MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

MILL STREET

(BRIDGE NO. S-21-003)
(BRIDGE NO. S-21-009)

IN THE TOWN OF

SOUTHBRIDGE

WORCESTER COUNTY

FEDERAL AID PROJECT NO. STP(BR-OFF)-003S(948)X

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	1	105
PROJECT FILE NO.	608862		

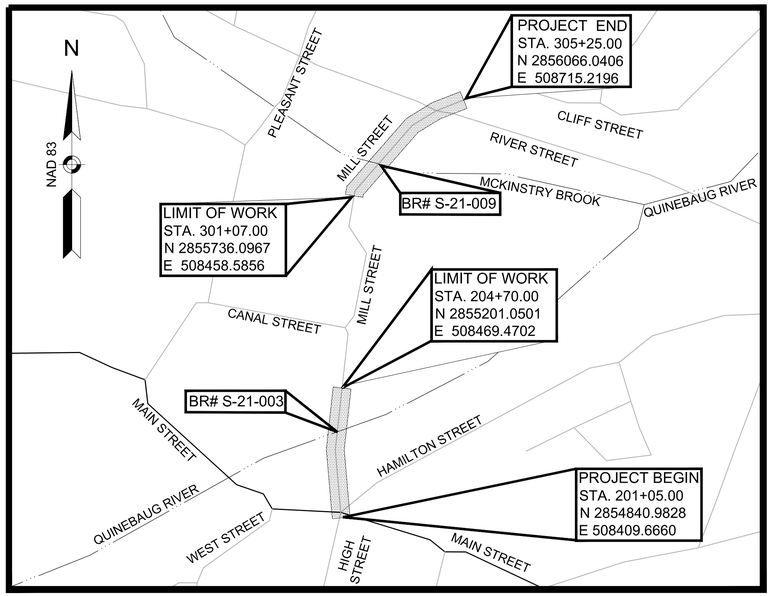
TITLE SHEET & INDEX

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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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0 200 400 600 800

SCALE: 1" = 200'

LENGTH OF PROJECT = 783.00 FEET = 0.148 MILES

DESIGN DESIGNATION (MILL STREET - BRIDGE NO'S. S-21-003, S-21-009)

DESIGN SPEED	25 MPH
ADT (2021)	350 VPD
ADT (2031)	365 VPD
K	11.0%
D	100.0% NB
T (PEAK HOUR)	5.3%
T (AVERAGE DAY)	11.8%
DHV	40 VPH
DDHV	40 VPH
FUNCTIONAL CLASSIFICATION	LOCAL

COMMONWEALTH OF MASSACHUSETTS
CHRISTINE A. CHAMPEAU
CIVIL
NO 40071
REGISTERED PROFESSIONAL ENGINEER

Christine A. Champeau PE

Digitally signed by Christine A. Champeau PE
Date: 2026.08.11 08:56:38 -04'00'

vhb
120 Front Street
Suite 500
Worcester, MA 01604
508.752.1001

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Digitally signed by Carrie Lavallee, P.E.
Date: 2026.08.12 09:04:23 -04'00'

08/12/2026

CHIEF ENGINEER **DATE**

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB 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
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
		TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)
		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
		FLOATING SILT FENCE

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
Ø1	Ø1	CONTROLLER PHASE
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		QUADRUPOLE WIRE LOOP DETECTOR
		BICYCLE WIRE LOOP DETECTOR, TYPE B-2
		VIDEO DETECTION CAMERA
		PASSIVE DETECTION ZONE
		PEDESTRIAN PUSH BUTTON, SIGN AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD, WITH/WITHOUT BACKPLATE
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, WITH/WITHOUT BACKPLATE
		FLASHING BEACON, WITH/WITHOUT BACKPLATE
		PEDESTRIAN SIGNAL HEAD, DENOTED AS P#
TS		SIGNAL POST AND BASE
		MAST ARM, SHAFT AND BASE
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD SIGN
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE - SD2.022 (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
		BICYCLE LANE WORD, SYMBOL AND/OR ARROW - WHITE
SL	SL	STOP LINE -WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
	CW	CROSSWALK-WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
SWL	SWL	SOLID WHITE LINE, 6" WIDTH
SYL	SYL	SOLID YELLOW LINE, 6" WIDTH
DWLEx	DWLEx	DOTTED WHITE LINE, 2' LINE W/6' SPACING, 6" WIDTH
DYLEx	DYLEx	DOTTED YELLOW LINE, 2' LINE W/6' SPACING, 6" WIDTH
DBYL	DBYL	DOUBLE YELLOW LINE, 6" WIDTH
12" SWL	12" SWL	SOLID WHITE LINE, 12" WIDTH UNLESS OTHERWISE NOTED
12" SYL	12" SYL	SOLID YELLOW LINE, 12" WIDTH UNLESS OTHERWISE NOTED
		WRONG WAY ARROW, WHITE

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	2	105
PROJECT FILE NO. 608862			

LEGEND & ABBREVIATIONS

608862_HD(COV).DWG Plotted on 27-Jul-2026 12:53 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	3	105
PROJECT FILE NO. 608862			

LEGEND & ABBREVIATIONS

608862_HD(COV).DWG Plotted on 27-Jul-2026 12:53 PM

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
APS	ACCESSIBLE PEDESTRIAN SYSTEM
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
L.O., LO	LAYOUT
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
MJ	MECHANICAL JOINT
MW	MONITORING WELL
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
PED	PEDESTRIAN
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT

ABBREVIATIONS (cont.)

GENERAL

PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVM'T	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TS	TRAFFIC SIGNAL
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WG, WGT	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
WSO	WATER SHUT OFF
X-SECT	CROSS SECTION

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
←FR–	FLASHING RED LEFT ARROW
–FR→	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
←FY–	FLASHING YELLOW LEFT ARROW
–FY→	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
←G–	STEADY GREEN LEFT ARROW
–G→	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
↑ G	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
←R–	STEADY RED LEFT ARROW
–R→	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR YELLOW
←Y–	STEADY YELLOW LEFT ARROW
–Y→	STEADY YELLOW RIGHT ARROW

GENERAL NOTES:

1. TOPOGRAPHICAL INFORMATION FROM A SURVEY PERFORMED BY GREEN INTERNATIONAL AFFILIATES, INC. IN OCTOBER 2019 AND UPDATED IN MAY 2024. THE HORIZONTAL COORDINATE SYSTEM IS ON THE MASS GRID SYSTEM NAD83 AND THE VERTICAL COORDINATE SYSTEM IS NAVD 1988.

2. 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 DETERMINE THE EXACT 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 EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

3. 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.

4. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING WATER, SEWER, AND DRAINAGE STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER, SEWER, AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.

5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CATV AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.

7. SAWCUT SURFACES ABUTTING THE PAVEMENT TOP COURSE SHALL BE COATED WITH HMA JOINT SEALANT.

8. LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.

9. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.

10. SILT SACKS SHALL BE INSTALLED IN ALL EXISTING CATCH BASINS PRIOR TO THE START OF CONSTRUCTION. SILT SACKS SHALL BE INSTALLED ON ALL NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION.

11. EXISTING STATE, COUNTY, CITY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.

12. 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).

13. ALL EXISTING GRANITE CURB SUITABLE FOR REUSE SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONE OF A DIFFERENT RADIUS THAN PROPOSED CURB. RESET CURB SHALL BE PLACED AS DIRECTED BY THE ENGINEER AND MAY BE ANYWHERE WITHIN THE PROJECT LIMITS.

NAD 83

N

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	4	105
PROJECT FILE NO.	608862		

KEY PLAN & BORING LOCATIONS

608862_HDI(KEY).DWG Plotted on 27-Jul-2026 12:53 PM

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

WEST STREET

MAIN STREET

HIGH STREET

200

202

B-1A

B-1B

B-2

204

206

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

MILL STREET

BRIDGE
S-21-003

HAMILTON STREET

QUINEBAUG RIVER

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

MCKINSTRY BROOK

30

BB-1

BB-2

BB-3

303

MILL STREET

BRIDGE
S-21-009

LIMIT OF PAVING
STA 304+50.50
N 2856007.2319
E 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

305+25

RIVER STREET

7
##
13
16
29 TO 32

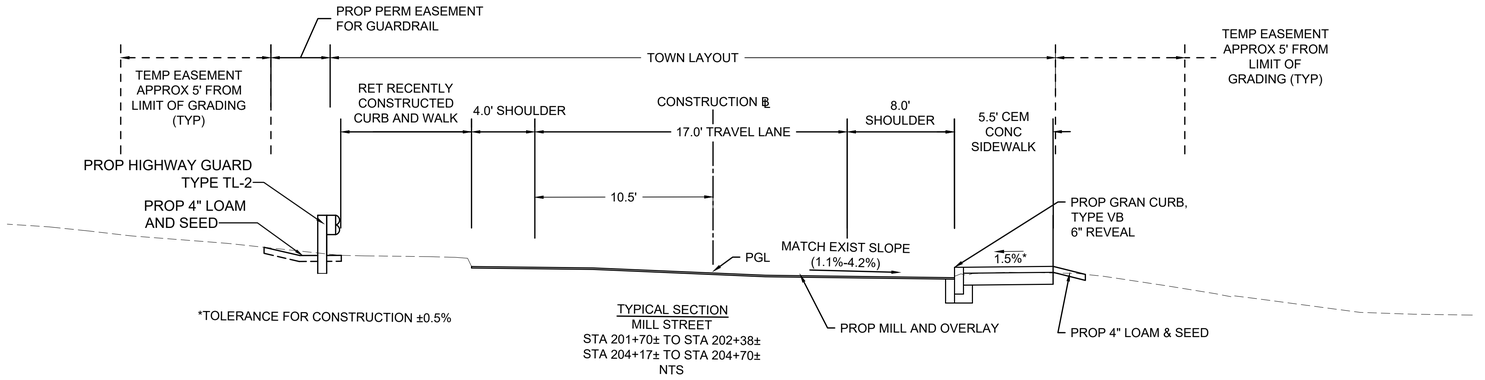
8
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14
17
33 TO 36

LEGEND

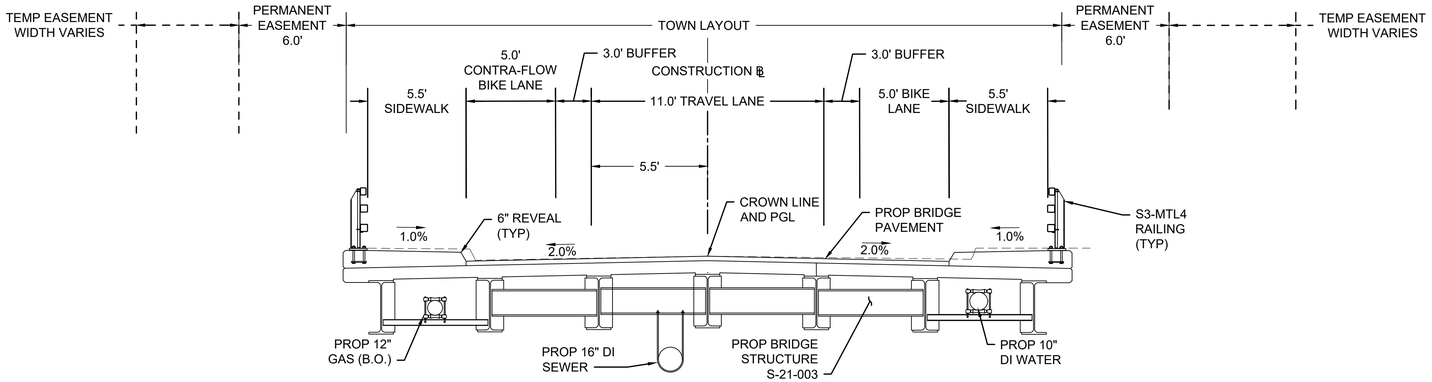
- (#) CONSTRUCTION PLANS
- (#) ALIGNMENT & GRADING PLANS
- (#) TRAFFIC PLANS
- (#) TRAFFIC SIGNAL PLANS
- (#) UTILITY PLANS
- BORING LOCATIONS

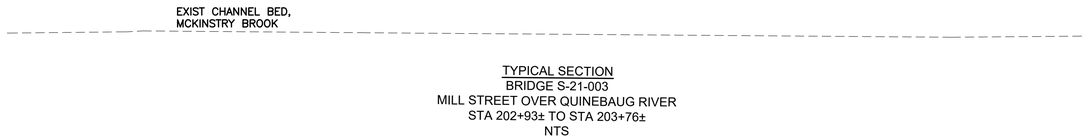
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SCALE: 1" = 60'

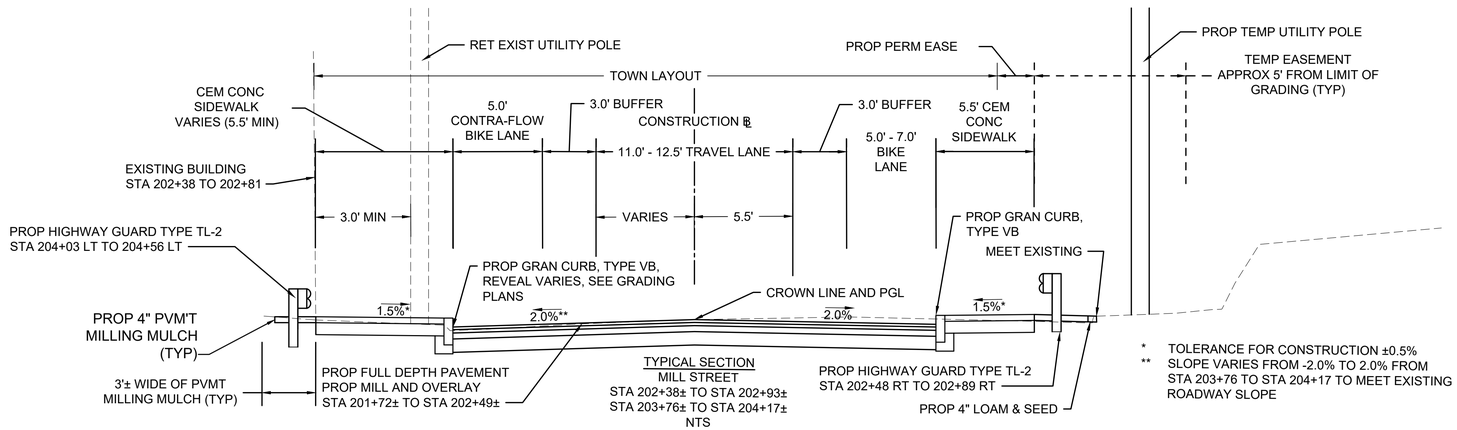


TYPICAL SECTION
MILL STREET
STA 201+70± TO STA 202+38±
STA 204+17± TO STA 204+70±
NTS





TYPICAL SECTION
BRIDGE S-21-003
MILL STREET OVER QUINEBAUG RIVER
STA 202+93± TO STA 203+76±
NTS



TYPICAL SECTION
MILL STREET
STA 202+38± TO STA 202+93±
STA 203+76± TO STA 204+17±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%
** SLOPE VARIES FROM -2.0% TO 2.0% FROM STA 203+76 TO STA 204+17 TO MEET EXISTING ROADWAY SLOPE

SOUTHBRIDGE
MILL STREET

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TYPICAL SECTIONS

PAVEMENT NOTES

PROP FULL DEPTH PAVEMENT

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

INTERMEDIATE COURSE: 2 ½" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC - 12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

BASE COURSE: 4 ½" SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) OVER

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

PROP FULL DEPTH PAVEMENT (LESS THAN 4.0 FEET WIDE)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

BASE COURSE: 8" CEMENT CONCRETE BASE COURSE OVER

SUBBASE: 10" GRAVEL BORROW TYPE b

PROP MILL AND OVERLAY

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

LEVELING COURSE: SUPERPAVE LEVELING COURSE 9.5 (SLC - 9.5) AS REQUIRED* TO MEET PROPOSED ELEVATIONS OVER

MILLING: 1 ½" FINE MILLING DEPTH

*SUPERPAVE LEVELING COURSE - 9.5 (SLC - 9.5) REQUIRED STA 201+85 TO 202+38 ONLY

PROP CEMENT CONCRETE WALKS, PEDESTRIAN CURB RAMPS (PCR), 4-INCH CEMENT CONCRETE PAD

SURFACE: 4" CEMENT CONCRETE (4000 PSI, 3/4", 610 LB), AIR-ENTRAINED, OVER

SUBBASE: 8" GRAVEL BORROW, TYPE b

PROP CEMENT CONCRETE SIDEWALK AT DRIVEWAYS, 6-INCH CEMENT CONCRETE PAD

SURFACE: 6" CEMENT CONCRETE (4000 PSI, 3/4", 610 LB), AIR-ENTRAINED, OVER

SUBBASE 8" GRAVEL BORROW, TYPE b

PROP HOT MIX ASPHALT DRIVEWAY

SURFACE: 1 ½" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5) OVER

INTERMEDIATE COURSE: 2 ½" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5) OVER

SUBBASE: 8" GRAVEL BORROW, TYPE b

PROP BRIDGE PAVEMENT (S-21-003 OVER MILL RIVER)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

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

PROP BRIDGE PAVEMENT (S-21-009 OVER MCKINSTRY BROOK)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

PROTECTIVE COURSE: 1 ½" MINIMUM SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P) OVER MEMBRANE WATERPROOFING FOR BRIDGE DECKS

GENERAL NOTES:

THE METHOD OF ROUNDING SLOPES FOLLOWS MASSDOT CONSTRUCTION STANDARD DRAWING 150.0.1 FOR ALL TYPICAL SECTIONS.

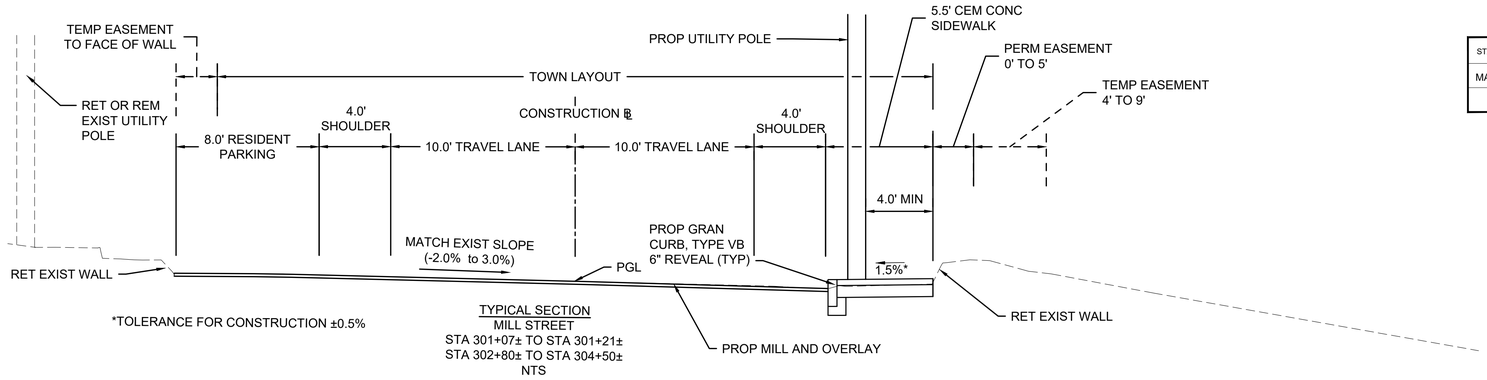
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SOUTHBRIDGE
MILL STREET

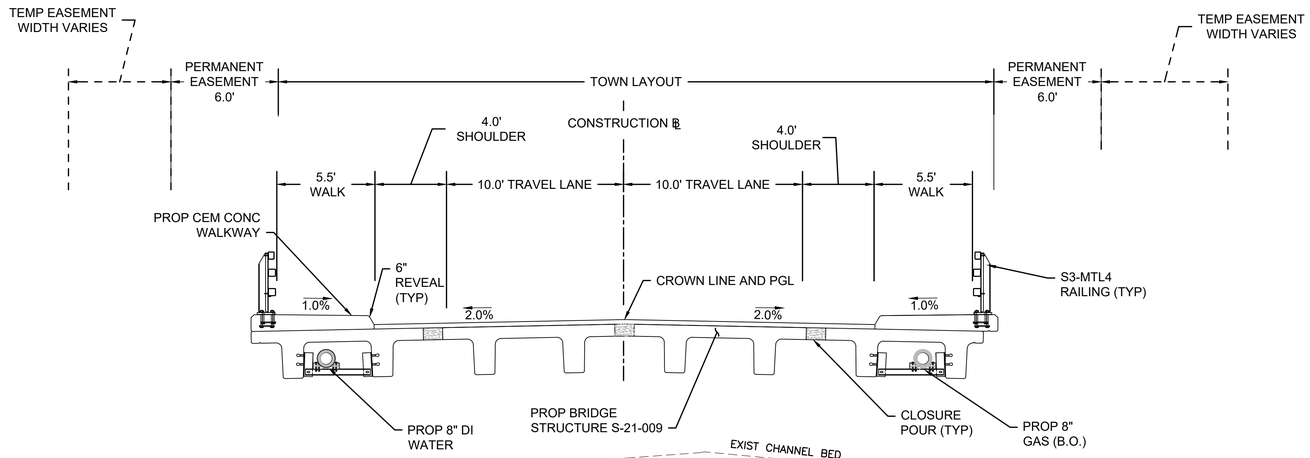
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	6	105
PROJECT FILE NO. 608862			

TYPICAL SECTIONS

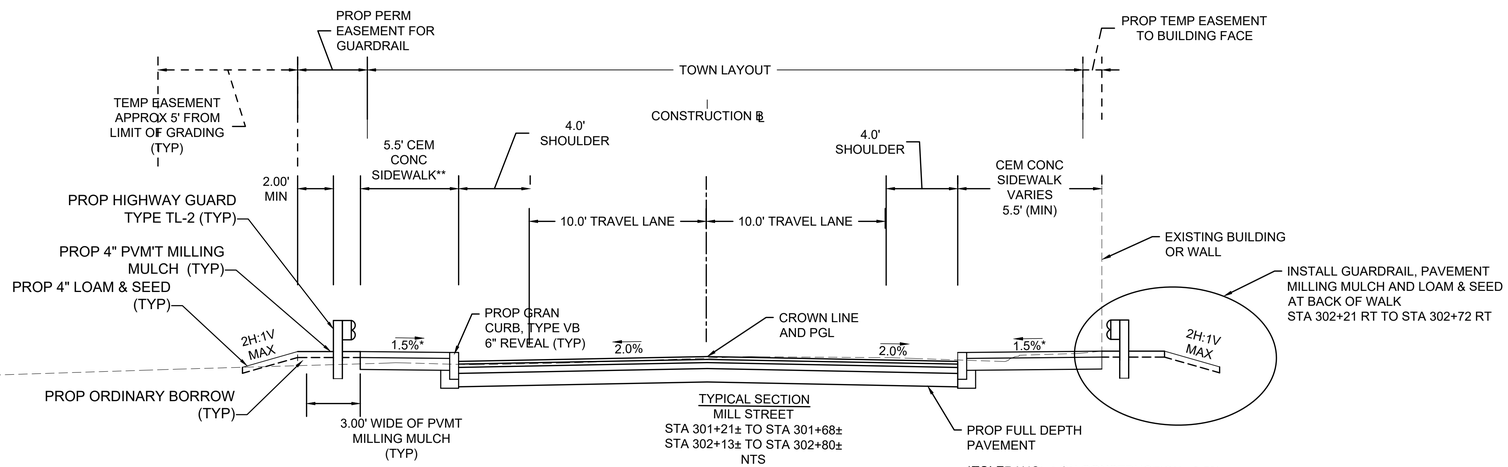
608862_HD(TYP).DWG Plotted on 27-Jul-2026 12:54 PM



TYPICAL SECTION
MILL STREET
STA 301+07± TO STA 301+21±
STA 302+80± TO STA 304+50±
NTS



TYPICAL SECTION
BRIDGE S-21-009
MILL STREET OVER MCKINSTRY BROOK
STA 301+68± TO STA 302+13±
NTS



TYPICAL SECTION
MILL STREET
STA 301+21± TO STA 301+68±
STA 302+13± TO STA 302+80±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%
**PROPOSED SIDEWALK LT ENDS AT AT STA 302+43 LT

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	7	105
PROJECT FILE NO. 608862			

CONSTRUCTION PLANS

608862_HD(GEN).DWG Plotted on 27-Jul-2026 12:55 PM

HIGHWAY GUARD DETAILS

STA 202+45± RT TO STA 202+45± RT	ITEM 627.1 TRAILING ANCHORAGE
STA 202+45± RT TO STA 202+45± RT	ITEM 620.31 GUARDRAIL, TL-2 (SINGLE FACED)
STA 202+45± RT TO STA 202+48± RT	ITEM 620.32 GUARDRAIL- CURVED, TL-2 (SINGLE FACED)
STA 202+48± RT TO STA 202+82± RT	ITEM 628.24 TRANSITION TO BRIDGE RAIL
STA 204+03± LT TO STA 204+36± LT	ITEM 628.24 TRANSITION TO BRIDGE RAIL
STA 204+36± LT TO STA 204+56± LT	ITEM 627.82 GUARDRAIL TANGENT END TREATMENT, TL-2

TRAFFIC SIGNAL CONDUIT
SEE SHEET 16

WATER SUPPLY ALTERATIONS
SEE SHEET 29 - 32

DRAINAGE DETAILS
SEE SHEET 32

NAD 83 N

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N 2855201.0501
E 508469.4702

WEST STREET
HIGH STREET
MAIN STREET
HAMILTON STREET
QUINEBAUG RIVER
MILL STREET

PROP TEMP EASEMENT
BEGIN MILL & OVERLAY STA 201+70
END MILL & OVERLAY BEGIN FULL DEPTH PVM'T STA 202+38
PROP 5.5' CEM CONC WALK
APPROX LIMIT OF GRADING
PROP FULL DEPTH PAVEMENT
PROP PERM EASEMENT
PROP LOAM & SEED
MEET EXIST WALK
PROP TS PB
MATCH EXIST CURB REVEAL
PROP 3" REVEAL
PROP GRAN CURB
PROP MILL & OVERLAY
PROP TS POST (TYP)
PROP ADA COMPLIANT HANDRAIL
PROP FDP <4 FT
REM EX TS POST TO 1 FT BELOW FINISHED GRADE
MATCH EXIST CURB REVEAL
MEET EXIST WALK
REM HANDRAIL RETAIN WALL
REM EX CONC WALK; PROP LOAM & SEED
PROP TEMP EASEMENT
PROP PERM EASEMENT
POLE EASEMENT FROM MILL STREET TO MAIN STREET (PLAN BOOK 534 PLAN 33)
PROP TEMP EASEMENT
EXISTING SLOPE AND WALL EASEMENT (PARCEL C-3) (BOOK 3826 PAGE 460)
PROP BRIDGE SUPERSTRUCTURE REPLACEMENT BRIDGE S-21-003
PROP CLEARING & GRUBBING
PROP TREE PROTECTION FENCE
EXISTING SLOPE AND WALL EASEMENT (PARCEL 4) (BOOK 3826 PAGE 460)
PROP CEM CONC WALK
PROP PERM EASEMENT
REM UPL (B.O.)
EXISTING SLOPE AND WALL EASEMENT (PARCEL 2) (BOOK 3826 PAGE 460)
EXISTING SLOPE AND WALL EASEMENT (PARCEL C-5) (BOOK 3826 PAGE 460)
PROP SELECTIVE CLEARING & THINNING TO PROVIDE ACCESS FOR BRIDGE CONSTRUCTION AND TEMP OVERHEAD WIRE (TYP)
PROP TREE PROTECTION FENCE & LIMIT OF SELECTIVE CLEARING
PROP TEMP EASEMENT
PROP FLOATING SILT FENCE
PROP LOAM AND SEED
RET EXIST FENCE
R&R 12' OF SAFETY FENCE
PROP TEMP EASEMENT
PROP HMA DWY
PROP CC SW AT DWY
REM CONC SW
PROP 5.5' CC WALK
RET TREE LINE
PROP SELECTIVE CLEARING & THINNING
RET CONC WALL
EXISTING SLOPE AND WALL EASEMENT (PARCEL C-4) (BOOK 3826 PAGE 460)
PROP PERM EASEMENT
PROP TREE PROTECTION FENCE & LIMIT OF SELECTIVE CLEARING
PROP SEDIMENT CONTROL BARRIER (TYP)
RET EX STONE WALL
PROP LOAM AND SEED
PROP GRAVEL PARKING LOT (B.O. UNDER SEPARATE CONTRACT)
RET EXIST FENCE
PROP PERM EASEMENT
RETAIN DETENTION POND
CLEAR & GRUB 32" TREE
RET TREE
PROP GRAN CURB
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP LOAM AND SEED
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP GUARDRAIL
MATCH EX
END FULL DEPTH PVM'T; BEGIN MILL & OVERLAY STA 204+17
RET EX SW
PROP TEMP EASEMENT
PROP MILL & OVERLAY
MATCH EXIST CURB REVEAL
SAWCUT, MEET EXIST
RET STEPS
PROP 5.5' CEM CONC WALK
PROP CC SW AT DWY
PROP HMA DWY
R&R (B.O.) SIGN "SOUTHBRIDGE RADIATOR"
R&R BOUND
PROP LOAM AND SEED
PROP HWY GUARDRAIL TRANSITION
PROP PERM EASEMENT
PROP TEMP EASEMENT
RET POST & WOOD RAIL FENCE
PROP PERM EASEMENT
N9°25'49"E 600.00'
FOR PROFILES SEE SHEET 9

GENERAL NOTES:
1. SEE UTILITY PLANS & BRIDGE PLANS FOR DETAILS REGARDING TEMPORARY SUPPORT OF UTILITIES DURING BRIDGE CONSTRUCTION.
2. SEE BRIDGE PLANS AND SPECIAL PROVISIONS FOR NON-STANDARD HIGHWAY GUARDRAIL TRANSTIONS.

S21003 - ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2854737.4018	508392.4620		N9°25'49"E 600.00'	206+00.00	2855329.293	508490.770

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

STA 301+31± LT TO STA 301+31± LT	ITEM 627.19 TERMINAL END, TYPE G
STA 301+31± LT TO STA 301+59± LT	ITEM 628.245 TRANSITION TO BRIDGE RAIL - THRIE BEAM
STA 302+21± RT TO STA 302+52± RT	ITEM 628.24 TRANSITION TO BRIDGE RAIL
STA 302+52± RT TO STA 302+72± RT	ITEM 627.82 GUARDRAIL TANGENT END TREATMENT, TL-2

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 33 - 36

DRAINAGE DETAILS

SEE SHEET 36

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
BN	2	BETULA NIFRA - CLUMP	BIRCH RIVER "HERITAGE"	6'-8' HT./CLUMP

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	8	105
PROJECT FILE NO. 608862			

CONSTRUCTION PLANS

608862_HD(GEN).DWG Plotted on 27-Jul-2026 12:55 PM

S21009 - ALIGNMENT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	301+00.00	2855730.5713	508454.2879		N37°52'34"E 425.00'	305+25.00	2856066.041	508715.220

LIMIT OF WORK
STA 301+07.00
N 2855736.0967
E 508458.5856

LIMIT OF PAVING
STA 304+50.50
N 2856007.2319
E 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

NAD 83

BRICK ROW

MILL STREET

RIVER STREET

CLIFF STREET

MCKINSTRY BROOK

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY
PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

PROP SEDIMENT CONTROL BARRIER (TYP)
PROP TREE PROTECTION FENCE & LIMIT OF SELECTIVE CLEARING & THINNING
PROP SELECTIVE CLEARING & THINNING TO PROVIDE ACCESS FOR BRIDGE CONSTRUCTION AND TEMP OVERHEAD WIRE
PROP PERM EASEMENT
REM EX FENCE STA 301+52 LT TO STA 301+64 LT
PROP TERMINAL SECTION, TYPE G
PROP PERM EASEMENT
PROP LOAM & SEED
R&R FENCE GATE & FENCE, STA 300+98 LT TO STA 301+52 LT
PROP HMA DWY
PROP 5.5' CC WALK
CONNECT RESET FENCE TO EXIST POST
LIMITS OF PROP CONTROL OF WATER (TEMPORARY SANDBAGS) SEE CONSTRUCTION DETAILS
PROP TEMP EASEMENT (TYP)
PROP STREAMBED RESTORATION
PROP WILDLIFE CROSSING
PROP TREE PROTECTION FENCE & LIMIT OF SELECTIVE CLEARING & THINNING
RET EX WALL
RET CLF
PROP SELECTIVE CLEARING & THINNING TO PROVIDE ACCESS FOR BRIDGE CONSTRUCTION AND TEMP OVERHEAD WIRE
R&R DUMPSTER TO STA 304+28 LT
REM EX WALK; PROP LOAM & SEED
PROP CEM CONC SIDEWALK
PROP GRAN TRANS CURB
RET EX WALL
PROP FULL DEPTH PVMT
RET EX LSA & CONC STOOPS (TYP)
END FULL DEPTH PVMT, BEGIN MILL & OVERLAY, STA 302+80
RET EX WALL
PROP TEMP EASEMENT
SAWCUT, MEET EXIST DWY
PROP 9'Wx9L' 6-INCH CC PAD UNDER DUMPSTER *
PROP HMA DWY FOR DUMPSTER ACCESS, MEET EX ROADWAY SURFACE
6± LF PROP GRAN TRANSITION CURB
PROP LOAM & SEED
PROP PERM EASEMENT
PROP 4'x2.5' 4-INCH CC PAD UNDER RELOCATED CLUSTER MB
ERADICATE EX CROSSWALK MARKINGS (BY OTHERS UNDER SEPARATE CONTRACT)
PROP CEM CONC WALK
REM EX CC PAD
R&R CLUSTER MAILBOX
PCR TO BE DESIGNED AND CONSTRUCTED BY TOWN UNDER SEPARATE CONTRACT
PROP MILL & OVERLAY
PROP LOAM & SEED; REM EX PVMT
PROP GRAN CURB
RET BOUND
PCR TO BE DESIGNED AND CONSTRUCTED BY TOWN UNDER SEPARATE CONTRACT
RET STEPS
RET EX WALL
PROP HMA DWY
R&R
MATCH EXIST CURB REVEAL
MEET EXIST WALK
PROP PVMT TRANSITION
END MILL & OVERLAY, BEGIN FULL DEPTH PAVEMENT STA 301+21
PROP GRAN CURB
LIMIT OF APPROACH SLAB
PROP FULL DEPTH PVMT
PROP LOAM & SEED
LIMIT OF APPROACH SLAB
REM WALL, STA 302+23 RT TO STA 302+77 RT
PROP PERM EASEMENT
APPROX LIMIT OF GRADING
RET FENCE
RET EX WALL
RET TREE
PROP CLEARING & GRUBBING; PROP COMPOST & RIVERBANK SEED OVER MODIFIED ROCKFILL
PROP LIMIT OF CLEARING & GRUBBING
RET EX WALL
REM 24" TREE
REM TREES (2)
PROP 5.5' CC WALK
RET STEPS
PROP GUARDRAIL
REM STAIRS
REM STEPS
REM 2 BOULDERS
RET EX CONC WALL
PROP LOAM AND SEED
PROP PERM EASEMENT
RET TREE
RET BOULDERS (TYP)
PROP OVERHEAD WIRES (B.O.) (TYP)
REM 28± FT EX WALL
PROP TEMP EASEMENT (TYP)
APPROX LIMIT OF GRADING
PROP GRAN CURB AT BACK OF WALK, 6" REVEAL
PROP 4 FT CLEARANCE BEHIND UPL
REM EXIST PVM'T
PROP LOAM & SEED
PROP CEM CONC WALK
VIBRATION MONITORING OF ADJACENT BUILDING REQUIRED DURING DEMOLITION AND CONSTRUCTION OF SUBSTRUCTURES
RET & PROTECT EXTERIOR VENT PIPES
PROP FLOATING SILT FENCE
PROP PERM EASEMENT
PROP BRIDGE REPLACEMENT BRIDGE S-21-009
TEMPORARY CONTROL OF WATER
PROP PERM EASEMENT

BENCHMARK: MAG NAIL IN UPL#7 EL=492.48'
BENCHMARK: MAG NAIL IN UPL#15 EL=492.24'
100000 N: 2855567.744' E: 508538.436' EL: 494.408' OHW

DWY 3
DWY 4
DWY 5
PCR 3
PCR 4
PCR 5
PCR 6
PCR 7
PCR 8
PCR
301
302
303
304
305
TOWN LAYOUT
1872 TOWN LAYOUT

* 6-INCH CC PAD WILL BE PAID UNDER ITEM 701.1
** 4-INCH CC PAD WILL BE PAID UNDER ITEM 701.

GENERAL NOTES:
1. SEE UTILITY PLANS & BRIDGE PLANS FOR DETAILS REGARDING TEMPORARY SUPPORT OF UTILITIES DURING BRIDGE CONSTRUCTION.
2. SEE BRIDGE PLANS AND SPECIAL PROVISIONS FOR NON-STANDARD HIGHWAY GUARDRAIL TRANSTIONS.

0 20 50 100
SCALE: 1" = 20'

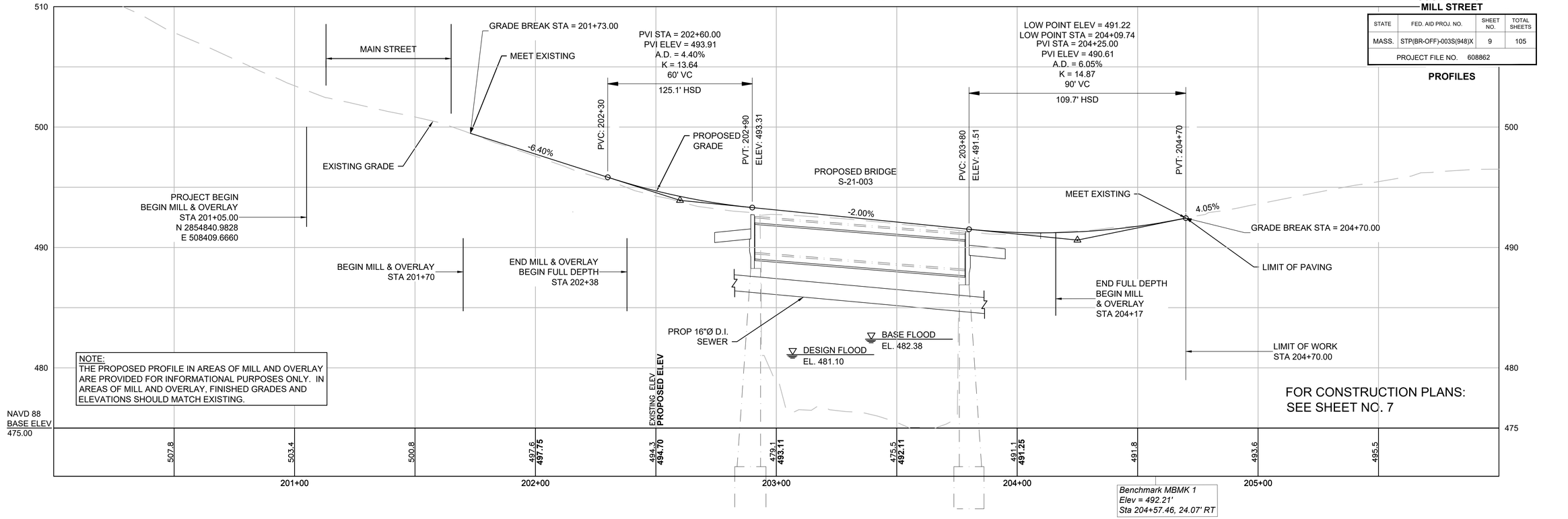
FOR PROFILES SEE SHEET 9

MILL STREET OVER QUINEBAUG RIVER

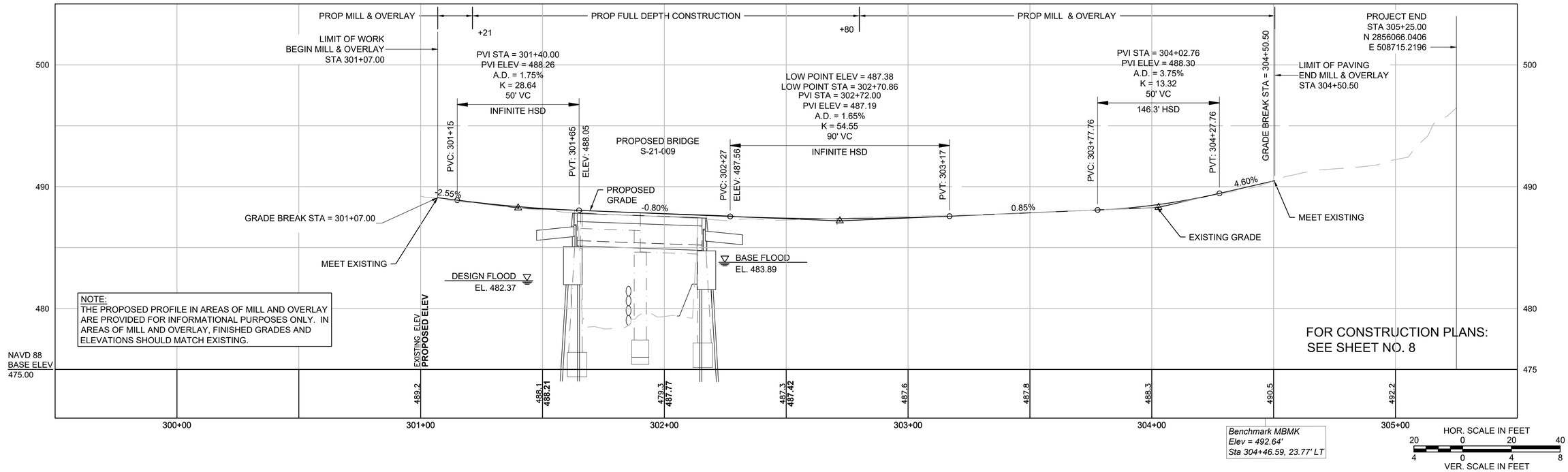
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	9	105
PROJECT FILE NO. 608862			

PROFILES



MILL STREET OVER MCKINSTRY BROOK



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SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	10	105
PROJECT FILE NO. 608862			

ALIGNMENT & GRADING PLANS

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WEST STREET
1997 TOWN LAYOUT
NAD 83
N
MAIN STREET
SURVEY TRAVERSE N81°00'18"W 285.43'
QUINEBAUG RIVER
EDGE OF WATER
CONC CURB
GRL
TREES
UTILITY POST
BIT PARKING
CONC CURB
CONC SW
GRASS
2"
WG
WSO
VGC
CONC
STONE RET WALL
MTL HANDRAIL CONC SW
1 STY VINYL
DECK
1955 TOWN LAYOUT
EXISTING TOWN LAYOUT
ULT
MILL STREET
SURVEY TRAVERSE N0°35'17"E 216.34'
SURVEY TRAVERSE S10°09'19"W 189.25'
SURVEY TRAVERSE 289.51' N8°20'02"W
SURVEY TRAVERSE S29°58'11"W 90.36'
SURVEY TRAVERSE 60.36' S26°19'53"W
SURVEY TRAVERSE 276.97' S16°19'41"W
SURVEY TRAVERSE 164.13' N62°55'19"E
SURVEY TRAVERSE 190.90' S7°41'37"E
HAMILTON STREET
1868 COUNTY LAYOUT
1927 TOWN LAYOUT
GRASS MEMORIAL
STONE RET WALL
DIRT
4' WOOD POST
3' WDF
6' WDF
BIT PARKING
CONC RAMP
RIGHT OF WAY BOOK 3818 PAGE 460)
EDGE OF WATER
5 STY BRICK
POST
STN WALL

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

BEGIN MILL & OVERLAY
STA 201+70

END MILL & OVERLAY
BEGIN FULL DEPTH PVM'T
STA 202+38

END FULL DEPTH PVM'T;
BEGIN MILL & OVERLAY
STA 204+17

16
N: 2854908.731'
E: 508402.079'
EL: 499.320'
MDHL MASSDOT GPS 2842

22
N: 2855042.155'
E: 508408.034'
EL: 478.022'
MSTN

15
N: 2855096.253'
E: 508434.807'
EL: 492.189'
MMAG

23
N: 2854983.446'
E: 508548.222'
EL: 494.007'
MSTN

24
N: 2855137.103'
E: 508667.141'
EL: 482.887'
MMAG

11
N: 2855174.488'
E: 508479.826'
EL: 491.689'
MMAG

BENCHMARK: MBMK 1
EL=492.29'
RIGHT OUTSIDE CORNER
4TH STEP

BENCHMARK: MBMK 2
EL=497.30'
RIGHT OUTSIDE CORNER
FIRST STEP

PC+70.34
17.58' LT
MEET EXIST
+70.3
17.6' LT
PT+76.09
15.84' LT
EL. 498.03
STA 201+95.74
CTRLINE OF CW
AT ALIGNMENT

PC+98.09
16.00' RT
498.40
500.00
500.75
MEET EXIST
+81.1
43.3' RT

PROP ROADWAY ELEVATIONS
FOR PCR2 SHOWN, SEE PCR
DETAIL SHEETS FOR
ADDITIONAL DETAILS

+90.90
13.50' LT
+78.56
13.50' LT
∠PT +85.42
19.24' LT
∠PT +95.56
13.50' LT
491.03
LP+02
PC+08.45
13.50' LT
PRC+26.56
14.90' LT
PT+28.84
15.09' LT
MEET EX
+32.5
15.1' LT
+30.39
13.50' RT
+46.39
13.50' RT
+90.90
13.50' RT
+78.56
13.50' RT
490.67
LP+08
+08.79
13.50' RT
+39.46
12.77' RT
MEET EXIST
+57.1
12.9' RT

Curve Table			
Curve #	Delta	Radius	Length
C1	107°18'25"	20.00	37.46
C2	34°53'38"	10.00	6.09
C10	8°49'39"	118.00	18.18
C11	8°13'16"	16.00	2.30

SURVEY TRAVERSE TABLE						
POINT #	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION	STATION	OFFSET
11	2855174.488	508479.826	491.689	MTRV MMAG	204+45.55	14.68 RT
15	2855096.253	508434.807	492.189	MTRV MMAG	203+60.94	17.02 LT
16	2854908.731	508402.079	499.320	MTRV MDHL MASSDOT GPS 2842	201+70.59	18.58 LT
22	2855042.155	508408.034	478.022	MTRV MSTN	203+03.19	34.57 LT
23	2854983.446	508548.222	494.007	MTRV MSTN	202+68.24	113.34 LT

LEGEND
- PEDESTRIAN CURB RAMP
- DRIVEWAY

0 20 50 100
SCALE: 1" = 20'

Curve Table			
Curve #	Delta	Radius	Length
C3	92°27'08"	5.00	8.07
C4	89°45'04"	2.00	3.13
C5	80°20'54"	10.00	14.02
C6	78°45'20"	10.00	13.75
C9	28°41'46"	5.00	2.50

SURVEY TRAVERSE TABLE						
POINT #	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION	STATION	OFFSET
2	2855977.050	508669.620	489.901	MTRV MMAG TRAV	304+26.76	18.64 RT
3	2855775.688	508509.723	488.141	MTRV MMAG TRAV	301+69.65	16.06 RT
5	2855784.198	508544.018	480.026	MTRV MREB TRAV	301+97.42	37.90 RT
6	2855845.209	508437.670	486.072	MTRV MDHL TRAV	301+80.29	83.50 LT

LEGEND

- [X] PEDESTRIAN CURB RAMP
- [X] DRIVEWAY

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	11	105
PROJECT FILE NO. 608862			

ALIGNMENT & GRADING PLANS

608862_HD(ALGN).DWG Plotted on 27-Jul-2026 12:56 PM

NAD 83

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

N/F A&R REALTY GROUP, LLC PARCEL ID 34-144-1 BOOK 61913 PAGE 46 62 PLEASANT ST

N/F 76 MILL STREET TRUST PARCEL ID 34-143-1 BOOK 37335 PAGE 239 MILL ST

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

6
N: 2855845.209'
E: 508437.670'
EL: 486.072'
MDHL TRAV

3.91'
59.07'
42.79'
N46°10'29"W
100.12'
SURVEY TRAVERSE

MEET EXIST
+23.9
24.4' LT

∠PT +26.67
19.80' LT

∠PT +23.98
19.50' LT

∠PT +31.77
22.73' LT

∠PT +43.17
22.73' LT

END FULL DEPTH PVMT, BEGIN MILL & OVERLAY, STA 302+80

N/F PAUL PANTZER & BEATA M. PANTZER PARCEL ID 31-146-1 BOOK 51124 PAGE 22 103 MILL ST

BENCHMARK: EL=492.64' MAG NAIL IN UPL#15

BEGIN MILL & OVERLAY
STA 301+07

BENCHMARK: EL=492.48' MAG MAIL IN UPL#7

4
N: 2855664.611'
E: 508407.957'
EL: 491.823'
MMAG #4

BIT DRIVE
BIT PARKING
TOWN LAYOUT
1872 TOWN LAYOUT
2 STY VINYL
GAS MARKER
CONC. WALL
LSA

PT+28.63
14.00' LT

487.93
488.21
487.49
487.26
487.48
487.77
487.03
487.42
486.71
486.63
LP+71

2.0%
1.5%
0.5%
4.0%
1.3% (EXIST SLOPE)
4.3% (EXIST SLOPE)
3.6%
1.2%

∠PT +43.16
14.00' LT

PC+20.00
15.99' LT

PT+22.00
14.00' LT

PC+37.74
14.00' LT

41.32'

301
302
303
304

150.65'
S42°29'42"W

SURVEY TRAVERSE

MEET EXIST
+07.0
14.0' RT

488.39

10.43'
46.76'
6.74'
N76°03'54"E
35.33'
SURVEY TRAVERSE
22.98'
62.95'
15.05'

3
N: 2855775.688'
E: 508509.723'
EL: 488.141'
MMAG TRAV

FOR GRADING UNDER THE BRIDGE - SEE SHEET 12

5
N: 2855784.198'
E: 508544.018'
EL: 480.026'
MREB TRAV

END MILL & OVERLAY, BEGIN FULL DEPTH PAVEMENT STA 301+21

S38°27'08"W
257.13'

∠PT +43.08
MEET EXIST
GRAN CURB

∠PT +56.58
21.25' LT

∠PT +71.46
MEET EXIST
GRAN CURB

54.76'

2
N: 2855977.050'
E: 508669.620'
EL: 489.901'
MMAG TRAV

20.61'

PT+53.07
22.05' RT

PC+43.26
14.00' RT

N/F IMPERIAL HOMEBUILDERS, LLC PARCEL ID 31-145-1 BOOK 17237 PAGE 104 102 MILL ST

MCKINSTRY BROOK

N/F 76 MILL STREET TRUST PARCEL ID 34-142-1 BOOK 25403 PAGE 336 MILL ST

N/F MIKRAN COMPANY LLC PARCEL ID 34-141-1 BOOK 57606 PAGE 221 PLBK 218 PG 098

S76°56'27"E
156.41'

SURVEY TRAVERSE

272.59'
S9°57'19"W

8
N: 2855629.266'
E: 508560.320'
EL: 495.010'
MDHL

1.5 STY BRICK
2 STY BRICK
4 STY BRICK
1 STY WOOD
2 STY VINYL
1 STY BRICK
1 STY BRICK

12
N: 2856119.680'
E: 508482.761'
EL: 488.636'
MDHL

TOWN LAYOUT

RIVER STREET

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

GRAN TRANSITION CURB, MEET EX ROAD SURFACE
+35.4
59.1' LT

14.26'
9.00'
490.0
490.1
490.1
490.21 (SEE PCR7&8 DETAILS)

PT+47.39
24.79' LT

C9
PCC+47.60
22.32' LT

WORK BY OTHERS

PROJECT END
STA 305+25.00
N: 2856066.0406
E: 508715.2196

N/F EMANUELL COX PARCEL ID 31-40-1 BOOK 65874 PAGE 336 164 RIVER STREET

N/F HOFFMAN PROPERTY PARTNERS LLC PARCEL ID 31-40-C-1 BOOK 67116 PAGE 345 135 MILL ST

CLIFF STREET

N/F GMA REALTY LLC PARCEL ID 31-135-1 BOOK 57845 PAGE 208 132 MILL ST

N/F DONNA WEBBER PARCEL ID 31-144-1 BOOK 8443 PAGE 150 147 RIVER ST

276.97'
N83°14'51"W

SURVEY TRAVERSE

CONC CURB
GRASS
BOULDERS
STEPS
VGC
WG
GG
EP
WDF
SWDF
TWDF
CONC WALL

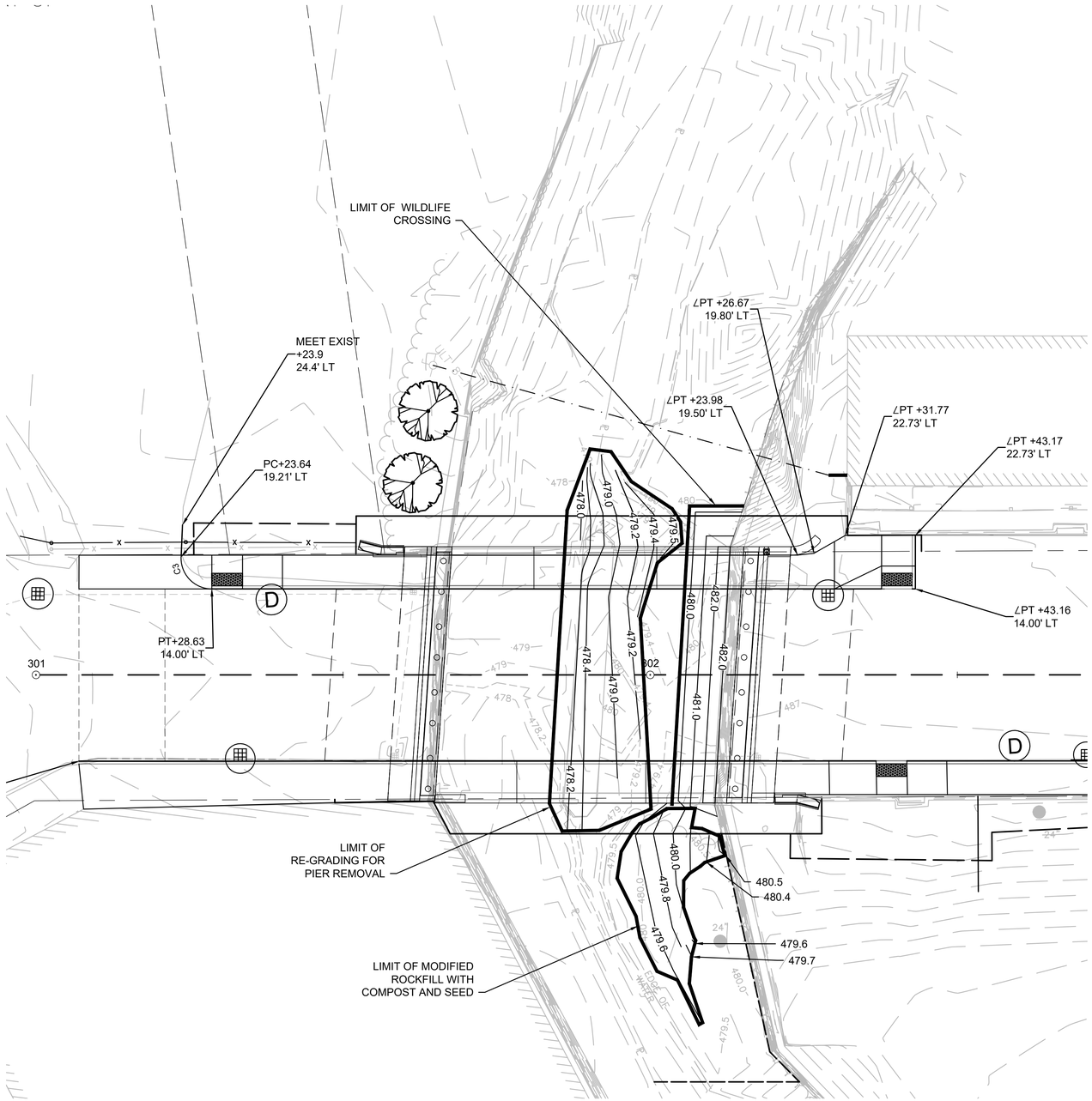
0 20 50 100
SCALE: 1" = 20'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	12	105
PROJECT FILE NO. 608862			

ALIGNMENT & GRADING PLANS

608862_HD(GRAD).DWG Plotted on 27-Jul-2026 12:57 PM



PROP GRADING UNDER BRIDGE

0 10 20 30 40

SCALE: 1" = 10'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	13	105
PROJECT FILE NO. 608862			

TRAFFIC SIGN & PAVEMENT MARKING PLANS

608862_HD(TRAF).DWG Plotted on 27-Jul-2026 12:58 PM

NAD 83

N

WEST STREET

MAIN STREET

QUINEBAUG RIVER

1997 TOWN LAYOUT

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

PROP BICYCLE STOP LINE
8-FEET FROM CROSSWALK

W6-3 (FACING NORTHBOUND TRAFFIC)
W/W16-9p
MTD BACK-TO-BACK WITH
R3-17 W/R3-17bp

BIKE LANE MARKING (TYP)

R7-1d

R&S R6-1/R5-1 ASSEMBLY

R6-2L W/R3-7bp
MTD BACK TO BACK WITH
R6-2R W/R3-7bp

PROP LIMIT OF PAVING

SEE CROSSWALK DETAIL ON SHEET 44

R&S SIGNS
(R6-1R,R3-2,R5-1)
MTD ON UP

R5-1
R3-7bp

R6-1R
R3-2
R3-7bp

RET PRIVATE SIGN
ASSEMBLY

RET "WINTER PARKING"
MTD ON UP

PROP 12" SYL
@ 45°, 10' O.C.

HIGH STREET

MILL STREET

RET EX PARKING

200 201 202 203 204 205

DBYL 5' 11' 3' BUFFER 3' BUFFER SWL 5'

+80.6 +12.8 +29.1 +65.0 +95.1 +91.2 +07.3 +63.3

DYLEx 4' SYL

2' DWLEx W/6' GAPS

R&R STREET NAME
SIGN ASSEMBLY

R&S R6-1/WEIGHT
RESTRICTION ASSEMBLY

R7-1d

R&S R6-1L AND
"WINTER PARKING"
MTD ON UP

PROP 12" SWL
@45°, 10' O.C.

R&S

R&R (B.O.)

R3-17

R&S R5-1/WEIGHT
RESTRICTION ASSEMBLY

PROP BIKE LANE MARKING
SEE DETAIL ON SHEET 44.

PROP GRAVEL
PARKING LOT
(B.O. UNDER
SEPARATE
CONTRACT)

PROP WRONG WAY ARROW
SEE DETAIL ON SHEET 44.

R&S R6-1L/R6-1R;
R&R R3-2 HIGHER ON EXIST POST W/PROP R3-7bp
MTD BACK TO BACK WITH R&R R3-1 W/PROP R3-7bp

R3-17 W/R3-17bP (FACING NORTHBOUND TRAFFIC)
MTD BACK-TO-BACK WITH
R5-1 & R3-7bp

HAMILTON STREET

1868 COUNTY LAYOUT

1955 TOWN LAYOUT

EXISTING TOWN LAYOUT

RIGHT OF WAY
(BOOK 3818 PAGE 460)

CONSTRUCTION NOTES

1. SEE SHEET 16-17 FOR TRAFFIC SIGNAL LAYOUT AND DATA.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
3. PREFORMED BIKE LANE RIDER AND ARROW SHALL BE REFLECTORIZED THERMOPLASTIC UNLESS OTHERWISE NOTED.
4. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
5. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE ADDRESSED AS NOTED:
   - RET = RETAIN
   - R&R = REMOVE AND RESET
   - R&S = REMOVE AND STACK

0 20 50 100

SCALE: 1" = 20'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	14	105
PROJECT FILE NO. 608862			

TRAFFIC SIGN & PAVEMENT MARKING PLANS

608862_HD(TRAF).DWG Plotted on 27-Jul-2026 12:58 PM

N

NAD 83

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.05
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

RIVER STREET

BRICK ROW

MILL STREET

MILL STREET (TO CLIFF STREET)

MCKINSTRY BROOK

W11-2L & W16-7pL
MTD BACK-TO-BACK WITH
W11-2R & W16-7pR

LINEAR MARKINGS SHALL STOP 4-FEET
FROM PROPOSED CROSSWALKS (TYP)

R&S "WINTER PARKING"
MTD ON UP

PROP LIMIT OF PAVING

WORK BY OTHERS
(SEPARATE CONTRACT)

ERADICATE EXISTING CW
STRIPING (B.O., SEPARATE
CONTRACT)

WORK BY OTHERS
(SEPARATE CONTRACT)

RET EXIST R1-1 & "Mill St" SIGNS
R&S EXIST "3-WAY"
PROP W4-4apR

PROP LIMIT OF PAVING

WORK BY OTHERS
(SEPARATE CONTRACT)

SEE CROSSWALK
DETAIL ON SHEET 44

PROP R1-1 &
W4-4apL

R&S EXIST STOP SIGN &
"3-WAY" & "WATCH FOR
CHILDREN" ASSEMBLY

R&R "Mill St" STREET NAME SIGN
TO NEW POST W/PROP MA-D3-1

W11-2L & W16-7pL
MTD BACK-TO-BACK WITH
W11-2R & W16-7pR

R&S FADED NO
PARKING SIGN
ASSEMBLY

WORK BY OTHERS
(SEPARATE CONTRACT)

RET EXIST
STOP SIGN

ERADICATE EXISTING CW
STRIPING (B.O., SEPARATE
CONTRACT)

301 302 303 304 305

DBYL

SWL

8' CW

R7-1d

2 STY VINYL

2 STY BRICK

1.5 STY BRICK

4 STY BRICK

1872 TOWN LAYOUT

TOWN LAYOUT

CONC WALL

CONC CURB

STEPS

BOULDERS

GRASS

3'WDF

EP

CB WITH PIN

IP

100003
N: 2855667.744'
E: 508538.436'
EL: 494.408'

0 20 50 100

SCALE: 1" = 20'

CONSTRUCTION NOTES

1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE ADDRESSED AS NOTED:
   - RET = RETAIN
   - R&R = REMOVE AND RESET
   - R&S = REMOVE AND STACK

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	15	105
PROJECT FILE NO. 608862			

TRAFFIC SIGN SUMMARY

TRAFFIC SIGN SUMMARY

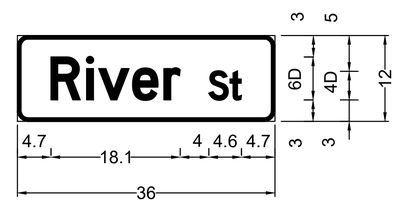
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK–GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
R1-1	30"	30"	STOP	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			1	RED	WHITE	WHITE	P5-1	6.25	6.25
R3-2	24"	24"					1	WHITE	RED/ BLACK	BLACK	P5-1	4.00	4.00
R3-7bP	24"	12"	EXCEPT BICYCLES				7	WHITE	BLACK	BLACK	7 MTD W/ OTHERS	2.00	14.00
R3-17	24"	18"	BIKE LANE				3	BLACK --- WHITE	WHITE --- BLACK	WHITE --- BLACK	P5-3	3.00	9.00
R3-17bP	24"	9"	ENDS				2	WHITE	BLACK	BLACK	2 MTD W/ R3-17	1.50	3.00
R5-1	30"	30"	DO NOT ENTER				2	WHITE	RED/ WHITE	-	P5-2	6.25	12.50
R6-1R	36"	12"	ONE WAY				1	BLACK	WHITE	WHITE	MTD W/ R3-2	3.00	3.00
R6-2L	24"	30"	ONE WAY				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R6-2R	24"	30"	ONE WAY				1	WHITE	BLACK	BLACK	MTD W/ R6-2L	5.00	5.00
R7-1D	12"	18"	NO PARKING ANY TIME				7	WHITE	RED	RED	P5-7	1.50	10.50
R10-3e(L)	9"	15"	START CROSSING Watch For Vehicles / DON'T START If Time Remaining Is Insufficient / TIME REMAINING To Finish Crossing / DON'T CROSS / Walk Button To Show				1	WHITE	WHITE/ BLACK/ ORANGE	BLACK	1 MTD ON TS POST	0.94	PAID UNDER ITEM 816.01
R10-3e(R)	9"	15"	START CROSSING Watch For Vehicles / DON'T START If Time Remaining Is Insufficient / TIME REMAINING To Finish Crossing / DON'T CROSS / Walk Button To Show				1	WHITE	WHITE/ BLACK ORANGE	BLACK	1 MTD ON TS POST	0.94	PAID UNDER ITEM 816.01
R10-41b	12"	21"	SIGNAL				2	WHITE	BLACK	BLACK	2 MTD ON TS POST	1.75	1.75

TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK–GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
W4-4aPL	24"	12"	TRAFFIC FROM LEFT DOES NOT STOP	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			1	YELLOW	BLACK	BLACK	MTD W/ R1-1	2.00	2.00
W4-4aPR	24"	12"	TRAFFIC FROM RIGHT DOES NOT STOP				1	YELLOW	BLACK	BLACK	MTD W/ EXIST R1-1 & MILL ST	2.00	2.00
W6-3	36"	36"					1	YELLOW	BLACK	BLACK	MTD W/ R3-17	9.00	9.00
W11-2L	30"	30"					2	FLUOR-ESCENT YELLOW GREEN	BLACK	BLACK	P5-2	6.25	12.50
W16-7pL	21"	15"					2	FLUOR-ESCENT YELLOW GREEN	BLACK	BLACK	MTD W/ W11-2L	2.12	4.24
W11-2R	30"	30"					2	FLUOR-ESCENT YELLOW GREEN	BLACK	BLACK	MTD BACK-TO-BACK W/ W11-2L	6.25	12.50
W16-7pR	21"	15"					2	FLUOR-ESCENT YELLOW GREEN	BLACK	BLACK	MTD W/ W11-2R	2.12	4.24
W16-9p	24"	12"	AHEAD				1	YELLOW	BLACK	BLACK	MTD W/ W6-3	2.00	2.00
MA-D3-1	36"	12"	River St	6"/4.5"	3" / 3"	N/A	1	GREEN	WHITE	WHITE	P5-1	3.00	PAID UNDER ITEM 874

NOTES:
1. RETROREFLECTIVE SHEETING CONFORMING TO SECTION M9.30.0 OF THE LATEST MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SHALL BE USED FOR ALL SIGNS.
2. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" AND 2012 SUPPLEMENT, AND 2024 EDITION PHASED RELEASES; THE 1990 MASSDPW STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE MASSDOT STANDARD SIGNS, LATEST EDITION.
3. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

MA-D3-1



BORDER	
OFFSET	0
WIDTH	0.5
RADIUS	1.5

NOTES:
1. ALL MEASUREMENTS ARE IN INCHES.

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SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	16	105
PROJECT FILE NO. 608862			

TRAFFIC SIGNAL PLANS

608862_HD(TRAF).DWG Plotted on 27-Jul-2026 12:59 PM

NAD 83

N

WEST STREET

MAIN STREET

QUINEBAUG RIVER

PROP DETECTION DEVICE (TYP)

R&S EXIST TS POST ASSEMBLY INCLUDING FOUNDATION
ABANDON & CAP EXIST TS CONDUIT

PROP 14' TS POST ON NEW FOUNDATION
W/BIKE SIGNAL HEAD & R10-41b SIGN
W/PED SIGNAL HEAD
W/APS PED PUSH BUTTON, RIGHT
W/R10-3e(R) & SADDLE
STA 201+94.15, 21.9'LT

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

PROP BIKE DETECTION ZONE

RET EXIST TS POST ASSEMBLY

PROP VEHICLE
DETECTION ZONE (TYP)

CONSTRUCT PB OVER
EXIST TS CONDUIT

RET EXIST
CONDUIT

CUT & EXTEND EXIST CONDUIT

PROP BIKE SIGNAL HEAD
MTD ON EXIST MAST ARM SHAFT
W/R10-41b SIGN

PROP 8' TS POST
ON NEW FOUNDATION
W/PED SIGNAL HEAD
W/APS PED PUSH BUTTON, LEFT
W/R10-3e(L) & SADDLE
STA 201+98.4, 22.4' RT

RETAIN EXIST
MAST ARM
ASSEMBLY

R&S EXIST TS POST ASSEMBLY;
REM FOUNDATION TO 1 FT
BELOW FINISH GRADE

R&S EXIST TS 2 TYPE 2 CONTROLLER
PROP ATC CONTROLLER
MODIFY EXIST TS 1 CABINET ASSEMBLY AS
NEEDED FOR PROPOSED CHANGES SHOWN

HIGH STREET

MILL STREET

HAMILTON STREET

MAIN STREET

1997 TOWN LAYOUT

1955 TOWN LAYOUT

1868 COUNTY LAYOUT

EXISTING TOWN LAYOUT

RIGHT OF WAY
(BOOK 3818 PAGE 460)

CONSTRUCTION NOTES

1. SEE SHEET 17 FOR TRAFFIC DATA.
2. SEE SHEET 13 FOR SIGN AND PAVEMENT MARKING PLAN.
3. RETAIN ALL EXISTING TS EQUIPMENT AND TS CONDUIT UNLESS OTHERWISE NOTED
4. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
5. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.
6. THE PROPOSED LOCATION OF THE DETECTION CAMERAS ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR SHALL INSTALL THE DEVICES IN THE OPTIMAL LOCATION PER MANUFACTURER'S RECOMMENDATIONS AND SITE-SPECIFIC CONSTRAINTS.

0 20 50 100

SCALE: 1" = 20'

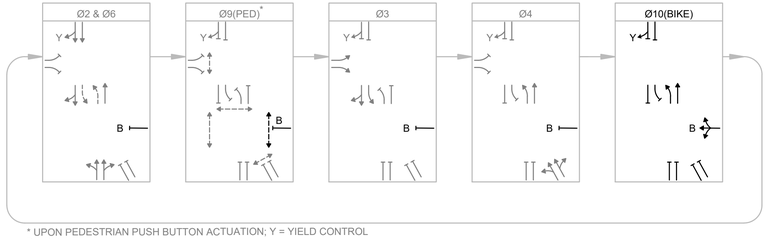
ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9*(PED)	ø10(BIKE)	
NOT USED	Y			NOT USED		NOT USED	NOT USED			

EXISTING/PROPOSED SEQUENCE AND TIMING FOR FULLY ACTUATED CONTROL

APPROACH	DIRECTION	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	FLASH
MAIN STREET	EB	A,B,C				G	Y	R	R	R	R	R	R	R				R	R	R							R	R	R	R	R	R	FY
MAIN STREET	EB	D				G	Y	R	G	G	Y	R	R	R	R			R	R	R							R	R	R	R	R	R	FY
MAIN STREET	EB	E				G	Y	R	G	Y	R	R	R	R				R	R	R							R	R	R	R	R	R	FY
MAIN STREET	WB	F,G				R	R	R	R	R	R	R	R	R				G	Y	R							R	R	R	R	R	R	FY
MAIN STREET	WB	H				R	R	R	R	R	R	G	G	Y	Y			G	Y	R							R	R	R	G	Y	R	FY
MAIN STREET	WB	J				R	R	R	R	R	R	G	Y	R				G	Y	R							R	R	R	G	Y	R	FY
WEST STREET	NB	K,L				R	R	R	G	Y	R	R	R	R				R	R	R							R	R	R	R	R	R	FR
HAMILTON STREET	SB	M,N				R	R	R	R	R	R	G	Y	R				R	R	R							R	R	R	R	R	R	FR
MILL STREET BIKE	**SB**	**P,Q**				**R**	**R**	**R**	**R**	**R**	**R**	**R**	**R**	**R**				**R**	**R**	**R**							**R**	**R**	**R**	G	Y	R	**FR**
PEDESTRIAN X–ING	ALL	P1–P10				DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW							W/FDW	DW	DW	DW	DW	DW	OUT
TIMING IN SECONDS																																	
MINIMUM GREEN (INITIAL)						15			8			7						15												10			CONFLICT FLASH OPERATION ONLY
PASSAGE TIME (VEHICLE)						3			3			3						3												2			
MAXIMUM 1						50			15			20						50												14			
MAXIMUM 2						60			18			20						60												14			
YELLOW CLEARANCE							~~3~~ 4			3			~~3~~ 3.5						~~3~~ 4								3			3		
RED CLEARANCE								~~3~~ 4			~~2~~ 3			~~2~~ 3						~~3~~ 4								1			9	
PEDESTRIAN WALK																											7						
PEDESTRIAN CLEARANCE																											~~12~~ 15						
DETECTOR MEMORY						NON–LOCK			NON–LOCK			~~LOCK~~ NON–LOCK						NON–LOCK									LOCK			NON–LOCK			
RECALL						SOFT			~~MIN~~ OFF			OFF						SOFT									OFF			OFF			

NOTES:
1. AUTOMATIC FLASHING OPERATION PER M.U.T.C.D., AS AMENDED.
2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. PERM = PERMISSIVE
4. Y = YIELD CONTROL
5. MAXIMUM 1 = NORMAL OPERATION
6. MAXIMUM 2 = MON-FRI 12:00 PM - 6:00 PM
7. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.
8. DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL NOT BE IN EFFECT.

EXISTING /PROPOSED PREFERENTIAL PHASE SEQUENCE



* UPON PEDESTRIAN PUSH BUTTON ACTUATION; Y = YIELD CONTROL
B = BIKE

SEQUENCE & TIMING NOTES:

1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	17	105
PROJECT FILE NO. 608862			

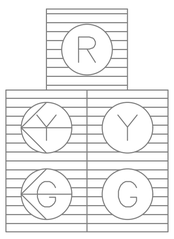
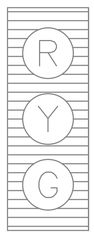
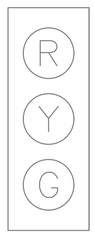
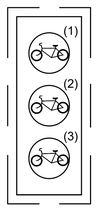
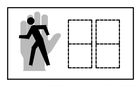
TRAFFIC SIGNAL PLANS

VEHICLE AND BICYCLE DETECTION DATA

DETECTION ZONE	APPROACH/LANE	CAMERA	DELAY /EXT	CALL PHASE	SWITCH PHASE
1	MAIN ST WB LEFT-LANE AT HAMILTON ST	C1	0	Ø6	
2	MAIN ST WB RIGHT-LANE AT HAMILTON ST	C1	0	Ø6	
3	MAIN ST WB LEFT-LANE AT WEST ST	C2	0	Ø6	Ø4
4	MAIN ST WB RIGHT-LANE AT WEST ST	C2	0	Ø6	Ø4
5	MAIN ST EB LEFT-LANE AT WEST ST	C2	0	Ø2	
6	MAIN ST EB RIGHT-LANE AT WEST ST	C2	0	Ø2	
7	MAIN ST EB LEFT-LANE AT HAMILTON ST	C1	0	Ø2	Ø3
8	MAIN ST EB RIGHT-LANE AT HAMILTON ST	C1	0	Ø2	Ø3
9	MILL ST SB CONTRAFLOW BIKE	C1	0	Ø10	
10	WEST ST NB LEFT-LANE	C2	0	Ø3	
11	WEST ST NB RIGHT-LANE	C2	10 SEC DELAY	Ø3	
12	HAMILTON ST SB LEFT-LANE	C1	0	Ø4	
13	HAMILTON ST SB RIGHT-LANE	C1	0	Ø4	

NOTES:
1. DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING PROPOSED DETECTION ZONES AS SHOWN ON THE PLANS, AND ADJUSTING/RE-ADJUSTING DETECTION ZONES IN THE PRESENCE OF THE ENGINEER.

EXISTING/PROPOSED SIGNAL HEAD DATA

D,H	E,J	A,B,C,F,G,K,L,M,N	P,Q	P1-P10	P7-P8
			 (1) RED (2) YELLOW (3) GREEN	 R&S P7, P8	 W/COUNTDOWN TIMER
ALL 12" LENS			ALL 8" HOUSINGS		ALL 16" HOUSINGS

NOTES:
1. SIGNAL HEADS P&Q SHALL BE RIGID MOUNTED.
2. SIGNAL HEADS P&Q SHALL BE EQUIPPED WITH 5"± NON- LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 3" WIDE YELLOW REFLECTIVE BORDER.
3. SIGNAL HEADS P&Q SHALL BE EQUIPPED WITH TUNNEL VISORS.
4. ALL PROPOSED SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.
5. EXISTING SIGNAL HEADS D, E, H,&J SHALL REMAIN OPTICALLY-PROGRAMMED.

