MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	1	41
PROJECT FILE NO.	609427		

TITLE SHEET AND INDEX

PLAN AND PROFILE OF

SOUTH STREET OVER SAWMILL RIVER

(BRIDGE NO. M-28-026)

IN THE TOWN OF

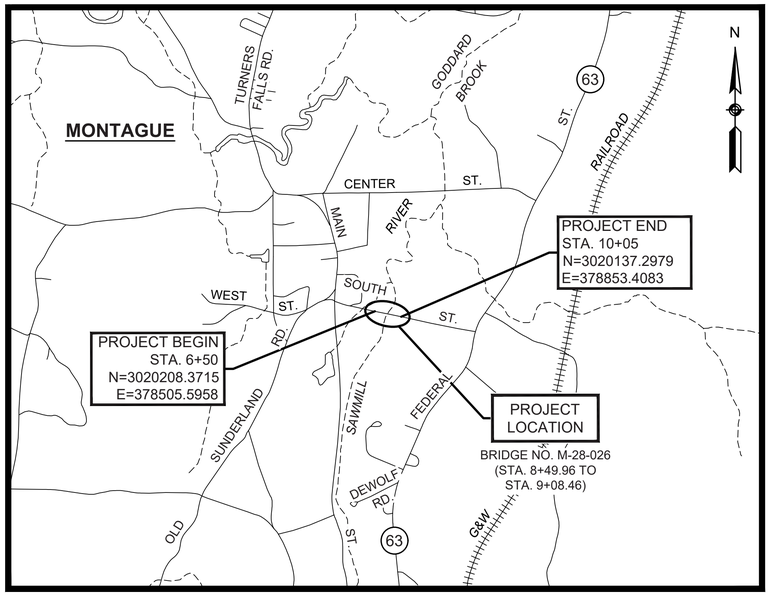
MONTAGUE

FRANKLIN COUNTY

FEDERAL AID PROJECT NO. STP(BR-OFF)-003S(734)X

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

INDEX



0 1000 2000 3000 4000

SCALE: 1" = 1,000'

LENGTH OF PROJECT = 355 FEET = 0.07 MILES

DESIGN DESIGNATION (SOUTH STREET)

DESIGN SPEED	35 MPH
ADT (2022)	320 VPD
ADT (2042)	390 VPD
K	10%
D	54%
T (PEAK HOUR)	10%
T (AVERAGE DAY)	1.4%
DHV	39 VPH
DDHV	21 VPH
FUNCTIONAL CLASSIFICATION	RURAL LOCAL

COMMONWEALTH OF MASSACHUSETTS
RICHARD P. LENOX
STRUCTURAL
No. 41034
PROFESSIONAL ENGINEER

Lenox, Richard (USRL04144)
Digitally signed by Lenox, Richard (USRL04144)
Date: 2024.03.28 16:58:09 -04'00'

WSP USA Inc.
100 NORTH PARKWAY
SUITE 110
WORCESTER, MA 01605
TEL: +1 508.248.1970

03/30/2024	ISSUED FOR CONSTRUCTION	0
DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

Carrie Lavallee, P.E.
Digitally signed by Carrie Lavallee, P.E.
Date: 2024.04.02 17:01:41 -04'00'
04/02/2024

CHIEF ENGINEER **DATE**

609427_HD1(TITLE_SHT).DWG Plotted on 28-Mar-2024 2:52 PM

GENERAL NOTES:

1. COORDINATES REFER TO THE MASS. STATE PLANE COORDINATE SYSTEM (NAD '83-2011). HORIZONTAL CONTROL IS BASED ON VALUES PROVIDED BY MEANS OF GLOBAL POSITIONING SYSTEM METHODS, AND IS BASED ON THE NORTH AMERICAN DATUM OF 1983, (NAD 83) MASSACHUSETTS STATE PLANE COORDINATE SYSTEM MAINLAND ZONE.
2. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. SURVEY PROVIDED BY WSP DATED MAY 2020 (UPDATED WITH ADDITIONAL INFORMATION MARCH 2023) AND RECORDED IN MASSDOT SURVEY BOOK #41646.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL WORK WITH UTILITIES AND OTHER PARTIES WITHIN THE PROJECT LIMITS.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTINUOUS SERVICE FOR, AND PREVENT DAMAGE TO, ALL EXISTING UTILITIES.
6. WHERE REQUIRED, ALL MUNICIPAL STRUCTURES SHALL BE ADJUSTED BY THE CONTRACTOR UNLESS OTHERWISE NOTED. ALL PRIVATE TELEPHONE, GAS, AND ELECTRICAL CASTINGS SHALL BE ADJUSTED BY OTHERS.
7. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES INVOLVED AND VERIFY THE LOCATIONS OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ADEQUATE AND SAFE ACCESS IS PROVIDED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL OBSERVE OSHA STANDARDS FOR SAFETY.
10. TREES AND SHRUBS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED ONLY UPON APPROVAL BY THE ENGINEER.
11. WHERE A NEW PAVEMENT MEETS EXISTING PAVEMENT, THE JOINT SHALL BE SAWCUT TO A NEAT VERTICAL LINE.
12. ALL AREAS OUTSIDE OF THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S OWN EXPENSE.
13. ALL GRANITE CURB SHALL BE SET TO HAVE A 6" REVEAL ABOVE FINAL PAVEMENT GRADES (UNLESS OTHERWISE NOTED).
14. THE CONTRACTOR MUST NOTIFY DIGSAFE AT 1-888-344-7233 NO LESS THAN 72 HOURS BEFORE COMMENCING ANY EXCAVATION ACTIVITIES.
15. FLOW OF STORMWATER RUNOFF SHALL BE MAINTAINED THROUGHOUT THE SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TEMPORARY DIVERSIONS FOR STORMWATER WHERE REQUIRED DURING SITE GRADING OPERATIONS.

BENCH MARKS:

"2549": MAG NAIL SET BY MASSDOT GPS
STA. 9+65.61, 12.01' RT., N=3020133.4210, E=378812.4080
EL.= 228.397' (NAVD 1988)

"2550": HUB TACK SET BY MASSDOT GPS
STA. 15+25.35, 16.00' RT., N=3020017.4420, E=379360.0150
EL.= 242.214' (NAVD 1988)

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE
	DYL	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

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
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	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
		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
o	o	WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		SIGN AND POST
		SIGN AND POST (2 POSTS)

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EW	EDGE OF WATER
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
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PMM	PAVEMENT MILLING MULCH
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION

ABBREVIATIONS (cont.)

GENERAL

PVT	POINT OF VERTICAL TANGENCY
PVMT	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
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WF	WETLAND FLAG
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	2	41
PROJECT FILE NO.	609427		

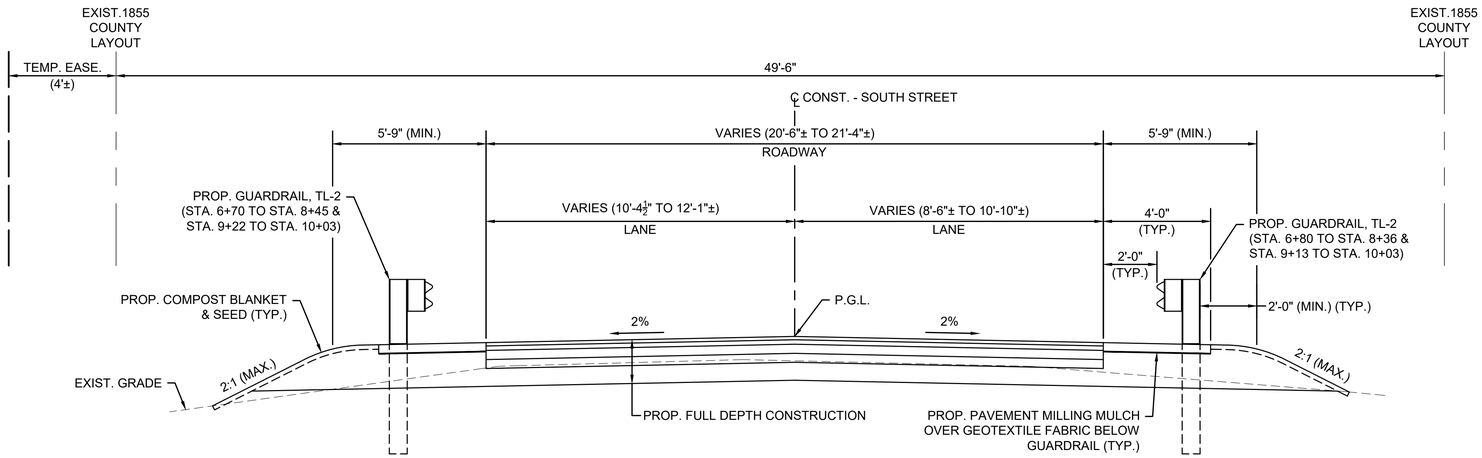
GENERAL NOTES, LEGEND AND ABBREVIATIONS

609427_HD2\GEN_NOTES).DWG Plotted on 14-Mar-2024 9:08 AM

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	3	41
PROJECT FILE NO.	609427		

TYPICAL ROADWAY SECTIONS AND PAVEMENT NOTES
1 OF 2



TYPICAL ROADWAY SECTION - SOUTH STREET

(STA. 6+80 TO STA. 8+15 & STA. 9+43 TO STA. 9+75)
SCALE: ⅜" = 1'-0"

PAVEMENT NOTES

PROPOSED MILLING & OVERLAY

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

SHIM: SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) (AS REQUIRED TO MEET PROPOSED GRADES) (SEE DETAIL, THIS SHEET)

MILLING: 1½" (MAX.) PAVEMENT FINE MILLING

PROPOSED FULL DEPTH CONSTRUCTION

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

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

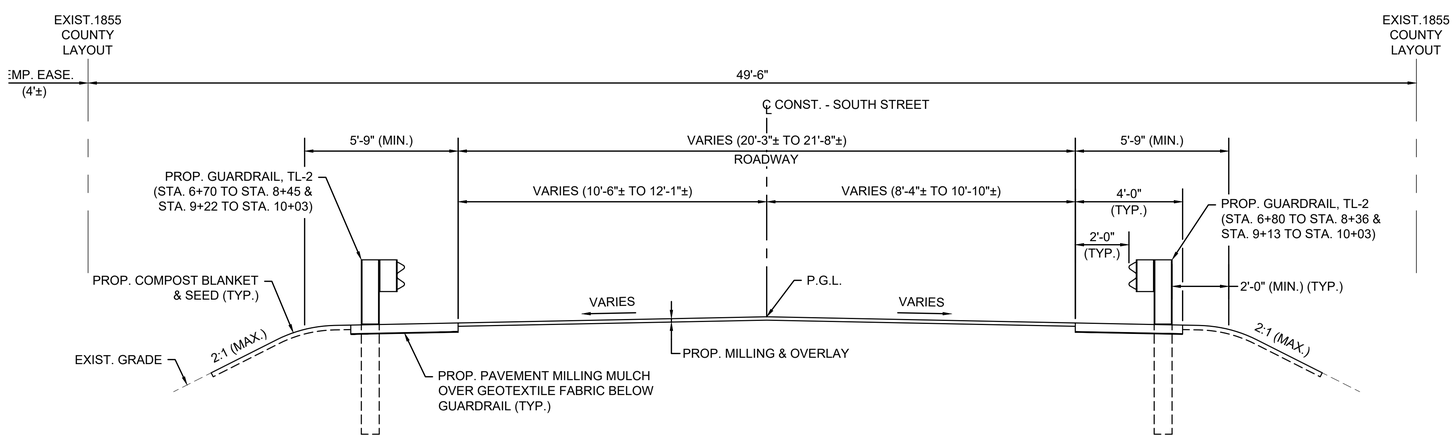
BASE: 4" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5)

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

PROPOSED BRIDGE CONSTRUCTION

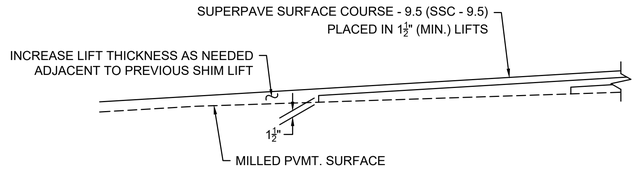
SURFACE: 1½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 (SSC-B-9.5)

INTERMEDIATE: 1½" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 (SPC-B-9.5) OVER MEMBRANE WATERPROOFING FOR BRIDGE DECKS



TYPICAL ROADWAY SECTION - SOUTH STREET

(STA. 6+50 TO STA. 6+80 & STA. 9+75 TO STA. 10+05)
SCALE: ⅜" = 1'-0"

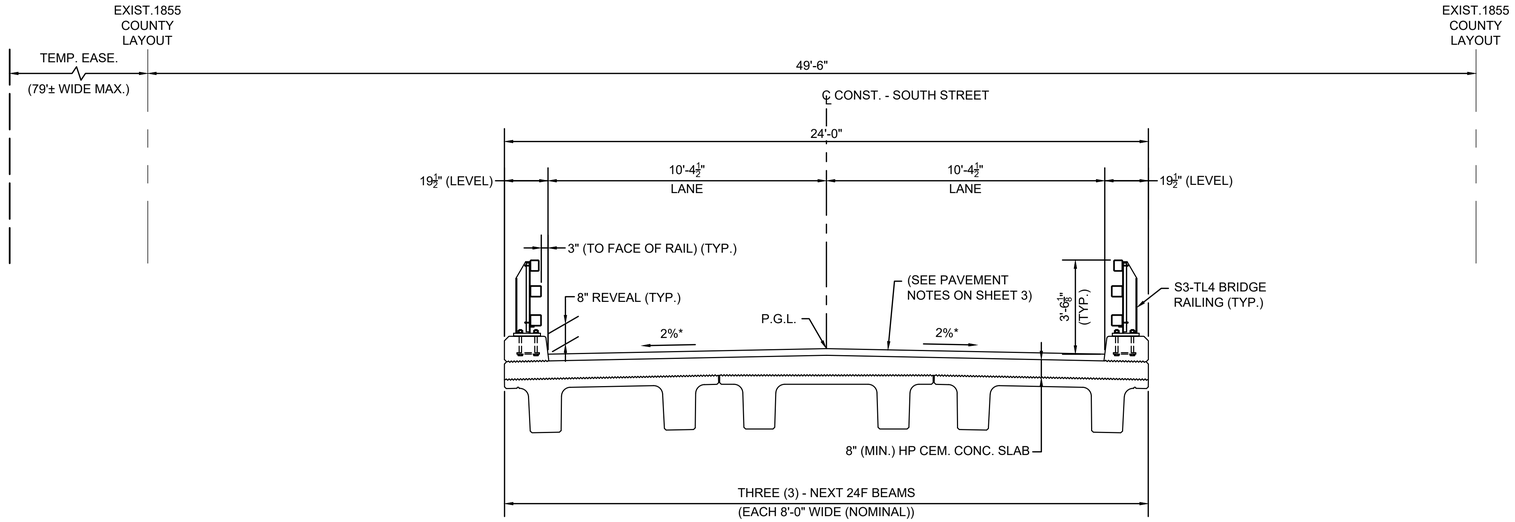


NOTES:

1. SEE SHEET 8 FOR PROPOSED PAVEMENT ELEVATIONS.
2. MAXIMUM TOTAL DEPTH OF SHIM SHALL BE 3 INCHES.

PAVEMENT SHIM DETAIL

NOT TO SCALE



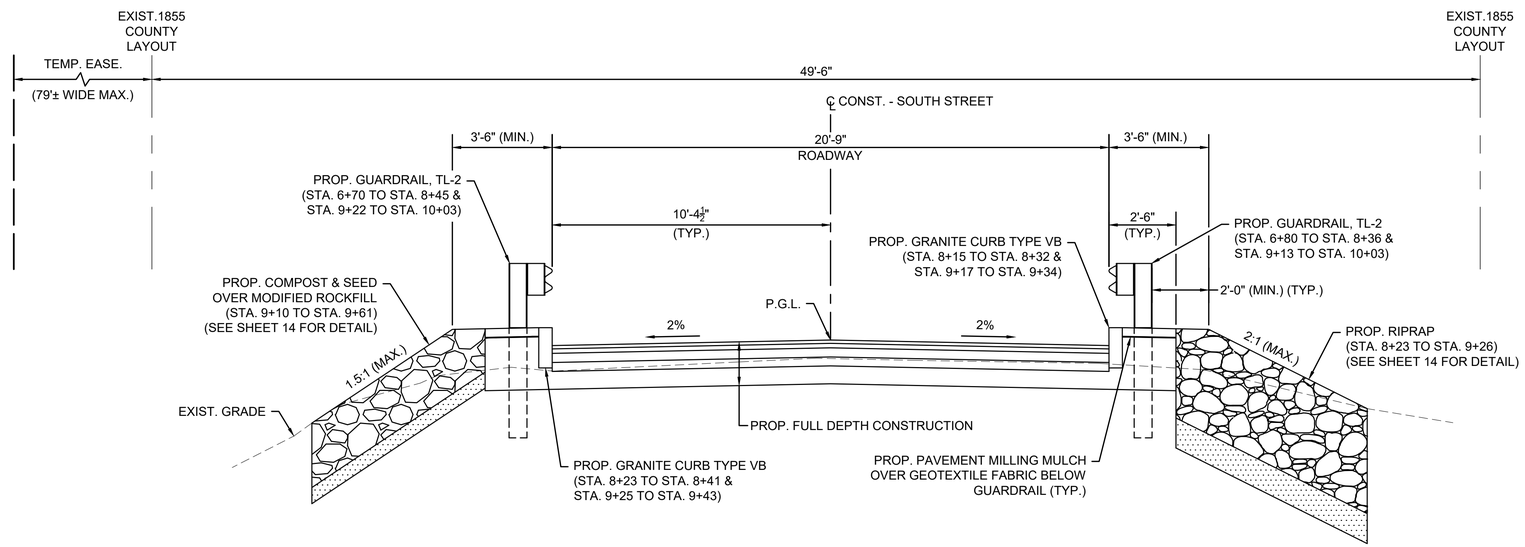
(*) - BRIDGE CROSS SLOPE SHALL BE WITHIN CONSTRUCTION TOLERANCE FOR BRIDGE DECKS

TYPICAL ROADWAY SECTION - SOUTH STREET AT BRIDGE NO. M-28-026

(STA. 8+49.96 TO STA. 9+08.46)
SCALE: ⅜" = 1'-0"

NOTE:

1. SEE SHEET 3 FOR PAVEMENT NOTES.



TYPICAL ROADWAY SECTION - SOUTH STREET

(STA. 8+15 TO STA. 8+49.96 & STA. 9+08.46 TO STA. 9+43)
SCALE: ⅜" = 1'-0"

609427_HD3-4(TYP_SECTS).DWG Plotted on 14-Mar-2024 9:08 AM

HIGHWAY GUARD DETAILS

STA. 6+70 LT. TO STA. 7+08 LT. (ITEM 627.72 GUARDRAIL TANGENT END TREATMENT, TL-2)
STA. 6+80 RT. TO STA. 7+18 RT. (ITEM 627.72 GUARDRAIL TANGENT END TREATMENT, TL-2)
STA. 7+08 LT. TO STA. 8+11 LT. (ITEM 620.12 GUARDRAIL, TL-2 (SINGLE FACED))
STA. 7+18 RT. TO STA. 8+02 RT. (ITEM 620.12 GUARDRAIL, TL-2 (SINGLE FACED))
STA. 8+02 RT. TO STA. 8+36 RT. (ITEM 628.24 TRANSITION TO BRIDGE RAIL)
STA. 8+11 LT. TO STA. 8+45 LT. (ITEM 628.24 TRANSITION TO BRIDGE RAIL)
STA. 9+13 RT. TO STA. 9+47 RT. (ITEM 628.24 TRANSITION TO BRIDGE RAIL)
STA. 9+22 LT. TO STA. 9+55 LT. (ITEM 628.24 TRANSITION TO BRIDGE RAIL)
STA. 9+47 RT. TO STA. 9+65 RT. (ITEM 620.12 GUARDRAIL, TL-2 (SINGLE FACED))
STA. 9+55 LT. TO STA. 9+65 LT. (ITEM 620.12 GUARDRAIL, TL-2 (SINGLE FACED))
STA. 9+65 LT. TO STA. 10+03 LT. (ITEM 627.72 GUARDRAIL TANGENT END TREATMENT, TL-2)
STA. 9+65 RT. TO STA. 10+03 RT. (ITEM 627.72 GUARDRAIL TANGENT END TREATMENT, TL-2)

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

NONE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	5	41
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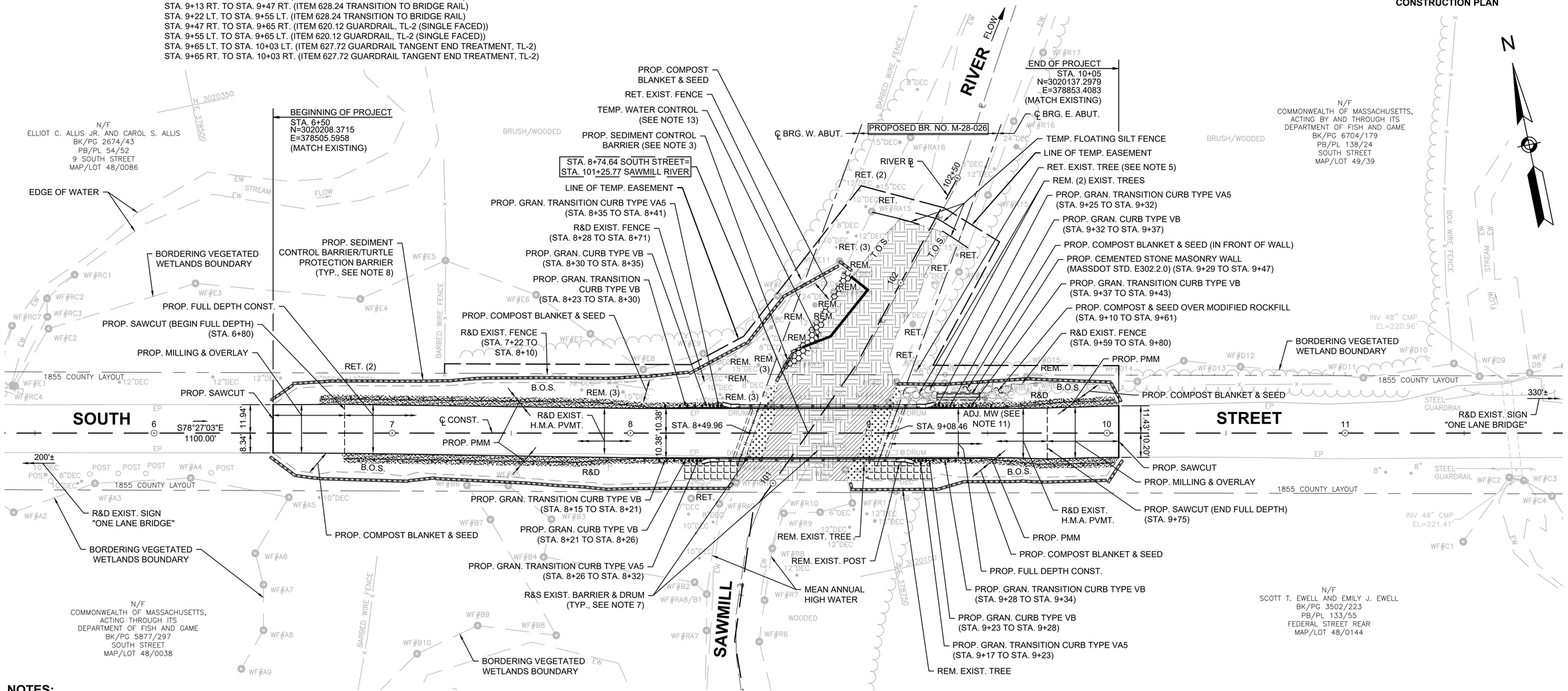
CONSTRUCTION PLAN

609427_HD5(CONST_PLAN).DWG Plotted on 14-Mar-2024 9:08 AM



NOTES:

1. SEE SHEET 7 FOR CURB TIE AND SURVEY TIE PLAN.
2. SEE SHEET 8 FOR GRADING PLAN.
3. THE NORTHWEST EMBANKMENT WILL BE CLEARED FOR RIVER ACCESS IN ORDER TO ACCOMMODATE THE REQUIRED CONSTRUCTION EQUIPMENT NEEDED TO COMPLETE THE WORK WITHIN THE RIVER. THE STUMPS OF ALL TREES, BRUSH AND MAJOR ROOTS SHALL NOT BE GRUBBED AT THIS LOCATION. THE SEDIMENT CONTROL BARRIER SHOWN AT THIS LOCATION IS INTENDED TO PREVENT DISTURBED SEDIMENT FROM THE ACCESS PATH FROM ENTERING THE SAWMILL RIVER.
4. THE CONTRACTOR SHALL CLEAR AND GRUB OR PROVIDE TREE TRIMMING TO THE LIMITS OF SLOPE WORK SHOWN OR AS REQUIRED BY THE ENGINEER.
5. WILDLIFE MANAGEMENT AREA BOUNDARY MARKERS LOCATED ON ANY TREES THAT ARE REMOVED SHALL BE REMOVED AND STACKED. MARKERS SHALL BE RELOCATED AND RESET ONCE A SUITABLE LOCATION HAS BEEN DETERMINED AS APPROVED BY THE ENGINEER. RELOCATION OF ALL BOUNDARY MARKERS SHALL BE PERFORMED UNDER GUIDANCE OF THE COMMONWEALTH OF MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE.
6. HAND BROADCAST METHOD SHALL BE USED FOR ALL AREAS OF SEEDING.
7. EXISTING BARRIERS AND DRUMS SHALL BE REMOVED FROM THE SITE AND TRANSPORTED TO 11 SANDY LANE, TURNER FALLS, MA 01376 AS STATED IN SPECIAL PROVISIONS.
8. WOOD TURTLE PROTECTION BARRIER SHALL BE PROVIDED IN ACCORDANCE WITH REQUIREMENTS DESCRIBED IN THE SPECIAL PROVISIONS. TURTLE BARRIER SHALL BE PROVIDED AT LOCATIONS SHOWN ON SHEET 11 AND SHALL ENCLOSE THE WORK AREA.
9. FLOATING SILT FENCE SHALL BE INSTALLED PRIOR TO ANY WORK WITHIN THE SAWMILL RIVER OUTSIDE THE LIMITS OF TEMP. WATER CONTROL. SEE SPECIAL PROVISIONS FOR FLOATING SILT FENCE REQUIREMENTS.
10. IT IS ANTICIPATED THAT JAPANESE KNOTWEED IS PRESENT THROUGHOUT THE PROJECT SITE. CONTROL OF INVASIVE PLANTS SHALL BEGIN IMMEDIATELY WITH THE INITIATION OF CONSTRUCTION ACTIVITIES AND PRIOR TO ANY CLEARING OR SITE DISTURBANCE. THE KNOTWEED WILL BE TREATED UNDER ITEM 102.3 HERBICIDE TREATMENT OF INVASIVE PLANTS. SEE SPECIAL PROVISIONS FOR INVASIVE PLANT MANAGEMENT STRATEGY AND HERBICIDE TREATMENT REQUIREMENTS.
11. SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING THE DISPOSITION OF THE EXISTING MONITORING WELL.
12. THERE IS NO PROPOSED GRADING OR DREDGING WITHIN THE AREA SHOWN. CONSTRUCTION EQUIPMENT WILL BE REQUIRED TO ACCESS THIS LOCATION IN ORDER TO COMPLETE THE WORK WITHIN THE RIVER. THIS AREA SHALL BE RESTORED TO ITS ORIGINAL CONDITION FOLLOWING THE COMPLETION OF WORK WITHIN THE RIVER.
13. A TEMPORARY SANDBAG COFFERDAM MAY BE REQUIRED TO ASSIST IN PROVIDING A STABLE AND LEVEL WORKING SURFACE FOR EXCAVATION EQUIPMENT ADJACENT TO THE WATERWAY.
14. SEE SHEET 12 FOR RESTORATION PLAN AND ADDITIONAL DETAILS.

