. Page No. 1 of 2

ELEVATION (FT)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-2
Boring Location: N: 3071148.00 E: 374894.00
Checked by: J. Vanotti
Date Start: February 27, 2023
Date Finish: March 1, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 348
Datum: NAVD 88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations					
Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 03/01/23	10:50	29	30	31	43 hours

T.O.F. EAST ABUTMENT
EL. = 322.00
EL. = 320.00
OBS. GROUNDWATER 03/06/23
EL. = 319.00
EL. = 310.00
EL. = 300.00

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
11											
26				10					FILL 321.6 / 26.4		
27	S-2	7	26-28	6 4						S-2A (5"): Medium dense, brown and light gray, fine to coarse GRAVEL and Silt, little fine to coarse Sand, Inferred Glacial Till. Wet. [S-2A and S-2B were submitted as a composite to the laboratory for analysis: pH = 7.67, Temp. = 21.5 Celsius, Chlorides = 54 ppm, Sulfates = <10 ppm].	
28				5						S-2B (2"): Medium dense, dark reddish-brown, fine to coarse SAND, little fine to coarse Gravel, little Silt. Wet. [S-2A and S-2B were submitted as a composite to the laboratory for analysis: pH = 7.67, Temp. = 21.5 Celsius, Chlorides = 54 ppm, Sulfates = <10 ppm].	
29				3						S-3: Dense, light reddish-brown, fine to coarse SAND and fine to coarse Gravel, little Silt, 2-inch thick lens of brown Silt with Gravel. Dry to Wet.	
30	S-3	12	29-31	6 14			▼				
31				18 11					GLACIAL TILL		
32–33											
34	S-4	1	34-34.3	50/3"						S-4: Very dense, red, coarse GRAVEL, 1 piece micaceous Arkose. Wet.	3
35–39									309.0 / 39.0		
40	C-1	56	39-44		93/75	2.4				C-1: Medium Hard to Hard, slightly weathered, slightly fractured to Sound, mottled red and gray, medium to coarse grained, ARKOSE, horizontal to steep joints with moderate to wide bedding.	
41–43						2.4					
44						2.4			BEDROCK		
45	C-2	60	44-49		100/88	1.3				C-2: Medium Hard to Hard, moderately weathered, moderately fractured to sound, mottled red and gray, medium to coarse grained, ARKOSE, horizontal to steep joints with moderate to wide bedding. [Laboratory Testing Performed - Bulk Density and Compressive Strength; Density = 161pcf, Compressive Strength = 8,660psi, Failure Type = 1].	4
46–48						1.3					
49						1.3			299.0 / 49.0	Boring terminated at 49 feet.	
50											

Soil	Percentage
trace	5 - 10
little	10 - 20
some	20 - 35
and	35 - 50

Non-Soil
very few
few
several
numerous

NOTES:
3) Increase in drilling resistance.
4) Borehole backfilled with drilling spoils and gravel. Bridge deck was restored using a plug of wood, 4 anchors at a 45 degree angle, and grout.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual. Page No. 2 of 2

ELEVATION (FT)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-3
Boring Location: N: 3071180.00 E: 374921.00
Checked by: J. Vanotti
Date Start: March 7, 2023
Date Finish: March 7, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 348
Datum: NAVD 88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations					
Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 03/07/23	11:05	21	27	38.2	10 minutes
▽ 03/07/23	12:00	21	27	38.2	55 minutes

T.O.F. EAST ABUTMENT
EL. = 322.00
EL. = 320.00
EL. = 310.00
EL. = 300.00

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
26–28											
29	C-1	62	28-33.2		100/98	2			INFERRED BEDROCK	C-1: Moderately Hard, slightly weathered, slightly fractured to sound, red, coarse-grained, ARKOSE, shallow joints with close to wide bedding. 2-inch end piece was mechanically removed into the row containing core run 2.	
30–33						2					
34	C-2	60	33.2-38.2		100/96	2.4				C-2: Moderately Hard, slightly to moderately weathered, slightly fractured, red, coarse-grained, ARKOSE, shallow joints with close to wide bedding, at approximately 36°, a 2-inch band of soft, weathered rock was removed and bagged. [Laboratory Testing Performed - Bulk Density and Compressive Strength; Density = 161pcf, Compressive Strength = 6,186psi, Failure Type = 1].	
35–38						2.4					
39									309.8 / 38.2	Boring terminated at 38.2 feet.	5
40–50											

Soil	Percentage
trace	5 - 10
little	10 - 20
some	20 - 35
and	35 - 50

Non-Soil
very few
few
several
numerous

NOTES:
5) Borehole backfilled with drilling spoils & gravel. Bridge deck restored using a plug of wood, 4 anchors at a 45 degree angle, & grout.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual. Page No. 2 of 2

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	63	146
PROJECT FILE NO.	612159		

BORING LOGS (2 OF 2)

NOTES:

1. SEE SHEET 3 FOR BORING NOTES.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 8/29/23 14:36 - J:\100313.000 MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE_BERNARDSTON\FIELD DATA\EXPLORATION\BORING\[100313.00_MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE_BERNARDSTON.GPJ]

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	64	146
	PROJECT FILE NO. 612159		

BORING LOGS (3 OF 8)

BORING 5 (WB–5)

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 349.00

ELEVATION (FT)

EL. = 340.00

EL. = 330.00

T.O.F. SOUTHWEST WINGWALL (2)
EL. = 326.50

T.O.F. SOUTHWEST WINGWALL (1)
EL. = 322.00

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: WB-5
Boring Location: N: 3071159.00 E: 374750.00
Checked by: J. Vanotti
Date Start: February 24, 2023
Date Finish: February 24, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 349
Datum: NAVD 88

	Drilling Method	Sampler	Groundwater Observations				
Type	Casing	Split-Spoon	Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
Size ID (in.)	4	1-3/8	03/03/23	14:40	Not Encountered			
Advancement	Drive and Wash	140-lb Hammer						

Depth (ft.)	Sample Info: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
						ASPHALT 348.5 / 0.5	Approximately 6-inch thick asphalt.	1
1	S-1	12	0.5-2	25			S-1: Very dense, dark gray brown, fine to coarse GRAVEL, some fine to coarse Sand, little Silt, Few asphalt particles. Wet.	
2				21				
3				45				
4								
	S-2	13	4-6	13			S-2: Dense, dark gray brown, fine to coarse GRAVEL and fine to coarse Sand, little Silt, Few asphalt particles. Moist.	
5				21				
6				24				
				26				
	S-3	13	6-8	28			S-3: Medium dense, gray brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Moist. [S-3 and S-4 were submitted as a composite to the laboratory for pH analysis: pH = 6.79, Temp. = 21.1 Celsius, Chlorides = 143 ppm, Sulfates = 12 ppm].	
7				14		FILL		
8				13				
	S-4	9	8-10	12			S-4: Loose, gray brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Wet. [S-3 and S-4 were submitted as a composite to the laboratory for pH analysis: pH = 6.79, Temp. = 21.1 Celsius, Chlorides = 143 ppm, Sulfates = 12 ppm].	
9				5				
10				4				
				5				
	S-5	2	10-12	6			S-5: Medium dense, gray brown, fine to coarse SAND, little Silt, Very little recovery. Wet.	
11				6				
12				5				
				8				
13								
14						335.0 / 14.0		
	S-6	0	14-14.1	51/1"			S-6: No Recovery.	2
15								
16								
17								
18								
19								
	S-7	1	19-19.2	50/2"		GLACIAL TILL	S-7: Very dense, red, Arkose. Moist.	
20								
21								
22								
23								
24						325.0 / 24.0	S-8: Arkose wash in spoon tip.	
	S-8	0	24-24	50/0"			Boring terminated at 24 feet.	3
25								

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) 6-inch thick Asphalt
2) Drilling resistance increased for remainder of exploration. Possible strata transition based on drill action
3) The spoon bounced for over 50 blows without advancing; inferred bedrock. Upon completion of borehole, it was backfilled with drilling spoils, sands and the road surface was restored using Asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums, transitions may be gradual.

Page No. 1 of 1

BORING 8 (WB–8)

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 349.00

OBS. GROUNDWATER
03/06/23
EL. = 348.00

ELEVATION (FT)

EL. = 340.00

EL. = 330.00

T.O.F. NORTHWEST WINGWALL
EL. = 322.00

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: WB-8
Boring Location: N: 3071195.00 E: 374779.00
Checked by: J. Vanotti
Date Start: March 6, 2023
Date Finish: March 6, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 349
Datum: NAVD 88

	Drilling Method	Sampler	Groundwater Observations				
Type	Casing	Split-Spoon	Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
Size ID (in.)	4	1-3/8	▽ 03/06/23	14:00	1	15	19	20 minutes
Advancement	Drive and Wash	140-lb Hammer	▽ 03/06/23	14:25	1	NA	19	45 minutes

Depth (ft.)	Sample Info: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
						ASPHALT 348.5 / 0.5	Approximately 6-inch thick asphalt.	
1	S-1	7	0.5-2	13			S-1: Medium dense, gray brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Moist.	
2				12				
	S-2	11	2-4	6			S-2: Medium dense, gray brown, fine to coarse SAND, some Clayey Silt, little fine Gravel. Moist.	
3				6				
4				15				
				7				
	S-3	12	4-6	7			S-3: Medium dense, gray brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet. [Submitted to laboratory for Particle Size analysis: Gravel = 28.4%, Sand = 53.8%, Fines = 17.8%].	
5				11				
6				19				
				14				
	S-4	6	6-8	12			S-4: Medium dense, gray brown, fine to coarse GRAVEL, some Silt, little fine to coarse Sand. Wet.	
7				10		FILL		
8				9				
				9				
	S-5	6	8-10	5			S-5: Loose, gray brown, fine to coarse SAND, some Silt, little fine to medium Gravel. Wet.	
9				3				
10				4				
				1				
	S-6	8	10-10.9	8			S-6A (4"): Very dense, gray brown, fine to coarse SAND, some Silt, little fine Gravel. Wet.	
11				50/5"		338.0 / 11.0		
12						GLACIAL TILL 337.0 / 12.0	S-6B (4"): Very dense, red, fine to coarse SAND, little Silt, little fine Gravel. Wet.	2
13								
14								
	S-7	0	14-14	53/0"			S-7: Red friable Arkose fragments in wash. Wet.	
15								
16						BEDROCK		
17								
18								
19						330.0 / 19.0	S-8: Bounced spoon with No Recovery.	
	S-8	0	19-19	50/0"			Boring terminated at 19 feet.	3
20								
21								
22								
23								

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) 6-inch thick Asphalt
2) Drilling resistance increased at 12 feet and for remainder of exploration; Driller notes top of rock
3) Boring Terminated at 19 feet due to split spoon refusal. Return wash consisited of Red Arkose Bedrock. Upon completion of borehole, it was backfilled with drilling spoils, sands, and the road surface was restored using Asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums, transitions may be gradual.

Page No. 1 of 1

NOTES:

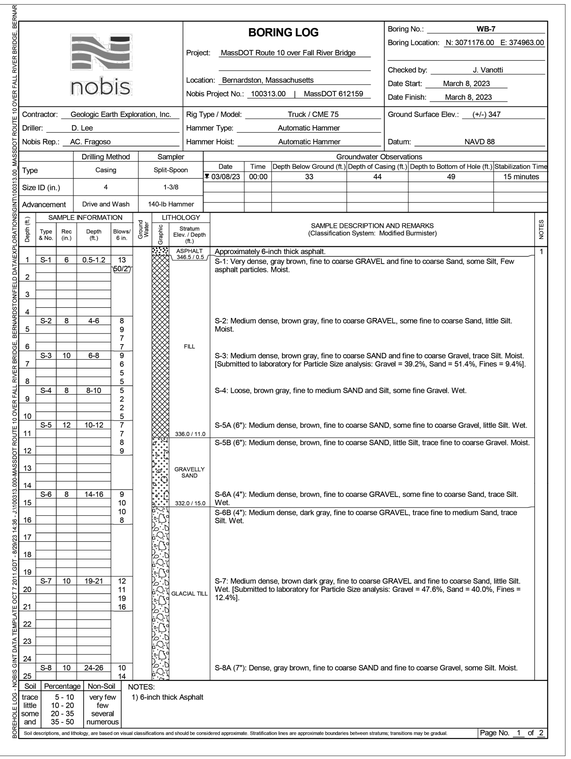
1. SEE SHEET 3 FOR BORING NOTES.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BORING 7 (WB–7)



BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: WB-7
Boring Location: N: 3071176.00 E: 374963.00
Checked by: J. Vanotti
Date Start: March 8, 2023
Date Finish: March 8, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 347
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 03/08/23	00:00	33	44	49	15 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
						ASPHALT 346.5 / 0.5	Approximately 6-inch thick asphalt.	1
1	S-1	6	0.5-1.2	13 60/2"			S-1: Very dense, gray brown, fine to coarse GRAVEL and fine to coarse Sand, some Silt, Few asphalt particles. Moist.	
2								
3								
4								
5	S-2	8	4-6	8 9 7 7			S-2: Medium dense, brown gray, fine to coarse GRAVEL, some fine to coarse Sand, little Silt. Moist.	
6						FILL		
7	S-3	10	6-8	9 6 5 5			S-3: Medium dense, brown gray, fine to coarse SAND and fine to coarse Gravel, trace Silt. Moist. [Submitted to laboratory for Particle Size analysis: Gravel = 39.2%, Sand = 51.4%, Fines = 9.4%].	
8								
9	S-4	8	8-10	5 2 2 5			S-4: Loose, brown gray, fine to medium SAND and Silt, some fine Gravel. Wet.	
10								
11	S-5	12	10-12	7 7 8 9			S-5A (6"): Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet.	
12						336.0 / 11.0	S-5B (6"): Medium dense, brown, fine to coarse SAND, little Silt, trace fine to coarse Gravel. Moist.	
13								
14						GRAVELLY SAND		
15	S-6	8	14-16	9 10 10 8		332.0 / 15.0	S-6A (4"): Medium dense, brown, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt. Wet.	
16							S-6B (4"): Medium dense, dark gray, fine to coarse GRAVEL, trace fine to medium Sand, trace Silt. Wet.	
17								
18								
19								
20	S-7	10	19-21	12 11 19 16			S-7: Medium dense, brown dark gray, fine to coarse GRAVEL and fine to coarse Sand, little Silt. Wet. [Submitted to laboratory for Particle Size analysis: Gravel = 47.6%, Sand = 40.0%, Fines = 12.4%].	
21								
22								
23								
24						GLACIAL TILL		
25	S-8	10	24-26	10 14			S-8A (7"): Dense, gray brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Moist.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) 6-inch thick Asphalt

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

Page No. 1 of 2

EL. = 350.00

EXISTING GROUND SURFACE
EL. = 347.00

EL. = 340.00

EL. = 330.00

T.O.F. EAST ABUTMENT
& NORTHEAST WINGWALL
EL. = 322.00

ELEVATION (FT)

BORING 7 (WB–7)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: WB-7
Boring Location: N: 3071176.00 E: 374963.00
Checked by: J. Vanotti
Date Start: March 8, 2023
Date Finish: March 8, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 347
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 03/08/23	00:00	33	44	49	15 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
26				35 25			A-8B (3"): Dense, gray brown, fine to coarse GRAVEL, little fine to medium Sand, trace Silt. Wet.	
27								
28								
29								
30	S-9	8	29-31	10 10 10 8			S-9: Medium dense, gray brown, fine to coarse GRAVEL and fine to coarse Sand, some Silt. Moist.	
31								
32								
33								
34								
35	S-10	6	34-36	8 7 6 8			S-10: Medium dense, gray brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Wet.	
36								
37						GLACIAL TILL		
38								
39								
40	S-11	10	39-41	6 6 10 8			S-11: Medium dense, gray orangish brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet. [Submitted to laboratory for Particle Size analysis: Gravel = 29.7%, Sand = 53.2%, Fines = 17.1%].	
41								
42								
43								
44								
45	S-12	9	44-46	8 8 25 37			S-12A (4"): Dense, gray orangish brown, fine to coarse GRAVEL and fine to coarse Sand, some Silt. Wet.	
46							S-12B (5"): Dense, red-gray friable, fine to coarse GRAVEL, some fine to coarse Sand, some Silt. Moist.	2
47								
48								
49								
50	S-13	1	49-49.3	50/3"		297.7 / 49.3	S-13: Very dense, red-gray, fine SILT, Inferred powdery rock dust in spoon tip. Dry.	3
							Boring terminated at 49.25 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
2) Drilling resistance increased for remainder of exploration.
3) Upon completion of borehole, it was backfilled with drilling spoils, sands and the road surface was restored using Asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

Page No. 2 of 2

EL. = 320.00

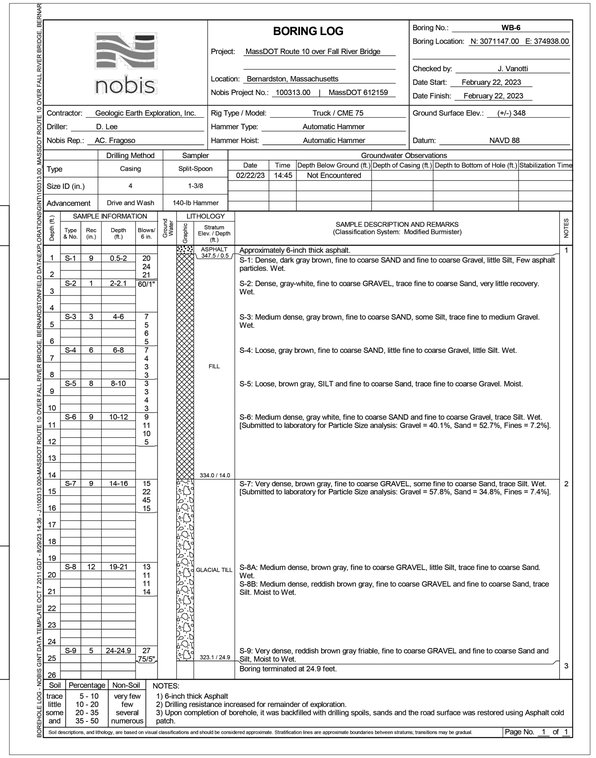
OBS. GROUNDWATER
03/06/23
EL. = 314.00

EL. = 310.00

EL. = 300.00

ELEVATION (FT)

BORING 6 (WB–6)



BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: WB-6
Boring Location: N: 3071147.00 E: 374938.00
Checked by: J. Vanotti
Date Start: February 22, 2023
Date Finish: February 22, 2023

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: AC. Fragoso

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 348
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
02/22/23	14:45	Not Encountered			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
						ASPHALT 347.5 / 0.5	Approximately 6-inch thick asphalt.	1
1	S-1	9	0.5-2	20 24 21			S-1: Dense, dark gray brown, fine to coarse SAND and fine to coarse Gravel, little Silt, Few asphalt particles. Wet.	
2								
3	S-2	1	2-2.1	60/1"			S-2: Dense, gray-white, fine to coarse GRAVEL, trace fine to coarse Sand, very little recovery. Wet.	
4								
5	S-3	3	4-6	7 5 6 5			S-3: Medium dense, gray brown, fine to coarse SAND, some Silt, trace fine to medium Gravel. Wet.	
6								
7	S-4	6	6-8	7 4 3 3			S-4: Loose, gray brown, fine to coarse SAND, little fine to coarse Gravel, little Silt. Wet.	
8						FILL		
9	S-5	8	8-10	3 3 4 3			S-5: Loose, brown gray, SILT and fine to coarse Sand, trace fine to coarse Gravel. Moist.	
10								
11	S-6	9	10-12	9 11 10 5			S-6: Medium dense, gray white, fine to coarse SAND and fine to coarse Gravel, trace Silt. Wet. [Submitted to laboratory for Particle Size analysis: Gravel = 40.1%, Sand = 52.7%, Fines = 7.2%].	
12								
13								
14						334.0 / 14.0		
15	S-7	9	14-16	15 22 45 15			S-7: Very dense, brown gray, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt. Wet. [Submitted to laboratory for Particle Size analysis: Gravel = 57.8%, Sand = 34.8%, Fines = 7.4%].	2
16								
17								
18								
19								
20	S-8	12	19-21	13 11 11 14			S-8A: Medium dense, brown gray, fine to coarse GRAVEL, little Silt, trace fine to coarse Sand. Wet.	
21						GLACIAL TILL	S-8B: Medium dense, reddish brown gray, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Moist to Wet.	
22								
23								
24								
25	S-9	5	24-24.9	27 75/5"		323.1 / 24.9	S-9: Very dense, reddish brown gray friable, fine to coarse GRAVEL and fine to coarse Sand and Silt. Moist to Wet.	3
26							Boring terminated at 24.9 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) 6-inch thick Asphalt
2) Drilling resistance increased for remainder of exploration.
3) Upon completion of borehole, it was backfilled with drilling spoils, sands and the road surface was restored using Asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

Page No. 1 of 1

EL. = 350.00

EXISTING GROUND SURFACE
EL. = 348.00

EL. = 340.00

EL. = 330.00

T.O.F. EAST ABUTMENT
& SOUTHEAST WINGWALL
EL. = 322.00

ELEVATION (FT)

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	65	146
PROJECT FILE NO.	612159		

BORING LOGS (4 OF 8)

NOTES:

1. SEE SHEET 3 FOR BORING NOTES.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

SHEET 6 OF 41 SHEETS BRIDGE NO. B–10–001 (CLA)

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM

BORING 9 (BB–102)

BORING LOG

Boring No.: BB-102
Boring Location: See boring location plan N: 3071194.71 E: 375006.83
Project: MassDOT Route 10 over Fall River Bridge
Checked by: E. Adler
Location: Bernardston, Massachusetts
Date Start: February 12, 2025
Nobis Project No.: 100313.00 | MassDOT 612159
Date Finish: February 19, 2025

Contractor: Geologic Earth Exploration, Inc.
Rig Type / Model: Truck / CME 55
Ground Surface Elev.: (+/-) 346
Driller: J. Gavin
Hammer Type: Automatic Hammer
Nobis Rep.: K. Kocia / T. Watopa
Hammer Hoist: Automatic Hammer
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/14/25	14:15	14	44	46	5 min
▼ 02/18/25	10:00	23	44	46	4 days
▼ 02/19/25	13:30	12.5	67.5	84	30 min

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
1				5					ASPHALT 345.5 / 0.5	Approximately 6-inch thick asphalt.	
				5						Cobbles and boulders approximately 4 to 5 inches in diameter.	
2	G-1		2-2.5							G-1: Dark brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Moist.	
3											
4											
5											
6	S-1	2	5-7	8					FILL	S-1: Loose to medium dense, dark gray, fine to coarse SAND, trace Silt. Wet.	1
				6							2
7				4							
				2							
8											
9											
10	S-2	12	9-11	8						S-2: Medium dense, dark gray, fine GRAVEL and fine to coarse Sand, trace Silt, very few weathered rock fragments/particles. Wet.	
				9							
				7							
11				8					335.0 / 11.0		
12										Increased resistance encountered at approximately 11 feet bgs.	
13							▼				
14											
15	S-3	13	14-16	10						S-3: Medium dense, brown - gray, fine to coarse SAND and fine to coarse Gravel, trace Silt, few decomposed rock fragments/particles. Wet. Spotting of redoximorphic staining present on gravel.	
				8							
				11							
16				10							
17											
18									GLACIAL TILL		
19											
20	S-4	15	19-21	14						S-4: Medium dense, brown - gray, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, few decomposed rock fragments/particles. Wet. Faint redoximorphic staining present.	
				12							
				9							
21				8							
22											
23											
24											
25	S-5	11	24-26	15						S-5: Medium dense, brown - white - gray, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Wet.	
				15							

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Vacuum excavated to approximately 5 feet below ground surface
2) Water was introduced into the borehole

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

EL. = 350.00
EXISTING GROUND SURFACE
EL. = 346.00
EL. = 340.00
OBS. GROUNDWATER 02/19/25
EL. = 333.50
OBS. GROUNDWATER 02/14/25
EL. = 332.00
EL. = 330.00
OBS. GROUNDWATER 02/18/25
EL. = 323.00
T.O.F. NORTHEAST WINGWALL
EL. = 322.00

ELEVATION (FT)

BORING 9 (BB–102) CONT'D

BORING LOG

Boring No.: BB-102
Boring Location: See boring location plan N: 3071194.71 E: 375006.83
Project: MassDOT Route 10 over Fall River Bridge
Checked by: E. Adler
Location: Bernardston, Massachusetts
Date Start: February 12, 2025
Nobis Project No.: 100313.00 | MassDOT 612159
Date Finish: February 19, 2025

Contractor: Geologic Earth Exploration, Inc.
Rig Type / Model: Truck / CME 55
Ground Surface Elev.: (+/-) 346
Driller: J. Gavin
Hammer Type: Automatic Hammer
Nobis Rep.: K. Kocia / T. Watopa
Hammer Hoist: Automatic Hammer
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/14/25	14:15	14	44	46	5 min
▼ 02/18/25	10:00	23	44	46	4 days
▼ 02/19/25	13:30	12.5	67.5	84	30 min

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
51				14					DECOMPOSED BEDROCK	S-11: Medium dense, dark brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt, few decomposed / weathered rock fragments/particles. Wet.	
				17							
52											
53											
54											
55	S-11	11	54-56	8							
				13							
				11							
56				13							
57											
58											
59											
60	S-12	15	59-61	18						S-12: Dense, dark brown - gray, fine to coarse GRAVEL and fine to coarse Sand, trace Silt, several weathered rock fragments/particles. Wet.	
				23							
				22							
61				55							
62											
63											
64											
65	S-13	4	64-64.3	100/4"					WEATHERED BEDROCK	S-13: Very dense, reddish-brown, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, numerous weathered rock fragments/particles. Wet.	
66											
67											
68											
69											
70	S-14	2	69-69.3	100/4"						S-14: Very dense, light brown, decomposed bedrock. Wet.	
71											
72											
73											
74	S-15	1	73.5-73.9	100/5"					272.0 / 74.0	S-15: Very dense, gray, pulverized bedrock. Wet.	
75	C-1	54	74-79		90/68	3.5			BEDROCK	C-1: Soft to Medium Hard, slightly weathered, sound to slightly fractured, gray, coarse-grained to fine grained, CONGLOMERATE, possible fault. Slight dipping angle	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

EL. = 290.00
EL. = 280.00

ELEVATION (FT)

BORING 9 (BB–102)

BORING LOG

Boring No.: BB-102
Boring Location: See boring location plan N: 3071194.71 E: 375006.83
Project: MassDOT Route 10 over Fall River Bridge
Checked by: E. Adler
Location: Bernardston, Massachusetts
Date Start: February 12, 2025
Nobis Project No.: 100313.00 | MassDOT 612159
Date Finish: February 19, 2025

Contractor: Geologic Earth Exploration, Inc.
Rig Type / Model: Truck / CME 55
Ground Surface Elev.: (+/-) 346
Driller: J. Gavin
Hammer Type: Automatic Hammer
Nobis Rep.: K. Kocia / T. Watopa
Hammer Hoist: Automatic Hammer
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/14/25	14:15	14	44	46	5 min
▼ 02/18/25	10:00	23	44	46	4 days
▼ 02/19/25	13:30	12.5	67.5	84	30 min

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
26				14					GLACIAL TILL		
				13							
27											
28											
29									317.0 / 29.0		
30	S-6	14	29-31	19						S-6: Very dense, dark gray - orangish-brown, fine to coarse GRAVEL and fine to coarse Sand, little Silt, few decomposed rock fragments/particles. Wet. Strong redoximorphic staining present.	
				25							
				40							
31				25							
32											
33											
34											
35	S-7	13	34-36	12						S-7: Medium dense, dark gray - orangish-brown, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, few decomposed rock fragments/particles. Wet. Redoxmorphic staining present.	
				13							
				15							
36				25							
37											
38											
39											
40	S-8	15	39-41	24					DECOMPOSED BEDROCK	S-8: Medium dense, dark gray - brown, fine to coarse SAND and fine to coarse Gravel, trace Silt, few decomposed / weathered rock fragments/particles. Wet.	
				12							
				14							
41				19							
42											
43											
44											
45	S-9	13	44-46	20						S-9: Dense, dark gray - orangish-brown, fine to coarse GRAVEL and fine to coarse Sand, little Silt, numerous decomposed rock fragments/particles. Wet.	
				15							
				24							
46				17							
47											
48											
49											
50	S-10	9	49-51	16						S-10: Medium dense, dark brown - orangish-brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt, numerous decomposed rock fragments/particles. Wet.	
				14							

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

EL. = 320.00
EL. = 310.00
EL. = 300.00

ELEVATION (FT)

BORING 9 (BB–102) CONT'D

BORING LOG

Boring No.: BB-102
Boring Location: See boring location plan N: 3071194.71 E: 375006.83
Project: MassDOT Route 10 over Fall River Bridge
Checked by: E. Adler
Location: Bernardston, Massachusetts
Date Start: February 12, 2025
Nobis Project No.: 100313.00 | MassDOT 612159
Date Finish: February 19, 2025

Contractor: Geologic Earth Exploration, Inc.
Rig Type / Model: Truck / CME 55
Ground Surface Elev.: (+/-) 346
Driller: J. Gavin
Hammer Type: Automatic Hammer
Nobis Rep.: K. Kocia / T. Watopa
Hammer Hoist: Automatic Hammer
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/14/25	14:15	14	44	46	5 min
▼ 02/18/25	10:00	23	44	46	4 days
▼ 02/19/25	13:30	12.5	67.5	84	30 min

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
76						2.9			BEDROCK	fractures present. Numerous mechanical breaks present.	
77						2.9					
78						2.8					
79						3.2					
80	C-2	55	79-84		92/35	2.7				C-2: Soft to Medium Hard, slightly weathered, sound to slightly fractured, gray - red, coarse-grained to fine grained, CONGLOMERATE AND ARKOSE, possible fault. Bedrock transition from conglomerate to arkose at 81 feet below ground surface. Numerous mechanical breaks present.	
81						2.3					
82						2.8					
83						2.6					
84						2.6			262.0 / 84.0		
85										Boring terminated at 84 feet.	3
86											
87											
88											
89											
90											
91											
92											
93											
94											
95											
96											
97											
98											
99											
100											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
3) Borehole was backfilled with drilling spoils and sand. The road surface was restored using asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strutures, transitions may be gradual.

EL. = 270.00
EL. = 260.00
EL. = 250.00

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	66	146
PROJECT FILE NO.	612159		

BORING LOGS (5 OF 8)

NOTES:

1. SEE SHEET 3 FOR BORING NOTES.

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 8/19/25 09:50 - J:\100313.00\MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BERNARDSTON\FIELD DATA\EXPLORATION\BORING\NT 2025\100313.00

BORING 10 (BB–103)

BORING LOG

Project:	MassDOT Route 10 over Fall River Bridge
Location:	Bernardston, Massachusetts
Nobis Project No.:	100313.00 | MassDOT 612159
Boring No.:	BB-103
Boring Location:	See boring location plan N: 3071178.85 E: 374970.07
Checked by:	K. Kocia
Date Start:	February 12, 2025
Date Finish:	February 21, 2025
Contractor:	Geologic Earth Exploration, Inc.
Driller:	J. Gavin
Nobis Rep.:	T. Watopa
Rig Type / Model:	Truck / CME 55
Hammer Type:	Automatic Hammer
Hammer Hoist:	Automatic Hammer
Ground Surface Elev.:	(+/-) 347
Datum:	NAVD 88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4 & 3	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/21/25	13:30	15	54	64	10 min

Depth (ft.)	Sample No.	Type	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1										ASPHALT 346.5 / 0.5	Approximately 6-inch thick asphalt. Cobbles and boulders approximately 4 to 5 inches in diameter.	
2												
3	G-1			2-2.5							G-1: Dark brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet.	
4												
5										FILL		
6	S-1		15	5-7	37 20 18 12						S-1: Dense, dark gray, fine to coarse SAND, some Silt, little fine Gravel. Wet.	1
7												
8												2
9										338.0 / 9.0		
10	S-2		11	9-11	14 10 9 10					GRAVELLY SAND	S-2: Medium dense, dark gray, fine to coarse SAND and fine Gravel, little Silt, few weathered rock fragments/particles. Wet.	
11												
12												
13												
14										333.0 / 14.0		
15	S-3		10	14-16	6 6 7 9			▼		GLACIAL TILL	S-3: Medium dense, dark gray - orangish-brown, fine to medium SAND, little Sand, trace fine Gravel. Wet. Faint redoximorphic staining present.	
16												
17												
18												
19												
20	S-4		12	19-21	16 17 20 23						S-4: Dense, dark gray, fine to coarse GRAVEL and fine to coarse Sand, trace Silt, few decomposed rock fragments/particles. Wet.	
21												
22												
23												
24										323.0 / 24.0		
25	S-5		13	24-26	30 27					DECOMPOSED BEDROCK	S-5: Dense, dark gray - orangish-brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt, numerous decomposed rock fragments/particles. Wet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Vacuum excavated to approximately 5 feet below ground surface.
2) Casing and water was introduced into the borehole at 7 feet bgs.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual.

BORESHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 9/19/25 09:50 - J:\100313.000-MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE - BERNARDSTON\FIELD DATA\FOLDER\DATA\BORINGPOINT 2025\100313.00

BORING 12 (BB–201)

EL. = 350.00

EXISTING GROUND SURFACE
EL. = 347.00

EL. = 340.00

EL. = 330.00

OBS. GROUNDWATER
05/09/25
EL. = 324.00

T.O.F. NORTHEAST WINGWALL
EL. = 322.00

EL. = 320.00

EL. = 310.00

EL. = 300.00

ELEVATION (FT)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-201
Boring Location: N: 3071182.27 E: 374956.23
Checked by: K. Kocia
Date Start: May 6, 2025
Date Finish: May 9, 2025

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: C. Piekarski

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 347
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 05/09/25	00:00	23	48	58	40 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	GB-1		0.5-5						ASPHALT 346.5 / 0.5	Asphalt Approximately 4 inches thick.	
2										GB-1: Light brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Moist.	
3											
4											
5											
6	S-1	0	5-7	7 6 7 7					FILL	S-1: No recovery.	
7											
8											
9											
10	S-2	10	9-11	18 15 13 9						S-2: Medium dense, brown / gray, fine to coarse SAND and fine to coarse Gravel, some Silt. Wet.	
11											
12											
13									334.5 / 12.5		
14											
15	S-3	8	14-16	19 21 21 19					DECOMPOSED BEDROCK	S-3: Dense, brown / gray, fine to coarse SAND and Silt, some fine to coarse Gravel, several decomposed rock fragments/particles. Wet.	
16											
17											
18											
19											
20	S-4	10	19-21	19 17 14 15						S-4: Dense, brown / gray, fine to coarse SAND and fine to coarse Gravel, some Silt, numerous decomposed rock fragments/particles. Wet.	
21											
22											
23											
24											
25	S-5	12	24-26	24 32						S-5: Very dense, brown / gray, fine to coarse SAND and Silt, some fine Gravel, numerous decomposed rock fragments/particles. Wet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums; transitions may be gradual.

Page No. 1 of 3

BOREHOLE LOG_NOBIS CONT DATA TEMPLATE OCT 7 2011.GDT - 8/19/25 09:50 - J:\100313.00\MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BERNARDSTON\FIELD DATA\EXPLORATION\BORING DATA\GEOLOGIC\BORING LOGS\100313.00_MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BE

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-201
Boring Location: N: 3071182.27 E: 374956.23
Checked by: K. Kocia
Date Start: May 6, 2025
Date Finish: May 9, 2025

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: C. Piekarski

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 347
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 05/09/25	00:00	23	48	58	40 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
26				23 24							
27											
28											
29											
30	S-6	6	29-31	20 7 7 6					DECOMPOSED BEDROCK	S-6: Medium dense, brown / gray, fine to coarse SAND, some fine to coarse Sand, little Silt, numerous decomposed and weathered rock fragments/particles. Wet.	
31											
32											
33											
34											
35	S-7	8	34-36	8 9 12 10						S-7: Medium dense, brown, fine to medium SAND and Silt, little fine Gravel, several decomposed rock fragments/particles. Wet.	
36											
37											
38											
39											
40	S-8	8	39-41	13 11 15 14						S-8: Medium dense, brown / gray, fine to medium SAND and Silt, little fine Gravel, several decomposed rock fragments/particles. Wet.	
41											
42											
43											
44											
45	S-9	4	44-46	7 16 21 12					WEATHERED BEDROCK? 301.0 / 46.0	S-9: Dense, gray, WEATHERED BEDROCK, some fine to medium Sand, little Silt, few red weathered rock fragments in Tip of spoon. Wet.	
46											
47											
48											
49	C-1	58	48-53		97/97	2 2			BEDROCK	C-1: Hard, very slightly weathered, sound, red, coarse-grained, ARKOSE, 45 Degree Fractures.	
50											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums; transitions may be gradual.

Page No. 2 of 3

BOREHOLE LOG_NOBIS CONT DATA TEMPLATE OCT 7 2011.GDT - 8/19/25 09:50 - J:\100313.00\MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BERNARDSTON\FIELD DATA\EXPLORATION\BORING DATA\GEOLOGIC\BORING LOGS\100313.00_MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BE

BORING 12 (BB–201) CONT'D

EL. = 290.00

EL. = 280.00

ELEVATION (FT)

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-201
Boring Location: N: 3071182.27 E: 374956.23
Checked by: K. Kocia
Date Start: May 6, 2025
Date Finish: May 9, 2025

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: C. Piekarski

Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

Ground Surface Elev.: (+/-) 347
Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 05/09/25	00:00	23	48	58	40 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
51						2					
52						2					
53						2					
54	C-2	60	53-58		100/95	2			BEDROCK	C-2: Hard, very slightly weathered, sound, red, coarse-grained, ARKOSE, 45 Degree Fractures.	
55						2					
56						2					
57						2					
58						2			289.0 / 58.0		
59						2				Boring terminated at 58 feet.	1
60											
61											
62											
63											
64											
65											
66											
67											
68											
69											
70											
71											
72											
73											
74											
75											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring terminated after 10 foot rockcore. Backfilled with spoils, sand, and CPA to road surface.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums; transitions may be gradual.

Page No. 3 of 3

BOREHOLE LOG_NOBIS CONT DATA TEMPLATE OCT 7 2011.GDT - 8/19/25 09:50 - J:\100313.00\MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BERNARDSTON\FIELD DATA\EXPLORATION\BORING DATA\GEOLOGIC\BORING LOGS\100313.00_MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE, BE

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	68	146
PROJECT FILE NO.	612159		

BORING LOGS (7 OF 8)

NOTES:

1. SEE SHEET 3 FOR BORING NOTES.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

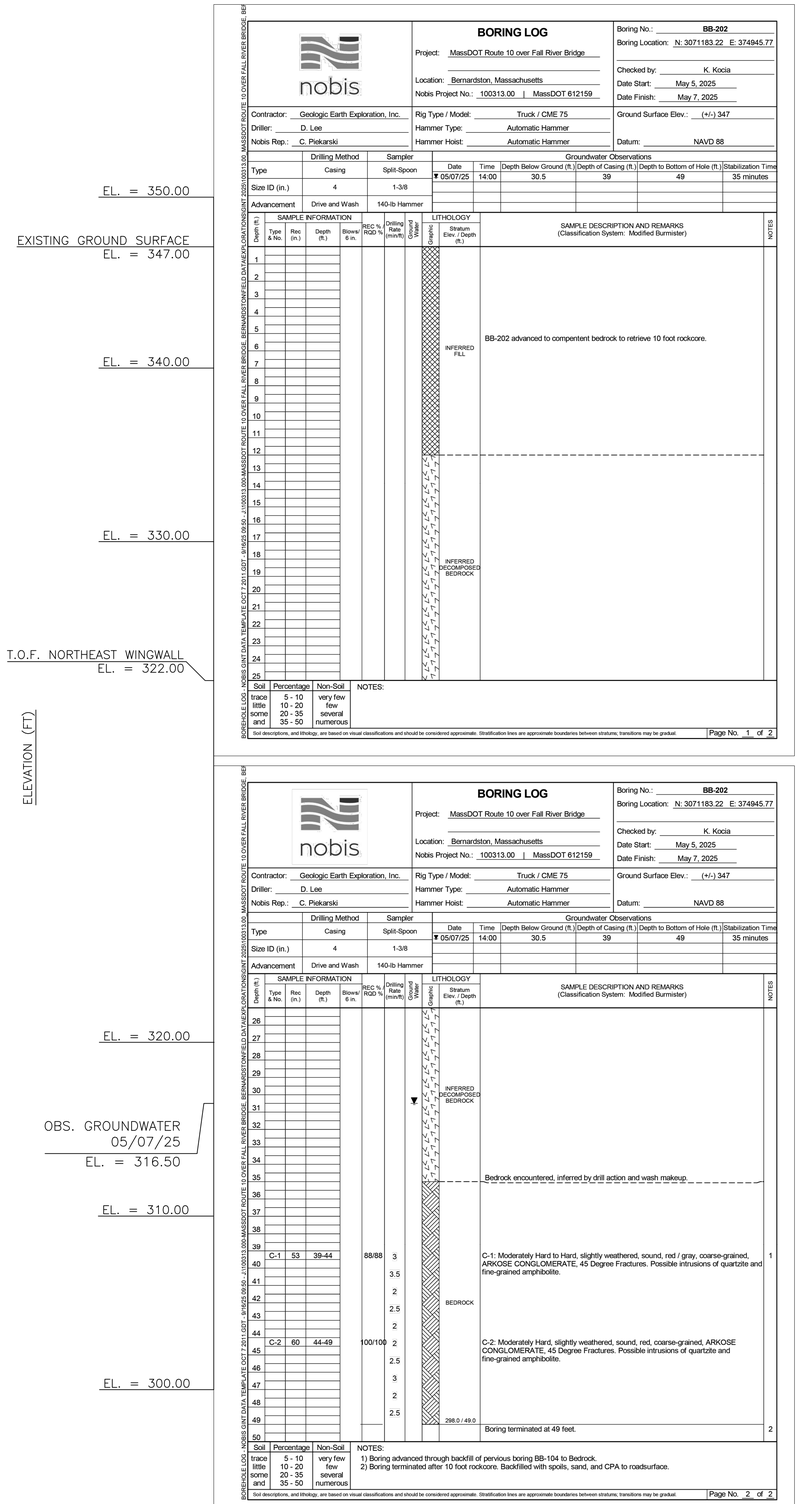
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM

BORING 13 (BB–202)



nobis

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
Location: Bernardston, Massachusetts
Nobis Project No.: 100313.00 | MassDOT 612159

Boring No.: BB-202
Boring Location: N: 3071183.22 E: 374945.77
Checked by: K. Kocia
Date Start: May 5, 2025
Date Finish: May 7, 2025
Ground Surface Elev.: (+/-) 347
Datum: NAVD 88

Contractor: Geologic Earth Exploration, Inc.
Driller: D. Lee
Nobis Rep.: C. Piekarski
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic Hammer

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 05/07/25	14:00	30.5	39	49	35 minutes

Depth (ft.)	Sample Type & No.	Sample Rec (in.)	Sample Depth (ft.)	Blows/ 6 in.	REC % RQD %	Drilling Rate (min/ft)	Observed Water	Lithology Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
1–12									INFERRED FILL	BB-202 advanced to compentent bedrock to retrieve 10 foot rockcore.	
13–25									INFERRED DECOMPOSED BEDROCK		

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual.

Page No. 1 of 2

nobis

BORING LOG

Project: MassDOT Route 10 over Fall River Bridge
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▼ 05/07/25	14:00	30.5	39	49	35 minutes

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26–35									INFERRED DECOMPOSED BEDROCK		
										Bedrock encountered, inferred by drill action and wash makeup.	
36–39									BEDROCK		
40	C-1	53	39-44	88/88		3				C-1: Moderately Hard to Hard, slightly weathered, sound, red / gray, coarse-grained, ARKOSE CONGLOMERATE, 45 Degree Fractures. Possible intrusions of quartzite and fine-grained amphibolite.	1
41						3.5					
42						2					
43						2.5					
44						2					
45	C-2	60	44-49	100/100		2				C-2: Moderately Hard, slightly weathered, sound, red, coarse-grained, ARKOSE CONGLOMERATE, 45 Degree Fractures. Possible intrusions of quartzite and fine-grained amphibolite.	
46						2.5					
47						3					
48						2					
49						2.5			298.0 / 49.0		
										Boring terminated at 49 feet.	2
50											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring advanced through backfill of pervious boring BB-104 to Bedrock.
2) Boring terminated after 10 foot rockcore. Backfilled with spoils, sand, and CPA to roadsurface.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strums, transitions may be gradual.

Page No. 2 of 2

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	69	146
PROJECT FILE NO.	612159		

BORING LOGS (8 OF 8)

NOTES:

1. SEE SHEET 3 FOR BORING NOTES.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

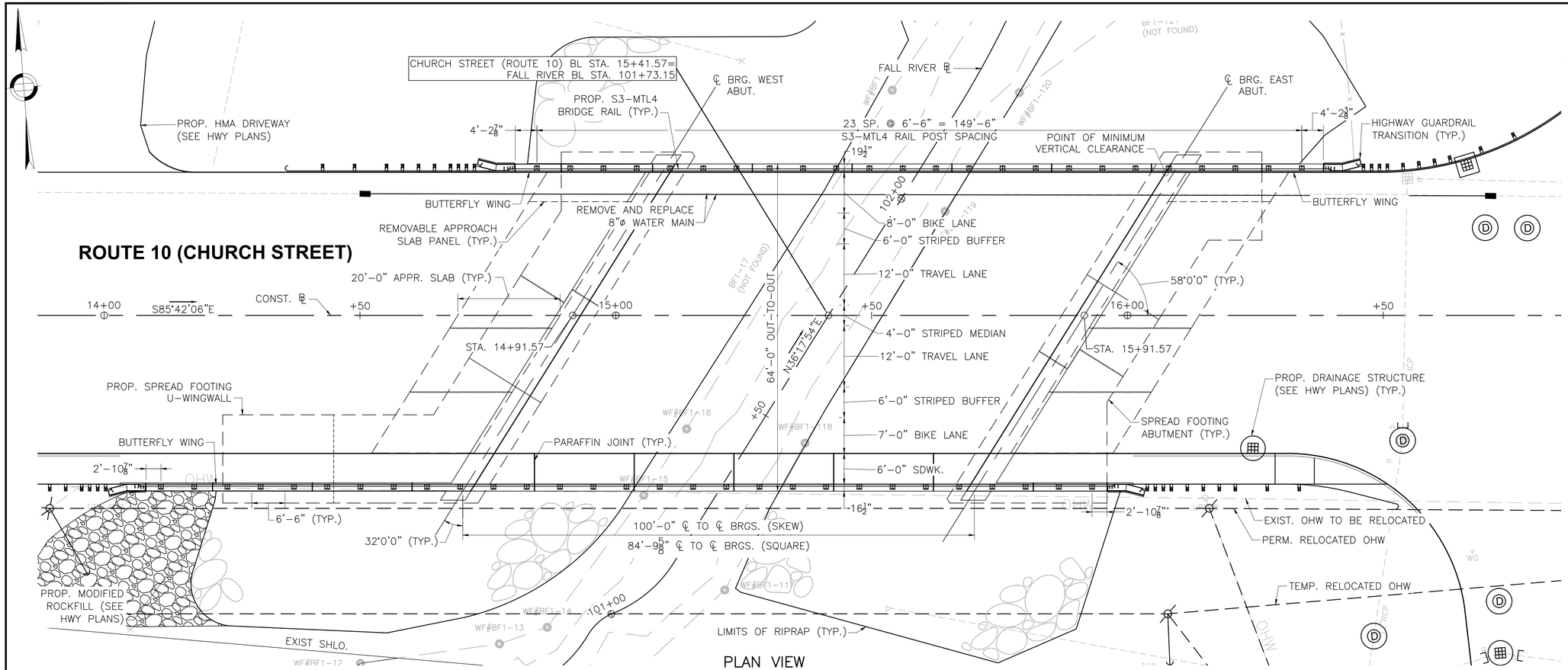
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

BOREHOLE LOG - NOBIS (ENT DATA TEMPLATE OCT 7 2011.GDT - 8/14/25 09:50 - I:\100313.00\MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE_BERNARDSTON\FIELD DATA\EXPLORATION\PRINT 2026\100313.00_MASSDOT ROUTE 10 OVER FALL RIVER BRIDGE_BER
612159_BR3-10(B10001).DWG Plotted on 31-Jul-2026 1:55 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	70	146
PROJECT FILE NO.	612159		

PLAN AND ELEVATION



NOTES:

1. SEE SHEET 34 FOR PARAFFIN JOINT SPACING.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

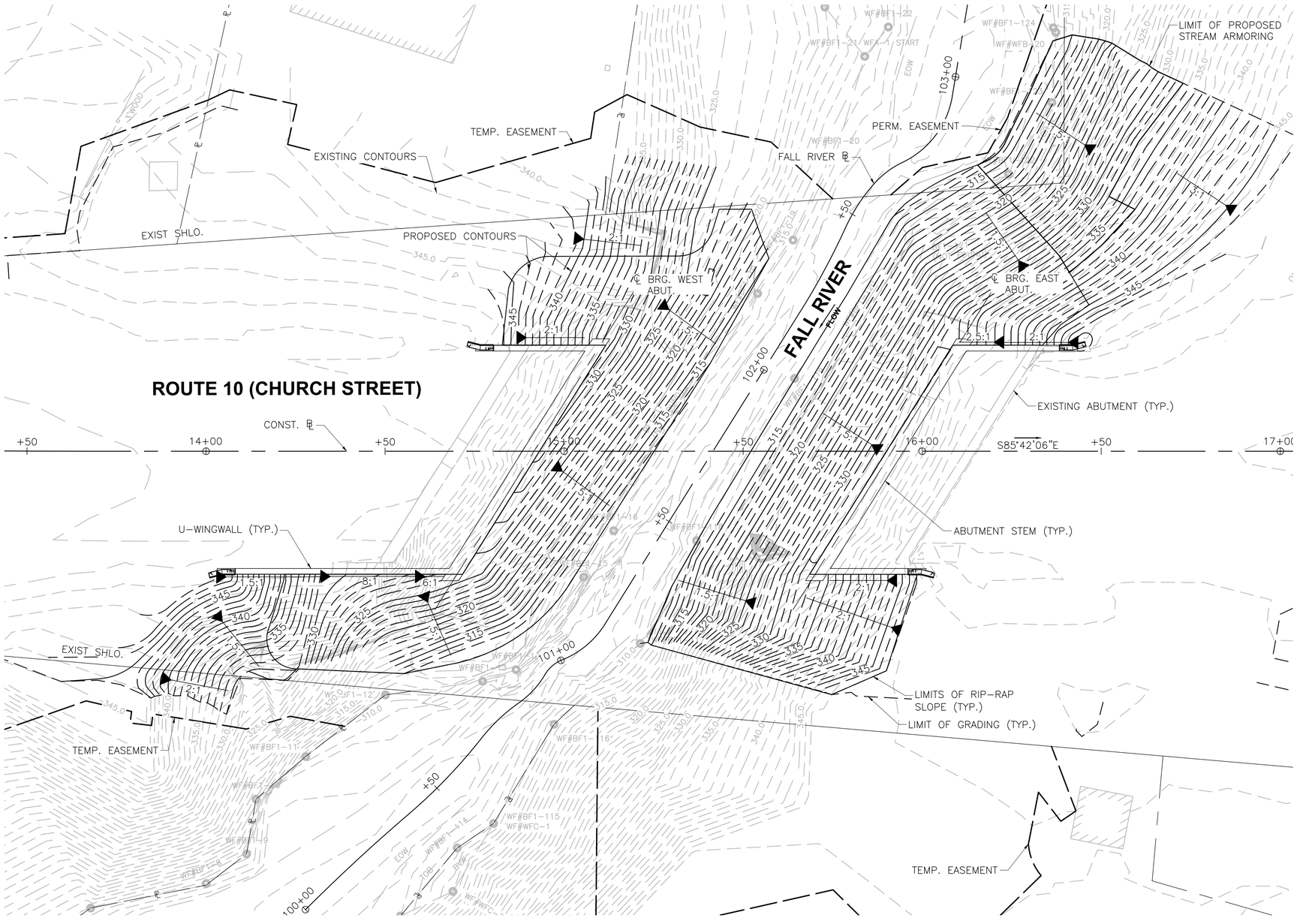
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR11(B10001).DWG Plotted on 31-Jul-2026 1:56 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	71	146
PROJECT FILE NO.	612159		

GRADING PLAN



NOTE:
THIS SHEET IS PROVIDED TO SHOW GUIDANCE FOR TYING INTO EXISTING SLOPES AND CLARIFY THE NEED FOR THE PROPOSED WINGWALL LENGTHS.

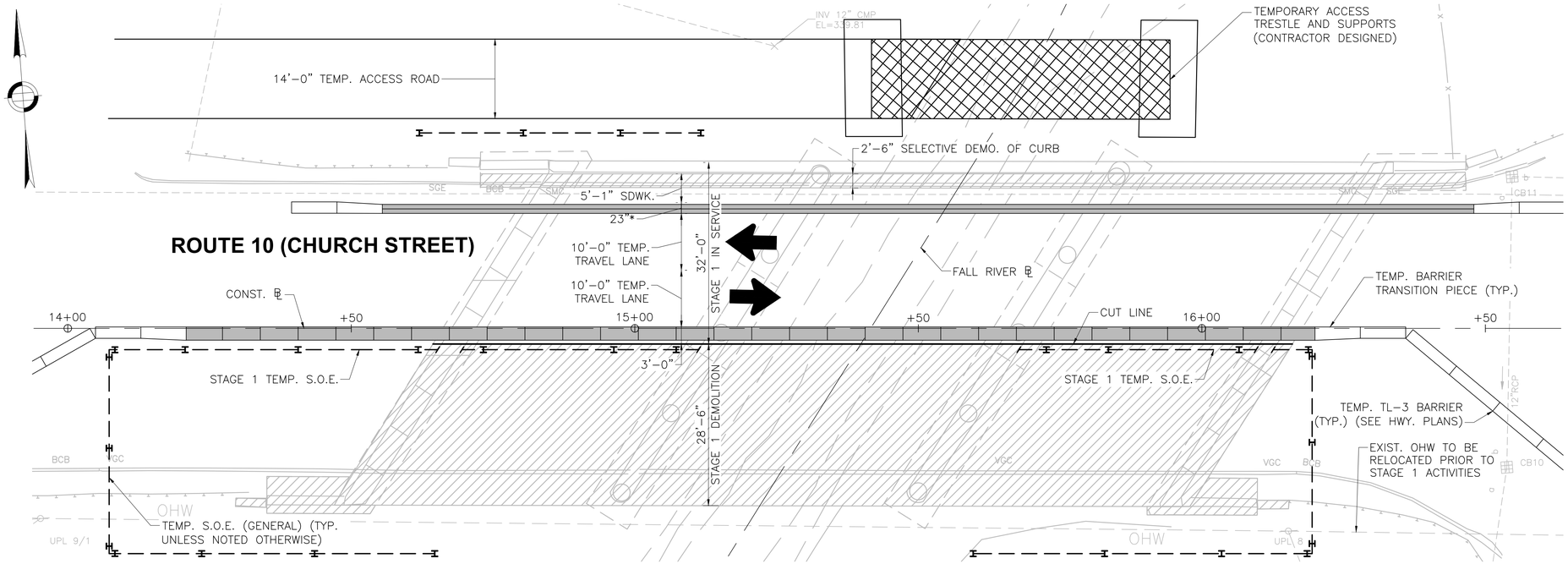
GRADING PLAN
SCALE: 1" = 15'

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

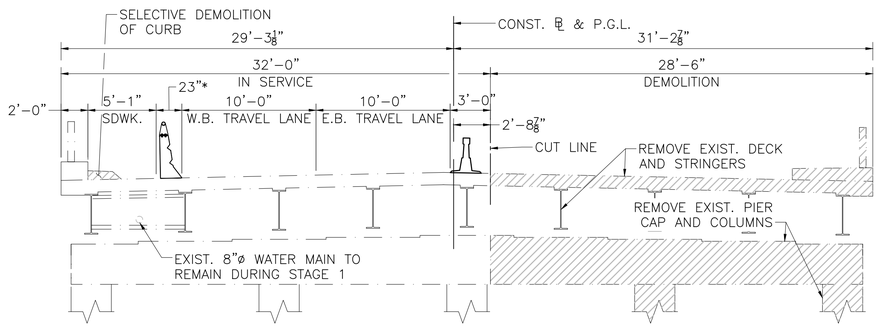
USE ONLY PRINTS OF LATEST DATE

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ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



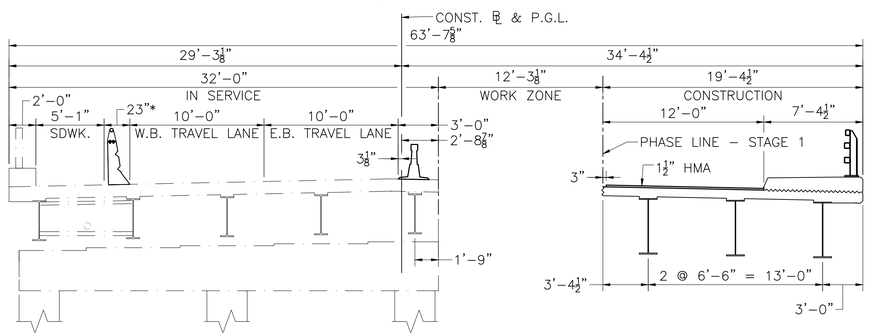
STAGE 1 PLAN

SCALE: $\frac{3}{32}$" = 1'–0"



STAGE 1 DEMOLITION

SCALE: $\frac{3}{16}$" = 1'–0"



STAGE 1 CONSTRUCTION

SCALE: $\frac{3}{16}$" = 1'–0"

GENERAL NOTES:

1. SEE TEMPORARY TRAFFIC CONTROL PLANS FOR ADDITIONAL PHASING AND CONSTRUCTION INFORMATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF TEMPORARY SHIELDING AND OTHER TEMPORARY WORKS AS REQUIRED BY THE CONTRACTOR'S MEANS AND METHODS. PROTECTION OF THE EXISTING UTILITIES SHALL BE CONSIDERED INCIDENTAL TO ITEM 114.11 – DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B–10–001.
3. ALL DEMOLITION MATERIAL AND DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS. SHORING TOWERS NOT SHOWN FOR CLARITY. TOWERS SHALL BE REMOVED AND STACKED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER AT LEAST 30 DAYS PRIOR TO THE START OF DEMOLITION WORK.
5. SEE SPECIAL PROVISIONS FOR REQUIREMENTS ON TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3).
6. SINGLE FACED TEMPORARY BARRIER – LIMITED DEFLECTION (TL–4) ON THE BRIDGE DECK SHALL HAVE A MAXIMUM DYNAMIC DEFLECTION OF 3.15 INCHES OR LESS AT THE BASE.
7. SEE FOUNDATION STAGING PLAN (SHEETS 18 AND 19) FOR ADDITIONAL DETAILS ON SUBSTRUCTURE PHASING.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE LAST 3" OF MEMBRANE WATERPROOFING AT THE PHASE LINES. MEMBRANE WATERPROOFING SHALL HAVE A MINIMUM 3" OVERLAP BETWEEN ALL DECK JOINTS. SEE DETAILS SHEET 35.
9. PRIOR TO THE INITIATION OF EACH CONSTRUCTION PHASE, THE EXISTING DECK TO REMAIN IN SERVICE SHALL BE INSPECTED AND REPAIRED AS REQUIRED FOR INSTALLATION OF THE TEMPORARY BARRIERS AND TRAFFIC SAFETY. SEE SPECIAL PROVISIONS ITEMS 127.4 AND 127.41.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATIONS OF THE TEMPORARY BOLT–DOWN BARRIERS WITH THE LOCATION OF THE EXISTING BEAMS. IF THE ANCHOR BOLTS WILL BE LOCATED DIRECTLY ABOVE THE BEAM FLANGE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE BARRIER MANUFACTURER TO ENSURE PROPER INSTALLATION OF THE BARRIER.

SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 1

1. SHIFT WESTBOUND LANES TO SOUTH AS NEEDED TO INSTALL SINGLE FACED TEMPORARY BARRIER ON THE NORTH SIDE.
2. DEMOLISH NORTHERN CONCRETE CURB WHILE MAINTAINING PEDESTRIAN ACCESS ON THE SOUTHERN SIDEWALK.
3. INSTALL TEMPORARY TL–3 BARRIER AND SHIFT VEHICULAR AND PEDESTRIAN TRAFFIC TO THE NORTH SIDE OF THE EXISTING BRIDGE.
4. DEMOLISH SOUTH SIDE OF THE SUPERSTRUCTURE.
5. INSTALL STAGE 1 TEMPORARY SUPPORT OF EXCAVATION AND DEMOLISH SOUTH SIDE SUBSTRUCTURE.
6. CONSTRUCT SOUTH SIDE OF BRIDGE TO THE LIMITS SHOWN.
7. INSTALL STAGE 2A SUPPORT OF EXCAVATION (SEE STAGE 2 PLANS).
8. BACKFILL APPROACHES AND INSTALL STAGE 1 APPROACH SLAB.
9. PAVE 1½" PROTECTIVE COURSE.

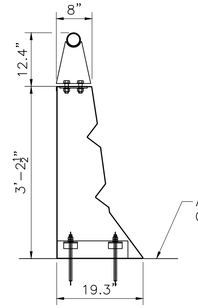
BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	72	146
PROJECT FILE NO. 612159			

CONSTRUCTION STAGE 1

LEGEND:

- EXISTING
- COMPLETED CONSTRUCTION
- TEMPORARY SUPPORT OF EXCAVATION (S.O.E.)
- DEMOLITION
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3) WITH BOLT–DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL–4) WITH BOLT–DOWN ANCHOR BOLTS
- TEMPORARY CONCRETE TL–3 BARRIER
- TEMPORARY BARRIER TRANSITION PIECE
- * DENOTES WIDTH OF TEMPORARY BARRIER PLUS ITS DYNAMIC DEFLECTION.
- DIRECTION OF TRAFFIC FLOW



NOTES:

1. EMBEDMENT AND SIZE OF ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. THE DETAILS SHOWN HEREIN DEPICT A POSSIBLE CONFIGURATION ONLY. TEMPORARY BARRIER – LIMITED DEFLECTION (TL–4) SHALL CONFORM TO THE REQUIREMENTS OF ITEM 853.34.
3. ONCE THE TEMPORARY BARRIERS ARE REMOVED, ANCHOR HOLES SHALL BE FILLED WITH GROUT.

TEMPORARY TL4 BOLT–DOWN BARRIER DETAIL

SCALE: $\frac{3}{4}$" = 1'–0"

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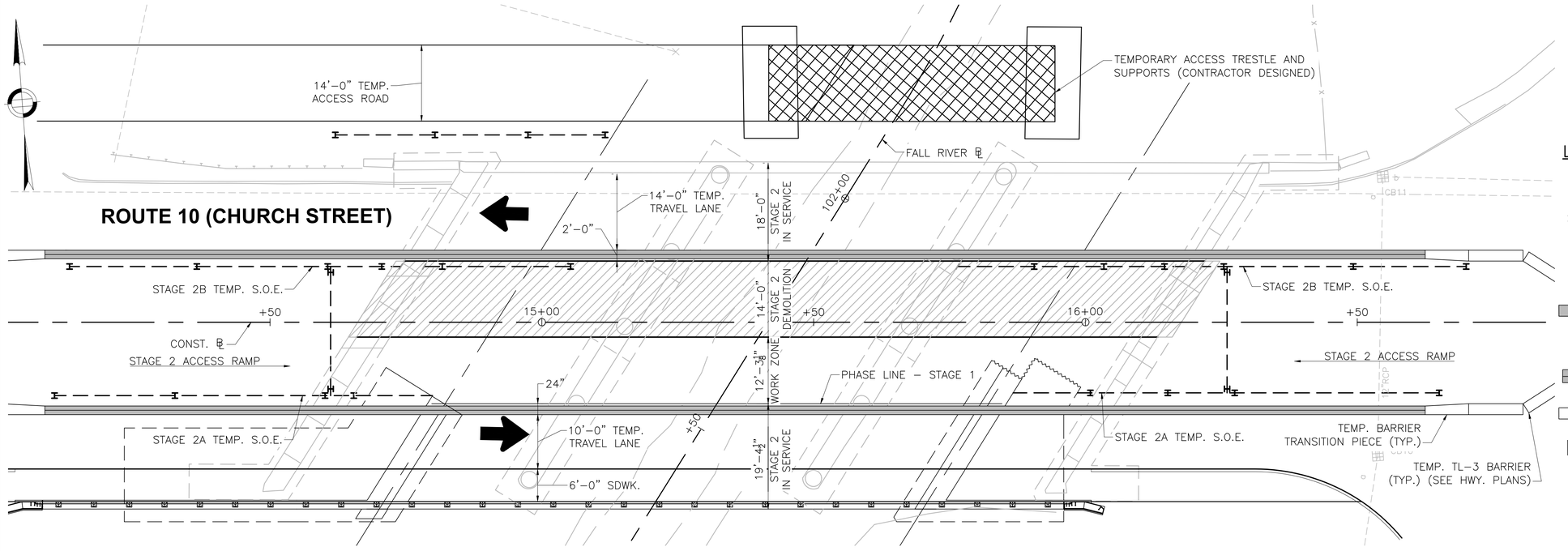
612159_BR13(B10001).DWG Plotted on 31-Jul-2026 1:56 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	73	146
PROJECT FILE NO.	612159		

CONSTRUCTION STAGE 2

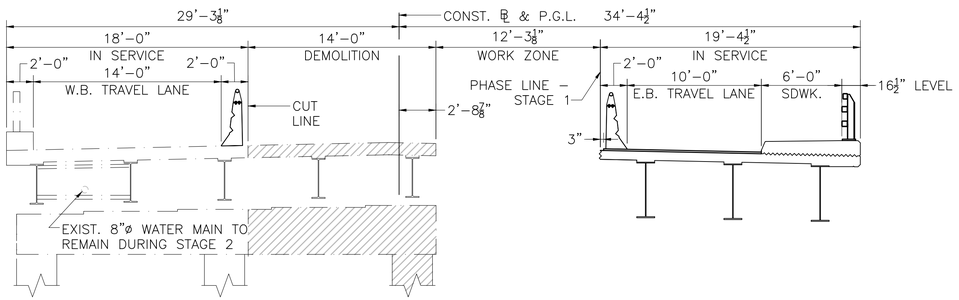


STAGE 2 PLAN

SCALE: $\frac{3}{32}$" = 1'–0"

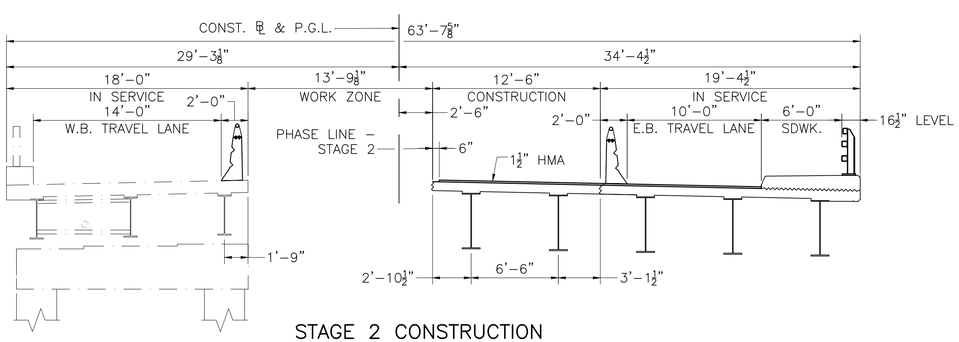
LEGEND:

- EXISTING
- COMPLETED CONSTRUCTION
- TEMPORARY SUPPORT OF EXCAVATION (S.O.E.)
- DEMOLITION
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3) WITH BOLT–DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL–4) WITH BOLT–DOWN ANCHOR BOLTS
- TEMPORARY CONCRETE TL–3 BARRIER
- TEMPORARY BARRIER TRANSITION PIECE
- * DENOTES WIDTH OF TEMPORARY BARRIER PLUS ITS DYNAMIC DEFLECTION.
- DIRECTION OF TRAFFIC FLOW



STAGE 2 DEMOLITION

SCALE: $\frac{3}{16}$" = 1'–0"

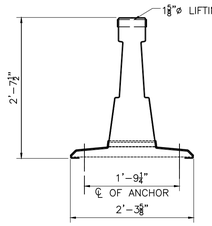


STAGE 2 CONSTRUCTION

SCALE: $\frac{3}{16}$" = 1'–0"

SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 2:

1. INSTALL TEMPORARY BARRIER ON THE NEWLY CONSTRUCTED SOUTH SIDE OF THE BRIDGE AND ROADWAY APPROACHES AND RELOCATE TEMPORARY BARRIER ON NORTH SIDE AS SHOWN.
2. SHIFT EASTBOUND VEHICULAR AND PEDESTRIAN TRAFFIC TO THE NEWLY CONSTRUCTED SOUTH SIDE, AND SHIFT WESTBOUND VEHICULAR TRAFFIC TO THE NORTH.
3. DEMOLISH CENTER PORTION OF SUPERSTRUCTURE TO THE LIMITS SHOWN.
4. INSTALL STAGE 2B TEMPORARY SUPPORT OF EXCAVATION AND REMOVE STAGE 1 TEMPORARY SUPPORT OF EXCAVATION. SEE FOUNDATION STAGING PLANS FOR MORE INFORMATION ON SUPPORT OF EXCAVATION REMOVAL.
5. COMPLETE REMOVAL OF SUBSTRUCTURE WITHIN STAGE 2 WORK ZONE.
6. CONSTRUCT THE CENTER PORTION OF THE BRIDGE.
7. INSTALL STAGE 3 SUPPORT OF EXCAVATION (SEE STAGE 3 PLANS).
8. BACKFILL APPROACHES TO 3FT BELOW PROPOSED ROADWAY SURFACE. CUT OR REMOVE STAGE 2A SUPPORT OF EXCAVATION.
9. COMPLETE BACKFILL AND INSTALLATION OF APPROACH SLAB WITHIN STAGE 2 ROADWAY LIMITS AND PAVE PROTECTIVE LAYER.



NOTES:

1. EMBEDMENT AND SIZE OF ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. THE DETAILS SHOWN HEREIN DEPICT A POSSIBLE CONFIGURATION ONLY. TEMPORARY BARRIER – LIMITED DEFLECTION WITH BOLT–DOWN ANCHOR BOLTS (TL–3) SHALL CONFORM TO THE REQUIREMENTS OF ITEM 853.33.
3. ONCE THE TEMPORARY BARRIERS ARE REMOVED, ANCHOR HOLES SHALL BE FILLED WITH GROUT.

TEMPORARY TL3 BOLT–DOWN BARRIER DETAIL

SCALE: ¾" = 1'–0"

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

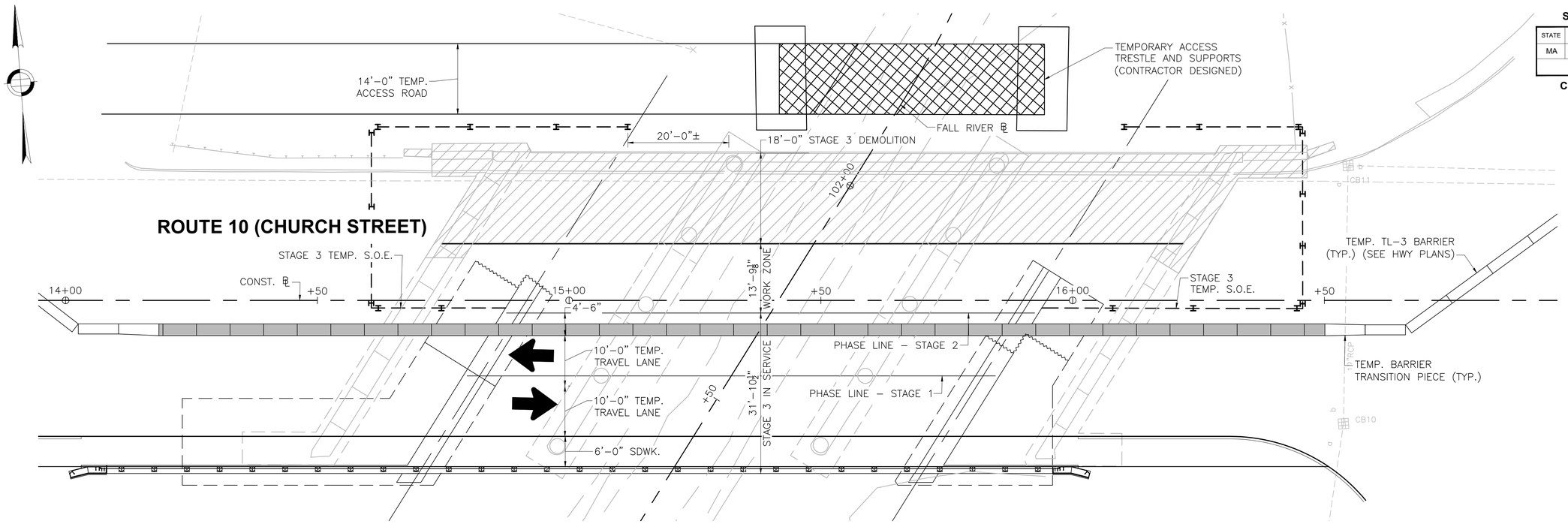
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612159_BR14(B10001).DWG Plotted on 31-Jul-2026 1:57 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

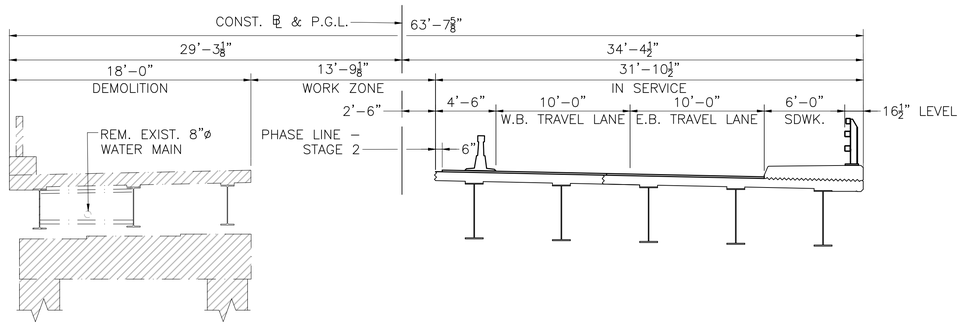
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	74	146
PROJECT FILE NO.	612159		

CONSTRUCTION STAGE 3



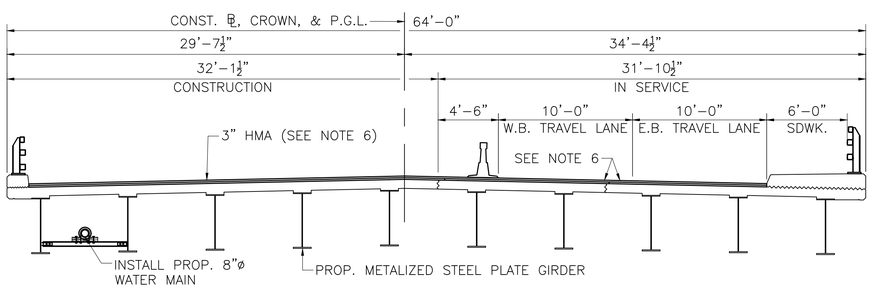
STAGE 3 PLAN

SCALE: $\frac{3}{32}$" = 1'–0"



STAGE 3 DEMOLITION

SCALE: $\frac{3}{16}$" = 1'–0"



STAGE 3 CONSTRUCTION

SCALE: $\frac{3}{16}$" = 1'–0"

SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 3:

1. INSTALL TEMPORARY BARRIERS ON THE NEWLY CONSTRUCTED CENTER PORTION OF THE BRIDGE AND REMOVE STAGE 2 BARRIERS.
2. SHIFT WESTBOUND VEHICULAR TRAFFIC TO THE SOUTH SIDE OF THE NEWLY CONSTRUCTED BRIDGE AND DEMOLISH REMAINDER OF NORTH SIDE.
3. CONSTRUCT THE NORTH SIDE OF THE BRIDGE.
4. BACKFILL APPROACHES TO 3FT BELOW PROPOSED ROADWAY GRADE. CUT OR REMOVE STAGE 3 SUPPORT OF EXCAVATION.
5. COMPLETE BACKFILL AND INSTALLATION OF APPROACH SLAB WITHIN STAGE 3 ROADWAY LIMITS.
6. PAVE 1½" OF PROTECTIVE LAYER WITHIN LIMITS OF STAGE 3 CONSTRUCTION. BRIDGE SHALL THEN BE PAVED IN A CONTINUOUS OPERATION WITH BRIDGE SURFACE COURSE FOR CLEAN FINISH.
7. COMPLETE FINAL STRIPING OF ROADWAY AND RESTORE TRAFFIC TO PROPOSED LANE CONFIGURATION ONCE NORTH SIDE IS CONSTRUCTED.