EXISTING PRE-EMPTION PHASING & PRIORITY

DETECTOR & PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1	EXIST	EXIST
D2	2	EXIST	EXIST
D3	3	EXIST	EXIST
D4	4	EXIST	EXIST

LIST OF MAJOR ITEMS REQUIRED

MAIN STREET AT WEST STREET/HAMILTON STREET

PAY ITEM	QUANTITY	DESCRIPTION
816.01	1	R&S EXIST PEEK 3000 CONTROLLER (TS 2 TYPE 2) AND MODIFY EXIST TS 1 CABINET ASSEMBLY TO ACCOMMODATE PROPOSED CHANGES
	1	ATC CONTROLLER (TS 2 TYPE 2 CONFIGURATION)
	1	MALFUNCTION MANAGEMENT UNIT
	1	VEHICLE AND BICYCLE DIGITAL VIDEO DETECTION SYSTEM
	1	TS POST 8' STANDARD INCL. FOUNDATION
	1	TS POST 14' STANDARD INCL. FOUNDATION
	2	SIGNAL HEAD, 3-SECTION, 8" LENSES (BICYCLE)
	2	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
	1	APS PEDESTRIAN PUSH BUTTON W/R10-3e(L) AND SIGN SADDLE
	1	APS PEDESTRIAN PUSH BUTTON W/R10-3e(R) AND SIGN SADDLE
811.31	1	PULLBOX - 12"X12"
804.3	50'±	3" CONDUIT, TYPE NM, SCHEDULE 80

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

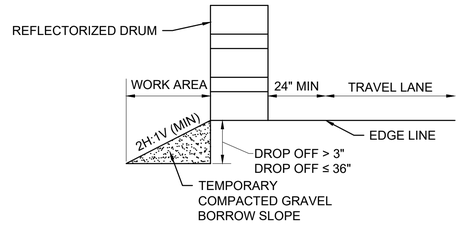
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GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. WORK HOURS SHALL BE 7:00AM TO 3:00PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY MASSDOT AND THE TOWN. NO WORK IMPACTING THE TRAVEL WAY WILL BE ALLOWED DURING PEAK TRAFFIC PERIODS. PEAK PERIODS ARE DEFINED AS MONDAY THRU FRIDAY, 6:00AM TO 9:00AM AND 3:00PM TO 7:00PM.
3. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY THE DAY BEFORE, AFTER OR ON A STATE RECOGNIZED HOLIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS AND PUBLIC RIGHTS-OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. ALL DRUMS OUTSIDE TAPERS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
6. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN SAFE AND REASONABLE ABUTTER ACCESS. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
7. THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AND SHALL BE OPERATING, AT A MINIMUM, BETWEEN DUSK AND DAWN, WHEN TAPER IS DEPLOYED.
8. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
9. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
10. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.
11. FOR DROP-OFFS 3" OR LESS WITHIN THE CLEAR ZONE, CONDITION MAY BE MITIGATED WITH W8-9 (LOW SHOULDER) SIGN OR TEMPORARY CHANNELIZATION DEVICES. FOR DROP-OFFS GREATER THAN 3" BUT NO MORE THAN 36", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO INSTALL BOTH W8-9 SIGN AND TEMPORARY CHANNELIZATION DEVICES IN ACCORDANCE WITH MASSDOT WORK ZONE SAFETY GUIDE OR W8-9 SIGN WITH A 2H:1V (MIN) WEDGE OR TO REMOVE THE HAZARD. FOR DROP-OFFS 36" OR GREATER USE TEMPORARY BARRIER IN ACCORDANCE WITH MASSDOT WORK ZONE POSITIVE PROTECTION GUIDELINES.
12. CONTRACTOR SHALL STAGE WORK SUCH THAT A DROP-OFF OF NO MORE THAN 3" AT THE END OF EACH WORK DAY EXISTS WITHIN THE CLEAR ZONE AT ANY TIME AND ENSURE DROP-OFF OUTSIDE OF BRIDGE WORKZONES IS MITIGATED WITHOUT BARRIER PER NOTE 11.
13. CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS:
    - 4' IF POSTED SPEED IS LESS THAN 35 MPH
    - 8' IF POSTED SPEED IS 35 MPH
    - 15' IF POSTED SPEED IS 40 MPH
14. ALL TEMP BARRIERS SHALL MEET OR EXCEED MASH TL-2 REQUIREMENTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND THE PROJECT SPECIFICATIONS.
15. THE CONTRACTOR SHALL PROVIDE TEMPORARY IMPACT ATTENUATORS TO PROTECT ALL BLUNT-ENDS OF TEMPORARY BARRIER OR AS REQUIRED BY THE ENGINEER. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. ALL TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED TO MEET OR EXCEED MASH TEST LEVEL 2 (TL-2).
16. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
17. TEMPORARY TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
18. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
19. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
20. SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN. CONTRACTOR SHALL MAINTAIN A MINIMUM SIDEWALK HORIZONTAL CLEAR WIDTH OF 36" AT ALL TIMES.
21. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN MASH CRASH TESTED SIGN SUPPORTS AND INSTALLED IN ACCORDANCE WITH THE MUTCD. SIGNS SHALL NOT BE MOUNTED TO OR LEANED AGAINST DRUMS OR CONES.
22. ARROW BOARD FLASHING CAUTION SHALL FLASH IN FOUR-POINT CAUTION MODE ONLY.
23. W21-7 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF AREAS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.
24. W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.
25. TEMPORARY MARKINGS SHALL BE SURFACE-APPLIED WATERBORNE PAINT OR REMOVABLE TAPE, AS APPROVED BY THE ENGINEER.
26. ALL TEMPORARY CROSSWALKS AND STOP LINES SHALL BE 12 INCHES WIDE.
27. ALL TEMPORARY DOUBLE YELLOW LINES (DBYL) AND WHITE PARKING LINES SHALL BE 6 INCHES WIDE.
28. W20-1c, MA-R2-10a OR MA-R2-10e SIGNS SHOWN ON ADVANCE SIGN SCHEMATIC MAY BE USED IN LIEU OF THOSE SIGNS SHOWN ON TYPICAL DETAILS ON THE TEMPORARY TRAFFIC CONTROL PLANS IF MINIMUM SIGN SPACING IS MET.
29. CONTRACTOR SHALL SECURE WORK AREAS BY APPROPRIATE MEANS, TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.
30. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
31. NIGHTTIME WORK SHALL REQUIRE PRIOR APPROVAL FROM MASSDOT AND TOWN.
32. ILLUMINATION REQUIRED FOR NIGHTTIME WORK APPROVED BY THE ENGINEER SHALL BE DIFFUSED OR ANTI-GLARE LIGHTING AND IN ACCORDANCE WITH MASSDOT STANDARDS.
33. CONTRACTOR SHALL PROVIDE 3 PORTABLE CHANGE MESSAGE SIGN (PCMS) A MINIMUM OF 14 DAYS PRIOR TO START OF CONSTRUCTION AND FOR THE DURATION OF THE PROJECT AS DIRECTED BY THE ENGINEER
34. WHEN UTILIZING TYPICAL TRAFFIC CONTROL DETAILS OR STAGING SETUPS, COVER EXISTING CONFLICTING ADVANCE WARNING SIGNS AS REQUIRED TO COMPLETE THE WORK.
35. CONTRACTOR SHALL NOT ALLOW PUBLIC ACCESS ON PORTIONS OF NEWLY BUILT SIDEWALK UNTIL ALL SIDEWALKS WITHIN THE PROJECT LIMITS ARE FULLY CONSTRUCTED AND ADAAG COMPLIANT OR AS DIRECTED BY THE ENGINEER.
36. PROPOSED WORK ZONE ENCLOSURE SHALL CONSIST OF FENCE AS SHOWN. IT IS PROVIDED TO PREVENT UNAUTHORIZED ACCESS TO THE WORK AREA. THE USE OF FENCING OR TEMP BARRIER W/ FENCE FOR THIS PURPOSE DOES NOT GUARANTEE PROTECTION FROM HAZARDS BEYOND THE BARRIER.

NOTE:

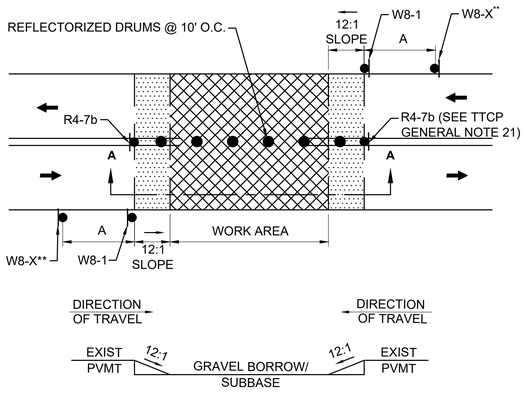
SIMULTANEOUS CLOSURE OF BOTH BRIDGES IS NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWN AND MASSDOT.



NOTE:
1. CONTRACTOR SHALL INSTALL W8-9 SIGN ON ALL ROADWAYS 350 FT IN ADVANCE OF THE START OF DROP-OFF CONDITION.

TYPICAL ROADWAY DROP-OFF PROTECTION

SCALE: NTS



SECTION A-A

NOTES:
1. SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY.
2. ** CONTRACTOR SHALL INSTALL W8-1 AT LIMIT OF EXCAVATION AND A W8-3, W8-8, W8-15, OR W8-24 SIGN, AS APPROPRIATE, ON ALL ROADWAYS IN ADVANCE OF THE TRANSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. R4-7b SIGNS AND DRUMS MAY BE OMITTED AT THE DISCRETION OF THE ENGINEER.

TEMPORARY PAVEMENT TRANSITION

SCALE: NTS DWG: TTCP1g DATE: FEB 2022

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	18	105
PROJECT FILE NO. 608862			

TEMPORARY TRAFFIC CONTROL PLANS
TTCP GENERAL NOTES & LEGEND

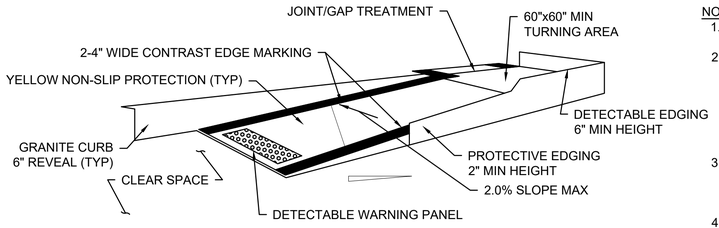
LEGEND	
P	POLICE OFFICER
S	TRAFFIC SIGNAL
●	REFLECTORIZED DRUM
◉	REFLECTORIZED DRUM WITH SEQUENTIAL FLASHING WARNING LIGHT (SEE NOTE 7)
	TEMPORARY CONSTRUCTION SIGN
▲	TRAFFIC CONE
	TYPE III BARRICADE
	TEMPORARY BARRIER
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	WORK AREA (PUBLIC ACCESS RESTRICTED)
	TRAFFIC FLOW
	PEDESTRIAN ROUTE
	CONSTRUCTION FENCE
	TEMPORARY PORTABLE PEDESTRIAN BARRICADE
NTS	NOT TO SCALE
TTCP	TEMPORARY TRAFFIC CONTROL PLAN

ADVANCE SIGN SPACING			
	DISTANCE BETWEEN SIGNS (FEET)		
ROADWAY	A	B	C
ALL ROADWAYS	100	100	100

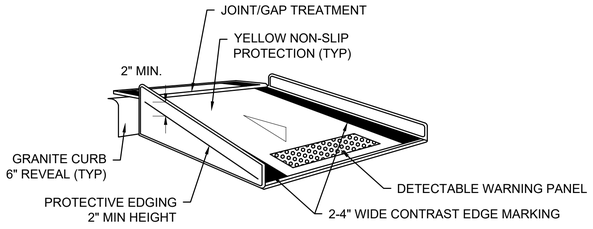
BUFFER SPACING	
SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425

LANE TAPER LENGTH FORMULAS	
L= TAPER LENGTH IN FEET	
W= WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED IN FEET	
S= POSTED SPEED LIMIT IN MPH	
POSTED SPEED	
40 MPH OR LESS	GREATER THAN 40 MPH
$L=\frac{WS^2}{60}$	L= WS

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TEMPORARY CURB RAMP-PARALLEL TO CURB



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:

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

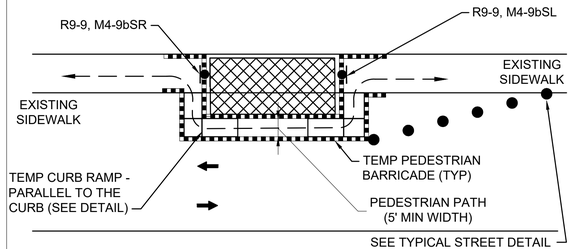
TEMPORARY CURB RAMPS

SCALE: NTS DWG: TTCP3b DATE: NOVEMBER 2020

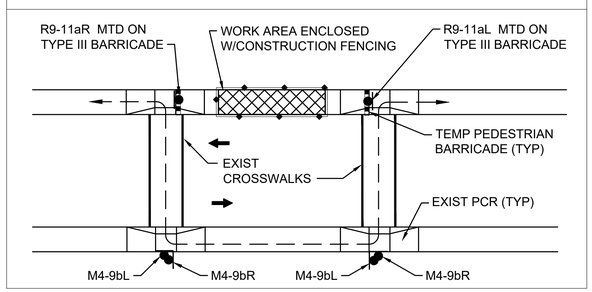
NOTES:

1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. → — → INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, THE APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AT EXISTING OR TEMPORARY CROSSWALKS AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER.
6. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
7. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS AND INCLUDE THE USE OF A COMPLIANT TEMPORARY PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AT ALL TIMES.
8. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS. A 5' x 5' PASSING AREA SHALL BE PROVIDED IN INTERVALS NOT EXCEEDING 200 FEET.
9. TEMPORARY PEDESTRIAN CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.
10. TEMPORARY PEDESTRIAN BARRICADE SHALL BE PAID FOR UNDER ITEM 852.11 TEMPORARY PEDESTRIAN BARRICADE.
11. TEMPORARY PEDESTRIAN CURB RAMPS SHALL BE PAID FOR UNDER ITEM 852.12 TEMPORARY PEDESTRIAN CURB RAMP.

PEDESTRIAN BYPASS TYPE I



PEDESTRIAN BYPASS TYPE II



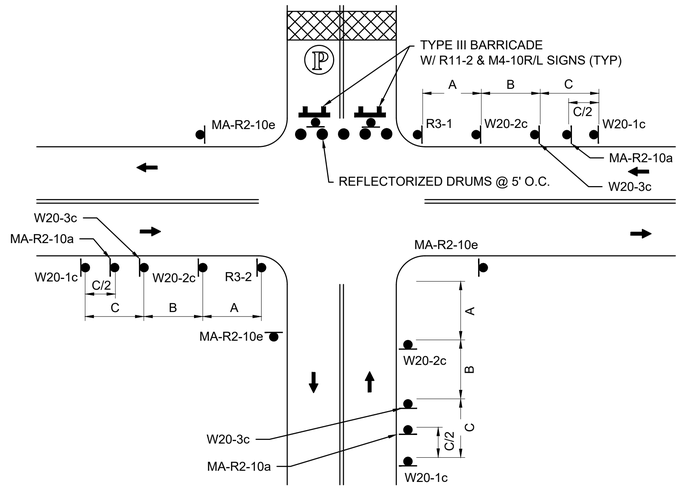
PEDESTRIAN BYPASS DETAIL

SCALE: NTS DWG: TTCP3a DATE: NOVEMBER 2020

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	19	105
	PROJECT FILE NO. 608862		

TEMPORARY TRAFFIC CONTROL PLANS
TYPICAL DETAILS

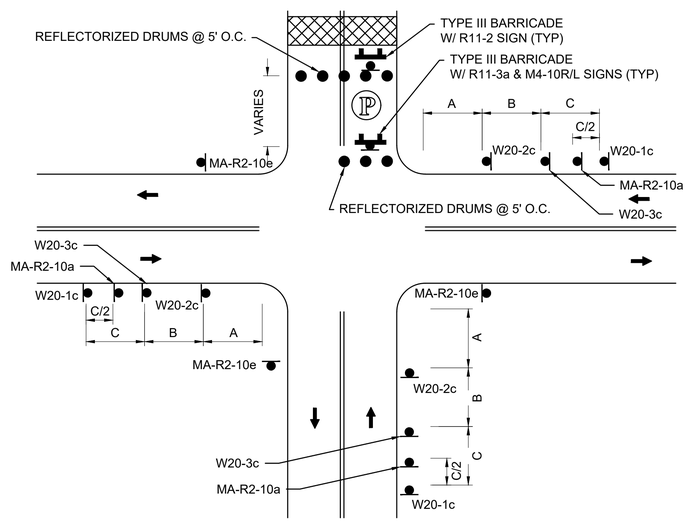


NOTES:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

TYPICAL LOCAL ROAD CLOSURE

SCALE: NTS DWG: TTCP5a DATE: FEB 2022



NOTES:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS

SCALE: NTS DWG: TTCP5b DATE: FEB 2022

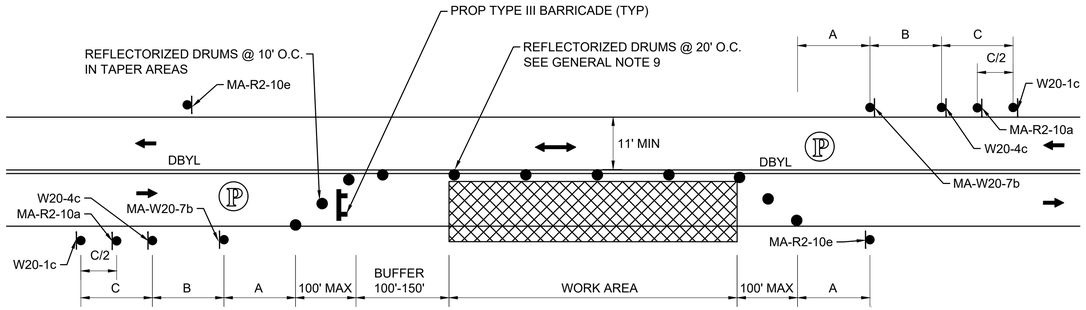
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SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	20	105
PROJECT FILE NO.	608862		

TEMPORARY TRAFFIC CONTROL PLANS
TYPICAL DETAILS

608862_HD(TTCP).DWG Plotted on 27-Jul-2026 12:59 PM

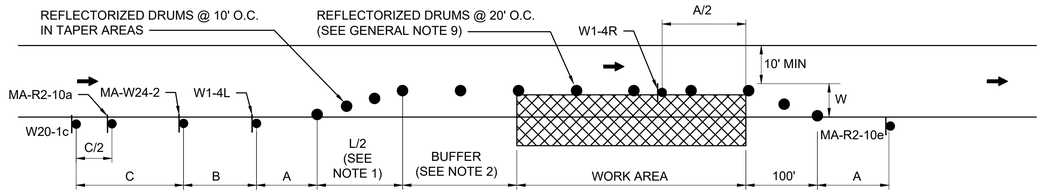


NOTES:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
4. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS DWG: TTCP2b DATE: FEB 2022

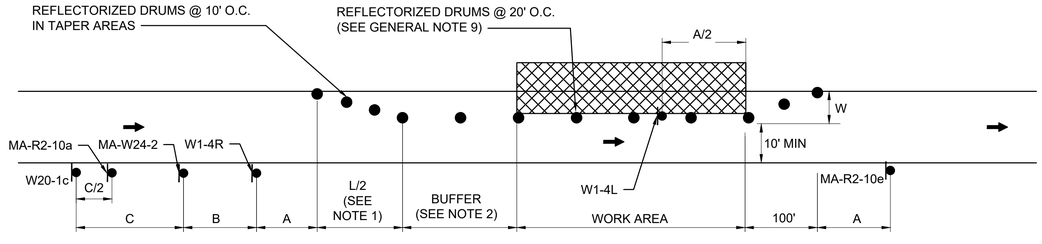


NOTES:

1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE ADVANCE SIGN SPACING TABLE TTCP GENERAL NOTES & LEGEND SHEET.
4. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

TYPICAL ONE-WAY STREET LANE SHIFT-LEFT

SCALE: NTS DWG: TTCP2d DATE: NOV 2022



NOTES:

1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE ADVANCE SIGN SPACING TABLE TTCP GENERAL NOTES & LEGEND SHEET.
4. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

TYPICAL ONE-WAY STREET LANE SHIFT-RIGHT

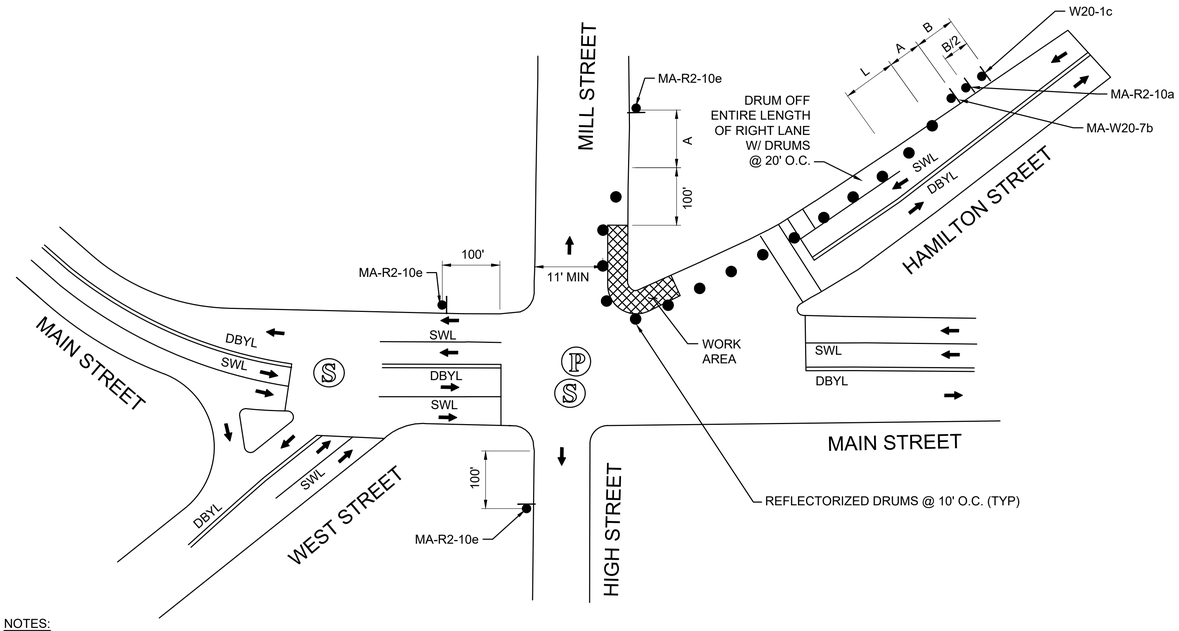
SCALE: NTS DWG: TTCP2d DATE: NOV 2022

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	21	105
PROJECT FILE NO.	608862		

TEMPORARY TRAFFIC CONTROL PLANS
TYPICAL DETAILS

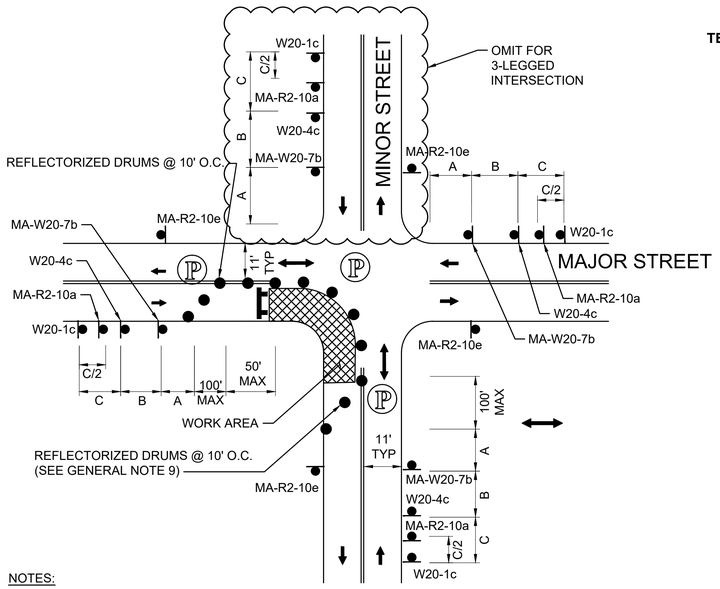
608862_HD(TTCP).DWG Plotted on 27-Jul-2026 12:59 PM



NOTES:

1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
4. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.
5. INTENDED USE OF SET-UP IS CURB, SIDEWALK, AND TRAFFIC SIGNAL CONDUIT WORK.

NEAR-SIDE INTERSECTION - MAIN STREET

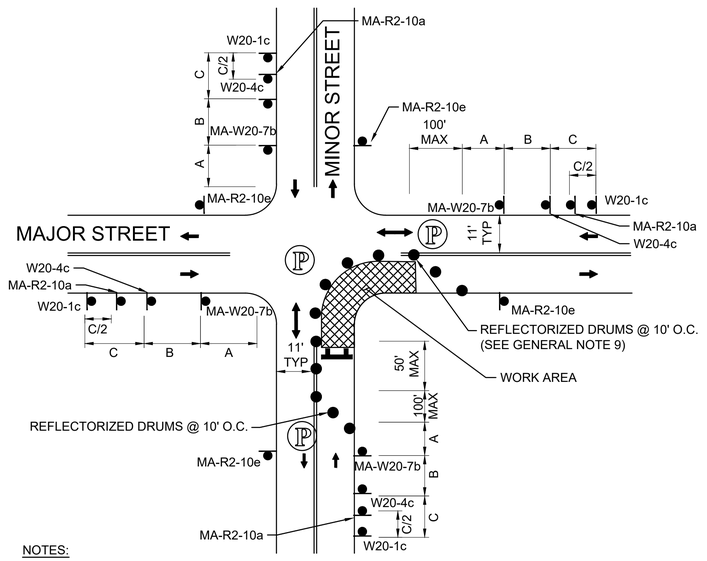


NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

ONE LANE BI-DIRECTIONAL TRAFFIC AT-INTERSECTIONS - NEAR SIDE

SCALE: NTS DWG: TTCP4d DATE: FEB 2022



NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE TTCP GENERAL NOTE 28 REGARDING ADVANCE SIGNAGE.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS - FAR SIDE

SCALE: NTS DWG: TTCP4c DATE: FEB 2022

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	22	105
PROJECT FILE NO.	608862		

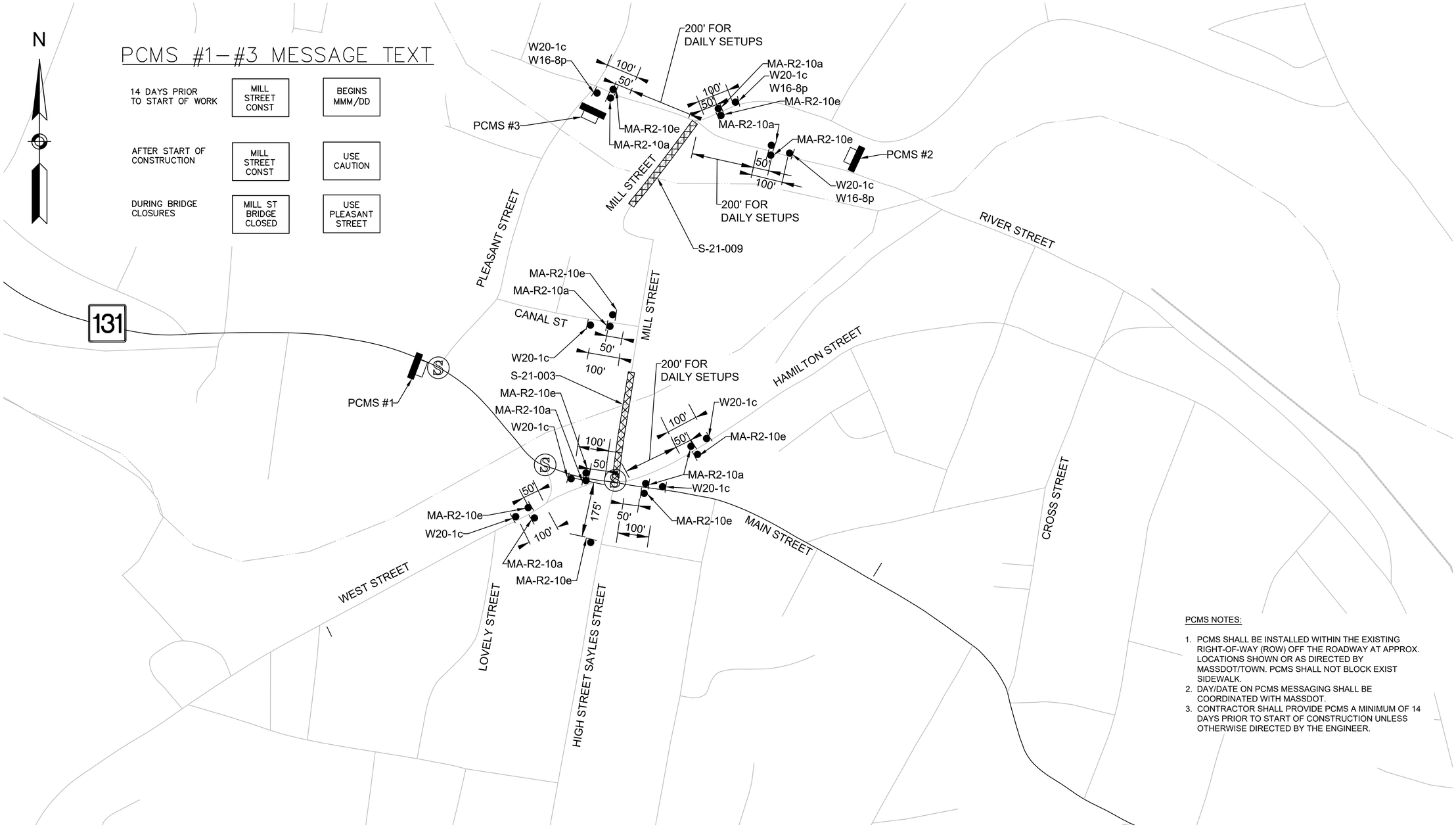
TEMPORARY TRAFFIC CONTROL PLANS
ADVANCE SIGN SCHEMATIC

608862_HD(TTCP).DWG Plotted on 27-Jul-2026 12:59 PM

N

PCMS #1–#3 MESSAGE TEXT

14 DAYS PRIOR TO START OF WORK	MILL STREET CONST	BEGINS MMM/DD
AFTER START OF CONSTRUCTION	MILL STREET CONST	USE CAUTION
DURING BRIDGE CLOSURES	MILL ST BRIDGE CLOSED	USE PLEASANT STREET



PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY MASSDOT/TOWN. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. DAY/DATE ON PCMS MESSAGING SHALL BE COORDINATED WITH MASSDOT.
3. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 14 DAYS PRIOR TO START OF CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ADVANCE SIGN SCHEMATIC

150 0 150 300
SCALE IN FEET

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	23	105
PROJECT FILE NO. 608862			

TEMPORARY TRAFFIC CONTROL PLANS
SITE-SPECIFIC CLOSURE - S-21-003

608862_HD(TTCP-ST(G).DWG Plotted on 27-Jul-2026 1:00 PM

NAD 83 N

PROJECT BEGIN
STA 201+70.00
N 2854905.1044
E 508420.3160

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

HIGH STREET

MILL STREET

CANAL STREET

HAMILTON STREET

QUINEBAUG RIVER

MAINTAIN PEDESTRIAN ACCESS TO ABUTTER

PROP WORKZONE ENCLOSURE FENCING

PROP TEMP R1-1 W/R3-5R

PROP TYPE III BARRICADE W/R11-2

ONE SIDEWALK SHALL REMAIN OPEN AND ACCESSIBLE TO PEDESTRIANS AT ALL TIMES. SEE NOTE 6 AND BRIDGE PLANS FOR ADDITIONAL DETAILS.

PROP TYPE III BARRICADE W/R11-2

MAINTAIN PARKING LOT ACCESS. SEE NOTE 5.

CONTRACTOR TO COORDINATE WITH TOWN TO PROHIBIT ON-STREET PARKING SOUTH OF CANAL STREET DURING CONSTRUCTION ACTIVITY BETWEEN CANAL STREET AND MAIN STREET.

PROP TYPE III BARRICADE W/R11-3b, M4-10R

PROP CONSTRUCTION GATE

PROP TYPE III BARRICADE W/SP-1, M4-10L

PROP TYPE III BARRICADE W/SP-2

PROP CONSTRUCTION DRUM (TYP)

PROP TYPE III BARRICADE W/R9-11aL SEE NOTE 6

PROP CONSTRUCTION GATE

PROP PARKING LOT (B.O. UNDER SEPARATE CONTRACT), TO BE COMPLETED PRIOR TO BRIDGE CONSTRUCTION. SEE NOTE 4.

PROP TYPE III BARRICADE W/R9-9 SEE NOTE 6

PROP TEMP BARRIER (TL-2) FOR DROP-OFF DELINEATION (TYP)

SEE NOTE 2 (TYP)

POTENTIAL CRANE LOCATION ADJUST TTCP DEVICES AS NEEDED

CONTRACTOR TO COORDINATE WITH ABUTTER ON RESTRICTING ACCESS DURING CRANE OPERATIONS

PROP TYPE III BARRICADE W/R9-9 SEE NOTE 6

PROP PEDESTRIAN ROUTE SEE NOTE 6

PROP TYPE III BARRICADE W/R9-11aR SEE NOTE 6

Lazo's Cafe

1 STY VINYL

1.5 STY BRICK

5 STY BRICK

GREENMEADOWS CUSTOMER PARKING

RIP RAP

SOUTHBRIDGE RADIATOR

RIGHT OF WAY (BOOK 3818 PAGE 460)

EPISCOPAL

GRASS MEMORIAL

0 20 50 100
SCALE: 1" = 20'

CONSTRUCTION NOTES

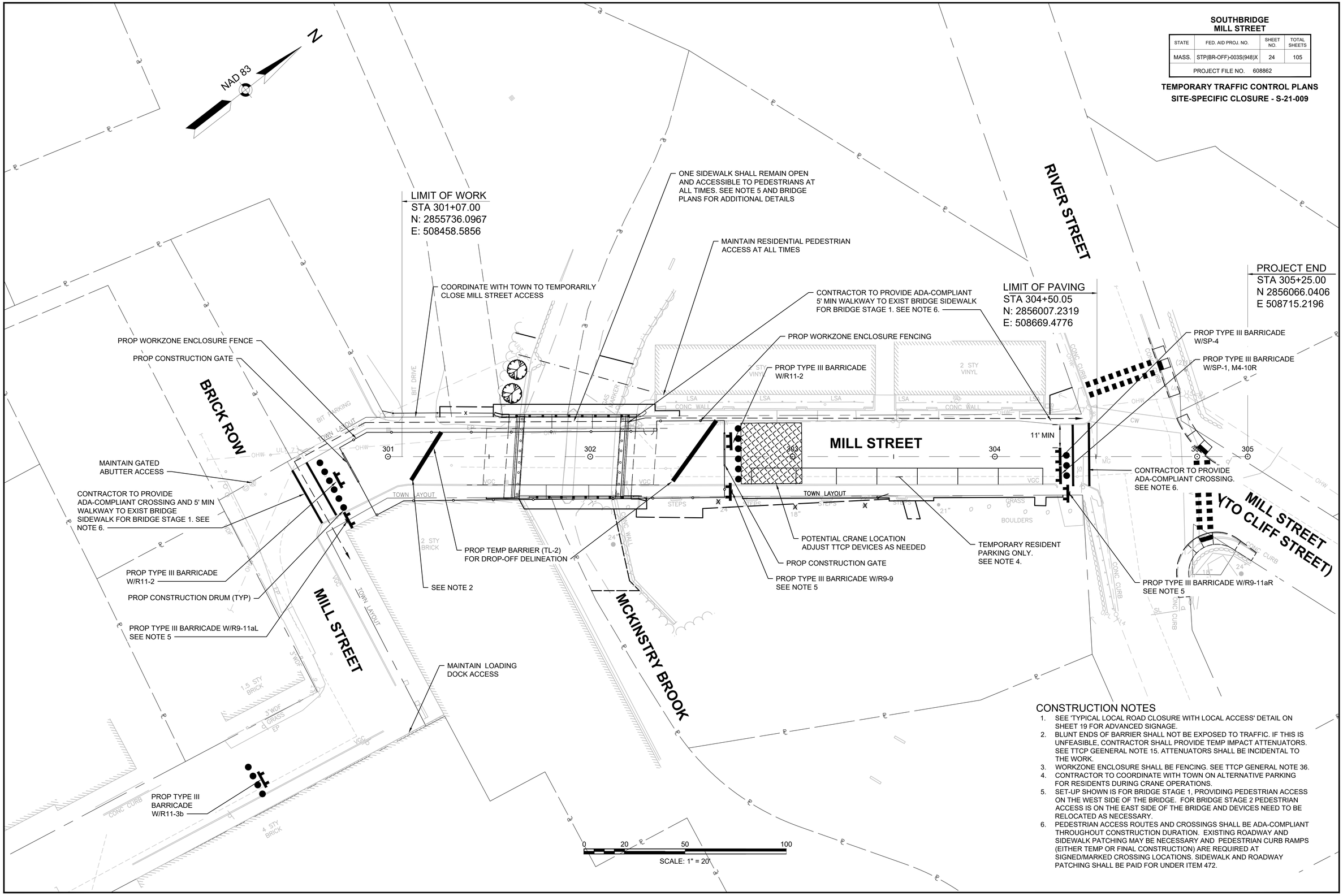
1. SEE 'TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS' DETAIL ON SHEET 19 FOR ADVANCED SIGNAGE.
2. BLUNT ENDS OF BARRIER SHALL NOT BE EXPOSED TO TRAFFIC. IF THIS IS UNFEASIBLE, CONTRACTOR SHALL PROVIDE TEMP IMPACT ATTENUATORS. SEE TTCP GEENERAL NOTE 15. ATTENUATORS SHALL BE INCIDENTAL TO THE WORK.
3. WORKZONE ENCLOSURE SHALL BE FENCING. SEE TTCP GENERAL NOTE 36.
4. ACCESS TO/FROM LAZO'S PARKING LOT SHALL REMAIN AVAILABLE MONDAY THRU FRIDAY 3PM TO 2AM AND SATURDAY & SUNDAY 11AM TO 2AM.
5. ACCESS TO/FROM GREENMEADOWS PARKING LOT SHALL REMAIN AVAILABLE SUNDAY THRU WEDNESDAY 10AM TO 7PM AND THURSDAY THRU SATURDAY 9AM TO 9PM.
6. SET-UP SHOWN IS FOR BRIDGE STAGES 2 AND 3, PROVIDING PEDESTRIAN ACCESS ON THE WEST SIDE OF THE BRIDGE. FOR BRIDGE STAGE 0 AND 1, PEDESTRIAN ACCESS IS ON THE EAST SIDE OF THE BRIDGE AND DEVICES NEED TO BE RELOCATED AS NECESSARY.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	24	105
PROJECT FILE NO. 608862			

TEMPORARY TRAFFIC CONTROL PLANS
SITE-SPECIFIC CLOSURE - S-21-009

608862_HDLTTCP-STG1.DWG Plotted on 27-Jul-2026 1:00 PM



CONSTRUCTION NOTES

1. SEE 'TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS' DETAIL ON SHEET 19 FOR ADVANCED SIGNAGE.
2. BLUNT ENDS OF BARRIER SHALL NOT BE EXPOSED TO TRAFFIC. IF THIS IS UNFEASIBLE, CONTRACTOR SHALL PROVIDE TEMP IMPACT ATTENUATORS. SEE TTCP GEENERAL NOTE 15. ATTENUATORS SHALL BE INCIDENTAL TO THE WORK.
3. WORKZONE ENCLOSURE SHALL BE FENCING. SEE TTCP GENERAL NOTE 36.
4. CONTRACTOR TO COORDINATE WITH TOWN ON ALTERNATIVE PARKING FOR RESIDENTS DURING CRANE OPERATIONS.
5. SET-UP SHOWN IS FOR BRIDGE STAGE 1, PROVIDING PEDESTRIAN ACCESS ON THE WEST SIDE OF THE BRIDGE. FOR BRIDGE STAGE 2 PEDESTRIAN ACCESS IS ON THE EAST SIDE OF THE BRIDGE AND DEVICES NEED TO BE RELOCATED AS NECESSARY.
6. PEDESTRIAN ACCESS ROUTES AND CROSSINGS SHALL BE ADA-COMPLIANT THROUGHOUT CONSTRUCTION DURATION. EXISTING ROADWAY AND SIDEWALK PATCHING MAY BE NECESSARY AND PEDESTRIAN CURB RAMPS (EITHER TEMP OR FINAL CONSTRUCTION) ARE REQUIRED AT SIGNED/MARKED CROSSING LOCATIONS. SIDEWALK AND ROADWAY PATCHING SHALL BE PAID FOR UNDER ITEM 472.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	25	105
PROJECT FILE NO.	608862		

TEMPORARY TRAFFIC CONTROL PLANS
SCHEMATIC DETOUR PLAN
BRIDGE S-21-003 DETOUR

608862_HDI(TTCP-DTR).DWG Plotted on 27-Jul-2026 1:00 PM

LEGEND	
S	TRAFFIC SIGNAL
	NORTHBOUND DETOUR
	WORK AREA (PUBLIC ACCESS RESTRICTED)

NOTE: BRIDGE S-21-003 IS NORTHBOUND ONLY

N

FISKE STREET
MILL STREET
RIVER STREET
PLEASANT STREET
MILL STREET
M4-9R
SP-3
M4-8a
CANAL ST
M4-9R
SEE SITE-SPECIFIC
ROAD CLOSURE DETAIL
ON SHEET 23
M4-9V
HAMILTON STREET
OLIVER STREET
MAIN STREET
WEST STREET
HIGH STREET
131

GENERAL NOTES:
ALL TEMPORARY SIGNS SHALL BE PLACED
WITHIN THE PUBLIC RIGHT OF WAY.

150 0 150 300
SCALE IN FEET

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	26	105
PROJECT FILE NO.	608862		

TEMPORARY TRAFFIC CONTROL PLANS
SCHEMATIC DETOUR PLAN
BRIDGE S-21-009 DETOUR

608862_HD(TTCP-DTR).DWG Plotted on 27-Jul-2026 1:00 PM

N

LEGEND

Ⓢ	TRAFFIC SIGNAL
	SOUTHBOUND DETOUR
	NORTHBOUND DETOUR
	WORK AREA (PUBLIC ACCESS RESTRICTED)

SEE SITE-SPECIFIC ROAD CLOSURE DETAIL ON SHEET 24

M4-9L
M4-8a
M4-9V
M4-9R

FISKE STREET
MILL STREET
RIVER STREET
PLEASANT STREET

M4-9L
M4-9R
SP-3
CANAL ST
M4-8a
MILL STREET
M4-9L

HAMILTON STREET
OLIVER STREET
MAIN STREET
WEST STREET
HIGH STREET
131

GENERAL NOTES:
ALL TEMPORARY SIGNS SHALL BE PLACED WITHIN THE PUBLIC RIGHT OF WAY.

150 0 150 300
SCALE IN FEET

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	27	105
PROJECT FILE NO.	608862		

TEMPORARY TRAFFIC CONTROL PLANS
TEMPORARY SIGN SUMMARY

608862_HD(TTCP).DWG Plotted on 27-Jul-2026 1:00 PM

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	UNIT AREA (S.F.)
MA-R2-10a	48"	36"	WORK ZONE / SPEEDING FINES DOUBLED	AS PER MASSDOT STANDARD			FLUORESCENT ORANGE / WHITE	BLACK	BLACK	12.00
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END				FLUORESCENT ORANGE / WHITE	BLACK	BLACK	12.00
R1-1	30"	30"	STOP	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			RED	WHITE	WHITE	6.25
R3-1	24"	24"					WHITE	RED/ BLACK	BLACK	4.00
R3-2	24"	24"					WHITE	RED/ BLACK	BLACK	4.00
R3-5R	30"	36"	ONLY				WHITE	BLACK	BLACK	7.50
R4-7b	24"	30"	KEEP RIGHT				WHITE	BLACK	BLACK	5.00
R7-1L/R	12"	18"	NO PARKING ANY TIME / NO PARKING ANY TIME				WHITE	RED	RED	1.50
R9-9	24"	12"	SIDEWALK CLOSED				WHITE	BLACK	BLACK	2.00
R9-11aL/R	24"	12"	SIDEWALK CLOSED CROSS HERE / SIDEWALK CLOSED CROSS HERE				WHITE	BLACK	BLACK	2.00
R11-2	48"	30"	ROAD CLOSED				WHITE	BLACK	BLACK	10.00
R11-3a	60"	30"	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY				WHITE	BLACK	BLACK	12.50
R11-3b	60"	30"	BRIDGE OUT AHEAD LOCAL TRAFFIC ONLY				WHITE	BLACK	BLACK	12.50
W1-4L/R	36"	36"					FLUORESCENT ORANGE	BLACK	BLACK	9.00
W4-2L/R	36"	36"					FLUORESCENT ORANGE	BLACK	BLACK	9.00
W5-1	36"	36"	ROAD NARROWS				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-1	36"	36"	BUMP				FLUORESCENT ORANGE	BLACK	BLACK	9.00

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	UNIT AREA (S.F.)
W8-3	36"	36"	PAVEMENT ENDS	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-8	36"	36"	ROUGH ROAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-9	36"	36"	LOW SHOULDER				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-15	36"	36"	GROOVED PAVEMENT				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W20-1c	36"	36"	ROAD WORK AHEAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W20-2c	36"	36"	DETOUR AHEAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W20-3c	36"	36"	ROAD CLOSED AHEAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W20-5cL/R	36"	36"	LEFT LANE CLOSED AHEAD / RIGHT LANE CLOSED AHEAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD	AS PER MASSDOT STANDARD			FLUORESCENT ORANGE	BLACK	BLACK	9.00
W21-7	36"	36"	UTILITY WORK AHEAD	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUORESCENT ORANGE	BLACK	BLACK	9.00
MA-W24-2	36"	36"	LANES SHIFT AHEAD	AS PER MASSDOT STANDARD			FLUORESCENT ORANGE	BLACK	BLACK	9.00
SP-1	60"	48"	BRIDGE OUT / BUSINESS ACCESS VIA CANAL STREET	6"C 5"C 5"C 5"C @100%	5.13" 5.13"	N/A	WHITE	BLACK	BLACK	20.00
SP-2	54"	36"	OPEN FOR LAZO'S CAFE PARKING ONLY	4"C 4"C @100%	6.5" 6.5"	N/A	FLUORESCENT ORANGE	BLACK	BLACK	13.50
SP-3	60"	48"	ROAD CLOSED AHEAD / BUSINESSES OPEN DURING CONSTRUCTION	5"B 5"C 5"C 5"C @100%	5.63" 5.63"	N/A	WHITE	BLACK	BLACK	20.00
SP-4	54"	36"	OPEN FOR RESIDENT PARKING ONLY	4"C 4"C @100%	6.5" 6.5"	N/A	FLUORESCENT ORANGE	BLACK	BLACK	13.50

NOTES:
1. RETROREFLECTIVE SHEETING CONFORMING TO SECTION M9.30.0 OF THE LATEST MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
2. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION", THE 2012 SUPPLEMENT, AND THE 2024 PHASED RELEASE; THE 1990 MASSDPW STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE MASSDOT STANDARD SIGNS, LATEST EDITION.
3. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

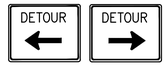
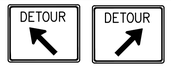
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	28	105
PROJECT FILE NO.	608862		

TEMPORARY TRAFFIC CONTROL PLANS
TEMPORARY SIGN SUMMARY

608862_HD(TTCP).DWG Plotted on 27-Jul-2026 1:00 PM

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			COLOR			UNIT AREA (S.F.)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACKGROUND	LEGEND	BORDER	
M4-8a	30"	24"		SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9V	30"	24"					FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9L/R	30"	24"					FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9AL/R	30"	24"					FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9bL/R	30"	24"					FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9bSL/R	30"	24"					FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9SL/R	30"	24"					FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-10L	48"	18"					FLUORESCENT ORANGE	BLACK	- - -	6.00
M4-10R	48"	18"					FLUORESCENT ORANGE	BLACK	- - -	6.00
W16-8p	16"	8"		4"B 6"C @85%	2" 2"	N/A	FLUORESCENT ORANGE	BLACK	BLACK	0.88

NOTES:
1. RETROREFLECTIVE SHEETING CONFORMING TO SECTION M9.30.0 OF THE LATEST MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
2. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION", THE 2012 SUPPLEMENT, AND THE 2024 PHASED RELEASE; THE 1990 MASSDPW STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE MASSDOT STANDARD SIGNS, LATEST EDITION.
3. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	29	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 0

608862_HDUTIL).DWG Plotted on 24-Jul-2026 2:22 PM

WEST STREET
MAIN STREET
HIGH STREET
MILL STREET
HAMILTON STREET
MAIN STREET
QUINEBAUG RIVER

NAD 83 N

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

DEACTIVATE GAS LINE ON WEST SIDE OF BRIDGE
PROP TEMP EASEMENT
TEMP STUB POLE & TEMP GUY (B.O.)
TEMP ARM (B.O.)
TEMP OHW (B.O.), NATIONAL GRID & CHARTER
PROP TEMP EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
RET UPL 47
INSTALL PERMANENT POLE & GUY (B.O.) FOR TEMP SERVICE
RET OHW
TEMP OHW (B.O.), ALL SERVICES
R&S SERVICE BOX CONFIRM W/ WATER DEPT PRIOR TO REMOVAL
ATTACH TEMP SERVICES (BO)
TEMPORARILY REM EX OHW (B.O.)
INSTALL & ACTIVATE TEMP SEWER BYPASS
PERMANENT CAP & CUT 3" GAS (B.O.)
CUT & CAP 10" WATER LINE +70
REM 139± LF 10" WATER LINE
REM OVERHEAD SERVICES (B.O.)
REM ULT 1 (B.O.)
ABAN EX GAS MAIN (B.O.)
CUT & CAP 10" WATER LINE +06
TEMPORARILY REM EX OHW, ALL SERVICES (B.O.)
R&S SERVICE BOX CONFIRM W/ WATER DEPT PRIOR TO REMOVAL
REM ULT 2 & GUY
PROP PERM EASEMENT
PROP TEMP EASEMENT
TEMPORARILY REM OHW (B.O.)
UPGRADE POLE ULT 3 (B.O.)
PROP TEMP EASEMENT
INSTALL TEMP GUY (B.O.)
RET UPL
EXIST DEAD END SECTION OF GAS MAIN
RET EX OHW
TEMP OHW (B.O.)
PERMANENT CAP & CUT 3" GAS (B.O.)
INSTALL TEMP UPL (B.O.)
PROP TEMP EASEMENT
PROVIDE TEMP OHW SERVICE (B.O.)
RET EX GAS
RET 10" EX GAS
RET UPL 19/46
RET 10" EX GAS
TEMPORARILY REM EX OHW (B.O.)
TEMP OHW (B.O.), VERIZON
PROP PERM EASEMENT
PROP TEMP EASEMENT
RET GRAVEL PARKING LOT
PROP TEMP WOOD POLE INSTALLED BY VERIZON
PROP TEMP EASEMENT
PROP PERM EASEMENT
TEMP OHW (B.O.), VERIZON
PROP BRIDGE REPLACEMENT STAGE 0 BRIDGE S-21-003
PROP LIMIT OF CLEARING & GRUBBING (TYP)
PROP TEMP EASEMENT
PROP PERM EASEMENT
TEMP REM EX OHW (B.O.)
UPGRADE EX POLE UPL 7 AND GUY (B.O.)
PROP TEMP GUY (B.O.)
RET EX OHW
RET UPL 6

1997 TOWN LAYOUT
1955 TOWN LAYOUT
1868 COUNTY LAYOUT
EXISTING TOWN LAYOUT

0 20 50 100
SCALE: 1" = 20'

GENERAL NOTES:
1. STAGE 0 CONSISTS OF WORK NEEDED TO BE COMPLETED BEFORE BRIDGE DEMOLITION.
2. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.
5. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRID AND COORDINATED WITH THE CONSTRUCTION AS NEEDED. CONTACT NATIONAL GRID FOR DEACTIVATION OF GAS MAIN.

LEGEND
PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	30	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 1

608862_HDUTIL).DWG Plotted on 24-Jul-2026 2:22 PM

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83

WEST STREET

MAIN STREET

HIGH STREET

MILL STREET

HAMILTON STREET

MAIN STREET

QUINEBAUG RIVER

PROP TEMP EASEMENT

PROP PERM EASEMENT

MAINTAIN SEWER BYPASS - REMOVE BYPASS AFTER PROP 16" SEWER PIPE IS ACTIVE

PROP 151 LF - 16" DI INSULATED SEWER PIPE, CONNECT TO EXIST MANHOLES AT EXIST ELEVATIONS

REMOVE EX 15" CI SEWER PIPE

REM EX GAS GATE (B.O.)

REM GAS MAIN ON BRIDGE (B.O.)

ABAN EX GAS MAIN (B.O.)

CONSTRUCT 225± LF 12" GAS MAIN (B.O.)

CONSTRUCT ADDITIONAL 165± LF 12" GAS MAIN FOR BETTERMENT (B.O.)

RET EXIST GAS (BOOK 3818 PAGE 160)

PROP TEMP EASEMENT

PROP PERM EASEMENT

PROP TEMP EASEMENT

PROP LIMIT OF CLEARING & GRUBBING (TYP)

PROP TEMP EASEMENT

PROP PERM EASEMENT

PROP BRIDGE REPLACEMENT STAGE 1 BRIDGE S-21-003

RET GRAVEL PARKING LOT

1997 TOWN LAYOUT

1955 TOWN LAYOUT

1868 COUNTY LAYOUT

EXISTING TOWN LAYOUT

RET SEWER

201 202 203 204 205 206

0 20 50 100
SCALE: 1" = 20'

GENERAL NOTES:

1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. RETAIN ALL EXISTING WATER SHUTOFFS, GATES, AND HYDRANTS UNLESS OTHERWISSE NOTED.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRID AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

LEGEND

- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	31	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 2

608862_HD(UTIL).DWG Plotted on 24-Jul-2026 2:22 PM

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83

WEST STREET
MAIN STREET
HIGH STREET
MILL STREET
HAMILTON STREET
MAIN STREET
QUINEBAUG RIVER

1997 TOWN LAYOUT
EXISTING TOWN LAYOUT
1868 COUNTY LAYOUT

PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP TEMP EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT

END MAIN ADJACENT TO EXIST PIPE FOR CONNECTION IN STAGE 3
END MAIN ADJACENT TO EXIST PIPE FOR CONNECTION IN STAGE 3 1997 TOWN LAYOUT

PROP 40± LF 10" DI WATER (MJ)
PROP 40± LF 10" DI WATER (MJ)
PROP 22.5° BENDS
PROP VERT BEND (2)
PROP VERT BEND (2)
PROP 45° BEND
PROP 45°BEND
ACTIVATE 12" GAS LINE (B.O.)
PROP GAS GATE (B.O.)
CUT & CAP 10" GAS (B.O.)
CUT & CAP 10" GAS (B.O.)
CONNECT TO EXIST 8" PLASTIC GAS MAIN (B.O.)
ACTIVATE 12" GAS LINE (B.O.)
REM 165± LF 10" GAS MAIN AFTER THE NEW 12" GAS LINE IS ACTIVE (B.O.)
CONSTRUCT 112± LF 10" DI WATER (MJ), INSULATED & JACKETED
PROP BRIDGE REPLACEMENT STAGE 2 BRIDGE S-21-003
PROP LIMIT OF CLEARING & GRUBBING (TYP)
PROP GAS GATE (B.O.)
RET HYD
RET HYD (2)
RET SEWER
RET SEWER
RET SEWER
RET 21"S
RET GRAVEL PARKING LOT

GENERAL NOTES:
1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
3. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRIC AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	32	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 3 (PERMANENT CONDITION)

608862_HDUTIL).DWG Plotted on 24-Jul-2026 2:23 PM

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83

WEST STREET
MAIN STREET
HIGH STREET
MILL STREET
HAMILTON STREET
MAIN STREET
QUINEBAUG RIVER

PROP TEMP EASEMENT
REM TEMP SERVICE WIRE AND POLE AFTER NEW SERVICE IS CONNECTED (B.O.)
PROP PERM EASEMENT
PROP 2 LF± DI WATER PIPE CONNECT TO EXIST PIPE WITH 10" COUPLING
RET UPL 47
RET OHW
USE EXIST WATER GATE TO SHUT OFF WATER PRIOR TO CONNECTING THE PROP WATER MAIN COORDINATE WITH WATER DEPT
REM TEMP SERVICE WIRES, INSTALL PROP NGRID GUY WIRE (B.O.)
PROP 10'± OF 6" DI (MJ)
RET WSO
RET MW
R&R HYD
ADJ SERVICE BOX
PROP 45° BEND
ADJ WG
ADJ MW
ADJ SERVICE BOX
PROP 10" WG
16' - 12" RCP
4' - 12" RCP
PROP CONDUIT
PROP TS POST (TYP)
ADJ GG (B.O.)
RET 21"S
RET SEWER
RET UPT 19/46
RET EX CONDUIT
PROP OHW (B.O.)
REMOVE TEMPORARY POLE
PROP PERM EASEMENT
PROP TEMP EASEMENT
SAWCUT
MEET EX
29' - 12" RCP
PROP CIT
INSTALL PERM ULT, (45 FT TALL FIBERGLASS POLE, W/ 3 FT DIA. CRUSHED STONE FOUNDATION (BY NGRID)
RET EX PIPE & OUTLET
PROP TEMP EASEMENT
PROP LIMIT OF CLEARING & GRUBBING (TYP)
PROP TEMP EASEMENT
PROP PERM EASEMENT
RET CONC BOUND
PROP DMH
REM EX CB & LATERALS
PROP ULT 2 & LUMINAIRE & GUY (B.O.)
PROP PERM EASEMENT
PROP 45° BEND 21' - 10" DI
MAINTAIN 12" GAS
INSTALL SERVICE OHW (B.O.), ALL SERVICES
PROP CBCI
3' - 12" RCP CL IV
REM EX CB
ADJ GATE
ADJ SERVICE BOX
PROP OHW (B.O.)
ADJ SMH
16' - 12" RCP CL IV
RET 12" RCP
2' - 12" RCP CL IV
ADJ CB
ADJ WG (2)
ADJ GG
PROP CB
PROP TEMP EASEMENT
CONNECT TO EXIST WATER LINE WITH 10" COUPLING
PROP 5 LF± 10" DI WATER PIPE
RET POLE UPL 3 (B.O.)
PROP TEMP EASEMENT
RET HYD
PROP OHW (B.O.)
RET EX OHW
SAWCUT; MEET EXIST
PROP OHW (B.O.) ALL SERVICES
REM TEMP OVERHEAD WIRES AND POLE (B.O.)
PROP TEMP EASEMENT
RET HYD (2)
RET POLE UPL 7 AND GUY
REM TEMP GUY
1997 TOWN LAYOUT
1955 TOWN LAYOUT
EXISTING TOWN LAYOUT
1868 COUNTY LAYOUT

0 20 50 100
SCALE: 1" = 20'

GENERAL NOTES:
1. DRAINAGE ELEVATIONS AND INVERTS ARE PROVIDED FOR DESIGN PURPOSES ONLY. ANY FIELD ADJUSTMENTS REQUIRED FOR POSITIVE DRAINAGE WILL BE MADE ONLY AS APPROVED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL VERIFY ELEVATIONS AND INVERTS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM PRIOR TO STRUCTURES BEING ORDERED.
2. COVERS OF PROPOSED OR EXISTING UTILITY STRUCTURES WITHIN AN ADA ACCESSIBLE PATH SHALL BE CAREFULLY ADJUSTED TO BE FLUSH ON ALL SIDES WITH THE FINISHED SURFACE.
3. UNLESS OTHERWISE NOTED, TRIM TREES AS NEEDED TO PROVIDE A MIMIMUM OF 10 FT CLEARANCE AROUND PERMANENT AND TEMPORARY OVERHEAD ELECTRIC POWER WIRES.
4. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
5. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRIC AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

S-21-003 MILL STREET STRUCTURE TABLE

NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS	TYPE
7	202+49.5 12.5' RT	494.48		I=490.00' (24)		PROP CB
8	202+79.1 29.2' RT	492.23	I=488.40' (24)	I=488.29 (EX)	EXIST DAYLIGHT= 488.09±	EX CB PROP CIT
11	204+01.7 12.4' RT	490.53	I=486.70' (22) I=486.68' (12)	I=486.56 (EX)		EX CB PROP CIT
12	204+04.7 -6.9' LT	491.12	I=487.10' (23) I=487.11' (13)	I=487.00' (11)		PROP DMH
21	202+51.6 -13.0' LT	494.26		I=489.62' (24)	ECCENTRIC, ROTATE BODY UNDER SW	PROP CBCI
22	204+07.8 12.5' RT	490.67		I=486.80' (11)		PROP CB
23	204+00.4 -12.5' LT	491.09		I=487.20' (12)		PROP CBCI
24	202+55.3 6.9' RT	494.29	I=489.90' (7) I=489.42' (21)	I=488.70' (8)		PROP DMH

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	33	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 0

608862_HDUTIL).DWG Plotted on 24-Jul-2026 2:23 PM

NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

BRICK ROW

MILL STREET

RIVER STREET

MCKINSTRY BROOK

CLIFF STREET

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY
PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-145-1
BOOK 25403 PAGE 336
76 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

TOWN OF SOUTHBRIDGE
SEWER ACCESS EASEMENT
(BOOK 61913 PAGE 46)

PROP TEMP EASEMENT (TYP)
PROP LIMIT OF CLEARING & GRUBBING
PROP TEMP OHW (B.O.) NATIONAL GRID SERVICE
RET EX WATER MAIN - KEEP IN SERVICE
RET EX GAS MAIN - KEEP IN SERVICE
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP PERM ARM FOR SERVICE OHW (B.O.)
TEMPORARILY REM EX SERVICE TO BLDG (B.O.)
REM ULT 8 (B.O.) R&S LUMINAIRE (B.O.)
REM OHW (B.O.)
REM ULT 9 & TRANSFORMER (B.O.); R&R LUMINAIRE (B.O.)
PROP TEMP EASEMENT
PROP PERM EASEMENT
REM EX GUY (B.O.)
CONSTRUCT DUMPSTER ACCESS DWY
RESET DUMPSTER (B.O)
PROP PERM GUY (B.O.)
RET ULT 8-1
RET OHW
RET UPL
RET OHW
RET ULT 7
RET OHW
RET ULT 15
REM OHW (B.O.)
DEACTIVATE AND CUT AND CAP 3" GAS (B.O.)
RETAIN AND PROTECT EXIST SEWER
PROVIDE TEMP OHW CHARTER SERVICE (B.O.)
PROP PERM OHW (B.O.) - CHARTER AND NGRID
PROP PERM UPL & TRANSFORMER (B.O.); RESET LUMINAIRE (B.O.)
NGRID POWER DEAD ENDS HERE FOR STAGES 0,1,2
PROP PERM EASEMENT
TEMP GUY (B.O.)
PROP TEMP EASEMENT (TYP)
DEACTIVATE AND CUT AND CAP 3" GAS (B.O.)
PROP TEMP EASEMENT
PROP PERM OHW (B.O.) CHARTER CABLE & VERIZON SERVICE WIRES
PROP BRIDGE REPLACEMENT STAGE 0 BRIDGE S-21-009
PROP LIMIT OF CLEARING & GRUBBING
PROP PERM EASEMENT
PROP FLOATING SILT FENCE

BENCHMARK: MAG NAIL IN UPL#7 EL=492.48'
BENCHMARK: MAG NAIL IN UPL#15 EL=492.64'

1872 TOWN LAYOUT
TOWN LAYOUT
TOWN L.O.

GENERAL NOTES:
1. STAGE 0 CONSISTS OF WORK NEEDED TO BE COMPLETED BEFORE BRIDGE DEMOLITION.
2. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRIC AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	34	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 1

608862_HDUTIL).DWG Plotted on 24-Jul-2026 2:23 PM

NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

BRICK ROW

RIVER STREET

MILL STREET

CLIFF STREET

MCKINSTRY BROOK

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY
PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-145-1
BOOK 25403 PAGE 336
76 MILL ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

TOWN OF SOUTHBRIDGE
SEWER ACCESS EASEMENT
(BOOK 61913 PAGE 46)

RET EX WATER MAIN - KEEP IN SERVICE

PROP TEMP EASEMENT (TYP)

PROP LIMIT OF CLEARING & GRUBBING

PROP SEDIMENT CONTROL BARRIER (TYP)

MAINTAIN EXST GAS MAIN (B.O.)

PROP TEMP EASEMENT

PROP PERM EASEMENT

RETAIN AND PROTECT EXIST SEWER

PROP TEMP EASEMENT

REM GAS MAIN OVER BRIDGE (BO)

CONSTRUCT 150± 6" GAS MAIN (BO)

PROP BRIDGE REPLACEMENT
STAGE 1
BRIDGE S-21-009

PROP LIMIT OF CLEARING & GRUBBING

PROP PERM EASEMENT

PROP FLOATING SILT FENCE

PROP PERM EASEMENT

PROP TEMP EASEMENT (TYP)

BENCHMARK:
MAG NAIL IN
UPL#7
EL=492.48'

BENCHMARK:
MAG NAIL IN
UPL#15
EL=492.64'

SAWCUT MEET EX.

TOWN L.O.

TOWN LAYOUT

1872 TOWN LAYOUT

301 302 303 304 305

GENERAL NOTES:
1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
3. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRIC AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

LEGEND

PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	35	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 2

608862_HD(UTIL).DWG Plotted on 24-Jul-2026 2:23 PM

NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

PROP TEMP EASEMENT (TYP)

ACTIVATE NEW GAS MAIN ON EAST SIDE. DEACTIVATE AND REMOVE 115± EXIST GAS MAIN

PROP SEDIMENT CONTROL BARRIER (TYP)

PROP 2" WATER SERVICE BOX & 2 LF OF 2" COPPER PIPE

PROP 20± LF 8" DI WATER MAIN

CONSTRUCT 90± LF 8" DI WATER (MJ), INSULATED & JACKETED

DE-ACTIVATE WATER MAIN AND REM 96± LF EX WATER COORDINATE WITH TOWN

PROP TEMP EASEMENT

PROP PERM EASEMENT

PROP 8" WG

CONNECT TO EX WATER WITH 8" TO 6" REDUCER

PROP VERT BEND (2)

R&S WG

PROP VERT BEND (2)

PROP 45° BENDS

PROP 12± LF 8" DI WATER MAIN

CONNECT TO EX WATER WITH 8" TO 6" REDUCER

PROP 90° BEND

PROP 45° BENDS

ABAN EXIST GAS GATE AND MAIN (B.O.)

RETAIN AND PROTECT EXIST SEWER

CONNECT PROP MAIN TO EXIST GAS MAIN (B.O.)

CONNECT TO EXIST 6" GAS MAIN (B.O.)

ABAN EXIST GAS MAIN (B.O.)

REM EX GG (B.O.)

PROP TEMP EASEMENT

PROP PERM EASEMENT

PROP TEMP EASEMENT (TYP)

PROP BRIDGE REPLACEMENT
STAGE 2
BRIDGE S-21-009

PROP LIMIT OF CLEARING & GRUBBING

PROP PERM EASEMENT

PROP FLOATING SILT FENCE

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY
PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F
76 MILL STREET TRUST
PARCEL ID 34-145-1
BOOK 25403 PAGE 336
76 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

BRICK ROW

MILL STREET

RIVER STREET

CLIFF STREET

MCKINSTRY BROOK

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

1872 TOWN LAYOUT

TOWN L.O.

TOWN LAYOUT

301 302 303 304 305

CB RIM=485.47 T.O.W.=483.97 T.O.S.=482.47 NPV

CB RIM=488.62 INV.(A)=485.02 INV.(B)=485.10

CB RIM=485.88 T.O.S.=483.23 NPV

CB RIM=487.11 INV.(A)=484.12 INV.(B)=485.93 INV.(C)=484.12

CB RIM=490.45 INV.(A)=487.65 INV.(B)=NPV INV.(C)=488.35

SMH RIM=490.99 INV.(A)=482.36 INV.(B)=482.39

SMH RIM=491.34 INV.(A)=480.58 INV.(B)=480.59 INV.(C)=481.47

SMH RIM=491.64 INV.(A)=480.07 INV.(B)=480.29 INV.(C)=487.18

SMH RIM=487.40 INACCESSIBLE CAN'T OPEN

CB RIM=486.41 INV.=481.74 SUMP=481.59

CB RIM=487.14 INV.=486.37

SMH RIM=488.07 MIDDLE=481.79 INACCESSIBLE PIPES

SMH RIM=488.38 INV.(A)=481.82 INV.(B)=481.86 INV.(C)=482.15

SMH RIM=489.48 INV.(A)=482.32 INV.(B)=482.26

100002 N: 2855667.744' E: 508533.436' EL=494.408' OH-1

GENERAL NOTES:

1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.
4. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRIC AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

LEGEND

PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

S-21-009 MILL STREET STRUCTURE TABLE						
NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS	TYPE
2	302+29 -13.0' LT	487.38		I=483.83' (3)		PROP CB
3	302+59.3 11.6' RT	486.90	I=482.08' (2) I=482.08' (4)	I=482.08' ()		PROP DMH
4	302+71 13.0' RT	486.82		I=482.83' (3)		PROP CBCI
6	302+12.7 11.2' RT	479.22		MATCH EX INV		OUTLET THROUGH ABUTMENT

S-21-009 MILL STREET STRUCTURE TABLE						
NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS	TYPE
1	301+33.3 13.6' RT	488.13		I=483.83' (20)		PROP ECC CBCI
18	301+00.3 -13.2' LT	488.62		I=484.33' (20)		PROP CB
19	301+67.2 -13.0' LT	480.01		MATCH EX INV		OUTLET THROUGH ABUTMENT
20	301+38.3 -12.3' LT	487.99	I=482.25' (1) I=482.67' (18)	I=482.25' ()		PROP ECC DMH

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	STP(BR-OFF)-003S(948)X	36	105
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 3 (PERMANENT CONDITION)

608862_HDUTIL).DWG Plotted on 24-Jul-2026 2:23 PM

NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

BRICK ROW

RIVER STREET

MILL STREET

MCKINSTRY BROOK

CLIFF STREET

PROP TEMP EASEMENT (TYP)

PROP SEDIMENT CONTROL BARRIER (TYP)

RET ULT 8-1

REM TEMP OHW RET ARM FOR SERVICES (B.O.)

REM EX CB; ABAN PIPE

PROP OHW, ALL SERVICES (B.O.)

22' - 10" DIP CONNECT TO EXISTING 10" PIPE

REM EX CB

RET EX UPL

RET EX OHW

RET ULT 7

34' - 12" RCP

PROP DMH, USE ECCENTRIC CONE TO CLEAR CURB

23' - 12" RCP

35' - 10" DI

8' - 12" RCP CL IV

PROP OHW (B.O.)

RET OHW (B.O.)

PROP TEMP EASEMENT

PROP PERM EASEMENT

RET GG

RET ULT 15 AND SIDEWALK GUY

PROP 12" RCP DRAIN OUTLET THRU ABUTMENT WALL

REM EX CB & PIPE

RET SEWER UNDER CHANNEL BED

RET & PROTECT EXTERIOR VENT PIPES

RET UPL

REMOVE TEMPORARY GUY PROP SIDEWALK GUY (B.O.)

41' - 10" DIP CONNECT TO EXISTING 10" PIPE

PROP TEMP EASEMENT

PROP ULT AND GUY (B.O.) DO NOT INSTALL UNTIL HIGHWAY GUARDRAIL TRANSITION CONSTRUCTION IS COMPLETE.

RESET STACKED LUMINAIRE HERE (B.O.)

RETAIN EXISTING 10" DRAIN OUTLET

PROP LIMIT OF CLEARING & GRUBBING

PROP PERM EASEMENT

PROP FLOATING SILT FENCE

REM TREES TO PROVIDE CLEARANCE FOR OVERHEAD WIRES (TYP)

PROP PERM EASEMENT

PROP TEMP EASEMENT (TYP)

SAWCUT MEET EX

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
152 MILL ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F
76 MILL STREET TRUST
PARCEL ID 34-145-1
BOOK 25403 PAGE 336
76 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

NOTE: UNSURE IF ABANDONED PIPE HAS BEEN REMOVED OR NOT

1872 TOWN LAYOUT

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

100002
N: 2855667.744'
E: 508538.436'
EL: 494.408'
WHO

GENERAL NOTES:

1. DRAINAGE ELEVATIONS AND INVERTS ARE PROVIDED FOR DESIGN PURPOSES ONLY. ANY FIELD ADJUSTMENTS REQUIRED FOR POSITIVE DRAINAGE WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS AND INVERTS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED.
2. COVERS OF PROPOSED OR EXISTING UTILITY STRUCTURES WITHIN AN ADA ACCESSIBLE PATH SHALL BE CAREFULLY ADJUSTED TO BE FLUSH ON ALL SIDES WITH THE FINISHED SURFACE.
3. SIDEWALK GUY SHALL HAVE AN 8 FT MINIMUM VERTICAL CLEARANCE ABOVE WALKWAY TO OVERHEAD WIRE.
4. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
5. WHERE PROPOSED GAS WORK AND RELOCATIONS ARE SHOWN, LINEWORK IS APPROXIMATE ONLY. EXACT GAS MAIN RELOCATION AND ALIGNMENT, FITTINGS, SEQUENCING, ETC. IS TO BE DESIGNED AND APPROVED BY NATIONAL GRIC AND COORDINATED WITH THE CONSTRUCTION AS NEEDED.

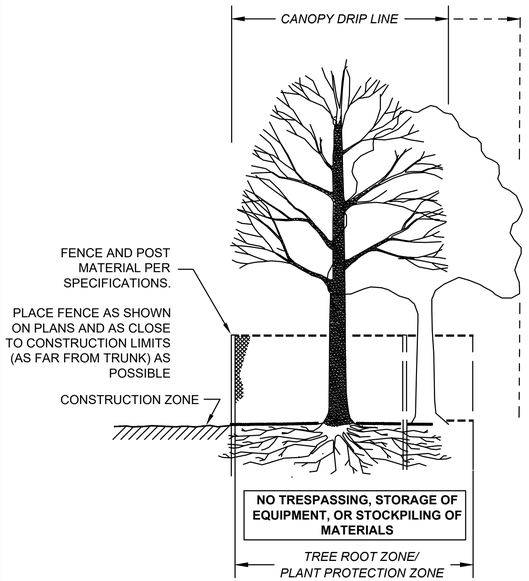
LEGEND

PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

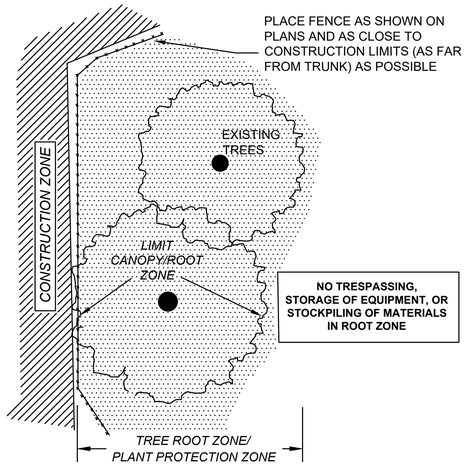
0 20 50 100
SCALE: 1" = 20'

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	37	105
	PROJECT FILE NO. 608862		

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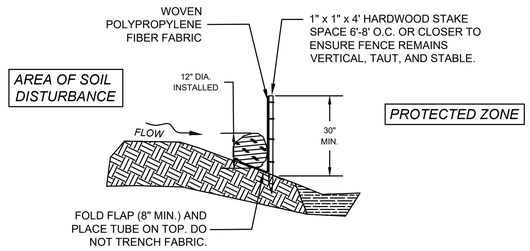
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

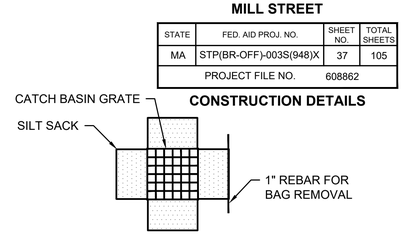
NOT TO SCALE



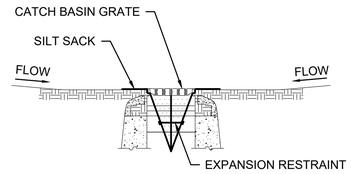
SECTION

COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE



PLAN VIEW

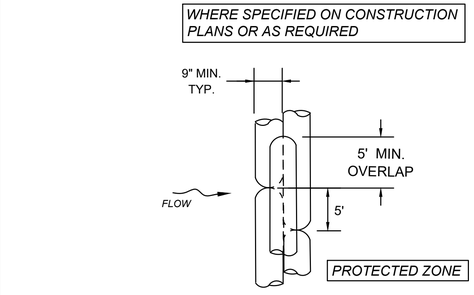


SECTION VIEW

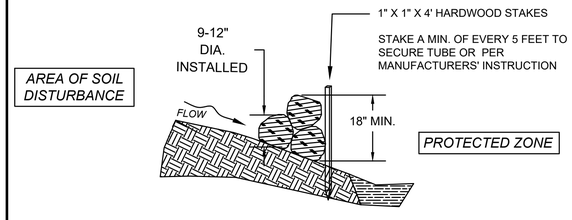
NOTES:
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL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

INLET PROTECTION - SILT SACK IN CATCH BASIN

SCALE: N.T.S.