LEGEND

- PERM. LAND UNDER WATER IMPACT AREA (838 SF)
  PROP. 18" NATURAL STREAMBED MATERIAL OVER 3.5' RIPRAP OVER 12" CRUSHED STONE (M2.01.1) OVER GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL (M9.50.0)
- TEMP. LAND UNDER WATER IMPACT AREA (3,127 SF)
  PROP. AREA OF CHANNEL EXCAVATION AND REGRADING
- TEMP. LAND UNDER WATER IMPACT AREA (181 SF)
  RIVER ACCESS RESTORATION ONLY (NO DREDGING) (SEE NOTE 12)
- PROP. 18" NATURAL STREAMBED MATERIAL OVER 3.5' RIPRAP OVER 12" CRUSHED STONE (M2.01.1) OVER GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL (M9.50.0) (OUTSIDE LIMITS OF MEAN ANNUAL HIGH WATER)
- PROP. 3.5' RIPRAP OVER 12" CRUSHED STONE (M2.01.1) OVER GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL (M9.50.0) (OUTSIDE LIMITS OF MEAN ANNUAL HIGH WATER)
- PROP. COMPOST AND SEED OVER MODIFIED ROCKFILL

CONSTRUCTION PLAN

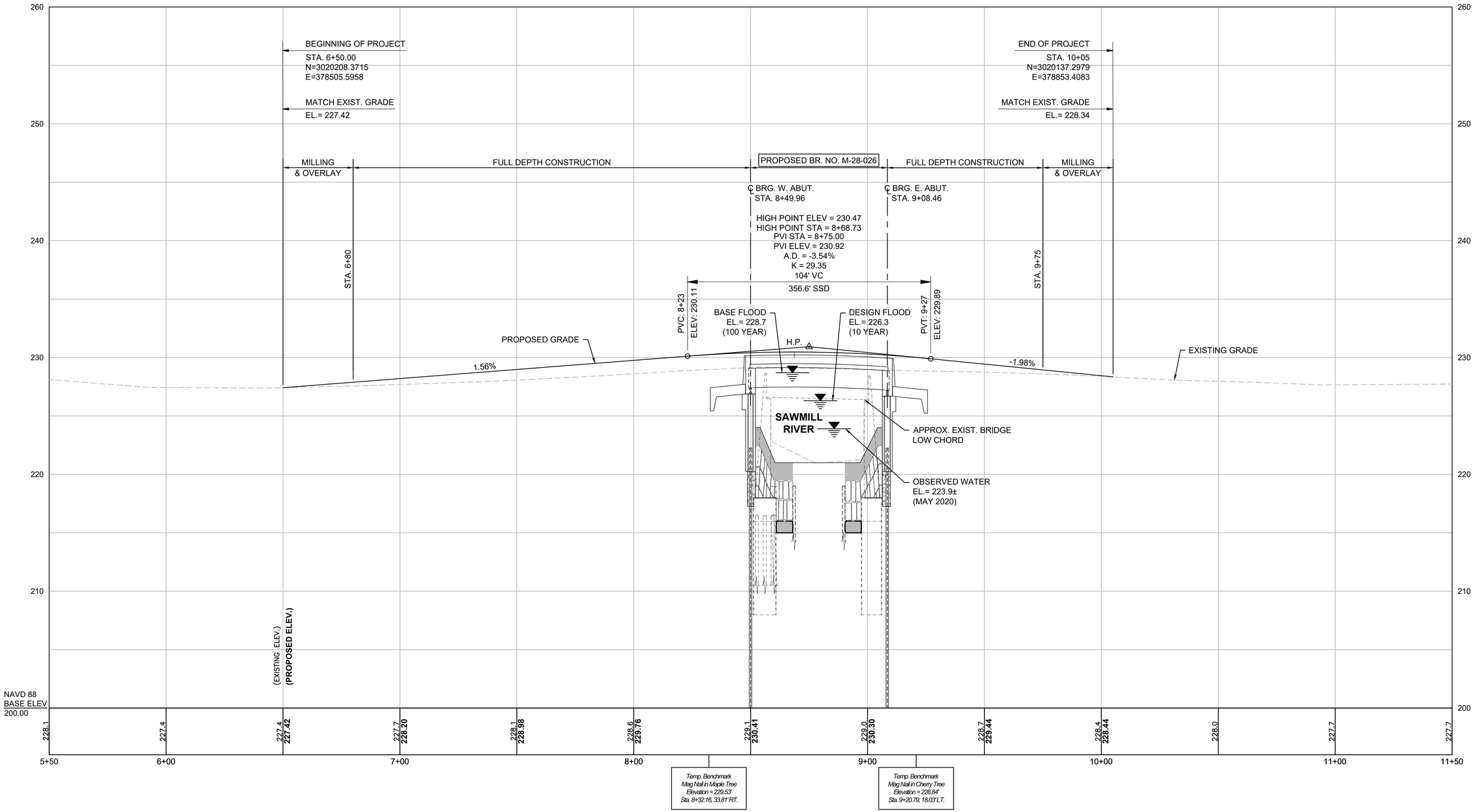
0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE SEE SHEET 6

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	6	41
PROJECT FILE NO.	609427		

PROFILE



PROFILE - SOUTH STREET

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

FOR CONSTRUCTION PLAN SEE SHEET 5

609427_HD6(PROFILE).DWG Plotted on 14-Mar-2024 9:08 AM

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

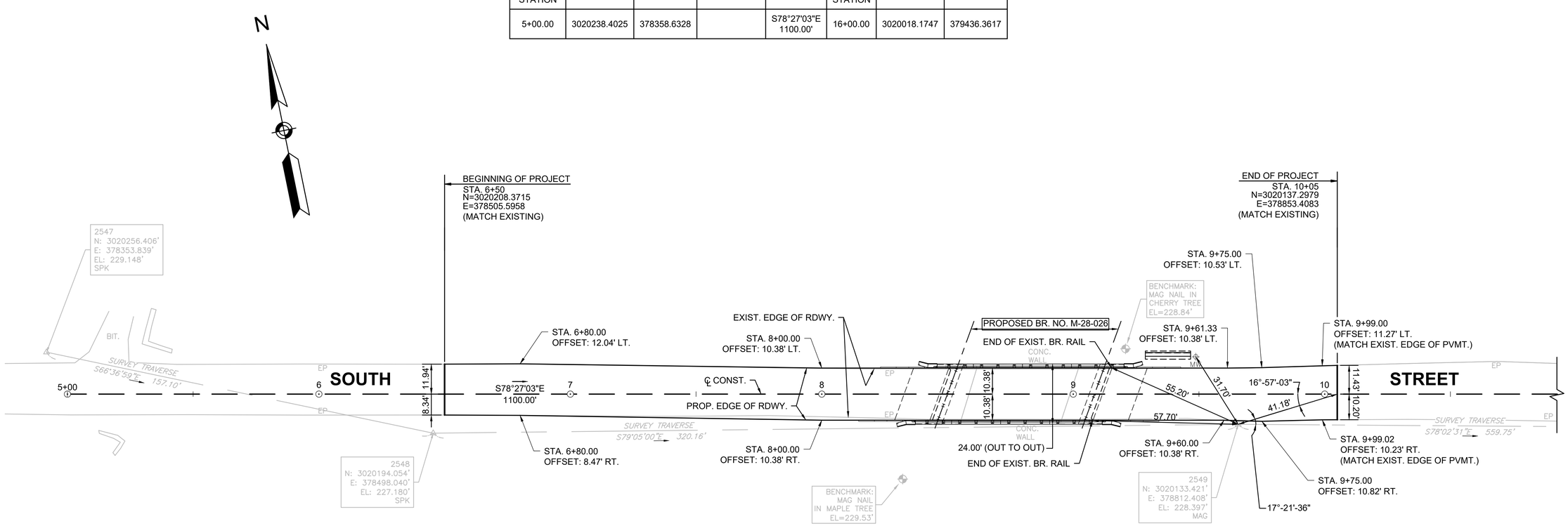
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	7	41
PROJECT FILE NO.	609427		

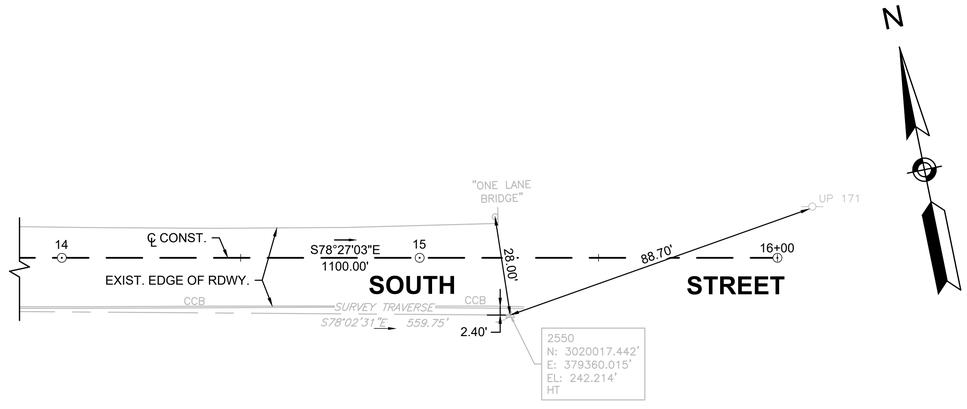
CURB TIE AND SURVEY TIE PLAN

609427_HD7(CURB_TIE_PLAN).DWG Plotted on 14-Mar-2024 9:08 AM

CONSTRUCTION CENTERLINE DATA

STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
5+00.00	3020238.4025	378358.6328		S78°27'03"E 1100.00'	16+00.00	3020018.1747	379436.3617





CURB TIE AND SURVEY TIE PLAN

0 20 50 100

SCALE: 1" = 20'

LEGEND

- ⌖ - BENCHMARK
- △ - SURVEY CONTROL POINT
- HT - HUB TACK
- MAG - MAG NAIL
- SPK - SPIKE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	8	41
PROJECT FILE NO.	609427		

GRADING PLAN

609427_H08(GRADE_PLAN).DWG Plotted on 14-Mar-2024 9:08 AM

N

BEGINNING OF PROJECT
STA. 6+50
N=3020208.3715
E=378505.5958
(MATCH EXISTING)

END OF PROJECT
STA. 10+05
N=3020137.2979
E=378853.4083
(MATCH EXISTING)

SEE BRIDGE PLANS FOR ELEVATIONS & GEOMETRY ON BRIDGE

PROPOSED BR. NO. M-28-026

MEAN ANNUAL HIGH WATER

LINE OF TEMP. EASEMENT

SEE SHEET 5 FOR LIMITS OF MODIFIED ROCKFILL

PROP. EDGE OF PVMT.

PROP. SEDIMENT CONTROL BARRIER/ TURTLE PROTECTION BARRIER (TYP.)

SEE SHEET 5 FOR LIMITS OF STREAMBED MATERIAL & RIPRAP

SOUTH STREET

RIVER FLOW

SAWMILL

1855 COUNTY LAYOUT

BRUSH/WOODED

BARBED WIRE FENCE

STEEL GUARDRAIL

INV 48" CMP EL=220.96'

INV 48" CMP EL=221.41'

B.O.S.

T.O.S.

C CONST.

6 7 8 10 11

227.65 227.96 228.76 229.55 229.23 228.73
227.89 228.20 228.98 229.76 229.44 228.94
227.72 228.02 228.79 229.55 229.23 228.72

2%

NOTES:

1. PROFILE AND CROSS SECTIONS SHALL BE USED TO ESTABLISH ALL ROADWAY GRADES.
2. SEE CURB TIE PLAN FOR PROPOSED EDGE OF ROADWAY GEOMETRY AND ROADWAY WIDTHS.

GRADING PLAN

0 20 50 100

SCALE: 1" = 20'

CONSTRUCTION SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	LEGEND	BORDER	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
MA-R2-10a	48"	36"	WORK ZONES / SPEEDING FINES DOUBLED	SEE MASSDOT STANDARDS			2	ORANGE / WHITE	BLACK	BLACK	12.0	24.0
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END				2	ORANGE / WHITE	BLACK	BLACK	12.0	24.0
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD				2	ORANGE	BLACK	BLACK	9.0	18.0
M4-8a	24"	18"	END DETOUR	SEE STANDARDS IN 2009 MUTCD			2	ORANGE	BLACK	BLACK	3.0	6.0
M4-9AL	30"	24"	DETOUR				1	ORANGE	BLACK	BLACK	5.0	5.0
M4-9AR	30"	24"	DETOUR				1	ORANGE	BLACK	BLACK	5.0	5.0
M4-9L	30"	24"	DETOUR				2	ORANGE	BLACK	BLACK	5.0	10.0
M4-9R	30"	24"	DETOUR				2	ORANGE	BLACK	BLACK	5.0	10.0
M4-9V	30"	24"	DETOUR				6	ORANGE	BLACK	BLACK	5.0	30.0
M4-10L	48"	18"	DETOUR				1	ORANGE	BLACK	BLACK	6.0	6.0
M4-10R	48"	18"	DETOUR				1	ORANGE	BLACK	BLACK	6.0	6.0
R11-2	48"	30"	BRIDGE CLOSED				2	WHITE	BLACK	BLACK	10.0	20.0
R11-4	60"	30"	ROAD CLOSED TO THRU TRAFFIC				2	WHITE	BLACK	BLACK	12.5	25.0
W16-8P (SOUTH ST)	24"	8"	SOUTH ST				16	ORANGE	BLACK	BLACK	1.33	21.3
W20-2	36"	36"	DETOUR AHEAD				2	ORANGE	BLACK	BLACK	9.0	18.0
W20-4	36"	36"	ONE LANE ROAD 1000 FT				2	ORANGE	BLACK	BLACK	9.0	18.0
W20-7	36"	36"					2	ORANGE	BLACK	BLACK	9.0	18.0

MOUNT ON TYPE III BARRICADE

MOUNT ON TYPE III BARRICADE

MOUNT ON TYPE III BARRICADE

MOUNT ON TYPE III BARRICADE

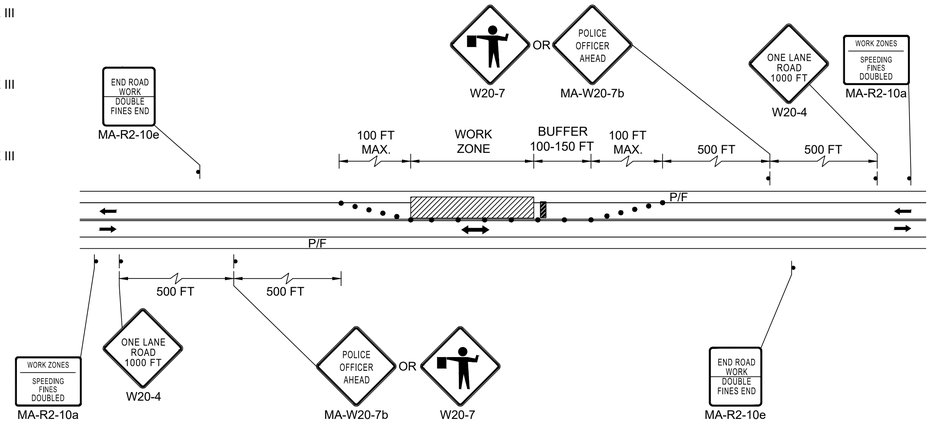
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	9	41
PROJECT FILE NO.	609427		

TEMPORARY TRAFFIC CONTROL DETAILS AND NOTES

TEMPORARY TRAFFIC CONTROL NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (M.U.T.C.D) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. UNLESS OTHERWISE NOTED.
3. THE TEMPORARY TRAFFIC CONTROL PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS, IF APPLICABLE, SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND AS APPROVED OR AS DIRECTED BY THE ENGINEER.
4. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, INCLUDING CHANNELIZING DEVICES, BARRIERS AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN THE "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. ALL SIGNS SHALL BE MOUNTED ON STANDARD SIGN SUPPORTS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
7. ORANGE BACKGROUND FOR CONSTRUCTION SIGNS SHALL BE FLUORESCENT.
8. EXISTING SIGNING THAT IS NOT APPLICABLE SHALL BE COVERED OR REMOVED WHEN NOT REQUIRED FOR CONTROL OF TRAFFIC.
9. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
10. DISTANCES SHOWN ON DETAIL MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER DUE TO SITE CONSTRAINTS.
11. THE MAXIMUM SPACING OF TRAFFIC CONTROL DEVICES IN A TAPER SHALL BE EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
12. THE FIRST TEN (10) PLASTIC DRUMS IN A TAPER SHALL BE MOUNTED WITH FLASHING LIGHTS.



SOUTH STREET LANE CLOSURE (SHORT TERM)
NOT TO SCALE

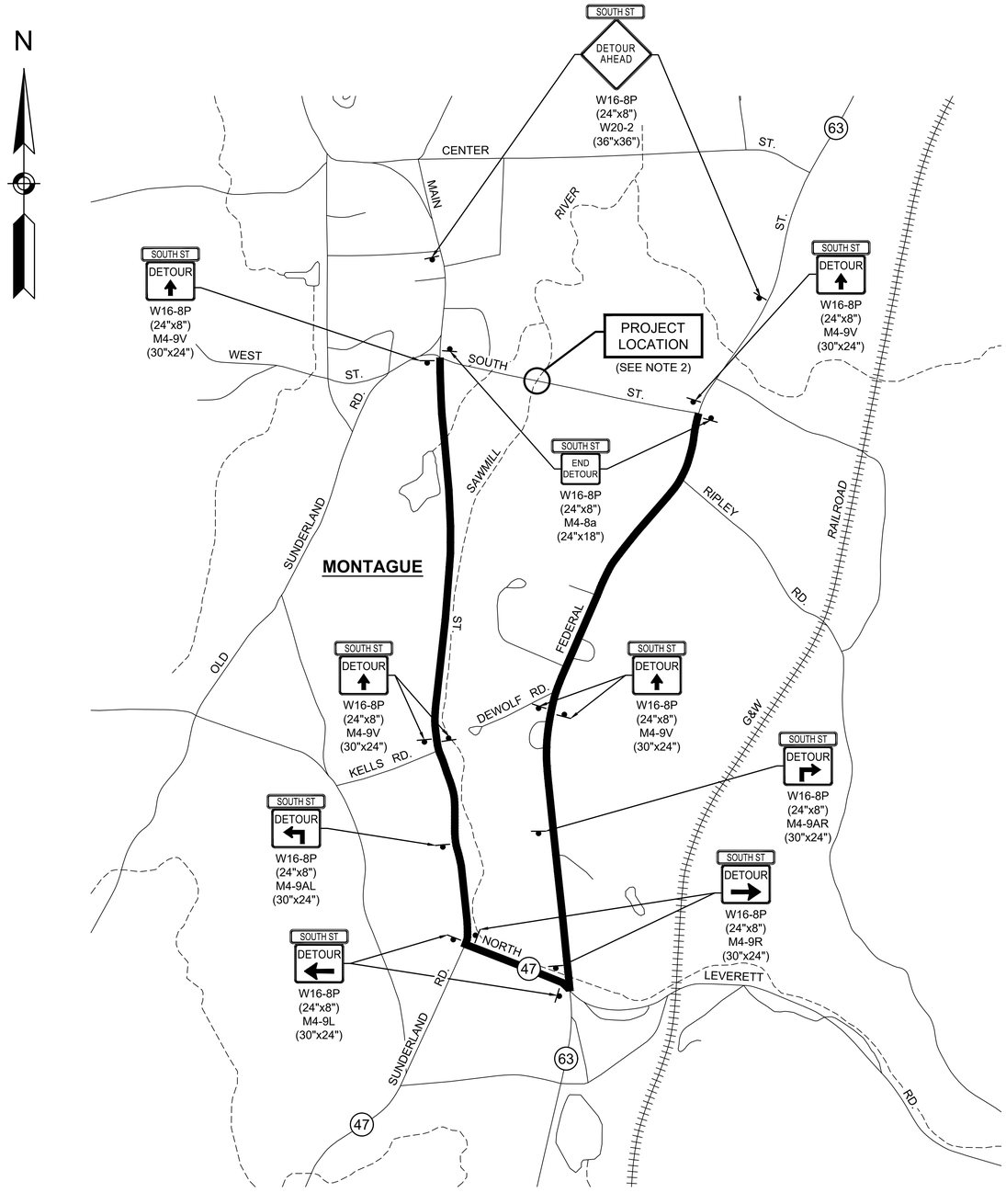
LEGEND

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC
- SIGN
- P/F — POLICE OR FLAGGER
- WORK AREA

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	10	41
PROJECT FILE NO.	609427		

DETOUR PLAN



DETOUR PLAN
SCALE: 1" = 500'

NOTES:

1. SEE SHEET 9 FOR TEMPORARY TRAFFIC CONTROL NOTES.
2. SEE SHEET 11 FOR ADDITIONAL CONSTRUCTION SIGNS AT BRIDGE AND SOUTH STREET INTERSECTIONS.

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

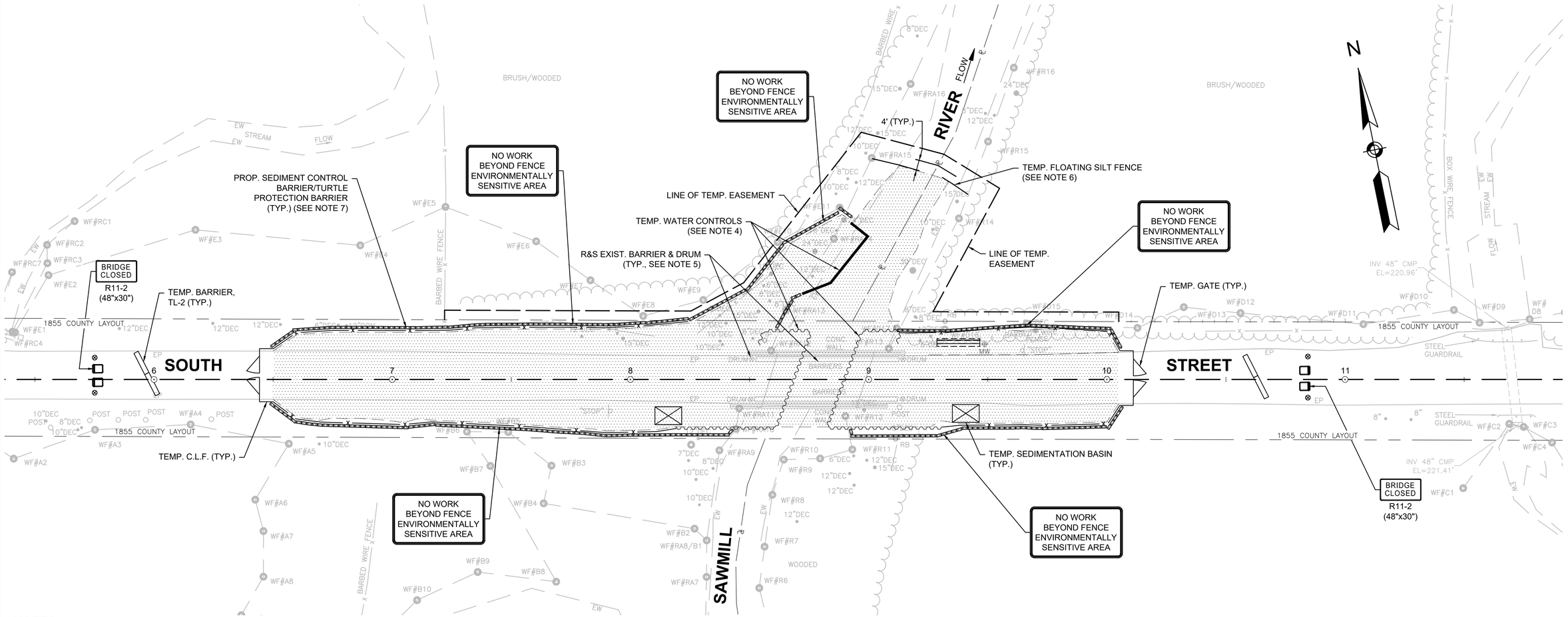
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	11	41
PROJECT FILE NO.	609427		

BRIDGE CLOSURE PLAN

609427_HD11(BR_CLOSE_PLAN).DWG Plotted on 14-Mar-2024 9:09 AM

CLOSURE AT INTERSECTIONS

NOT TO SCALE



NOTES:

1. SEE SHEET 10 FOR DETOUR PLAN.
2. THE CONTRACTOR MAY MOVE TEMPORARY BARRIERS AS REQUIRED TO ACCESS THE SITE DURING WORKING HOURS AT NO ADDITIONAL COST TO THE DEPARTMENT. THE TEMPORARY BARRIERS MUST BE REPLACED AS SOON AS ACCESS/EGRESS OF VEHICLE HAS BEEN COMPLETED.
3. THE TEMPORARY WATER CONTROL SYSTEM FOR DEMOLITION OF THE EXISTING ABUTMENTS, CONSTRUCTION OF THE PROPOSED ABUTMENTS AND CHANNEL RECONSTRUCTION SHALL BE IMPLEMENTED SO AS TO MAINTAIN FLOW OF SAWMILL RIVER.
4. SUGGESTED TEMPORARY WATER CONTROL LOCATION SHOWN FOR THE DEMOLITION AND CONSTRUCTION OF THE ABUTMENTS. ADDITIONAL WATER CONTROL REQUIRED TO COMPLETE CHANNEL REGRADING. FINAL TEMPORARY WATER CONTROL PLAN SHALL BE DEVELOPED BY THE CONTRACTOR.
5. EXISTING BARRIERS AND DRUMS SHALL BE REMOVED FROM THE SITE AND TRANSPORTED TO 11 SANDY LANE, TURNER FALLS, MA 01376 AS STATED IN SPECIAL PROVISIONS.
6. FLOATING SILT FENCE SHALL BE INSTALLED PRIOR TO ANY WORK WITHIN THE SAWMILL RIVER OUTSIDE THE LIMITS OF TEMP. WATER CONTROL. SEE SPECIAL PROVISIONS FOR FLOATING SILT FENCE REQUIREMENTS.
7. WOOD TURTLE PROTECTION BARRIER SHALL BE A CLOSED LOOP SYSTEM FOR THE FULL DURATION OF CONSTRUCTION. TURTLE BARRIER MUST CONNECT TO COFFERDAMS WITH NO GAPS. GAPS AT THE TEMPORARY FENCE GATES MUST BE CLOSED EACH NIGHT. SEE SPECIAL PROVISIONS FOR ADDITIONAL WOOD TURTLE PROTECTION REQUIREMENTS.

BRIDGE CLOSURE PLAN

0 20 50 100

SCALE: 1" = 20'

LEGEND

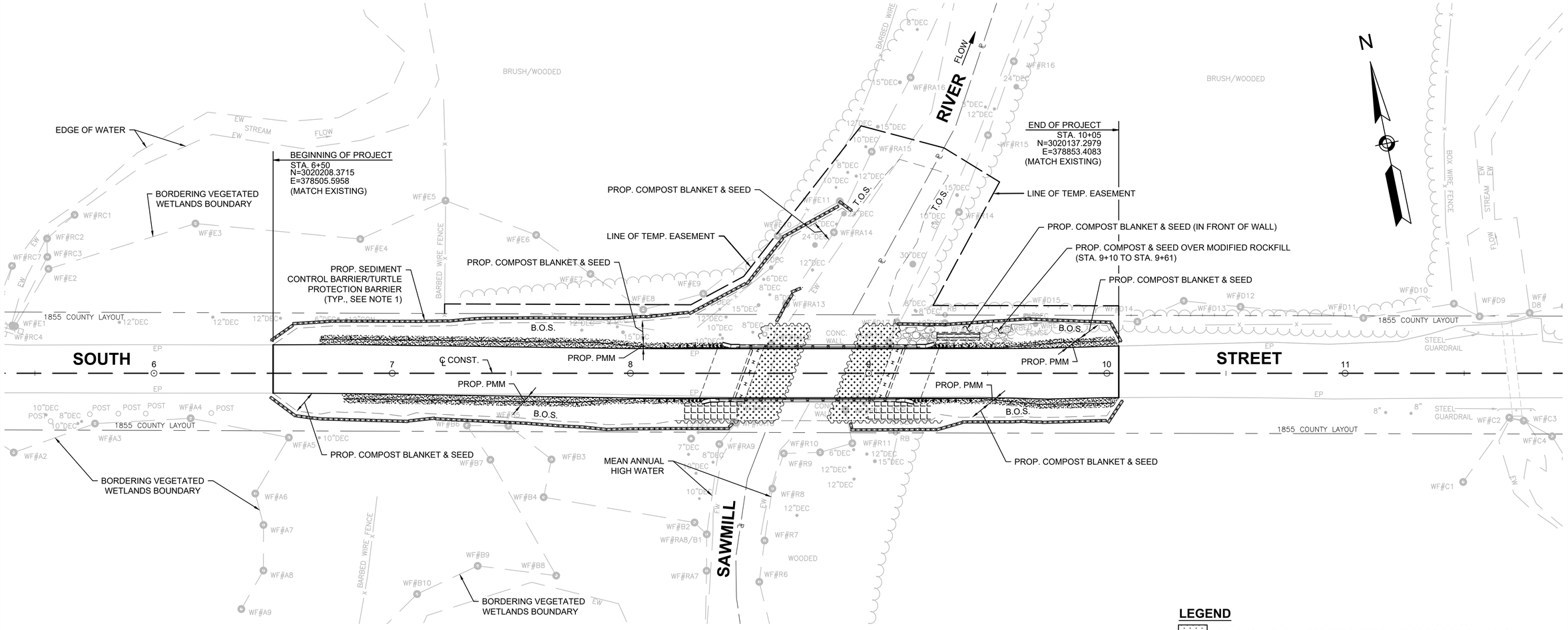
- TEMPORARY FENCE
- TEMPORARY FENCE GATES
- TEMPORARY BARRIER
- REFLECTORIZED DRUM
- PORTABLE BREAKAWAY BARRICADE TYPE III
- WORK AREA
- SEDIMENT CONTROL BARRIER
- TEMPORARY FLOATING SILT FENCE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	12	41
PROJECT FILE NO.	609427		

RESTORATION PLAN

609427_HD12(RESTOR_PLAN).DWG Plotted on 14-Mar-2024 9:09 AM



NOTE:

1. SEE SHEET 5 FOR CONSTRUCTION PLAN AND ADDITIONAL DETAILS.

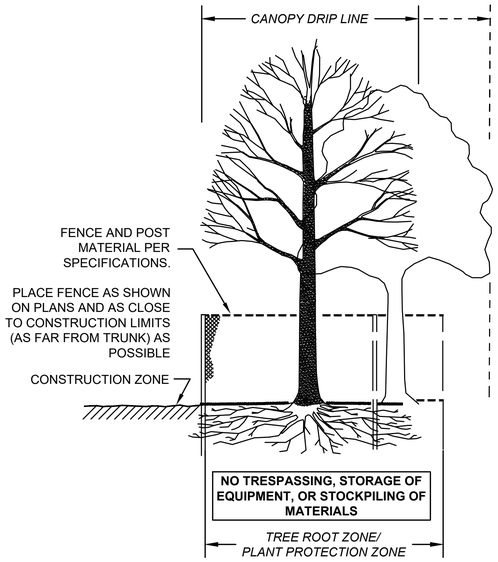
LEGEND

- PROP. 18" NATURAL STREAMBED MATERIAL OVER 3.5' RIPRAP OVER 12" CRUSHED STONE (M2.01.1) OVER GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL (M9.50.0)
- PROP. 3.5' RIPRAP OVER 12" CRUSHED STONE (M2.01.1) OVER GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL (M9.50.0)
- PROP. COMPOST AND SEED OVER MODIFIED ROCKFILL
- PROP. COMPOST BLANKET AND SEED
- PROP. PAVEMENT MILLING MULCH (PMM)

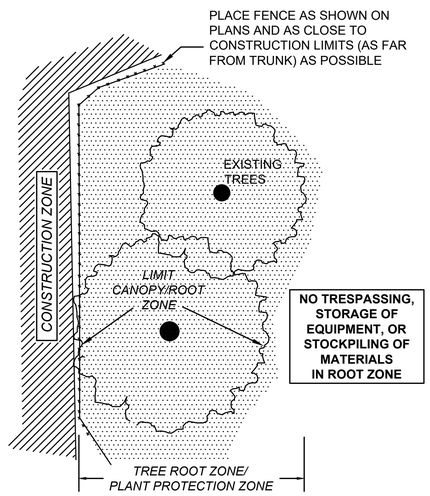
RESTORATION PLAN

0 20 50 100

SCALE: 1" = 20'



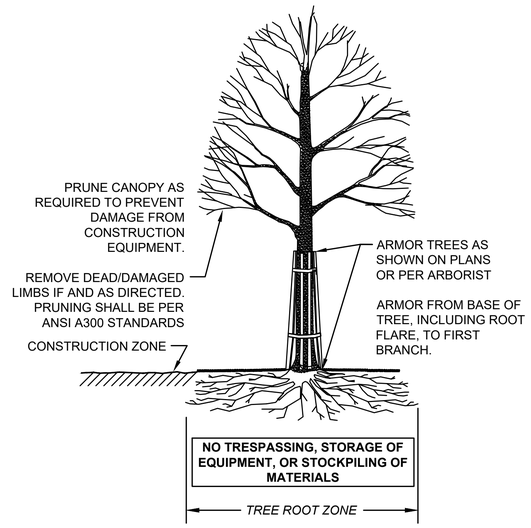
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

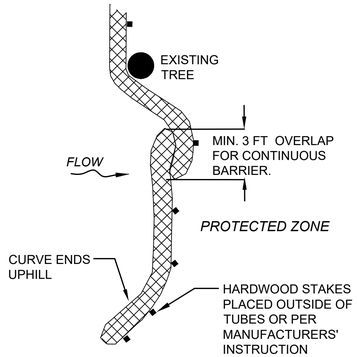
NOT TO SCALE



SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK

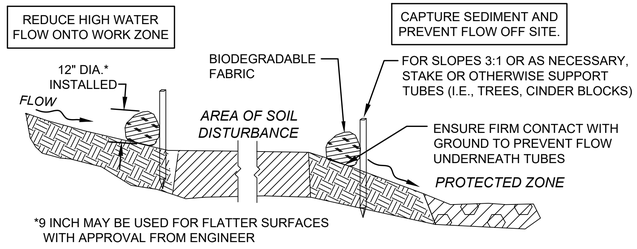
NOT TO SCALE



PLACE 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.

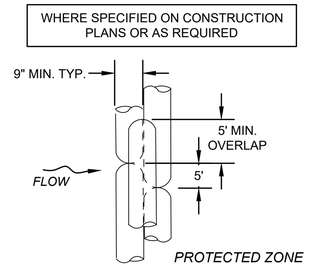
PLAN VIEW



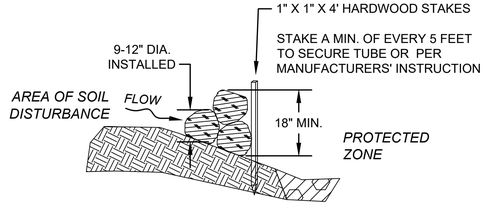
SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



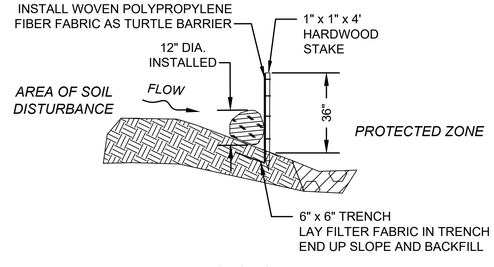
PLAN VIEW



SECTION

COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE



SECTION

NOTE:
SEE SPECIAL PROVISIONS FOR ADDITIONAL WOOD TURTLE PROTECTION REQUIREMENTS.

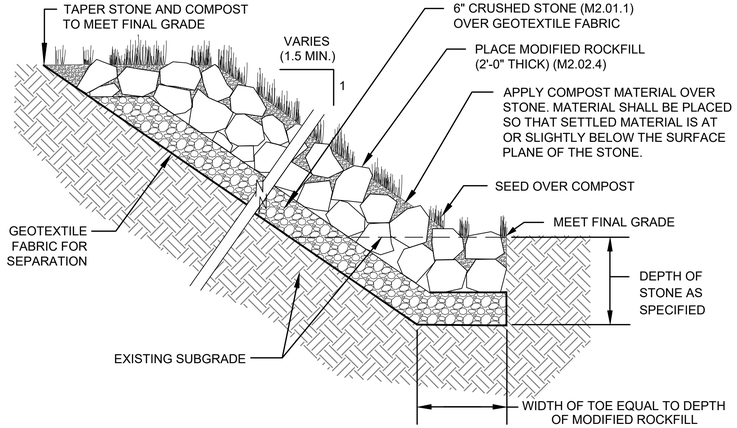
COMPOST FILTER TUBE AND SILT FENCE/TURTLE BARRIER

NOT TO SCALE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

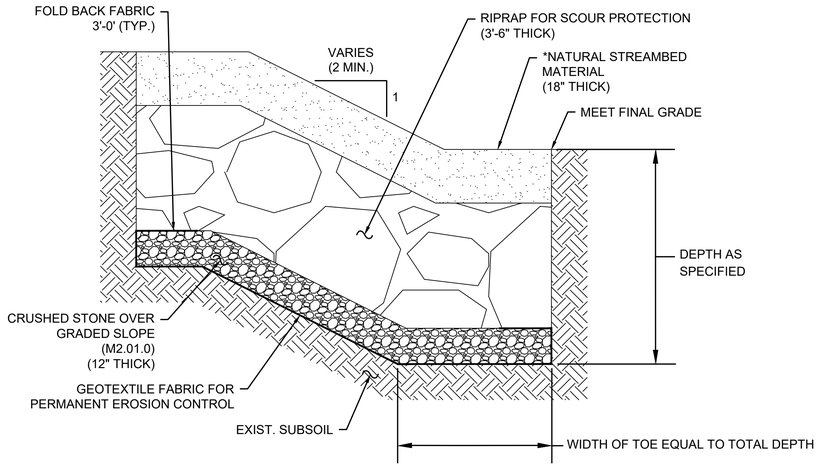
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	14	41
PROJECT FILE NO.	609427		

MISCELLANEOUS DETAILS
2 OF 2



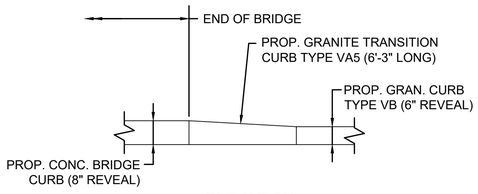
NOTE:
SEED MIX USED OVER MODIFIED ROCKFILL SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

COMPOST AND SEED OVER MODIFIED ROCKFILL
NOT TO SCALE

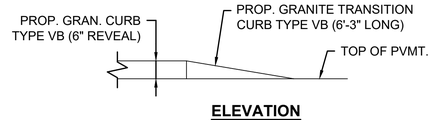


(*) - AT LOCATIONS OF RIPRAP OUTSIDE THE LIMITS OF THE MEAN ANNUAL HIGH WATER, NATURAL STREAMBED MATERIAL SHALL BE OMITTED. AT THESE LOCATIONS, THE BOTTOM LAYER OF CRUSHED STONE SHALL BE STEPPED SUCH THAT THE TOP OF RIPRAP IS FLUSH WITH FINAL GRADE.