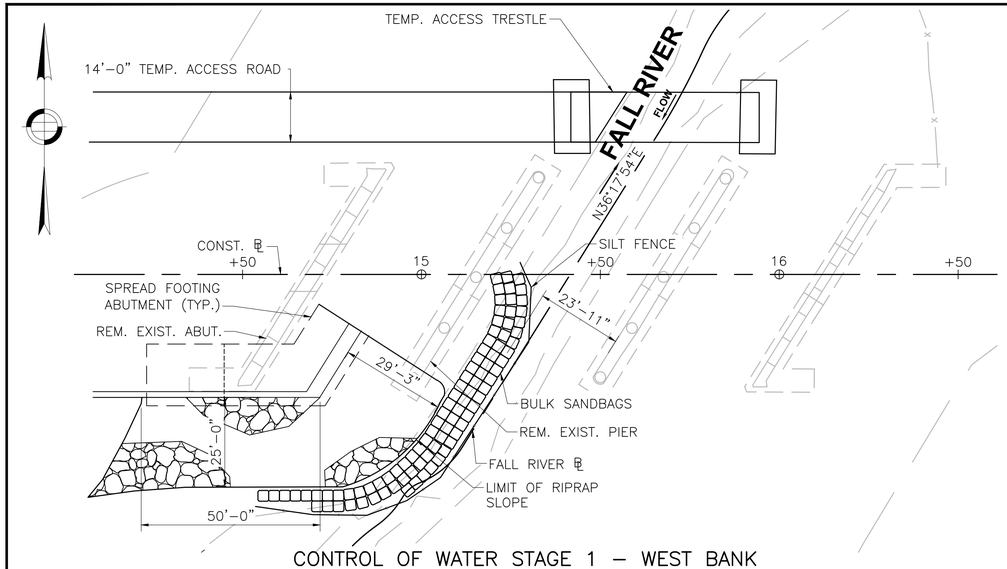
LEGEND:

- EXISTING
- COMPLETED CONSTRUCTION
- TEMPORARY SUPPORT OF EXCAVATION (S.O.E.)
- DEMOLITION
- TEMPORARY STEEL BARRIER – LIMITED DEFLECTION WITH BOLT–DOWN ANCHOR BOLTS (TL–3)
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL–4) WITH BOLT–DOWN ANCHOR BOLTS
- TEMPORARY CONCRETE TL–3 BARRIER
- TEMPORARY BARRIER TRANSITION PIECE
- * DENOTES WIDTH OF TEMPORARY BARRIER PLUS ITS DYNAMIC DEFLECTION.
- DIRECTION OF TRAFFIC FLOW

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

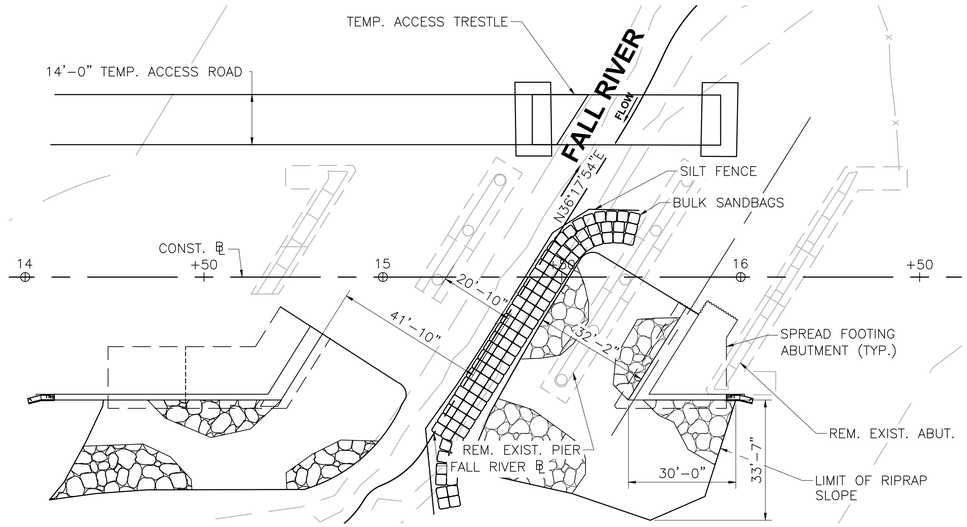
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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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612159_BR15(B10001).DWG Plotted on 31-Jul-2026 1:57 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



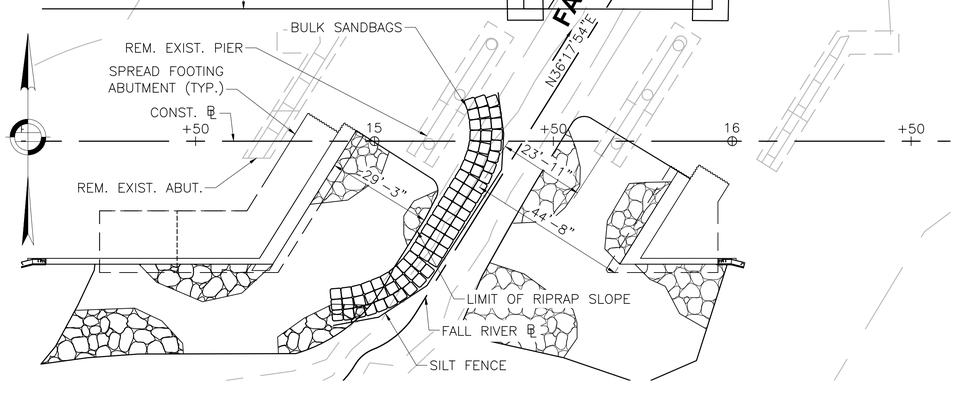
CONTROL OF WATER STAGE 1 – WEST BANK

SCALE: 1" = 20'



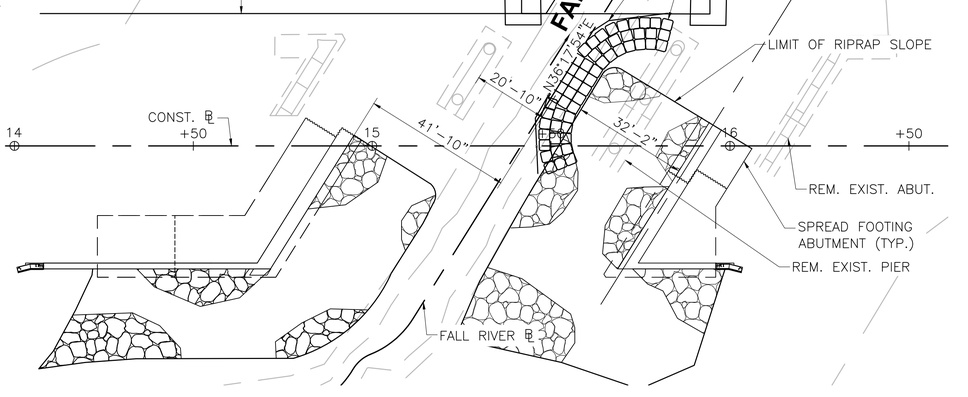
CONTROL OF WATER STAGE 1 – EAST BANK

SCALE: 1" = 20'



CONTROL OF WATER STAGE 2 – WEST BANK

SCALE: 1" = 20'



CONTROL OF WATER STAGE 2 – EAST BANK

SCALE: 1" = 20'

CONTROL OF WATER NOTES:

1. PROPOSED BRIDGE SUPERSTRUCTURE NOT SHOWN FOR CLARITY.
2. THE C.O.W. SYSTEM SHOW IN THESE PLANS IS CONCEPTUAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE CONTROL OF WATER (C.O.W.) SYSTEM AND SHALL SUBMIT A CONTROL OF WATER PLAN TO THE ENGINEER FOR APPROVAL.
3. ALL DEWATERING SHALL BE DIVERTED TO A TEMPORARY STILLING BASIN PRIOR TO BEING PUMPED BACK INTO THE STREAM. NO CONTAMINATED WATER IS PERMITTED TO ENTER THE STREAM.
4. C.O.W. SYSTEM SHALL BE DESIGNED USING A 2–YEAR (CONSTRUCTION) RETURN FREQUENCY FLOOD EVENT OF 784 CFS. PROVIDED SYSTEM SHALL EXTEND 12" (MIN.) ABOVE STORM ELEVATION. IF THE C.O.W. SYSTEM WILL BE IN PLACE FOR GREATER THAN 1–YEAR, THE C.O.W. SYSTEM SHALL BE DESIGNED USING A 5–YEAR (CONSTRUCTION) RETURN FREQUENCY FLOOD EVENT OF 1290 CFS.
5. C.O.W. SYSTEM SHALL BE INSPECTED DAILY FOR WATER LEAKS OR EROSION AND REPAIR PROCEDURES SHALL BE IMPLEMENTED ACCORDINGLY.
6. THE TEMPORARY ACCESS ROAD AND TRESTLE, IF UTILIZED BY THE CONTRACTOR SHALL BE USED TO COMPLETE THE WORK ON THE EAST BANK. ONCE THE RIPRAP, STREAM ARMORING, AND FINAL GRADING OF THE EAST BANK HAS BEEN COMPLETED FOR STAGE 3, THE TEMPORARY TRESTLE AND PORTION OF THE ACCESS ROAD SHALL BE REMOVED IN ORDER TO COMPLETE THE WORK ON THE WEST BANK.

SUGGESTED SEQUENCE OF CONSTRUCTION:

1. DEMOLISH STAGE 1 OF THE EXISTING BRIDGE SUPERSTRUCTURE AND ABUTMENTS TO THE LIMITS SHOWN ON THE STAGE CONSTRUCTION PLANS.
2. INSTALL PHASE 1 CONTROL OF WATER SYSTEM ON THE WEST OR EAST BANK AS SHOWN AND DEMOLISH THE EXISTING PIER AS NEEDED FOR STAGING. C.O.W. SYSTEM SHALL CONSIST OF A SANDBAG COFFERDAM OR APPROVED EQUIVALENT. THESE CONCEPTUAL PLANS SHOW THE WEST BANK COMPLETED FIRST, HOWEVER, THE SEQUENCE OF WORK IS AT THE DISCRETION OF THE CONTRACTOR.
3. DEWATER THE WORK AREA TO REMOVE EXISTING BOULDER/RIP RAP SCOUR PROTECTION STONES AS REQUIRED FOR CONSTRUCTION OF THE GIVEN STAGE.
4. CONSTRUCT STAGE 1 OF THE STRUCTURE AS SHOWN ON THE STAGE CONSTRUCTION PLANS FOR THE BANK WHICH HAS THE CONTROL OF WATER SYSTEM IN PLACE. INSTALL RIPRAP SLOPE FOR SCOUR PROTECTION TO THE EXTENTS SHOWN ON THE PLANS. RIPRAP TOE SHALL BE KEYED INTO BEDROCK.
5. SHIFT CONTROL OF WATER SYSTEM TO MOVE THE FALL RIVER FLOW TO THE EAST OR WEST AS NEEDED FOR EACH GIVEN STAGE AND REPEAT STEPS 2–4.
6. REPEAT STEPS 1–5 FOR EACH GIVEN STAGE OF CONSTRUCTION. AT NO POINT SHOULD THE CONTROL OF WATER SYSTEM BE IN PLACE ON BOTH THE EAST AND WEST BANKS SIMULTANEOUSLY.
7. REMOVE SANDBAG COFFERDAM AND RESTORE NORMAL RIVER FLOW AFTER RIPRAP SLOPES FOR ALL STAGES OF CONSTRUCTION HAVE BEEN INSTALLED.

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	75	146
PROJECT FILE NO.	612159		

CONTROL OF WATER PLAN (1 OF 2)

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

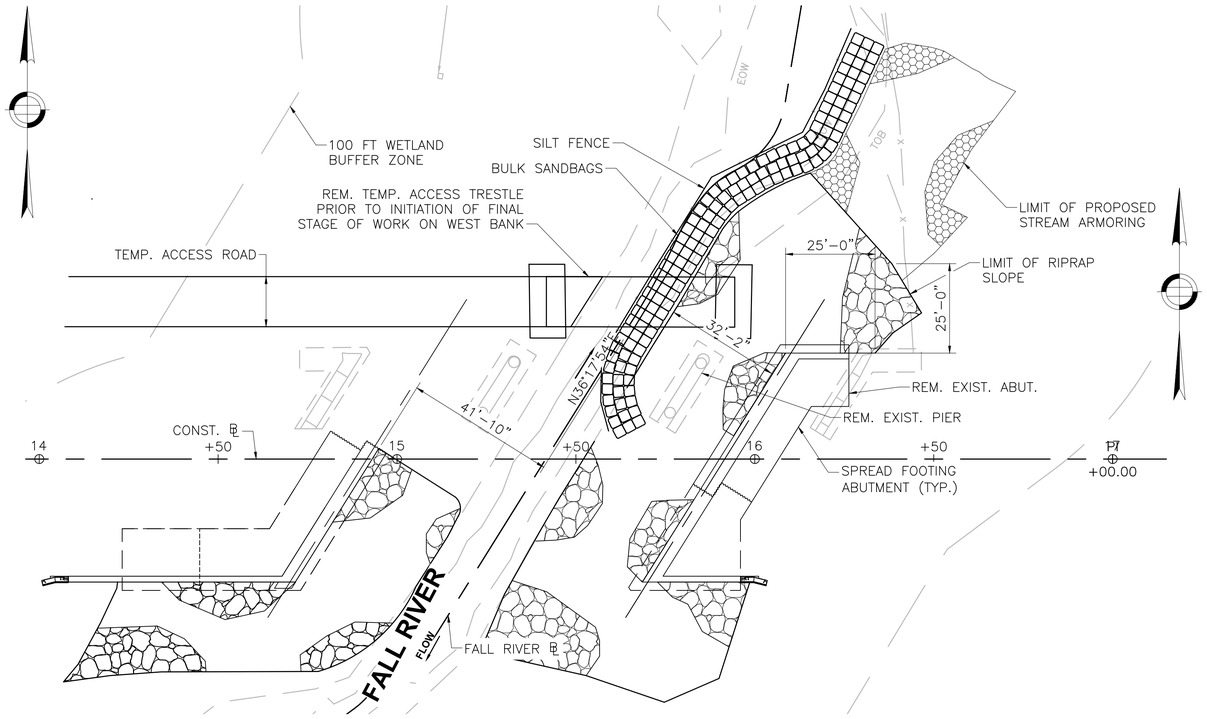
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

612159_BR16-17(B10001).DWG Plotted on 31-Jul-2026 1:58 PM

BERNARDSTON
ST 10 (CHURCH STREET)

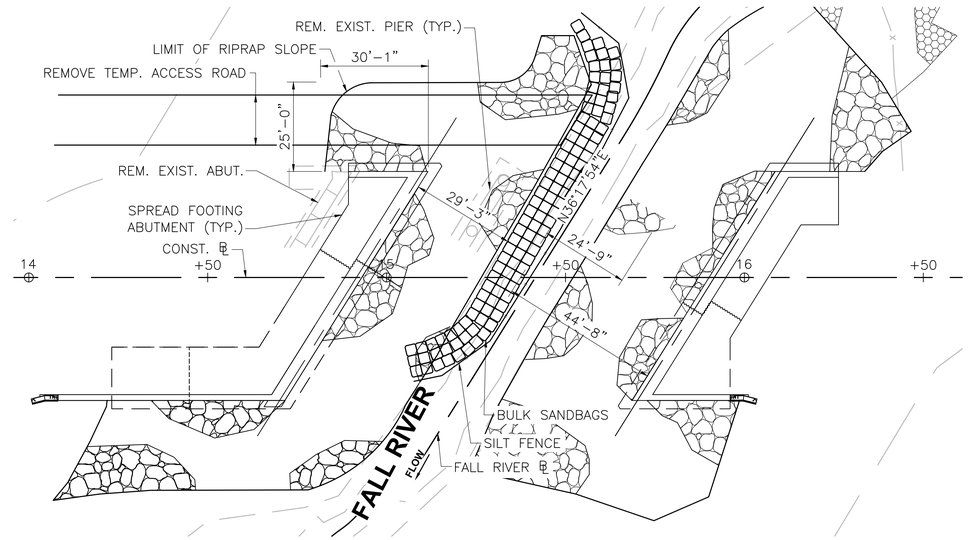
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	76	146
PROJECT FILE NO.	612159		

CONTROL OF WATER PLAN (2 OF 2)



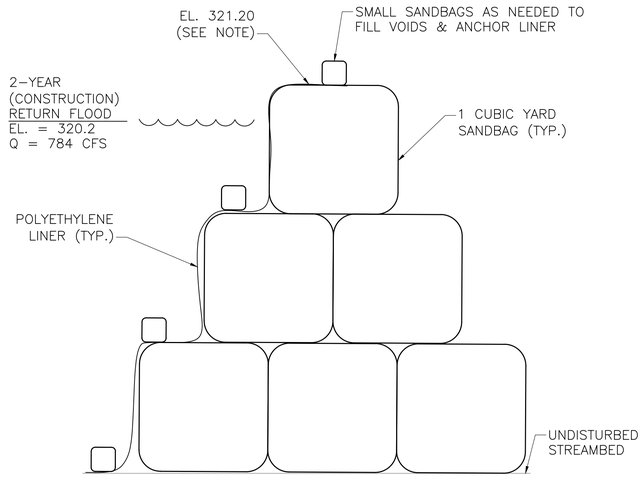
CONTROL OF WATER STAGE 3 – EAST BANK

SCALE: 1" = 20'



CONTROL OF WATER STAGE 3 – WEST BANK

SCALE: 1" = 20'



NOTE: TOP OF WATER CONTROL ELEVATION SHALL BE A MINIMUM OF 1 FOOT ABOVE THE 2 YEAR FLOOD ELEVATION.

SANDBAG COFFERDAM

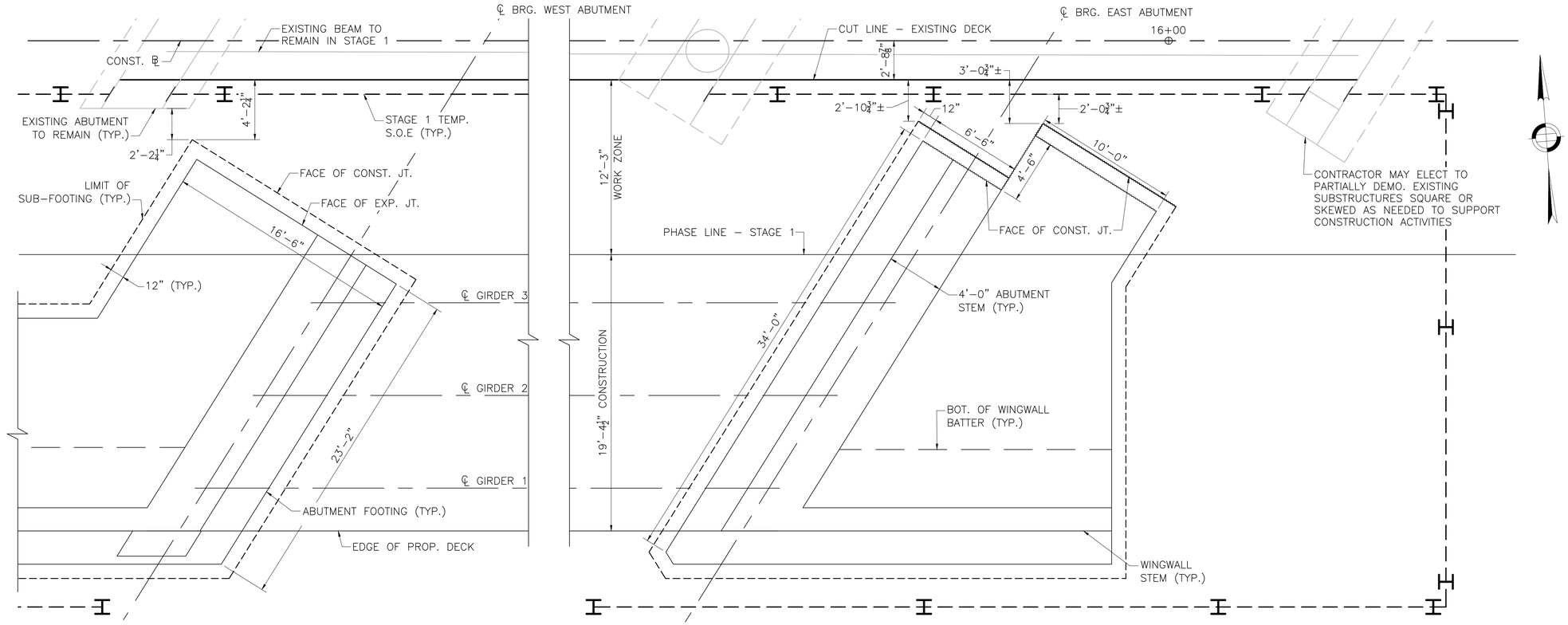
NOT TO SCALE

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

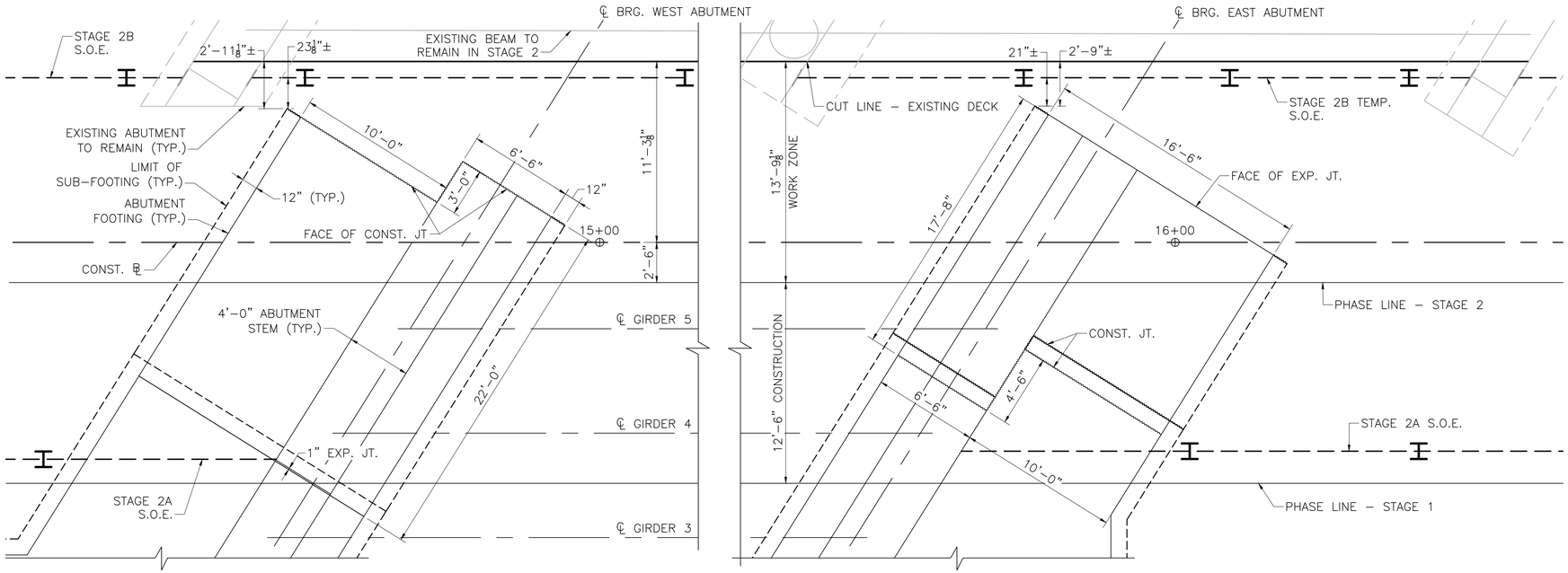
USE ONLY PRINTS OF LATEST DATE

612159_BR16-17(B10001).DWG Plotted on 31-Jul-2026 1:58 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



STAGE 1

SCALE: ¼" = 1'-0"



STAGE 2

SCALE: ¼" = 1'-0"

NOTES:

1. TEMPORARY SUPPORT OF EXCAVATION IS CONCEPTUAL AND SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISION ITEM NO. 953.30, AND THE TRAFFIC CONTROL PLAN REQUIREMENTS.
2. TEMPORARY SUPPORT OF EXCAVATION THAT IS INSTALLED WITHIN THE ZONE OF INFLUENCE OF AN ADJACENT STRUCTURE (BOTH EXISTING AND PROPOSED) SHALL BE LEFT IN PLACE AND CUT 3FT BELOW FINISHED GRADE.

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	77	146
PROJECT FILE NO.	612159		

FOUNDATION STAGING PLAN (1 OF 2)

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

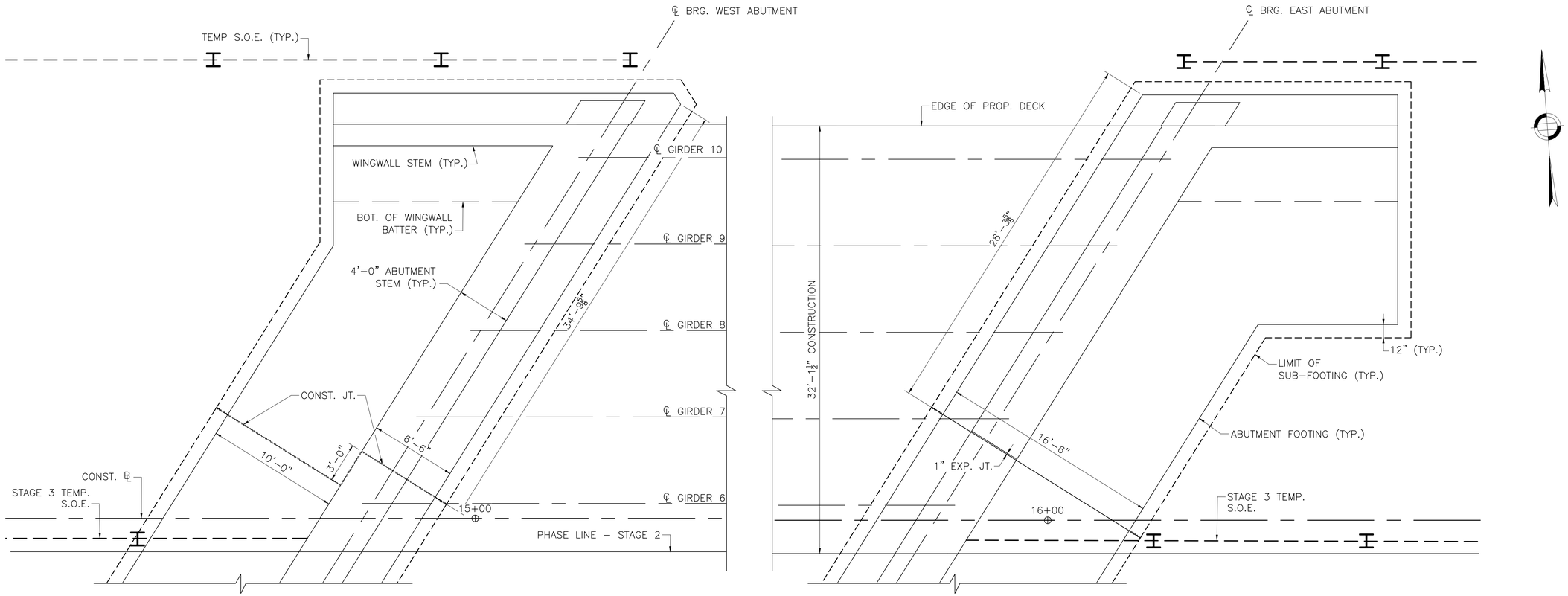
612159_BR18-19(B10001).DWG Plotted on 31-Jul-2026 1:59 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	78	146
PROJECT FILE NO.	612159		

FOUNDATION STAGING PLAN (2 OF 2)



STAGE 3
SCALE: ¼" = 1'–0"

NOTES:

1. TEMPORARY SUPPORT OF EXCAVATION IS CONCEPTUAL AND SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISION ITEM NO. 953.3, AND THE TRAFFIC CONTROL PLAN REQUIREMENTS.
2. TEMPORARY SUPPORT OF EXCAVATION THAT IS INSTALLED WITHIN THE ZONE OF INFLUENCE OF AN ADJACENT STRUCTURE (BOTH EXISTING AND PROPOSED) SHALL BE LEFT IN PLACE AND CUT 3FT BELOW FINISHED GRADE.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

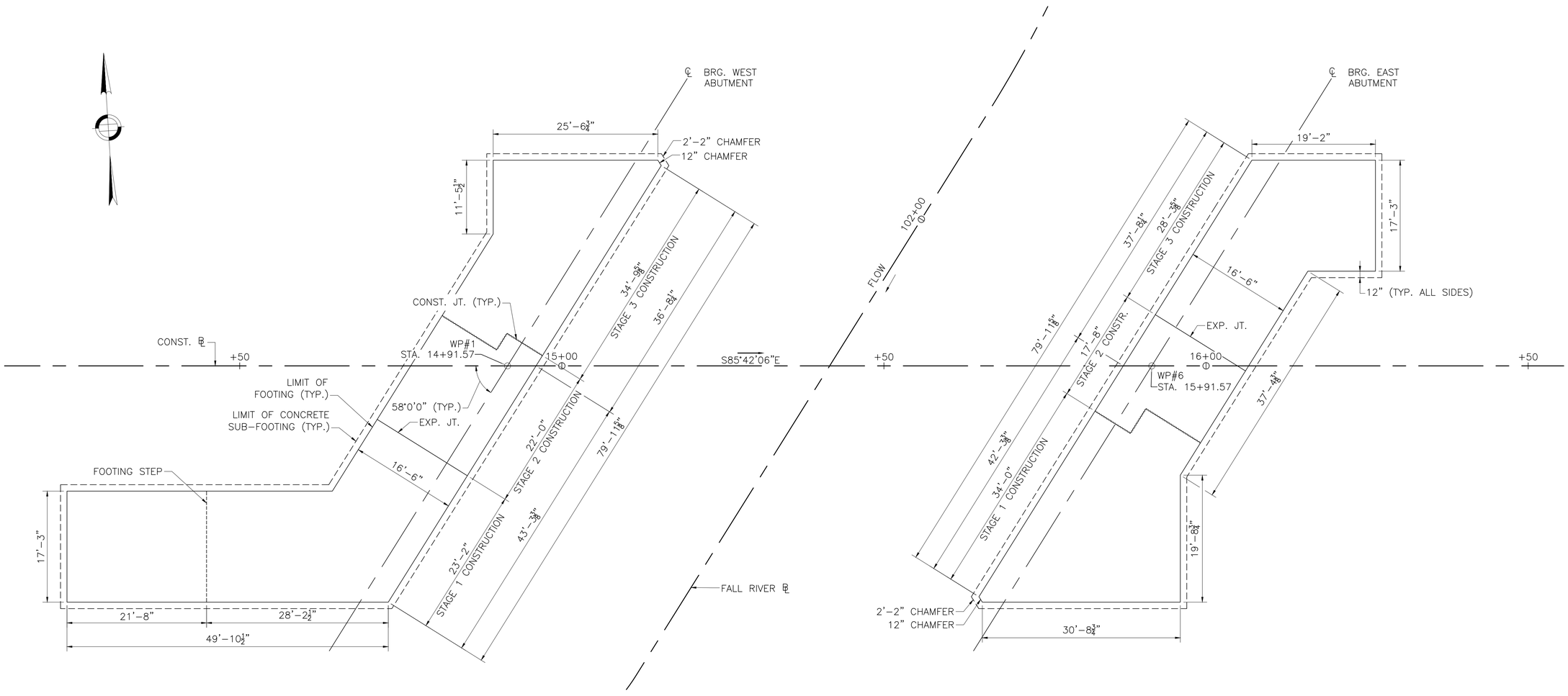
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR18-19(B10001).DWG Plotted on 31-Jul-2026 1:59 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	79	146
PROJECT FILE NO.	612159		

FOUNDATION PLAN



FOUNDATION PLAN
SCALE: ⅛" = 1'-0"

NOTES:

1. SEE SHEETS 18 & 19 FOR ADDITIONAL DETAILS ON FOUNDATION STAGING.
2. CONCRETE SUB-FOOTING SHALL EXTEND A MINIMUM OF 12" BEYOND ALL EDGE OF FOOTINGS. SEE SHEET 28 FOR ADDITIONAL SUB-FOOTING DETAILS.
3. TEMPORARY SUPPORT OF EXCAVATION NOT SHOWN FOR CLARITY.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

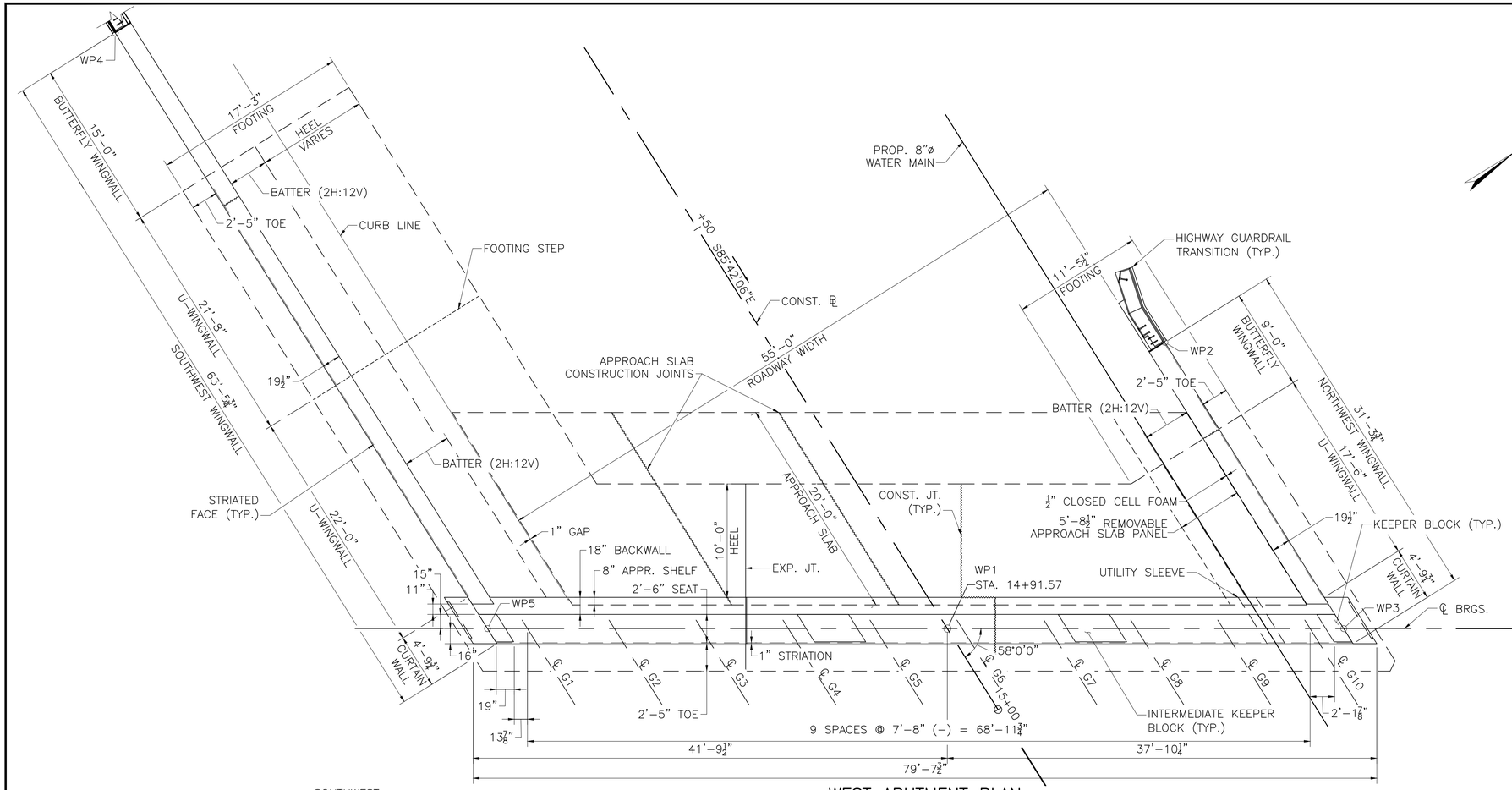
USE ONLY PRINTS OF LATEST DATE

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ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

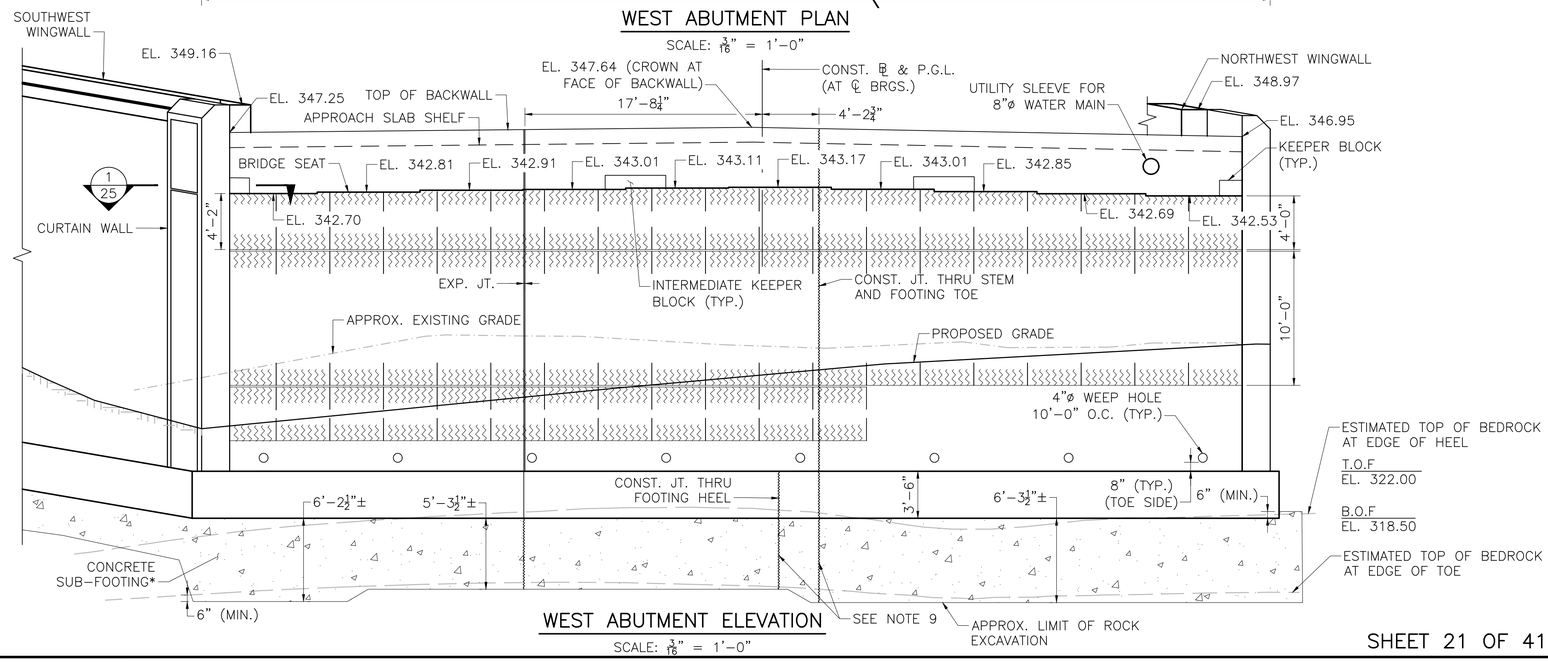
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	80	146
PROJECT FILE NO. 612159			

WEST ABUTMENT PLAN AND ELEVATION



WEST ABUTMENT PLAN

SCALE: 7/16" = 1'-0"



WEST ABUTMENT ELEVATION

SCALE: 3/16" = 1'-0"

*CONCEPTUAL BENCHING IS SHOWN BASED ON AVAILABLE APPROXIMATIONS OF BEDROCK. LAYOUT OF BENCHES SHALL BE MODIFIED TO SUIT THE BEDROCK CONDITIONS ENCOUNTERED AT THE TIME OF EXCAVATION. REFER TO MISCELLANEOUS SUBSTRUCTURE DETAILS SHEET 28 FOR DOWEL DETAILS AND NOTES.

ABUTMENT NOTES:

1. 4" ø WEEP HOLES 10'-0" O.C. LOCATED 12" ABOVE THE HEEL OF THE FOOTING SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
2. FACTORED BEARING PRESSURE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
   - STRENGTH I LIMIT STATE
     FACTORED BEARING PRESSURE = 18.51 KSF.
3. FACTORED BEARING RESISTANCE = 18.6 KSF FOR THE STRENGTH LIMIT STATE AND IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE OF 41.4 KSF AND A RESISTANCE FACTOR OF 0.45.
4. BEARING SEAT ELEVATIONS ARE PROVIDED AT THE CENTERLINE OF BEARING.
5. BACKWALL ELEVATIONS ARE PROVIDED AT THE FRONT FACE OF THE BACKWALL.
6. APPROXIMATE ELEVATIONS OF THE TOP OF COMPETENT BEDROCK AT THE HEEL EDGE AND TOE EDGE OF THE ABUTMENT FOOTING ARE PROVIDED TO ASSIST IN ESTIMATION OF ROCK EXCAVATION, BUT MAY NOT BE REPRESENTATIVE OF TRUE BEDROCK ELEVATIONS.
7. SUB-FOOTING NOT SHOWN IN PLAN FOR CLARITY, SEE SHEET 20 FOR LIMITS.
8. APPROXIMATE THICKNESSES OF THE CONCRETE SUB-FOOTING ARE PROVIDED AT THE EDGE OF THE FOOTING TOE IN THE ABUTMENT ELEVATION VIEW.
9. WHERE ABUTMENT CONSTRUCTION JOINT IS STAGGERED, CONSTRUCTION JOINT THROUGH SUB-FOOTING SHALL ALIGN WITH THE FACE OF THE JOINT IN THE ABUTMENT

WORKING POINTS TABLE		
WP#	STATION	OFFSET
WP1	14+91.57	0.00
WP2	14+80.34	29.63 LT
WP3	15+10.09	29.63 LT
WP4	14+08.18	34.38 RT
WP5	14+70.09	34.38 RT

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

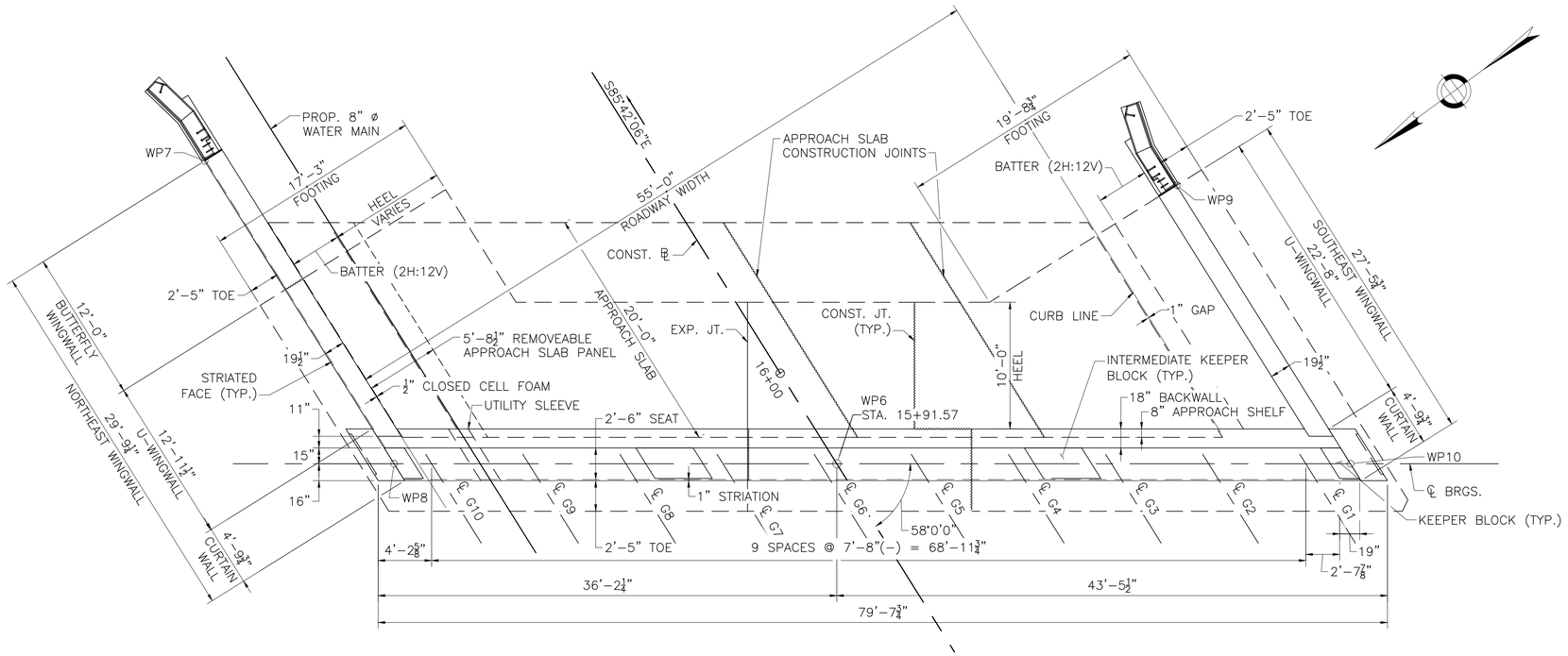
612159_BR21-22(B10001).DWG Plotted on 31-Jul-2026 1:59 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

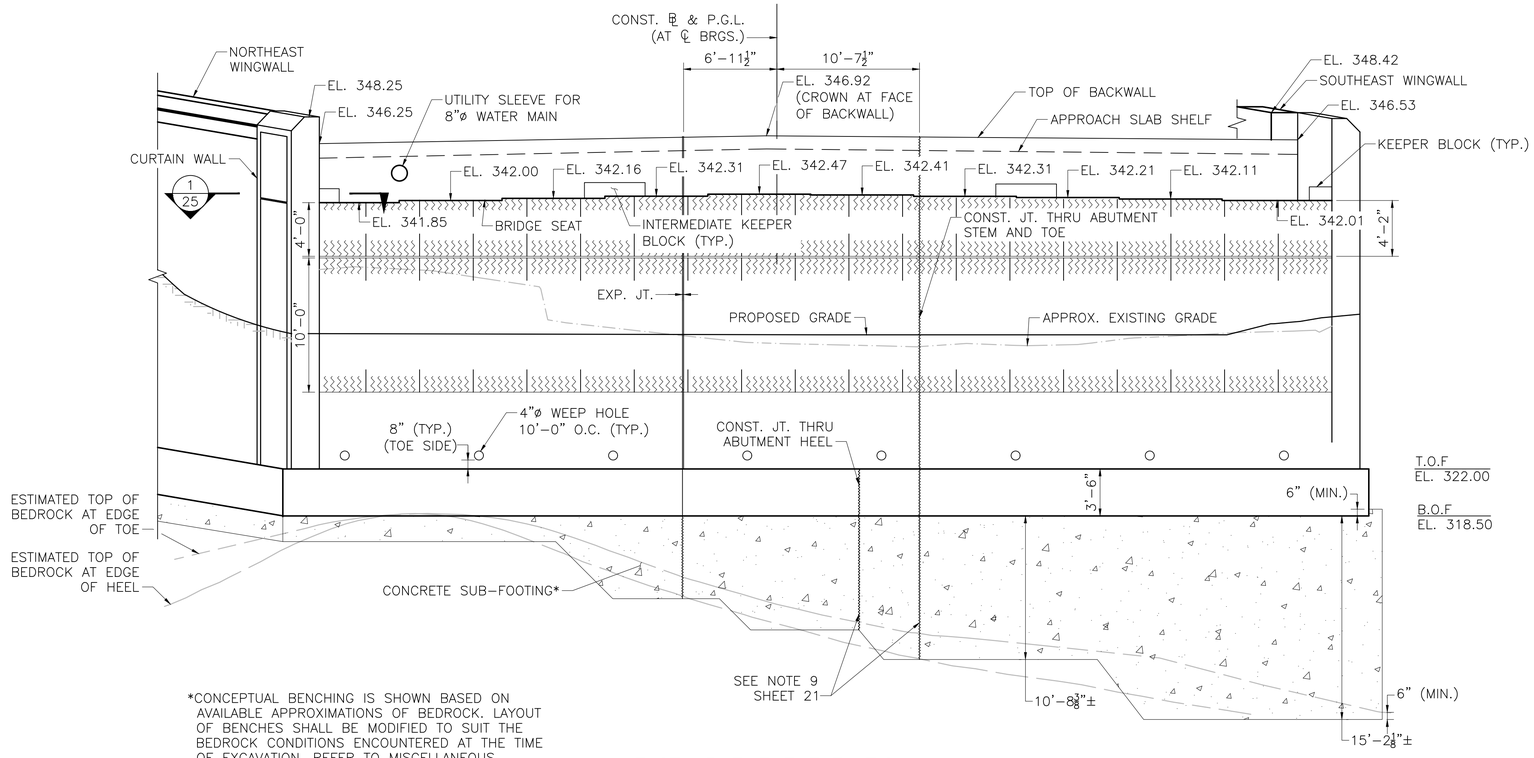
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	81	146
	PROJECT FILE NO. 612159		

EAST ABUTMENT PLAN AND ELEVATION



EAST ABUTMENT PLAN

SCALE: $\frac{3}{16}$" = 1'-0"



*CONCEPTUAL BENCHING IS SHOWN BASED ON AVAILABLE APPROXIMATIONS OF BEDROCK. LAYOUT OF BENCHES SHALL BE MODIFIED TO SUIT THE BEDROCK CONDITIONS ENCOUNTERED AT THE TIME OF EXCAVATION. REFER TO MISCELLANEOUS SUBSTRUCTURE DETAILS SHEET 28 FOR DOWEL DETAILS AND NOTES.

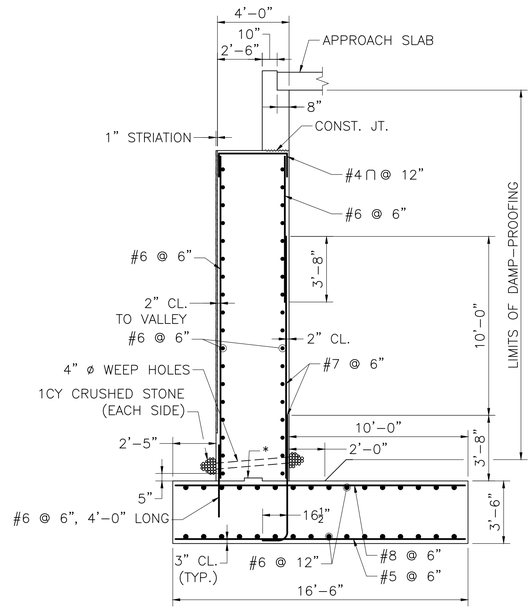
EAST ABUTMENT ELEVATION

SCALE: $\frac{3}{16}$" = 1'-0"

NOTES:

1. SEE SHEET 21 FOR ABUTMENT NOTES.
2. SUB-FOOTING NOT SHOWN IN PLAN FOR CLARITY, SEE SHEET 20 FOR LIMITS.

WORKING POINTS TABLE		
WP#	STATION	OFFSET
WP6	15+91.57	0.00
WP7	16+38.29	29.63 LT
WP8	16+10.08	29.63 LT
WP9	15+96.00	34.38 RT
WP10	15+70.09	34.38 RT



* 12" X 2" KEY AT CONSTRUCTION JOINT

TYPICAL ABUTMENT SECTION

SCALE: ¼" = 1'-0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

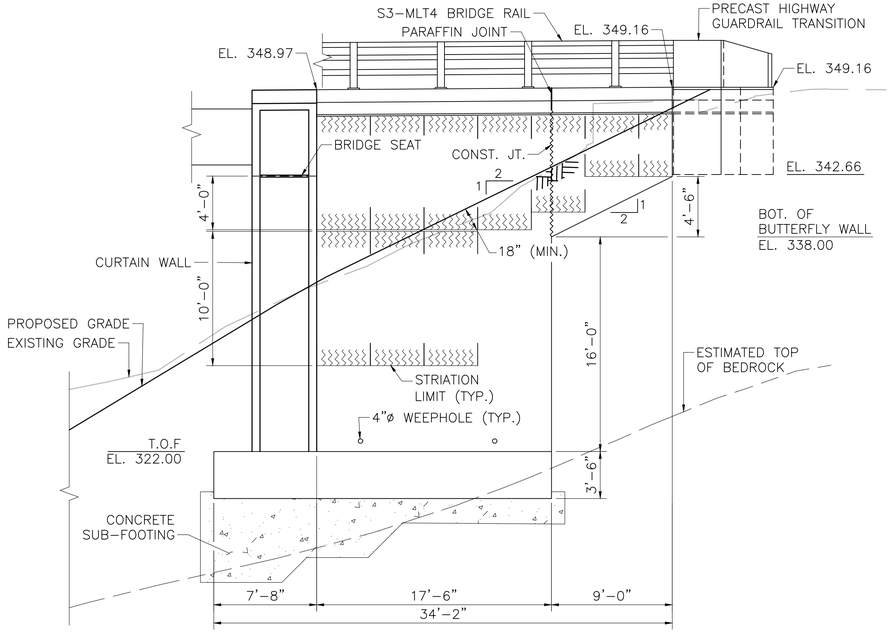
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR21-22(B10001).DWG Plotted on 31-Jul-2026 1:59 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

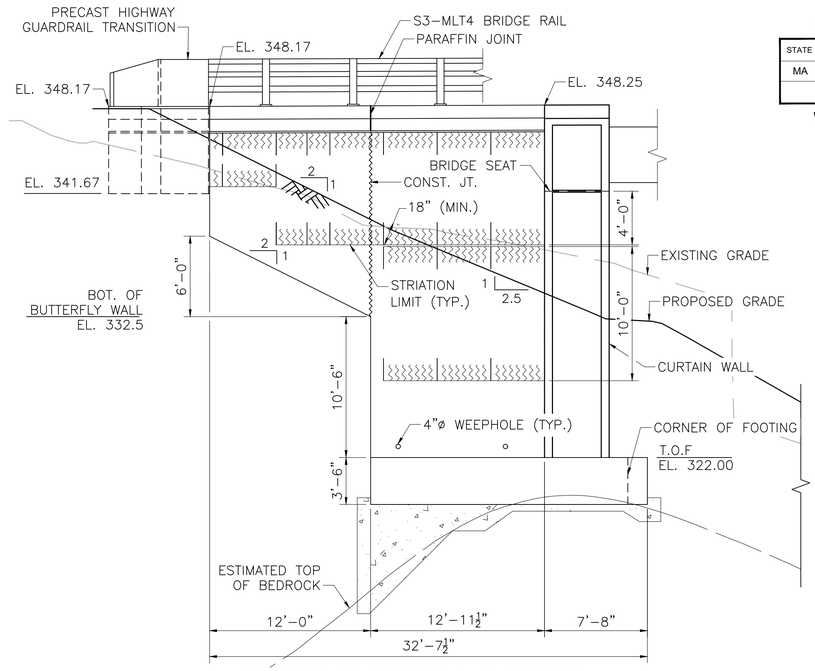
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	82	146
PROJECT FILE NO.	612159		

WINGWALL ELEVATIONS



NORTHWEST WINGWALL ELEVATION

SCALE: $\frac{3}{16}$" = 1'–0"

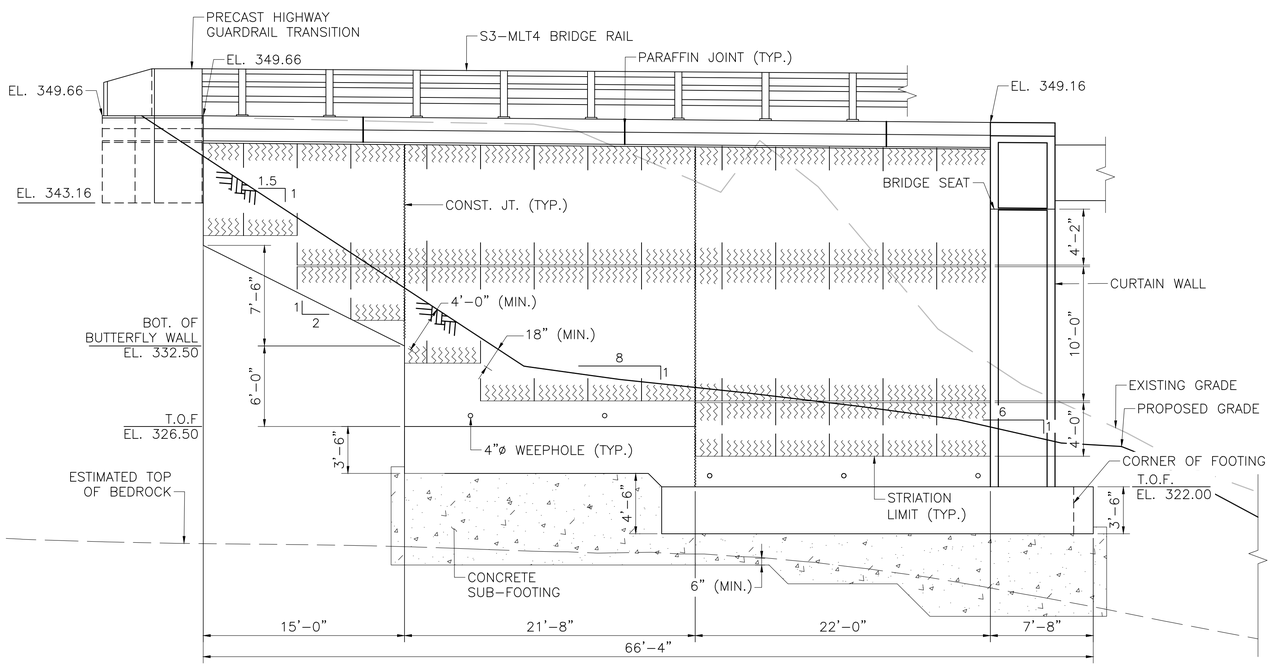


NORTHEAST WINGWALL ELEVATION

SCALE: $\frac{3}{16}$" = 1'–0"

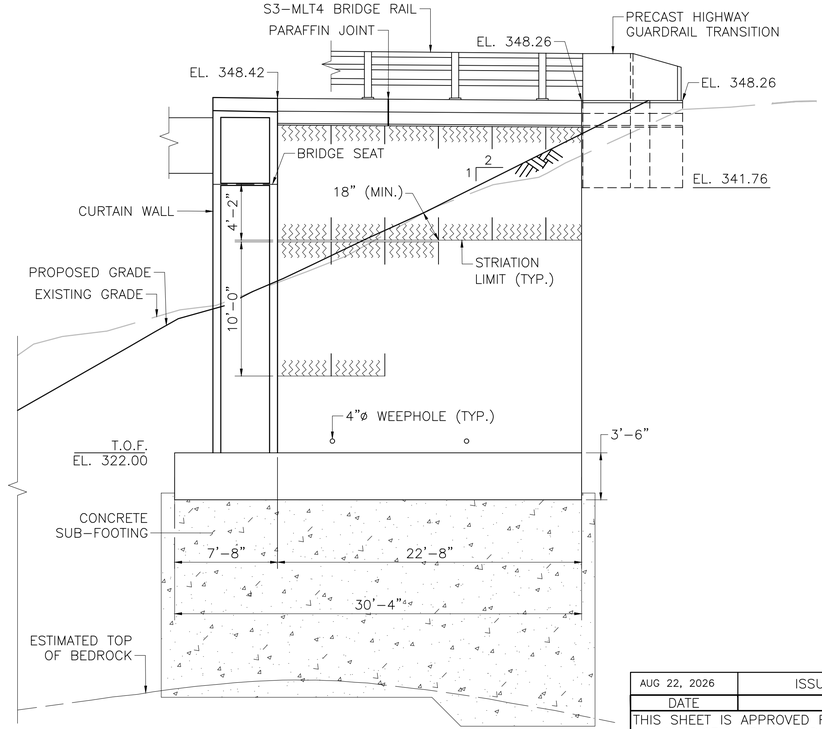
NOTES:

1. SEE SHEET 27 FOR WINGWALL NOTES.
2. WEEPHOLES ARE NOT REQUIRED ON BUTTERFLY WINGS.
3. FOOTING DIMENSIONS ARE PROVIDED AT THE FACE OF THE WINGWALL STEM.
4. SEE GRADING PLAN FOR SLOPEWORKS AROUND WINGWALLS.
5. REFER TO MISCELLANEOUS SUBSTRUCTURE DETAILS SHEET 28 FOR DOWEL DETAILS AND NOTES.



SOUTHWEST WINGWALL ELEVATION

SCALE: $\frac{3}{16}$" = 1'–0"



SOUTHEAST WINGWALL ELEVATION

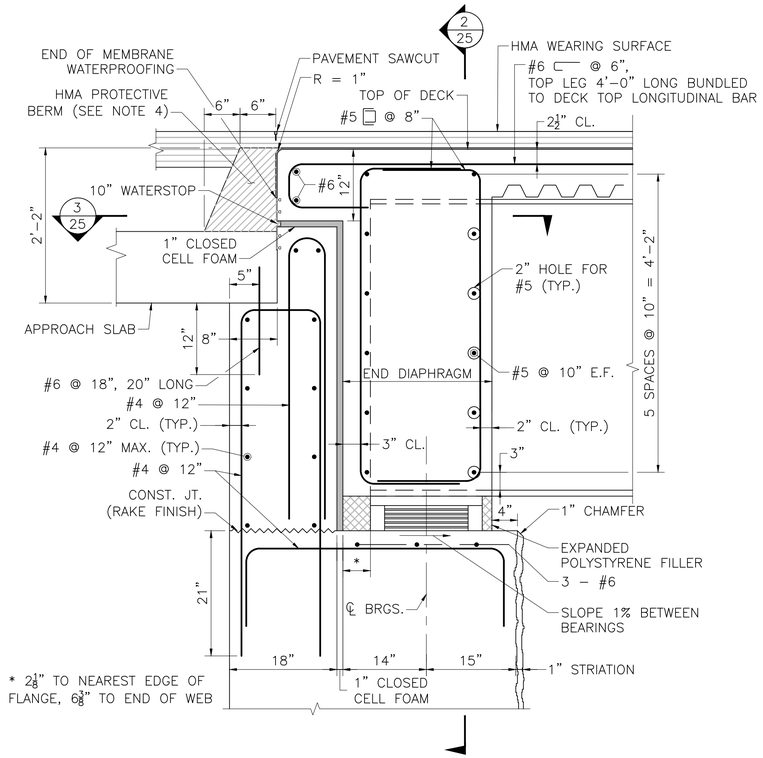
SCALE: $\frac{3}{16}$" = 1'–0"

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

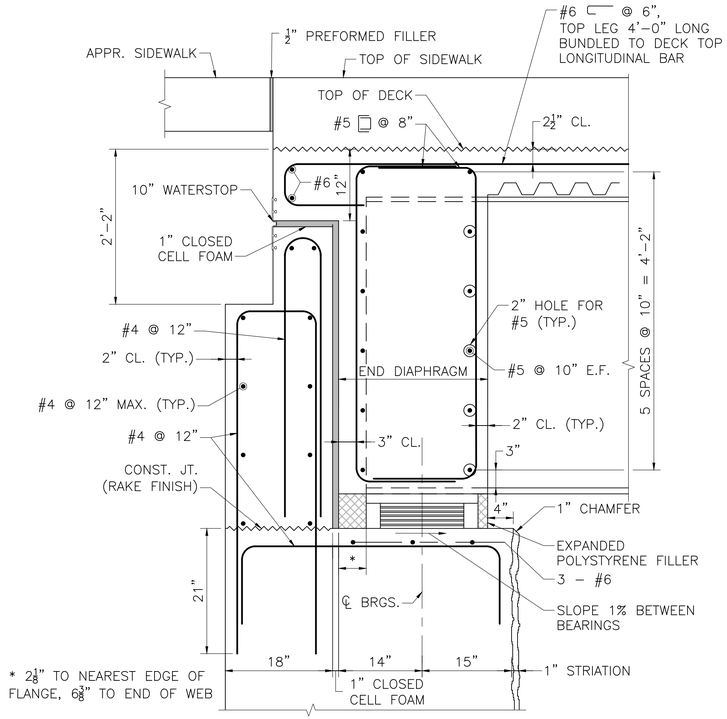
USE ONLY PRINTS OF LATEST DATE

612159_BR23(B10001).DWG Plotted on 31-Jul-2026 2:00 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



DETAILS AT ABUTMENT – ROADWAY SECTION

SCALE: 1" = 1'-0"



DETAILS AT ABUTMENT – SIDEWALK SECTION

SCALE: 1" = 1'-0"

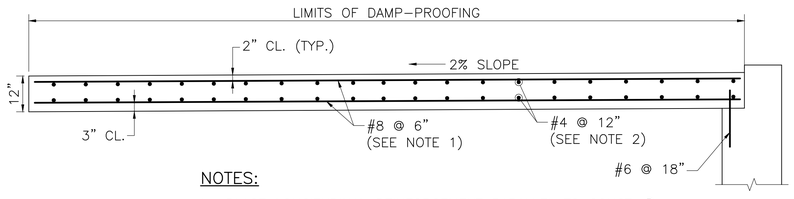
ABUTMENT DETAIL NOTES:

1. ALL REINFORCEMENT SHALL BE COATED.
2. THE CONSTRUCTION JOINT SHALL BE GIVEN A RAKE FINISH WITH A ¼" MINIMUM AMPLITUDE.
3. TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE
4. HMA PROTECTIVE BERM TO BE SUPERPAVE BRIDGE PROTECTIVE COURSE (SPC-B-12.5), PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND-GUIDED TAMPER.
5. ALL INTERMEDIATE KEEPER BLOCKS SHALL BE PLACED AFTER THE BEAMS ARE ERECTED.
6. THE BACKWALL, KEEPER BLOCKS AND CURTAIN WALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
7. PRIOR TO PLACING END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESS SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCKS, AND CURTAIN WALLS AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED BY PLACING EXPANDED POLYSTYRENE FILLER OF THE REQUIRED THICKNESS ON THE BRIDGE SEAT AND TUCKING IT UNDER THE BEAM BOTTOM FLANGES. THE CONTRACTOR SHALL MAKE SURE THAT THE CLOSED CELL FOAM AND EXPANDED POLYSTYRENE FILLER HAVE BEEN PROPERLY AND SECURELY INSTALLED SO THAT THE END DIAPHRAGM CONCRETE SHALL NOT COME IN DIRECT CONTACT WITH THE ABUTMENT CONCRETE.
8. DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
9. SEE TYPICAL ABUTMENT SECTION FOR ADDITIONAL REINFORCEMENT IN THE STEM.

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	83	146
PROJECT FILE NO.	612159		

ABUTMENT DETAILS (1 OF 3)

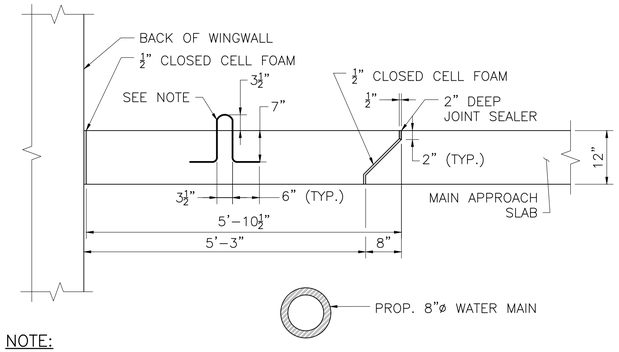


NOTES:

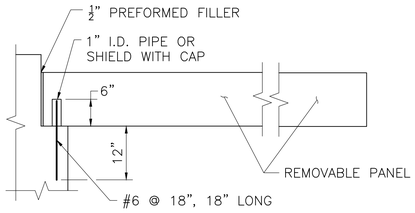
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO CONST. ℄.
2. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
3. ALL REINFORCEMENT SHALL NOT BE COATED.

APPROACH SLAB DETAILS

SCALE: ½" = 1'-0"



NOTE:
2 LIFT HOOKS REQUIRED. USE #5 COATED REBAR AT QUARTER POINTS.



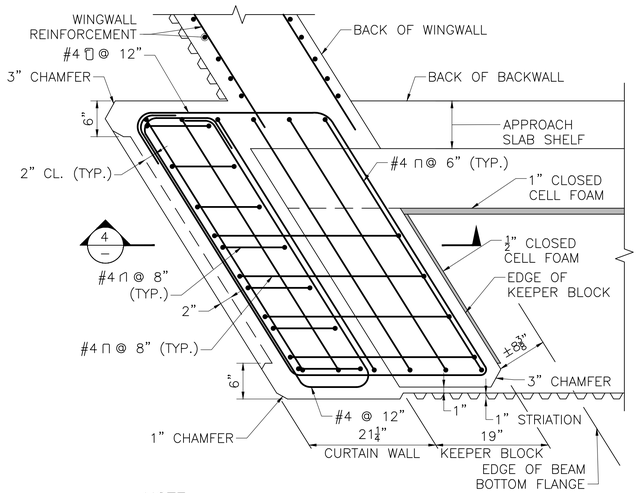
REMOVABLE PANEL DETAIL AT ABUTMENT

SCALE: ¾" = 1'-0"

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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612159_BR24(B10001).DWG Plotted on 31-Jul-2026 2:00 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

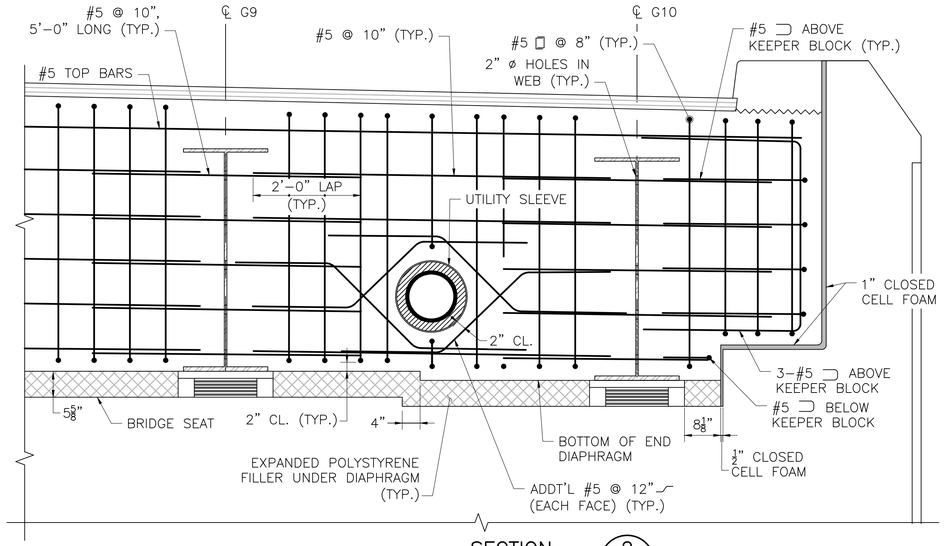


NOTE:

BACKWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

SECTION 1 / 21/22

SCALE: 1" = 1'–0"



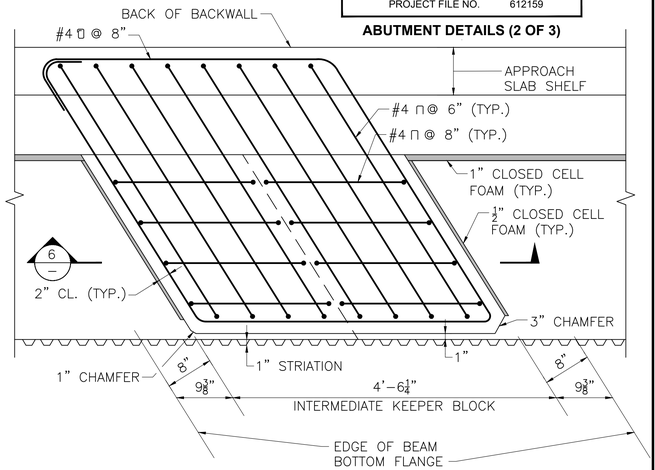
SECTION 2 / 24

SCALE: ¾" = 1'–0"

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	84	146
	PROJECT FILE NO. 612159		

ABUTMENT DETAILS (2 OF 3)



INTERMEDIATE KEEPER BLOCK

SCALE: 1" = 1'–0"

NOTES:

1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
2. ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.

SECTION 4 / –

SCALE: 1" = 1'–0"

SECTION 3 / 24

SCALE: ¾" = 1'–0"

NOTES:

1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
2. ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.

SECTION 6 / –

SCALE: 1" = 1'–0"

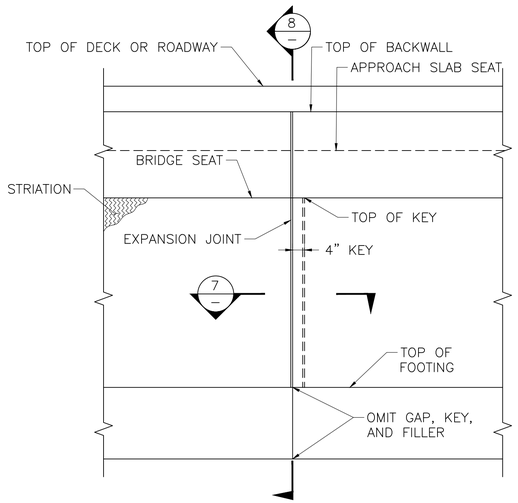
SECTION 5 / –

SCALE: 1" = 1'–0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

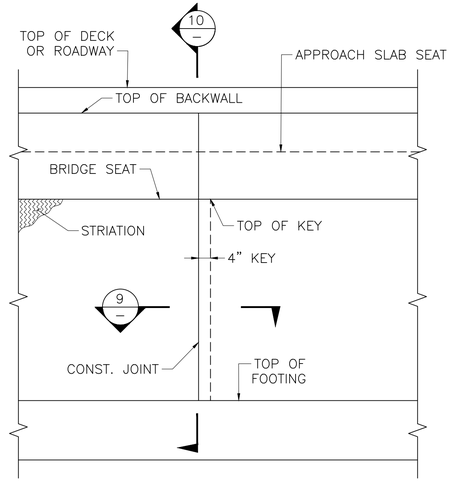
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ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



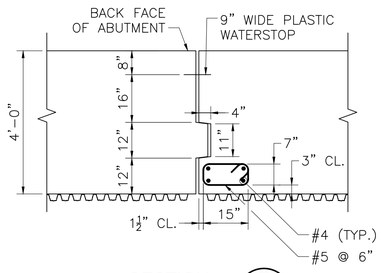
ELEVATION OF ABUTMENT
EXPANSION JOINT

SCALE: $\frac{1}{2}$" = 1'–0"



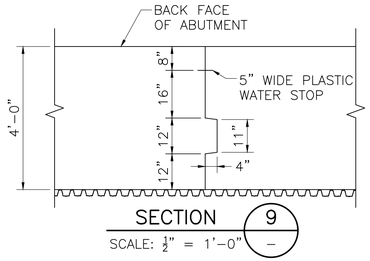
ELEVATION OF ABUTMENT
CONSTRUCTION JOINT

SCALE: $\frac{1}{2}$" = 1'–0"



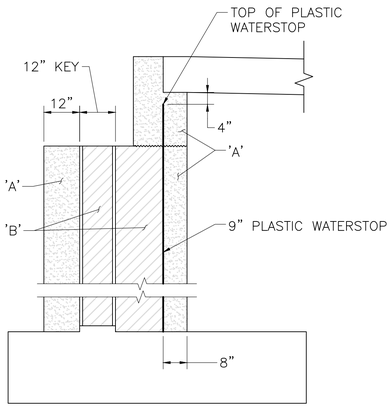
SECTION 7

SCALE: $\frac{1}{2}$" = 1'–0"



SECTION 9

SCALE: $\frac{1}{2}$" = 1'–0"

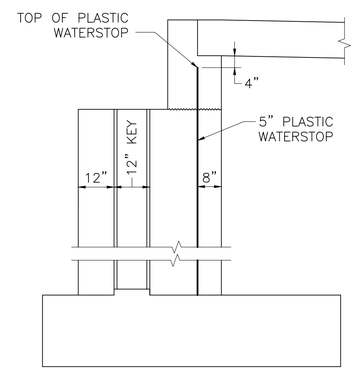


NOTES:

1. LONGITUDINAL REINFORCEMENT SHALL END 2" CLEAR OF EXPANSION JOINT.
2. 'A' – PREFORMED FILLER (IN ACCORDANCE WITH M9.14.0)
   'B' – PREFORMED FILLER (IN ACCORDANCE WITH M3.05.5)
3. FILLER MATERIAL SHALL BE FASTENED SECURELY TO ONE SIDE OF JOINT.

SECTION 8

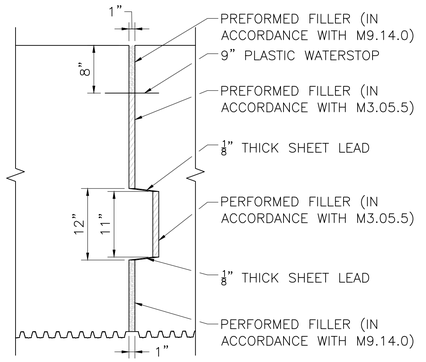
SCALE: $\frac{1}{2}$" = 1'–0"



NOTE:
REINFORCEMENT SHALL BE CONTINUOUS THRU CONSTRUCTION JOINTS.