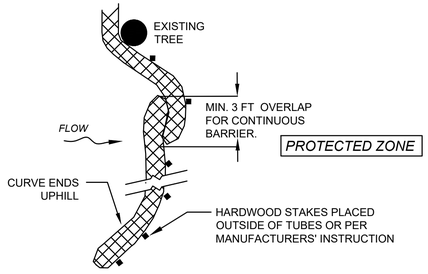
PLAN VIEW



SECTION

COMPOST FILTER TUBE STACKED

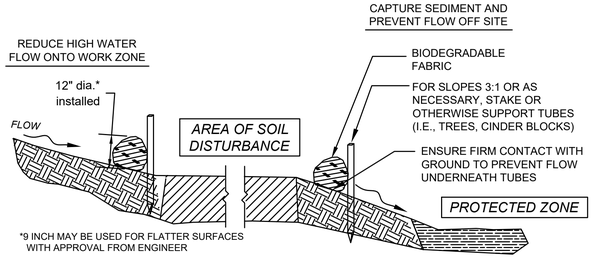
NOT TO SCALE



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

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

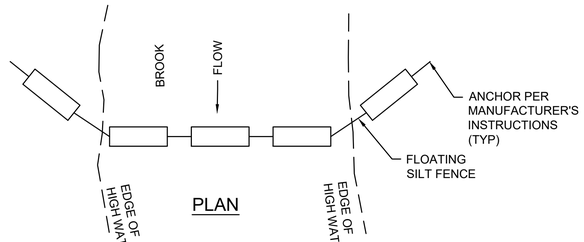
PLAN VIEW



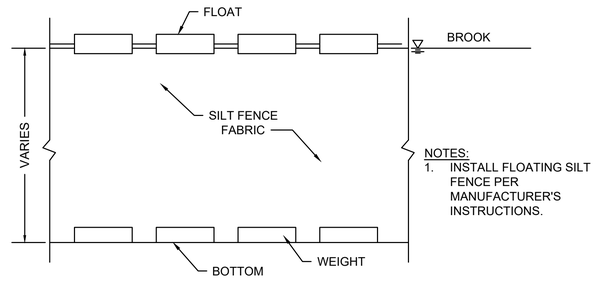
SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



PLAN



NOTES:
1. INSTALL FLOATING SILT FENCE PER MANUFACTURER'S INSTRUCTIONS.

PROFILE

FLOATING SILT FENCE DETAIL

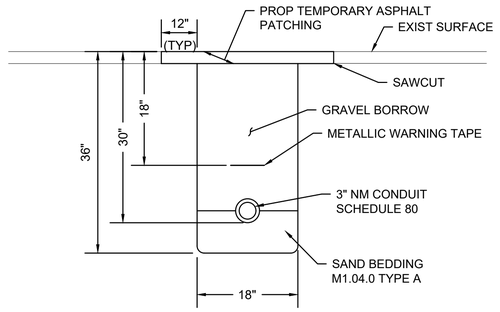
SCALE: N.T.S.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	38	105
PROJECT FILE NO.	608862		

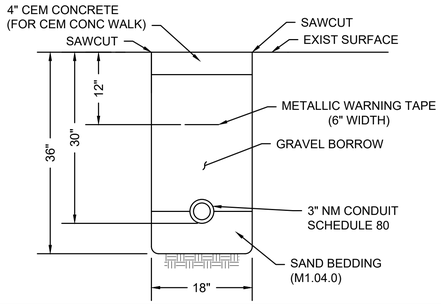
CONSTRUCTION DETAILS

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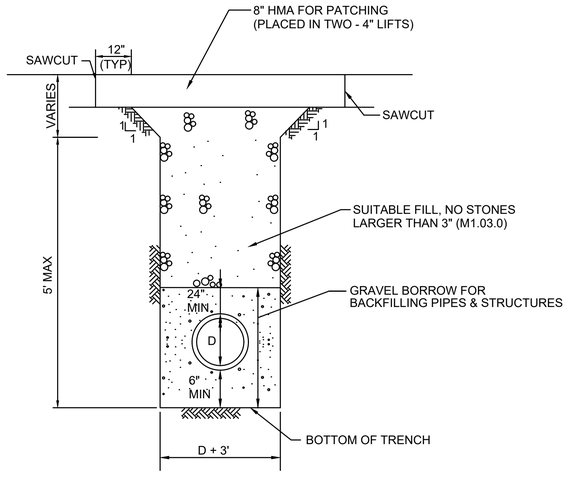
CONDUIT CROSSING ROADWAY/DRIVEWAY

SCALE: N.T.S. DWG: TRENCH-01 DATE: MARCH 2013



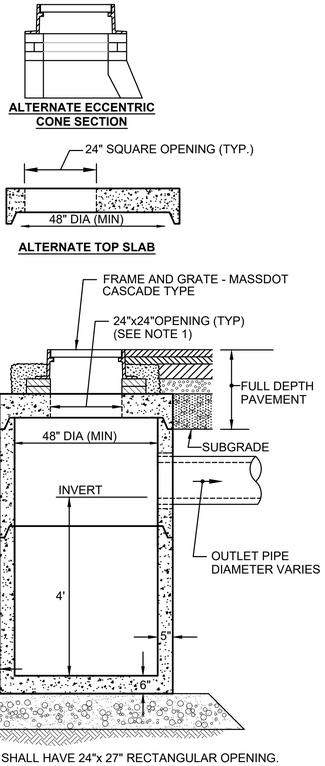
CONDUIT IN SIDEWALK

SCALE: N.T.S.



TRENCH DETAIL

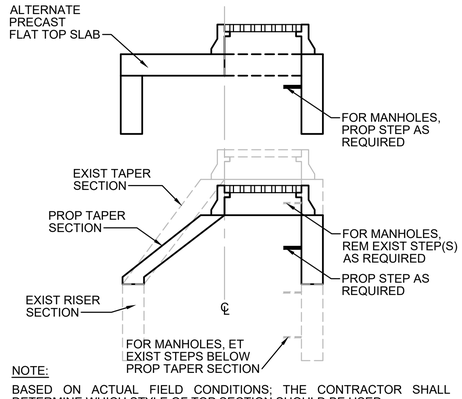
SCALE: N.T.S.



NOTES:
1. TOP SLAB FOR CBCI SHALL HAVE 24"x 27" RECTANGULAR OPENING.
2. ALL SECTIONS SHALL BE RATED FOR HS-20 LOADING.
3. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

CATCH BASIN

SCALE: NTS

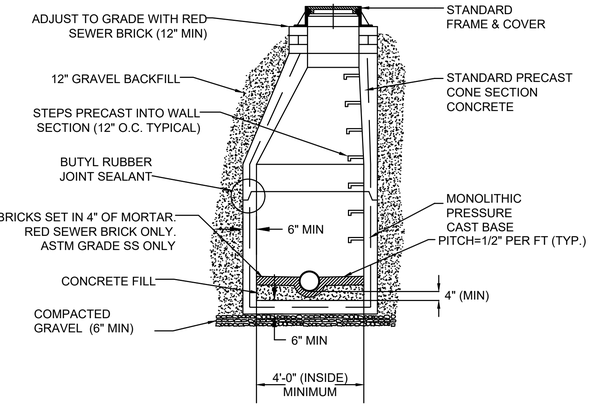


NOTE:

BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

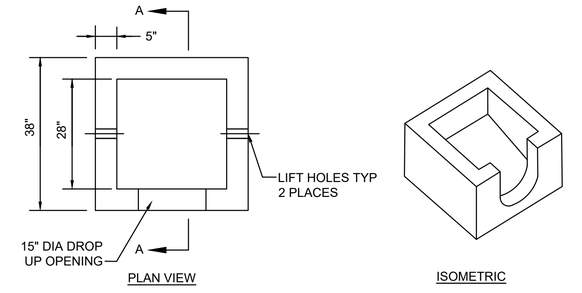
DRAINAGE STRUCTURE REBUILT

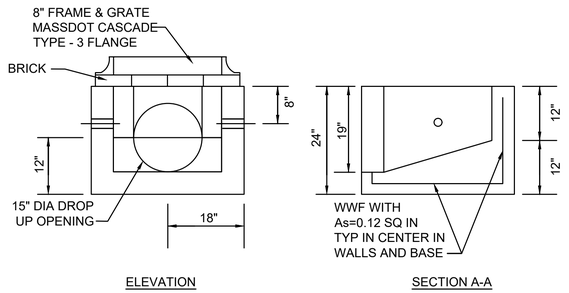
SCALE: NTS



MANHOLE

SCALE: NTS



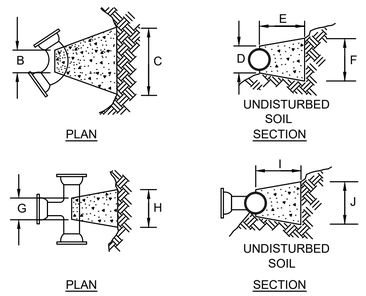


NOTES:
1. DESIGNED FOR AASHTO HS25-44 LOADING.
2. CONCRETE STRENGTH f'c=4000 PSI
3. REINFORCING STEEL: ASTM A185 (wwf) fy=60,000 PSI
4. CURB INLETS ARE REQUIRED WHEN INSTALLED AGAINST CURBING.

GUTTER INLET - SPECIAL

SCALE: NTS

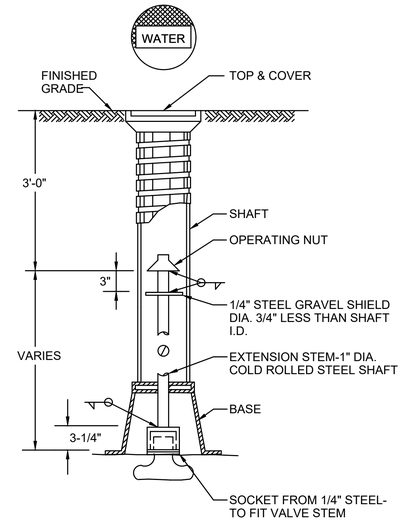
BENDS		B	C	D	E	F	BENDS		B	C	D	E	F
6"	11-1/4°	8"	15"	12"	24"	12"	6"	45°	8"	30"	12"	24"	14"
6"	22-1/2°	"	19"	"	"	13"	6"	90°	"	30"	"	"	27"
8"	11-1/4°	"	20"	"	"	12"	8"	45°	"	30"	"	"	24"
8"	22-1/2°	"	22"	"	"	17"	8"	90°	"	38"	"	"	36"
12"	11-1/4°	"	30"	"	"	15"	12"	45°	"	40"	"	"	40"
12"	22-1/2°	"	35"	"	"	25"	12"	90°	"	60"	"	"	52"
TEES		G	H	I	J		TEES		G	H	I	J	
6"x 6"x 6"		12"	24"	24"	18"		12"x12"x6"		12"	24"	24"	12"	
8"x 8"x 6"		"	"	"	"		12"x12"x8"		"	"	"	24"	
8"x 8"x 8"		"	"	"	24"		12"x12"x12"		"	36"	"	36"	



NOTES:
1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES AND VERTICAL BENDS, SAME SIZE AS REQUIRED FOR TEES.
2. PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES
3. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.

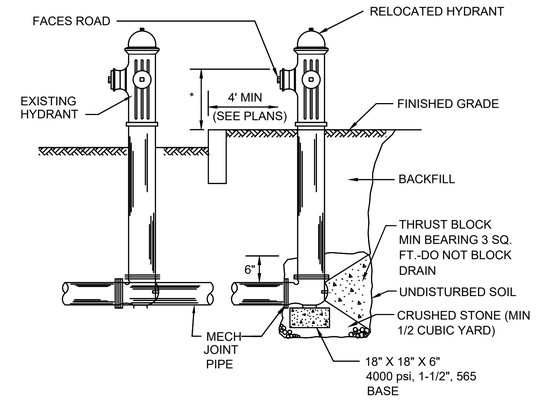
CONCRETE THRUST BLOCK

SCALE: N.T.S. DWG: WS-02 DATE: APRIL 2013



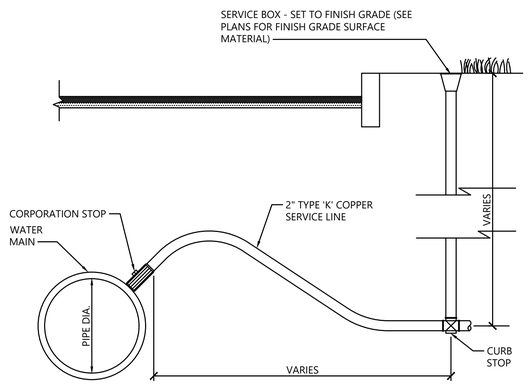
VALVE SHAFT EXTENSION

SCALE: N.T.S. DWG: WS-01 DATE: APRIL 2013



HYDRANT RELOCATION DETAIL

SCALE: N.T.S. DWG: WS-03 DATE: APRIL 2013

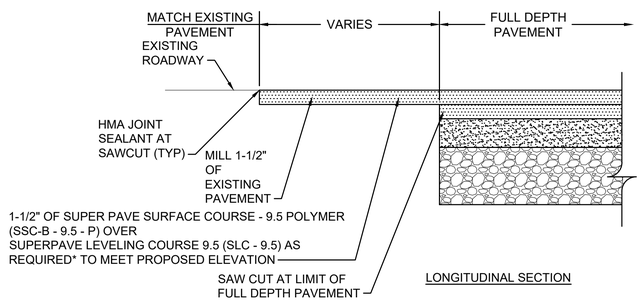


NOTES

1. INSTALLATIONS SHALL CONFORM WITH MUNICIPAL WATER WORKS SPECIFICATIONS AND STANDARDS.

WATER SERVICE DETAIL

SCALE: N.T.S. DWG: WS-02 DATE: APRIL 2013



*SUPERPAVE LEVELING COURSE - 9.5 (SLC - 9.5) REQUIRED STA 201+85 TO STA 202+38 ONLY

FULL DEPTH PAVEMENT TRANSITION

SCALE: N.T.S.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	39	105
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS

608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM

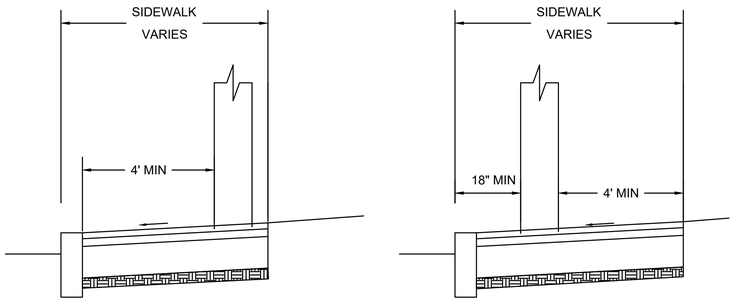
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	40	105
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS

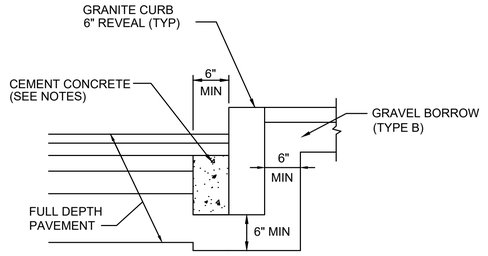
608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM

NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALK SHALL BE 48" EXCLUDING THE CURB. THE CLEAR PATH SHALL BE MEASURED TO FIRST VERTICAL FACE ENCOUNTERED ON THE OBSTRUCTION (INCLUDING ALL PROTRUSIONS LESS THAN 6'-8" IN HEIGHT).
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES, ETC.) TO BE SET WITHIN THE SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36". CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION THAT CANNOT MEET THE CLEARANCE REQUIREMENTS.



SIDEWALK CLEARANCE VERTICAL OBSTRUCTION

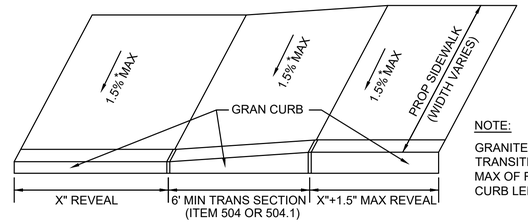
SCALE: N.T.S. DWG: WALK-04



NOTES:
1. TO BE PLACED IF CURB IS INSTALLED AFTER HOT MIX ASPHALT
2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN FULL DEPTH PAVEMENT

SCALE: N.T.S. DWG: CURB-04 DATE: APRIL 2003

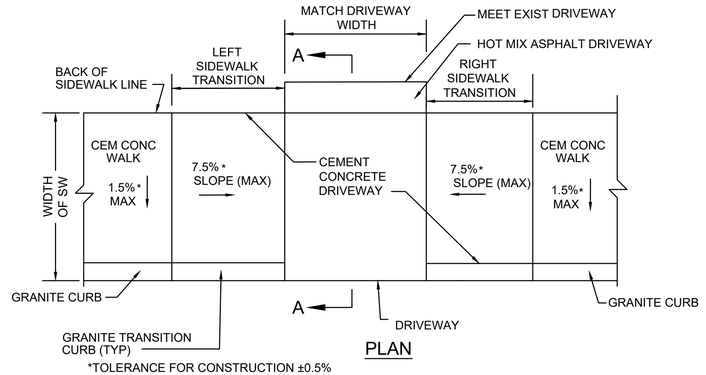


NOTE:
GRANITE CURB SHALL BE TRANSITIONED AT A RATE OF 1.5" MAX OF REVEAL PER 6.0' MINIMUM CURB LENGTH.

* TOLERANCE FOR CONSTRUCTION ±0.5%

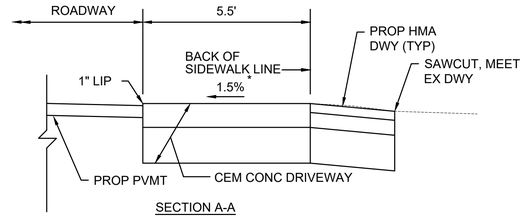
TYPICAL GRANITE CURB REVEAL TRANSITION

SCALE: NTS



PLAN

*TOLERANCE FOR CONSTRUCTION ±0.5%



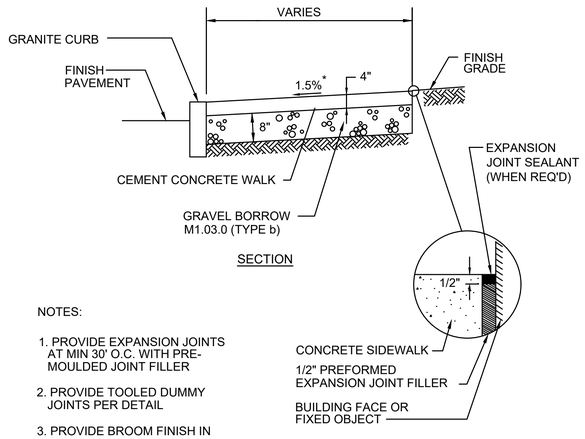
SECTION A-A

DRIVEWAYS 1, 2, 5

SCALE: N.T.S.

DRIVEWAY DATA									
NO.	LOCATION	SIDEWALK WIDTH	DWY SLOPE	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
					REVEAL	TRANS	REVEAL	TRANS	
MILL STREET									
1	202+38.39' 13.50 RT	5'-6"	1.50%	-7.16%	6"	15'-0"	6"	6'-6"	495.05
2	204+23.96' 13.50 RT	5'-6"	1.50%	1.69%	6"	9'-0"	6"	6'-6"	490.95
5	303+96.11' 14.00 RT	5'-6"	1.50%	2.53%	6"	11'-0"	6"	6'-6"	487.94

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



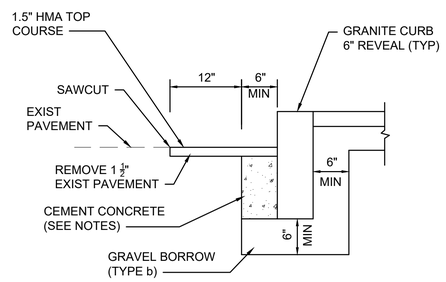
NOTES:

1. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
2. PROVIDE TOOLED DUMMY JOINTS PER DETAIL
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB

* 0.5% CONSTRUCTION TOLERANCE

CEMENT CONCRETE SIDEWALK

SCALE: N.T.S.

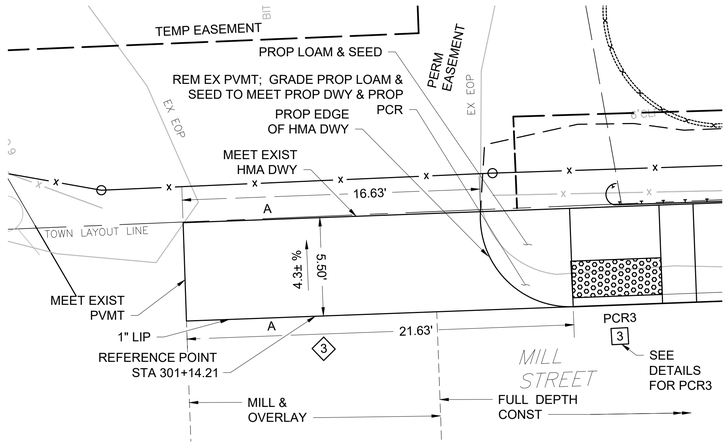


NOTES:
1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.
2. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

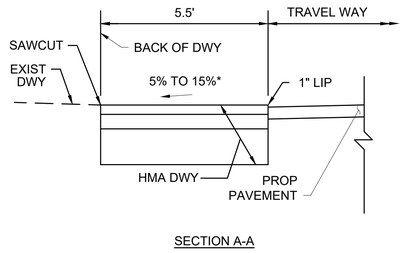
GRANITE CURB IN EXISTING PAVEMENT

SCALE: N.T.S.

608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM



PLAN



SECTION A-A

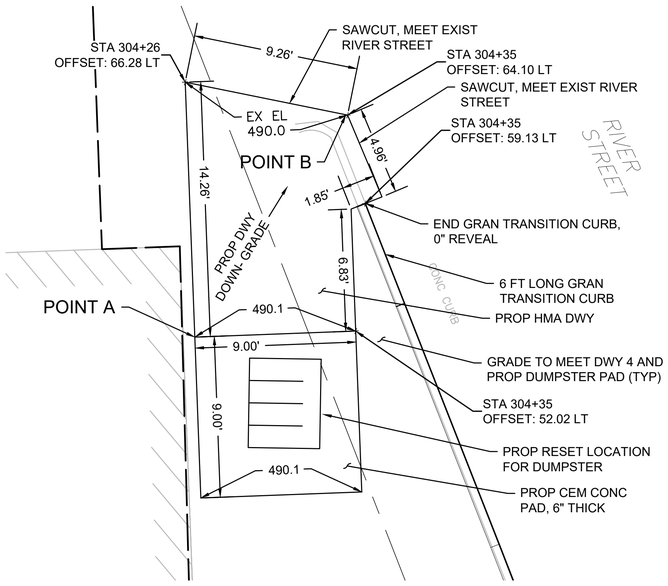
*TOLERANCE FOR CONSTRUCTION ±0.5%

DRIVEWAY 3 DETAIL

SCALE: N.T.S.

DRIVEWAY DATA									
NO.	LOCATION	SIDEWALK WIDTH	DWY SLOPE	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
					REVEAL	TRANS	REVEAL	TRANS	
MILL STREET									
3	301+14.21' 14.00 LT	N/A	7.46%	-2.50%	N/A	N/A	N/A	N/A	488.70

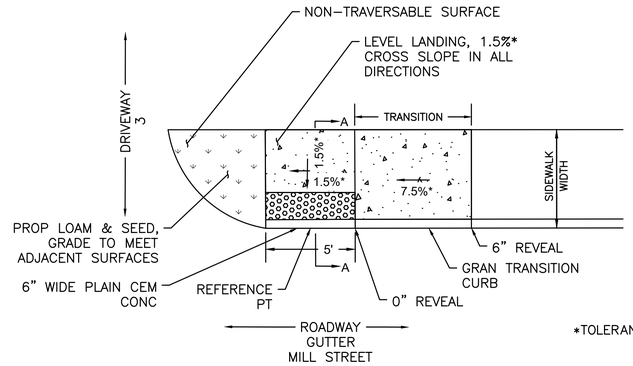
ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

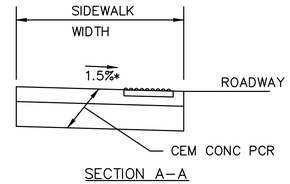


DRIVEWAY 4 NOTES:
1. IN ALL CASES, PROVIDE POSITIVE DRAINAGE FROM POINT A TO POINT B.
2. SEE GENERAL CONSTRUCTION PLANS.

DRIVEWAY 4 DETAIL

SCALE: N.T.S.





SECTION A-A

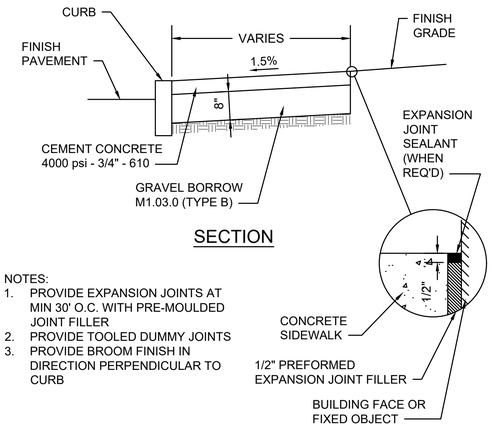
*TOLERANCE FOR CONSTRUCTION ±0.5%

PEDESTRIAN CURB RAMP - PCR3

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
3	301+24.93 15.65' LT	5.5'	0.68%	-	-	6"	6'-6"	488.09

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

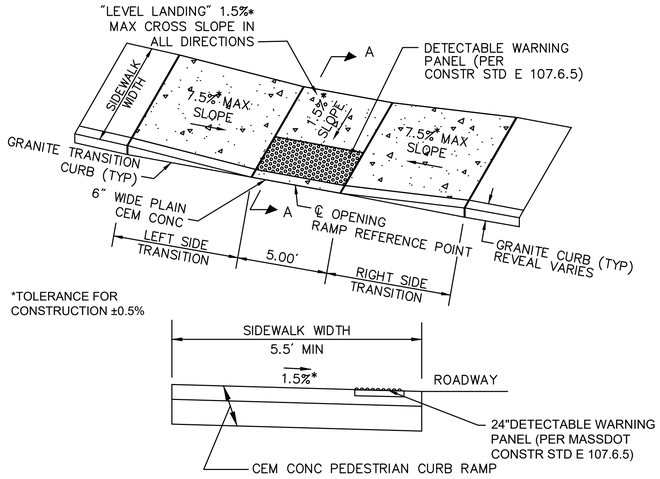


SECTION

NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
2. PROVIDE TOOLED DUMMY JOINTS
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB

CEMENT CONCRETE SIDEWALK

SCALE: N.T.S. DWG: WALK-01 DATE: MARCH 2013



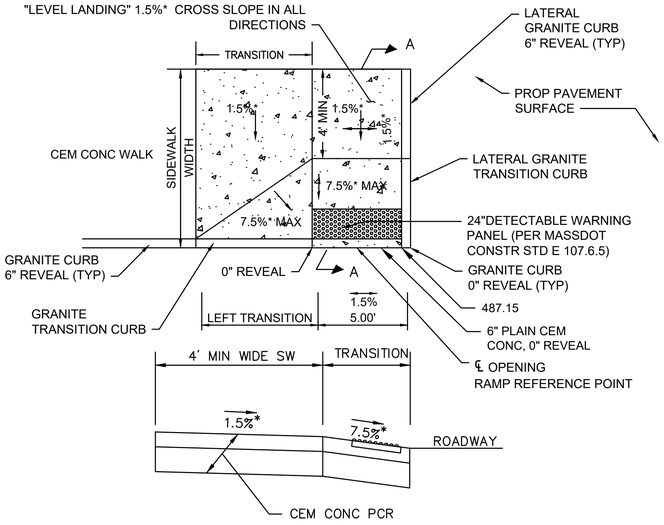
SECTION A–A

PEDESTRIAN CURB RAMP - WIDTH LESS THAN 6.5 FT

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
1	201+89.06 16.08' LT	5'-0"	-7.20%	3"	15'-0"	6"	6'-6"	498.12
4	302+39.27 14.50' RT	5'-5"	-0.80%	6"	6'-6"	6"	7'-8"	486.82

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



*TOLERANCE FOR CONSTRUCTION ±0.5%

SECTION A–A

PEDESTRIAN CURB RAMP - TRANSITIONS WITH INTERMEDIATE LEVEL LANDING

SCALE: N.T.S.

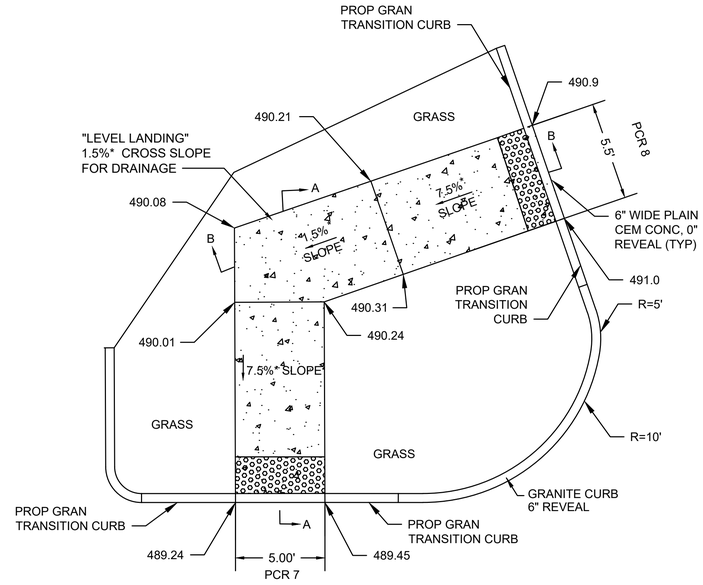
PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
5	302+40.16 14.00' LT	8' MAX.	-0.80%	6"	7'-8"	-	-	487.17

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

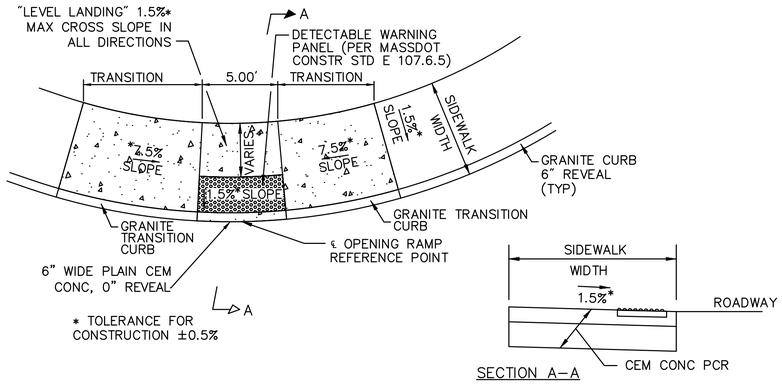
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	42	105
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS



*TOLERANCE FOR CONSTRUCTION ±0.5%



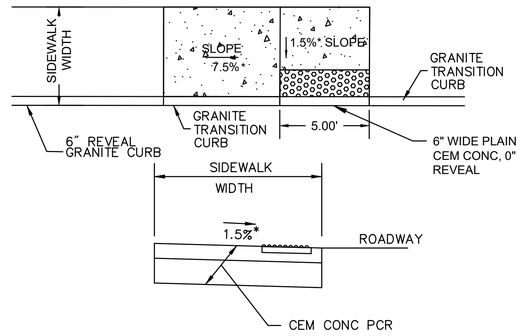
SECTION A–A

PEDESTRIAN CURB RAMP - TWO WINGS

SCALE: N.T.S.

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
2	201+97.96 16.05' RT	5'-6"	-6.80%	6"	6'-6"	6"	18'-3"	498.29



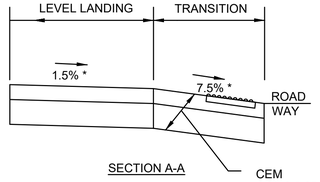
SECTION A–A

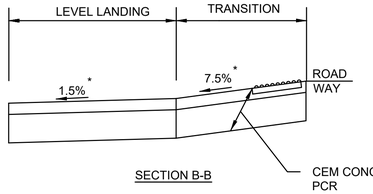
PEDESTRIAN CURB RAMP - ONE WING

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
6	304+30.11 14.00' RT	5'-5"	4.40%	-	-	6"	6'-6"	489.36

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.





PEDESTRIAN CURB RAMPS 7 AND 8

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANSITION	℄ OPENING ELEVATION
MILL STREET						
7	304+29.76 14.50' LT	5'-0"	4.20%	6"	11'-2"	489.35
RIVER STREET						
8	304+44.71 32.48' LT	5'-6"	0.20%	6"	11'-2"	490.95

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

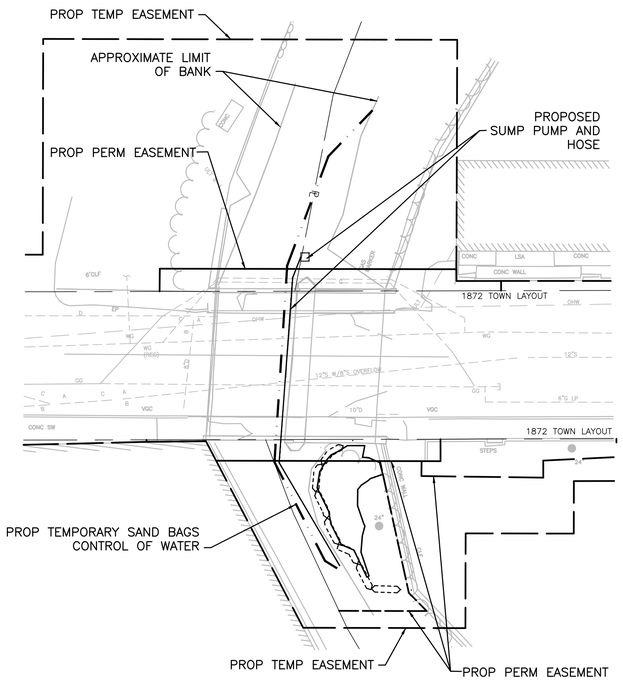
608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	43	105
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS

608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM

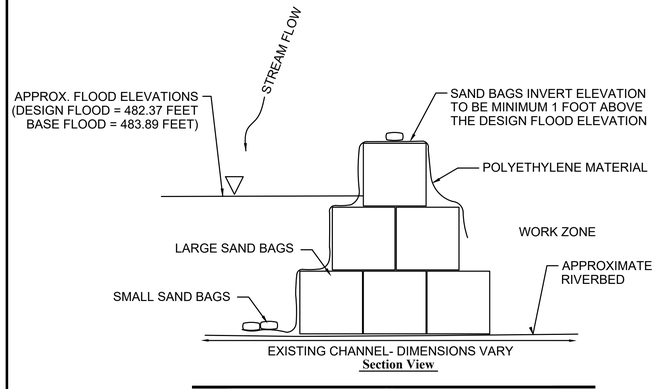


Notes:

1. CONTRACTOR TO COLLECT AND SUBMIT FOR REVIEW STREAM ELEVATION AND FLOW DATA PRIOR TO INSTALLATION OF ANY WATER CONTROL SYSTEM
2. CONTRACTOR TO DESIGN AND INSTALL TEMPORARY SAND BAGS AND BYPASS SYSTEM TO CONTROL OVERTOPPING FLOWS AND PREVENT EROSION OR DAMAGE TO SURROUNDING LAND

WATER DIVERSION

N.T.S.



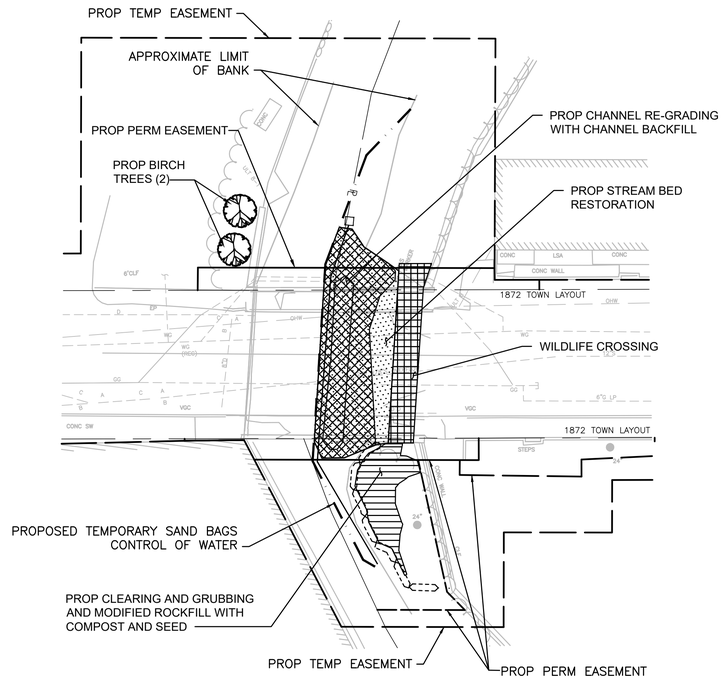
Section View

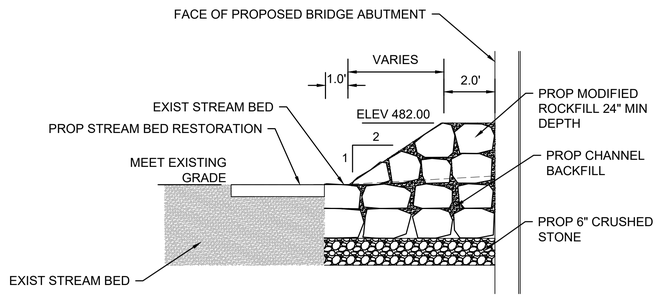
Notes:

1. CONTRACTOR TO DESIGN AND INSTALL SAND BAGS AND BYPASS SYSTEM TO CONTROL OVERTOPPING FLOWS AND PREVENT EROSION OR DAMAGE TO SURROUNDING LAND
2. PAID FOR UNDER ITEM NUMBER 991.2 CONTROL OF WATER - BRIDGE NO. S-21-009

TEMPORARY SAND BAGS - CONTROL OF WATER

N.T.S.



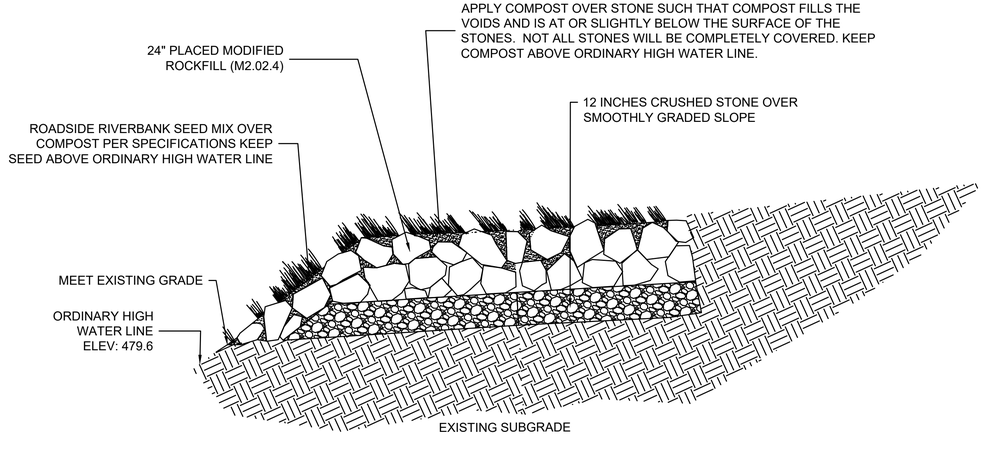


WILDLIFE CROSSING

N.T.S. SCALE: N.T.S.

STREAM BED RESTORATION

N.T.S.



NOTE:

EXISTING BOULDERS AND LARGE STONES WITHIN RECONSTRUCTED SLOPE AREAS SHALL BE REUSED TO THE EXTENT PRACTICABLE AS APPROVED BY THE ENGINEER

MODIFIED ROCKFILL WITH COMPOST AND SEED

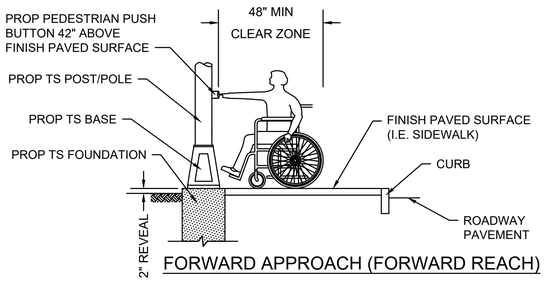
SCALE: N.T.S.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	44	105
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS

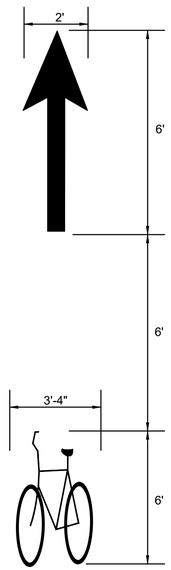
608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM



NOTE:
A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS.
a) WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.
b) WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.

PEDESTRIAN PUSH BUTTON CLEAR ZONE

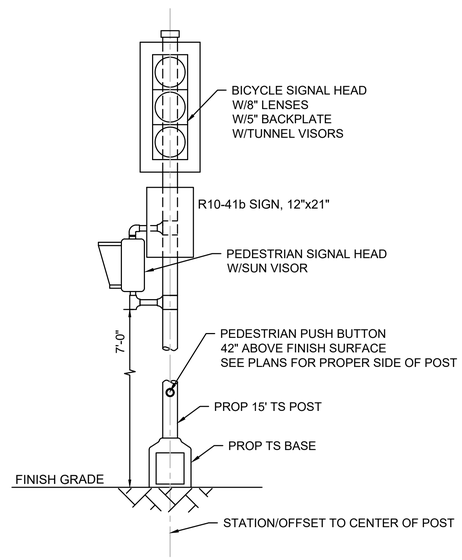
SCALE: N.T.S. DWG: PM-10



NOTES:
1. SEE 2023 MUTCD FIGURE 9E-1 FOR MORE INFORMATION.
2. BIKE LANE MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

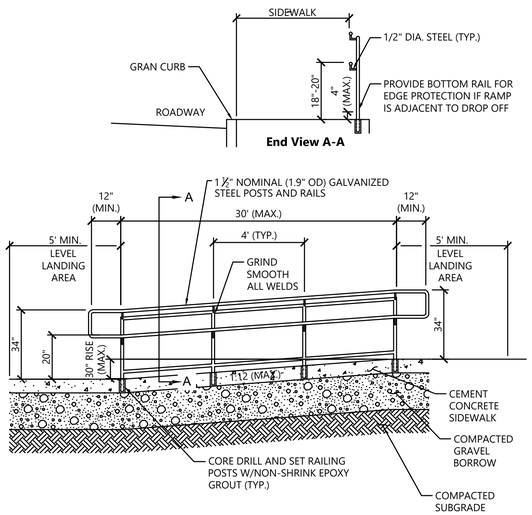
BIKE LANE PAVEMENT MARKINGS

SCALE: N.T.S. DWG: PM-11



BICYCLE SIGNAL HEAD W/R10-41b SIGN - POST MOUNTED

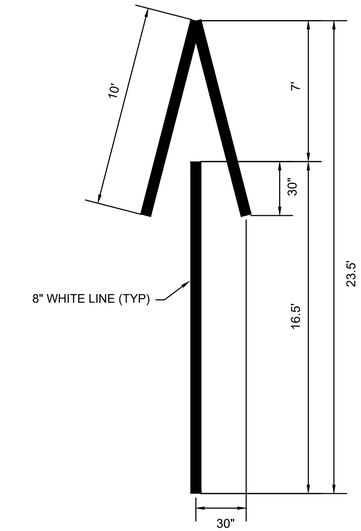
SCALE: N.T.S.



NOTES

1. FOR ADDITIONAL INFORMATION SEE 521 CMR 24.00 RAMPS.
2. REFER TO SIDEWALK DETAIL FOR SIDEWALK CONSTRUCTION.
3. CONTRACTOR TO TOUCH UP ANY MINOR BLEMISHES UPON COMPLETION OF INSTALLATION.

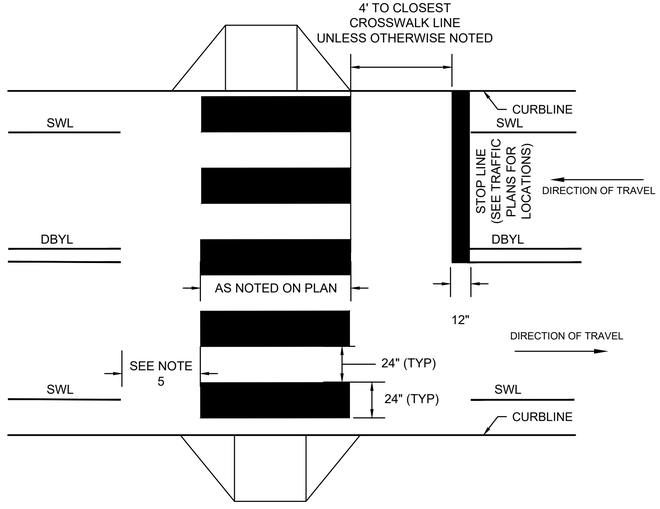
ADA COMPLIANT HANDRAIL



NOTES:
1. SEE MUTCD FIGURE 3B-21 FOR MORE INFORMATION.
2. ARROWS SHALL BE WHITE REFLECTORIZED THERMOPLASTIC.

WRONG-WAY PAVEMENT ARROW

SCALE: N.T.S. DWG: PM-38

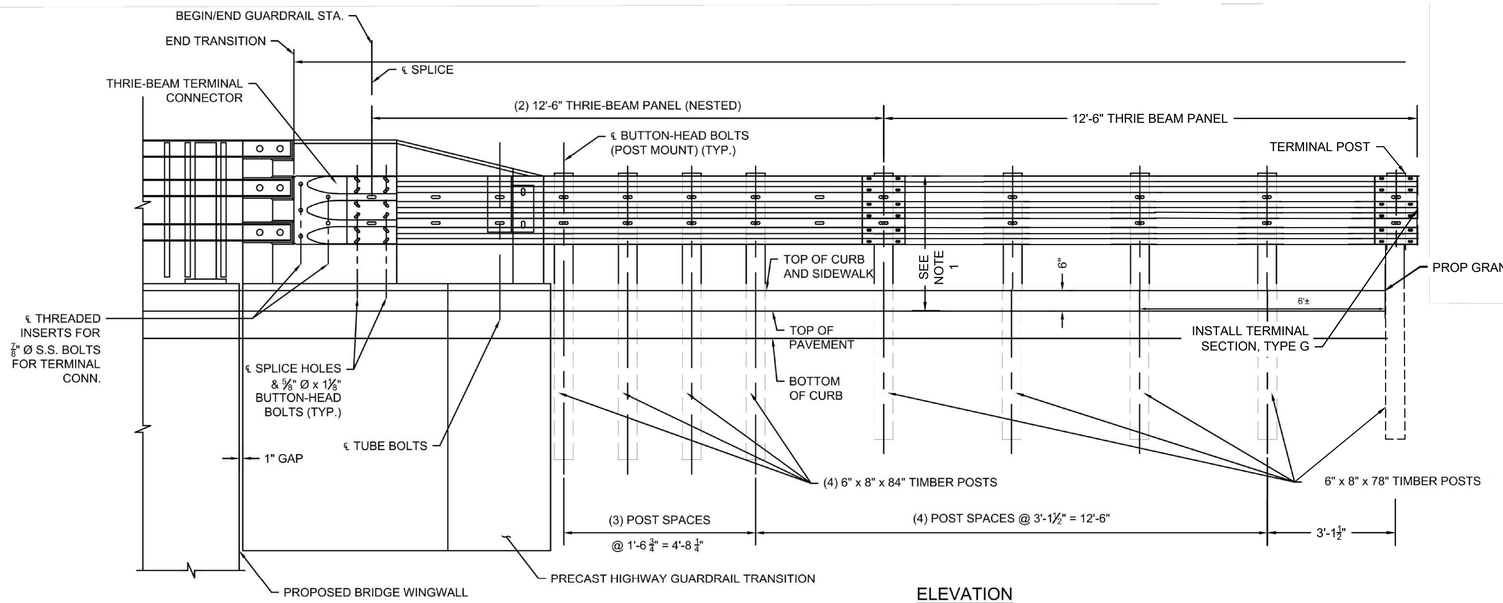


NOTES:

1. ALL 12" AND 24" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (e.g. TWO - 6" LINES OR TWO-12" LINES) WILL BE ACCEPTED.
2. CROSSWALK LINES SHALL BE IN THE DIRECTION OF TRAVEL AND LOCATED OUTSIDE OF TYPICAL VEHICLE WHEEL PATHS.
3. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO INSTALLATION.
4. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE CURRENT EDITION OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES", SECTION 860 FOR REFLECTORIZED THERMOPLASITIC PAVEMENT MARKINGS & MATERIAL, M7.01.03,LATEST REVISIONS.
5. NO PAVEMENT MARKINGS WITHIN 4' OF THE CROSSWALK FROM THE OUTSIDE EDGE

CROSSWALK DETAIL -TOWN STANDARD

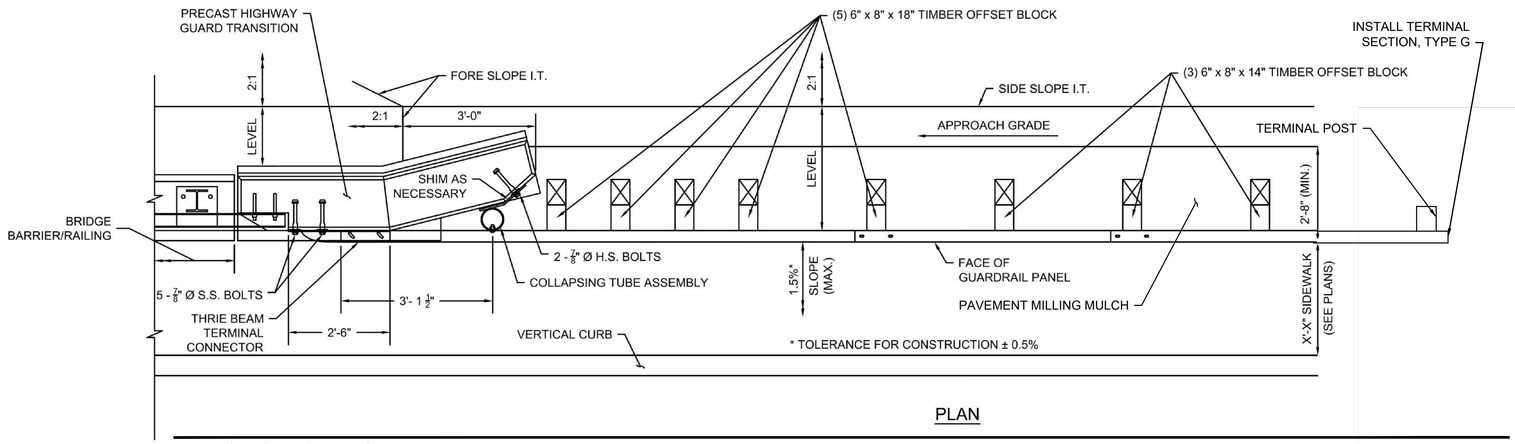
SCALE: N.T.S.



ELEVATION

NOTES:

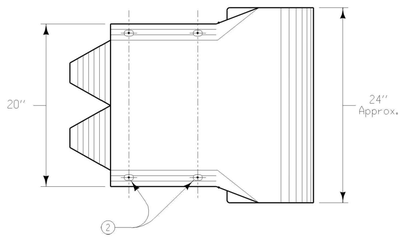
1. THE TOP OF THE PANEL SHALL BE 31" FROM THE TOP OF PAVEMENT.



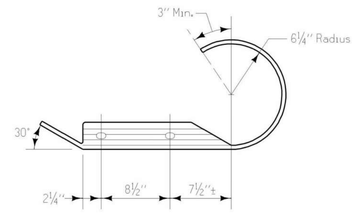
PLAN

TRANSITION TO BRIDGE RAIL - THRIE BEAM

SCALE: N.T.S.



FRONT VIEW
TYPE "G" TERMINAL SECTION
Rounded End



TOP VIEW

GENERAL NOTES:

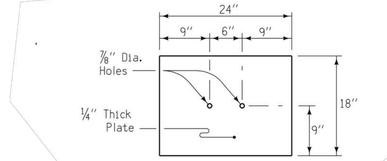
Materials and methods of construction shall be in accordance with current Standard and Supplemental Specifications.

Type "G" terminal shall not be less than U.S.S. 12 gage.

② Slotted holes 29/32" x 1-⅛" long.

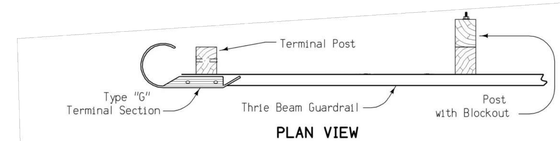
TERMINAL END, TYPE G

SCALE: N.T.S.

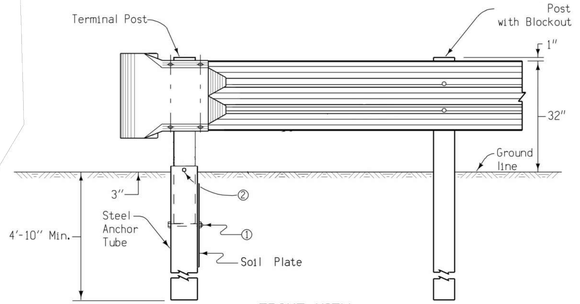


SOIL PLATE

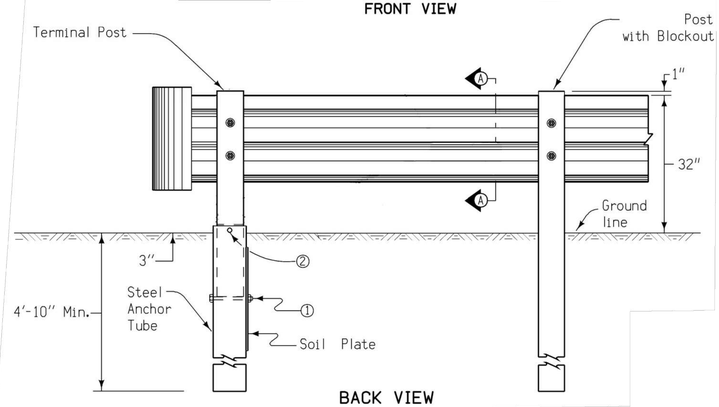
① Two 7.5" long, ¾" hex bolt, nut and washers under head and nut.
② One 10" long, ¾" hex bolt, nut and washers under head and nut.



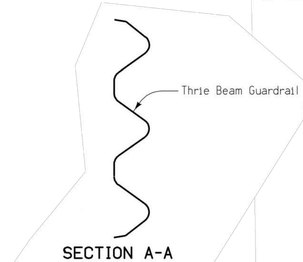
PLAN VIEW



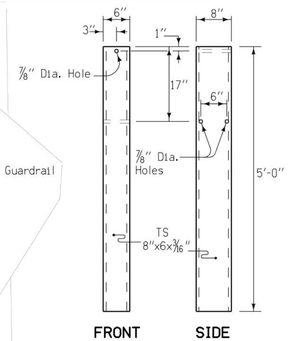
FRONT VIEW



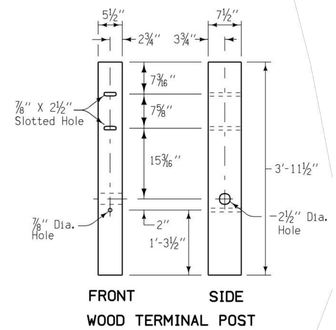
BACK VIEW



SECTION A-A



FRONT SIDE
STEEL ANCHOR TUBE



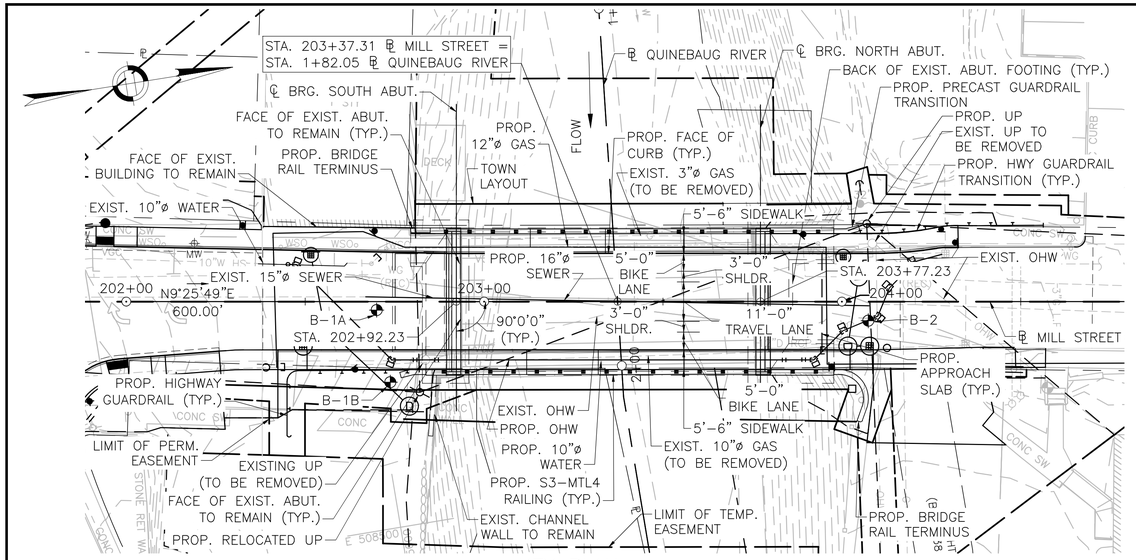
FRONT SIDE
WOOD TERMINAL POST

SOUTHBRIDGE
MILL STREET

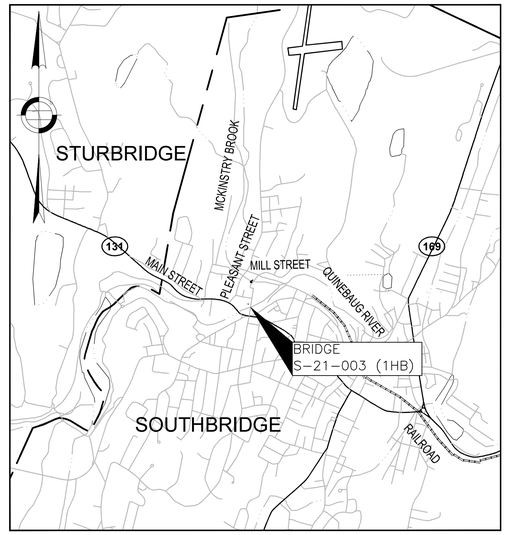
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	45	105
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS

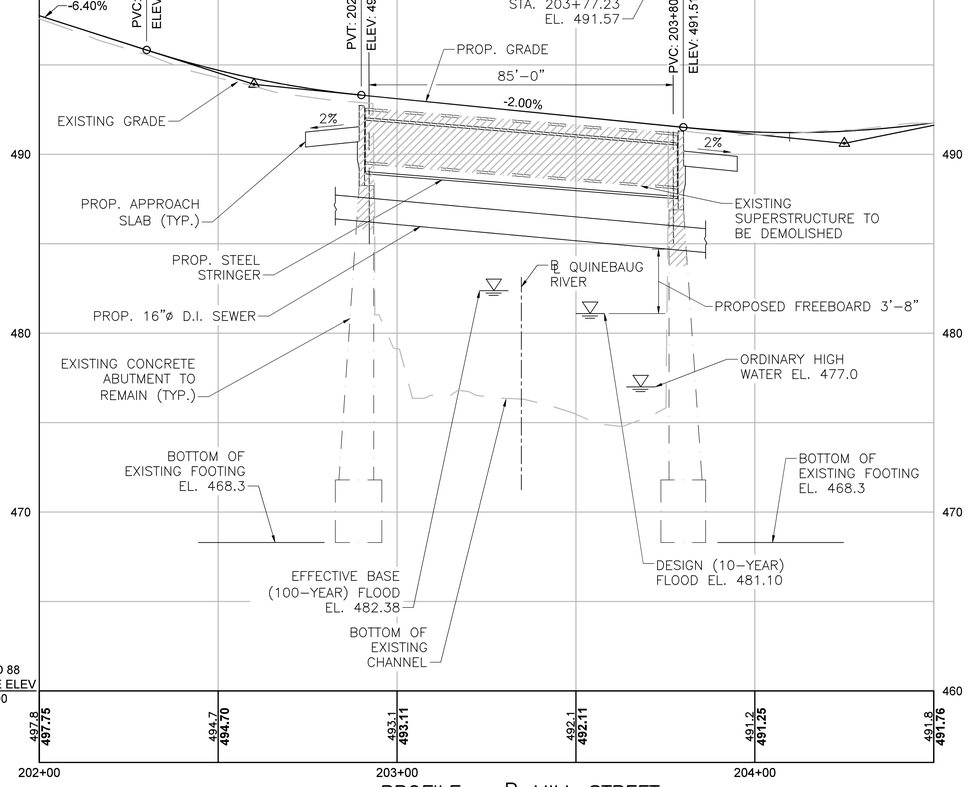
608862_HD(DET).DWG Plotted on 27-Jul-2026 1:02 PM



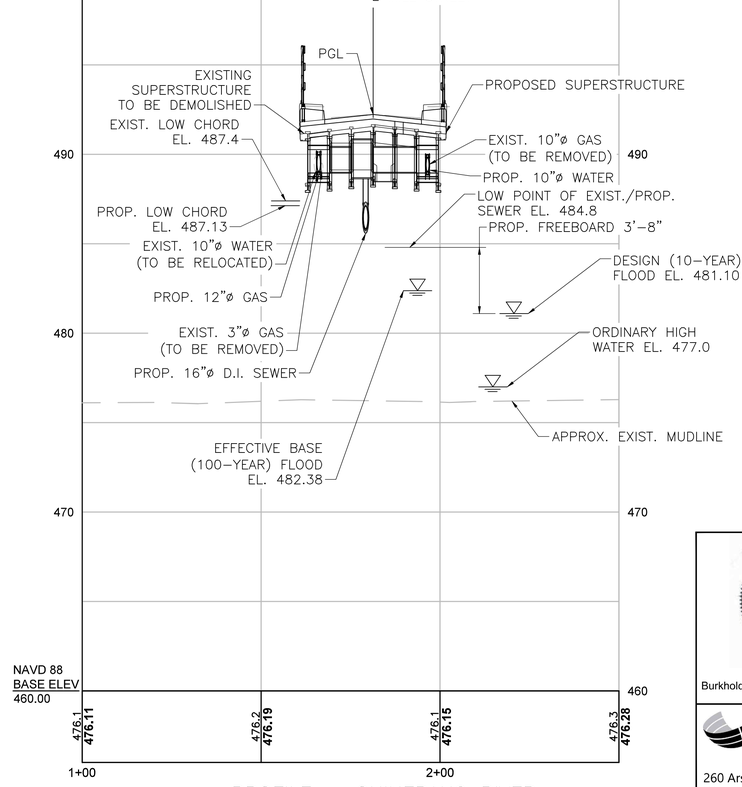
KEY PLAN
SCALE: 1" = 20'



LOCUS
SCALE: 1" = 2000'



PROFILE – ℄ MILL STREET
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: ¼" = 1'-0"



PROFILE – QUINEBAUG RIVER
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: ¼" = 1'-0"

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	46	105
PROJECT FILE NO.	608862		

KEY PLAN, PROFILE AND INDEX

SHEET INDEX

1 KEY PLAN, PROFILE AND INDEX
2 GENERAL NOTES
3 BORING LOGS (1 OF 2)
4 BORING LOGS (2 OF 2)
5 GENERAL PLAN AND ELEVATION
6 STAGING DETAILS (1 OF 2)
7 STAGING DETAILS (2 OF 2)
8 STAGING PLANS
9 SOUTH ABUTMENT DEMOLITION
10 NORTH ABUTMENT DEMOLITION
11 SOUTH ABUTMENT PLAN AND ELEVATION
12 NORTH ABUTMENT PLAN AND ELEVATION
13 ABUTMENT SECTIONS
14 ABUTMENT DETAILS (1 OF 2)
15 ABUTMENT DETAILS (2 OF 2)
16 FRAMING PLAN
17 GIRDER DETAILS
18 DIAPHRAGM DETAILS
19 BEARING DETAILS
20 TYPICAL SECTION
21 DECK DETAILS
22 ABUTMENT END DIAPHRAGM
23 S3-MTL4 BRIDGE RAILING
24 TRANSITION FOR S3-MTL4 RAILING
25 TERMINUS AT SOUTHWEST CORNER
26 TERMINUS AT NORTHEAST CORNER
27 TRANSITION BASE

COMMONWEALTH OF MASSACHUSETTS
ANDREW T. BURKHOLDER STRUCTURAL No. 49811 REGISTERED PROFESSIONAL ENGINEER

Burkholder, Andrew — Digitally signed by Burkholder, Andrew Date: 2026.09.11 14:13:48 -04'00'

vhb
260 Arsenal Place #2
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

SEPT. 5, 2026 | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED SUPERSTRUCTURE REPLACEMENT
SOUTHBRIDGE
MILL STREET
OVER QUINEBAUG 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: 2026.09.11 14:40:12 -04'00'
STATE BRIDGE ENGINEER

Carrie Lavallee — Digitally signed by Carrie Lavallee, P.E. Date: 2026.09.13 14:53:35 -04'00'
CHIEF ENGINEER

SHEET 1 OF 27 SHEETS BRIDGE NO. S-21-003 (1HB)

608862_BR1_KEY PLAN PROFILE & INDEX.DWG Plotted on 28-Aug-2026 4:56 PM

22-January-2026 Final Structural Submittal (SF)

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.

THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION LRFD BRIDGE MANUAL HUNDREDTH ANNIVERSARY EDITION.

THE 2011 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN.

BENCH MARKS:

BENCH MARK 1: (RIGHT OUTSIDE CORNER OF 4TH CONC. STEP, N2855184.733', E508491.160', EL=492.29')
BENCH MARK 2: (RIGHT OUTSIDE CORNER OF 1ST CONC. STEP, N2855345.604', E508522.363', EL=497.30')

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD88) OF 1988.

DATE

TO BE PLACED ON THE INSIDE FACE OF THE SOUTHEAST AND NORTHWEST 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.

SURVEY NOTEBOOK:

THE EXISTING CONDITIONS SHOWN WITHIN THIS PLAN SET ARE THE RESULT OF ELECTRONIC SURVEY PERFORMED BY GREEN INTERNATIONAL, INC.

SUBSTRUCTURE:

EXISTING SUBSTRUCTURE WILL BE REUSED.
SUBSTRUCTURE DIMENSIONS ARE TAKEN FROM 1955 BRIDGE PLANS. ELEVATIONS NOTED ON 1955 PLANS WERE CONVERTED FROM NGVD29 TO NAVD88 BY SUBTRACTING 0.7 FT (SEE GEOTECH REPORT).

FOR THE NORTH ABUTMENT THE FACTORED BEARING PRESSURE = 5.35 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
FACTORED BEARING RESISTANCE = 45.5 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

FOR THE SOUTH ABUTMENT THE FACTORED BEARING PRESSURE = 5.09 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
FACTORED BEARING RESISTANCE = 46.1 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

UNSUITABLE MATERIAL:

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

GEOTECHNICAL REPORT:

REFER TO GEOTECHNICAL REPORT PREPARED BY NOBIS GROUP, DATED NOVEMBER 29, 2023.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 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. COATED BARS, COVER <3d_b, OR CLEAR SPACING <6d_b	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.

ALL REINFORCING STEEL SHALL BE EPOXY COATED EXCEPT FOR THE APPROACH SLAB REINFORCING STEEL.

MEMBRANE WATERPROOFING

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

CONSTRUCTION REQUIREMENTS AND PROCEDURES:

THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION. REFER TO APPROVED DEMOLITION/ERECTION PLANS.

EXISTING CONDITIONS:

THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF.

CONSTRUCTION JOINTS:

CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

SCALES:

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

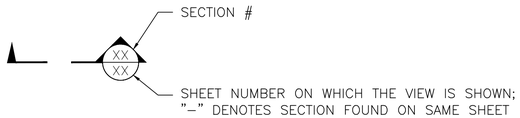
CONCRETE:

UNLESS OTHERWISE SPECIFIED, ALL CONCRETE SHALL BE 5000 HP CONCRETE.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50. ALL BEAMS SHALL BE METALLIZED. DIAPHRAGMS SHALL BE HOT-DIP GALVANIZED.

SECTION MARK:



ESTIMATED QUANTITIES

NOT GUARANTEED

DESCRIPTION	QUANTITY	UNITS
GEOTECHNICAL MONITORING AND INSTRUMENTATION	1	LS
DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-003	1	LS
REINFORCED CONCRETE EXCAVATION	100	CY
REINFORCED CONCRETE EXCAVATION FOR REPAIRS	2	CY
BRIDGE EXCAVATION	590	CY
CLASS B ROCK EXCAVATION	30	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	500	CY
CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI)	5	CY
SUPERPAVE BRIDGE SURFACE COURSE – 9.5 POLYMER (SSC-B – 9.5 – P)	25	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 POLYMER (SPC-B – 9.5 – P)	25	TON
SAWING AND SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES	54	FT
RAPID SET CONCRETE FOR OVERHEAD AND VERTICAL SURFACE REPAIRS	2	CY
TEMPORARY SHORING – BRIDGE NO. S-21-003	1	LS
TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-21-003	1	LS
BRIDGE SUPERSTRUCTURE, BRIDGE NO. S-21-003	1	LS

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	47	105
	PROJECT FILE NO. 608862		

GENERAL NOTES

TRAFFIC DATA	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2031	N/A
AVERAGE DAILY TRAFFIC – PRESENT	325 VPD	N/A
AVERAGE DAILY TRAFFIC – DESIGN YEAR	345 VPD	N/A
DESIGN HOURLY VOLUME	40 VPH	N/A
DIRECTIONAL DISTRIBUTION	100% SB	N/A
TRUCK PERCENTAGE – AVERAGE DAY	11.8%	N/A
TRUCK PERCENTAGE – PEAK HOUR	5.3%	N/A
DESIGN SPEED	25 MPH	N/A
DIRECTIONAL DESIGN HOURLY VOLUME	40 VPH	N/A

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000 YRS
DESIGN SPECTRA	
As	0.096
SDs	0.218
SD1	0.089
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	94.7
DESIGN FLOOD DISCHARGE (C.F.S.)	1,600
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	6.8
DESIGN FLOOD ELEVATION (FEET, NAVD)	481.10
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	2,500
BASE FLOOD ELEVATION (FEET, NAVD)	482.38
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	25
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	2.4
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	2.4
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	1,850
FREQUENCY (IF KNOWN, YEARS)	50
MAXIMUM ELEVATION (FEET, NAVD)	UNKNOWN
DATE (MM/YYYY)	03/1980
HISTORY OF ICE FLOES	UNKNOWN
EVIDENCE OF SCOUR AND EROSION	NONE

TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	1,600
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	6.8
DESIGN FLOOD ELEVATION (FEET, NAVD)	481.10

SEPT. 5, 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

608862_BRIS21003)_NOTES.DWG Plotted on 10-Aug-2026 1:32 PM
22-January-2026 Final Structural Submittal (SF)

BORING B–1A

STATION: 202+69.99'
OFFSET: 2.38' RIGHT
N: 2855007.06
E: 508440.65

ELEV.

500.00

GROUND SURFACE
EL. 493.3

490.00

480.00

470.00

BOT. OF EXISTING
FOOTING
EL. 468.3

460.00

450.00

440.00

430.00

nobis

BORING LOG

Project: Mill Street over Quinebaug River
Location: Southbridge, Massachusetts
Nobis Project No.: 89300.02

Boring No.: B-1A
Boring Location: See exploration location plan.
N: 2855007.06 E: 508440.65
Checked by: Serena Pape
Date Start: October 27, 2021
Date Finish: October 27, 2021

Contractor: Seaboard Drilling, Inc.
Driller: M. Glynn
Nobis Rep.: S. Kurtzer

Rig Type / Model: Truck / B-53 Mobile
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 493.3
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
10/27/21	11:00	Not Encountered			

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1							ASPHALT 493.7 / 0.6	7-inches of asphalt.	
2	S-1	9	1-3	15				S-1: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, very few asphalt pieces. Moist. (FILL).	
3				11					
4	S-2	8	3-5	11					
5				9				S-2: Loose, brown, fine to coarse SAND, little Silt, little fine Gravel. Moist. (FILL). [Laboratory Testing - Grain Size Sieve Only: 23.4% Gravel, 55.1% Sand, 21.5% Fines].	
6	S-3	7	5-7	7					
7				3					
8				3			FILL	S-3: Medium dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL).	
9	S-4	7	8-10	3					
10				7					
11				7					
12				3				S-4: Dense, brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Moist. (FILL).	1
13				7					
14				7					
15				3					
16				7					
17				7					
18				3					
19				7					
20				7					
21				3					
22				7					
23				7					
24				3					
25				7			483.3 / 10.0	Boring terminated at 10 feet.	2

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

NOTES:
1) Water introduced at 7 feet below ground surface during drive and wash process.
2) Casing became crooked at approximately 7.5 feet below ground surface. The borehole was abandoned and offset to B-1B. The borehole was backfilled to ground surface with a cement mixture.

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 B–1B

STATION: 202+73.79'
OFFSET: 22.54' RIGHT
N: 2855001.18
E: 508461.88

GROUND SURFACE
EL. 493.4

OBSERVED
WATER LEVEL
(10/28/2021)
EL. 481.0

BOT. OF EXISTING
FOOTING
EL. 468.3

nobis

BORING LOG

Project: Mill Street over Quinebaug River
Location: Southbridge, Massachusetts
Nobis Project No.: 89300.02

Boring No.: B-1B
Boring Location: See exploration location plan.
N: 2855001.18 E: 508461.88
Checked by: Serena Pape
Date Start: October 27, 2021
Date Finish: October 28, 2021

Contractor: Seaboard Drilling, Inc.
Driller: M. Glynn
Nobis Rep.: S. Kurtzer

Rig Type / Model: Truck / B-53 Mobile
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 493.4
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
▼ 10/28/21	14:00	12.4	48	55.5	15 min

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1							ASPHALT 492.7 / 0.7	8-inches of asphalt.	1
2								Advanced casing to 8 feet below ground surface.	
3									
4									
5									
6									
7									
8									
9	S-1	6	8-10	17				S-1: Medium dense, brown, fine to coarse SAND, some Silt, trace fine Gravel. Wet. (FILL).	
10				12					
11	S-2	0	10-12	6			FILL	S-2: No recovery.	
12				7					
13				3					
14				3	▼				
15	S-3	6	14-16	6				S-3: Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Wet. (FILL).	
16				5					
17				6					
18				5					
19								Roller bit through boulder from approximately 18.5 to 19.5 feet below ground surface.	
20							473.4 / 20.0		
21	S-4	14	20-22	4				S-4: Medium dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel. Wet.	
22				13					
23				16					
24				17			GLACIAL TILL		
25	S-5	10	24-26	20				S-5: Dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel. Wet.	
26				24					
27				25					
28				31					
29								Roller bit through boulder from approximately 29 to 30 feet below ground surface.	
30									
31	S-6	16	30-32	28				S-6: Very dense, gray, fine to coarse SAND, little fine to coarse Gravel, little Silt. Wet.	
32				38					
33				45					
34				50					
35								Increase in drilling resistance.	
36	S-7	6	35-37	42				S-7: Very dense, gray, fine to coarse GRAVEL, some fine to coarse Sand, some Silt, pulverized weathered rock. Wet.	
37				63					
38				34					
39				57					
40							GLACIAL TILL		
41	S-8	15	40-42	34				S-8: Very dense, gray, fine to coarse SAND, little fine to coarse Gravel, some Silt. Wet.	
42				42					
43				63					
44				81					
45								Roller bit through boulder from approximately 42 to 43 feet below ground surface.	
46	S-9	16	45-47	45				S-9: Very dense, gray, fine to coarse SAND and Silt, trace fine to coarse Gravel. Wet. [Laboratory Testing - Grain Size Sieve Only: 7.0% Gravel, 55.7% Sand, 37.3% Fines].	
47				41					
48				43					
49				52					
50									
51	S-10	17	50-51.8	21				S-10: Very dense, gray, fine to coarse SAND and Silt, trace fine to coarse Gravel. Wet.	
52				33					
53				60/3"			GLACIAL TILL	C-1: Cored through boulder from approximately 53 to 54 feet below ground surface.	
54	C-1		53-55.5						
55							437.9 / 55.5		2
56								Boring terminated at 55.5 feet.	
57									

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

NOTES:
1) Water introduced at ground surface during drive and wash process.