NATURAL STREAMBED MATERIAL OVER RIPRAP
NOT TO SCALE

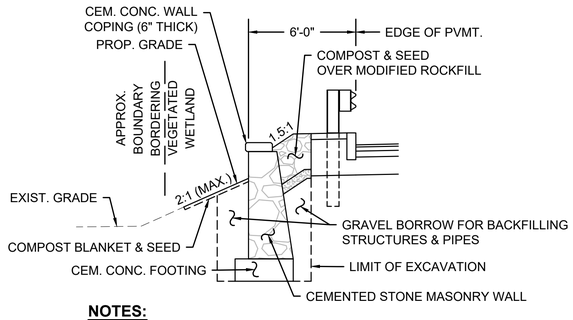


ELEVATION
CURB HEIGHT TRANSITION - END OF BRIDGE



ELEVATION
CURB HEIGHT TRANSITION - END OF CURB

GRANITE CURB TRANSITION DETAILS
NOT TO SCALE

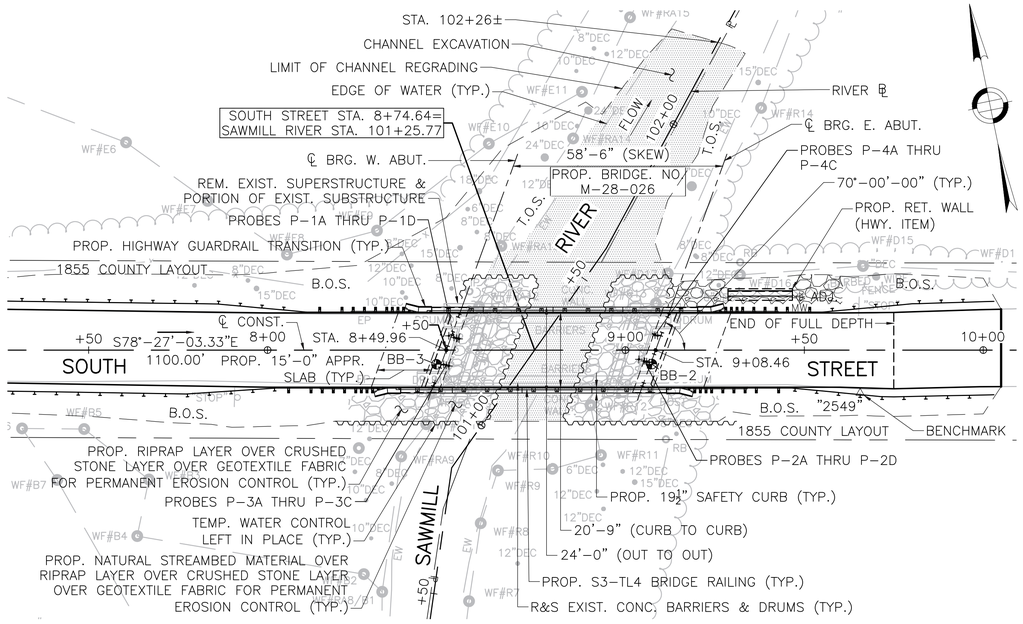


NOTES:

1. CEMENTED STONE MASONRY WALL SHALL CONFORM TO MASSDOT STANDARD DETAIL DRAWING E 302.2.0, WITH THE EXCEPTION OF THE CONCRETE FOR THE FOOTING AND COPING, WHICH SHALL BE 5000 PSI HP CEMENT CONCRETE.

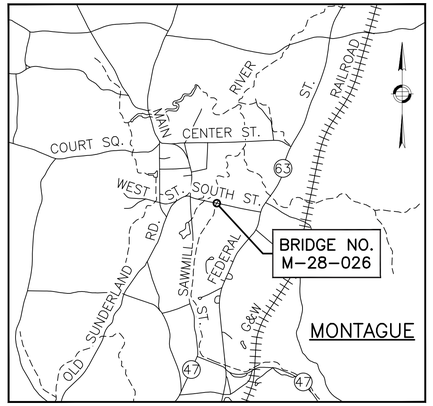
2. FACTORED BEARING PRESSURE = 2.4 KSF AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD. FACTORED BEARING RESISTANCE = 3.0 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

CEMENTED STONE MASONRY WALL DETAIL
NOT TO SCALE



KEY PLAN

SCALE: 1" = 20'



LOCUS

SCALE: 1" = 2,000'

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

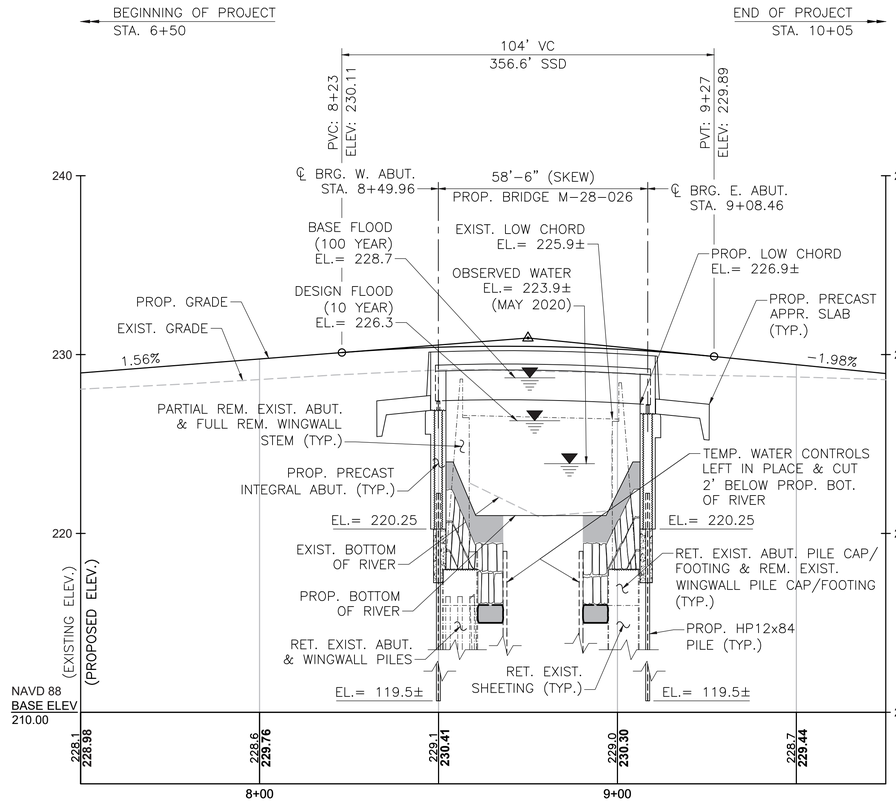
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	15	41
PROJECT FILE NO.	609427		

TITLE SHEET AND INDEX

INDEX OF SHEETS

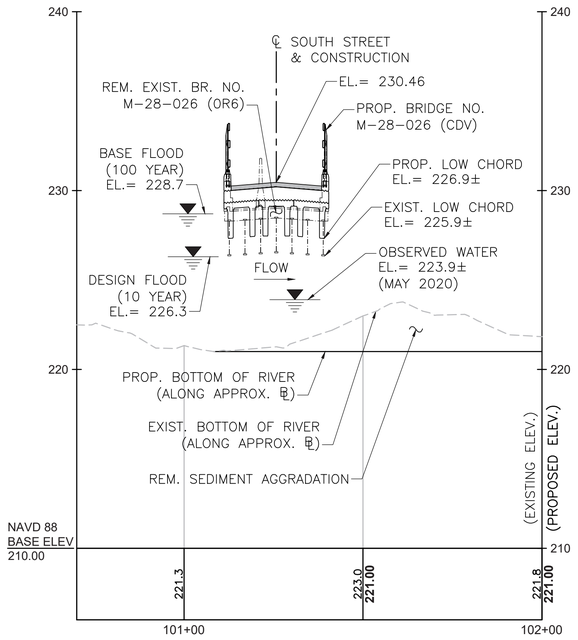
NOTE:

1. SEE SHEET 2 OF 24 FOR ESTIMATED QUANTITIES.



PROFILE – ℄ CONSTRUCTION – SOUTH STREET

SCALES: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'



PROFILE – SAWMILL RIVER

SCALES: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

COMMONWEALTH OF MASSACHUSETTS
RICHARD P. LENOX
STRUCTURAL
No. 41034
PROFESSIONAL ENGINEER

Lenox, Richard (USRL04144) Digitally signed by Lenox, Richard (USRL04144) Date: 2024.03.28 14:39:29 -04'00'

WSP USA Inc.
100 NORTH PARKWAY
SUITE 110
WORCESTER, MA 01605
TEL: +1 508.248.1970

MARCH 30, 2024 | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE
MONTAGUE
SOUTH STREET
OVER SAWMILL 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: 2024.03.29 16:49:49 -04'00'
STATE BRIDGE ENGINEER

Carrie Lavallee, P.E. — Digitally signed by Carrie Lavallee, P.E. Date: 2024.04.02 17:05:13 -04'00'
CHIEF ENGINEER

SHEET 1 OF 24 SHEETS BRIDGE NO. M–28–026 (CDV)

609427_BR1(M28026).DWG Plotted on 20-Mar-2024 2:41 PM

12-March-2024 Final Structural Submittal (SF)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	16	41
PROJECT FILE NO.	609427		

GENERAL NOTES AND QUANTITIES

GENERAL NOTES:

DESIGN:

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

EXISTING BRIDGE PLANS:

PLANS FOR THE EXISTING BRIDGE ARE AVAILABLE AND MAY BE SEEN AT THE OFFICE OF THE STATE BRIDGE ENGINEER, MASSDOT – HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

MASSDOT BENCH MARK:

"2549" MAG NAIL SET BY MASSDOT GPS
STA. 9+65.61, 12.01' RT., N=3020133.4210, E=378812.4080, EL.= 228.397'
ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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.

MASSDOT SURVEY NOTEBOOKS:

ELECTRONIC SURVEY PERFORMED BY WSP WAS USED IN THE PREPARATION OF THESE CONSTRUCTION DRAWINGS. FILES CAN BE OBTAINED AT THE SURVEY OFFICE, MASSDOT – HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

SCALES:

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

FOUNDATIONS:

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

UNSUITABLE MATERIAL:

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

ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED.

REINFORCEMENT:

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

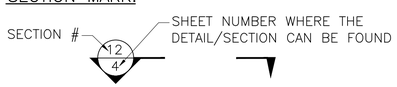
MODIFICATION CONDITION	#4 BARS	#5 BARS	#6 BARS
1. NONE	16"	19"	23"
2. 12" OF CONCRETE BELOW BAR	20"	25"	30"
3. EPOXY COATED BARS, COVER < $3d_b$, OR CLEAR SPACING < $6d_b$	23"	29"	34"
4. COATED BARS, ALL OTHER CASES	18"	23"	27"
5. CONDITION 2 AND 3.	26"	32"	39"
6. CONDITION 2 AND 4.	24"	30"	36"

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

TRAFFIC:

THE BRIDGE WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC AS SHOWN ON THE BRIDGE CLOSURE AND EROSION CONTROL PLAN.

SECTION MARK:



CONCRETE:

ALL EXPOSED SURFACES OF CONCRETE THAT ARE NOT STRIATED SHALL BE TREATED AND RUBBED TO OBTAIN A UNIFORMLY SMOOTH SURFACE WITH EVEN TEXTURE.

PRECAST
5000 PSI, HP CEMENT CONCRETE SHALL BE PROVIDED FOR HIGHWAY GUARDRAIL TRANSITIONS, LOWER PORTIONS OF THE PRECAST INTEGRAL ABUTMENT/WINGWALL PILE CAPS AND PRECAST APPROACH SLABS.

CONCRETE (cont.):

CAST-IN-PLACE
5000 PSI, HP CEMENT CONCRETE SHALL BE PROVIDED FOR THE BRIDGE DECK, UPPER PORTIONS OF THE INTEGRAL ABUTMENTS (END DIAPHRAGMS), UPPER PORTIONS OF INTEGRAL WINGWALLS, SAFETY CURBS, AND TO FILL CMP VOIDS WITHIN THE PRECAST PILE CAPS.

** CEMENT CONCRETE PLACEMENTS WHERE ALL VOLUMETRIC DIMENSIONS OF THE PLACEMENT ARE 4'-0" OR GREATER REQUIRES ADHERENCE TO MASSDOT MASS CONCRETE PROCEDURES AS DESCRIBED IN THE JULY 1, 2015 MASSDOT SUPPLEMENTAL SPECIFICATIONS 901.65 FINISHING AND CURING UNDER SECTION B1.

DIMENSIONS:

DIMENSIONS TO CHAMFERED CORNERS ARE TO PROJECTIONS OF THE ADJOINING FACES, UNLESS OTHERWISE NOTED.

MEMBRANE WATERPROOFING:

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

EXISTING CONDITIONS:

EXISTING DIMENSIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE & VERIFY ALL PRESENTED DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE/SHE HAS MADE THE REQUIRED MEASUREMENTS, AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

ESTIMATED QUANTITIES

(NOT GUARANTEED)

ITEM NO.	ITEM	UNIT	QUANTITY
112.4	REMOVAL OF EXISTING TIMBER PILE	EA	3
112.5	REMOVAL OF EXISTING STEEL SHEETING	FT	30
114.1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. M-28-026 (0R6)	LS	1
127.1	REINFORCED CONCRETE EXCAVATION	CY	140
140.	BRIDGE EXCAVATION	CY	360
140.1	BRIDGE EXCAVATION WITHIN COFFERDAM	CY	350
144.	CLASS B ROCK EXCAVATION	CY	70
151.1	GRAVEL BORROW FOR BRIDGE FOUNDATION	CY	180
156.13	CRUSHED STONE FOR INTEGRAL ABUTMENT PILES	TON	45
156.2	CRUSHED STONE FOR SLOPE TREATMENT	TON	100
450.60	SUPERPAVE BRIDGE SURFACE COURSE – 9.5 (SSC-B-9.5)	TON	14
450.70	SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 (SPC-B-9.5)	TON	14
450.71	SUPERPAVE BRIDGE PROTECTIVE COURSE – 12.5 (SPC-B-12.5)	TON	4
482.31	SAWING & SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES	FT	45
698.4	GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL	SY	190
942.124	STEEL PILE HP12x84	FT	1,181
944.2	DRILLING FOR PILE OBSTRUCTIONS	FT	25
948.3	QUICK LOAD TEST	EA	1
948.41	DYNAMIC LOAD TEST BY CONTRACTOR	EA	4
948.5	PILE SHOES	EA	11
983.1	RIPRAP	TON	357
983.4	STREAMBED RESTORATION	LS	1
991.1	CONTROL OF WATER – STRUCTURE NO. M-28-026	LS	1
994.01	TEMPORARY PROTECTIVE SHIELDING – BRIDGE NO. M-28-026 (0R6)	LS	1
995.01	BRIDGE STRUCTURE, BRIDGE NO. M-28-026 (CDV)	LS	1

TRAFFIC DATA	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2042	
AVERAGE DAILY TRAFFIC – PRESENT	320	
AVERAGE DAILY TRAFFIC – DESIGN YEAR	390	
DESIGN HOURLY VOLUME	39	
DIRECTIONAL DISTRIBUTION	54%	
TRUCK PERCENTAGE – AVERAGE DAY	1.4%	
TRUCK PERCENTAGE – PEAK HOUR	10%	
DESIGN SPEED	35 MPH	
DIRECTIONAL DESIGN HOURLY VOLUME	21	

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000
DESIGN SPECTRA	
As	0.150
SDs	0.343
SD1	0.140
SITE CLASS	E
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	23.6
DESIGN FLOOD DISCHARGE (C.F.S.)	1,410
DESIGN FLOOD FREQUENCY (YEARS)	10
DESIGN FLOOD VELOCITY (F.P.S.)	8.0
DESIGN FLOOD ELEVATION (FEET, NAVD)	226.3
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	2,790
BASE FLOOD ELEVATION (FEET, NAVD)	228.7
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	25
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	2.8
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	3.5
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	N/A
FREQUENCY (IF KNOWN, YEARS)	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YYYY)	03/1936
HISTORY OF ICE FLOES	*YES
EVIDENCE OF SCOUR AND EROSION	YES

(*) – ICE JAMS OBSERVED IN D/S CONNECTICUT RIVER

TEMPORARY WATER CONTROL DESIGN DATA (SEE NOTE)	
DESIGN FLOOD DISCHARGE (C.F.S.)	339
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	8.1
DESIGN FLOOD ELEVATION (FEET, NAVD)	228.1

TEMPORARY WATER CONTROL DESIGN DATA NOTE:

THE 2 YEAR DESIGN FLOOD FOR THE TEMPORARY WATER CONTROL PREDICTS OVERTOPPING OF THE ROADWAY APPROACHES IN BOTH THE EXISTING AND PROPOSED TEMPORARY WATERWAY CONFIGURATIONS. THEREFORE, THE WORK SITE MAY BE INACCESSIBLE DURING A 2 YEAR DESIGN STORM. THE CONTRACTOR SHALL SET THE TEMPORARY COFFERDAM ELEVATION TO 229.1. THE CONTRACTOR SHALL BE PREPARED TO EXECUTE SWIFT REMOVAL OF EQUIPMENT AND MATERIALS BELOW AN ELEVATION OF 228.1 PRIOR TO A PREDICTED SIGNIFICANT STORM EVENT UNTIL SUCH TIME AS THE WATER RECEDES AND WORK CAN CONTINUE.

DATE	DESCRIPTION
MARCH 30, 2024	ISSUED FOR CONSTRUCTION

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

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	17	41
PROJECT FILE NO. 609427			

BORING LOGS
1 OF 2

BORING BB–2

N=3020153
E=378757
GROUND ELEVATION: 228.9±

massDOT Highway — Boring Log

LAMSON ENGINEERING CORPORATION
437 Cherry Street, #109, Newton, Massachusetts 02465
Phone: (617) 558-0101 E-Mail: Lamsoneng@msn.com

Boring No. BB-2 (Bridge Boring) — Page 1/3
Scale: 1" = 5'

City/Town: Montague	Bridge No.: M-28-026 (0R6)	Project File No.: 609427	Contract No.: -
Location: South Street over Sawmill River		Date & Time Started: 2/8/21 9:00 a.m.	Total Hours:
Groundwater Depth (Feet): 1'6"	Date & Time: 2/10/21 11:30 a.m.	Date & Time Completed: 2/10/21 11:30 a.m.	19.5
Coordinates: N 3,020,153 E 378,757	Ground Elevation (Feet): 228.9'	Inspector's Name: Weijie Dong	
Drilling Company: New England Boring Contractors		Driller's Name: Peter Labossirere	Helper's Name: Travis Clegg

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches — Coring Times Minute Per Foot				Recovery (inches)	Field Description	Strata Changes
							ASPHALT 3"	
S-1	1' - 3'	28	25	23	23	7"	Dry, dense, brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt.	
S-2	4' - 6'	9	8	5	3	3"	Wet, medium dense, brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt.	
S-3	9' - 11'	10	9	9	8	4"	Wet, medium dense, brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt, trace wood.	
S-4	14' - 16'	24	16	7	6	2"	Wet, medium dense, brown, FINE TO COARSE SAND, some fine gravel.	
S-5	19' - 21'	5	3	4	5	5"	Wet, loose, brown, FINE TO COARSE SAND, some fine gravel.	21'
S-6	24' - 26'	5	3	3	4	3"	Wet, loose, gray, FINE TO COARSE SAND, some fine gravel.	28'
S-7	29' - 31'	13	10	8	4	8"	Wet, medium dense, gray, FINE TO COARSE SAND, some fine gravel, some clay.	31'
S-8	34' - 36'	5	6	5	7	20"	Wet, stiff, gray, CLAY.	
S-9	39' - 41'	4	3	5	4	12"	Wet, stiff, gray, CLAY.	
S-10	44' - 46'	1	1	2	1	18"	Wet, soft, gray, CLAY AND FINE SAND.	44'
S-11	49' - 51'	1	1	1	1	12"	Wet, soft, gray, CLAY AND FINE SAND.	
S-12	54' - 56'	2	3	2	3	18"	Wet, loose, gray, FINE SAND, trace clay.	54'
S-13	59' - 61'	2	2	2	2	16"	Wet, loose, gray, FINE SAND, trace clay.	
S-14	64' - 66'	1	1	2	2	12"	Wet, very loose, gray, FINE SAND, trace clay.	
S-15	69' - 71'	2	3	3	4	20"	Wet, loose, gray, FINE SAND, trace clay.	
S-16	74' - 76'	4	4	7	9	18"	Wet, medium dense, gray, FINE SAND.	
S-17	79' - 81'	6	7	8	8	12"	Wet, medium dense, gray, FINE SAND.	
S-18	84' - 86'	7	9	9	10	16"	Wet, medium dense, gray, FINE SAND.	
S-19	89' - 91'	10	12	11	14	16"	Wet, medium dense, gray, FINE SAND.	
S-20	94' - 96'	12	15	19	17	20"	Wet, dense, gray, FINE SAND.	
S-21	99' - 101'	14	20	23	26	18"	Wet, dense, gray, FINE SAND.	
S-22	104' - 106'	11	12	18	22	23"	Wet, dense, gray, FINE SAND.	
S-23	109' - 111'	20	22	18	21	24"	Wet, dense, gray, FINE SAND.	
S-24	114' - 116'	25	26	22	28	17"	Wet, dense, gray, FINE SAND.	
S-25	119' - 120'6"	30	55	87/6"		18"	Wet, very dense, gray, FINE SAND.	121'
S-26	124' - 126'	6	8	10	12	19"	Wet, medium dense, gray, FINE TO COARSE SAND, trace fine gravel. Bottom of Exploration @ 126'	126'
							- Boring terminated at 126' deep due to possible positive water pressure condition with sand coming inside of 3" casings.	

Notes:

Arrow-Board: - Signs: 8 Cones: 16

Protective Device: Stand: - Box: - Well Depth: - Solid Pipe: - Stick Up Pipe: - Screen Pipe: -

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck - SS15
Hammer Weight: 300 lbs Fall: 30"
Casing Types: HW NW
Size: 4" 3"
Depth: 29' 124'
Sampler Type: S/S Size: 1 3/8" ID
Automatic Hammer Weight: 140 lbs
Safety Hammer Weight:
Donut Hammer Weight: Fall: 30"
Core Barrel Type: - Size: -

OBSERVED WATER EL.= 227.4± (2/10/2021)

APPROX. BOTTOM OF PROP. E. ABUT. EL.= 220.25

BOTTOM OF PROP. E. ABUT. H–PILES EL.= 119.5± (SEE NOTE 9)

NO GO BELOW LIMIT EL.= 113.0± (SEE NOTE 9)

APPROX. LOCATION OF EXIST. CONFINED AQUIFER (SEE NOTE 9)

MATCHLINE

ELEVATION (feet)
230.0 225.0 220.0 215.0 210.0 205.0 200.0 195.0 190.0 185.0 180.0 175.0 170.0 165.0 160.0 155.0

MATCHLINE

ELEVATION (feet)
155.0 150.0 145.0 140.0 135.0 130.0 125.0 120.0 115.0 110.0 105.0 100.0

BORING LOG
SCALE: 1" = 5'

NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS: ⊕ BB–X
   LOCATION OF PROBES SHOWN ON THE PLAN THUS: + P–X
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 A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
6. ALL BORINGS WERE MADE IN FEBRUARY 2021.
7. BORINGS WERE MADE BY:
   NEW ENGLAND BORING CONTRACTORS
   P.O. BOX 165
   DERRY, NH 03038
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. A CONFINED AQUIFER WAS ENCOUNTERED AT EL.= 103± ON BORING B–2 AT THE EAST ABUTMENT. PILE TIP ELEVATIONS, SUPPORT OF EXCAVATION, AND ANY OTHER SUBSURFACE ACTIVITY SHALL NOT GO BELOW EL.= 113 IN ORDER TO AVOID COMPLICATIONS WITH THE CONFINED AQUIFER.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

massDOT Highway Division

Boring Log

LAMSON ENGINEERING CORPORATION
437 Cherry Street, #109, Newton, Massachusetts 02465
Phone: (617) 558-0101 E-Mail: Lamsoneng@msn.com

Boring No. BB-3 (Bridge Boring) | Page 1/4
Scale: 1" = 5'

City/Town: Montague	Bridge No.: M-28-026 (0R6)	Project File No.: 609427	Contract No.: -
Location: South Street over Sawmill River		Date & Time Started: 2/10/21 12:00 p.m.	Total Hours: 25
Groundwater Depth (Feet): 6'	Date & Time: 2/15/21 8:00 a.m.	Date & Time Completed: 2/16/21 11:00 a.m.	
Coordinates: N 3,020,165 E 378,698	Ground Elevation (Feet): 229.0'	Inspector's Name: Weijie Dong	
Drilling Company: New England Boring Contractors		Driller's Name: Peter Labossirere	Helper's Name: Travis Clegg

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery (inches)	Field Description	Strata Changes
							ASPHALT 3"	
S-1	1' - 3'	17	17	16	9	15"	Dry, dense, brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt.	
S-2	4' - 6'	12	5	7	6	6"	Wet, medium dense, brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt.	
S-3	9' - 11'	12	9	15	17	9"	Wet, medium dense, brown, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, trace inorganic silt.	
								13'
S-4	14' - 16'	5	3	3	3	14"	Wet, medium stiff, gray, CLAY.	
S-5	19' - 21'	1	2	2	2	22"	Wet, soft, gray, CLAY.	
S-6	24' - 26'	2	1	2	1	24"	Wet, soft, gray, CLAY.	
S-7	29' - 31'	1	2	2	2	24"	Wet, soft, gray, CLAY.	
S-8	34' - 36'	1	2	2	2	24"	Wet, soft, gray, CLAY.	
S-9	39' - 41'	2	2	2	3	24"	Wet, soft, gray, CLAY, trace fine sand.	
S-10	44' - 46'	1	2	1	2	22"	Wet, soft, gray, CLAY, trace fine sand.	
S-11	49' - 51'	1	2	2	2	21"	Wet, soft, gray, CLAY, trace fine sand.	
S-12	54' - 56'	2	3	3	5	24"	Wet, medium stiff, gray, CLAY, some fine sand.	
								59'
S-13	59' - 61'	1	2	2	4	16"	Wet, loose, gray, FINE SAND, trace clay.	
S-14	64' - 66'	2	3	3	5	12"	Wet, loose, gray, FINE SAND.	
S-15	69' - 71'	5	6	6	8	12"	Wet, medium dense, gray, FINE SAND.	
S-16	74' - 76'	8	9	15	17	13"	Wet, medium dense, gray, FINE SAND.	
S-17	79' - 81'	10	14	14	17	14"	Wet, medium dense, gray, FINE SAND.	
S-18	84' - 86'	12	14	18	20	13"	Wet, dense, gray, FINE SAND.	
S-19	89' - 91'	14	17	20	22	13"	Wet, dense, gray, FINE SAND.	
S-20	94' - 96'	17	20	17	29	13"	Wet, dense, gray, FINE SAND.	
S-21	99' - 101'	12	16	17	19	13"	Wet, dense, gray, FINE SAND.	
S-22	104' - 106'	14	15	17	20	17"	Wet, dense, gray, FINE SAND.	
S-23	109' - 111'	11	14	17	18	14"	Wet, dense, gray, FINE SAND.	
S-24	114' - 116'	10	18	22	26	17"	Wet, dense, gray, FINE SAND.	
S-25	119' - 121'	9	18	14	20	15"	Wet, dense, gray, FINE SAND.	
S-26	124' - 126'	11	18	23	22	20"	Wet, dense, gray, FINE SAND.	
S-27	129' - 131'	10	12	19	25	19"	Wet, dense, gray, FINE SAND.	
S-28	134' - 136'	14	17	20	24	16"	Wet, dense, gray, FINE SAND.	
S-29	139' - 141'	16	23	24	30	18"	Wet, dense, gray, FINE SAND.	
S-30	144' - 146'	18	24	22	29	12"	Wet, dense, gray, FINE TO COARSE SAND.	
S-31	149' - 151'	19	30	36	38	19"	Wet, very dense, gray, FINE TO COARSE SAND.	
S-32	154' - 156'	13	32	30	34	14"	Wet, very dense, gray, FINE SAND.	
S-33	159' - 161'	18	26	30	35	16"	Wet, very dense, gray, FINE SAND.	
S-34	164' - 166'	14	28	28	30	16"	Wet, very dense, gray, FINE SAND.	
S-35	169' - 171'	16	28	32	38	19"	Wet, very dense, gray, FINE SAND.	
								173'
S-36	174' - 176'	16	26	29	29	14"	Wet, very dense, brown, FINE SAND.	
S-37	179' - 181'	17	24	27	27	17"	Wet, very dense, brown, FINE SAND.	181'
							Bottom of Exploration @ 181'	

Notes:
Due to the drilling condition encountered at BB-2, drilling mud was used after 4" casings, which is from 79' to 181' deep.

Arrow-Board: - Signs: 8 Cones: 16

Protective Device Stand: - Box: -
Well Depth: - Solid Pipe: -
Stick Up Pipe: - Screen Pipe: -

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Type of Drill Rig: Truck - SS15
Hammer Weight: 300 lbs Fall: 30"
Casing Types: HW NW
Size: 4" 3"
Depth: 79' 174'
Sampler Type: S/S Size: 1 3/8" ID
Automatic Hammer Weight: 140 lbs
Safety Hammer Weight:
Donut Hammer Weight: Fall: 30"
Core Barrel Type: - Size: -

ELEVATION (feet)
230.0 225.0 220.0 215.0 210.0 205.0 200.0 195.0 190.0 185.0 180.0 175.0 170.0 165.0 160.0 155.0 150.0 145.0 140.0 135.0

MATCHLINE

BORING BB–3

N=3020165
E=378698
GROUND ELEVATION: 229.0±

OBSERVED WATER EL.= 223.0± (2/15/2021)

BOTTOM OF PROP. W. ABUT. H–PILES EL.= 119.5± (SEE NOTE 9 ON SHEET 3 OF 24)

APPROX. BOTTOM OF PROP. W. ABUT. EL.= 220.25

NO GO BELOW LIMIT EL.= 113.0± (SEE NOTE 9 ON SHEET 3 OF 24)

APPROX. LOCATION OF EXIST. CONFINED AQUIFER (SEE NOTE 9 ON SHEET 3 OF 24)

BORING LOG

SCALE: 1" = 5'

MATCHLINE

ELEVATION (feet)
135.0 130.0 125.0 120.0 115.0 110.0 105.0 100.0 95.0 90.0 85.0 80.0 75.0 70.0 65.0 60.0 55.0 50.0

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	18	41
PROJECT FILE NO. 609427			

BORING LOGS
2 OF 2

NOTE:
1. SEE SHEET 3 OF 24 FOR NOTES.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

massDOT Highway — Probe Log

LAMSON ENGINEERING CORPORATION
437 Cherry Street, #109, Newton, Massachusetts 02465
Phone: (617) 558-0101 E Mail: Lamsoneng@msn.com

Probe No. P-1 | Page 1/1

City/Town: Montague	Bridge No.: M-28-026 (0R6)	Project File No.: 609427	Contract No.:
Location: South Street over Sawmill River		Date & Time Started: 2/11/21 10:30 am	Total Hours: 1.0
Coordinates: N 3,020,173 E 378,705	Ground Elev.(Feet): 229.1'	Date & Time Completed: 2/11/21 11:30 am	
Drilling Company: New England Boring Contractors	Driller's Name: Carl Downing	Helper's Name: Walter Hoeckele	
Inspector's Name: Weijie Dong	Type of Drill Rig: Geoprobe 6712DT	Drill Rods/Solid Augers: 1.5" Drill Rods	Type: Size: Hammer:

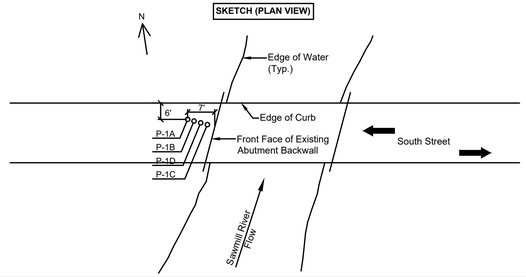
INFORMATION LOG

Probe Number	Depth	Distance From Face	Refusal or Required Depth
P-1A	18'	7'	Required
P-1B	18'	5'6"	Required
P-1D	11'	4'9"	Refusal
P-1C	10'	4'	Refusal

Probe Number	Depth	Distance From Face	Refusal or Required Depth

Remarks:
The edge of existing footing is likely between Probe numbers P-1B and P-1D, i.e. 5'6" to 4'9" from the face of existing backwall.