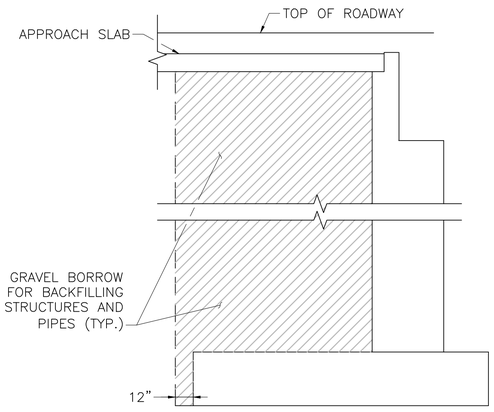
SECTION 10

SCALE: $\frac{1}{2}$" = 1'–0"



LIMITS OF PREFORMED FILLER AT ABUTMENT

SCALE: 1" = 1'–0"



ABUTMENT

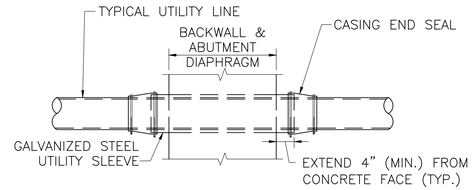
LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

SCALE: $\frac{1}{4}$" = 1'–0"

BERNARDSTON
ST 10 (CHURCH STREET)

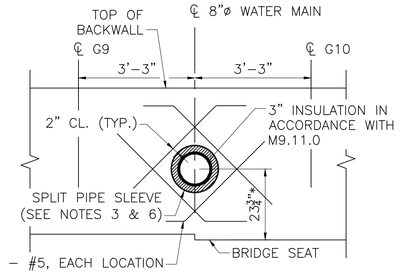
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	85	146
PROJECT FILE NO. 612159			

ABUTMENT DETAILS (3 OF 3)



LONGITUDINAL UTILITY SLEEVE SECTION

NOT TO SCALE



* CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE ELEVATION OF THE WATER MAIN WITH THE UTILITY OWNER. ELEVATIONS MAY VARY DEPENDING ON PIPE SLEEVE SIZE AND INSULATION THICKNESS.

NOTES:

1. DIMENSIONS ARE SQUARE TO BEAMS.
2. UTILITY SLEEVES SHALL BE STEEL PIPE CONFORMING TO ASTM A53 TYPE S, GRADE B HOT–DIP GALVANIZED AND SHALL BE SET IN THE FORMS PRIOR TO PLACING ABUTMENT DIAPHRAGM AND BACKWALL CONCRETE.
3. SLEEVE SHALL BE SECURELY SUPPORTED DURING CONSTRUCTION AND PLACEMENT OF CONCRETE.
4. WEST ABUTMENT SHOWN. EAST ABUTMENT SIMILAR.
5. CONTRACTOR SHALL LAY OUT LOCATION OF UTILITY SLEEVE PRIOR TO POURING ABUTMENT STEM. ANY CONTINUOUS STEM REBAR WHICH ARE INTERRUPTED BY PIPE PENETRATION SHALL BE TERMINATED 2" BELOW THE UTILITY OPENING.
6. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER TO PROVIDE A SLEEVE SIZE CONSISTENT WITH THE INSULATION AND UTILITY SIZE REQUIREMENTS.

UTILITY DETAIL ELEVATION AT BACKWALL

SCALE: $\frac{1}{2}$" = 1'–0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

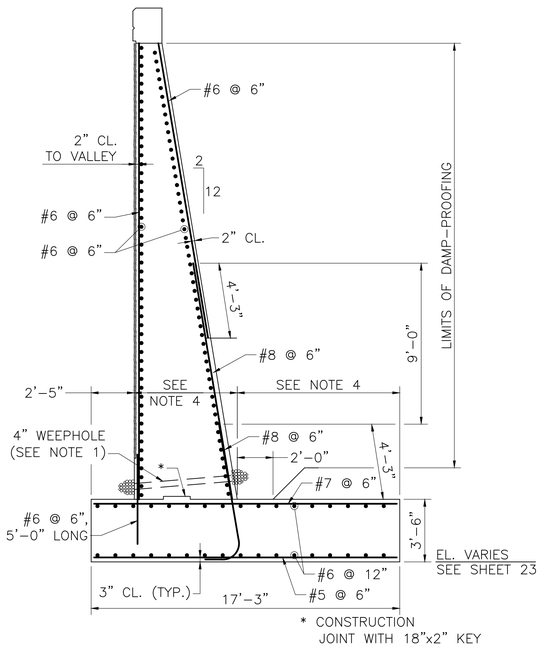
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BERNARDSTON
ST 10 (CHURCH STREET)

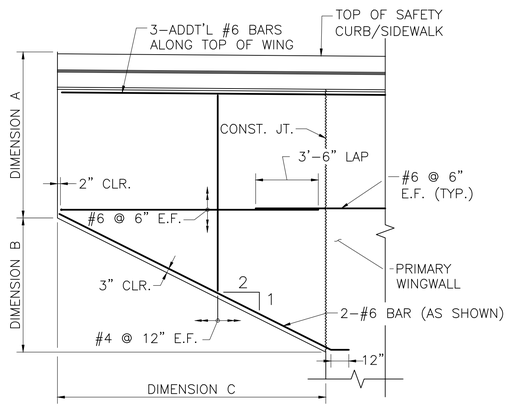
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	86	146
PROJECT FILE NO.	612159		

WINGWALL DETAILS



TYPICAL WINGWALL SECTION

SCALE: $\frac{1}{4}$" = 1'-0"



NOTE:

1. REINFORCING WITHIN COPING AT SIDEWALK/SAFETY CURB NOT SHOWN FOR CLARITY.
2. THIS DETAIL DEPICTS THE TYPICAL REINFORCING STEEL LAYOUT FOR ALL BUTTERFLY WINGWALLS. SEE BELOW FOR INDIVIDUAL WALL DIMENSIONS:

NORTHEAST WINGWALL:
DIMENSION A = 9'-8"
DIMENSION B = 6'-0"
DIMENSION C = 12'-0"

NORTHWEST WINGWALL:
DIMENSION A = 6'-8"
DIMENSION B = 4'-6"
DIMENSION C = 9'-0"

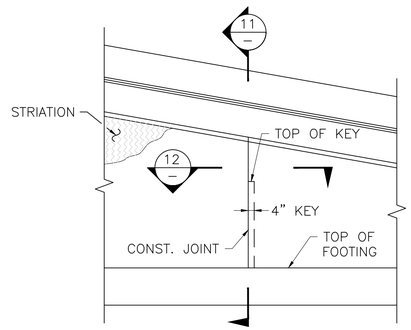
SOUTHWEST WINGWALL:
DIMENSION A = 9'-8"
DIMENSION B = 7'-6"
DIMENSION C = 15'-0"

TYPICAL BUTTERFLY WINGWALL

SCALE: $\frac{1}{4}$" = 1'-0"

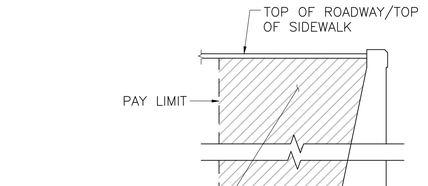
WINGWALL NOTES:

1. 4" ø WEEP HOLES 10'-0" O.C. LOCATED 12" ABOVE THE FOOTING HEEL AND SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
2. FACTORED BEARING PRESSURE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
   - STRENGTH I LIMIT STATE
     FACTORED BEARING PRESSURE AT SPREAD FOOTING WINGWALLS = 15.79 KSF
3. FACTORED BEARING RESISTANCE = 18.6 KSF FOR THE STRENGTH LIMIT STATE AND IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE OF 41.4 KSF AND A RESISTANCE FACTOR OF 0.45.
4. THICKNESS AT WALL BASE AND HEEL WIDTH WILL VARY FOR SHORTER STEPPED WINGWALL SECTIONS. THE CONTRACTOR SHALL MAINTAIN THE WALL BATTER SHOWN AND SIZE THE BASE OF THE WALL ACCORDINGLY. SEE ABUTMENT PLANS.



WINGWALL ELEVATION

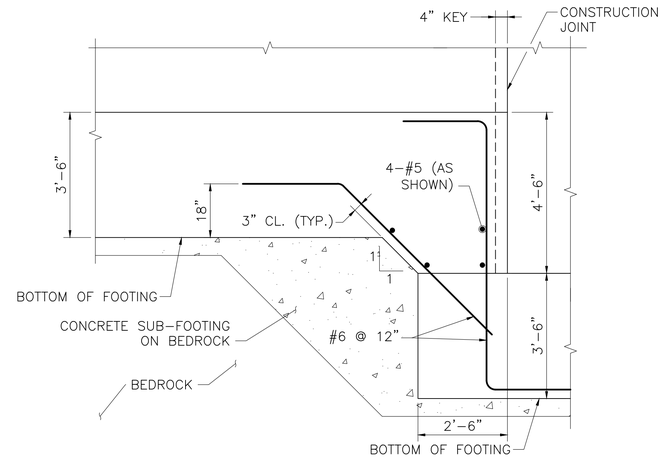
SCALE: $\frac{1}{2}$" = 1'-0"



WINGWALL

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

NOT TO SCALE

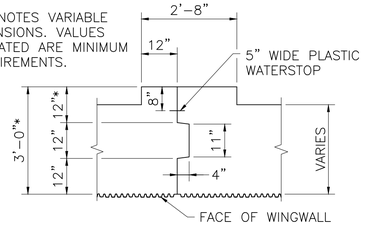


HIGHER WALL — LOWER WALL

STEPPED-UP FOOTING DETAIL AT CONSTRUCTION JOINT

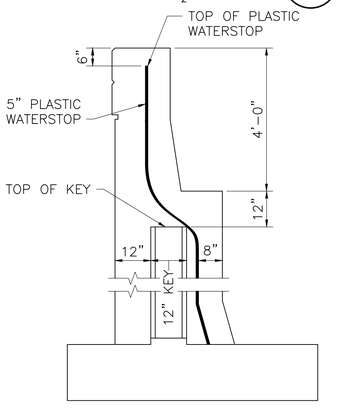
SCALE: $\frac{1}{2}$" = 1'-0"

* DENOTES VARIABLE DIMENSIONS. VALUES INDICATED ARE MINIMUM REQUIREMENTS.



SECTION 11 / –

SCALE: $\frac{1}{2}$" = 1'-0"

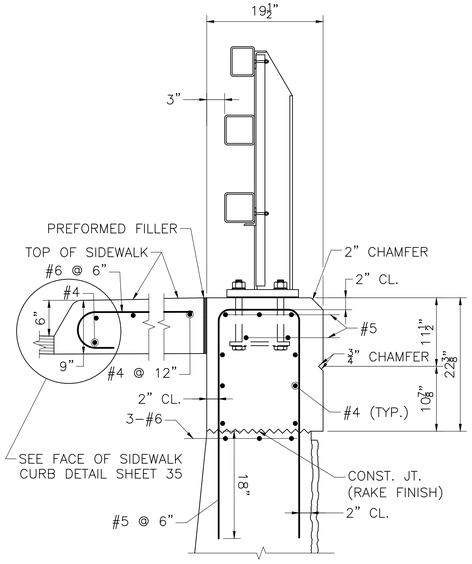


NOTE:

REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

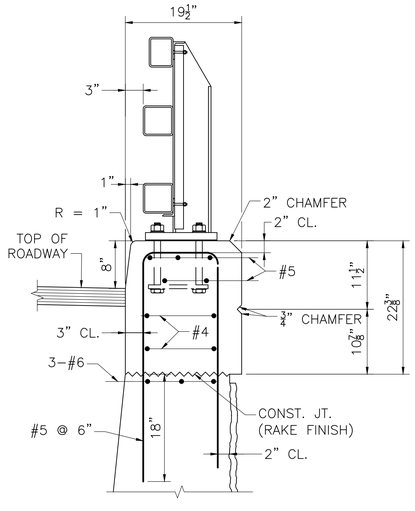
SECTION 12 / –

SCALE: $\frac{1}{2}$" = 1'-0"



TOP OF U-WINGWALL DETAILS AT SIDEWALK

SCALE: 1" = 1'-0"

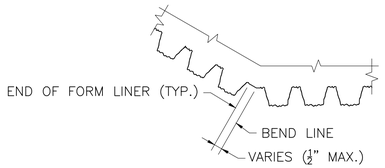


TOP OF U-WINGWALL DETAILS AT SAFETY CURB

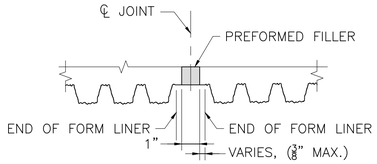
SCALE: 1" = 1'-0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
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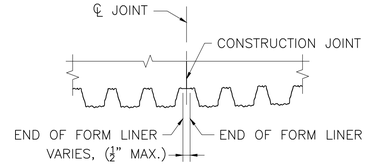
612159_BR27-28(B10001).DWG Plotted on 31-Jul-2026 2:02 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



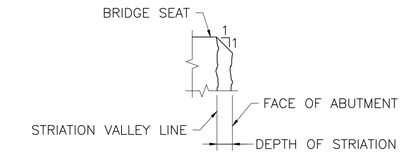
DETAIL AT WALL CORNER
NOT TO SCALE



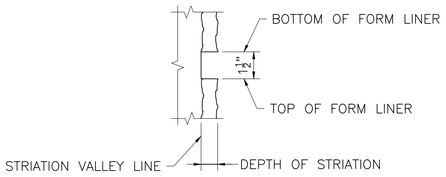
EXPANSION JOINT
NOT TO SCALE



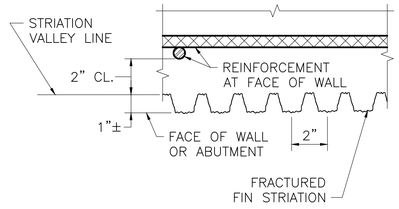
CONSTRUCTION JOINT
NOT TO SCALE



DETAIL AT BRIDGE SEAT
NOT TO SCALE



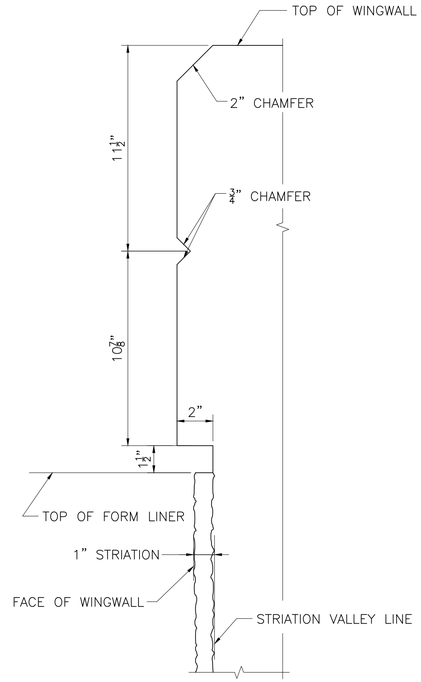
HORIZONTAL PANEL JOINT
NOT TO SCALE



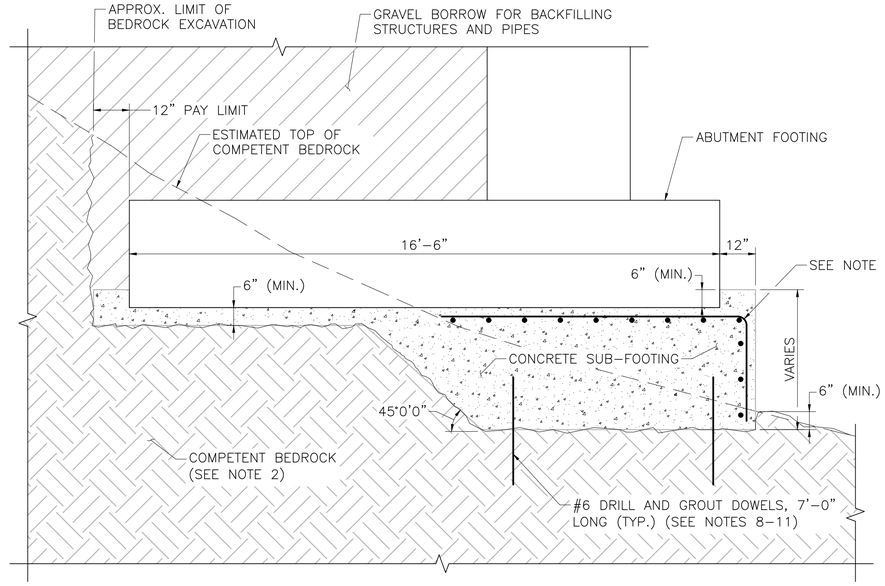
NOTES:

1. THE CONTRACTOR SHALL MAKE SURE THAT THE STRIATION FINS ARE PLUMB AND LINED UP VERTICALLY FROM PANEL TO PANEL FOR THE FULL HEIGHT OF THE WALL.
2. THE HORIZONTAL JOINT MAY BE OMITTED IF THE CONTRACTOR CAN DEMONSTRATE THAT THE FORM LINER PANELS CAN BE INSTALLED END TO END WITHOUT CREATING A VISIBLE SEAM IN THE FINAL CAST CONCRETE.

TYPICAL STRIATION DETAIL
NOT TO SCALE

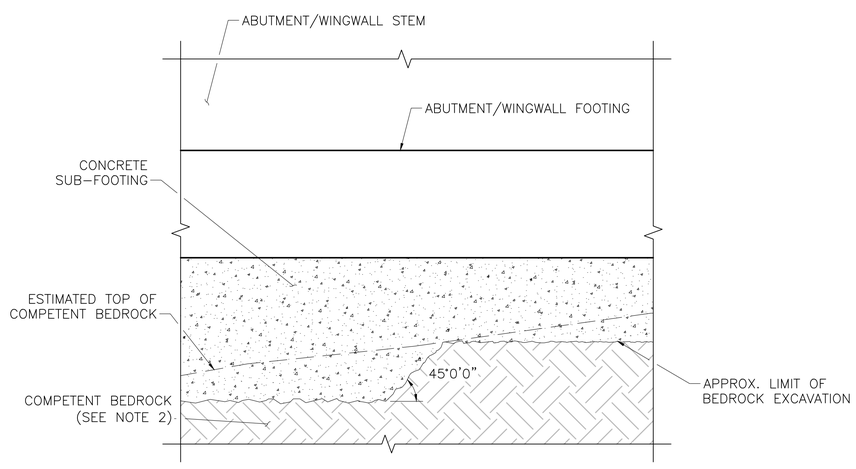


DETAIL AT TOP OF WINGWALL
SCALE: 3" = 1'–0"



ABUTMENT SECTION SHOWN. WINGWALL SECTION SIMILAR.

SUB–FOOTING SECTION
SCALE: ½" = 1'–0"



SUB–FOOTING SECTION ALONG WALL LENGTH
SCALE: ½" = 1'–0"

SUB–FOOTING NOTES:

1. CONCRETE SUB–FOOTING SHALL BE 3000 PSI CONCRETE.
2. COMPETENT BEDROCK SHALL BE DEFINED AS BEDROCK THAT IS NOT LOOSE OR WEATHERED AND CANNOT BE EASILY EXCAVATED WITH TYPICAL HEAVY EXCAVATION EQUIPMENT.
3. BEDROCK SURFACE SHALL BE CLEANED TO THE REQUIREMENTS OF SPECIAL PROVISION ITEM 903.1 PRIOR TO PLACING SUB–FOOTING.
4. SUB–FOOTING SHALL BE A MINIMUM OF 6" THICK, AND MUST BE KEYED INTO BEDROCK A MINIMUM OF 6". THE CONTRACTOR SHALL OVER–EXCAVATE BEDROCK AS NEEDED TO MEET THESE REQUIREMENTS.
5. THE COMPETENT BEDROCK SURFACE SHALL BE LEVEL WHEREVER POSSIBLE AND SHALL BE NO STEEPER THAN 6V:1H. THE CONTRACTOR SHALL MICRO–BENCH BEDROCK AS NEEDED TO PROVIDE A LEVEL BEARING SURFACE FOR THE SUB–FOOTING.
6. TREMIE METHODS SHALL BE USED TO DISPLACE ANY WATER. THE CONTRACTOR SHALL BE PREPARED TO PLACE TREMIE CONCRETE SOON AFTER THE REMOVAL OF SUMP PUMPS.
7. BENCHING ALONG WALL LENGTHS SHALL BE STEPPED WITH A 45 DEGREE TRANSITION WHERE POSSIBLE.
8. DOWELS AT THE ABUTMENTS SHALL BE PLACED BETWEEN THE BEDROCK AND SUB–FOOTING AT A GRID OF APPROXIMATELY 10'–0" SPACING ALONG THE ABUTMENT LENGTH WITH 2 DOWELS MINIMUM ACROSS THE FOOTING WIDTH. DOWELS MAY EXTEND INTO THE PROPOSED FOOTING AS NEEDED.
9. DOWELS AT SPREAD FOOTING SUPPORTED WINGWALLS SHALL BE PLACED BETWEEN THE BEDROCK AND SUB–FOOTING AT A GRID OF APPROXIMATELY 4'–0" SPACING ALONG THE WINGWALL LENGTH WITH 3 DOWELS MINIMUM ACROSS THE FOOTING WIDTH. DOWELS MAY EXTEND INTO THE PROPOSED FOOTINGS AS NEEDED.
10. DOWELS SHALL NOT BE PLACED CLOSER THAN 2'–0" TO FACE OF SUB–FOOTING OR FACE OF A STEP IN THE BEDROCK.
11. DOWELS SHALL BE EMBEDDED 5' IN 1.5" DIAMETER HOLES AND FILLED WITH NON–SHRINK GROUT IN ACCORDANCE WITH SECTION M4.04.5.
12. IF SUBFOOTING HEIGHT EXCEEDS 6'–0" IN THICKNESS FOR MORE THAN 4 CONSECUTIVE FEET OF FOOTING LENGTH, INCLUDE REINFORCEMENT OF #4 @ 18" EACH WAY, OR EQUIVALENT WELDED WIRE FABRIC, AS SHOWN. VERTICAL BARS SHALL HOOK AND EXTEND ACROSS THE TOP SURFACE FOR A DISTANCE TAKEN AS THE GREATER OF 3'–0" OR UNTIL SUBFOOTING THICKNESS REDUCES TO LESS THAN 4'–0" IN THICKNESS.
13. DOWELS SHALL BE EPOXY COATED AND CONFORM TO THE REQUIREMENTS OF AASHTO M31, GRADE 60.

BERNARDSTON
ST 10 (CHURCH STREET)

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MA	HIP(NGB)/FHG(BIP2)-003S(915)	87	146
PROJECT FILE NO. 612159			

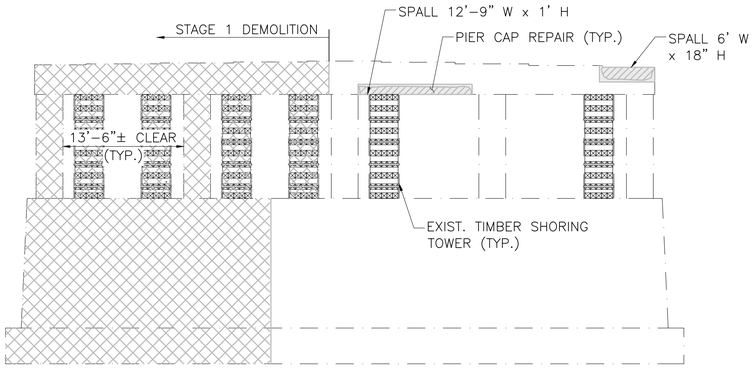
MISCELLANEOUS SUBSTRUCTURE DETAILS

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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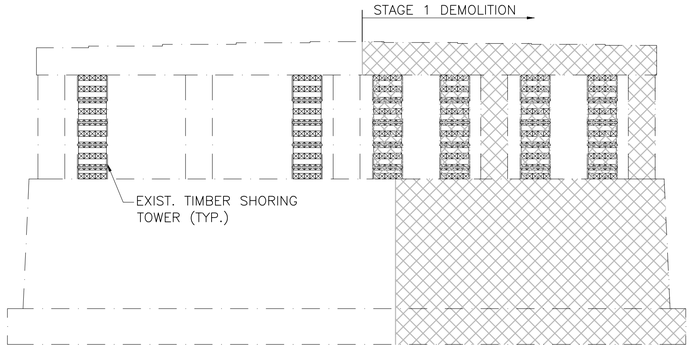
612159_BR27-28(B10001).DWG Plotted on 31-Jul-2026 2:02 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



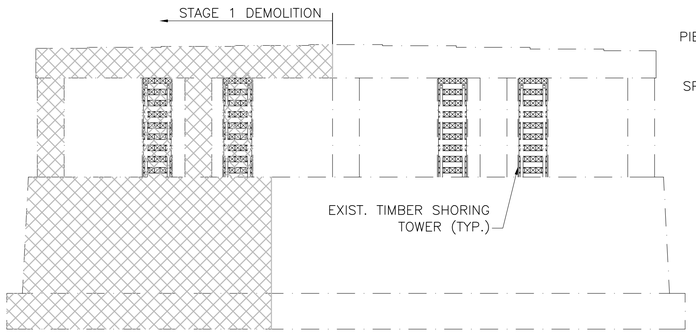
WEST PIER – EAST ELEVATION

SCALE: $\frac{1}{8}$" = 1'–0"



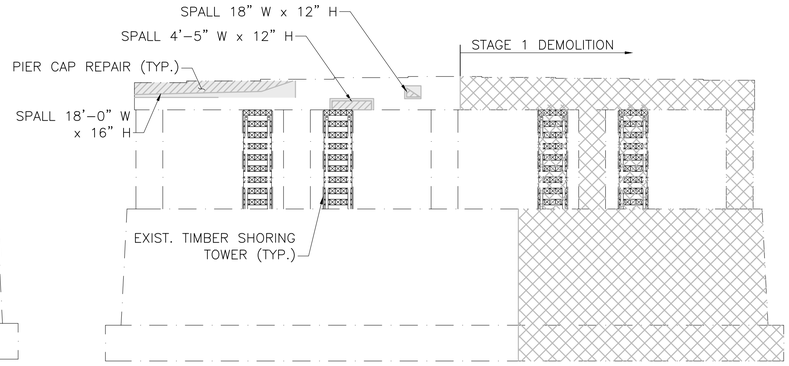
WEST PIER – WEST ELEVATION

SCALE: $\frac{1}{8}$" = 1'–0"



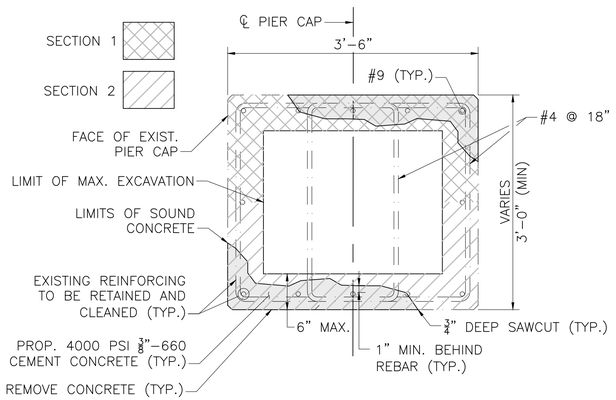
EAST PIER – EAST ELEVATION

SCALE: $\frac{1}{8}$" = 1'–0"



EAST PIER – WEST ELEVATION

SCALE: $\frac{1}{8}$" = 1'–0"



NOTES:

1. CONTRACTOR SHALL NOT WORK ON ADJACENT SECTIONS SIMULTANEOUSLY UNLESS APPROVED BY THE DISTRICT BRIDGE ENGINEER.
2. MAXIMUM SEGMENT LENGTH SHALL BE LIMITED TO 8 FEET.

PIER CAP REPAIR SECTION

SCALE: 1" = 1'–0"

LEGEND

STAGE 1 DEMOLITION	(NO REPAIRS SHALL BE MADE IN STAGE 1 DEMOLITION AREAS)
SPALL	
REPAIR AREA	

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	88	146
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PIER PATCH REPAIR DETAILS

TEMPORARY REPAIR NOTES:

1. PROPOSED REPAIRS ARE INTENDED TO ADDRESS THE TEMPORARY CONDITION ONLY WHERE PORTIONS OF THE PIERS ARE REMAINING IN SERVICE DURING CONSTRUCTION. AS SUCH, ONLY AREAS WITH EXPOSED REBAR SHALL BE REPAIRED. SPALLS AND REPAIR AREAS NOTED ARE BASED ON THE FEBRUARY 2026 INSPECTION REPORT AND ARE SHOWN ONLY FOR THOSE AREAS WITH EXPOSED REBAR IN THE PIER CAPS. DELAMINATIONS, CRACKS, AND MINOR SPALLS ARE NOT NOTED. SEE INSPECTION REPORT FOR MORE INFORMATION. CONDITIONS MAY VARY AT THE TIME OF CONSTRUCTION. IF EXPOSED REBAR IN THE PIER CAPS IS IDENTIFIED AT LOCATIONS NOT SHOWN ON THE PLANS AT THE TIME OF CONSTRUCTION, THE ENGINEER SHALL BE NOTIFIED.
2. THE CONTRACTOR SHALL EXERCISE CARE WHEN REMOVING CONCRETE AROUND REINFORCEMENT TO ONLY REMOVE DETERIORATED CONCRETE AND TO LIMIT THE SOUND CONCRETE REMOVED TO THE MINIMUM NECESSARY TO EFFECT A GOOD REPAIR.
3. THE CONTRACTOR SHALL ESTABLISH LIMITS OF VARIOUS REPAIRS AS SHOWN ON THE PLANS AND AT THE DIRECTION OF THE ENGINEER. THE LOCATIONS SHOWN ON THE PLANS ARE BASED UPON RECORDS OF BRIDGE INSPECTIONS AND OBSERVATION FROM THE GROUND AND ARE NOT GUARANTEED. THE LOCATION AND EXTENT OF ALL CONCRETE REPAIRS ARE TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREAS. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS.
4. THE LIMITS OF THE REPAIRS SHALL BE SAWCUT ALONG NEAT LINES TO A DEPTH OF ¾" TO PRODUCE A CLEAN EDGE.
5. REMOVE DETERIORATED AND UNSOUND CONCRETE AS WELL AS SOUND CONCRETE WHERE NECESSARY TO A MINIMUM OF 1" BEYOND SURFACE REINFORCEMENT.
6. EXPOSED REINFORCEMENT IS TO BE CLEANED BY MECHANICAL CLEANING AND HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED (THAT WHICH WOULD INHIBIT BONDING) SANDBLAST STEEL TO SSPC–SP5.
7. MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. AFTER REMOVAL AND EDGE PREPARATION ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, GREASE, LOOSELY BONDED AGGREGATE) BY ABRASION BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. CHECK THE CONCRETE SURFACES AFTER CLEANING TO INSURE THAT THE SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
8. 4000 PSI ⅜" 660 CEMENT CONCRETE SHALL BE USED TO PERFORM THE REPAIRS.
9. PRESOAK CONCRETE SUBSTRATE WITH A WATER HOSE FOR 24 HOURS OR AS LONG AS SITE CONSTRAINTS PERMIT. AT TIME OF REPAIR CONCRETE PLACEMENT, SUBSTRATE SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER.
10. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES.
11. IF AN EPOXY BONDING COMPOUND IS USED (AS DIRECTED BY THE ENGINEER), THE MATERIALS SHALL MEET AASHTO M235 TYPE V. GRADE AND CLASS SHALL BE SPECIFIED FOR EACH INDIVIDUAL APPLICATION. THE EPOXY COMPOUND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. IN NO CASE WILL THE EPOXY BONDING COMPOUND BE ALLOWED TO CURE TO A HARDENED STATE PRIOR TO CONCRETE PLACEMENT. IF THIS DOES OCCUR IT MUST BE COMPLETELY REMOVED.
12. CONTRACTOR SHALL WAIT 72 HOURS AFTER COMPLETING REPAIRS TO A SECTION BEFORE REPAIRS TO ADJACENT SECTIONS, HOWEVER HE/SHE MAY PERFORM WORK ON OTHER BRIDGE ELEMENTS.
13. CONTRACTOR SHALL STOP REMOVING DETERIORATING CONCRETE WHEN A MAXIMUM DEPTH OF 6 IN. IS REACHED. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED IF MORE REMOVAL SEEMS NECESSARY.
14. THE CONTRACTOR SHALL SUBMIT AN ALTERNATE REPAIR SEQUENCE FOR APPROVAL OF THE ENGINEER IF ADDITIONAL TEMPORARY SHORING IS UTILIZED DURING REPAIRS.
15. CONTRACTOR SHALL STAGE THE WORK SO THAT THE WORST SECTIONS ARE REPAIRED FIRST.
16. SHORING TOWERS SHALL BE REMOVED AND STACKED DURING THEIR RESPECTIVE STAGES OF DEMOLITION.
17. REPAIRS TO DETERIORATED AREAS IN THE PIER CAP IN THE VICINITY OF THE BEARINGS SHALL BE APPROVED BY THE ENGINEER. DETERIORATION THAT DOES NOT EXTEND MORE THAN 10% OF THE BEARING WIDTH OR LENGTH SHALL BE REPAIRED AS INDICATED ON THIS SHEET. IF EXPOSED REBAR EXTENDS MORE THAN 10% OF THE WIDTH OR LENGTH OF THE BEARING PLATE, THE ENGINEER SHALL BE CONTACTED FOR DIRECTION. IF THE ENGINEER DIRECTS THE CONTRACTOR TO SHORE THE BEAMS TO COMPLETE REPAIRS, THE WORK ASSOCIATED WITH SHORING SHALL BE PAID FOR AND IN ACCORDANCE WITH THE PROVISIONAL ITEM 950.1.

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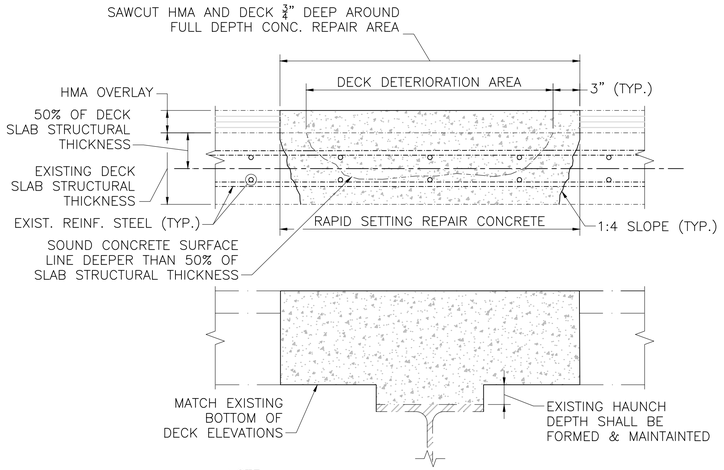
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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MA	HIP(NGB)/FHG(BIP2)-003S(915)	89	146
	PROJECT FILE NO. 612159		

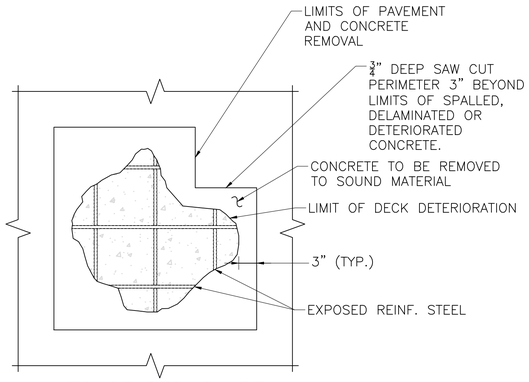
DECK PATCH REPAIR DETAILS



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

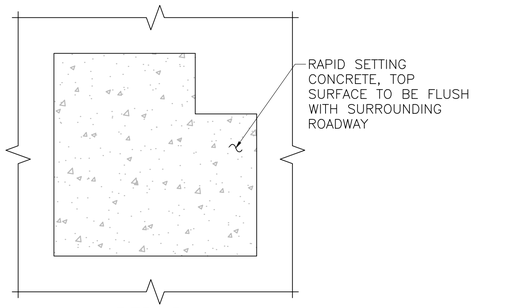
FULL DEPTH DECK REPAIR DETAIL

SCALE: 1½" = 1'–0"



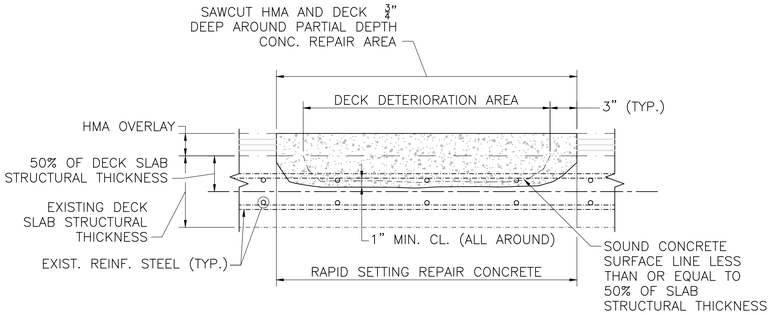
LIMITS OF REPAIR AREA

SCALE: 1" = 1'–0"



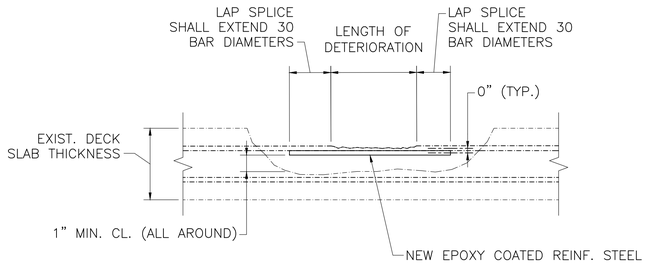
REPAIR

SCALE: 1" = 1'–0"



PARTIAL DEPTH DECK REPAIR DETAIL

SCALE: 1½" = 1'–0"



NOTE:
TOP OF DECK DETERIORATED REINFORCING STEEL SHOWN, UNDERSIDE OF DECK SIMILAR.

TYPICAL DETERIORATED REINFORCEMENT STEEL REPAIR

SCALE: 1½" = 1'–0"

TEMPORARY BRIDGE DECK REPAIR NOTES:

1. REPAIR AREAS SHALL BE LIMITED TO AREAS NECESSARY TO FACILITATE THE INSTALLATION OF THE TEMPORARY BOLT–DOWN BARRIERS DURING STAGED CONSTRUCTION. REPAIRS SHALL BE MADE IN ACCORDANCE WITH THE DETAILS ON THIS SHEET AND PER THE BARRIER MANUFACTURERS RECOMMENDATIONS.
2. SPALLED, DELAMINATED, AND DETERIORATED CONCRETE DECK AREAS SHALL BE REPAIRED USING AN APPROVED RAPID SETTING BAGGED CONCRETE PRODUCT, RAPID SETTING LOW PERMEABILITY MOBILE MIXED CONCRETE, OR HIGH EARLY STRENGTH READY MIX CONCRETE AS DIRECTED BY THE ENGINEER.
3. 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.
4. 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.
5. 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 WHENEVER POSSIBLE, BUT SHALL IN NO CASE BE LESS THAN 15 MINUTES.
6. 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.
7. COORDINATE LOCATIONS OF REPAIR AREAS AND EXPECTED BOLT DOWN ANCHOR LOCATIONS TO ENSURE ALL ANCHORS ARE LOCATED AT LEAST 3" FROM THE EDGE OF THE REPAIR SAWCUT LINE.
8. SIP FORMS SHALL NOT BE USED FOR ANY CONCRETE DECK REPAIRS.
9. TEMPORARY SHIELDING SHALL BE INSTALLED UNDERNEATH REPAIR AREAS FOR THE DURATION OF THE REPAIR.

BRIDGE DECK REPAIR SEQUENCE NOTES:

1. IN AREAS WHERE ADEQUATE STRENGTH CANNOT BE ACHIEVED FOR TEMPORARY BOLT–DOWN ANCHORS, THE CONTRACTOR SHALL REMOVE THE DETERIORATED EXISTING PAVEMENT, WATERPROOFING MEMBRANE, CONCRETE AND/OR DECK REPAIR PATCHES FROM THE BRIDGE DECK. THE LIMITS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONCRETE EXCAVATION.
2. AFTER EXCAVATION, CLEAN AND RE–TIE THE EXPOSED STEEL REINFORCEMENT AS APPLICABLE AND INSTALL NEW REINFORCEMENT IF NEEDED AND AS DIRECTED BY THE ENGINEER.
3. MIX AND PLACE RAPID SETTING REPAIR CONCRETE IN THE EXCAVATED AREAS. TOP SURFACE SHALL BE FLUSH WITH ADJACENT TOP OF PAVEMENT. SEE SPECIAL PROVISIONS FOR CONCRETE REQUIREMENTS.
4. ANCHOR BOLTS FOR BOLT DOWN BARRIERS MAY BE INSTALLED ONCE THE REPAIR CONCRETE HAS REACHED THE REQUIRED STRENGTH OF THE BOLT DOWN MANUFACTURERS INSTALLATION REQUIREMENTS.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
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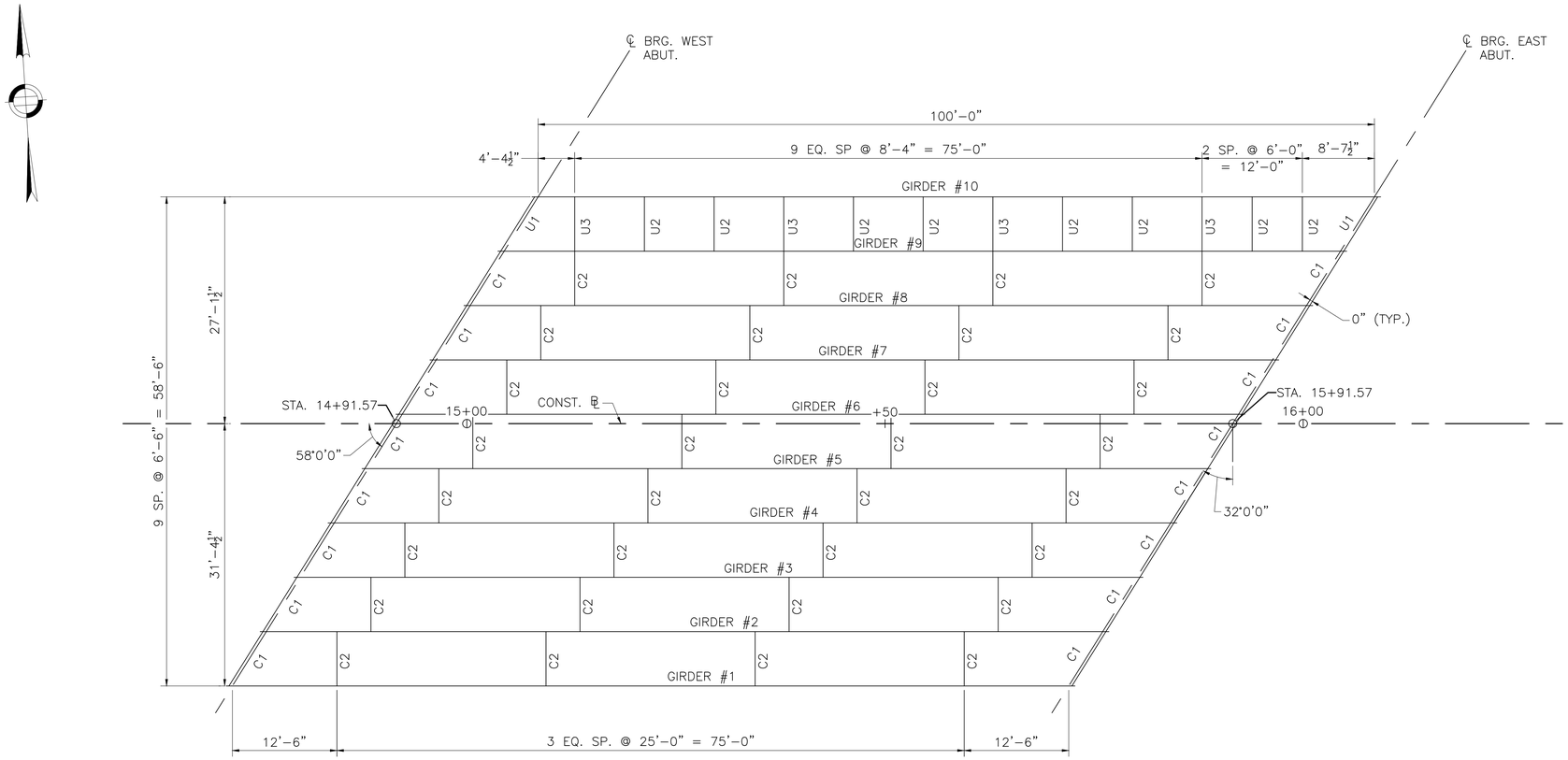
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BERNARDSTON
ST 10 (CHURCH STREET)

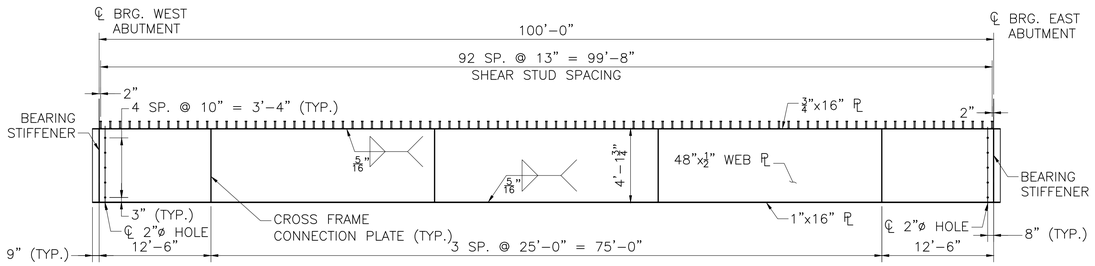
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	90	146
PROJECT FILE NO.	612159		

FRAMING PLAN



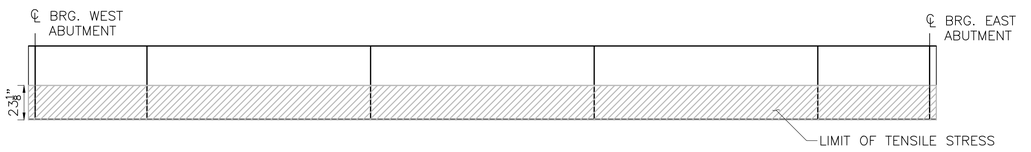
FRAMING PLAN

SCALE: ⅛" = 1'–0"



GIRDER ELEVATION

HORIZONTAL SCALE: ⅛" = 1'–0"
VERTICAL SCALE: NOT TO SCALE

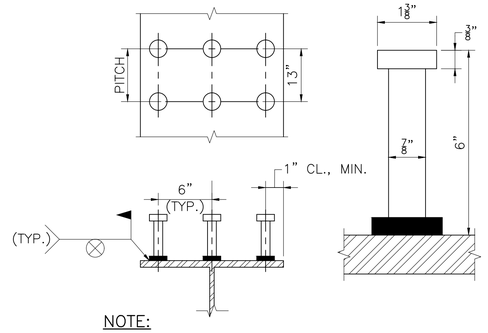


LIMIT OF TENSILE STRESS

HORIZONTAL SCALE: ⅛" = 1'–0"
VERTICAL SCALE: NOT TO SCALE

NOTES:

1. C1 = C12x20.7 – TYPICAL END CROSS FRAME
   C2 = TYPICAL INTERMEDIATE CROSS FRAME
   U1 = TYPICAL UTILITY SUPPORT AT ABUTMENTS
   U2 = TYPICAL UTILITY SUPPORT BETWEEN CROSS FRAMES
   U3 = TYPICAL UTILITY SUPPORT AT CROSS FRAME
2. SEE SHEET 32 FOR CROSS FRAME AND UTILITY SUPPORT DETAILS.
3. THE PRIMARY MEMBERS ARE G1 THROUGH G10.
4. ALL CROSS FRAMES, TRANSVERSE CONNECTION PLATES, INTERMEDIATE STIFFENERS, BEARING STIFFENERS SOLE PLATES, AND DRIP BARS ARE CONSIDERED SECONDARY MEMBERS.
5. ALL STEEL SHALL CONFORM TO AASHTO M 270 GRADE 50.
6. ALL HIGH STRENGTH BOLTS SHALL BE ⅞" ø CONFORMING TO THE REQUIREMENTS OF ASTM F3125 GRADE A325 TYPE 1 GALVANIZED, UNLESS OTHERWISE NOTED. NUTS AND WASHERS SHALL BE LISTED AS SUITABLE IN THE ASTM F3125 SPECIFICATION FOR GRADE A325.
7. ALL CONNECTIONS HAVE BEEN DESIGNED FOR A CLASS B SURFACE CONDITION, ASSUMING A COEFFICIENT OF FRICTION ON THE FAYING SURFACES EQUAL TO OR GREATER THAN 0.5, EXCEPT FOR THE CONNECTION OF THE CROSS FRAMES TO THE TRANSVERSE CONNECTION PLATE, WHICH HAS BEEN DESIGNED FOR CLASS C WITH A COEFFICIENT OF FRICTION OF 0.3.
8. ALL WELDING AND THE PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING SHALL CONFORM TO THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, BRIDGE WELDING CODE (AASHTO AWS D1.5) AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO AS OF THE BID OPENING DATE.
9. ALL CROSS FRAMES SHALL BE DETAILED AND FABRICATED TO THE TOTAL DEAD LOAD FIT (TDLF) CONDITION.
10. THE BEAMS SHALL BE FABRICATED SO THAT UNDER FULL DEAD LOAD THE ENDS ARE PLUMB.
11. ALL BEAMS SHALL BE METALIZED TO MEET THE REQUIREMENTS OF ZONE 2. THE ENTIRE FASCIA GIRDERS SHALL BE METALIZED AND PAINTED, AMS STANDARD 595A COLOR NUMBER 14223 OF THE FEDERAL STANDARD 595B. CROSS FRAMES MAY BE HOT–DIP GALVANIZED.
12. ALL CROSS FRAME CONNECTION PLATES AND BEARING STIFFENERS SHALL BE PERPENDICULAR TO THE WEB AND TO THE GIRDER FLANGES.
13. ALL BEARING STIFFENERS SHALL BE PLUMB.
14. ENDS OF BEAMS SHALL BE FABRICATED SO THAT UNDER FULL DEAD LOAD THE ENDS WILL BE PLUMB.
15. ALL BOLT HOLES SHALL BE 15/16"ø UNLESS OTHERWISE NOTED.
16. SHEAR CONNECTORS SHALL BE IN ACCORDANCE WITH AASHTO M 169, GRADES 1015 OR 1020.



NOTE:

¾" ø STUDS MAY BE SUBSTITUTED FOR ⅞" ø STUDS BY ADJUSTING THE PITCH TO PROVIDE AN EQUIVALENT CROSS–SECTIONAL AREA PER FOOT.

SHEAR STUD CONNECTORS

NOT TO SCALE

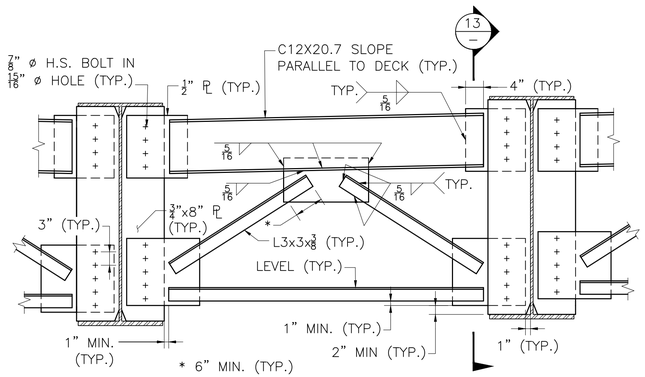
AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
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USE ONLY PRINTS OF LATEST DATE	

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ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

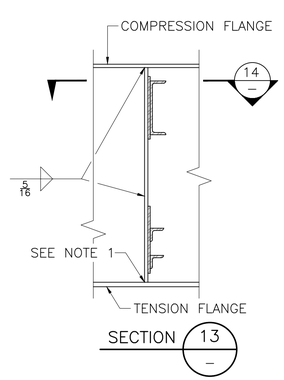
BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	91	146
PROJECT FILE NO. 612159			

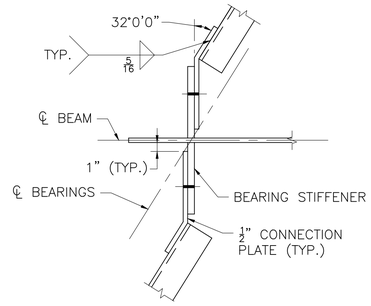
FRAMING DETAILS



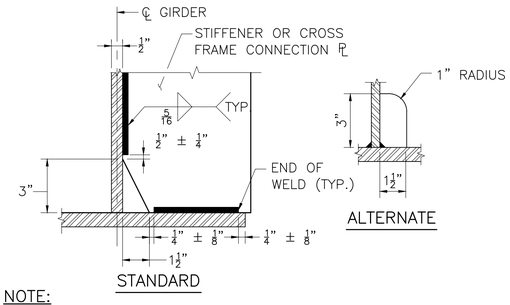
ELEVATION



SECTION 13



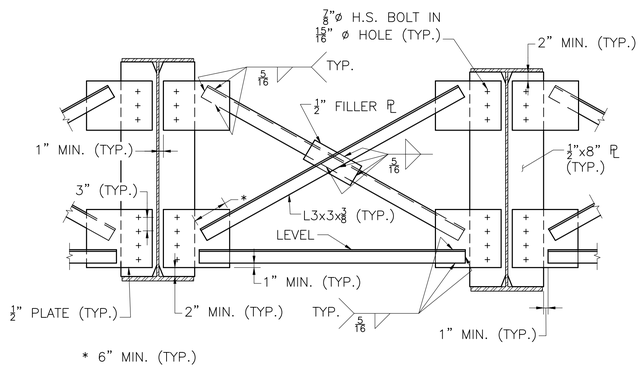
SECTION 14
SCALE: 1½" = 1'–0"



NOTE:
AT BEARING STIFFENER LOCATIONS, MODIFY THE PLATE ATTACHMENT TO THE FLANGES AS SHOWN IN THE TYPICAL STIFFENER ATTACHMENTS ON THIS SHEET.

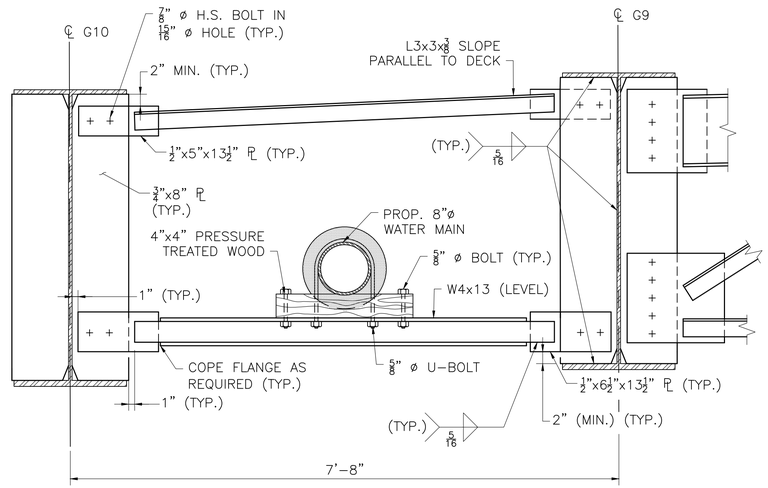
END CROSS FRAME – C1

SCALE: 3/4" = 1'–0"



INTERMEDIATE CROSS FRAME – C2

SCALE: 3/4" = 1'–0"

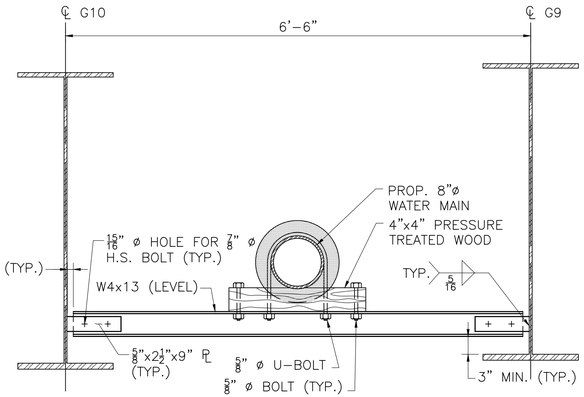


UTILITY SUPPORT – U1

SCALE: 1" = 1'–0"

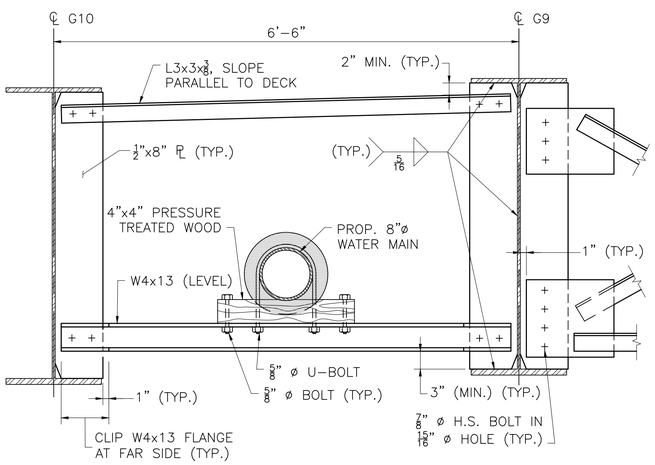
CLIP DETAIL

NOT TO SCALE



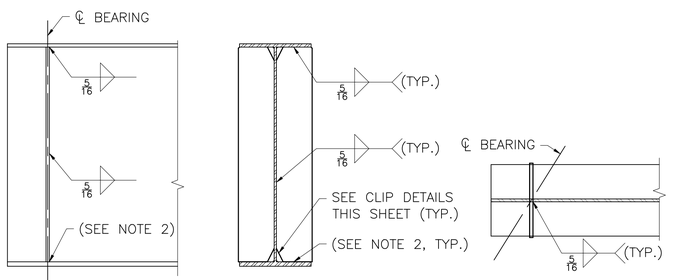
UTILITY SUPPORT – U2

SCALE: 1" = 1'–0"



UTILITY SUPPORT – U3

SCALE: 1" = 1'–0"



NOTES:
1. ALL BEARING STIFFENERS SHALL BE PLUMB.
2. BEARING STIFFENERS AT TENSION FLANGE CAN BE WELDED WITH A COMPLETE JOINT PENETRATION WELD (CJP) WITH A REINFORCING FILLET OR FABRICATED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF THE STIFFENER.

END BEARING STIFFENER

SCALE: 3/4" = 1'–0"

STIFFENER AND CONNECTION PLATE NOTES:

1. BEARING STIFFENER PLATE AT THE BOTTOM FLANGE SHALL BE MILLED FOR TIGHT FIT AND WELDED WITH A 5/16" FILLET WELD ON BOTH SIDES OF THE PLATE.
2. ALL BEARING STIFFENERS SHALL BE PLUMB.
3. TERMINATE FILLET WELDS 1/2" SHORT OF ALL PLATE EDGES.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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USE ONLY PRINTS OF LATEST DATE

612159_BR32(B10001).DWG Plotted on 31-Jul-2026 2:03 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	92	146
PROJECT FILE NO.	612159		

CAMBER DETAILS

CAMBER TABLE

BEAM NO.		℄ WEST ABUT.	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ EAST ABUT.
G1	STEEL DL DEFLECTION	0.000	0.211	0.398	0.546	0.639	0.671	0.639	0.546	0.398	0.211	0.000
	CONC. DL DEFLECTION	0.000	0.845	1.599	2.189	2.564	2.692	2.564	2.189	1.599	0.845	0.000
	S.D.L. DL DEFLECTION	0.000	0.350	0.662	0.906	1.062	1.115	1.062	0.906	0.662	0.350	0.000
	VERT. CURVE CAMBER	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	ADDITIONAL CAMBER	0.000	0.250	0.500	0.750	1.000	1.250	1.000	0.750	0.500	0.250	0.000
	TOTAL CAMBER	0.000	1.656	3.159	4.391	5.264	5.728	5.264	4.391	3.159	1.656	0.000
G2	STEEL DL DEFLECTION	0.000	0.217	0.412	0.563	0.660	0.693	0.660	0.563	0.412	0.217	0.000
	CONC. DL DEFLECTION	0.000	0.788	1.490	2.040	2.389	2.509	2.389	2.040	1.490	0.788	0.000
	S.D.L. DL DEFLECTION	0.000	0.303	0.573	0.784	0.919	0.965	0.919	0.784	0.573	0.303	0.000
	VERT. CURVE CAMBER	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	ADDITIONAL CAMBER	0.000	0.250	0.500	0.750	1.000	1.250	1.000	0.750	0.500	0.250	0.000
	TOTAL CAMBER	0.000	1.558	2.975	4.138	4.968	5.416	4.968	4.138	2.975	1.558	0.000
G3 – G10	STEEL DL DEFLECTION	0.000	0.217	0.411	0.563	0.659	0.692	0.659	0.563	0.411	0.217	0.000
	CONC. DL DEFLECTION	0.000	0.788	1.490	2.040	2.390	2.509	2.390	2.040	1.490	0.788	0.000
	S.D.L. DL DEFLECTION	0.000	0.203	0.384	0.526	0.616	0.646	0.616	0.526	0.384	0.203	0.000
	VERT. CURVE CAMBER	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	ADDITIONAL CAMBER	0.000	0.250	0.500	0.750	1.000	1.250	1.000	0.750	0.500	0.250	0.000
	TOTAL CAMBER	0.000	1.458	2.786	3.879	4.665	5.098	4.665	3.879	2.786	1.458	0.000

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ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	93	146
PROJECT FILE NO. 612159			

DEPARTMENT OF TRANSPORTATION

DECK PLAN

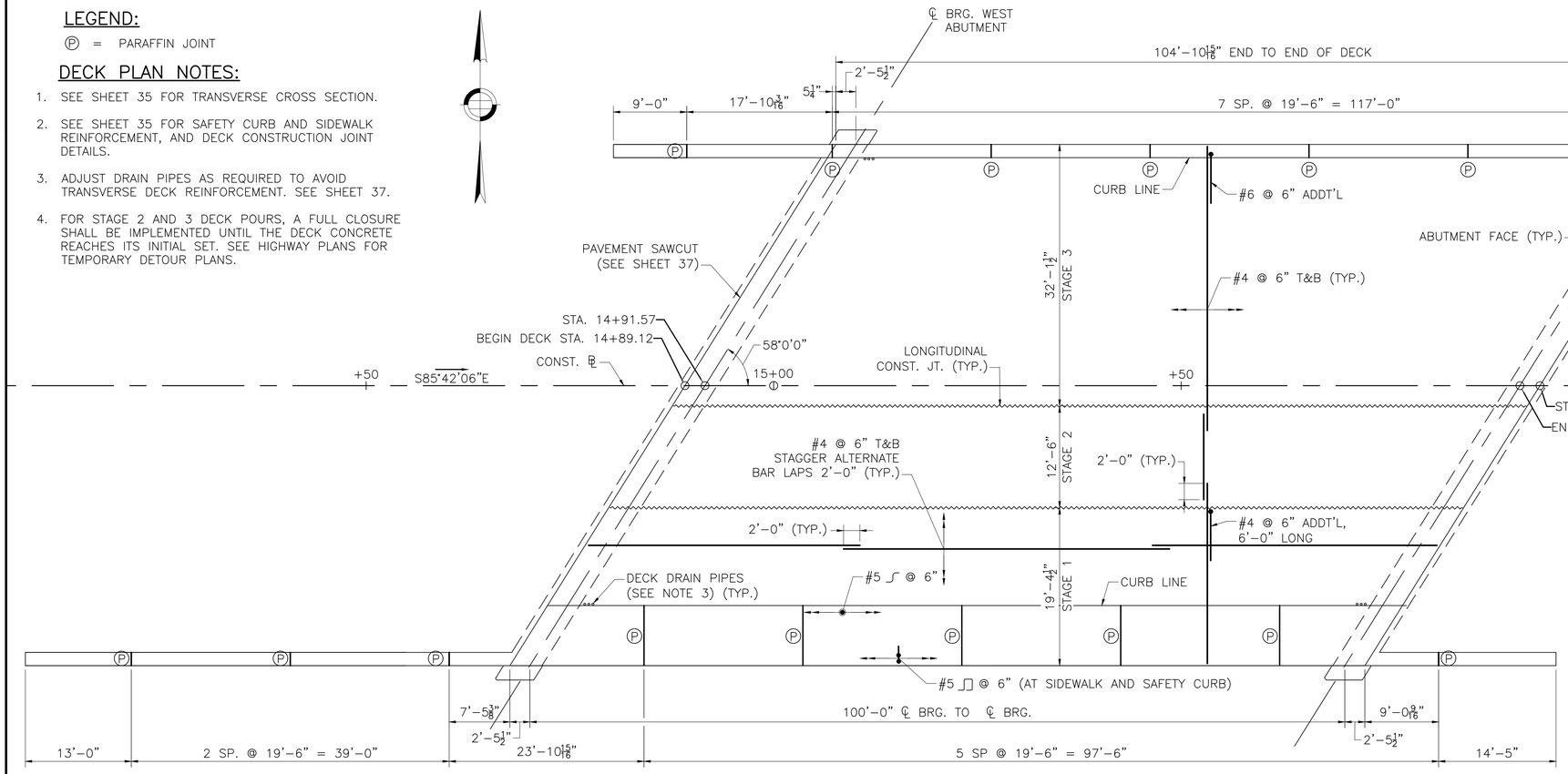
612159_BR34(B10001).DWG Plotted on 31-Jul-2026 2:04 PM

LEGEND:

Ⓟ = PARAFFIN JOINT

DECK PLAN NOTES:

1. SEE SHEET 35 FOR TRANSVERSE CROSS SECTION.
2. SEE SHEET 35 FOR SAFETY CURB AND SIDEWALK REINFORCEMENT, AND DECK CONSTRUCTION JOINT DETAILS.
3. ADJUST DRAIN PIPES AS REQUIRED TO AVOID TRANSVERSE DECK REINFORCEMENT. SEE SHEET 37.
4. FOR STAGE 2 AND 3 DECK POURS, A FULL CLOSURE SHALL BE IMPLEMENTED UNTIL THE DECK CONCRETE REACHES ITS INITIAL SET. SEE HIGHWAY PLANS FOR TEMPORARY DETOUR PLANS.



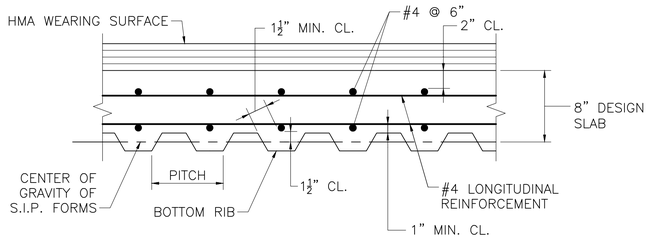
DECK PLAN

SCALE: 1/8" = 1'–0"

TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE											
BEAM NO.	INCREASING STATIONS										
	℄ BRG. WEST ABUT.	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ BRG. EAST ABUT.
1	347.57	347.60	347.61	347.61	347.59	347.53	347.45	347.34	347.20	347.04	346.87
2	347.67	347.69	347.70	347.69	347.66	347.61	347.52	347.42	347.28	347.13	346.97
3	347.77	347.78	347.79	347.77	347.74	347.68	347.60	347.50	347.37	347.22	347.07
4	347.87	347.88	347.89	347.88	347.84	347.79	347.70	347.60	347.47	347.33	347.17
5	347.97	347.99	347.99	347.98	347.94	347.89	347.80	347.70	347.57	347.43	347.28
6	348.03	348.04	348.05	348.03	348.00	347.94	347.86	347.76	347.63	347.48	347.33
7	347.87	347.88	347.89	347.88	347.84	347.79	347.70	347.60	347.47	347.33	347.17
8	347.71	347.73	347.73	347.72	347.68	347.63	347.55	347.44	347.31	347.17	347.02
9	347.55	347.57	347.57	347.56	347.53	347.47	347.39	347.28	347.15	347.01	346.86
10	347.40	347.41	347.41	347.40	347.36	347.30	347.22	347.12	346.99	346.85	346.71

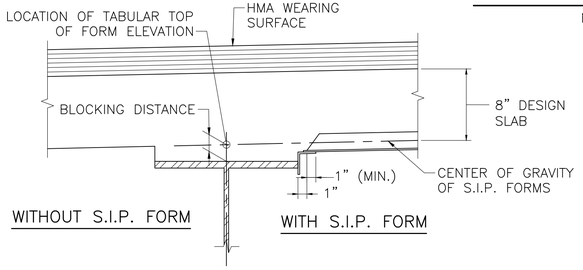
TOP OF FORM NOTES:

AFTER THE BEAMS ARE ERECTED BUT BEFORE THE FORMS ARE PLACED, THE ELEVATION AT THE TOP OF THE FLANGE OF EACH BEAM SHALL BE OBTAINED AT THE POINTS INDICATED IN THE TABLE. THE DIFFERENCE BETWEEN EACH OBTAINED ELEVATION AND ITS CORRESPONDING ELEVATION SHOWN IN THE TABLE IS THE BLOCKING DISTANCE FROM THE TOP OF THE BEAM TO THE BOTTOM OF THE SLAB AT THE CENTERLINE OF THE BEAM.



STAY–IN–PLACE FORM DETAILS

NOT TO SCALE



HAUNCH DETAIL

SCALE: 1 1/2" = 1'–0"

STAY–IN–PLACE FORM NOTES:

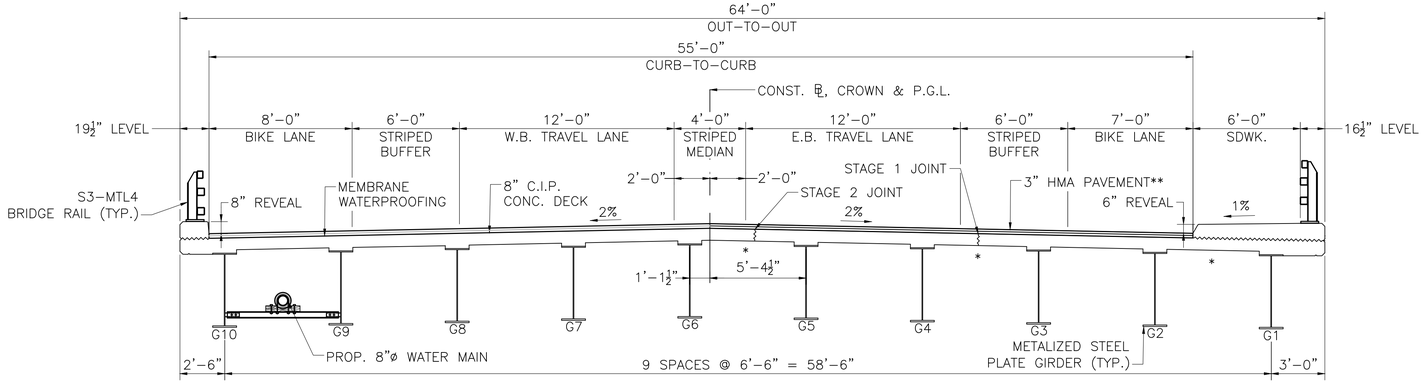
1. FOR 2" S.I.P. FORM, SET BOTTOM OF FORM 1" BELOW ELEVATION GIVEN IN TABLE. FOR 3" S.I.P. FORM, SET BOTTOM OF FORM 1 1/2" BELOW TABLE ELEVATIONS.
2. FORM ENDS SHALL BE CRIMPED CLOSED IN A TAPERED MANNER. SEPARATE END CLOSURE PIECES WILL NOT BE ALLOWED.
3. SUPPORT ANGLES SHALL BE PLACED IN THE "LEG DOWN" POSITION WHERE POSSIBLE. WHERE "LEG UP" POSITION IS NECESSARY, THE UPPER MOST PORTION OF THE ANGLE SHALL NOT PROJECT MORE THAN 1" ABOVE THE TOP FLANGE OR COVER PLATE. THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF ANGLES OF VARIOUS SIZES AVAILABLE ON THE SITE TO CONFORM TO THIS REQUIREMENT.
4. ALL MAIN STEEL REINFORCEMENT IN THE LOWER MAT SHALL BE CENTERED OVER THE VALLEY OF THE S.I.P. FORM.
5. CONTRACTOR SHALL DESIGN AND DETAIL ALL ELEMENTS OF THE FORMING SYSTEM AND SHALL SUBMIT IT TO THE ENGINEER FOR APPROVAL.
6. IN CASES WHERE STANDARD 2" OR 3" DEEP S.I.P. FORMS DO NOT SATISFY DESIGN REQUIREMENTS AN ALTERNATIVE FORMING SYSTEM CONSISTING OF DEEPER S.I.P. FORMS OR REMOVABLE FORMS SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE DESIGN THICKNESS OF THE SLAB SHALL NOT BE REDUCED.
7. STAY–IN–PLACE FORMS ARE NOT PERMITTED IN THE FOLLOWING LOCATIONS:
   - IN DECK BAYS WHICH ARE DIRECTLY UNDER CURB OR BARRIER LINES.
   - IN DECK BAYS WHERE THERE ARE LONGITUDINAL STAGE CONSTRUCTION JOINTS.
   - FOR THE FORMING OF THE END DIAPHRAGMS AND OVERHANG PORTIONS OF THE DECK SLAB.
   - WITHIN A DISTANCE OF 4 FEET ON BOTH SIDES OF THE DECK TRANSVERSE CONSTRUCTION JOINTS (IF NECESSARY).

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* DENOTES BAY WHERE STAY–IN–PLACE FORMS ARE NOT PERMITTED.
** 1½" SUPERPAVE BRIDGE SURFACE COURSE (SSC–B–9.5–P) OVER 1½" SUPERPAVE BRIDGE PROTECTIVE COURSE (SPC–B–9.5–P) OVER MEMBRANE WATERPROOFING

TYPICAL CROSS SECTION (LOOKING UPSTATION)

SCALE: ¼" = 1'–0"

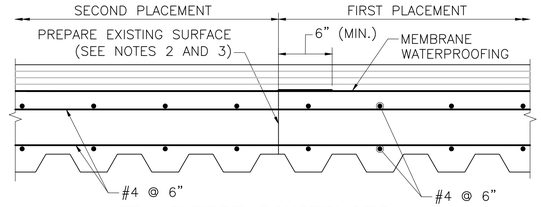
STRIPED MEDIAN BUFFER NOTE:

THE WIDTHS OF THE STRIPED MEDIAN AND BUFFERS VARY ACROSS THE LENGTH OF THE BRIDGE STRUCTURE. VALUES SHOWN ARE PROVIDED AT THE EAST ABUTMENT. THE CURB TO CURB WIDTH IS CONSISTENT. SEE HIGHWAY PLANS FOR ADDITIONAL STRIPING INFORMATION.

BERNARDSTON
ST 10 (CHURCH STREET)

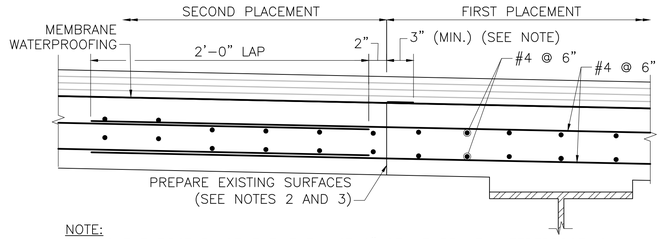
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	94	146
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DECK DETAILS



TRANSVERSE CONSTRUCTION JOINT DETAIL IN DECK SLAB

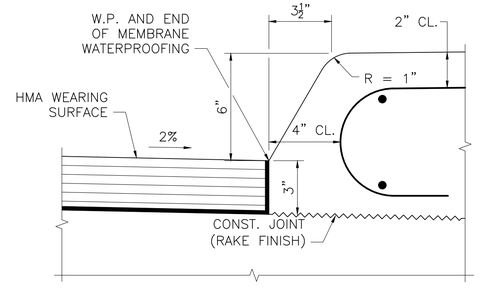
SCALE: 1½" = 1'–0"



NOTE:
DURING THE FIRST PLACEMENT, THE LAST 6" OF MEMBRANE WATERFPROOFING SHALL BE PROTECTED SO A 6" OVERLAP CAN BE PLACED DURING SECOND PLACEMENT. THIS APPLIES TO ALL PHASES OF THE DECK POUR. WHERE SPACE IS LIMITED, A 3" OVERLAP IS PERMITTED. ALL LOCATIONS WITH ADEQUATE SPACE SHALL HAVE A 6" OVERLAP.