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 3

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	48	105
PROJECT FILE NO.	608862		

BORING LOGS (1 OF 2)

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE KEY PLAN THUS:
2. BORINGS ARE TAKEN FOR 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 MASSDOT FACILITY AT 219 WINTHROP AVE, LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES UPON REQUEST.
6. ALL BORINGS WERE MADE IN OCTOBER AND NOVEMBER 2021.
7. BORINGS WERE MADE BY SEABOARD DRILLING, INC., 649 MEADOW STREET, CHICOPEE, MA. 01013.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

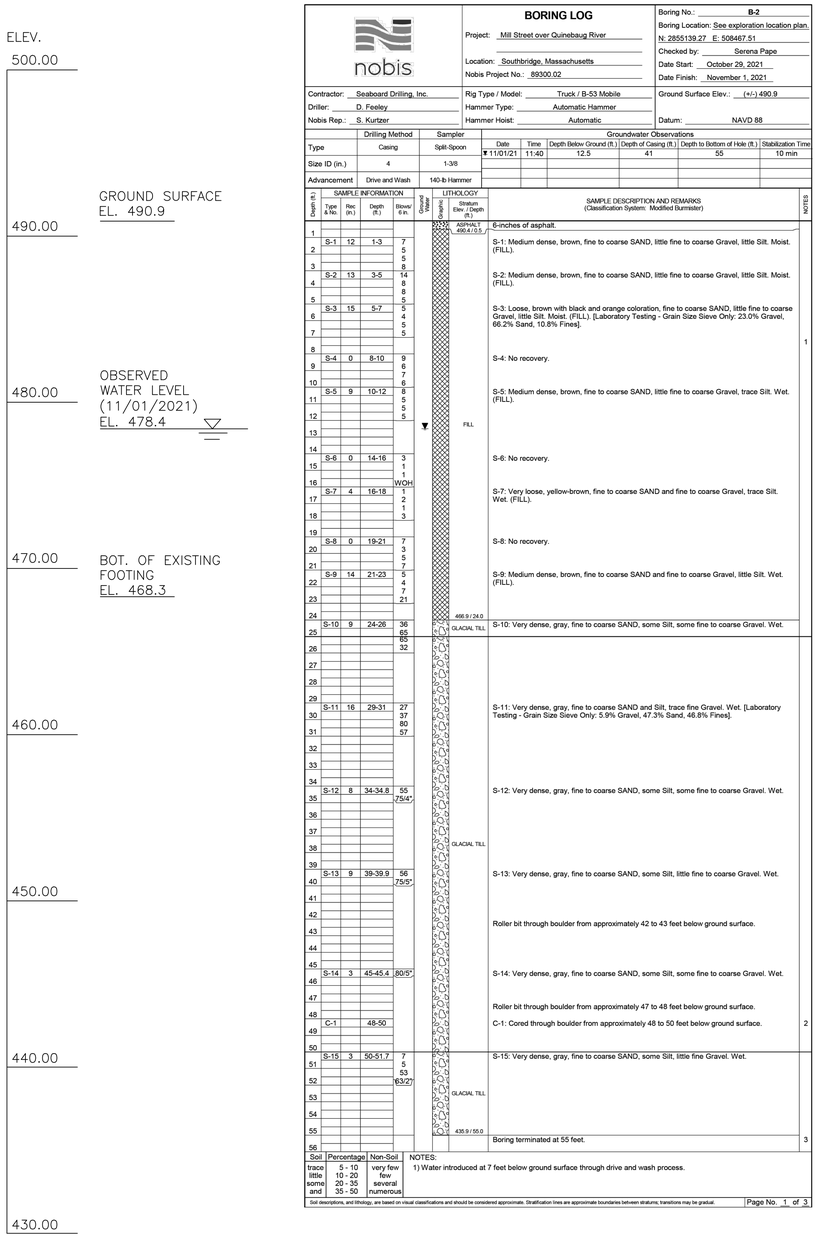
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

608862_BR(S21003)_BORINGS.DWG Plotted on 10-Aug-2026 1:33 PM
22-January-2026 Final Structural Submittal (SF)
BOREHOLE LOG - NOBIS LIGHT DATA TEMPLATE OCT 7 2011.GDT - 5/22/25 12:02 - J:\89300.02 - MASSDOT MILL ST OVER MCKINSTRY BROOK, SOMILL STREET OVER QUINEBAUG RIVER\BOREHOLE LOGS\608862_BR(S21003)_BORINGS.DWG

BORING B–2

STATION: 204+07.37'
OFFSET: 5.33' RIGHT
N: 2855139.27
E: 508467.51



nobis

BORING LOG

Project: Mill Street over Quinebaug River
Location: Southbridge, Massachusetts
Nobis Project No.: 89300.02

Boring No.: B-2
Boring Location: See exploration location plan.
N: 2855139.27 E: 508467.51
Checked by: Serena Pape
Date Start: October 29, 2021
Date Finish: November 1, 2021

Contractor: Seaboard Drilling, Inc.
Driller: D. Feeley
Nobis Rep.: S. Kurtzer

Rig Type / Model: Truck / B-53 Mobile
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 490.9
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
▼ 11/01/21	11:40	12.5	41	55	10 min

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec. (in.)	Depth (ft.)	Blows/ 6 in.	Graphic Symbol	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1						ASPHALT 490.4 / 0.5	6-inches of asphalt.	
2	S-1	12	1-3	7 5 5 8			S-1: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt. Moist. (FILL).	
3								
4	S-2	13	3-5	14 8 8 5			S-2: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt. Moist. (FILL).	
5								
6	S-3	15	5-7	5 4 5 5			S-3: Loose, brown with black and orange coloration, fine to coarse SAND, little fine to coarse Gravel, little Silt. Moist. (FILL). [Laboratory Testing - Grain Size Sieve Only: 23.0% Gravel, 66.2% Sand, 10.8% Fines].	
7								
8								1
9	S-4	0	8-10	9 6 7 6			S-4: No recovery.	
10								
11	S-5	9	10-12	8 5 5 5			S-5: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt. Wet. (FILL).	
12								
13						FILL		
14								
15	S-6	0	14-16	3 1 1 WOH			S-6: No recovery.	
16								
17	S-7	4	16-18	1 2 1 3			S-7: Very loose, yellow-brown, fine to coarse SAND and fine to coarse Gravel, trace Silt. Wet. (FILL).	
18								
19								
20	S-8	0	19-21	7 3 5 7			S-8: No recovery.	
21								
22	S-9	14	21-23	5 4 7 21			S-9: Medium dense, brown, fine to coarse SAND and fine to coarse Gravel, little Silt. Wet. (FILL).	
23								
24						466.9 / 24.0		
25	S-10	9	24-26	36 65 65 32		GLACIAL TILL	S-10: Very dense, gray, fine to coarse SAND, some Silt, some fine to coarse Gravel. Wet.	
26								
27								
28								
29								
30	S-11	16	29-31	27 37 80 57			S-11: Very dense, gray, fine to coarse SAND and Silt, trace fine Gravel. Wet. [Laboratory Testing - Grain Size Sieve Only: 5.9% Gravel, 47.3% Sand, 46.8% Fines].	
31								
32								
33								
34								
35	S-12	8	34-34.8	55 75/4"			S-12: Very dense, gray, fine to coarse SAND, some Silt, some fine to coarse Gravel. Wet.	
36								
37								
38						GLACIAL TILL		
39								
40	S-13	9	39-39.9	56 75/5"			S-13: Very dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel. Wet.	
41								
42							Roller bit through boulder from approximately 42 to 43 feet below ground surface.	
43								
44								
45	S-14	3	45-45.4	80/5"			S-14: Very dense, gray, fine to coarse SAND, some Silt, some fine to coarse Gravel. Wet.	
46								
47							Roller bit through boulder from approximately 47 to 48 feet below ground surface.	
48	C-1		48-50				C-1: Cored through boulder from approximately 48 to 50 feet below ground surface.	2
49								
50								
51	S-15	3	50-51.7	7 5 53 63/7"			S-15: Very dense, gray, fine to coarse SAND, some Silt, little fine Gravel. Wet.	
52								
53						GLACIAL TILL		
54								
55						435.9 / 55.0	Boring terminated at 55 feet.	3
56								

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

NOTES:
1) Water introduced at 7 feet below ground surface through drive and wash process.

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.

BORING NOTES:

1. SEE SHEET 3 OF 27 FOR BORING NOTES.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	49	105
	PROJECT FILE NO. 608862		

BORING LOGS (2 OF 2)

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

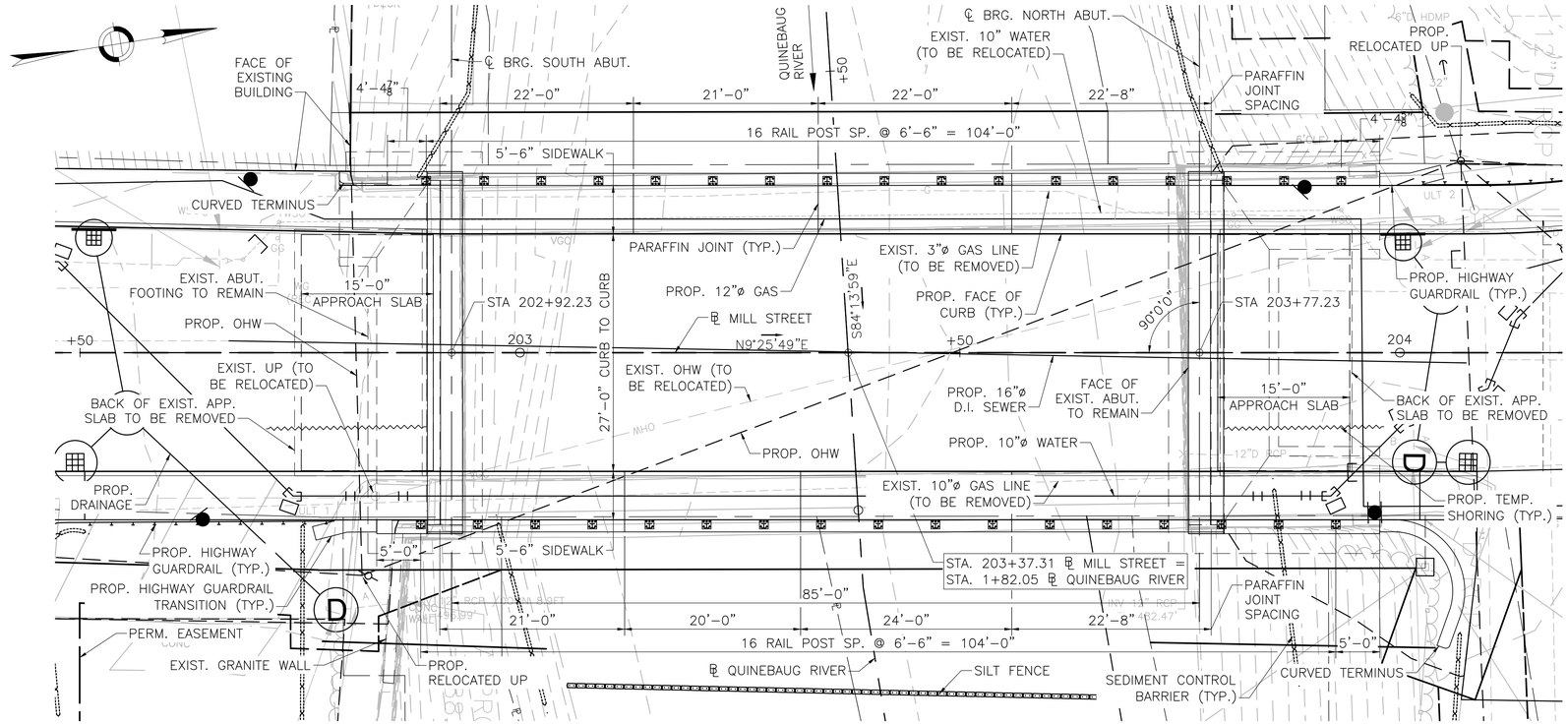
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21003)_BORINGS.DWG Plotted on 10-Aug-2026 1:33 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

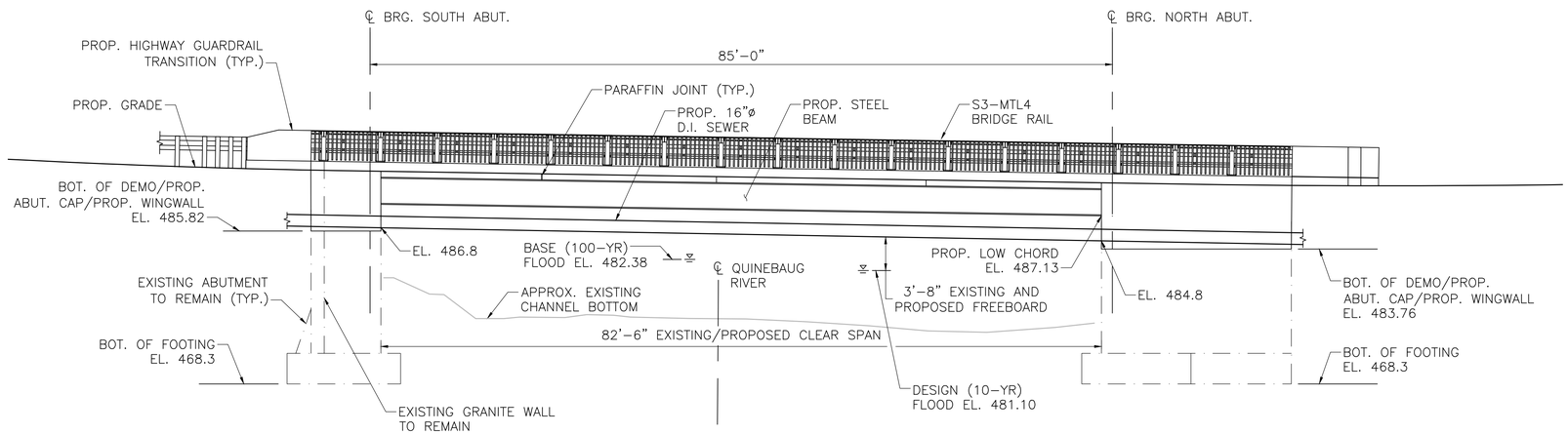
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	50	105
	PROJECT FILE NO. 608862		

GENERAL PLAN AND ELEVATION



GENERAL PLAN

SCALE: ⅛" = 1'-0"



EAST ELEVATION

SCALE: ⅛" = 1'-0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

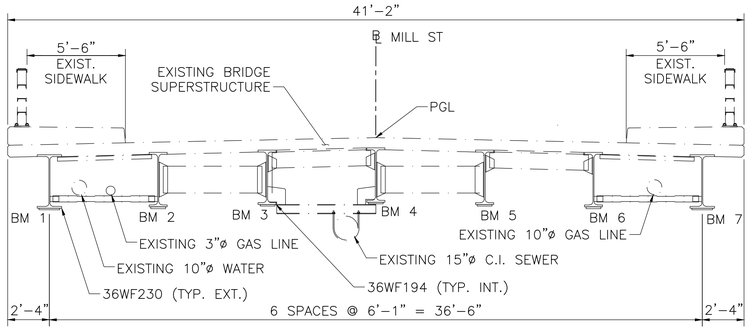
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BRIS21003)_GPE.DWG Plotted on 10-Aug-2026 1:33 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	51	105
PROJECT FILE NO.	608862		

STAGING DETAILS (1 OF 2)

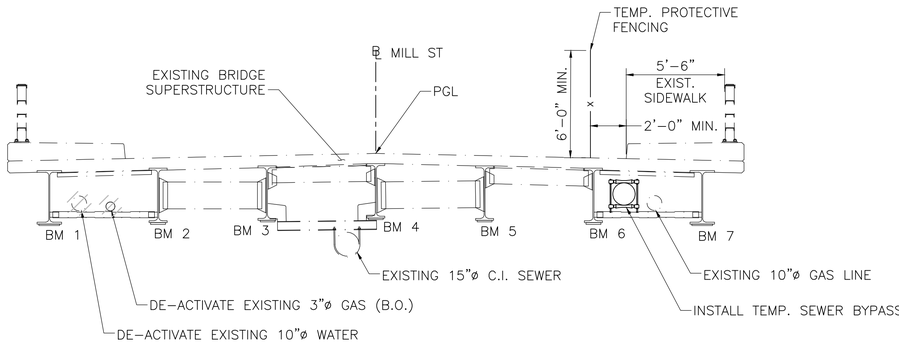


EXISTING BRIDGE SECTION

SCALE: $\frac{1}{4}$" = 1'–0"

BRIDGE STAGE 0 UTILITY NOTES:

1. INSTALL TEMPORARY SEWER BYPASS IN EASTERNMOST UTILITY BAY BETWEEN EXISTING BEAMS 6 AND 7.
2. DE–ACTIVATE (BO) AND REMOVE EXISTING 3"ø GAS LINE.
3. DE–ACTIVATE AND REMOVE EXISTING 10"ø WATER DURING CONSTRUCTION. PROVIDE WATER SERVICE FROM MAIN STREET TO CAFE BUILDING TO SOUTHWEST OF BRIDGE (SEE HIGHWAY PLANS).
4. INSTALL TEMPORARY PROTECTIVE FENCING 2'–0" FROM EXISTING CURB LINE. DIVERT PEDESTRIANS TO EAST SIDEWALK



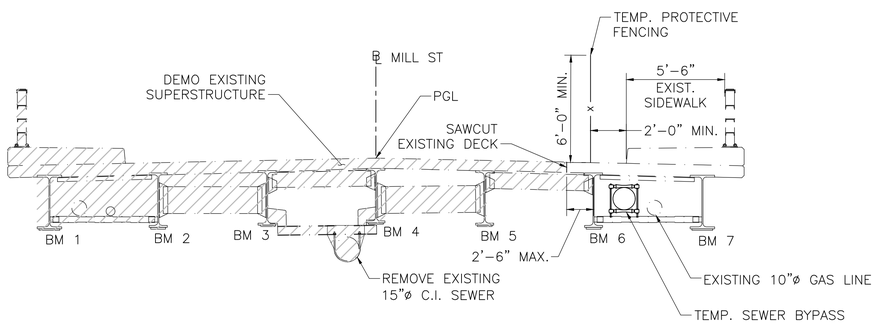
BRIDGE STAGE 0 – UTILITY RELOCATION

SCALE: $\frac{1}{4}$" = 1'–0"

DENOTES AREA OF DEMOLITION

BRIDGE STAGE 1 DEMOLITION NOTES:

1. BRIDGE ASSUMED TO BE CLOSED TO VEHICLE TRAFFIC DURING CONSTRUCTION.
2. DE–ACTIVATE AND REMOVE EXISTING 15"ø SEWER.
3. DEMO EXISTING BRIDGE DECK, BEAMS, CROSSFRAMES AND DIAPHRAGMS BETWEEN EXISTING BEAMS 1–5, AS SHOWN.
4. MAINTAIN EXISTING BEAMS 6–7 CARRYING EAST SIDEWALK, EXISTING 10" GAS LINE AND TEMPORARY SEWER BYPASS.



BRIDGE STAGE 1 – DEMOLITION

SCALE: $\frac{1}{4}$" = 1'–0"

SEPT. 5, 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

608862_BR(S21003)_STAGING.DWG Plotted on 10-Aug-2026 1:34 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

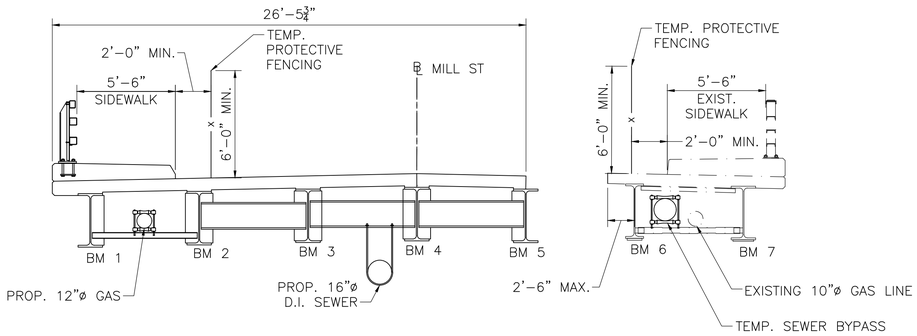
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	52	105
	PROJECT FILE NO. 608862		

STAGING DETAILS (2 OF 2)

608862_BR(S21003)_STAGING.DWG Plotted on 10-Aug-2026 1:34 PM

BRIDGE STAGE 1 CONSTRUCTION NOTES:

1. ERECT PROPOSED BEAMS 1 THROUGH 5, INCLUDING CROSS FRAMES AND UTILITY SUPPORTS.
2. INSTALL PROPOSED 12"ø GAS IN WESTERNMOST UTILITY BAY BETWEEN BEAMS 1 AND 2.
3. CONSTRUCT PROPOSED DECK, SIDEWALK AND RAILING.
3. INSTALL PROPOSED 16"ø D.I. SEWER.
4. INSTALL TEMPORARY PROTECTIVE FENCING 2'–0" FROM PROPOSED CURB LINE. DIVERT PEDESTRIANS TO WEST SIDEWALK.

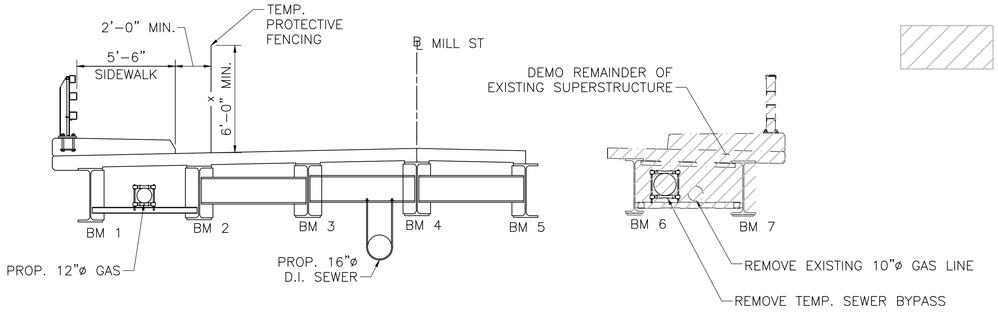


BRIDGE STAGE 1 – CONSTRUCTION

SCALE: ¼" = 1'–0"

BRIDGE STAGE 2 DEMOLITION NOTES:

1. DE–ACTIVATE EXISTING 10"ø GAS LINE IN EASTERNMOST UTILITY BAY (B0).
2. REMOVE TEMPORARY SEWER BYPASS.
3. DEMO REMAINDER OF EXISTING SUPERSTRUCTURE, EXISTING BEAMS 6 AND 7.



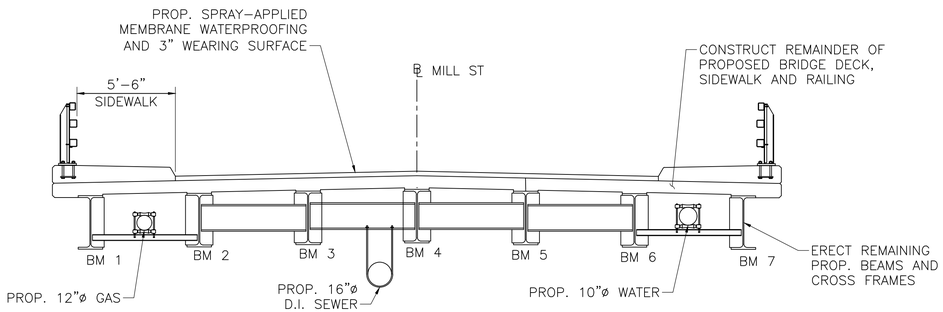
DENOTES AREA OF DEMOLITION

BRIDGE STAGE 2 – DEMOLITION

SCALE: ¼" = 1'–0"

BRIDGE STAGE 2 CONSTRUCTION NOTES:

1. ERECT PROPOSED BEAMS 6 AND 7, INCLUDING CROSS FRAMES.
2. INSTALL PROPOSED 10"ø WATER IN EAST UTILITY BAY BETWEEN BEAMS 6 AND 7.
3. CONSTRUCT REMAINDER OF PROPOSED BRIDGE DECK, SIDEWALK AND RAILING. PROVIDE CLOSURE POUR OVER FLANGE OF PROPOSED BEAM 5.
4. REMOVE TEMPORARY PROTECTIVE FENCING AT EAST SIDEWALK.
5. APPLY MEMBRANE WATERPROOFING AND 3" WEARING SURFACE TO BRIDGE DECK.



BRIDGE STAGE 2 – CONSTRUCTION

SCALE: ¼" = 1'–0"

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

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

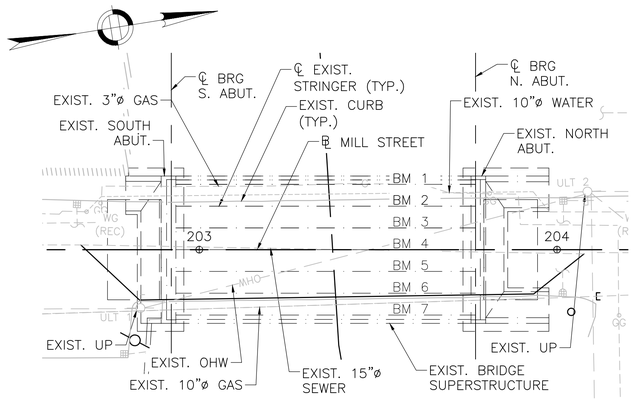
USE ONLY PRINTS OF LATEST DATE

Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

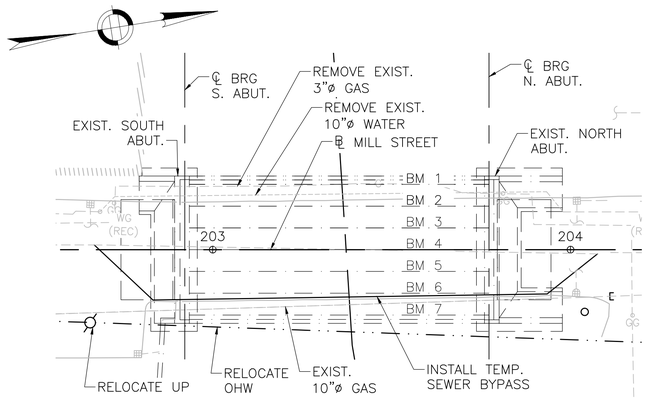
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	53	105
PROJECT FILE NO.	608862		

STAGING PLANS



EXISTING CONDITIONS

SCALE: 1" = 20'

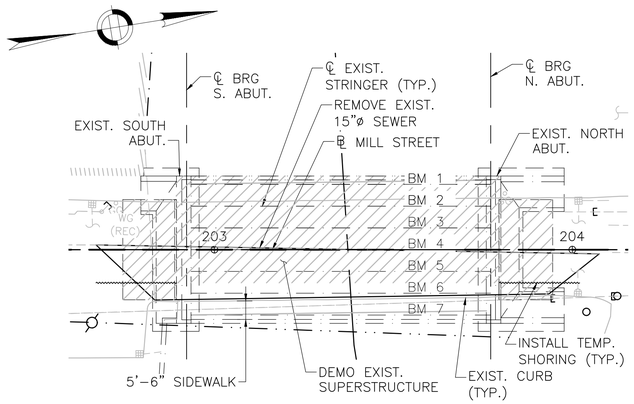


BRIDGE STAGE 0 – UTILITY RELOCATION

SCALE: 1" = 20'

BRIDGE STAGE 0 UTILITY NOTES:

1. BRIDGE ASSUMED TO BE CLOSED TO VEHICLE TRAFFIC DURING CONSTRUCTION.
2. RELOCATE OVERHEAD WIRES AS SHOWN IN UTILITY STAGING PLANS.
3. DE-ACTIVATE AND REMOVE EXISTING 3"ø GAS FROM WESTERN BAY (B.O.). SERVICE TO BE PROVIDED BY EXISTING 10"ø GAS IN EASTERN BAY.
4. EXISTING 10"ø WATER IN WESTERN BAY ASSUMED TO BE CUT OFF DURING CONSTRUCTION. TEMPORARY WATER TO BE SUPPLIED TO CAFE BUILDING AT SOUTHWEST CORNER OF BRIDGE FROM MAIN STREET.
5. INSTALL TEMPORARY SEWER BYPASS IN EASTERN BAY.
6. INSTALL TEMPORARY PROTECTIVE FENCING 2'-0" FROM EXISTING CURB LINE. DIVERT PEDESTRIANS TO EAST SIDEWALK.

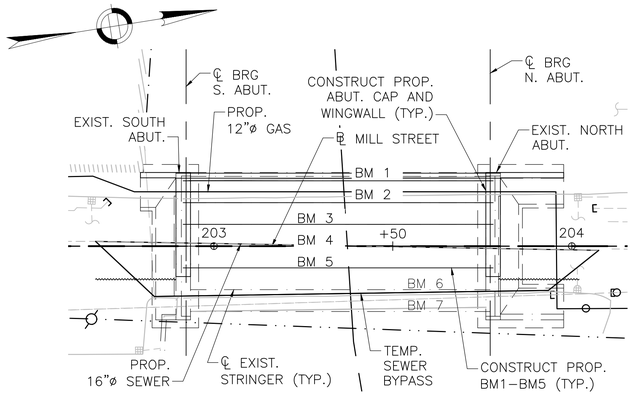


BRIDGE STAGE 1 – DEMOLITION

SCALE: 1" = 20'

BRIDGE STAGE 1 DEMOLITION NOTES:

1. INSTALL TEMP. SHORING FOR PARTIAL ABUTMENT DEMO
2. DEMO BRIDGE SUPERSTRUCTURE BETWEEN BEAMS 1 THROUGH 5.
3. REMOVE EXISTING 15"ø SEWER.
4. DEMO PORTION OF TOP OF EXISTING ABUTMENTS, EAST WINGWALLS AND APPROACH SLABS.

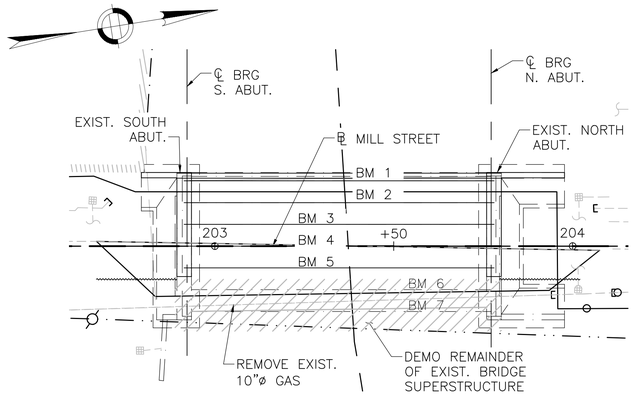


BRIDGE STAGE 1 – CONSTRUCTION

SCALE: 1" = 20'

BRIDGE STAGE 1 CONSTRUCTION NOTES:

1. CONSTRUCT PORTION OF PROPOSED ABUTMENT CAPS AND EAST WINGWALLS.
2. CONSTRUCT PROPOSED BEAMS 1 THROUGH 5.
3. INSTALL PROP. 12"ø GAS IN WESTERN BAY BETWEEN BEAMS 1-2 (B.O.).
4. INSTALL PROP. 16"ø D.I. SEWER.
5. INSTALL TEMPORARY PROTECTIVE FENCING AND DIVERT PEDESTRIANS TO WEST SIDEWALK.

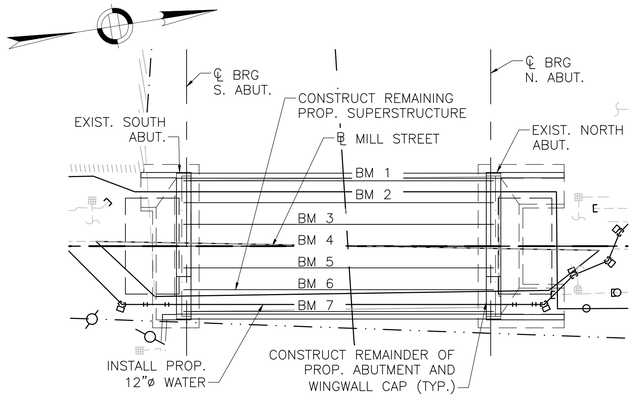


BRIDGE STAGE 2 – DEMOLITION

SCALE: 1" = 20'

BRIDGE STAGE 2 DEMOLITION NOTES:

1. DE-ACTIVATE AND REMOVE EXISTING 10"ø GAS IN EASTERN BAY (B.O.).
2. DEMO REMAINDER OF EXISTING SUPERSTRUCTURE, INCLUDING EXISTING BEAMS 6 AND 7.
3. DEMO REMAINDER OF TOP OF EXISTING ABUTMENTS AND WEST WINGWALLS.



BRIDGE STAGE 2 – CONSTRUCTION

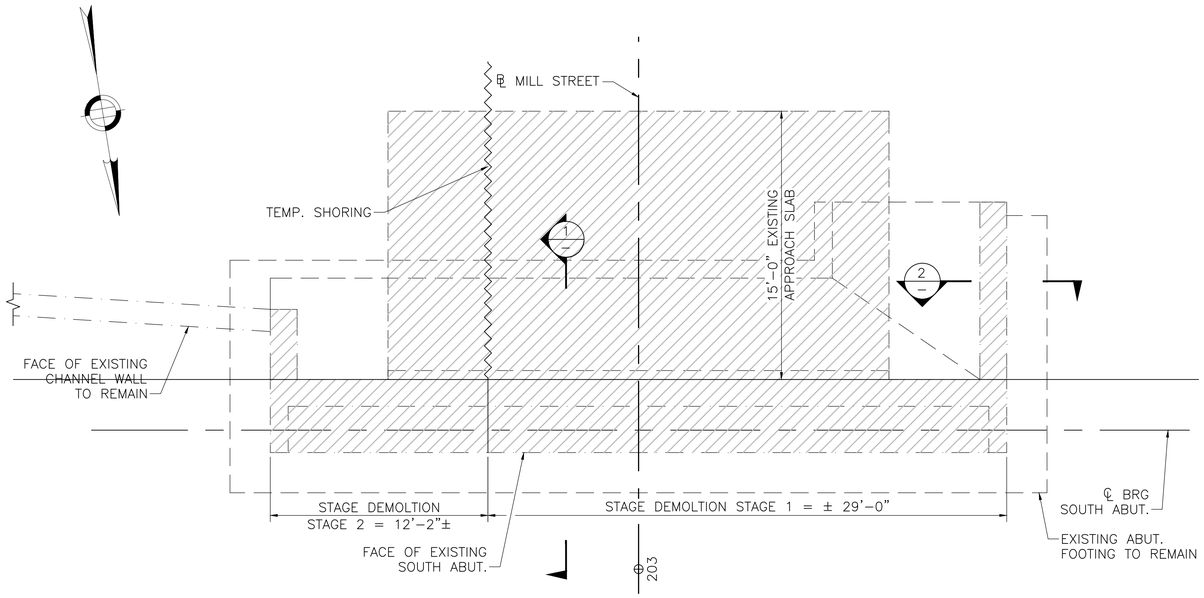
SCALE: 1" = 20'

BRIDGE STAGE 2 CONSTRUCTION NOTES:

1. CONSTRUCT REMAINDER OF PROPOSED ABUTMENT CAPS AND WEST WINGWALLS.
2. REMOVE TEMP. SHORING.
3. CONSTRUCT APPROACH SLABS AND REMAINDER OF PROPOSED SUPERSTRUCTURE, INCLUDING PROPOSED BEAMS 6 AND 7.
4. INSTALL PROPOSED 10"ø WATER IN EASTERN BAY BETWEEN BEAMS 6-7.

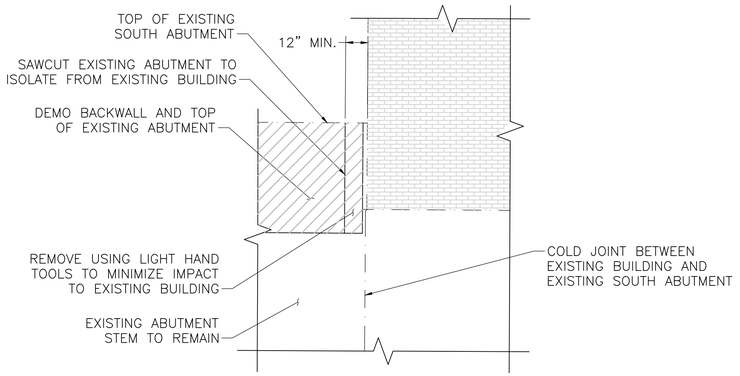
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

608862_BR(S21003)_STAGING.DWG Plotted on 10-Aug-2026 1:34 PM
22-January-2026 Final Structural Submittal (SF)



EXISTING SOUTH ABUTMENT DEMOLITION PLAN

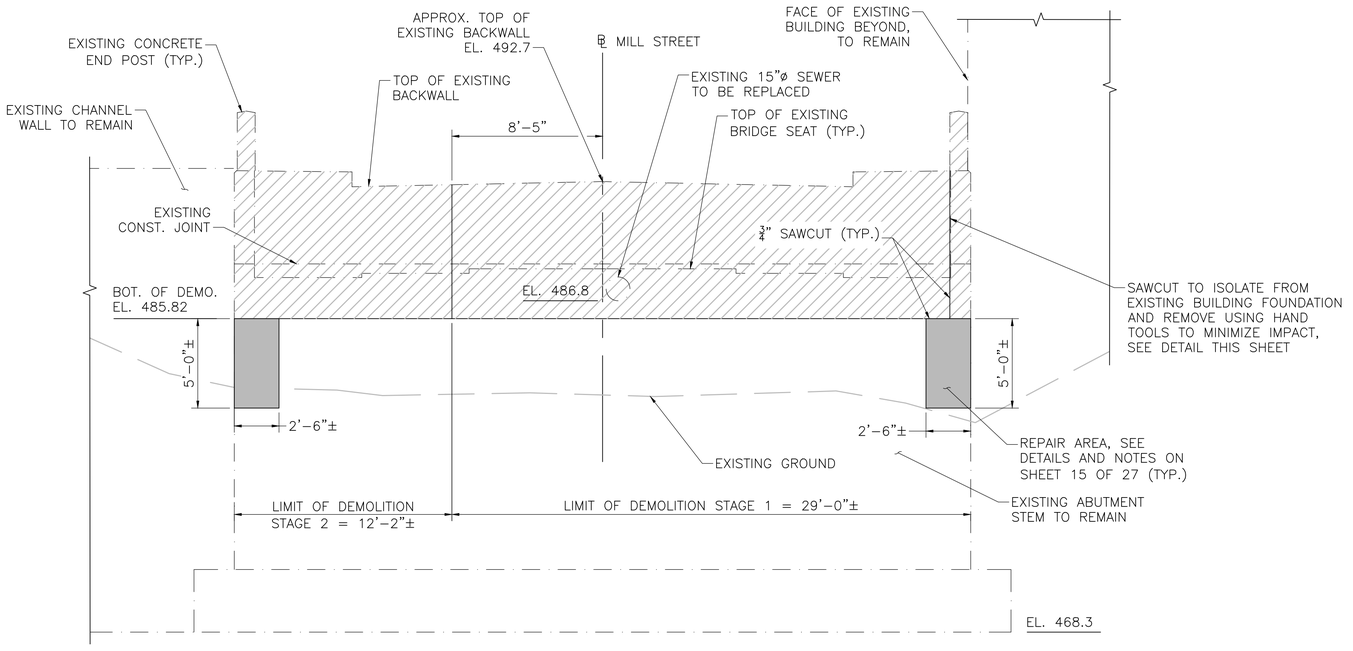
SCALE: $\frac{1}{4}$" = 1'–0"



DETAIL OF DEMOLITION AT EXISTING BUILDING INTERFACE

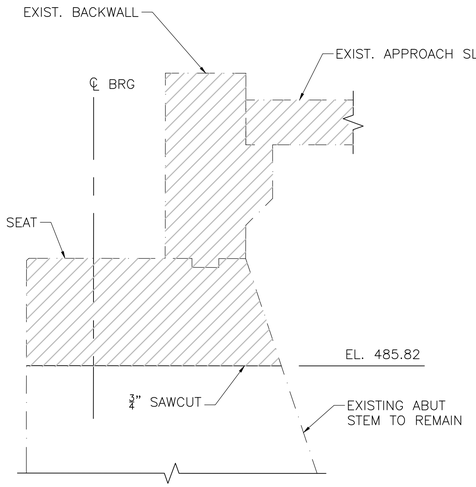
SCALE: $\frac{1}{4}$" = 1'–0"

DENOTES AREA OF DEMOLITION



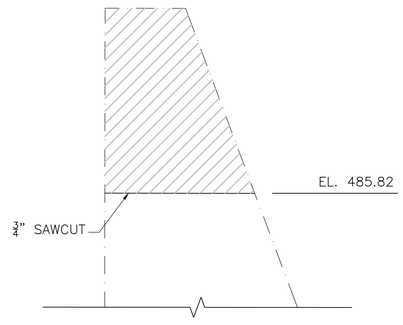
EXISTING SOUTH ABUTMENT DEMOLITION

SCALE: $\frac{1}{4}$" = 1'–0"



SECTION 1

SCALE: $\frac{3}{4}$" = 1'–0"



SECTION 2

SCALE: $\frac{3}{4}$" = 1'–0"

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	54	105
PROJECT FILE NO.	608862		

SOUTH ABUTMENT DEMOLITION

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

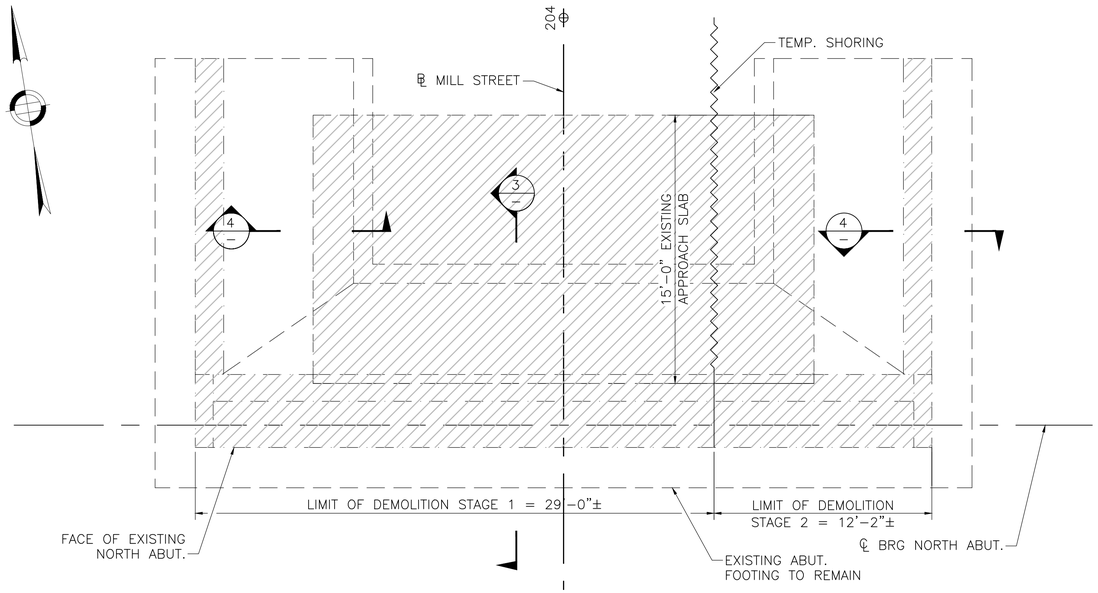
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BRIS21003)_ABUT_DEMO.DWG Plotted on 10-Aug-2026 1:35 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	55	105
	PROJECT FILE NO. 608862		

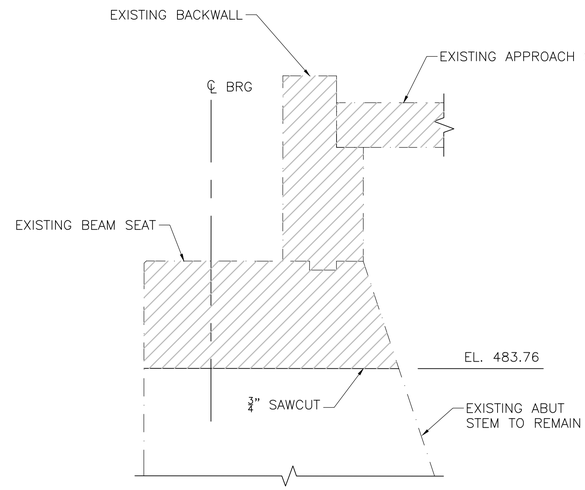
NORTH ABUTMENT DEMOLITION



EXISTING NORTH ABUTMENT DEMOLITION PLAN

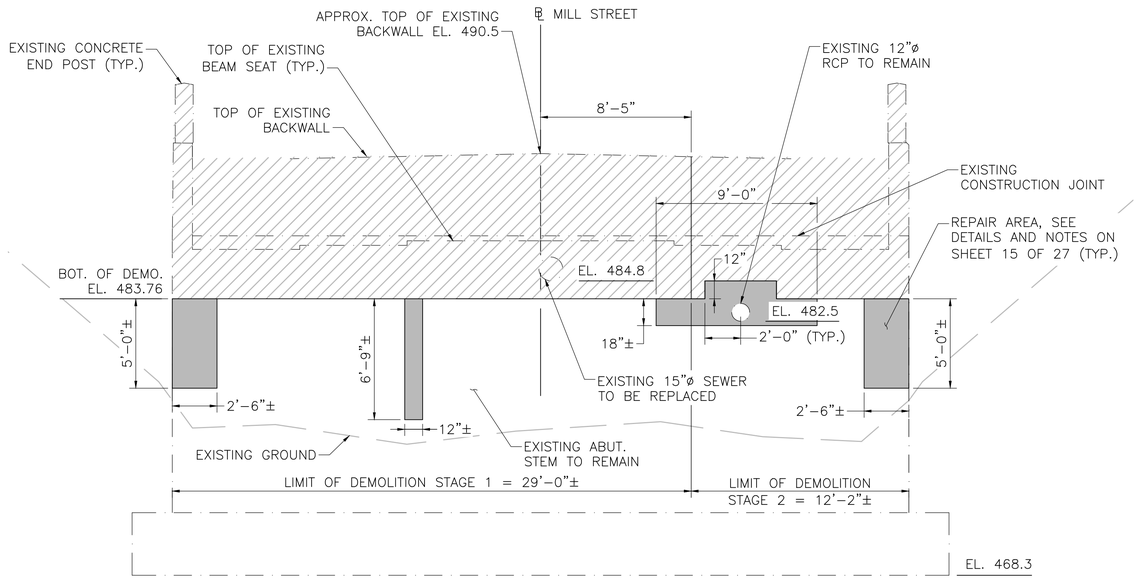
SCALE: $\frac{1}{4}$" = 1'–0"

DENOTES AREA OF DEMOLITION



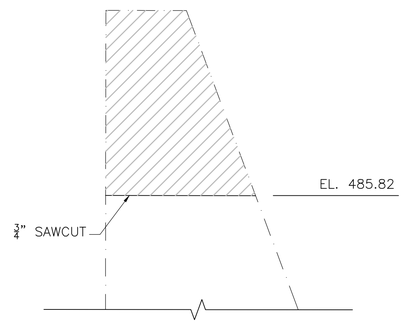
SECTION 3 / –

SCALE: $\frac{3}{4}$" = 1'–0"



EXISTING NORTH ABUTMENT DEMOLITION

SCALE: $\frac{1}{4}$" = 1'–0"



SECTION 4 / –

SCALE: $\frac{3}{4}$" = 1'–0"

SEPT. 5, 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

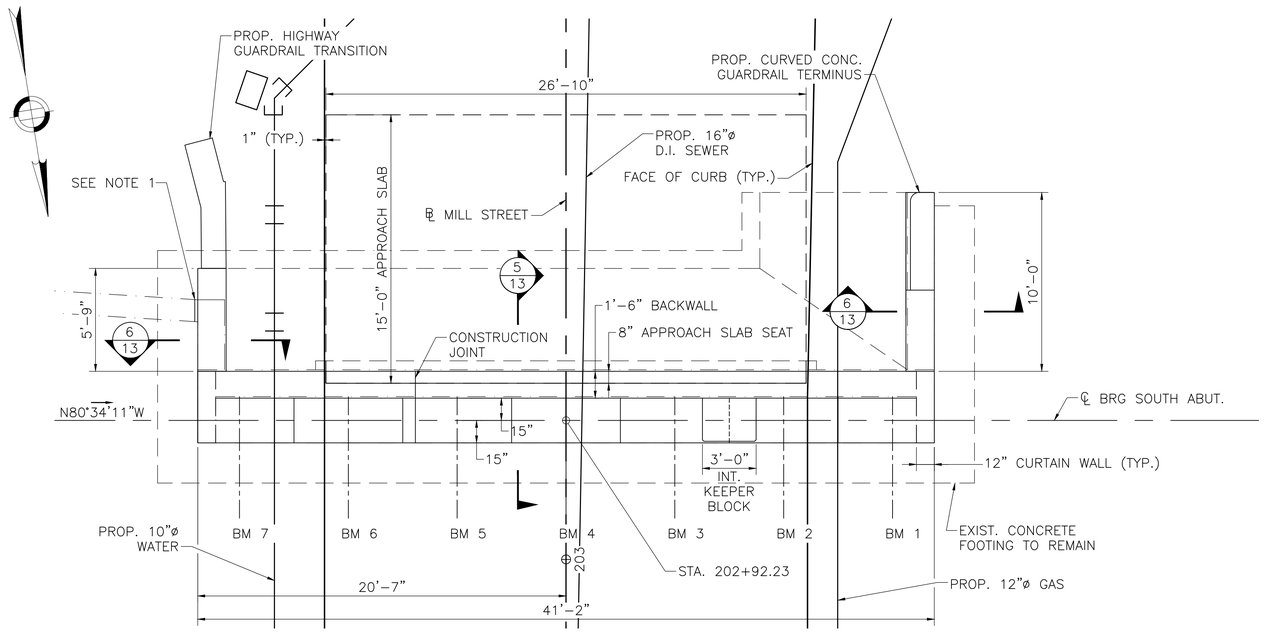
608862_BR(S21003)_ABUT_DEMO.DWG Plotted on 10-Aug-2026 1:35 PM

Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

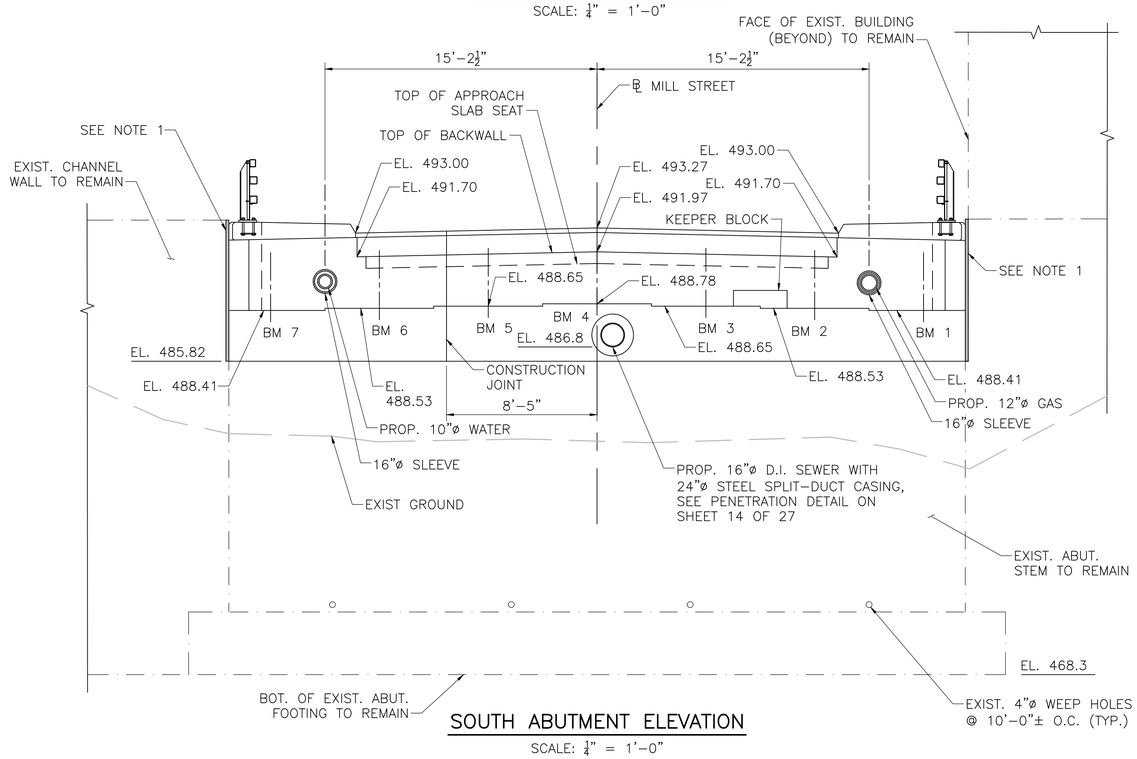
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	56	105
	PROJECT FILE NO. 608862		

SOUTH ABUTMENT PLAN AND ELEVATION



SOUTH ABUTMENT PLAN

SCALE: $\frac{1}{4}$" = 1'-0"



SOUTH ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$" = 1'-0"

NOTES:

1. PROVIDE MIN. 2" JOINT FILLER AT INTERFACE BETWEEN PROPOSED BACKWALL AT SOUTH ABUTMENT AND EXISTING BUILDING FOUNDATION AND AT INTERFACE BETWEEN PROPOSED WINGWALL AND EXISTING CHANNEL WALL.
2. SEE UTILITY SLEEVE DETAIL ON SHEET 14 OF 27.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

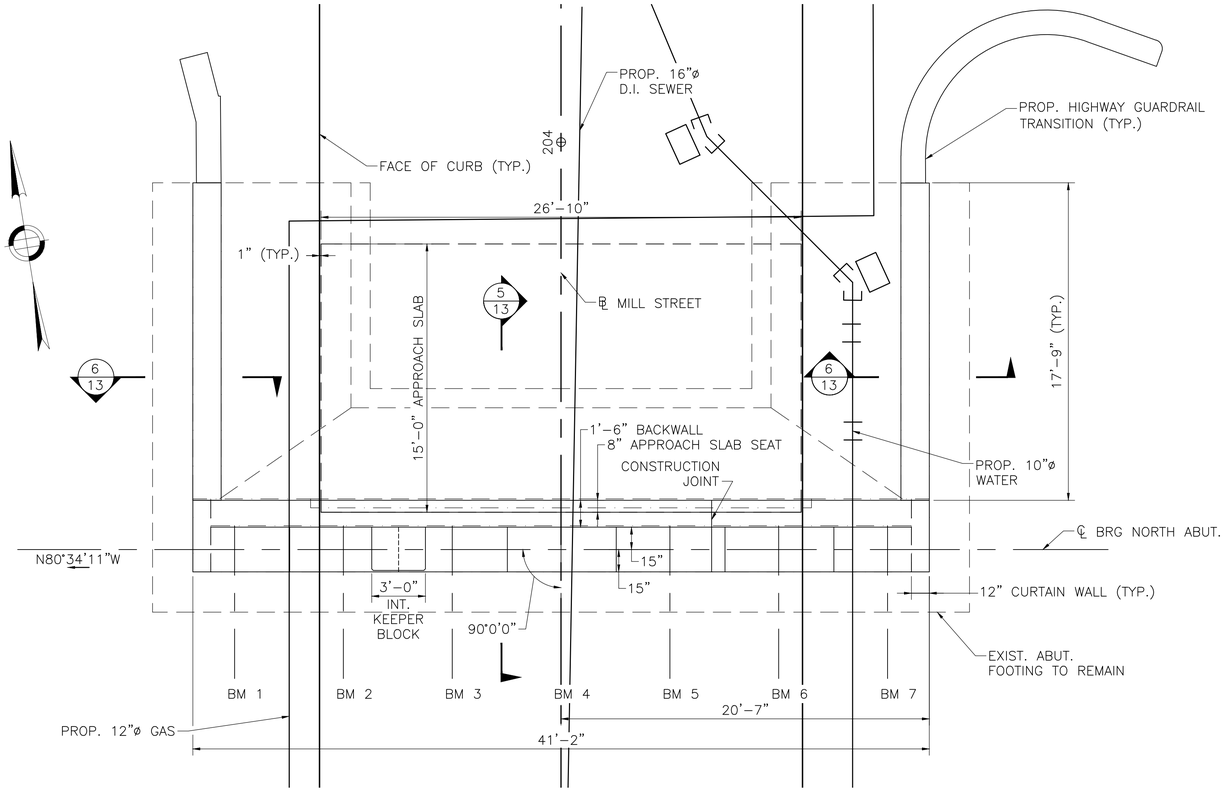
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21003)_ABUT.DWG Plotted on 10-Aug-2026 1:35 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

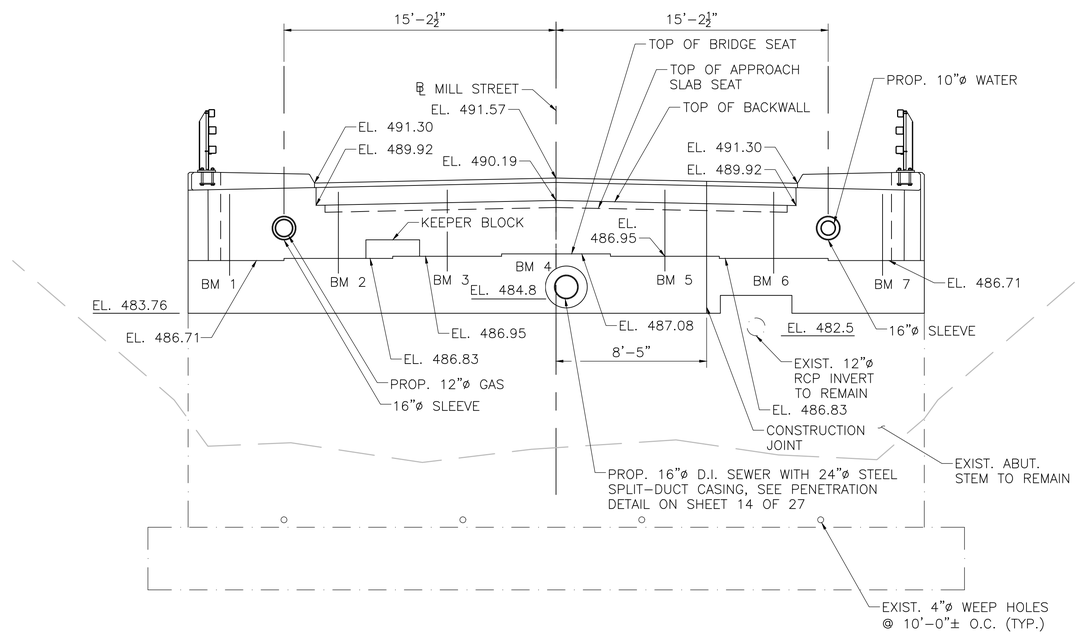
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	57	105
PROJECT FILE NO.	608862		

NORTH ABUTMENT PLAN AND ELEVATION



NORTH ABUTMENT PLAN

SCALE: $\frac{1}{4}$" = 1'–0"



NORTH ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"

NOTES:

1. SEE UTILITY SLEEVE DETAIL ON SHEET 14 OF 27.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

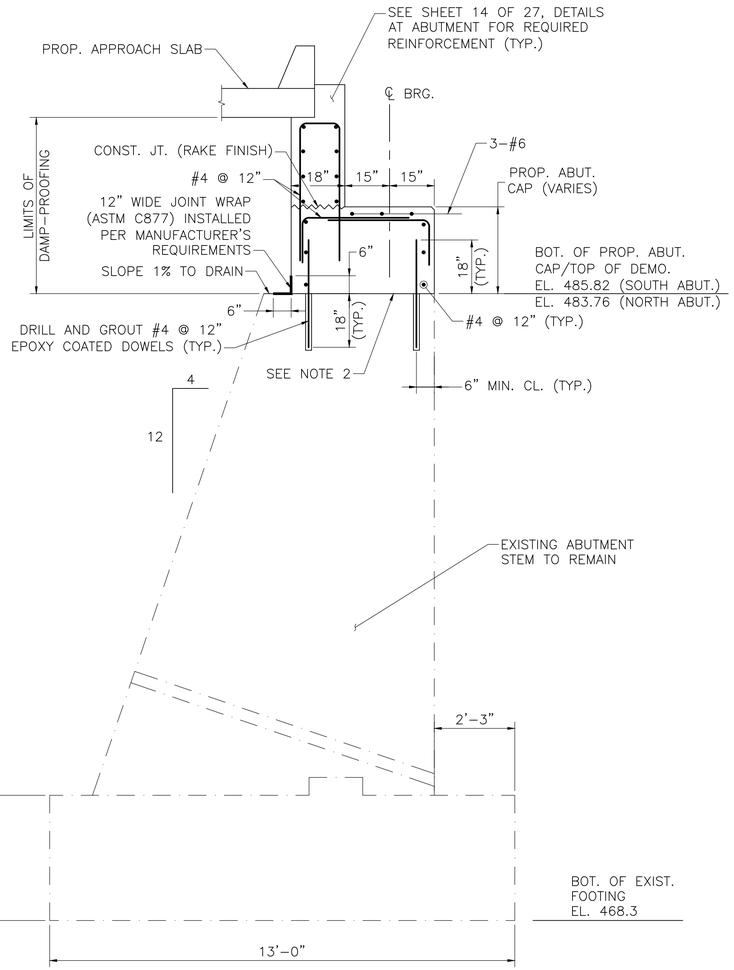
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21003)_ABUT.DWG Plotted on 10-Aug-2026 1:35 PM
Final Structural Submittal (SF) 22-January-2026

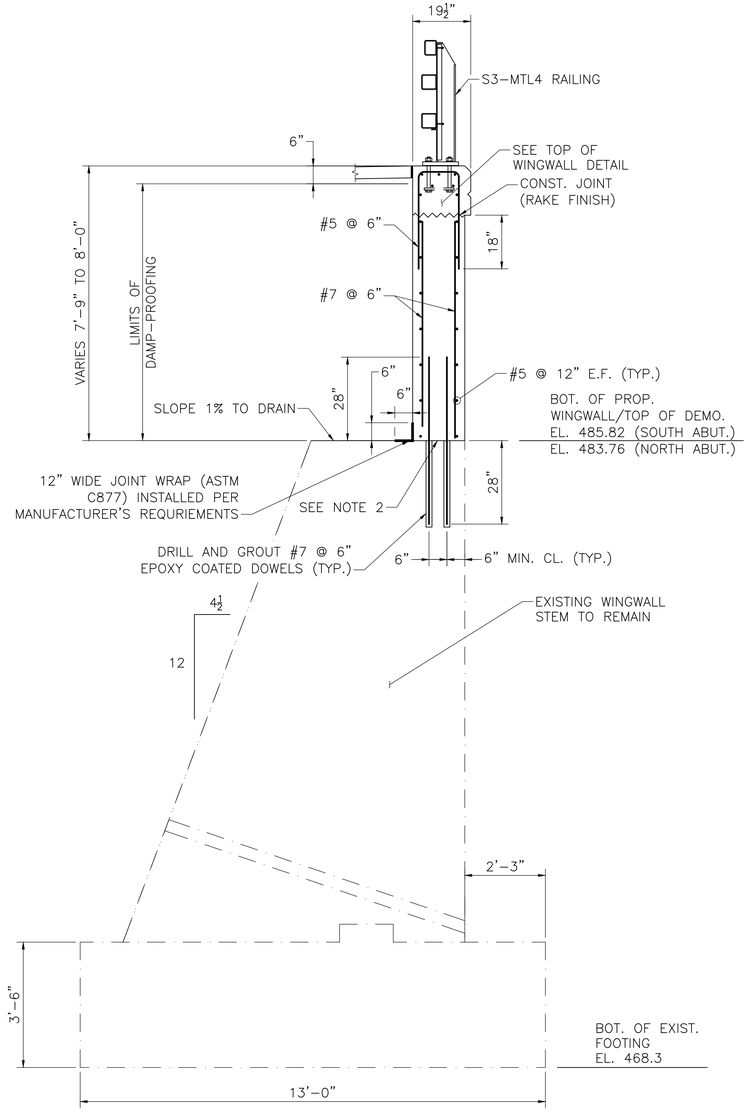
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	58	105
	PROJECT FILE NO. 608862		

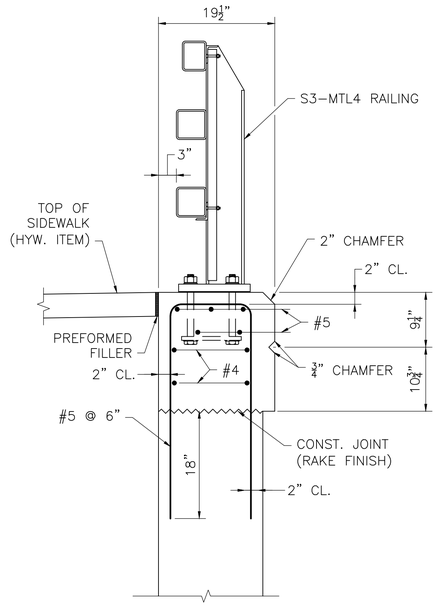
ABUTMENT SECTIONS



SECTION 5
SCALE: ½" = 1'–0"
11,12



SECTION 6
SCALE: ½" = 1'–0"
11,12



TOP OF WINGWALL DETAIL
SCALE: 1" = 1'–0"

NOTES:

1. ALL REINFORCEMENT SHALL BE EPOXY–COATED.
2. IMMEDIATELY BEFORE NEW CONCRETE IS CAST, THE PREVIOUSLY CAST CONCRETE SHALL BE CLEANED OF ALL DUST, DIRT AND CARBONATION USING A HIGH–PRESSURE WATER BLAST. THE SURFACES SHALL THEN BE WETTED NO MORE THAN 24 HOURS PRIOR TO THE PLACEMENT OF THE NEW CONCRETE, SO THAT THE SURFACES SHALL HAVE A SATURATED DRY (SSD) CONDITION.
3. SEE SHEET 14 OF 27 FOR APPROACH SLAB, BACKWALL AND BEAM SEAT DETAILS.

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

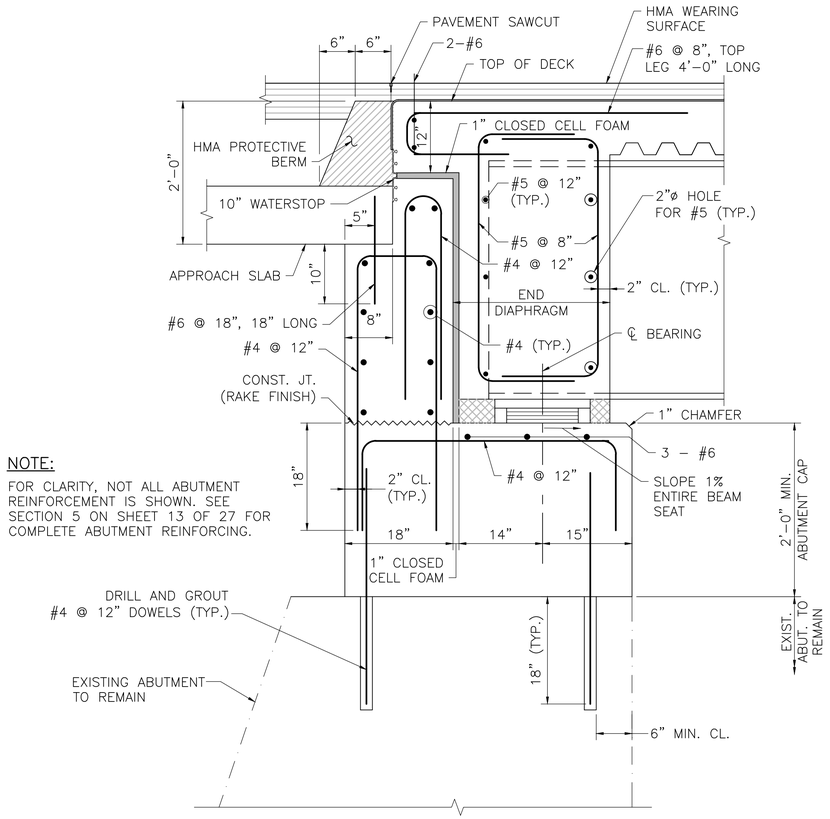
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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USE ONLY PRINTS OF LATEST DATE

608862_BR(S21003)_ABUT.DWG Plotted on 10-Aug-2026 1:36 PM
22-January-2026
Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	59	105
	PROJECT FILE NO. 608862		

ABUTMENT DETAILS (1 OF 2)



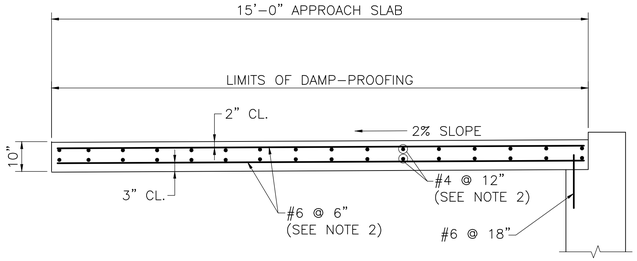
NOTE:

FOR CLARITY, NOT ALL ABUTMENT REINFORCEMENT IS SHOWN. SEE SECTION 5 ON SHEET 13 OF 27 FOR COMPLETE ABUTMENT REINFORCING.

NOTES:

1. IMMEDIATELY BEFORE NEW CONCRETE IS CAST, THE PREVIOUSLY CAST CONCRETE SHALL BE CLEANED OF ALL DUST, DIRT, AND CARBONATION USING A HIGH–PRESSURE WATER BLAST. THE SURFACES SHALL THEN BE WETTED NO MORE THAN 24 HOURS PRIOR TO THE PLACEMENT OF THE NEW CONCRETE, SO THAT THE SURFACES SHALL HAVE A SATURATED DRY (SSD) CONDITION.
2. ALL REINFORCEMENT SHALL BE COATED EXCEPT FOR THE APPROACH SLAB REINFORCEMENT.
3. BACKWALL CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE
4. TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
5. BACKWALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
6. THE END DIAPHRAGM CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE AND SHALL BE PLACED MONOLITHICALLY WITH THE DECK.
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 SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT ALL ABUTMENT CONCRETE IS PROPERLY LINED. END DIAPHRAGM CONCRETE MUST NOT COME IN DIRECT CONTACT WITH THE ABUTMENT CONCRETE.
8. DRAPE MEMBRANE WATERPROOFING OVER CLOSED CELL FOAM BACKER ROD.
9. PROTECTIVE COURSE 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.

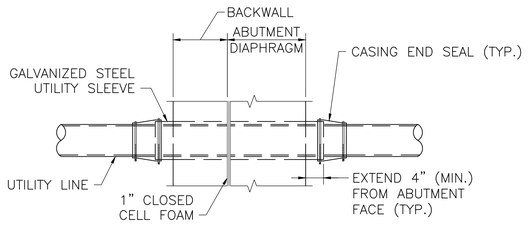
BACKWALL DETAIL
SCALE: 1" = 1'–0"



NOTES:

1. APPROACH SLAB TO BE 5000 PSI HP CEMENT CONCRETE.
2. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO ℄ CONSTRUCTION. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.

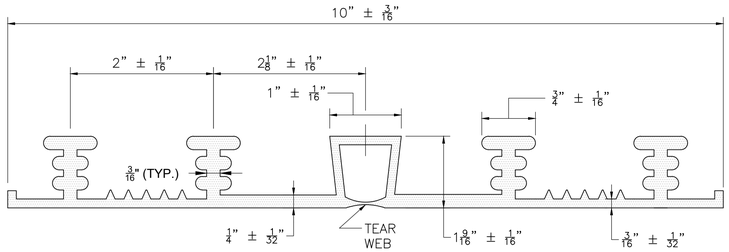
APPROACH SLAB DETAILS
SCALE: ½" = 1'–0"



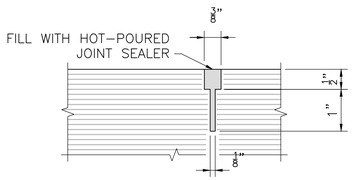
NOTES:

1. UTILITY SLEEVES SHALL BE STEEL PIPE CONFORMING TO ASTM A 53, TYPE S, GRADE B, STANDARD WEIGHT, PLAIN ENDS, HOT–DIP GALVANIZED AND SHALL BE SET IN THE FORMS PRIOR TO PLACING ABUTMENT CONCRETE.

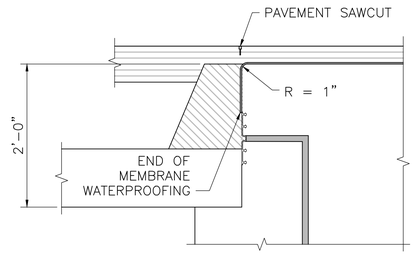
UTILITY DETAILS AT ABUTMENT
SCALE: ½" = 1'–0"



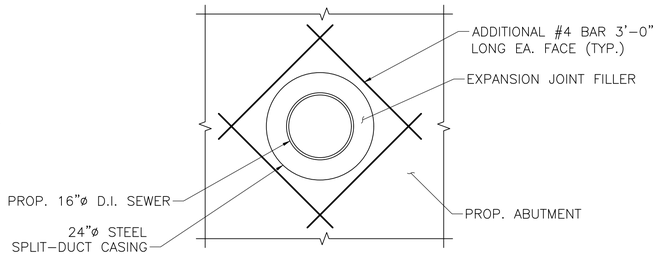
10" WATERSTOP
NOT TO SCALE



PAVEMENT SAWCUT DETAIL
NOT TO SCALE



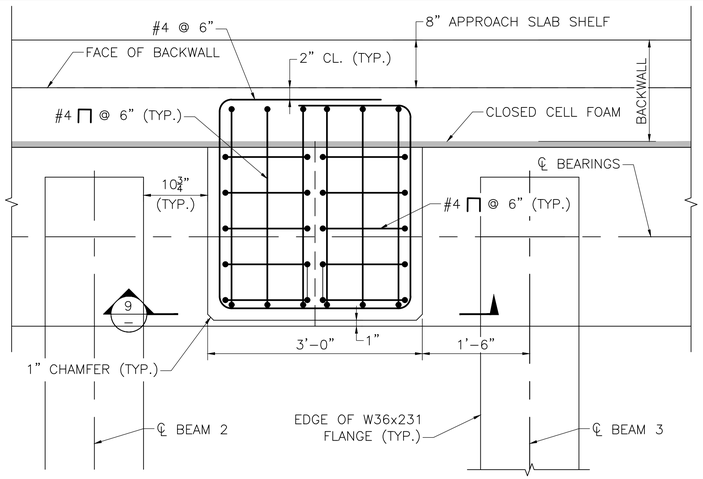
DETAILS AT ABUTMENT FOR DECK WITH HMA
SCALE: 1" = 1'–0"



SEWER PIPE PENETRATION DETAIL
SCALE: ¾" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
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USE ONLY PRINTS OF LATEST DATE	

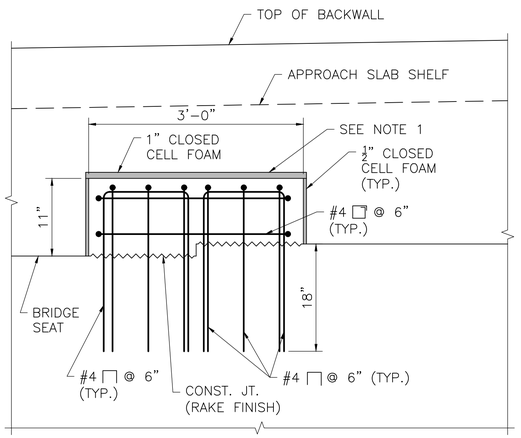
608862_BR(S21003)_ABUT_DETAILS.DWG Plotted on 10-Aug-2026 1:36 PM
Final Structural Submittal (SF) 22-January-2026



INTERMEDIATE KEEPER BLOCK

SCALE: 1" = 1'-0"

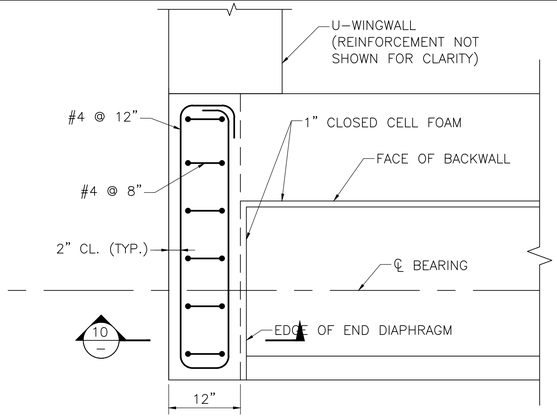
(NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR)



NOTES:

1. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
2. ABUTMENT REINFORCEMENT BELOW CONSTRUCTION JOINT HAS BEEN OMITTED FOR CLARITY.
3. BEAMS NOT SHOWN FOR CLARITY.