SKETCH (PLAN VIEW)



Remarks:

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massDOT Highway — Probe Log

LAMSON ENGINEERING CORPORATION
437 Cherry Street, #109, Newton, Massachusetts 02465
Phone: (617) 558-0101 E Mail: Lamsoneng@msn.com

Probe No. P-2 | Page 1/1

City/Town: Montague	Bridge No.: M-28-026 (0R6)	Project File No.: 609427	Contract No.:
Location: South Street over Sawmill River		Date & Time Started: 2/11/21 8:00 am	Total Hours: 1.5
Coordinates: N 3,020,152 E 378,754	Ground Elev.(Feet): 228.9'	Date & Time Completed: 2/11/21 9:30 am	
Drilling Company: New England Boring Contractors	Driller's Name: Carl Downing	Helper's Name: Walter Hoeckele	
Inspector's Name: Weijie Dong	Type of Drill Rig: Geoprobe 6712DT	Drill Rods/Solid Augers: 1.5" Drill Rods	Type: Size: Hammer:

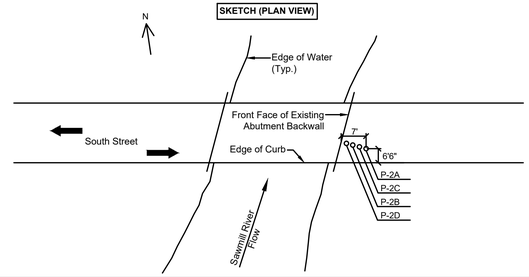
INFORMATION LOG

Probe Number	Depth	Distance From Face	Refusal or Required Depth
P-2A	18'	7'	Required
P-2B	10'6"	5'6"	Refusal
P-2C	12'6"	6'3"	Refusal
P-2D	6'6"	4'	Refusal

Probe Number	Depth	Distance From Face	Refusal or Required Depth

Remarks:
The edge of existing footing is likely between Probe numbers P-2A and P-2C, i.e. 7' to 6'3" from the face of existing backwall.

SKETCH (PLAN VIEW)



Remarks:

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massDOT Highway — Probe Log

LAMSON ENGINEERING CORPORATION
437 Cherry Street, #109, Newton, Massachusetts 02465
Phone: (617) 558-0101 E Mail: Lamsoneng@msn.com

Probe No. P-3 | Page 1/1

City/Town: Montague	Bridge No.: M-28-026 (0R6)	Project File No.: 609427	Contract No.:
Location: South Street over Sawmill River		Date & Time Started: 2/11/21 11:30 am	Total Hours: 1.0
Coordinates: N 3,020,163 E 378,699	Ground Elev.(Feet): 229.0'	Date & Time Completed: 2/11/21 12:30 am	
Drilling Company: New England Boring Contractors	Driller's Name: Carl Downing	Helper's Name: Walter Hoeckele	
Inspector's Name: Weijie Dong	Type of Drill Rig: Geoprobe 6712DT	Drill Rods/Solid Augers: 1.5" Drill Rods	Type: Size: Hammer:

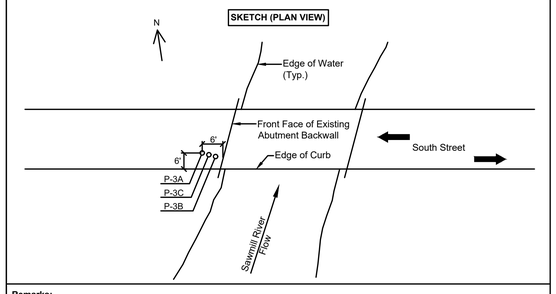
INFORMATION LOG

Probe Number	Depth	Distance From Face	Refusal or Required Depth
P-3A	18'	6'	Required
P-3B	10'	4'6"	Refusal
P-3C	18'	5'3"	Required

Probe Number	Depth	Distance From Face	Refusal or Required Depth

Remarks:
The edge of existing footing is likely between Probe numbers P-3B and P-3C, i.e. 4'6" to 5'3" from the face of existing backwall.

SKETCH (PLAN VIEW)



Remarks:

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massDOT Highway — Probe Log

LAMSON ENGINEERING CORPORATION
437 Cherry Street, #109, Newton, Massachusetts 02465
Phone: (617) 558-0101 E Mail: Lamsoneng@msn.com

Probe No. P-4 | Page 1/1

City/Town: Montague	Bridge No.: M-28-026 (0R6)	Project File No.: 609427	Contract No.:
Location: South Street over Sawmill River		Date & Time Started: 2/11/21 9:30 am	Total Hours: 1.0
Coordinates: N 3,020,162 E 378,760	Ground Elev.(Feet): 228.9'	Date & Time Completed: 2/11/21 10:30 am	
Drilling Company: New England Boring Contractors	Driller's Name: Carl Downing	Helper's Name: Walter Hoeckele	
Inspector's Name: Weijie Dong	Type of Drill Rig: Geoprobe 6712DT	Drill Rods/Solid Augers: 1.5" Drill Rods	Type: Size: Hammer:

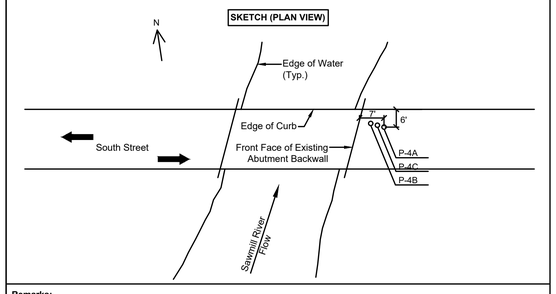
INFORMATION LOG

Probe Number	Depth	Distance From Face	Refusal or Required Depth
P-4A	18'	7'	Required
P-4B	12'	5'6"	Refusal
P-4C	13'6"	6'3"	Refusal

Probe Number	Depth	Distance From Face	Refusal or Required Depth

Remarks:
The edge of existing footing is likely between Probe numbers P-4A and P-4C, i.e. 7' to 6'3" from the face of existing backwall.

SKETCH (PLAN VIEW)



Remarks:

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	19	41
PROJECT FILE NO.	609427		

PROBE LOGS

NOTE:
1. SEE SHEET 3 OF 24 FOR NOTES.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

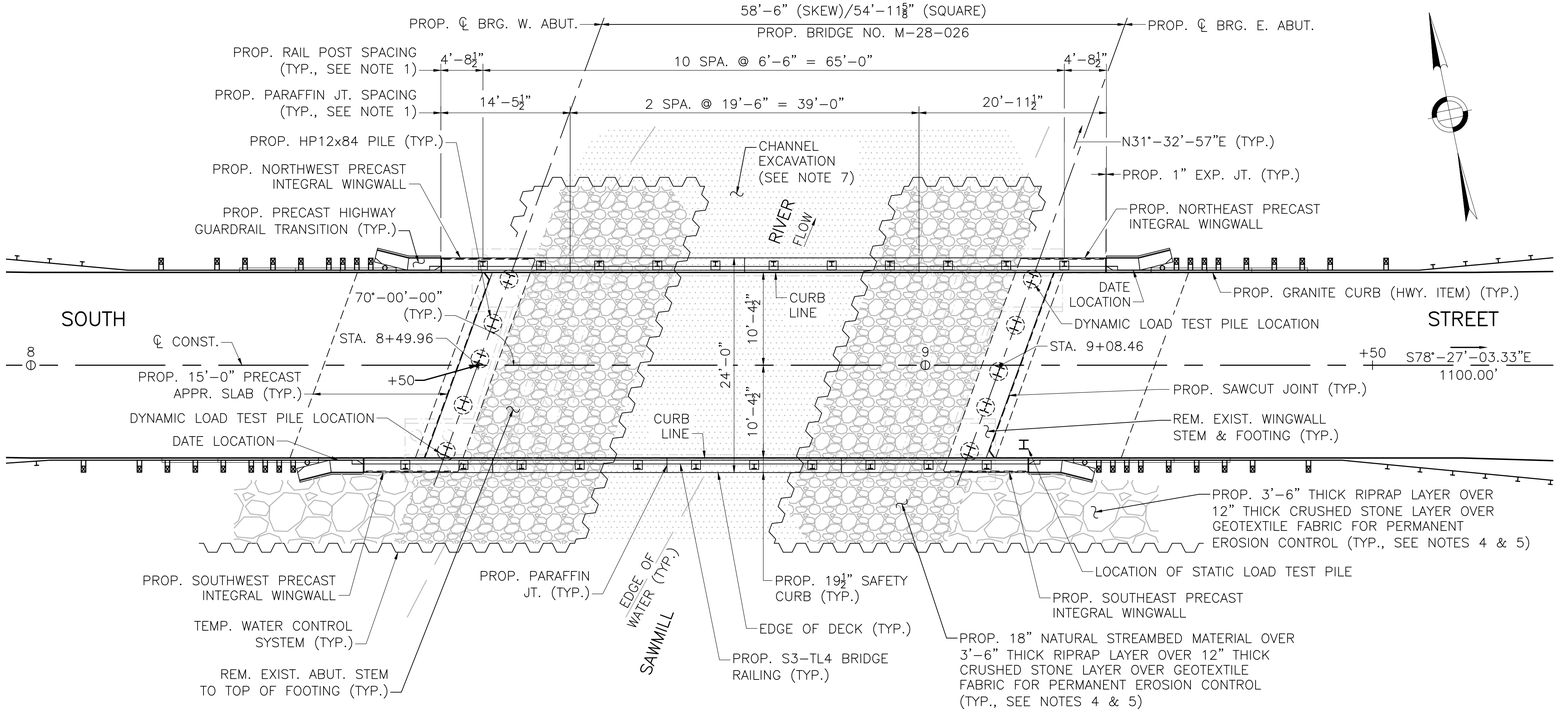
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

PROBE LOGS
NOT TO SCALE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

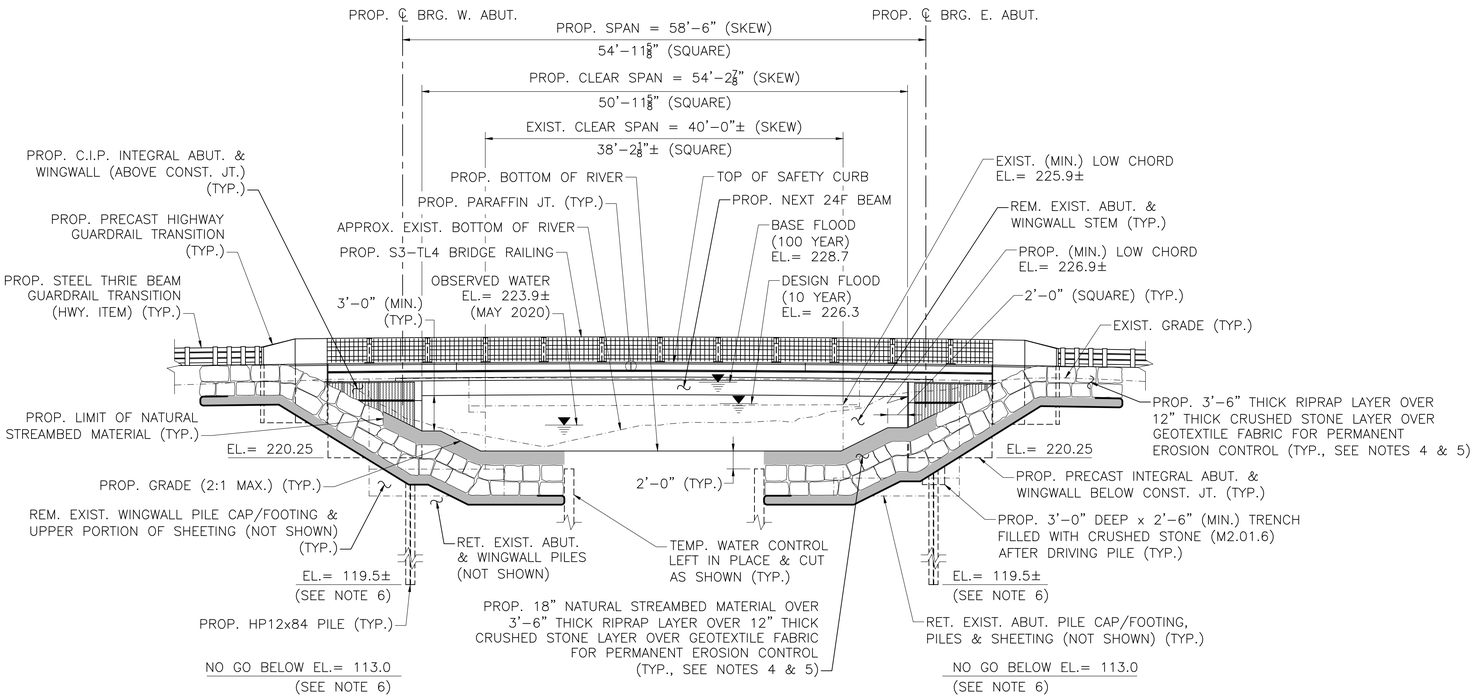
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	20	41
PROJECT FILE NO. 609427			

BRIDGE PLAN AND ELEVATION



BRIDGE PLAN

SCALE: ⅛" = 1'-0"



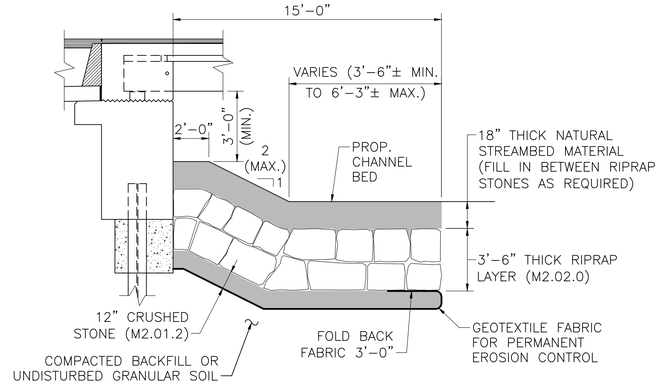
SOUTH ELEVATION

(NORTH ELEVATION SIMILAR)

SCALE: ⅛" = 1'-0"

NOTES:

1. RAIL POST AND PARAFFIN JOINT SPACING DIMENSIONS ARE ALONG THE CENTERLINE OF THE BASE PLATES FROM THE FACE OF HIGHWAY GUARDRAIL TRANSITIONS. PROVIDE LEVEL BEARING AREA FOR SETTING POSTS (SEE SHEET 24 OF 24).
2. SEE SHEET 21 OF 24 FOR PARAFFIN JOINT DETAILS.
3. THE EXISTING FREEBOARD TO THE DESIGN FLOOD IS -0.4'. THE PROPOSED FREEBOARD TO THE DESIGN FLOOD IS 0.6'.
4. RIPRAP SHALL BE CLASS VII WITH A NOMINAL D50 OF 27". CRUSHED STONE SHALL CONFORM TO M2.01.2 OF THE STANDARD SPECIFICATIONS.
5. GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL SHALL CONFORM TO M9.50.0 OF THE STANDARD SPECIFICATIONS AND AASHTO M288 CLASS 4.
6. A CONFINED AQUIFER WAS ENCOUNTERED AT EL.= 103± ON BORING B-2 AT THE EAST ABUTMENT. PILE TIP ELEVATIONS, SUPPORT OF EXCAVATION, AND ANY OTHER SUBSURFACE ACTIVITY SHALL NOT GO BELOW EL.= 113 IN ORDER TO AVOID COMPLICATIONS WITH THE CONFINED AQUIFER.
7. SEE HIGHWAY PLANS FOR COMPLETE LIMITS AND PROPOSED GRADES OF CHANNEL EXCAVATION WITHIN SAWMILL RIVER.



NOTE:

IF EXISTING FOOTING IS ENCOUNTERED CLOSER THAN 3'-0" TO FINISHED GRADE, ELIMINATE CRUSHED STONE LAYER AND ADJUST RIPRAP LAYER THICKNESS. GEOTEXTILE FABRIC SHALL BE PLACED OVER FOOTING TO ENSURE CONTINUITY.

RIPRAP DETAIL

SCALE: ¼" = 1'-0"

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

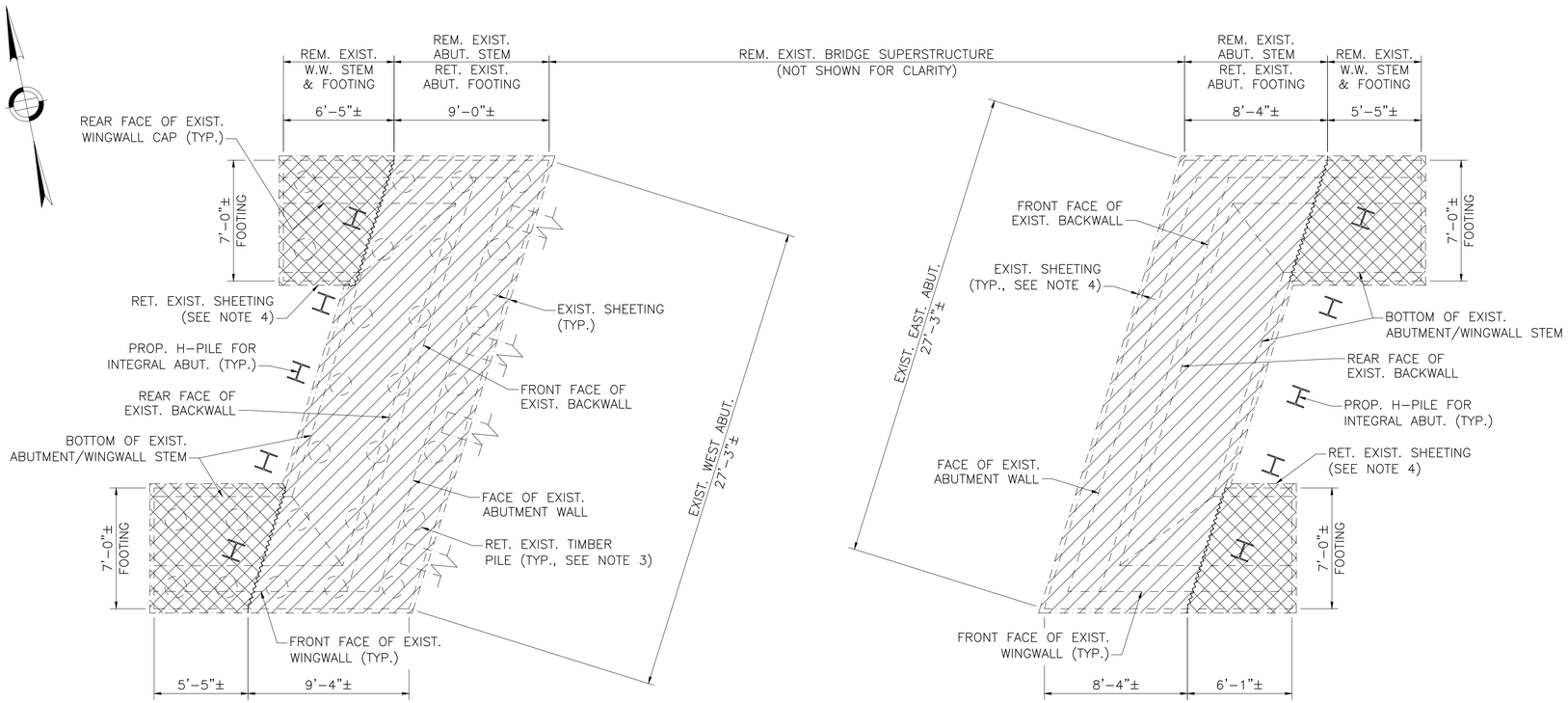
609427_BR6(M28026).DWG Plotted on 14-Mar-2024 10:07 AM

12-March-2024 Final Structural Submittal (SF)

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

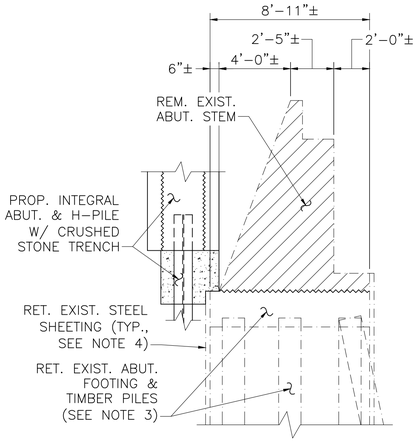
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	21	41
PROJECT FILE NO.	609427		

EXISTING SUBSTRUCTURE REMOVAL DETAILS



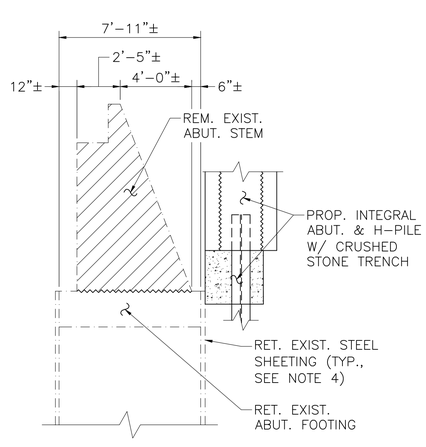
EXISTING BRIDGE SUBSTRUCTURE PLAN

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



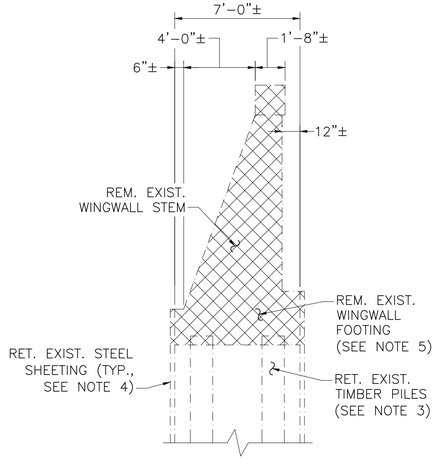
EXISTING WEST ABUTMENT SECTION

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



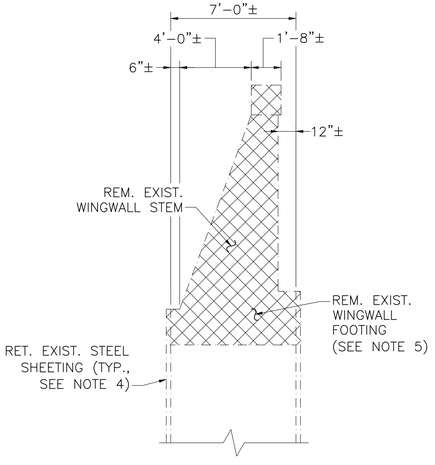
EXISTING EAST ABUTMENT SECTION

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



EXISTING WEST WINGWALL SECTION

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



EXISTING EAST WINGWALL SECTION

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

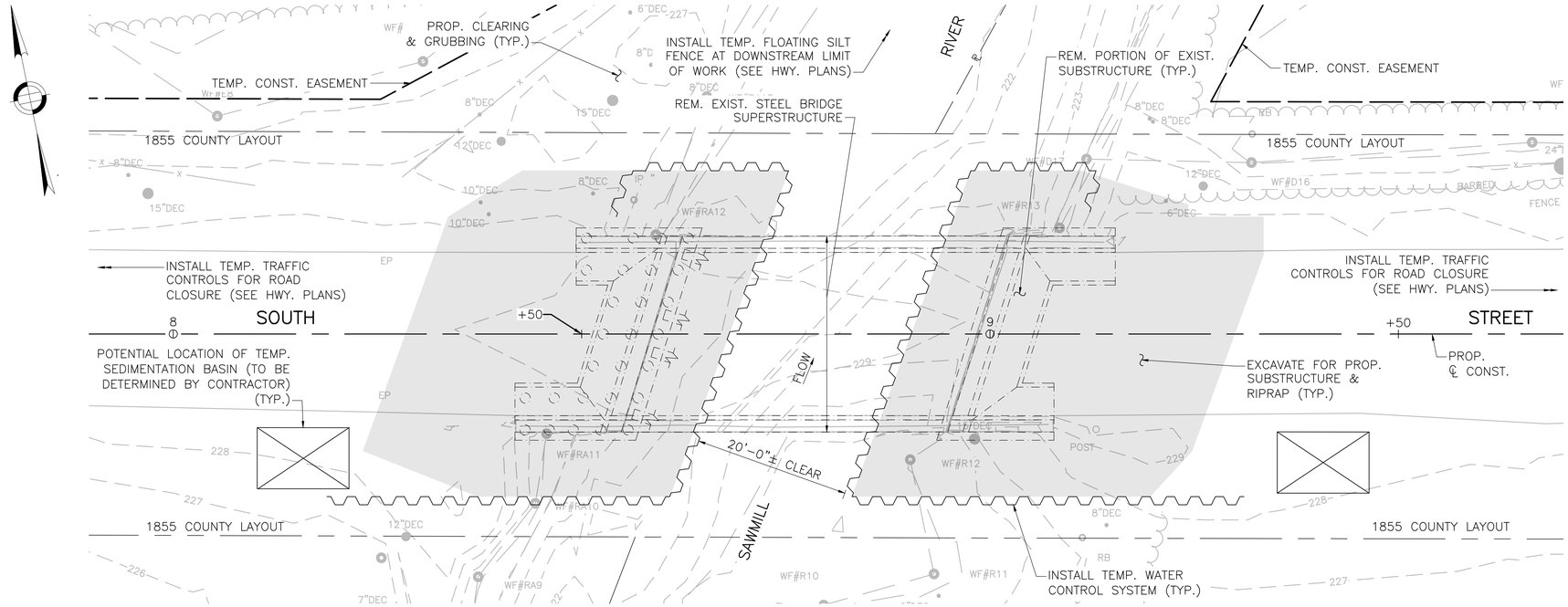
NOTES:

1. EXISTING ABUTMENT STEMS SHALL BE REMOVED IN THEIR ENTIRETY. EXISTING ABUTMENT FOOTINGS SHALL BE RETAINED. PAYMENT SHALL BE COVERED UNDER ITEM 127.1 SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. EXISTING WINGWALL STEMS SHALL BE REMOVED IN THEIR ENTIRETY. EXISTING WINGWALL FOOTINGS SHALL BE REMOVED TO THE LIMITS SHOWN ON THE PLANS. PAYMENT SHALL BE COVERED UNDER ITEM 127.1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. EXISTING TIMBER PILES PRESENT BELOW THE EXISTING WEST ABUTMENT AND WINGWALL FOOTINGS SHALL BE RETAINED. AT SELECT LOCATIONS WHERE AN EXISTING TIMBER PILE INTERFERES WITH INSTALLATION OF PROPOSED INTEGRAL ABUTMENT PILE, THE EXISTING TIMBER PILE SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SAND BORROW. PAYMENT SHALL BE COVERED UNDER ITEM 112.4. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
4. EXISTING STEEL SHEETING PRESENT ALONG THE PERIMETER OF THE EXISTING ABUTMENT AND WINGWALL FOOTINGS SHALL BE RETAINED. AT SELECT LOCATIONS WHERE EXISTING SHEETING INTERFERES WITH INSTALLATION OF PROPOSED INTEGRAL ABUTMENT PILE, A PORTION OF THE EXISTING SHEETING SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SAND BORROW. PAYMENT SHALL BE COVERED UNDER ITEM 112.5. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
5. AFTER REMOVAL OF THE EXISTING WINGWALL FOOTINGS, THE ENTIRE VOLUME BETWEEN THE BOTTOM OF REMOVAL AND UNDERSIDE OF PROPOSED ABUTMENTS SHALL BE BACKFILLED USING GRAVEL BORROW FOR BRIDGE FOUNDATIONS.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

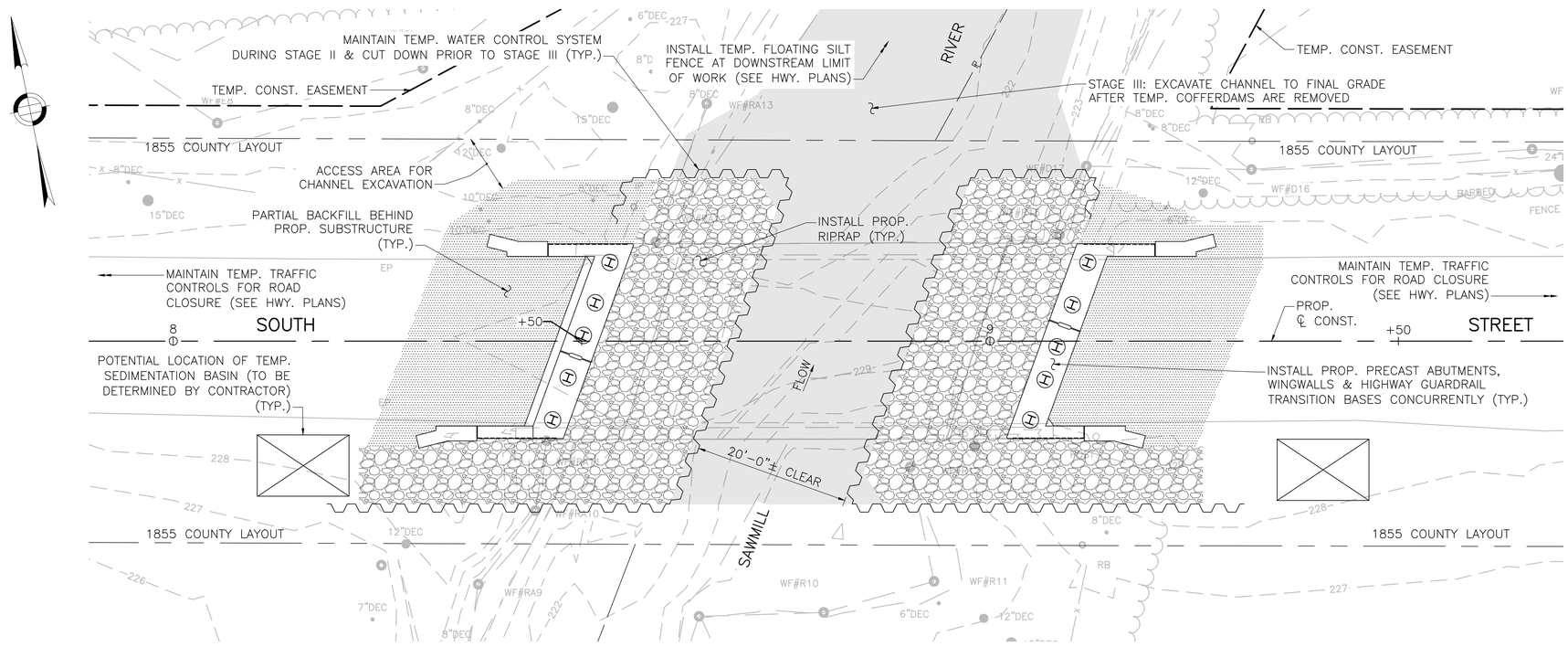
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE



SUGGESTED STAGE CONSTRUCTION AND TEMPORARY WATER CONTROL PLAN – STAGE I

SCALE: $\frac{1}{8}$" = 1'–0"



SUGGESTED STAGE CONSTRUCTION AND TEMPORARY WATER CONTROL PLAN – STAGE II

SCALE: $\frac{1}{8}$" = 1'–0"

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	22	41
	PROJECT FILE NO. 609427		

SUGGESTED CONSTRUCTION SEQUENCE

PRE–STAGE I

1. INSTALL TRAFFIC CONTROLS AND IMPLEMENT CLOSURE AND DETOUR OF SOUTH STREET.
2. REMOVE EXISTING BRIDGE SUPERSTRUCTURE.

STAGE I

1. WORK AT EACH ABUTMENT SHALL BE PERFORMED SIMULTANEOUSLY TO ENSURE BRIDGE CONSTRUCTION IS COMPLETED WITHIN THE REQUIRED TIME DURATION. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. INSTALL TEMPORARY CONTROL OF WATER SYSTEM. ESTABLISH TEMPORARY SEDIMENTATION BASINS.
3. BEGIN EXCAVATION BEHIND EXISTING ABUTMENTS.
4. DEMOLISH PORTION OF EXISTING ABUTMENT STEMS AND ENTIRETY OF EXISTING WINGWALLS.
5. CONTINUE EXCAVATION FOR PROPOSED ABUTMENTS TO THE REQUIRED GRADES. DE–WATER EXCAVATION SITE AS REQUIRED.
6. BEGIN CHANNEL EXCAVATION AS REQUIRED BASED ON STAGING.