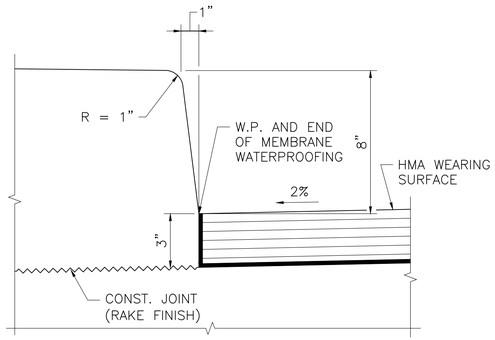
LONGITUDINAL CONSTRUCTION JOINT DETAIL IN DECK SLAB

SCALE: 1½" = 1'–0"



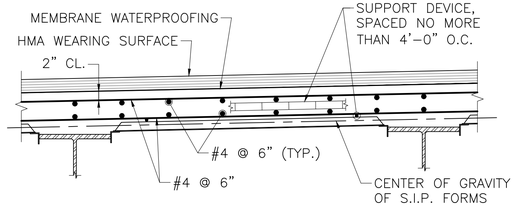
FACE OF SIDEWALK CURB DETAILS

SCALE: 3" = 1'–0"



FACE OF SAFETY CURB DETAILS

SCALE: 3" = 1'–0"



NOTES:

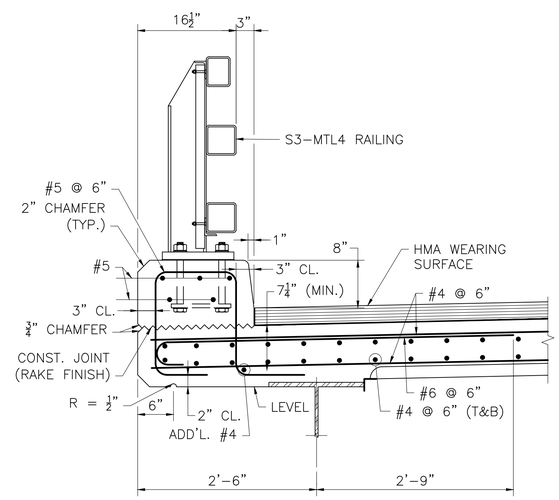
1. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ℄ OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCTION.
2. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.
3. THE FINISHED SURFACE OF THE BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.

TYPICAL DECK REINFORCEMENT

SCALE: ¾" = 1'–0"

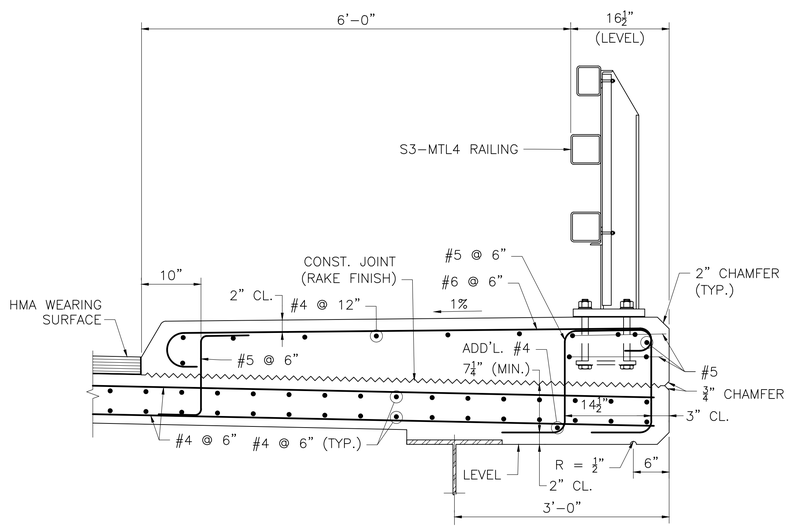
NOTES:

1. THE CONTRACTOR SHALL PLACE THE ENTIRE DECK IN ONE CONTINUOUS OPERATION WITHOUT TRANSVERSE CONSTRUCTION JOINTS FOR EACH CONSTRUCTION STAGE. THE INITIAL SET (f'_c = 500 PSI) OF ALL CONCRETE SHALL NOT OCCUR UNTIL AFTER THE COMPLETION OF THE PLACEMENT. AN APPROVED RETARDER SHALL BE USED, WHEN NECESSARY, TO RETAIN THE WORKABILITY OF THE CONCRETE. IF MULTIPLE PLACEMENTS ARE MADE, A MINIMUM OF 72 HOURS SHALL PASS BETWEEN PLACEMENTS.
2. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
3. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS MAY BE USED. THE EPOXY ADHESIVE SHALL CONFORM TO AASHTO M 235 TYPE V AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. DOWEL BAR SPLICERS SHALL BE USED WHERE USE OF LAP SPLICES IS NOT FEASIBLE.



SECTION THRU SAFETY CURB

SCALE: 1" = 1'–0"



SECTION THRU SIDEWALK

SCALE: 1" = 1'–0"

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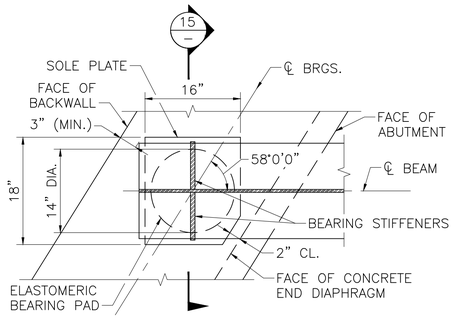
612159_BR35(B10001).DWG Plotted on 31-Jul-2026 2:04 PM

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BERNARDSTON
ST 10 (CHURCH STREET)

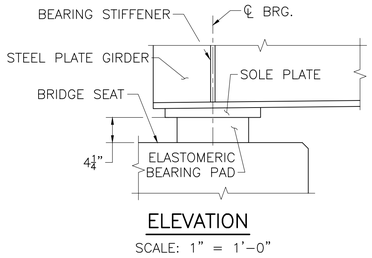
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	95	146
PROJECT FILE NO.	612159		

BEARING DETAILS



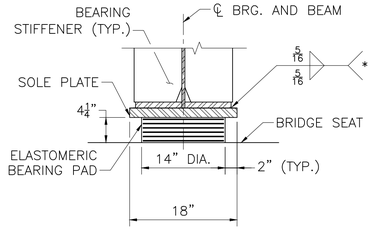
BEARING PLAN

SCALE: 1" = 1'–0"



ELEVATION

SCALE: 1" = 1'–0"

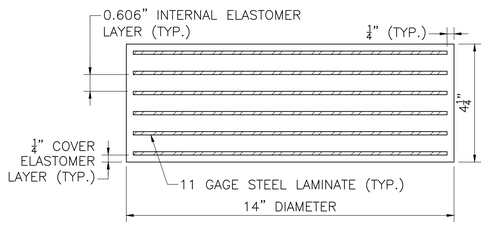


(*) – WELDS SHALL TERMINATE ¼" FROM EDGE OF PLATE.

SECTION 15 – SCALE: 1" = 1'–0"

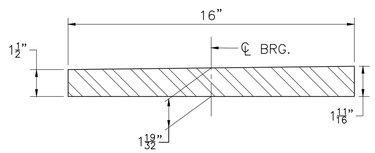
NOTES:

1. THIS BEARING IS DESIGNED USING AASHTO METHOD B.
2. ELASTOMER SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
3. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER. ALL EDGES OF STEEL LAMINATES SHALL BE GROUND SMOOTH.
4. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 152.56 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.99 KSI.
5. THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%
6. ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.
7. STEEL SOLE PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50 AND SHALL BE HOT–DIP GALVANIZED OR METALIZED.
8. CENTER THE ELASTOMERIC BEARING PAD UNDER THE SOLE PLATE DURING BEAM ERECTION.
9. BEAM SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 30 °F AND 90 °F. IF BEAMS ARE ERECTED AT OTHER AMBIENT TEMPERATURES, THEY WILL HAVE TO BE JACKED AND THE ELASTOMERIC BEARINGS RECENTERED WHEN THE TEMPERATURE RETURNS TO THAT RANGE.
10. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A 1/32" DEEP DIRECTION ARROW THAT POINTS UP–STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.



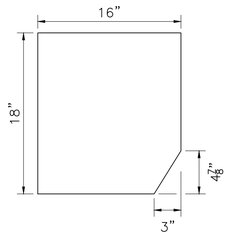
ELASTOMERIC BEARING PAD

SCALE: 1'–0" = 1'–0"



SOLE PLATE DETAIL

SCALE: 3" = 1'–0"



SOLE PLATE COPING DETAIL

SCALE: 1½" = 1'–0"

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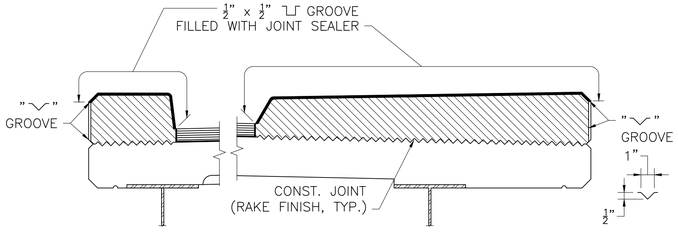
USE ONLY PRINTS OF LATEST DATE

612159_BR36(B10001).DWG Plotted on 31-Jul-2026 2:04 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	96	146
PROJECT FILE NO.	612159		

MISCELLANEOUS DETAILS



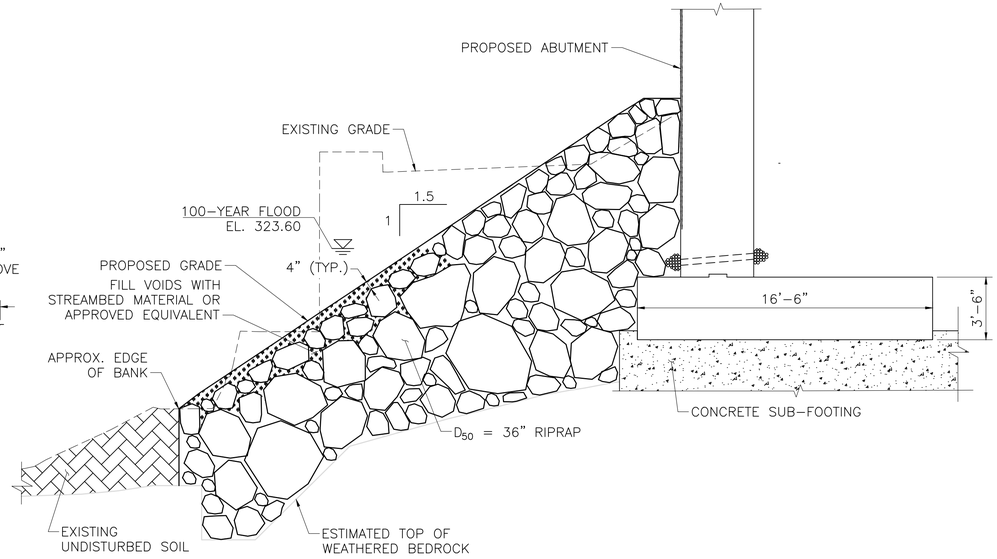
SAFETY CURB SIDEWALK

NOTES:

1. ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO FACE OF CURB

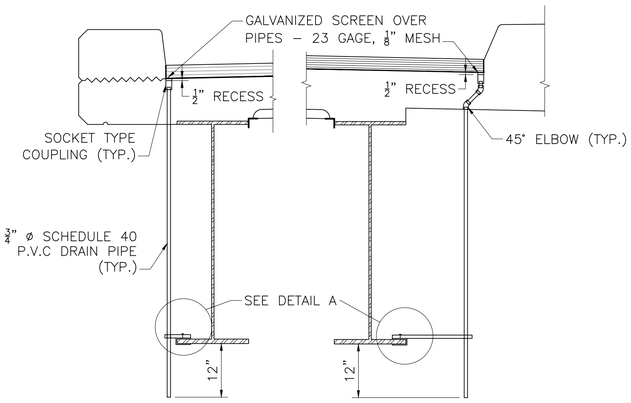
PARAFFIN JOINT DETAILS

SCALE: ¾" = 1'–0"



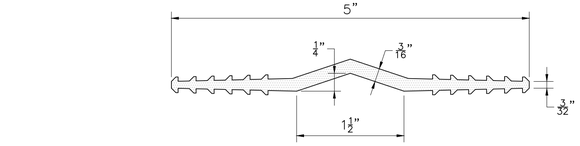
STREAMBED RESTORATION DETAIL

SCALE: ¼" = 1'–0"



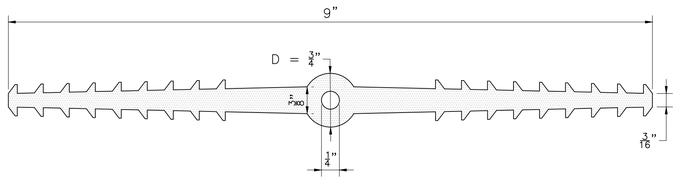
SECTION 17 / –

SCALE: ¾" = 1'–0"



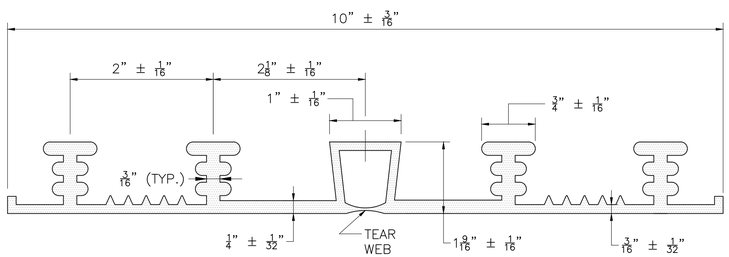
5 INCH WATERSTOP

SCALE: 1'–0" = 1'–0"



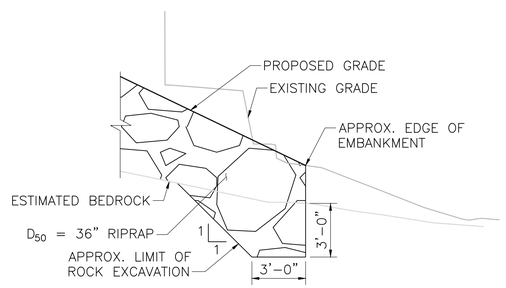
9 INCH WATERSTOP

SCALE: 1'–0" = 1'–0"



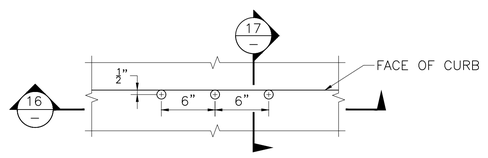
10 INCH PLASTIC WATERSTOP

SCALE: 1'–0" = 1'–0"



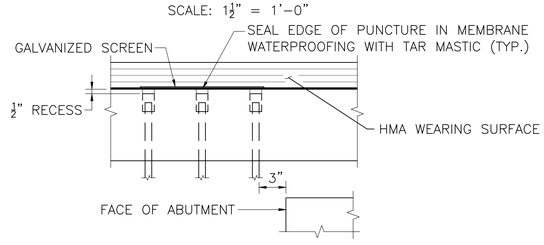
RIPRAP TOE – AT BEDROCK

SCALE: ¼" = 1'–0"



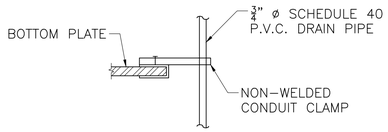
DECK PLAN

SCALE: 1½" = 1'–0"



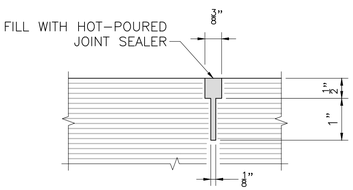
SECTION 16 / –

SCALE: 1½" = 1'–0"



DETAIL A / –

SCALE: 1½" = 1'–0"



PAVEMENT SAWCUT DETAIL

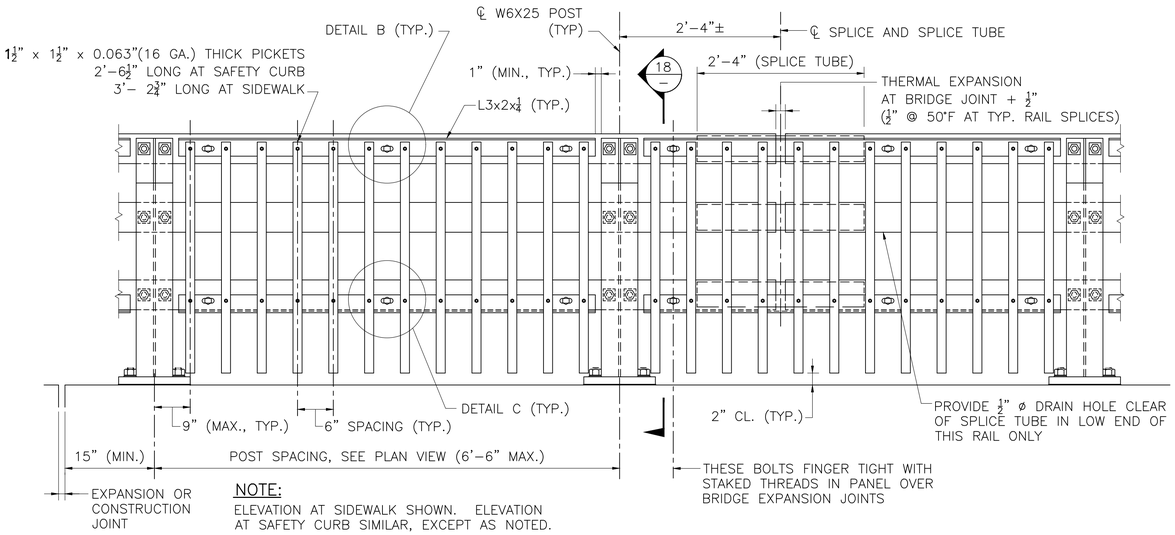
NOT TO SCALE

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

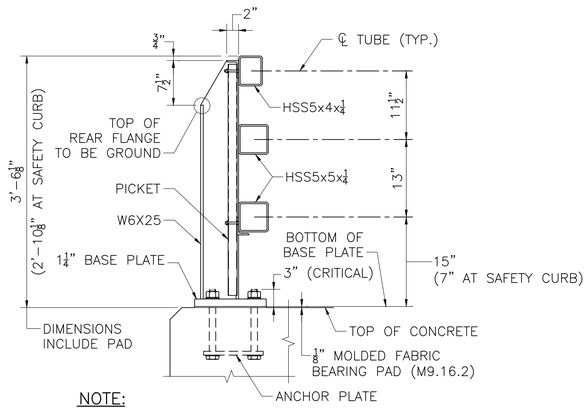
USE ONLY PRINTS OF LATEST DATE

612159_BR37(B10001).DWG Plotted on 31-Jul-2026 2:05 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



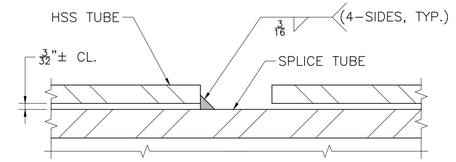
NOTE:
ELEVATION AT SIDEWALK SHOWN. ELEVATION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

BRIDGE RAILING ELEVATION
SCALE: 1" = 1'-0"

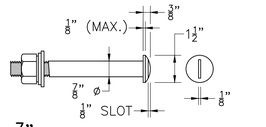


NOTE:
SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

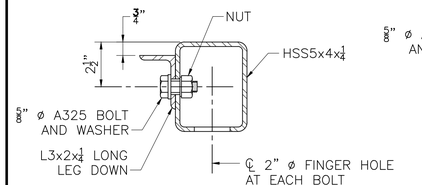
SECTION 18 –
SCALE: 1" = 1'-0"



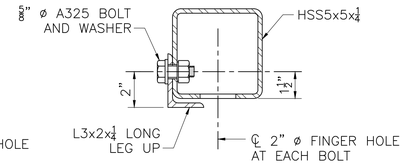
SPLICE DETAIL
SCALE: 1'-0" = 1'-0"



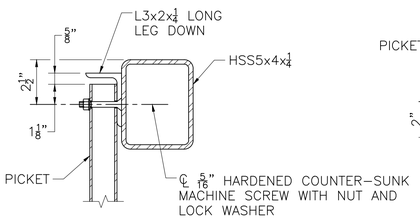
⅞" ø ROUND HEAD BOLT
SCALE: 3" = 1'-0"



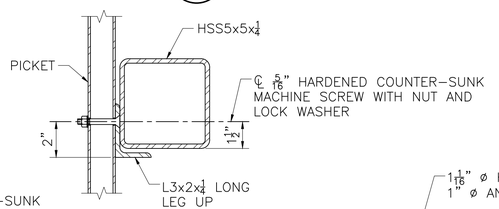
SECTION 19 –



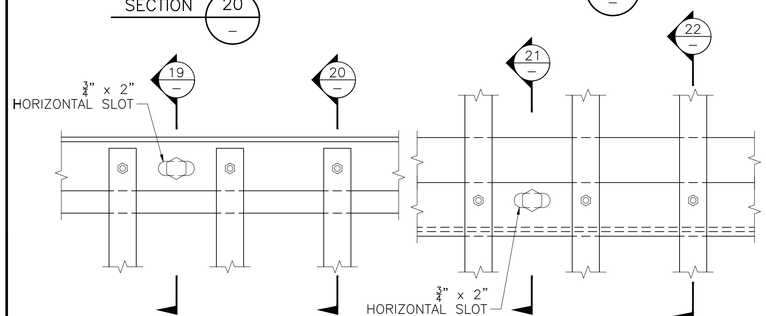
SECTION 21 –



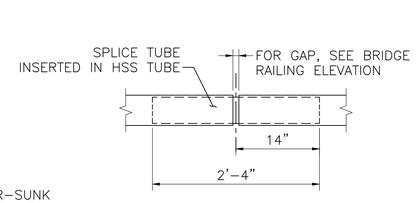
SECTION 20 –



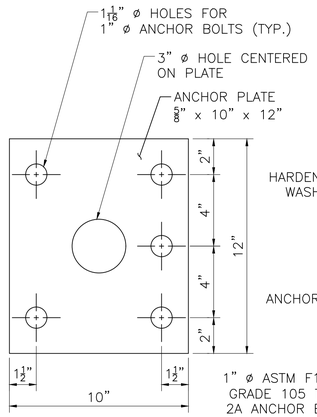
SECTION 22 –



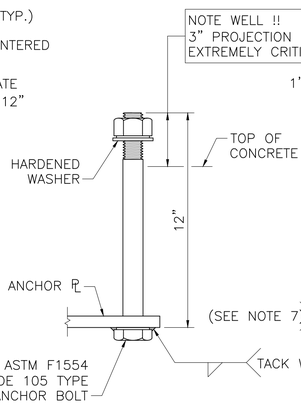
TYPICAL PICKET TO RAIL DETAILS
SCALE: 3" = 1'-0"



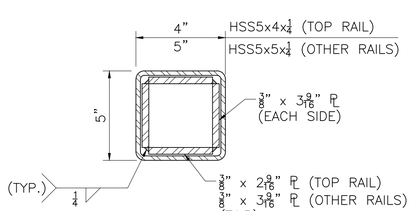
TYPICAL SPLICE
SCALE: 1" = 1'-0"



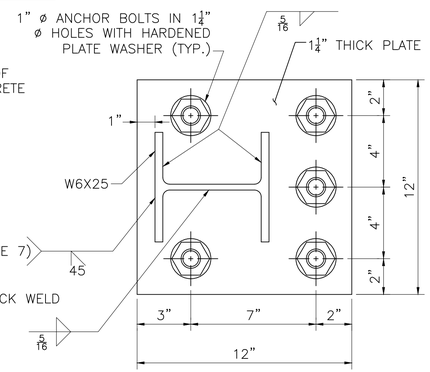
ANCHOR PLATE
SCALE: 3" = 1'-0"



ANCHOR BOLT
SCALE: 3" = 1'-0"



SPLICE TUBE DETAILS
SCALE: 3" = 1'-0"

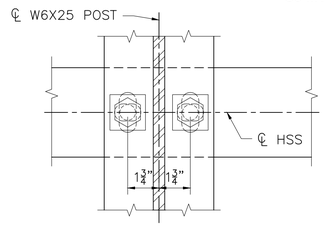


BASE PLATE
SCALE: 3" = 1'-0"

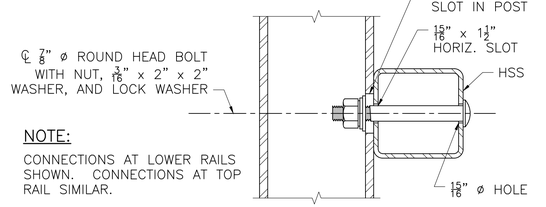
BERNARDSTON
ST 10 (CHURCH STREET)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	97	146
	PROJECT FILE NO. 612159		

S3-MTL4 BRIDGE RAILING



SECTION THRU POST WEB



NOTE:
CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

SECTION THRU RAIL
TYPICAL RAIL TO POST CONNECTIONS
SCALE: 3" = 1'-0"

RAILING NOTES:

1. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH Fy = 36 KSI MIN. OR A 500 GRADE B.
2. ALL STEEL (EXCEPT THE ⅝" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF ⅞" ø ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. IN ADDITION SPLICES SHALL ALSO BE LOCATED IN RAILS OVER BRIDGE EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. POSTS SHALL BE SET PERPENDICULAR TO GRADE.
7. POST TO FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. BEVEL OUTSIDE FLANGES OF POST. FIT POST TO BASE PLATE. WELD 5/16" FILLET ON INSIDE OF FLANGE AND WEB. BACKGOUGE OUTSIDE OF FLANGE TO SOUND METAL. COMPLETE GROOVE WELD WITH MINIMUM OF ⅛" REINFORCEMENT. WELD IS THE SAME ON BOTH FLANGES.
8. ⅞" ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF ASTM F3125 GRADE 325 TYPE 1 GALVANIZED.

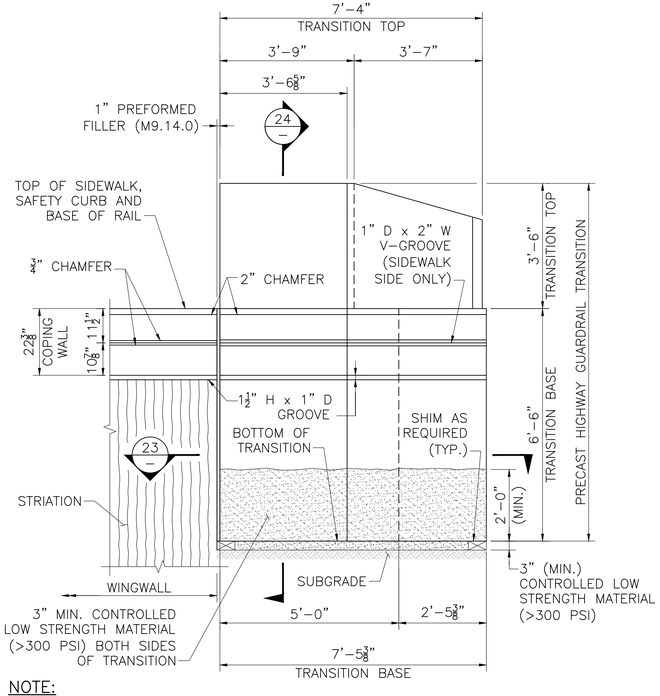
AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR38(B10001).DWG Plotted on 31-Jul-2026 2:05 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	98	146
PROJECT FILE NO.	612159		

PRECAST HIGHWAY GUARDRAIL TRANSITION BASE DETAILS

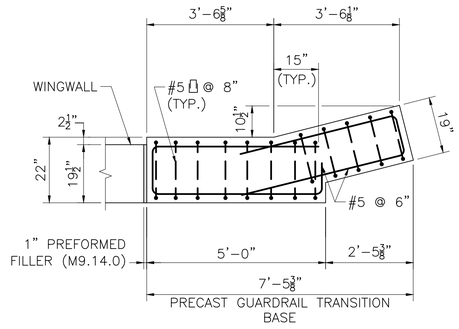


NOTE:

TRANSITION AT SIDEWALK SHOWN, TRANSITION AT SAFETY CURB SIMILAR EXCEPT AS NOTED.

PRECAST GUARDRAIL TRANSITION AT U-WINGWALL

SCALE: ½" = 1'-0"



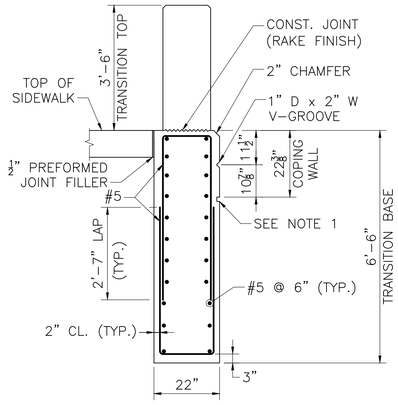
NOTE:

WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY.

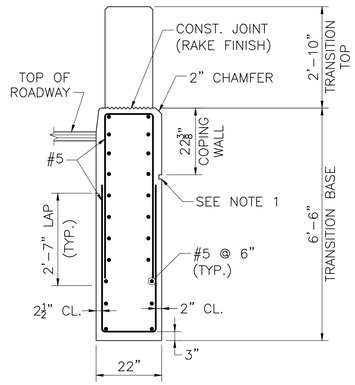
SECTION 23
SCALE: ½" = 1'-0"

NOTES:

1. PRECAST GUARDRAIL TRANSITION SHALL BE 5000 PSI, HP CEMENT CONCRETE.
2. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
3. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED LOW STRENGTH MATERIAL (NON-EXCAVATABLE) TO THE ELEVATION SHOWN.
4. BACKFILL THE REMAINDER OF EXCAVATION WITH GRAVEL BORROW, WHICH SHALL BE THOROUGHLY COMPACTED IN 12" LIFTS.



AT SIDEWALK

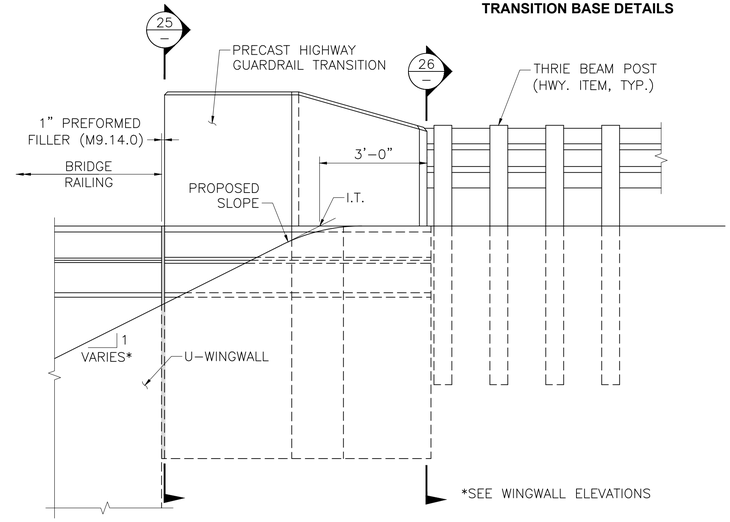


AT SAFETY CURB

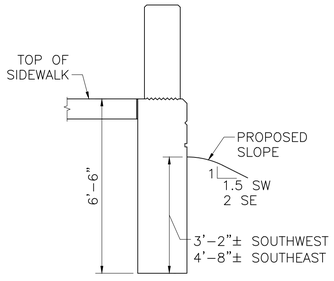
NOTES:

1. 1½" H x 1" D GROOVE. ALIGN WITH GROOVE AT TOP OF STRIATIONS.
2. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

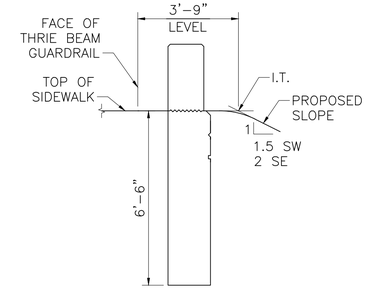
SECTION 24
SCALE: ½" = 1'-0"



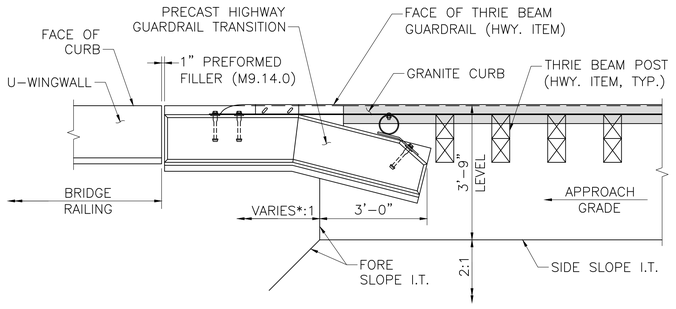
GRADING REQUIREMENTS ELEVATION
SCALE: ½" = 1'-0"



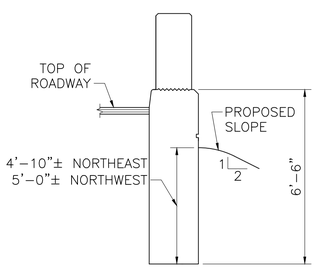
SECTION AT SIDEWALK 25
SCALE: ⅜" = 1'-0"



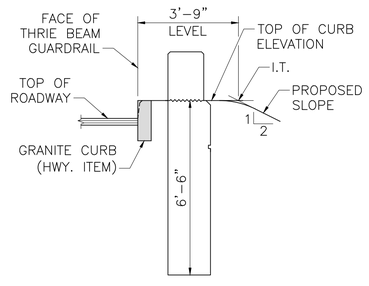
SECTION AT SIDEWALK 26
SCALE: ⅜" = 1'-0"



GRADING REQUIREMENTS PLAN
SCALE: ½" = 1'-0"



SECTION AT SAFETY CURB 25
SCALE: ⅜" = 1'-0"



SECTION AT SAFETY CURB 26
SCALE: ⅜" = 1'-0"

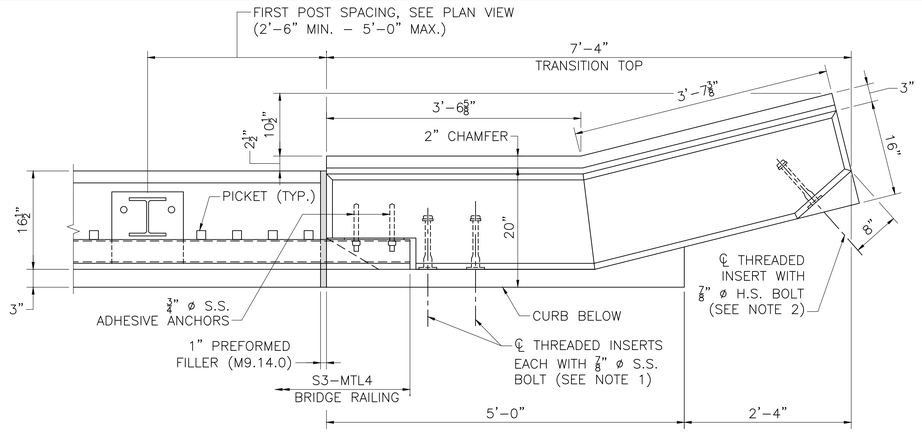
AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
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USE ONLY PRINTS OF LATEST DATE	

612159_BR39(B10001).DWG Plotted on 31-Jul-2026 2:05 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

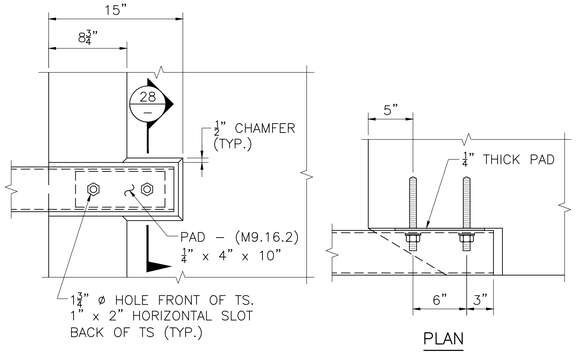
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)FHG(BIP2)-003S(915)	99	146
PROJECT FILE NO.	612159		

PRECAST HIGHWAY GUARDRAIL TRANSITION TOP DETAILS (1 OF 2)



PLAN AT SAFETY CURB

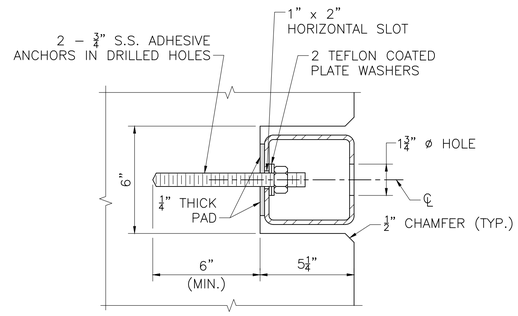
SCALE: 1" = 1'–0"



ELEVATION PLAN

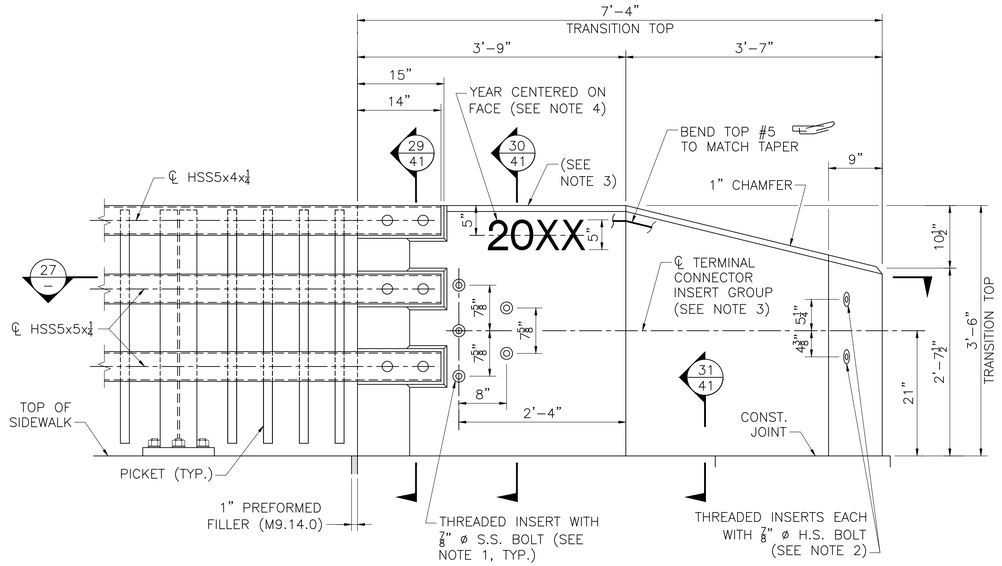
RAIL ATTACHMENT

SCALE: 1½" = 1'–0"



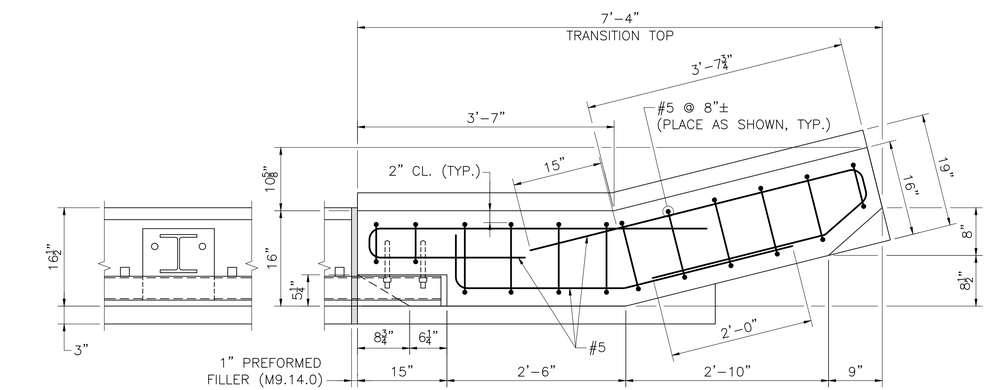
SECTION 28 / –

SCALE: 3" = 1'–0"



ELEVATION AT SIDEWALK

SCALE: 1" = 1'–0"



SECTION 27 / –

SCALE: 3" = 1'–0"

NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. (STAINLESS STEEL) BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED CONFORMING TO ASTM F593D WITH AISI TYPE 304N S.S. WASHERS. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. ⅞" ø HIGH STRENGTH BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F3125 AND BE GALVANIZED. USE ADDITIONAL WASHERS AS REQUIRED TO PROPERLY ENGAGE THE BOLTS.
3. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.
4. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS WHICH BEAR THE DATE.
5. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 HP CEMENT CONCRETE.
6. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON–SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

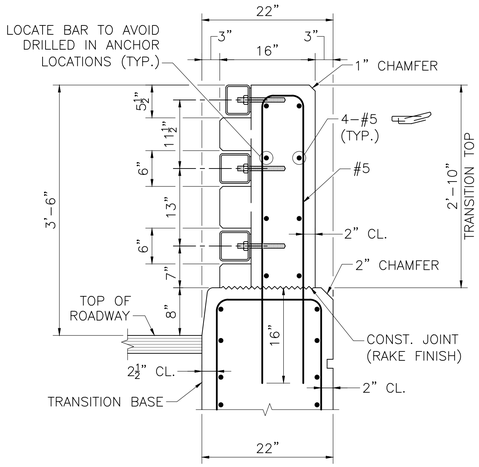
AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

612159_BR40-41(B10001).DWG Plotted on 31-Jul-2026 2:06 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (CHURCH STREET)

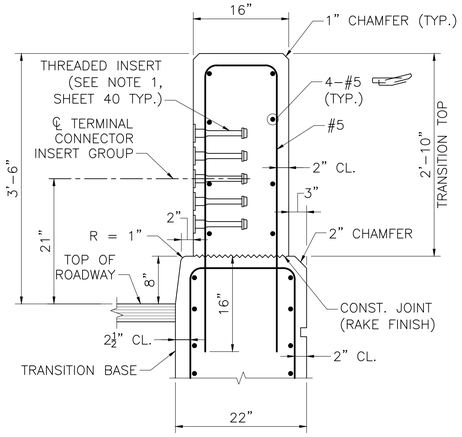
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	100	146
PROJECT FILE NO.	612159		

PRECAST HIGHWAY GUARDRAIL TRANSITION TOP DETAILS (2 OF 2)



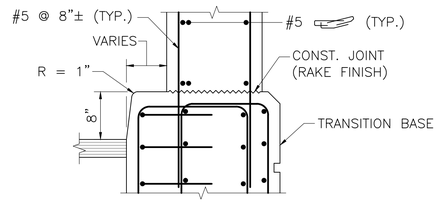
SECTION AT SAFETY CURB

SECTION 29 / SCALE: 1" = 1'-0" (40)



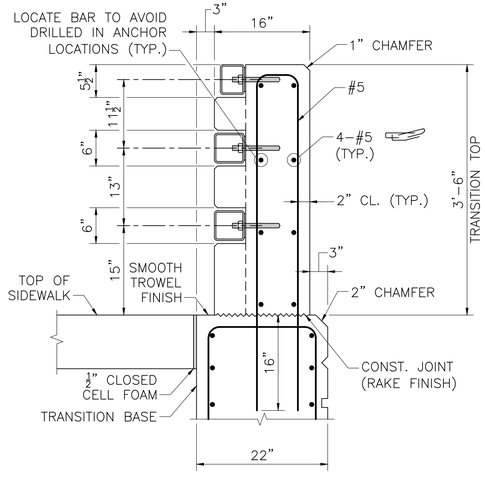
SECTION AT SAFETY CURB

SECTION 30 / SCALE: 1" = 1'-0" (40)



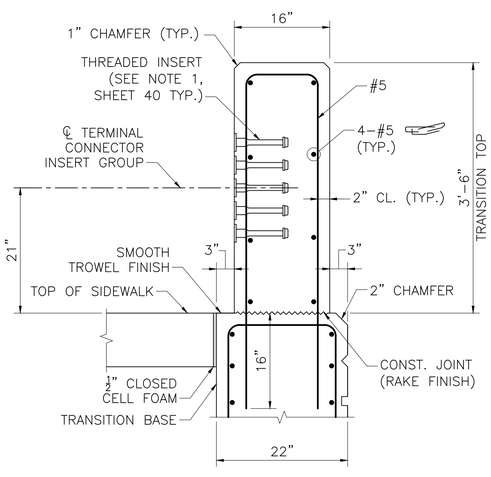
SECTION AT SAFETY CURB

SECTION 31 / SCALE: 1" = 1'-0" (40)



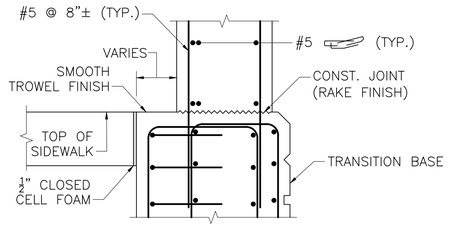
SECTION AT SIDEWALK

SECTION 29 / SCALE: 1" = 1'-0" (40)



SECTION AT SIDEWALK

SECTION 30 / SCALE: 1" = 1'-0" (40)



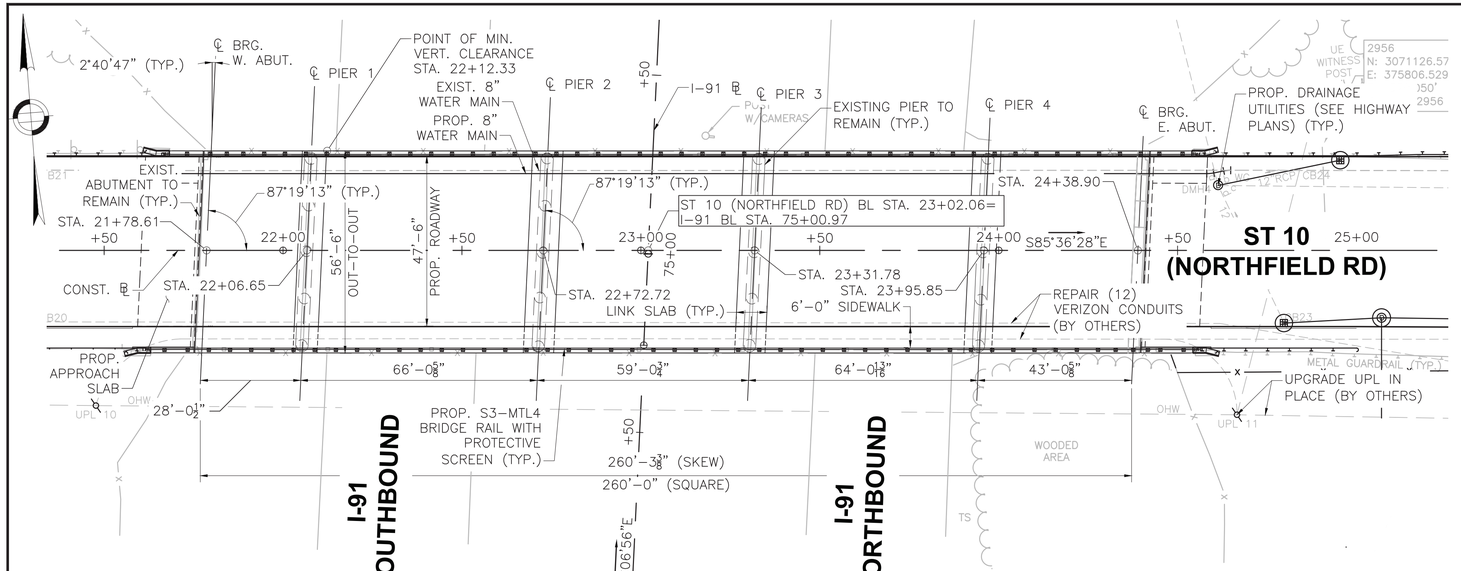
SECTION AT SIDEWALK

SECTION 31 / SCALE: 1" = 1'-0" (40)

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

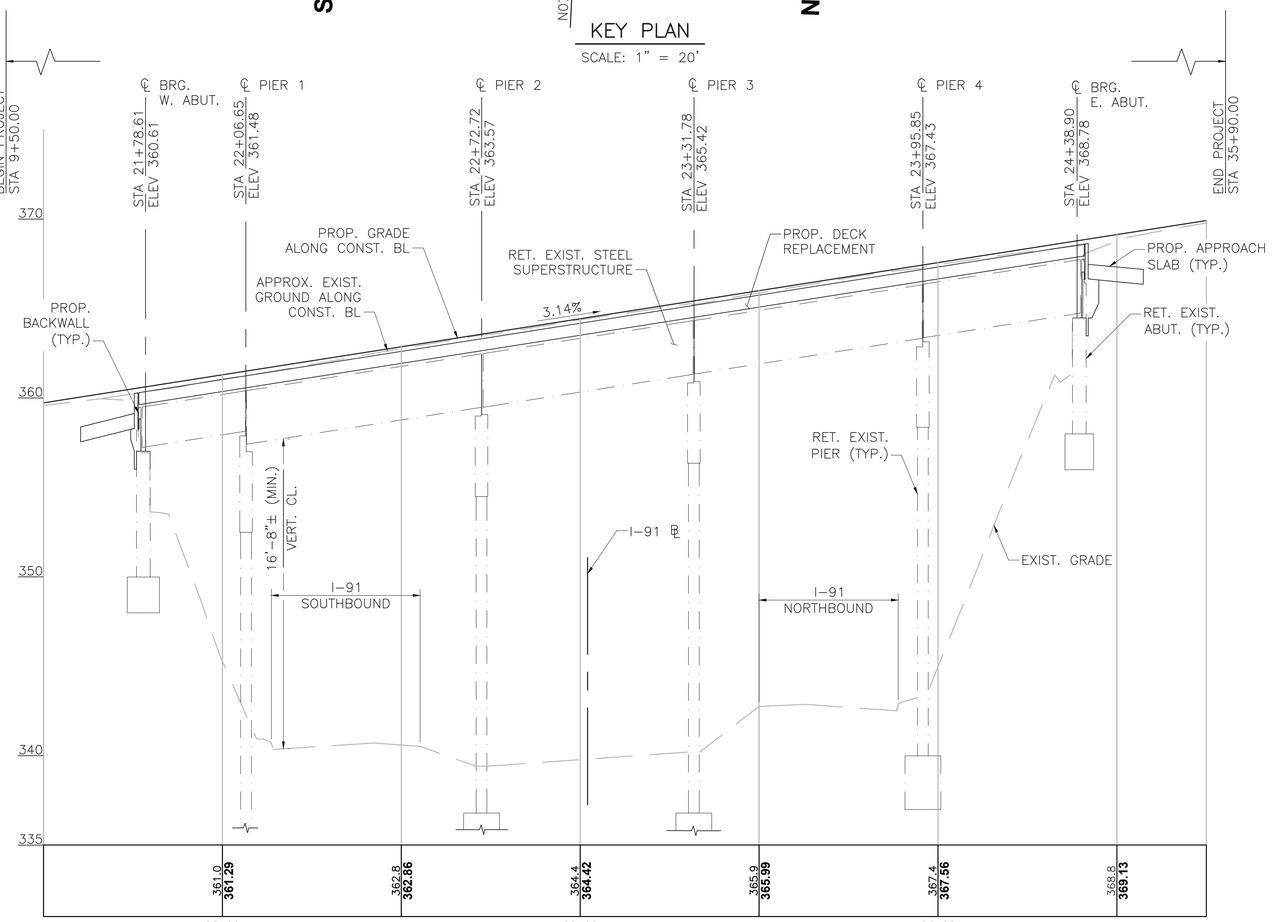
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

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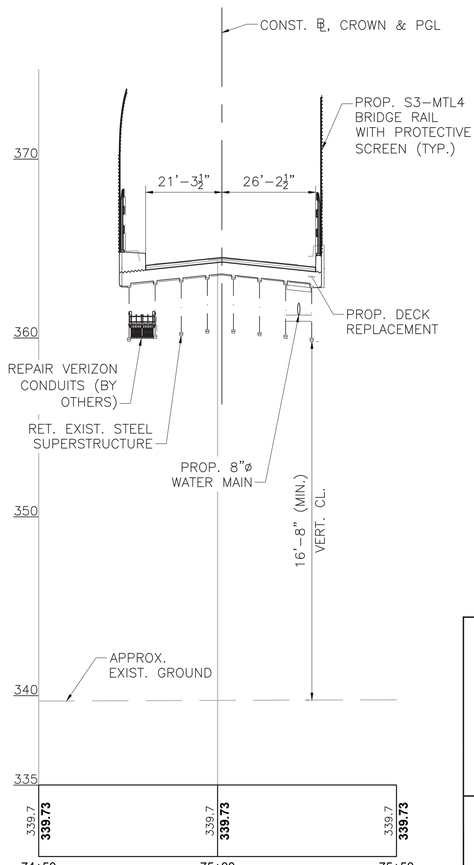
KEY PLAN

SCALE: 1" = 20'



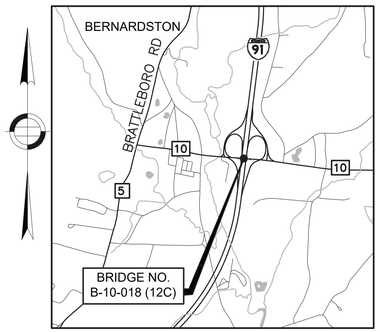
PROFILE – ST 10 (NORTHFIELD RD)

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 8'



PROFILE – I-91

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 8'



LOCUS MAP

SCALE: 1" = 2000'

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	101	146
PROJECT FILE NO.	612159		

KEY PLAN AND PROFILE

INDEX OF DRAWINGS

SHEET NUMBER	SHEET TITLE
1	KEY PLAN AND PROFILE
2	GENERAL NOTES
3	PLAN AND ELEVATION
4	CONSTRUCTION STAGE 1
5	CONSTRUCTION STAGE 2
6	CONSTRUCTION STAGE 3
7	WEST SUBSTRUCTURE PLAN AND ELEVATION
8	EAST SUBSTRUCTURE PLAN AND ELEVATION
9	ABUTMENT DETAILS (1 OF 3)
10	ABUTMENT DETAILS (2 OF 3)
11	ABUTMENT DETAILS (3 OF 3)
12	SUBSTRUCTURE MODIFICATIONS
13	FRAMING PLAN
14	BEAM DETAILS (1 OF 2)
15	BEAM DETAILS (2 OF 2)
16	TYPICAL DECK SECTIONS
17	DECK DETAILS
18	STRIP SEAL JOINT DETAILS
19	DECK PATCH REPAIR DETAILS
20	TOP OF FORM ELEVATIONS & DETAILS
21	BEARING DETAILS
22	TYPICAL CONSTRUCTION DETAILS
23	S3-MTL4 BRIDGE RAIL
24	HIGHWAY GUARDRAIL TRANSITION (1 OF 2)
25	HIGHWAY GUARDRAIL TRANSITION (2 OF 2)
26	TYPE I PROTECTIVE SCREEN

COMMONWEALTH OF MASSACHUSETTS
ROBERT NICCOLI CIVIL No. 49871 PROFESSIONAL ENGINEER

Robert Niccoli Digitally signed by Robert Niccoli Date: 2026.08.14 10:13:29 -04'00'

TEC The Engineering Corp
TEC, INC.
282 MERRIMACK ST
LAWRENCE, MA 01843

AUG 22, 2026 | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED DECK REPLACEMENT

BERNARDSTON

ST 10 (NORTHFIELD RD)
OVER I-91

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Alexander K. Bardow, P.E. — Digitally signed by Alexander K. Bardow, P.E. Date: 2026.08.19 13:40:19 -04'00'
STATE BRIDGE ENGINEER

John Moran — Digitally signed by John Moran Date: 2026.08.21 09:18:19 -04'00'
CHIEF ENGINEER

SHEET 1 OF 26 SHEETS BRIDGE NO. B-10-018 (12C)

612159_BR1(B10018).DWG Plotted on 27-Jul-2026 2:09 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

DESIGN

PROPOSED DESIGN COMPONENTS SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, FOR HL–93 LOADING, EXCEPT FOR THE BEAM END REPAIRS WHICH WERE DESIGNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS STANDARD SPECIFICATIONS, 17TH EDITION, 2002, FOR HS20 LOADING.

MASSDOT BENCH MARK:

24
N: 307112.350
E: 375347.319
EL: 355.560
PK 24/GPS 10000

2956
N: 307126.573
E: 375806.529
EL: 370.050
RB/CAP 2956

GEODETIC SURVEY DISK 7560
EL: 368.70

GEODETIC SURVEY DISK 186MM
EL: 369.78

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

ELEVATIONS OBTAINED FROM THE EXISTING PLANS HAVE BEEN CONVERTED FROM THE USGS MEAN SEA LEVEL DATUM OF 1929 TO NAVD88.

DATE:

DATE TO BE PLACED ON THE INSIDE FACE OF THE NORTHEAST AND SOUTHWEST HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS:

SURVEY PREPARED BY HANCOCK ASSOCIATES OF DANVERS, MA DATED MARCH 2023 WITH SUPPLEMENTAL UPDATES DATED JULY 2024. ELECTRONIC SURVEY FILES ARE AVAILABLE FROM MASSDOT.

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF SIZE PRINTS (A3).

ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED.

ALL ANCHOR BOLTS FOR ANCHORING BRIDGE RAILING BASE PLATES TO CONCRETE SHALL BE IN ACCORDANCE WITH ASTM F1554 GRADE 105 TYPE 2A AND ALL ANCHOR BOLTS USED FOR ANCHORING BRIDGE BEARINGS TO CONCRETE SHALL BE IN ACCORDANCE WITH ASTM F1554 GRADE 105 UNLESS OTHERWISE NOTED.

CONCRETE:

UNLESS OTHERWISE SPECIFIED, ALL CONCRETE SHALL BE 5000 HP CONCRETE.

A MASS CONCRETE POUR SHALL BE DEFINED AS ALL C.I.P. CONCRETE POURS SHOWN ON THESE CONSTRUCTION DRAWINGS OF ANY VOLUME IN WHICH A COMBINATION OF THE DIMENSIONS OF THE MEMBER BEING CAST, THE BOUNDARY CONDITIONS, THE CHARACTERISTICS OF THE CONCRETE MIXTURE, AND THE AMBIENT TEMPERATURE CAN LEAD TO UNDESIRABLE THERMAL STRESSES, CRACKING, DELETERIOUS CHEMICAL REACTIONS, OR REDUCTION IN THE LONG–TERM STRENGTH AS A RESULT OF ELEVATED CONCRETE TEMPERATURE DUE TO HEAT OF HYDRATION OR WHEN CEMENT CONCRETE PLACEMENTS ARE SPECIFICALLY DESIGNATED AS MASS CONCRETE PLACEMENTS. MASS CONCRETE PLACEMENTS SHALL REQUIRE A HEAT OF HYDRATION ANALYSIS AND THERMAL CONTROL PLAN, AS SPECIFIED IN THE MASSDOT STANDARD SPECIFICATIONS.

REINFORCEMENT:

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS	#6 BARS
1. NONE	16"	17"	21"
2. 12" OF CONCRETE BELOW BAR	18"	22"	27"
3. EPOXY COATED BARS, COVER<3db, OR CLEAR SPACING<6db	21"	26"	31"
4. COATED BARS, ALL OTHER CASES	17"	21"	25"
5. CONDITION 2. AND 3.	23"	29"	35"
6. CONDITION 2. AND 4.	21"	27"	32"

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

MEMBRANE WATERPROOFING:

ALL MEMBRANE WATERPROOFING USED ON BRIDGE DECKS SHALL BE MEMBRANE WATERPROOFING FOR BRIDGE DECKS – SPRAY APPLIED.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL BE AASHTO M 270 GRADE 36 OR GRADE 50, UNLESS OTHERWISE NOTED.
2. ALL BOLTS AND RELATED HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 164 (ASTM F3125 GRADE A 325 TYPE 1) UNLESS OTHERWISE NOTED.
3. ALL BOLTS AND HARDWARE SHALL BE HOT–DIP GALVANIZED ACCORDING TO ASTM A153.
4. SHEAR CONNECTORS SHALL BE IN ACCORDANCE WITH AASHTO M 169, GRADES 1015 OR 1020.
5. STRUCTURAL STEEL SHALL BE CLEANED AND PAINTED. SURFACES OF STEEL TO BE IN CONTACT WITH CONCRETE, INCLUDING THE END DIAPHRAGM REGIONS, SHALL BE CLEANED AND RECEIVED A PRIME COAT ONLY BEFORE CONCRETE IS PLACED.
6. ALL PAINTING SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AND THE FINISH COAT COLOR SHALL BE FEDERAL STANDARD COLOR #14223, GREEN.

EXISTING BRIDGE PLANS:

FOR EXISTING PLANS DATED 1959 AND REPAIR PLANS DATED 2020 FOR BRIDGE NO. B 10–018 (12C) A COPY CAN BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION, 10 PARK PLAZA BOSTON MA 012116.

EXISTING CONDITIONS:

ALL DIMENSIONS AND DETAILS OF THE EXISTING STRUCTURE SHOWN ON THESE CONSTRUCTION DRAWINGS HAVE BEEN OBTAINED FROM THE ORIGINAL DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND EXISTING DETAILS NECESSARY FOR THE COMPLETION OF ALL WORK BY FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE FABRICATION UNTIL HE/SHE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

WELDING:

WELDING SHALL BE IN ACCORDANCE WITH THE BRIDGE WELDING CODE, ANSI/AASHTO/AWS D1.5 AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO AS OF THE OPENING BID DATE.

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM	QTY.	UNIT
JACKING AND SHORING	40	EA
STRUCTURAL STEEL REPAIRS	2000	LB
DEMOLITION OF DECK OF BRIDGE NO. B–10–018 (12C)	1	LS
REINFORCED CONCRETE EXCAVATION – BRIDGE NO. B–10–018	90	CY
REINFORCED CONCRETE DECK EXCAVATION (FULL DEPTH)	45	SY
REINFORCED CONCRETE DECK EXCAVATION (PARTIAL DEPTH)	10	CY
BRIDGE EXCAVATION	125	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	80	CY
CRUSHED STONE	30	TON
8 INCH DUCTILE IRON WATER PIPE (RUBBER GASKET) WITH TEMPORARY SUPPORTS	300	FT
DUCTILE IRON FITTINGS FOR WATER PIPE	480	LB
16 INCH STEEL PIPE CASING FOR WATER PIPE	10	FT
8 INCH WATER PIPE INSULATION	275	FT
SUPERPAVE BRIDGE SURFACE COURSE – 9.5 (SSC–B–9.5–P)	150	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 POLYMER (SPC–B–9.5–P)	150	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – (SPC–B – 12.5)	10	TON
TEMPORARY BOLT–DOWN BARRIER REMOVED AND RESET	950	FT
TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3)	350	FT
TEMPORARY BARRIER – LIMITED DEFLECTION (TL–4)	350	FT
TEMPORARY BARRIER – TRANSITION	4	EA
RAPID SETTING CONCRETE	15	CY
SHEAR CONNECTORS	1800	EA
DRILLING AND GROUTING DOWELS	650	EA
ANCHOR BOLT CORRECTIVE ACTION FOR BEARINGS NOT SCHEDULED FOR REPLACEMENT	2	EA
CLEAN (FULL REMOVAL) AND PAINT STEEL BRIDGE NO. B–10–018 (12C)	1	LS
ALTERATION TO BRIDGE STRUCTURE, BRIDGE NO. B–10–018 (12C)	1	LS
TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. B–10–018 (12C)	1	LS

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	102	146
PROJECT FILE NO.	612159		

GENERAL NOTES

TRAFFIC DATA

	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2043	N/A
AVERAGE DAILY TRAFFIC – PRESENT	8386	N/A
AVERAGE DAILY TRAFFIC – DESIGN YEAR	10233	N/A
DESIGN HOURLY VOLUME	880	N/A
DIRECTIONAL DISTRIBUTION	58.2%	N/A
TRUCK PERCENTAGE – AVERAGE DAY	5%	N/A
TRUCK PERCENTAGE – PEAK HOUR	7.9%	N/A
DESIGN SPEED	45 MPH	N/A
DIRECTIONAL DESIGN HOURLY VOLUME	512	N/A

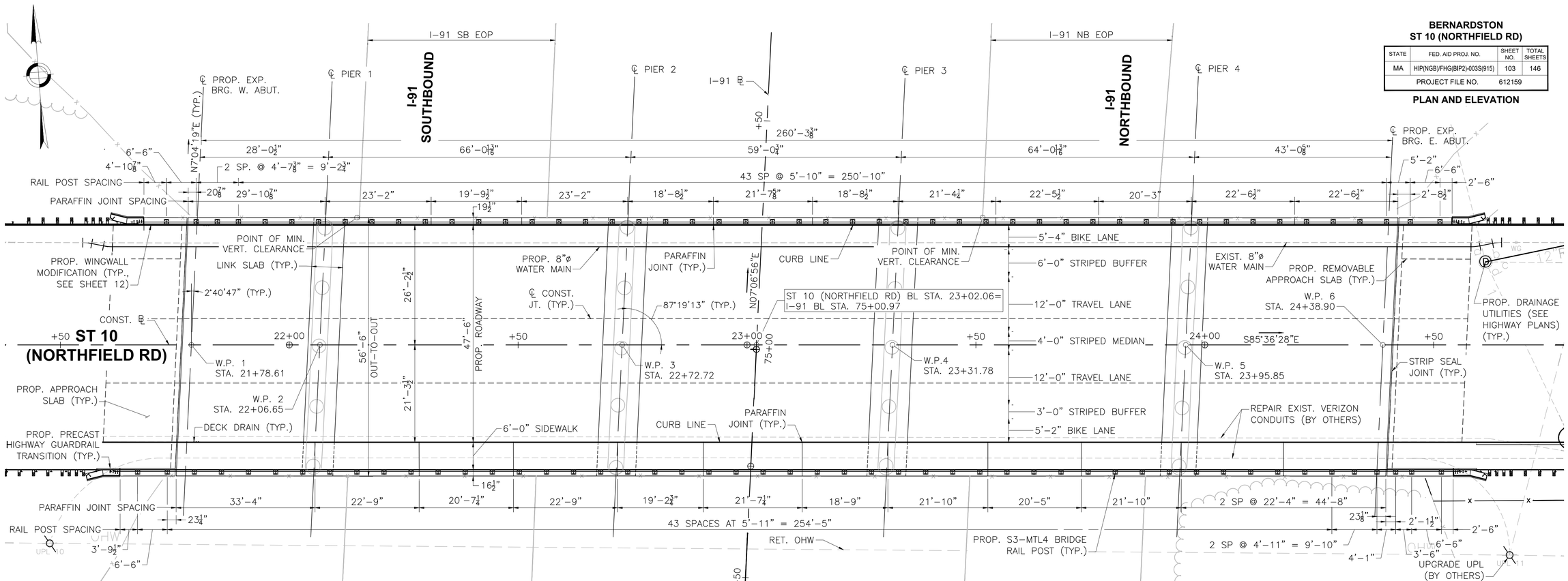
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USE ONLY PRINTS OF LATEST DATE	

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BERNARDSTON
ST 10 (NORTHFIELD RD)

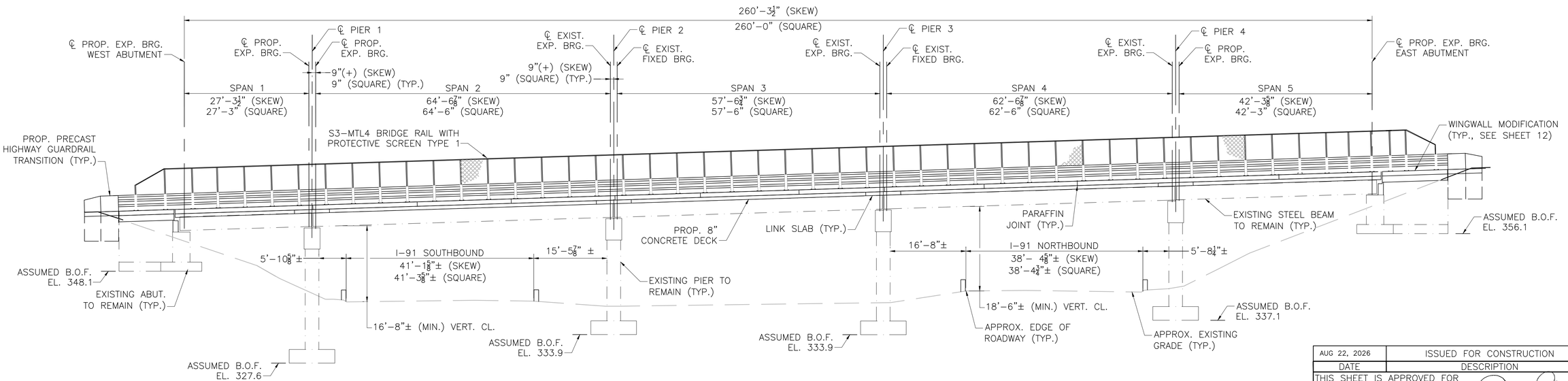
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	103	146
PROJECT FILE NO. 612159			

PLAN AND ELEVATION



PLAN

SCALE: 3/32" = 1'-0"



SOUTH ELEVATION

SCALE: 3/32" = 1'-0"

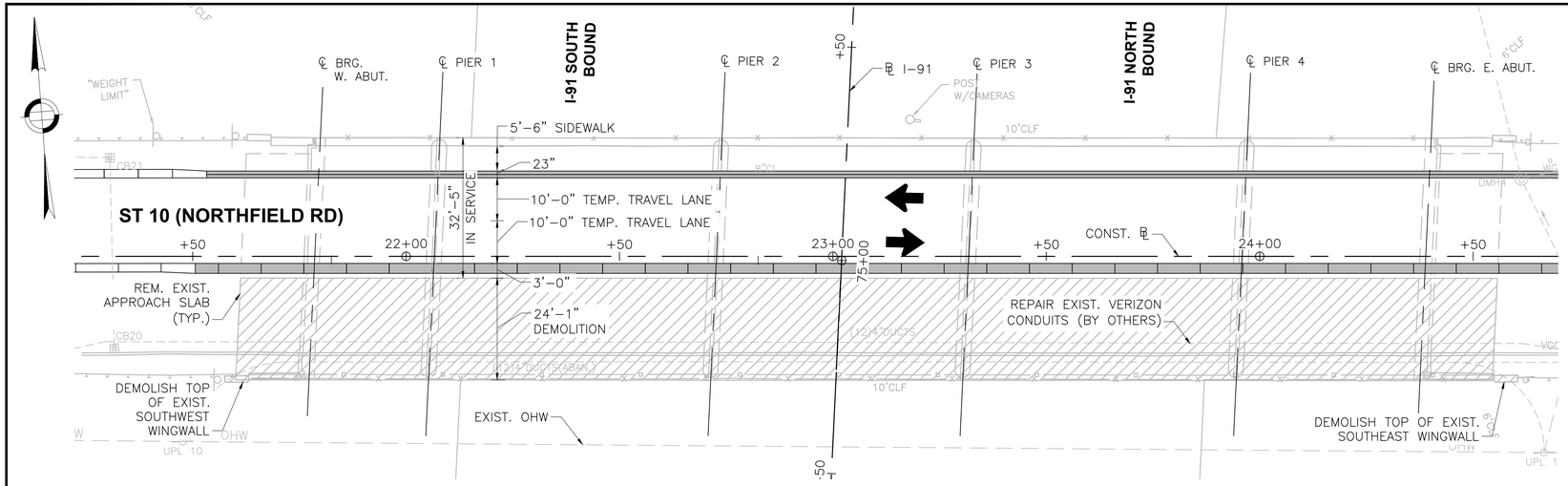
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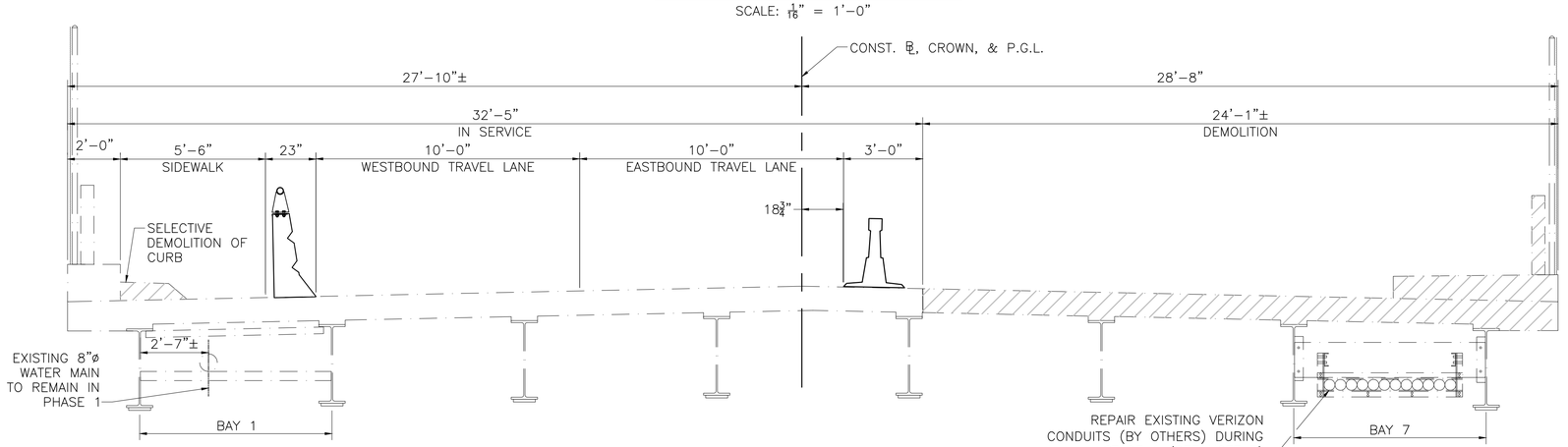
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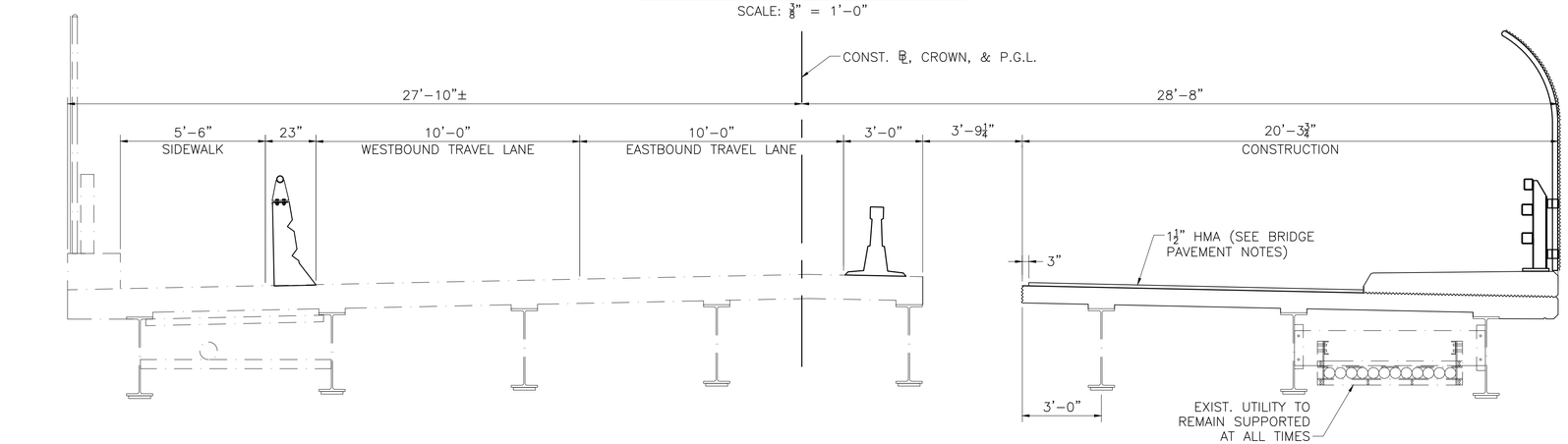
PLAN – STAGE 1 DEMOLITION

SCALE: $\frac{1}{16}$" = 1'-0"



SECTION – STAGE 1 DEMOLITION

SCALE: $\frac{3}{8}$" = 1'-0"



SECTION – STAGE 1 CONSTRUCTION

SCALE: $\frac{3}{8}$" = 1'-0"

BERNARDSTON
ST 10 (NORTHFIELD RD)

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MA	HIP(NGB)/FHG(BIP2)-003S(915)	104	146
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CONSTRUCTION STAGE 1

TEMPORARY BARRIER NOTES:

1. EMBEDMENT AND SIZE OF ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. THE DETAILS SHOWN HEREIN DEPICT A POSSIBLE CONFIGURATION ONLY. TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) AND TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) SHALL CONFORM TO THE REQUIREMENTS OF ITEMS 853.33 AND 853.34 RESPECTIVELY.
3. ONCE THE TEMPORARY BARRIERS HAVE BEEN REMOVED, ANCHOR HOLES SHALL BE FILLED WITH GROUT.

GENERAL NOTES:

1. SEE TEMPORARY TRAFFIC CONTROL PLANS FOR ADDITIONAL PHASING AND CONSTRUCTION INFORMATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF TEMPORARY SHIELDING AND OTHER TEMPORARY WORKS AS REQUIRED BY THE CONTRACTOR'S MEANS AND METHODS. PROTECTION OF THE EXISTING UTILITIES SHALL BE CONSIDERED INCIDENTAL TO ITEM 113.1 DEMOLITION OF DECK OF BRIDGE NO. B-10-018 (12C).
3. ALL DEMOLITION MATERIAL AND DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL STATE AND FEDERAL REQUIREMENTS.
4. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER AT LEAST 30 DAYS PRIOR TO THE START OF DEMOLITION WORK.
5. SEE SPECIAL PROVISIONS FOR REQUIREMENTS ON TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3).
6. TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) ON THE BRIDGE DECK SHALL HAVE A MAXIMUM DYNAMIC DEFLECTION OF 3.15 INCHES OR LESS AT THE BASE.
7. PRIOR TO THE INITIATION OF EACH CONSTRUCTION PHASE, THE EXISTING DECK TO REMAIN IN SERVICE SHALL BE INSPECTED AND REPAIRED AS REQUIRED FOR INSTALLATION OF THE TEMPORARY BARRIERS AND TRAFFIC SAFETY. SEE SPECIAL PROVISIONS ITEMS 127.4 AND 127.41.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE MEMBRANE WATERPROOFING AT THE PHASE LINE. MEMBRANE WATERPROOFING SHALL HAVE A MINIMUM 3" OVERLAP BETWEEN JOINTS. SEE DETAILS SHEET 17.

SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 1:

1. INSTALL TEMPORARY TL-4 BARRIER
2. DEMOLISH NORTHERN CONCRETE CURB.
3. INSTALL TEMPORARY TL-3 BARRIER. SHIFT PEDESTRIAN ACCESS AND VEHICULAR TRAFFIC TO THE NORTH SIDE OF THE EXISTING BRIDGE.
4. INSTALL TEMPORARY PROTECTIVE SHIELDING IN BAYS 5 TO 7.
5. DEMOLISH SOUTHERN PORTION OF EXISTING BRIDGE DECK.
6. REPAIR EXIST. UTILITIES.
7. CONSTRUCT SOUTHERN PORTION OF NEW BRIDGE DECK AND PAVE.

LEGEND:

- EXISTING
- DEMOLITION
- COMPLETED CONSTRUCTION
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WITH BOLT-DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) WITH BOLT-DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WITH BOLT-DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) WITH BOLT-DOWN ANCHOR BOLTS
- * DENOTES WIDTH OF TEMPORARY BARRIER PLUS ITS DYNAMIC DEFLECTION
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY CONCRETE TL-3 BARRIER
- TEMPORARY BARRIER TRANSITION PIECE

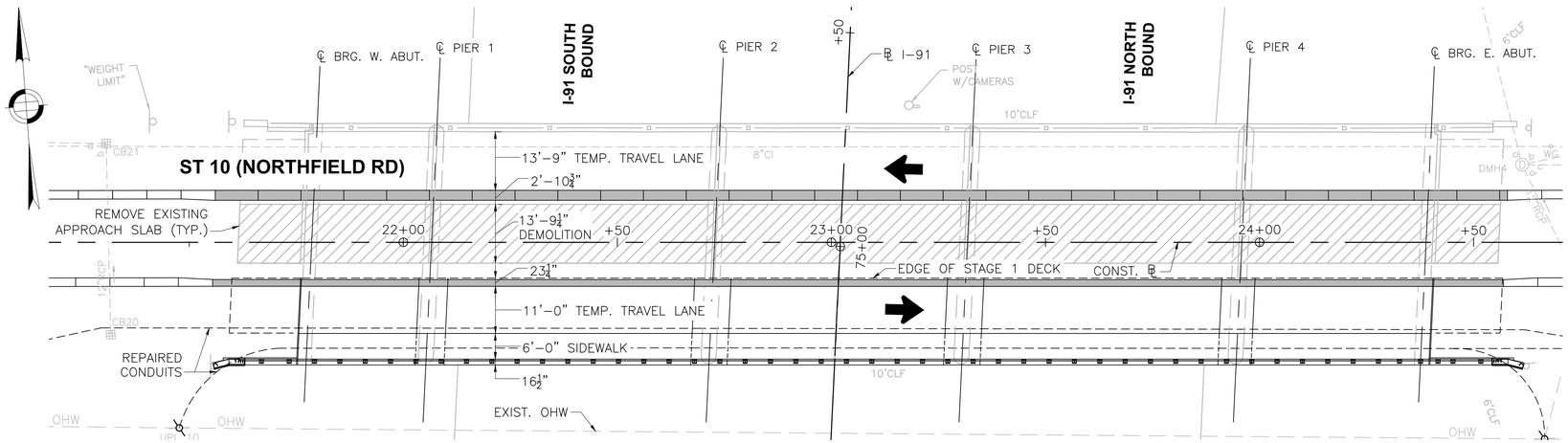
DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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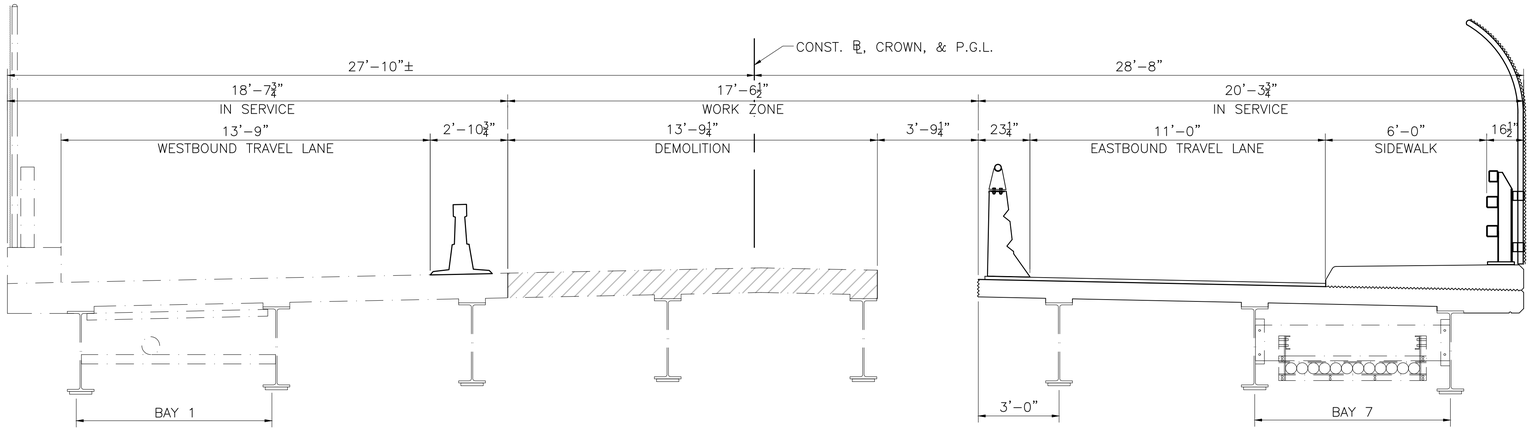
612159_BR4-6(B10018).DWG Plotted on 31-Jul-2026 2:16 PM

22-AUG-2026 ISSUED FOR CONSTRUCTION (SF)



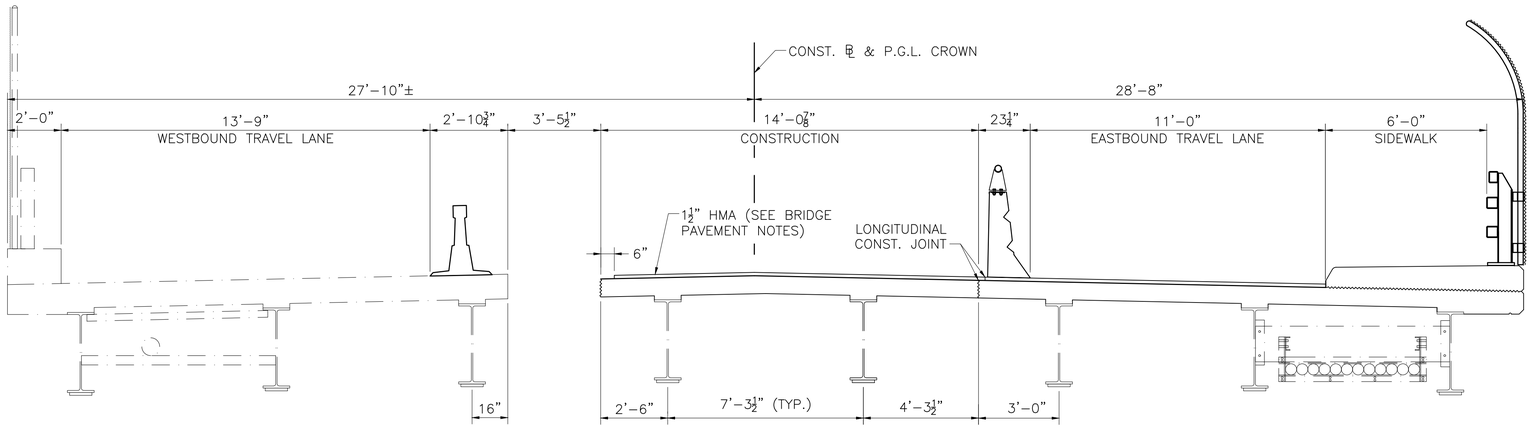
PLAN – STAGE 2 DEMOLITION

SCALE: 1/16" = 1'-0"



SECTION – STAGE 2 DEMOLITION

SCALE: 3/8" = 1'-0"



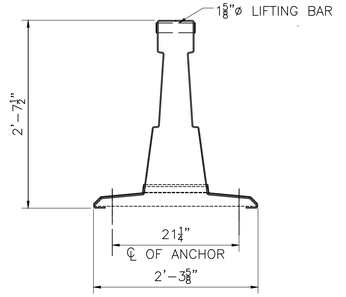
SECTION – STAGE 2 CONSTRUCTION

SCALE: 3/8" = 1'-0"

BERNARDSTON
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CONSTRUCTION STAGE 2



TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) DETAIL

SCALE: 1" = 1'-0"

SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 2:

1. INSTALL TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) ONTO NEW SOUTHERN PORTION OF BRIDGE.
2. SHIFT NORTHERN PEDESTRIAN ACCESS AND EASTBOUND TRAFFIC ONTO NEW SOUTHERN BRIDGE STRUCTURE.
3. RELOCATE TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3), REMOVE TEMPORARY BARRIER (TL4) AND SHIFT WESTBOUND TRAFFIC TO THE NORTH AS INDICATED ON THE PLANS.
4. INSTALL TEMPORARY PROTECTIVE SHIELDING IN BAYS 3 AND 4.
5. DEMOLISH BRIDGE DECK IN BAYS 3 AND 4.
6. CONSTRUCT BRIDGE DECK TO THE LIMITS SHOWN AND PAVE.

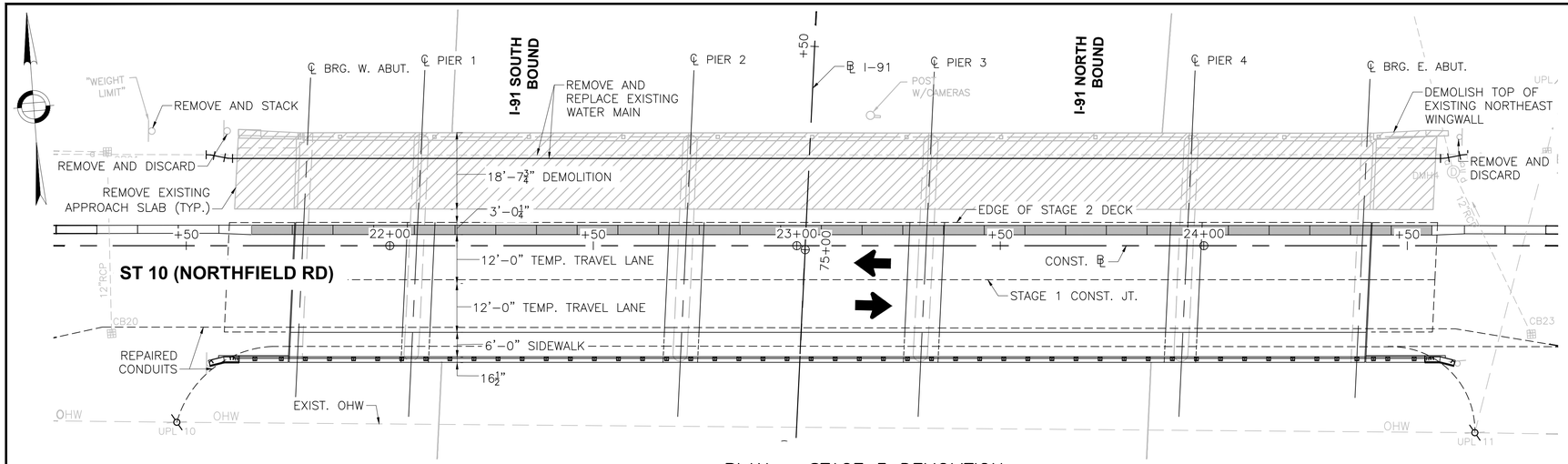
LEGEND:

- EXISTING
- DEMOLITION
- COMPLETED CONSTRUCTION
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WITH BOLT-DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) WITH BOLT-DOWN ANCHOR BOLTS
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WITH BOLT-DOWN ANCHOR BOLTS
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) WITH BOLT-DOWN ANCHOR BOLTS

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

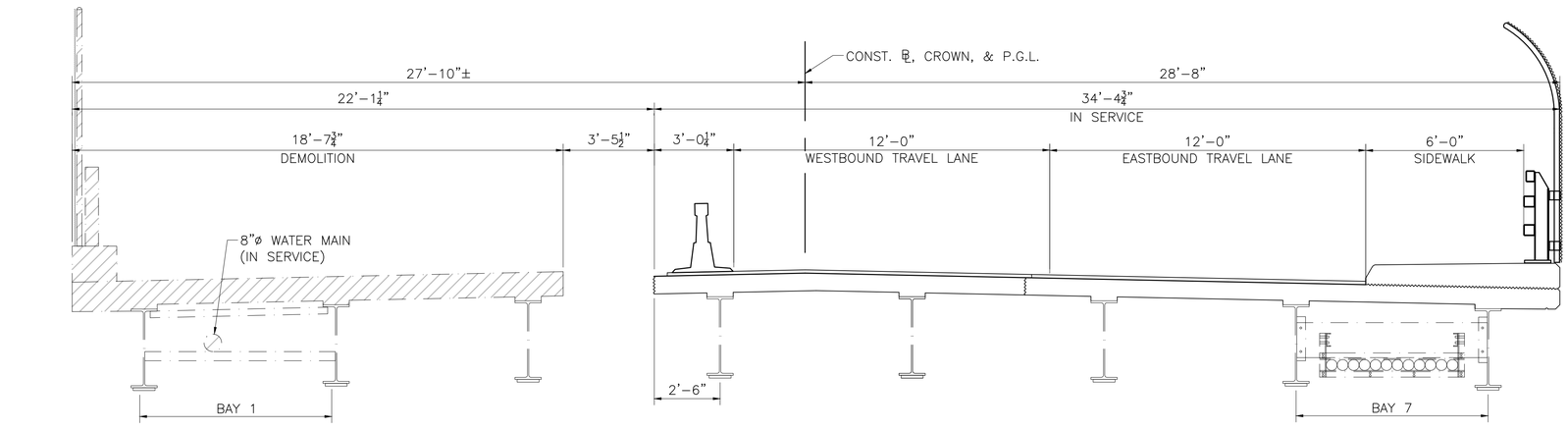
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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612159_BR4-6(B10018).DWG Plotted on 31-Jul-2026 2:17 PM
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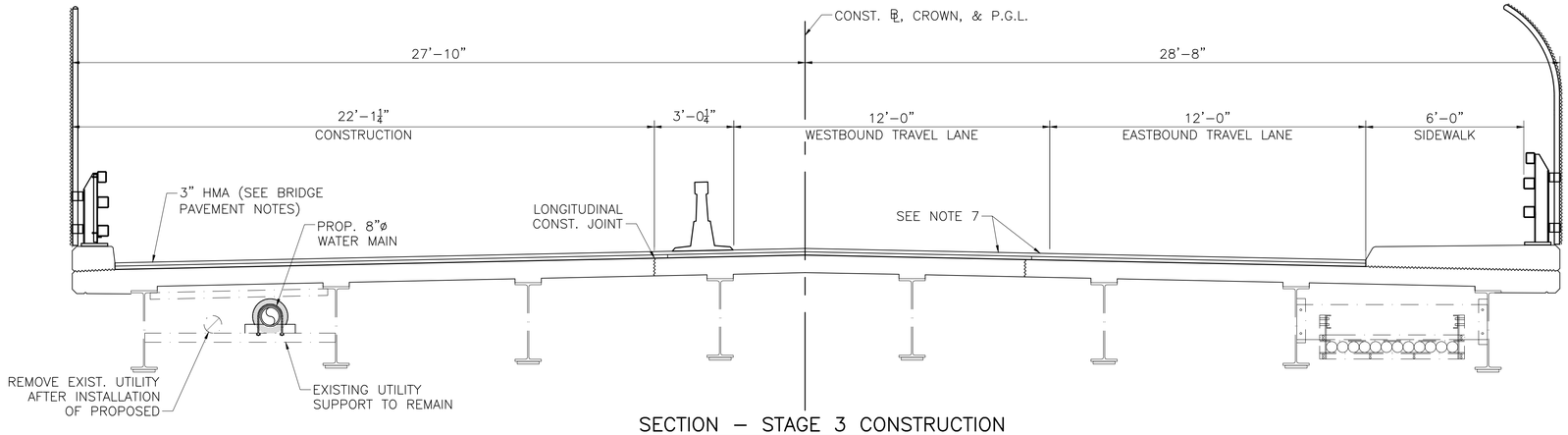
PLAN – STAGE 3 DEMOLITION

SCALE: $\frac{1}{16}$" = 1'-0"



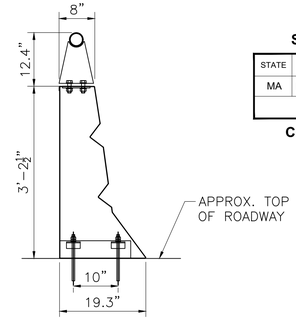
SECTION – STAGE 3 DEMOLITION

SCALE: $\frac{3}{8}$" = 1'-0"



SECTION – STAGE 3 CONSTRUCTION

SCALE: $\frac{3}{8}$" = 1'-0"



TEMPORARY BARRIER – LIMITED DEFLECTION (TL-4) DETAIL

SCALE: $\frac{3}{4}$" = 1'-0"

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MA	HIP(NGB)/FHG(BIP2)-003S(915)	106	146
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CONSTRUCTION STAGE 3

SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 3:

1. RELOCATE TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) FROM BAY 2 TO BAY 3 AND SHIFT WESTBOUND TRAFFIC ONTO NEW PORTION OF BRIDGE.
2. INSTALL TEMPORARY PROTECTIVE SHIELDING IN BAYS 1 TO 3.
3. DEMOLISH BRIDGE DECK IN BAYS 1 TO 3.
4. INSTALL 8" DIA. WATER MAIN IN BAY 1. REMOVE EXIST. WATER MAIN.
5. COMPLETE CONSTRUCTION OF BRIDGE DECK.
6. REMOVE TEMPORARY BARRIERS AND TEMPORARY PROTECTIVE SHIELDING.
7. PAVE 1½" OF PROTECTIVE COURSE WITHIN LIMITS OF STAGE 3 CONSTRUCTION. BRIDGE SHALL THEN BE PAVED IN A CONTINUOUS OPERATION WITH BRIDGE SURFACE COURSE FOR CLEAN FINISH.
8. COMPLETE FINAL STRIPING OF ROADWAY AND RESTORE TRAFFIC TO PROPOSED LANE CONFIGURATION.

LEGEND:

- EXISTING
- DEMOLITION
- COMPLETED CONSTRUCTION
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WITH BOLT-DOWN ANCHOR BOLTS
- * DENOTES WIDTH OF TEMPORARY BARRIER PLUS ITS DYNAMIC DEFLECTION
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WITH BOLT-DOWN ANCHOR BOLTS
- TEMPORARY CONCRETE TL-3 BARRIER
- TEMPORARY BARRIER TRANSITION PIECE

DATE	DESCRIPTION
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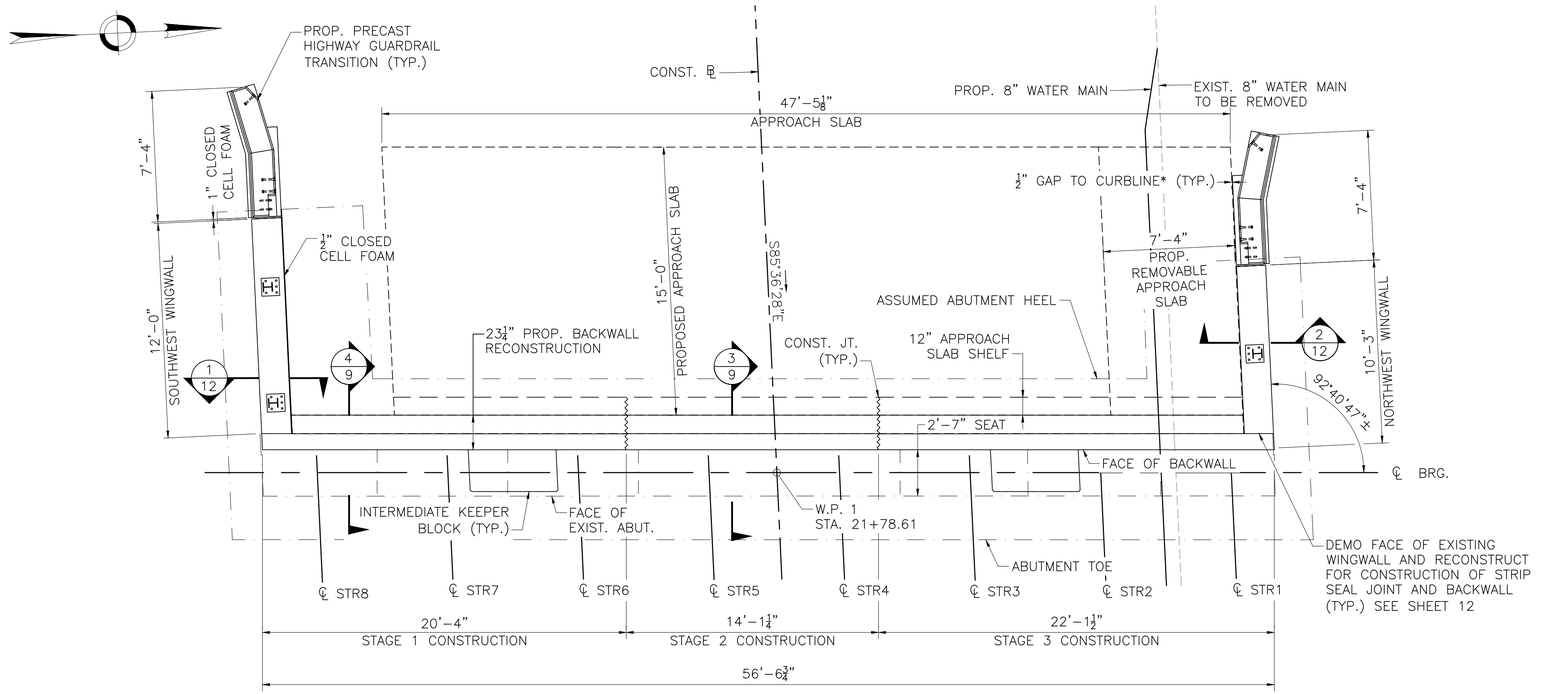
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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BERNARDSTON
ST 10 (NORTHFIELD RD)

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PROJECT FILE NO.	612159		

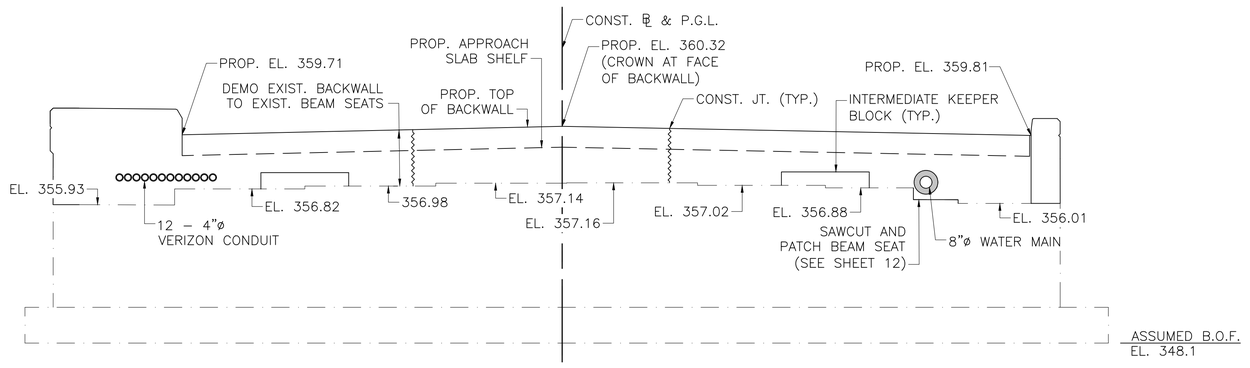
WEST SUBSTRUCTURE PLAN AND ELEVATION



*GAP FROM CURBLINE TO APPROACH SLAB SHALL BE 1" AT SIDEWALK AND ½" AT WINGWALL. FILL GAP BETWEEN WING AND APPROACH SLAB WITH CLOSED CELL FOAM.

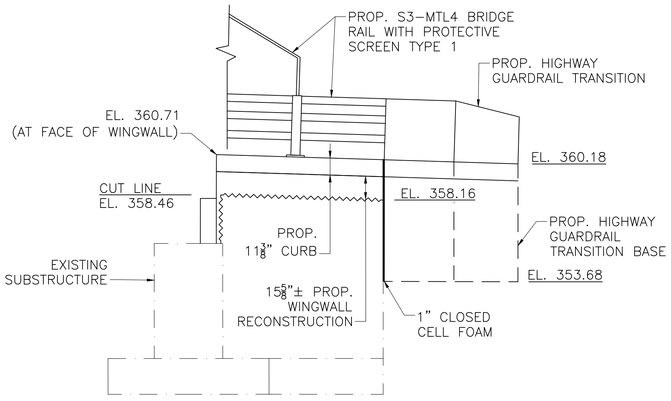
WEST ABUTMENT PLAN

SCALE: ¼" = 1'-0"



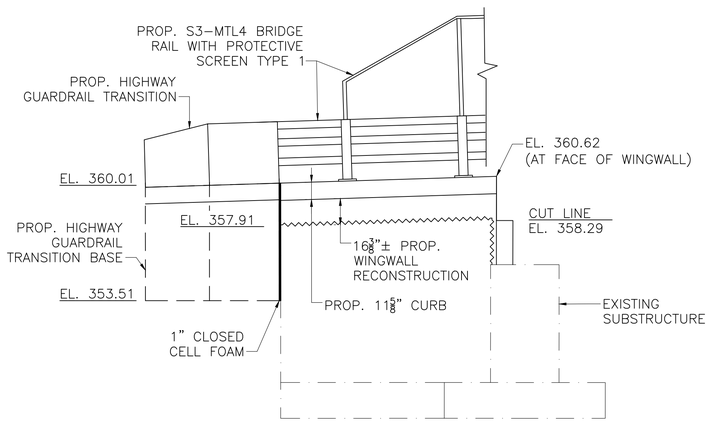
WEST ABUTMENT ELEVATION

SCALE: ¼" = 1'-0"



NORTHWEST WINGWALL ELEVATION

SCALE: ¼" = 1'-0"



SOUTHWEST WINGWALL ELEVATION

SCALE: ¼" = 1'-0"

NOTES:

1. BRIDGE RAIL NOT SHOWN FOR CLARITY.
2. ALL EXISTING BRIDGE SEAT ELEVATIONS ARE SHOWN AT THE CENTERLINE OF BEARING AND ARE APPROXIMATE.
3. FIELD VERIFY ALL EXISTING ELEVATIONS PRIOR TO FABRICATION.
4. EXISTING ABUTMENT DETAILS ARE TAKEN FROM THE 1959 BRIDGE PLANS AND ARE NOT GUARANTEED. CONTRACTOR SHALL VERIFY EXISTING DETAILS AND DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION.
5. EXISTING BRICK UTILITY BLOCKOUTS ON EACH SIDE TO BE REMOVED FOR CONSTRUCTION OF NEW BACKWALL. COORDINATE WITH UTILITY PROVIDERS FOR THE SEQUENCE OF THIS WORK.
6. WINGWALL LENGTHS BETWEEN THE EXISTING PLANS, SURVEYS, AND MEASUREMENTS ALL VARY. CONTRACTOR TO ASCERTAIN ACCURATE EXISTING WINGWALL LENGTHS AND ADJUST THE RAIL POST SPACINGS AS NEEDED TO ACCOMMODATE PRIOR TO FABRICATION OF THE BRIDGE RAIL.

DATE	DESCRIPTION
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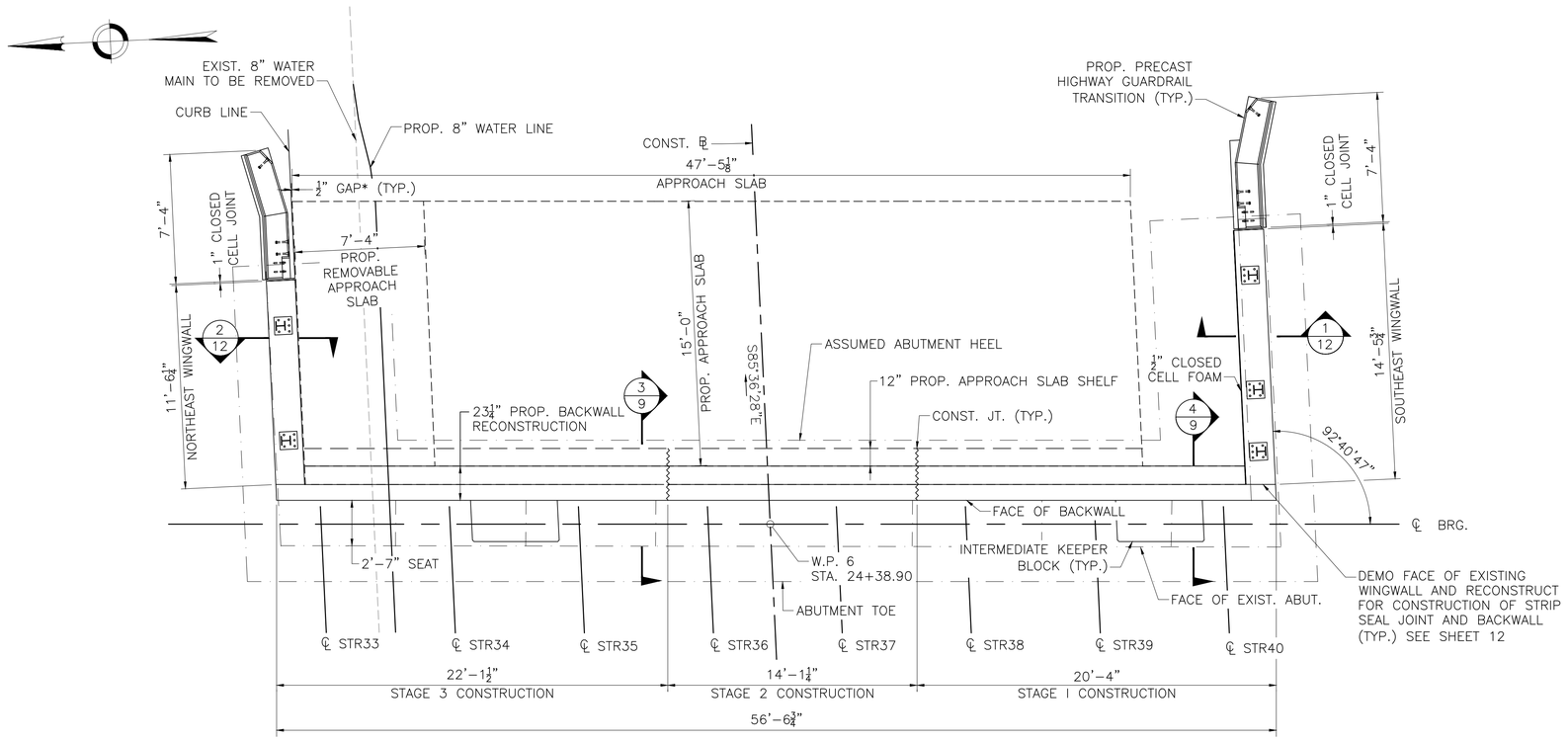
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612159_BR7-8(B10018).DWG Plotted on 31-Jul-2026 2:19 PM
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BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	108	146
PROJECT FILE NO.	612159		

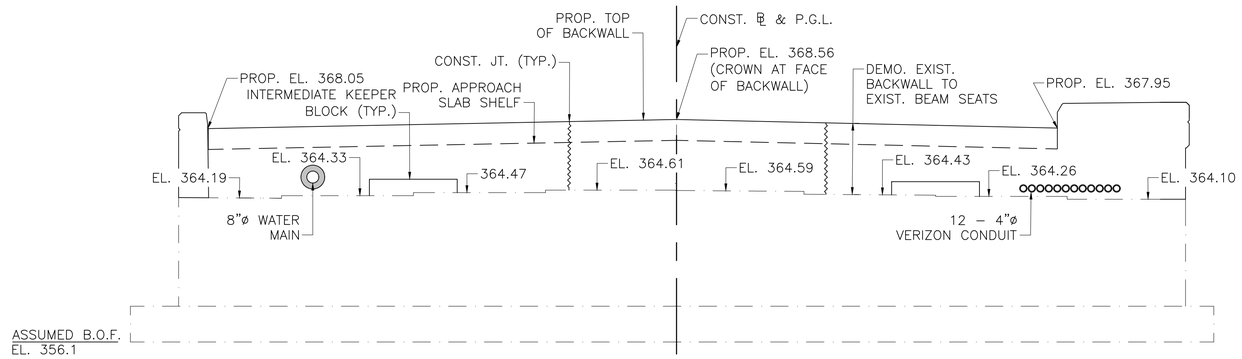
EAST SUBSTRUCTURE PLAN AND ELEVATION



*GAP FROM CURBLINE TO APPROACH SLAB SHALL BE 1" AT SIDEWALK AND ½" AT WINGWALL. FILL GAP BETWEEN WING AND APPROACH SLAB WITH CLOSED CELL FOAM.

EAST ABUTMENT PLAN

SCALE: ¼" = 1'-0"

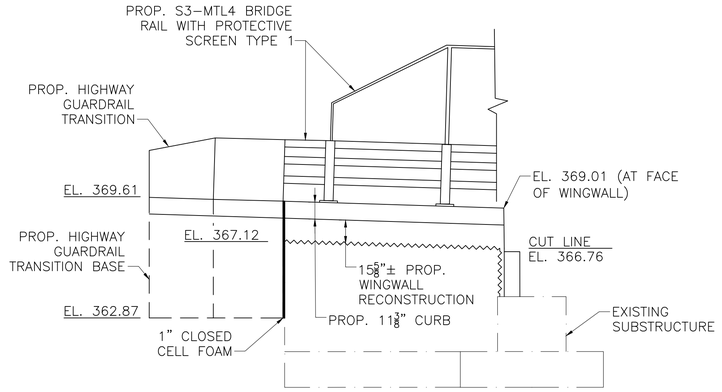


EAST ABUTMENT ELEVATION

SCALE: ¼" = 1'-0"

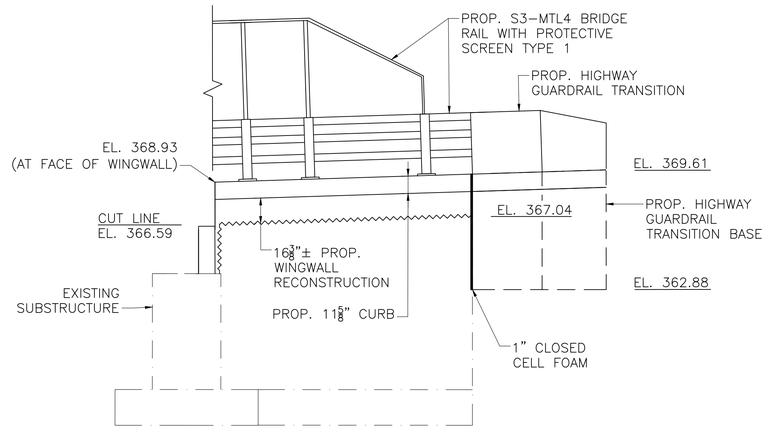
NOTES:

1. BRIDGE RAIL NOT SHOWN FOR CLARITY.
2. ALL EXISTING BRIDGE SEAT ELEVATIONS ARE SHOWN AT THE CENTERLINE OF BEARING AND ARE APPROXIMATE.
3. FIELD VERIFY ALL EXISTING ELEVATIONS PRIOR TO FABRICATION.
4. EXISTING ABUTMENT DETAILS ARE TAKEN FROM THE 1959 BRIDGE PLANS AND ARE NOT GUARANTEED. CONTRACTOR SHALL VERIFY EXISTING DETAILS AND DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION.
5. EXISTING BRICK UTILITY BLOCKOUTS ON EACH SIDE TO BE REMOVED FOR CONSTRUCTION OF NEW BACKWALL. COORDINATE WITH UTILITY PROVIDERS FOR THE SEQUENCE OF THIS WORK.
6. WINGWALL LENGTHS BETWEEN THE EXISTING PLANS, SURVEYS, AND MEASUREMENTS ALL VARY. CONTRACTOR TO ASCERTAIN ACCURATE EXISTING WINGWALL LENGTHS AND ADJUST THE RAIL POST SPACINGS AS NEEDED TO ACCOMMODATE PRIOR TO FABRICATION OF THE BRIDGE RAIL.



NORTHEAST WINGWALL ELEVATION

SCALE: ¼" = 1'-0"



SOUTHEAST WINGWALL ELEVATION

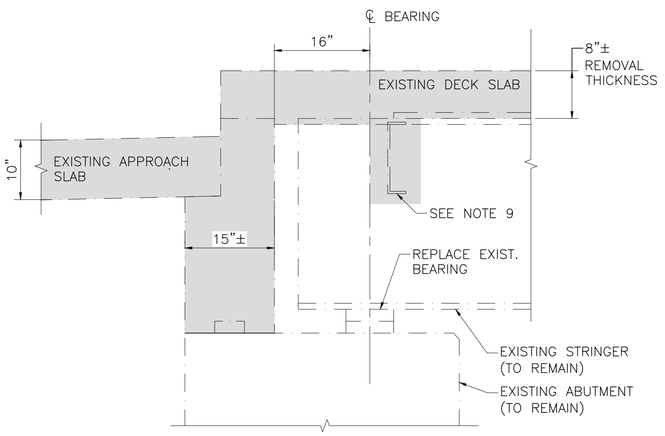
SCALE: ¼" = 1'-0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
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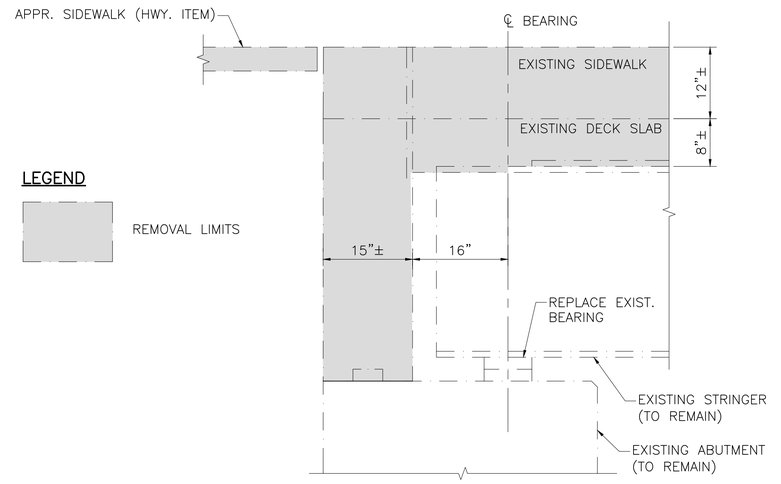
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ISSUED FOR CONSTRUCTION (SF)



DETAILS AT ABUTMENT – ROADWAY SECTION (REMOVAL) 3 7,8,10

SCALE: 1" = 1'–0"



DETAILS AT ABUTMENT – SIDEWALK SECTION (REMOVAL) 4 7,8,10

SCALE: 1" = 1'–0"

LEGEND

REMOVAL LIMITS

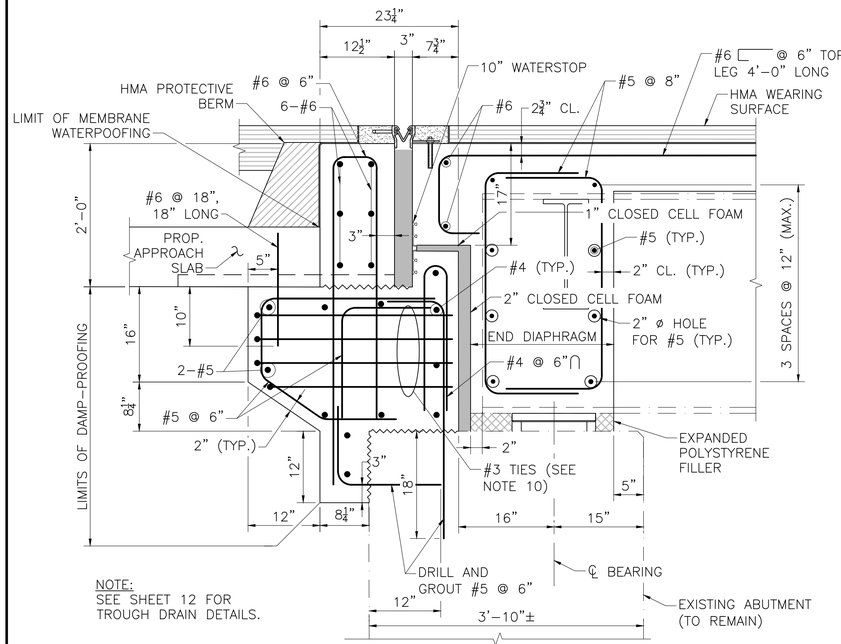
NOTES:

1. ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE COATED.
2. ALL BACKWALL CONCRETE ABOVE THE CONSTRUCTION JOINT SHALL BE 5000 PSI, HP CEMENT CONCRETE. AT CONSTRUCTION JOINT, ROUGHEN EXISTING CONCRETE TO PROVIDE A ROUGH FINISH WITH A $\frac{1}{4}$" MINIMUM AMPLITUDE.
3. TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
4. THE BACKWALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
5. THE END DIAPHRAGM CONCRETE SHALL BE 5000 PSI, HP CEMENT CONCRETE.
6. THE ELEVATION AND ANGLE OF PENETRATION OF THE WATER MAIN IS UNKNOWN. UPON EXCAVATION FOR BACK WALL REPAIR, CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF THE WATER MAIN BEHIND THE BACKWALL, AND THE CONDITION SHALL BE INSPECTED BY THE ENGINEER. THE DETAILS SHOWN ON THESE PLANS FOR THE PENETRATION OF THE WATER MAIN THROUGH THE BACKWALL ARE CONCEPTUAL AND SHALL BE MODIFIED AS APPROPRIATE UPON DETERMINATION OF THE FINAL LOCATION OF THE WATER MAIN.
7. PRIOR TO PLACING THE END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESSES SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL. EXPANDED POLYSTYRENE FILLER SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. END DIAPHRAGM CONCRETE MUST NOT COME IN DIRECT CONTACT WITH ABUTMENT CONCRETE.
8. HMA PROTECTIVE BERM TO BE SUPERPAVE BRIDGE PROTECTIVE COARSE (SPC–B–12.5), PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND–GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING MEMBRANE WATERPROOFING.
9. THE EXISTING END DIAPHRAGMS CONSIST OF CONCRETE ENCASED STEEL CHANNELS. REMOVE CONCRETE ENCASEMENT. STEEL CHANNELS MAY REMAIN UNLESS MEANS AND METHODS OF JACKING FOR BEARING REPLACEMENTS REQUIRES INSTALLATION OF NEW DIAPHRAGMS. SEE SHEET 22 FOR PROPOSED DETAILS.
10. 4 TIES SHALL BE SPACED EVENLY WITHIN A DEPTH OF 17" BELOW THE APPROACH SLAB SHELF.
11. #5 @ 6" DOWELS CONNECTING THE NEW BACKWALL TO THE EXISTING ABUTMENT SHALL BE COMPLETED BY INSTALLING HORIZONTAL DOWELS (DRILLED, INSTALLED, AND GROUTED) PRIOR TO DRILLING OF HOLES FOR THE VERTICAL BARS.

BERNARDSTON
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PROJECT FILE NO. 612159			

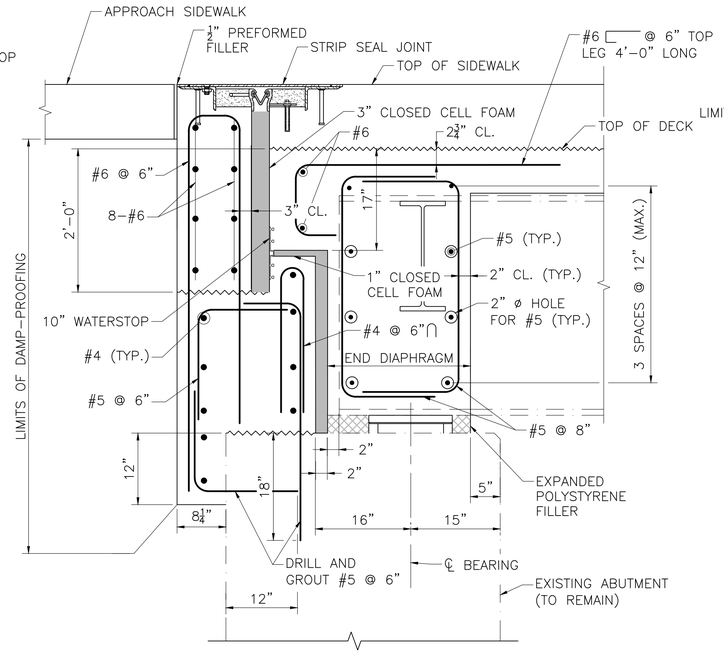
ABUTMENT DETAILS (1 OF 3)



NOTE:
SEE SHEET 12 FOR
TROUGH DRAIN DETAILS.

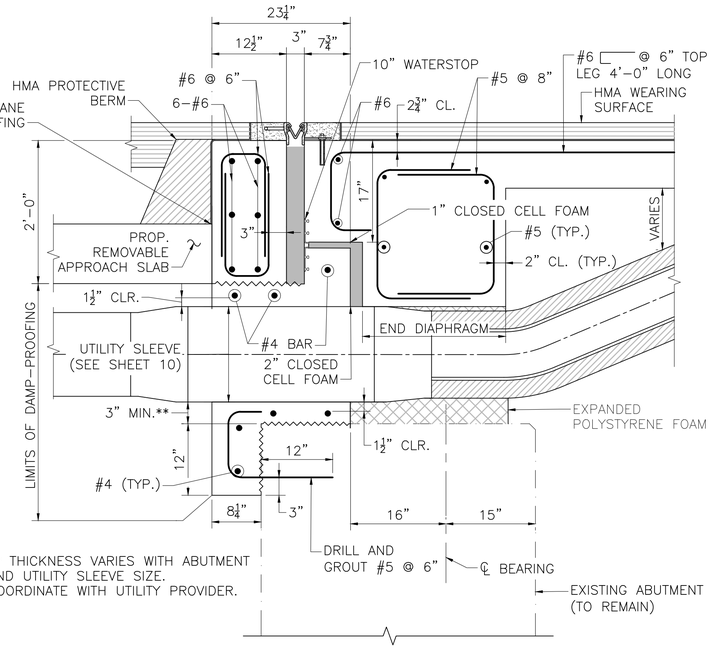
DETAILS AT ABUTMENT – ROADWAY SECTION (RECONSTRUCTION) 3 7,8,10

SCALE: 1" = 1'–0"



DETAILS AT ABUTMENT – SIDEWALK SECTION (RECONSTRUCTION) 4 7,8,10

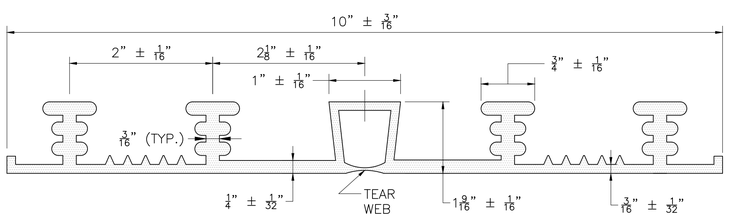
SCALE: 1" = 1'–0"



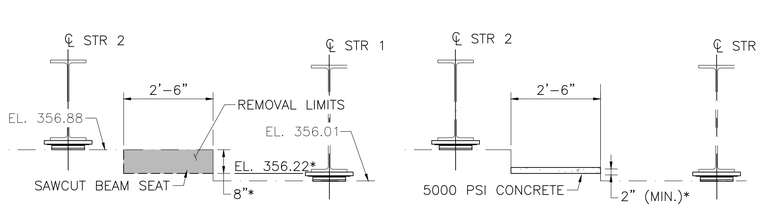
** THICKNESS VARIES WITH ABUTMENT AND UTILITY SLEEVE SIZE. COORDINATE WITH UTILITY PROVIDER.

DETAILS AT ABUTMENT – WATER UTILITY SECTION (RECONSTRUCTED)

SCALE: 1" = 1'–0"



10" WATERSTOP
NOT TO SCALE



WEST ABUTMENT BEAM SEAT CUT AND BUILD BACK DETAIL

SCALE: ½" = 1'–0"

* SEAT CUT ELEVATION AND BUILD BACK DIMENSIONS ARE BASED ON AN ASSUMED 16" OUTER DIAMETER OF SLEEVE THROUGH THE BACKWALL. THE INTENTION IS TO PROVIDE A MINIMUM OF 3" OF BACKWALL CONCRETE BETWEEN THE BRIDGE SEAT AND THE SLEEVE. CONTRACTOR SHALL COORDINATE BOTH CUT AND BUILD BACK DIMENSIONS AS NEEDED TO PROVIDE ADEQUATE ROOM IN THE BACKWALL FOR THE REINFORCEMENT SHOWN IN THE DETAILS ON THIS SHEET AND SHEET 10. CONTRACTOR SHALL COORDINATE SLEEVE SIZE REQUIRED WITH UTILITY PROVIDER.

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

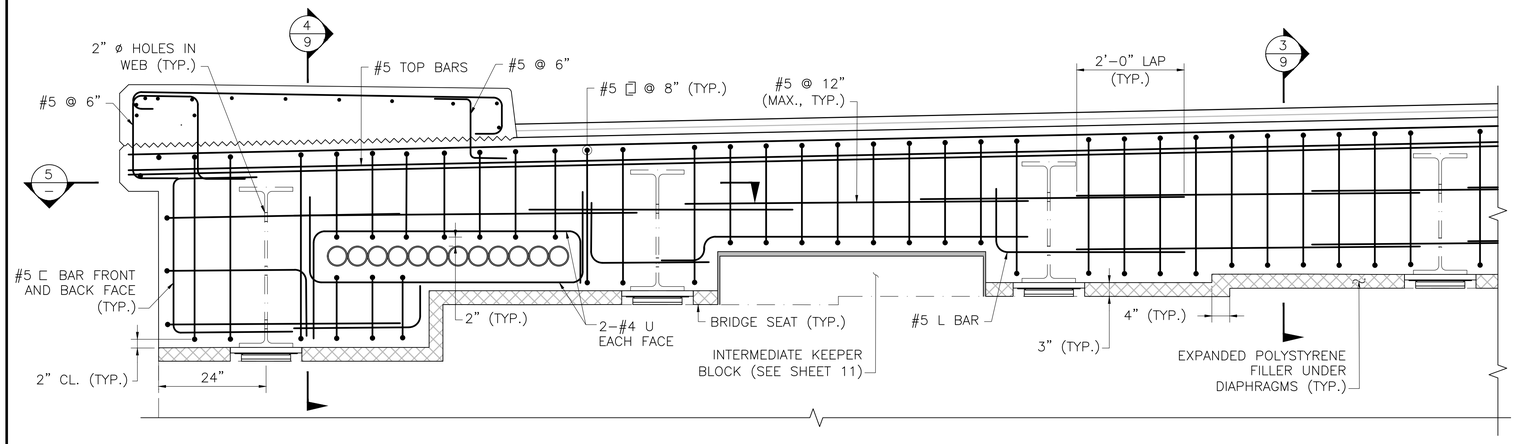
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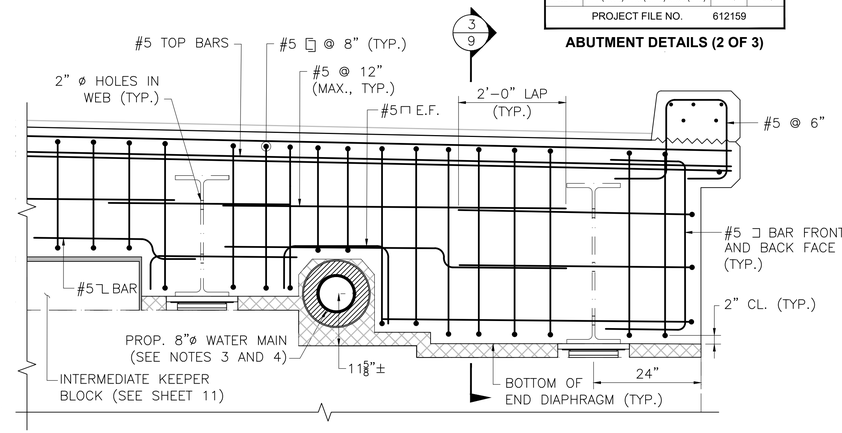
612159_BR9-11(B10018).DWG Plotted on 31-Jul-2026 2:20 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	110	146
PROJECT FILE NO.	612159		

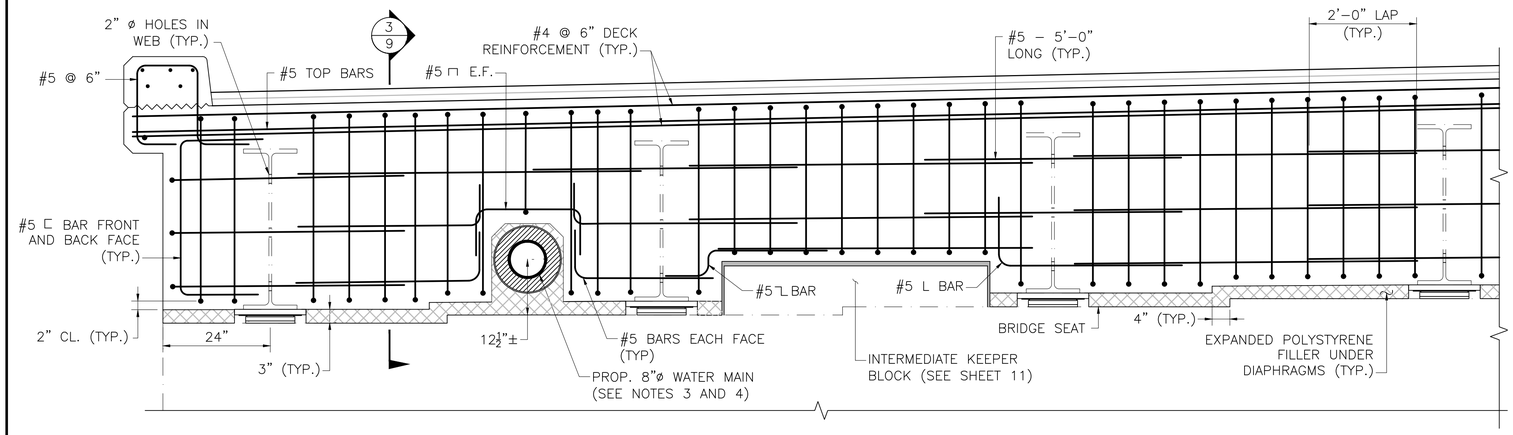
ABUTMENT DETAILS (2 OF 3)

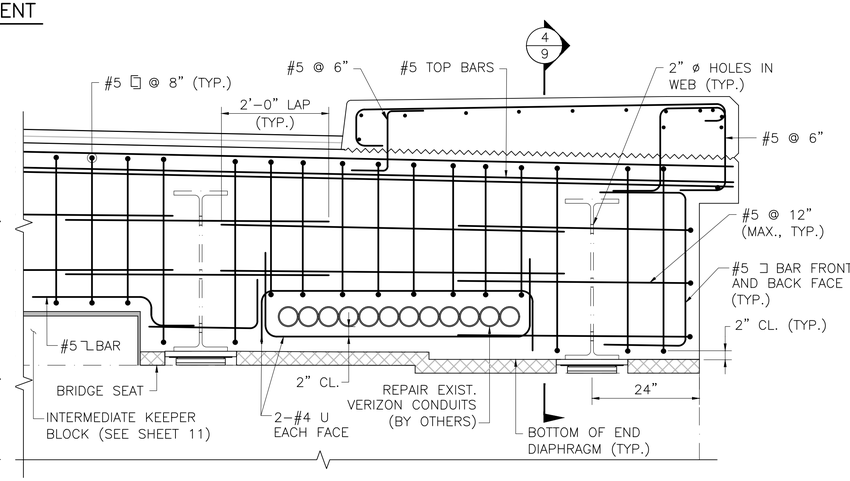


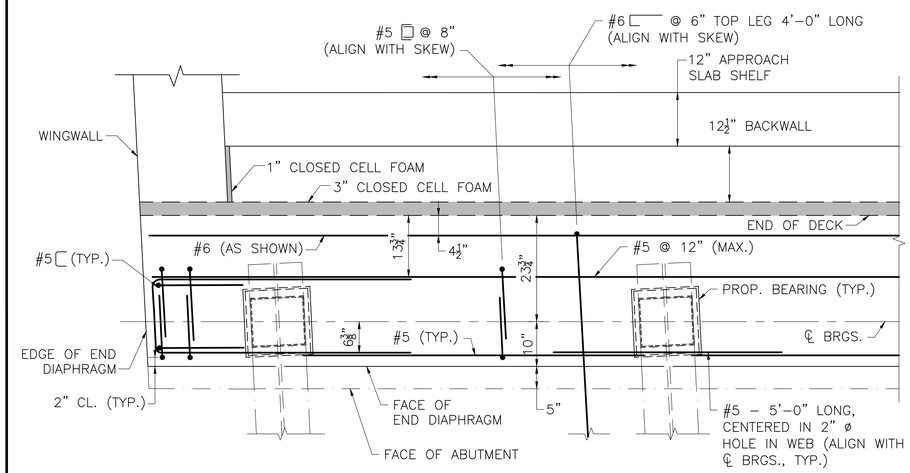


VERTICAL SECTION AT END DIAPHRAGM AT WEST ABUTMENT

SCALE: ¾" = 1'-0"





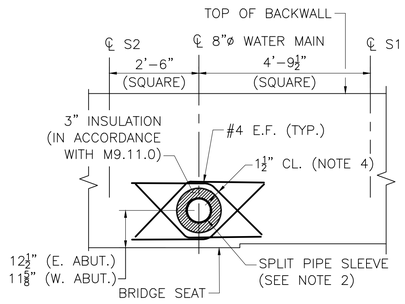


HORIZONTAL SECTION AT END DIAPHRAGM AT ABUTMENT 5

SCALE: ¾" = 1'-0"

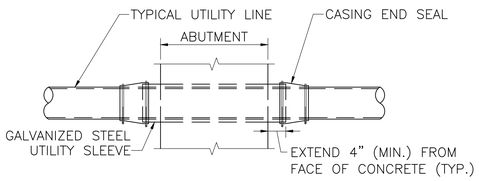
VERTICAL SECTION AT END DIAPHRAGM AT EAST ABUTMENT

SCALE: ¾" = 1'-0"



UTILITY DETAIL ELEVATION AT BACKWALL

SCALE: ½" = 1'-0"



LONGITUDINAL UTILITY SLEEVE SECTION

SCALE: ½" = 1'-0"

NOTES:

1. UTILITY SLEEVES SHALL BE STEEL PIPE CONFORMING TO ASTM A36/A36M, HOT-DIP GALVANIZED AND SHALL BE SET IN THE FORMS PRIOR TO PLACING ABUTMENT AND DIAPHRAGM CONCRETE.
2. SLEEVE AND WATER PIPE SHALL BE SECURELY SUPPORTED DURING CONSTRUCTION AND PLACEMENT OF THE CONCRETE.
3. CONTRACTOR TO COORDINATE SLEEVE SIZE AND LOCATION WITH UTILITY COMPANY PRIOR TO REBAR FABRICATION.
4. PROVIDE 2" CLEAR COVER FROM UTILITY SLEEVE TO REBAR WHERE SPACE ALLOWS. MINIMUM COVER 1½".

DATE	DESCRIPTION
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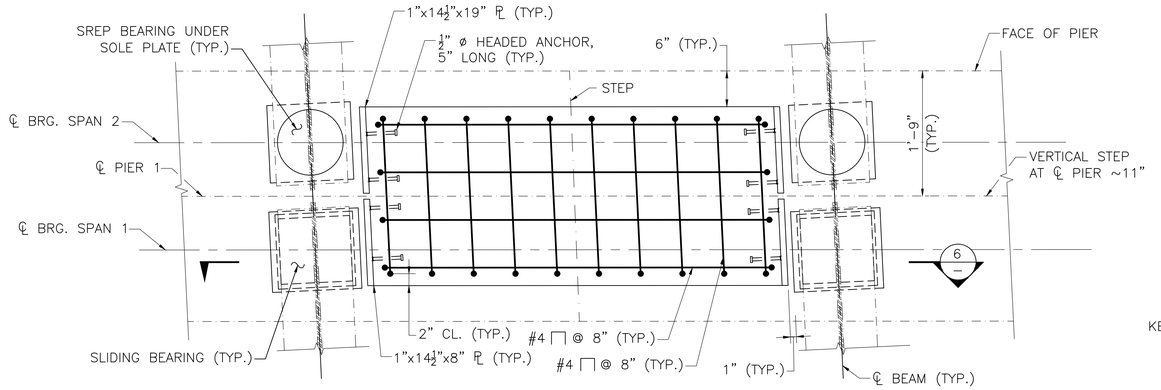
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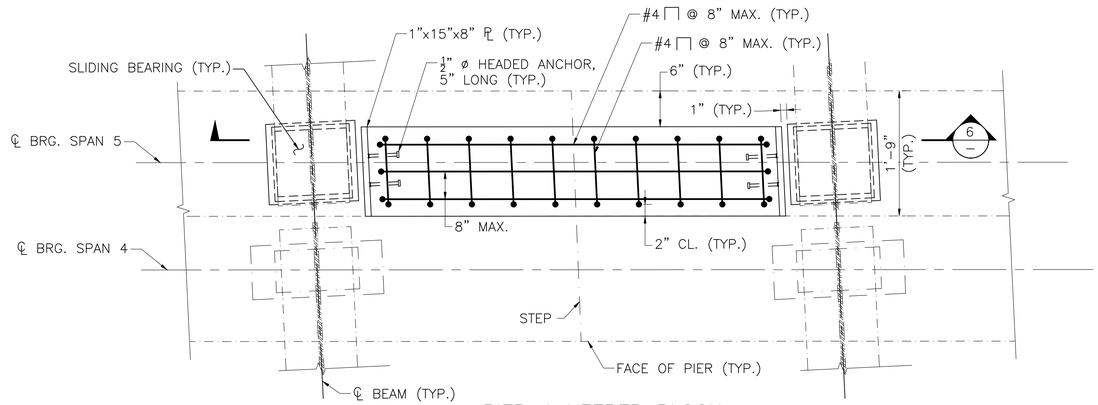
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	111	146
PROJECT FILE NO.	612159		

ABUTMENT DETAILS (3 OF 3)



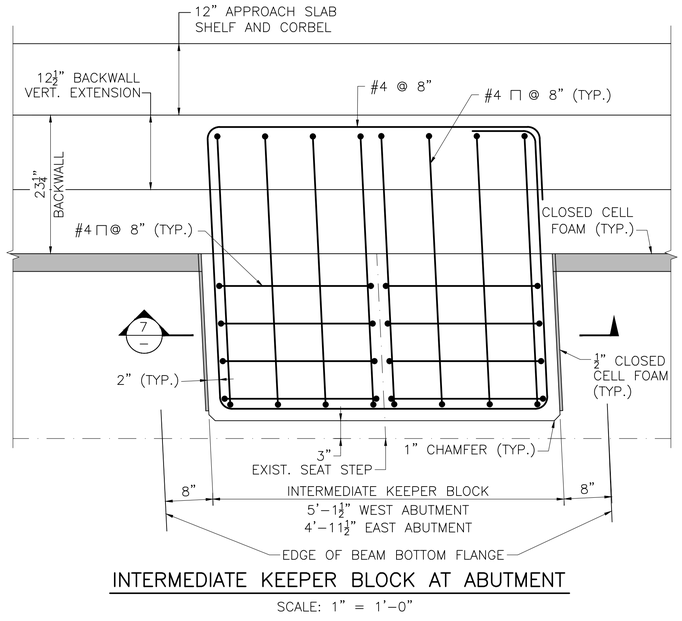
PIER 1 KEEPER BLOCK

SCALE: 1" = 1'-0"



PIER 4 KEEPER BLOCK

SCALE: 1" = 1'-0"

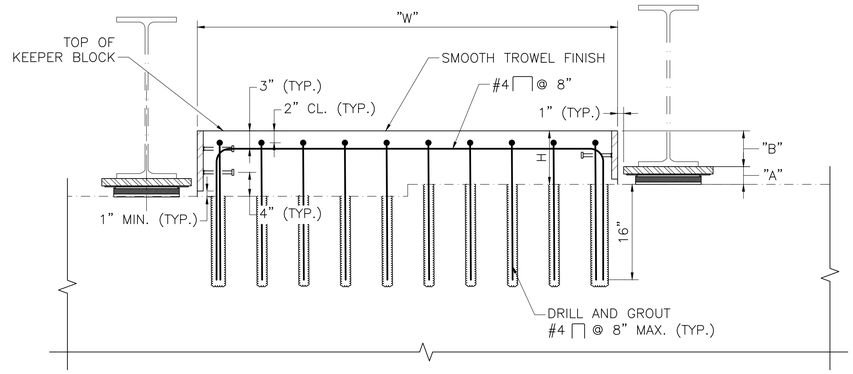


INTERMEDIATE KEEPER BLOCK AT ABUTMENT

SCALE: 1" = 1'-0"

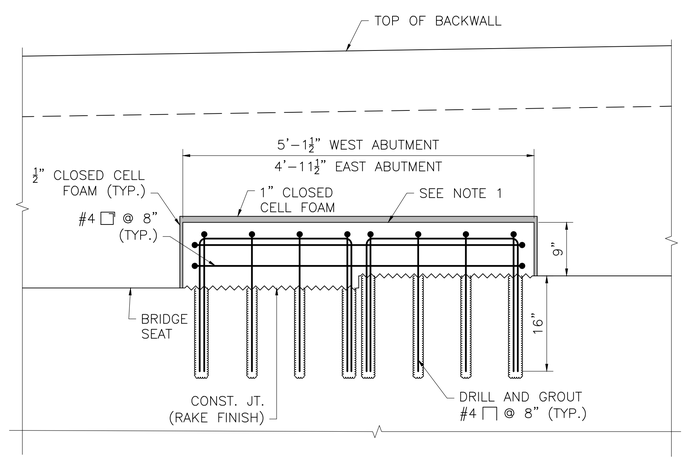
PIER	SPAN	H	A	B	W (SQUARE TO BEAMS)
1	1	9"	3"	6"	5'-10½"
1	2	20"*	5½"	14½"*	5'-10½"
4	5	9"	3"	6"	5'-9½"

*MATCH ELEVATION OF TOP OF KEEPER FOR PIER 1 SPAN 1 AND PIER 1 SPAN 2



SECTION 6/–

SCALE: 1" = 1'-0"



SECTION 7/–

SCALE: 1" = 1'-0"

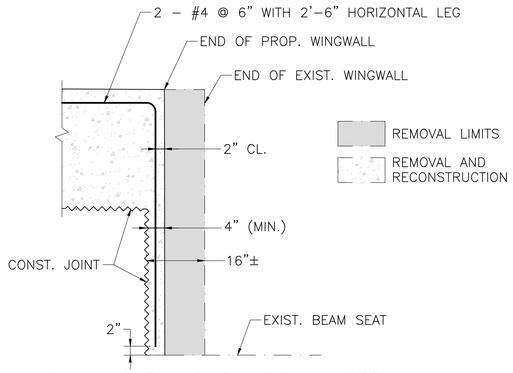
NOTES:

1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
2. REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.
3. DRILL AND GROUT REINFORCING BARS INTO EXISTING CONCRETE IN ACCORDANCE WITH SPECIAL PROVISION ITEM 912. LOCATE EXISTING REINFORCEMENT PRIOR TO DRILLING AND ADJUST BAR LOCATIONS AS REQUIRED TO AVOID CONFLICTS.

DATE	DESCRIPTION
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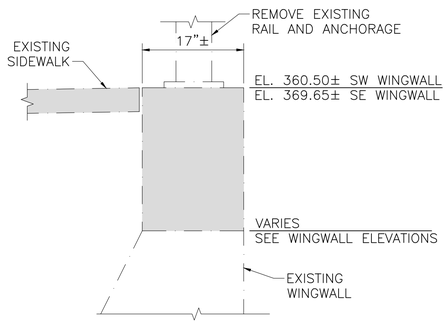
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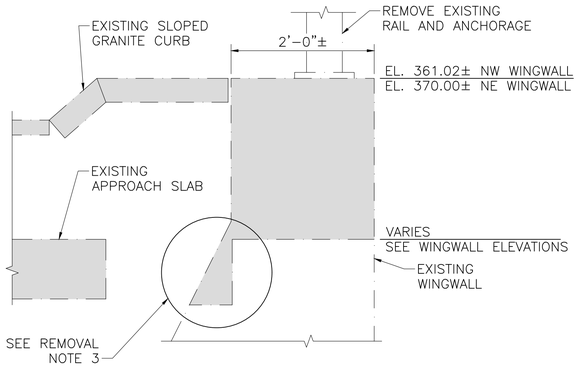
WINGWALL CUT AND BUILDBACK DETAIL

SCALE: $\frac{3}{4}$" = 1'–0"



SECTION AT SIDEWALK (REMOVAL) SOUTHWEST AND SOUTHEAST WINGWALLS (1 / 7,8)

SCALE: 1" = 1'–0"

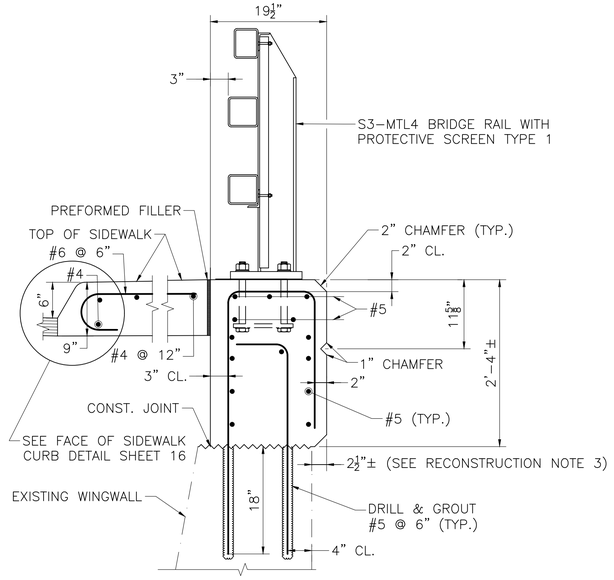


SECTION AT SAFETY CURB (REMOVAL) NORTHWEST AND NORTHEAST WINGWALLS (2 / 7,8)

SCALE: 1" = 1'–0"

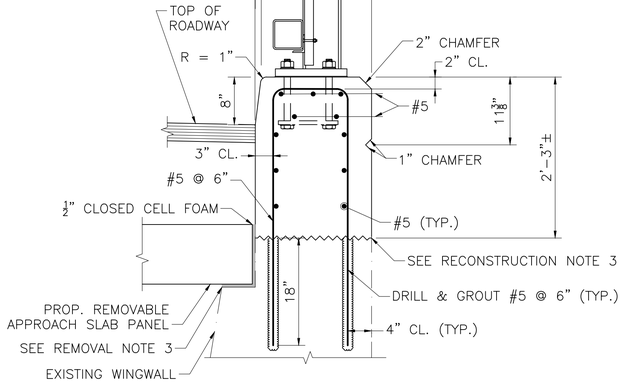
REMOVAL NOTES:

1. ROUGHEN SURFACE OF EXISTING WINGWALL FACE AT JOINT TO A $\frac{1}{4}$" MIN. AMPLITUDE
2. EXISTING CONCRETE SURFACE INTERFACE WITH THE PROPOSED CONCRETE MUST BE FREE OF MATERIALS SUCH AS PAINT, OIL, CURING COMPOUND, BOND BREAKER, BITUMINOUS DAMPING, ETC.
3. THE EXISTING WINGWALLS ON THE SAFETY CURB SIDE ARE 24"± WIDE, WITH A BATTER BEGINNING AT AN UNKNOWN DEPTH. THE NOTCH SHOWN IN THE EXISTING WALL FOR THE PROPOSED REMOVABLE APPROACH SLAB PANEL IS NOT REQUIRED, BUT IS SHOWN TO PROVIDE DIRECTION SHOULD BATTER BE ENCOUNTERED WITHIN THE APPROACH SLAB DEPTH. THERE ARE NO REQUIREMENTS FOR THE WIDTH OF THE NOTCH. CLOSED CELL FOAM SHALL BE USED AT ALL CONTACT SURFACES BETWEEN THE PROPOSED APPROACH SLAB AND THE EXISTING WINGWALL.
4. ELEVATIONS OF THE TOP OF WINGWALL VARY WITH THE PROFILE GRADE. THE REMOVAL ELEVATIONS ARE SHOWN AT THE APPROXIMATE ELEVATIONS AT THE END OF EACH WINGWALL.



SECTION AT SIDEWALK (RECONSTRUCTED) SOUTHWEST AND SOUTHEAST WINGWALLS (1 / 7,8)

SCALE: 1" = 1'–0"

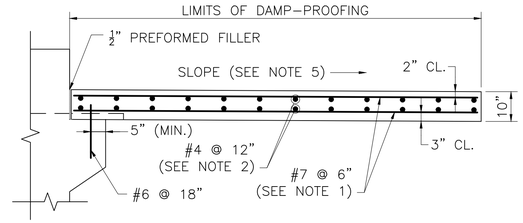


SECTION AT SAFETY CURB (RECONSTRUCTED) NORTHWEST AND NORTHEAST WINGWALLS (2 / 7,8)

SCALE: 1" = 1'–0"

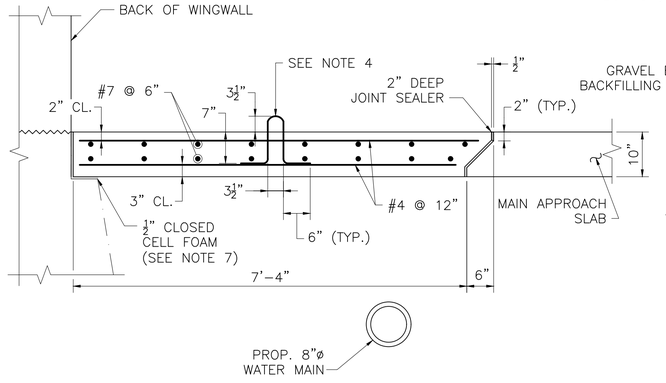
RECONSTRUCTION NOTES:

1. TYPE 1 PROTECTIVE SCREEN NOT SHOWN FOR CLARITY.
2. ALL CONCRETE FOR WINGWALL RECONSTRUCTION SHALL BE 5000PSI HP CEMENT CONCRETE.
3. THE THICKNESS OF THE EXISTING WINGWALLS ARE NOTED TO BE 17" ON THE SIDEWALK SIDE AND 24" ON THE SAFETY CURB SIDE. HOLD PROPOSED CURB LINE FOR RECONSTRUCTION. SHOULD THE PROPOSED WINGWALL RECONSTRUCTION NEED TO OVERHANG THE EXISTING WING TO MAINTAIN THE CURB LINE, MODIFY THE REINFORCEMENT AS SHOWN IN THE SIDEWALK RECONSTRUCTION SECTION 1 ABOVE. OVERHANG WIDTH MAY VARY.
4. DRILL AND GROUT OPERATIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE SPECIAL PROVISIONS. IN NO INSTANCE SHALL THE CLEAR DISTANCE FROM THE FACE OF THE EXISTING WING TO THE GROUT HOLE BE LESS THAN 3". SHOULD EXISTING GEOMETRY VARY MEASURABLY, THE ENGINEER SHALL BE CONTACTED FOR DIRECTION.



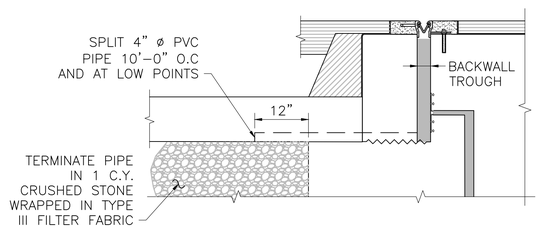
APPROACH SLAB DETAILS

SCALE: ½" = 1'–0"



REMOVABLE APPROACH SLAB PANEL

SCALE: ¾" = 1'–0"

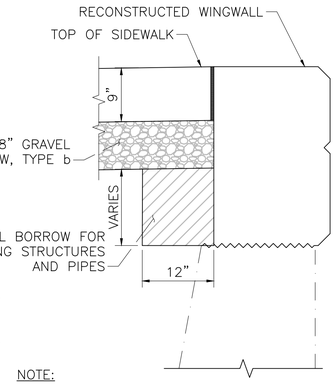


TROUGH DRAIN DETAILS

SCALE: ¾" = 1'–0"

APPROACH SLAB NOTES:

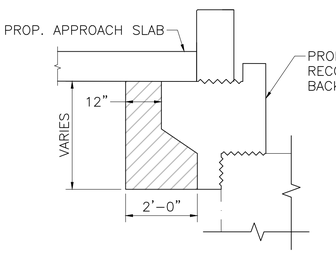
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO CENTER LINE OF CONSTRUCTION.
2. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
3. ALL REINFORCEMENT SHALL NOT BE COATED.
4. 2 LIFT HOOKS REQUIRED. USE #5 COATED REBAR AT QUARTER POINTS.
5. APPROACH SLABS SHALL SLOPE DOWN AWAY FROM THE APPROACH SLAB SEAT. SLOPE AT 2% ON THE EAST ABUTMENT AND 5% ON THE WEST ABUTMENT TO ACCOUNT FOR PROFILE GRADES.
6. APPROACH SLAB SHALL BE 5000 PSI HP CONCRETE.
7. APPROACH SLAB NEED NOT BE SEATED ON THE EXISTING WINGWALL IF THE EXISTING WINGWALL IS NOT BATTERED WITHIN THE APPROACH SLAB DEPTH. ½" CLOSED CELL FOAM SHALL BE PROVIDED BETWEEN ALL SURFACES OF THE APPROACH SLAB PANEL AND THE EXISTING WING REGARDLESS OF THE GEOMETRY ENCOUNTERED.