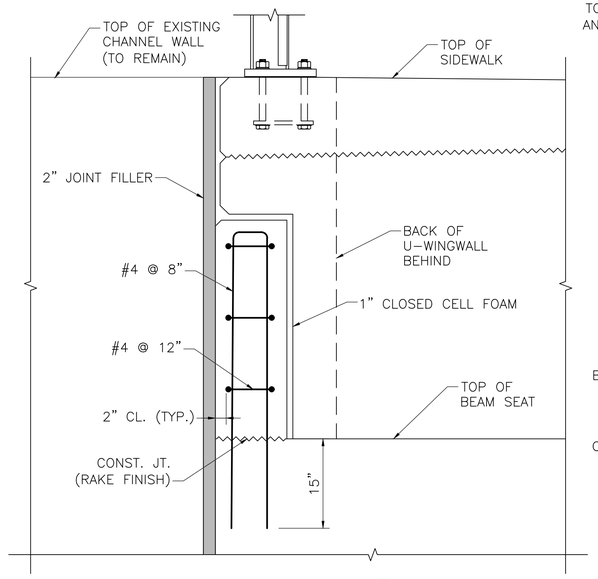
SECTION 9 — SCALE: 1" = 1'-0"



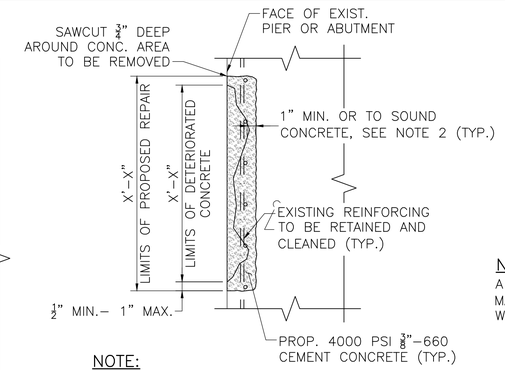
CURTAIN WALL DETAIL

SCALE: 1" = 1'-0"

(NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR)



SECTION 10 — SCALE: 1" = 1'-0"

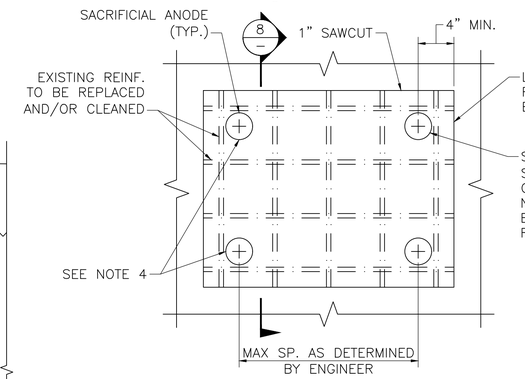


NOTE:

IF THERE IS LESS THAN 1½" CONCRETE COVER, THEN THE CONTRACTOR SHALL BUILD OUT THE FORM TO ENSURE A MINIMUM OF 1½" COVER.

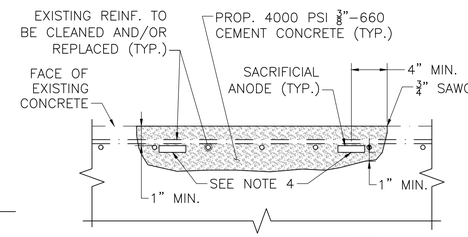
PARTIAL DEPTH REPAIR

SCALE: 1½" = 1'-0"



SACRIFICIAL ANODE INSTALLATION PLAN

SCALE: 1½" = 1'-0"



SECTION 8 — SCALE: 1½" = 1'-0"

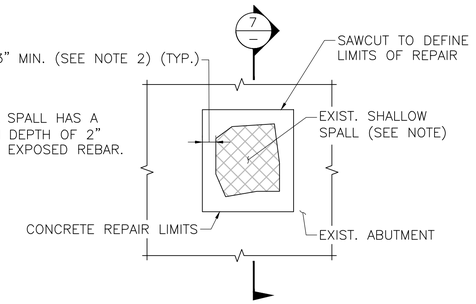
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	60	105
	PROJECT FILE NO. 608862		

ABUTMENT DETAILS (2 OF 2)

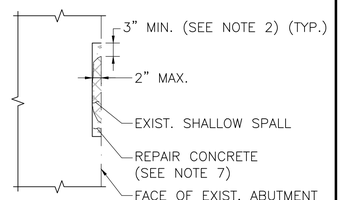
NOTE:

A SHALL SPALL HAS A MAXIMUM DEPTH OF 2" WITH NO EXPOSED REBAR.



SHALLOW SPALL REPAIR DETAIL

SCALE: ¾" = 1'-0"



SECTION 7 — SCALE: ¾" = 1'-0"

SACRIFICAL ANODE NOTES:

1. REMOVE CONCRETE ACCORDING TO DRAWINGS AND CONTRACT SPECIFICATIONS.
2. REPLACE, AND/OR CLEAN DAMAGED REINFORCING STEEL. ALL NEW REBAR SHALL BE UNCOATED BLACK STEEL WHEN SACRIFICIAL ANODES ARE USED.
3. ENSURE ALL EXPOSED REINFORCING STEEL IS SECURELY FASTENED TOGETHER WITH TIE WIRE TO PROVIDE ELECTRICAL CONTINUITY.
4. ATTACH SACRIFICAL ANODE TO CLEAN REINFORCING STEEL WITHIN THE REPAIR AREA AT SPACING DETERMINED BY ENGINEER AND ACCORDING TO MANUFACTURER'S SPECIFICATIONS. MINIMUM SPACING OF ¾" BETWEEN ANODES AND EXISTING CONCRETE, A MINIMUM OF 4" EDGE DISTANCE FROM ANY CORNER AND/OR EDGE OF EXCAVATION, AND A MINIMUM OF 1" CONCRETE COVER SHALL BE PROVIDED.
5. TEST THE ELECTRICAL CONTINUITY BETWEEN THE ANODE TIES AND THE REBAR AND BETWEEN THE REBARS ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
6. PLACE REPAIR CONCRETE ACCORDING TO DRAWINGS AND CONTRACT SPECIFICATIONS. WHEN SACRIFICIAL ANODES ARE USED, THE REPAIR MATERIAL USED SHALL BE NON-HP CONCRETE AND APPROVED BY THE ENGINEER.

CONCRETE REPAIR NOTES:

1. 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.
2. 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 CONCTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREAS. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS.
3. THE LIMITS OF THE REPAIRS SHALL BE SAWCUT ALONG NEAT LINES TO A DEPTH OF ¾" TO PRODUCE A CLEAN EDGE.
4. REMOVE DETERIORATED AND UNSOUND CONCRETE AS WELL AS SOUND CONCRETE WHERE NECESSARY TO A MINIMUM OF 1" BEYOND SURFACE REINFORCEMENT.
5. 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 OCCURED (THAT WHICH WOULD INHIBIT BONDING) SANDBLAST STEEL TO SSPC-SP5.
6. 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 ENSURE THAT THE SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
7. 4000 PSI ⅜" 660 – CEMENT CONCRETE SHALL BE USED TO PERFORM THE REPAIRS.
8. 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.
9. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES.
10. 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.
11. UPON COMPLETION OF CONCRETE REPAIRS, APPLY ELASTOMERIC PROTECTIVE COATING TO FACE OF ABUTMENTS.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

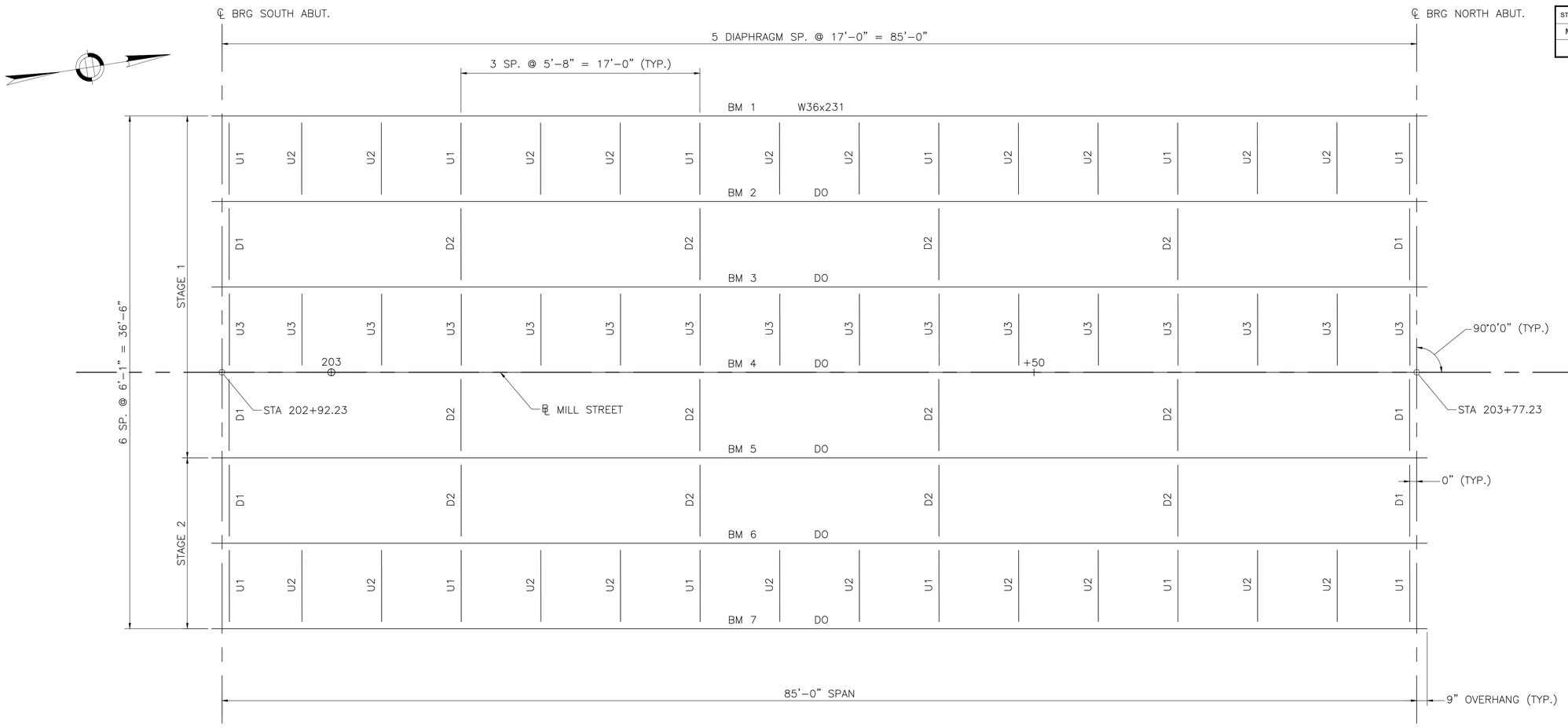
USE ONLY PRINTS OF LATEST DATE

608862_BRI(S21003)_ABUT_DETAILS.DWG Plotted on 10-Aug-2026 1:36 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	61	105
PROJECT FILE NO. 608862			

FRAMING PLAN



FRAMING PLAN
SCALE: $\frac{1}{4}$" = 1'–0"

NOTES:
1. D1 = TYPICAL END DIAPHRAGM
   D2 = TYPICAL INTERMEDIATE DIAPHRAGM
   U1 = TYPICAL UTILITY SUPPORT AT DIAPHRAGM
   U2 = TYPICAL UTILITY SUPPORT BETWEEN DIAPHRAGMS
   U3 = SUPPORT FOR 16" ø SEWER
2. SEE SHEET 18 OF 27 FOR DIAPHRAGM DETAILS.
3. THE MAIN LOAD CARRYING MEMBERS ARE BM1 THROUGH BM7 (W36x231).
4. ALL DIAPHRAGMS, DIAPHRAGM CONNECTION PLATES, 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 $\frac{7}{8}$" DIAMETER CONFORMING TO THE REQUIREMENTS OF ASTM F3125 GRADE A325 TYPE 1 GALVANIZED UNLESS OTHERWISE NOTED.
7. NUTS AND WASHERS SHALL BE LISTED AS SUITABLE IN THE ASTM F3125 SPECIFICATION FOR GRADE A325.
8. ALL WELDING AND THE PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING SHALL CONFORM TO THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE BRIDGE WELDING CODE (ANSI/AASHTO AWS D1.5) AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO.
9. ALL DIAPHRAGMS SHALL BE DETAILED AND FABRICATED TO THE TOTAL DEAD LOAD FIT (TDLF) CONDITION.
10. ALL DIAPHRAGM BOLTED CONNECTIONS HAVE BEEN DESIGNED FOR A CLASS C SURFACE CONDITION WITH A MINIMUM COEFFICIENT OF FRICTION OF 0.3.
11. THE BEAMS SHALL BE FABRICATED SO THAT THE ENDS OF THE BEAMS ARE PLUMB UNDER FULL DEAD LOAD.
12. BEAMS SHALL BE METALLIZED AND DIAPHRAGMS SHALL BE HOT–DIP GALVANIZED.

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

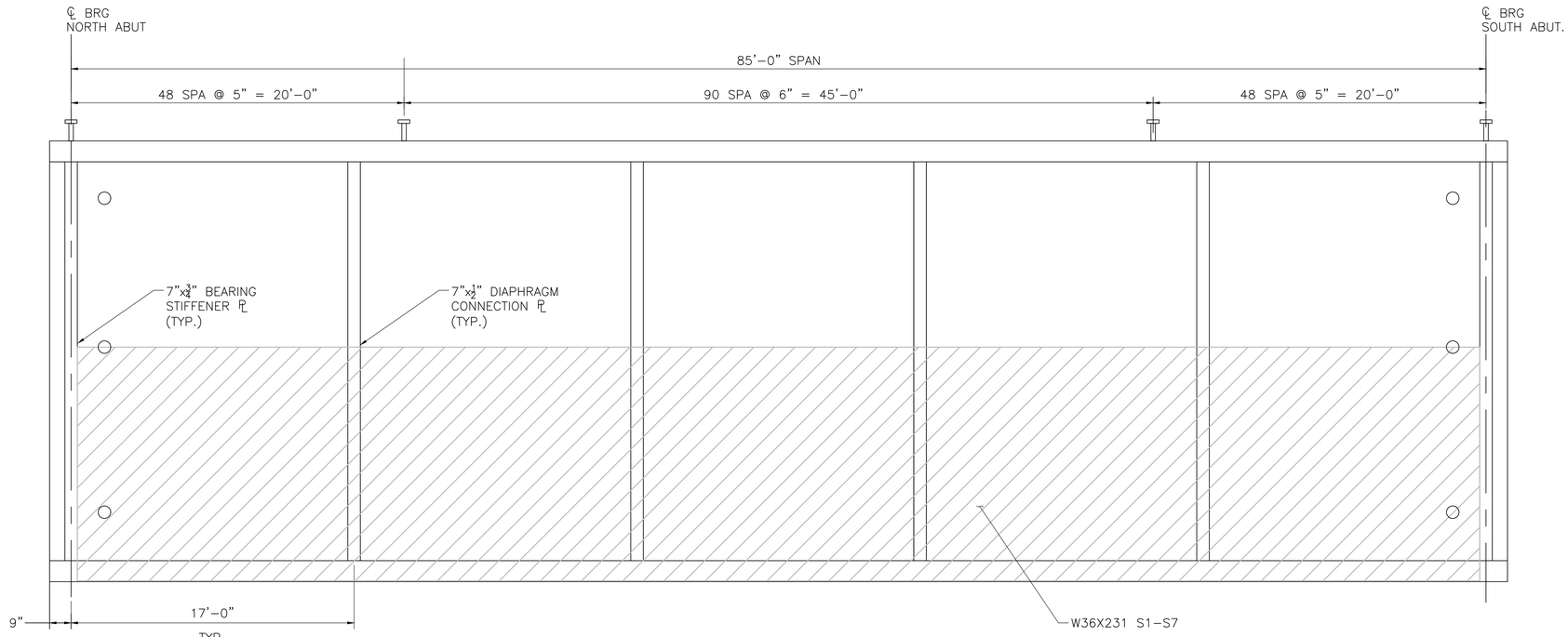
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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608862_BR(S21003)_FRAMING.DWG Plotted on 10-Aug-2026 1:37 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	62	105
PROJECT FILE NO.	608862		

GIRDER DETAILS



TYPICAL GIRDER ELEVATION
NOT TO SCALE

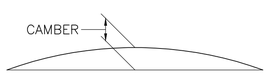
NOTES:

1. ALL BEARING STIFFENERS SHALL BE PLUMB.
2. ENDS OF BEAMS SHALL BE FABRICATED SO THAT UNDER FULL DEAD LOAD THE ENDS WILL BE PLUMB.
3. CAMBER IS MEASURED FROM THE REFERENCE LINE THAT RUNS BETWEEN CENTERLINES OF BEARINGS.
4. ALL VALUES OF CAMBER DISPLAYED IN INCHES.
5. SEE SHEET 18 OF 27 FOR CLIP DETAIL AND DIAPHRAGM DETAILS.

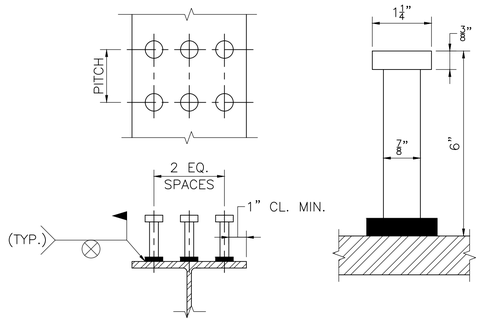
DENOTES LOCATION OF NET TENSILE STRESS UNDER STRENGTH I

BEAM CAMBER TABLE

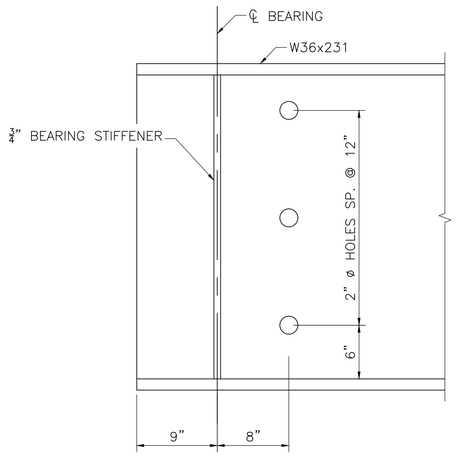
BM. NO.		℄ BRG. S. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG. N. ABUT.
(EXT.) S1, S7	STEEL DL DEFLECTION	0	0.21	0.39	0.54	0.63	0.66	0.63	0.54	0.39	0.21	0
	CONC. DL DEFLECTION	0	1.04	1.97	2.70	3.16	3.31	3.16	2.70	1.97	1.04	0
	S.D.L. DEFLECTION	0	0.18	0.34	0.46	0.54	0.57	0.54	0.46	0.34	0.18	0
	VERT. CURVE CAMBER	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
	ADDITIONAL CAMBER	0	0.38	0.68	0.89	1.02	1.06	1.02	0.89	0.68	0.38	0
	TOTAL CAMBER	0	1.81	3.38	4.59	5.35	5.61	5.35	4.59	3.38	1.81	0
(TYP. INT.) S3–S5	STEEL DL DEFLECTION	0	0.25	0.48	0.65	0.77	0.80	0.77	0.65	0.48	0.25	0
	CONC. DL DEFLECTION	0	1.03	1.94	2.65	3.11	3.26	3.11	2.65	1.94	1.03	0
	S.D.L. DEFLECTION	0	0.17	0.33	0.45	0.52	0.55	0.52	0.45	0.33	0.17	0
	VERT. CURVE CAMBER	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
	ADDITIONAL CAMBER	0	0.38	0.68	0.89	1.02	1.06	1.02	0.89	0.68	0.38	0
	TOTAL CAMBER	0	1.84	3.42	4.65	5.41	5.68	5.41	4.65	3.42	1.84	0
(1ST INT.) S2, S6	STEEL DL DEFLECTION	0	0.21	0.41	0.56	0.65	0.68	0.65	0.56	0.41	0.21	0
	CONC. DL DEFLECTION	0	1.03	1.94	2.65	3.11	3.26	3.11	2.65	1.94	1.03	0
	S.D.L. DEFLECTION	0	0.18	0.33	0.45	0.53	0.56	0.53	0.45	0.33	0.18	0
	VERT. CURVE CAMBER	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
	ADDITIONAL CAMBER	0	0.38	0.68	0.89	1.02	1.05	1.02	0.89	0.68	0.38	0
	TOTAL CAMBER	0	1.80	3.36	4.56	5.31	5.56	5.31	4.56	3.36	1.80	0



GIRDER CAMBER DIAGRAM



STUD SHEAR CONNECTORS
NOT TO SCALE



GIRDER END DETAIL
NOT TO SCALE

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

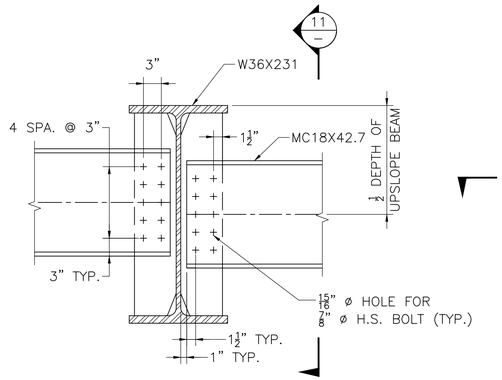
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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608862_BR(S21003)_GIRDER.DWG Plotted on 10-Aug-2026 1:37 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

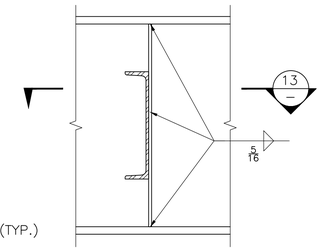
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	63	105
	PROJECT FILE NO. 608862		

DIAPHRAGM DETAILS



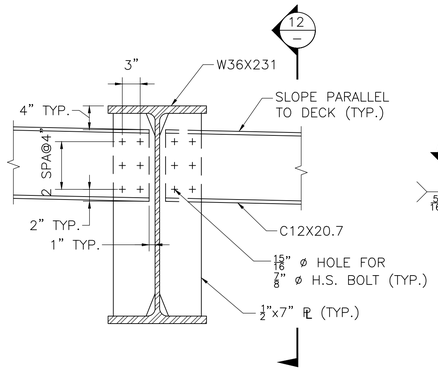
D2 INTERMEDIATE DIAPHRAGM DETAIL

SCALE: 1" = 1'-0"



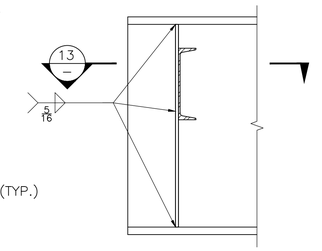
SECTION 11

SCALE: 1" = 1'-0"



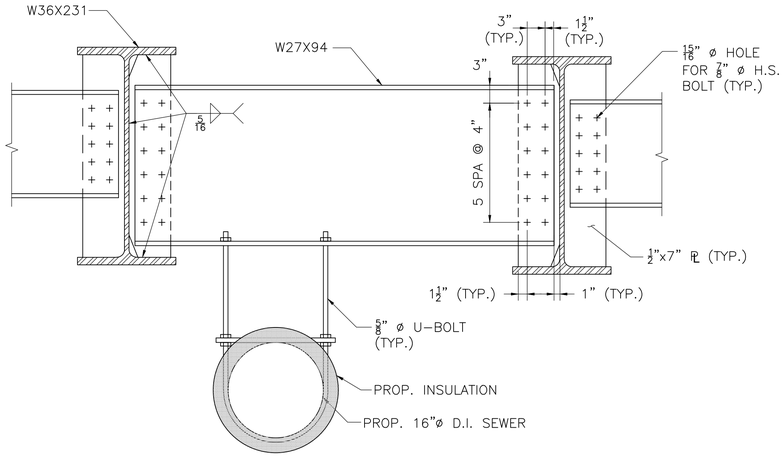
D1 END DIAPHRAGM DETAIL

SCALE: 1" = 1'-0"



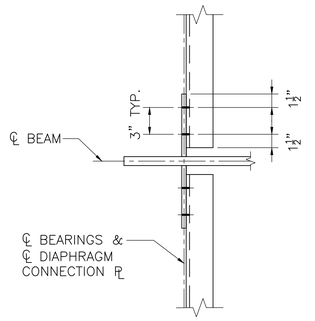
SECTION 12

SCALE: 1" = 1'-0"



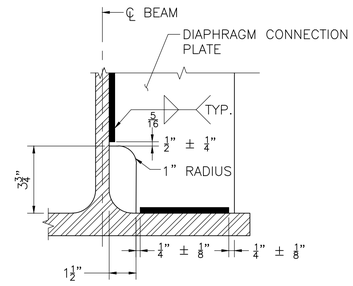
U3 SUPPORT DETAIL FOR 16"ø SEWER @ DIAPHRAGM

SCALE: 1" = 1'-0"



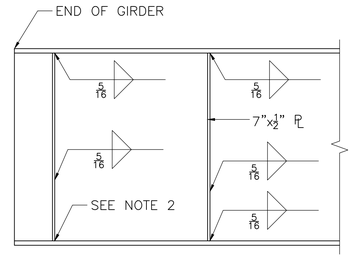
SECTION 13

SCALE: 1½" = 1'-0"



CLIP DETAIL

SCALE: 3" = 1'-0"



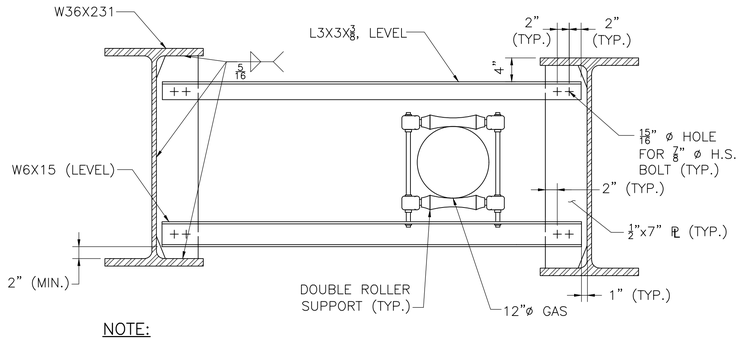
END BEARING *DIAPHRAGM CONNECTION*

NOTES:

1. SEE CLIP DETAIL THIS SHEET.
2. BEARING STIFFENER PLATE SHALL BE MILLED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF PLATE.
3. SEE GIRDER ELEVATION SHEETS FOR BEARING STIFFENER SIZES AT EACH BEARING LOCATION.

STIFFENER ATTACHMENT DETAILS

NOT TO SCALE

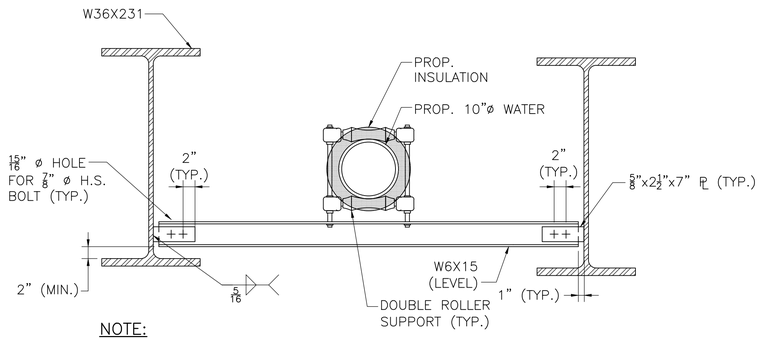


NOTE:

12"ø GAS SHOWN. 10"ø WATER SIMILAR.

U1 UTILITY SUPPORT DETAILS DIAPHRAGMS UNDER SIDEWALK

SCALE: 1" = 1'-0"



NOTE:

10"ø WATER SHOWN. 12"ø GAS SIMILAR.

U2 UTILITY SUPPORT DETAILS BETWEEN DIAPHRAGMS

SCALE: 1" = 1'-0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

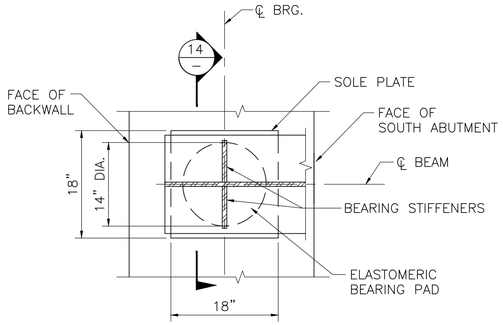
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608862_BR(S21003)_XFRAMES.DWG Plotted on 10-Aug-2026 1:37 PM
Final Structural Submittal (SF) 22-January-2026

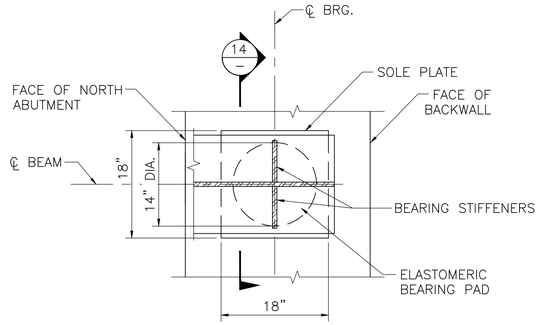
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	64	105
	PROJECT FILE NO. 608862		

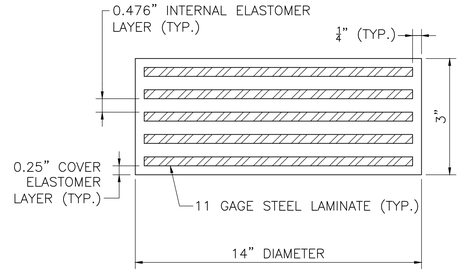
BEARING DETAILS



PLAN @ SOUTH ABUTMENT
SCALE: 1" = 1'–0"



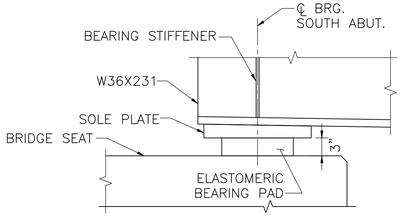
PLAN @ NORTH ABUTMENT
SCALE: 1" = 1'–0"



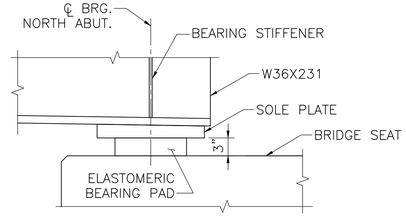
NOTE:

THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 140 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 1.24 KSI.

ELASTOMERIC BEARING PAD AT ABUTMENT
NOT TO SCALE



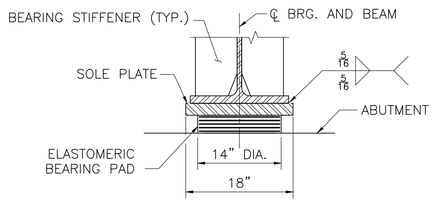
ELEVATION @ SOUTH ABUTMENT
SCALE: 1" = 1'–0"



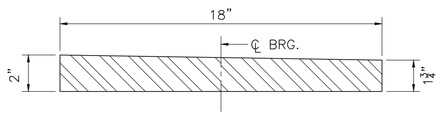
ELEVATION @ NORTH ABUTMENT
SCALE: 1" = 1'–0"

BEARING NOTES:

1. THIS BEARING IS DESIGNED USING AASHTO METHOD A.
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 203 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 1.32 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 AND SHALL BE HOT–DIP GALVANIZED.
8. CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING BEAM ERECTION.
9. BEAMS 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.



SECTION 14/–
SCALE: 1" = 1'–0"



SOLE PLATE DETAIL
SCALE: 3" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

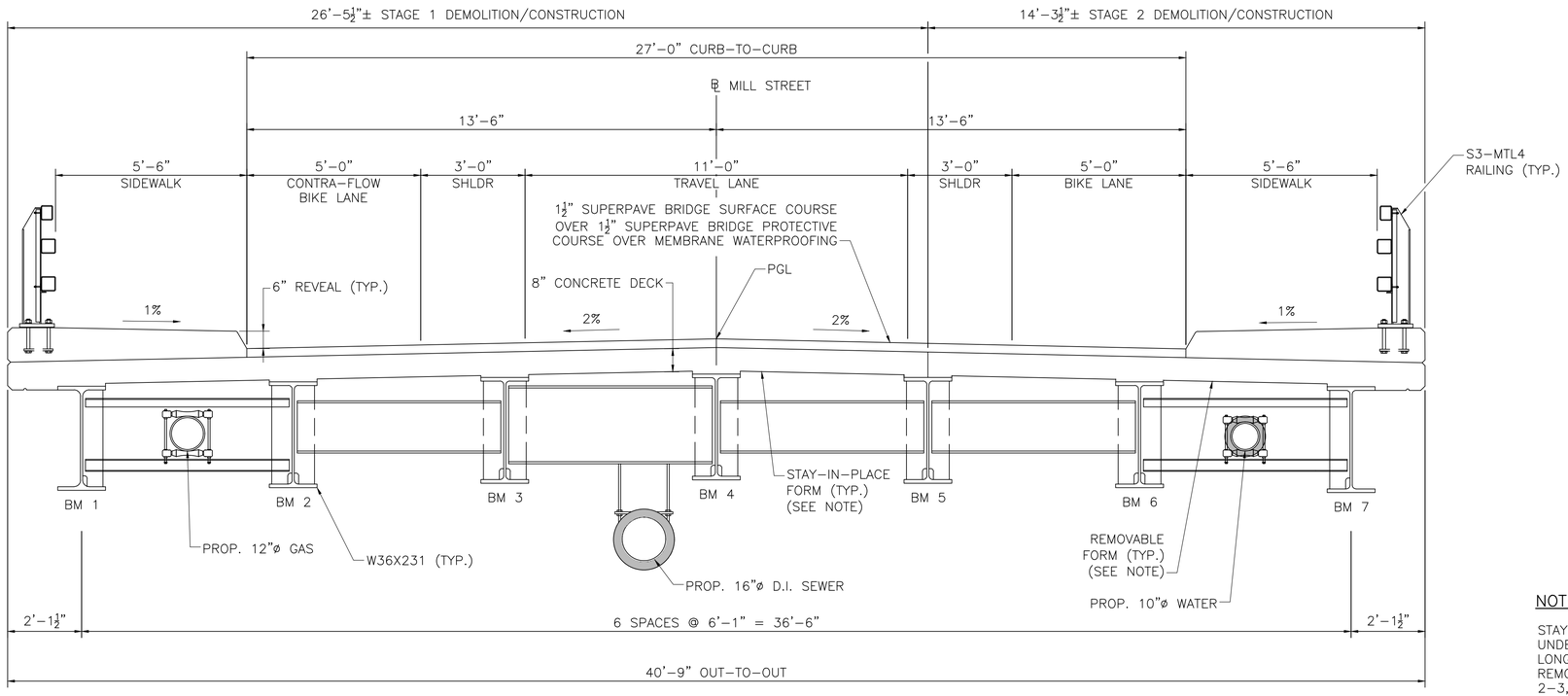
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21003)_BEARINGS.DWG Plotted on 10-Aug-2026 1:37 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	65	105
PROJECT FILE NO.	608862		

TYPICAL SECTION



TYPICAL SECTION
SCALE: ½" = 1'–0"

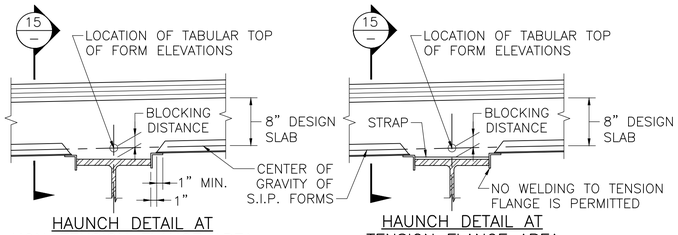
NOTE:

STAY–IN–PLACE FORMS ARE PROHIBITED FROM BAYS DIRECTLY UNDER THE CURB OR BARRIER LINES AND IN BAYS WHERE LONGITUDINAL STAGE CONSTRUCTION JOINTS ARE LOCATED. REMOVABLE FORMS SHALL BE USED IN BAYS BETWEEN BM 1–2, BM 2–3, AND BM 6–7.

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

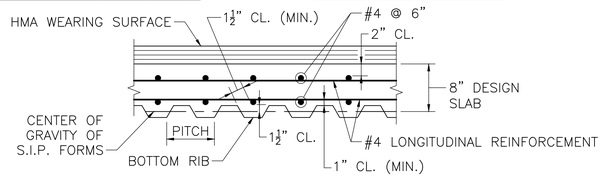
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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608862_BR(S21003)_TYP.DWG Plotted on 10-Aug-2026 1:38 PM
Final Structural Submittal (SF) 22-January-2026



HAUNCH DETAIL AT NON–TENSION FLANGE AREA

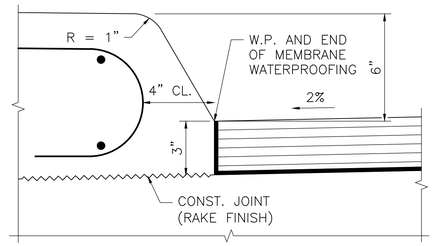
HAUNCH DETAIL AT TENSION FLANGE AREA



SECTION 15 –

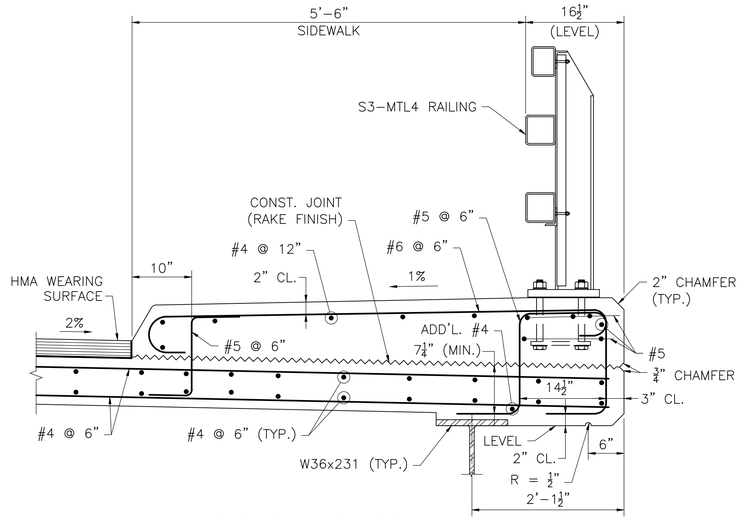
STAY–IN–PLACE FORM DETAILS

NOT TO SCALE



FACE OF SIDEWALK CURB DETAILS

SCALE: 3" = 1'–0"



SECTION THRU SIDEWALK

SCALE: 1" = 1'–0"

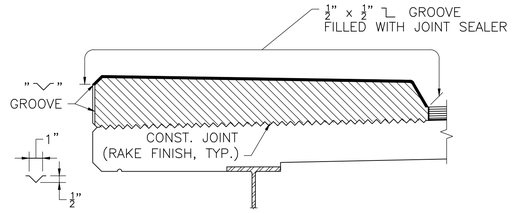
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	66	105
PROJECT FILE NO.	608862		

DECK DETAILS

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 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 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.

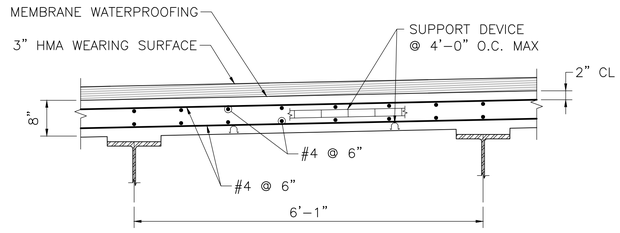


NOTES:

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"



NOTES:

1. LONGITUDINAL REINFORCEMENT SHALL BE PLACE PARALLEL TO THE ℄ OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCITON
2. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.

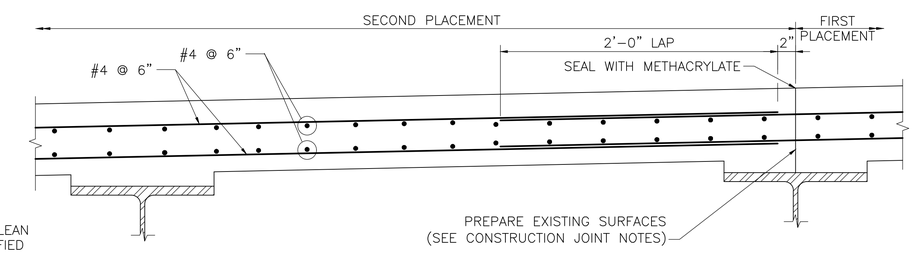
TYPICAL DECK REINFORCEMENT

SCALE: ¾" = 1'–0"

BEAM NO.	TOP OF FORM ELEVATIONS FOR DECK SLAB PRIOR TO PLACEMENT OF CONCRETE										
	INCREASING STATION										
	CL BRG. SOUTH ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	CL BRG. NORTH ABUT.
S1	491.98	491.92	491.84	491.74	491.61	491.46	491.27	491.06	490.82	490.56	490.28
S2	492.11	492.04	491.95	491.85	491.73	491.57	491.39	491.17	490.93	490.68	490.41
S3	492.23	492.16	492.08	491.98	491.85	491.69	491.51	491.30	491.06	490.80	490.53
S4	492.35	492.28	492.20	492.10	491.97	491.82	491.63	491.42	491.18	490.92	490.65
S5	492.47	492.40	492.32	492.22	492.09	491.94	491.75	491.54	491.30	491.04	490.77
S6	492.59	492.52	492.44	492.34	492.21	492.06	491.87	491.66	491.42	491.16	490.89
S7	491.71	492.65	492.57	492.47	492.34	492.19	492.00	491.79	491.55	491.29	491.01

CONSTRUCTION JOINT NOTES:

1. 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.
2. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDEN 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.
3. THE CONTRACTOR MAY SUBMIT A PROPOSAL DETAILING THE ELMINATION OF THE CLOSURE POUR FOR THE APPROVAL OF THE ENGINEER. THE PROPOSAL SHALL DETAIL THE CONTRACTOR'S MEANS AND METHODS FOR ACCURATELY CONSTRUCTING THE DECK SLAB TO THE LINES, GRADES, AND THICKNESS SHOWN ON THE CONSTRUCTION DRAWINGS WITHOUT LEAKAGE OF CONCRETE.
4. DOWEL BAR SPLICERS SHALL BE USED WHERE USE OF LAP SPLICES IS NOT FEASIBLE.



LONGITUDINAL CONSTRUCTION JOINT DETAIL IN DECK SLAB

SCALE: 1½" = 1'–0"

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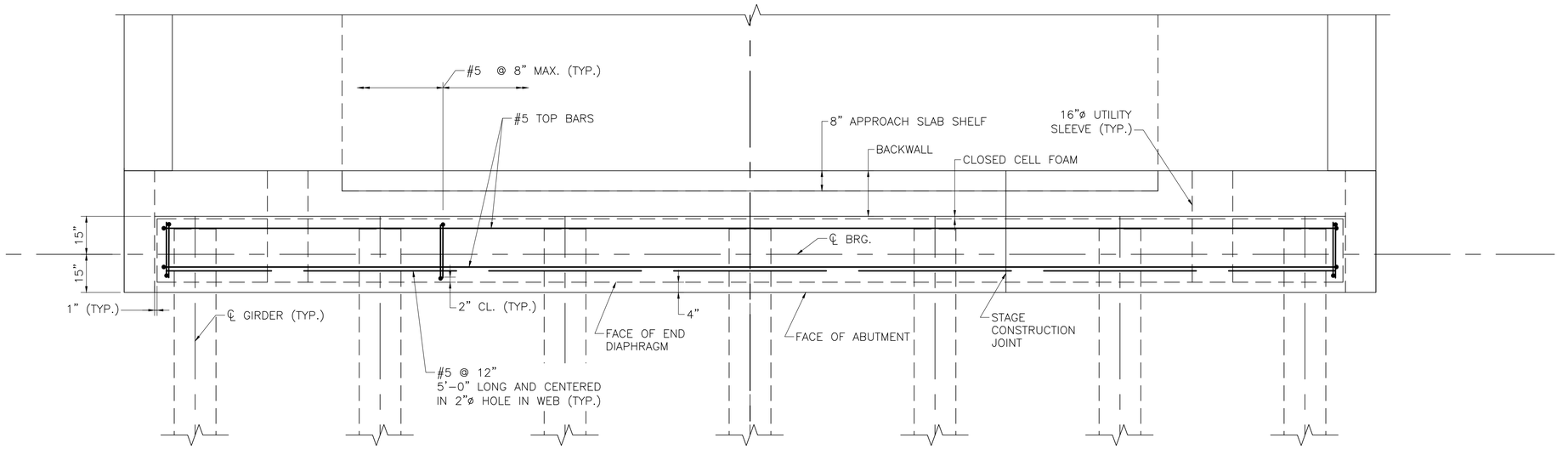
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608862_BR(S21003)_DECK.DWG Plotted on 10-Aug-2026 1:38 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

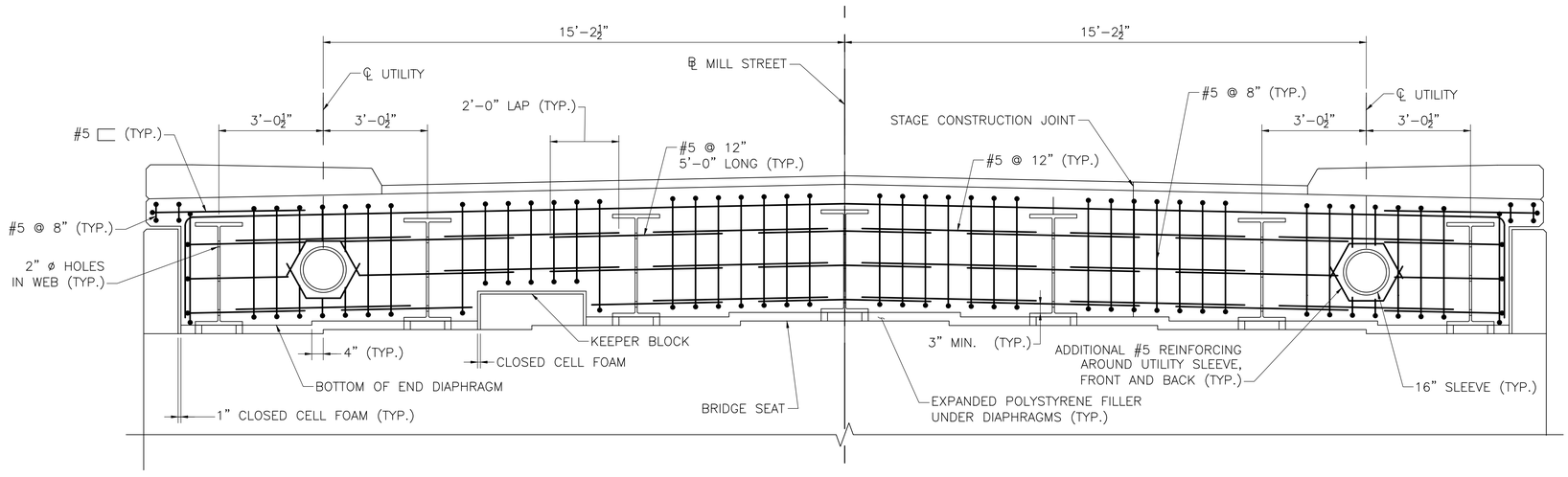
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	67	105
PROJECT FILE NO.	608862		

ABUTMENT END DIAPHRAGM



ABUTMENT END DIAPHRAGM PLAN

SCALE: $\frac{1}{2}$" = 1'-0"



END DIAPHRAGM DETAIL

SCALE: $\frac{1}{2}$" = 1'-0"

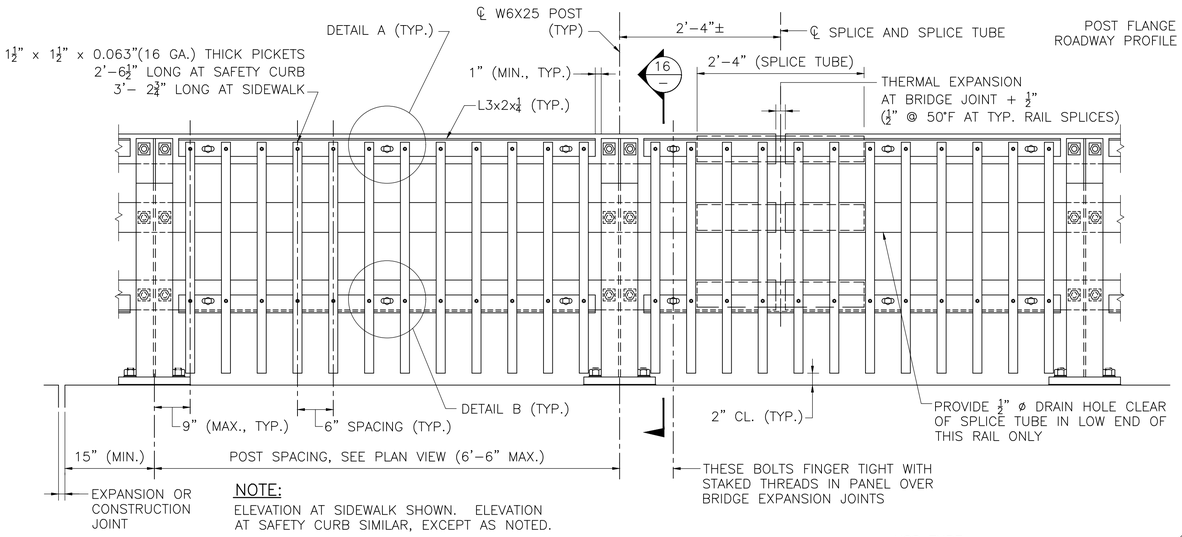
(NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR)

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
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USE ONLY PRINTS OF LATEST DATE

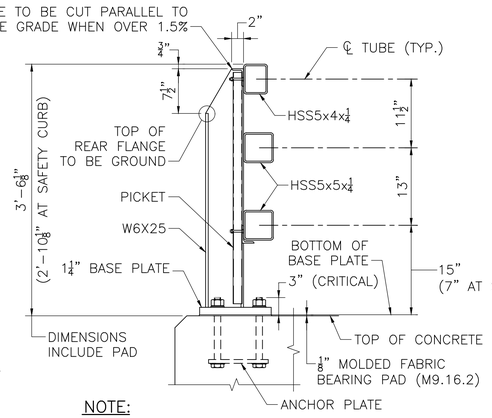
608862_BR(S21003)_END DIAPHRAGM.DWG Plotted on 10-Aug-2026 1:39 PM
Final Structural Submittal (SF) 22-January-2026



NOTE:
ELEVATION AT SIDEWALK SHOWN. ELEVATION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

BRIDGE RAILING ELEVATION

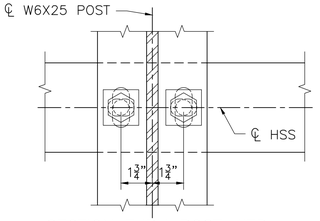
SCALE: 1" = 1'-0"



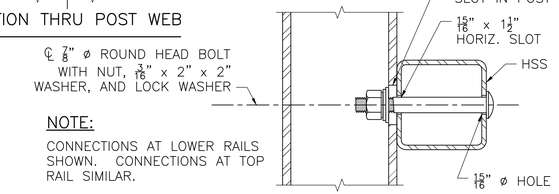
NOTE:
SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

SECTION 16 –

SCALE: 1" = 1'-0"



SECTION THRU POST WEB

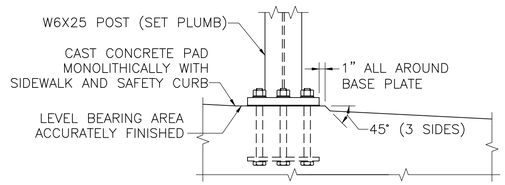


NOTE:
CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

SECTION THRU RAIL

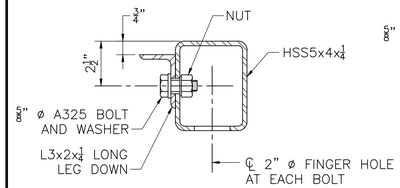
TYPICAL RAIL TO POST CONNECTIONS

SCALE: 3" = 1'-0"

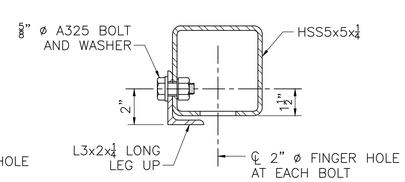


SETTING OF POSTS (PROFILE GRADE OVER 1.5%)

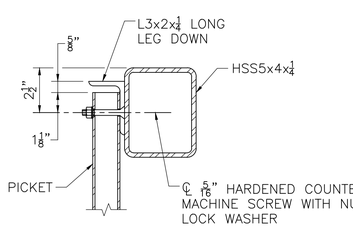
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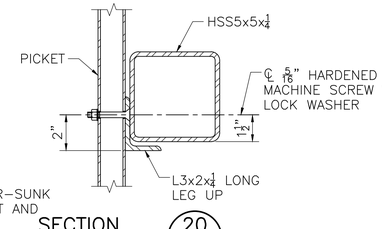
SECTION 17 –



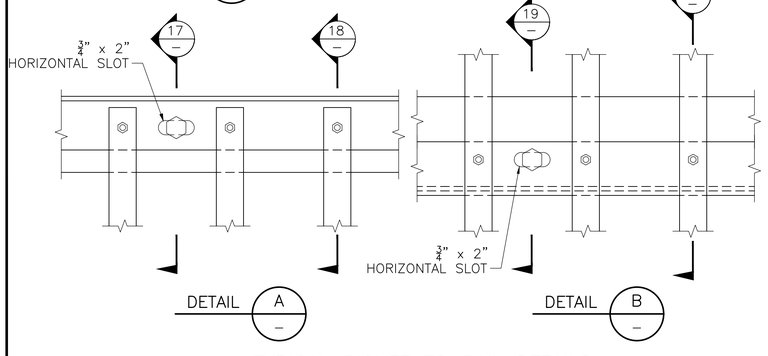
SECTION 19 –



SECTION 18 –



SECTION 20 –

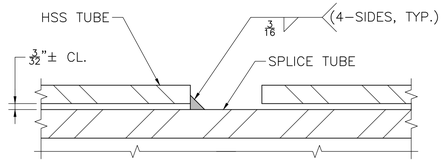


DETAIL A –

DETAIL B –

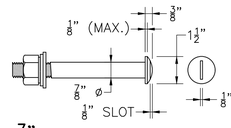
TYPICAL PICKET TO RAIL DETAILS

SCALE: 3" = 1'-0"



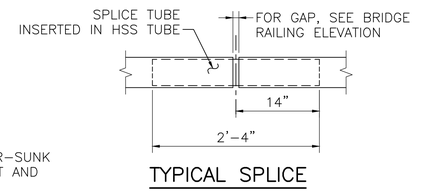
SPLICE DETAIL

SCALE: 1'-0" = 1'-0"



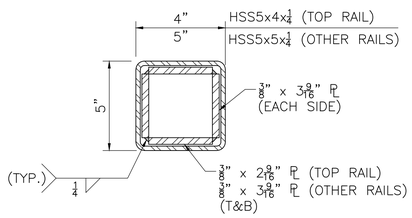
⅞" ø ROUND HEAD BOLT

SCALE: 3" = 1'-0"



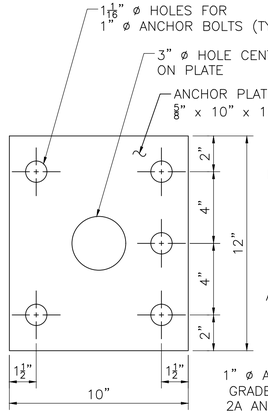
TYPICAL SPLICE

SCALE: 1'-0" = 1'-0"



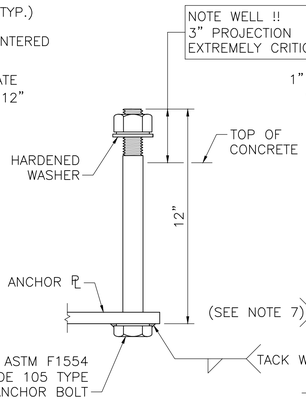
SPLICE TUBE DETAILS

SCALE: 3" = 1'-0"



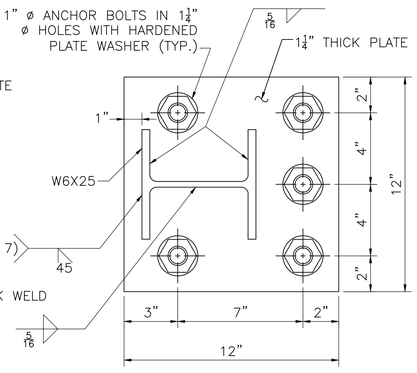
ANCHOR PLATE

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 BRIDGE 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 WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, 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.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	68	105
	PROJECT FILE NO. 608862		

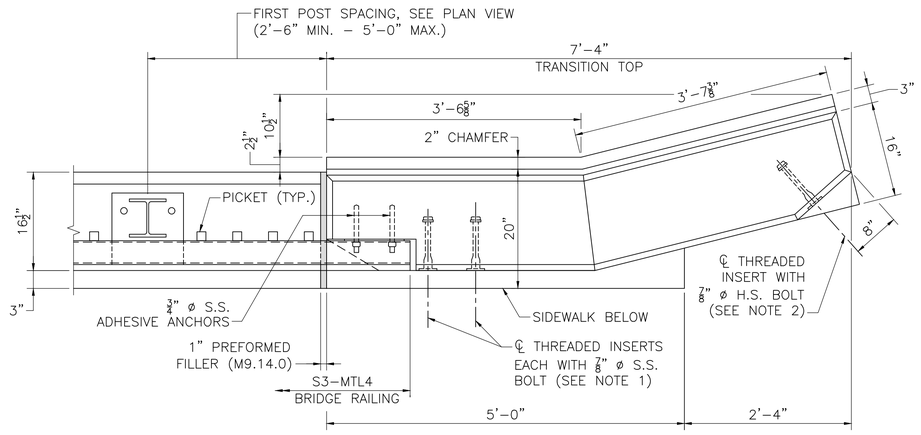
S3-MTL4 BRIDGE RAILING

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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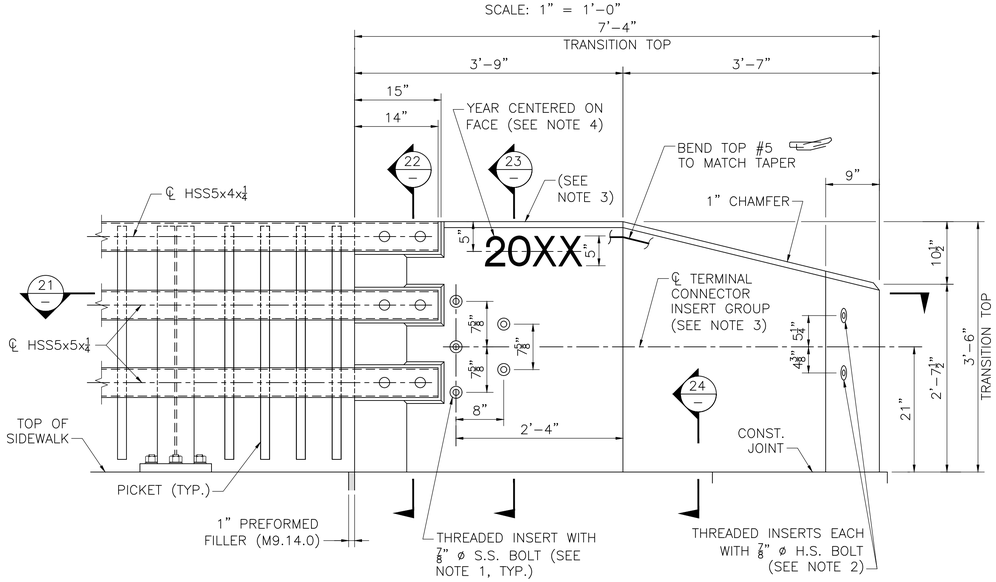
608862_BR20-21_RAILING.DWG Plotted on 10-Aug-2026 1:39 PM

Final Structural Submittal (SF) 22-January-2026



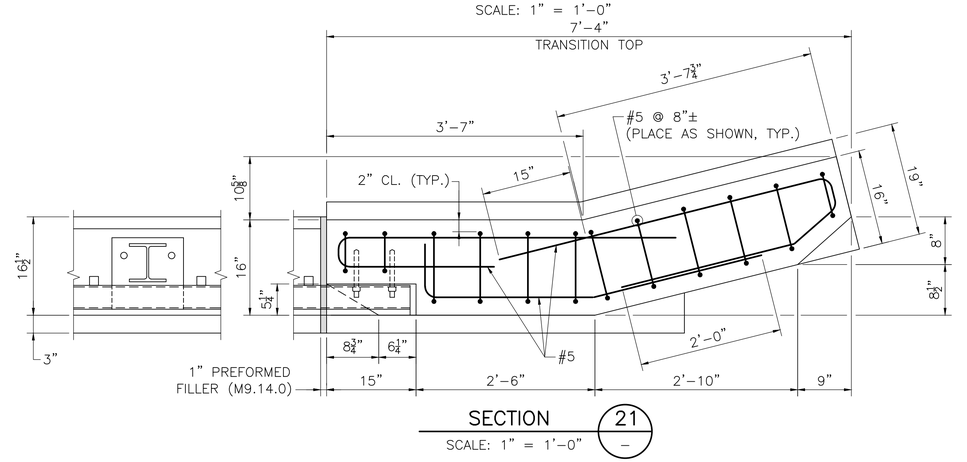
PLAN AT SIDEWALK

SCALE: 1" = 1'-0"



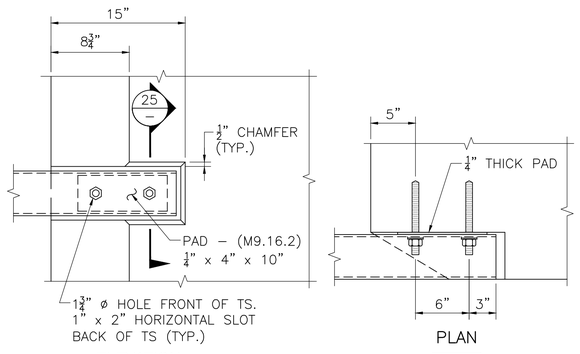
ELEVATION AT SIDEWALK

SCALE: 1" = 1'-0"



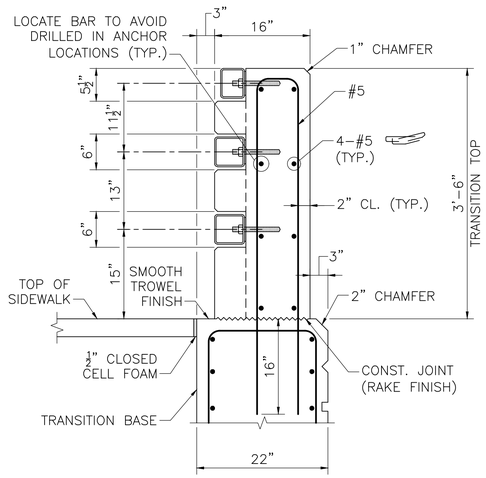
SECTION 21

SCALE: 1" = 1'-0"



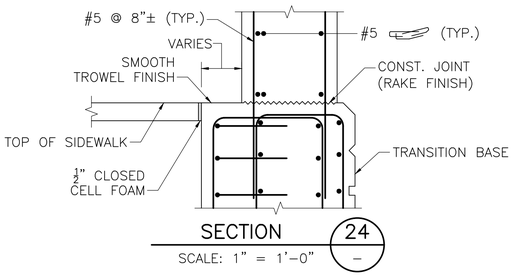
RAIL ATTACHMENT

SCALE: 1½" = 1'-0"



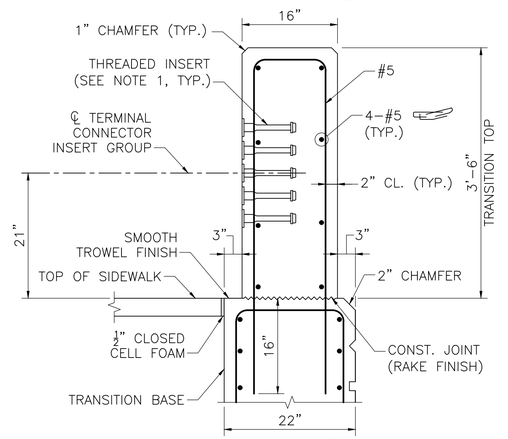
SECTION 22

SCALE: 1" = 1'-0"



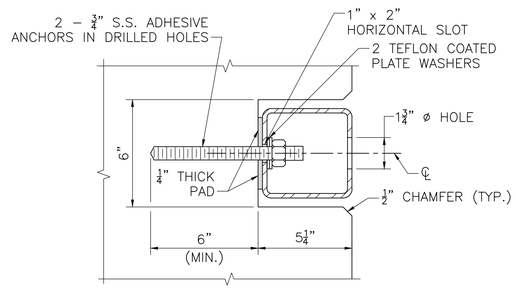
SECTION 24

SCALE: 1" = 1'-0"



SECTION 23

SCALE: 1" = 1'-0"



SECTION 25

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.
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.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	69	105
PROJECT FILE NO. 608862			

TRANSITION FOR S3-MTL4 RAILING

SEPT. 5, 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

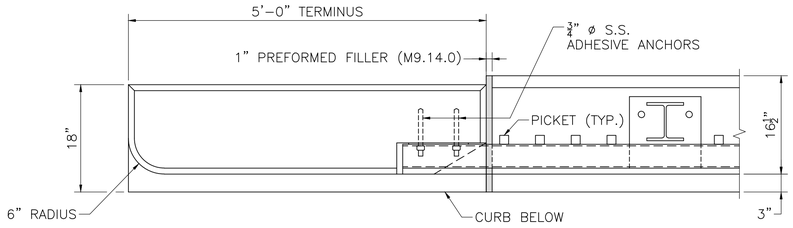
608862_BR20-21_RAILING.DWG Plotted on 10-Aug-2026 1:39 PM

Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

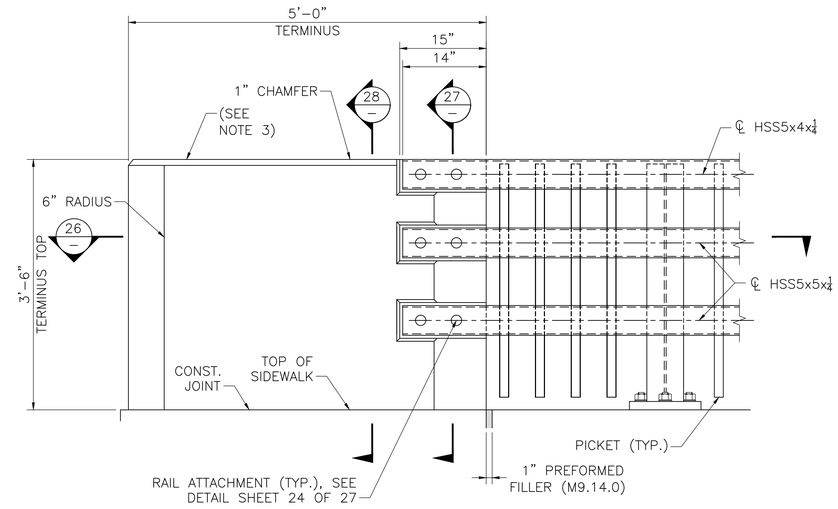
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	70	105
	PROJECT FILE NO. 608862		

TERMINUS AT SOUTHWEST CORNER



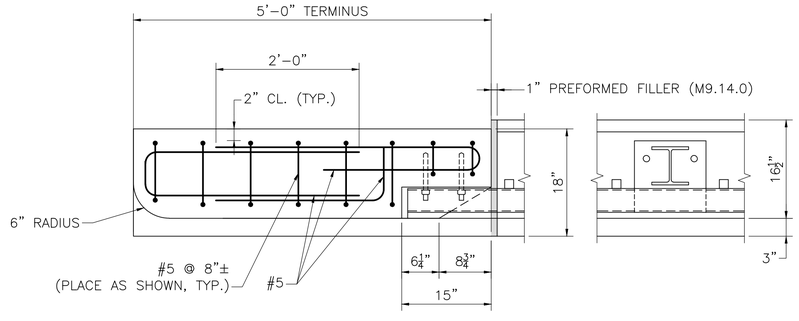
PLAN AT SOUTHWEST TERMINUS

SCALE: 1" = 1'–0"



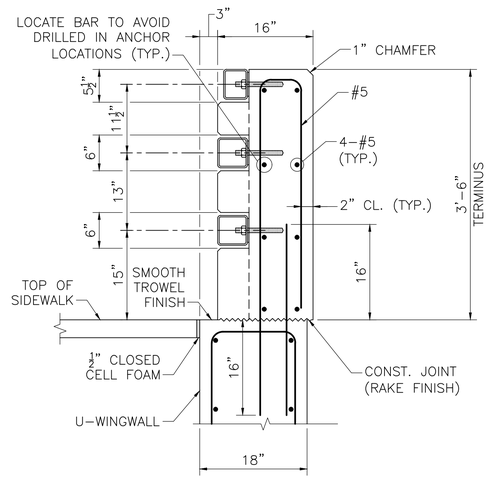
ELEVATION AT SOUTHWEST TERMINUS

SCALE: 1" = 1'–0"



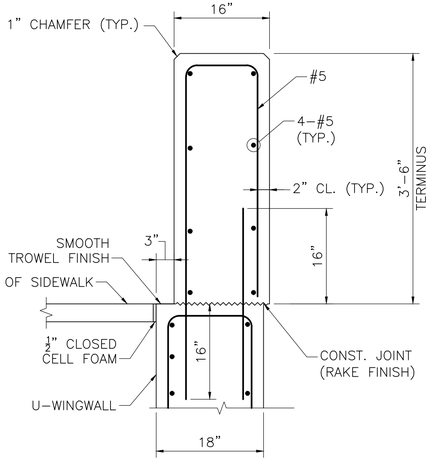
SECTION 26

SCALE: 1" = 1'–0"



SECTION 27

SCALE: 1" = 1'–0"



SECTION 28

SCALE: 1" = 1'–0"

SEPT. 5, 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	

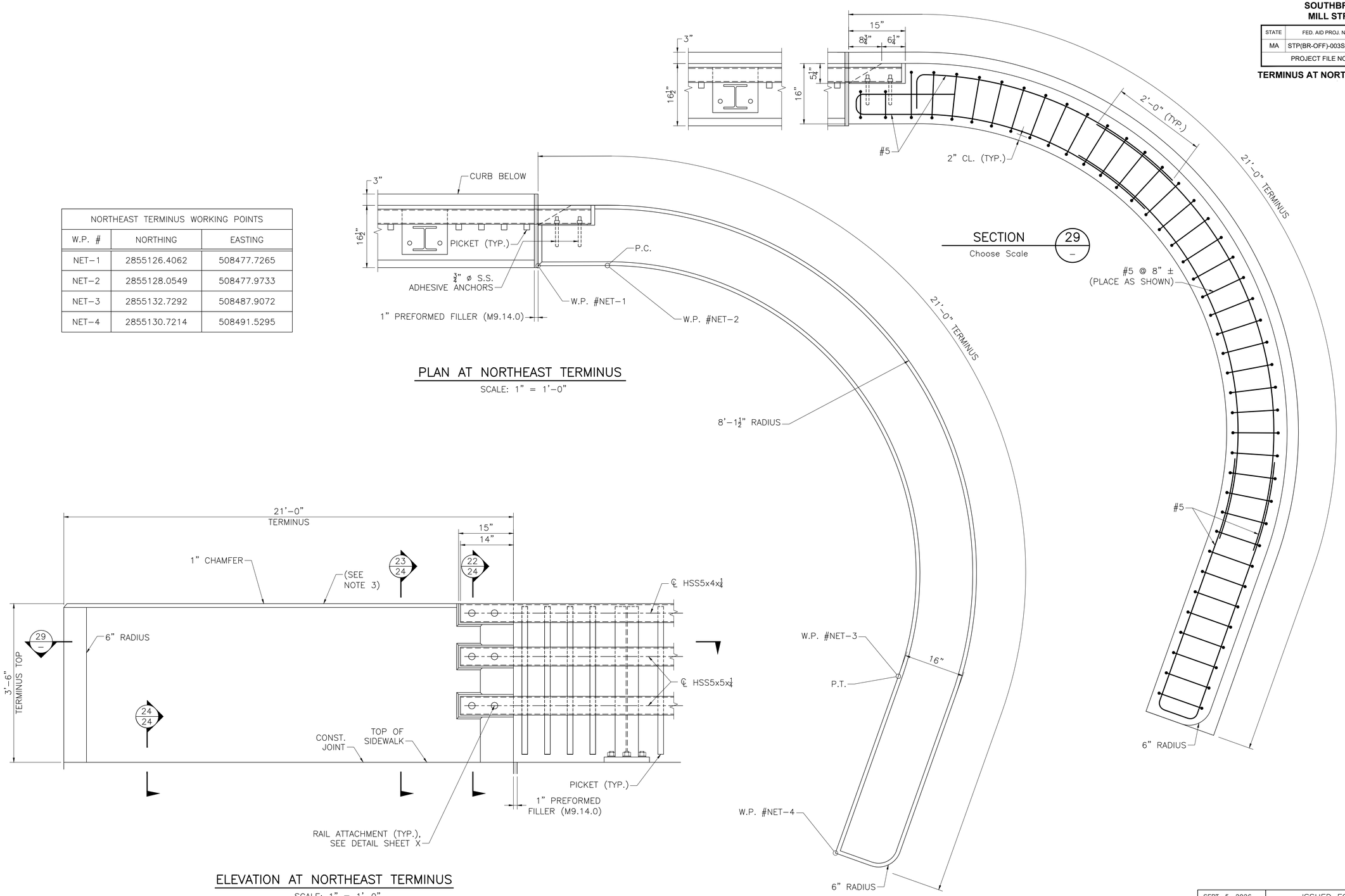
608862_BR20-21_RAILING.DWG Plotted on 10-Aug-2026 1:39 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	71	105
	PROJECT FILE NO. 608862		

TERMINUS AT NORTHEAST CORNER

NORTHEAST TERMINUS WORKING POINTS		
W.P. #	NORTHING	EASTING
NET–1	2855126.4062	508477.7265
NET–2	2855128.0549	508477.9733
NET–3	2855132.7292	508487.9072
NET–4	2855130.7214	508491.5295



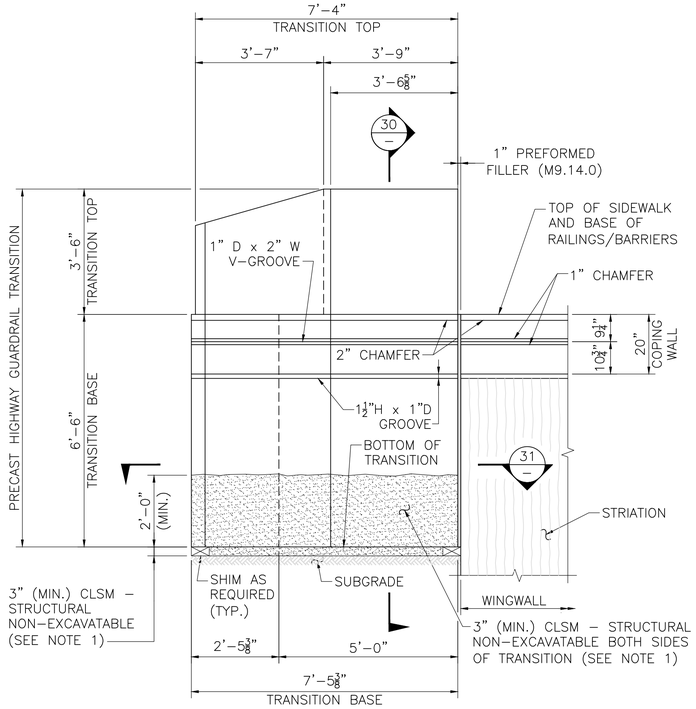
PLAN AT NORTHEAST TERMINUS
SCALE: 1" = 1'–0"

ELEVATION AT NORTHEAST TERMINUS
SCALE: 1" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

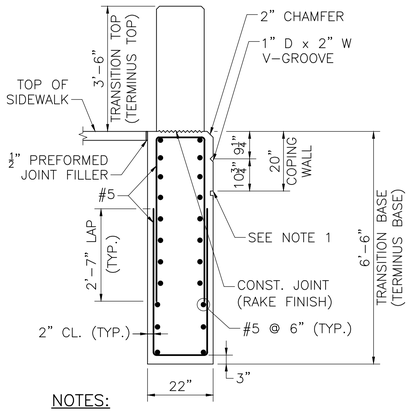
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

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22-January-2026 Final Structural Submittal (SF)



PRECAST GUARDRAIL TRANSITION ELEVATION AT U–WINGWALL

SCALE: ½" = 1'–0"



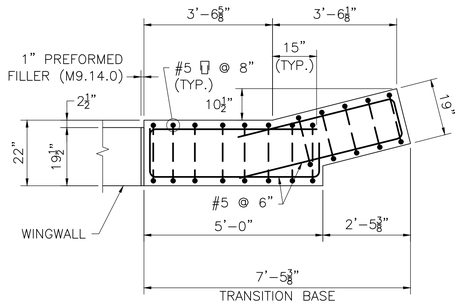
NOTES:

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 30 – SCALE: ½" = 1'–0"

NOTES:

1. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE 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.
2. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKFILL GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON–EXCAVATABLE) TO THE ELEVATION SHOWN.
3. BACKFILL THE REMAINDER OF EXCAVATION WITH GRAVEL BORROW, WHICH SHALL BE THOROUGHLY COMPACTED IN 12" LIFTS.
4. THE REST OF REINFORCEMENT IS NOT SHOWN FOR CLARITY.

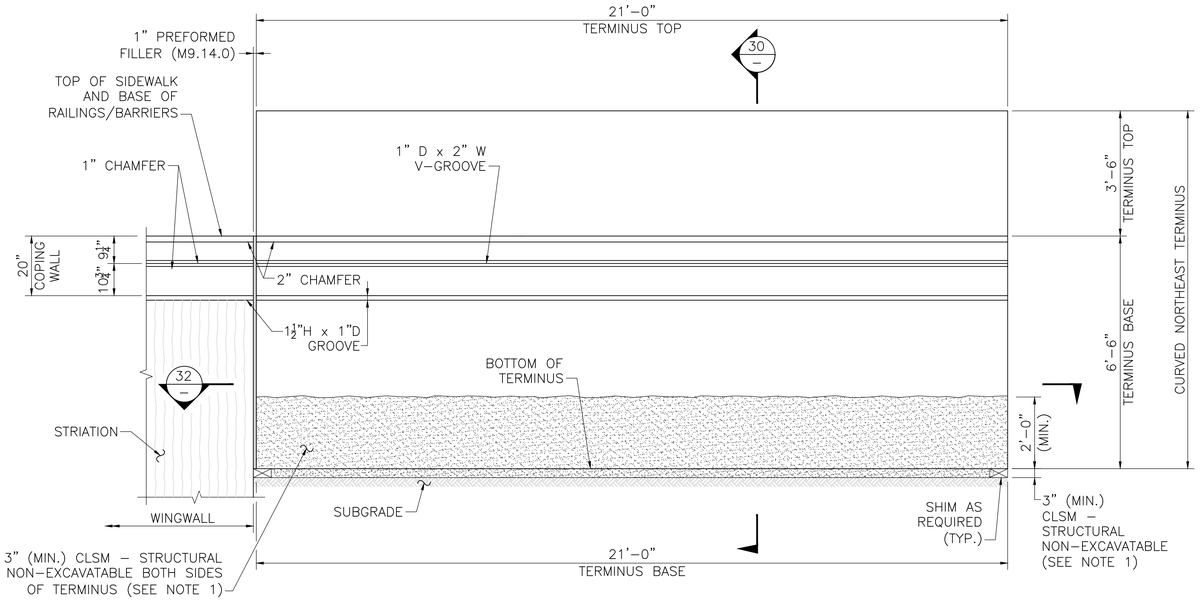


NOTE:

WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY.

SECTION 31 – SCALE: ½" = 1'–0"

SECTION 32 – SCALE: ½" = 1'–0"



NORTHEAST TERMINUS BASE ELEVATION

SCALE: ½" = 1'–0"

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	72	105
PROJECT FILE NO. 608862			

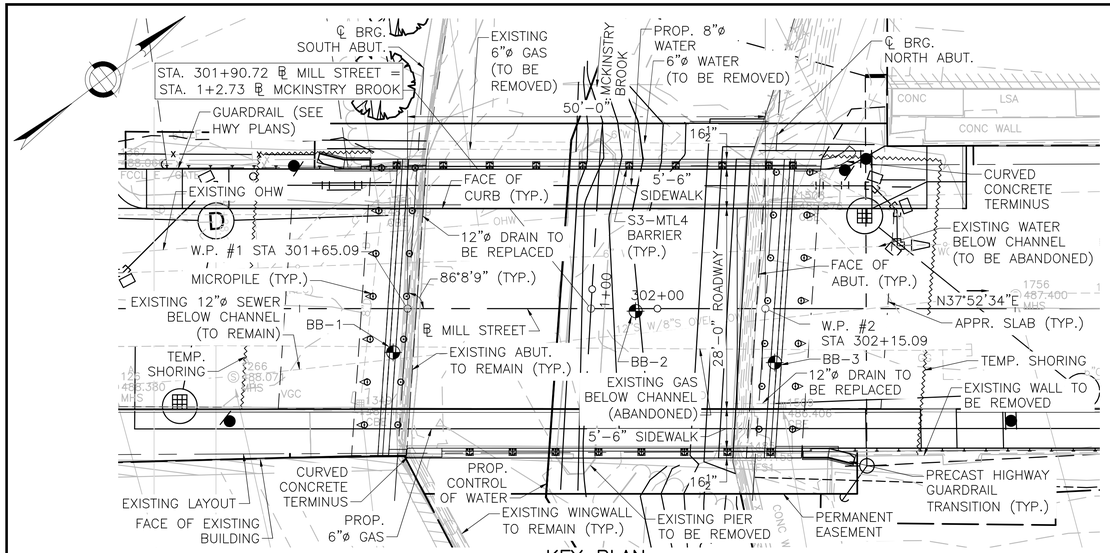
TRANSITION BASE

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

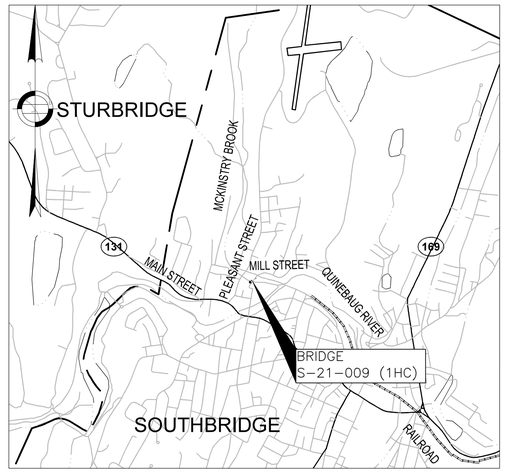
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

608862_BR20-21_RAILING.DWG Plotted on 10-Aug-2026 1:39 PM
Final Structural Submittal (SF) 22-January-2026



KEY PLAN
SCALE: 1" = 10'



LOCUS
SCALE: 1" = 2000'

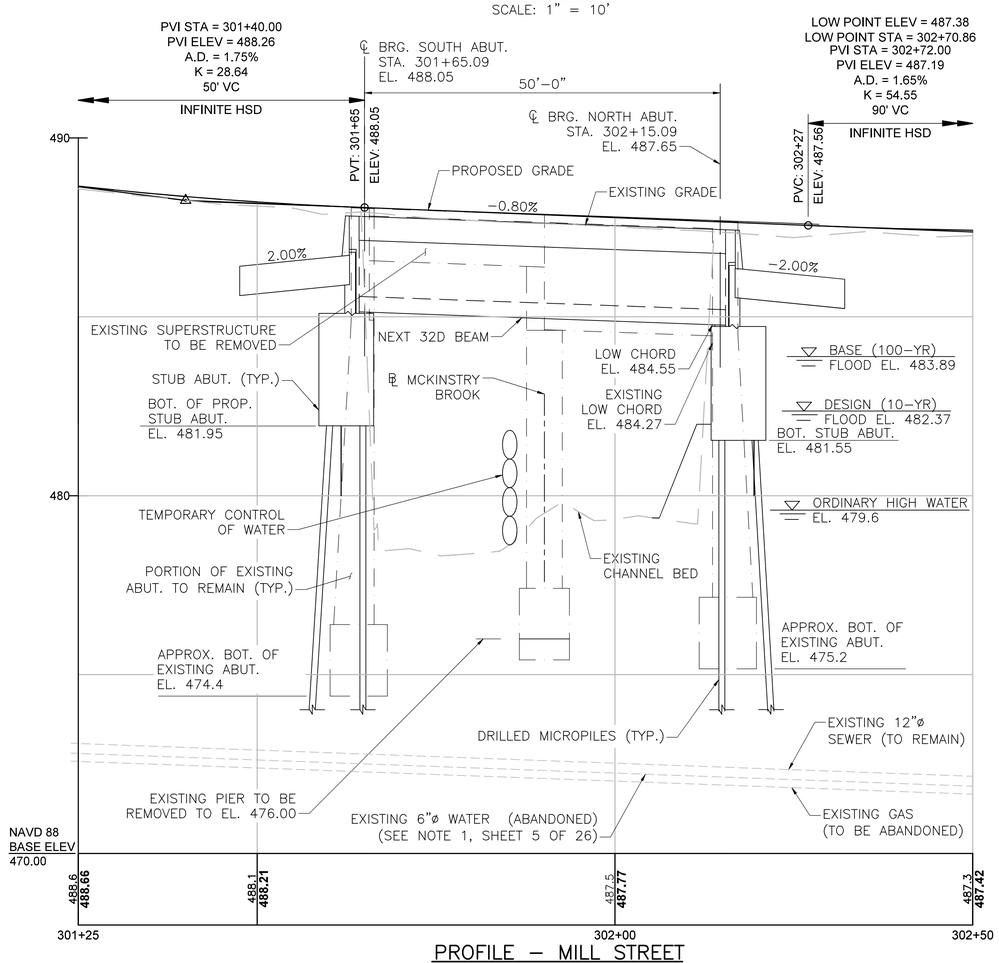
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	73	105
PROJECT FILE NO.	608862		

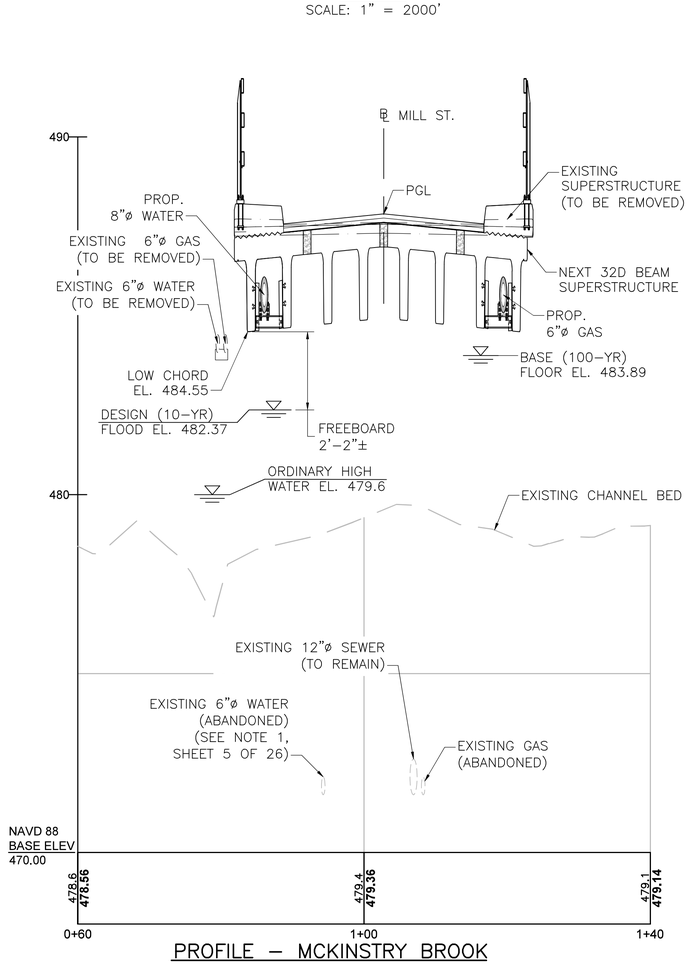
KEY PLAN, PROFILE & INDEX

SHEET INDEX

1 KEY PLAN, PROFILE & INDEX
2 GENERAL NOTES
3 BORING LOGS (1 OF 2)
4 BORING LOGS (2 OF 2)
5 GENERAL PLAN & ELEVATION
6 STAGING DETAILS
7 STAGING PLANS
8 FOUNDATION PLAN
9 NORTH ABUTMENT DEMOLITION DETAILS
10 SOUTH ABUTMENT DEMOLITION DETAILS
11 PIER DEMOLITION DETAILS
12 NORTH ABUTMENT PLAN AND ELEVATION
13 SOUTH ABUTMENT PLAN AND ELEVATION
14 ABUTMENT DETAILS (1 OF 2)
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16 MICROPILE DETAILS
17 FRAMING PLAN
18 BEAM DETAILS (1 OF 2)
19 BEAM DETAILS (2 OF 2)
20 DECK DETAILS
21 UTILITY SUPPORT DETAILS
22 BEARING DETAILS
23 S3-MTL4 RAILING
24 TRANSITION FOR S3-MTL4 RAILING
25 TERMINUS FOR S3-MTL4 RAILING
26 TRANSITION BASES



PROFILE – MILL STREET
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: ½" = 1'-0"



PROFILE – MCKINSTRY BROOK
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: ½" = 1'-0"

SEPT. 5, 2026 | ISSUED FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
ANDREW T. BURKHOLDER
STRUCTURAL
No. 49811
REGISTERED PROFESSIONAL ENGINEER

Burkholder, Andrew — Digitally signed by Burkholder, Andrew. Date: 2026.09.11 14:14:57 -04'00'

vhb
260 Arsenal PL #2
PO Box 9151
Watertown, MA 02471
617.924.1770

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE

SOUTHBRIDGE

MILL STREET
OVER MCKINSTRY BROOK

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: 2026.09.11 14:40:35 -04'00'
STATE BRIDGE ENGINEER

Carrie Lavallee, P.E. — Digitally signed by Carrie Lavallee, P.E. Date: 2026.09.13 14:48:55 -04'00'
CHIEF ENGINEER

SHEET 1 OF 26 SHEETS BRIDGE NO. S-21-009 (CQU)

Plotted on 26-Aug-2026 4:40 PM
608862_BR(S21009)_KEY PROFILES & INDEX.DWG
22-January-2026
Final Structural Submittal (SF)

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.

THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION LRFD BRIDGE MANUAL HUNDREDTH ANNIVERSARY EDITION.

THE 2011 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN.

MASSDOT BENCH MARK

BENCH MARK 1: MAG NAIL IN UPL7 (N2855697.696', E508426.429', EL.=492.48')

BENCH MARK 2: MAG NAIL IN UPL15 (N2856018.749', E508648.316', EL.=492.64')

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD88) OF 1988.

DATE

TO BE PLACED ON THE INSIDE FACE OF THE SOUTHWEST AND NORTHEAST 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.

SURVEY NOTEBOOK

SURVEY PERFORMED BY GREEN INTERNATIONAL AFFILIATES, INC. BETWEEN APRIL 2019 AND MAY 2019. FIELD NOTEBOOKS SHALL BE OBTAINED FROM THE DISTRICT 3 SURVEY OFFICE.

HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY MASSDOT SURVEY, IN MASSDOT DISTRICT 3 FIELD BOOK 41564, PAGE 40 TO 41, AUGUST 2019.

GEOTECHNICAL REPORT

REFER TO GEOTECHNICAL REPORT PREPARED BY NOBIS GROUP, DATED NOVEMBER 29, 2023.

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.

CONSTRUCTION REQUIREMENTS AND PROCEDURES

THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION. REFER TO APPROVED DEMOLITION/ERECTION PLANS.

EXISTING CONDITIONS

THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR 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 ANY FABRICATION UNTIL THE REQUIRED MEASUREMENTS HAVE BEEN MADE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

UTILITIES

THE EXISTING UTILITIES HAVE BEEN DISPLAYED FROM THE BEST AVAILABLE INFORMATION. THE EXACT LOCATIONS AND DEPTHS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION FROM DAMAGE FOR ALL THE EXISTING UTILITIES.

CONSTRUCTION JOINTS

CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

CONCRETE

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

PRECAST BEAMS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 8000 PSI AND A CONCRETE COMPRESSIVE STRENGTH AT RELEASE OF 6000 PSI.

REINFORCEMENT

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 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. COATED BARS, COVER <3d_b,OR CLEAR SPACING <6d_b	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.

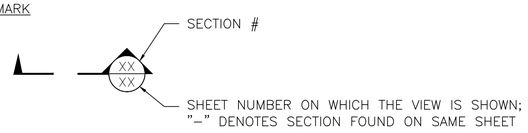
MEMBRANE WATERPROOFING

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

PRESTRESSING STRANDS

PRESTRESSING STRANDS SHALL BE LOW RELAXATION, 0.6 IN. DIAMETER, NOT EPOXY COATED AND MEET THE REQUIREMENTS OF AASHTO M203. BEAMS SHALL BE FABRICATED WITH THE PRESTRESSING STRAND LAYOUT AS SHOWN ON THE PLANS.

SECTION MARK



ESTIMATED QUANTITIES

NOT GUARANTEED

DESCRIPTION	QUANTITY	UNITS
GEOTECHNICAL MONITORING AND INSTRUMENTATION	1	LS
DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-009	1	LS
REINFORCED CONCRETE EXCAVATION	240	CY
BRIDGE EXCAVATION	540	CY
CLASS B ROCK EXCAVATION	30	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	400	CY
SAND BORROW	20	CY
CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI)	5	CY
SUPERPAVE BRIDGE SURFACE COURSE – 9.5 POLYMER (SSC-B – 9.5 – P)	16	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 POLYMER (SPC-B – 9.5 – P)	22	TON
SAWING AND SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES	56	FT
DRILLED MICROPILES	800	FT
DRILL THROUGH EXISTING ABUTMENTS	200	FT
MICROPILE VERIFICATION LOAD TEST	1	EA
MICROPILE PROOF LOAD TEST	2	EA
TEMPORARY SHORING – BRIDGE NO. S-21-009	1	LS
CONTROL OF WATER – BRIDGE NO. S-21-009	1	LS
TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-21-009	1	LS
BRIDGE STRUCTURE, BRIDGE NO. S-21-009	1	LS

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	74	105
PROJECT FILE NO. 608862			

GENERAL NOTES

TRAFFIC DATA	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2031	YEAR
AVERAGE DAILY TRAFFIC – PRESENT	325 VPD	N/A
AVERAGE DAILY TRAFFIC – DESIGN YEAR	345 VPD	N/A
DESIGN HOURLY VOLUME	40 VPH	N/A
DIRECTIONAL DISTRIBUTION	100% SB	N/A
TRUCK PERCENTAGE – AVERAGE DAY	11.8%	N/A
TRUCK PERCENTAGE – PEAK HOUR	5.3%	N/A
DESIGN SPEED	25 MPH	N/A
DIRECTIONAL DESIGN HOURLY VOLUME	40 VPH	N/A

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000 YRS
DESIGN SPECTRA	
As	0.072
SDs	0.163
SD1	0.063
SITE CLASS	C
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	7.97
DESIGN FLOOD DISCHARGE (C.F.S.)	488
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	4.11
DESIGN FLOOD ELEVATION (FEET, NAVD)	482.37
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	965
BASE FLOOD ELEVATION (FEET, NAVD)	483.89
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	25
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	0.4
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	0.4
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)	09/1938
HISTORY OF ICE FLOES	NO
EVIDENCE OF SCOUR AND EROSION	YES

TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	488
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	4.11
DESIGN FLOOD ELEVATION (FEET, NAVD) *	482.37

* THE TOP ELEVATION OF THE TEMPORARY WATER CONTROL MEASURE SHALL BE THE DESIGN FLOOD ELEVATION PLUS 1 FOOT OF FREEBOARD.

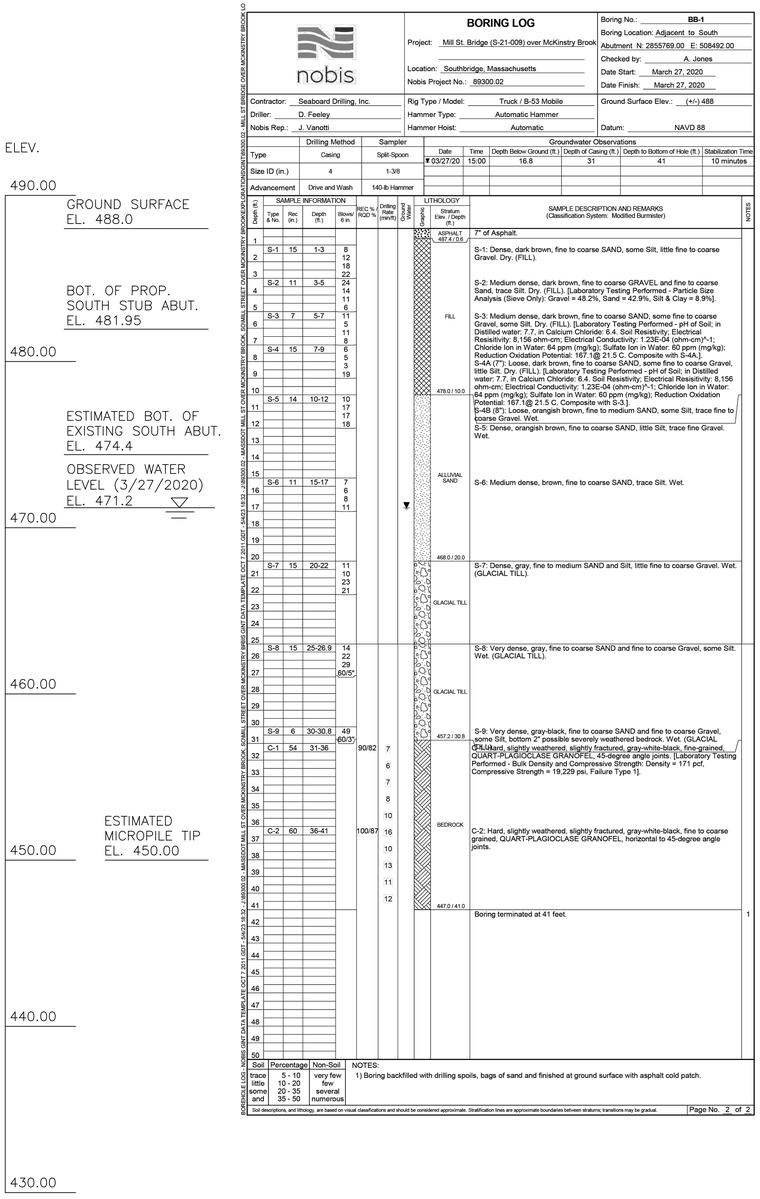
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

608862_BRIS21009)_NOTES.DWG Plotted on 10-Aug-2026 1:20 PM
22-January-2026 Final Structural Submittal (SF)

BORING BB–1

STATION: 301+63.07'
OFFSET: 6.11'
N: 2855769.00 E: 508492.00



BORING LOG

Boring No.: BB-1
Boring Location: Adjacent to South Abutment N: 2855769.00 E: 508492.00
Checked by: A. Jones
Date Start: March 27, 2020
Date Finish: March 27, 2020
Ground Surface Elev.: (+/-) 488
Datum: NAVD 88

Project: Mill St. Bridge (S-21-009) over McKinstry Brook
Location: Southbridge, Massachusetts
Nobis Project No.: 89300.02

Contractor: Seaboard Drilling, Inc.
Driller: D. Feeley
Nobis Rep.: J. Vanotti
Rig Type / Model: Truck / B-53 Mobile
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic

	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
▼ 03/27/20	15:00	16.8	31	41	10 minutes

Depth (ft.)	Sample Info: 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								ASPHALT 487.4 / 0.6	7" of Asphalt.	
2	S-1	15	1-3	8 12 18 22					S-1: Dense, dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Dry. (FILL).	
3										
4	S-2	11	3-5	24 14 11 6					S-2: Medium dense, dark brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Dry. (FILL) [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 48.2%, Sand = 42.9%, Silt & Clay = 8.9%].	
5										
6	S-3	7	5-7	11 5 11 8				FILL	S-3: Medium dense, dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Dry. (FILL) [Laboratory Testing Performed - pH of Soil; in Distilled water: 7.7, in Calcium Chloride: 6.4. Soil Resistivity: Electrical Resistivity: 8,156 ohm-cm; Electrical Conductivity: 1.23E-04 (ohm-cm)^-1; Chloride Ion in Water: 64 ppm (mg/kg); Sulfate Ion in Water: 60 ppm (mg/kg); Reduction Oxidation Potential: 167.1@ 21.5 C. Composite with S-4A.] S-4A (7"): Loose, dark brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Dry. (FILL) [Laboratory Testing Performed - pH of Soil; in Distilled water: 7.7, in Calcium Chloride: 6.4. Soil Resistivity: Electrical Resistivity: 8,156 ohm-cm; Electrical Conductivity: 1.23E-04 (ohm-cm)^-1; Chloride Ion in Water: 64 ppm (mg/kg); Sulfate Ion in Water: 60 ppm (mg/kg); Reduction Oxidation Potential: 167.1@ 21.5 C. Composite with S-3.]	
7	S-4	15	7-9	6 5 3 19					S-4B (8"): Loose, orangish brown, fine to medium SAND, some Silt, trace fine to coarse Gravel. Wet.	
8									S-5: Dense, orangish brown, fine to coarse SAND, little Silt, trace fine Gravel. Wet.	
9										
10								478.0 / 10.0		
11	S-5	14	10-12	10 17 17 18						
12										
13										
14										
15								ALLUVIAL SAND		
16	S-6	11	15-17	7 8 8 11					S-6: Medium dense, brown, fine to coarse SAND, trace Silt. Wet.	
17										
18										
19										
20								468.0 / 20.0		
21	S-7	15	20-22	11 10 23 21					S-7: Dense, gray, fine to medium SAND and Silt, little fine to coarse Gravel. Wet. (GLACIAL TILL).	
22										
23								GLACIAL TILL		
24										
25										
26	S-8	15	25-26.9	14 22 29 60/5"					S-8: Very dense, gray, fine to coarse SAND and fine to coarse Gravel, some Silt. Wet. (GLACIAL TILL).	
27										
28								GLACIAL TILL		
29										
30										
31	S-9	6	30-30.8	49 60/3"				457.2 / 30.8	S-9: Very dense, gray-black, fine to coarse SAND and fine to coarse Gravel, some Silt, bottom 2" possible severely weathered bedrock. Wet. (GLACIAL TILL)	
32	C-1	54	31-36		90/82	7			C-1: Hard, slightly weathered, slightly fractured, gray-white-black, fine-grained, QUART-PLAGIOCLASE GRANOFEL, 45-degree angle joints. [Laboratory Testing Performed - Bulk Density and Compressive Strength: Density = 171 pcf, Compressive Strength = 19,228 psi, Failure Type 1].	
33						6				
34						7				
35						8				
36						10		BEDROCK		
37	C-2	60	36-41		100/87	16			C-2: Hard, slightly weathered, slightly fractured, gray-white-black, fine to coarse grained, QUART-PLAGIOCLASE GRANOFEL, horizontal to 45-degree angle joints.	
38						10				
39						13				
40						11				
41						12		447.0 / 41.0		
42									Boring terminated at 41 feet.	1
43										
44										
45										
46										
47										
48										
49										
50										

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

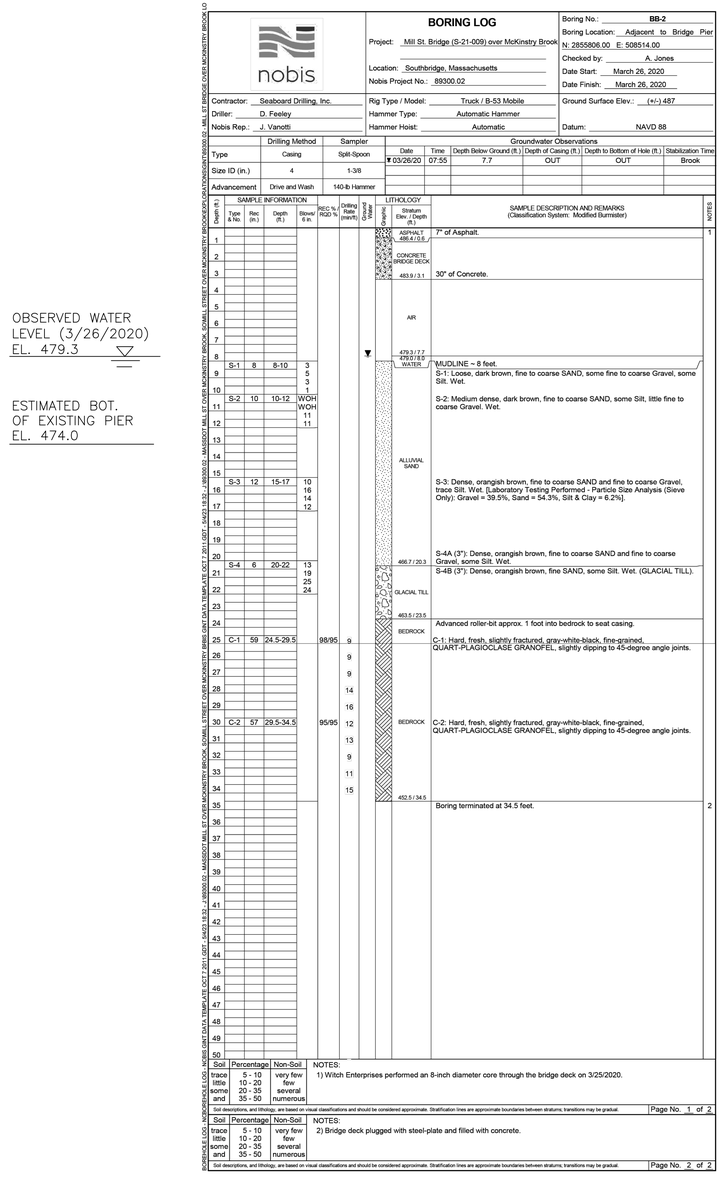
NOTES:
1) Boring backfilled with drilling spoils, bags of sand and finished at ground surface with asphalt cold patch.

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 BB–2

STATION: 301+96.96'
OFFSET: 0.35'
N: 2855806.00 E: 508514.00



BORING LOG

Boring No.: BB-2
Boring Location: Adjacent to Bridge Pier
N: 2855806.00 E: 508514.00
Checked by: A. Jones
Date Start: March 26, 2020
Date Finish: March 26, 2020
Ground Surface Elev.: (+/-) 487
Datum: NAVD 88

Project: Mill St. Bridge (S-21-009) over McKinstry Brook
Location: Southbridge, Massachusetts
Nobis Project No.: 89300.02

Contractor: Seaboard Drilling, Inc.
Driller: D. Feeley
Nobis Rep.: J. Vanotti
Rig Type / Model: Truck / B-53 Mobile
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic

	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
▼ 03/26/20	07:55	7.7	OUT	OUT	Brook

Depth (ft.)	Sample Info: 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								ASPHALT 486.4 / 0.6	7" of Asphalt.	1
2								CONCRETE BRIDGE DECK		
3								483.9 / 3.1	30" of Concrete.	
4										
5								AIR		
6										
7										
8								479.3 / 7.7 479.0 / 8.0		
9	S-1	8	8-10	3 5 3 1				WATER	MUDLINE ~ 8 feet. S-1: Loose, dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Wet.	
10										
11	S-2	10	10-12	WOH WOH 11 11					S-2: Medium dense, dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Wet.	
12										
13										
14										
15								ALLUVIAL SAND		
16	S-3	12	15-17	10 16 14 12					S-3: Dense, orangish brown, fine to coarse SAND and fine to coarse Gravel, trace Silt. Wet. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 39.5%, Sand = 54.3%, Silt & Clay = 6.2%].	
17										
18										
19										
20								466.7 / 20.3	S-4A (3"): Dense, orangish brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Wet.	
21	S-4	6	20-22	13 19 25 24					S-4B (3"): Dense, orangish brown, fine SAND, some Silt. Wet. (GLACIAL TILL).	
22										
23								GLACIAL TILL		
24								463.5 / 23.5		
25	C-1	59	24.5-29.5		98/95	9		BEDROCK	Advanced roller-bit approx. 1 foot into bedrock to seat casing. C-1: Hard, fresh, slightly fractured, gray-white-black, fine-grained, QUART-PLAGIOCLASE GRANOFEL, slightly dipping to 45-degree angle joints.	
26						9				
27						9				
28						14				
29						16				
30	C-2	57	29.5-34.5		95/95	12		BEDROCK	C-2: Hard, fresh, slightly fractured, gray-white-black, fine-grained, QUART-PLAGIOCLASE GRANOFEL, slightly dipping to 45-degree angle joints.	
31						13				
32						9				
33						11				
34						15		452.5 / 34.5		
35									Boring terminated at 34.5 feet.	2
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										

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

NOTES:
1) Witch Enterprises performed an 8-inch diameter core through the bridge deck on 3/25/2020.

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

NOTES:
2) Bridge deck plugged with steel-plate and filled with concrete.

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 NOTES:

1. LOCATION OF BORINGS SHOWN ON THE KEY PLAN THUS: ⌖
2. BORINGS ARE TAKEN FOR 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 $1\frac{3}{8}$" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT MASSDOT FACILITY AT 219 WINTHROP AVE, LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES UPON REQUEST.
6. ALL BORINGS WERE MADE IN MARCH 2020.
7. BORINGS WERE MADE BY SEABOARD DRILLING, INC., 649 MEADOW STREET, CHICOPEE, MA. 01013.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	75	105
	PROJECT FILE NO. 608862		

BORING LOGS (1 OF 2)

SEPT. 5, 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 3 OF 26 SHEETS BRIDGE NO. S–21–009 (CQU)

608862_BRI(S21009)_BORINGS.DWG Plotted on 10-Aug-2026 1:20 PM

Final Structural Submittal (SF) 22-January-2026

BORELOG_NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 8/4/23 18:52 - J:\89300.02 - MASSDOT MILL ST OVER MCKINSTRY BROOK, SOUTHBRIDGE\DATA\BORINGS\89300.02 - MASSDOT MILL ST OVER MCKINSTRY BROOK, SOUTHBRIDGE.GPJ

BORING BB–3

STATION: 302+16.40'
OFFSET: 7.22'
N: 2855822.00
E: 508535.00

ELEV.

490.00

GROUND SURFACE ELEVATION EL. 487.0

BOT. OF PROP. NORTH STUB ABUT. EL. 481.55

480.00

ESTIMATED BOT. OF EXISTING NORTH ABUT. EL. 475.2

OBSERVED WATER LEVEL (3/24/2020) EL. 475.8 ▽

470.00

ESTIMATED MICROPILE TIP EL. 459.00

460.00

450.00

440.00

430.00

nobis

BORING LOG

Project: Mill St. Bridge (S-21-009) over McKinstry Brook

Location: Southbridge, Massachusetts

Nobis Project No.: 89300.02

Contractor: Seaboard Drilling, Inc.

Driller: D. Feeley

Nobis Rep.: J. Vanotti

Rig Type / Model: Truck / B-53 Mobile

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Boring No.: BB-3

Boring Location: Adjacent to North Abutment N: 2855822.00 E: 508535.00

Checked by: A. Jones

Date Start: March 24, 2020

Date Finish: March 24, 2020

Ground Surface Elev.: (+/-) 487

Datum: NAVD 88

	Drilling Method	Sampler
Type	HSA/Casing	Split-Spoon
Size ID (in.)	3-1/4 / 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
▼ 03/24/20	14:45	11.2	21	31	5 minutes

Depth (ft.)	Sample No.	Type & No.	Rec. (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Overburden Sample	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
0									ASPHALT 486.2 / 0.8	10" of Asphalt.	
1	S-1	8	1-3		12					S-1: Medium dense, black- light gray, fine to coarse SAND, some Silt, some fine to coarse Gravel. Dry. (FILL).	
2					8						
3	S-2	10	3-5		7					S-2: Dense, dark brown- light gray, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Dry. (FILL). [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 48.9%, Sand = 42.0%, Silt & Clay = 9.1%].	
4					15						
5	S-3	5	5-7		16					S-3: Loose, dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Dry. (FILL).	
6					6						
7	S-4	1	7-9		4				FILL		
8					3					S-4: Very loose, dark brown, fine to medium SAND, some Silt, piece of coarse gravel stuck in sample tip. Dry. (FILL).	1
9					2						
10					1						
11					1					Roller-bit stuck in casing, forced to adavnce to 15 feet bgs.	
12					2				475.0 / 12.0		
13										Observed wash color change from brown to orangish brown around 12-feet bgs, possible strata transition.	
14									ALLUVIAL SAND		
15											
16	S-5	12	15-16.4		10					S-5: Very dense, orangish brown, fine to medium SAND, trace Silt. Wet. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only): Gravel = 0.0%, Sand = 96.3%, Silt & Clay = 3.7%].	
17					16				470.6 / 16.4		
18					60/5"				BOULDERS/ COBBLES IN TILL	Heavy drill resistance observed from about 16.4 to 19.5 feet bgs, possible boulders/ cobbles in glacial till.	
19									467.5 / 19.5		
20									GLACIAL TILL		
21	S-6	8	20-21		17				466.0 / 21.0	S-6: Very dense, brown-orange, fine to medium SAND, some Silt, little fine to coarse Gravel, faint redoximorphic staining. Wet. (GLACIAL TILL).	
22	C-1	56	21-26	60/0"		93/82				C-1: Hard, fresh to slightly weathered, slightly fractured, gray-white-black, fine-grained, QUART-PLAGIOCLASE GRANOFEL, slightly dipping to 45-degree angle joints. [Laboratory Testing Performed - Bulk Density and Compressive Strength: Density = 171 pcf, Compressive Strength = 21,695 psi, Failure Type 1].	
23									BEDROCK		
24											
25											
26	C-2	56	26-31			93/88				C-2: Hard, fresh, slightly fractured, gray-white-black, fine to coarse grained, QUART-PLAGIOCLASE GRANOFEL, slightly dipping joints.	
27											
28									BEDROCK		
29											
30											
31									456.0 / 31.0		
32										Boring terminated at 31 feet.	2
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											
46											
47											
48											
49											
50											

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

NOTES:
1) Advanced augers to about 7-feet bgs, then switched to casing and introduced water for drive and wash techniques.

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

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

NOTES:
2) Boring backfilled with drilling spoils, bags of sand and finished at ground surface with asphalt cold patch.

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 NOTE:

SEE SHEET 3 OF 26 FOR BORING NOTES.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	76	105
PROJECT FILE NO.	608862		

BORING LOGS (2 OF 2)

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

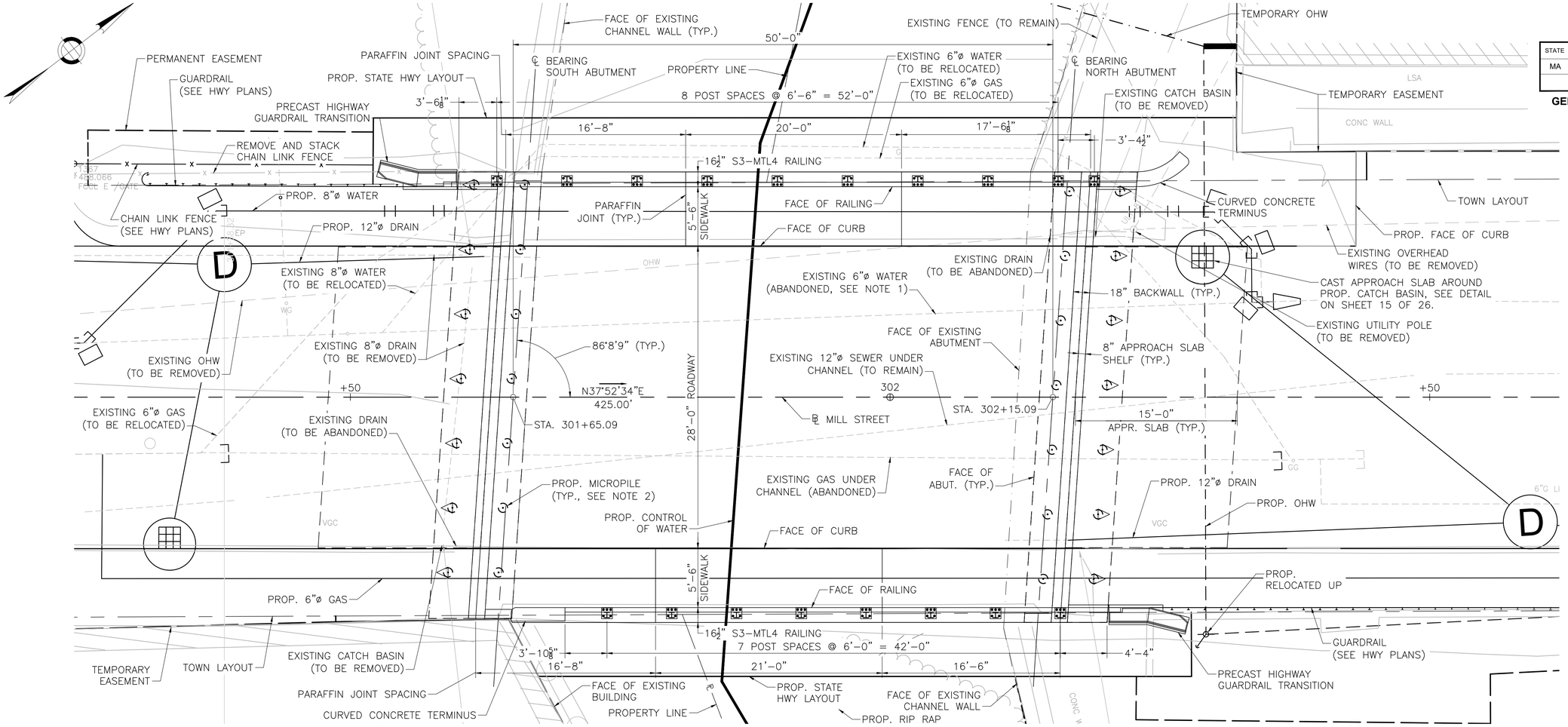
USE ONLY PRINTS OF LATEST DATE

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Final Structural Submittal (SF) 22-January-2026
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SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	77	105
PROJECT FILE NO.	608862		

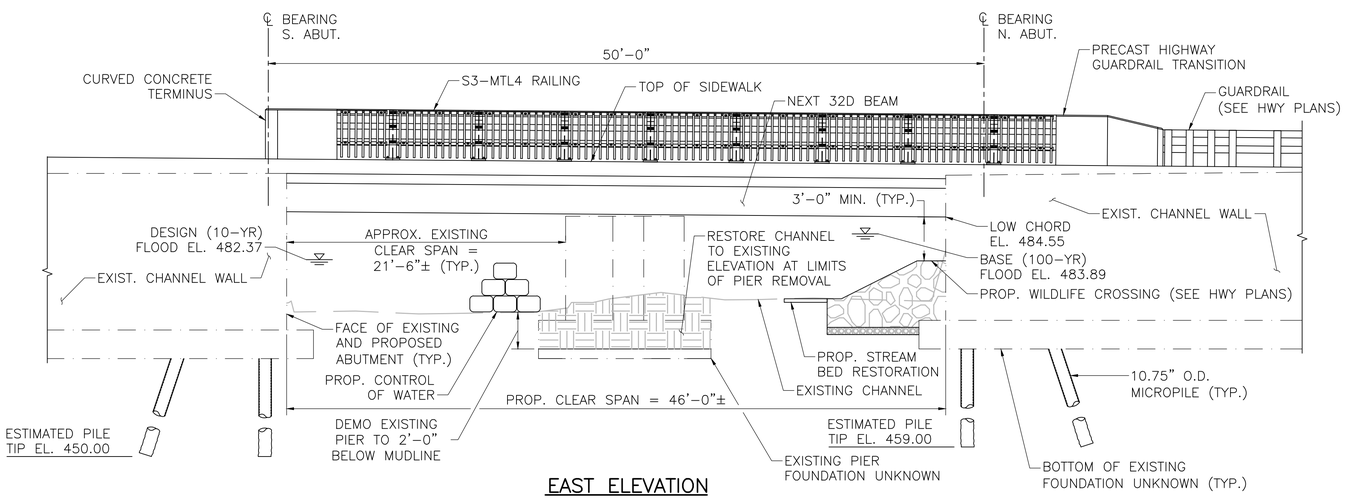
GENERAL PLAN & ELEVATION



GENERAL PLAN
SCALE: 3/16" = 1'-0"

LEGEND:

- DENOTES BATTERED MICROPILE
- DENOTES VERTICAL MICROPILE
- DENOTES TEST PILE



EAST ELEVATION
SCALE: 3/16" = 1'-0"

NOTES:

1. CONTRACTOR TO CONFIRM ABANDONED PIPE REMAINS IN PLACE AS SHOWN.
2. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLING THE MICROPILES AND CONTROL OF WATER.

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

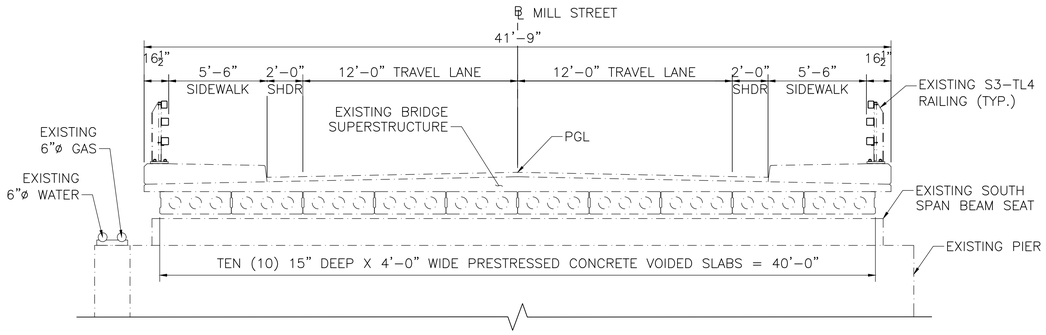
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_GEN PLAN & ELEV.DWG Plotted on 10-Aug-2026 1:21 PM
22-January-2026 Final Structural Submittal (SF)

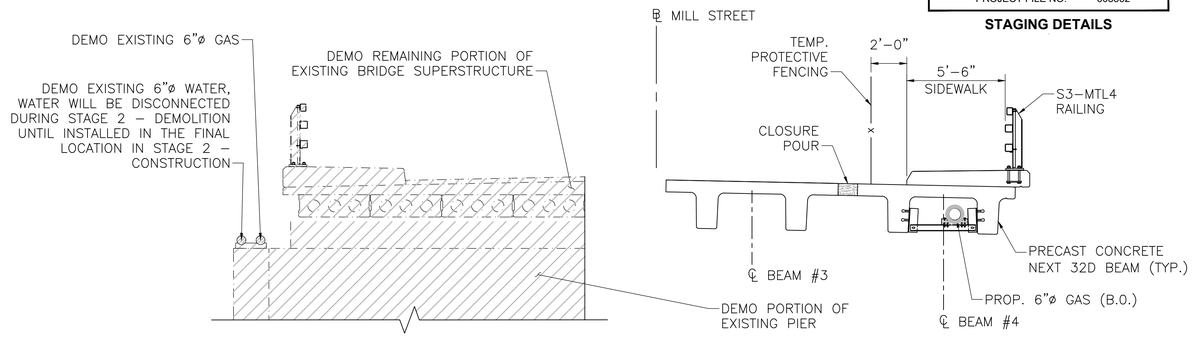
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	78	105
PROJECT FILE NO.	608862		

STAGING DETAILS



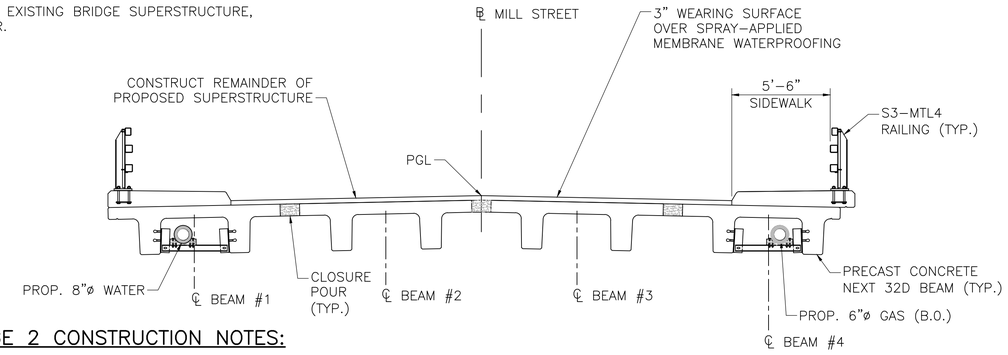
EXISTING BRIDGE SECTION
SCALE: ¼" = 1'–0"



BRIDGE STAGE 2 – DEMOLITION
SCALE: ¼" = 1'–0"

BRIDGE STAGE 2 DEMOLITION NOTES:

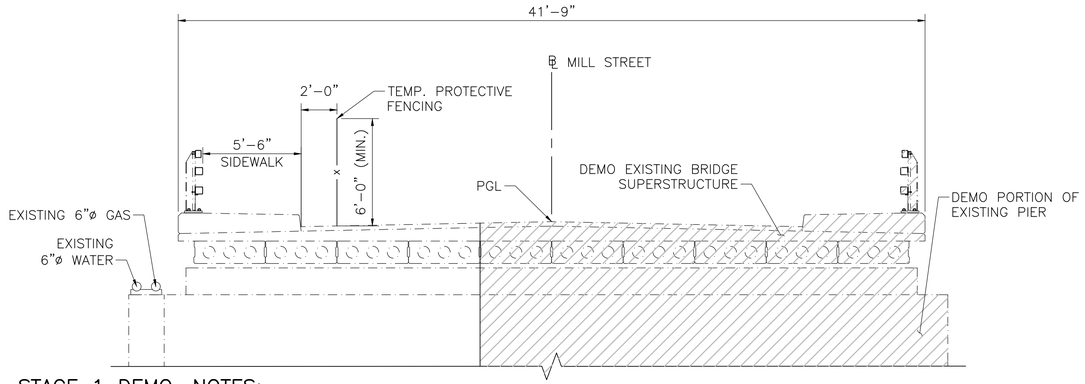
1. TURN OFF EXISTING 6"ø WATER DURING REMAINDER OF CONSTRUCTION.
2. DEMO REMAINDER OF EXISTING BRIDGE SUPERSTRUCTURE, ABUTMENTS AND PIER.



BRIDGE STAGE 2 – CONSTRUCTION
SCALE: ¼" = 1'–0"

BRIDGE STAGE 2 CONSTRUCTION NOTES:

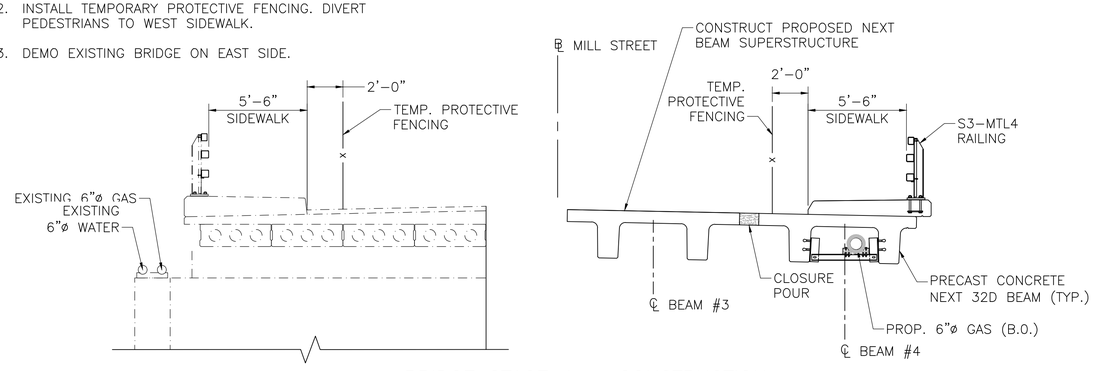
1. CONSTRUCT REMAINDER OF PROP. STUB ABUTMENTS.
2. ERECT PROP. BEAMS #1 AND #2.
3. INSTALL PROP. 8"ø WATER IN WESTERN BAY WITHIN BEAM #1.



BRIDGE STAGE 1 – DEMOLITION
SCALE: ¼" = 1'–0"

STAGE 1 DEMO. NOTES:

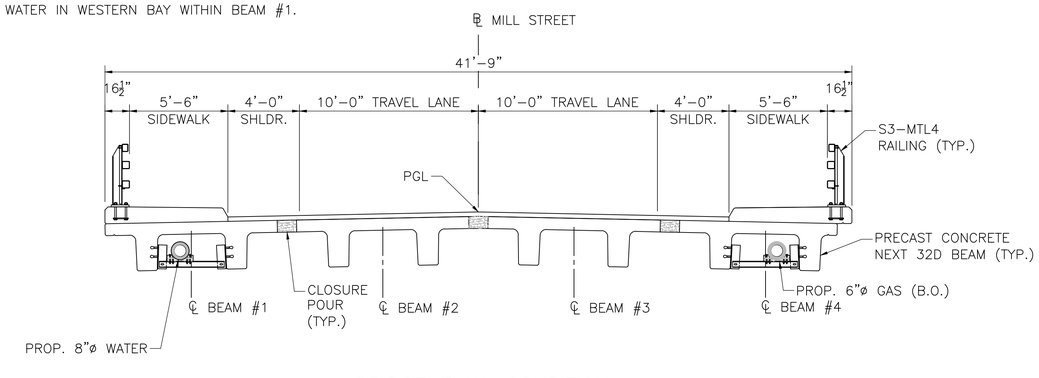
1. THE BRIDGE IS ASSUMED TO BE CLOSED TO VEHICLE TRAFFIC DURING CONSTRUCTION.
2. INSTALL TEMPORARY PROTECTIVE FENCING. DIVERT PEDESTRIANS TO WEST SIDEWALK.
3. DEMO EXISTING BRIDGE ON EAST SIDE.



BRIDGE STAGE 1 – CONSTRUCTION
SCALE: ¼" = 1'–0"

STAGE 1 CONSTR. NOTES:

1. CONSTRUCT EASTERN SIDE OF PROP. ABUTMENTS.
2. ERECT PROP. BEAMS #3 AND #4.
3. INSTALL PROP. 6"ø GAS LINE TO EASTERN BAY WITHIN BEAM #4.
4. INSTALL TEMPORARY PROTECTIVE FENCING. DIVERT PEDESTRIANS TO EAST SIDEWALK.



BRIDGE FINAL CONDITION
SCALE: ¼" = 1'–0"

CONSTRUCTION NOTES:

1. THE STAGING SHOWN IS CONCEPTUAL. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL DEMOLITION AND ERECTION PLANS THAT DEFINE AND DETAIL THE METHODS FOR DEMOLITION/ERECTION.
2. PEDESTRIAN ACCOMMODATIONS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
3. SECTIONS SHOWN ARE ALONG THE SOUTH SPAN. NORTH SPAN LIMITS OF DEMOLITION ARE SIMILAR.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

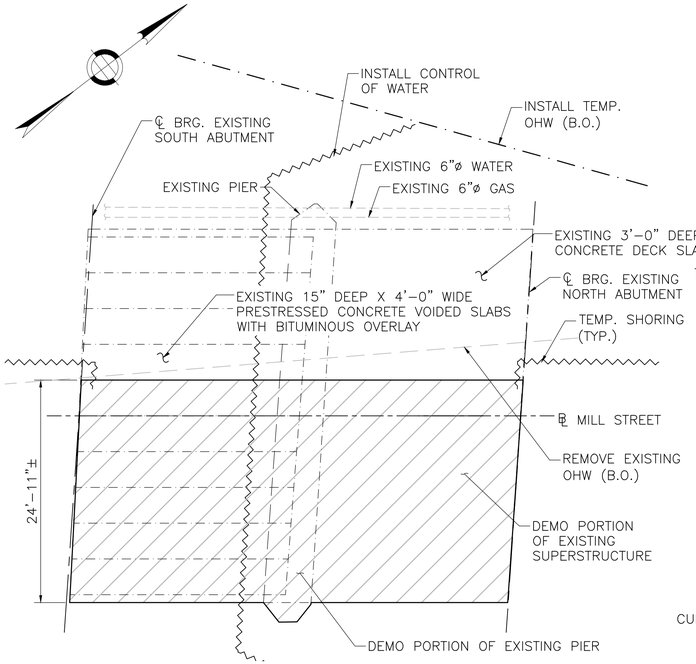
USE ONLY PRINTS OF LATEST DATE

608862_BRI(S21009)_STAGING DETAILS.DWG Plotted on 10-Aug-2026 1:21 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

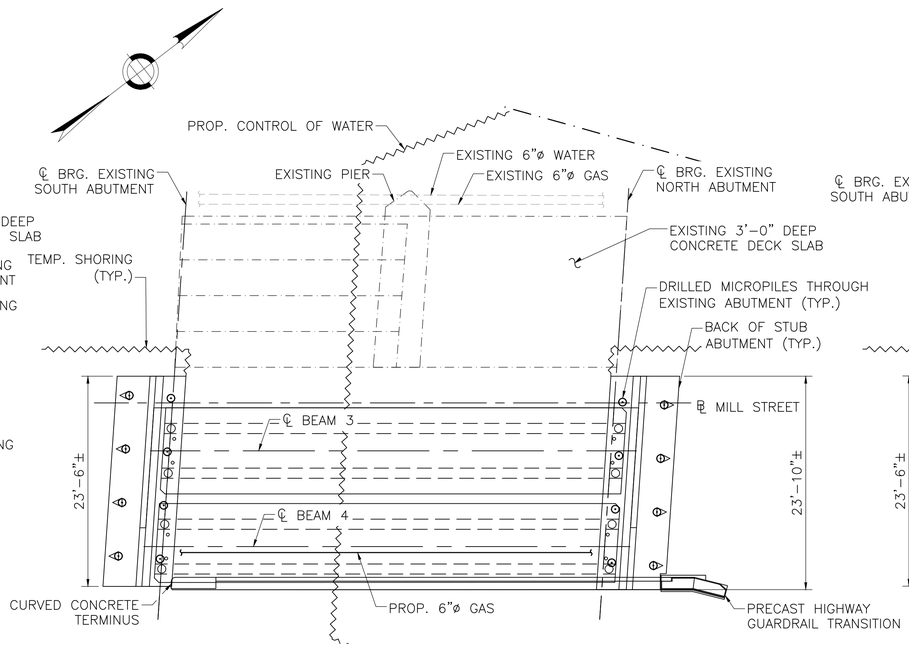
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	79	105
PROJECT FILE NO.	608862		

STAGING PLANS



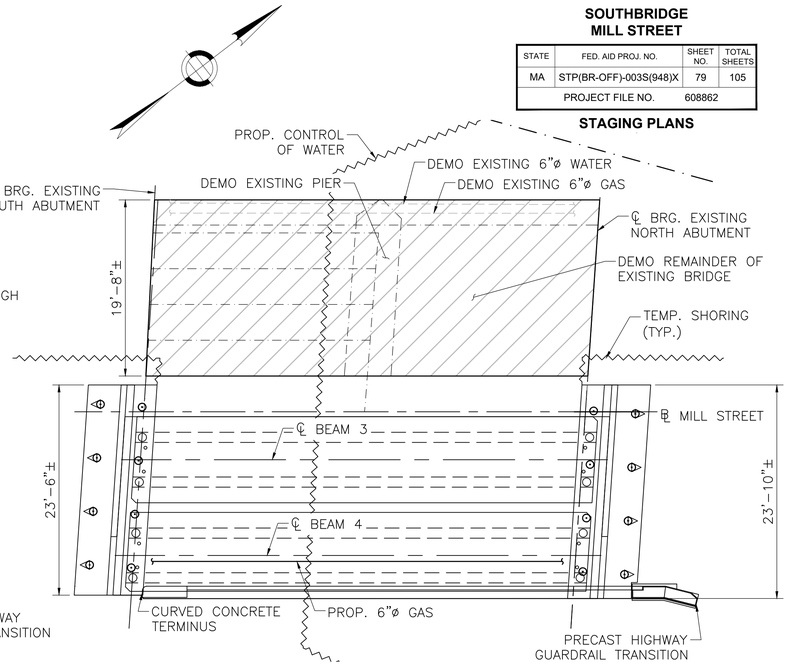
BRIDGE STAGE 1 – DEMOLITION

SCALE: $\frac{1}{8}$" = 1'-0"



BRIDGE STAGE 1 – CONSTRUCTION

SCALE: $\frac{1}{8}$" = 1'-0"



BRIDGE STAGE 2 – DEMOLITION

SCALE: $\frac{1}{8}$" = 1'-0"

BRIDGE STAGE 0 UTILITY NOTES:

1. INSTALL TEMP. OHW (B.O.). REMOVE EXIST. OHW (B.O.).
2. SEE HIGHWAY PLANS FOR ADDITIONAL UTILITY STAGING DETAILS.

BRIDGE STAGE 1 DEMOLITION NOTES:

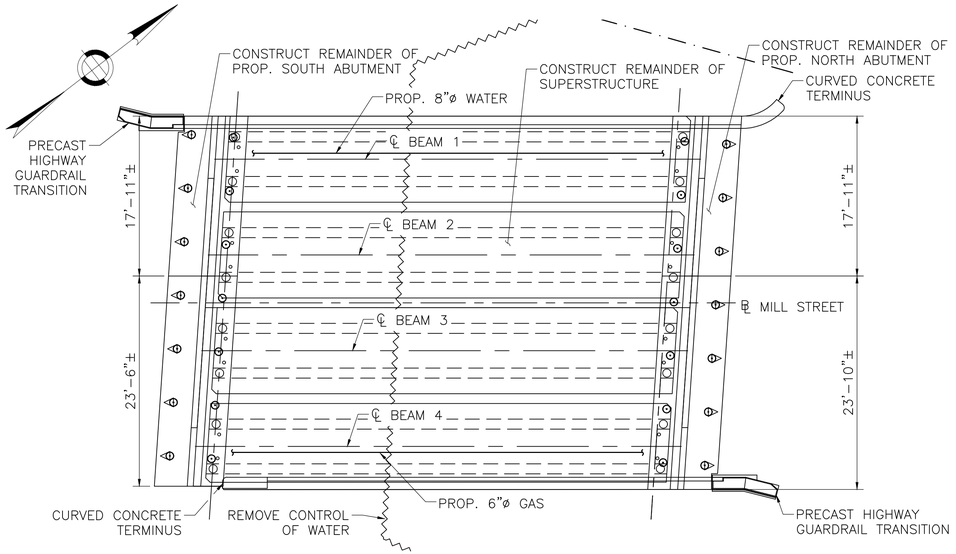
1. THE BRIDGE IS ASSUMED TO BE CLOSED TO VEHICLE TRAFFIC DURING CONSTRUCTION.
2. INSTALL TEMPORARY PROTECTIVE FENCING, DIVERT PEDESTRIANS TO WEST SIDEWALK.
3. DEMO EXISTING BRIDGE ON EAST SIDE.

BRIDGE STAGE 1 CONSTRUCTION NOTES:

1. CONSTRUCT EASTERN SIDE OF PROP. ABUTMENTS.
2. ERECT PROP. BEAMS #3 AND #4.
3. INSTALL PROP. 6"ø GAS LINE (BO) TO EASTERN BAY WITHIN BEAM #4.
4. INSTALL TEMPORARY PROTECTIVE FENCING. DIVERT PEDESTRIANS TO EAST SIDEWALK.

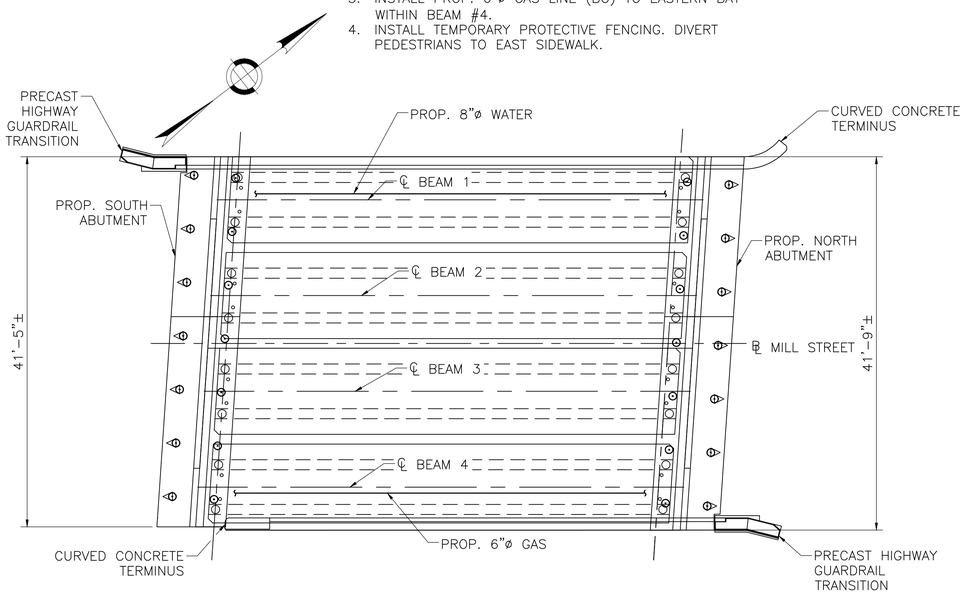
BRIDGE STAGE 2 DEMOLITION NOTES:

1. TURN OFF EXISTING 6"ø WATER DURING REMAINDER OF CONSTRUCTION.
2. DEMO REMAINDER OF EXISTING BRIDGE SUPERSTRUCTURE, ABUTMENTS AND PIER.



BRIDGE STAGE 2 – CONSTRUCTION

SCALE: $\frac{1}{8}$" = 1'-0"



BRIDGE FINAL CONDITION

SCALE: $\frac{1}{8}$" = 1'-0"

BRIDGE STAGE 2 CONSTRUCTION NOTES:

1. CONSTRUCT REMAINDER OF PROP. STUB ABUTMENTS,
2. ERECT PROP. BEAMS #1 AND #2.
3. INSTALL PROP. 8"ø WATER IN WESTERN BAY WITHIN BEAM #1.

CONSTRUCTION NOTE:

SEE NOTES ON SHEET 6 OF 26.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

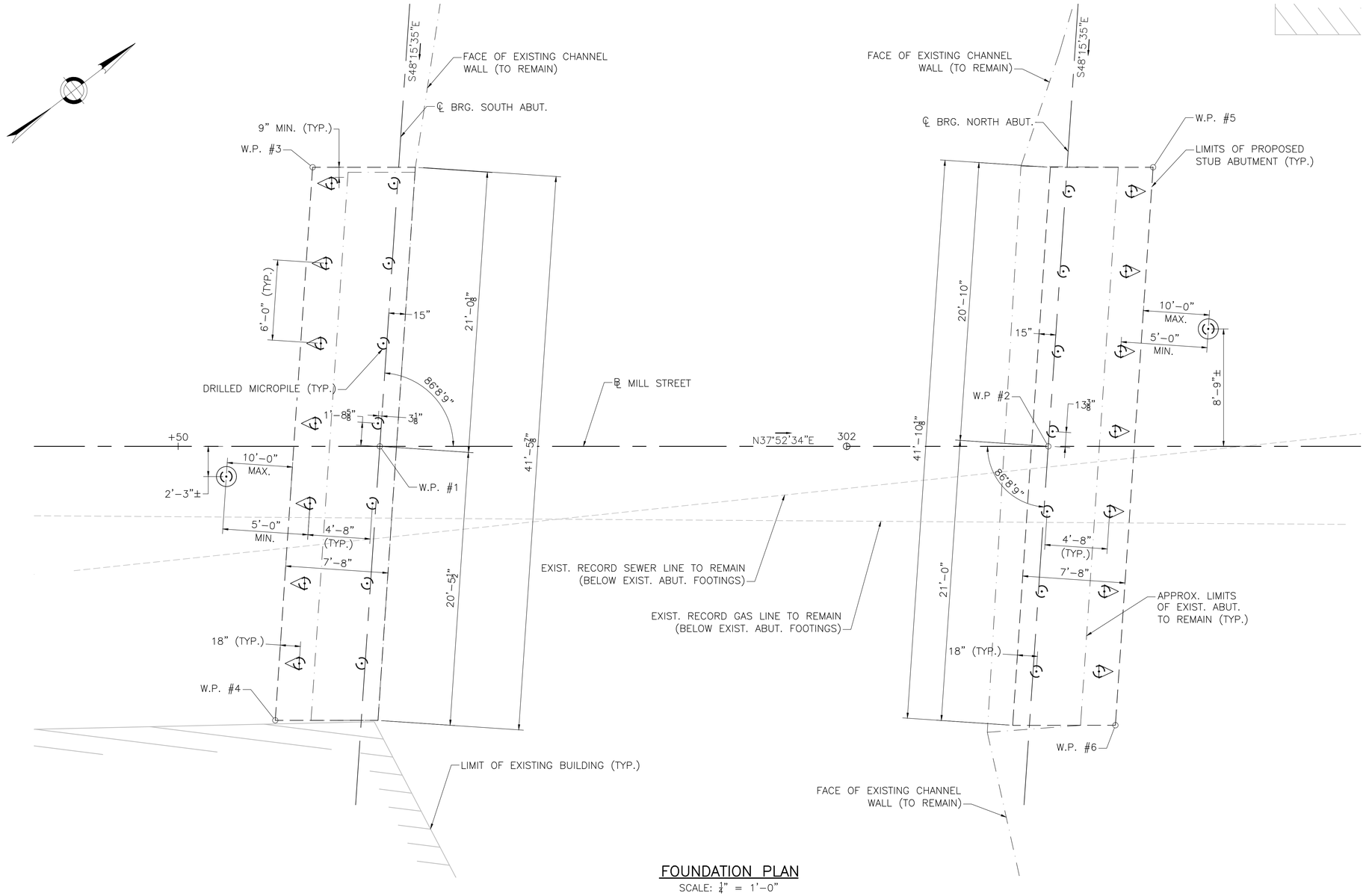
USE ONLY PRINTS OF LATEST DATE

608862_BRI(S21009)_STAGING DETAILS.DWG Plotted on 10-Aug-2026 1:21 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	80	105
	PROJECT FILE NO. 608862		

FOUNDATION PLAN



FOUNDATION PLAN

SCALE: ¼" = 1'-0"

WORKING POINTS				
W.P. #	STATION	OFFSET	NORTHING	EASTING
1	301+65.09	0.00	2855781.9468	508494.2483
2	302+15.09	0.00	2855821.4142	508524.9465
3	301+60.06	20.87	2855790.7956	508474.6848
4	301+57.27	20.50	2855763.1857	508505.6295
5	302+22.93	20.87	2855840.4208	508513.2839
6	302+20.11	20.87	2855812.5650	508544.5027

LEGEND:

- DENOTES BATTERED MICROPILE
- DENOTES VERTICAL MICROPILE
- DENOTES VERIFICATION LOAD TEST PILE

NOTES:

1. LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. CONTRACTOR TO VERIFY BEFORE MICROPILE INSTALLATION.
2. MICROPILES CAN BE SHIFTED DURING CONSTRUCTION TO AVOID CONFLICT WITH EXISTING UTILITIES. MICROPILES CAN BE SHIFTED LATERALLY (ORTHOGONAL TO BASELINE) UP TO 1'-0" FROM LOCATION SHOWN ON PLANS.
3. THE LOCATION OF THE VERIFICATION LOAD TEST IS APPROXIMATE, AS SHOWN. CONTRACTOR TO SELECT EXACT LOCATION OF VERIFICATION LOAD TEST MICROPILE WITH APPROVAL BY THE ENGINEER.

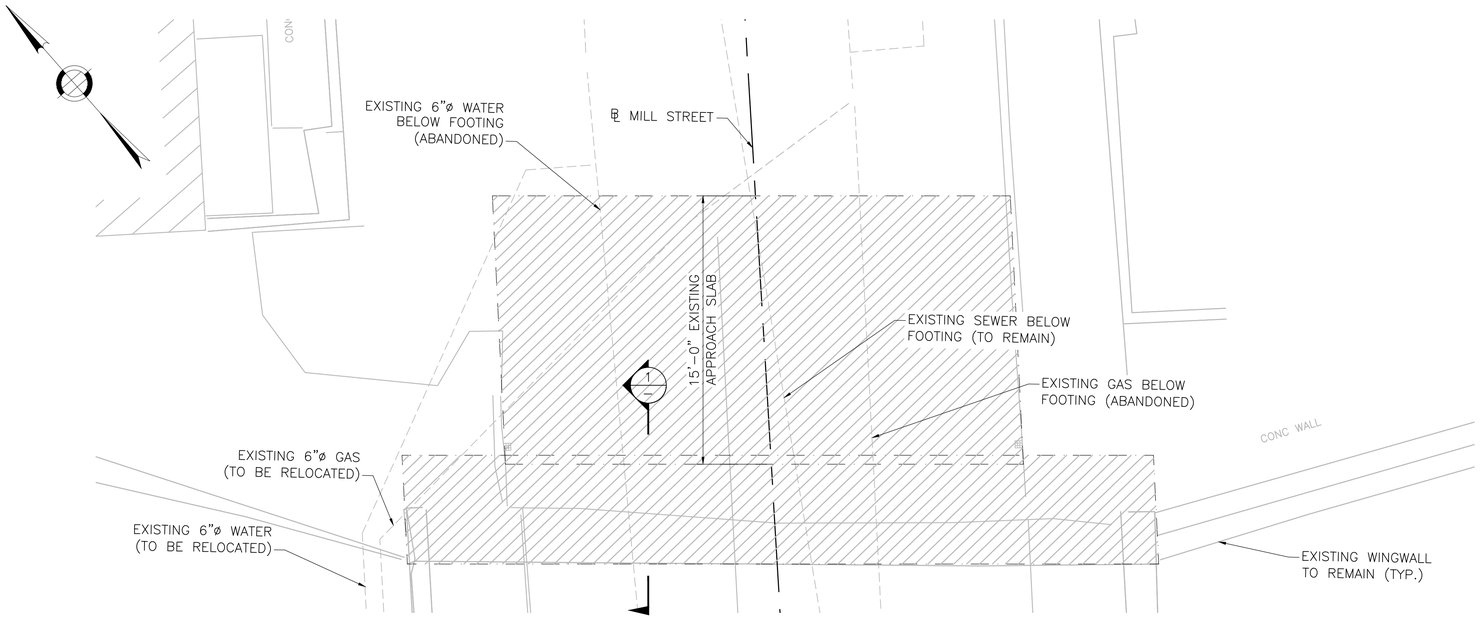
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

608862_BR(S21009)_FOUNDATION PLAN.DWG Plotted on 10-Aug-2026 1:21 PM
22-January-2026 Final Structural Submittal (SF)

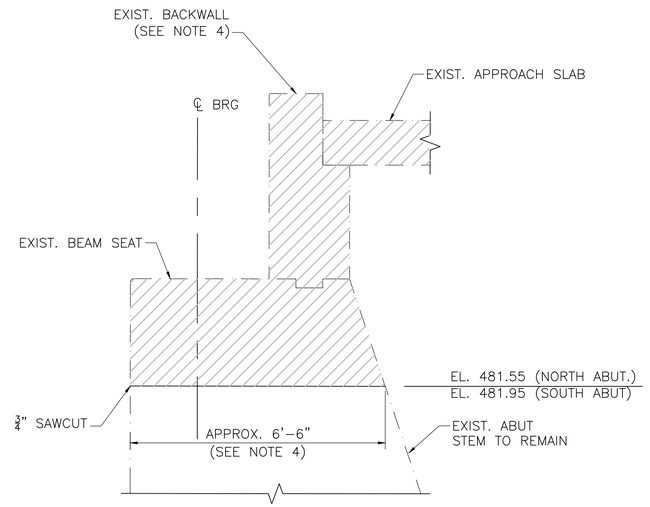
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	81	105
PROJECT FILE NO.	608862		

NORTH ABUTMENT DEMOLITION DETAILS

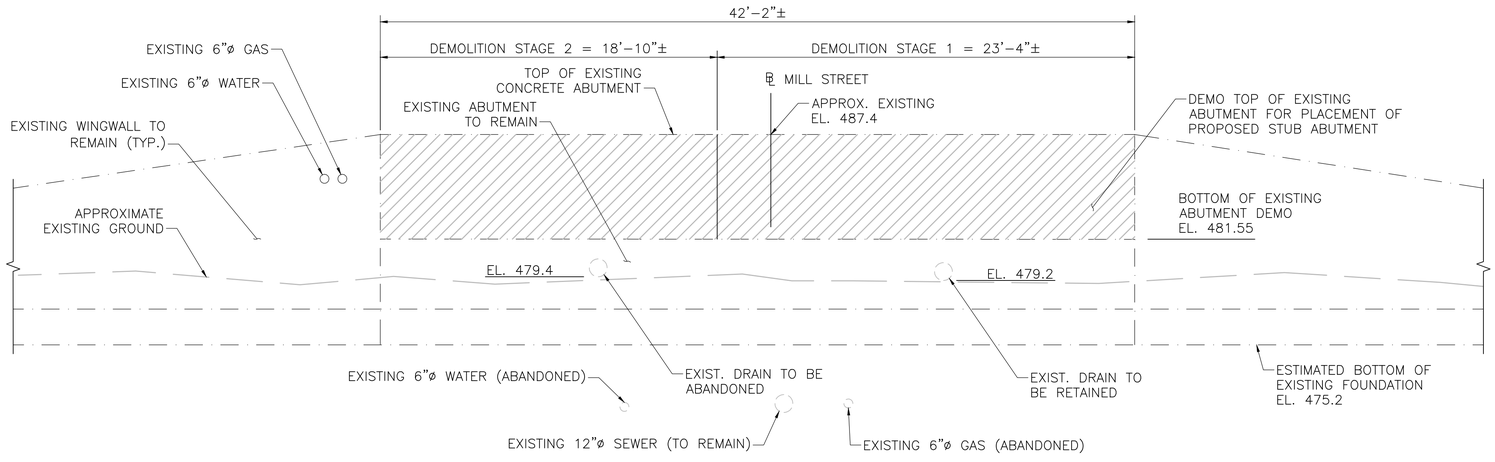


EXISTING NORTH ABUTMENT DEMOLITION PLAN
SCALE: ¼" = 1'-0"



SECTION 1 –
SCALE: ¾" = 1'-0"

DENOTES AREA OF DEMOLITION



EXISTING NORTH ABUTMENT ELEVATION
SCALE: ¼" = 1'-0"

NOTES:

1. CONTRACTOR SHALL EXHIBIT CARE WHEN WORKING AROUND THE EXISTING CHANNEL WALLS AND SHALL NOT DEMOLISH BEYOND LIMITS SHOWN ON THE PLANS. ANY DEMOLITION BEYOND LIMIT SHOWN ON THE PLANS SHALL BE PAID FOR BY THE CONTRACTOR.
2. CONTRACTOR SHALL NOT DAMAGE ANY EXISTING PORTIONS OF THE ABUTMENTS TO REMAIN NOR THE ADJACENT BUILDINGS. ANY EXISTING SUBSTRUCTURE COMPONENT TO REMAIN OR PORTION OF THE ADJACENT BUILDINGS THAT ARE DAMAGED OR MISALIGNED AS A RESULT OF CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR RESTORED, TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL PROVIDE VIBRATION MONITORING AT EXISTING BUILDING DURING DEMOLITION AND CONSTRUCTION TO ENSURE INTEGRITY OF EXISTING BUILDING.
4. DIMENSIONS AND SHAPE OF EXISTING ABUTMENT BACKWALL, APPROACH SLAB SEAT AND STEM ARE ASSUMED.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

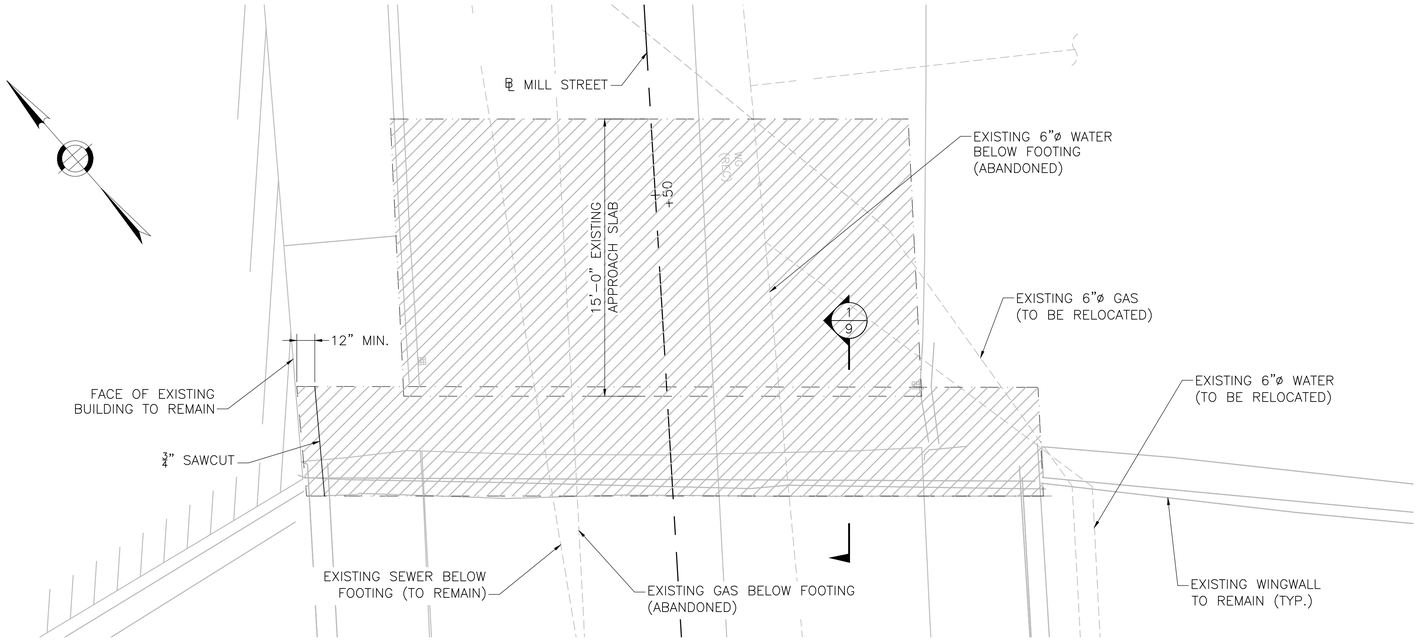
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_DEMO DETAILS.DWG Plotted on 10-Aug-2026 1:22 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

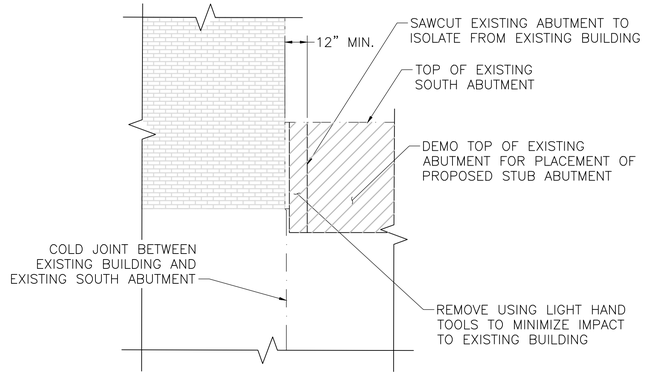
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	82	105
	PROJECT FILE NO. 608862		

SOUTH ABUTMENT DEMOLITION DETAILS



EXISTING SOUTH ABUTMENT DEMOLITION PLAN

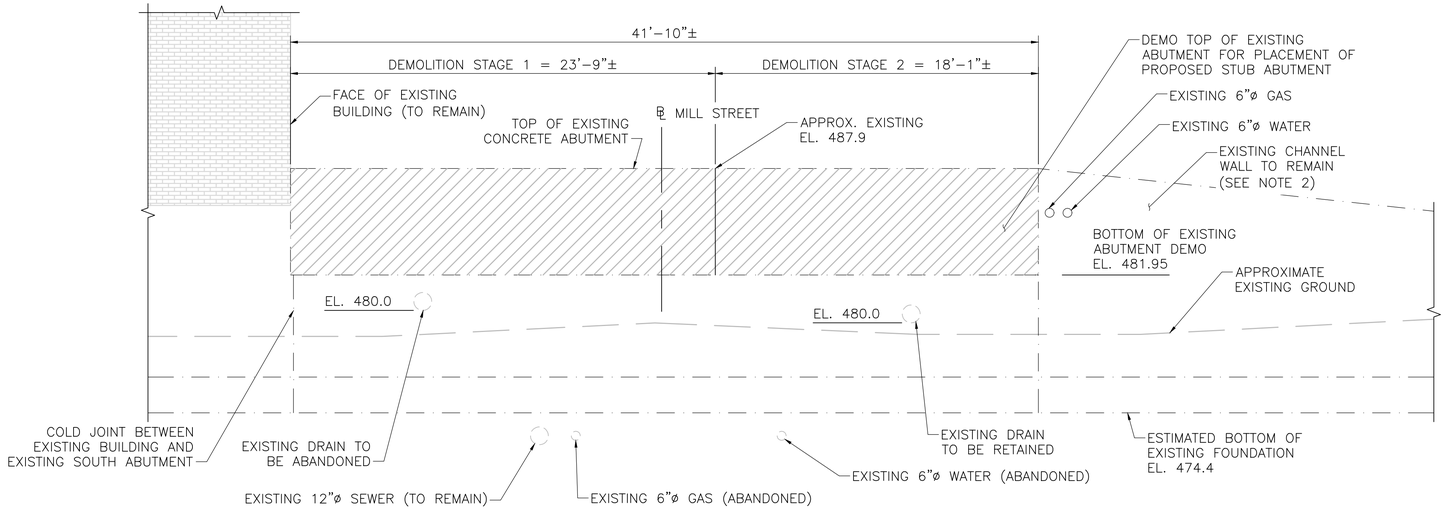
SCALE: ¼" = 1'-0"



DETAIL OF DEMOLITION AT EXISTING BUILDING INTERFACE

SCALE: ¼" = 1'-0"

DENOTES AREA OF DEMOLITION



EXISTING SOUTH ABUTMENT ELEVATION

SCALE: ¼" = 1'-0"

NOTES:

1. CONTRACTOR SHALL EXHIBIT CARE WHEN WORKING AROUND THE EXISTING CHANNEL WALLS AND SHALL NOT DEMOLISH BEYOND LIMITS SHOWN ON THE PLANS. ANY DEMOLITION BEYOND LIMIT SHOWN ON THE PLANS SHALL BE PAID FOR BY THE CONTRACTOR.
2. CONTRACTOR SHALL NOT DAMAGE ANY EXISTING PORTIONS OF THE ABUTMENTS TO REMAIN NOR THE ADJACENT BUILDINGS. ANY EXISTING SUBSTRUCTURE COMPONENT TO REMAIN OR PORTION OF THE ADJACENT BUILDINGS THAT ARE DAMAGED OR MISALIGNED AS A RESULT OF CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR RESTORED, TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL PROVIDE VIBRATION MONITORING AT EXISTING BUILDING DURING DEMOLITION AND CONSTRUCTION TO ENSURE INTEGRITY OF EXISTING BUILDING.
4. DIMENSIONS AND SHAPE OF EXISTING ABUTMENT BACKWALL, APPROACH SLAB SEAT AND STEM ARE ASSUMED.

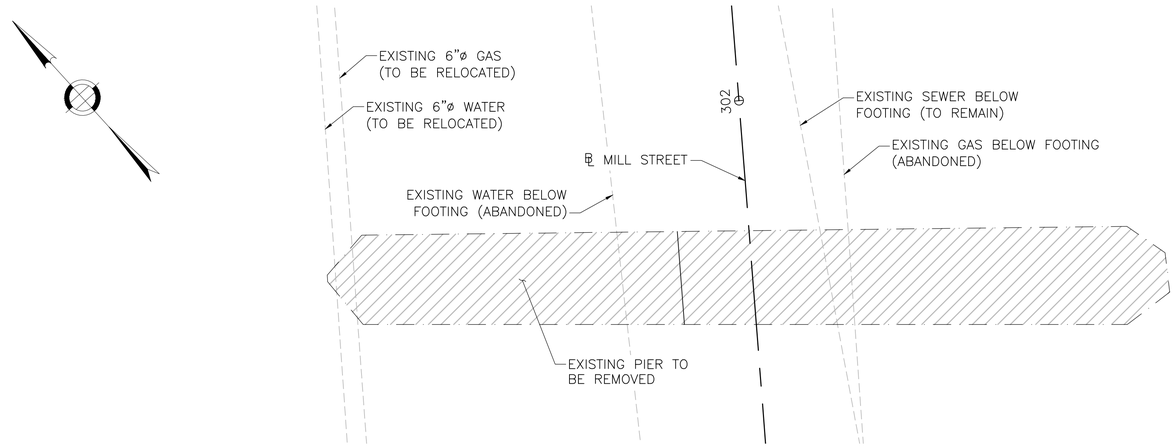
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

608862_BR(S21009)_DEMO DETAILS.DWG Plotted on 10-Aug-2026 1:22 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

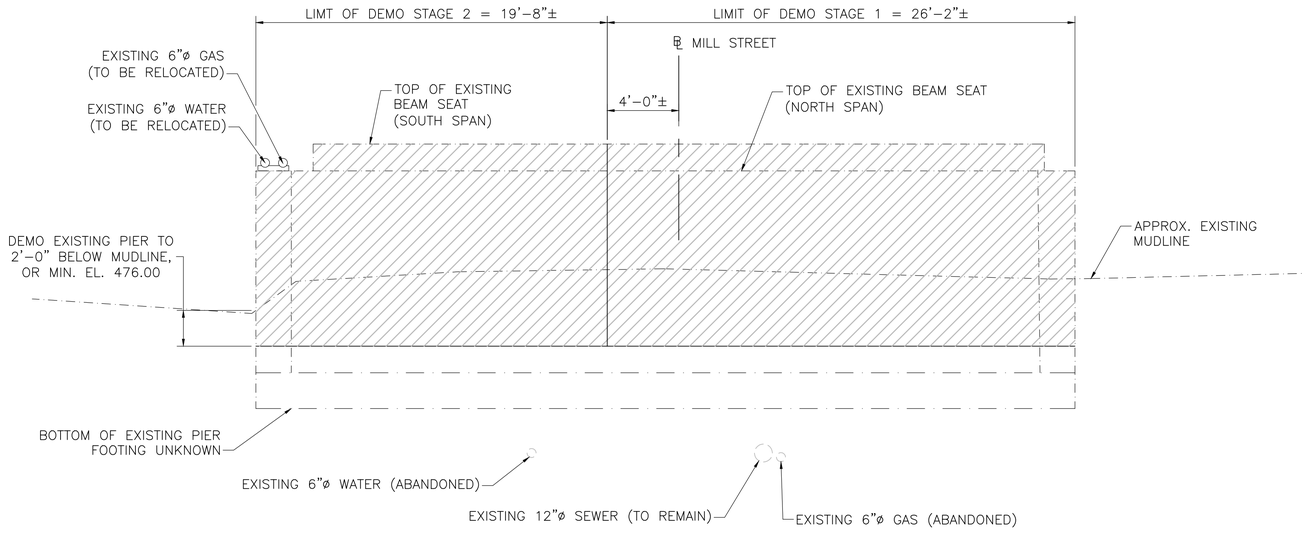
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	83	105
PROJECT FILE NO.	608862		

PIER DEMOLITION DETAILS



EXISTING PIER DEMOLITION PLAN
SCALE: ¼" = 1'–0"

DENOTES AREA
OF DEMOLITION



EXISTING PIER DEMOLITION
SCALE: ¼" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

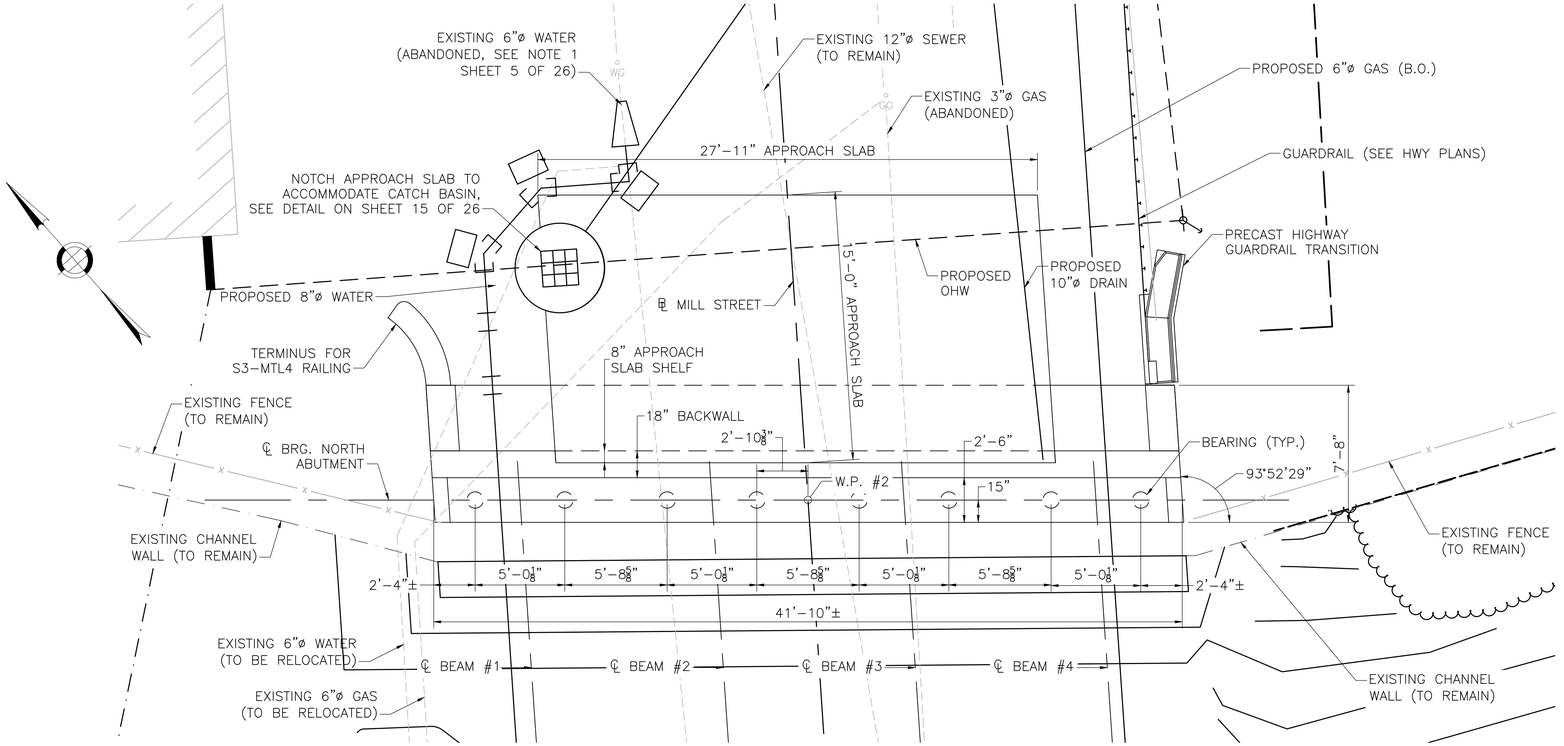
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_DEMO DETAILS.DWG Plotted on 10-Aug-2026 1:22 PM
Final Structural Submittal (SF) 22-January-2026

SOUTHBRIDGE
MILL STREET

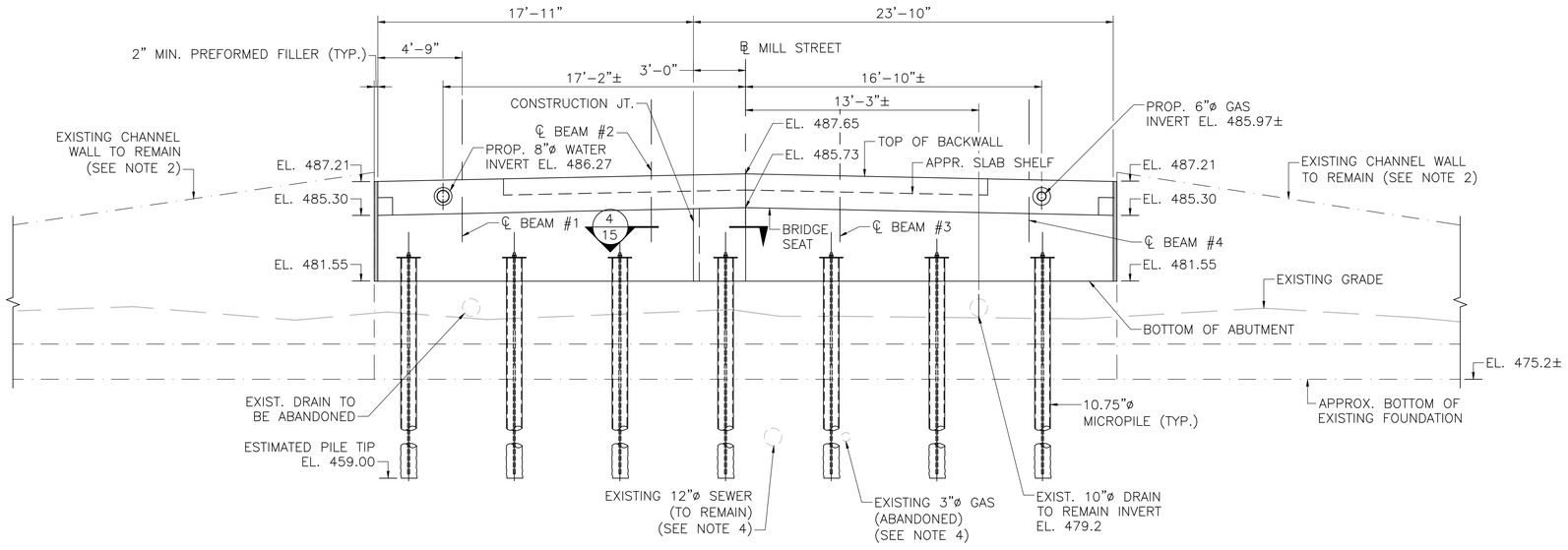
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	84	105
PROJECT FILE NO.	608862		

NORTH ABUTMENT PLAN AND ELEVATION



NORTH ABUTMENT PLAN

SCALE: ¼" = 1'-0"



NORTH ABUTMENT ELEVATION

SCALE: ¼" = 1'-0"

NOTES:

1. PRIOR TO INSTALLATION OF MICROPILES, A 14" O.D. HOLE SHALL BE CORED THROUGH ENTIRE HEIGHT OF EXISTING ABUTMENT, SEE GEOTECHNICAL REPORT.
2. CONTRACTOR SHALL RECONSTRUCT ANY PORTIONS OF EXISTING CHANNEL WALL AND FENCING THAT ARE DEMOLISHED DURING CONSTRUCTION OF PROPOSED ABUTMENT.
3. CONTRACTOR SHALL PROVIDE VIBRATION MONITORING AT EXISTING BUILDING DURING DEMOLITION AND CONSTRUCTION TO ENSURE INTEGRITY OF EXISTING BUILDING.
4. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO DRILLING OF MICROPILES AND ALERT THE ENGINEER IN THE EVENT OF CONFLICT BETWEEN PROPOSED MICROPILE LOCATION AND EXISTING UTILITIES. MICROPILES CAN BE SHIFTED WITHIN 1'-0" IN ANY DIRECTION OF PROPOSED LOCATION TO AVOID EXISTING UTILITY, BUT NO CLOSER TO EDGE OF ABUTMENT.
5. MICROPILES NOT SHOWN FOR CLARITY. SEE FOUNDATION PLAN ON SHEET 8 OF 26.
6. CONTRACTOR SHALL PROVIDE STEEL SLEEVE THROUGH BACKWALL AND DIAPHRAGM. SEE SHEET 21 OF 26 FOR UTILITY PENETRATION DETAIL.
7. DIMENSIONS ARE TAKEN ALONG THE CENTERLINE OF THE BEARINGS.

SEPT. 5, 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	

608862_BR(S21009)_ABUT PLANS AND ELEVATIONS.DWG Plotted on 10-Aug-2026 1:22 PM
22-January-2026 Final Structural Submittal (SF)

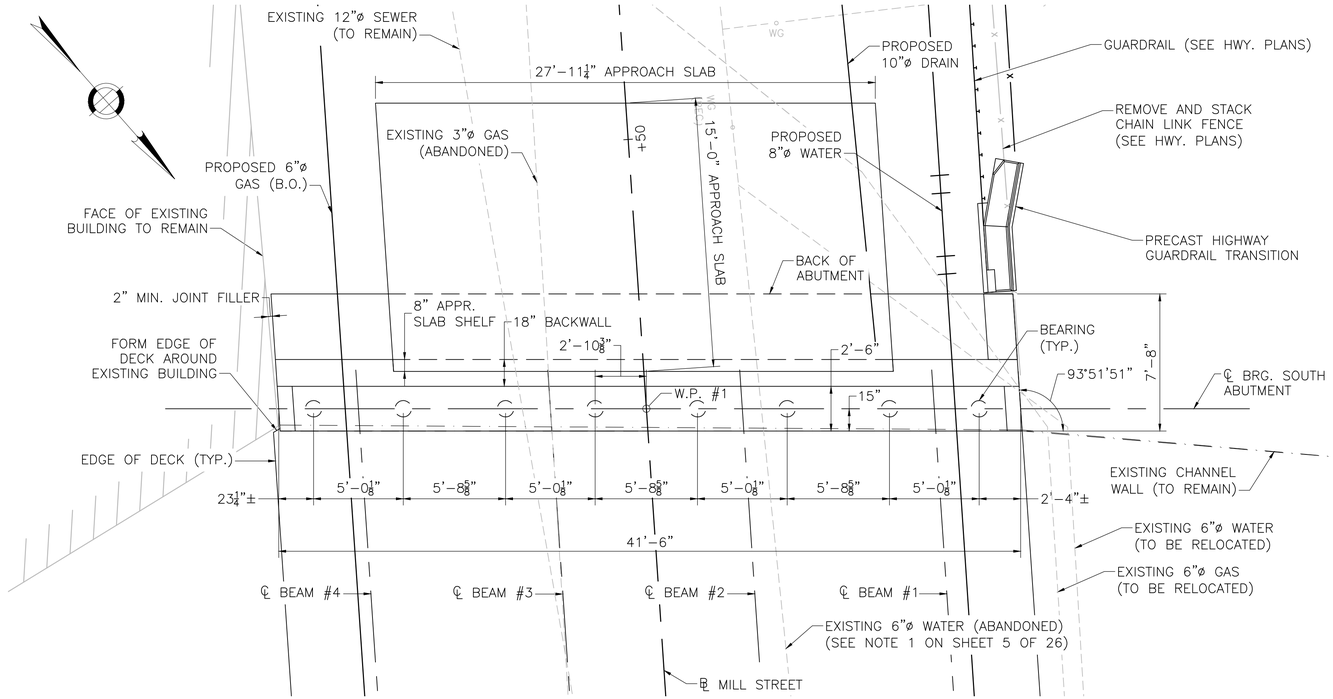
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	85	105
PROJECT FILE NO.	608862		

SOUTH ABUTMENT PLAN AND ELEVATION

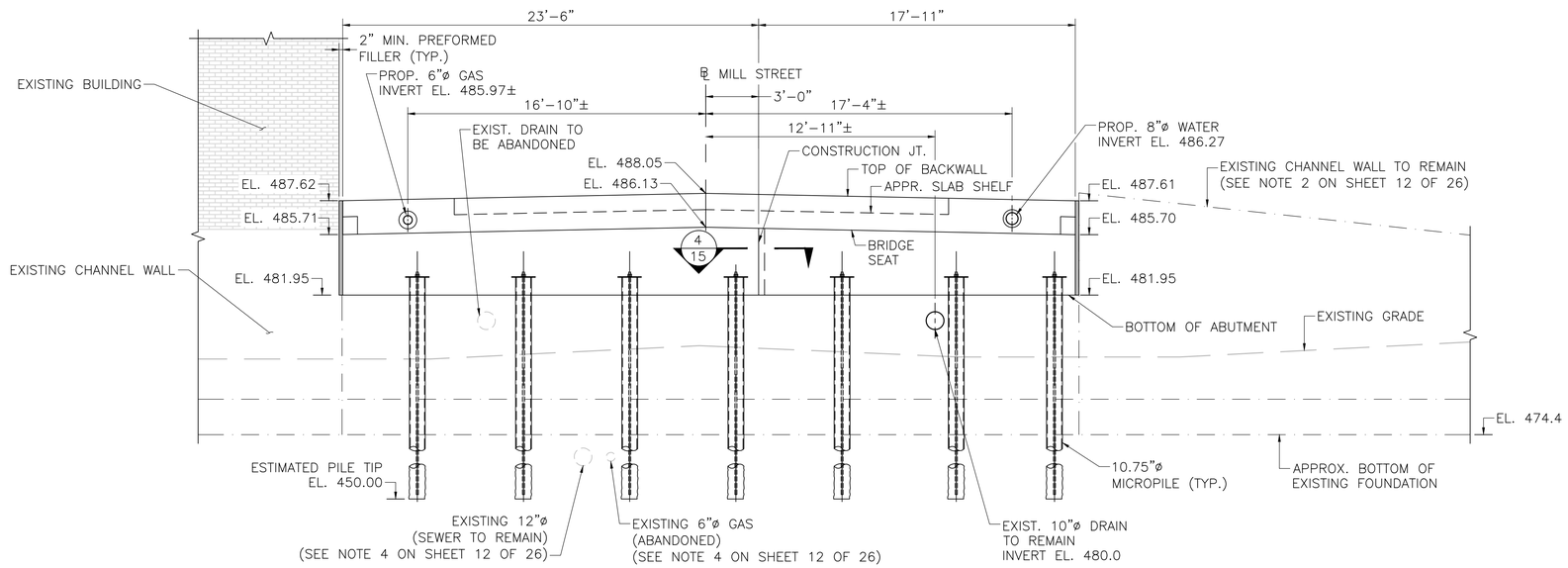
NOTE:

SEE NOTES ON SHEET 12 OF 26.



SOUTH ABUTMENT PLAN

SCALE: ¼" = 1'-0"



SOUTH ABUTMENT ELEVATION

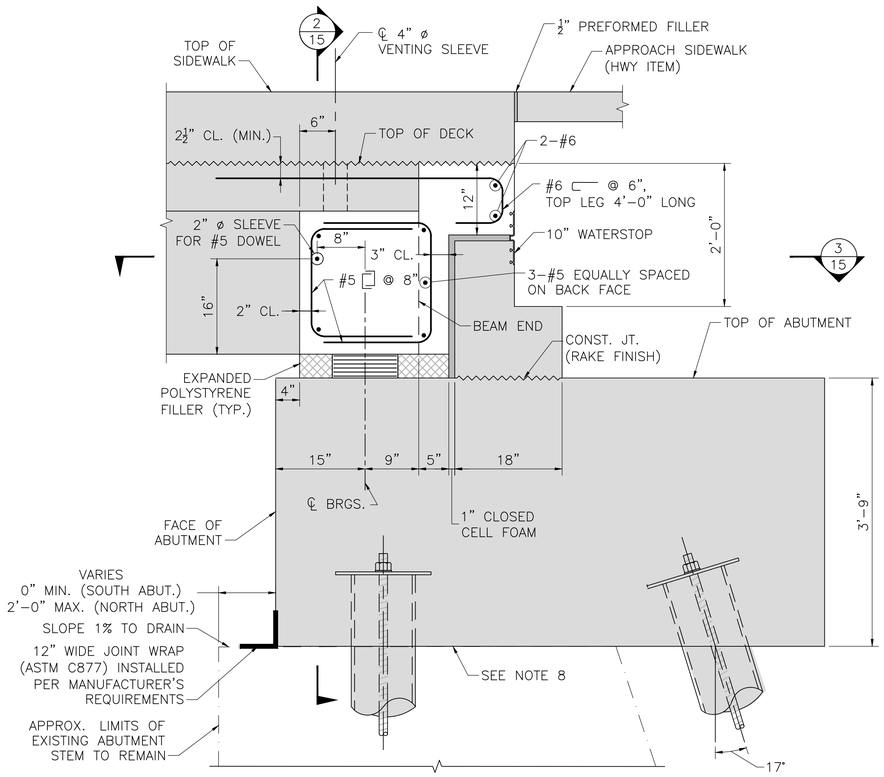
SCALE: ¼" = 1'-0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

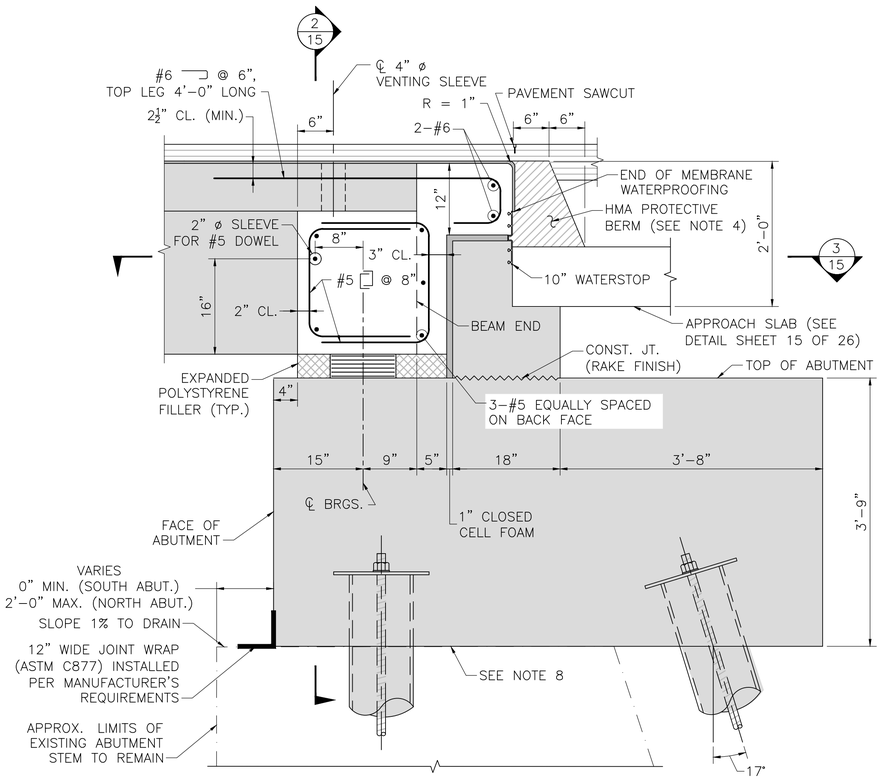
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_ABUT PLANS AND ELEVATIONS.DWG Plotted on 10-Aug-2026 1:22 PM
22-January-2026 Final Structural Submittal (SF)



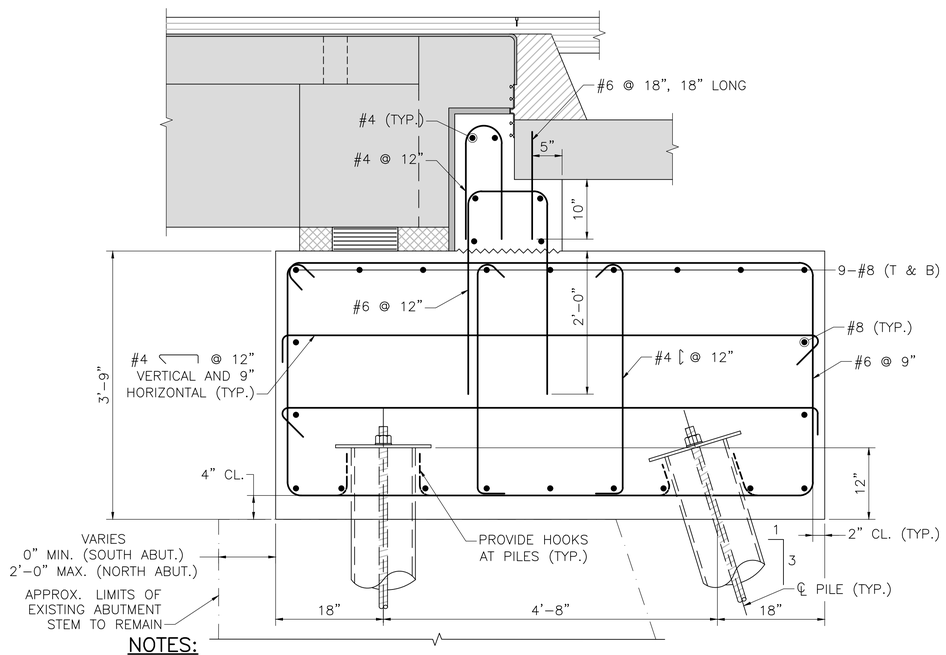
DETAILS AT ABUTMENT – SIDEWALK SECTION

SCALE: 1" = 1'-0"



DETAILS AT ABUTMENT – ROADWAY SECTION

SCALE: 1" = 1'-0"

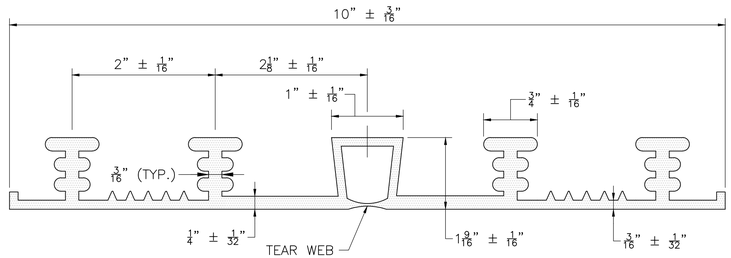


NOTES:

1. SECTION AT ROADWAY SHOWN. SECTION AT SIDEWALK SIMILAR.
2. DECK AND END DIAPHRAGM REINFORCEMENT NOT SHOWN FOR CLARITY.

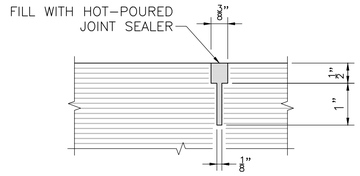
ABUTMENT REINFORCEMENT

SCALE: 1" = 1'-0"



10" WATERSTOP

NOT TO SCALE



PAVEMENT SAWCUT DETAIL

NOT TO SCALE

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	86	105
PROJECT FILE NO. 608862			

ABUTMENT DETAILS (1 OF 2)

SIDEWALK AND ROADWAY SECTION 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 KEEPER BLOCKS SHALL BE CAST BEFORE BEAMS ARE SET.
6. THE BACKWALL 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 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. 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. IMMEDIATELY BEFORE NEW STUB ABUTMENT CONCRETE IS CAST, THE TOP OF EXISTING CONCRETE ABUTMENT TO REMAIN SHALL BE CLEANED OF ALL DUST, DIRT, AND CARBONATION USING A HIGH-PRESSURE WATER BLAST. THE SURFACES SHALL THEN BE WETTED NO MORE THAN 24 HOURS PRIOR TO THE PLACEMENT OF THE NEW CONCRETE, SO THAT THE SURFACES SHALL HAVE A SATURATED DRY (SSD) CONDITION.

SEPT. 5, 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

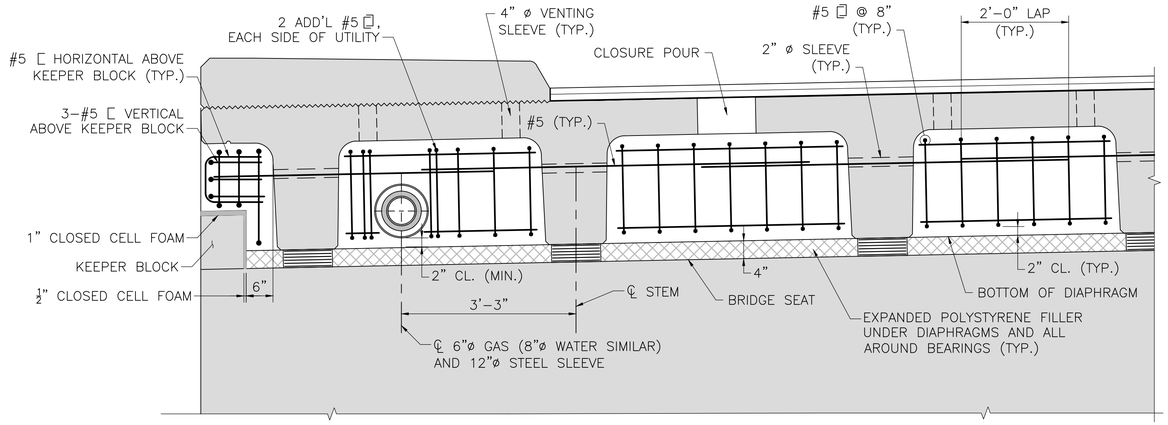
608862_BR(S21009)_ABUTMENT DETAILS.DWG Plotted on 10-Aug-2026 1:23 PM

22-January-2026 Final Structural Submittal (SF)

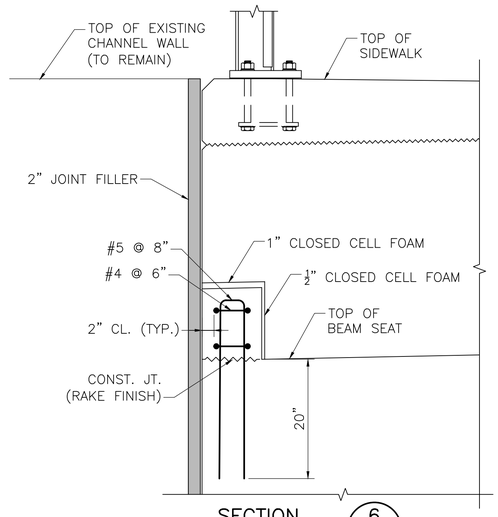
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	87	105
	PROJECT FILE NO. 608862		

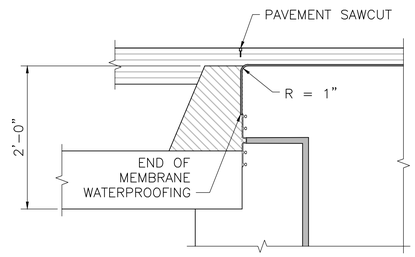
ABUTMENT DETAILS (2 OF 2)



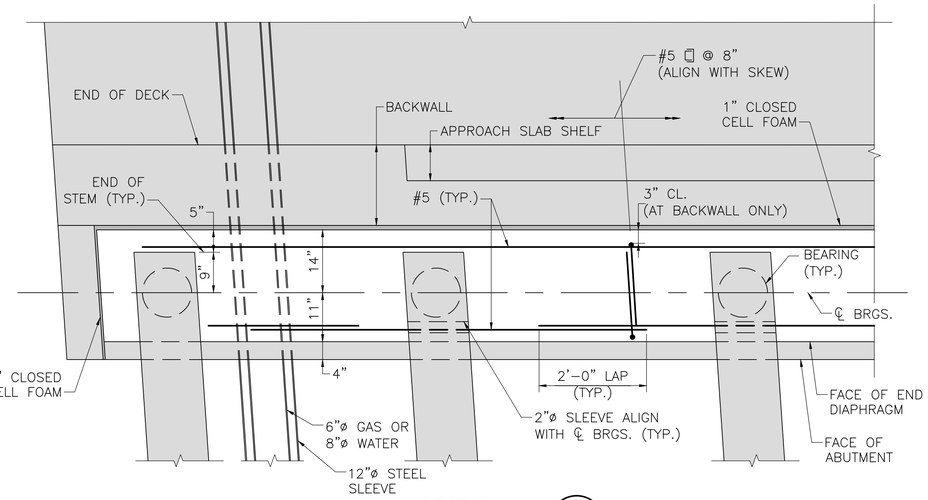
SECTION 2
SCALE: ¾" = 1'-0"



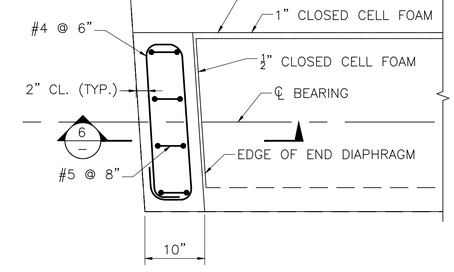
SECTION 6
SCALE: 1" = 1'-0"



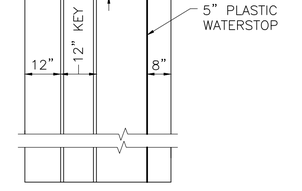
DETAILS AT ABUTMENT FOR DECK WITH HMA
SCALE: 1" = 1'-0"



SECTION 3
SCALE: ¾" = 1'-0"

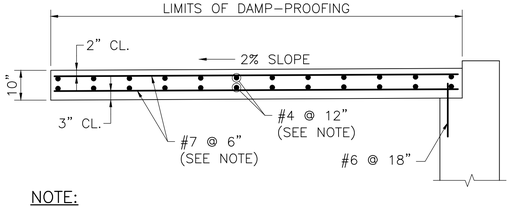


KEEPER BLOCK DETAIL
SCALE: 1" = 1'-0"



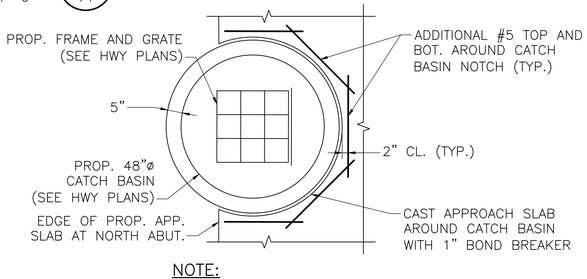
NOTE:
REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

SECTION 5
NOT TO SCALE



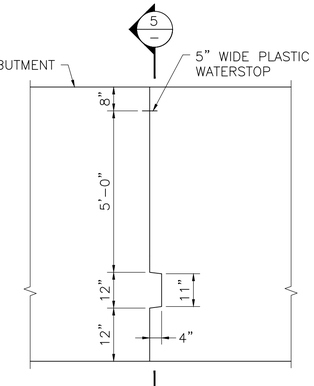
NOTE:
PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO ℄ CONSTRUCTION.
PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
ALL REINFORCEMENT SHALL NOT BE COATED.

APPROACH SLAB DETAIL
SCALE: ½" = 1'-0"



NOTE:
APPROACH SLAB MAIN REINFORCING NOT SHOWN FOR CLARITY.

APPROACH SLAB NOTCH DETAIL
SCALE: ½" = 1'-0"

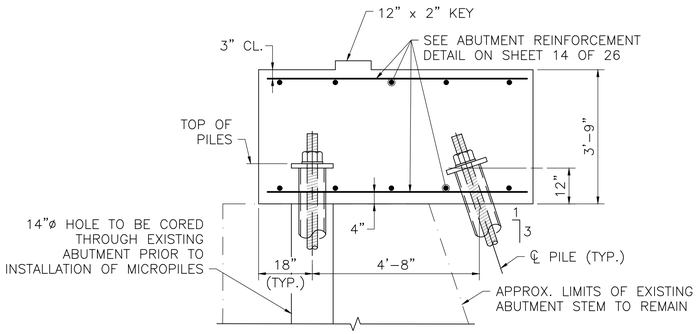


SECTION 4
SCALE: ½" = 1'-0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

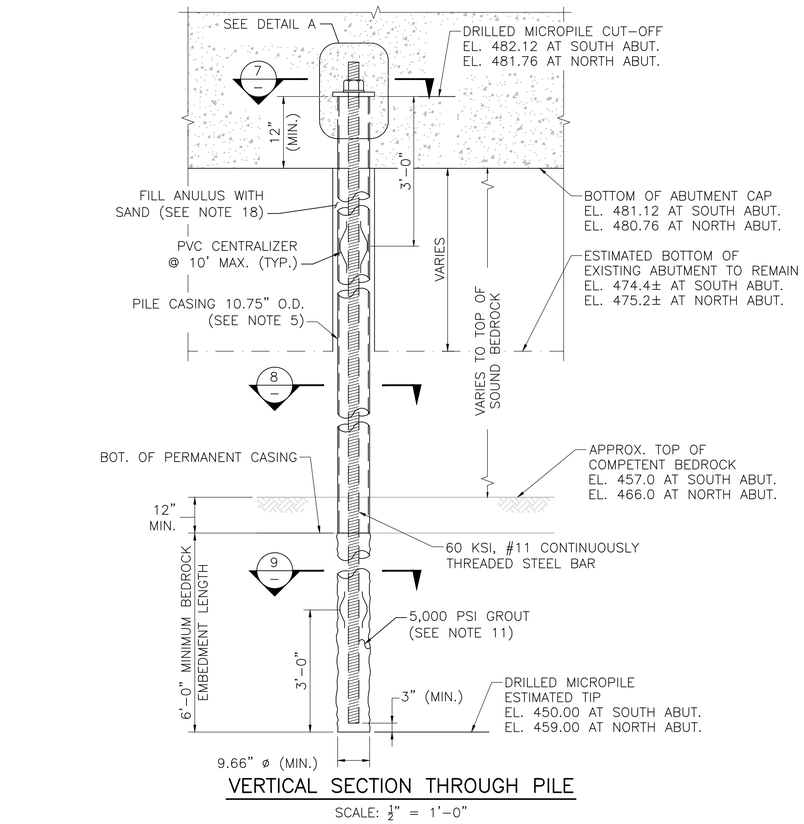
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_ABUTMENT DETAILS.DWG Plotted on 10-Aug-2026 1:23 PM
Final Structural Submittal (SF) 22-January-2026



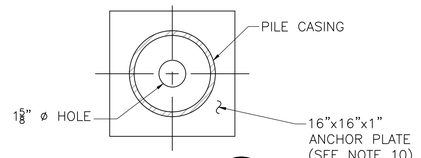
TYPICAL SECTION THROUGH PILE CAP

SCALE: $\frac{1}{2}$" = 1'–0"



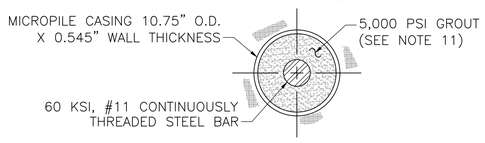
VERTICAL SECTION THROUGH PILE

SCALE: $\frac{1}{2}$" = 1'–0"



SECTION 7

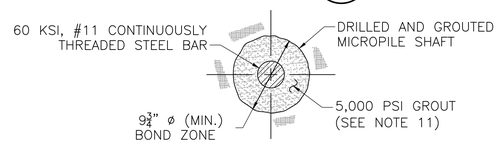
SCALE: $1\frac{1}{2}$" = 1'–0"



(CASED ZONE)

SECTION 8

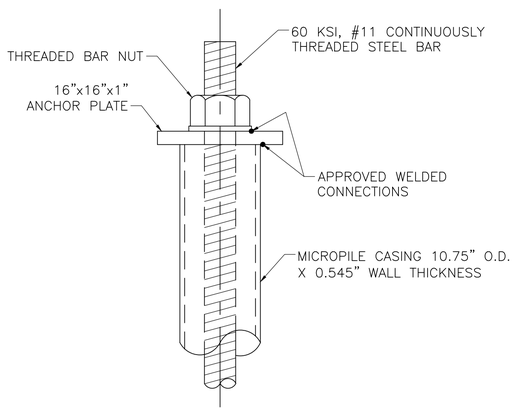
SCALE: $1\frac{1}{2}$" = 1'–0"



(BONDED ZONE)

SECTION 9

SCALE: $1\frac{1}{2}$" = 1'–0"



DETAIL A

SCALE: $1\frac{1}{2}$" = 1'–0"

MICROPILE INSTALLATION PROCEDURE:

1. CORE 14"ø HOLE THROUGH ENTIRE HEIGHT OF EXISTING EXISTING ABUTMENT.
2. ADVANCE STEEL CASING TO A MINIMUM DEPTH OF 12" BELOW TOP OF BEDROCK UTILIZING ROTARY DRILLING TECHNIQUES AND THEN CONTINUE DRILLING, UNCASED, FOR A MINIMUM BOND LENGTH OF 6'–0".
3. PLACE REINFORCING BAR WITH CENTRALIZER CASING.
4. TREMIE CASING FULL DEPTH WITH NEAT CEMENT GROUT.
5. CEMENT GROUT SHALL BE PLACED UNDER GRAVITY HEAD ONLY.
6. NO PRESSURE GROUTING IS TO TAKE PLACE FOR THE INSTALLATION OF THE MICROPILES NOR IS CASING TO EXTEND INTO THE REQUIRED BOND ZONE.
7. TRIM TOP OF CASING TO PROPER ELEVATION.
8. FILL ANNULUS OF CORE HOLE THROUGH EXISTING ABUTMENTS WITH SAND BORROW (M1.04.0).
9. CONSISTENCY OF PILES INSTALLATION SHALL BE MONITORED AND RECORDED AS DESCRIBED IN THE SPECIAL PROVISIONS. MONITORED AND RECORDED DATA SHALL INCLUDE TOTAL PILE LENGTH, SOI/ROCK ENCOUNTERED DURING INSTALLATION, AND ANY OBSTRUCTIONS OR IRREGULARITIES.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	88	105
PROJECT FILE NO.	608862		

MICROPILE DETAILS

MICROPILE NOTES:

1. THE FACTORED AXIAL DESIGN LOAD PER MICROPILE IS 180 KIPS AS PER AASHTO LRFD BRIDGE SPECIFICATIONS STRENGTH I LOAD COMBINATION.
2. THE FACTORED STRUCTURAL PILE RESISTANCE IS 207 KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 276 KIPS AND A RESISTANCE FACTOR OF 0.75.
3. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS 209 KIPS AND IS A PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 379 KIPS AND A RESISTANCE FACTOR OF 0.55.
4. THE ESTIMATED TIP ELEVATION IS 450.00 FEET AT THE SOUTH ABUTMENT AND 459.00 FEET AT THE NORTH ABUTMENT (7'–0" BELOW TOP OF BEDROCK).
5. STEEL CASING SHALL BE PRIME STEEL AND MEET THE REQUIREMENTS OF API 5L PSL1 GRADE 52 WITH SR15 SUPPLEMENTAL REQUIREMENTS. TYPICAL CORROSION COVER ASSUMED TO BE $\frac{1}{16}$" LOSS TO THE CASING.
6. THREADED STEEL BAR SHALL BE #11 CONTINUOUSLY THREADED FOR THE ENTIRE BAR LENGTH CONFORMING TO AASHTO M31, HAVING A MINIMUM YIELD STRENGTH OF 60 KSI (GRADE 60).
7. THREADED CASING JOINTS ARE NOT ALLOWED WITHIN 3'–0" OF THE PILE CAP.
8. THREADBAR NUT AND COUPLING SHALL BE SUPPLIED FROM THE SAME MANUFACTURER AS THE THREADBAR AND SHALL CONFORM TO THE THREADBAR MANUFACTURER REQUIREMENTS.
9. BAR COUPLING SHALL BE FULLY ENGAGED ON THE THREADED STEEL BAR AND SHALL NOT BE LOCATED IN THE TOP THIRD OF THE MICROPILE LENGTH.
10. ANCHOR PLATE SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50.
11. GROUT SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 5000 PSI AND CEMENT SHALL CONFORM TO AASHTO M85 TYPE I, II, III, OR IV.
12. GROUT SHALL BE PLACED USING TREMIE METHODS.
13. THE CONTRACTOR SHALL SUBMIT A MICROPILE SCHEDULE, MICROPILE INSTALLATION, AND MICROPILE TESTING PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER.
14. SEE SPECIAL PROVISION ITEM 945.10 DRILLED MICROPILES, ITEM 948.60 MICROPILE VERIFICATION LOAD TEST, AND ITEM 948.61 MICROPILE PROOF LOAD TEST FOR ADDITIONAL MICROPILE SPECIFICATIONS.
15. ONE MICROPILE VERIFICATION TEST SHALL BE PERFORMED ON A SACRIFICIAL PILE. SEE FOUNDATION PLAN ON SHEET 8 OF 26 FOR APPROXIMATE LOCATION.
16. TWO MICROPILE PROOF TESTS SHALL BE PERFORMED ON TWO PRODUCTION PILES, ONE AT THE SOUTH ABUTMENT AND ONE AT THE NORTH ABUTMENT.
17. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO DRILLING OF MICROPILES AND ALERT THE ENGINEER IN THE EVENT OF CONFLICT BETWEEN PROPOSED MICROPILE LOCATION AND EXISTING UTILITIES.
18. ANNULUS AROUND DRILLED MICROPILES TO BE FILLED WITH SAND TO ALLOW EXISTING ABUTMENTS TO BE SELF–SUPPORTED AND NOT IMPART LOAD ON MICROPILES.
19. CONTRACTOR SHALL SEQUENCE PILE INSTALLATION SUCH THAT PILES WITHIN 8 FEET OF THE PILE TO BE DRILLED ARE NOT GROUTED WITHIN THE PREVIOUS 12 HOURS.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
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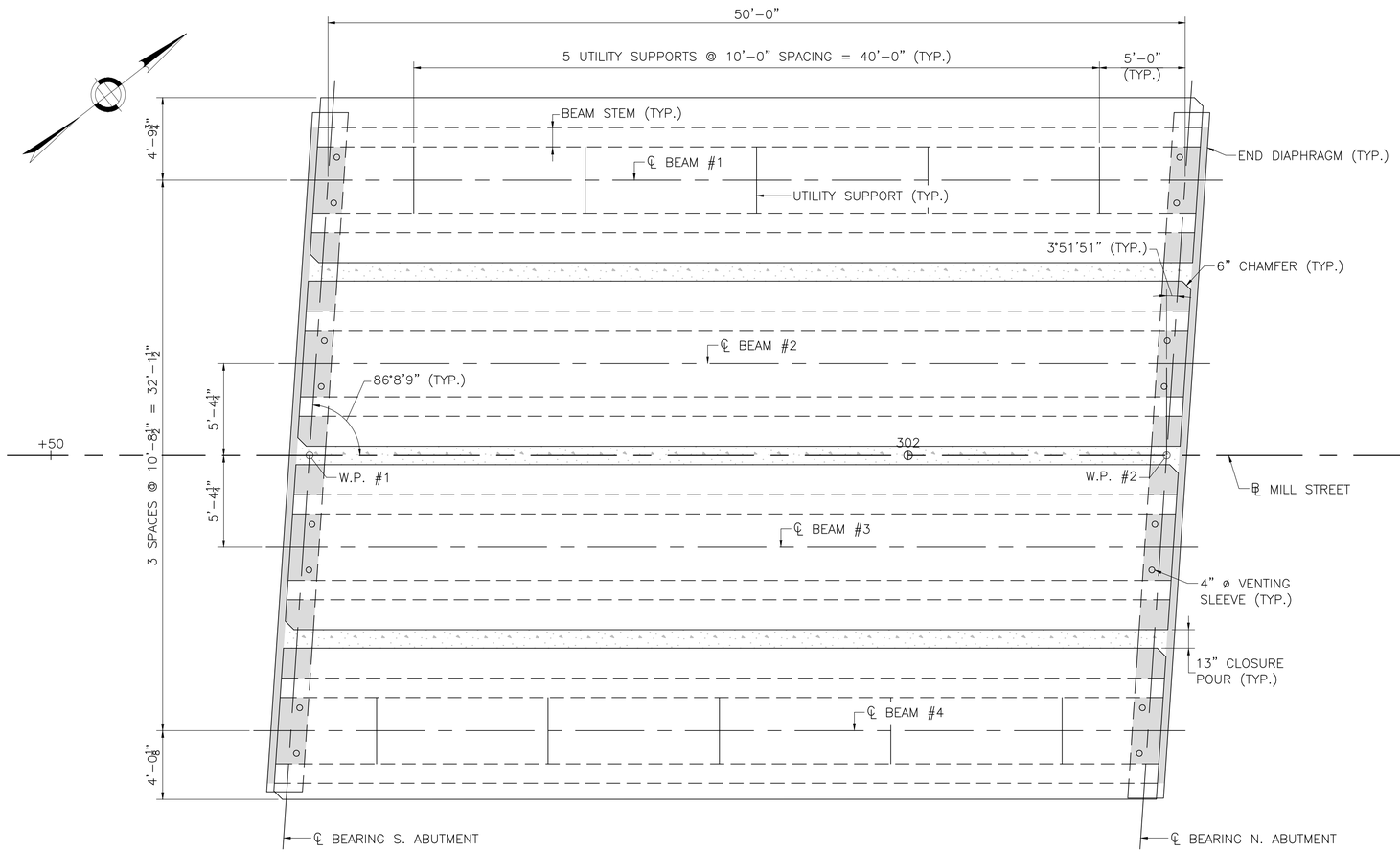
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_MICROPILE DETAILS.DWG Plotted on 10-Aug-2026 1:24 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	89	105
PROJECT FILE NO.	608862		

FRAMING PLAN



FRAMING PLAN
SCALE: ¼" = 1'-0"

NOTE:

SEE SHEET 8 OF 26 FOR WORKING POINT DATA.

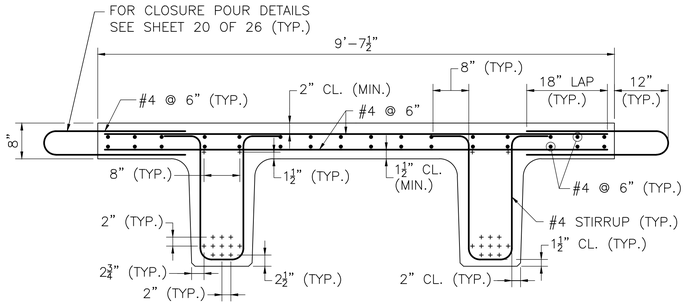
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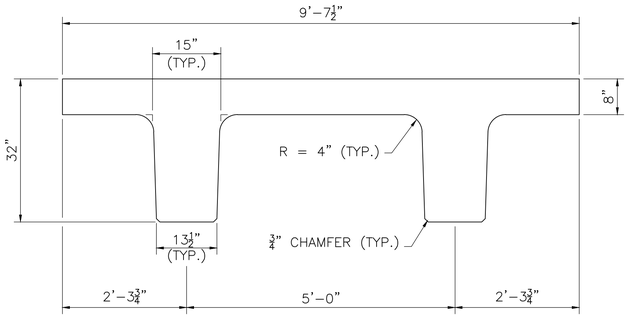
608862_BR(S21009)_FRAMING PLAN.DWG Plotted on 10-Aug-2026 1:24 PM
Final Structural Submittal (SF) 22-January-2026

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	90	105
PROJECT FILE NO.	608862		

BEAM DETAILS (1 OF 2)



MIDSPAN SECTION
SCALE: ¾" = 1'–0"



NOTES:

1. INTERIOR BEAM (BM. #2 & #3) SHOWN. SEE EXTERIOR BEAM FASCIA DETAIL THIS SHEET FOR MODIFICATIONS TO EXTERIOR BEAM (BM. #1 & #4).
2. BEAM WIDTH DOES NOT INCLUDE CLOSURE POURS.
3. SEE SHEET 21 OF 26 FOR UTILITY SUPPORT AND INSERT DETAILS.

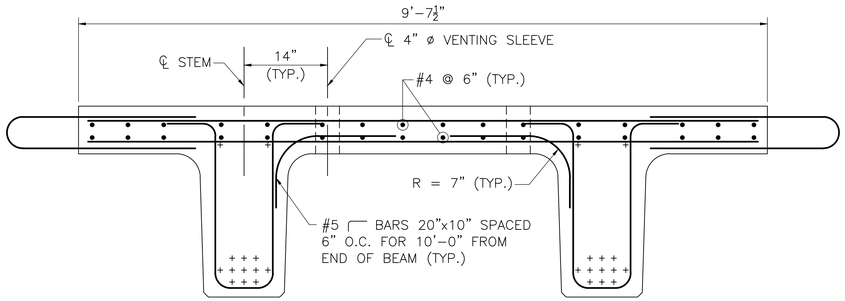
NEXT 32D BEAM

TYPICAL BEAM DIMENSIONS
SCALE: ¾" = 1'–0"

ESTIMATED CAMBER AND DEFLECTIONS AT MIDSPAN (INCHES)					
STATE OF BEAM	DIRECTION	BEAM #1	BEAM #2	BEAM #3	BEAM #4
CAMBER AT TRANSFER	UP	3/4	3/4	3/4	3/4
CAMBER AT ERECTION	UP	1 3/8	1 3/8	1 3/8	1 3/8
FINAL NCDL DEFLECTION	DOWN	1/4	1/8	1/8	1/4
FINAL CDL DEFLECTION	DOWN	0	0	0	0

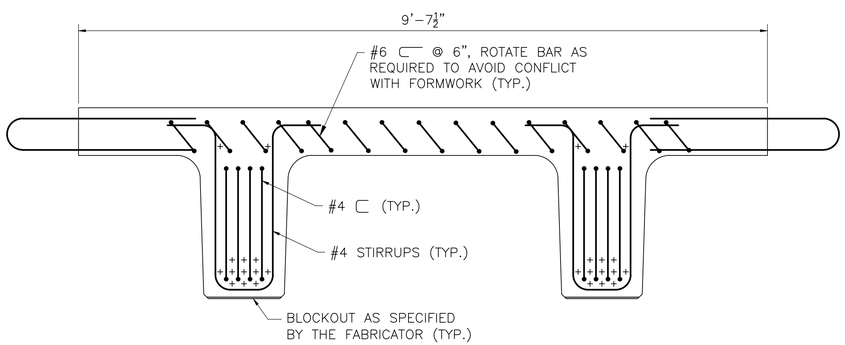
NOTES:

1. CAMBER AND DEFLECTIONS IN THE TABLE ARE NOT GUARANTEED AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
2. THE BEAM CONCRETE MODULUS OF ELASTICITY AT TRANSFER USED IN THE ABOVE BEAM CAMBER IS ASSUMED TO BE 4877010 PSI.
3. THE BEAM CONCRETE MODULUS OF ELASTICITY USED IN THE ABOVE BEAM DEFLECTION IS ASSUMED TO BE 5362700 PSI (AT 28 DAYS).



NOTE:
SEE MIDSPAN SECTION ON SHEET 18 OF 26 FOR DETAILS AND INFORMATION NOT SHOWN HERE.

SECTION 11/19
SCALE: 1" = 1'–0"

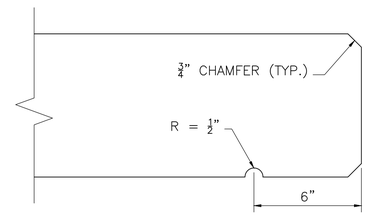


NOTE:
SEE MIDSPAN SECTION ON SHEET 18 OF 26 FOR DETAILS AND INFORMATION NOT SHOWN HERE.

SECTION 10/19
SCALE: 1" = 1'–0"

PRESTRESS BEAM NOTES:

1. + DENOTES STRAIGHT STRANDS.
2. ALL PRETENSIONING ELEMENTS SHALL BE 0.6" ø, UNCOATED, SEVEN–WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
3. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
4. THE INITIAL TENSION PER 0.6" ø STRAND SHALL BE 44 KIPS.
5. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 8000 PSI.
6. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, (AASHTO T22) OF AT LEAST 6000 PSI.
7. THE TOP OF THE BEAMS UNDER THE SIDEWALKS SHALL BE GIVEN A RAKED FINISH (¼" AMPLITUDE) ACROSS THE ENTIRE WIDTH (PERPENDICULAR TO THE BEAM'S AXIS).
8. THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES AND BEAM STRESSES DURING LIFTING AND HANDLING WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
9. TO CONTROL CRACKING AT THE END OF THE BEAM, THE FABRICATOR SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM.
10. INTERIOR BEAM (BM. #2 & #3) SECTIONS ARE SHOWN. SEE EXTERIOR BEAM FASCIA DETAIL ON THIS SHEET FOR MODIFICATIONS TO EXTERIOR BEAMS (BM. #1 & #4).
11. FOR REBAR THAT EXTENDS INTO SIDEWALK, SEE DETAIL ON SHEET 20 OF 26.



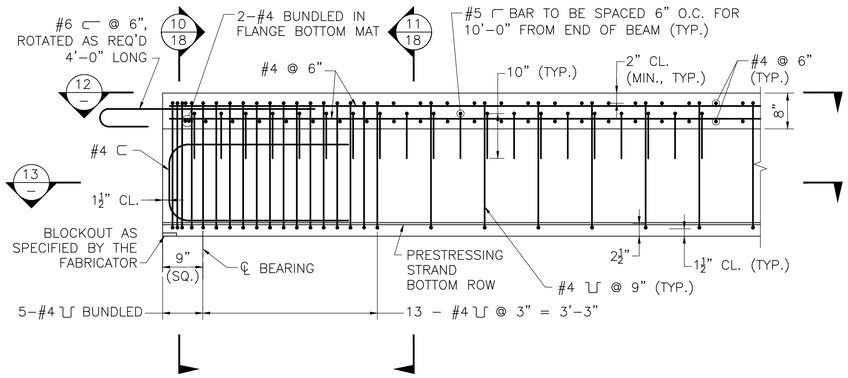
EXTERIOR BEAM FASCIA DETAIL
SCALE: 3" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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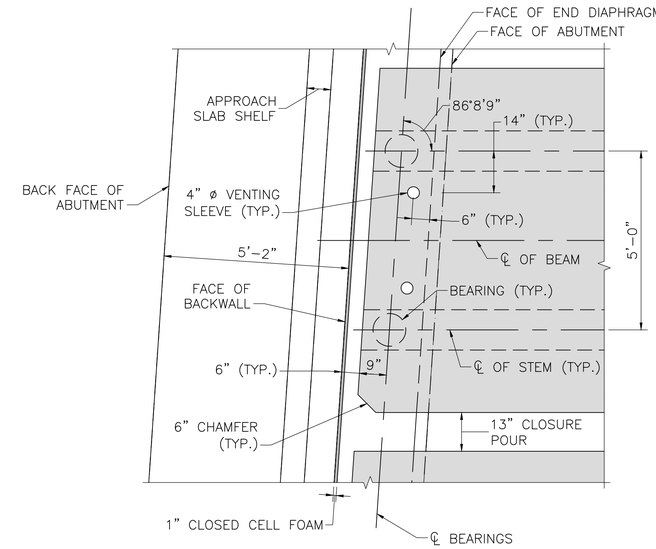
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_BEAM DETAILS.DWG Plotted on 10-Aug-2026 1:25 PM
22-January-2026 Final Structural Submittal (SF)

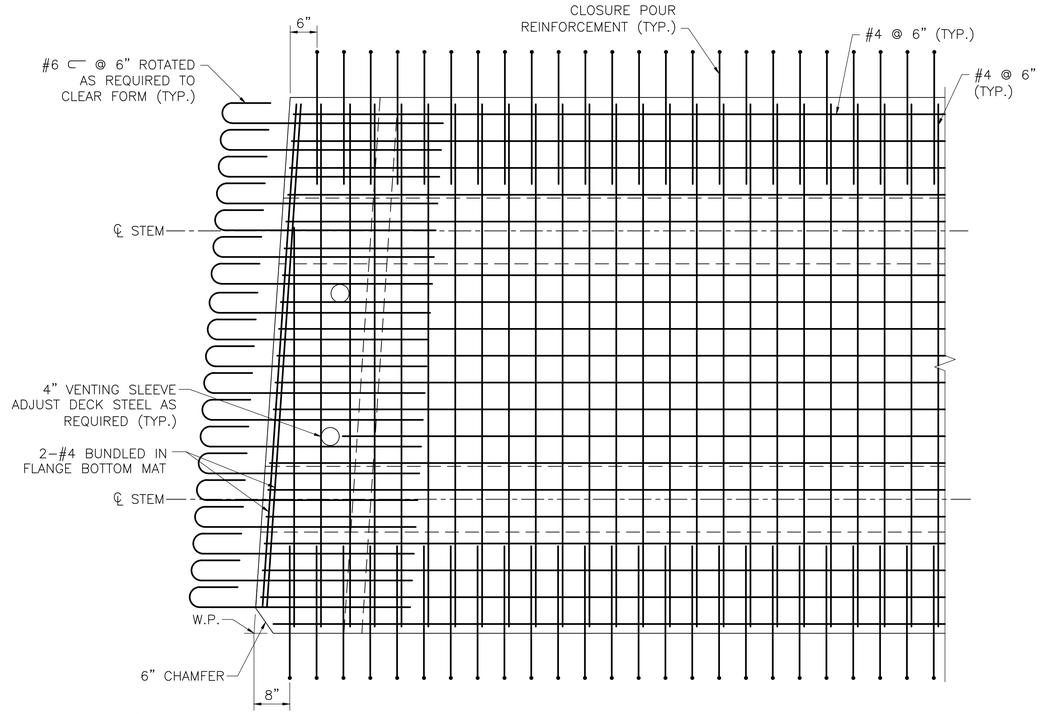


NOTE:
REMAINDER OF PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

BEAM LONGITUDINAL SECTION AT ABUTMENT
SCALE: ¾" = 1'-0"

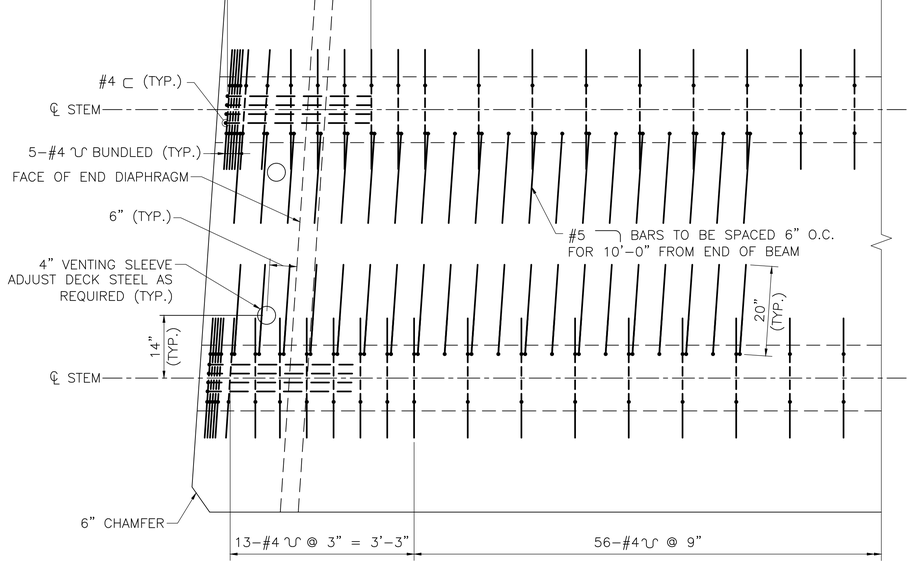


END OF BEAM PLAN AT ABUTMENT
SCALE: ½" = 1'-0"



NOTE:
PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

SECTION 12/– SCALE: ¾" = 1'-0"



NOTE:
PRESTRESSING STRANDS NOT SHOWN FOR CLARITY.

SECTION 13/– SCALE: ¾" = 1'-0"

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	91	105
	PROJECT FILE NO. 608862		

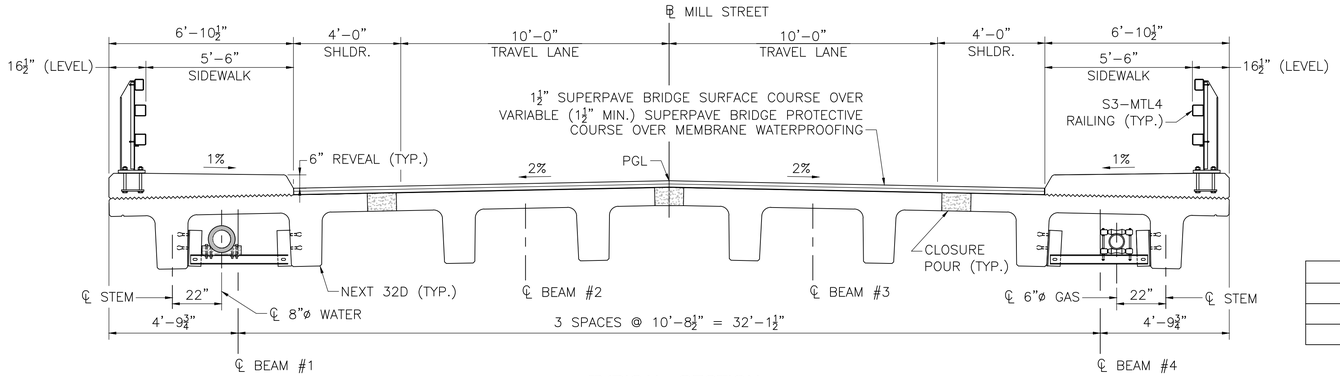
BEAM DETAILS (2 OF 2)

SEPT. 5, 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

608862_BR(S21009)_BEAM DETAILS.DWG Plotted on 10-Aug-2026 1:25 PM
22-January-2026 Final Structural Submittal (SF)

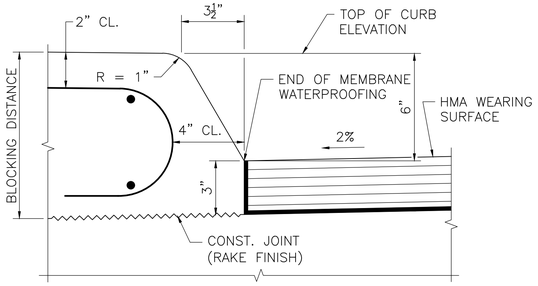
DECK DETAILS



TYPICAL SECTION

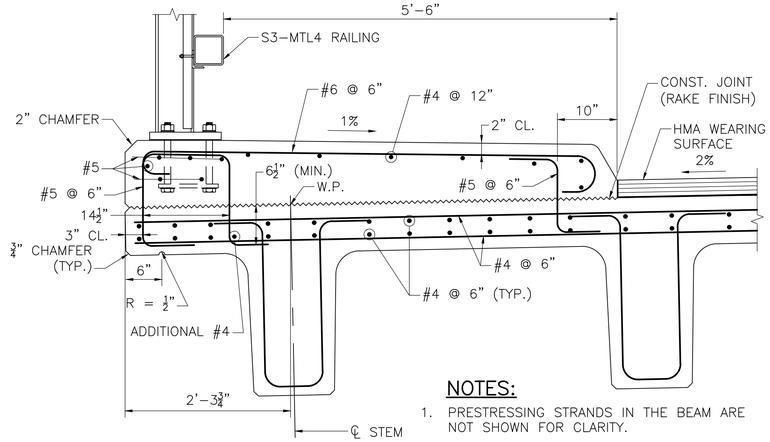
SCALE: ⅜" = 1'–0"

WEARING SURFACE THICKNESS (IN)	
NORTH ABUT.	4.19
MIDSPAN	3.00
SOUTH ABUT.	4.19



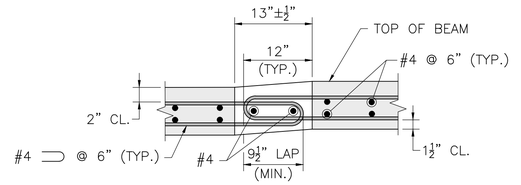
FACE OF SIDEWALK CURB DETAILS

SCALE: 3" = 1'–0"

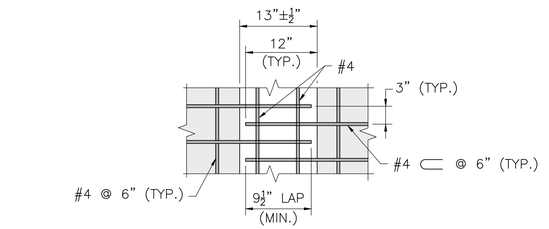


NOTES:

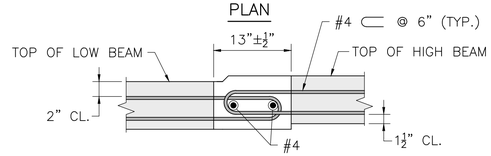
1. PRESTRESSING STRANDS IN THE BEAM ARE NOT SHOWN FOR CLARITY.
2. EMBEDMENT DEPTH OF REINFORCING CAN BE INCREASED AS NEEDED TO AVOID INTERFERENCE WITH PRESTRESSING STRANDS.



SECTION



PLAN



CAMBER DIFFERENTIAL DETAIL

CLOSURE POUR DETAILS

NOT TO SCALE

CLOSURE POUR NOTES:

1. EDGE OF BEAM FLANGE IN CLOSURE POUR TO HAVE EXPOSED AGGREGATE FINISH.
2. CLOSURE POUR REINFORCEMENT TO BE PLACED ALONG THE ENTIRE SPAN.
3. CLOSURE POUR REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO BEAM EDGE.
4. METHOD OF FORMING CLOSURE POUR TO BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND SHALL BE ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHOULD NOT PENETRATE THROUGH TOP OF POUR UNLESS APPROVED BY THE ENGINEER.
5. CLOSURE POUR CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI AND SHALL REACH A COMPRESSIVE STRENGTH OF 3500 PSI BEFORE THE ROADWAY IS REOPENED TO PUBLIC TRAFFIC.
6. AT THE CONTRACTOR'S OPTION, GALVANIZED INSERTS MAY BE CAST IN TO THE BEAMS TO FACILITATE FORMING OF THE CLOSURE POUR. THE INSERTS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MAY NOT BE CLOSER THAN 2'–0" O.C.. CALCULATIONS SHALL BE PROVIDED ALONG WITH MANUFACTURER'S RECOMMENDATIONS DEMONSTRATING THAT THE INSERTS ARE SUFFICIENT FOR THE INTENDED PURPOSE.
7. WHEN MINIMUM COVER OVER HOOPS IN THE CLOSURE POUR IS LESS THAN 1" USE CAMBER DIFFERENTIAL DETAIL.

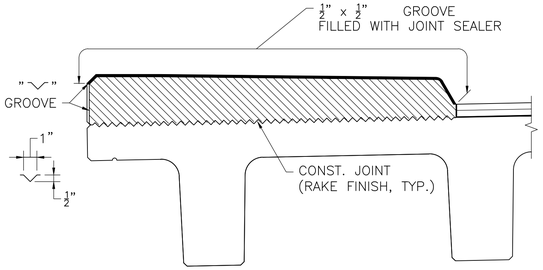
THEORETICAL TOP OF CURB FORM ELEVATIONS ALONG THE SPAN LENGTH (TO BE PROVIDED BY DESIGNER)											
INCREASING STATIONS											
	℄ BRG.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG.
LEFT CURB	488.26	488.29	488.33	488.34	488.34	488.32	488.26	488.18	488.09	487.97	487.86
RIGHT CURB	488.26	488.29	488.33	488.34	488.34	488.32	488.26	488.18	488.09	487.97	487.86

ACTUAL TOP OF BEAM ELEVATIONS AT CURB LINE ALONG THE SPAN LENGTH (TO BE PROVIDED BY CONTRACTOR)											
INCREASING STATIONS											
	℄ BRG.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG.
LEFT CURB											
RIGHT CURB											

ACTUAL BLOCKING DISTANCE AT CURB LINE ALONG THE SPAN LENGTH (TO BE CALCULATED BY CONTRACTOR)											
INCREASING STATIONS											
	℄ BRG.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG.
LEFT CURB											
RIGHT CURB											

NOTES:

1. REFERENCE FOR RIGHT CURB AND LEFT CURB IS LOOKING UP STATION.
2. THE THEORETICAL TOP OF CURB FORM ELEVATIONS ARE CALCULATED BY TAKING THE PROPOSED TOP OF HMA ELEVATION AT THE CURB LINE ALONG THE SPAN AT THE POINTS INDICATED IN THE TABLE AND ADDING TO IT THE SUPERIMPOSED DEAD LOAD DEFLECTION AND THE REQUIRED CURB REVEAL.
3. AFTER THE BEAMS ARE ERECTED AND CLOSURE POURS ARE COMPLETED, BUT PRIOR TO THE CONSTRUCTION OF ANY SIDEWALKS AND/OR BARRIERS, THE CONTRACTOR SHALL SURVEY THE TOP OF THE BEAMS DIRECTLY UNDER THE CURB LINES TO OBTAIN THE ACTUAL ELEVATIONS ALONG THE SPAN AT THE POINTS INDICATED, AND PROVIDE THESE ELEVATIONS IN THE TABLE.
4. THE DIFFERENCE BETWEEN THE CALCULATED THEORETICAL TOP OF CURB FORM ELEVATION AND THE SURVEYED ACTUAL TOP OF BEAM ELEVATION RESULTS IN THE ACTUAL BLOCKING DISTANCE AT THE CURB LINE ALONG THE SPAN AT THE POINTS INDICATED.



NOTES:

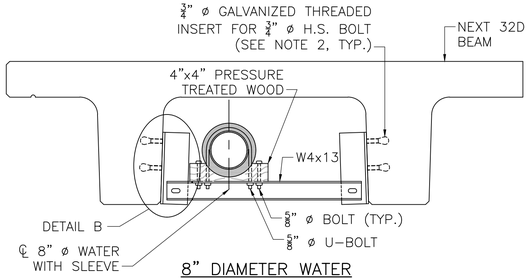
1. ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO FACE OF CURB.
4. JOINTS SHALL BE SPACED PREFERABLY BETWEEN 20' AND 25'. A MINIMUM OF 15' MAY BE USED, IF NECESSARY. JOINTS SHALL BE LOCATED APPROXIMATELY AT THE CENTER OF THE RAILING PANEL.

PARAFFIN JOINT DETAILS

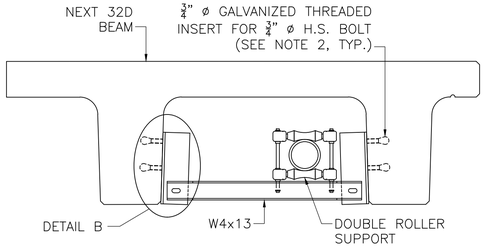
SCALE: ¾" = 1'–0"

SEPT. 5, 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	

608862_BR(S21009)_DECK DETAILS.DWG Plotted on 10-Aug-2026 1:26 PM
22-January-2026 Final Structural Submittal (SF)



8" DIAMETER WATER



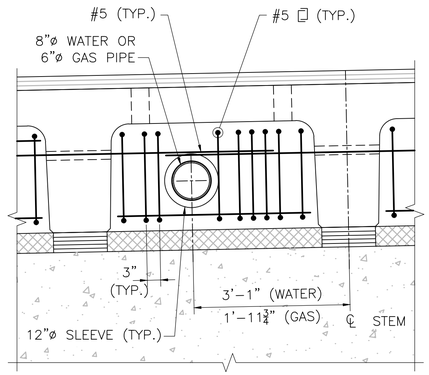
6" DIAMETER GAS

NOTES:

1. ALL STRUCTURAL STEEL FOR UTILITY SUPPORTS SHALL CONFORM TO AASHTO M 270 GRADE 36 OR GRADE 50. ALL STRUCTURAL STEEL AND FASTENERS SHALL BE HOT-DIP GALVANIZED.
2. THE ¾" ø GALVANIZED THREADED INSERTS FOR ¾" ø H.S. BOLTS SHALL BE CAST INTO THE PRECAST BEAMS BY THE FABRICATOR. THEY SHALL PROVIDE A MINIMUM NOMINAL TENSILE RESISTANCE OF 4.0 KIPS AND A MINIMUM NOMINAL SHEAR RESISTANCE OF 4.0 KIPS IN 3000 PSI CONCRETE.

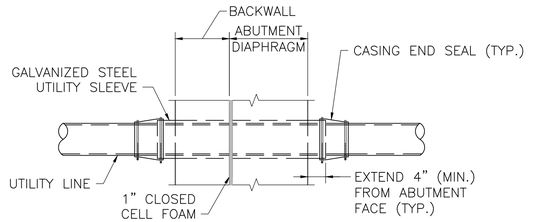
UTILITY SUPPORT DETAILS

SCALE: ¾" = 1'-0"



UTILITY BAY DETAIL AT ABUTMENT

SCALE: ¾" = 1'-0"

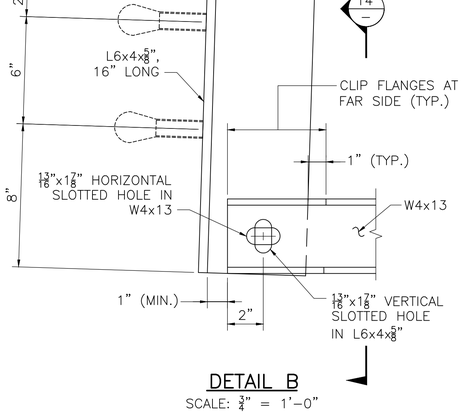


NOTES:

1. UTILITY SLEEVES SHALL BE STEEL PIPE CONFORMING TO ASTM A 53, TYPE S, GRADE B, STANDARD WEIGHT, PLAIN ENDS, HOT-DIP GALVANIZED AND SHALL BE SET IN THE FORMS PRIOR TO PLACING ABUTMENT CONCRETE.

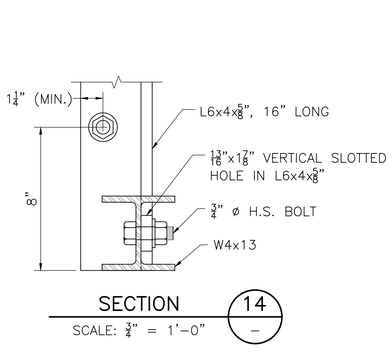
UTILITY DETAILS AT ABUTMENT

SCALE: ½" = 1'-0"



DETAIL B

SCALE: ¾" = 1'-0"



SECTION 14/–

SCALE: ¾" = 1'-0"

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	93	105
PROJECT FILE NO. 608862			

UTILITY SUPPORT DETAILS

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

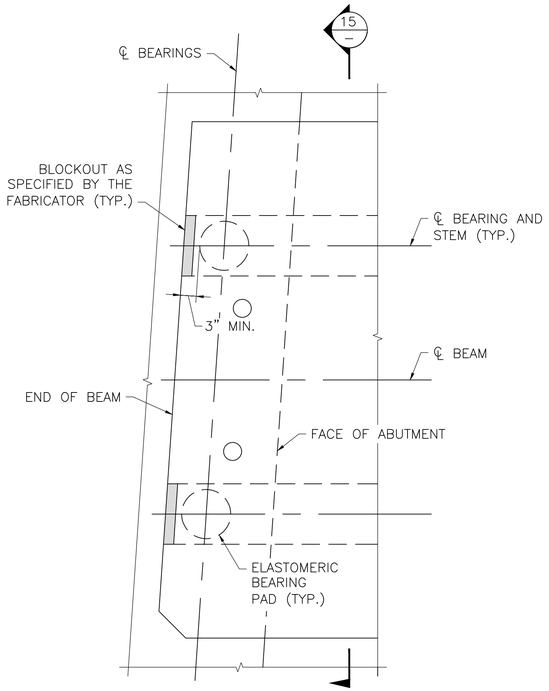
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BRIS21009)_UTILITY SUPPORT DETAILS.DWG Plotted on 10-Aug-2026 1:26 PM
Final Structural Submittal (SF) 22-January-2026

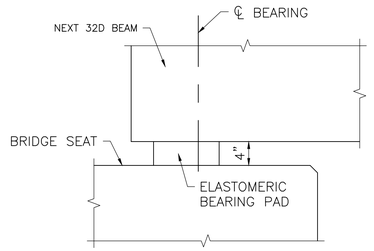
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	94	105
PROJECT FILE NO.	608862		

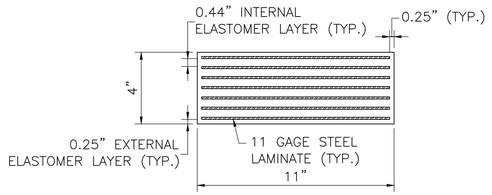
BEARING DETAILS



BEARING PLAN
SCALE: $\frac{1}{4}$" = 1'–0"



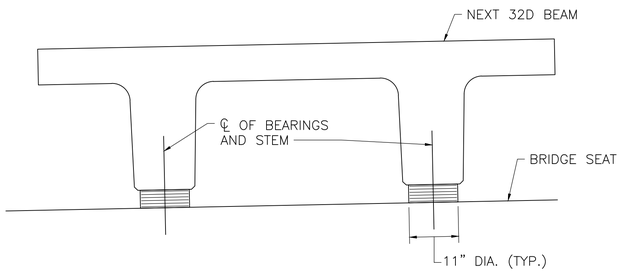
BEARING PAD ELEVATION
SCALE: 1" = 1'–0"



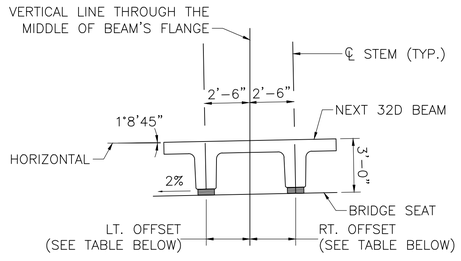
ELASTOMETRIC BEARING PAD
SCALE: 3" = 1'–0"

BEARING NOTES:

1. 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 130 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 1.37 KSI.
5. THE 25 YEAR CREEP STRAIN SHALL BE LIMITED TO 35%.
6. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A $\frac{1}{32}$" DEEP DIRECTION ARROW THAT POINTS UP–STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.
7. BEAMS SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 30 °F AND 90 °F. IF THE 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.



SECTION 15 –
SCALE: $\frac{3}{4}$" = 1'–0"



BEAM BEARING OFFSETS		
BEAM NO.	LEFT BEARING (FT.)	RIGHT BEARING (FT.)
1	2.44	2.56
2	2.44	2.56
3	2.56	2.44
4	2.56	2.44

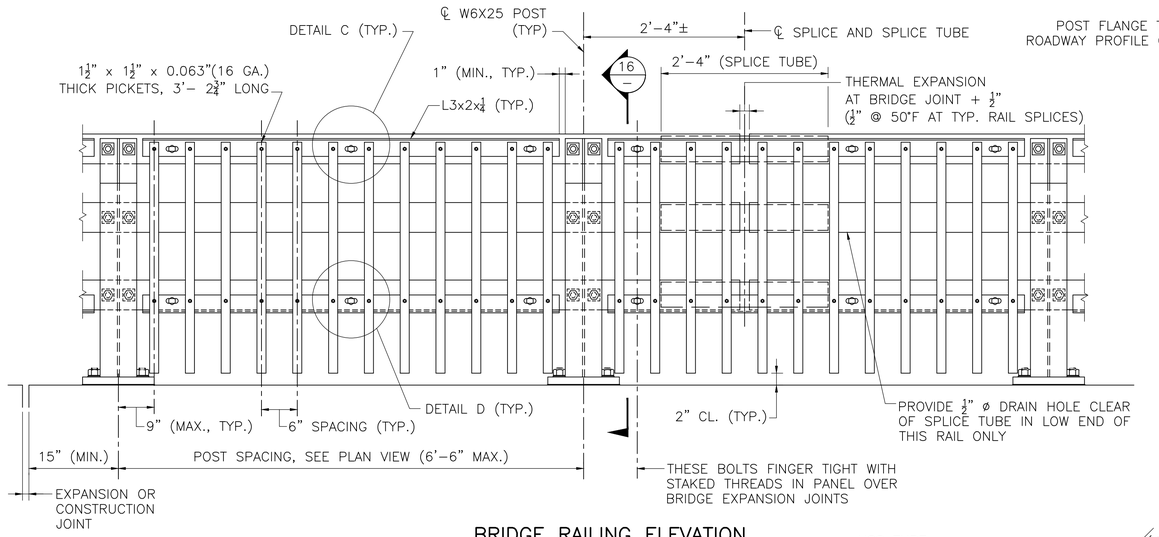
NOTE:
OFFSETS (LEFT AND RIGHT) ARE GIVEN LOOKING UPSTATION ALONG THE BEAM CENTERLINE.

BEARING OFFSET DETAIL
SCALE: $\frac{1}{4}$" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

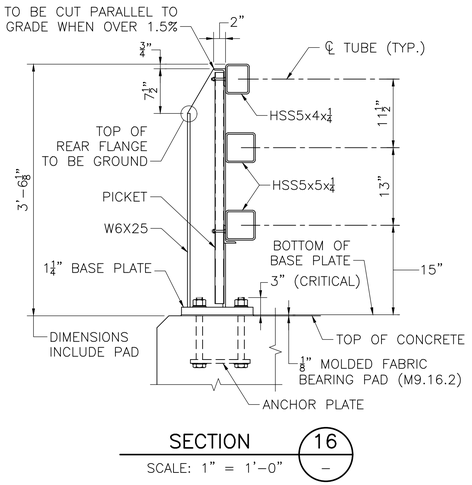
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

608862_BRIS21009)_BEARING DETAILS.DWG Plotted on 10-Aug-2026 1:26 PM
22-January-2026 Final Structural Submittal (SF)



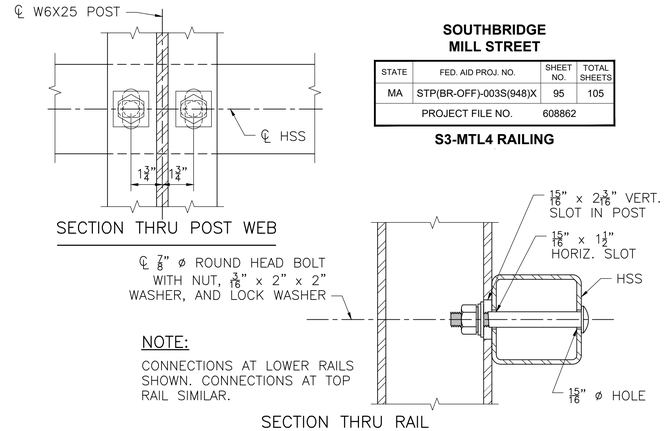
BRIDGE RAILING ELEVATION

SCALE: 1" = 1'-0"



SECTION 16/–

SCALE: 1" = 1'-0"



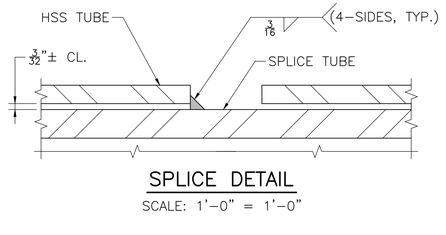
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	95	105
	PROJECT FILE NO. 608862		

S3-MTL4 RAILING

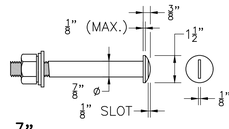
TYPICAL RAIL TO POST CONNECTIONS

SCALE: 3" = 1'-0"



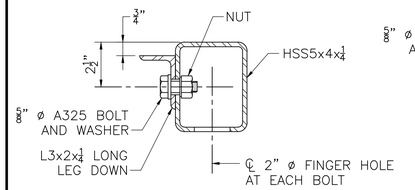
SPLICE DETAIL

SCALE: 1'-0" = 1'-0"

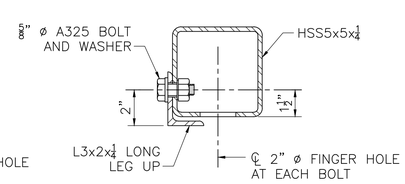


⅞" ø ROUND HEAD BOLT

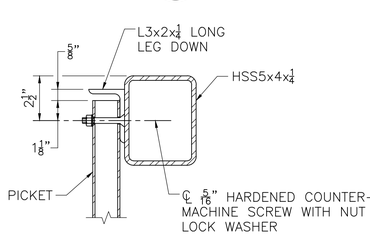
SCALE: 3" = 1'-0"



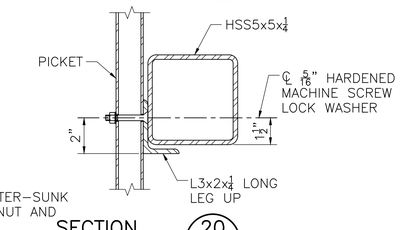
SECTION 17/–



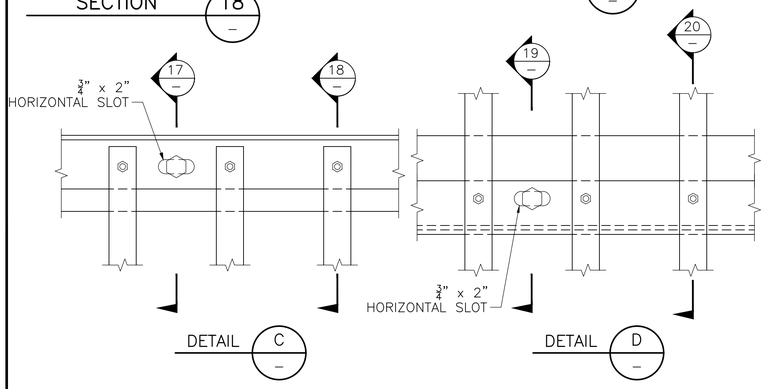
SECTION 19/–



SECTION 18/–

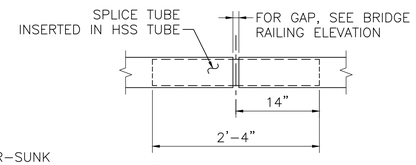


SECTION 20/–



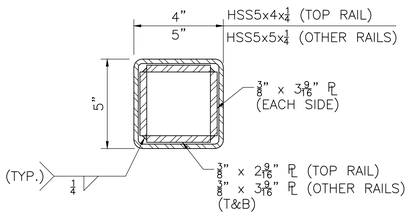
TYPICAL PICKET TO RAIL DETAILS

SCALE: 3" = 1'-0"



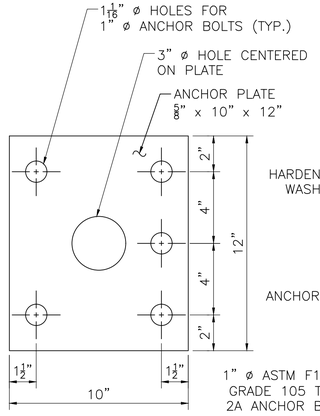
TYPICAL SPLICE

SCALE: 1'-0" = 1'-0"



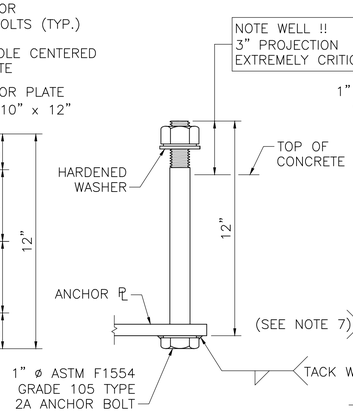
SPLICE TUBE DETAILS

SCALE: 3" = 1'-0"



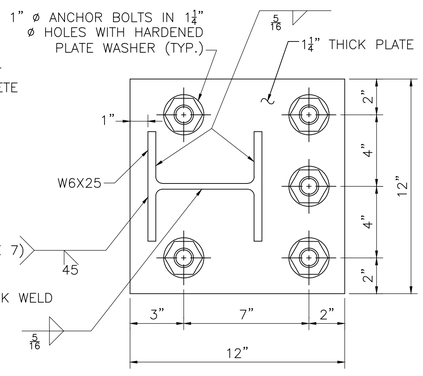
ANCHOR PLATE

SCALE: 3" = 1'-0"



ANCHOR BOLT

SCALE: 3" = 1'-0"



BASE PLATE

SCALE: 3" = 1'-0"

RAILING NOTES:

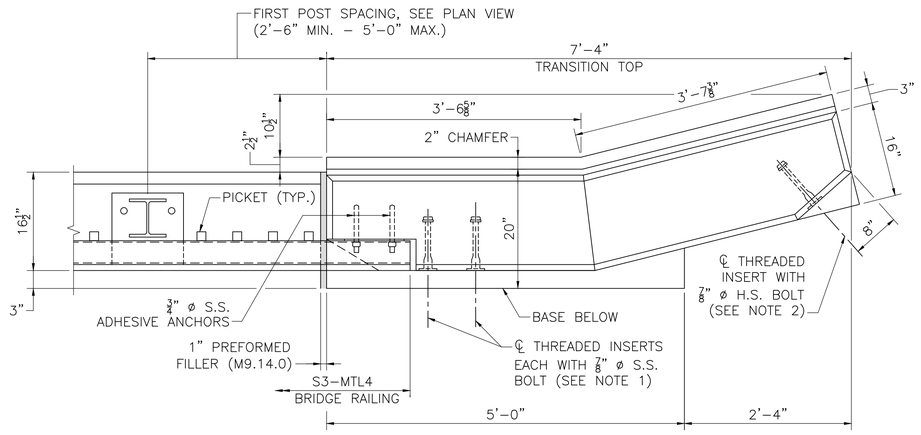
1. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER 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 BRIDGE 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 WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, 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.

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
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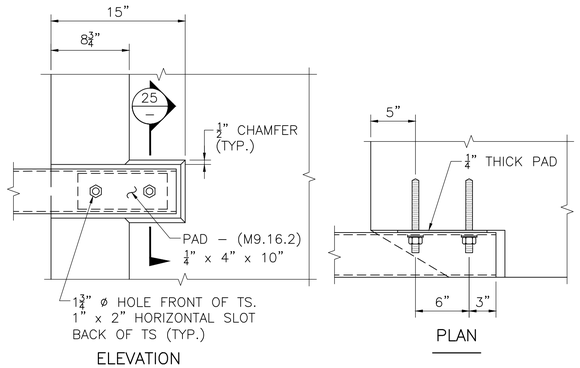
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_RAILING.DWG Plotted on 10-Aug-2026 1:26 PM
22-January-2026 Final Structural Submittal (SF)



TRANSITION PLAN

SCALE: 1" = 1'-0"



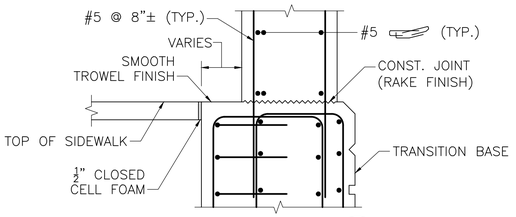
RAIL ATTACHMENT

SCALE: 1½" = 1'-0"

SOUTHBRIDGE
MILL STREET

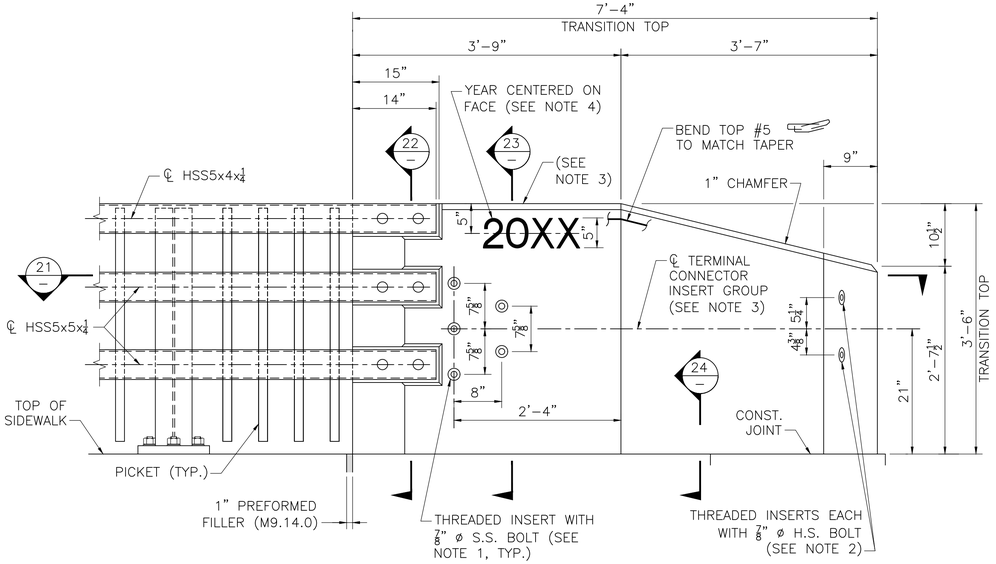
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	96	105
PROJECT FILE NO. 608862			

TRANSITION FOR S3-MTL4 RAILING



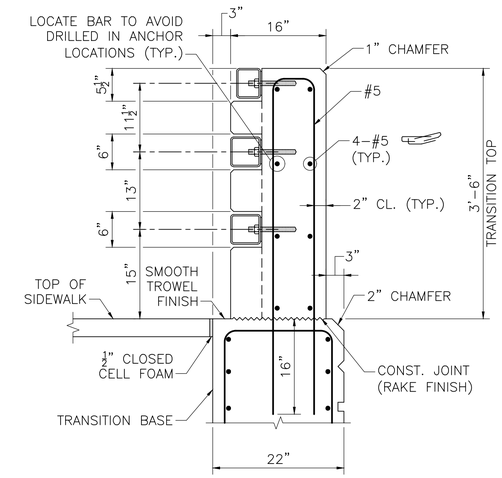
SECTION 24 –

SCALE: 1" = 1'-0"



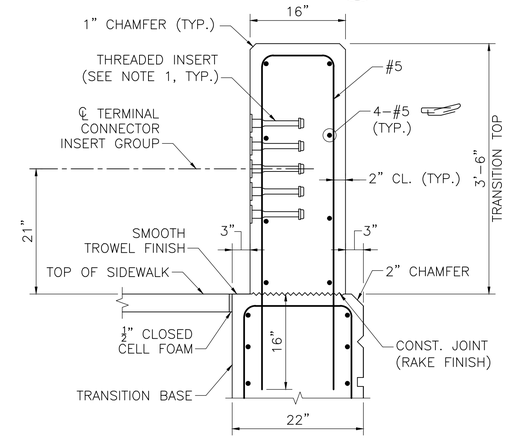
TRANSITION ELEVATION

SCALE: 1" = 1'-0"



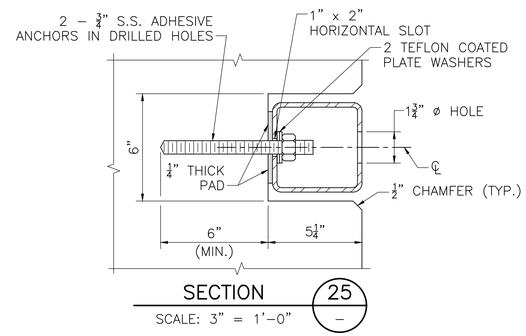
SECTION 22 –

SCALE: 1" = 1'-0"



SECTION 23 –

SCALE: 1" = 1'-0"



SECTION 25 –

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.
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.

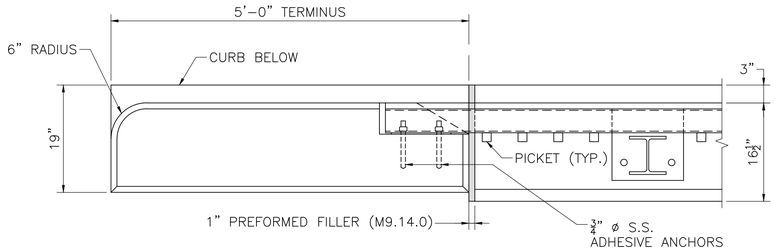
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
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608862_BR(S21009)_RAILING.DWG Plotted on 10-Aug-2026 1:26 PM
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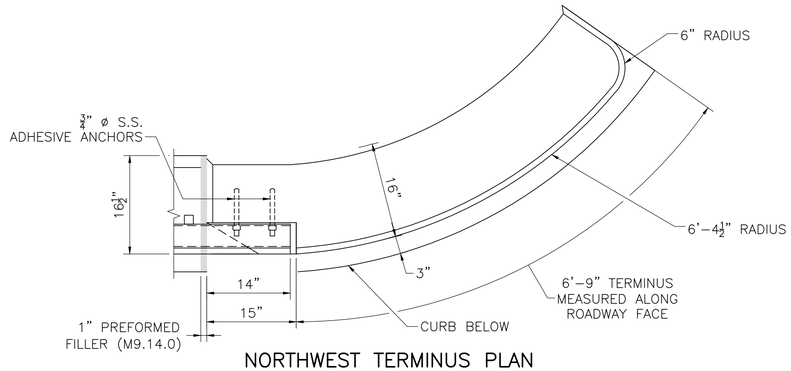
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	97	105
	PROJECT FILE NO. 608862		

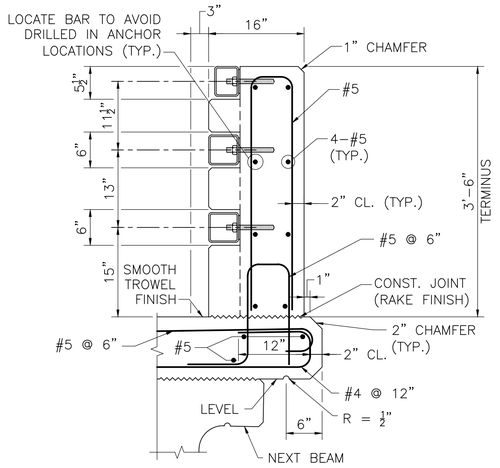
TERMINUS FOR S3-MTL4 RAILING



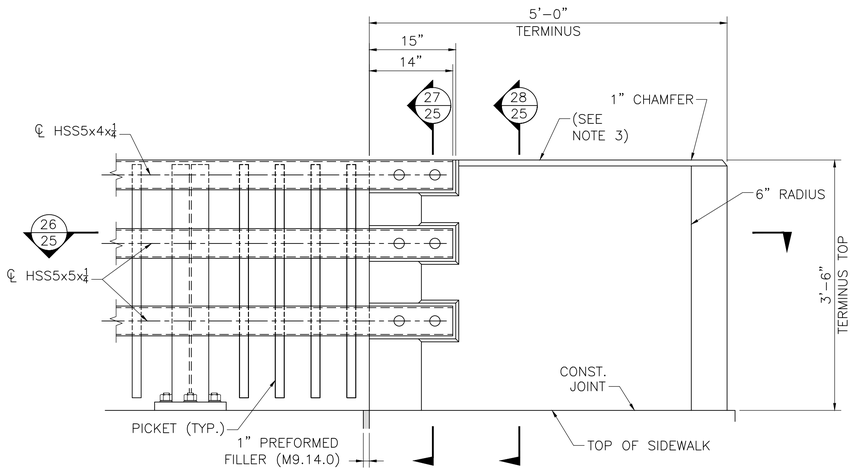
SOUTHEAST TERMINUS PLAN
SCALE: 1" = 1'–0"



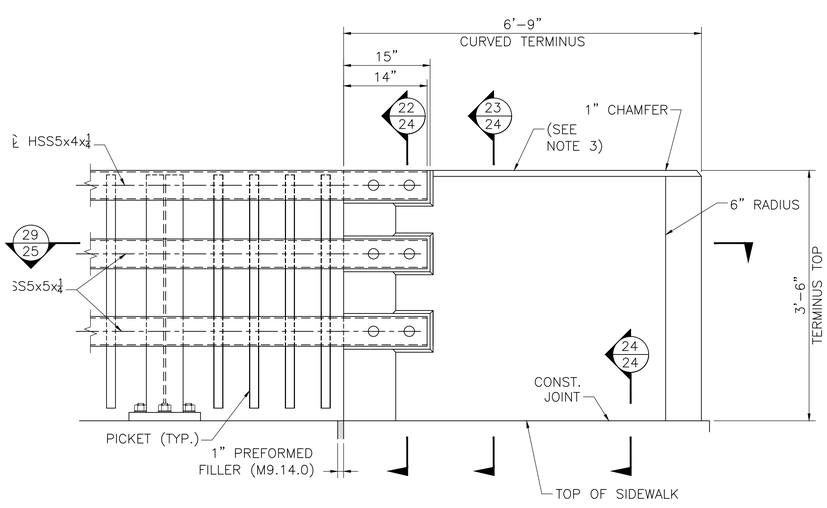
NORTHWEST TERMINUS PLAN
SCALE: 1" = 1'–0"



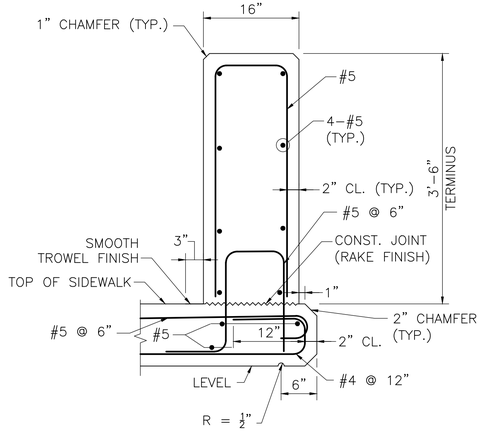
SECTION 27
SCALE: 1" = 1'–0"



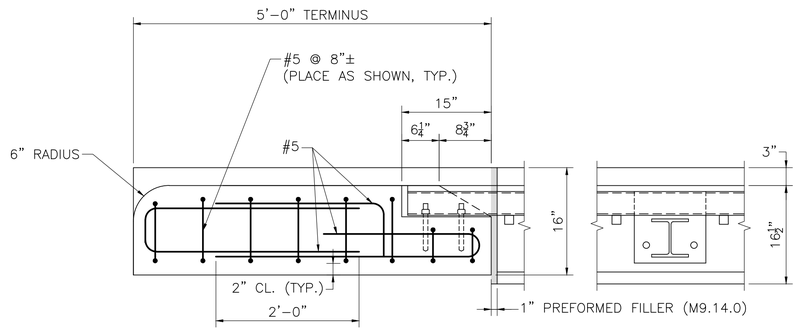
SOUTHEAST TERMINUS ELEVATION
SCALE: 1" = 1'–0"



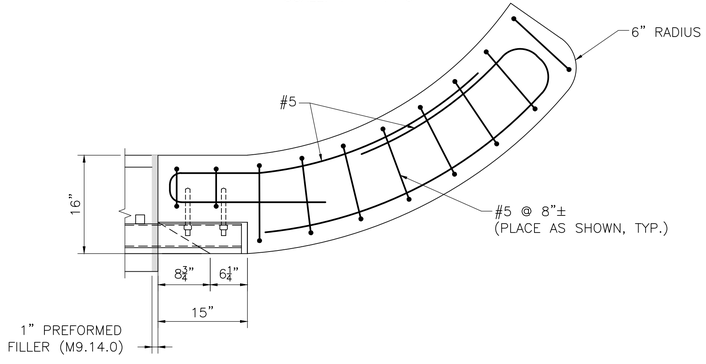
NORTHWEST TERMINUS ELEVATION
SCALE: 1" = 1'–0"



SECTION 28
SCALE: 1" = 1'–0"



SECTION 26
SCALE: 1" = 1'–0"



SECTION 29
SCALE: 1" = 1'–0"

DATE	DESCRIPTION
SEPT. 5, 2026	ISSUED FOR CONSTRUCTION

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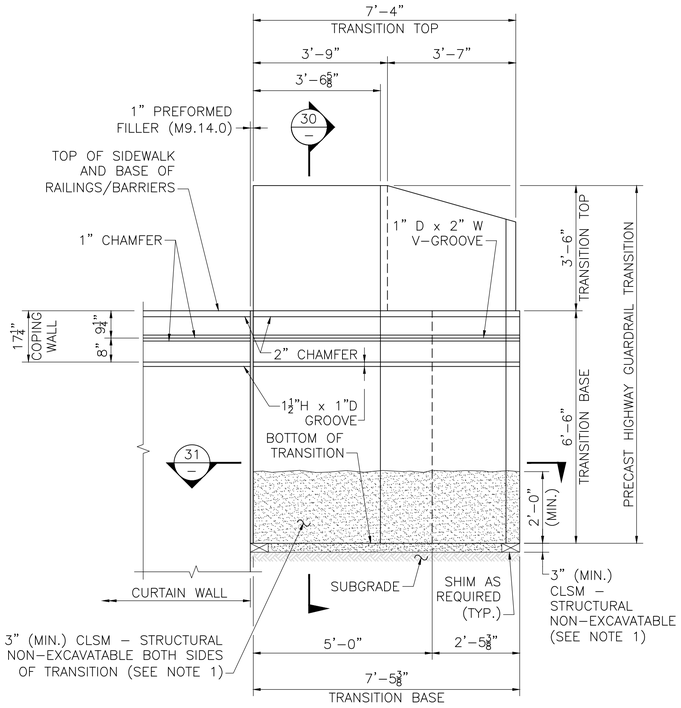
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_RAILING.DWG Plotted on 10-Aug-2026 1:26 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

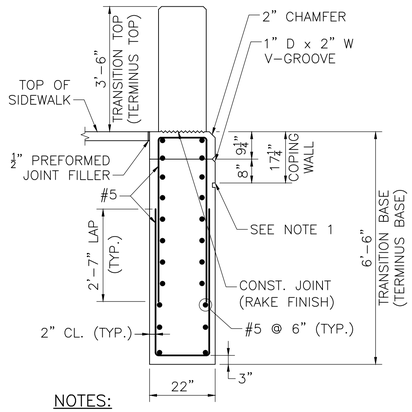
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	98	105
PROJECT FILE NO.	608862		

TRANSITION BASES



PRECAST GUARDRAIL TRANSITION ELEVATION

SCALE: ½" = 1'–0"

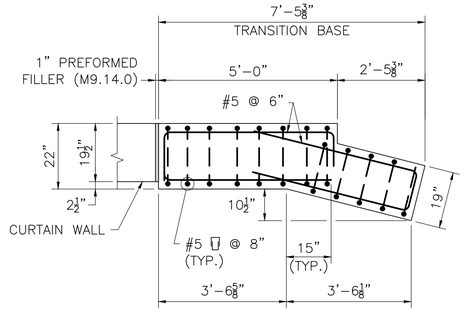


NOTES:

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 30 (–)

SCALE: ½" = 1'–0"

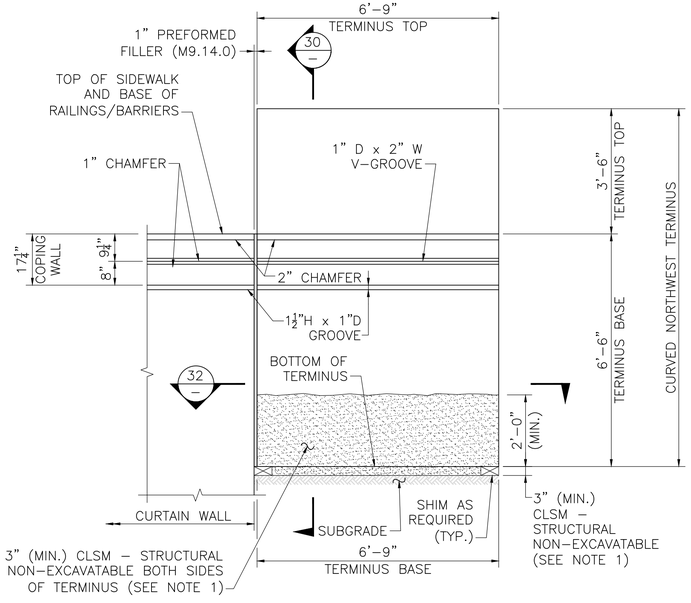


NOTE:

WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY.

SECTION 31 (–)

SCALE: ½" = 1'–0"

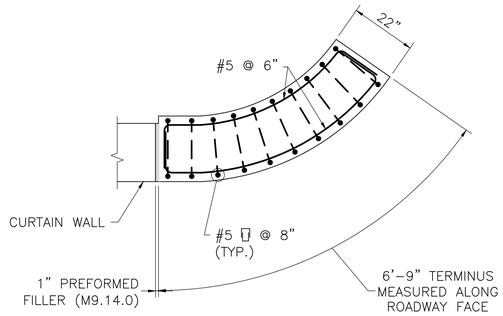


NORTHWEST TERMINUS BASE ELEVATION

SCALE: ½" = 1'–0"

NOTES:

1. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE 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.
2. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKFILL GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON–EXCAVATABLE) TO THE ELEVATION SHOWN.
3. BACKFILL THE REMAINDER OF EXCAVATION WITH GRAVEL BORROW, WHICH SHALL BE THOROUGHLY COMPACTED IN 12" LIFTS.
4. AFTER CONTROLLED DENSITY FILL (NON–EXCAVATABLE) HAS SET FILL THE GAPS BETWEEN GUARDRAIL TRANSITION AND BLOCK–OUT IN BACKWALL AND ABUTMENT WITH NON–SHRINK GROUT UP TO THE TOP OF BACKWALL.
5. THE REST OF REINFORCEMENT IS NOT SHOWN FOR CLARITY.



SECTION 32 (–)

SCALE: ½" = 1'–0"

SEPT. 5, 2026	ISSUED FOR CONSTRUCTION
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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

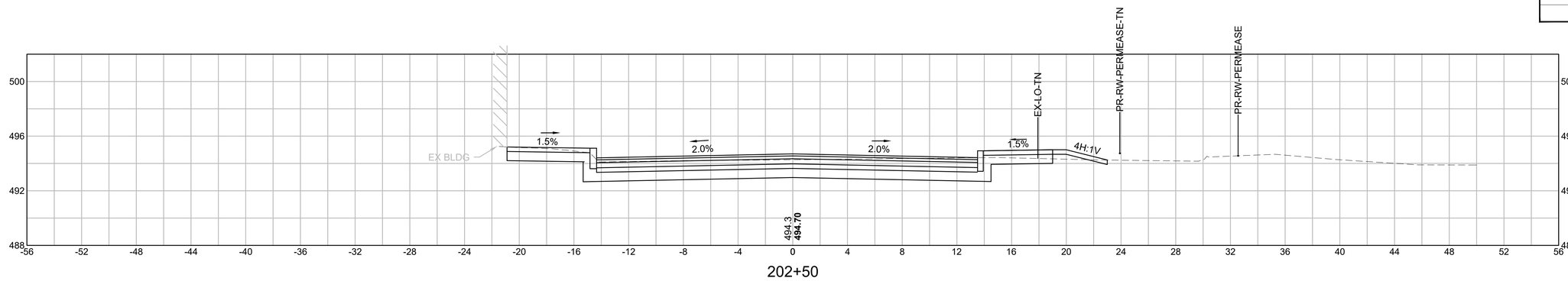
USE ONLY PRINTS OF LATEST DATE

608862_BR(S21009)_RAILING.DWG Plotted on 10-Aug-2026 1:26 PM
22-January-2026 Final Structural Submittal (SF)

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	99	105
PROJECT FILE NO.	608862		

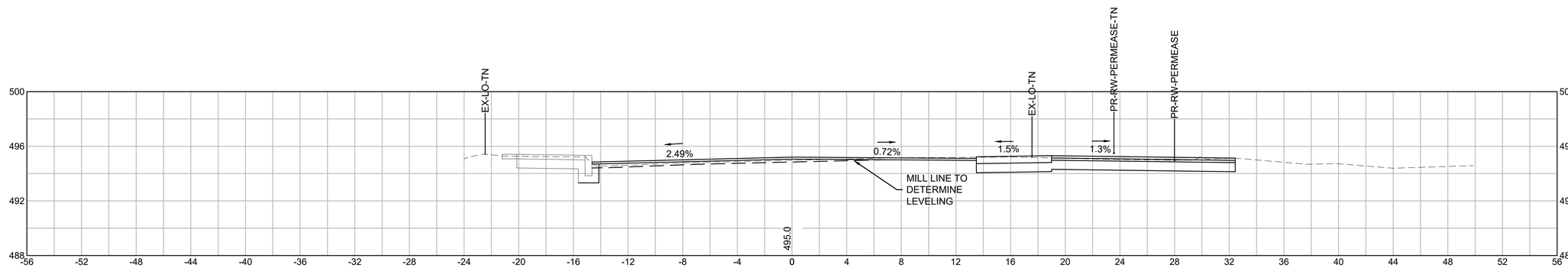
CROSS SECTIONS



202+50

CUT: 51.60 SF

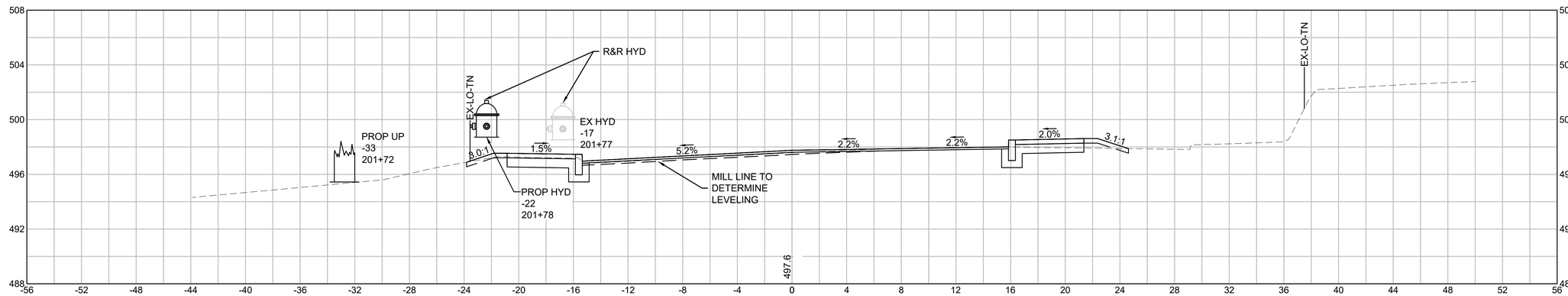
FILL: 0.55 SF



202+38

CUT: 23.66 SF

FILL: 0.00 SF



202+00

CUT: 10.28 SF

FILL: 0.59 SF

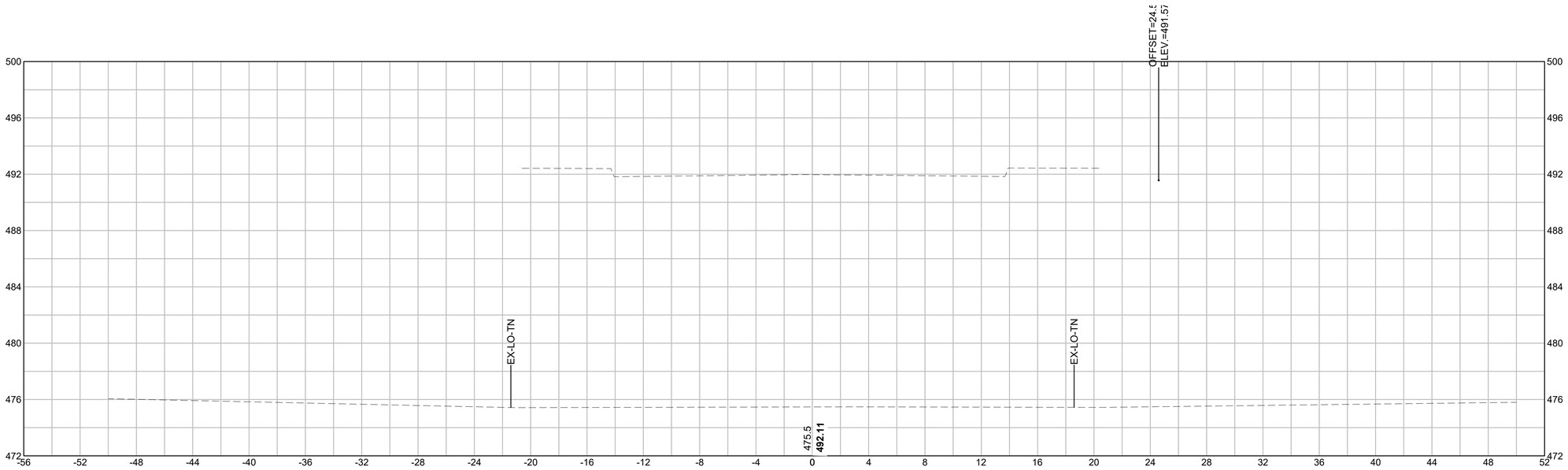
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

608862_HD(XS).DWG Plotted on 27-Jul-2026 1:03 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	100	105
PROJECT FILE NO.	608862		

CROSS SECTIONS

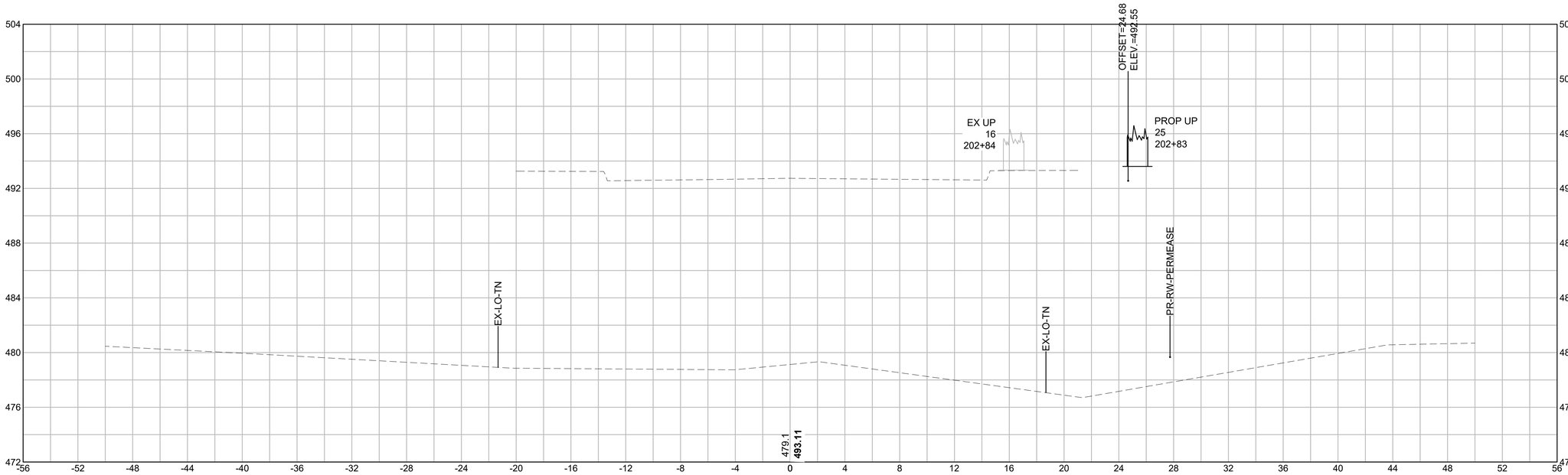


CUT: 0.00 SF

FILL: 620.81 SF

203+50

BRIDGE NO. S-21-003 - SEE STRUCTURAL PLANS FOR CROSS SECTION



CUT: 0.00 SF

FILL: 531.45 SF

203+00

BRIDGE NO. S-21-003 - SEE STRUCTURAL PLANS FOR CROSS SECTION

HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

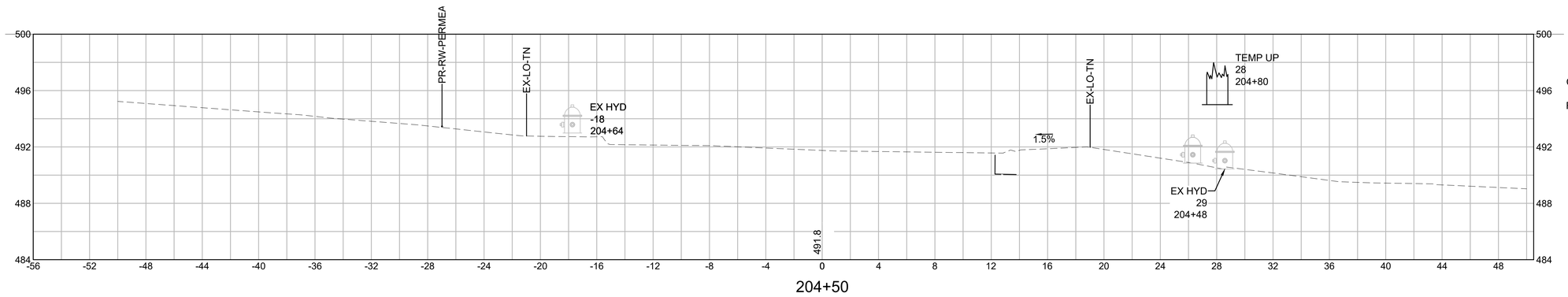
VER. SCALE IN FEET

608862_HD(XS).DWG Plotted on 27-Jul-2026 1:03 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	101	105
PROJECT FILE NO.	608862		

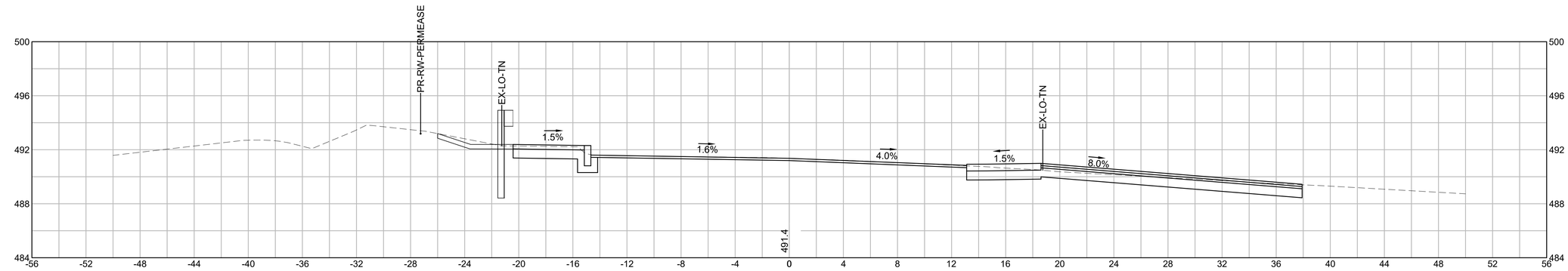
CROSS SECTIONS



204+50

CUT: 6.29 SF

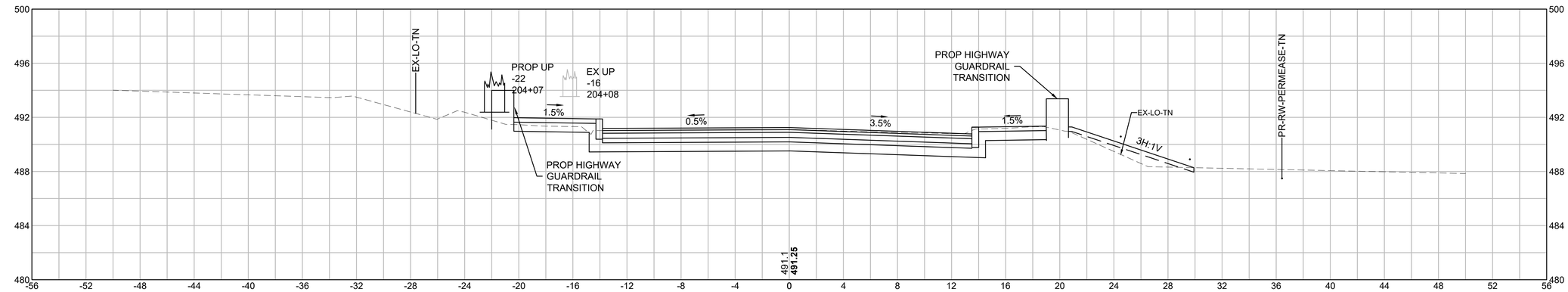
FILL: 0.00 SF



204+25

CUT: 27.20 SF

FILL: 0.00 SF



204+00

CUT: 53.31 SF

FILL: 3.31 SF

HOR. SCALE IN FEET
4 0 4 8

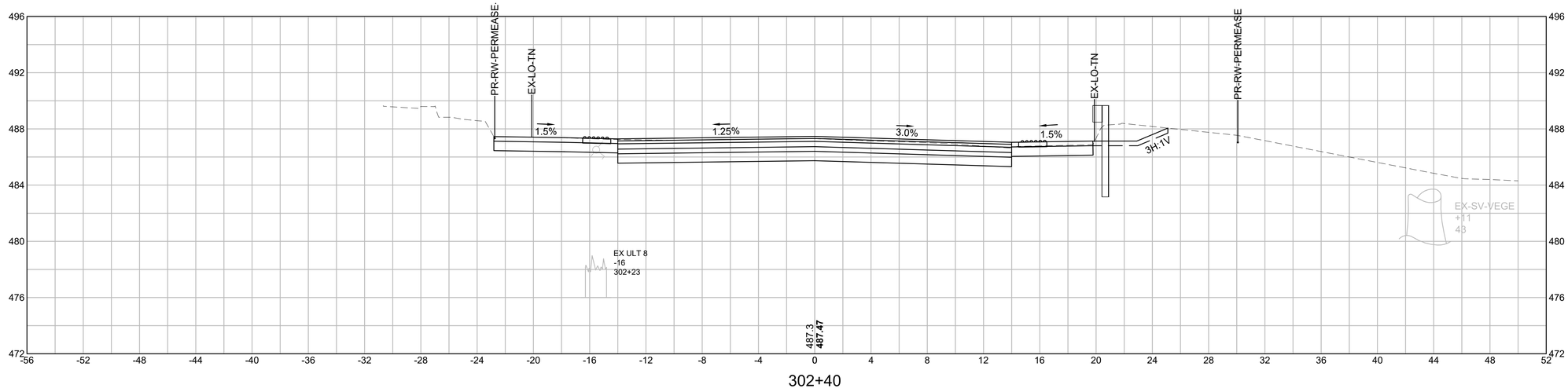
VER. SCALE IN FEET
4 0 4 8

608862_HD(XS).DWG Plotted on 27-Jul-2026 1:03 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	102	105
	PROJECT FILE NO. 608862		

CROSS SECTIONS

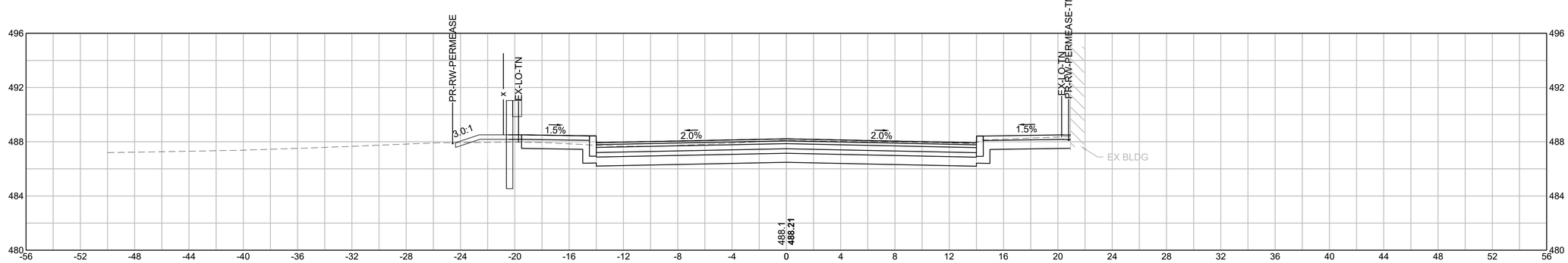


302+40

CUT: 58.94 SF

FILL: 0.02 SF

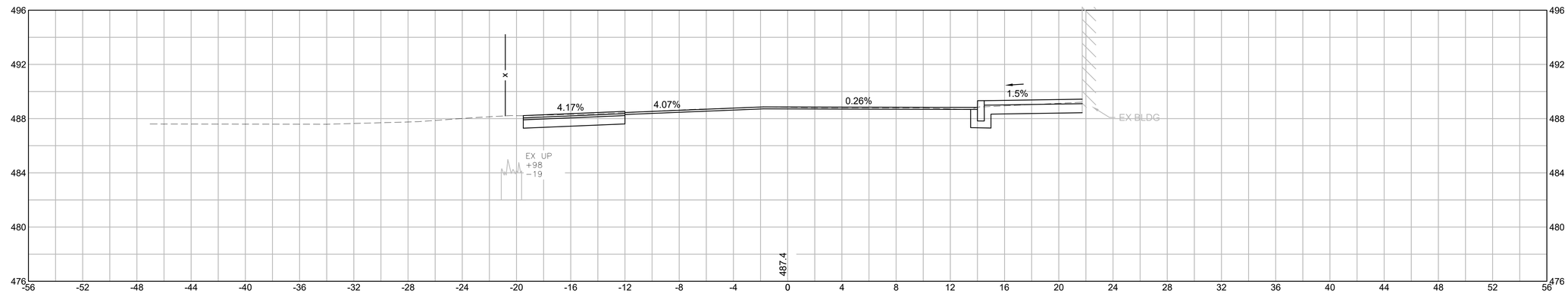
BRIDGE NO. S-21-009 - SEE STRUCTURAL PLANS FOR CROSS SECTION



301+50

CUT: 52.59 SF

FILL: 0.27 SF



301+14

CUT: 13.23 SF

FILL: 0.00 SF

HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

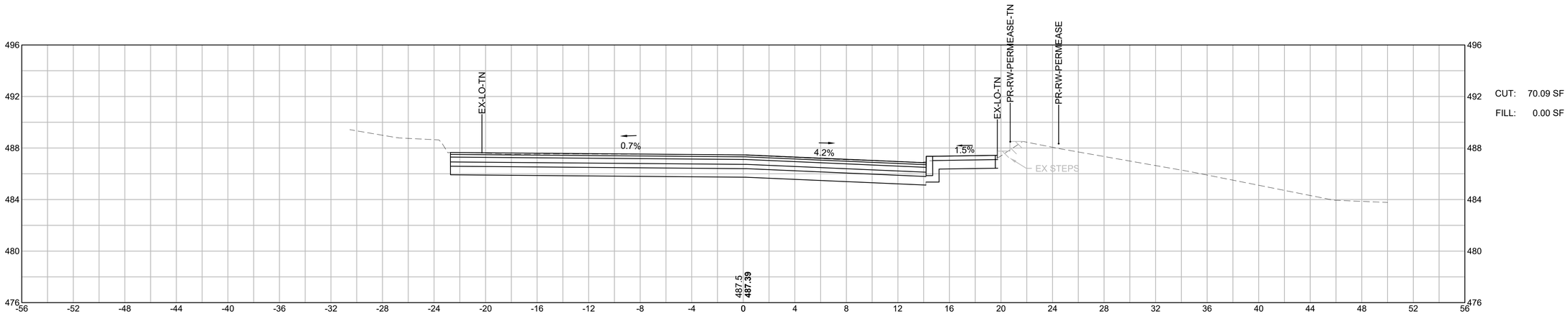
608862_HD(XS).DWG Plotted on 27-Jul-2026 1:04 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	103	105
PROJECT FILE NO.	608862		

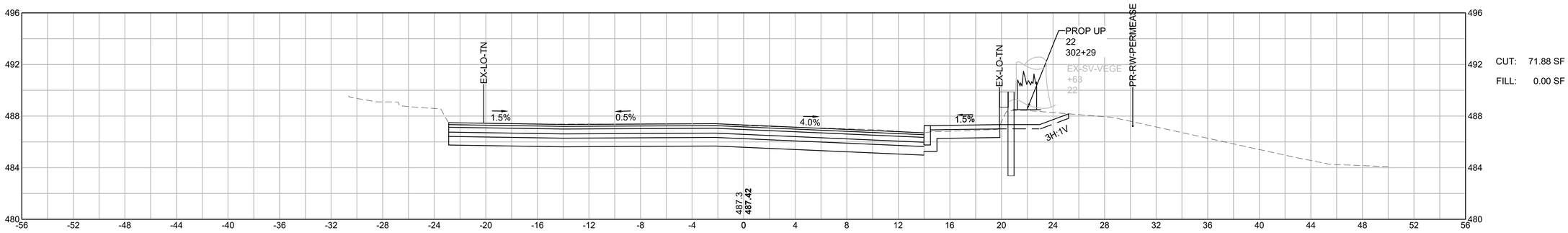
CROSS SECTIONS

608862_HD(XS).DWG Plotted on 27-Jul-2026 1:04 PM



CUT: 70.09 SF
FILL: 0.00 SF

302+79



CUT: 71.88 SF
FILL: 0.00 SF

302+50

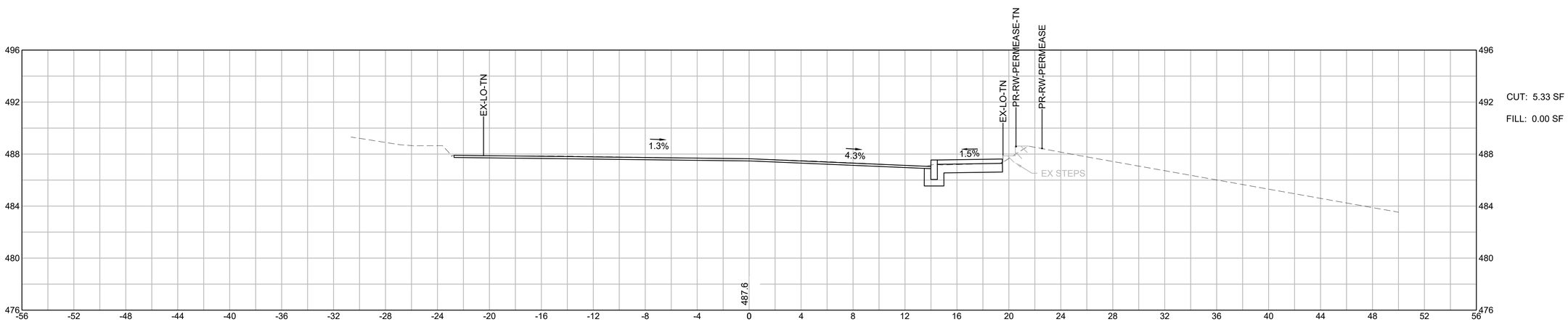
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	104	105
PROJECT FILE NO.	608862		

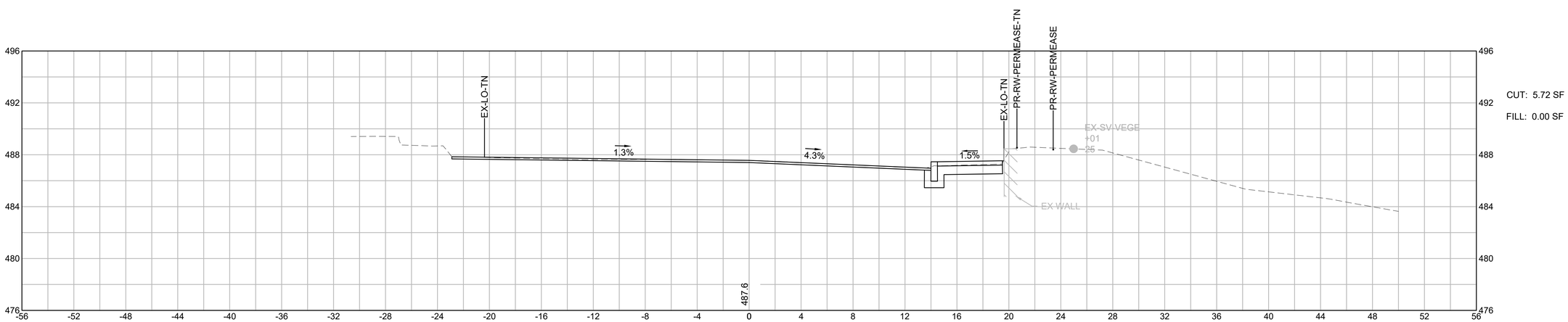
CROSS SECTIONS

608862_HD(XS).DWG Plotted on 27-Jul-2026 1:04 PM



CUT: 5.33 SF
FILL: 0.00 SF

303+17



CUT: 5.72 SF
FILL: 0.00 SF

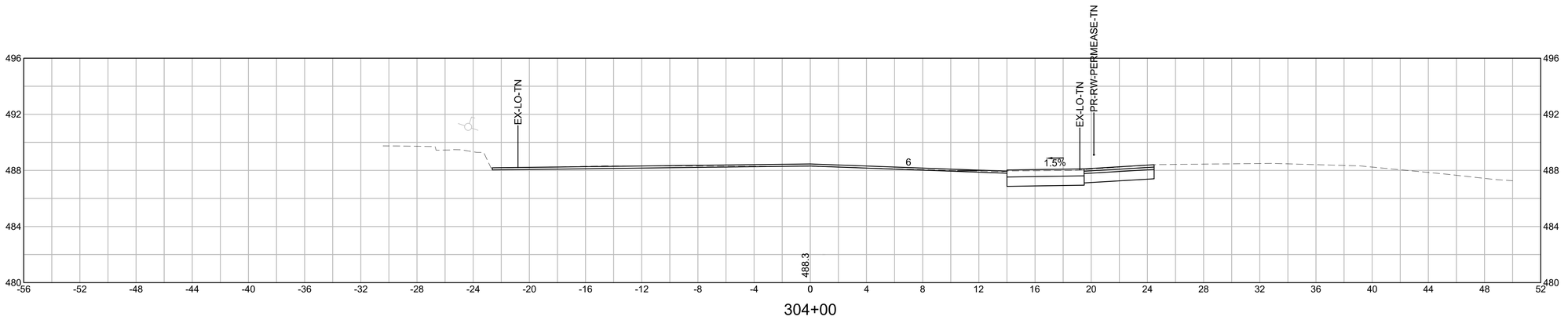
303+00

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(948)X	105	105
PROJECT FILE NO.	608862		

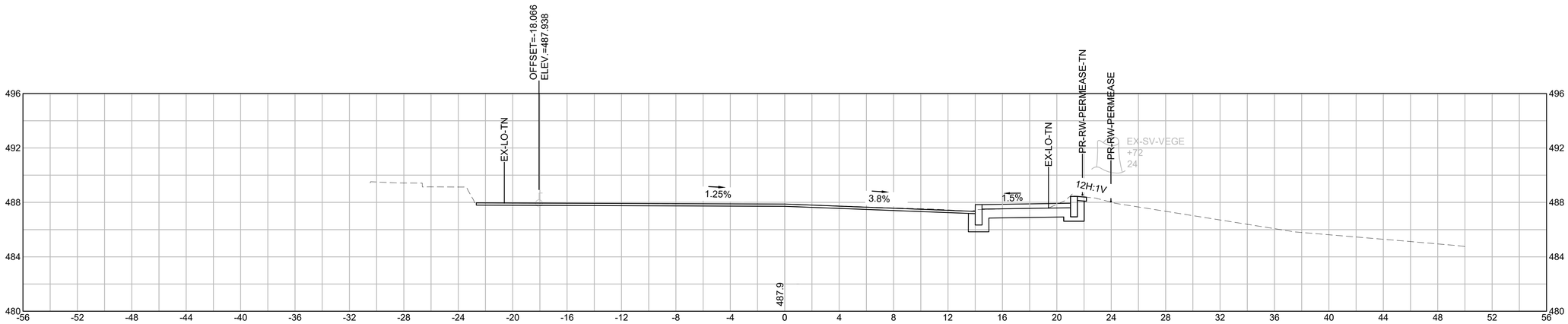
CROSS SECTIONS



304+00

CUT: 10.83 SF

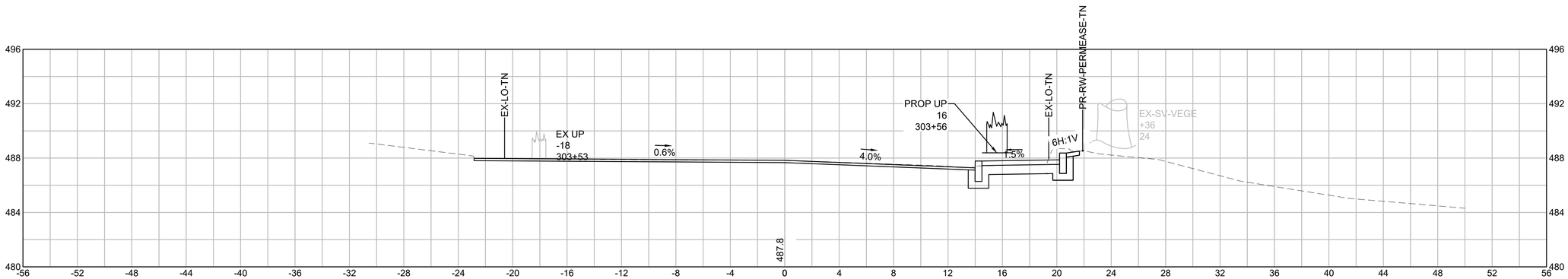
FILL: 0.00 SF



303+55

CUT: 9.06 SF

FILL: 0.00 SF



303+50

CUT: 9.40 SF

FILL: 0.00 SF

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

608862_HD(XS).DWG Plotted on 27-Jul-2026 1:04 PM