STAGE II

1. PERFORM STATIC LOAD TESTS. INSTALL PROPOSED INTEGRAL ABUTMENT PILES AND PERFORM DYNAMIC LOAD TESTS.
2. INSTALL CRUSHED STONE AROUND PILES.
3. INSTALL PROPOSED PRECAST ABUTMENT PILE CAP UNITS. PLACE CONTROLLED DENSITY FILL BELOW PRECAST CONCRETE ELEMENTS AS REQUIRED. GROUT SHEAR KEYS.
4. DAMP–PROOF BACK OF ABUTMENTS.
5. PLACE RIPRAP IN RIVER AND PARTIALLY BACKFILL BEHIND PROPOSED ABUTMENTS. PARTIAL BACKFILLING SHALL OCCUR SIMULTANEOUSLY WITH THE PLACEMENT OF RIPRAP SUCH THAT THE ELEVATION OF BACKFILL AND RIPRAP HEIGHT ON EITHER SIDE OF A STEM DOES NOT VARY BY MORE THAN 1 FOOT AT ANY TIME.
6. CUT/REMOVE TEMPORARY WATER CONTROL SYSTEM TO THE REQUIRED GRADES.

STAGE III

1. COMPLETE CHANNEL EXCAVATION OF SAWMILL RIVER TO THE REQUIRED GRADES. SEE HIGHWAY PLANS.
2. ERECT PROPOSED NEXT F BEAM SUPERSTRUCTURE.
3. CONSTRUCT CAST–IN–PLACE PORTIONS OF PROPOSED ABUTMENTS AND WINGWALLS.
4. POUR CAST–IN–PLACE DECK SLAB.
5. INSTALL PROPOSED PRECAST HIGHWAY GUARDRAIL TRANSITIONS. PLACE CONTROLLED DENSITY FILL AS REQUIRED.
6. COMPLETE BACKFILLING BEHIND PROPOSED ABUTMENTS.
7. INSTALL PRECAST APPROACH SLABS.
8. COMPLETE REMAINDER OF BRIDGE SUPERSTRUCTURE CONSTRUCTION.
9. REMOVE TEMPORARY TRAFFIC CONTROLS AND RE–OPEN SOUTH STREET.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

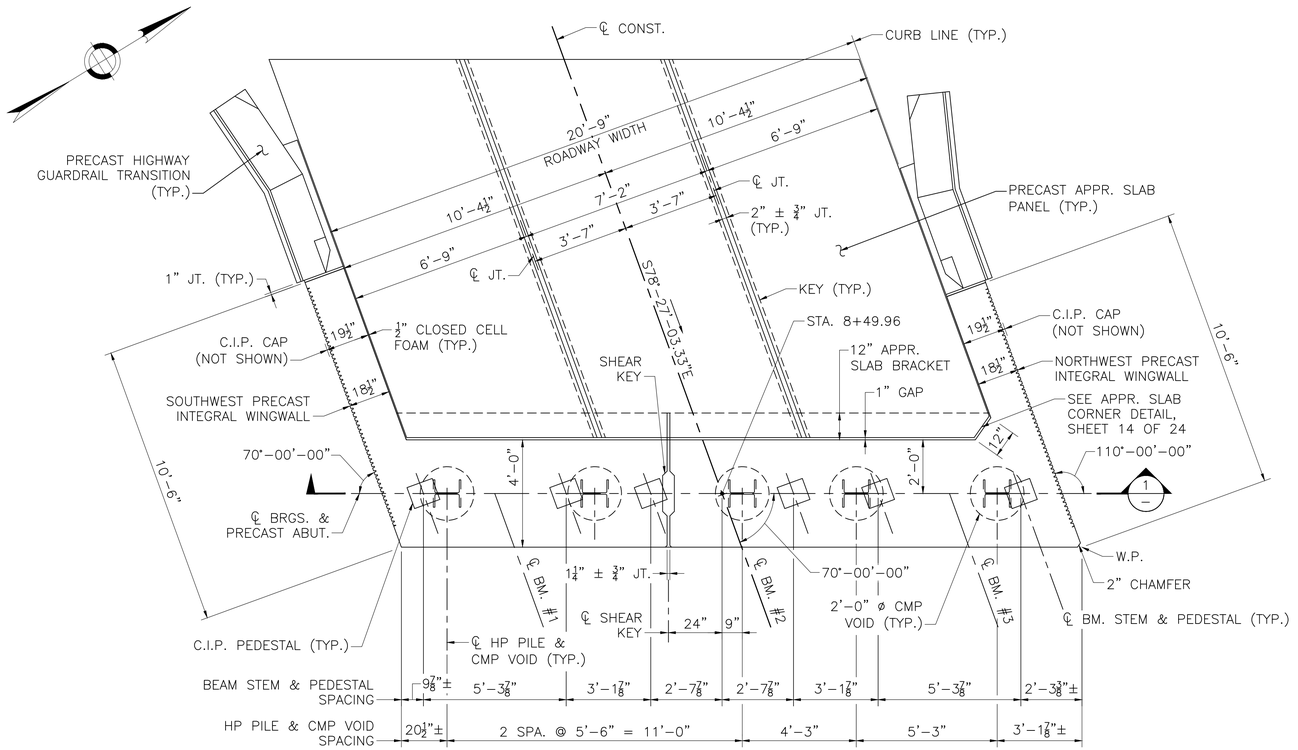
609427_BRM(M28026).DWG Plotted on 14-Mar-2024 10:38 AM

Final Structural Submittal (SF) 12-March-2024

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

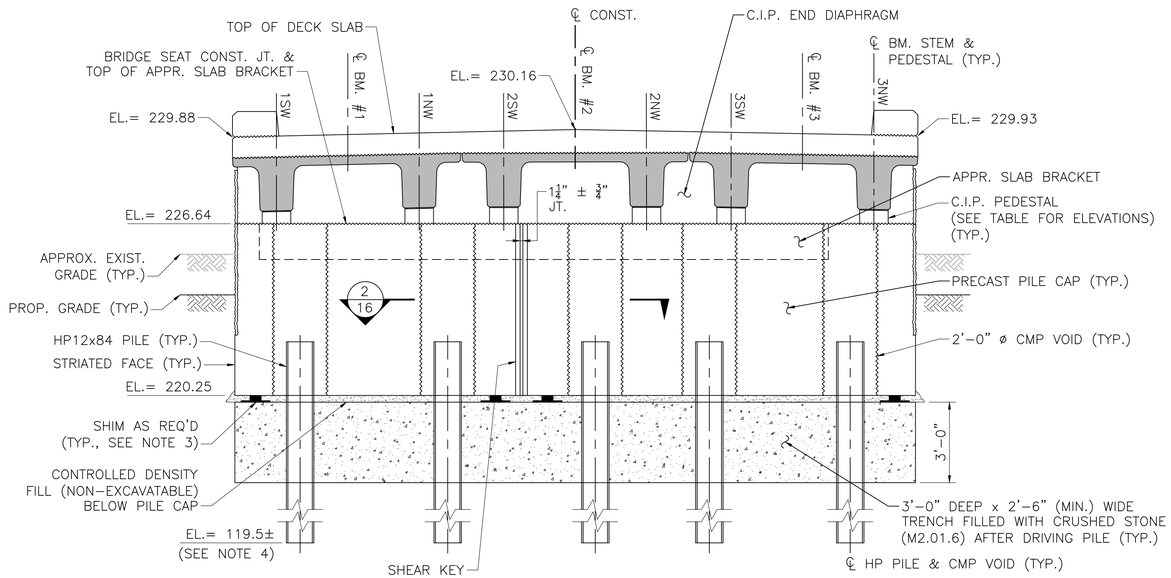
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	23	41
PROJECT FILE NO.	609427		

PROPOSED WEST ABUTMENT PLAN AND SECTION



PROPOSED WEST ABUTMENT PLAN

SCALE: ⅜" = 1'-0"



SECTION 1 –

SCALE: ⅜" = 1'-0"

PROPOSED WEST ABUTMENT TOP OF CONCRETE PEDESTAL ELEVATIONS	
BEAM STEM	ELEVATION
1SW	227.14
1NW	227.26
2SW	227.29
2NW	227.31
3SW	227.28
3NW	227.19

NOTES:

1. PEDESTAL ELEVATIONS ARE PROVIDED AT THE INTERSECTION OF THE CENTERLINE OF BEAM AND CENTERLINE OF INTEGRAL ABUTMENT STEM.
2. ELEVATIONS DO NOT INCLUDE ERECTION PAD THICKNESS.
3. BEAMS PEDESTAL ELEVATION ARE LISTED AS "BEAM #, STEM (NORTH OR SOUTH), ABUTMENT LOCATION (WEST OR EAST)". FOR EXAMPLE 1SW = BEAM #(1), (S)OUTHERN STEM, (W)EST ABUTMENT.
4. TOP OF PEDESTALS SHALL BE SLOPED TO MATCH CROSS SLOPE OF BOTTOM OF BEAM, BEAM CAMBER AND PROFILE GRADE.

NOTES:

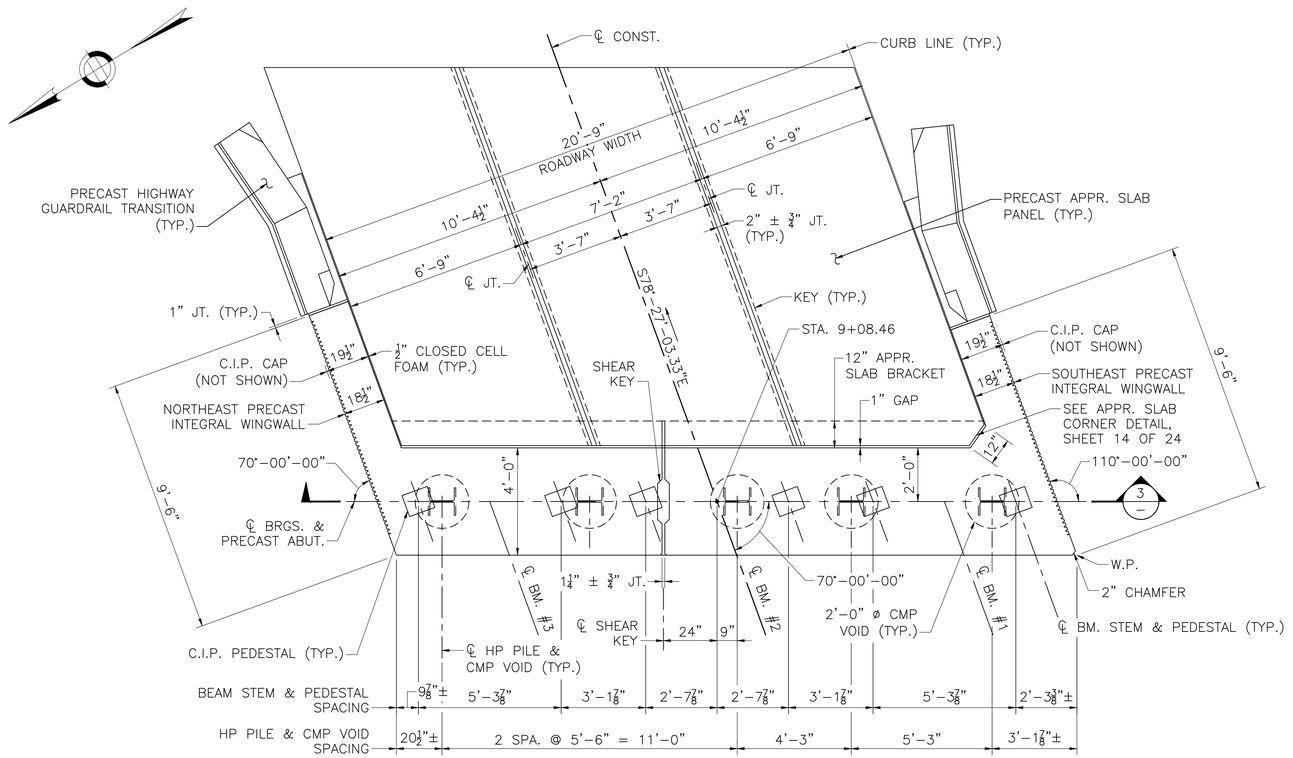
1. ALL ELEVATIONS ARE SHOWN AT ABUTMENT CENTERLINE.
2. SOUTHWEST INTEGRAL WINGWALL NOT SHOWN FOR CLARITY (SEE SHEET 11 OF 24 FOR DETAILS).
3. SEE SHEET 17 OF 24 FOR PRECAST ERECTION DETAILS AND NOTES.
4. A CONFINED AQUIFER WAS ENCOUNTERED AT EL.= 103± ON BORING B-2 AT THE EAST ABUTMENT. PILE TIP ELEVATIONS, SUPPORT OF EXCAVATION, AND ANY OTHER SUBSURFACE ACTIVITY SHALL NOT GO BELOW EL.= 113 IN ORDER TO AVOID COMPLICATIONS WITH THE CONFINED AQUIFER.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

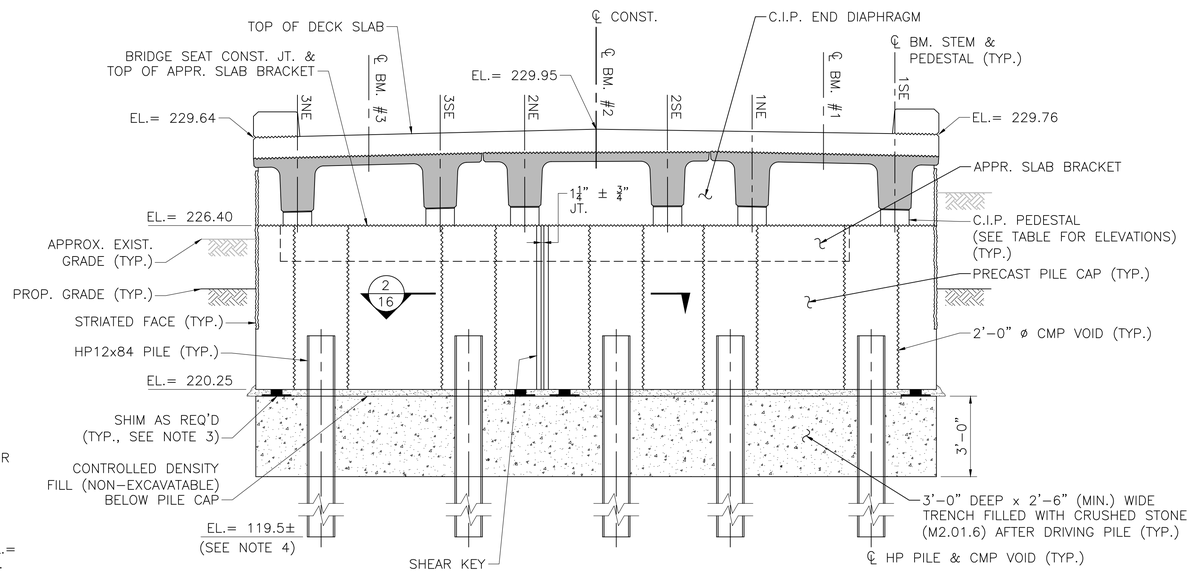
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	24	41
PROJECT FILE NO.	609427		

PROPOSED EAST ABUTMENT PLAN AND SECTION



PROPOSED EAST ABUTMENT PLAN

SCALE: ⅜" = 1'-0"



SECTION 3 –

SCALE: ⅜" = 1'-0"

NOTES:

1. ALL ELEVATIONS ARE SHOWN AT ABUTMENT CENTERLINE.
2. NORTHEAST INTEGRAL WINGWALL NOT SHOWN FOR CLARITY (SEE SHEET 11 OF 24 FOR DETAILS).
3. SEE SHEET 17 OF 24 FOR PRECAST ERECTION DETAILS AND NOTES.
4. A CONFINED AQUIFER WAS ENCOUNTERED AT EL.= 103± ON BORING B-2 AT THE EAST ABUTMENT. PILE TIP ELEVATIONS, SUPPORT OF EXCAVATION, AND ANY OTHER SUBSURFACE ACTIVITY, SHALL NOT GO BELOW EL.= 113 IN ORDER TO AVOID COMPLICATIONS WITH THE CONFINED AQUIFER.

PROPOSED EAST ABUTMENT TOP OF CONCRETE PEDESTAL ELEVATIONS

BEAM STEM	ELEVATION
1SE	227.01
1NE	227.09
2SE	227.11
2NE	227.08
3SE	227.03
3NE	226.90

NOTES:

1. PEDESTAL ELEVATIONS ARE PROVIDED AT THE INTERSECTION OF THE CENTERLINE OF BEAM AND CENTERLINE OF INTEGRAL ABUTMENT STEM.
2. ELEVATIONS DO NOT INCLUDE ERECTION PAD THICKNESS.
3. BEAMS PEDESTAL ELEVATION ARE LISTED AS "BEAM #, STEM (NORTH OR SOUTH), ABUTMENT LOCATION (WEST OR EAST)". FOR EXAMPLE 1SE = BEAM #(1), (S)OUTHERN STEM, (E)AST ABUTMENT.
4. TOP OF PEDESTALS SHALL BE SLOPED TO MATCH CROSS SLOPE OF BOTTOM OF BEAM, BEAM CAMBER AND PROFILE GRADE.

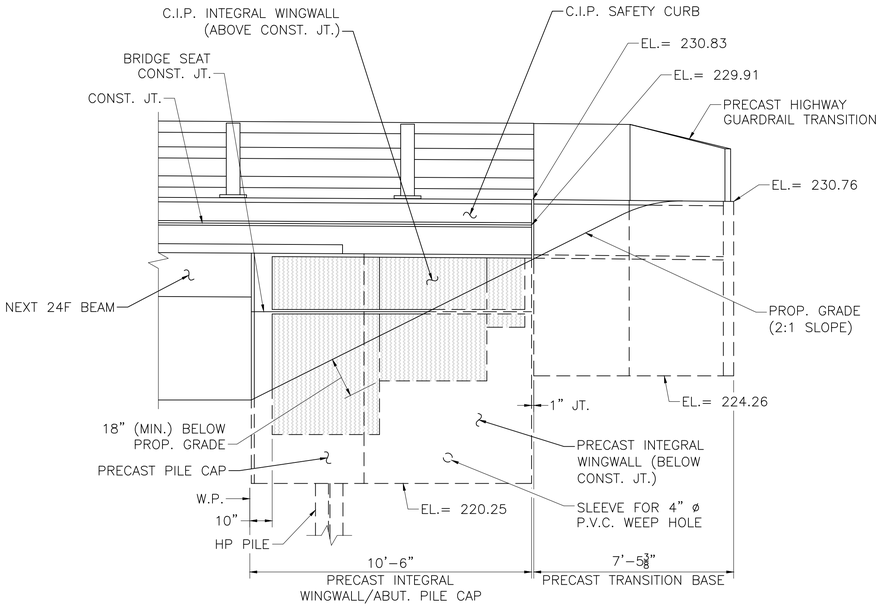
MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

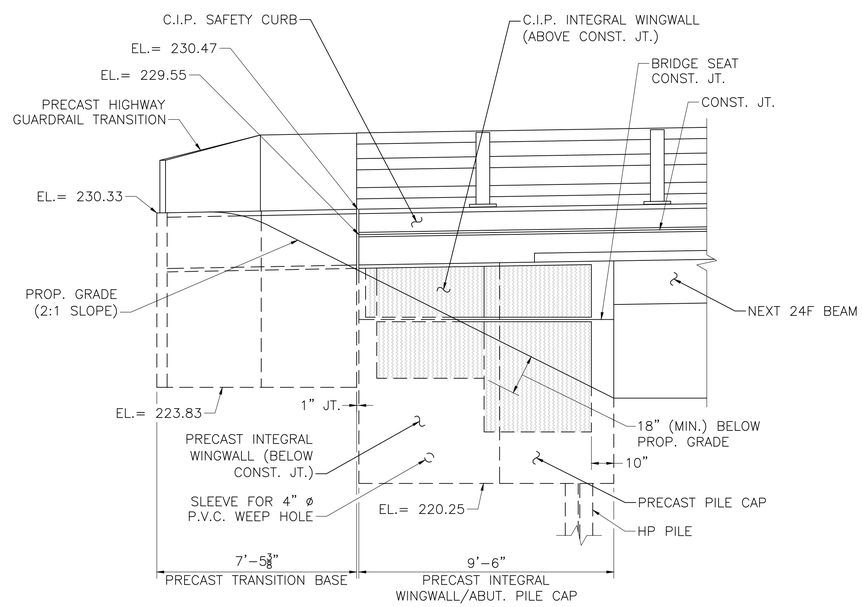
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	25	41
PROJECT FILE NO.	609427		

PROPOSED WINGWALL ELEVATIONS



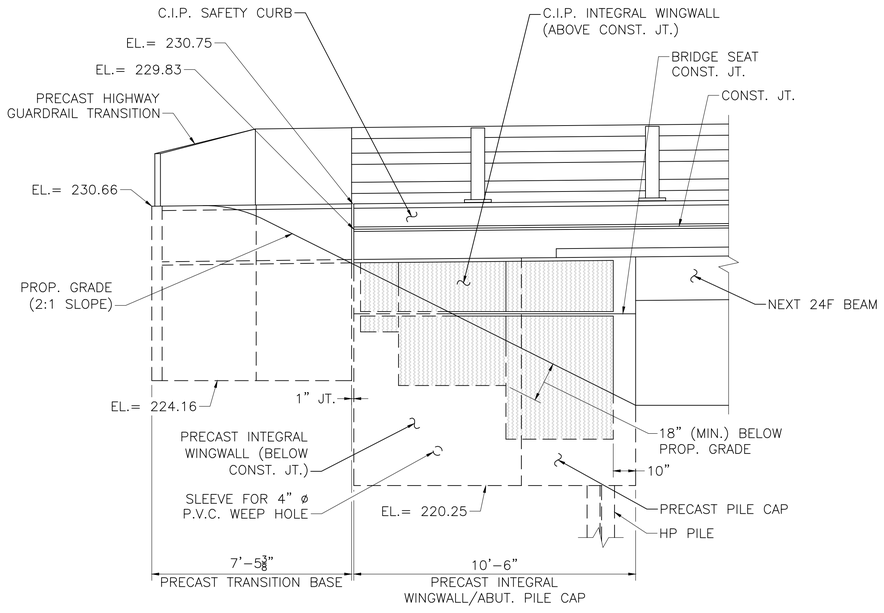
PROPOSED NORTHWEST WINGWALL ELEVATION

SCALE: 3/8" = 1'-0"



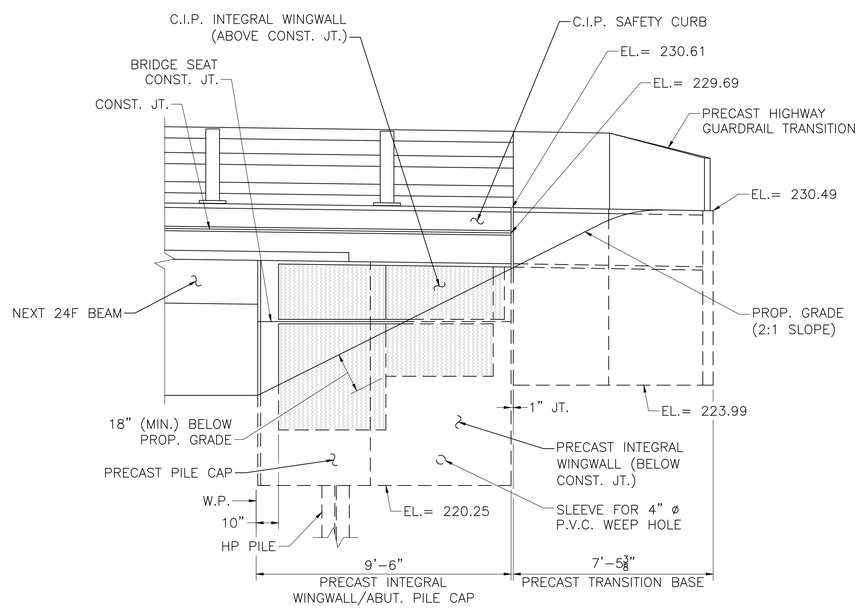
PROPOSED NORTHEAST WINGWALL ELEVATION

SCALE: 3/8" = 1'-0"



PROPOSED SOUTHWEST WINGWALL ELEVATION

SCALE: 3/8" = 1'-0"



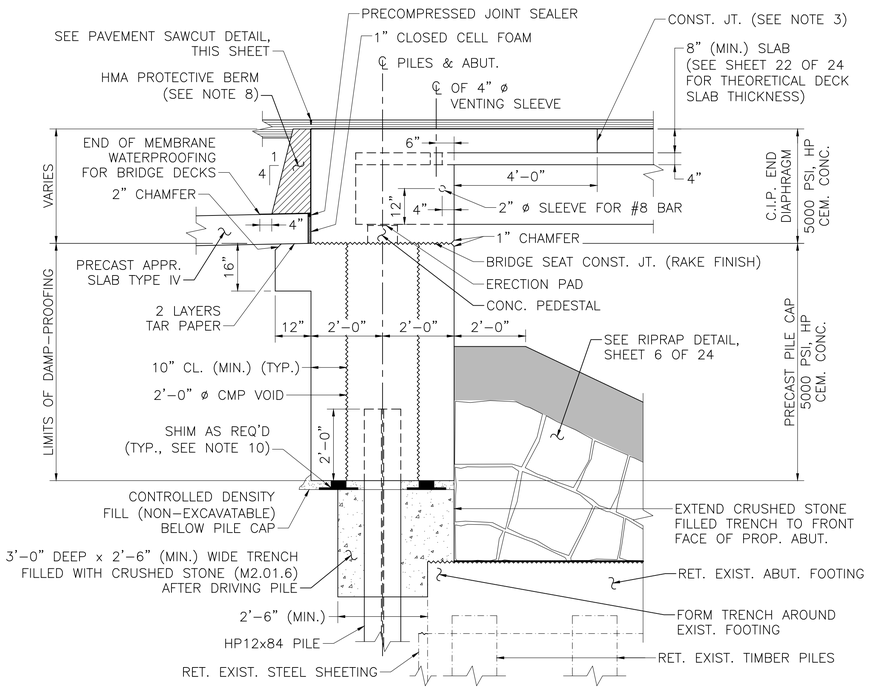
PROPOSED SOUTHEAST WINGWALL ELEVATION

SCALE: 3/8" = 1'-0"

NOTES:

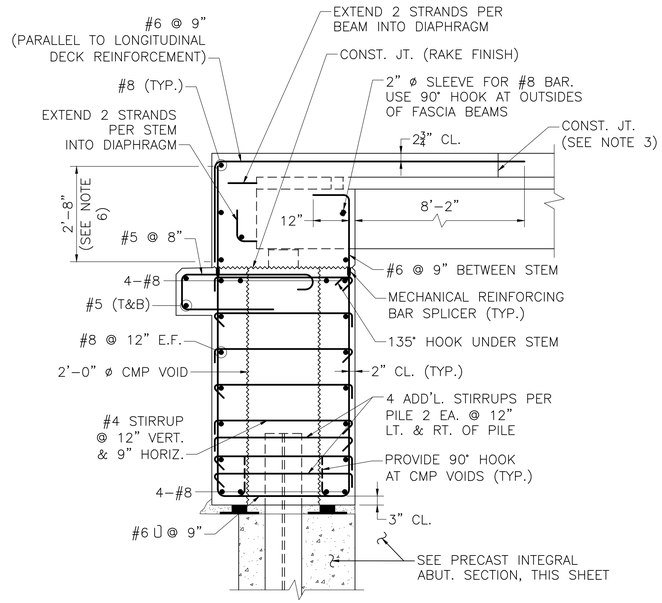
1. RAILING PICKETS ARE NOT SHOWN FOR CLARITY.
2. RIPRAP NOT SHOWN FOR CLARITY.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	



PRECAST INTEGRAL ABUTMENT SECTION

(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)
SCALE: $\frac{1}{2}$" = 1'–0"



TYPICAL PRECAST INTEGRAL ABUTMENT REINFORCEMENT

SCALE: $\frac{1}{2}$" = 1'–0"

CONSTRUCTION NOTES:

1. ALL REINFORCEMENT SHALL BE EPOXY COATED.
2. DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY. CONTINUE DECK SLAB REINFORCEMENT TO BACK OF ABUTMENT.
3. THE CONTRACTOR SHALL FOLLOW THE DECK PLACEMENT SEQUENCE AS SHOWN ON SHEET 22 OF 24.
4. ALL CONCRETE SHALL CONTAIN SUPERPLASTICIZER TO ENSURE ADEQUATE CONSOLIDATION.
5. PRIOR TO SUPERSTRUCTURE ERECTION, BOTH ABUTMENTS SHALL BE PARTIALLY BACKFILLED SIMULTANEOUSLY WITH THE PLACEMENT OF RIPRAP. FINAL BACKFILLING SHALL NOT BEGIN UNTIL AFTER ABUTMENT AND DECK CONSTRUCTION IS COMPLETE. NO MORE THAN TWO (2) FEET OF DIFFERENTIAL BACKFILL HEIGHT SHALL BE PERMITTED FOR FINAL BACKFILLING.
6. THE CONTRACTOR MAY USE MECHANICAL REINFORCING BAR SPLICERS IN LIEU OF TENSION LAP SPLICES TO FACILITATE CONSTRUCTION. HOWEVER, NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR THE USE OF MECHANICAL REINFORCING BAR SPLICERS.
7. THE TOP OF THE HMA PROTECTIVE BERM SHALL MATCH THE TOP OF THE DECK SLAB.
8. 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.
9. CMP VOIDS SHALL BE FILLED WITH 4000 PSI, $\frac{3}{4}$ IN., 610 CEMENT CONCRETE.
10. SEE SHEET 17 OF 24 FOR PRECAST ERECTION DETAILS AND NOTES.

INTEGRAL ABUTMENT PILE NOTES:

1. A TRENCH WITH A DEPTH OF 3'–0" AND A MINIMUM WIDTH OF 2'–6" SHALL BE CONSTRUCTED 3" (MIN.) BELOW THE BOTTOM OF THE PILE CAP ELEVATION. AFTER THE PILES ARE DRIVEN, THE TRENCH SHALL BE FILLED WITH CRUSHED STONE (M2.01.6).
2. ALL SPLICES SHALL HAVE COMPLETE PENETRATION BUTT WELDS. THERE SHALL BE NO SPLICES WITHIN THE TOP 20 FEET OF PILE. SPLICE WELDS SHALL BE 100% UT. SEE SHEET 16 OF 24 FOR H–PILE SPLICE DETAILS.
3. THE FACTORED AXIAL DESIGN LOAD PER PILE IS 175 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH IA LOAD COMBINATION.
4. THE FACTORED STRUCTURAL RESISTANCE PER PILE IS 487 KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF 974 KIPS AND A RESISTANCE FACTOR OF 0.50.
5. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS 190 KIPS. THE ESTIMATED PILE TIP ELEVATION IS 119.5'.
6. DETERMINATION OF THE DRIVE PILE RESISTANCE, PILE DRIVING CRITERIA, AND PILE INTEGRITY SHALL BE PERFORMED USING STATIC AND DYNAMIC LOAD TESTING WITH A RESISTANCE FACTOR OF 0.80. DYNAMIC LOAD TESTING SHALL BE PERFORMED ON ONE PILE PER ABUTMENT AS NOTED ON THE PLANS. PILES SHALL BE INSTALLED TO ACHIEVE A FACTORED DRIVEN RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED AXIAL DESIGN LOAD.
7. A CONFINED AQUIFER WAS ENCOUNTERED AT EL.= 103± ON BORING B–2 AT THE EAST ABUTMENT. PILE TIP ELEVATIONS, SUPPORT OF EXCAVATION, AND ANY OTHER SUBSURFACE ACTIVITY SHALL NOT GO BELOW EL.= 113 IN ORDER TO AVOID COMPLICATIONS WITH THE CONFINED AQUIFER.
8. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
9. PILES SHALL CONFORM TO AASHTO M270 GRADE 50.
10. HEAVY DUTY PILE SHOES SHALL BE INSTALLED ON THE TIPS OF ALL PILES. PREFABRICATED PILE SHOES MAY BE USED IF APPROVED BY THE ENGINEER.
11. ALL PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 31 FEET (EL.= 189.25) BELOW THE BOTTOM OF PILE CAP TO ACHIEVE LATERAL FIXITY.