NOTE:
SIDEWALK SECTION SHOWN, ROADWAY SECTION SIMILAR.

LIMITS OF GRAVEL BORROW AT WINGWALL

SCALE: 1" = 1'–0"



NOTES:
1. HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES.

LIMITS OF GRAVEL BORROW AT CORBEL

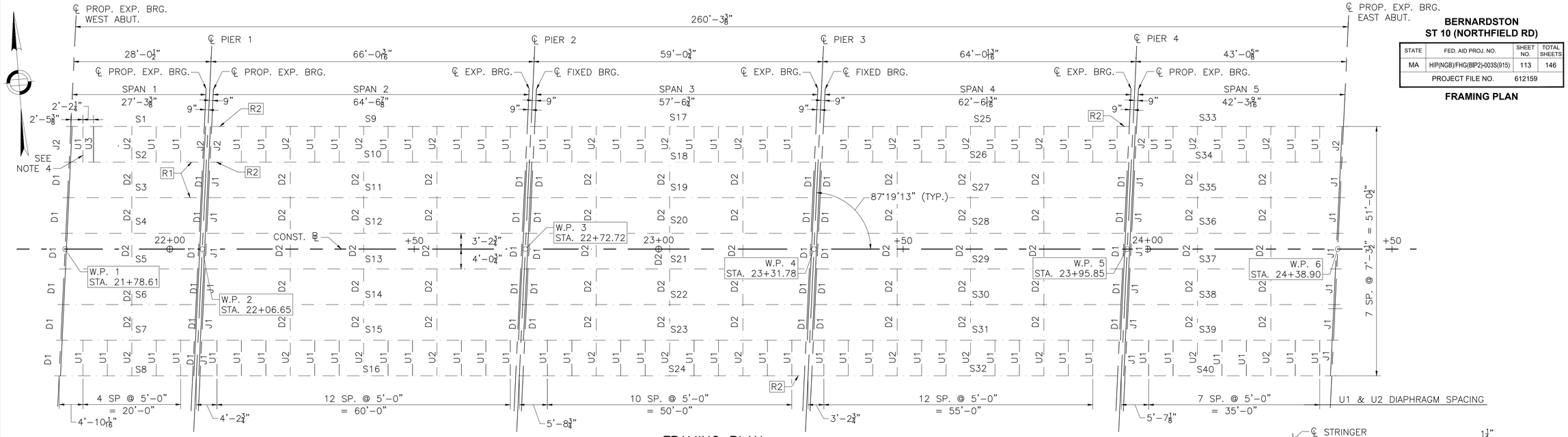
SCALE: ½" = 1'–0"

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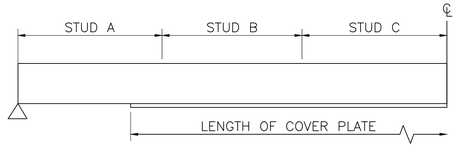
FRAMING PLAN

SCALE: 1" = 10'

NOTES:

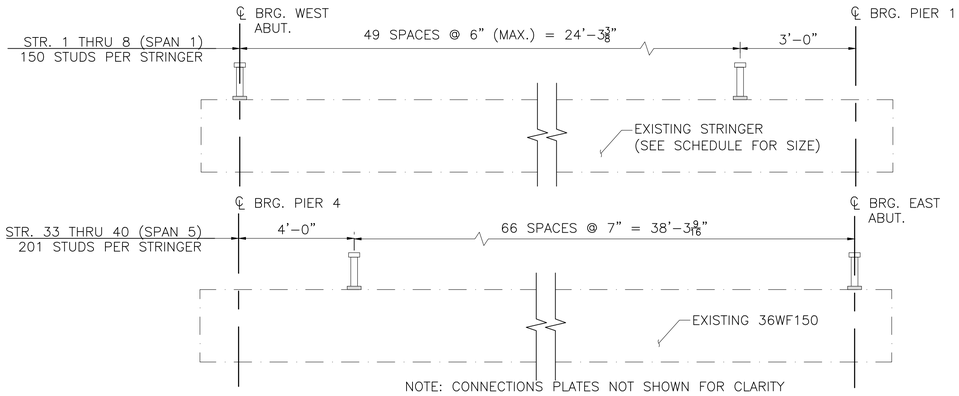
1. D1= 12C20.7 (TYP. PROP. END DIAPHRAGM REPAIR, SEE SHEET 14)
   D2= 18C42.7 (TYP. EXIST. INTERMEDIATE DIAPHRAGM)
   J1= PROP. TYP. END DIAPHRAGM (SEE SHEET 22)
   J2= TEMPORARY UTILITY SUPPORT FOR JACKING (SEE SHEET 22)
   U1= TYP. EXIST. UTILITY SUPPORT BETWEEN DIAPHRAGMS
   U2= TYP. EXIST. UTILITY SUPPORT AT DIAPHRAGMS
   U3= PROP. UTILITY SUPPORT (SEE SHEET 14)
2. ALL PIERS AND ABUTMENTS ARE PARALLEL.
3. R# DENOTES STEEL REPAIR, SEE SHEET 15.
4. AN EXISTING UTILITY SUPPORT, U1, CURRENTLY EXISTS 2'–5⅝"± FROM THE CENTERLINE OF BEARING AT THE WEST ABUTMENT BETWEEN STRINGERS 1 AND 2. THIS BRACKET IS TO BE REMOVED AND REPLACED WITH SUPPORT U3 AT THE INDICATED LOCATION TO ALLOW FOR PROPER SUPPORT OF THE UTILITY ELBOWS.

EXISTING STRINGER SCHEDULE			
SPAN	STRINGER NO.	SIZE	BOTTOM COVER PLATE
1	1, 8	36WF150	–
	2 – 7	27WF102	–
2	9, 16	36WF150	1" x 10 1/2" x 43'–0" L
	10 – 15	36WF150	1 1/4" x 10" x 45'–0" L
3	17, 24	36WF150	3/4" x 9" x 33'–0" L
	18 – 23	36WF150	3/4" x 10" x 35'–6" L
4	25, 32	36WF150	1" x 9" x 40'–6" L
	26 – 31	36WF150	1 1/8" x 10" x 41'–6" L
5	33, 40	36WF150	–
	34 – 39	36WF150	–



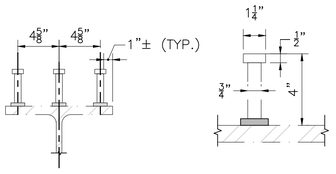
SHEAR CONNECTOR NOTES:

1. SHEAR CONNECTORS AND COVER PLATES ARE SYMMETRICAL ABOUT ℄ OF SPAN.
2. ⅞" DIAM. STUDS MAY BE SUBSTITUTED FOR ¾" DIAM. STUDS BY PROVIDING AN EQUIVALENT CROSS–SECTIONAL AREA AND ADJUSTING THE PITCH ACCORDINGLY.
3. EXISTING SHEAR CONNECTOR DETAILS ARE TAKEN FROM THE 1959 BRIDGE PLANS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL NOTE THAT NO EXISTING SHEAR CONNECTORS ARE DETAILED IN SPANS 1 AND 5. SHEAR CONNECTORS SHALL BE PROVIDED AS DETAILED HEREIN.
4. ANY DAMAGE TO THE EXISTING SHEAR CONNECTORS SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. INSTALL ACCORDING TO SHEAR CONNECTOR SCHEDULE.



PROPOSED STUD SHEAR CONNECTOR SPACING

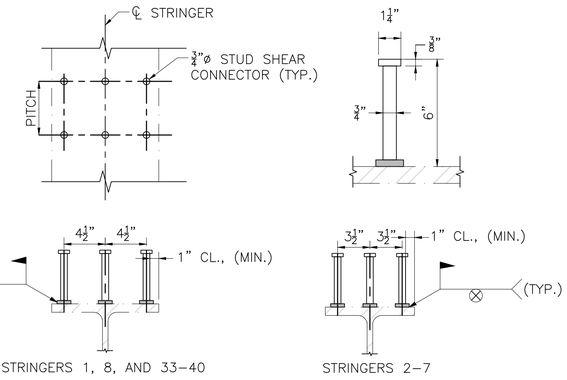
NOT TO SCALE



EXISTING STUD SHEAR CONNECTORS

NOT TO SCALE

EXISTING SHEAR CONNECTOR SCHEDULE								
SPAN	STRINGER NO.	SIZE	STUD A		STUD B		STUD C	
			LENGTH	PITCH	LENGTH	PITCH	LENGTH	PITCH
2	9, 16	3/4"	10'–0"	6"	10'–0"	7 1/2"	12'– 6 1/2"	10"
	10 – 15	3/4"	10'–0"	4 1/2"	10'–0"	6 1/2"	12'– 6 1/2"	9"
3	17, 24	3/4"	10'–0"	6"	10'–0"	7 1/2"	9'–0 1/2"	11"
	18 – 23	3/4"	10'–0"	5"	10'–0"	7"	9'–0 1/2"	10"
4	25, 32	3/4"	10'–0"	6"	10'–0"	7 1/2"	11'–6 1/2"	10 1/2"
	26 – 31	3/4"	10'–0"	4 1/2"	10'–0"	7"	11'–6 1/2"	9 1/2"



PROPOSED STUD SHEAR CONNECTOR

NOT TO SCALE

REPAIR NO.	BEAM NO.	SPAN NO.	LOCATION	REPAIR	BEAM SIZE	DEFICIENCY LENGTH (IN)	DEFICIENCY HEIGHT (IN)
R1	STR 2	1	PIER 1	WEB	27WF102	2'–0"	2'–1½"
R1	STR 3	1	PIER 1	WEB	27WF102	2'–0"	2'–1½"
R2	STR 9	2	PIER 1	WEB	36WF150	5'–6"	1'–4"
R2	STR 10	2	PIER 1	WEB	36WF150	2'–0"	2'–10"
R2	STR 24	3	PIER 3	WEB	36WF150	2'–0"	1'–0"
R2	STR 25	4	PIER 4	WEB	36WF150	1'–6"	2'–1"

NOTE: THE DEFICIENCIES PROVIDED IN THIS TABLE WERE MEASURED IN JUNE 2025 AND ARE INDICATIVE OF THE CORRODED CONDITION AT THAT TIME. LOSSES SHALL BE VERIFIED PRIOR TO FABRICATION OF BEAM END REPAIR PLATES – SEE SPECIFICATIONS SECTION 107.97.

BERNARDSTON
ST 10 (NORTHFIELD RD)

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MA	HIP(NGB)/FHG(BIP2)-003S(915)	113	146
PROJECT FILE NO.	612159		

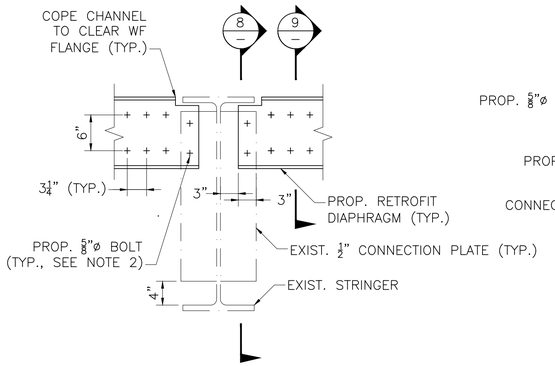
FRAMING PLAN

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

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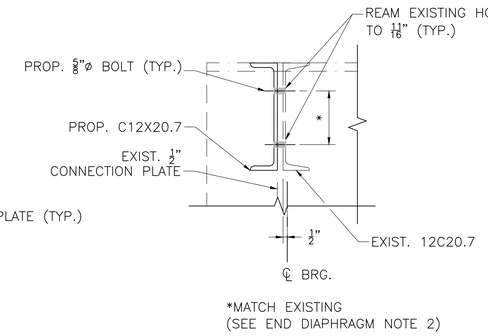
612159_BR13(B10018).DWG Plotted on 31-Jul-2026 2:23 PM

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D1 – PROPOSED END DIAPHRAGM RETROFIT

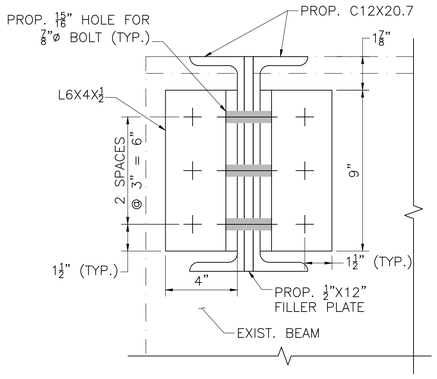
SCALE: 1" = 1'–0"



*MATCH EXISTING
(SEE END DIAPHRAGM NOTE 2)

SECTION 8 (–)

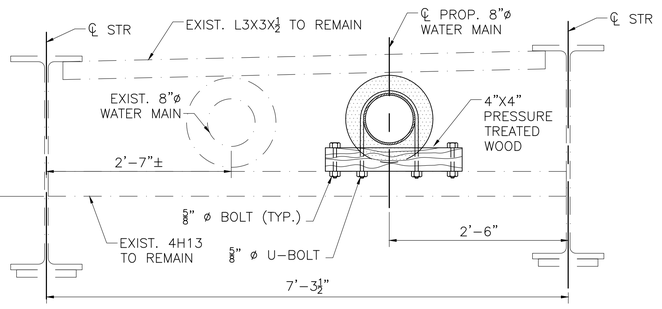
SCALE: 1½" = 1'–0"



NOTE: SEE END DIAPHRAGM NOTES 3 AND 4.

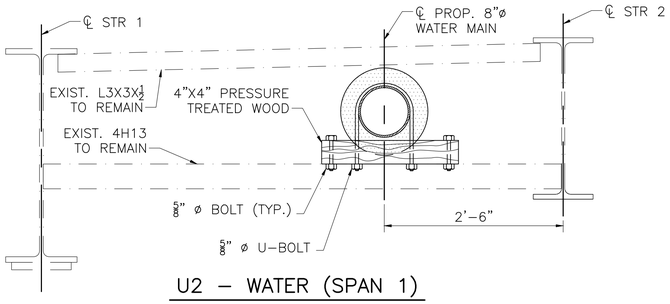
DETAIL A (–)

SCALE: 3" = 1'–0"



U2 – WATER (SPANS 2–5)

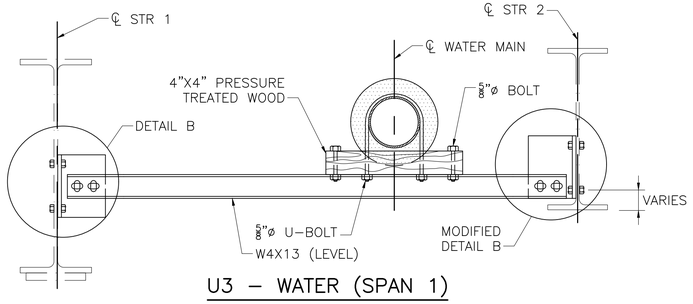
SCALE: 1" = 1'–0"



U2 – WATER (SPAN 1)

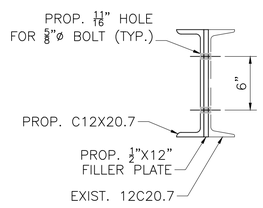
SCALE: 1" = 1'–0"

(EXISTING UTILITY NOT SHOWN FOR CLARITY)



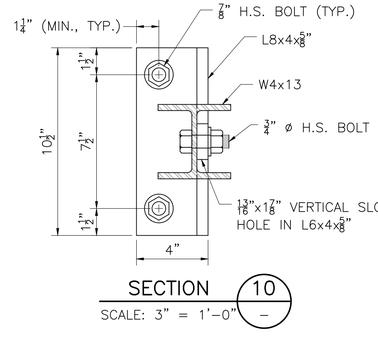
U3 – WATER (SPAN 1)

SCALE: 1" = 1'–0"



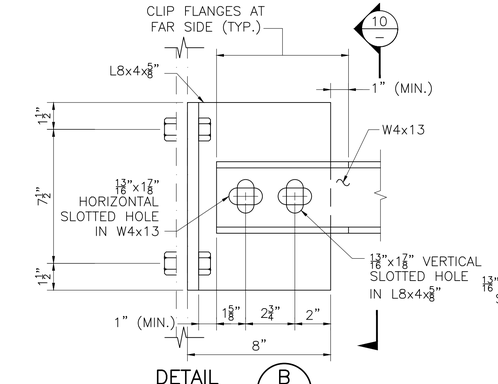
SECTION 9 (–)

SCALE: 1½" = 1'–0"



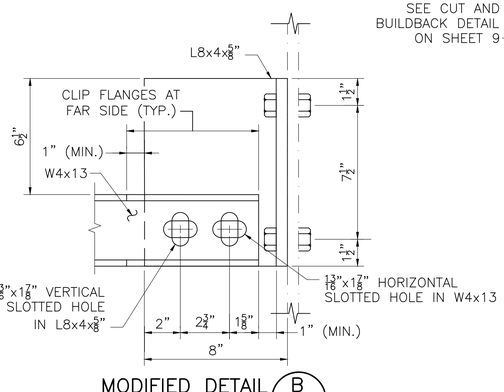
SECTION 10 (–)

SCALE: 3" = 1'–0"



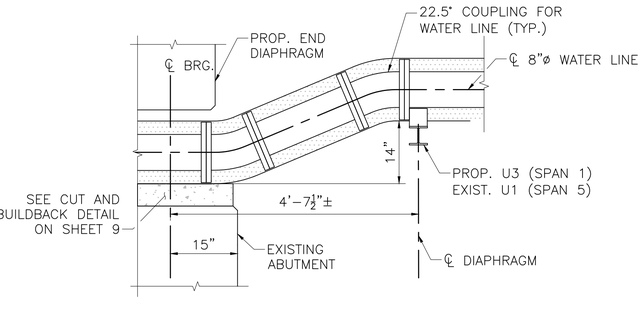
DETAIL B (–)

SCALE: 3" = 1'–0"



MODIFIED DETAIL B (–)

SCALE: 3" = 1'–0"



WATER LINE LAYOUT AT ABUTMENTS

SCALE: ¾" = 1'–0"

END DIAPHRAGM NOTES:

1. THE PROPOSED END DIAPHRAGM RETROFIT (D1) IS APPLICABLE AT ALL BEARING LINES WHERE EXISTING BEARINGS ARE TO REMAIN AND FOR SPAN 1 IN ALL BAYS EXCEPT THE WATER UTILITY BAY. ALL OTHER END DIAPHRAGMS SHALL BE REPLACED WITH THE PROPOSED JACKING DIAPHRAGMS J1 AND J2 AS SHOWN ON THE FRAMING PLAN.
2. LOCATIONS OF EXISTING BOLT HOLES ARE SHOWN ON EXISTING PLANS BUT NOT FIELD–VERIFIED DUE TO CONCRETE ENCASEMENT. CONTRACTOR TO LOCATE EXISTING BOLT HOLES AFTER REMOVAL OF ENCASEMENT FOR RE–USE.
3. EXISTING CHANNEL SHALL BE REPLACED IN KIND IF CONTRACTOR FINDS THAT THE EXISTING CHANNEL IS UNSUITABLE FOR RE–USE. THE CHANNEL SHALL BE CONSIDERED UNSUITABLE IF IT HAS MORE THAN 20% SECTION LOSS, AN UNACCEPTABLE LEVEL OF DAMAGE FROM CONCRETE REMOVAL, OR AS DIRECTED BY THE ENGINEER.
4. IF CONNECTION PLATE IS SIGNIFICANTLY DAMAGED OR DETERIORATED, THE CONNECTION PLATE SHALL BE REMOVED AND GROUND SMOOTH TO THE WEB AND L6X4 CONNECTION ANGLES AND NEW CHANNELS SHALL BE INSTALLED AS SHOWN IN DETAIL A.
5. EXISTING CHANNELS TO REMAIN SHALL BE CLEANED AND PAINTED, AND PROPOSED CHANNELS SHALL BE PAINTED, IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

UTILITY DIAPHRAGM NOTES:

1. CONTRACTOR TO PROCURE AND INSTALL UTILITY BRACKETS (U3) TO SUPPORT WATER UTILITY AT ELBOW.
2. CONTRACTOR SHALL COORDINATE THE VERTICAL LOCATION OF U3 UTILITY SUPPORT DIAPHRAGMS TO ENSURE THE WATER LINE ALIGNS WITH THE PROPOSED UTILITY ELEVATIONS BUT SHALL NOT EXCEED AN UNSUPPORTED LENGTH OF 10 FEET. ELEVATION AND LOCATION OF UTILITY SUPPORT U3 MAY VARY TO ALLOW FOR EXISTING UTILITY PROFILE CONFIGURATION AT ABUTMENT BLCKOUT.
3. CONTRACTOR TO FIELD LOCATE AND DRILL 15/16" DIA. HOLES IN EXISTING STRINGER WEB FOR PROPOSED UTILITY SUPPORT ANGLE CONNECTION.
4. ALL PROPOSED UTILITY SUPPORTS AND HARDWARE SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50. ALL STRUCTURAL STEEL AND FASTENERS SHALL BE HOT–DIP GALVANIZED.
5. ANY HOLES IN THE EXISTING 4H13 FROM THE EXISTING UTILITY SUPPORT CONNECTION SHALL BE FILLED WITH BOLTS UPON REMOVAL OF THE EXISTING UTILITY.
6. MEANS AND SEQUENCING OF TEMPORARY UTILITY SUPPORTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE COORDINATED WITH THE UTILITY PROVIDERS.
7. TEMPORARY SUPPORTS, IF NEEDED, MAY BE CLAMPED TO BOTTOM FLANGES, BUT SHALL NOT BE WELDED OR BOLTED TO ANY EXISTING STEEL TO REMAIN.
8. TEMPORARY SUPPORTS SHALL NOT RESULT IN AN UNSUPPORTED LENGTH EXCEEDING 10 FEET.

UTILITY INSTALLATION NOTES:

1. CONTRACTOR SHALL SUBMIT THE INTENDED SEQUENCE AND METHODS OF INSTALLATION OF THE WATER UTILITY FOR APPROVAL. SEE SPECIAL PROVISIONS ITEM 302.081

BERNARDSTON
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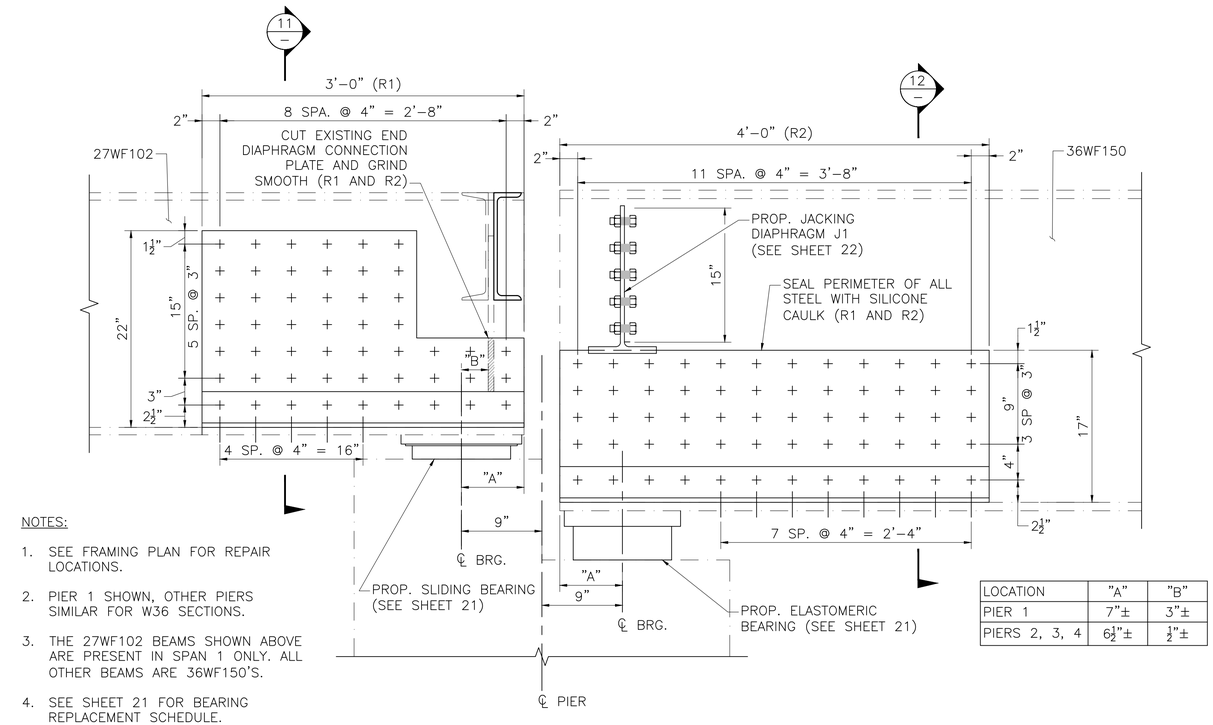
BEAM DETAILS (1 OF 2)

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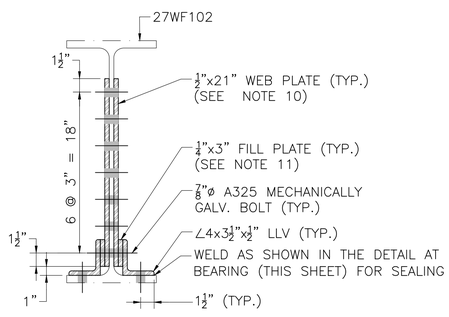
NOTES:

1. SEE FRAMING PLAN FOR REPAIR LOCATIONS.
2. PIER 1 SHOWN, OTHER PIERS SIMILAR FOR W36 SECTIONS.
3. THE 27WF102 BEAMS SHOWN ABOVE ARE PRESENT IN SPAN 1 ONLY. ALL OTHER BEAMS ARE 36WF150'S.
4. SEE SHEET 21 FOR BEARING REPLACEMENT SCHEDULE.

LOCATION	"A"	"B"
PIER 1	7"±	3"±
PIERS 2, 3, 4	6½"±	½"±

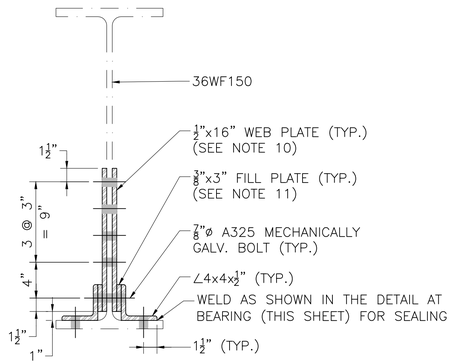
BEAM END REPAIR DETAIL (R1 AND R2)

SCALE: 1½" = 1'–0"



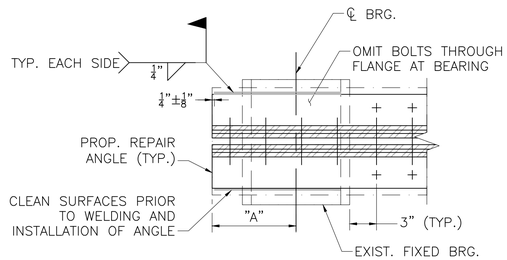
SECTION 11 / —

SCALE: 1½" = 1'–0"



SECTION 12 / —

SCALE: 1½" = 1'–0"



NOTE: EXISTING BEARING CONDITION SHOWN. PROPOSED BEARING CONDITION SIMILAR.

REPAIR ANGLE DETAIL AT BEARING

SCALE: 1½" = 1'–0"

NOTE: IF EXISTING BOTTOM FLANGE IS LESS THAN ⅜" THICK AT THE WELD LOCATION, CONTACT THE ENGINEER FOR DIRECTION.

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BEAM DETAILS (2 OF 2)

BEAM END REPAIR NOTES:

1. REMOVE END DIAPHRAGM CONCRETE AND REINFORCING AND COMPLETE DIAPHRAGM REPLACEMENT OR RETROFIT AS REQUIRED DEPENDING ON LOCATION. CUT WEB PLATE STIFFENER AND GRIND SMOOTH.
2. CLEAN THE CONTACT SURFACES OF EXISTING STEEL IN ACCORDANCE WITH SPECIAL PROVISIONS. THE CONTACT SURFACES SHALL BE FREE OF PAINT, OIL, AND GREASE, AND SHALL PROVIDE THE NECESSARY SLIP RESISTANCE FOR CLASS A SLIP CRITICAL CONNECTIONS.
3. ENGINEER TO INSPECT CLEANED REPAIR AREA AND VERIFY REPAIR LIMITS BASED ON CONDITIONS EXPOSED BY CLEANING.
4. THE BEAM SHALL BE INSPECTED FOR DAMAGE DUE TO CONTRACTOR OPERATIONS. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTORS' EXPENSE.
5. IN LOCATIONS WHERE HEAVY DETERIORATION HAS OCCURRED OR AS DIRECTED BY THE ENGINEER, EPOXY REPAIR FAIRING COMPOUND SHALL BE APPLIED OVER THE PRIME COAT AS FOLLOWS:
   A. THE EPOXY REPAIR COMPOUND SHALL BE APPLIED TO THE DETERIORATED AREAS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL THE METHODS, PROCEDURES, AND MATERIALS TO BE USED FOR THE WORK.
   B. THE REPAIR COMPOUND SHALL ONLY BE APPLIED TO THOSE OF THE EXISTING STEEL THAT EXHIBIT SEVERE SECTION LOSS TO COMPLETELY FILL THE IRREGULARITIES IN THE EXISTING STEEL SURFACES SUCH THAT NO VOIDS REMAIN BETWEEN THE PLIES OF THE EXISTING STEEL AND THE PROPOSED STRENGTHENING STEEL IN THE FINAL REPAIRED CONDITION.
   C. THE PROPOSED REPAIR STEEL SHALL BE PROPERLY POSITIONED AND BROUGHT INTO FIRM CONTACT WITHIN THE WORKING TIME LIMITS OF THE EPOXY REPAIR COMPOUND. THE REPAIR STEEL SHALL BE SECURED IN PLACE USING POSITIONING BOLTS TENSIONED TO A SNUG TIGHT CONDITION AND CLAMPS OR OTHER MECHANICAL MEANS TO BRING THE PLIES OF THE EXISTING STEEL AND NEW STEEL INTO FIRM CONTACT. WELDING IS NOT ALLOWED.
   D. ONCE THE PROPOSED STEEL HAS BEEN SECURED INTO POSITION WITH THE POSITIONING BOLTS, AND THE EPOXY COMPOUND HAS CURED, THE REMAINING H.S BOLTS SHALL BE INSTALLED FOLLOWING THE PROCEDURE OUTLINED IN THE GENERAL NOTES.
   E. EPOXY COMPOUND FOR STRUCTURAL STEEL REPAIRS SHALL BE A SOLVENT FREE, MOISTURE TOLERANT, EPOXY PASTE ADHESIVE SYSTEM. THE EPOXY PASTE SHALL BE DEVELOPED SPECIFICALLY FOR FILLING, SMOOTHING, SEALING, OR FAIRING APPLICATIONS ON METALS. THE PASTE SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S LATEST WRITTEN INSTRUCTIONS. AN ACCEPTABLE PRODUCT SHALL BE ONE OF THE FOLLOWING OR AN APPROVED EQUAL: ITW PHILADELPHIA RESINS REPAIR COMPOUND MANUFACTURED BY: ITW PHILADELPHIA RESINS, SIKADUR 31, HI–MOD GEL MANUFACTURED BY: SIKA CORPORATION, DEVCON PLASTIC STEEL PUTTY (A) MANUFACTURED BY: ITW DEVCON, FX–738 METAL FILLED EPOXY MANUFACTURED BY: SIMPSON STRONG–TIE.
6. STEEL ELEMENTS FOR REPAIR SHALL BE BOLTED TO EXISTING STEEL SURFACES.
7. STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 36. IT SHALL BE CONSIDERED A MAIN MEMBER AND CONFORM TO THE CHARPY V–NOTCH REQUIREMENTS OF AASHTO M270 ZONE T2.
8. CLEAN AND PAINT REPAIRED AREA IN ACCORDANCE WITH SUBSECTION 961 OF THE STANDARD SPECIFICATIONS, INCIDENTAL TO ITEM 961.201.
9. SEAL PERIMETER OF ALL STEEL WITH SILICONE CAULK.
10. MINIMUM PLATE HEIGHT PROVIDED. INSPECTIONS SHALL BE COMPLETED AFTER AWARD AND PRIOR TO FABRICATION TO DETERMINE LOSSES THAT MAY HAVE OCCURRED AFTER JULY 2025.
11. FILL PLATE SIZE IS BASED ON AN ASSUMED k_1 VALUE FROM HISTORIC SHAPE GEOMETRY. GIVEN THE VARIABILITY IN MANUFACTURING AMONG HISTORICAL STEEL FABRICATORS, k_1 MAY VARY. THE ½" PLATE SPECIFIED IS ADEQUATE FOR k_1 VALUES UP TO 1⅜". FILL PLATE THICKNESS SHALL BE INCREASED AS NEEDED FOR FIELD MEASUREMENTS OF k_1 EXCEEDING THE ASSUMED VALUE. CONTRACTOR SHALL FIELD VERIFY FILLET PRIOR TO ORDERING FILL PLATE.
12. CONTRACTOR TO COORDINATE BEAM END REPAIRS WITH JACKING AND SHORING OPERATIONS FOR BEARING REPLACEMENTS. PROPOSED JACKING DIAPHRAGM SHALL BE REMOVED FROM BETWEEN BEAMS 9 AND 10 PRIOR TO BEAM END REPAIR.

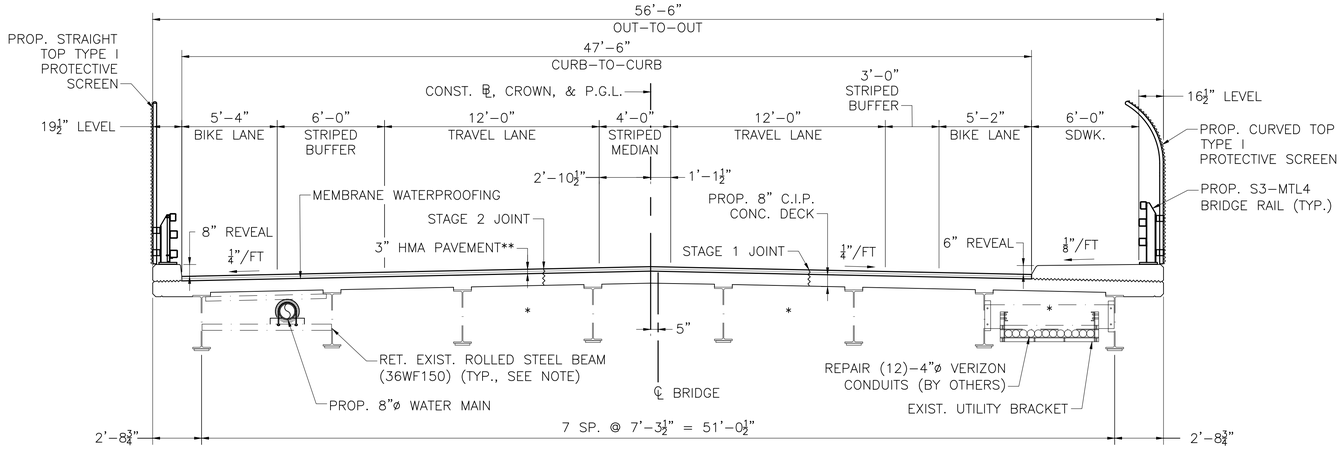
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TRANSVERSE SECTION (LOOKING UPSTATION)

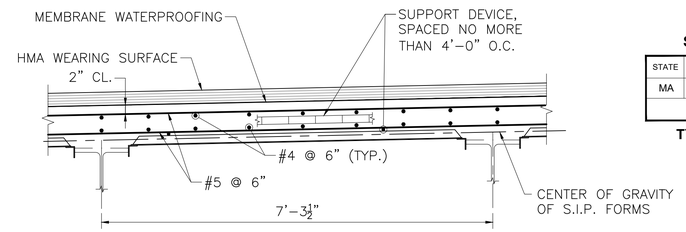
SCALE: ¼" = 1'–0"

* DENOTES BAY WHERE S.I.P. FORM IS NOT PERMITTED. USE TEMPORARY FORM WORK THAT SHALL BE REMOVED AFTER CURING OF CONCRETE DECK.

** 1½" SUPERPAVE BRIDGE SURFACE COURSE (SSC–B–9.5–P) OVER 1½" SUPERPAVE BRIDGE PROTECTIVE COURSE (SPC–B–9.5–P) OVER MEMBRANE WATERPROOFING

NOTE:

TYPICAL SECTION SHOWN FOR SPANS 2–5. SPAN 1 SECTION IS THE SAME, WITH EXCEPTION OF THE SHORTER 27WF INTERIOR BEAMS LOCATED IN THAT SPAN.

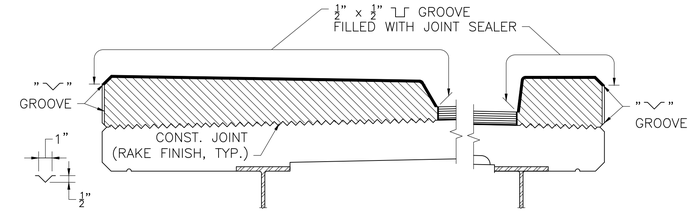


NOTES:

1. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ℄ OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCTION.
2. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.
3. THE FINISHED SURFACE OF BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.

TYPICAL DECK REINFORCEMENT

SCALE: ¾" = 1'–0"



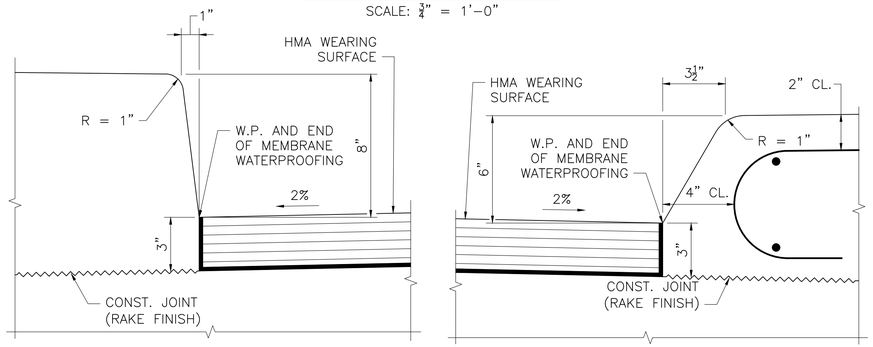
SIDEWALK SAFETY CURB

NOTES:

1. ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO FACE OF CURB.

PARAFFIN JOINT DETAILS

SCALE: ¾" = 1'–0"

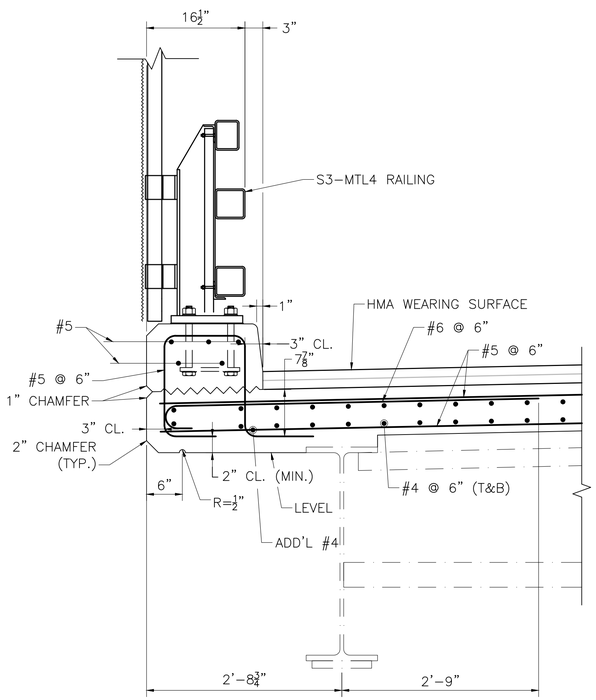


FACE OF SAFETY CURB DETAILS

SCALE: 3" = 1'–0"

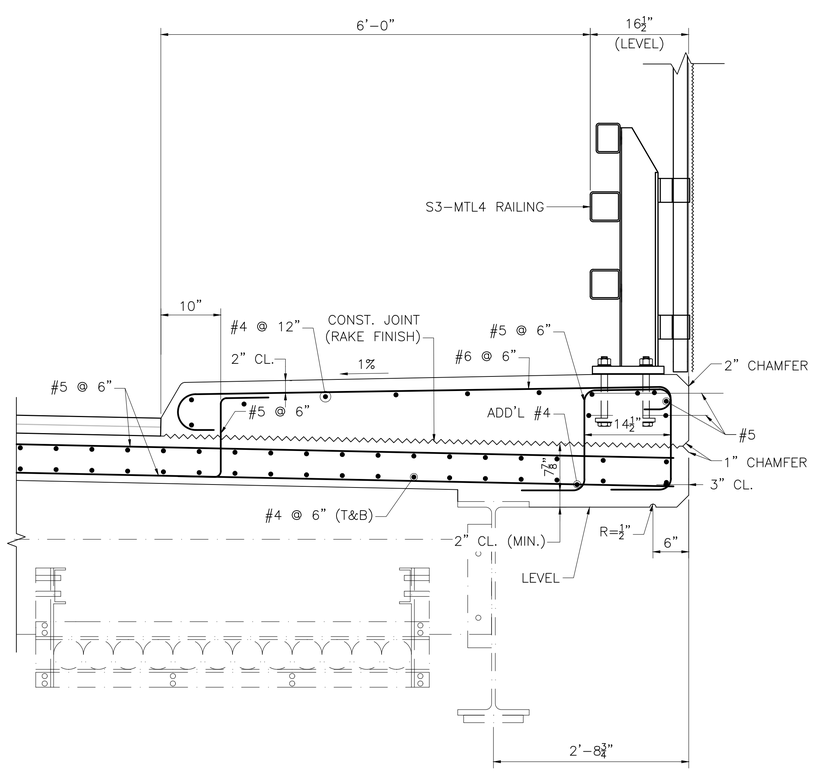
FACE OF SIDEWALK CURB DETAILS

SCALE: 3" = 1'–0"



SECTION THROUGH SAFETY CURB

SCALE: 1" = 1'–0"



SECTION THROUGH SIDEWALK

SCALE: 1'–0" = 1'–0"

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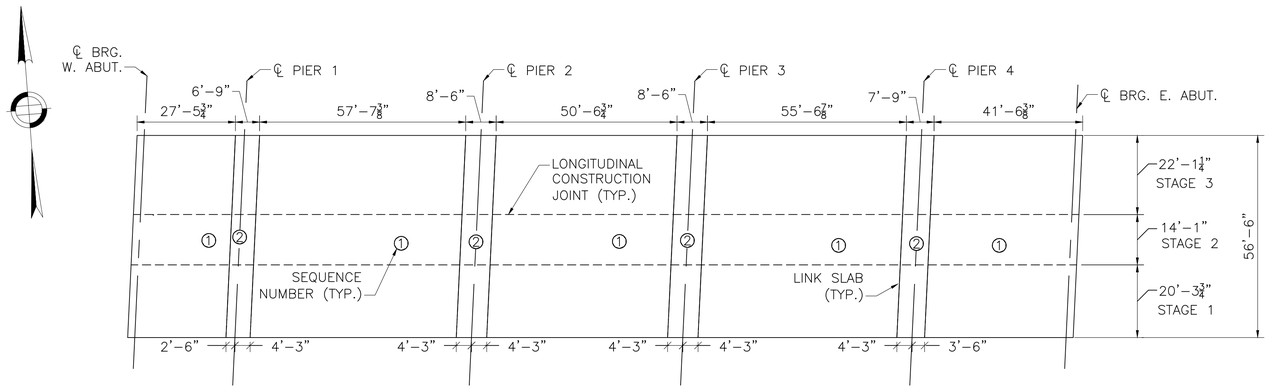
TYPICAL DECK SECTIONS

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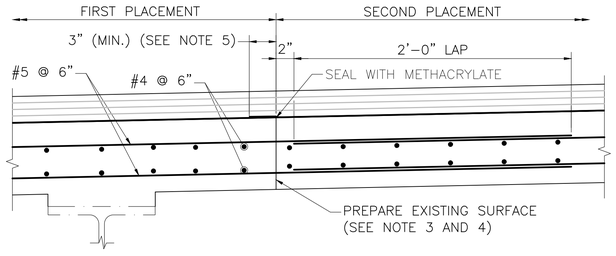


DECK PLACEMENT SEQUENCE

NOT TO SCALE

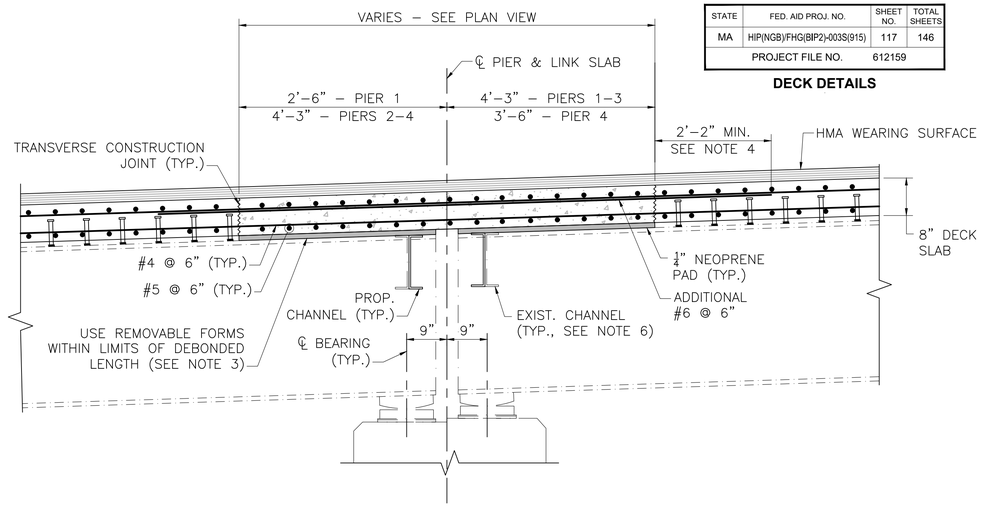
PLACEMENT SEQUENCE NOTES:

1. BRIDGE DECK SLAB SHALL BE PLACED IN ACCORDANCE WITH THE PLACEMENT SEQUENCE SHOWN ON THE CONSTRUCTION DRAWINGS.
2. THE CONTRACTOR MAY PLACE THE ENTIRE DECK IN A GIVEN SPAN IN ONE CONTINUOUS OPERATION WITHOUT CONSTRUCTION JOINTS WITH THE APPROVAL OF THE ENGINEER, PROVIDED THAT THE INITIAL SET (f'_c = 500 PSI) OF ALL CONCRETE DOES NOT OCCUR UNTIL AFTER THE COMPLETION OF THE PLACEMENT. AN APPROVED RETARDER SHALL BE USED, WHEN NECESSARY, TO RETAIN THE WORKABILITY OF THE CONCRETE. IF MULTIPLE PLACEMENTS ARE MADE, A MINIMUM OF 72 HOURS SHALL PASS BETWEEN PLACEMENTS.
3. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
4. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS MAY BE USED. THE EPOXY ADHESIVE SHALL CONFORM TO AASHTO M 235 TYPE V AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. DURING THE FIRST PLACEMENT AT DECK JOINTS, THE LAST 6" OF MEMBRANE WATERPROOFING SHALL BE PROTECTED SO A 6" OVERLAP CAN BE PLACED DURING SECOND PLACEMENT. THIS APPLIES TO ALL PHASES OF THE DECK POUR. WHERE SPACE IS LIMITED, A 3" OVERLAP IS PERMITTED. ALL LOCATIONS WITH ADEQUATE SPACE SHALL HAVE A 6" OVERLAP. SEE LONGITUDINAL CONSTRUCTION JOINT DETAIL.
6. DOWEL BAR SPLICERS SHALL BE USED WHERE USE OF LAP SPLICES IS NOT FEASIBLE.
7. S.I.P. FORMS SHALL NOT BE USED WITHIN THE LIMITS OF THE LINK SLAB.
8. SEQUENCE NUMBERS 1 AND 2 ARE SHOWN IN THIS PLAN VIEW FOR STAGE 2 OF CONSTRUCTION, BUT SHALL BE APPLICABLE TO ALL STAGES.



LONGITUDINAL CONSTRUCTION JOINT DETAIL IN DECK SLAB

SCALE: 1½" = 1'-0"

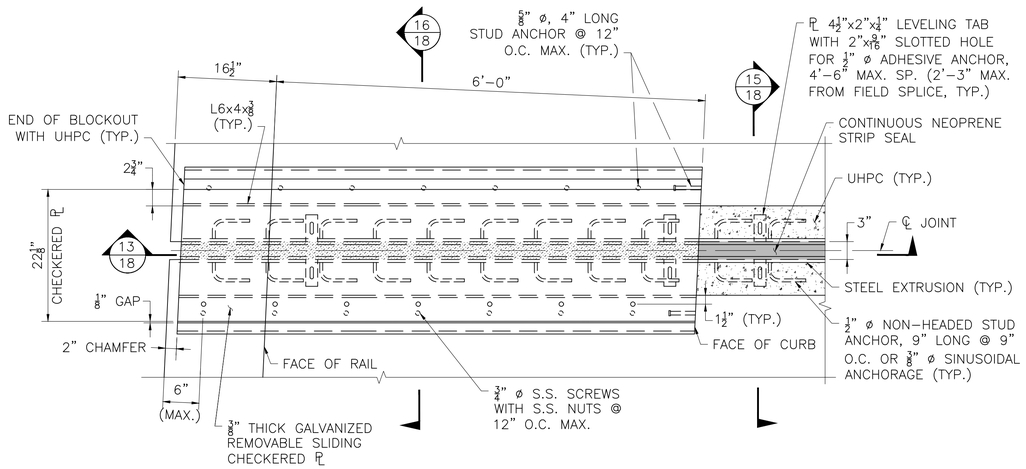


TYPICAL LINK SLAB SECTION

SCALE: ¾" = 1'-0"

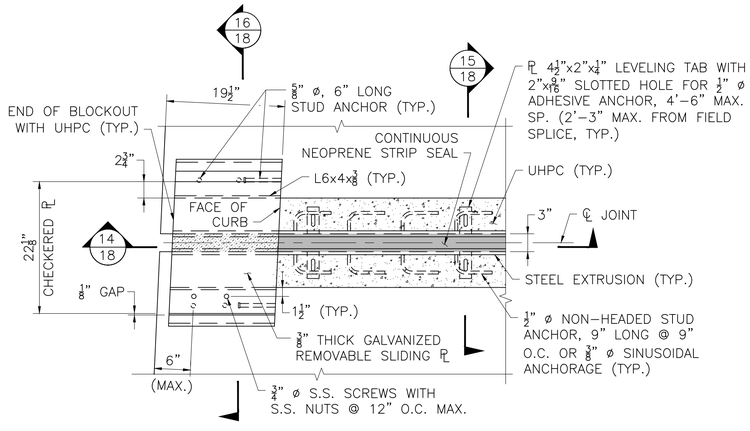
LINK SLAB NOTES:

1. ANY EXISTING SHEAR CONNECTORS ARE TO BE REMOVED WITHIN THE DEBONDED LENGTH. SEE ITEM 113.1 OF THE SPECIAL PROVISIONS FOR REMOVAL PROCEDURE. SHEAR CONNECTORS ARE NOT TO BE PLACED WITHIN THIS LENGTH.
2. ¼" MAX. THICK PLANE NEOPRENE PAD TO BE PLACED ON TOP SURFACE OF ALL FLANGES AND CONCRETE END DIAPHRAGMS PRIOR TO PLACEMENT OF THE LINK SLAB WITHIN THE DEBONDED LENGTH.
3. OMIT SHEAR CONNECTORS WITHIN THE FULL LENGTH OF THE LINK SLAB (DEBONDED LENGTH).
4. STAGGER LAP SPLICES SUCH THAT NO MORE THAN 50% OF LAP SPLICES OCCUR AT A SINGLE TRANSVERSE LOCATION.
5. CENTER ADDITIONAL #6 BARS IN LINK SLAB BETWEEN THE TYPICAL LONGITUDINAL REINFORCEMENT (#4 @ 6").
6. AFTER REMOVAL OF CONCRETE ENCASING THE EXISTING DIAPHRAGM CHANNELS, THE CHANNELS SHALL BE INSPECTED FOR SECTION LOSS. IF THE CHANNELS ARE SUITABLE FOR RE-USE, THE DIAPHRAGMS SHALL BE RETROFITTED WITH A STEEL CHANNEL. IF SEVERE LOSS IS NOTED, THE DIAPHRAGMS SHALL BE REPLACED AS SHOWN IN DETAIL A OF SHEET 14. AT PIER 1 AND AT PIER 4 FOR SPAN 5, THE EXISTING CHANNEL WILL BE REPLACED WITH THE PROPOSED JACKING DIAPHRAGM. SEE FRAMING PLAN FOR APPLICABLE LOCATIONS.



PLAN – STRIP SEAL JOINT AT SIDEWALK

SCALE: 1" = 1'-0"



PLAN – STRIP SEAL JOINT AT SAFETY CURB

SCALE: 1" = 1'-0"

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	117	146
PROJECT FILE NO.	612159		

DECK DETAILS

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

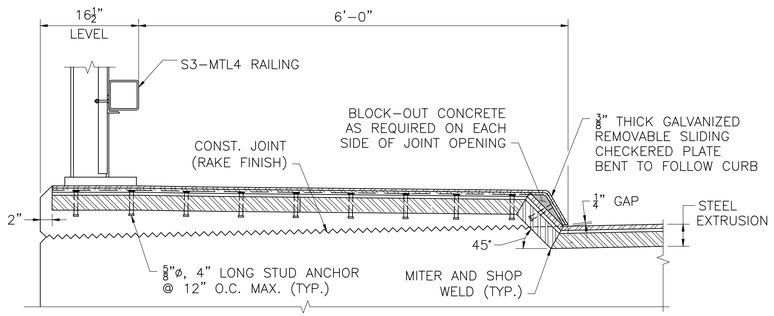
USE ONLY PRINTS OF LATEST DATE

612159_BR17-19(B10018).DWG Plotted on 31-Jul-2026 2:24 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

BERNARDSTON
ST 10 (NORTHFIELD RD)

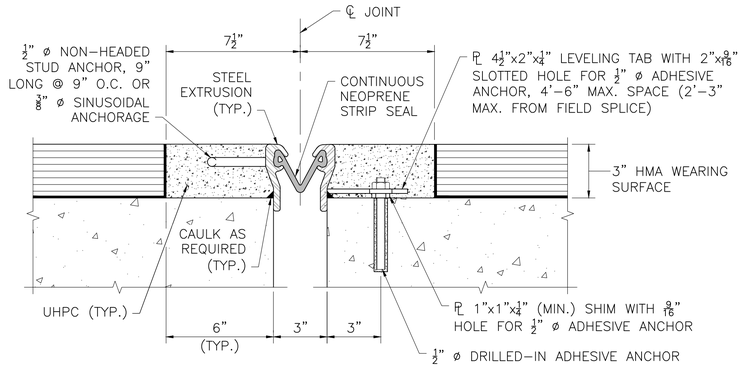
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	118	146
	PROJECT FILE NO. 612159		

STRIP SEAL JOINT DETAILS



(THRU SIDEWALK)

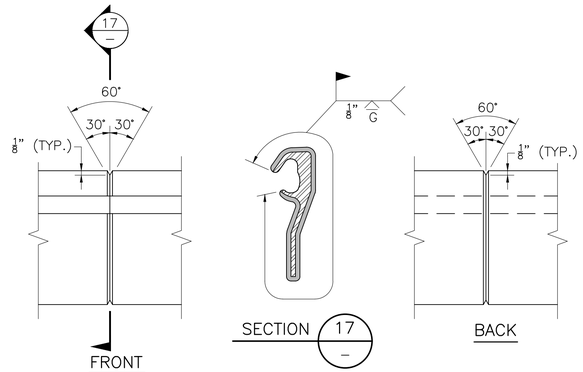
SECTION 13 / 17
SCALE: 1" = 1'-0"



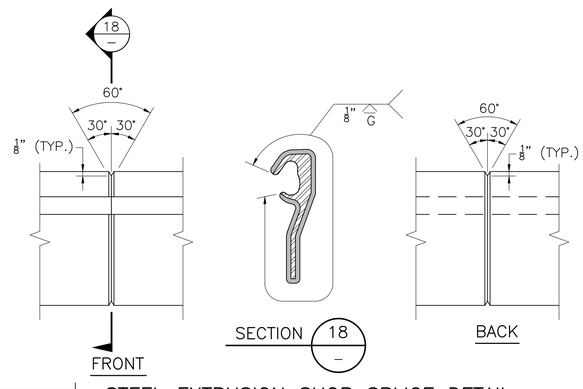
AT ANCHOR LOCATION AT SUPPORT LOCATION

SECTION 15 / 17
SCALE: 3" = 1'-0"

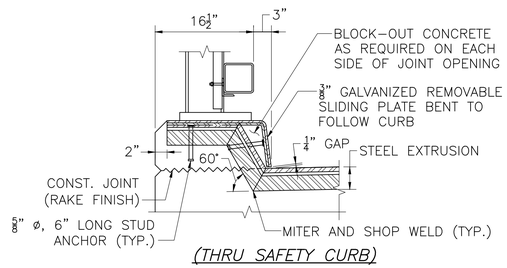
ACCEPTABLE STRIP SEAL JOINTS		
MANUFACTURER	STEEL EXTRUSION MODEL	NEOPRENE STRIP SEAL MODEL
WATSON BOWMAN ACME	TYPE R	SE-400
D.S. BROWN	TYPE SSCM2	A2R-400



STEEL EXTRUSION FIELD SPLICE DETAIL
NOT TO SCALE

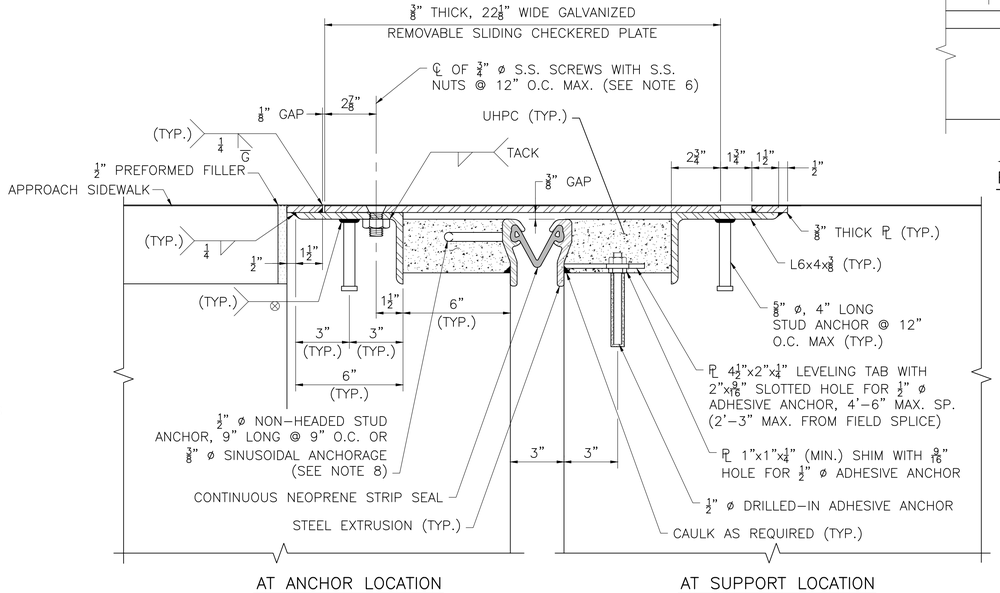


STEEL EXTRUSION SHOP SPLICE DETAIL
NOT TO SCALE



(THRU SAFETY CURB)

SECTION 14 / 17
SCALE: 1" = 1'-0"



AT ANCHOR LOCATION AT SUPPORT LOCATION

SECTION 16 / 17
SCALE: 3" = 1'-0"

NOTES:

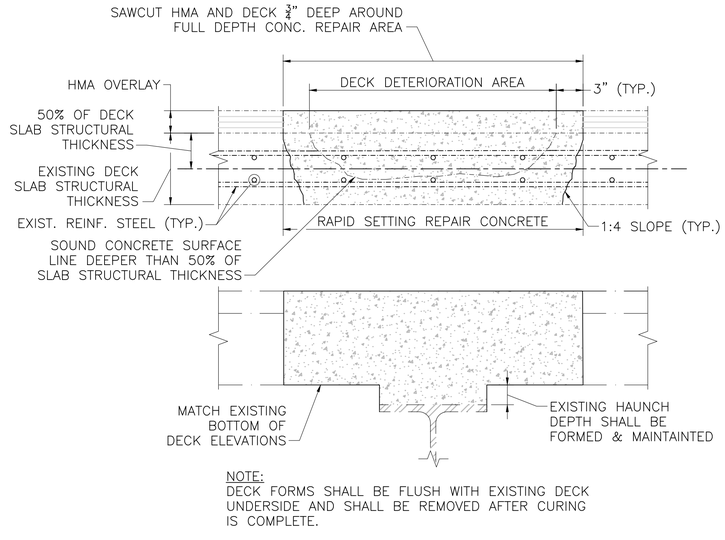
1. THE DETAILS SHOWN HERE ARE INTENDED AS A GENERAL GUIDE FOR A TYPICAL GLANDULAR TYPE STRIP SEAL JOINT SYSTEM. SHOP DRAWINGS WHICH INCLUDE DETAILS OF THE GLAND SHAPE, STEEL EXTRUSION SHAPE, WELDING PROCEDURE SPECIFICATIONS, ANCHOR ARRANGEMENT, TEMPERATURE CORRECTION REQUIREMENTS, AND TEMPORARY SUPPORT DETAILS SHALL BE SUBMITTED FOR APPROVAL OF THE ENGINEER ACCORDING TO THE STANDARD SPECIFICATIONS.
2. ALL STRUCTURAL STEEL COMPONENTS SHALL CONFORM TO AASHTO M270 GRADE 36 OR GRADE 50. AFTER THE COMPLETION OF ALL WELDING OPERATIONS STEEL PLATE ASSEMBLIES SHALL BE HOT-DIP GALVANIZED.
3. UHPC BLOCKOUT SHALL BE SANDBLASTED AND CLEANED WITH COMPRESSED OIL-LESS AIR PRIOR TO CASTING UHPC. UHPC HEADERS SHALL BE FORMED AND CAST TO ALLOW THE HEADERS TO MOVE INDEPENDENTLY WITH THEIR RESPECTIVE BRIDGE SPAN UNTIL THE UHPC IS FULLY CURED. UHPC MAY BE SUBSTITUTED WITH ELASTOMERIC CONCRETE WITH APPROVAL OF THE ENGINEER.
4. NEOPRENE STRIP SEAL SHALL BE BONDED TO STEEL EXTRUSION WITH APPROVED ADHESIVE.
5. INSTALL CONTINUOUS NEOPRENE STRIP SEAL IN THE FIELD. SPLICING OF SEAL IS NOT PERMITTED. TEMPORARY SEAL SHALL BE REQUIRED FOR EACH STAGE OF CONSTRUCTION.
6. PRIOR TO PLACEMENT OF SIDEWALK/SAFETY CURB CONCRETE, LUBRICATE STAINLESS STEEL SCREWS WITH GRAPHITE AND SET SECURELY IN PLACE. MACHINE SCREWS TO BE TEMPORARILY REMOVED AFTER CONCRETE HAS ATTAINED FINAL SET.
7. NO WELDING OF PORTIONS OF STEEL EXTRUSIONS IN DIRECT CONTACT WITH NEOPRENE SEAL SHALL BE PERMITTED.
8. THE STUD ANCHOR OR SINUSOIDAL ANCHORAGE SHALL BE OMITTED AT THE SAFETY CURB.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

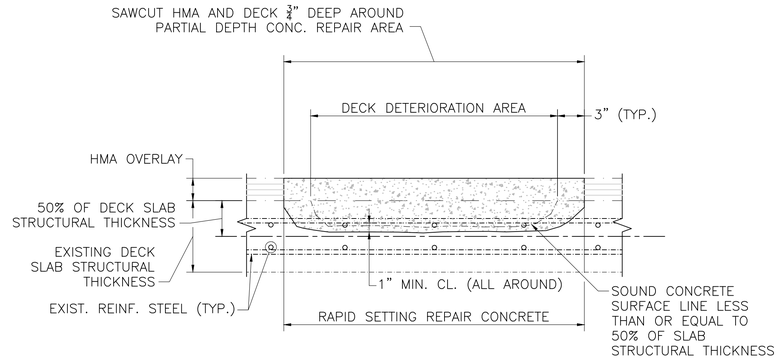
USE ONLY PRINTS OF LATEST DATE

612159_BR17-19(B10018).DWG Plotted on 31-Jul-2026 2:24 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

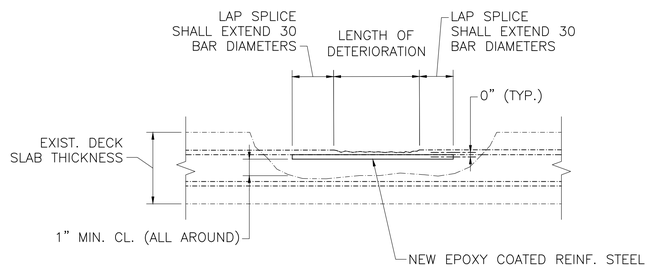


NOTE:
DECK FORMS SHALL BE FLUSH WITH EXISTING DECK UNDERSIDE AND SHALL BE REMOVED AFTER CURING IS COMPLETE.

FULL DEPTH DECK REPAIR DETAIL
SCALE: 1½" = 1'–0"

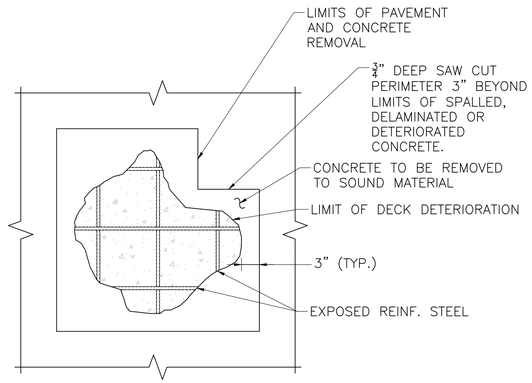


PARTIAL DEPTH DECK REPAIR DETAIL
SCALE: 1½" = 1'–0"

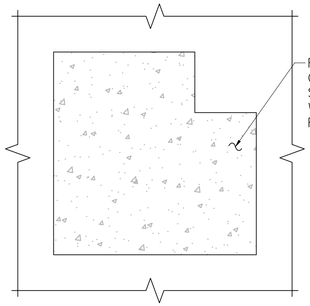


NOTE:
TOP OF DECK DETERIORATED REINFORCING STEEL SHOWN, UNDERSIDE OF DECK SIMILAR.

TYPICAL DETERIORATED REINFORCEMENT STEEL REPAIR
SCALE: 1½" = 1'–0"



LIMITS OF REPAIR AREA
SCALE: 1" = 1'–0"



REPAIR
SCALE: 1" = 1'–0"

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	119	146
PROJECT FILE NO. 612159			

DECK PATCH REPAIR DETAILS

TEMPORARY BRIDGE DECK REPAIR NOTES:

1. REPAIR AREAS SHALL BE LIMITED TO AREAS NECESSARY TO FACILITATE THE INSTALLATION OF THE TEMPORARY BOLT–DOWN BARRIERS DURING STAGED CONSTRUCTION. REPAIRS SHALL BE MADE IN ACCORDANCE WITH THE DETAILS ON THIS SHEET AND PER THE BARRIER MANUFACTURERS RECOMMENDATIONS.
2. SPALLED, DELAMINATED, AND DETERIORATED CONCRETE DECK AREAS SHALL BE REPAIRED USING AN APPROVED RAPID SETTING BAGGED CONCRETE PRODUCT, RAPID SETTING LOW PERMEABILITY MOBILE MIXED CONCRETE, OR HIGH EARLY STRENGTH READY MIX CONCRETE AS DIRECTED BY THE ENGINEER.
3. 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.
4. 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.
5. 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 WHENEVER POSSIBLE, BUT SHALL IN NO CASE BE LESS THAN 15 MINUTES.
6. 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.
7. COORDINATE LOCATIONS OF REPAIR AREAS AND EXPECTED BOLT DOWN ANCHOR LOCATIONS TO ENSURE ALL ANCHORS ARE LOCATED AT LEAST 3" FROM THE EDGE OF THE REPAIR SAWCUT LINE.
8. SIP FORMS SHALL NOT BE USED FOR ANY CONCRETE DECK REPAIRS.
9. TEMPORARY SHIELDING SHALL BE INSTALLED UNDERNEATH REPAIR AREAS FOR THE DURATION OF THE REPAIR.

BRIDGE DECK REPAIR SEQUENCE NOTES:

1. IN AREAS WHERE ADEQUATE STRENGTH CANNOT BE ACHIEVED FOR TEMPORARY BOLT–DOWN ANCHORS, THE CONTRACTOR SHALL REMOVE THE DETERIORATED EXISTING PAVEMENT, WATERPROOFING MEMBRANE, CONCRETE AND/OR DECK REPAIR PATCHES FROM THE BRIDGE DECK. THE LIMITS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONCRETE EXCAVATION.
2. AFTER EXCAVATION, CLEAN AND RE–TIE THE EXPOSED STEEL REINFORCEMENT AS APPLICABLE AND INSTALL NEW REINFORCEMENT IF NEEDED AND AS DIRECTED BY THE ENGINEER.
3. MIX AND PLACE RAPID SETTING REPAIR CONCRETE IN THE EXCAVATED AREAS. TOP SURFACE SHALL BE FLUSH WITH ADJACENT TOP OF PAVEMENT. SEE SPECIAL PROVISIONS FOR CONCRETE REQUIREMENTS.
4. ANCHOR BOLTS FOR BOLT DOWN BARRIERS MAY BE INSTALLED ONCE THE REPAIR CONCRETE HAS REACHED THE REQUIRED STRENGTH OF THE BOLT DOWN MANUFACTURERS INSTALLATION REQUIREMENTS.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR17-19(B10018).DWG Plotted on 31-Jul-2026 2:25 PM
22-AUG-2026
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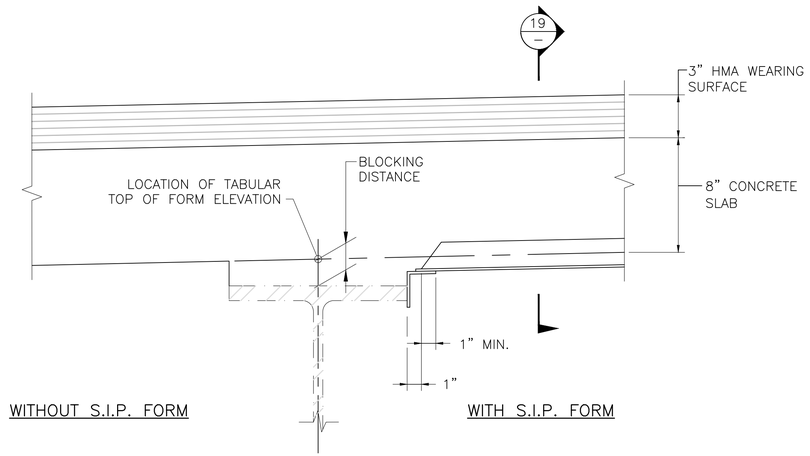
SPAN 1	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
STRINGER NO.	INCREASING STATIONS →								
	CL BRG. W. ABUT.	1/8 PT	1/4 PT	3/8 PT	1/2 PT	5/8 PT	3/4 PT	7/8 PT	CL BRG. PIER 1
1	359.22	359.32	359.43	359.54	359.65	359.75	359.86	359.96	360.07
2	359.36	359.47	359.58	359.69	359.79	359.90	360.00	360.11	360.21
3	359.50	359.61	359.72	359.83	359.93	360.04	360.14	360.25	360.35
4	359.64	359.75	359.86	359.97	360.07	360.18	360.29	360.39	360.49
5	359.61	359.72	359.83	359.94	360.05	360.15	360.26	360.36	360.47
6	359.45	359.56	359.67	359.78	359.88	359.99	360.10	360.20	360.30
7	359.29	359.40	359.51	359.62	359.72	359.83	359.93	360.04	360.14
8	359.12	359.23	359.34	359.45	359.55	359.66	359.77	359.87	359.98

SPAN 2	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
STRINGER NO.	INCREASING STATIONS →								
	CL BRG. PIER 1	1/8 PT	1/4 PT	3/8 PT	1/2 PT	5/8 PT	3/4 PT	7/8 PT	CL BRG. PIER 2
9	360.12	360.40	360.68	360.95	361.21	361.46	361.69	361.92	362.14
10	360.26	360.55	360.83	361.10	361.36	361.60	361.84	362.06	362.28
11	360.40	360.69	360.97	361.24	361.50	361.75	361.98	362.21	362.43
12	360.54	360.83	361.11	361.38	361.64	361.89	362.14	362.35	362.57
13	360.51	360.80	361.08	361.35	361.61	361.86	362.11	362.32	362.54
14	360.35	360.64	360.92	361.19	361.45	361.70	361.93	362.16	362.38
15	360.19	360.48	360.76	361.03	361.30	361.54	361.77	362.00	362.21
16	360.02	360.32	360.60	360.87	361.13	361.38	361.61	361.84	362.05

SPAN 3	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
STRINGER NO.	INCREASING STATIONS →								
	CL BRG. PIER 2	1/8 PT	1/4 PT	3/8 PT	1/2 PT	5/8 PT	3/4 PT	7/8 PT	CL BRG. PIER 3
17	362.19	362.44	362.68	362.92	363.15	363.37	363.58	363.79	363.99
18	362.33	362.58	362.83	363.06	363.29	363.52	363.73	363.93	364.14
19	362.47	362.72	362.97	363.21	363.44	363.66	363.87	364.08	364.28
20	362.61	362.86	363.11	363.35	363.58	363.80	364.01	364.22	364.42
21	362.59	362.84	363.08	363.32	363.55	363.77	363.98	364.19	364.39
22	362.42	362.67	362.92	363.16	363.39	363.61	363.82	364.03	364.23
23	362.26	362.51	362.76	363.00	363.23	363.45	363.66	363.87	364.07
24	362.10	362.35	362.60	362.84	363.07	363.29	363.50	363.70	363.90

SPAN 4	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
STRINGER NO.	INCREASING STATIONS →								
	CL BRG. PIER 3	1/8 PT	1/4 PT	3/8 PT	1/2 PT	5/8 PT	3/4 PT	7/8 PT	CL BRG. PIER 4
25	364.04	364.32	364.58	364.84	365.10	365.34	365.57	365.79	366.00
26	364.18	364.46	364.73	364.99	365.24	365.48	365.71	365.93	366.15
27	364.32	364.60	364.87	365.13	365.38	365.62	365.85	366.07	366.29
28	364.47	364.74	365.01	365.27	365.52	365.76	365.99	366.21	366.43
29	364.44	364.71	364.98	365.25	365.50	365.74	365.97	366.19	366.40
30	364.27	364.55	364.82	365.08	365.33	365.57	365.80	366.02	366.24
31	364.11	364.39	364.66	364.93	365.18	365.42	365.65	365.86	366.07
32	363.95	364.23	364.50	364.77	365.02	365.26	365.48	365.73	365.91

SPAN 5	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE								
STRINGER NO.	INCREASING STATIONS →								
	CL BRG. PIER 4	1/8 PT	1/4 PT	3/8 PT	1/2 PT	5/8 PT	3/4 PT	7/8 PT	CL BRG. E. ABUT
33	366.05	366.22	366.40	366.57	366.73	366.90	367.06	367.22	367.38
34	366.19	366.37	366.54	366.71	366.87	367.04	367.20	367.36	367.52
35	366.33	366.51	366.68	366.85	367.02	367.18	367.34	367.50	367.66
36	366.47	366.65	366.82	366.99	367.16	367.32	367.48	367.64	367.80
37	366.45	366.62	366.79	366.96	367.13	367.30	367.46	367.62	367.77
38	366.28	366.46	366.63	366.80	366.97	367.13	367.29	367.45	367.61
39	366.12	366.30	366.47	366.64	366.81	366.97	367.13	367.29	367.45
40	365.96	366.13	366.31	366.48	366.65	366.81	366.97	367.13	367.29

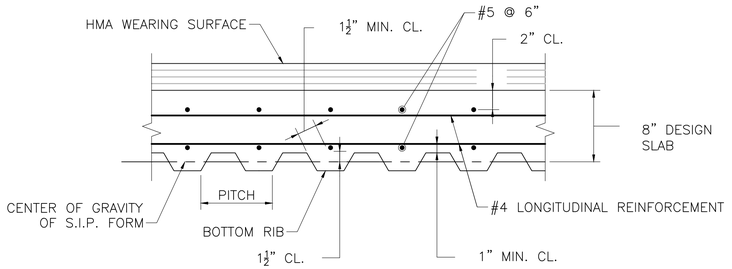


HAUNCH DETAIL

NOTE:
BEFORE THE FORMS ARE BUILT, ELEVATIONS ON TOP OF THE FLANGE OF THE STRINGER ARE TO BE OBTAINED AT THE POINTS INDICATED IN THE TABLE. THE DIFFERENCE BETWEEN THE ELEVATIONS OBTAINED AND THOSE SHOWN IN THE TABLE GIVES THE ACTUAL BLOCKING DISTANCE FROM THE TOP OF STRINGER TO THE BOTTOM OF THE SLAB AT CENTER LINE OF STRINGER.

TOP OF FORM DETAILS

NOT TO SCALE



SECTION 19 (–)
SCALE: 1" = 1'–0"

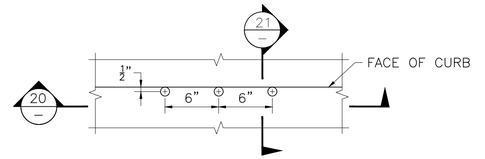
S.I.P. FORM NOTES:

1. FOR 2" S.I.P. FORM, SET BOTTOM OF FORM 1" BELOW ELEVATION GIVEN IN TABLE. FOR 3" S.I.P. FORM, SET BOTTOM OF FORM 1½" BELOW TABLE ELEVATIONS.
2. FORM ENDS SHALL BE CRIMPED CLOSED IN A TAPERED MANNER. SEPARATE END CLOSURE PIECES WILL NOT BE ALLOWED.
3. SUPPORT ANGLES SHALL BE PLACED IN THE "LEG DOWN" POSITION WHERE POSSIBLE. WHERE "LEG UP" POSITION IS NECESSARY, THE UPPER MOST PORTION OF THE ANGLE SHALL NOT PROJECT MORE THAN 1" ABOVE THE TOP FLANGE. THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF ANGLES OF VARIOUS SIZES AVAILABLE ON THE SITE TO CONFORM TO THIS REQUIREMENT.
4. ALL MAIN STEEL REINFORCEMENT IN THE LOWER MAT SHALL BE CENTERED OVER THE VALLEY OF THE S.I.P. FORM.
5. CONTRACTOR SHALL DESIGN AND DETAIL ALL ELEMENTS OF THE FORMING SYSTEM AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL.
6. IN CASES WHERE STANDARD 2" OR 3" DEEP S.I.P. FORMS DO NOT SATISFY DESIGN REQUIREMENTS AN ALTERNATIVE FORMING SYSTEM CONSISTING OF DEEPER S.I.P. FORMS OR REMOVABLE FORMS SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE DESIGN THICKNESS OF THE SLAB SHALL NOT BE REDUCED.
7. SIP FORMS SHALL NOT BE USED IN UTILITY BAYS OR IN BAYS WHERE CONSTRUCTION PHASE LINES FOR THE DECK ARE LOCATED, OR WITHIN 4'–0" OF THE TRANSVERSE DECK JOINT FOR LINK SLABS.

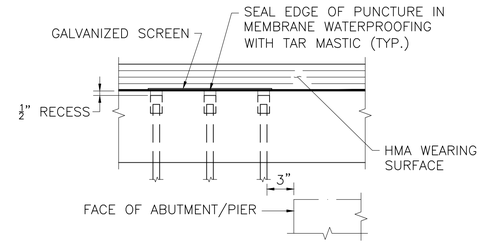
BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	120	146
PROJECT FILE NO. 612159			

TOP OF FORM ELEVATIONS & DETAILS



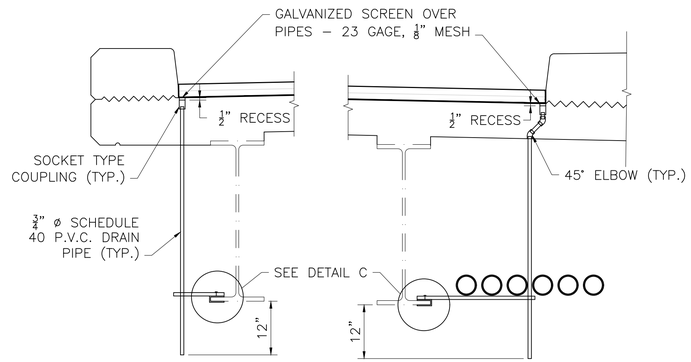
DECK PLAN



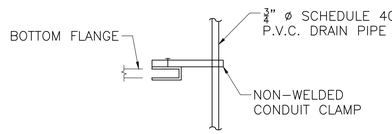
SECTION 20 (–)

DECK DRAIN PIPES

SCALE: 1½" = 1'–0"



SECTION 21 (–)
SCALE: ¾" = 1'–0"



DETAIL C (–)
SCALE: 1½" = 1'–0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

612159_BR20(B10018).DWG Plotted on 31-Jul-2026 2:25 PM

ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

GENERAL BEARING NOTES:

1. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A 1/32" DEEP DIRECTION ARROW THAT POINTS UP–STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%.
3. THE SOLE PLATE AND BEARING HAVE BEEN SIZED TO FIT BETWEEN THE BOTTOM OF THE EXISTING BEAMS AND THE BEARING SEAT BASED ON ELEVATIONS FROM THE EXISTING PLANS. THE THICKNESS OF THE SOLE PLATE SHALL BE ADJUSTED AS NEEDED TO ENSURE THE BEARING ASSEMBLY WILL FIT WITHOUT CHANGING THE FINAL ELEVATION OF THE BEAMS. THIS MAY NOT BE THE SAME MEASURE AT ALL BEAM LOCATIONS, DEPENDING ON AS BUILT CONDITIONS. MEASURE ALL BEAM LOCATIONS PRIOR TO ORDERING SOLE PLATE. IF SOLE PLATE THICKNESS WILL BE LESS THAN $\frac{1}{8}$" AT IT'S LOW SIDE DUE TO FIELD MEASUREMENTS, THE ENGINEER SHALL BE CONTACTED PRIOR TO FABRICATION.

   3.1. WHERE THE AVAILABLE BEARING HEIGHT EXCEEDS THE HEIGHT OF THE PROPOSED BEARING ASSEMBLY, THE CONTRACTOR MAY INSTALL A MOLDED FABRIC BEARING PAD CONFORMING TO M9.16.2 BENEATH THE BEARING TO COMPENSATE FOR THE DIFFERENCE UP TO $\frac{1}{8}$" THICKNESS. LARGER DIFFERENCES MUST BE ACCOMMODATED BY THICKENING THE SOLE PLATE.

   3.2. WHERE THE AVAILABLE BEARING HEIGHT IS LESS THEN THE HEIGHT OF THE PROPOSED BEARING ASSEMBLY, THE CONTRACTOR MAY CHISEL THE BEARING SURFACE TO ACCOMMODATE THE ASSEMBLY OR ADJUST THE SOLE PLATE THICKNESS. THE ENGINEER SHALL BE CONTACTED FOR DIRECTION IF DIFFERENCES RESULT IN CONCRETE REMOVAL DEPTHS EXCEEDING $\frac{1}{2}$".
4. STEEL SOLE PLATES SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50.
5. SOLE PLATES SHALL BE METALIZED, EXCEPT FOR 1" WIDE STRIPS WHERE THE SOLE PLATE WILL BE WELDED TO THE FLANGE. AFTER WELDING, APPLY A GALVANIZING REPAIR PAINT (M7.04.11) WITH A MINIMUM DRY FILM THICKNESS OF 3 MILS TO THESE STRIPS.
6. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE FOR BOTH BEARING TYPES.
7. THE COMPRESSIVE DESIGN STRESSES NOTED IN THE BEARING TABLE ARE THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE ELASTOMERIC PADS.

STEEL REINFORCED ELASTOMERIC BEARING (SREP) NOTES:

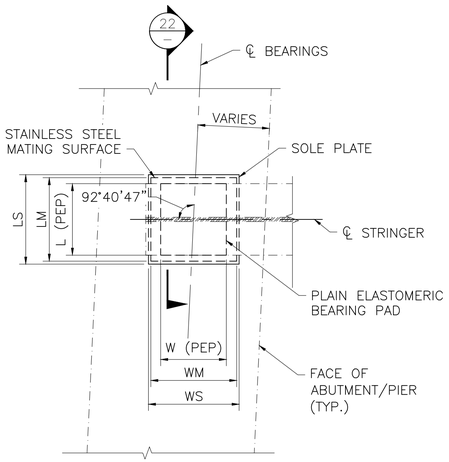
1. SREP BEARINGS ARE DESIGNED USING AASHTO METHOD B.
2. ELASTOMER IN SREP BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI.
3. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER. ALL EDGES OF STEEL LAMINATES SHALL BE GROUND SMOOTH.
4. ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.

SLIDING BEARING NOTES:

1. SLIDING BEARINGS ARE DESIGNED USING AASHTO METHOD A.
2. ELASTOMERIC PAD SHALL BE VIRGIN NATURAL RUBBER WITH A HARDNESS (SHORE "A" DUROMETER) OF 60.
3. STEEL LOAD PLATES SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50, AND SHALL BE VULCANIZED TO THE ELASTOMERIC BEARING PAD. THE SIDES OF THE LOAD PLATE SHALL BE METALIZED AFTER VULCANIZATION.
4. PTFE SURFACE SHALL BE FABRICATED AS UNFILLED SHEET AND SHALL BE MADE FROM PTFE RESIN ALONE. IT SHALL CONTAIN DIMPLES TO ACT AS A RESERVOIR FOR LUBRICANT.
5. THE MAXIMUM ALLOWABLE COEFFICIENT OF FRICTION BETWEEN THE PTFE AND THE STAINLESS STEEL MATING SURFACE IS 0.04 AT 68 DEG F.
6. STAINLESS STEEL MATING SURFACE SHALL BE TYPE 304 CONFORMING TO ASTM A167 / A240 WITH A SURFACE FINISH OF 8 MICRO–INCHES RMS OR BETTER. IT SHALL BE WELDED WITH AN ALL–AROUND WELD TO THE SOLE PLATE SO THAT IT REMAINS FLAT AND IN FULL CONTACT WITH THE SOLE PLATE.
7. STAINLESS STEEL MATING SURFACE SHALL BE PROTECTED FROM SCRATCHES, GOUGES, OR OTHER DAMAGE DURING SHIPMENT AND STORAGE.

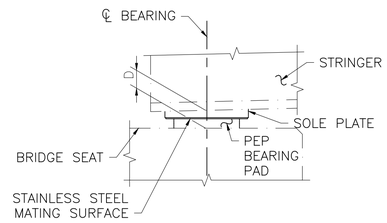
INSTALLATION OF PROPOSED BEARINGS:

1. LIVE LOAD SHALL BE REMOVED FROM THE ROADWAY ABOVE THE REPAIR LOCATION UNTIL JACKING IS COMPLETED AND HYDRAULIC JACKS ARE LOCKED. SEE SHEET 22 FOR ADDITIONAL JACKING NOTES AND REQUIREMENTS.
2. GRIND THE BEARING SEAT AND PATCH AS NECESSARY FOR THE PROPOSED BEARINGS TO ENSURE LEVEL BEARING SURFACE.
3. CLEAN THE BEAM BOTTOM FLANGE AFTER REMOVAL OF EXISTING BEARING AND PRIOR TO INSTALLATION OF NEW BEVELED SOLE PLATE.
4. BEARING PADS SHALL BE SET WHEN THE AMBIENT TEMPERATURE IS BETWEEN 50° AND 70°F. IF THE BEARINGS ARE SET AT OTHER AMBIENT TEMPERATURES, THEY WILL HAVE TO BE RE–JACKED AND THE SOLE PLATE ASSEMBLY AND ELASTOMERIC BEARINGS RE–CENTERED WHEN THE TEMPERATURE RETURNS TO THAT RANGE. NO ADDITIONAL PAYMENT WILL BE MADE FOR REJACKING.
5. PLACE THE SOLE PLATE ASSEMBLY SO THAT IT IS CENTERED UNDER THE BEAM BOTTOM FLANGE. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE.
6. AFTER THE SOLE PLATE ASSEMBLY IS IN ITS FINAL POSITION, WELD IT TO THE BEAM BOTTOM FLANGE.
7. TEMPERATURE OF THE STEEL ADJACENT TO THE ELASTOMER DURING FIELD WELDING SHALL BE KEPT BELOW 250°F.
8. SLOWLY RELEASE JACKS AND REMOVE TEMPORARY SHORING.
9. CLEAN AND PAINT THE REPAIRED AREA IN CONJUNCTION WITH CLEANING AND PAINTING THE ENTIRE SUPERSTRUCTURE.

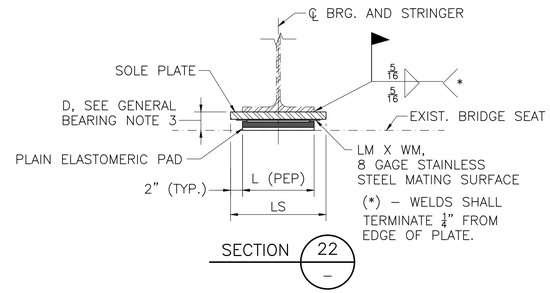


SLIDING BEARING PLAN

SCALE: 1" = 1'–0"

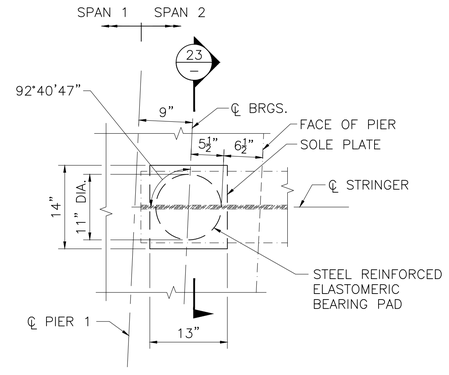


ELEVATION



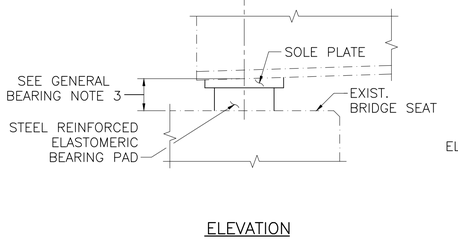
SLIDING BEARING ASSEMBLY

SCALE: 1" = 1'–0"

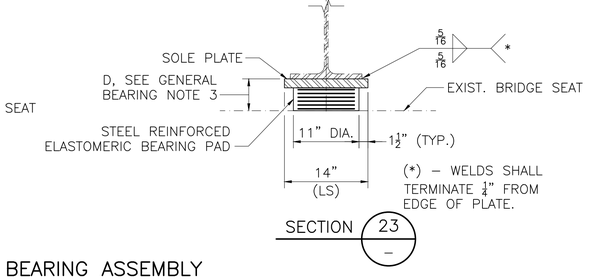


ELASTOMERIC BEARING PLAN

SCALE: 1" = 1'–0"



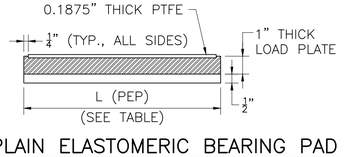
ELEVATION



SREP PIER 1 BEARING ASSEMBLY

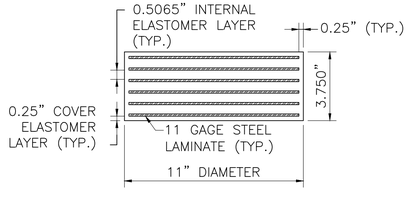
SCALE: 1" = 1'–0"

LOCATION	BEARING TYPE	COMPRESSIVE DESIGN LOAD	COMPRESSIVE DESIGN STRESS	LS	WS	LM	WM	L (PEP)	W (PEP)	L (PTFE)	W (PTFE)	A	B	C	D	RANGE OF FIELD MEASURED HEIGHTS
WEST ABUTMENT	SLIDING BEARING	22 KIP	0.18 KSI	15"	14.0"	13.0"	13.0"	11.0"	11.0"	10.5"	10.5"	1.01"	1.23"	1.45"	3"	3" – 3½"
PIER 1, SPAN 1	SLIDING BEARING	22 KIP	0.18 KSI	15"	13.5"	13.0"	12.5"	11.0"	11.0"	10.5"	10.5"	1.02"	1.23"	1.45"	3"	2½" – 3⅜"
PIER 1, SPAN 2	ELASTOMERIC BEARING	118 KIP	1.24 KSI	14"	13.0"	–	–	–	–	–	–	1.52"	1.75"	1.98"	5¼"	5¼" – 6½"
PIER 4, SPAN 5	SLIDING BEARING	35 KIP	0.26 KSI	16"	13.5"	14.0"	12.5"	12.0"	11.0"	11.5"	10.5"	1.02"	1.23"	1.45"	3"	3" – 4"
EAST ABUTMENT	SLIDING BEARING	35 KIP	0.26 KSI	16"	14.0"	14.0"	13.0"	12.0"	11.0"	11.5"	10.5"	1.01"	1.23"	1.45"	3"	2½" – 3½"



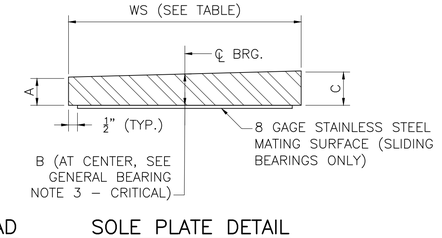
PLAIN ELASTOMERIC BEARING PAD

NOT TO SCALE



STEEL REINFORCED ELASTOMERIC BEARING PAD

NOT TO SCALE



SOLE PLATE DETAIL

SCALE: 3" = 1'–0"

BERNARDSTON
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	121	146
PROJECT FILE NO. 612159			

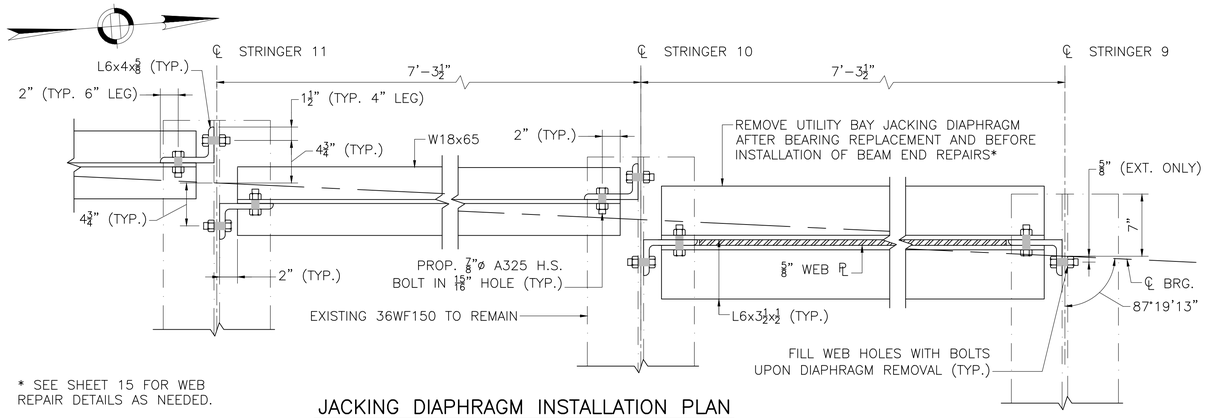
BEARING DETAILS

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

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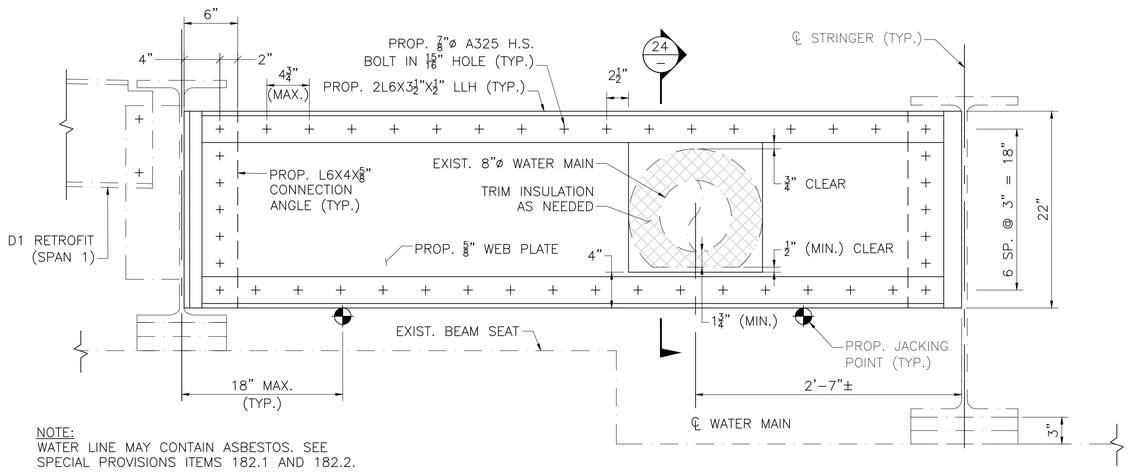
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ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



* SEE SHEET 15 FOR WEB REPAIR DETAILS AS NEEDED.

JACKING DIAPHRAGM INSTALLATION PLAN

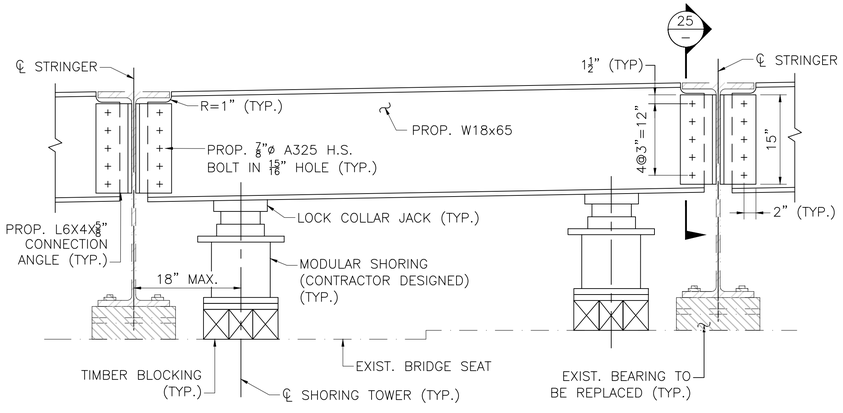
SCALE: 1½" = 1'–0"
(PIER 1 SPAN 2 SHOWN. SPAN 5 DETAILS SIMILAR)



NOTE:
WATER LINE MAY CONTAIN ASBESTOS. SEE SPECIAL PROVISIONS ITEMS 182.1 AND 182.2.

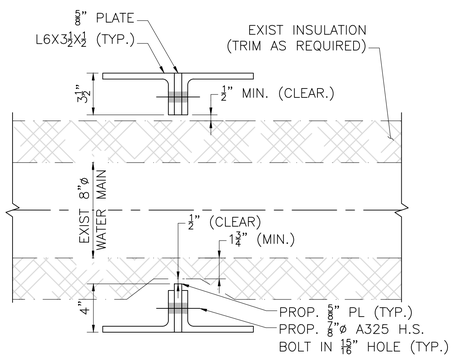
J2 – UTILITY BAY TEMPORARY END DIAPHRAGM JACKING DETAIL

SCALE: 1½" = 1'–0"
(SPAN 1 SHOWN. OTHER SPANS SIMILAR BUT WITH W36 AT ALL BEAM LINES)



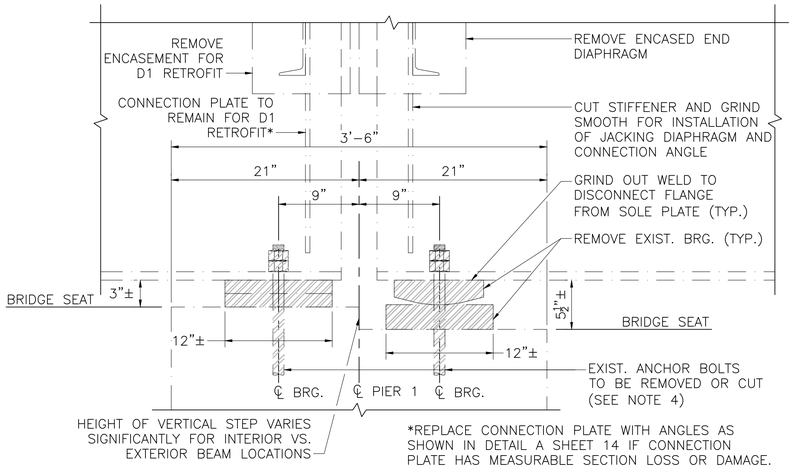
J1 – TYPICAL END DIAPHRAGM JACKING DETAIL

SCALE: 1" = 1'–0"



SECTION 24
SCALE: 2" = 1'–0"

SECTION 25
SCALE: 1½" = 1'–0"



EXISTING BEARING ELEVATION AT PIER 1

SCALE: 1½" = 1'–0"

BERNARDSTON
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	122	146
PROJECT FILE NO.	612159		

TYPICAL CONSTRUCTION DETAILS

JACKING AND SHORING NOTES

1. THE CONTRACTOR SHALL SUBMIT A TEMPORARY JACKING AND SHORING PLAN TO THE ENGINEER FOR APPROVAL. THIS WORK IS TO BE PAID FOR UNDER ITEM 106.88. SEE ADDITIONAL STIPULATIONS IN THE SPECIAL PROVISIONS.
2. LIVE LOAD SHALL BE REMOVED FROM THE ROADWAY ABOVE THE REPAIR LOCATION UNTIL JACKING IS COMPLETED AND HYDRAULIC JACKS ARE LOCKED.
3. JACK STRINGERS AND REMOVE EXISTING BEARING ASSEMBLY BY REMOVING SOLE PLATE TO BOTTOM FLANGE WELD. CUT OFF AND/OR DRILL OUT EXISTING ANCHOR BOLT AND REMOVE MASONRY PLATE.
4. REMOVE OR CUT EXISTING ANCHOR BOLTS AS REQUIRED TO PLACE THE PROPOSED ELASTOMERIC BEARING PADS AND SLIDING BEARINGS. AFTER THE ANCHOR BOLTS ARE REMOVED OR CUT, ANY REMAINING VOIDS SHALL BE FILLED WITH GROUT. EXISTING PLANS INDICATE THE ANCHOR BOLTS ARE SWEDGED ANCHORS WITH 15" EMBEDMENT. ANCHOR BOLTS ARE NOTED TO BE 1¼" DIAMETER AT THE PIER 1 SPAN 2 BEARINGS AND 1" DIAMETER AT THE SPAN 1 AND SPAN 5 BEARINGS.
5. JACKING AND BEARING REPLACEMENT SHALL BE COMPLETED AND THE J2 DIAPHRAGM REMOVED PRIOR TO THE INSTALLATION OF THE PROPOSED WATER MAIN. IF CONTRACTOR'S PROPOSED SEQUENCE OF CONSTRUCTION DICTATES OTHERWISE, THE CONTRACTOR SHALL PROVIDE THE DESIGN AND DETAILS OF THE JACKING DIAPHRAGM IN THE WATER MAIN UTILITY BAY THAT ACCOUNTS FOR THE REVISED VERTICAL AND HORIZONTAL LOCATION OF THE PROPOSED WATER MAIN.

BRIDGE B–10–018 CALCULATED LOADS			
SPAN	STRINGER NO.	DEAD LOAD	LIVE LOAD + IMPACT
1	1 (EXTERIOR)	21.2 KIPS	30.8 KIPS
	2 (INTERIOR)	20.2 KIPS	40.8 KIPS
	3–6 (INTERIOR)	19.9 KIPS	40.8 KIPS
	7 (INTERIOR)	22.6 KIPS	40.8 KIPS
	8 (EXTERIOR)	23.7 KIPS	30.8 KIPS
2	9 (EXTERIOR)	51.4 KIPS	38.9 KIPS
	10 (INTERIOR)	51.6 KIPS	51.6 KIPS
	11–14 (INTERIOR)	51.0 KIPS	51.6 KIPS
	15 (INTERIOR)	57.3 KIPS	51.6 KIPS
	16 (EXTERIOR)	57.5 KIPS	38.9 KIPS
5	33 (EXTERIOR)	32.7 KIPS	36.4 KIPS
	34 (INTERIOR)	32.3 KIPS	48.3 KIPS
	35–38 (INTERIOR)	31.9 KIPS	48.3 KIPS
	39 (INTERIOR)	36.0 KIPS	48.3 KIPS
	40 (EXTERIOR)	36.7 KIPS	36.4 KIPS

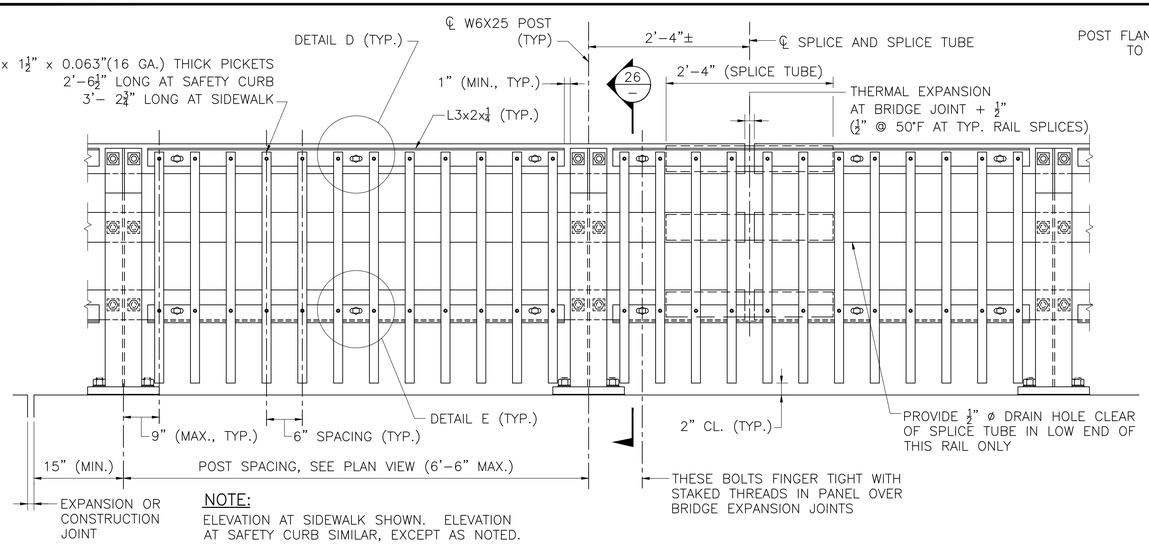
BRIDGE LOAD NOTES:

1. LOADS PROVIDED INCLUDE THE UNFACTORED DEAD LOAD OF THE EXISTING BRIDGE, LIVE AND IMPACT LOADS EXERTED ON EACH STRINGER END. LIVE LOAD IS BASED ON AN HS20 TRUCK IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, 17TH EDITION.
2. CONSTRUCTION DEAD AND LIVE LOADS ARE NOT INCLUDED IN THE TABULATED LOADS. CONTRACTOR IS RESPONSIBLE FOR INCORPORATING APPROPRIATE FACTORS OF SAFETY TO ACCOUNT FOR CONSTRUCTION LOADS.
3. DEAD LOADS INCLUDING DECK WEIGHT ARE PROVIDED TO ALLOW FOR FLEXIBILITY IN THE PROPOSED CONSTRUCTION SEQUENCE. CONTRACTOR SHALL SIZE JACKS FOR THE ACTUAL LOADS ANTICIPATED DURING JACKING OPERATIONS AND SHALL CLEARLY INDICATE THEIR PROPOSED SEQUENCING, INCLUDING LOOSENING OF DIAPHRAGMS AS NECESSARY AS WELL AS MAXIMUM JACK HEIGHTS AND ANY EXPECTED DIFFERENTIALS IN THE TEMPORARY JACKING AND SHORING SUBMITTAL.

AUG 22, 2026	ISSUED FOR CONSTRUCTION
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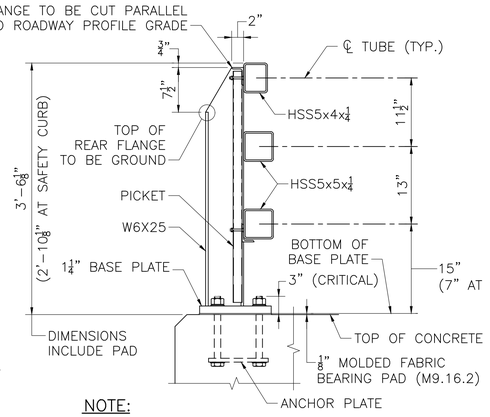
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



NOTE:
ELEVATION AT SIDEWALK SHOWN. ELEVATION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

BRIDGE RAILING ELEVATION

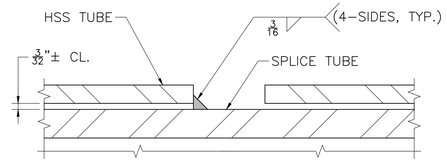
SCALE: 1" = 1'-0"



NOTE:
SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

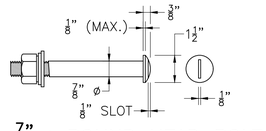
SECTION 26

SCALE: 1" = 1'-0"



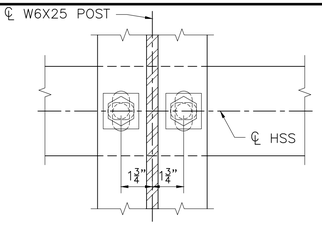
SPLICE DETAIL

SCALE: 1'-0" = 1'-0"

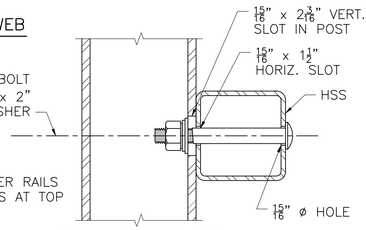


⅞" ø ROUND HEAD BOLT

SCALE: 3" = 1'-0"



SECTION THRU POST WEB

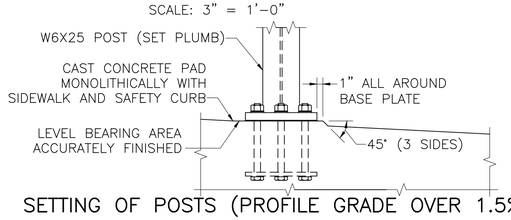


NOTE:
CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

SECTION THRU RAIL

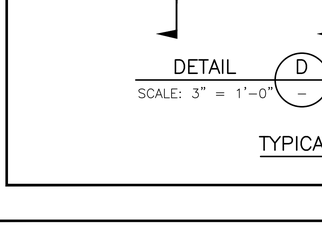
TYPICAL RAIL TO POST CONNECTIONS

SCALE: 3" = 1'-0"

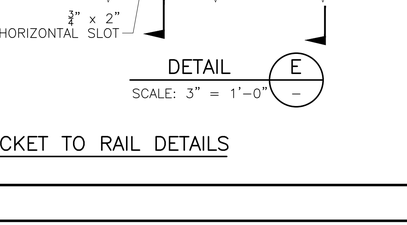


SETTING OF POSTS (PROFILE GRADE OVER 1.5%)

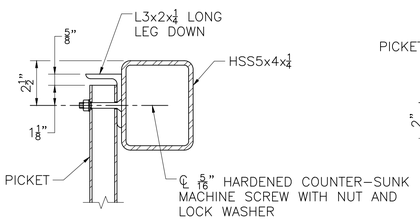
SCALE: 1" = 1'-0"



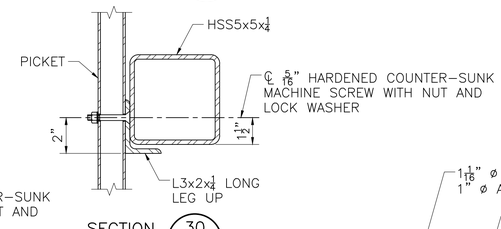
SECTION 27



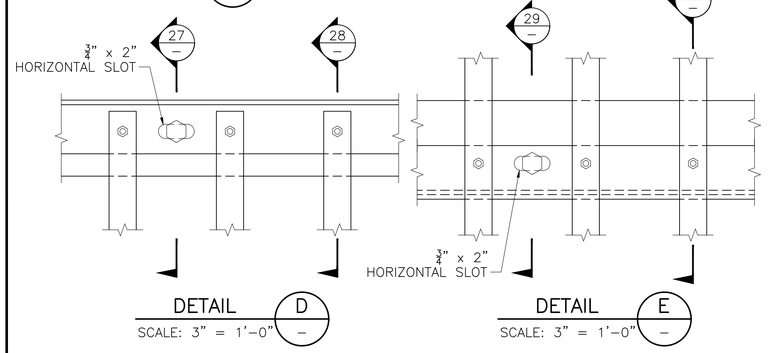
SECTION 29



SECTION 28



SECTION 30



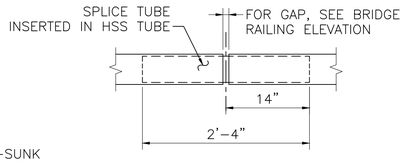
DETAIL D

SCALE: 3" = 1'-0"

DETAIL E

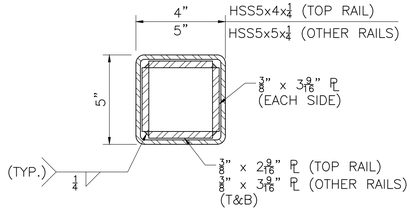
SCALE: 3" = 1'-0"

TYPICAL PICKET TO RAIL DETAILS



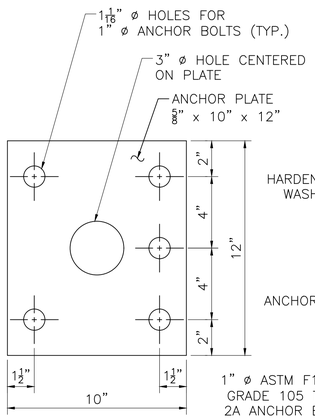
TYPICAL SPLICE

SCALE: 1" = 1'-0"



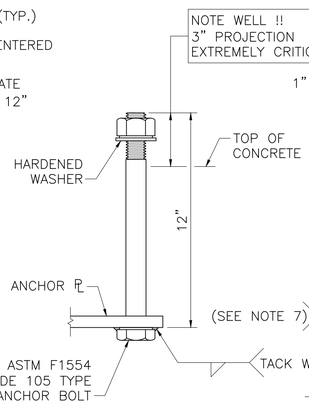
SPLICE TUBE DETAILS

SCALE: 3" = 1'-0"



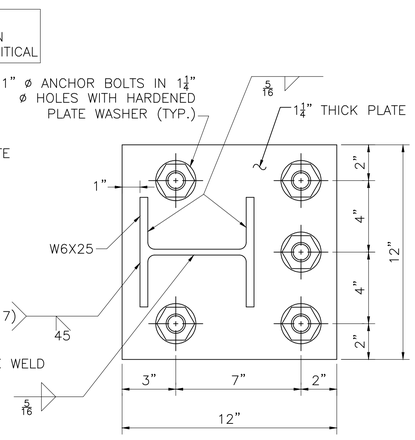
ANCHOR PLATE

SCALE: 3" = 1'-0"



ANCHOR BOLT

SCALE: 3" = 1'-0"



BASE PLATE

SCALE: 3" = 1'-0"

RAILING NOTES:

1. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH Fy = 36 KSI MIN. OR A 500 GRADE B.
2. ALL STEEL (EXCEPT THE ⅝" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF ⅞" ø ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. IN ADDITION SPLICES SHALL ALSO BE LOCATED IN RAILS OVER EACH PIER LOCATION AND THE BRIDGE END EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. ALL POSTS TO BE PLUMB AS THE PROFILE GRADE EXCEEDS 1.5%.
7. POST TO FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. BEVEL OUTSIDE FLANGES OF POST. FIT POST TO BASE PLATE. WELD 5/16" FILLET ON INSIDE OF FLANGE AND WEB. BACKGOUGE OUTSIDE OF FLANGE TO SOUND METAL. COMPLETE GROOVE WELD WITH MINIMUM OF ⅛" REINFORCEMENT. WELD IS THE SAME ON BOTH FLANGES.
8. ⅞" ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF ASTM F3125 GRADE 325 TYPE 1 GALVANIZED.

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	123	146
	PROJECT FILE NO. 612159		

S3-MTL4 BRIDGE RAIL

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

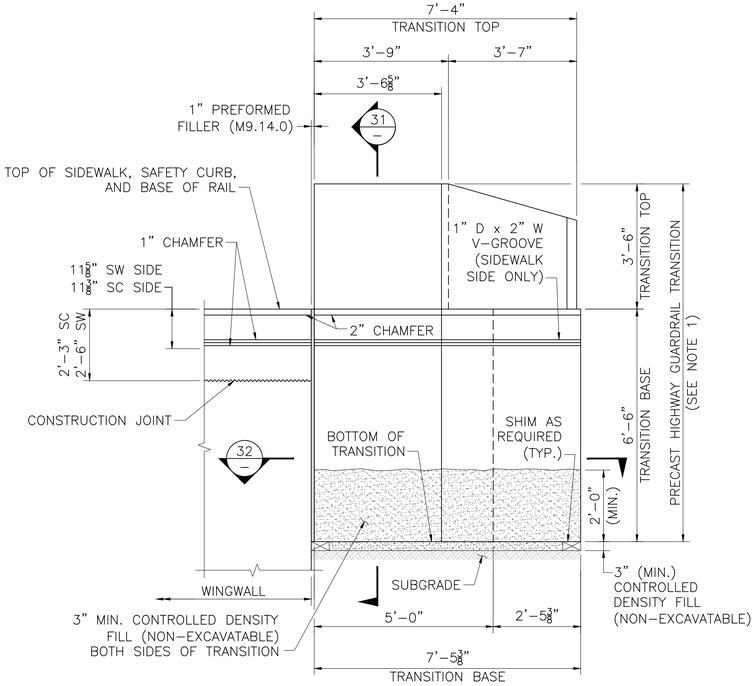
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

612159_BR23(B10018).DWG Plotted on 31-Jul-2026 2:26 PM

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	124	146
	PROJECT FILE NO. 612159		

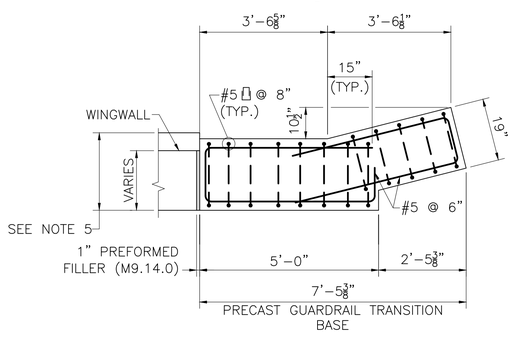
HIGHWAY GUARDRAIL TRANSITION (1 OF 2)



NOTE:
TRANSITION AT SIDEWALK SHOWN, TRANSITION AT SAFETY CURB SIMILAR EXCEPT AS NOTED.

PRECAST GUARDRAIL TRANSITION ELEVATION AT U-WINGWALL

SCALE: 1/2" = 1'-0"

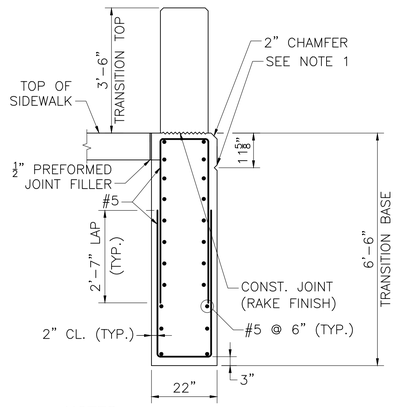


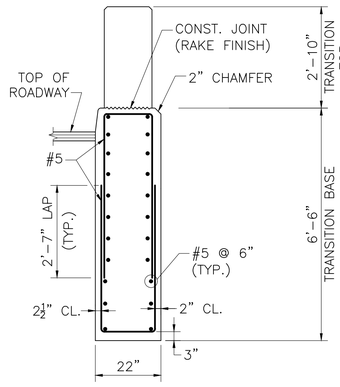
NOTE:
WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

SECTION 32 — SCALE: 1/2" = 1'-0"

NOTES:

1. PRECAST GUARDRAIL TRANSITION SHALL BE 5000 PSI, HP CEMENT CONCRETE.
2. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
3. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON-EXCAVATABLE) TO THE ELEVATION SHOWN.
4. BACKFILL THE REMAINDER OF EXCAVATION WITH GRAVEL BORROW, WHICH SHALL BE THOROUGHLY COMPACTED IN 12" LIFTS.
5. EXISTING PLANS INDICATE THAT THE WINGWALLS BATTER AT 6 ON 12, BUT DOES NOT SPECIFY THE DEPTH AT WHICH THE BATTER BEGINS. THEREFORE THE WIDTH OF THE WINGWALL AT THE HIGHWAY GUARDRAIL TRANSITION BASE IS UNCERTAIN.



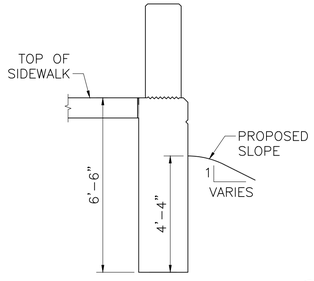


NOTES:

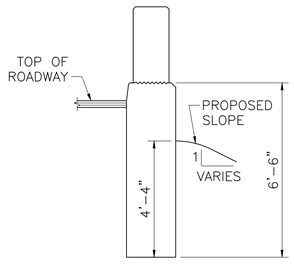
1. 1" D x 2" W V-GROOVE. ALIGN WITH GROOVE AT TOP OF WINGWALL.
2. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

SECTION AT SIDEWALK 31 — SCALE: 1/2" = 1'-0"

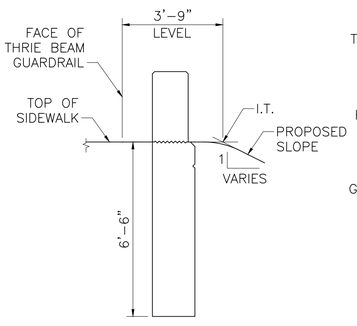
SECTION AT SAFETY CURB 31 — SCALE: 1/2" = 1'-0"



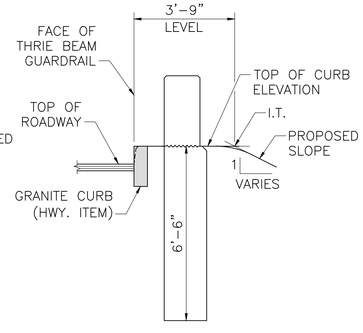
SECTION AT SIDEWALK 33 — SCALE: 3/8" = 1'-0"



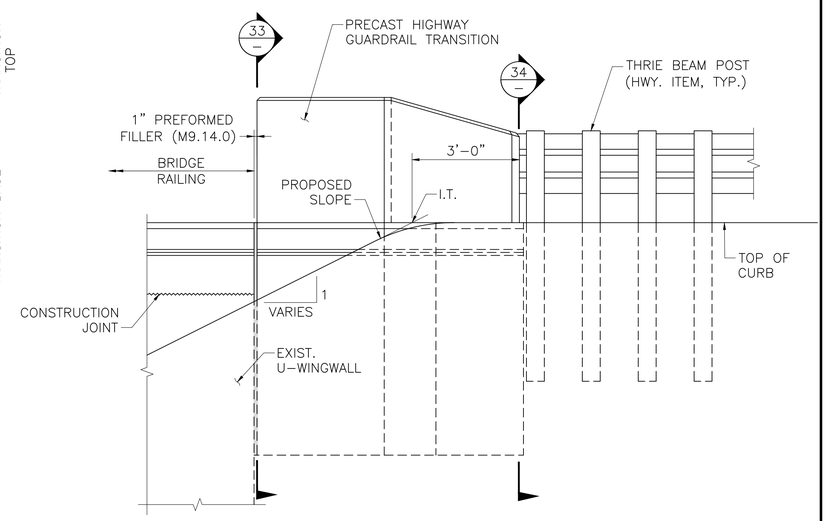
SECTION AT SAFETY CURB 33 — SCALE: 3/8" = 1'-0"



SECTION AT SIDEWALK 34 — SCALE: 3/8" = 1'-0"

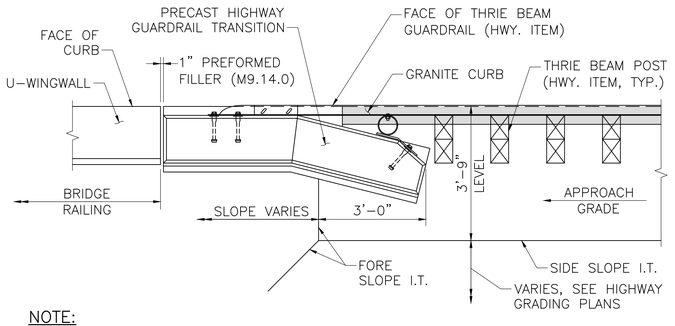


SECTION AT SAFETY CURB 34 — SCALE: 3/8" = 1'-0"



GRADING REQUIREMENTS ELEVATION

SCALE: 1/2" = 1'-0"



NOTE:
PLAN AT SAFETY CURB SHOWN. PLAN AT SIDEWALK SIMILAR.

GRADING REQUIREMENTS PLAN

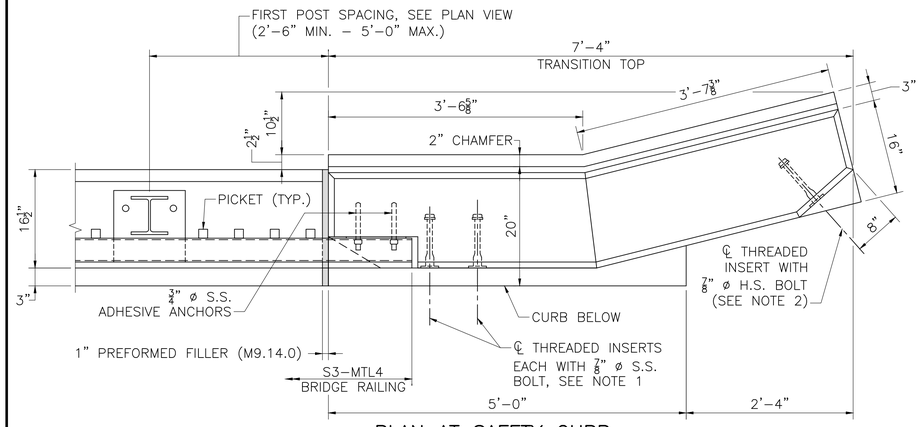
SCALE: 1/2" = 1'-0"

AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

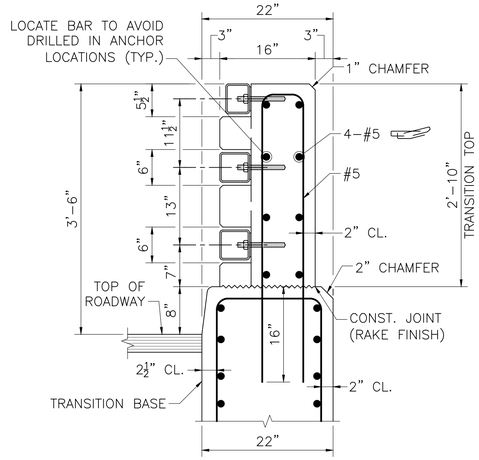
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

612159_BR24-25(B10018).DWG Plotted on 31-Jul-2026 2:26 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



PLAN AT SAFETY CURB
SCALE: 1" = 1'–0"



SECTION 36 AT SAFETY CURB
SCALE: 1" = 1'–0"

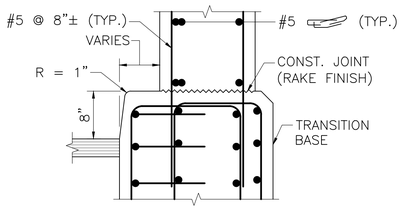
NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. (STAINLESS STEEL) BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED CONFORMING TO ASTM F593D WITH AISI TYPE 304N S.S. WASHERS. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. ⅞" ø HIGH STRENGTH BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F3125 AND BE GALVANIZED. USE ADDITIONAL WASHERS AS REQUIRED TO PROPERLY ENGAGE THE BOLTS.
3. FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF CURB SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
4. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR THE NE AND SW GUARDRAIL TRANSITIONS.
5. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 HP CEMENT CONCRETE.
6. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON–SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

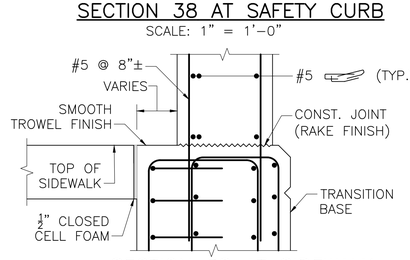
BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	125	146
	PROJECT FILE NO. 612159		

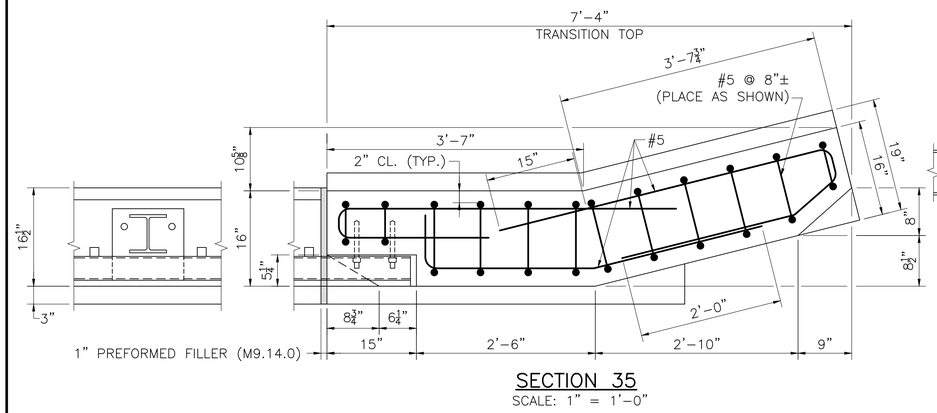
HIGHWAY GUARDRAIL TRANSITION (2 OF 2)



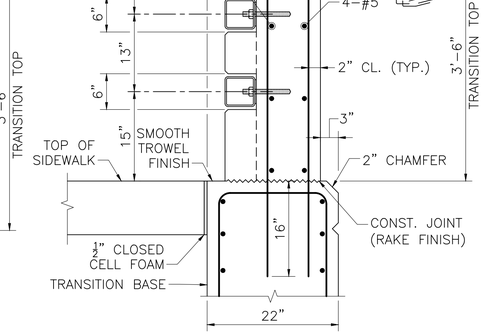
SECTION 38 AT SAFETY CURB
SCALE: 1" = 1'–0"



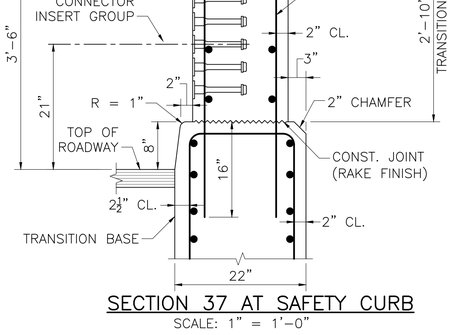
SECTION 38 AT SIDEWALK
SCALE: 1" = 1'–0"



ELEVATION AT SIDEWALK
SCALE: 1" = 1'–0"



SECTION 36 AT SIDEWALK
SCALE: 1" = 1'–0"



SECTION 37 AT SAFETY CURB
SCALE: 1" = 1'–0"

SECTION 39
SCALE: 3" = 1'–0"

SECTION 35
SCALE: 1" = 1'–0"

RAIL ATTACHMENT
SCALE: 1½" = 1'–0"

SECTION 37 AT SIDEWALK
SCALE: 1" = 1'–0"

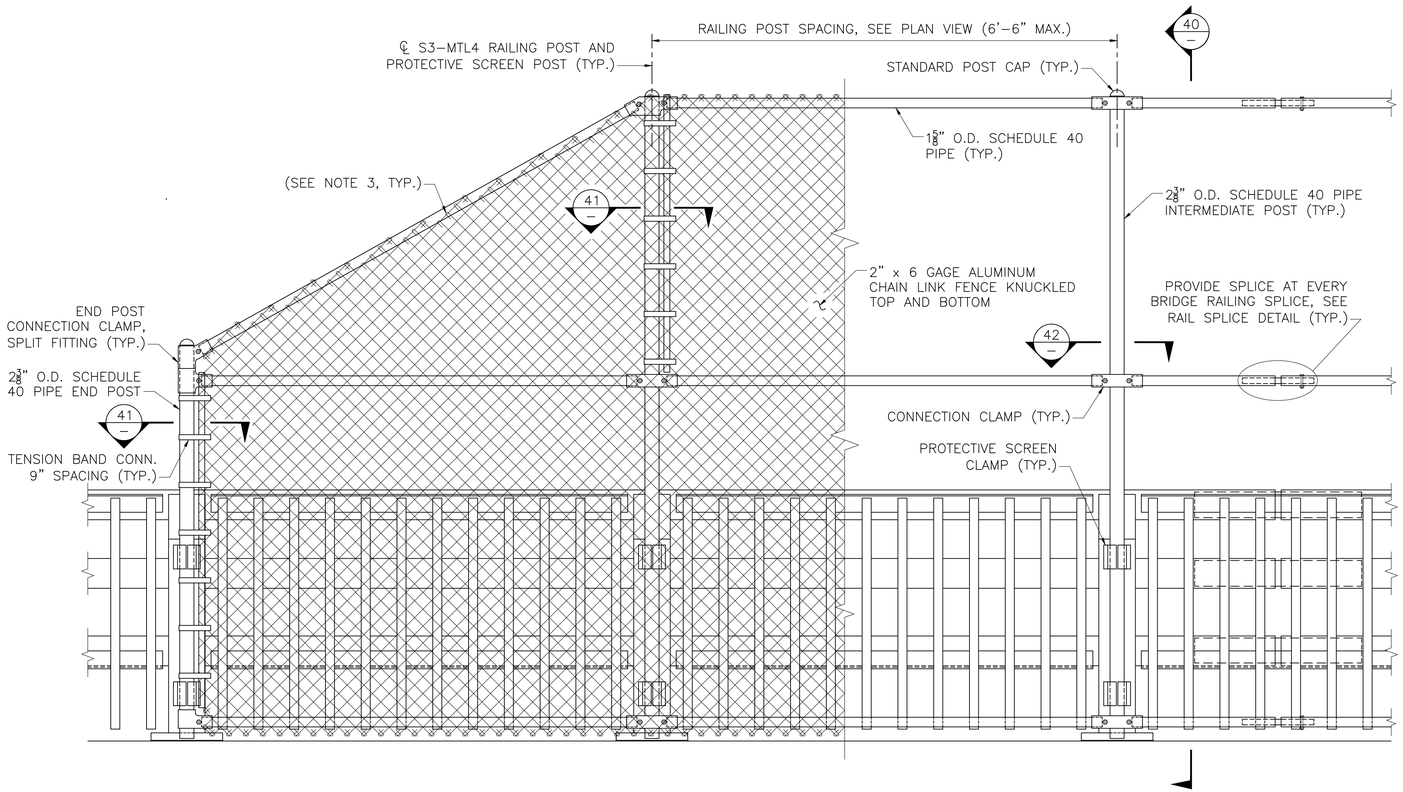
AUG 22, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

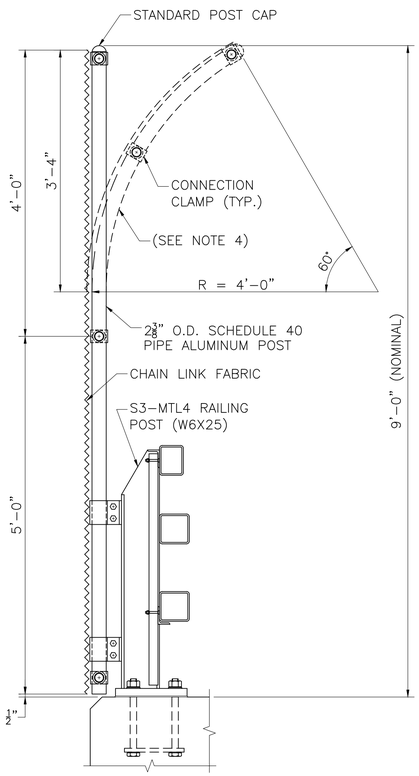
TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR S3–TL4 RAILING

612159_BR24-25(B10018).DWG Plotted on 31-Jul-2026 2:27 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026



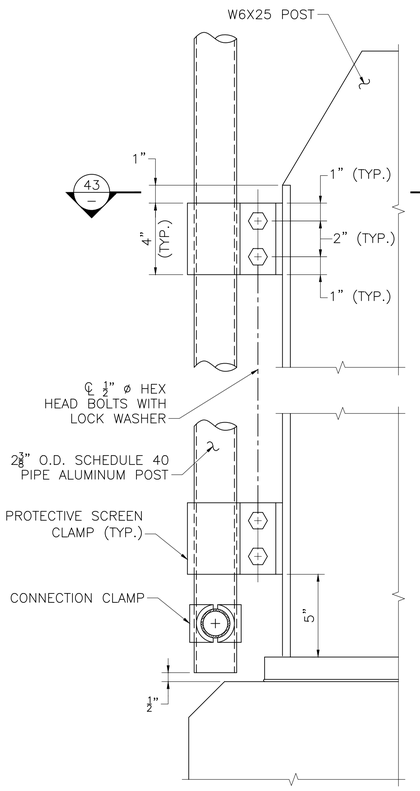
ELEVATION

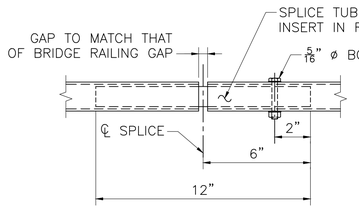
SCALE: 1" = 1'–0"



SECTION 40

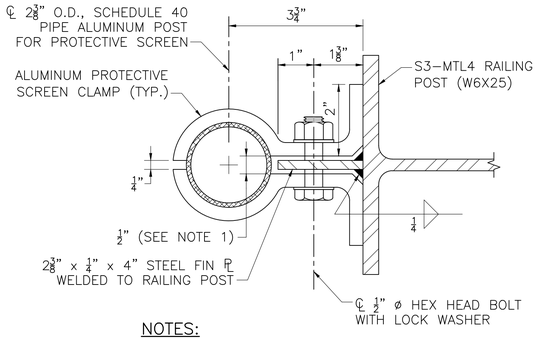
SCALE: 1" = 1'–0"





RAIL SPLICE

SCALE: 3" = 1'–0"

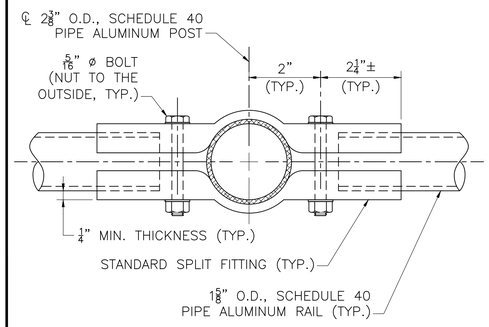


NOTES:

1. DRAW FOR FABRICATION TO ENSURE CLAMPING ACTION.
2. SLIGHT VARIATIONS IN EXTRUSION DIMENSIONS MAY BE SUBMITTED FOR APPROVAL.

SECTION 43

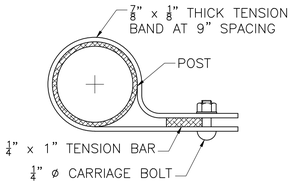
SCALE: 6" = 1'–0"



POST CONNECTION CLAMP

SECTION 42

SCALE: 6" = 1'–0"



SECTION 41

SCALE: 6" = 1'–0"

GENERAL NOTES:

1. USE 6 GAGE TIES AT 12" O.C. TO ALL POSTS AND TOP 2 RAILS OR 3 RAILS (CURVED TOP). SPACE TIES TO BOTTOM RAIL AT 6" O.C.
2. ALL ALUMINUM, INCLUDING HARDWARE AND FABRIC, SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL MATCH THE COLOR OF THE S3–MTL4 RAILING.
3. THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
4. THE SCREEN TREATMENT TO BE USED (CURVED OR STRAIGHT TOP) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
5. PICKETS ARE REQUIRED FOR CRASH SAFETY.

MATERIALS:

POST AND RAILS	ASTM B 221, ALLOY 6061–T6, SCHEDULE 40 PIPE
TENSION BARS, RAIL SPLICES, WASHERS, AND POST CONN. CLAMPS	ASTM B 221, ALLOY 6061–T6
FABRIC AND TIES	AASHTO M 181 TYPE III, ALLOY 6061–T89 OR T94; 6 GAGE
TENSION BANDS	ASTM B 221, ALLOY 6063–T5
BOLTS	ASTM B 316, ALLOY 2024–T4
NUTS	ASTM B 316, ALLOY 6061–T6
PROTECTIVE SCREEN CLAMPS	ASTM B 221, ALLOY 6061–T6

BERNARDSTON
ST 10 (NORTHFIELD RD)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	126	146
PROJECT FILE NO.	612159		

TYPE I PROTECTIVE SCREEN

DATE	DESCRIPTION
AUG 22, 2026	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

612159_BR26(B10018).DWG Plotted on 31-Jul-2026 2:27 PM
ISSUED FOR CONSTRUCTION (SF) 22-AUG-2026

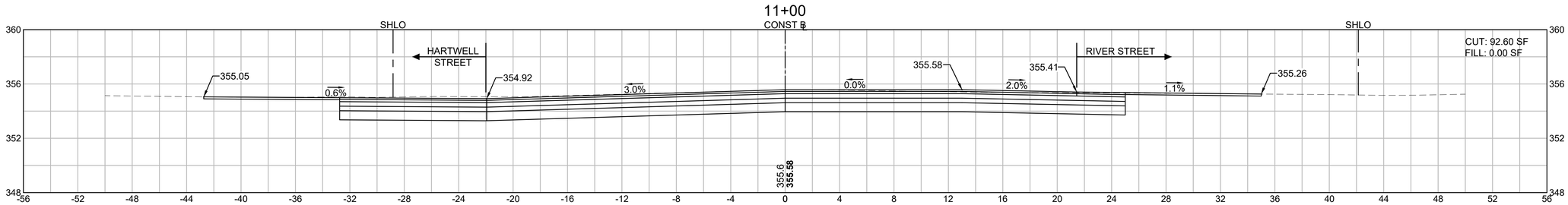
BERNARDSTON
RT 10

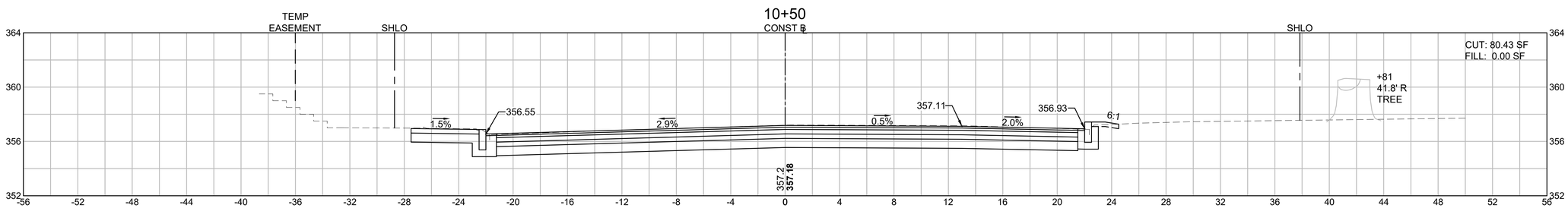
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	127	146
PROJECT FILE NO.	612159		

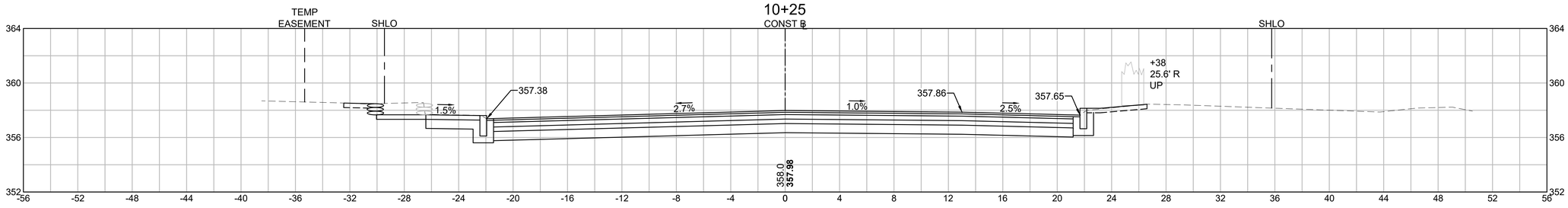
CROSS SECTIONS - 1 OF 20

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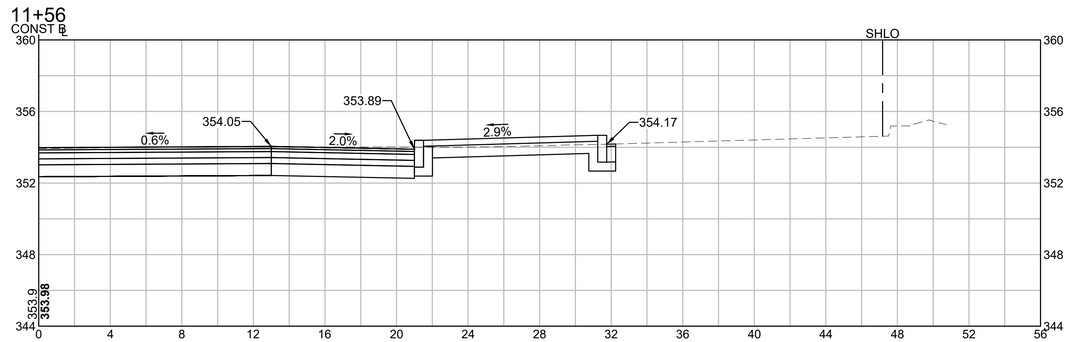


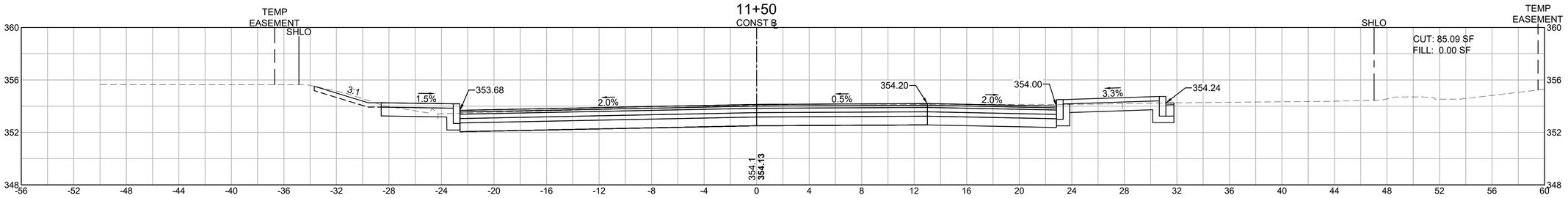
HOR. SCALE IN FEET
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VER. SCALE IN FEET
4 0 4 8

BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	128	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 2 OF 20







HOR. SCALE IN FEET
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VER. SCALE IN FEET

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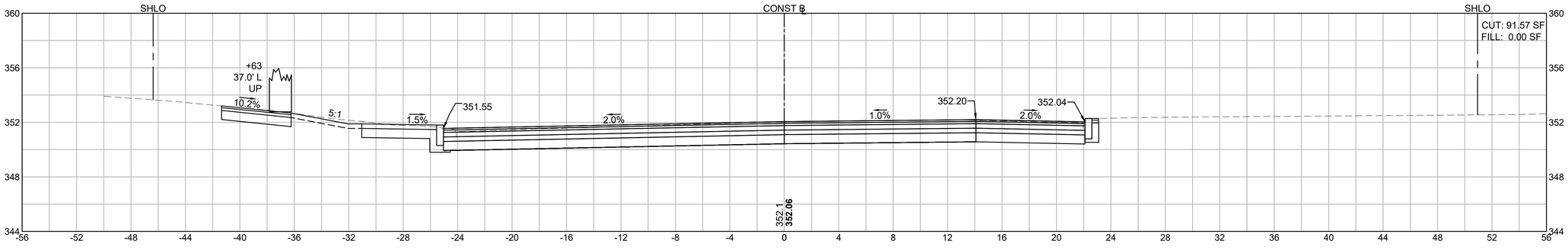
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	129	146
PROJECT FILE NO.	612159		

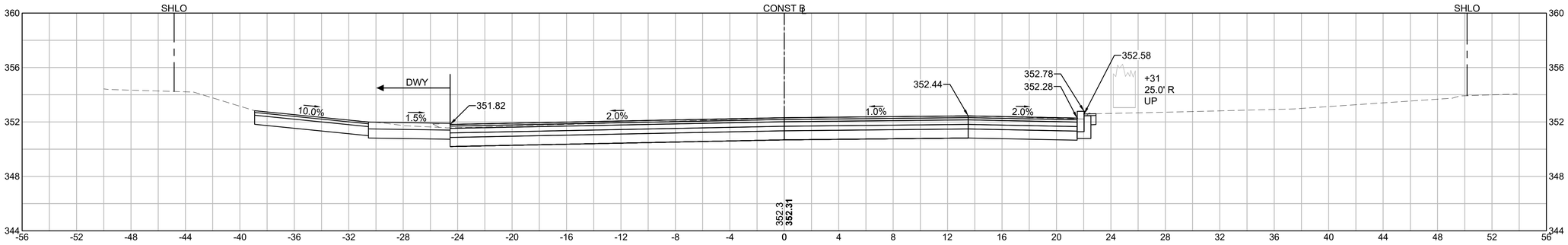
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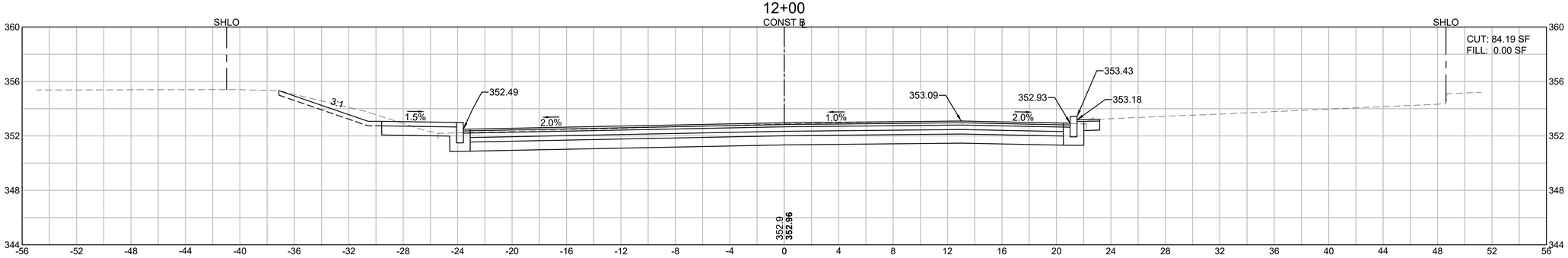
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12+35



12+00

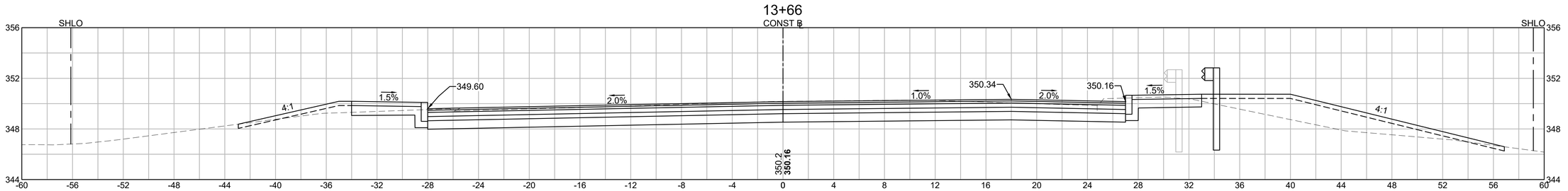


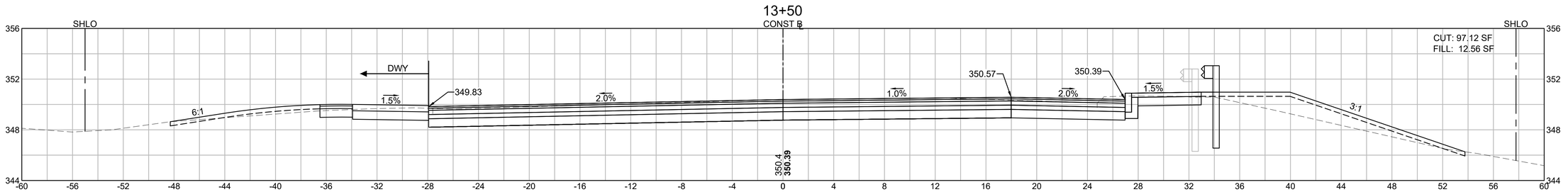
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4 0 4 8
VER. SCALE IN FEET

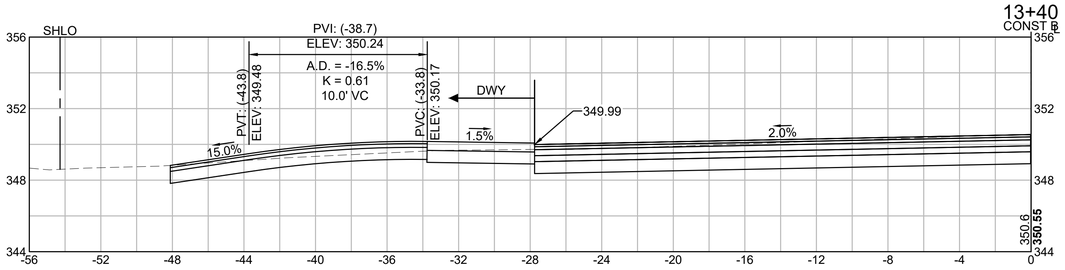
BERNARDSTON
RT 10

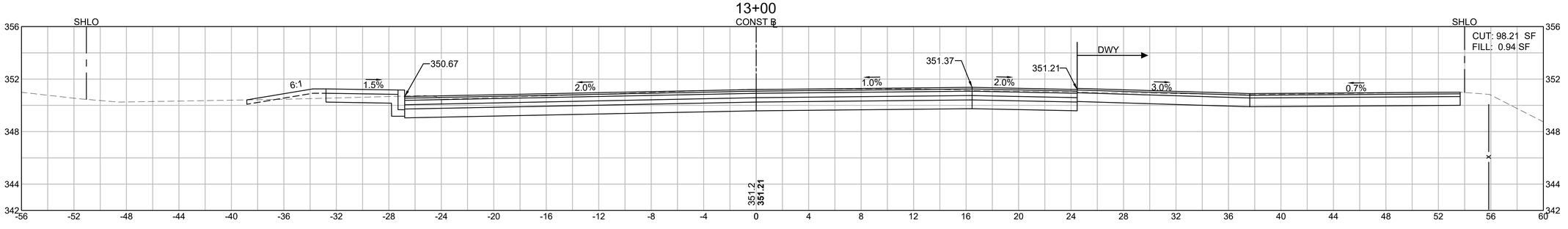
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	130	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 4 OF 20









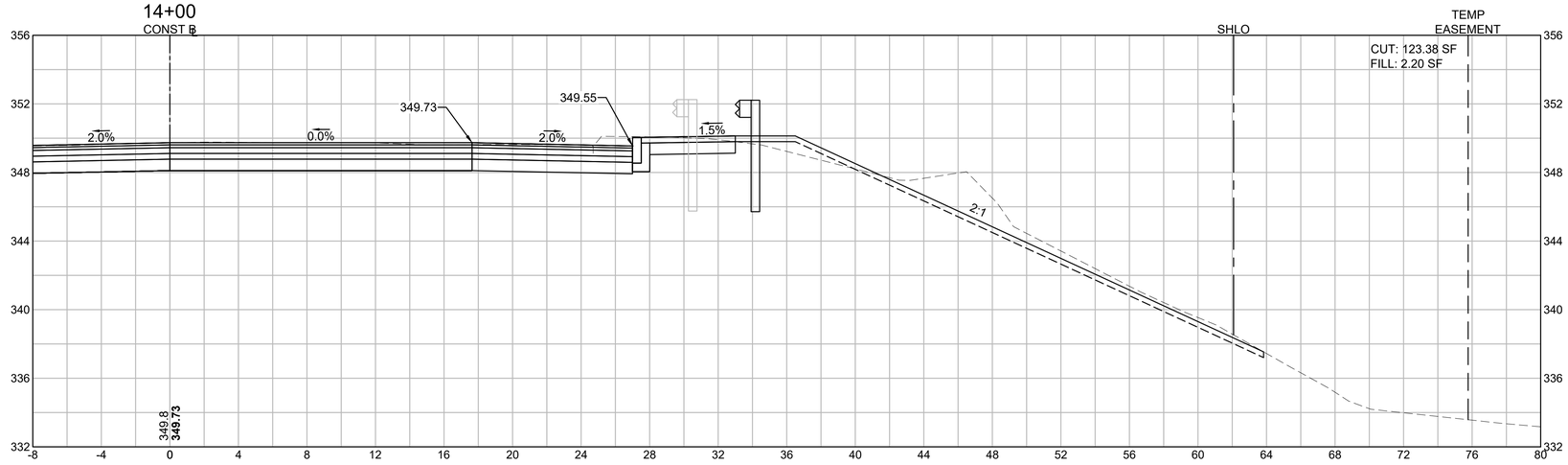
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4 0 4 8
VER. SCALE IN FEET

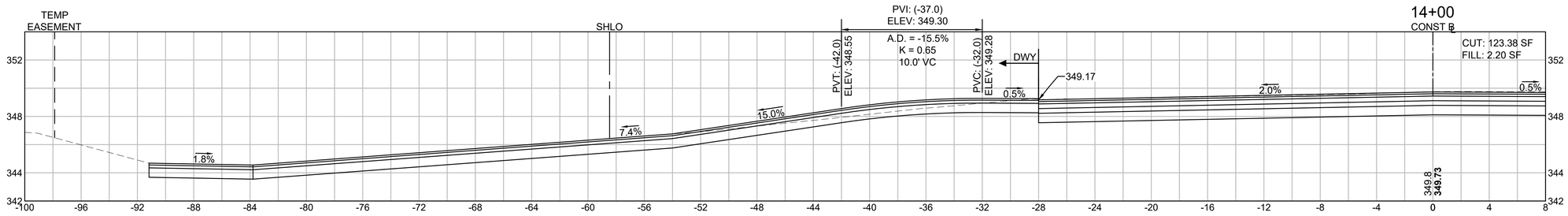
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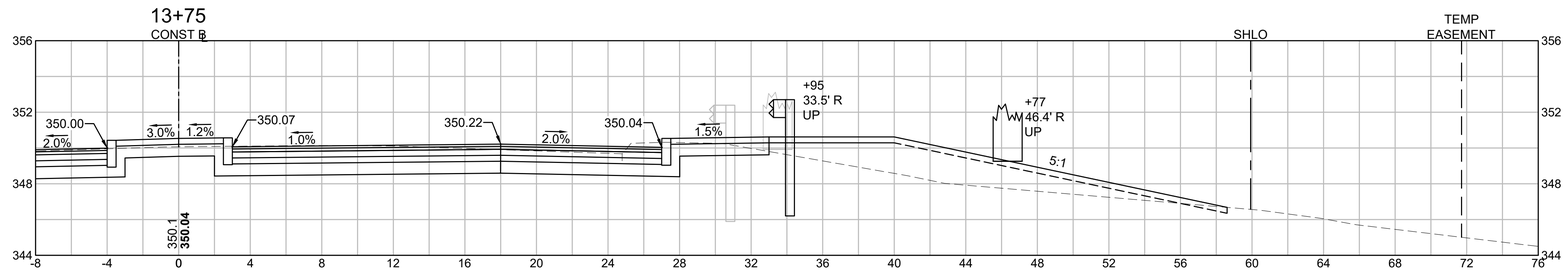
BERNARDSTON
RT 10

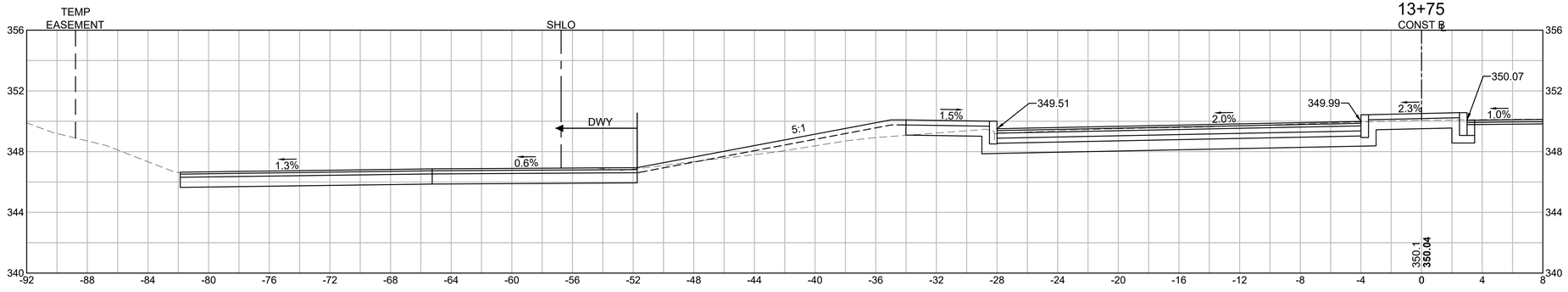
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	131	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 5 OF 20



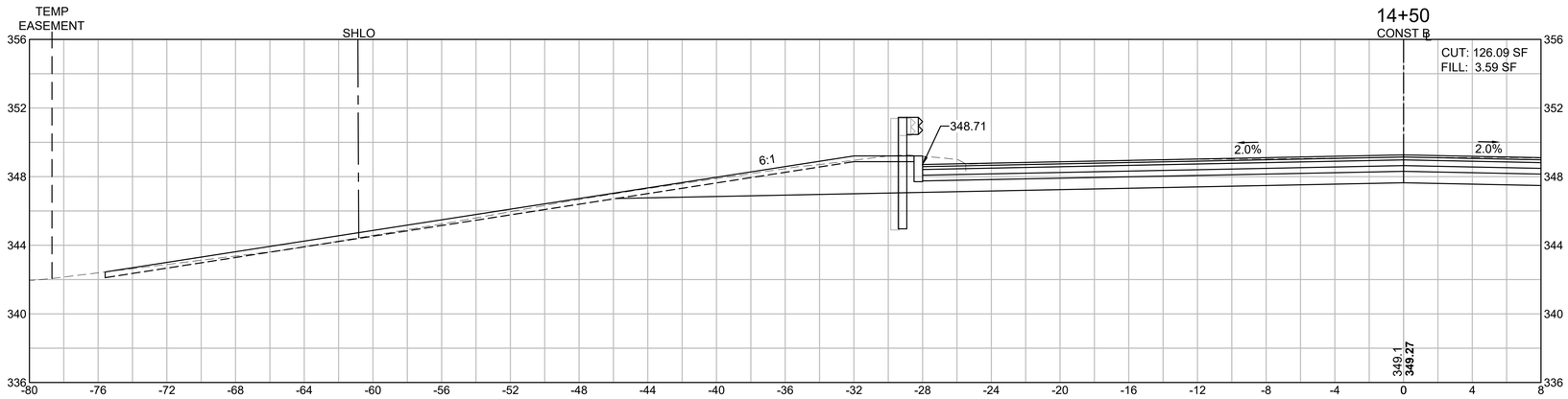


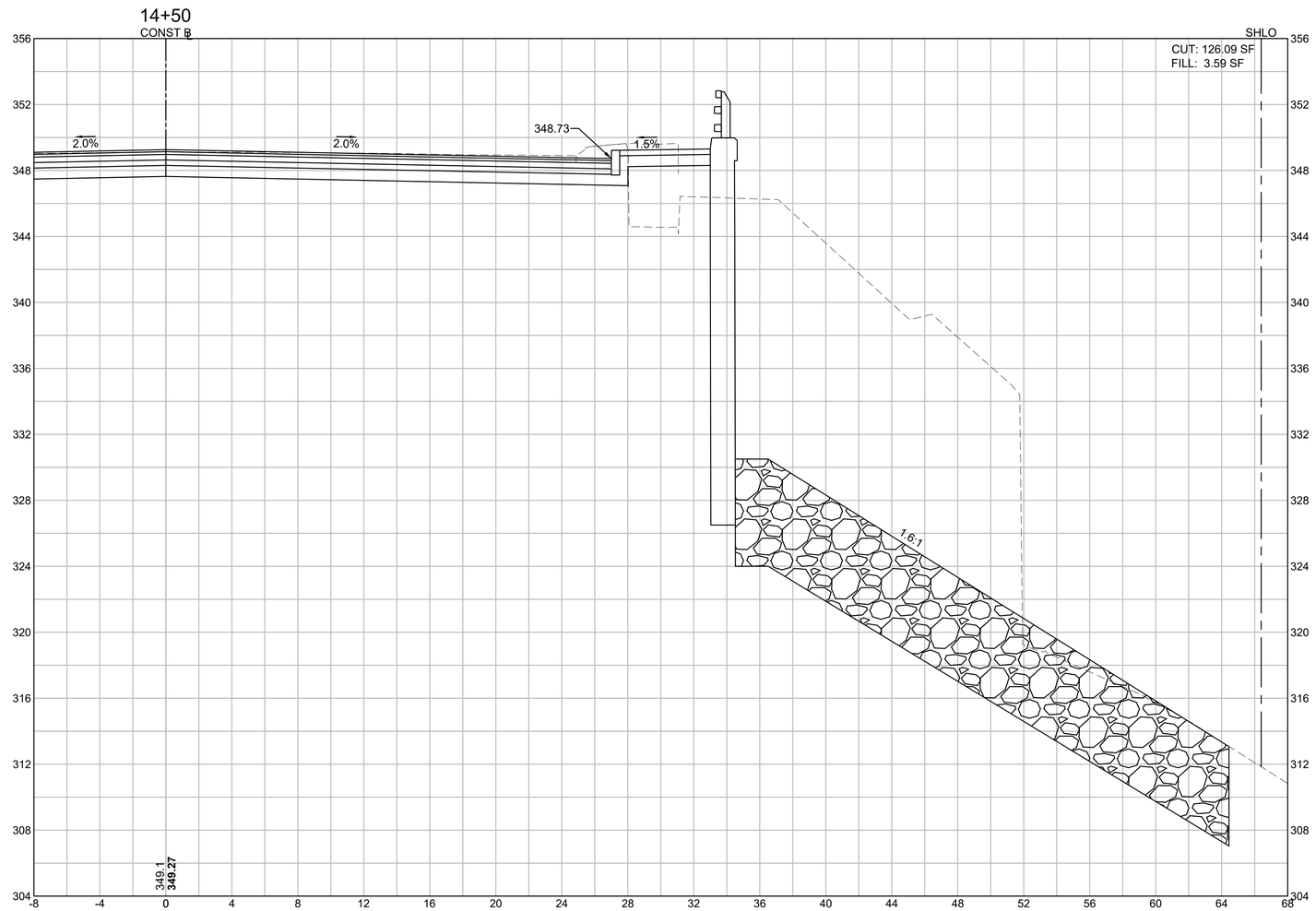




HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

T1217.01_HD15_CROSS SECTIONS.DWG Plotted on 27-Jul-2026 11:15 AM





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RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	132	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 6 OF 20

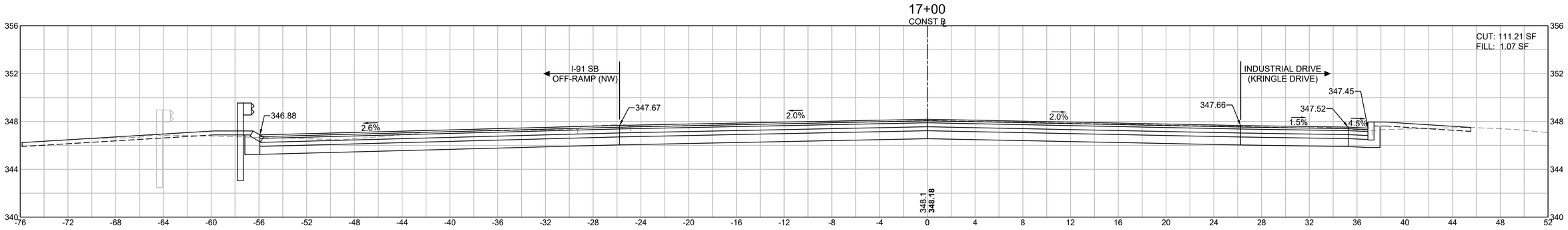
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VER. SCALE IN FEET

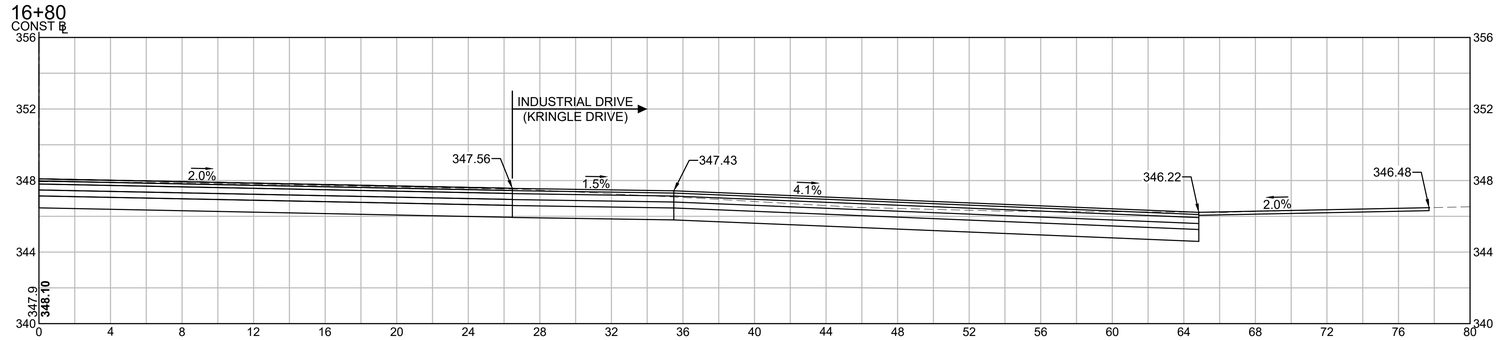
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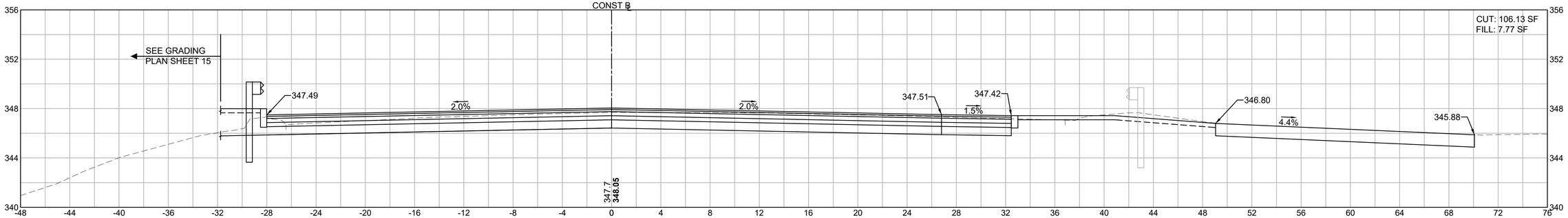
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	133	146
	PROJECT FILE NO. 612159		

CROSS SECTIONS - 7 OF 20







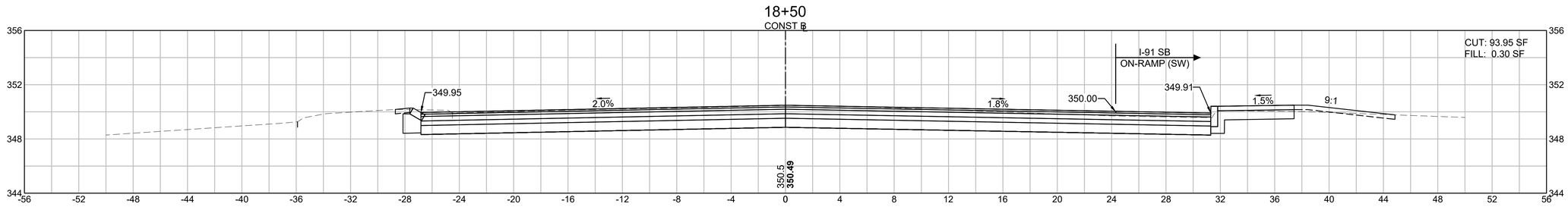
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VER. SCALE IN FEET

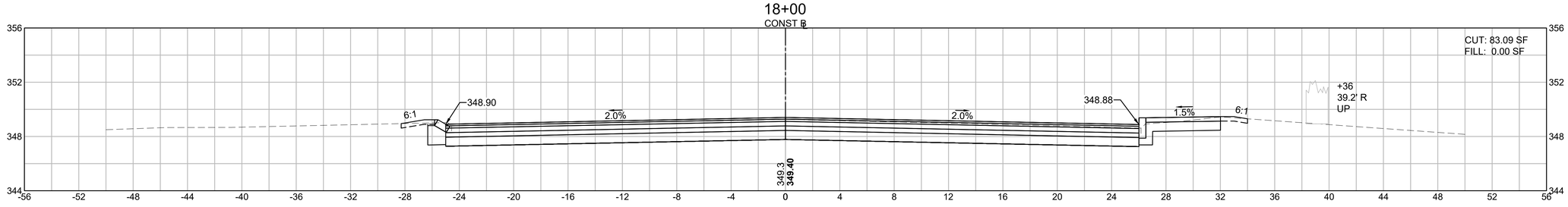
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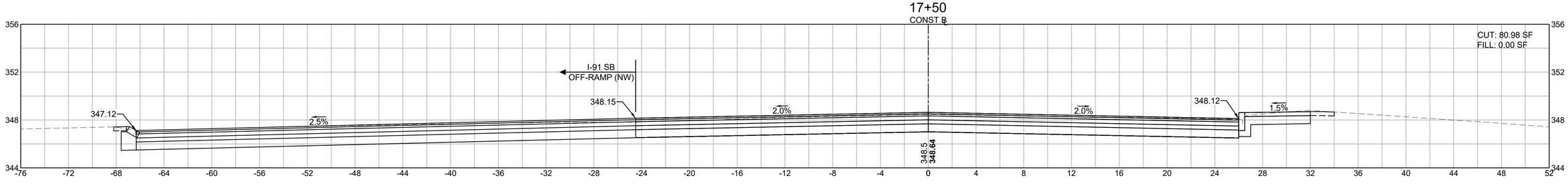
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	134	146
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CROSS SECTIONS - 8 OF 20







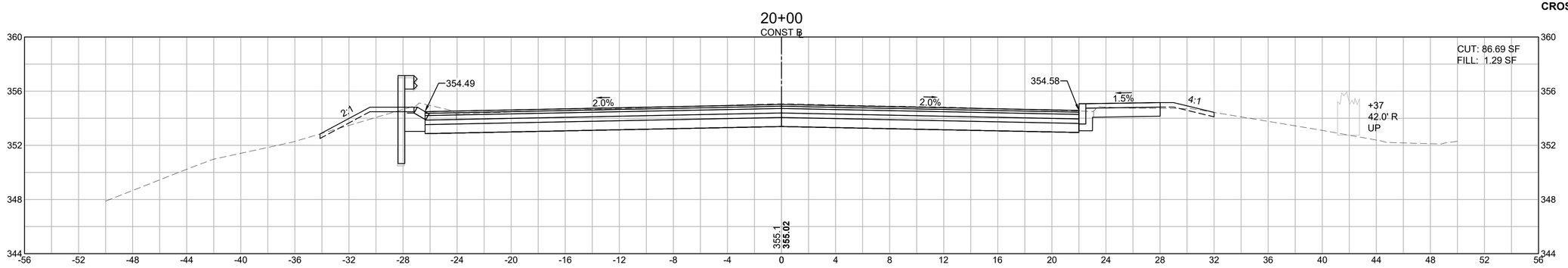
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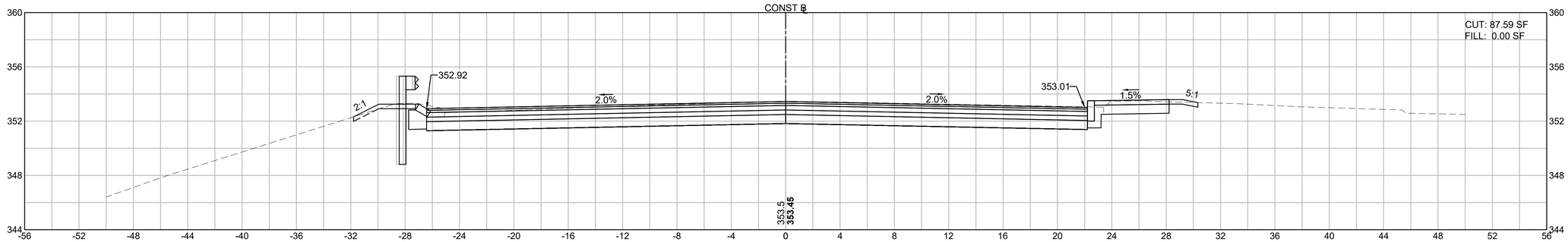
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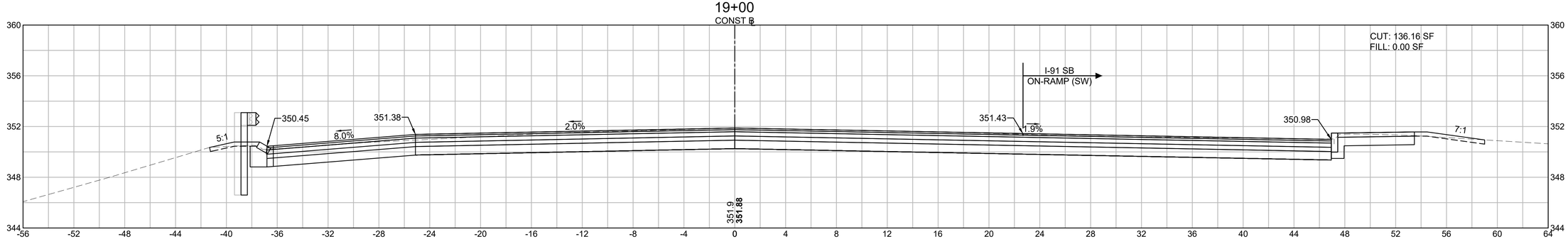
BERNARDSTON
RT 10

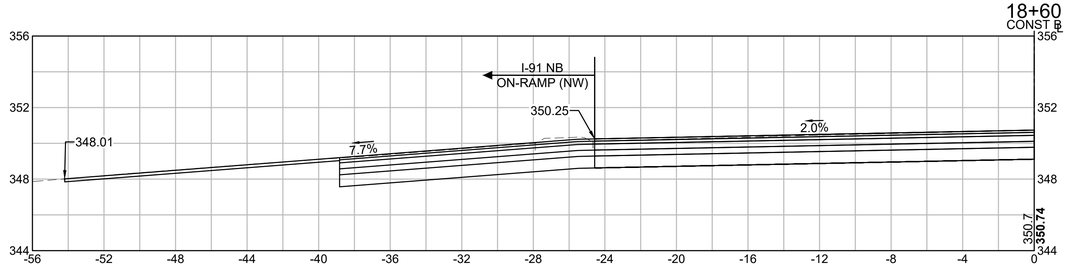
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	135	146
	PROJECT FILE NO. 612159		

CROSS SECTIONS - 9 OF 20









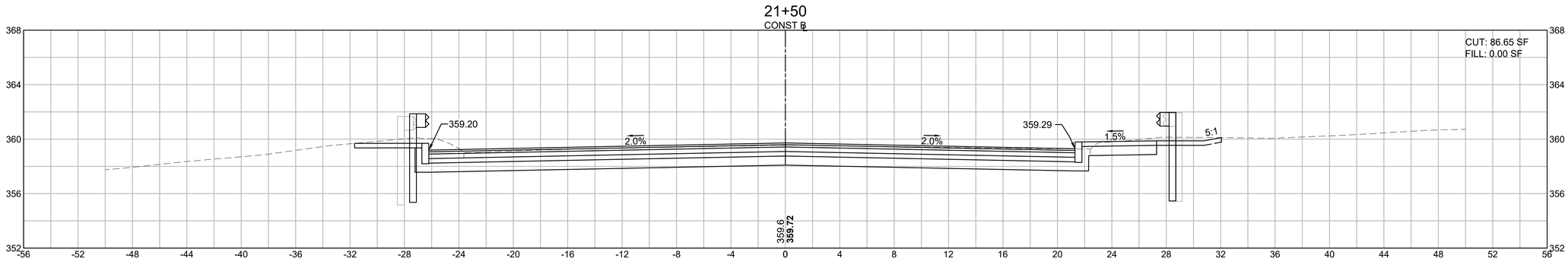
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VER. SCALE IN FEET
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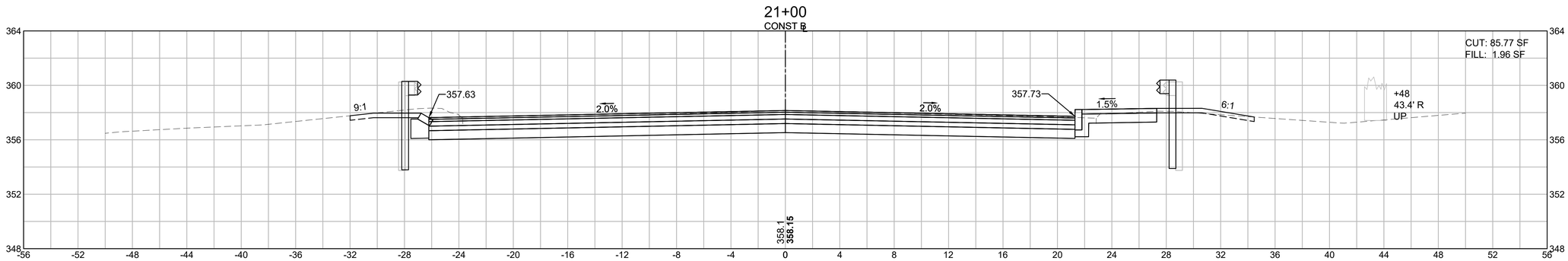
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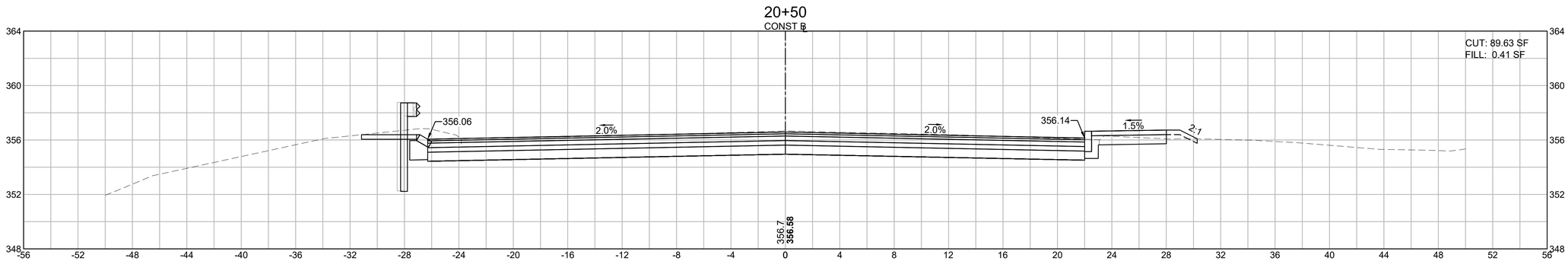
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	136	146
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CROSS SECTIONS - 10 OF 20







HOR. SCALE IN FEET
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VER. SCALE IN FEET

T1217.01_HD15_CROSS SECTIONS.DWG Plotted on 27-Jul-2026 11:16 AM

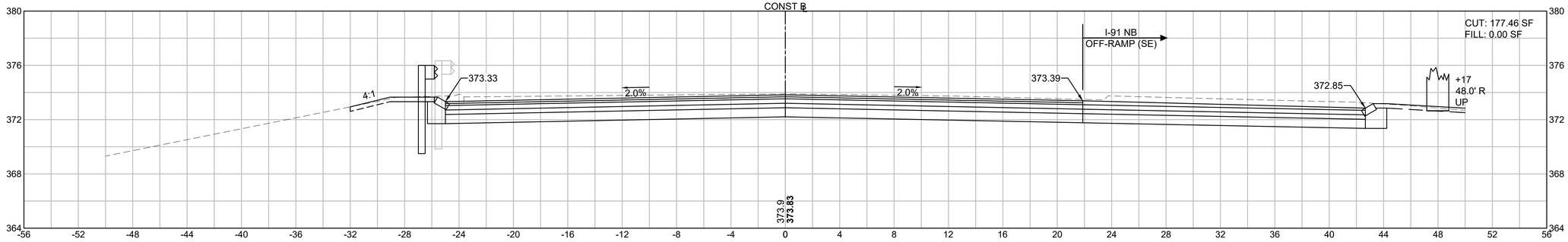
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	137	146
	PROJECT FILE NO. 612159		

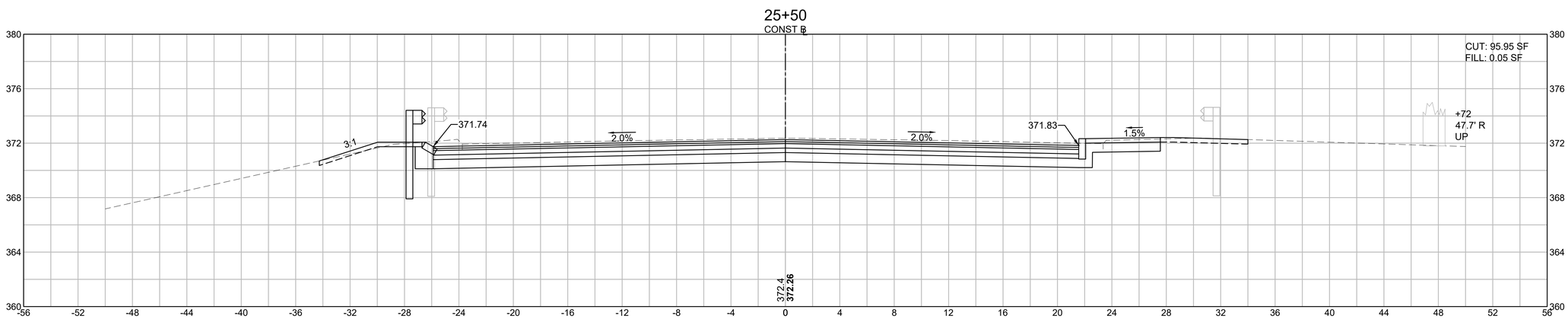
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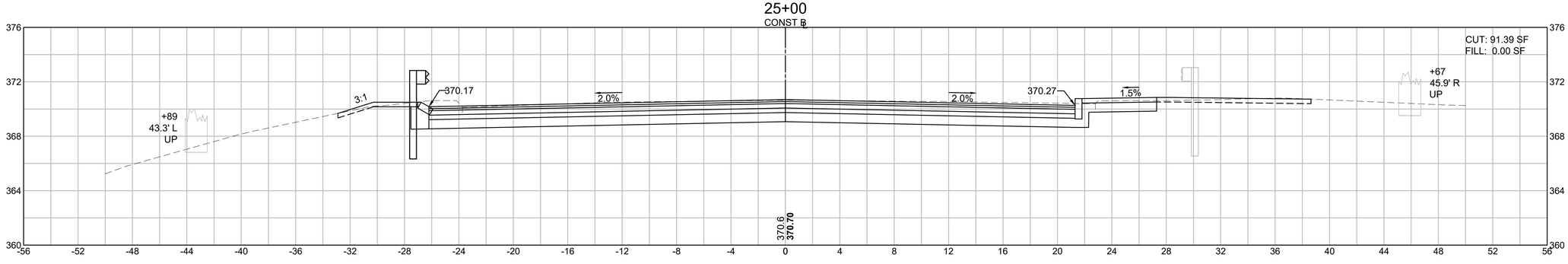
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25+50



25+00

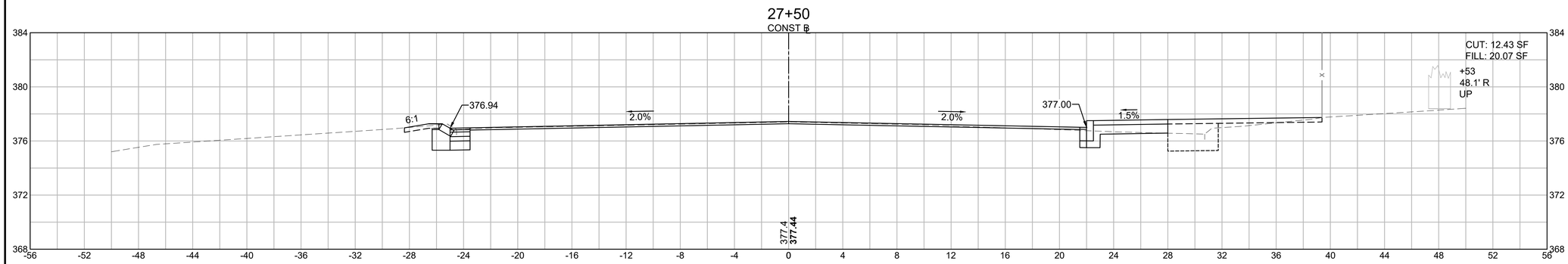


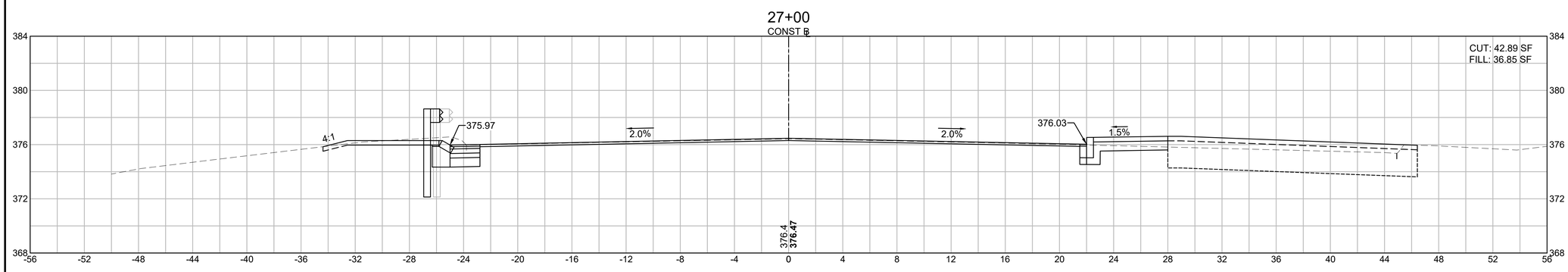
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VER. SCALE IN FEET
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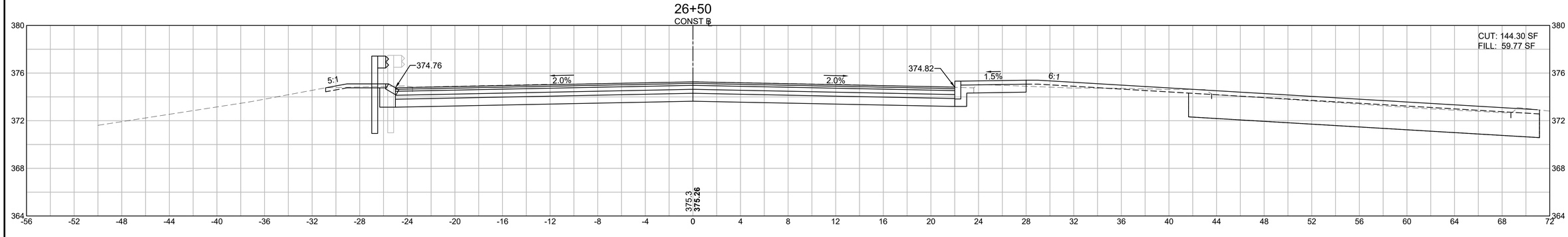
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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	PROJECT FILE NO. 612159		

CROSS SECTIONS - 12 OF 20







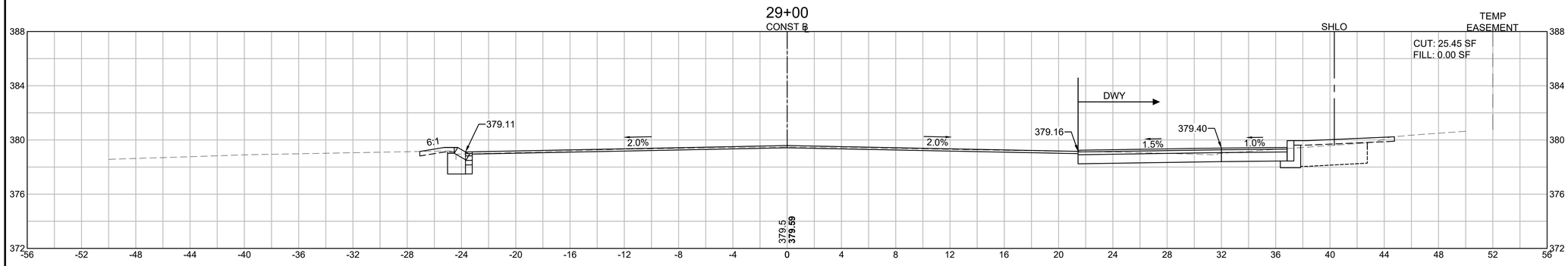
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VER. SCALE IN FEET

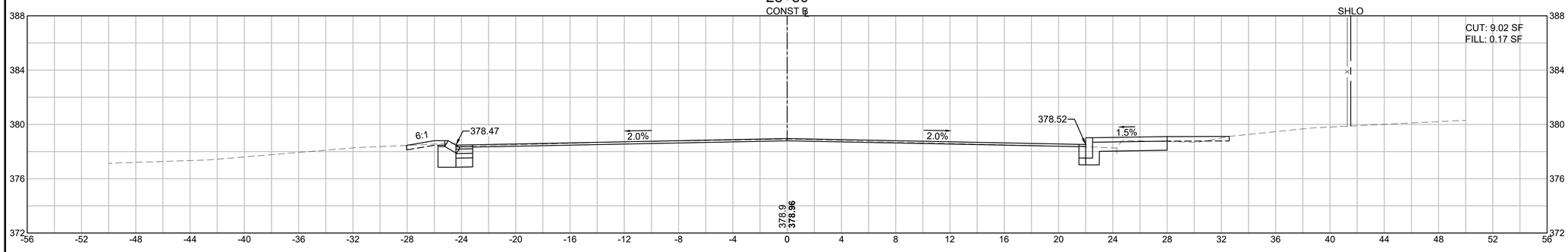
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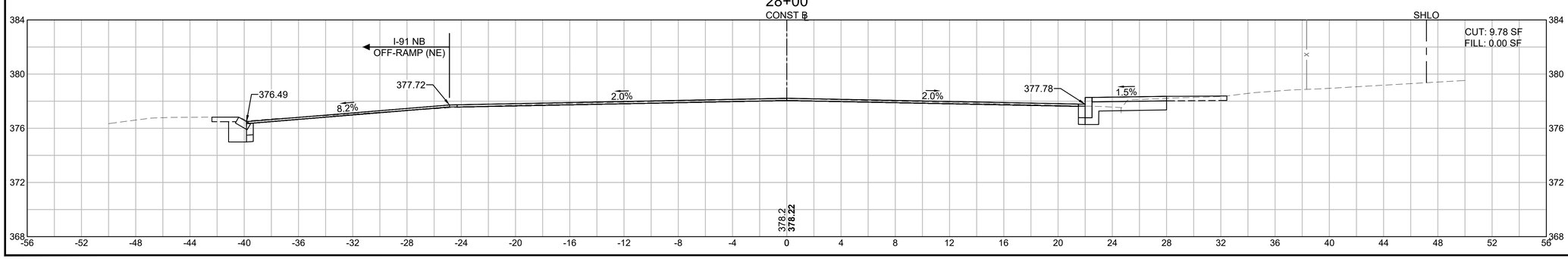
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	139	146
	PROJECT FILE NO. 612159		

CROSS SECTIONS - 13 OF 20







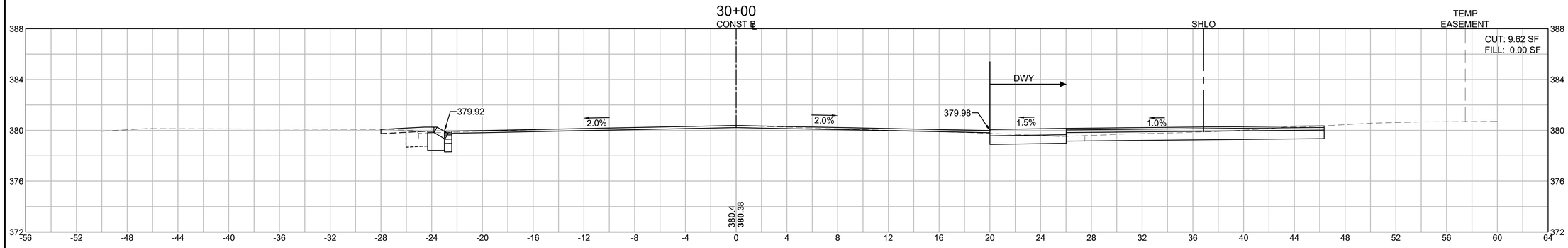
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VER. SCALE IN FEET

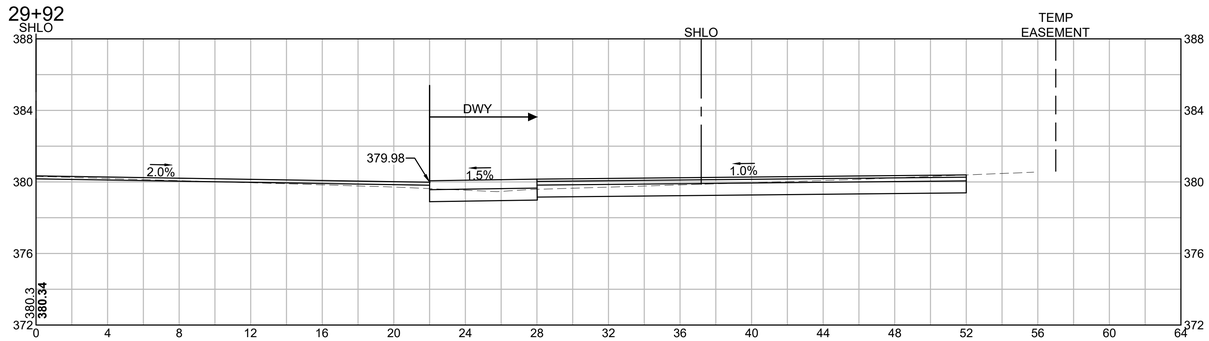
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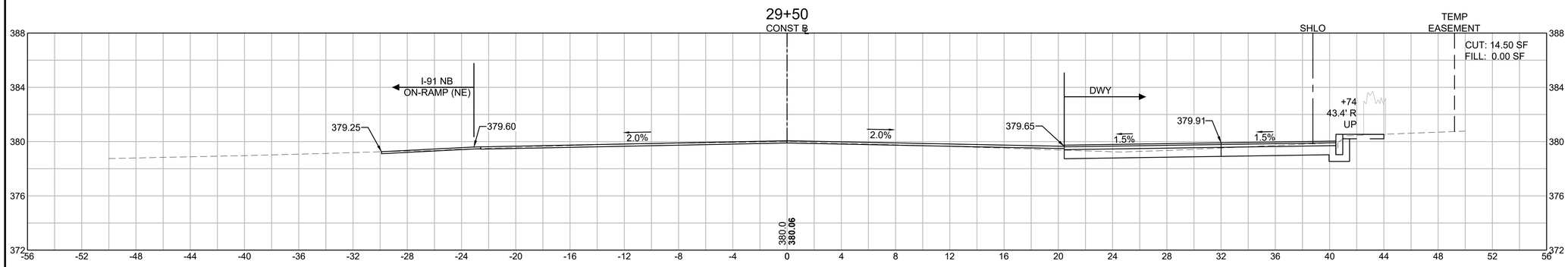
BERNARDSTON
RT 10

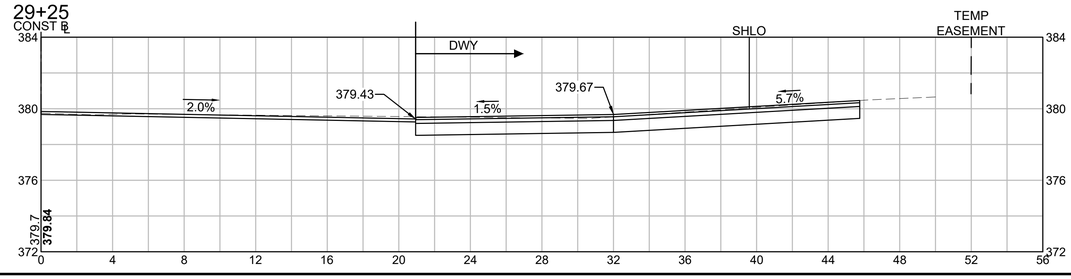
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	140	146
	PROJECT FILE NO. 612159		

CROSS SECTIONS - 14 OF 20









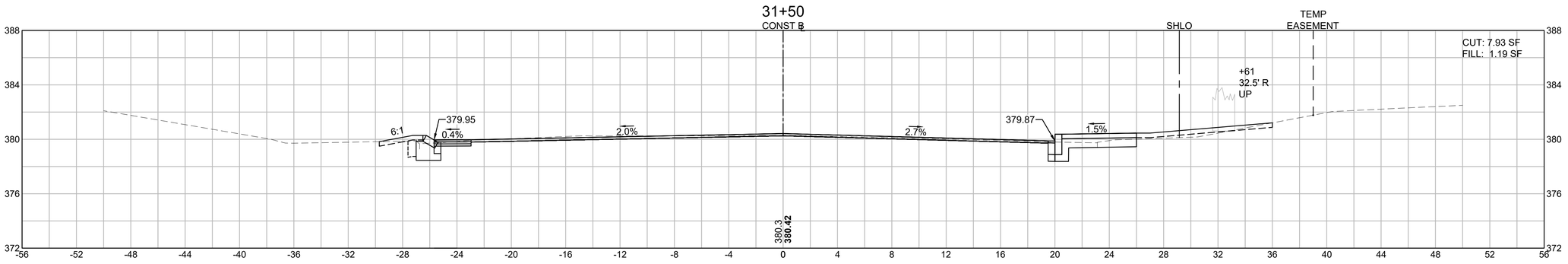
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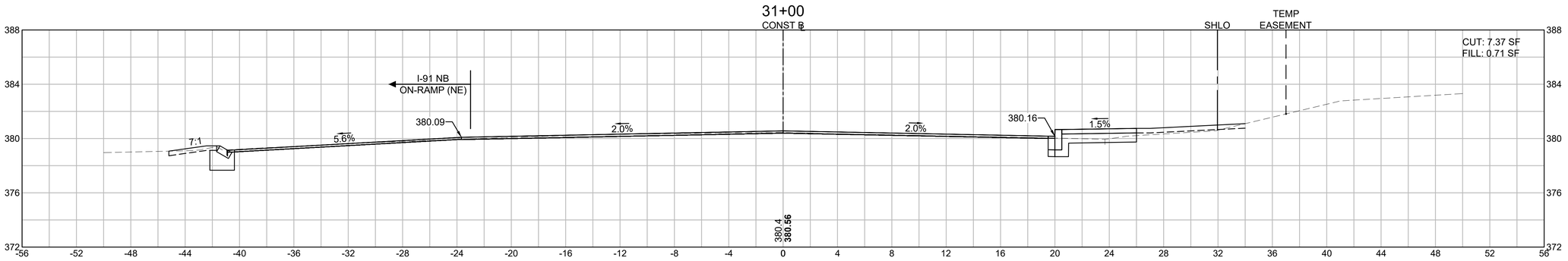
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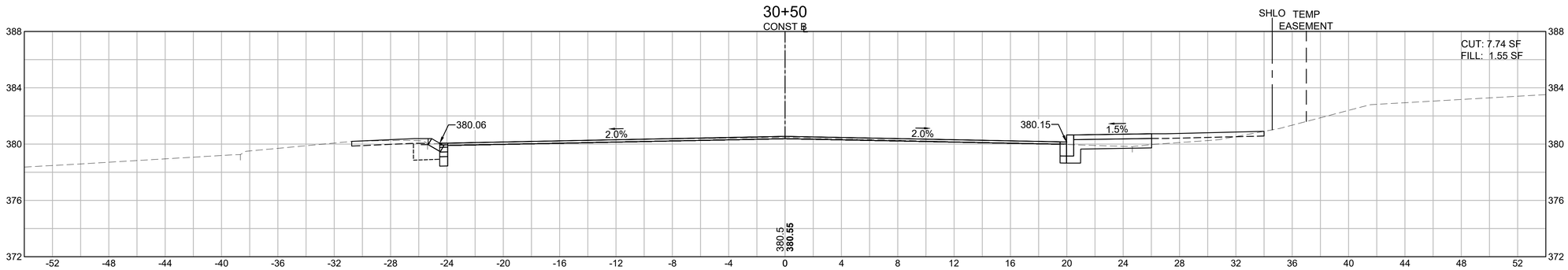
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	141	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 15 OF 20







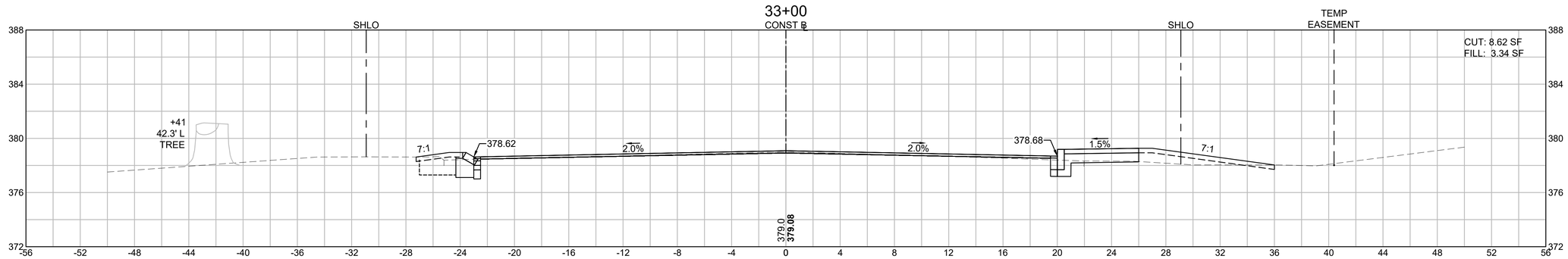
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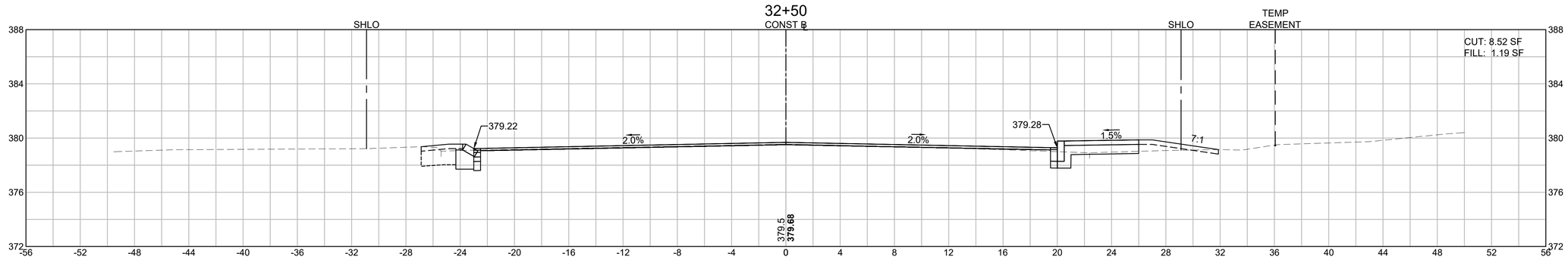
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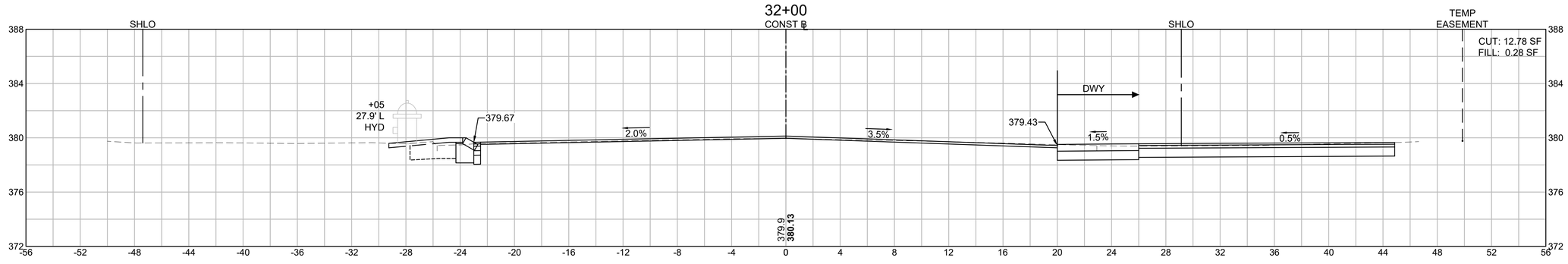
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	142	146
	PROJECT FILE NO. 612159		

CROSS SECTIONS - 16 OF 20







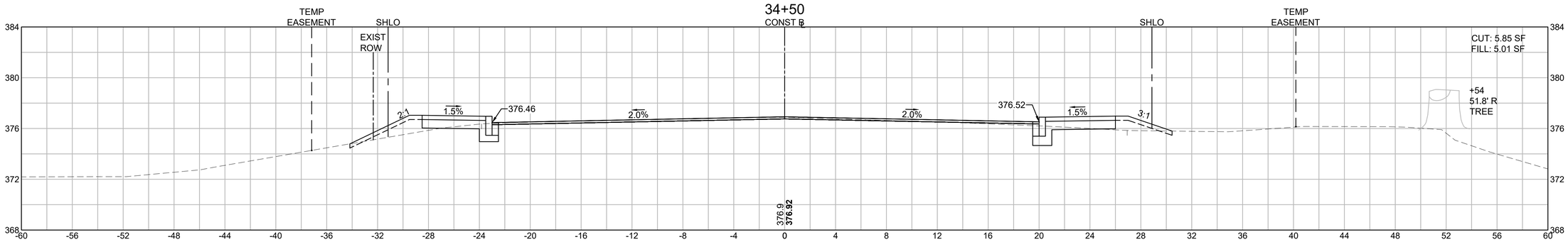
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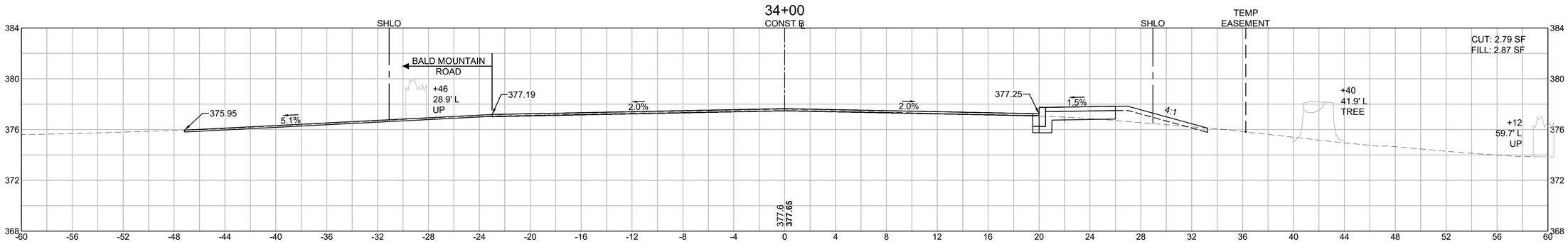
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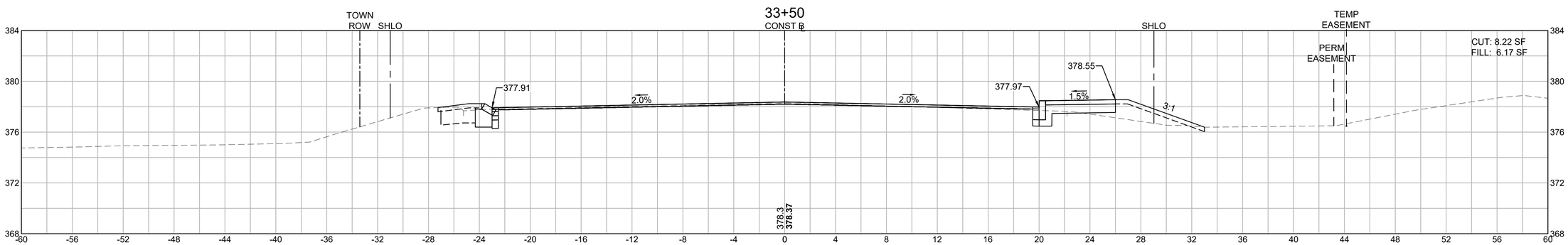
BERNARDSTON
RT 10

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	143	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 17 OF 20







HOR. SCALE IN FEET
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VER. SCALE IN FEET

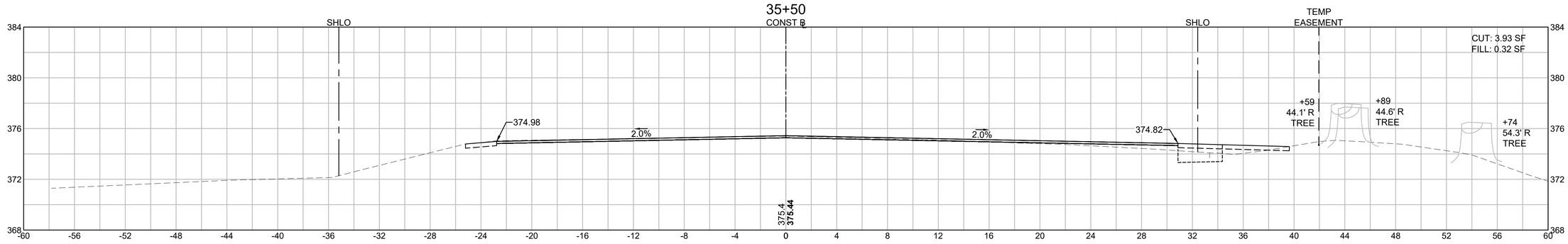
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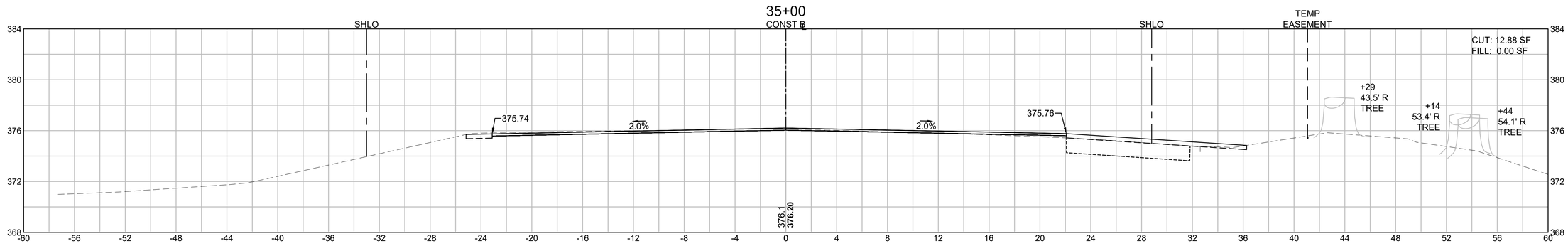
BERNARDSTON
RT 10

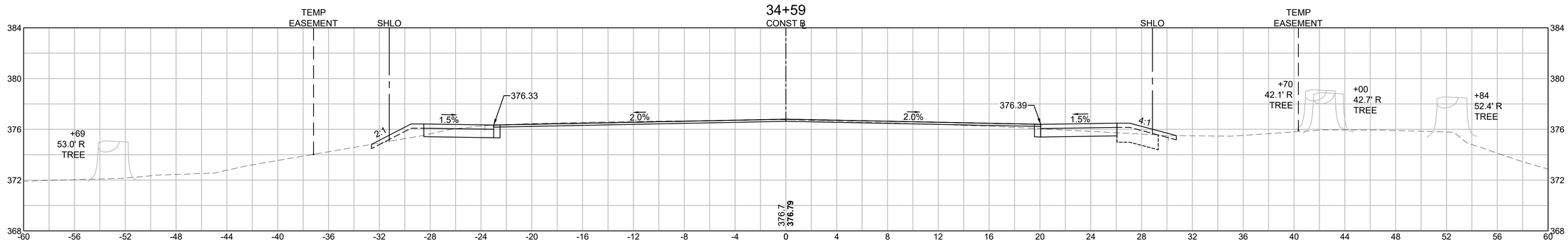
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	144	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 18 OF 20

T1217.01_HD15_CROSS SECTIONS.DWG Plotted on 27-Jul-2026 11:17 AM





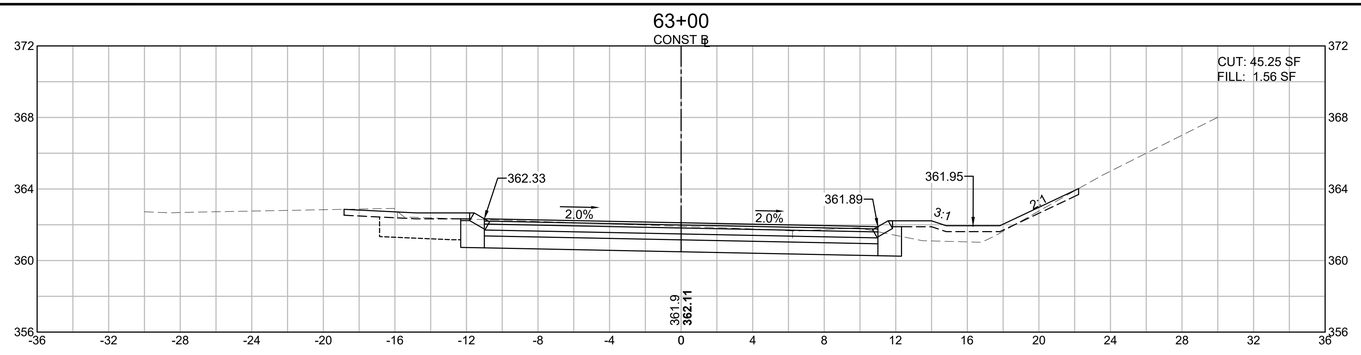


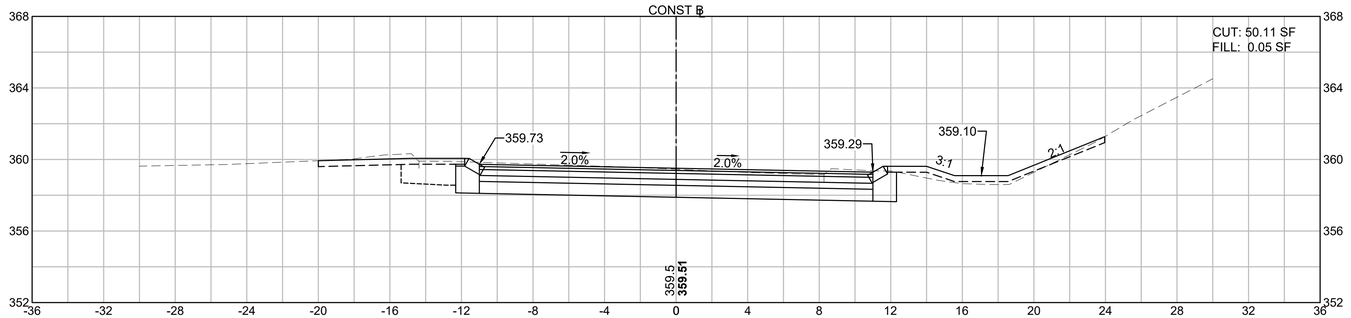
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VER. SCALE IN FEET

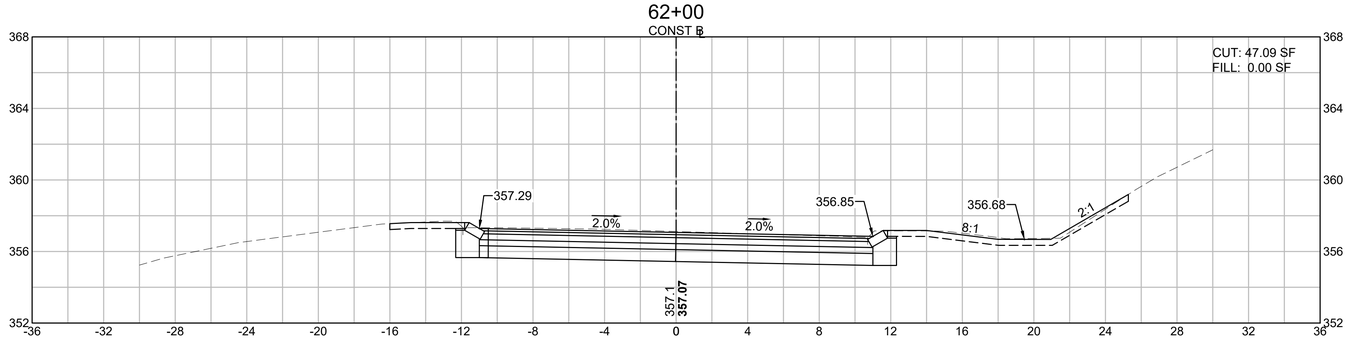
BERNARDSTON
RT 10

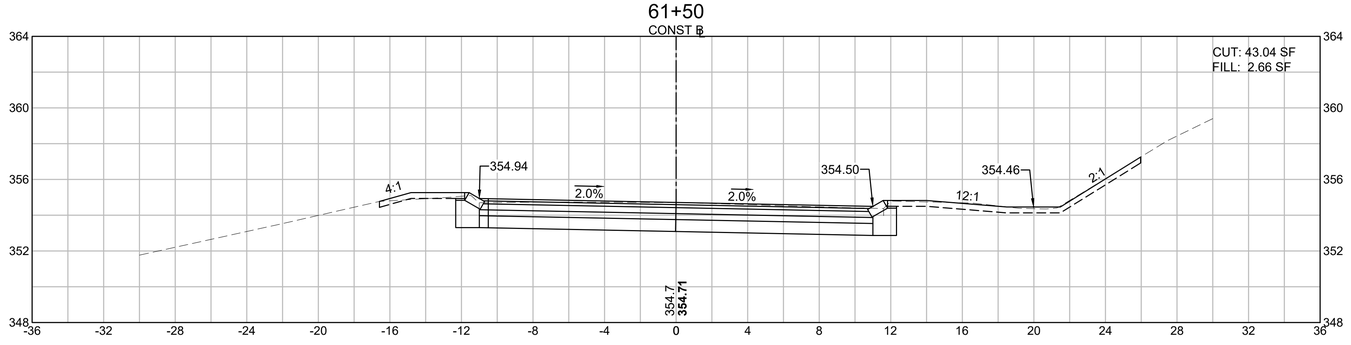
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	145	146
PROJECT FILE NO.	612159		

CROSS SECTIONS - 19 OF 20









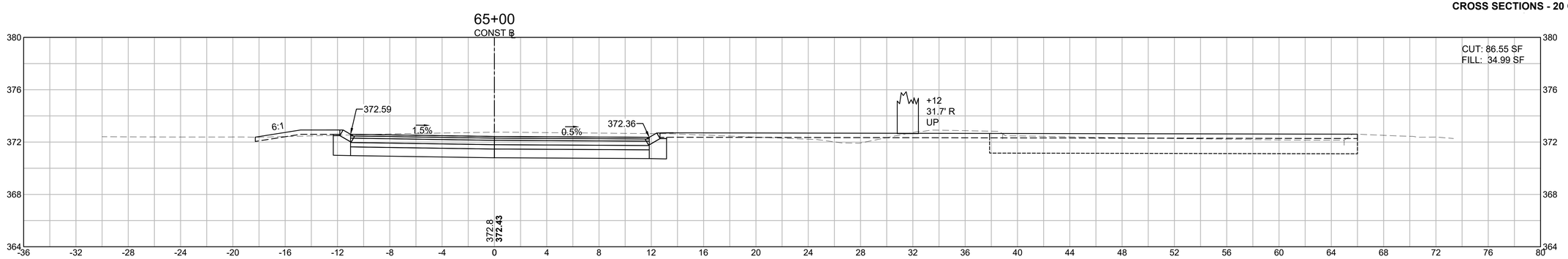
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VER. SCALE IN FEET

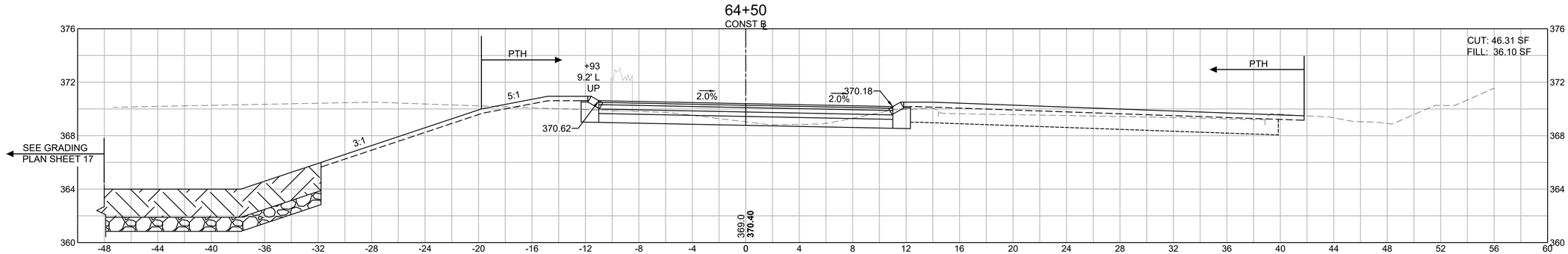
T1217.01_HD15_CROSS SECTIONS.DWG Plotted on 27-Jul-2026 11:17 AM

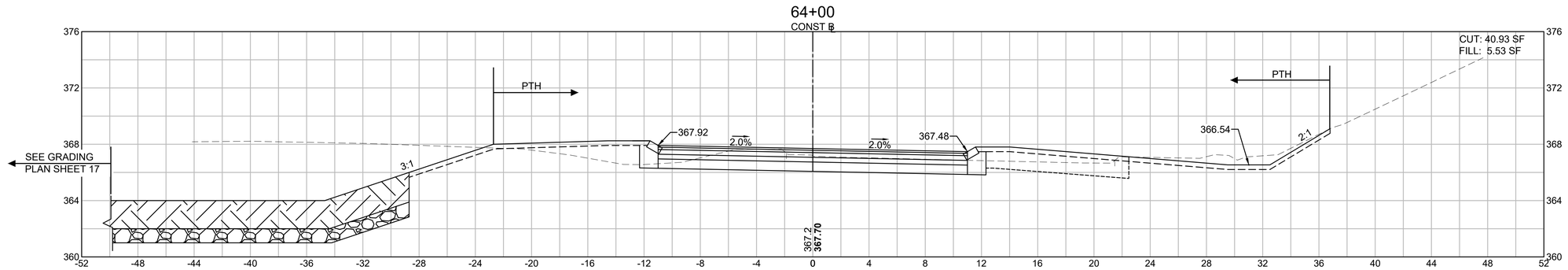
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RT 10

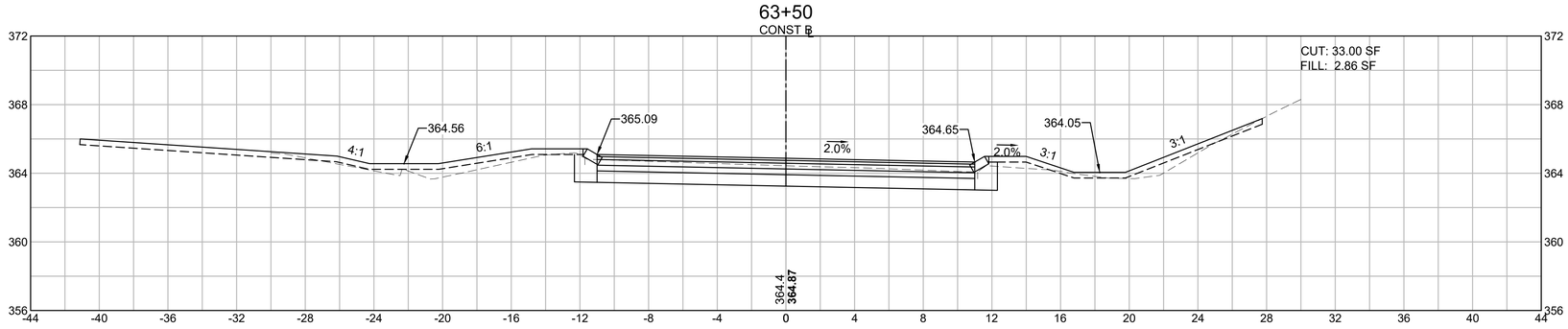
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(NGB)/FHG(BIP2)-003S(915)	146	146
	PROJECT FILE NO. 612159		

CROSS SECTIONS - 20 OF 20









HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

T1217.01_HD15_CROSS SECTIONS.DWG Plotted on 27-Jul-2026 11:18 AM