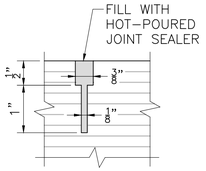
REQUIRED PILE LOCATION TOLERANCES:

1. CONFORMANCE TO THE FOLLOWING TOLERANCES IS OF EXTREME IMPORTANCE TO FOUNDATIONS OF THIS TYPE.
2. PRIOR TO DRIVING, EACH ABUTMENT PILE SHALL BE HELD BY TEMPLATE TO WITHIN 1" OF PLAN LOCATION.
3. AFTER EACH ABUTMENT PILE IS DRIVEN, THE TOP OF THE PILE SHALL BE WITHIN 3" OF PLAN LOCATION.

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

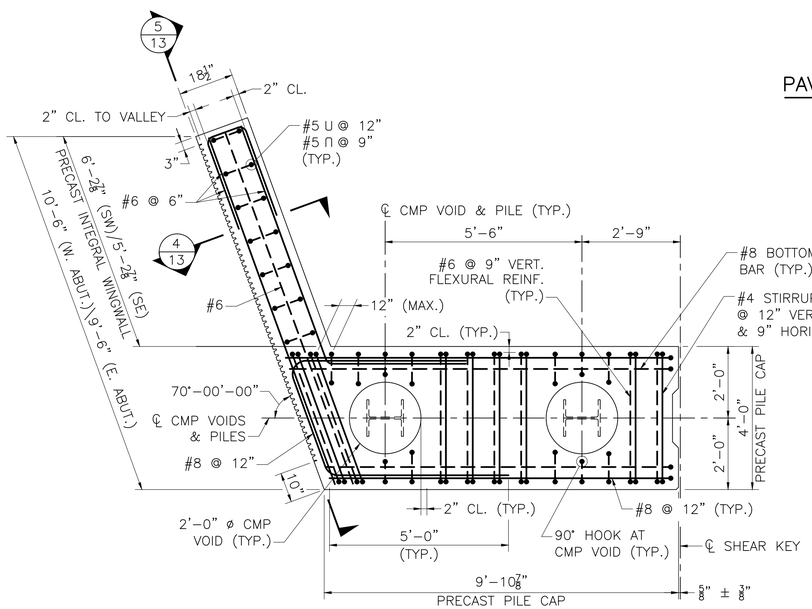
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	26	41
PROJECT FILE NO.	609427		

TYPICAL ABUTMENT SECTIONS AND DETAILS



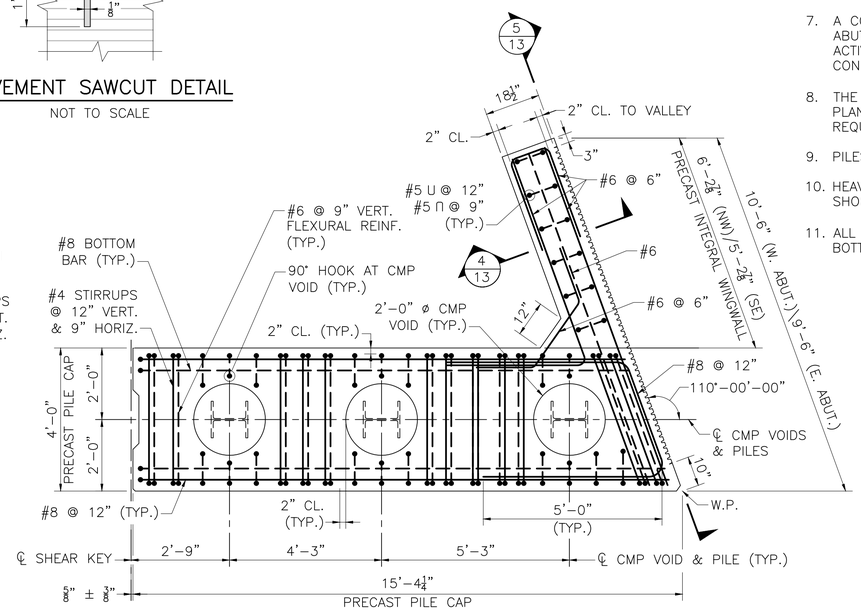
PAVEMENT SAWCUT DETAIL

NOT TO SCALE



PILE CAP AT OBTUSE CORNER

(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)
SCALE: $\frac{1}{2}$" = 1'–0"



PILE CAP AT ACUTE CORNER

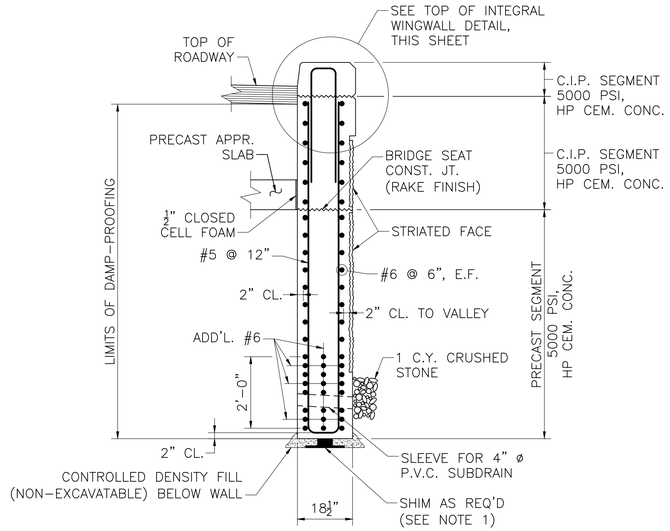
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)
SCALE: $\frac{1}{2}$" = 1'–0"

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

609427_BR12(M28026).DWG Plotted on 14-Mar-2024 10:08 AM
12-March-2024 Final Structural Submittal (SF)

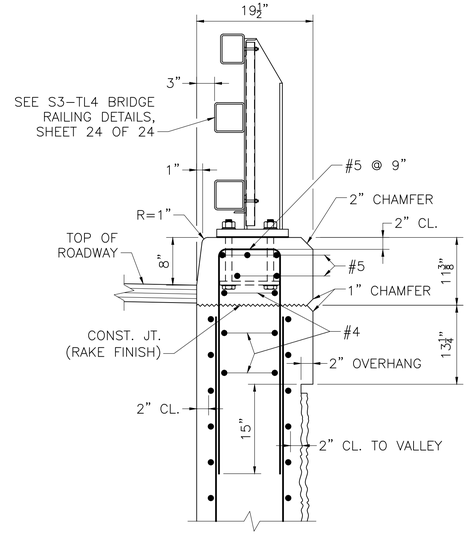


NOTE:

1. SEE SHEET 17 OF 24 FOR PRECAST ERECTION DETAILS AND NOTES.

SECTION 4/12

SCALE: ½" = 1'-0"



TOP OF INTEGRAL WINGWALL DETAIL

SCALE: 1" = 1'-0"

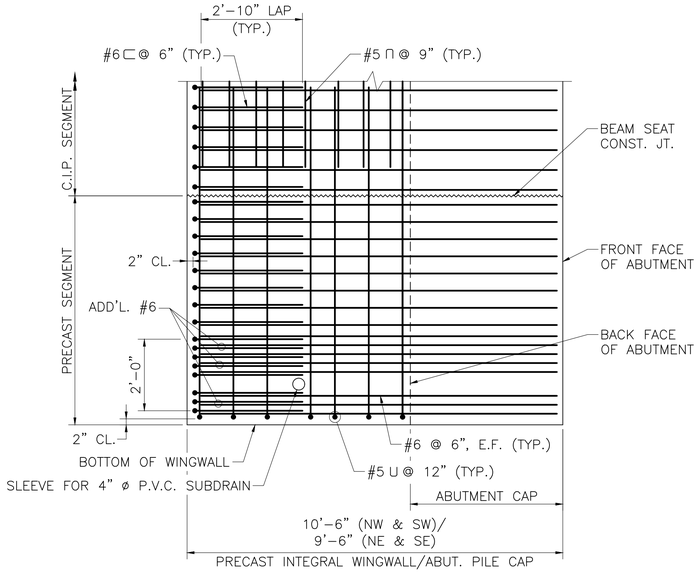
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	27	41
PROJECT FILE NO.	609427		

TYPICAL WINGWALL SECTIONS AND DETAILS

NOTE:

1. SEE SHEET 12 OF 24 FOR CONSTRUCTION NOTES.

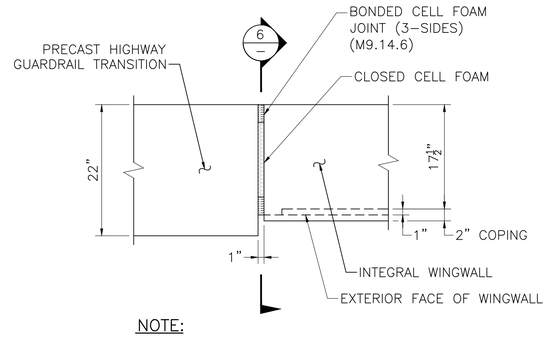


NOTE:

ABUTMENT REINFORCEMENT, CMP VOIDS AND HP PILES ARE NOT SHOWN FOR CLARITY.

SECTION 5/12

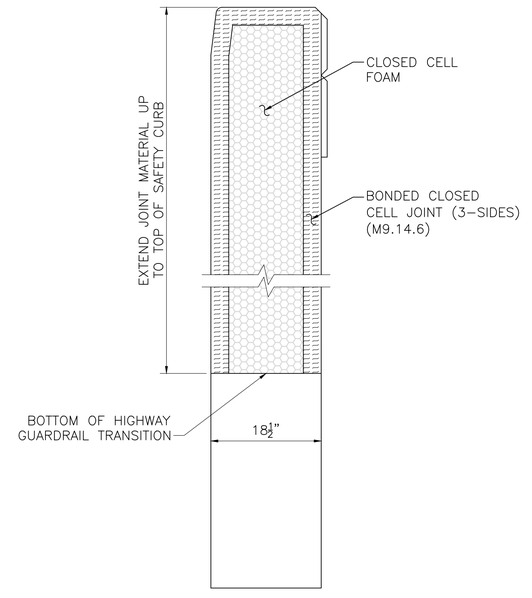
SCALE: ½" = 1'-0"



NOTE:

REINFORCEMENT NOT SHOWN FOR CLARITY.

PLAN



SECTION 6/–

WINGWALL EXPANSION JOINT DETAILS

SCALE: 1" = 1'-0"

DATE	DESCRIPTION
MARCH 30, 2024	ISSUED FOR CONSTRUCTION

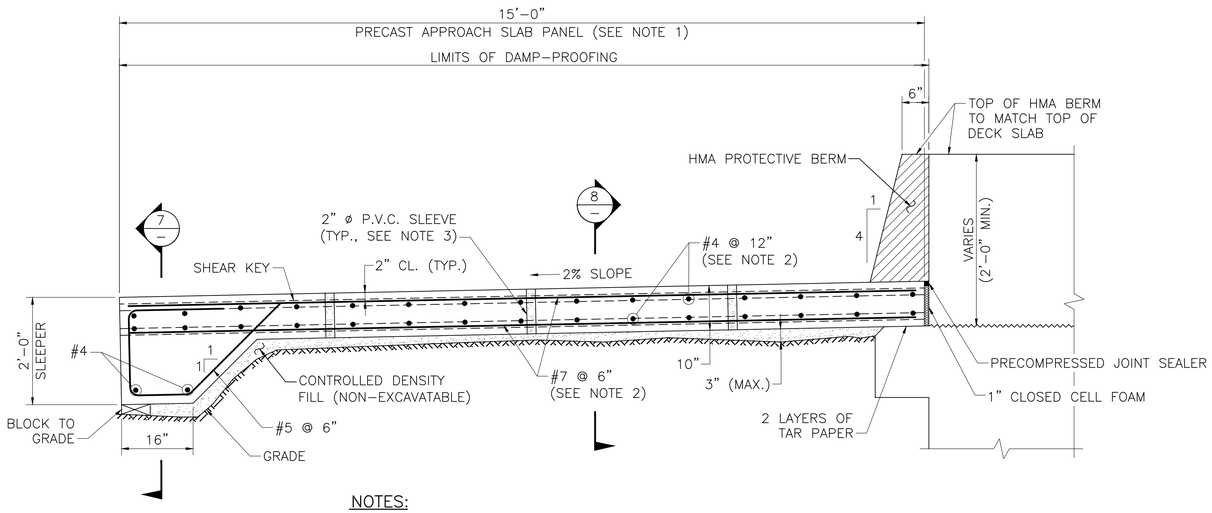
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	28	41
PROJECT FILE NO.	609427		

PRECAST APPROACH SLAB DETAILS

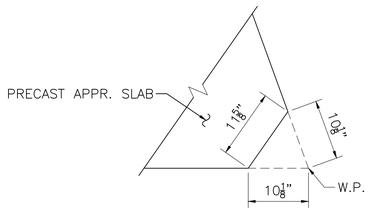


NOTES:

1. PRECAST PANEL TO BE 5000 PSI, HP CEMENT CONCRETE.
2. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO CENTERLINE OF CONSTRUCTION. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
3. P.V.C. SLEEVES TO BE INCLUDED IN PRECAST APPROACH SLABS TO FACILITATE PLACEMENT OF CONTROLLED DENSITY FILL (NON-EXCAVATABLE).

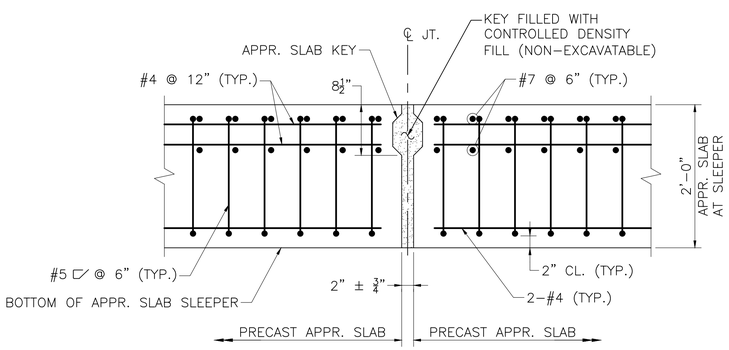
APPROACH SLAB DETAIL

SCALE: $\frac{3}{4}$" = 1'-0"



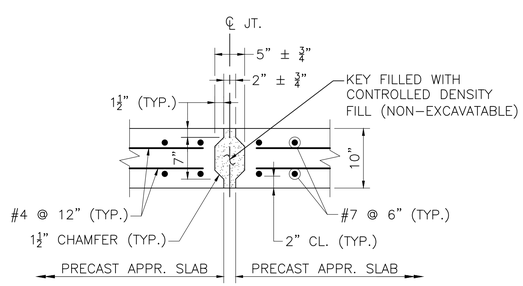
APPROACH SLAB CORNER DETAIL

NOT TO SCALE



SECTION 7

SCALE: 1" = 1'-0"



SECTION 8

SCALE: 1" = 1'-0"

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

USE ONLY PRINTS OF LATEST DATE

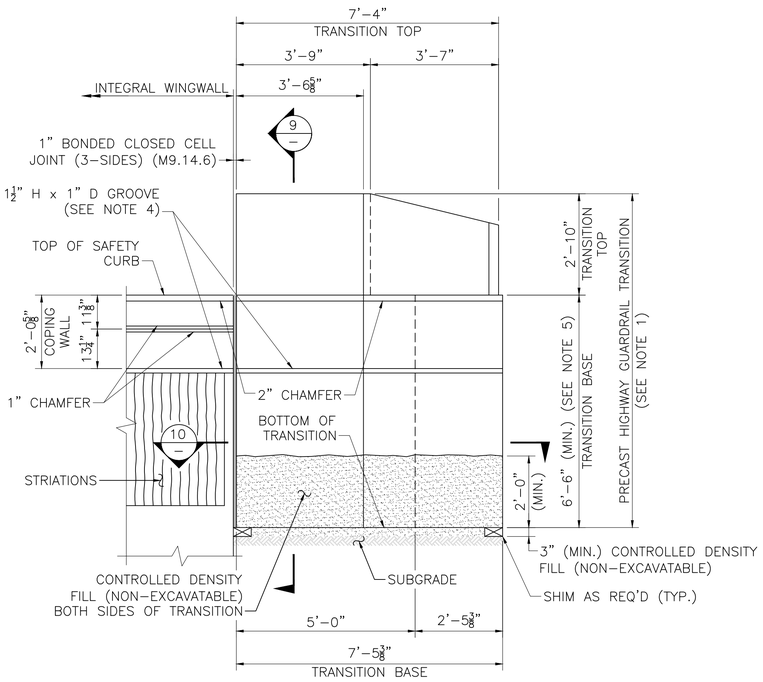
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	29	41
	PROJECT FILE NO. 609427		

PRECAST HIGHWAY GUARDRAIL TRANSITION DETAILS

NOTES:

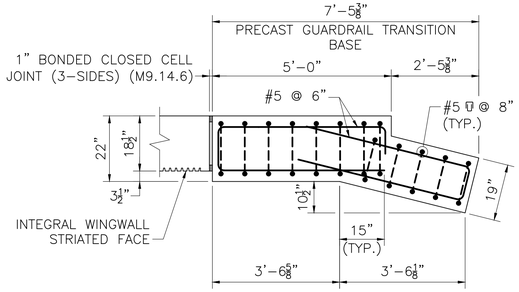
1. PRECAST GUARDRAIL TRANSITION SHALL BE 5000 PSI, HP CEMENT CONCRETE.
2. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'–0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
3. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT AND BACKFILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON–EXCAVATABLE) TO THE ELEVATION SHOWN.
4. $1\frac{1}{2}$" H x 1" D GROOVE. ALIGN WITH GROOVE AT TOP OF STRIATIONS.
5. HEIGHT OF TRANSITION BASE SHALL BE ADJUSTED TO MEET ELEVATIONS ON SHEET 11 OF 24.



ELEVATION

NOTE:
TRANSITION TOP REINFORCEMENT NOT SHOWN FOR CLARITY.

SECTION 9

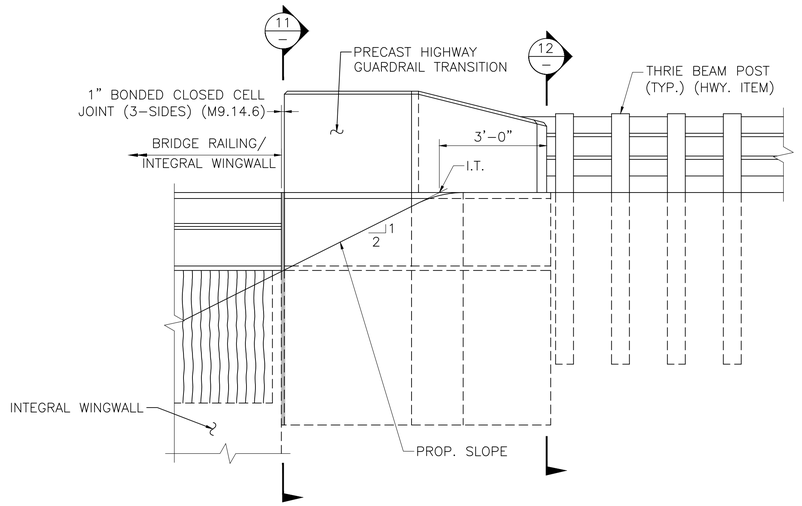


NOTE:
WINGWALL REINFORCEMENT AND STRIATIONS NOT SHOWN FOR CLARITY.

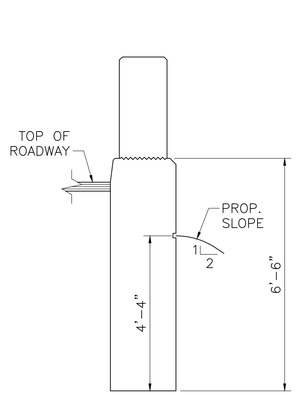
SECTION 10

PRECAST HIGHWAY GUARDRAIL TRANSITION DETAILS

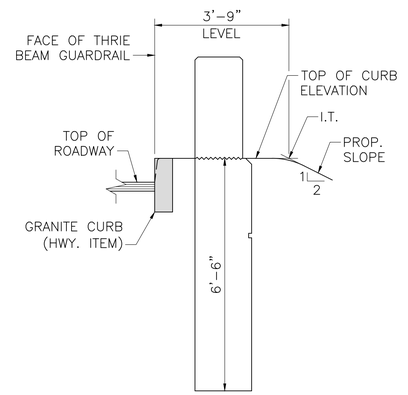
SCALE: ½" = 1'–0"



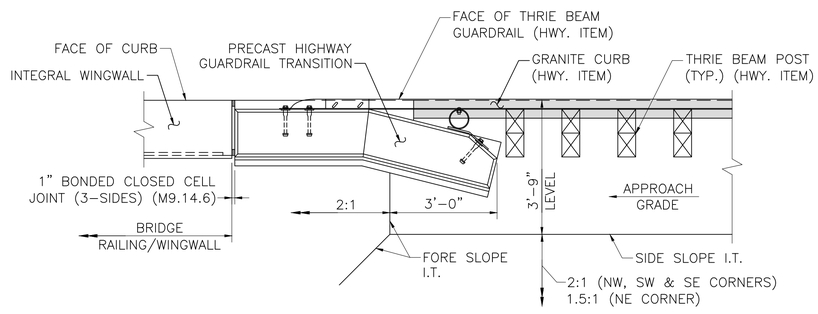
ELEVATION



SECTION 11



SECTION 12



PLAN

PRECAST HIGHWAY GUARDRAIL TRANSITION GRADING REQUIREMENT DETAILS

SCALE: ½" = 1'–0"

DATE	DESCRIPTION
MARCH 30, 2024	ISSUED FOR CONSTRUCTION

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

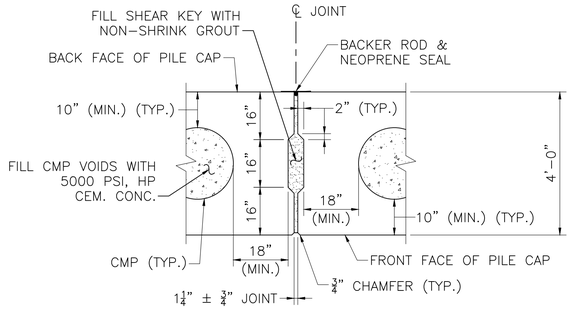
609427_BR15(M28026).DWG Plotted on 14-Mar-2024 10:09 AM

Final Structural Submittal (SF) 12-March-2024

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	30	41
PROJECT FILE NO.	609427		

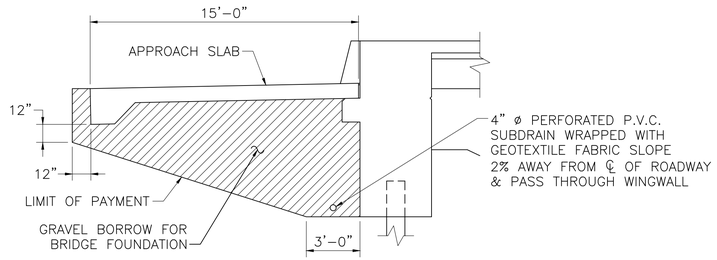
MISCELLANEOUS SUBSTRUCTURE DETAILS
1 OF 2



NOTES:

1. FACE OF SHEAR KEYS SHALL BE BLAST CLEANED AND ROUGHENED PRIOR TO INSTALLATION AND WETTED WITH CLEAN WATER PRIOR TO GROUTING.
2. REINFORCEMENT IS NOT SHOWN FOR CLARITY.

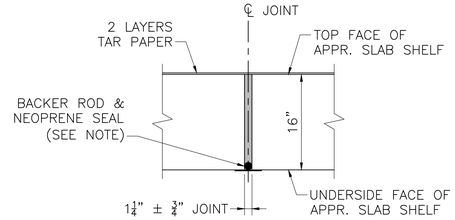
SECTION 2 (9,10)
SCALE: ½" = 1'-0"



NOTE:

SEE NOTE 5 ON SHEET 7 OF 24 FOR ADDITIONAL BACKFILL INSTRUCTIONS.

INTEGRAL ABUTMENT BACKFILL
SCALE: ¼" = 1'-0"

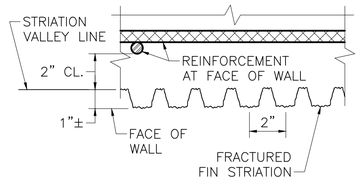


NOTE:

BACKER ROD AND NEOPRENE SEAL SHALL BE A CONTINUOUS LENGTH EXTENDING FROM THE BACK FACE OF THE PRECAST PILE CAP, ALONG THE UNDERSIDE AND VERTICAL FACES OF THE APPROACH SLAB SHELF AND TERMINATE AT THE TOP OF APPROACH SLAB SHELF.

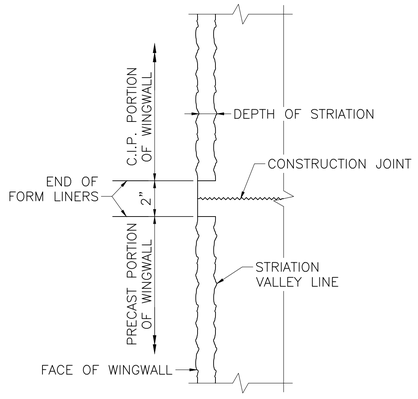
APPROACH SLAB SHELF JOINT DETAIL
SCALE: 1" = 1'-0"

DETAIL AT TOP OF WINGWALL



TYPICAL STRIATION DETAIL

EXPANSION JOINT

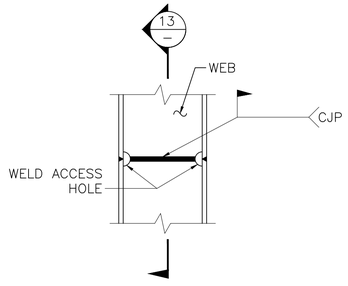


HORIZONTAL CONSTRUCTION JOINT

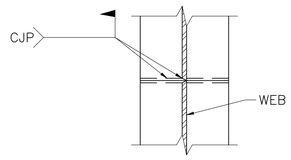
NOTE:

THE CONTRACTOR SHALL MAKE SURE THAT THE STRIATION FINS ARE PLUMB AND LINED UP VERTICALLY FROM PANEL TO PANEL FOR THE FULL HEIGHT OF THE WALL.

STRIATION DETAILS
NOT TO SCALE



ELEVATION



SECTION 13 (–)

NOTES:

1. ALL WELDS SHALL BE COMPETE PENETRATION AND SHALL CONFORM TO THE ANSI/AASHTO/AWS BRIDGE WELDING CODE, D1.5.
2. WELDING PROCEDURE SPECIFICATIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO WELDING.
3. WHENEVER POSSIBLE ALL PILES SHALL BE SPLICED ON THE GROUND IN THE FLAT POSITION.
4. WEB SHALL BE COPED TO ALLOW FOR COMPLETE PENETRATION WELDING OF FLANGES.
5. WELDED MECHANICAL PILE SPLICERS MAY BE USED PROVIDED THAT COMPLETE DETAILS AND WELDING PROCEDURES HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER.

H-PILE SPLICE DETAILS
NOT TO SCALE

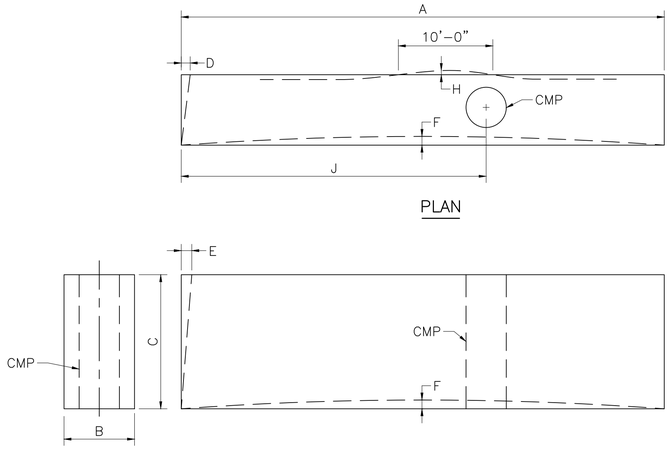
DATE	DESCRIPTION
MARCH 30, 2024	ISSUED FOR CONSTRUCTION

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

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	31	41
PROJECT FILE NO.	609427		

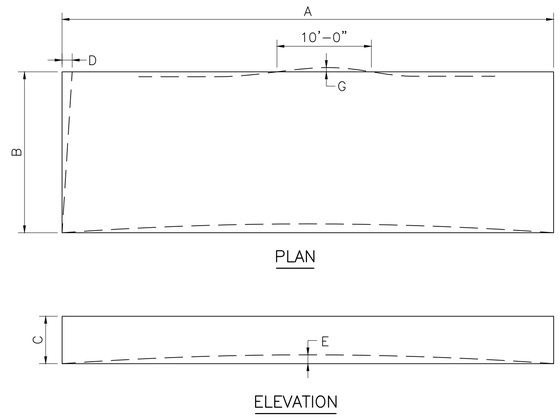
MISCELLANEOUS SUBSTRUCTURE DETAILS
2 OF 2



A	LENGTH	±¼"
B	WIDTH (OVERALL)	±¼"
C	DEPTH (OVERALL)	±¼"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	±½"
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	±½"
F	SWEEP OVER MEMBER LENGTH	±⅜"
H	LOCAL SMOOTHNESS OF ANY SURFACE	±¼" IN 10 FEET
J	LOCATION OF BLOCKOUT FOR PILES OR VOIDS	±½"
K	MAXIMUM PLUMB VARIATION OVER HEIGHT OF CMP VOID	±½"

INTEGRAL ABUTMENT/PILE CAP FABRICATION TOLERANCES

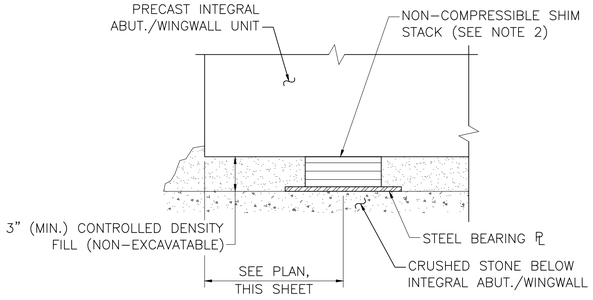
NOT TO SCALE



A	LENGTH (OVERALL)	±¼"
B	WIDTH (OVERALL)	±¼"
C	DEPTH (OVERALL)	±¼"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	±½"
E	SWEEP OVER MEMBER LENGTH	±⅜"
G	LOCAL SMOOTHNESS OF ANY SURFACE	±¼" IN 10 FEET

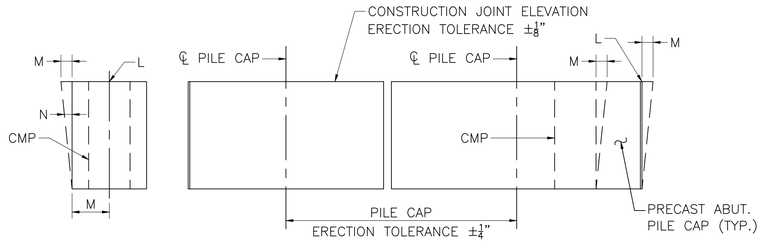
APPROACH SLAB FABRICATION TOLERANCES

NOT TO SCALE



SHIM STACK DETAIL

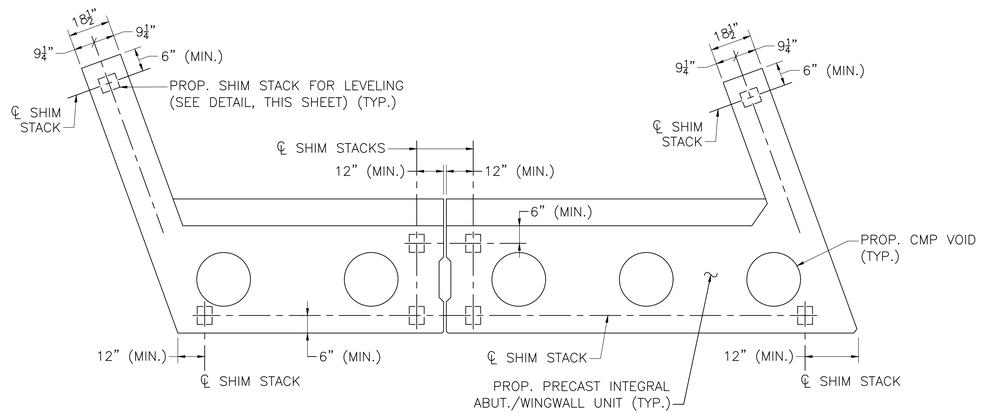
NOT TO SCALE



L	TOP ELEVATION FROM NOMINAL TOP ELEVATION	¼"
M	MAXIMUM PLUMB VARIATION OVER HEIGHT OF PANEL	½"
N	PLUMB IN ANY 10 FEET OF PANEL HEIGHT	¼"

INTEGRAL ABUTMENT/PILE CAP ERECTION TOLERANCES

NOT TO SCALE



NOTES:

1. SIZE AND LOCATION OF LEVELING DEVICES SHOWN ARE CONCEPTUAL. DESIGN AND FINAL LOCATIONS TO BE DETERMINED BY CONTRACTOR. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
2. CONTRACTOR SHALL DETERMINE SHIM STACK HEIGHTS VIA SURVEY OF FIELD PLACED STEEL PLATES AND FIELD MEASUREMENTS OF AS–BUILT PRECAST SEGMENTS.
3. DRY FIT PRECAST ELEMENTS IN THE FIELD PRIOR TO PLACING CONTROLLED DENSITY FILL TO ALLOW FOR ADJUSTMENTS TO BE MADE. THE CONTRACTOR SHALL BE PREPARED TO LIFT AND RESET THE PRECAST PIECES AS NEEDED TO MEET THE ELEVATIONS SHOWN ON THE PLANS.
4. THE CONTRACTOR SHALL SUBMIT AN ERECTION PROCEDURE AND QUALITY CONTROL PLAN FOR PRECAST CONCRETE BRIDGE ELEMENT ASSEMBLY FOR REVIEW AND APPROVAL BY THE ENGINEER. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

INTEGRAL ABUTMENT/PILE CAP LEVELING PLAN

NOT TO SCALE

DATE	DESCRIPTION
MARCH 30, 2024	ISSUED FOR CONSTRUCTION

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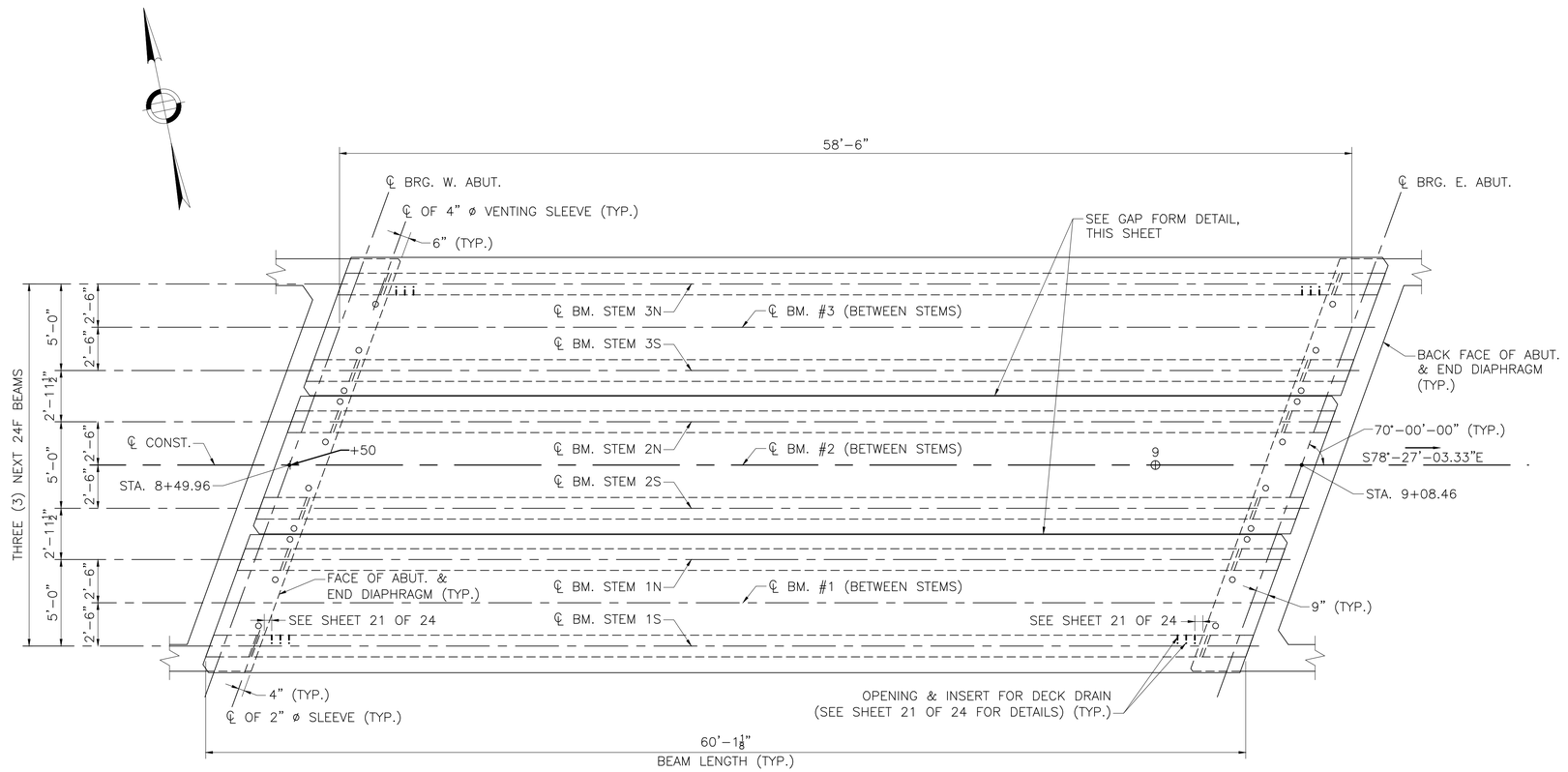
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

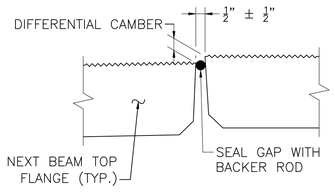
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	32	41
PROJECT FILE NO. 609427			

FRAMING PLAN



FRAMING PLAN

SCALE: ¼" = 1'–0"



GAP FORM DETAIL

NOT TO SCALE

NOTE:

1. SEE SHEETS 19 AND 20 OF 24 FOR BEAM DETAILS AND NOTES.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
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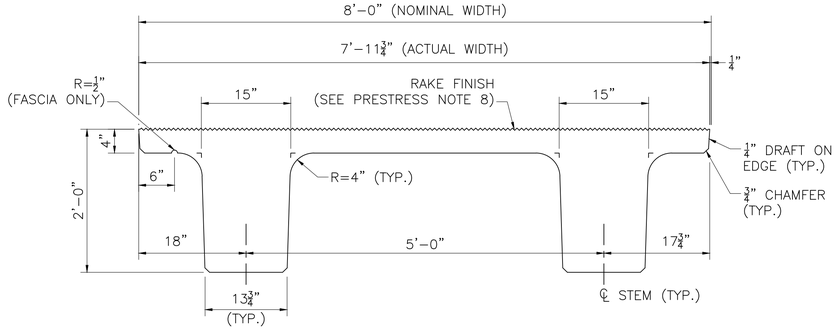
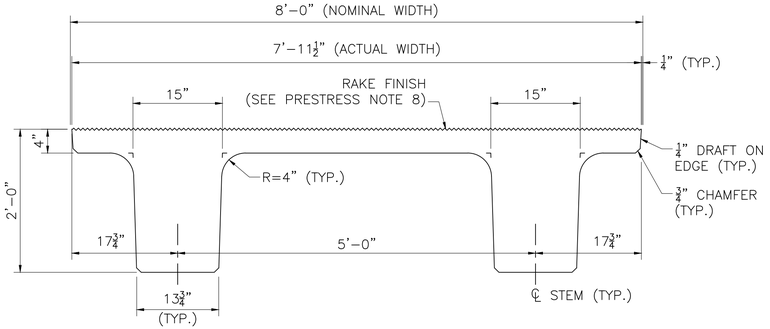


BEAM #3

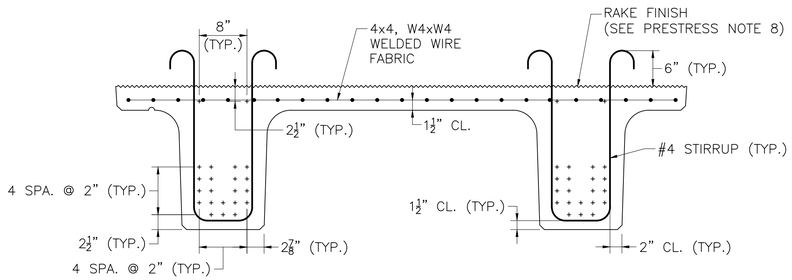
(BEAM #1 SIMILAR)



BEAM #2

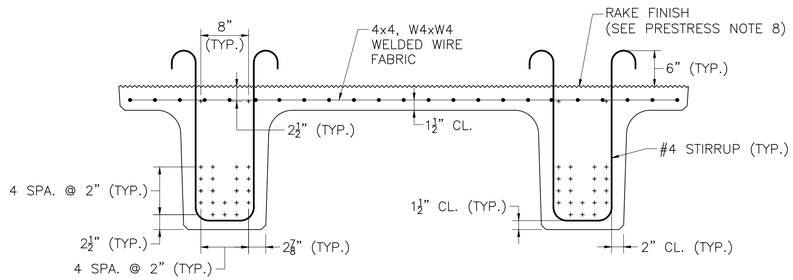
TYPICAL BEAM SECTIONS

SCALE: 1" = 1'–0"



BEAM #3

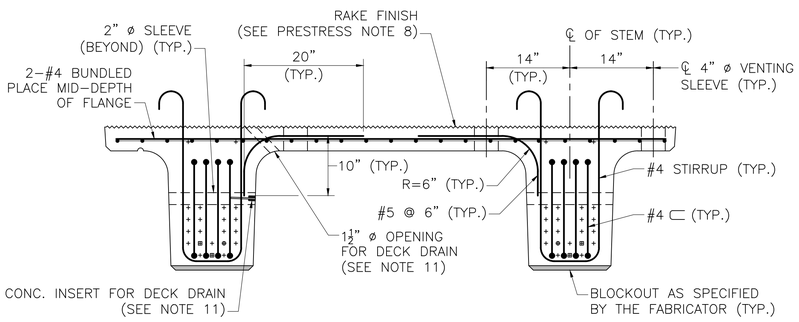
(BEAM #1 SIMILAR)



BEAM #2

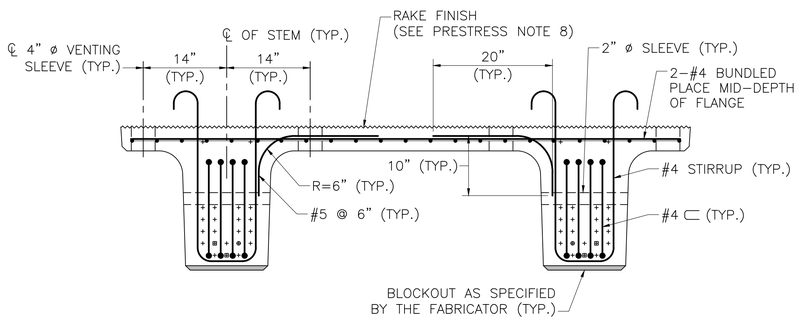
TYPICAL MIDSPAN SECTIONS

SCALE: 1" = 1'–0"



BEAM #3

(BEAM #1 SIMILAR)



BEAM #2

NOTE:

SEE MIDSPAN SECTIONS FOR DETAILS AND INFORMATION NOT SHOWN ABOVE.

TYPICAL END SECTIONS

SCALE: 1" = 1'–0"

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	33	41
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BEAM DETAILS
1 OF 2

PRESTRESS NOTES:

1. + DENOTES STRAIGHT STRANDS.
2. ⊕ DENOTES DEBONDED STRANDS 5' FROM BEAM END.
   ⊞ DENOTES DEBONDED STRANDS 9' FROM BEAM END.
3. ALL PRETENSIONING ELEMENTS SHALL BE 0.6" ø, UNCOATED, SEVEN–WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
4. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
5. THE INITIAL TENSION PER 0.6" ø STRAND SHALL BE 44 KIPS.
6. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 9000 PSI. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
7. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, OF AT LEAST 7000 PSI.
8. THE TOP OF ALL BEAMS SHALL BE GIVEN A RAKED FINISH (¼" AMPLITUDE) ACROSS THE WIDTH (PERPENDICULAR TO THE BEAM'S AXIS).
9. THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
10. TO CONTROL CRACKING AT THE END OF THE BEAM, THE PRECASTER SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM. TO MEET THIS REQUIREMENT ONLY IN THIS 6" END REGION OF THE BEAM, DEBONDED STRANDS MAY BE ADJACENT STRANDS HORIZONTALLY AND VERTICALLY.
11. CONCRETE INSERTS AND OPENINGS FOR DRAIN PIPES SHALL BE LOCATED AS SHOWN ON THE PLANS. MINOR ADJUSTMENTS TO THE LOCATION OF THESE ELEMENTS IS PERMISSIBLE TO AVOID INTERFERENCE WITH PRESTRESSING STRANDS OR REINFORCING BARS. ALL CONCRETE INSERTS AND OPENINGS FOR DECK DRAINS SHALL BE DEPICTED ON THE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO BEAM FABRICATION.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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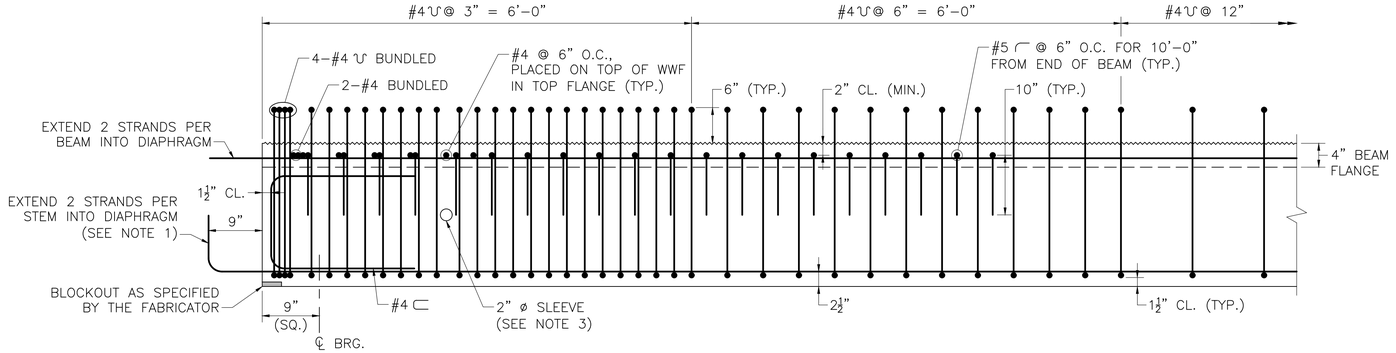
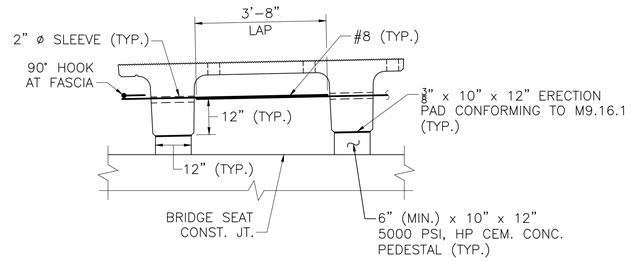


NOTES:

1. ONLY FULLY BONDED STRANDS IN THE BOTTOM ROW SHALL BE EXTENDED INTO THE INTEGRAL ABUTMENT.
2. WELDED WIRE FABRIC AND THE REMAINDER OF THE PRESTRESSING STRANDS ARE NOT SHOWN FOR CLARITY.
3. ADJUST STIRRUPS TO EITHER SIDE OF 2" ø SLEEVE. MAINTAIN MAXIMUM SPACING AS SHOWN.

BEAM LONGITUDINAL SECTION AT ABUTMENT

SCALE: 1" = 1'-0"

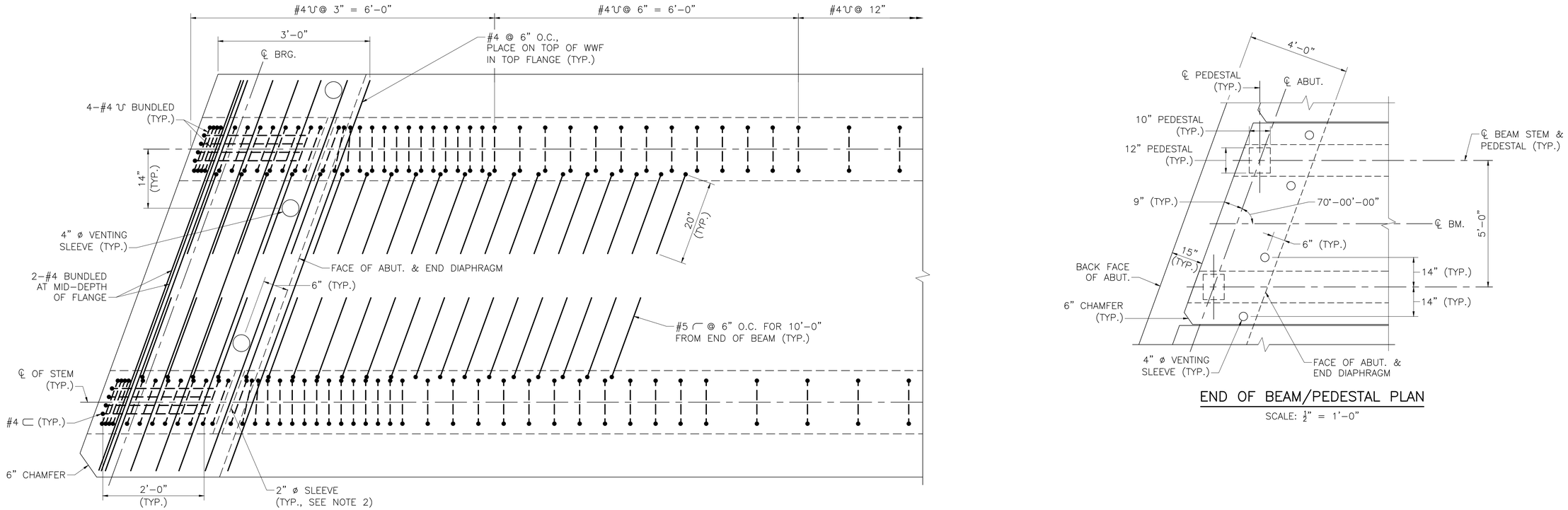


NOTE:

THE LATERAL STABILITY OF THE BEAMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR DURING ERECTION AND CONSTRUCTION. A LATERAL SUPPORT SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN AND BRIDGE CONSTRUCTION SPECIFICATIONS.

BEAM END DETAIL

SCALE: ½" = 1'-0"



NOTES:

1. WELDED WIRE FABRIC IN THE TOP FLANGE AND THE PRESTRESSING STRANDS ARE NOT SHOWN FOR CLARITY.
2. ADJUST STIRRUPS TO EITHER SIDE OF 2" ø SLEEVE. MAINTAIN MAXIMUM SPACING AS SHOWN.
3. AT END OF BEAM, SPLAY THE END STIRRUPS AS REQUIRED TO TRANSITION FROM SKEW TO PERPENDICULAR.

BEAM HORIZONTAL SECTION AT ABUTMENT

SCALE: 1" = 1'-0"

END OF BEAM/PEDESTAL PLAN

SCALE: ½" = 1'-0"

NOTE:

1. SEE SHEET 19 OF 24 FOR PRESTRESS NOTES.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
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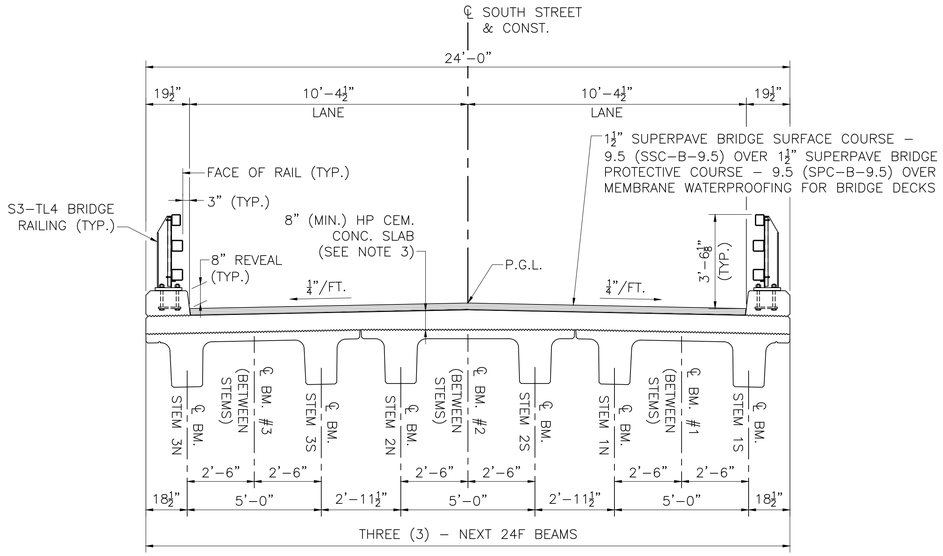
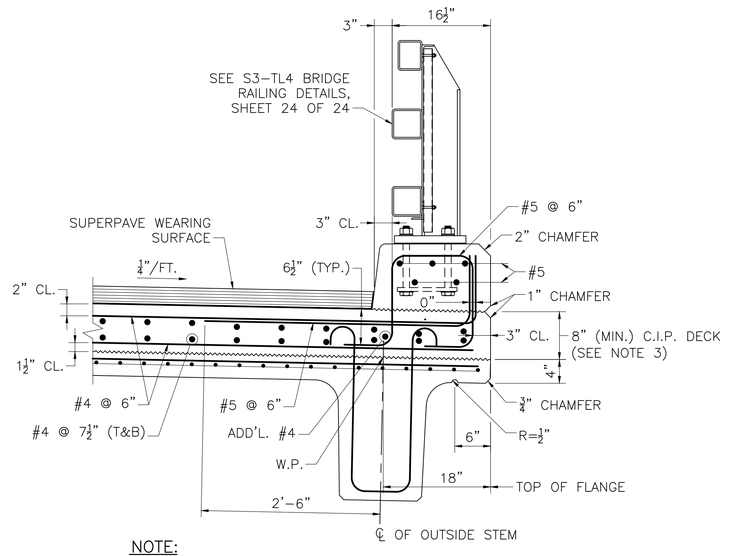
BRIDGE TRANSVERSE SECTION AND DETAILS



BRIDGE TRANSVERSE SECTION

(LOOKING UPSTATION)
SCALE: ⅜" = 1'-0"



NOTE:

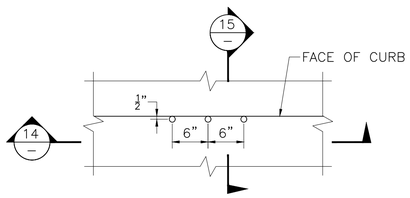
PRESTRESSING STRANDS IN THE BEAM ARE NOT SHOWN FOR CLARITY.

SAFETY CURB SECTION

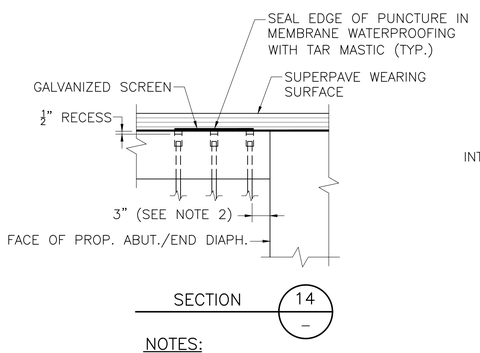
(SOUTH SIDE SHOWN, NORTH SIDE SIMILAR)
SCALE: 1" = 1'-0"

NOTES:

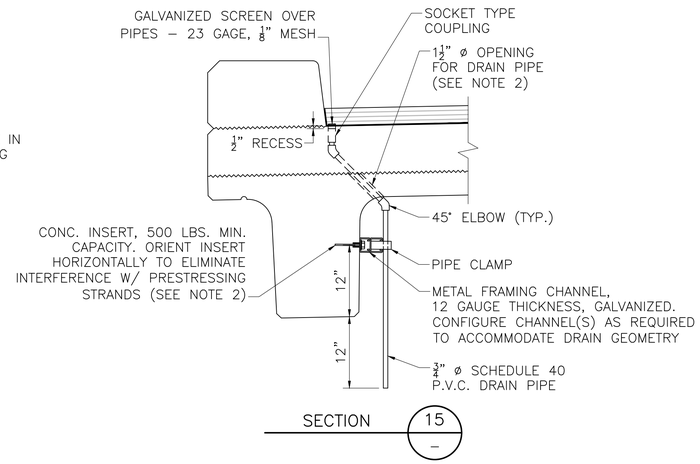
1. ALL REINFORCEMENT SHALL BE EPOXY COATED.
2. SAFETY CURB CONCRETE SHALL BE 5000 PSI, HP CEMENT CONCRETE.
3. 8" (MIN.) SLAB IS SHOWN AND THE ACTUAL SLAB THICKNESS VARIES (SEE SHEET 22 OF 24 FOR THEORETICAL DECK SLAB THICKNESS).



DECK PLAN



SECTION 14



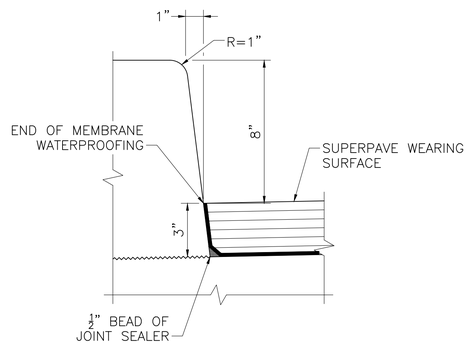
SECTION 15

NOTES:

1. SEE FRAMING PLAN FOR DECK DRAIN LOCATIONS.
2. CONCRETE INSERTS AND OPENINGS FOR DRAIN PIPES SHALL BE LOCATED AS SHOWN ON THE PLANS. MINOR ADJUSTMENTS TO THE LOCATION OF THESE ELEMENTS IS PERMISSIBLE TO AVOID INTERFERENCE WITH PRESTRESSING STRANDS OR REINFORCING BARS. ALL CONCRETE INSERTS AND OPENINGS FOR DECK DRAINS SHALL BE DEPICTED ON THE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO BEAM FABRICATION.

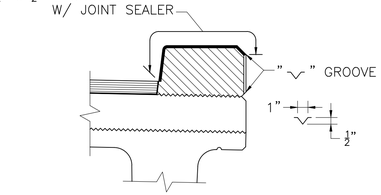
DECK DRAIN PIPES

SCALE: 1" = 1'-0"



FACE OF SAFETY CURB DETAIL

SCALE: 3" = 1'-0"



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 DETAIL

SCALE: ¾" = 1'-0"

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
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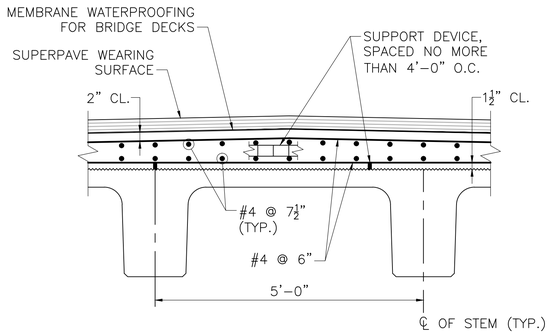
USE ONLY PRINTS OF LATEST DATE

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	36	41
PROJECT FILE NO.	609427		

DECK DETAILS

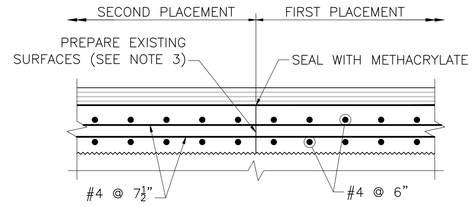


NOTES:

1. ROADWAY DECK SLAB SHALL BE 5000 PSI, HP CEMENT CONCRETE.
2. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ℄ OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCTION.
3. ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED.
4. THE FINISHED SURFACE OF BRIDGE DECK SHALL BE SMOOTH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.

TYPICAL DECK REINFORCEMENT

SCALE: ¾" = 1'-0"

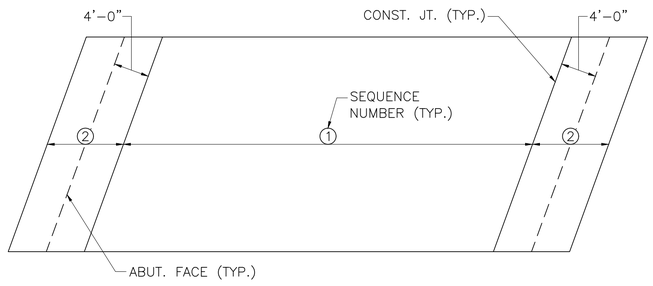


NOTES:

1. BRIDGE DECK SLAB SHALL BE PLACED IN ACCORDANCE WITH THE PLACEMENT SEQUENCE SHOWN ON THE PLANS.
2. THE CONTRACTOR MAY PLACE THE ENTIRE DECK IN ONE CONTINUOUS OPERATION WITHOUT CONSTRUCTION JOINTS WITH THE APPROVAL OF THE ENGINEER, PROVIDED THAT THE INITIAL SET (f'c = 500 PSI) OF ALL CONCRETE DOES NOT OCCUR UNTIL AFTER THE COMPLETION OF THE PLACEMENT. AN APPROVED RETARDER SHALL BE USED, WHEN NECESSARY, TO RETAIN THE WORKABILITY OF THE CONCRETE. IF MULTIPLE PLACEMENTS ARE MADE, A MINIMUM OF 72 HOURS SHALL PASS BETWEEN PLACEMENTS.
3. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
4. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS MAY BE USED. THE EPOXY ADHESIVE SHALL CONFORM TO AASHTO M 235 TYPE V AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. DOWEL BAR SPLICERS SHALL BE USED WHERE USE OF LAP SPLICES IS NOT FEASIBLE.

TRANSVERSE CONSTRUCTION JOINT DETAIL IN DECK SLAB

SCALE: 1" = 1'-0"



DECK PLACEMENT SEQUENCE

NOT TO SCALE

DECK THICKNESS DETERMINATION:

THE BRIDGE IS DESIGNED FOR A MINIMUM HAUNCH RANGING FROM 0" TO 1½" THICK. ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON A ¾" THEORETICAL HAUNCH. THIS ALLOWS THE CONTRACTOR A ¾"± TOLERANCE DURING THE DECK PLACEMENT IN ORDER TO MAINTAIN THE DESIGN PROFILE. AFTER THE BEAMS ARE INSTALLED AND PRIOR TO DECK PLACEMENT, THE CONTRACTOR SHALL MEASURE THE BEAM CAMBER AT MIDSPAN. DETERMINE THE FOLLOWING THREE ELEVATIONS ALONG THE CENTERLINE OF EACH BEAM:

A = ℄ OF BRG./℄ BEAM @ W. ABUT.
B = ℄ OF BRG./℄ BEAM @ E. ABUT.
C = MIDSPAN @ ℄ BEAM

$$\text{MIDSPAN CAMBER} = C - \left(\frac{A + B}{2}\right)$$

VERIFY THAT THE CAMBER VALUE IS AS FOLLOWS:
BEAMS #1 AND #3: 3.30" ± ¾"
BEAM #2: 3.30" ± ¾"

IF THE VALUE IS OUTSIDE THIS RANGE, CONTACT THE ENGINEER PRIOR TO DECK PLACEMENT.

THEORETICAL DECK SLAB THICKNESS TABLE

LOCATION	NORTH EDGE OF DECK SLAB	PROFILE GRADE LINE	SOUTH EDGE OF DECK SLAB
℄ BRGS. @ W. ABUT.	9.29"	10.27"	9.29"
MIDSPAN	8.75"	9.75"	8.75"
℄ BRGS. @ E. ABUT.	9.29"	10.27"	9.29"

NOTES:

1. THIS TABLE INDICATES THE THEORETICAL THICKNESS OF THE DECK SLAB IN INCHES BASED UPON AN ASSUMED MAXIMUM MIDSPAN BEAM CAMBER OF 3.30" AT ERECTION AND A FULL WIDTH ¾" HAUNCH (INCLUDED IN TABLE THICKNESS).
2. TABLE IS PROVIDED TO ASSIST IN ESTIMATING THE REQUIRED CONCRETE VOLUME.
3. THE ACTUAL DECK THICKNESS WILL BE AS REQUIRED TO MEET THE PROFILE GRADES.

DATE	DESCRIPTION
MARCH 30, 2024	ISSUED FOR CONSTRUCTION

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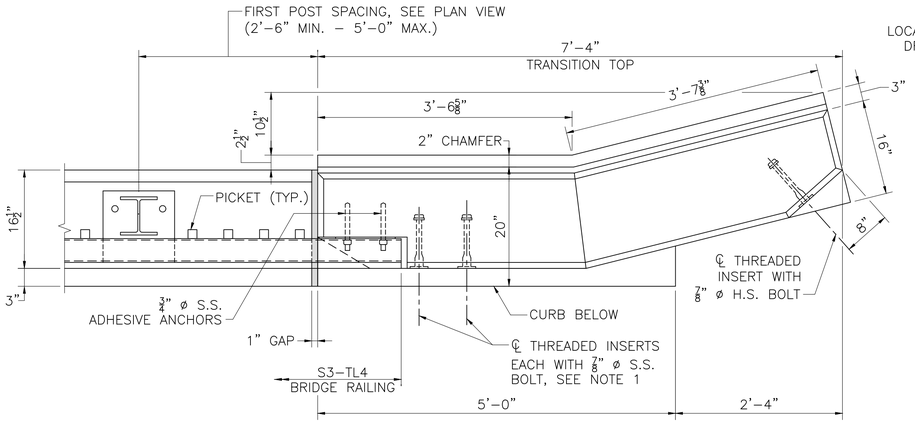
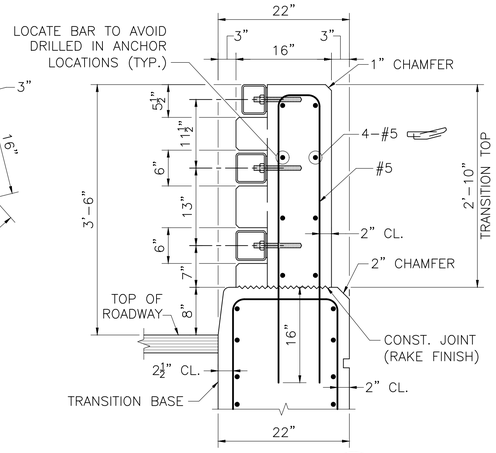


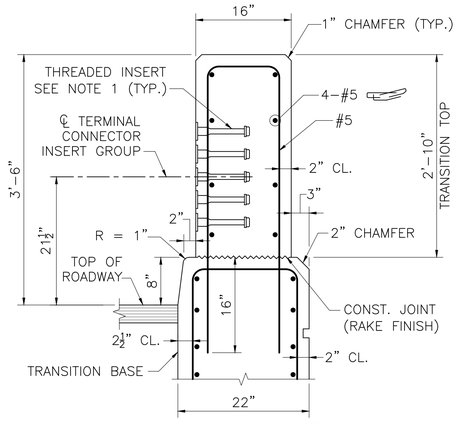
PLAN AT SAFETY CURB

SCALE: 1" = 1'–0"



SECTION 17 / –

SCALE: 1" = 1'–0"



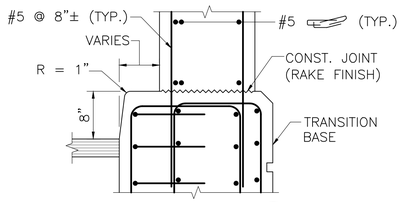
SECTION 18 / –

SCALE: 1" = 1'–0"

MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

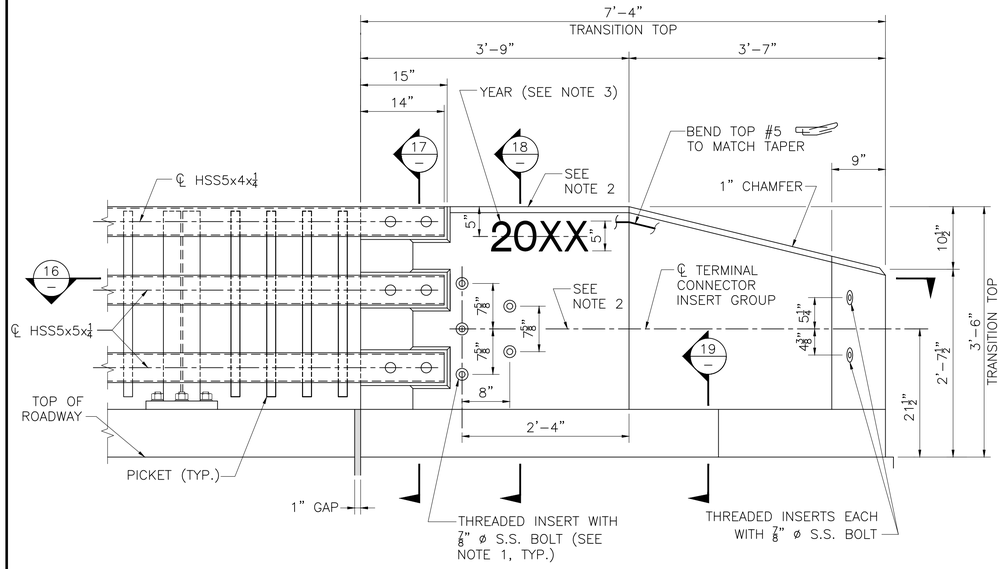
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	37	41
	PROJECT FILE NO. 609427		

TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR S3-TL4 RAILING



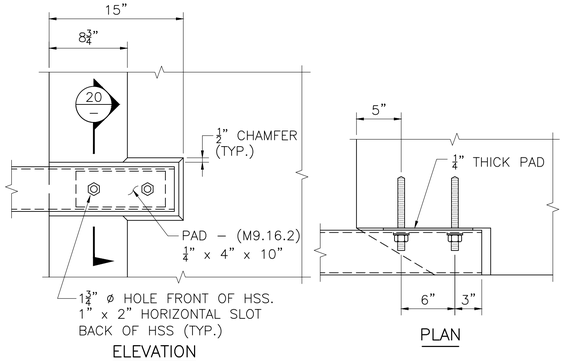
SECTION 19 / –

SCALE: 1" = 1'–0"



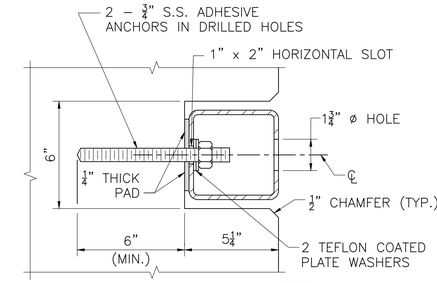
ELEVATION AT SAFETY CURB

SCALE: 1" = 1'–0"



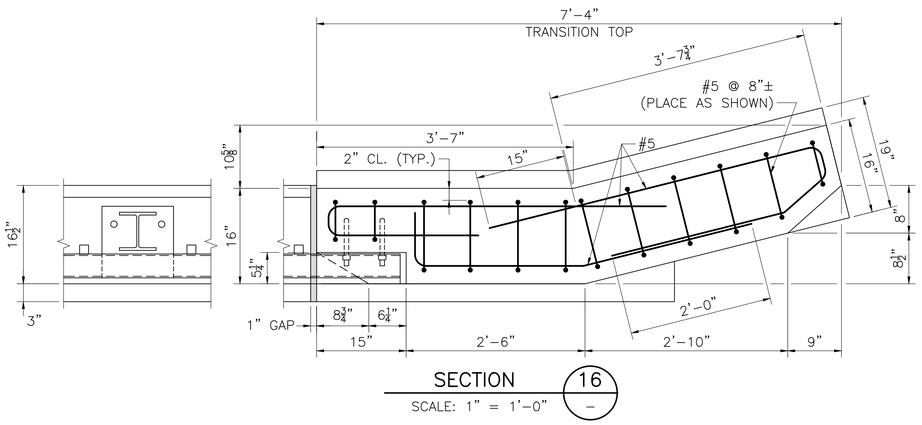
RAIL ATTACHMENT

SCALE: 1½" = 1'–0"



SECTION 20 / –

SCALE: 3" = 1'–0"



SECTION 16 / –

SCALE: 1" = 1'–0"

NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. TOP OF GUARDRAIL TRANSITION SHALL BE SET TO THE ELEVATIONS SPECIFIED ON SHEET 11 OF 24. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO MATCH THE PROFILE GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, HP CEMENT CONCRETE.
5. 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.

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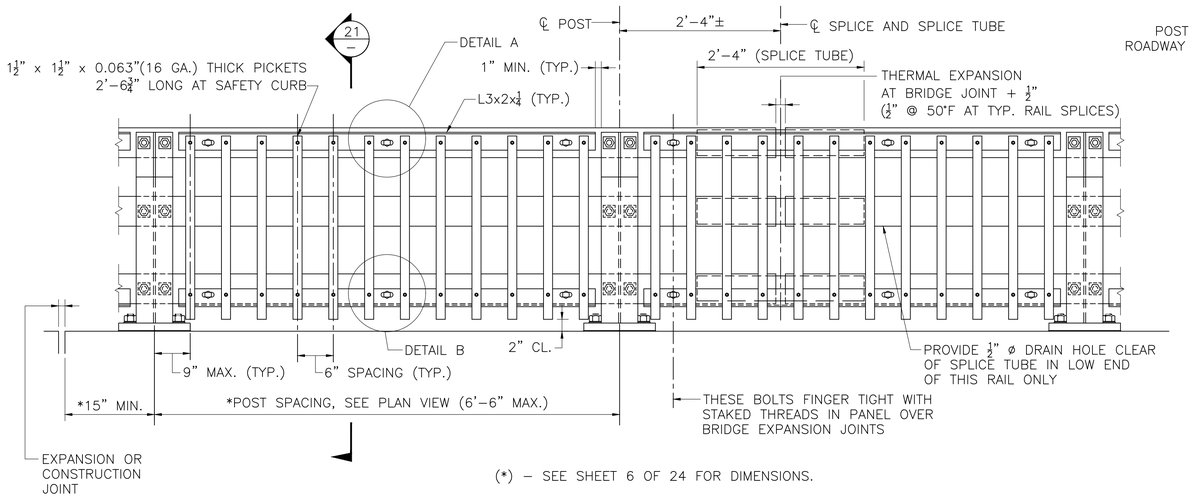
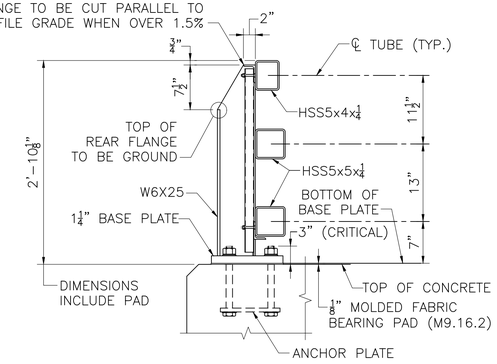
TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR S3–TL4 RAILING



(*) – SEE SHEET 6 OF 24 FOR DIMENSIONS.

BRIDGE RAILING ELEVATION

SCALE: 1" = 1'-0"



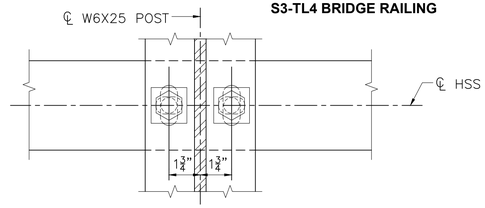
SECTION 21 –

SCALE: 1" = 1'-0"

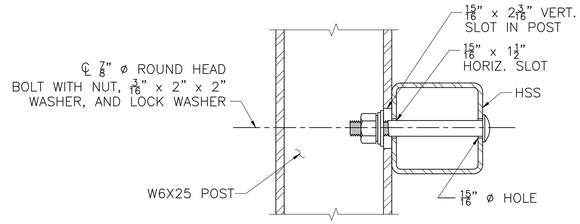
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	38	41
PROJECT FILE NO. 609427			

S3-TL4 BRIDGE RAILING



SECTION THRU POST WEB

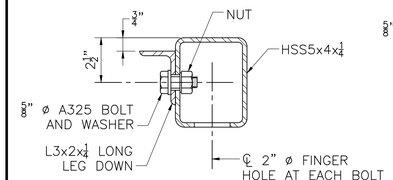


SECTION THRU RAIL

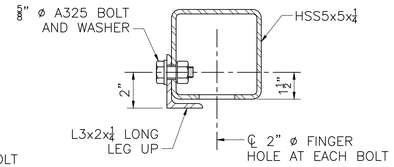
NOTE:
CONNECTIONS AT LOWER RAILS SHOWN.
CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

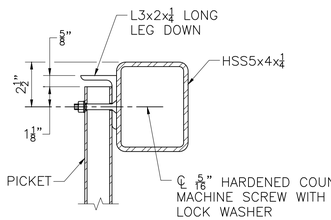
SCALE: 1" = 1'-0"



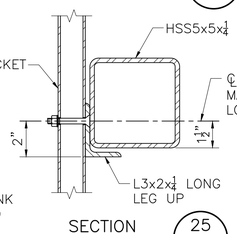
SECTION 22 –



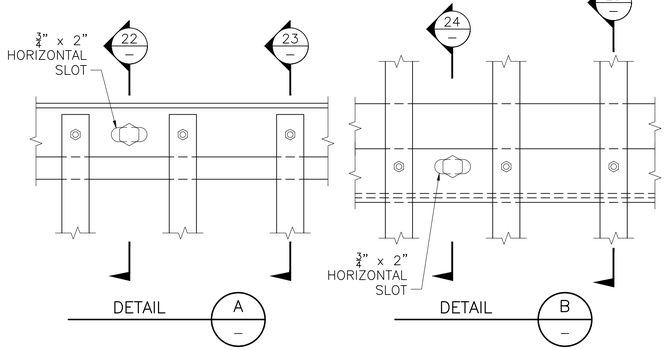
SECTION 24 –



SECTION 23 –



SECTION 25 –

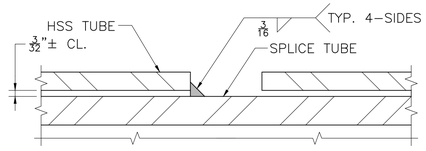


DETAIL A –

DETAIL B –

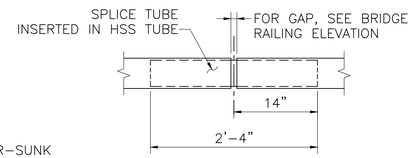
TYPICAL PICKET TO RAIL DETAILS

SCALE: 3" = 1'-0"



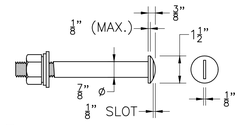
SPLICE DETAIL

FULL SIZE



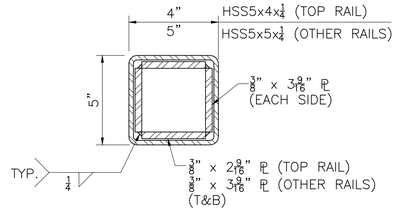
TYPICAL SPLICE

SCALE: 1" = 1'-0"



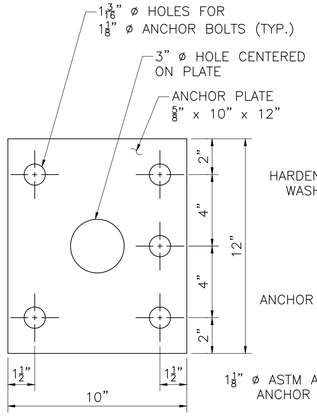
⅞" ø ROUND HEAD BOLT

SCALE: 3" = 1'-0"



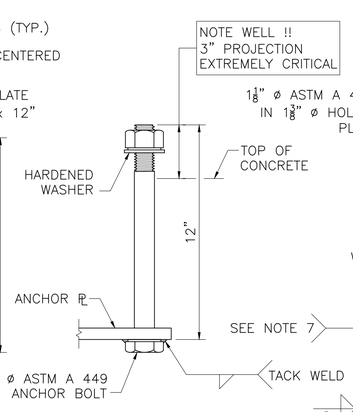
SPLICE TUBE DETAILS

SCALE: 3" = 1'-0"



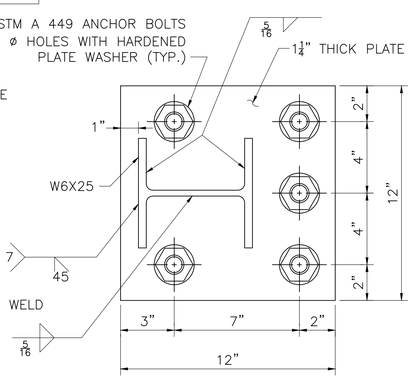
ANCHOR PLATE

SCALE: 3" = 1'-0"



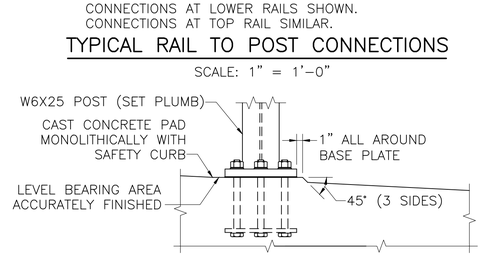
ANCHOR BOLT

SCALE: 3" = 1'-0"



BASE PLATE

SCALE: 3" = 1'-0"



SETTING OF POSTS (PROFILE GRADE OVER 1.5%)

SCALE: 1" = 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. RAILS SHALL BE SPLICED IN THE PANELS OVER EXPANSION JOINT.
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 SET PLUMB.
7. POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK-GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
8. ⅞" ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

MARCH 30, 2024	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

S3-TL4 BRIDGE RAILING

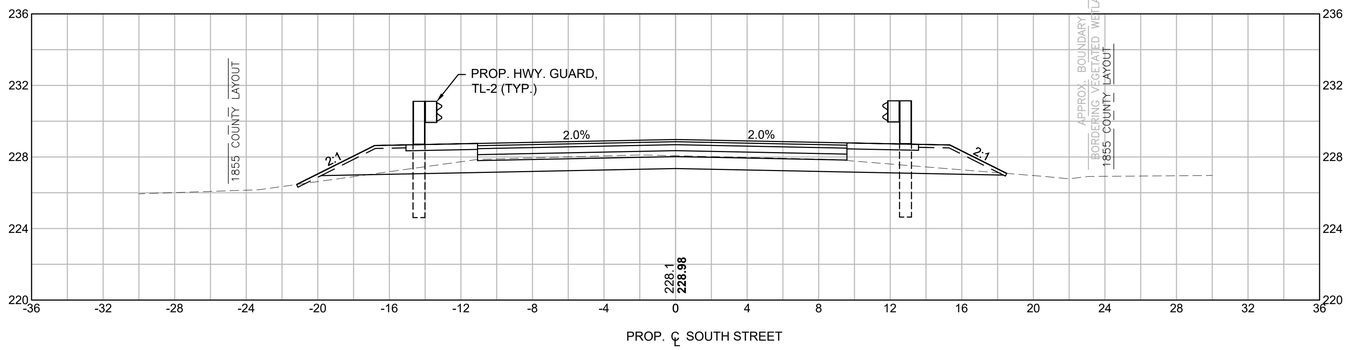
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	39	41
PROJECT FILE NO.	609427		

CROSS SECTIONS - SOUTH STREET

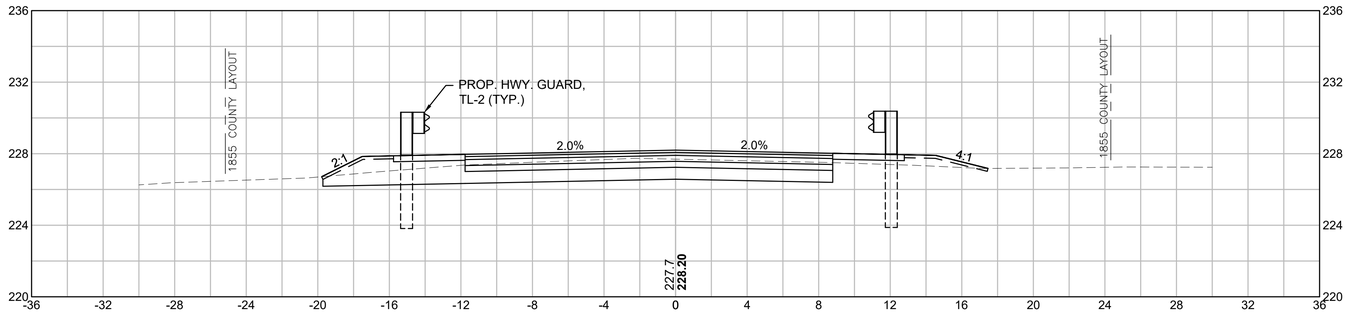
609427_HD39-41(SECTIONS).DWG Plotted on 14-Mar-2024 9:09 AM

7+50



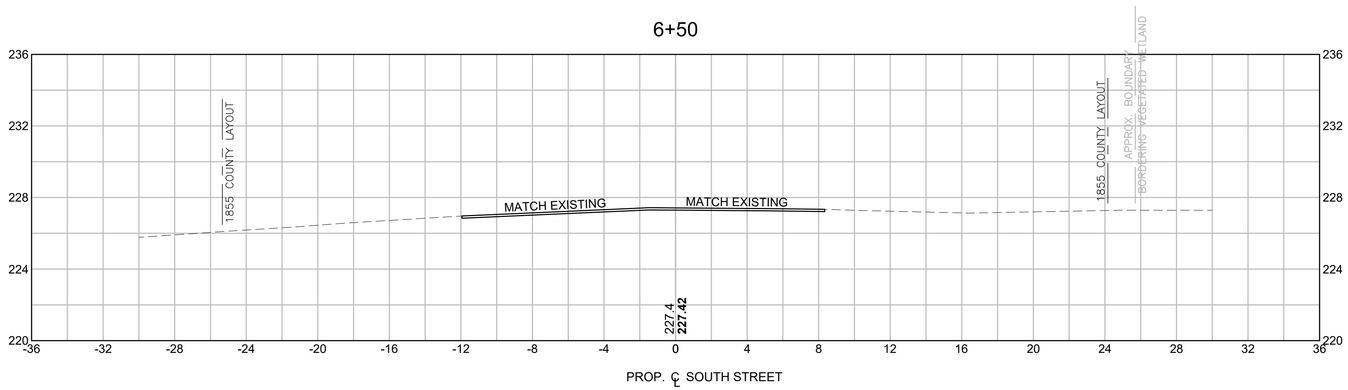
CUT: 20.76 SF
FILL: 0.53 SF

7+00



CUT: 29.47 SF
FILL: 2.06 SF

6+50



CUT: 0.00 SF
FILL: 0.00 SF

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

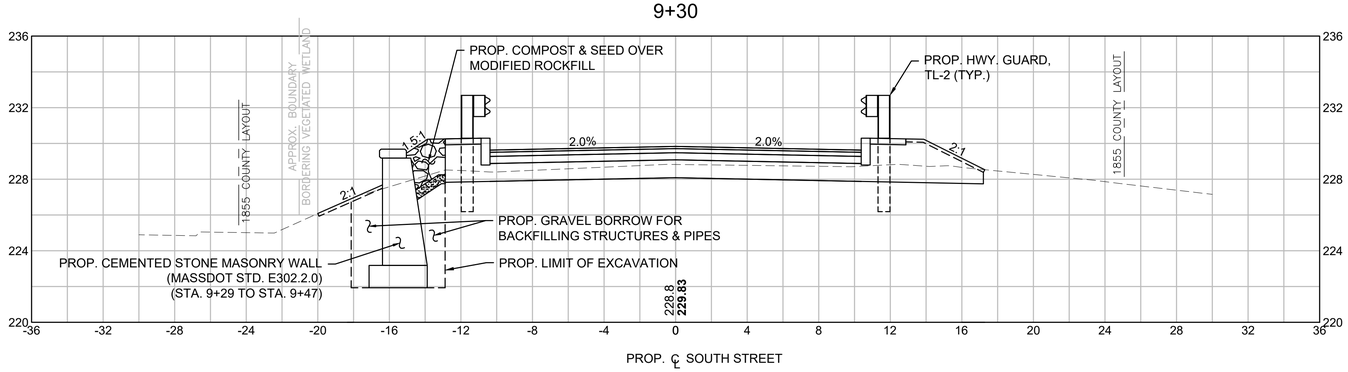
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	40	41
PROJECT FILE NO.	609427		

CROSS SECTIONS - SOUTH STREET

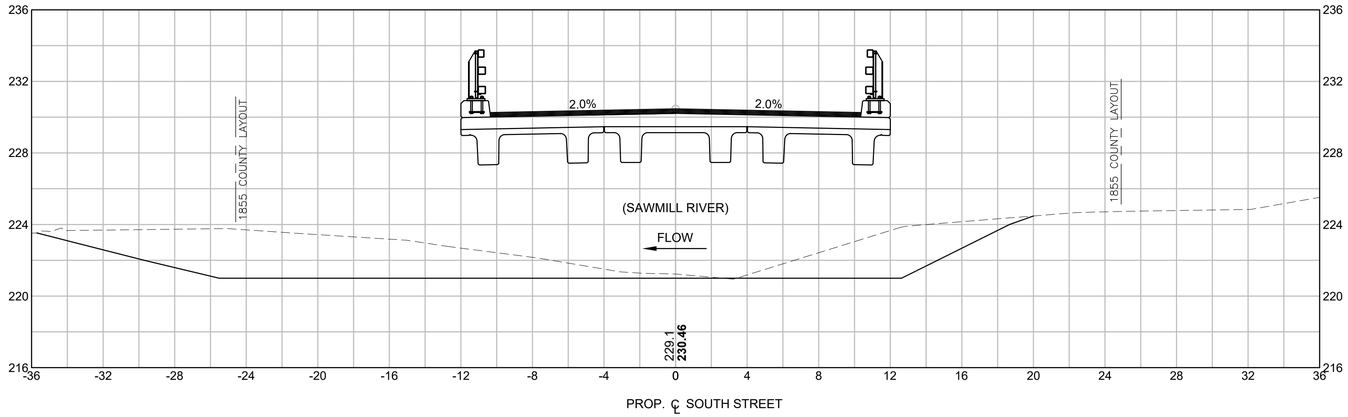
609427_HD39-41(SECTIONS).DWG Plotted on 14-Mar-2024 9:09 AM

9+30



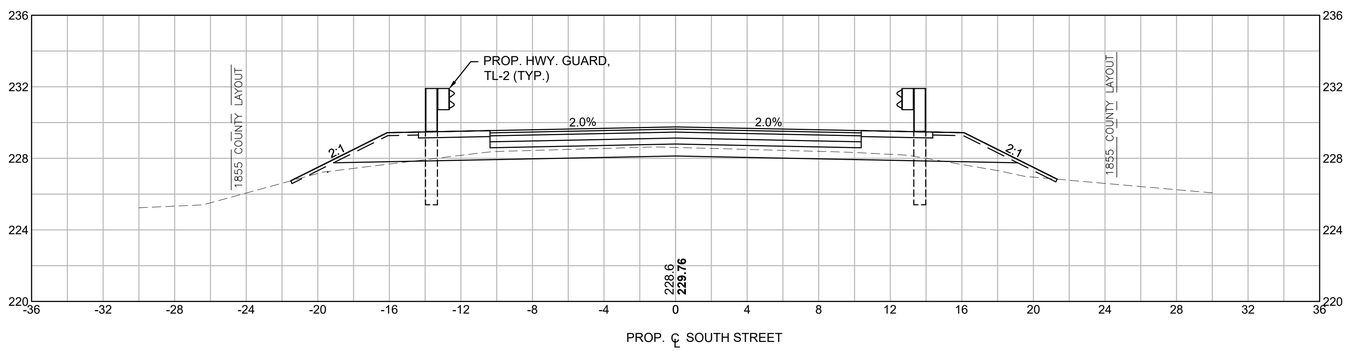
CUT: 22.91 SF
FILL: 0.00 SF

8+75



CUT: 0.00 SF
FILL: 0.00 SF

8+00



CUT: 11.84 SF
FILL: 3.26 SF

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

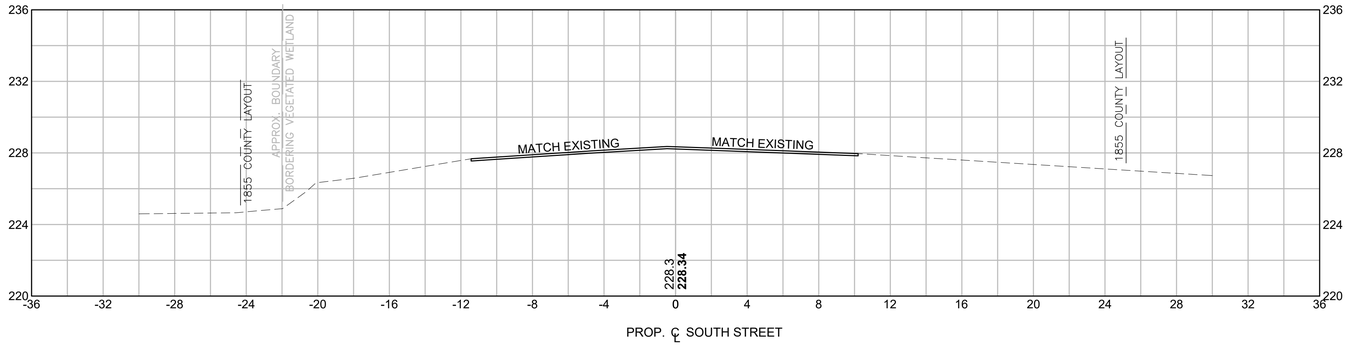
MONTAGUE
SOUTH STREET OVER SAWMILL RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP(BR-OFF)-003S(734)X	41	41
PROJECT FILE NO.	609427		

CROSS SECTIONS - SOUTH STREET

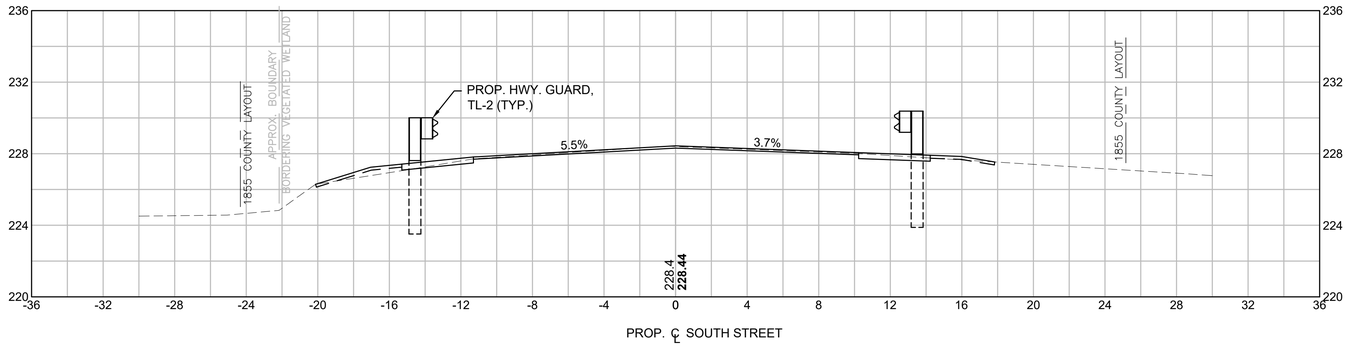
609427_HD39-41(SECTIONS).DWG Plotted on 14-Mar-2024 9:09 AM

10+05



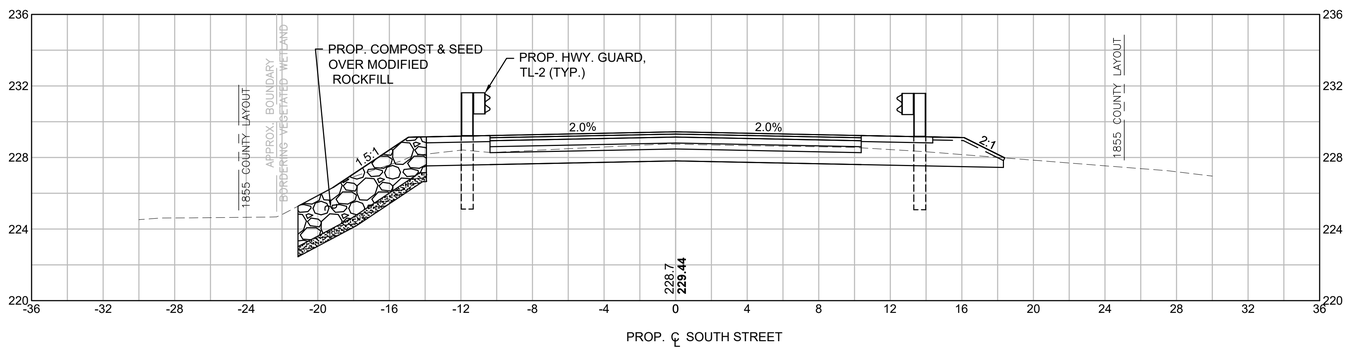
CUT: 0.00 SF
FILL: 0.00 SF

10+00



CUT: 1.55 SF
FILL: 0.75 SF

9+50



CUT: 44.62 SF
FILL: 0.00 SF

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET