MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

NORTH POLAND ROAD

(BRIDGE NO. C-20-004)

IN THE TOWN OF

CONWAY

FRANKLIN COUNTY

FEDERAL AID PROJECT NO. HIP(BR)-003S(779)X

CONWAY
NORTH POLAND ROAD

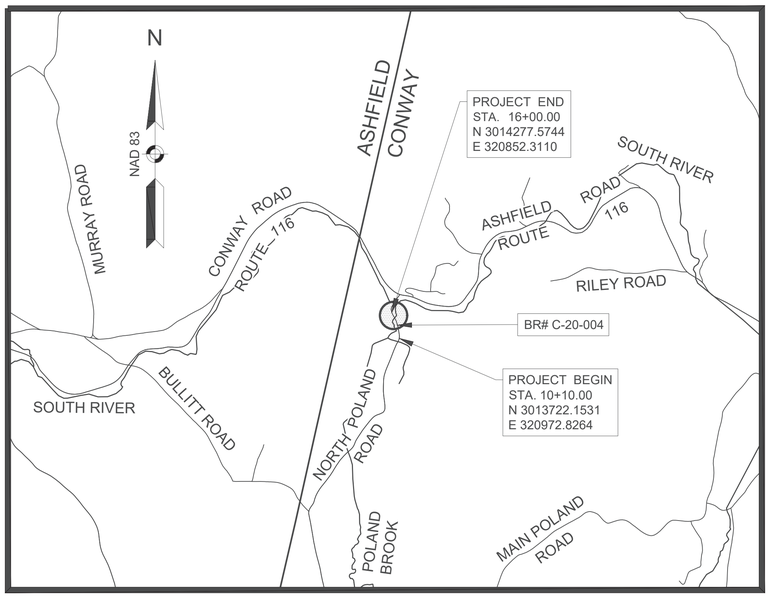
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	01	42
	PROJECT FILE NO. 609082		

TITLE SHEET & INDEX

609082_HD(4657 TITLE).DWG Plotted on 24-Jul-24 1:22 PM

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



PROJECT LOCATION

0 1500 3000 4500 6000

SCALE: 1" = 1500'

LENGTH OF PROJECT = 590 FEET = 0.11 MILES

DESIGN DESIGNATION (NORTH POLAND ROAD)	
DESIGN SPEED	30 MPH
ADT (2021)	146
ADT (2031)	150
K	10.3%
D	66.7%
T (PEAK HOUR)	20%
T (AVERAGE DAY)	5.4%
DHV	15
DDHV	10
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR

COMMONWEALTH OF MASSACHUSETTS
DARSHAN N. JHAVERI
CIVIL
No. 41441
PROFESSIONAL ENGINEER

Darshan N Jhaveri Digitally signed by Darshan N Jhaveri Date: 2024.08.07 10:32:26 -04'00'

BETA
www.BETA-Inc.com
315 Norwood Park South
2nd Floor
Norwood, MA 02062

DATE	DESCRIPTION

MassDOT Massachusetts Department of Transportation Highway Division

APPROVED

Carrie Lavallee Digitally signed by Carrie Lavallee, P.E. Date: 2024.08.10 06:36:35 -04'00'

08/10/2024

CHIEF ENGINEER **DATE**

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	02	42
	PROJECT FILE NO. 609082		

LEGEND & ABBREVIATIONS

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
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
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS AND SIGNING SYMBOLS

PROPOSED

CW	CROSSWALK, 2 - 12" WHITE LINES (8' WIDTH)
SL	STOP LINE - 12" WHITE LINE 4' BEHIND CW (TYP.)
SWL	SOLID WHITE LINE - 6"
SWCHL	SOLID WHITE CHANNELIZING LINES - 12" (SPACING NOTED)
SWGL	SOLID WHITE GORE LINE 12" @ 45°, (SPACING NOTED)
SWPL	SOLID WHITE PARKING LINE - 6"
BWL	BROKEN WHITE LINE - 6"
DWLEx	DOTTED WHITE LANE EXTENSION LINE - 6" (2' LINE & 6' GAP)
DYLEx	DOTTED YELLOW LANE EXTENSION LINE - 6" (2' LINE & 6' GAP)
BYL	BROKEN YELLOW LINE - 6"
DBYL	DOUBLE YELLOW LINE - 2 - 6" LINES
SYL	SOLID YELLOW LINE - 6"
SYGL	SOLID YELLOW GORE LINE 12" @ 45°, (SPACING NOTED)
SCHOOL	SCHOOL ZONE - WHITE
	ACCESSIBILITY SYMBOL - WHITE
	PAVEMENT ARROW - WHITE
ONLY	LEGEND "ONLY" - WHITE

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
DE	DRAINAGE EASEMENT
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACHING 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
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE

ABBREVIATIONS (cont.)

GENERAL

PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
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
TCE	TEMPORARY CONSTRUCTION EASEMENT
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL ABBREVIATIONS

CAB	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY UPRAISED HAND
FDW	FLASHING UPRAISED HAND
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
FYL	FLASHING YELLOW LEFT ARROW
FYR	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALKING PERSON
Y	STEADY CIRCULAR YELLOW
YL	STEADY YELLOW LEFT ARROW

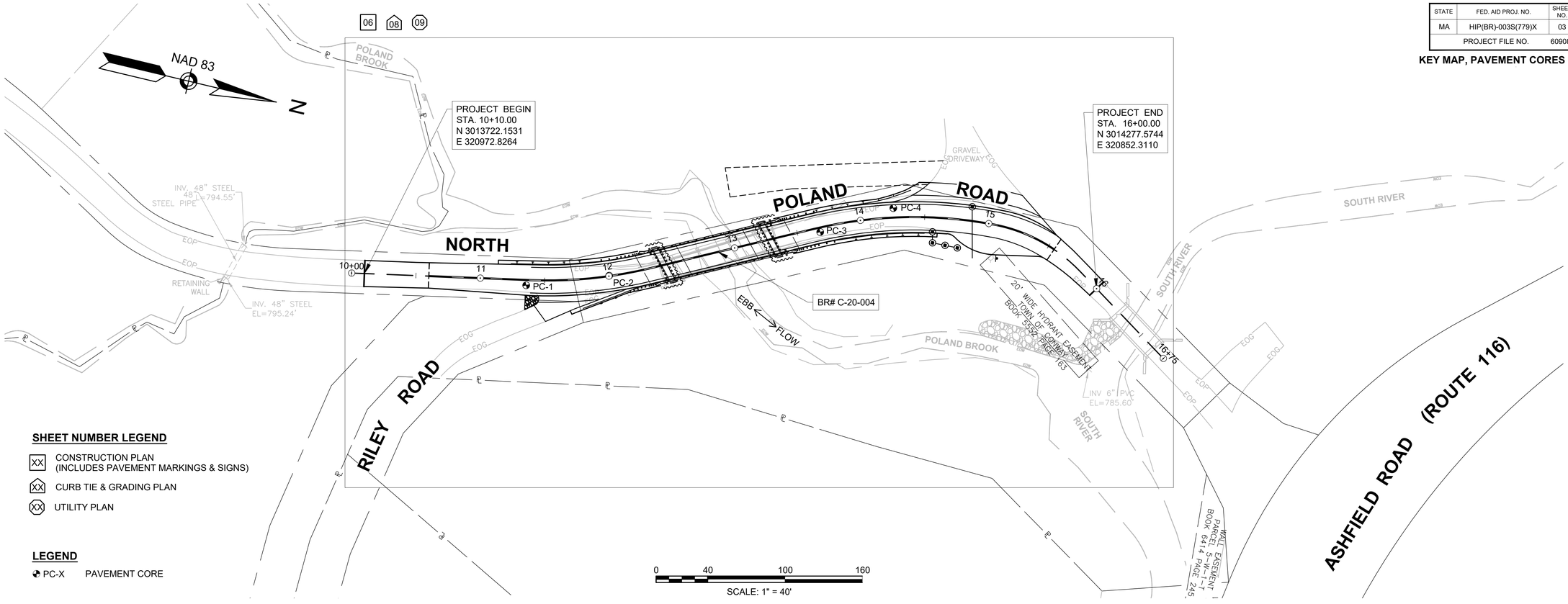
609082_HD(4657 LEGEND).DWG Plotted on 24-Jul-24 1:23 PM

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	03	42
	PROJECT FILE NO. 609082		

KEY MAP, PAVEMENT CORES & NOTES

609082_HD(4657 KEY).DWG Plotted on 24-Jul-24 1:24 PM



SHEET NUMBER LEGEND

- XX — CONSTRUCTION PLAN (INCLUDES PAVEMENT MARKINGS & SIGNS)
- XX — CURB TIE & GRADING PLAN
- XX — UTILITY PLAN

LEGEND

- PC-X PAVEMENT CORE

BORING
PC-1
PAGE 1 of 1

BORING INFORMATION
NORTHING (ft): 3,013,833 — EASTING (ft): 320,959
GROUND SURFACE EL. (ft): ~801.5 (See Plan) — DATE START/END: 10/20/2020 - 10/20/2020
VERT./HORZ. DATUMS: NAVD 88/NAD 1983 — DRILLING COMPANY: Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 3.8 — DRILLER NAME: Mike
LOGGED BY: R. Outal — RIG TYPE: Mobile B-53

DRILLING INFORMATION
HAMMER TYPE: Automatic — CASING I.D./O.D.: 4 inch/ 4.5 inch — CORE BARREL TYPE: N/A
AUGER I.D./O.D.: NA / NA — DRILL ROD O.D.: 2.625 inch — CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS: Pen. = Penetration Length; Rec. = Recovery Length; RQD = Rock Quality Designation; = Length of Sound Cores>4 in / Pen, %; WOR = Weight of Rods; WOH = Weight of Hammer; S = Split Spoon Sample; C = Core Sample; U = Undisturbed Sample; SC = Sonic Core; DP = Direct Push Sample; HSA = Hollow-Stem Auger; Qp = Pocket Penetrometer Strength; Sv = Pocket Torvane Shear Strength; LL = Liquid Limit; PI = Plasticity Index; PID = Photoionization Detector; I.D./O.D. = Inside Diameter/Outside Diameter; NA, NM = Not Applicable, Not Measured; Blows per 6 in. : 140-lb hammer falling 30 inches to drive a 2-inch-O.D. splitspoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Sample Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
								(0-3.25 in): ASPHALT.
		S1	0.3 to 1.8	18/8	16-15-33	Unable to fully penerate S1 due to an embedded tree root.	FILL	S1(0-3"): Wet, dense, black, FINE TO COARSE SAND, some fine gravel. S1(3-8"): Wet, dense, light brown, FINE TO COARSE SAND, some fine gravel, trace inorganic silt.
		S2	1.8 to 3.8	24/3	27-10-7-4			S2: Wet, medium dense, brown, FINE TO MEDIUM GRAVEL, some fine to coarse sand, trace inorganic silt.
	5							Bottom of boring at 3.8 feet. Backfilled with sand and topped with cold patch.

NOTES:

PROJECT NAME: North Poland Road Over Poland Road
CITY/STATE: Conway, Massachusetts
GEI PROJECT NUMBER: 2004115
GEI Consultants

BORING
PC-2
PAGE 1 of 1

BORING INFORMATION
NORTHING (ft): 3,013,903 — EASTING (ft): 320,926
GROUND SURFACE EL. (ft): ~801.5 (See Plan) — DATE START/END: 10/20/2020 - 10/20/2020
VERT./HORZ. DATUMS: NAVD 88/NAD 1983 — DRILLING COMPANY: Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 2.3 — DRILLER NAME: Mike
LOGGED BY: R. Outal — RIG TYPE: Mobile B-53

DRILLING INFORMATION
HAMMER TYPE: Automatic — CASING I.D./O.D.: 4 inch/ 4.5 inch — CORE BARREL TYPE: N/A
AUGER I.D./O.D.: NA / NA — DRILL ROD O.D.: 2.625 inch — CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS: Pen. = Penetration Length; Rec. = Recovery Length; RQD = Rock Quality Designation; = Length of Sound Cores>4 in / Pen, %; WOR = Weight of Rods; WOH = Weight of Hammer; S = Split Spoon Sample; C = Core Sample; U = Undisturbed Sample; SC = Sonic Core; DP = Direct Push Sample; HSA = Hollow-Stem Auger; Qp = Pocket Penetrometer Strength; Sv = Pocket Torvane Shear Strength; LL = Liquid Limit; PI = Plasticity Index; PID = Photoionization Detector; I.D./O.D. = Inside Diameter/Outside Diameter; NA, NM = Not Applicable, Not Measured; Blows per 6 in. : 140-lb hammer falling 30 inches to drive a 2-inch-O.D. splitspoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Sample Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
								(0-3 in): ASPHALT.
		S1	0.3 to 2.3	24/13	11-8-8-7		FILL	S1: Wet, medium dense, light brown, FINE TO COARSE SAND, some fine to medium gravel, trace inorganic silt.
	5							Bottom of boring at 2.2 feet. Backfilled with sand and topped with cold patch.

NOTES:

PROJECT NAME: North Poland Road Over Poland Road
CITY/STATE: Conway, Massachusetts
GEI PROJECT NUMBER: 2004115
GEI Consultants

BORING
PC-3
PAGE 1 of 1

BORING INFORMATION
NORTHING (ft): 3,014,053 — EASTING (ft): 320,861
GROUND SURFACE EL. (ft): ~801 (See Plan) — DATE START/END: 10/21/2020 - 10/21/2020
VERT./HORZ. DATUMS: NAVD 88/NAD 1983 — DRILLING COMPANY: Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 2.4 — DRILLER NAME: Mike
LOGGED BY: R. Outal — RIG TYPE: Mobile B-53

DRILLING INFORMATION
HAMMER TYPE: Automatic — CASING I.D./O.D.: 4 inch/ 4.5 inch — CORE BARREL TYPE: N/A
AUGER I.D./O.D.: NA / NA — DRILL ROD O.D.: 2.625 inch — CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS: Pen. = Penetration Length; Rec. = Recovery Length; RQD = Rock Quality Designation; = Length of Sound Cores>4 in / Pen, %; WOR = Weight of Rods; WOH = Weight of Hammer; S = Split Spoon Sample; C = Core Sample; U = Undisturbed Sample; SC = Sonic Core; DP = Direct Push Sample; HSA = Hollow-Stem Auger; Qp = Pocket Penetrometer Strength; Sv = Pocket Torvane Shear Strength; LL = Liquid Limit; PI = Plasticity Index; PID = Photoionization Detector; I.D./O.D. = Inside Diameter/Outside Diameter; NA, NM = Not Applicable, Not Measured; Blows per 6 in. : 140-lb hammer falling 30 inches to drive a 2-inch-O.D. splitspoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Sample Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
								(0-3.88 in): ASPHALT. Horizontaly fracture at about 1".
		S1	0.3 to 2.3	24/15	12-12-9-7		FILL	S1: Moist, medium dense, light brown, FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, trace inorganic silt.
	5							Bottom of boring at 2.3 feet. Backfilled with sand and topped with cold patch.

NOTES:

PROJECT NAME: North Poland Road Over Poland Road
CITY/STATE: Conway, Massachusetts
GEI PROJECT NUMBER: 2004115
GEI Consultants

BORING
PC-4
PAGE 1 of 1

BORING INFORMATION
NORTHING (ft): 3,014,106 — EASTING (ft): 320,830
GROUND SURFACE EL. (ft): ~799 (See Plan) — DATE START/END: 10/21/2020 - 10/21/2020
VERT./HORZ. DATUMS: NAVD 88/NAD 1983 — DRILLING COMPANY: Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 2.1 — DRILLER NAME: Mike
LOGGED BY: R. Outal — RIG TYPE: Mobile B-53

DRILLING INFORMATION
HAMMER TYPE: Automatic — CASING I.D./O.D.: 4 inch/ 4.5 inch — CORE BARREL TYPE: N/A
AUGER I.D./O.D.: NA / NA — DRILL ROD O.D.: 2.625 inch — CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS: Pen. = Penetration Length; Rec. = Recovery Length; RQD = Rock Quality Designation; = Length of Sound Cores>4 in / Pen, %; WOR = Weight of Rods; WOH = Weight of Hammer; S = Split Spoon Sample; C = Core Sample; U = Undisturbed Sample; SC = Sonic Core; DP = Direct Push Sample; HSA = Hollow-Stem Auger; Qp = Pocket Penetrometer Strength; Sv = Pocket Torvane Shear Strength; LL = Liquid Limit; PI = Plasticity Index; PID = Photoionization Detector; I.D./O.D. = Inside Diameter/Outside Diameter; NA, NM = Not Applicable, Not Measured; Blows per 6 in. : 140-lb hammer falling 30 inches to drive a 2-inch-O.D. splitspoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Sample Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
								(0-2 in): ASPHALT.
		S1	0.1 to 2.1	24/14	10-14-26-14		FILL	S1: Wet, dense, FINE TO COARSE GRAVEL, some fine to coarse sand, trace inorganic silt.
	5							Bottom of boring at 2.1 feet. Backfilled with sand and topped with cold patch.

NOTES:

PROJECT NAME: North Poland Road Over Poland Road
CITY/STATE: Conway, Massachusetts
GEI PROJECT NUMBER: 2004115
GEI Consultants

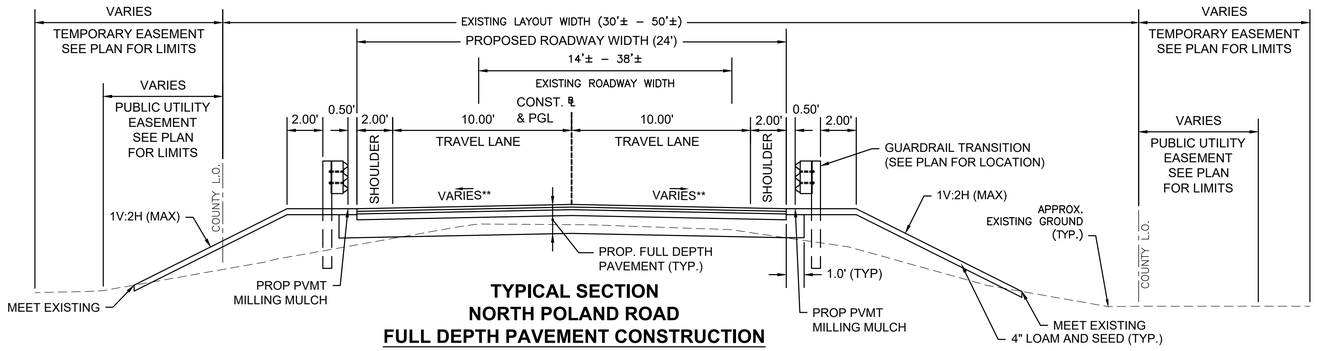
NOTE:

1. THE ENTIRE PROJECT AREA IS LOCATED WITHIN A NHESP MAPPED ESTIMATED HABITAT OF RARE WILDLIFE & PRIORITY HABITAT OF RARE SPECIES (PH 1741). BOUNDARIES OF THESE AREAS ARE OUTSIDE THE LIMITS OF THIS SHEET.
2. THE SITE IS NOT IN PROXIMITY TO AN OUTSTANDING RESOURCE WATER (ORW) OR AN AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)
3. ACCESS TO THE HYDRANT ACROSS FROM 42 NORTH POLAND ROAD (STA 15+06± 25'±RT) SHALL BE MAINTAINED AT ALL TIMES UNLESS APPROVED ACCOMMODATIONS ARE ACCEPTED BY THE TOWN OF CONWAY FIRE CHIEF

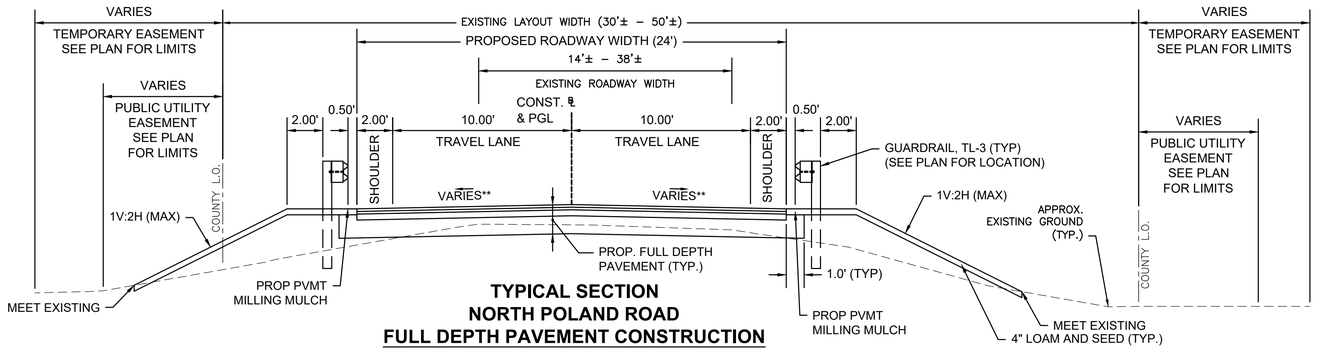
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	04	42
	PROJECT FILE NO. 609082		

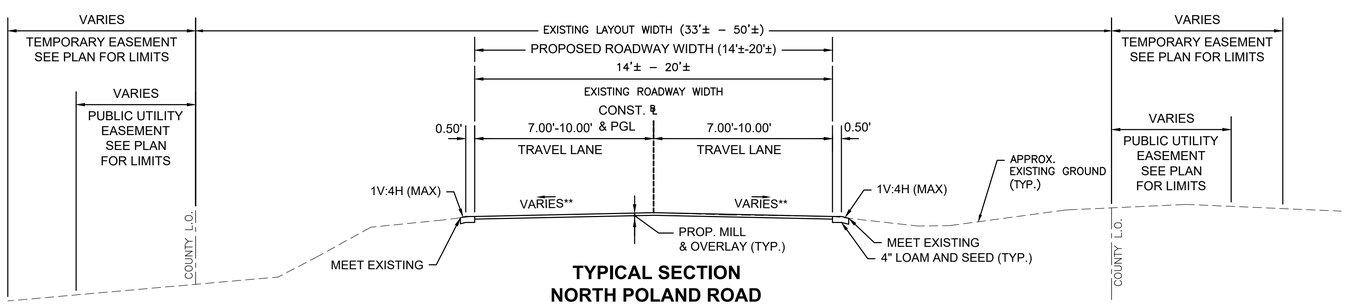
TYPICAL SECTIONS & PAVEMENT NOTES



TYPICAL SECTION
NORTH POLAND ROAD
FULL DEPTH PAVEMENT CONSTRUCTION
W/ THRIE BEAM GUARDRAIL TRANSITION (TYP)
STA 11+50± TO 11+95±
STA 13+77± TO 13+90±
NOT TO SCALE



TYPICAL SECTION
NORTH POLAND ROAD
FULL DEPTH PAVEMENT CONSTRUCTION
W/ TL-3 GUARDRAIL (TYP)
STA 11+50± TO 11+95±
STA 13+77± TO 13+90±
NOT TO SCALE



TYPICAL SECTION
NORTH POLAND ROAD
PAVEMENT MILLING & OVERLAY (TYP)
STA 10+10± TO 10+60±
STA 15+55± TO 16+00±
NOT TO SCALE

PAVEMENT NOTES

FULL DEPTH PAVEMENT CONSTRUCTION

SURFACE COURSE:	1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
INTERMEDIATE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
BASE COURSE:	4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
SUB-BASE:	4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER 8" GRAVEL BORROW (MIN)

PROPOSED HMA BRIDGE WEARING COURSE

SURFACE COURSE:	1-1/2" SUPERPAVE BRIDGE SURFACE COURSE 9.5 POLYMER (SSC-B-9.5 - P) OVER
INTERMEDIATE	1-1/2" SUPERPAVE BRIDGE PROTECTIVE COURSE 9.5 POLYMER (SPC-B-9.5 - P) COURSE

PAVEMENT MILLING AND OVERLAY

SURFACE COURSE:	1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
PAVEMENT MILLING:	1-1/2" PAVEMENT FINE MILLING

PROPOSED HMA DRIVEWAYS

SURFACE:	1-1/2" SURFACE COURSE OVER
INTERMEDIATE:	2-1/2" INTERMEDIATE COURSE OVER
FOUNDATION:	8" GRAVEL BORROW

PROPOSED GRAVEL DRIVEWAYS

SURFACE:	8" GRAVEL BORROW

PAVEMENT NOTES

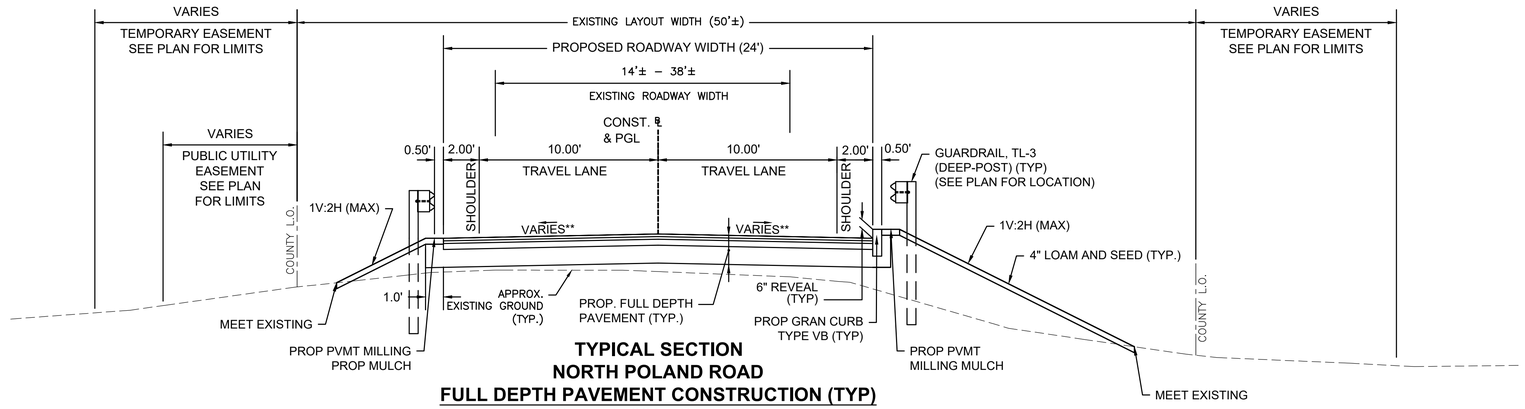
1. MILLING SHALL ESTABLISH PROP CROSS SLOPE AND/OR AS SHOWN ON PLANS TO PROVIDE A CONSISTENT HMA OVERLAY THICKNESS. LEVELING COURSE SHALL BE SUPERPAVE
2. ALL HMA FOR PATCHING. ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE INSTALLED PER SECTION 450.43G2.

** SLOPE VARIES IN SUPERELEVATION TRANSITION

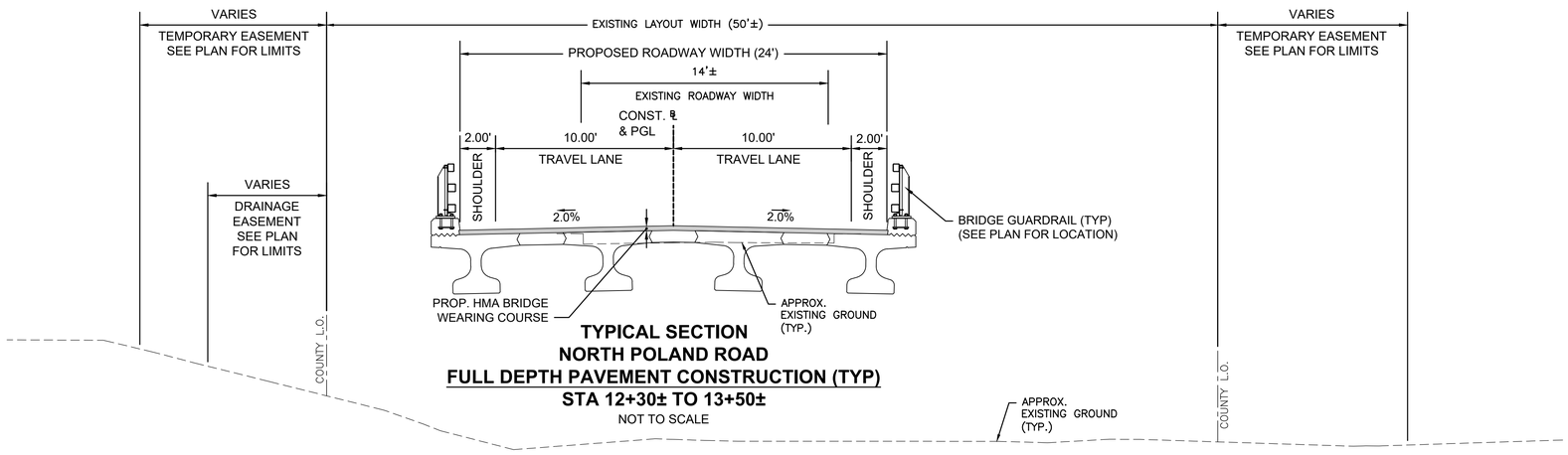
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	05	42
PROJECT FILE NO.	609082		

TYPICAL SECTIONS



TYPICAL SECTION
NORTH POLAND ROAD
FULL DEPTH PAVEMENT CONSTRUCTION (TYP)
STA 14+02± TO 14+50±
NOT TO SCALE



TYPICAL SECTION
NORTH POLAND ROAD
FULL DEPTH PAVEMENT CONSTRUCTION (TYP)
STA 12+30± TO 13+50±
NOT TO SCALE

HIGHWAY GUARD DETAILS

TRAILING ANCHORAGE (POWDER COATED) - STA 11+23 LT
GUARDRAIL, TL-3 (SINGLE FACED POWDER COATED) - STA 11+33 TO 11+95 LT

TRAILING ANCHORAGE (POWDER COATED) - STA 11+78 RT
GUARDRAIL, TL-3 (SINGLE FACED POWDER COATED) - STA 11+88 TO 12+16 RT

TRANSITION TO BRIDGE RAIL (POWDER COATED) - STA 11+95 TO 12+33 LT

TRANSITION TO BRIDGE RAIL (POWDER COATED) - STA 12+16 TO 12+40 RT

TRANSITION TO BRIDGE RAIL (POWDER COATED)- STA 13+33 TO 13+66 LT

TRANSITION TO BRIDGE RAIL (POWDER COATED) - STA 13+40 TO 13+78 RT

GUARDRAIL, TL-3 (SINGLE FACED POWDER COATED) - STA 13+66 TO 13+90 LT

GUARDRAIL, TL-3 (SINGLE FACED POWDER COATED) - STA 13+78 TO 14+02 RT

GUARDRAIL, TL-3, DEEP POST (SINGLE FACED AND POWDER COATED) - STA 13+90 TO 14+30 LT
TRAILING ANCHORAGE (POWDER COATED) - STA 14+40 LT

GUARDRAIL, TL-3, DEEP POST (SINGLE FACED AND POWDER COATED) - STA 14+02 TO 14+40 RT
TRAILING ANCHORAGE (POWDER COATED) - STA 14+50 RT

CURB TIE & GRADING PLAN

SEE SHEET 08

UTILITY PLANS

SEE SHEET 09

SUMMARY OF RESOURCE AREA IMPACTS

LEGEND	TYPE	TEMPORARY	PERMANENT	RESTORATION
	BANK	84 FT	N/A	N/A
	LUW	786 SF	N/A	47 SF

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	06	42
	PROJECT FILE NO. 609082		

CONSTRUCTION PLAN

609082_HDI(4657 CONST).DWG Plotted on 24-Jul-24 1:24 PM

BEGINING OF PROJECT
STA. 10+10.00
N 3013722.1531
E 320972.8264
MEET EXISTING

END OF PROJECT
STA. 16+00.00
N 3014277.5744
E 320852.3110
MEET EXISTING

NORTH POLAND ROAD (PUBLIC)
RILEY ROAD (DISCONTINUED) (PRIVATE)
POLAND BROOK
SOUTH RIVER

DONALD E. BURNETT AND JOSEPHINE L. BURNETT
BK. 1274 PG. 478
PARCEL ID 409-10-1
42 NORTH POLAND RD

N/F
STEVEN F. RICARDI AND TINA M. OLANYK
BK. 3347 PG. 113
PARCEL ID 409-4-2
67 NORTH POLAND RD

DONALD E. BURNETT AND JOSEPHINE L BURNETT
BK. 1274 PG. 478
PARCEL ID 414-14-0
0 NORTH POLAND RD

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	DIMENSIONS (in) LETTER HEIGHT	DIMENSIONS (in) VERTICAL SPACING	DIMENSIONS (in) ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
R7-1	12 in	18 in	NO PARKING ANY TIME	2009 MUTCD STANDARD			1	WHITE	RED	RED	P-5 1	1.5	1.5

SCALE: 1" = 20'

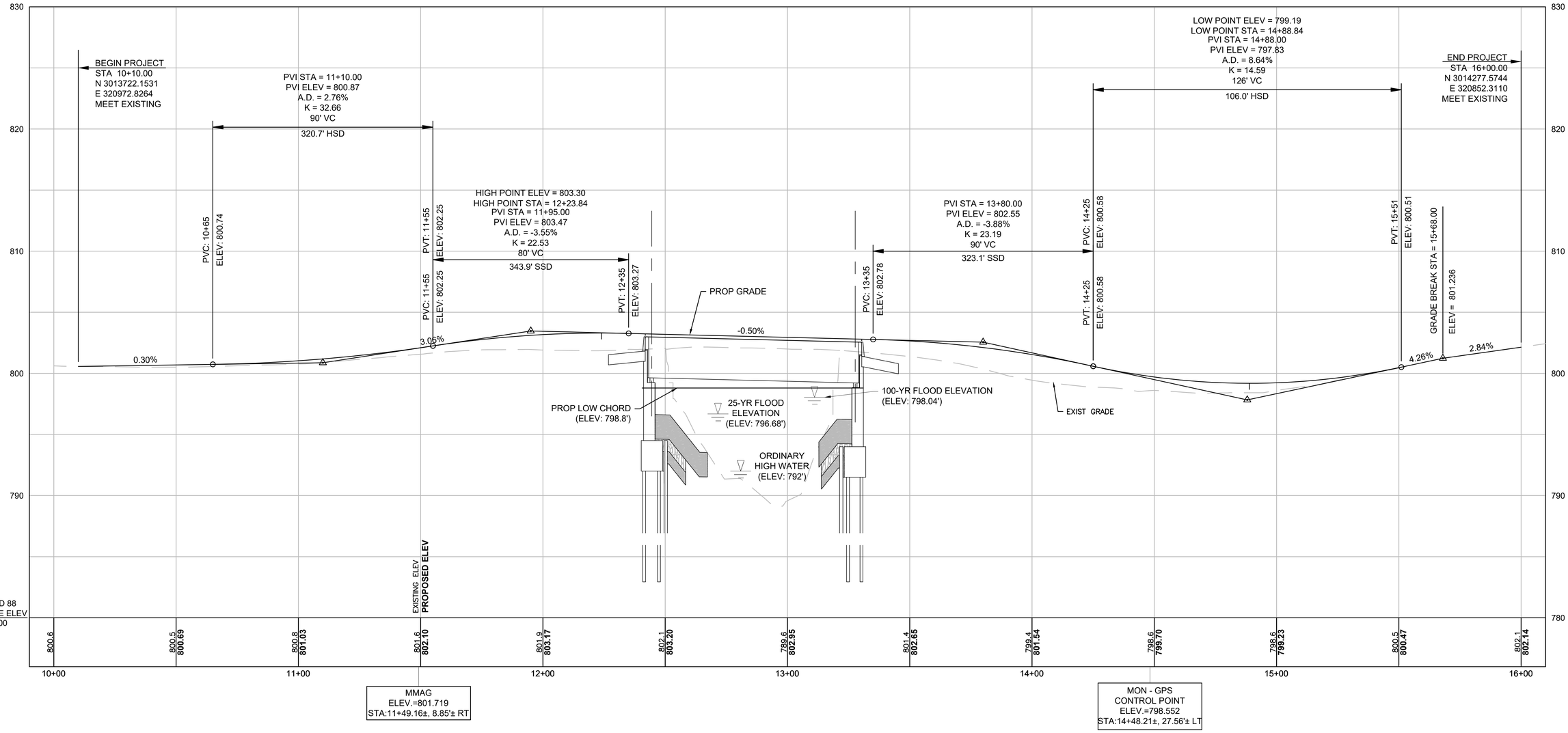
FOR PROFILE SEE SHEET 07

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	07	42
PROJECT FILE NO.	609082		

PROFILE

NORTH POLAND RD

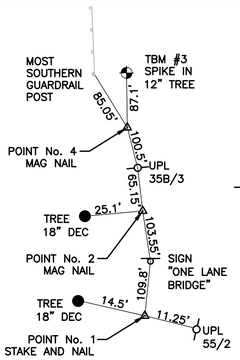


NOTE:

1. THE VERTICAL DATUM IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID 12B).

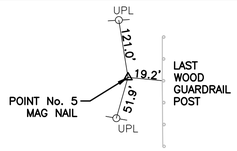
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

609082_HD(4657 PROF).DWG Plotted on 24-Jul-24 1:31 PM



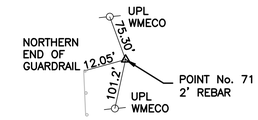
TRAVERSE TIE POINT No. 1, 2, 4

NOT TO SCALE



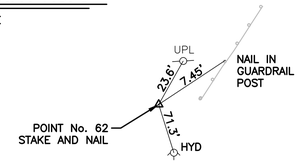
TRAVERSE TIE POINT No. 5

NOT TO SCALE



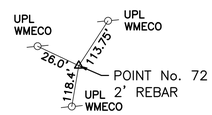
TRAVERSE TIE POINT No. 71

NOT TO SCALE



TRAVERSE TIE POINT No. 62

NOT TO SCALE



TRAVERSE TIE POINT No. 72

NOT TO SCALE

NOTES:
1. THIS PLAN IS BASED UPON AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY GCG ASSOCIATES BETWEEN JUNE 10, 2020 AND JULY 1, 2020.
2. NORTH IS BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD-83) (2011) EPOCH 2010.00, MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, MAINLAND ZONE. COORDINATES ARE BASED ON CONTROL AS PROVIDED BY MASSDOT SURVEY SCALE FACTOR FOR THIS PROJECT HAS BEEN CALCULATED TO BE 0.999945237705025.
3. VERTICAL CONTROL IS BAED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 AS PROVIDED BY MASSDOT SURVEY SECTION FOR STATIONS 2557 AND 2558.
4. ALL UNITS FOR MASSDOT PROJECTS ARE COLLECTED AND SHOWN IN US SURVEY FEET.
5. FOR TRAVERSE TIE INFORMATION SEE MASSACHUSETTS HIGHWAY FIELD BOOK NO. 40556.
6. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY HIGHWAY BOUND OR PRIVATE PROPERTY PIN THAT MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION, TO ITS LOCATION JUST PRIOR TO CONSTRUCTION.

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	08	42
PROJECT FILE NO.	609082		

CURB TIE & GRADING PLAN

NORTH POLAND ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	3013712.342	320974.761		N11°09'23"W 139.26'	11+39.26	3013848.973	320947.815
C1	11+39.26	3013848.973	320947.815	R=335.00' Δ=15°46'27" L=92.23' T=46.41'		12+31.49	3013935.880	320917.817
L2	12+31.49	3013935.880	320917.817		N26°55'51"W 131.76'	13+63.25	3014053.351	320858.141
C2	13+63.25	3014053.351	320858.141	R=333.00' Δ=24°11'08" L=140.57' T=71.35'		15+03.82	3014188.223	320822.411
C3	15+03.82	3014188.223	320822.411	R=125.00' Δ=35°36'56" L=77.70' T=40.15'		15+81.52	3014262.052	320842.280
L3	15+81.52	3014262.052	320842.280		N32°52'13"E 93.49'	16+75.00	3014340.571	320893.019

Curve Table			
Curve #	Delta	Radius	Length
C4	0°39'00"	345.00	3.91
C5	18°03'55"	321.00	101.21

BEGINING OF PROJECT
STA. 10+10.00
N 3013722.1531
E 320972.8264
MEET EXISTING

END OF PROJECT
STA. 16+00.00
N 3014277.5744
E 320852.3110
MEET EXISTING

NORTH POLAND ROAD
(PUBLIC)

RILEY ROAD
(DISCONTINUED) (PRIVATE)

POLAND BROOK

SOUTH RIVER

DONALD E. BURNETT AND JOSEPHINE L. BURNETT BK. 1274 PG. 478 PARCEL ID 409-10-1 42 NORTH POLAND RD

DONALD E. BURNETT AND JOSEPHINE L BURNETT BK. 1274 PG. 478 PARCEL ID 414-14-0 0 NORTH POLAND RD

N/F STEVEN F. RICARDI AND TINA M. OLANYK BK. 3347 PG. 113

3
N: 3013720.471'
E: 320851.626'
EL: 794.561'
MSTN

57
N: 3013803.778'
E: 320884.842'
EL: 794.706'
MSTN

51
N: 3013937.312'
E: 320902.180'
EL: 800.944'
STAKE AND NAIL

55
N: 3013968.345'
E: 320882.394'
EL: 791.557'
MSTN

5
N: 3014032.217'
E: 320861.537'
EL: 801.623'
MMAG 5

2557
N: 3014127.285'
E: 320802.765'
EL: 798.552'
MON - GPS CONTROL POINT

62
N: 3014259.936'
E: 320826.627'
EL: 801.471'
MSTN

72
N: 3014269.348'
E: 320862.217'
EL: 801.462'
2' REBAR SET

52
N: 3014270.024'
E: 320895.403'
EL: 795.975'
STAKE AND NAIL

71
N: 3014081.110'
E: 320868.559'
EL: 796.392'
MREB 71

56
N: 3014019.187'
E: 320915.235'
EL: 790.232'
MSTN

4
N: 3013860.620'
E: 320954.391'
EL: 801.719'
MMAG

BENCHMARK: SPIKE UP 2' EL=802.512'

BENCHMARK: SPIKE IN TREE UP 1.5' EL=803.825'

BENCHMARK: SPIKE UP 1.5FT EL=798.727'

BENCHMARK:

1940 COUNTY LAYOUT SIDELINE BOOK 840 PAGE 196

1811 NORTH POLAND ROAD SIDELINE

20' WIDE HYDRANT EASEMENT TOWN OF CONWAY BOOK 3552 PAGE 183

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE SEE SHEET 07

609082_HD(4657 TIE).DWG Plotted on 24-Jul-24 1:32 PM

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	09	42
PROJECT FILE NO.	609082		

UTILITY PLAN

609082_HDI4657 UTIL).DWG Plotted on 24-Jul-24 1:33 PM

PR-DRAIN STRUCTURE TABLE					
NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-2	14+85.61 -10.97' LT	799.05		I=796.30' (FLARED END)	6" FLAT TOP 1 COURSE BRICK LOW POINT
CBCI-1	14+56.51 11.16' RT	799.31		I=795.00' (LB-2)	
FLARED END	14+91.38 28.47' RT		I=796.10' (CB-2)		
LB-2	14+56.94 19.71' RT	798.10	I=794.50' (CBCI-1)	I=794.50' (LB-3)	LEACHING BASIN BAR GRATE
LB-3	14+67.45 21.04' RT	798.10	I=794.50' (LB-2)	I=794.50' (LB-4)	LEACHING BASIN BAR GRATE
LB-4	14+77.80 22.11' RT	798.10	I=794.50' (LB-3)		LEACHING BASIN BAR GRATE

BEGINING OF PROJECT
STA. 10+10.00
N 3013722.1531
E 320972.8264
MEET EXISTING

N 3013728.9018
E 320944.6454

PUBLIC UTILITY EASEMENT LINE

PROP GUY POLE
W/ 15' GUY (BO)
N 3013739.3442
E 320955.4136

1811 NORTH POLAND ROAD SIDELINE

10+00

NORTH POLAND ROAD

PC +39.26

11

12

13

PT +81.49

PC +63.25

14

15

PCC +03.82

NORTH POLAND ROAD

RET UP
R&R 15' GUY (BO)
N 3013765.1072
E 320994.5743

PUBLIC UTILITY
EASEMENT LINE
TEMP CONST EASEMENT LINE
(TYP)

PERM OHW (BO)

PROP MODIFIED
ROCKFILL (ITEM 986.)

N 3013924.6028
E 320945.6332

PROP PERM UP
W/ 15' GUY (BO)
PUBLIC UTILITY EASEMENT LINE

N 3013929.5383
E 320959.7990

PERM OHW (BO)

TEMP CONST EASEMENT LINE (TYP)

RILEY ROAD

N/F
STEVEN F. RICARDI
AND TINA M. OLANYK
BK. 3347 PG. 113
PARCEL ID 409-4-2
67 NORTH POLAND RD

DONALD E. BURNETT
AND JOSEPHINE L. BURNETT
BK. 1274 PG. 478
PARCEL ID 409-10-1
42 NORTH POLAND RD

N 3013976.2161
E 320832.9829

TEMP R&R
DEEP SET UP & GUY
FOR CONSTRUCTION
TEMP 15' GUY (BO)

N 3013982.1317
E 320846.7663

DRAINAGE EASEMENT LINE

BRIDGE NO. C-20-004

END OF 1940
COUNTY LAYOUT

TEMP CONST
EASEMENT LINE (TYP)

REM OHW FOR
CONSTRUCTION (BO)

1940 COUNTY LAYOUT SIDELINE
BOOK 840 PAGE 196

N 3014114.6018
E 320810.6928

TEMP UP (BO)
TEMP OHW (BO)

N 3014212.7929
E 320770.0023

TEMP UP
TEMP 15' GUY (BO)

N 3014209.9448
E 320784.7278

TEMP OHW (BO)

R&R UP & 15' GUY
PROP 12' GUY (BO)

N 3014280.6178
E 320838.2663

PUBLIC UTILITY
EASEMENT LINE

END OF PROJECT
STA. 16+00.00
N 3014277.5744
E 320852.3110
MEET EXISTING

CB-2

CBCI-1

LB-2

REM UP (BO)

LB-3

LB-4

PROP 38' - 10" DIP
RET HYD

PROP 4' - 12" PIPE OPTION

PROP 4' - 12" PIPE OPTION
PROP 4' - 12" PIPE OPTION

PROP 1' WIDE (MIN.)
VEGETATED LEVEL
SPREADER

N 3014089.2947
E 320863.6090

PROP PERM UP
W/ 25' PUSH BRACE (BO)
N 3014096.6840
E 320887.7452

DONALD E. BURNETT
AND JOSEPHINE L BURNETT
BK. 1274 PG. 478
PARCEL ID 414-14-0
0 NORTH POLAND RD

PUBLIC UTILITY EASEMENT LINE

PROP MODIFIED
ROCKFILL (ITEM 986.)

PROP 12" RCP FLARED END
FILL ANNULAR SPACE BETWEEN
PIPE AND FLARED END WITH
BRICK AND MORTAR (ITEM 227.4)

PERM OHW (BO)

N 3014285.5161
E 320824.0898
N 3014292.5166
E 320836.6918

16+75

1940 COUNTY LAYOUT SIDELINE
BOOK 840 PAGE 196

20' WIDE HYDRANT EASEMENT
TOWN OF CONWAY
BOOK 3552 PAGE 183

POLAND BROOK

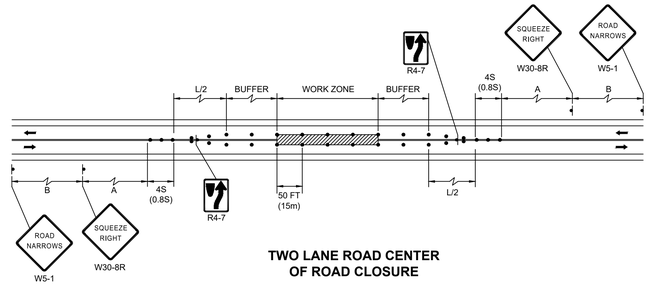
SOUTH RIVER

0 20 50 100
SCALE: 1" = 20'

CONSTRUCTION SIGN SUMMARY

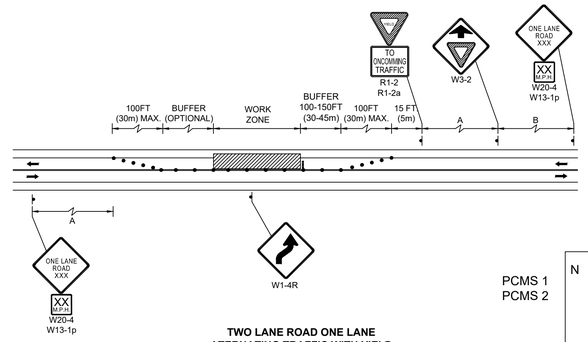
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	DIMENSIONS (in) LETTER HEIGHT	DIMENSIONS (in) VERTICAL SPACING	DIMENSIONS (in) ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
R1-2	36 in	36 in		SEE 2009 MUTCD STANDARDS			1	WHITE	BLACK	BLACK	MOUNT W/ R1-2a	9.0	9.0
R1-2a	24 in	18 in	TO ONCOMMING TRAFFIC				1	WHITE	BLACK	BLACK	MOUNT W/ R1-2	3.0	3.0
R4-7	24 in	30 in					2	WHITE	BLACK	BLACK	P-5 2	5.0	5.0
R11-2	48 in	30 in	ROAD CLOSED				2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	10.0	20.0
R11-3a	48 in	30 in	ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY				1	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	10.0	10.0
R11-3b (Mod)	60 in	30 in	N POLAND RD BRIDGE CLOSED LOCAL TRAFFIC ONLY	6 5 4	4 3.5 3.5 4		5	WHITE	BLACK	BLACK	P-5 (2) 5	12.5	62.5
R11-4	60 in	30 in	ROAD CLOSED TO THRU TRAFFIC				1	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	12.5	12.5
W1-4R	36 in	36 in					1	F.L. ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
W3-2	36 in	36 in					1	F.L. ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
W5-1	36 in	36 in	ROAD NARROWS				2	F.L. ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
W13-1P	30 in	30 in	XX M.P.H.				2	F.L. ORANGE	BLACK	BLACK	MOUNT W/ W20-4	6.25	6.25
W20-2	36 in	36 in	DETOUR				1	F.L. ORANGE	BLACK	BLACK	P-5 2	9.0	18.0
W20-3a	36 in	36 in	ROAD CLOSED 1000 FT				1	F.L. ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
W20-3b	36 in	36 in	ROAD CLOSED 500 FT				1	F.L. ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
W20-4	36 in	36 in	ONE LANE ROAD XXX				2	F.L. ORANGE	BLACK	BLACK	MOUNT W/ W13-1P	9.0	9.0
MA-W30-8R	SEE MASSDOT STANDARDS						2	SEE MASSDOT STANDARDS			P-5 2	9.0	9.0
M4-8a	24 in	18 in	END DETOUR				2	F.L. ORANGE	BLACK	BLACK	P-5 2	3.0	6.0
M4-9L	30 in	24 in	DETOUR				3	F.L. ORANGE	BLACK	BLACK	MOUNT W/ MA-D3-1	5.0	15.0
M4-9R	30 in	24 in	DETOUR				3	F.L. ORANGE	BLACK	BLACK	MOUNT W/ MA-D3-1	5.0	15.0
M4-9V	30 in	24 in	DETOUR				6	F.L. ORANGE	BLACK	BLACK	MOUNT W/ MA-D3-1	5.0	20.0
M4-10L	48 in	18 in	DETOUR				1	F.L. ORANGE	BLACK	BLACK	MOUNT W/ R11-4	6.0	6.0
M4-10R	48 in	18 in	DETOUR				2	F.L. ORANGE	BLACK	BLACK	MOUNT ON BARRICADE	6.0	6.0
W16-8p	60 in	30 in	N POLAND RD	6/4D	3.00 3.00		13	F.L. ORANGE	BLACK	BLACK	P-5 11	4.0	44.0

TWO LANE ROAD
CENTER OF ROAD CLOSURE
NOT TO SCALE



TWO LANE ROAD CENTER OF ROAD CLOSURE

TWO LANE ROAD
ONE LANE ALTERNATING
TRAFFIC WITH YIELD
NOT TO SCALE



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC WITH YIELD

NOTES:

1. SEE THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" FOR THE LATEST SPECIFICATIONS ON TEXT DIMENSIONS AND COLOR. (ALSO SEE SECTION M9.30.0 TYPE III MHD STANDARD SPECIFICATION, THE "MASSACHUSETTS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS HIGHWAY DEPARTMENT).
2. ALL P5 POSTS SHALL BE TELESCOPIC, RECTANGULAR TYPE POSTS, CONFORMING TO THE DIMENSIONS AND REQUIREMENTS OF THE MHD "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS" (LATEST EDITION).
3. ALL SIGNS WITH ORANGE BACKGROUNDS SHALL BE FLUORESCENT (F.L.) ORANGE

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	10	42
	PROJECT FILE NO. 609082		

DETOUR PLAN

PCMS 1
PCMS 2

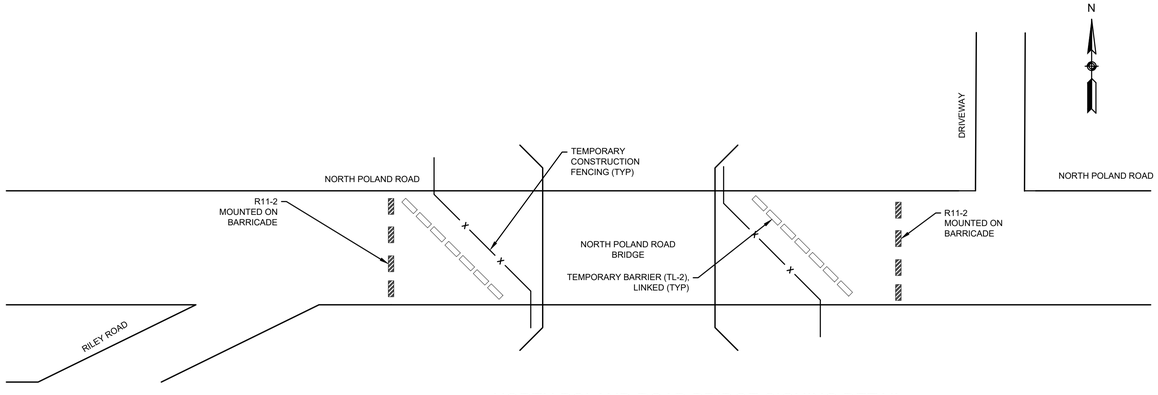
N P O L A N D	C L O S E D
R O A D	S T A R T I N G
B R I D G E	X X / X X

NOTE: PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PLACED TWO WEEKS PRIOR TO DETOUR IMPLEMENTATION.

	PANEL 1	PANEL 2
PCMS 1 PCMS 2	N P O L A N D R O A D B R I D G E	C L O S E D A H E A D

NOTE: PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PLACED FOR THE FIRST TWO WEEKS OF DETOUR.

PORTABLE CHANGEABLE MESSAGE SIGNS



NORTH POLAND ROAD BRIDGE SIGNING DETAIL
NOT TO SCALE

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	11	42
PROJECT FILE NO.	609082		

DETOUR PLAN

609082_HD(4657 DETOUR).DWG Plotted on 24-Jul-24 1:33 PM

N

ASHFIELD ROAD (RT 116)

NORTH POLAND ROAD

MAIN POLAND ROAD

PROJECT LOCATION

SEE INSET 1

SEE INSET 2

RILEY RD

PINE HILL RD

BULLITT RD

ORCHARD ST

OLD CRICKET HILL RD

WHATELY RD

FIELDS HILL RD

MA-D3-1
M4-9V

MA-D3-1
M4-9V

MA-D3-1
M4-9V

MA-D3-1

W20-3b

W20-3a

R11-3b (MOD)
M4-10R

R11-3A
W/
M4-10R
UNDERNEATH
MOUNTED
ON
TYPE
III
BARRICADE

PMCS-1

R11-3b
(MOD)

M4-8a

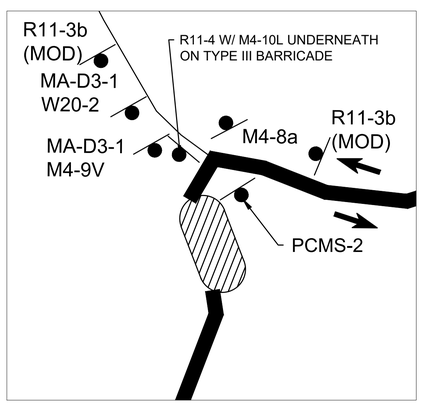
M4-9V

R11-3b (MOD)

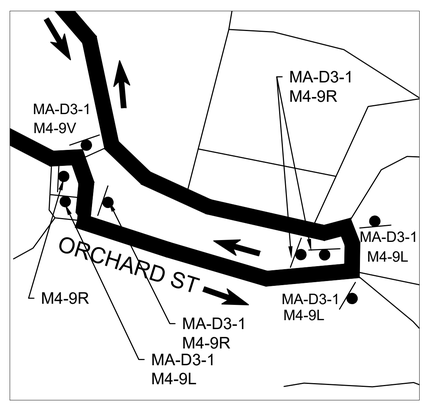
MA-D3-1
M4-9V

MA-D3-1
M4-9L

SCALE: NOT TO SCALE



INSET 1
NOT TO SCALE



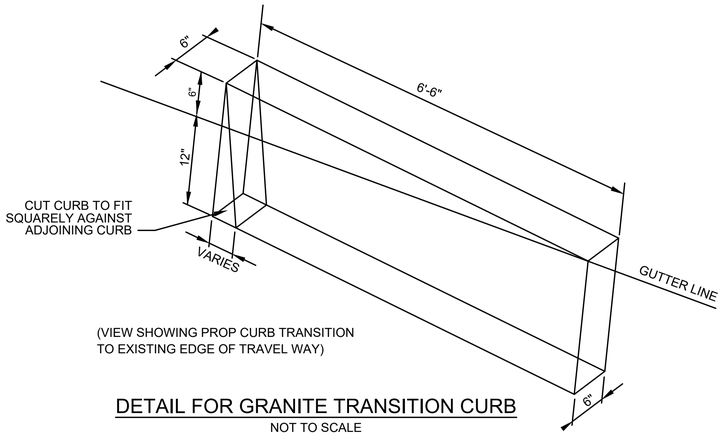
INSET 2
NOT TO SCALE

NOTE:
1. ALL ROADWAYS ALONG THE PROPOSED DETOUR ROUTE ARE PUBLIC ROADS.
2. ALL SIGNS ALONG THE DETOUR ROUTE ARE PROPOSED WITHIN EXISTING PUBLIC LAYOUT.

CONWAY
NORTH POLAND ROAD

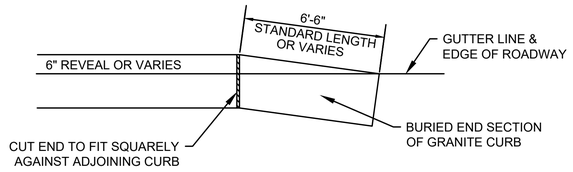
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	12	42
	PROJECT FILE NO. 609082		

CONSTRUCTION DETAILS

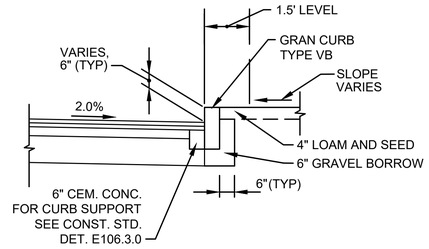


(VIEW SHOWING PROP CURB TRANSITION TO EXISTING EDGE OF TRAVEL WAY)

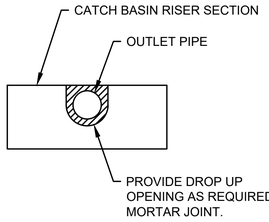
DETAIL FOR GRANITE TRANSITION CURB
NOT TO SCALE

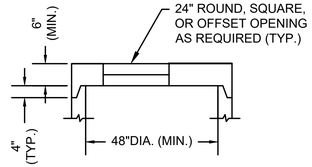


DETAIL FOR TRANSITION CURB
PROP CURB TO EXISTING EDGE OF TRAVEL WAY
NOT TO SCALE

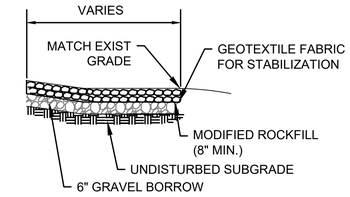


DETAIL FOR GRANITE CURB WITHOUT SIDEWALK
NOT TO SCALE



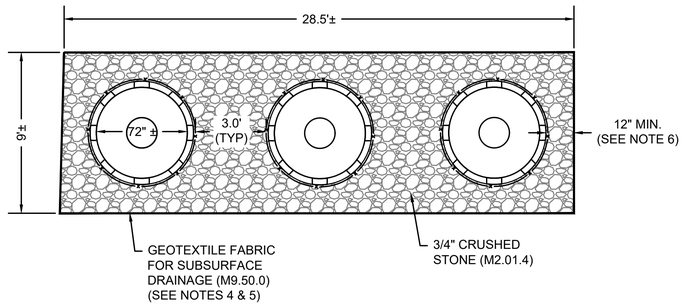


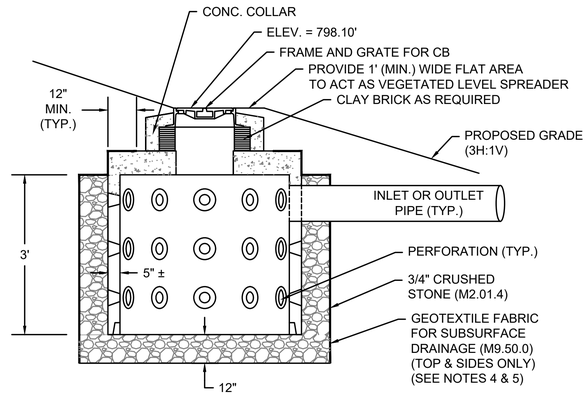
ALTERNATE TOP SLAB
NOT TO SCALE



MODIFIED ROCKFILL DETAIL
NOT TO SCALE

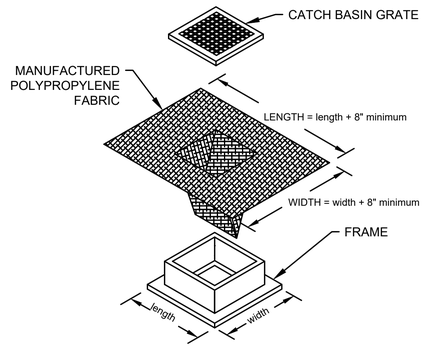
SHALLOW PIPE INSTALLATION AT CATCH BASIN DETAIL
NOT TO SCALE





NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. AASHTO H-20 LOADING.
3. STEEL REINFORCEMENT PER ASTM A615 GRADE-60.
4. FOR LEACHING BASINS INSTALLED IN SERIES, GEOTEXTILE SHALL ENVELOPE THE OUTER PERIMETER OF CRUSHED STONE AND SHALL NOT BE INSTALLED VERTICALLY BETWEEN LEACHING BASINS.
5. PROVIDE A MINIMUM 12" OVERLAP BETWEEN GEOTEXTILE SHEETS.
6. A CONTINUOUS BED OF CRUSHED STONE SHALL BE PROVIDED BETWEEN LEACHING BASINS INSTALLED IN SERIES.

LEACHING BASIN (LB) WITH LEVEL SPREADER
NOT TO SCALE



NOTES:
1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN FRAME DIMENSIONS BY A MINIMUM OF 8".
2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC OVER CATCH BASIN FRAME. REPLACE CATCH BASIN GRATE TO SECURE POLYPROPYLENE FABRIC IN PLACE.

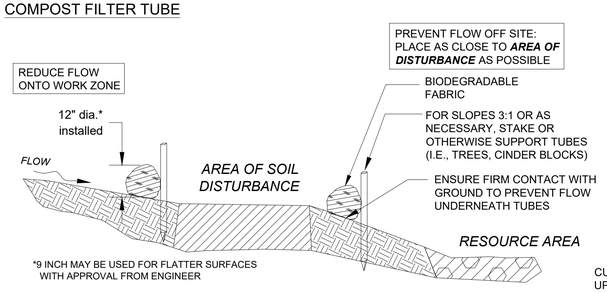
CATCH BASIN EROSION CONTROL PROTECTION (TYP)
NOT TO SCALE

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	13	42
	PROJECT FILE NO. 609082		

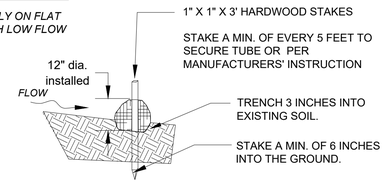
CONSTRUCTION DETAILS

COMPOST FILTER TUBE

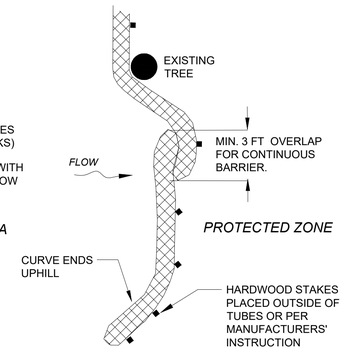


12 INCH STRAW WATTLE

TO BE USED ONLY ON FLAT SURFACES WITH LOW FLOW



SECTION



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

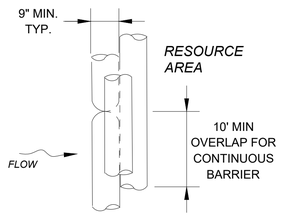
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

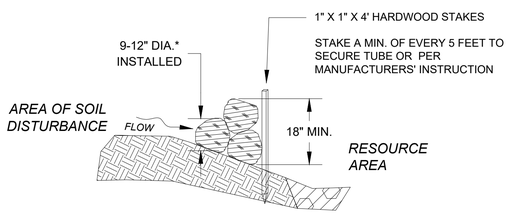
PLAN VIEW

SEDIMENT BARRIERS - COMPOST FILTER TUBES & STRAW WATTLES

NOT TO SCALE



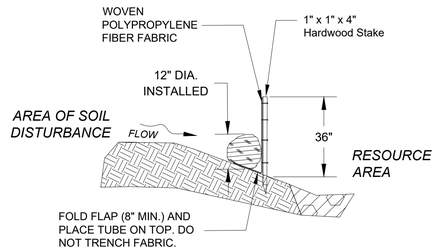
PLAN VIEW



SECTION

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

NOT TO SCALE



SECTION

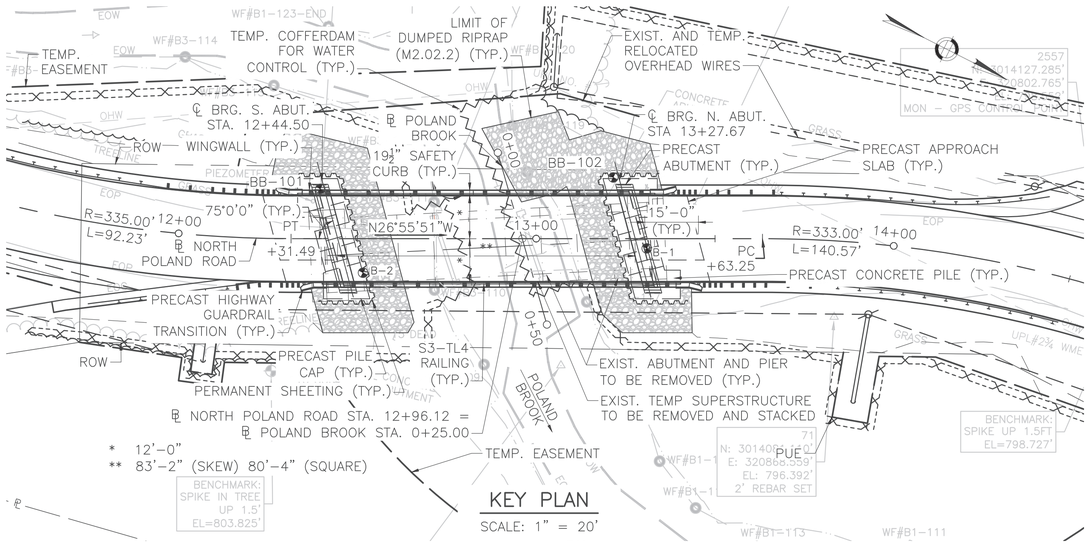
COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

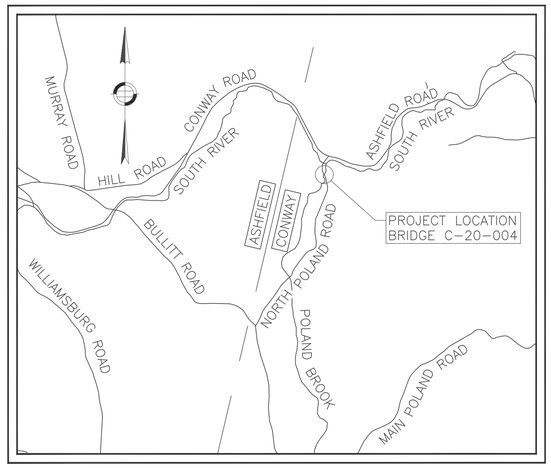
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	14	42
PROJECT FILE NO.	609082		

BRIDGE
KEY PLAN, PROFILE, LOCUS, & INDEX

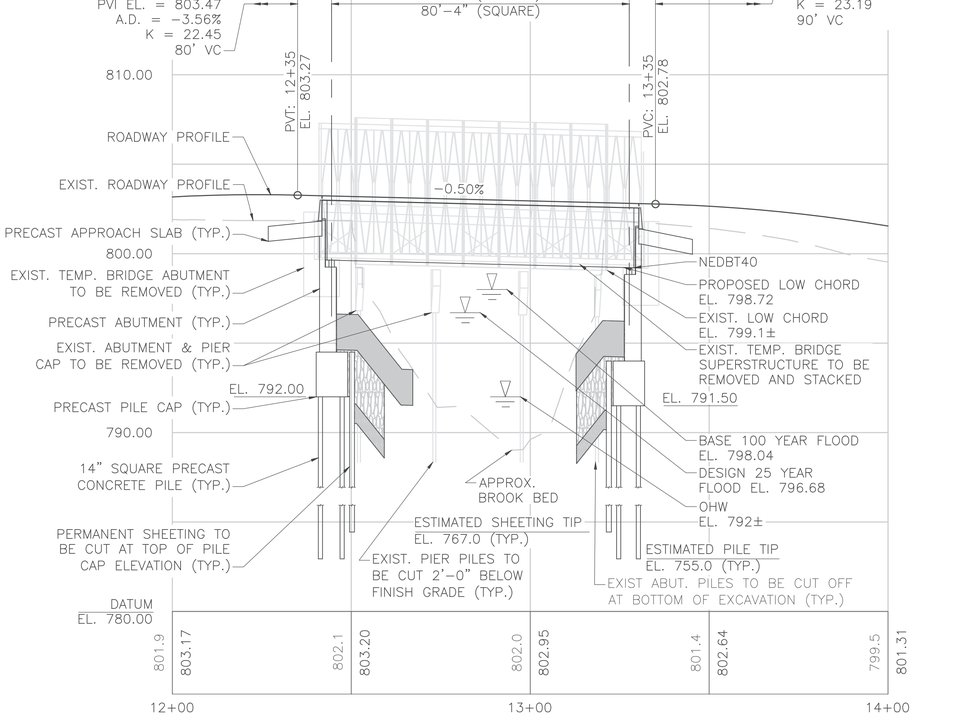


KEY PLAN
SCALE: 1" = 20'

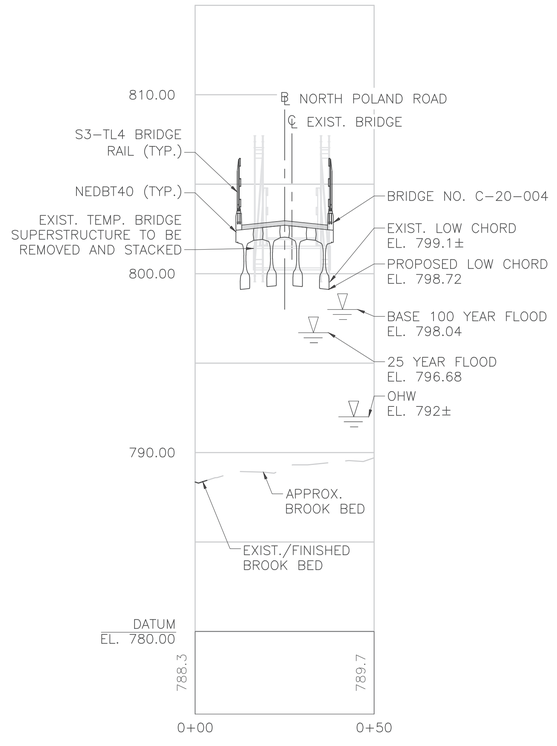


LOCUS
1" = 2000'

SHEET INDEX:



NORTH POLAND ROAD PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: ¼" = 1'-0"



POLAND BROOK PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: ¼" = 1'-0"

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER W. JONES
STRUCTURAL
No. 41025
REGISTERED PROFESSIONAL ENGINEER

Christopher W Jones
Digitally signed by Christopher W Jones
Date: 2024.08.02 09:26:16 -04'00'

BETA
www.BETA-Inc.com
315 NORWOOD PARK SOUTH
NORWOOD, MA 02062

08/03/2024 | ISSUED FOR CONSTRUCTION

massDOT
Massachusetts Department of Transportation
Highway Division

PROPOSED BRIDGE
CONWAY
NORTH POLAND ROAD
OVER POLAND BROOK

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

Alexander K. Bardow, P.E.
Digitally signed by Alexander K. Bardow, P.E.
Date: 2024.08.02 11:53:16 -04'00'
STATE BRIDGE ENGINEER

Carrie Lavallee, P.E.
Digitally signed by Carrie Lavallee, P.E.
Date: 2024.08.10 06:31:33 -04'00'
CHIEF ENGINEER

609082_BR1(C20004).DWG Plotted on 24-Jul-2024 1:36 PM

03-August-2024 Final Structural Submittal (SF)

GENERAL NOTES

DESIGN:

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

MASSDOT BENCH MARK:

BENCH MARK:	SPIKE	SPIKE	SPIKE
LOCATION:	UPL35B/3 UP 2'	IN TREE UP 1.5'	IN UPL WMECO UP 1.5'
NORTHING:	3013763.435	3013947.641	3014151.548
EASTING:	320979.415	320953.289	320842.498
ELEVATION:	802.512	803.825	798.727

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

DATE:

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

SURVEY NOTEBOOKS:

AN INSTRUMENT FIELD SURVEY WAS PERFORMED BY GCG ASSOCIATES, INC. OF WILMINGTON, MA IN IN JUNE 2020 AND BETWEEN JANUARY 2023 AND MAY 2023.

SURVEY FIELDNOTES CAN BE FOUND IN MASSDOT SURVEY NOTEBOOK NO. 40556.

THE COORDINATES, IN FEET, ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 83).

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED 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.

ARTESIAN CONDITIONS ARE PRESENT AT THE SITE AND WERE ENCOUNTERED DURING DRILLING.

NO CONSTRUCTION (PILES, SUPPORT OF EXCAVATION, AND WATER CONTROL) SHALL EXTEND BELOW ELEVATION 747.0 BECAUSE OF UNDERLYING ARTESIAN CONDITIONS.

REFER TO THE GEOTECHNICAL REPORT DATED JULY 2022 AND PIEZOMETER DATA FOR ADDITIONAL INFORMATION REGARDING ARTESIAN CONDITION AND PIEZOMETRIC ELEVATION.

UNSUITABLE MATERIAL:

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

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	#7 BARS
1. NONE	16"	19"	23"	33"
2. 12" OF CONCRETE BELOW BAR	20"	25"	30"	43"
3. COATED BARS, COVER < $3d_b$, OR CLEAR SPACING < $6d_b$	23"	29"	34"	50"
4. COATED BARS, ALL OTHER CASES	18"	23"	27"	40"
5. CONDITION 2. AND 3.	26"	32"	39"	64"
6. CONDITION 2. AND 4.	24"	30"	36"	52"

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

MEMBRANE WATERPROOFING:

ALL MEMBRANE WATERPROOFING USED ON BRIDGE DECKS SHALL BE MEMBRANE WATERPROOFING FOR BRIDGE DECKS.

CONCRETE SCHEDULE:

ALL CONCRETE SHALL BE 5000 PSI HP CONCRETE, EXPECT AS NOTED BELOW: BEAM CLOSURE POUR CONCRETE SHALL BE 8000 PSI HP CONCRETE. IF POURED INTEGRALLY WITH THE BEAM CLOSURE POURS, END AND INTERMEDIATE DIAPHRAGM CONCRETE SHALL BE 8000 PSI HP CONCRETE.

PRECAST CONCRETE BEAM

BASIC DESIGN STRESSES:

PRESTRESSED CONCRETE

STRENGTH AT RELEASE — f'_{ci} = 4,500 PSI

STRENGTH — f'_c = 8,000 PSI

REINFORCING STEEL — f_y = 60,000 PSI

PRESTRESSING STEEL — f_u = 270,000 PSI

STRESS LIMITS AT RELEASE

MAX. COMPRESSION — $0.65f'_{ci}$ = 2,925 PSI

MAX. TENSION — 200 PSI

STRESS LIMITS AT SERVICE AFTER LOSSES

MAX. COMPRESSION — $0.6f'_c$ = 4,800 PSI

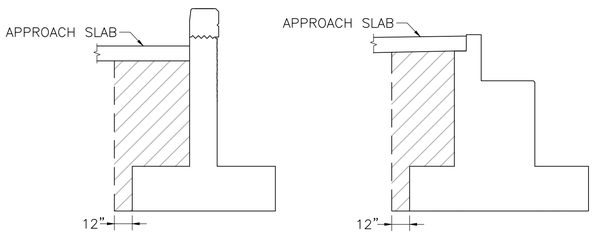
MAX. TENSION — $0.0948\sqrt{f'_c}$ = 268 PSI

STRESS LIMITS AT DL + PS AFTER LOSSES

MAX. COMPRESSION — $0.45f'_c$ = 3,600 PSI

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ITEM DESCRIPTION	QUANTITY	UNITS
DEMOLITION OF OF BRIDGE NO. C-20-004	1	LS
UNCLASSIFIED EXCAVATION	370	CY
BRIDGE EXCAVATION	410	CY
MUCK EXCAVATION	20	CY
CLASS B ROCK EXCAVATION	56	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	70	CY
STREAMBED RESTORATION	1	LS
CRUSHED STONE	164	TON
CRUSHED STONE FOR BRIDGE FOUNDATIONS	60	TON
SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P)	22	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P)	22	TON
GEOTEXTILE FABRIC FOR STABILIZATION	341	SY
PRECAST-PRESTRESSED CONCRETE PILE - 14 INCH	1774	FT
DYNAMIC LOAD TEST BY CONTRACTOR	2	EA
STEEL SHEETING	96600	LB
DUMPED RIPRAP	499	TON
CONTROL OF WATER - STRUCTURE NO. C-20-004	1	LS
TEMPORARY BRIDGE NO. C-20-004 REMOVED AND STACKED	1	LS
BRIDGE STRUCTURE, BRIDGE NO. C-20-004	1	LS



WINGWALL ABUTMENT

NOTE:
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

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

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	15	42
	PROJECT FILE NO. 609082		

BRIDGE
GENERAL NOTES & ESTIMATED QUANTITIES

TRAFFIC DATA	ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR	2031	
AVERAGE DAILY TRAFFIC - PRESENT	146	
AVERAGE DAILY TRAFFIC - DESIGN YEAR	150	
DESIGN HOURLY VOLUME	15	
DIRECTIONAL DISTRIBUTION	66.7%	
TRUCK PERCENTAGE - AVERAGE DAY	12.6%	
TRUCK PERCENTAGE - PEAK HOUR	20%	
DESIGN SPEED	30 MPH	
DIRECTIONAL DESIGN HOURLY VOLUME	10	

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000 YRS
DESIGN SPECTRA	
As	0.096
SDs	0.216
SD1	0.096
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

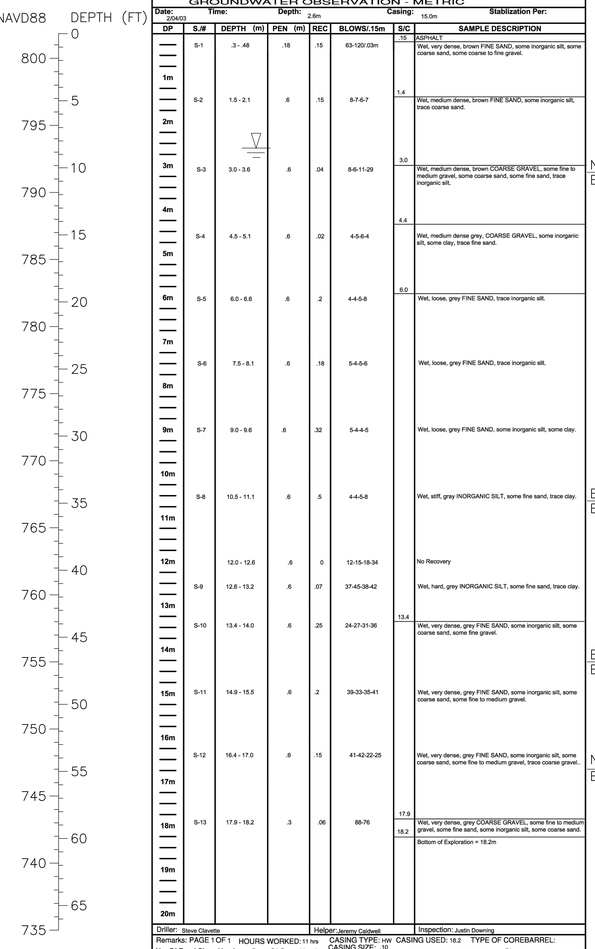
HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	6.66
DESIGN FLOOD DISCHARGE (C.F.S.)	1,111
DESIGN FLOOD FREQUENCY (YEARS)	25
DESIGN FLOOD VELOCITY (F.P.S.)	5.71
DESIGN FLOOD ELEVATION (FEET, NAVD)	796.68
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	1,564
BASE FLOOD ELEVATION (FEET, NAVD)	798.04
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	50
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	2.05
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY (YEARS)	100
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	2.58
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	UNKNOWN
FREQUENCY (IF KNOWN, YEARS)	UNKNOWN
MAXIMUM ELEVATION (FEET, NAVD)	UNKNOWN
DATE (MM/YYYY)	09/1938
HISTORY OF ICE FLOES	NONE DOCUMENTED
EVIDENCE OF SCOUR AND EROSION	NORTH ABUTMENT AND PIERS EXPOSING PILES

TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	380
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	8.95
DESIGN FLOOD ELEVATION (FEET, NAVD)	794.8

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

BRIDGE
BORING LOGS (1 OF 2)



PHONE: (603) 437-1610 — NEW HAMPSHIRE BORING, INC. — FAX: (603) 437-0034
P. O. BOX 165 DERRY, NH 03038
E MAIL: nhb@nhboring

Boring #: B-1 — **Project:** C-20-4 — **Contract #:** 31240 — **Station:** N918675.05
Project Address: North Poland Road over Poland Brook — **City:** Conway — **State:** MA — **Offset:** E97807.77
Date Start: 2/03/03 — **Start Time:** 8:30AM — **Date End:** 2/04/03 — **End Time:** 2:00PM — **Elev:** 244.4m
Casing: — **Sampler:**
Type: HW — **Size:** 1m I.D. — **S/S** — **Size:** 34.9mm I.D.
Hammer: 136 Kg — **Fall:** 6m — **Hammer:** 63.5 Kg — **Fall:** 760 mm Length

GROUNDWATER OBSERVATION - METRIC

Date: 2/04/03 — **Time:** — **Depth:** 2.6m — **Casing:** 15.0m — **Stabilization Per:**

DP	S.#	DEPTH (m)	PEN (m)	REC	BLOWS/.15m	S/C	SAMPLE DESCRIPTION
						.15	ASPHALT
	S-1	.3 - .48	.18	.15	63-120/.03m		Wet, very dense, brown FINE SAND, some inorganic silt, some coarse sand, some coarse to fine gravel.
	S-2	1.5 - 2.1	.6	.15	8-7-6-7	1.4	Wet, medium dense, brown FINE SAND, some inorganic silt, trace coarse sand.
						3.0	
	S-3	3.0 - 3.6	.6	.04	8-6-11-29		Wet, medium dense, brown COARSE GRAVEL, some fine to medium gravel, some coarse sand, some fine sand, trace inorganic silt.
	S-4	4.5 - 5.1	.6	.02	4-5-6-4	4.4	Wet, medium dense grey, COARSE GRAVEL, some inorganic silt, some clay, trace fine sand.
						6.0	
	S-5	6.0 - 6.6	.6	.2	4-4-5-8		Wet, loose, grey FINE SAND, trace inorganic silt.
	S-6	7.5 - 8.1	.6	.18	5-4-5-6		Wet, loose, grey FINE SAND, trace inorganic silt.
	S-7	9.0 - 9.6	.6	.32	5-4-4-5		Wet, loose, grey FINE SAND, some inorganic silt, some clay.
	S-8	10.5 - 11.1	.6	.5	4-4-5-8		Wet, stiff, gray INORGANIC SILT, some fine sand, trace clay.
		12.0 - 12.6	.6	0	12-15-18-34		No Recovery
	S-9	12.6 - 13.2	.6	.07	37-45-38-42		Wet, hard, grey INORGANIC SILT, some fine sand, trace clay.
						13.4	
	S-10	13.4 - 14.0	.6	.25	24-27-31-36		Wet, very dense, grey FINE SAND, some inorganic silt, some coarse sand, some fine gravel.
	S-11	14.9 - 15.5	.6	.2	39-33-35-41		Wet, very dense, grey FINE SAND, some inorganic silt, some coarse sand, some fine to medium gravel.
	S-12	16.4 - 17.0	.6	.15	41-42-22-25		Wet, very dense, grey FINE SAND, some inorganic silt, some coarse sand, some fine to medium gravel, trace coarse gravel.
						17.9	
	S-13	17.9 - 18.2	.3	.06	88-76		Wet, very dense, grey COARSE GRAVEL, some fine to medium gravel, some fine sand, some inorganic silt, some coarse sand.
						18.2	Bottom of Exploration = 18.2m

Driller: Steve Clavette — Helper: Jeremy Caldwell — Inspection: Justin Downing

Remarks: PAGE 1 OF 1 — HOURS WORKED: 11 hrs — CASING TYPE: HW — CASING USED: 18.2 — CASING SIZE: 10 — TYPE OF COREBARREL:
No. Of Road Signs Used: 4 — Bags Of Grout Used: 4 — Well Size: — Screen Size: — Riser:
Note 1: 4.4m - 15m to 4.4 - Fine sand and gravel, with several cobbles throughout this zone. small cobbles and gravel advanced with casing down to change at
Note: Hole was terminatd at 18.2m as requested by the inspector. Put bentonite from 18.2m to 15.0m, grouted from 15.0 to surface.

S.#: SAMPLE | PEN: PENETRATION | REC: RECOVERY | S/C: STRATA CHANGE

N. ABUT. BOT. PILE CAP
EL. 791.50

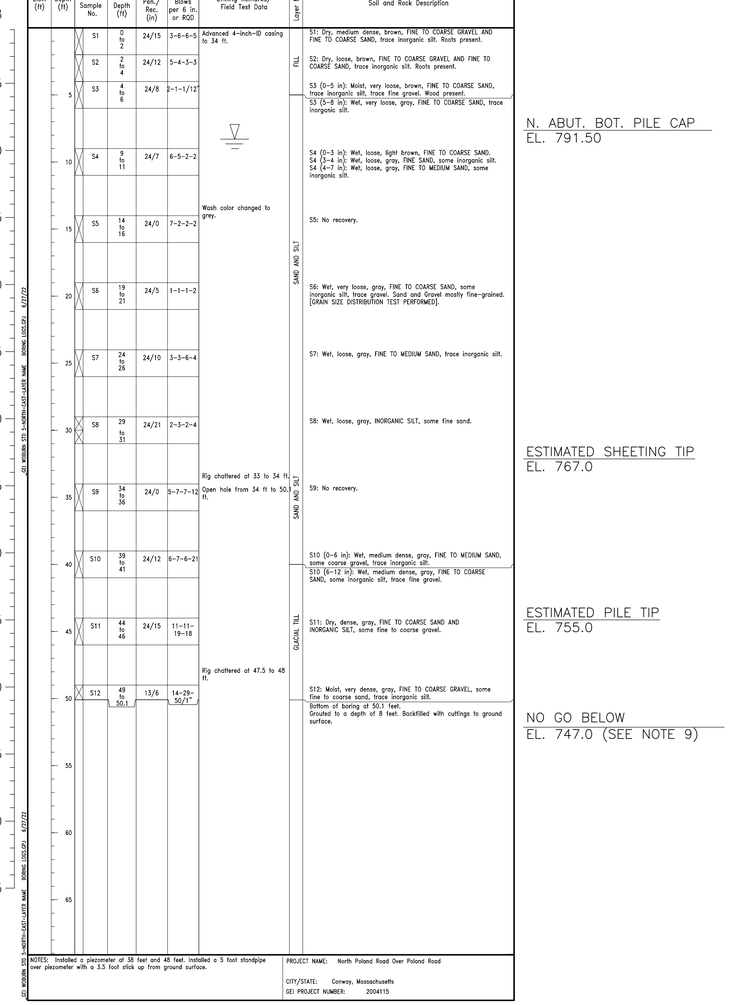
ESTIMATED SHEETING TIP
EL. 767.0

ESTIMATED PILE TIP
EL. 755.0

NO GO BELOW
EL. 747.0 (SEE NOTE 9)

BORING B–1

SCALE: $\frac{3}{16}$" = 1'–0"



BORING INFORMATION
NORTHING (ft): 3,014,001 — EASTING (ft): 320,862
GROUND SURFACE EL. (ft): ~799 (See Plan) — DATE START/END: 10/21/2020 – 10/22/2020
VERT./HORIZ. DATUMS: NAVD 88/NAD 1983 — DRILLING COMPANY: Seaboard Drilling, Inc.
TOTAL DEPTH (ft): 50.1 — DRILLER NAME: Mike
LOGGED BY: R. Ouisi — RIG TYPE: Diedrich D-50

BORING
BB–102

DRILLING INFORMATION
HAMMER TYPE: Automatic — CASING I.D./O.D.: 4 inch/ 4.5 inch — CORE BARREL TYPE: N/A
AUGER I.D./O.D.: NA / NA — DRILL ROD O.D.: 2.625 inch — CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Drive and Wash
WATER LEVEL DEPTHS (ft): ▼ 8.3 10/22/2020 10:52 am

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Core≥4 in / Pen.,BOZ = Soils Core
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D.= Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		S1	0 to 2	24/15	3-6-6-5	Advanced 4-inch-ID casing to 34 ft.	FILL	S1: Dry, medium dense, brown, FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, trace inorganic silt. Roots present.
		S2	2 to 4	24/12	5-4-3-3			S2: Dry, loose, brown, FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, trace inorganic silt. Roots present.
	5	S3	4 to 6	24/8	2-1-1/12"			S3 (0–5 in): Moist, very loose, brown, FINE TO COARSE SAND, trace inorganic silt, trace fine gravel. Wood present.
							SAND AND SILT	S3 (5–8 in): Wet, very loose, gray, FINE TO COARSE SAND, trace inorganic silt.
	10	S4	9 to 11	24/7	6-5-2-2			S4 (0–3 in): Wet, loose, light brown, FINE TO COARSE SAND. S4 (3–4 in): Wet, loose, gray, FINE SAND, some inorganic silt. S4 (4–7 in): Wet, loose, gray, FINE TO MEDIUM SAND, some inorganic silt.
	15	S5	14 to 16	24/0	7-2-2-2	Wash color changed to gray.		S5: No recovery.
	20	S6	19 to 21	24/5	1-1-1-2			S6: Wet, very loose, gray, FINE TO COARSE SAND, some inorganic silt, trace gravel. Sand and Gravel mostly fine-grained. [GRAIN SIZE DISTRIBUTION TEST PERFORMED].
	25	S7	24 to 26	24/10	3-3-6-4			S7: Wet, loose, gray, FINE TO MEDIUM SAND, trace inorganic silt.
	30	S8	29 to 31	24/21	2-3-2-4			S8: Wet, loose, gray, INORGANIC SILT, some fine sand.
	35	S9	34 to 36	24/0	5-7-7-12	Rig chattered at 33 to 34 ft. Open hole from 34 ft to 50.1 ft.	SAND AND SILT	S9: No recovery.
	40	S10	39 to 41	24/12	6-7-6-21			S10 (0–6 in): Wet, medium dense, gray, FINE TO MEDIUM SAND, some coarse gravel, trace inorganic silt. S10 (6–12 in): Wet, medium dense, gray, FINE TO COARSE SAND, some inorganic silt, trace fine gravel.
	45	S11	44 to 46	24/15	11-11-19-18		GLACIAL TILL	S11: Dry, dense, gray, FINE TO COARSE SAND AND INORGANIC SILT, some fine to coarse gravel.
	50	S12	49 to 50.1	13/6	14-29-50/1"	Rig chattered at 47.5 to 48 ft.		S12: Moist, very dense, gray, FINE TO COARSE GRAVEL, some fine to coarse sand, trace inorganic silt. Bottom of boring at 50.1 feet. Grouted to a depth of 8 feet. Backfilled with cuttings to ground surface.
	55							
	60							
	65							

NOTES: Installed a piezometer at 38 feet and 48 feet. Installed a 5 foot standpipe over piezometer with a 3.5 foot stick up from ground surface.

PROJECT NAME: North Poland Road Over Poland Road
CITY/STATE: Conway, Massachusetts
GEI PROJECT NUMBER: 2004115

N. ABUT. BOT. PILE CAP
EL. 791.50

ESTIMATED SHEETING TIP
EL. 767.0

ESTIMATED PILE TIP
EL. 755.0

NO GO BELOW
EL. 747.0 (SEE NOTE 9)

BORING BB–102

SCALE: $\frac{3}{16}$" = 1'–0"

BORING NOTES:

1. LOCATION OF BORINGS ARE SHOWN THUS: ⊕
2. BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A $1\frac{3}{8}$" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATION ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.
6. BORINGS B–1 AND B–2 WERE MADE IN FEBRUARY 2003.

   BORINGS BB–101 AND BB–102 WERE MADE IN OCTOBER 2020.
7. BORINGS B–1 AND B–2 WERE MADE BY NEW HAMPSHIRE BORING, INC. P.O. BOX 165 DERRY, NH 03038.

   BORINGS BB–101 AND BB–102 WERE MADE BY SEABOARD DRILLING, INC. 649 MEADOW STREET, CHICOPEE, MA 01013.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
9. PILES, SUPPORT OF EXCAVATION, & WATER CONTROL SHALL NOT BE DRIVEN BELOW THE NO GO BELOW ELEVATION TO AVOID IMPACTING UNDERLYING ARTESIAN CONDITIONS.

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

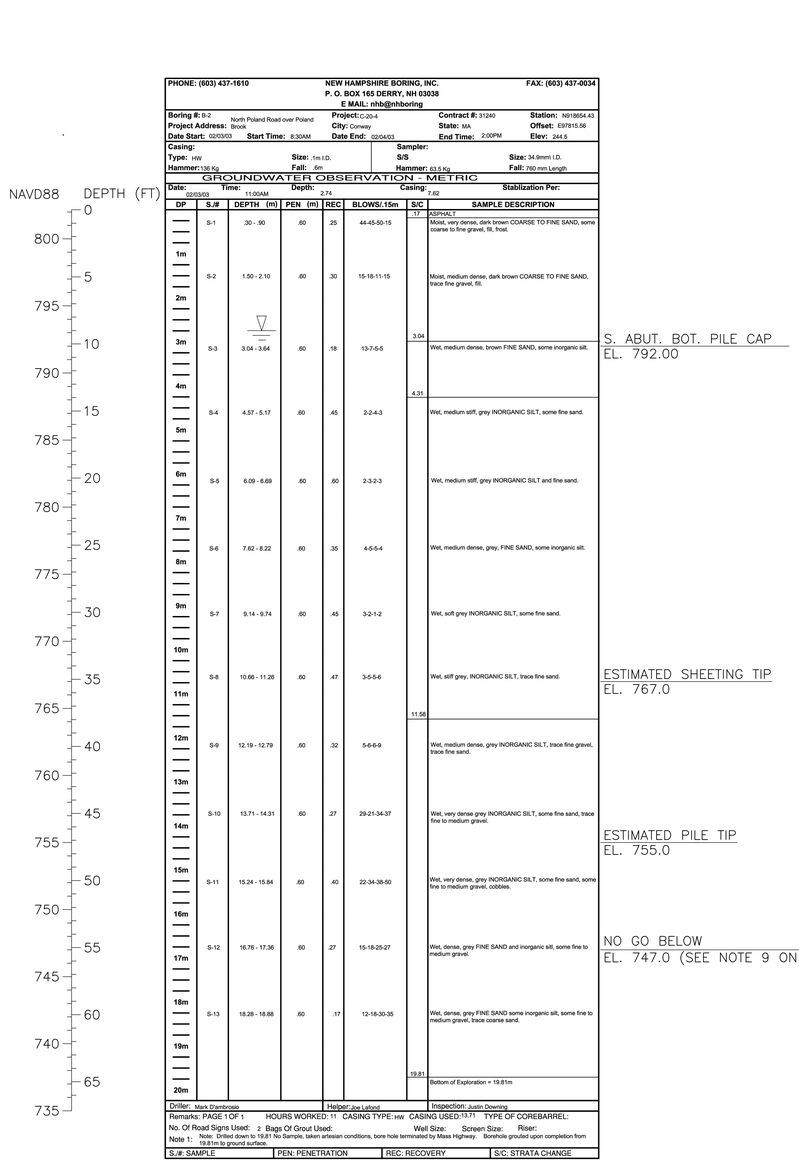
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	17	42
	PROJECT FILE NO. 609082		

BRIDGE
BORING LOGS (2 OF 2)

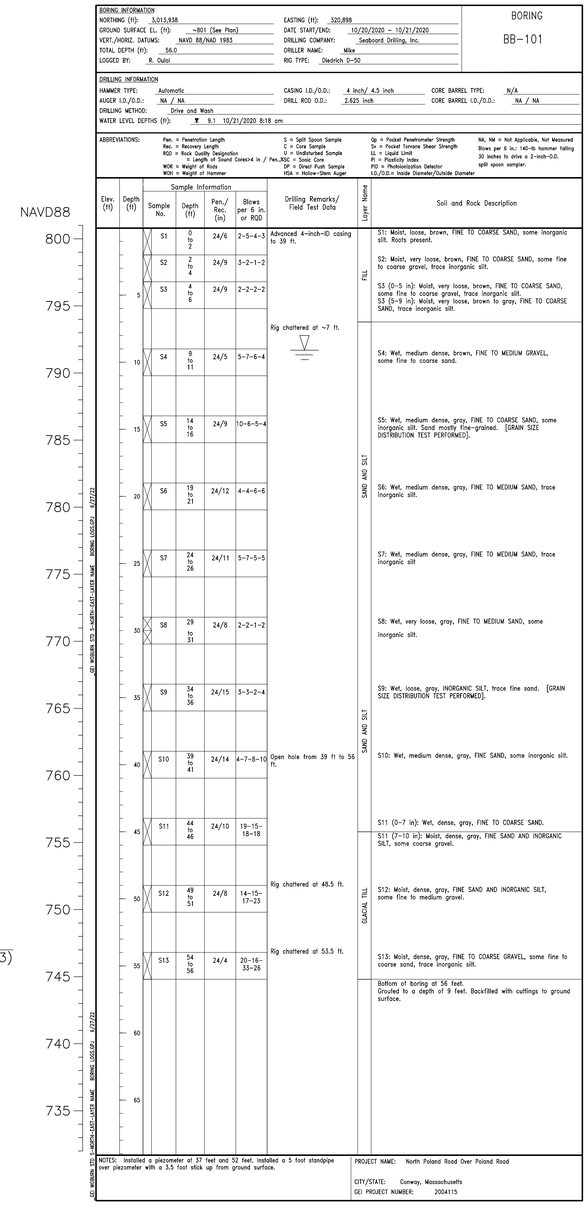
BORING NOTES:

1. SEE NOTES ON SHEET 3.



BORING B–2

SCALE: $\frac{3}{16}$" = 1'–0"



BORING BB–101

SCALE: $\frac{3}{16}$" = 1'–0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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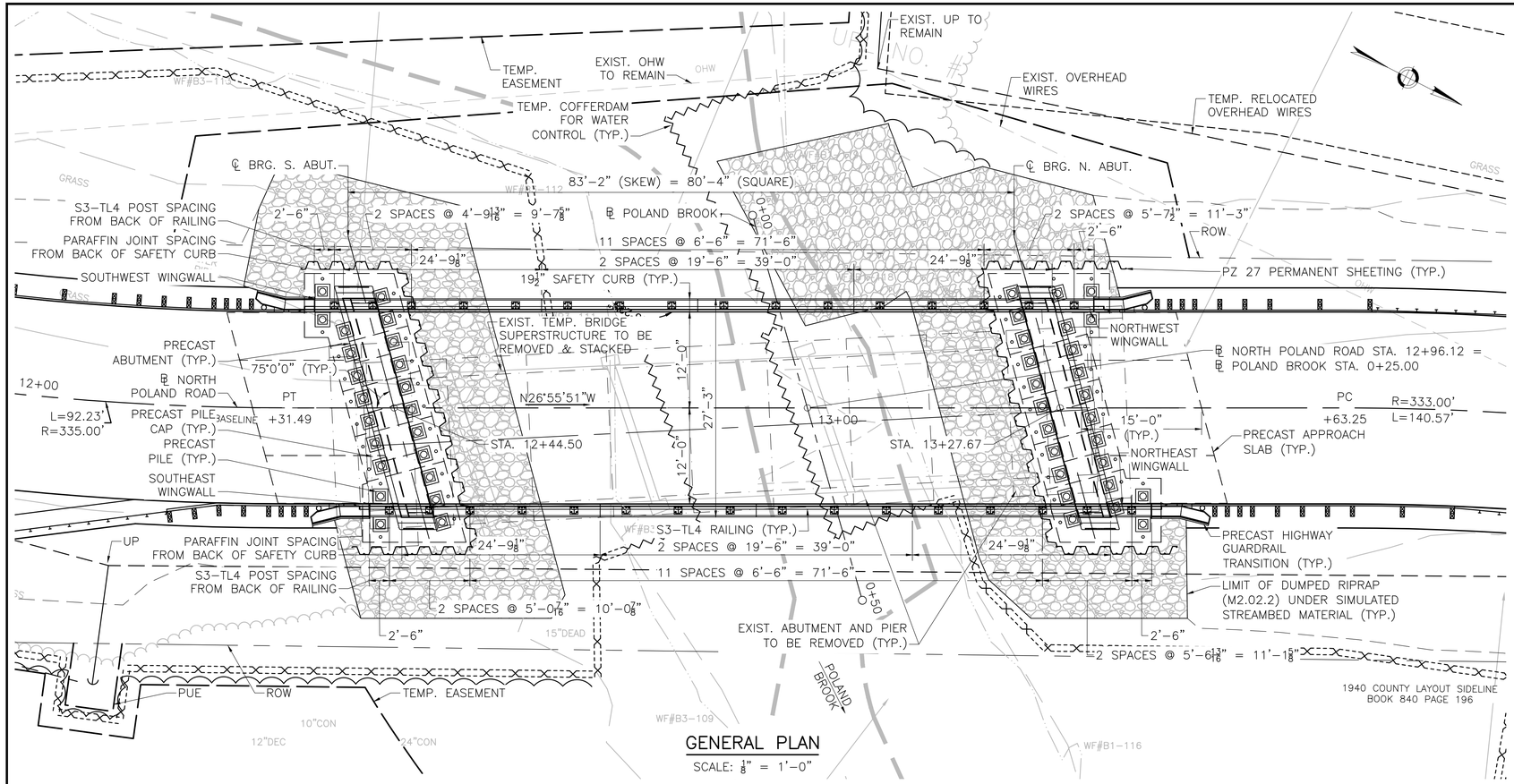
USE ONLY PRINTS OF LATEST DATE

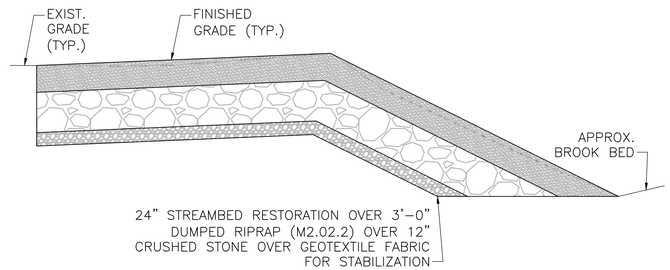
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	18	42
PROJECT FILE NO.	609082		

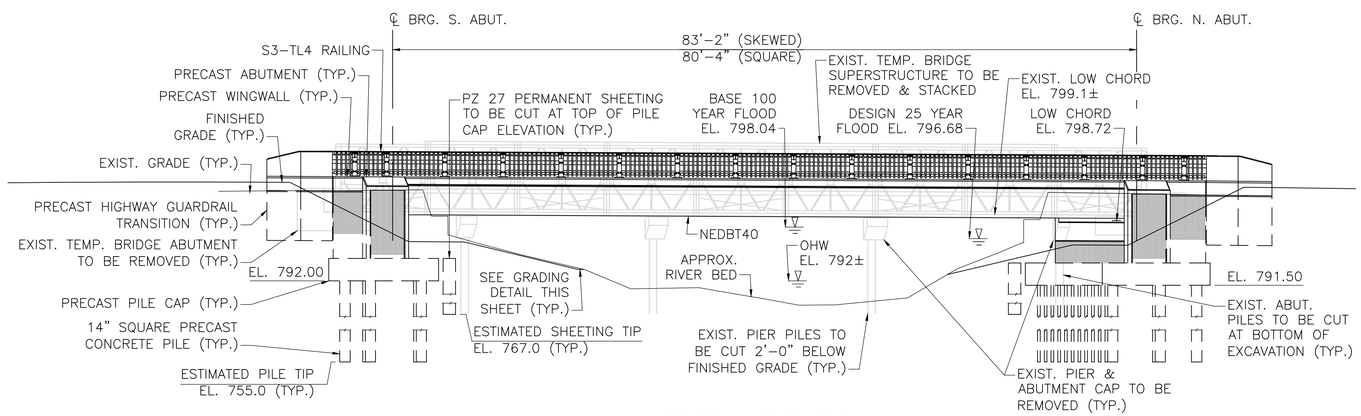
BRIDGE
GENERAL PLAN & ELEVATION



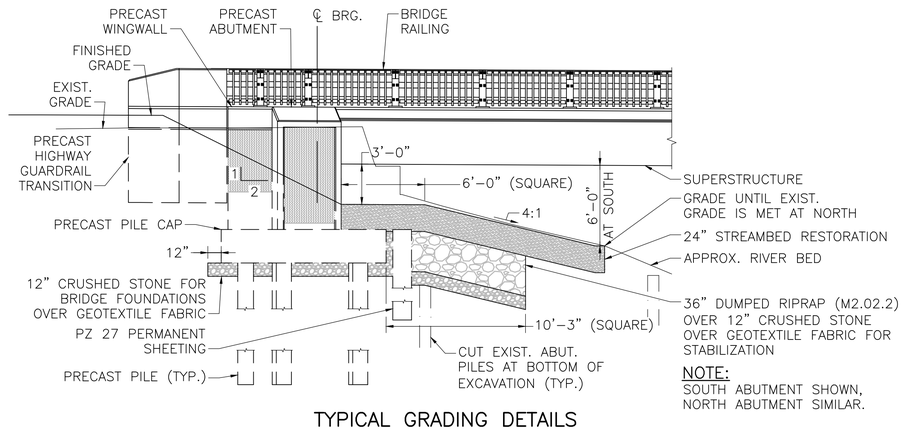
GENERAL PLAN
SCALE: 1/8" = 1'-0"



[LOOKING EAST] CHANNEL APPROACH SECTION AT NORTHWEST BANK
SCALE: 3/16" = 1'-0"



GENERAL ELEVATION
SCALE: 1/8" = 1'-0"



NOTE:
SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR.

TYPICAL GRADING DETAILS AT ABUTMENTS & WINGWALLS
SCALE: 3/16" = 1'-0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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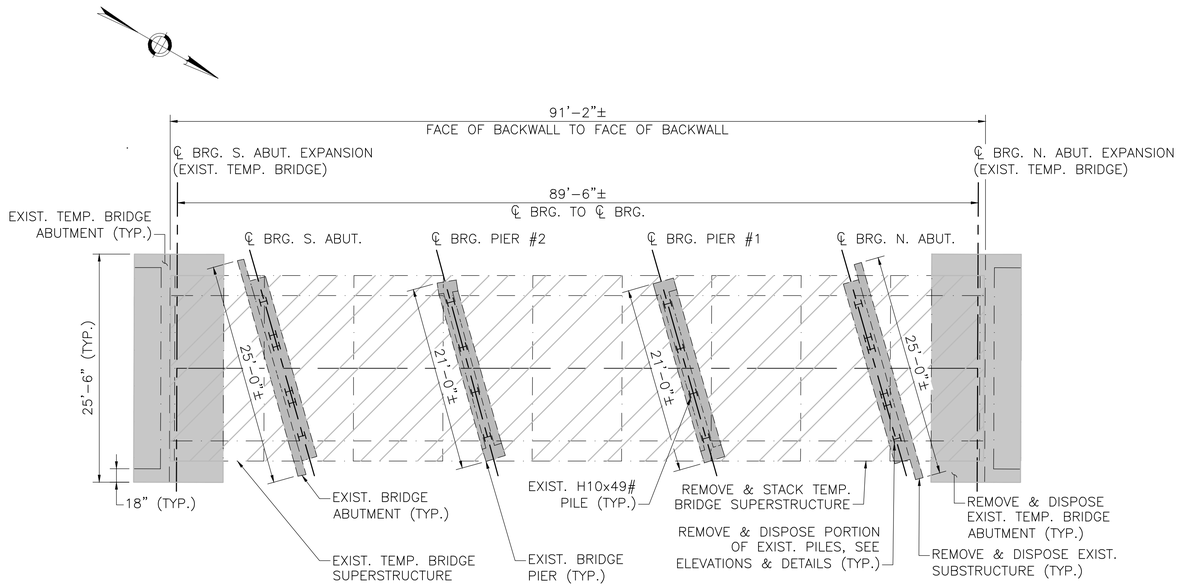


DEMOLITION PLAN

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

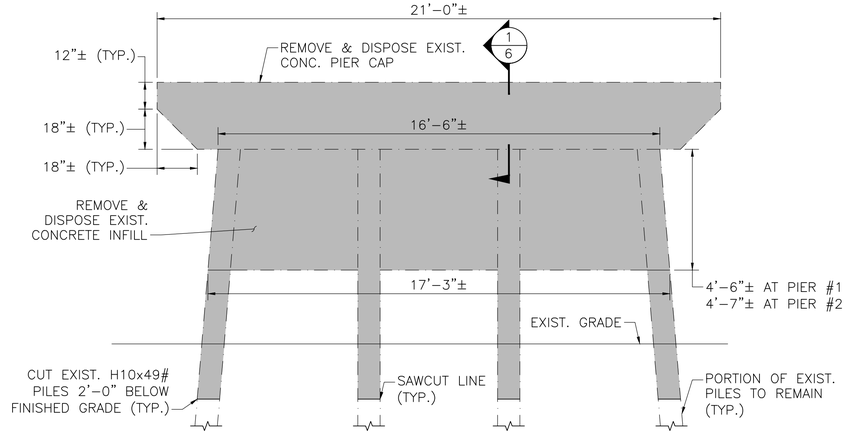
DEMOLITION NOTES:

1. ▒▒▒ INDICATES AREA TO BE REMOVED AND DISPOSED.
2. ▨ INDICATES AREA TO BE REMOVED AND STACKED.
3. THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES ONLY. ACTUAL CONFIGURATION MAY VARY.

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	19	42
PROJECT FILE NO.	609082		

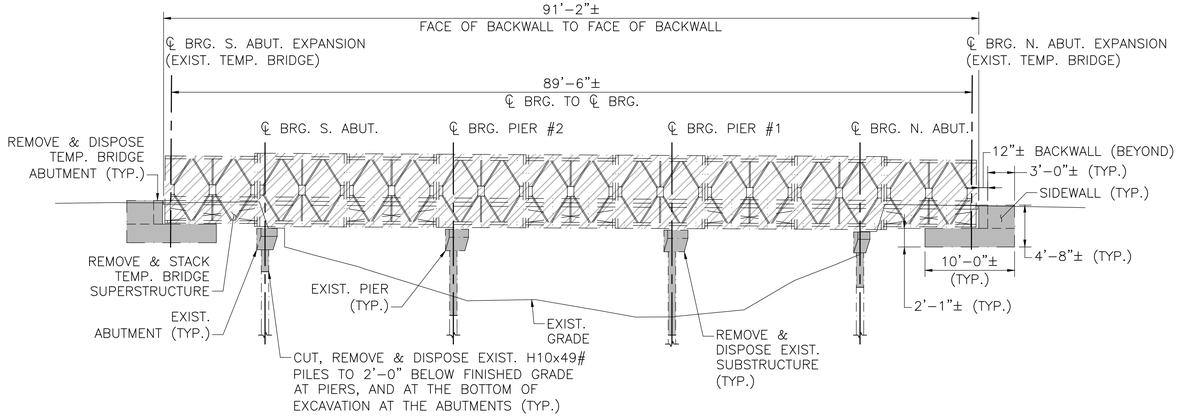
BRIDGE DEMOLITION



[PIER #1 SHOWN, PIER #2 SIMILAR]

EXISTING PIER DEMOLITION ELEVATION

SCALE: $\frac{3}{8}$" = 1'-0"



DEMOLITION ELEVATION

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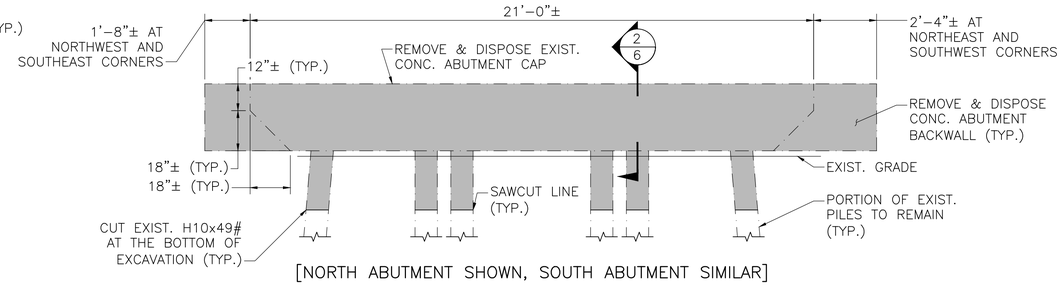
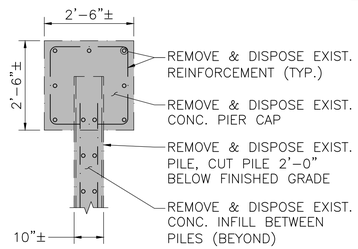


[NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR]

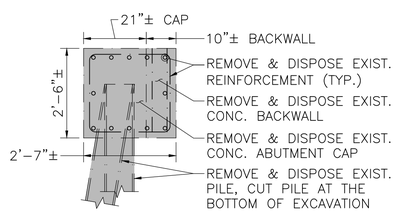
EXISTING ABUTMENT DEMOLITION ELEVATION

SCALE: $\frac{3}{8}$" = 1'-0"



EXISTING DEMOLITION SECTION 1/6

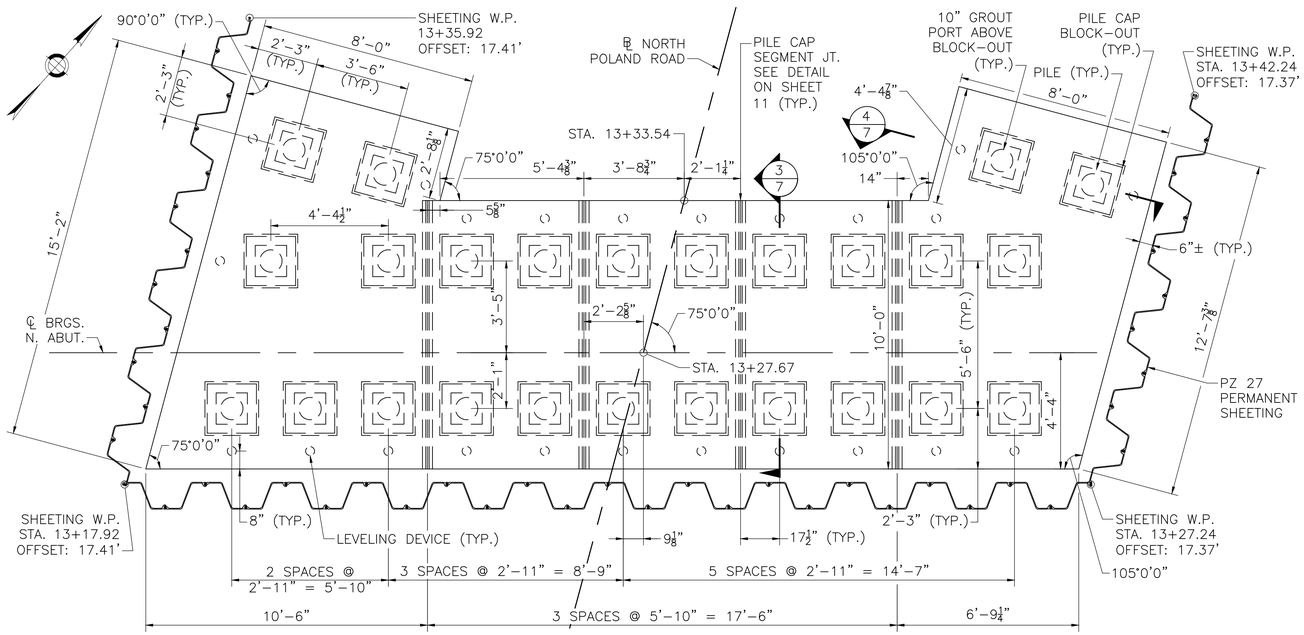
SCALE: $\frac{1}{2}$" = 1'-0"



EXISTING DEMOLITION SECTION 2/6

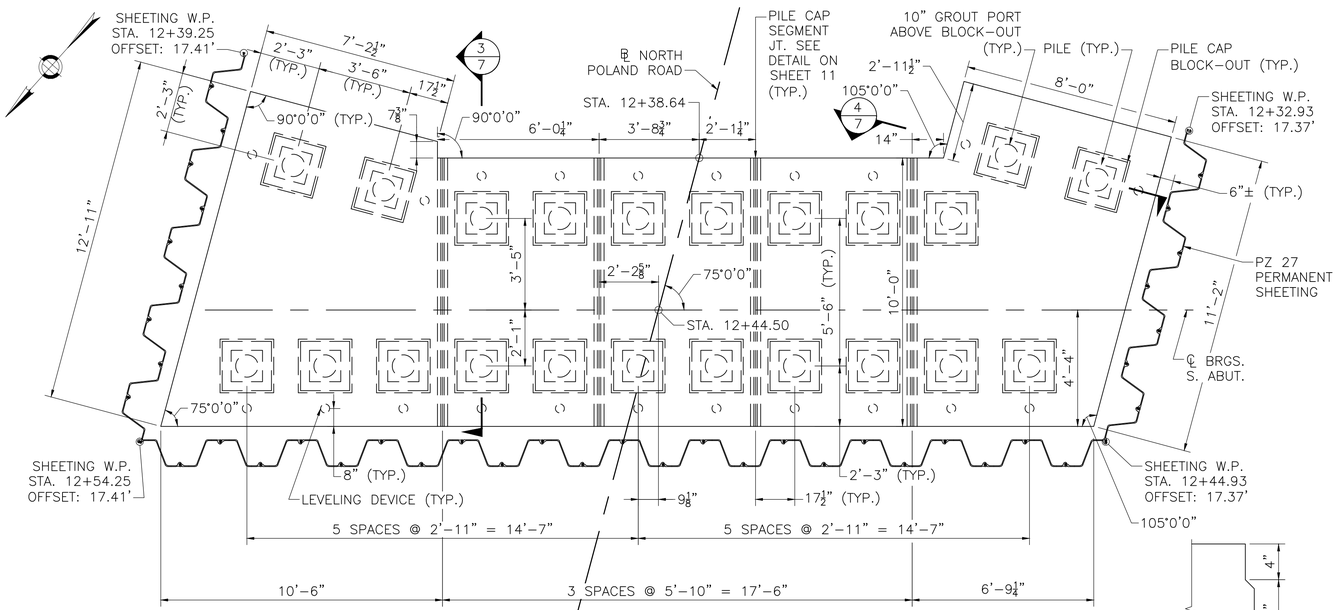
SCALE: $\frac{1}{2}$" = 1'-0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE	



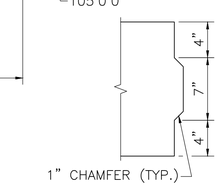
NORTH PILE CAP & PILE LAYOUT PLAN

SCALE: ⅜" = 1'-0"



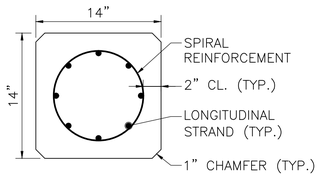
SOUTH PILE CAP & PILE LAYOUT PLAN

SCALE: ⅜" = 1'-0"



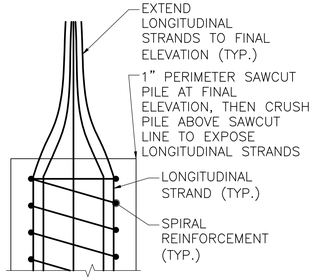
PILE BLOCK-OUT KEY DETAIL

SCALE: 1½" = 1'-0"



PILE SECTION

SCALE: 1½" = 1'-0"



PILE CONNECTION

SCALE: 1½" = 1'-0"

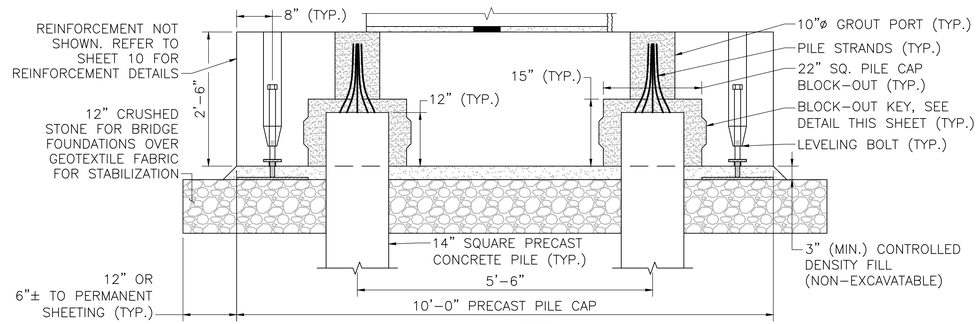
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	20	42
	PROJECT FILE NO. 609082		

BRIDGE
PILE CAP, PILE LAYOUT PLANS, & PILE DETAILS

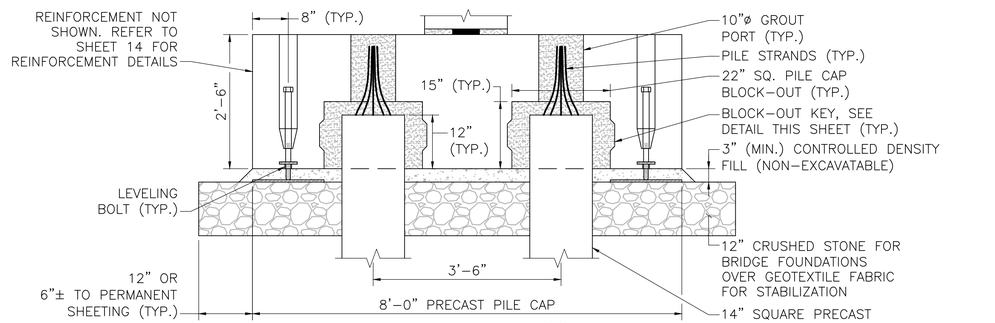
PILE NOTES:

1. PILES SHALL BE DESIGNED BY CONTRACTOR.
2. ALL PRETENSIONING ELEMENTS SHALL BE 0.6"ø, UNCOATED, SEVEN-WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
3. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
4. THE INITIAL TENSION PER 0.6"ø STRAND SHALL BE 44 KIPS.
5. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 6500 PSI.
6. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, OF AT LEAST 4000 PSI.
7. CENTERING DEVICES SHALL BE CONSTRUCTED OF AN APPROVED NON-METALLIC DURABLE MATERIAL.
8. IF SPLICING OF SPIRAL REINFORCEMENT IS NECESSARY, A MINIMUM 2" CLEARANCE SHALL BE PROVIDED BETWEEN THE OUTSIDE SURFACE OF MECHANICAL REINFORCING BAR SPLICERS AND THE FACE OF PILE.
9. WELDING OF LONGITUDINAL REINFORCEMENT SHALL NOT BE PERMITTED. WELDING OF OTHER REINFORCING BARS MAY BE PERMITTED WITH THE WRITTEN APPROVAL OF THE ENGINEER.
10. CONTRACTOR SHALL PERFORM ONE DYNAMIC LOAD TEST AT EACH ABUTMENT. PILES TO BE TESTED SHALL BE SELECTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO DRIVING.



SECTION 3/7

SCALE: ¾" = 1'-0"



SECTION 4/7

SCALE: ¾" = 1'-0"

DATE	DESCRIPTION
08/03/2024	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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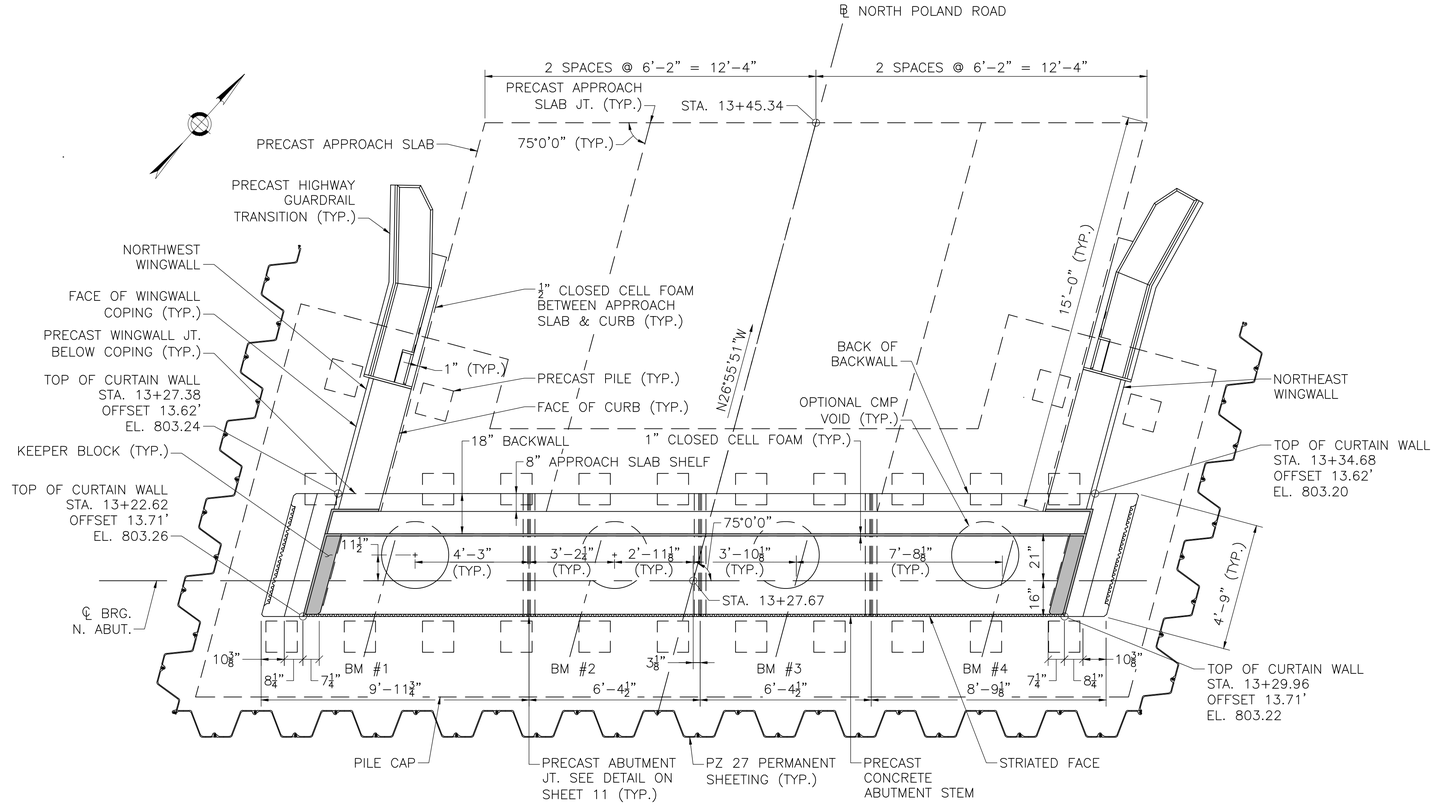
CONWAY
NORTH POLAND ROAD

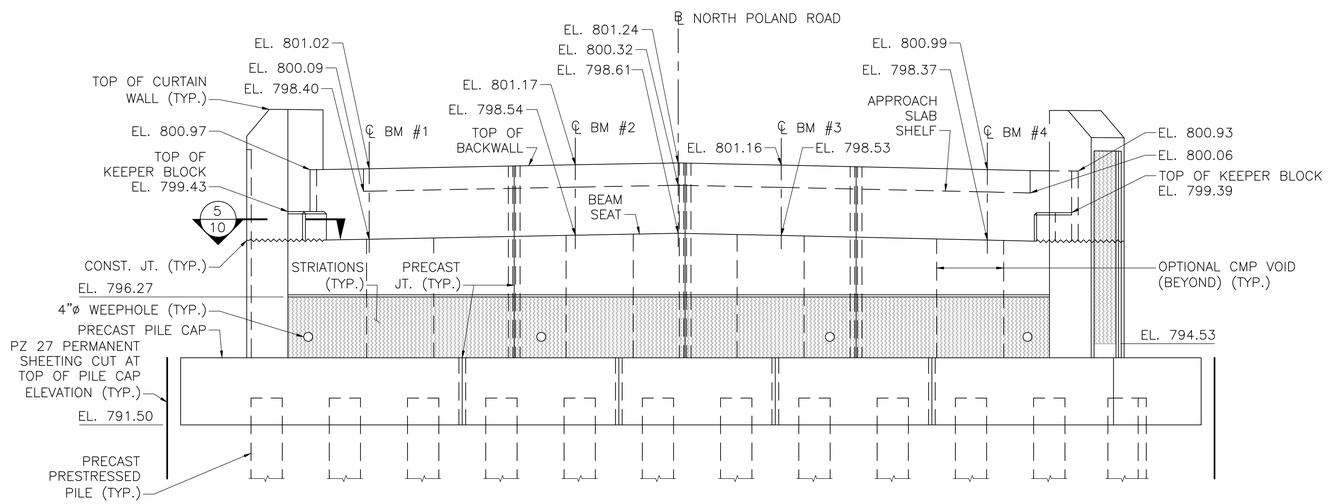
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	21	42
PROJECT FILE NO.	609082		

BRIDGE
NORTH ABUTMENT PLAN & ELEVATION



NORTH ABUTMENT PLAN

SCALE: ⅜" = 1'-0"



NORTH ABUTMENT ELEVATION

SCALE: ⅜" = 1'-0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

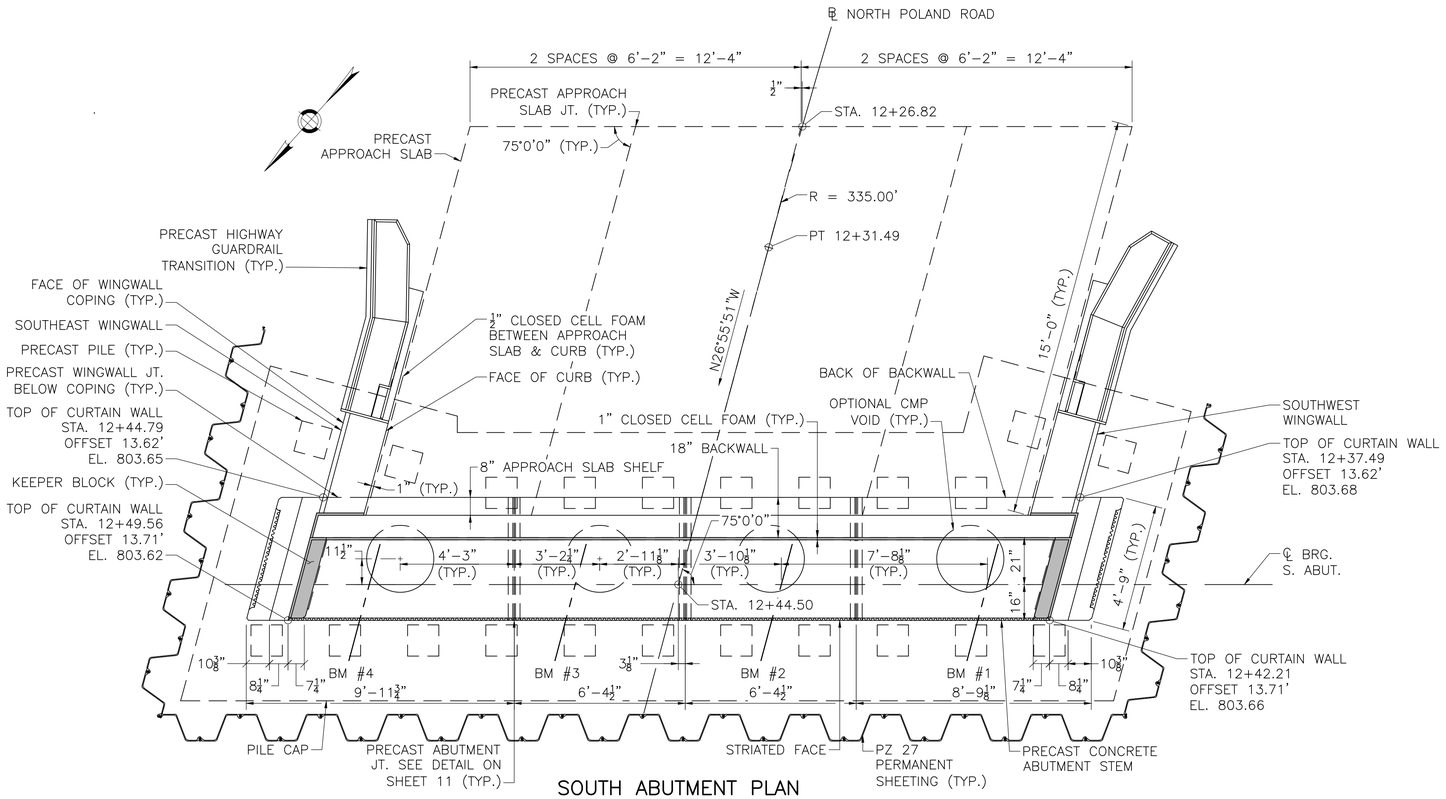
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

USE ONLY PRINTS OF LATEST DATE

CONWAY
NORTH POLAND ROAD

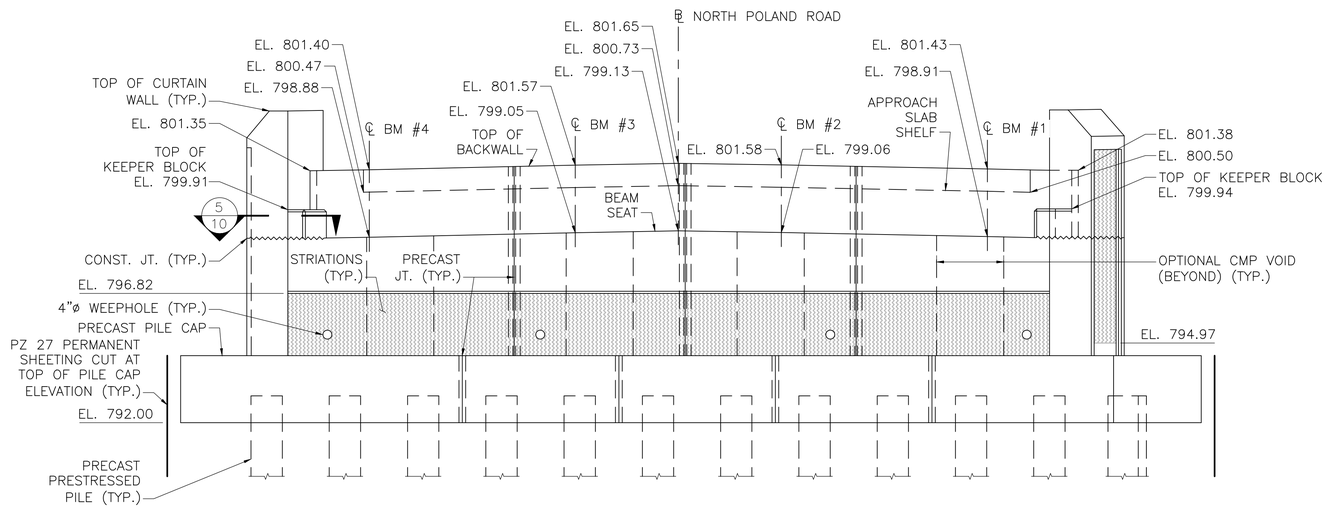
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	22	42
PROJECT FILE NO.	609082		

BRIDGE
SOUTH ABUTMENT PLAN & ELEVATION



SOUTH ABUTMENT PLAN

SCALE: ⅜" = 1'-0"

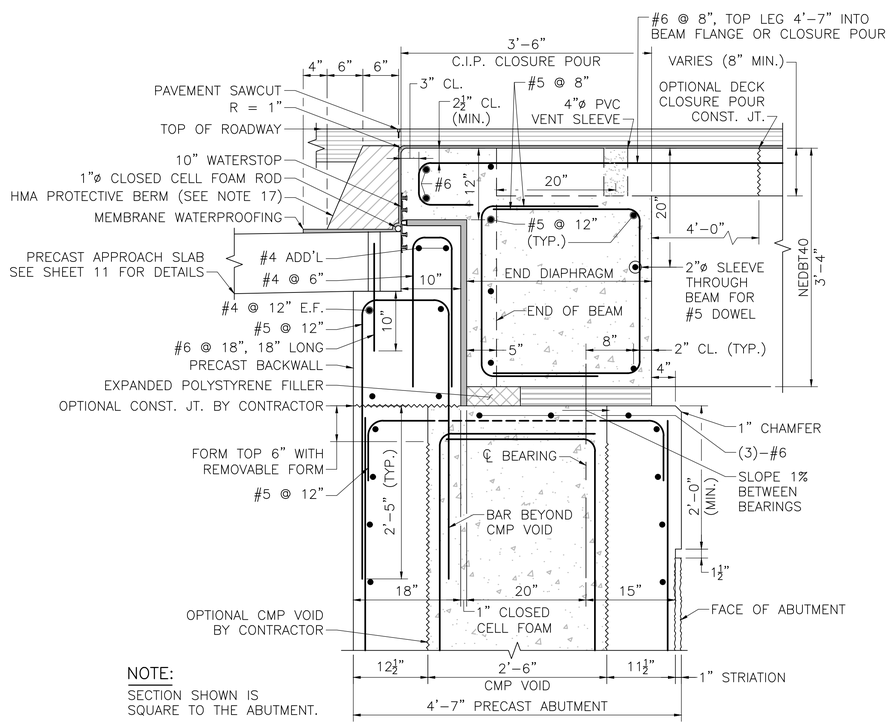


SOUTH ABUTMENT ELEVATION

SCALE: ⅜" = 1'-0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

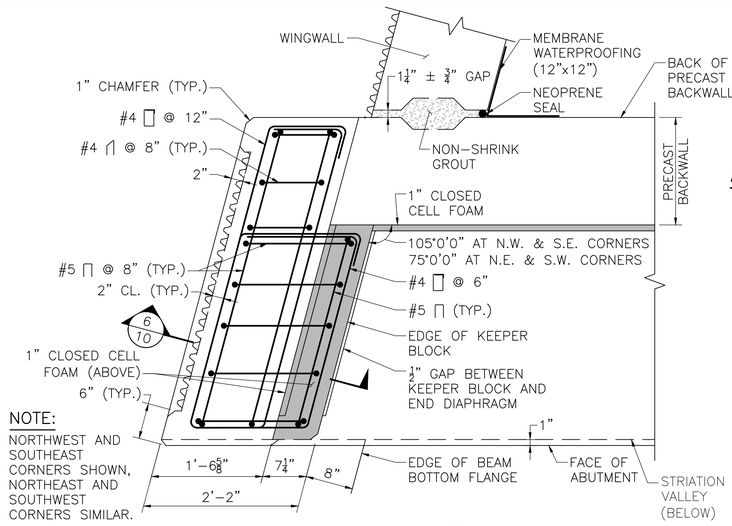
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE



NOTE:
SECTION SHOWN IS SQUARE TO THE ABUTMENT.

DETAILS AT ABUTMENT – ROADWAY SECTION

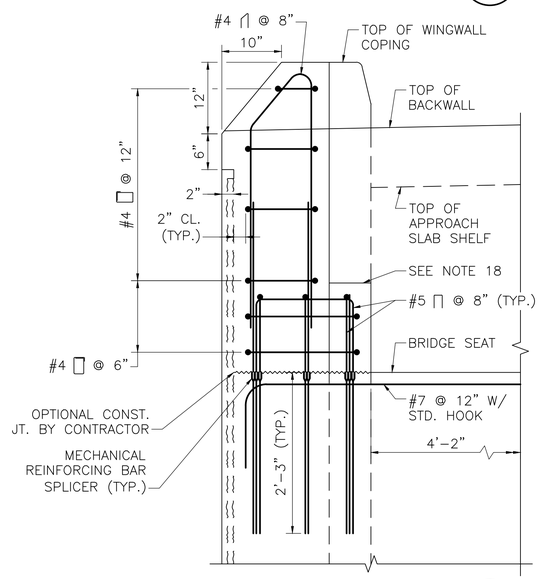
SCALE: 1" = 1'–0"



NOTE:
NORTHWEST AND SOUTHEAST CORNERS SHOWN, NORTHEAST AND SOUTHWEST CORNERS SIMILAR.

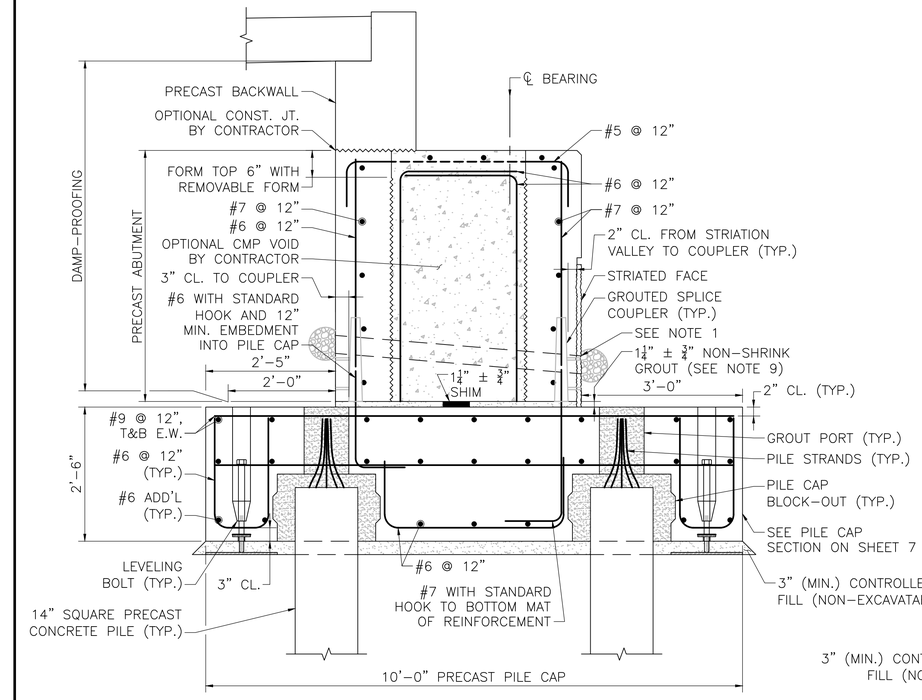
SECTION 5 (8 & 9)

SCALE: 1" = 1'–0"



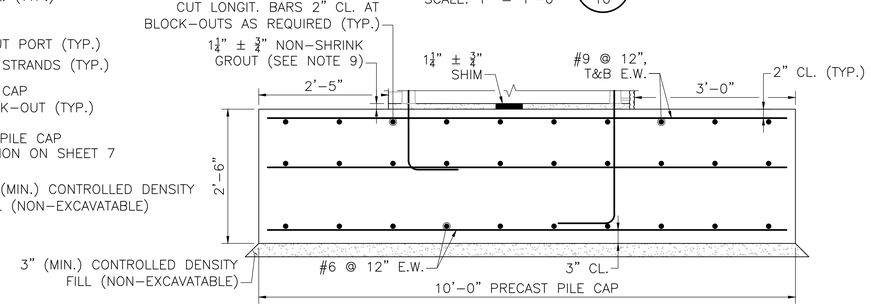
SECTION 6 (10)

SCALE: 1" = 1'–0"



TYPICAL ABUTMENT SECTION

SCALE: ¾" = 1'–0"



TYPICAL PILE CAP SECTION AT ABUTMENT BETWEEN PILES

SCALE: ¾" = 1'–0"

ABUTMENT NOTES:

1. 4"ø WEEP HOLES 10'–0" O.C. LOCATED 12" ABOVE THE HEEL OF THE FOOTING SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
2. ALL CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE.
3. ALL REINFORCING BARS SHALL BE EPOXY COATED, EXCEPT AT THE PILE CAP, WHICH SHALL BE GALVANIZED.
4. THE FACTORED AXIAL DESIGN LOAD PER PILE IS 80.3 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.

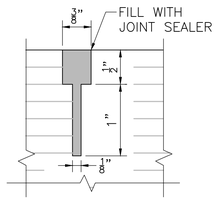
   THE FACTORED LATERAL DESIGN LOAD PER PILE IS 9.1 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
5. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS 81.4 KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 180.9 KIPS AND A RESISTANCE FACTOR OF 0.45.
6. THE ESTIMATED PILE TIP ELEVATION IS 755.0 FEET. PILES SHALL NOT BE DRIVEN BELOW ELEVATION 747.0 TO AVOID IMPACTING UNDERLYING ARTESIAN CONDITIONS.
7. DETERMINATION OF THE DRIVEN PILE RESISTANCE, PILE DRIVING CRITERIA, AND PILE INTEGRITY SHALL BE PERFORMED USING THE PILE DRIVING ANALYZER DRIVING/TESTING METHOD WITH A RESISTANCE FACTOR OF 0.65.
8. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION, AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER. PILES SHALL BE INSTALLED TO ACHIEVE A FACTOR DRIVEN RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED AXIAL DESIGN LOAD.
9. PRE–BED PRECAST ELEMENT WITH NON–SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK.
10. FILL ALL CMP VOIDS WITH 5000 PSI HP CEMENT CONCRETE.

ROADWAY SECTION NOTES

11. ALL BACKWALL CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE. THE TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
12. THE KEEPER BLOCK CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE CLOSURE POUR CONCRETE.
13. THE CLOSURE POUR CONCRETE SHALL BE 8000 PSI, ⅜ IN., HP CEMENT CONCRETE.
14. PRIOR TO PLACING THE CLOSURE POUR CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESS SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE BACKWALL, KEEPER BLOCKS, AND CURTAIN WALLS AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE FILLER SHALL BE PLACED UNDER THE BEAM BOTTOM FLANGE AND THE BOTTOM OF THE CLOSURE POUR SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT ALL ABUTMENT CONCRETE IS PROPERLY LINED. CLOSURE POUR CONCRETE MUST NOT COME IN DIRECT CONTACT WITH ABUTMENT CONCRETE.
15. PRE–BED SEAT WITH NON–SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK.
16. DRAPED MEMBRANE WATERPROOFING OVER CLOSED CELL FOAM BACKER ROD.
17. PROTECTIVE COURSE TO BE HOT MIX ASPHALT DENSE BINDER COURSE FOR BRIDGES, PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND–GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING MEMBRANE WATERPROOFING.

CURTAIN WALL AND KEEPER BLOCK NOTES:

18. TOP OF KEEPER BLOCK SHALL BE TROWELED SMOOTH PARALLEL TO PROFILE GRADE.
19. ABUTMENT REINFORCEMENT NOT SHOWN FOR CLARITY.
20. PRE–BED SEAT WITH NON–SHRINK GROUT WITH THICKNESS SLIGHTLY MORE THAN SHIM STACK.



PAVEMENT SAWCUT DETAIL

FULL SIZE

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	23	42
PROJECT FILE NO.	609082		

BRIDGE ABUTMENT DETAILS

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
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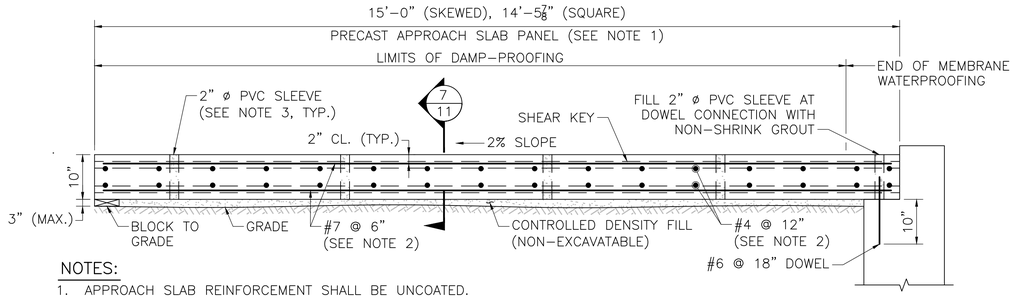
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	24	42
PROJECT FILE NO.	609082		

BRIDGE
SUBSTRUCTURE DETAILS

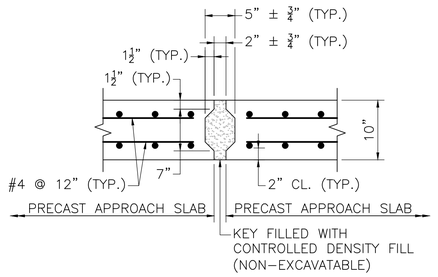


NOTES:

1. APPROACH SLAB REINFORCEMENT SHALL BE UNCOATED.
2. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO CENTERLINE OF CONSTRUCTION. PLACE TRANSVERSE REINFORCEMENT PARALLEL TO ABUTMENT.
3. PVC SLEEVES TO BE INCLUDED IN PRECAST APPROACH SLABS TO FACILITATE PLACEMENT OF CONTROLLED DENSITY FILL (NON–EXCAVATABLE).
4. APPROACH SLAB CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE.

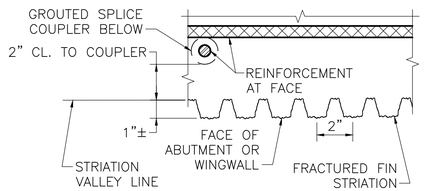
TYPICAL APPROACH SLAB SECTION

SCALE: ¾" = 1'–0"



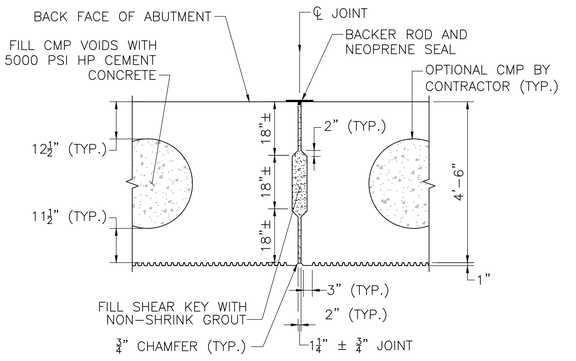
SECTION 7/11

SCALE: 1" = 1'–0"



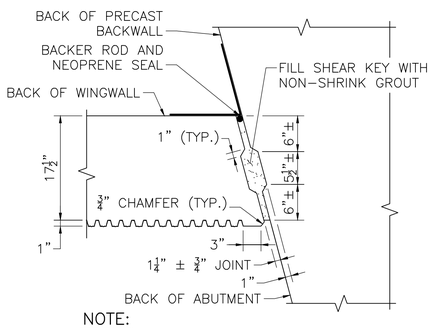
TYPICAL STRIATION DETAIL

SCALE: 3" = 1'–0"



SHEAR KEY – ABUTMENT

SCALE: ½" = 1'–0"

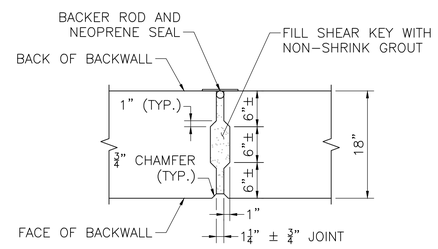


NOTE:

REINFORCEMENT IS NOT SHOWN FOR CLARITY.

SHEAR KEY – WINGWALL

SCALE: 1" = 1'–0"

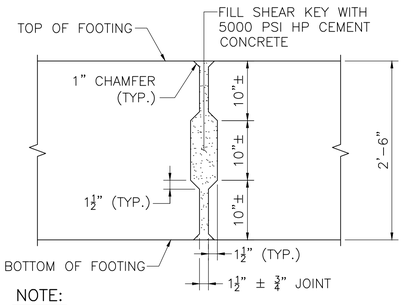


NOTE:

BACKWALL REINFORCEMENT IS NOT SHOWN FOR CLARITY.

SHEAR KEY – BACKWALL

SCALE: 1" = 1'–0"

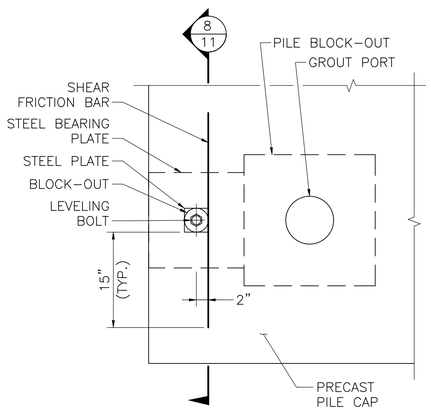


NOTE:

FOOTING REINFORCEMENT IS NOT SHOWN FOR CLARITY.

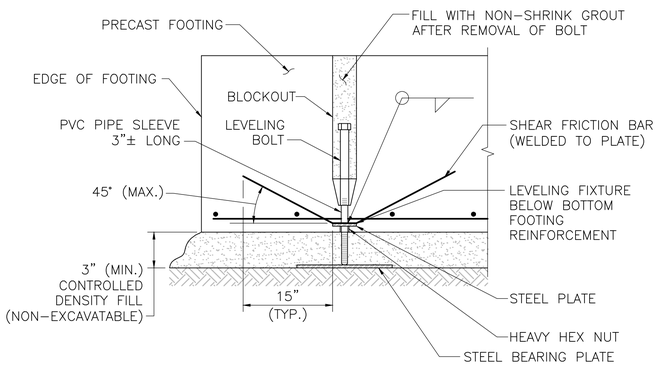
SHEAR KEY – FOOTING

SCALE: 1" = 1'–0"



LEVELING BOLT ASSEMBLY PLAN

SCALE: 1" = 1'–0"

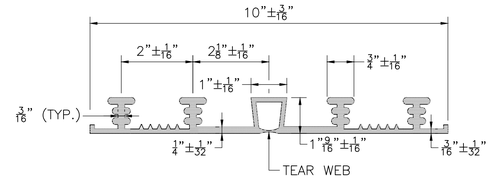


SECTION 8/11

SCALE: 1" = 1'–0"

LEVELING BOLT ASSEMLY NOTES:

1. THE LEVELING BOLT ASSEMBLY SHOWN IS SCHEMATIC. DESIGN OF THE LEVELING BOLT ASSEMBLY SHALL BE PERFORMED BY THE CONTRACTOR AND SUBMITTED WITH THE ASSEMBLY PLAN TO ENGINEER FOR APPROVAL.
2. BOLT SHALL BE REMOVED AFTER THE CONTROLLED DENSITY FILL (NON–EXCAVATABLE) HAS SET.
3. STEEL PLATES SHALL BE AASHTO M270 GRADE 36 UNCOATED STEEL.
4. BOLTS SHALL BE H.S. AASHTO M164 AND UNCOATED.
5. REINFORCEMENT SHALL BE WELDABLE LOW–ALLOY ASTM A706 BARS.
6. GREASE OR OIL NUT AND BOLT THREADS TO FACILITATE LEVELING AND REMOVAL.



10" WATERSTOP

NOT TO SCALE

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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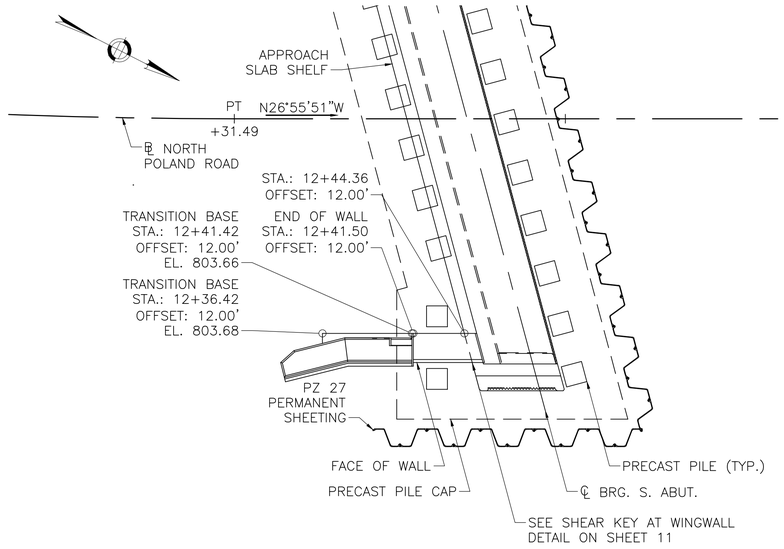
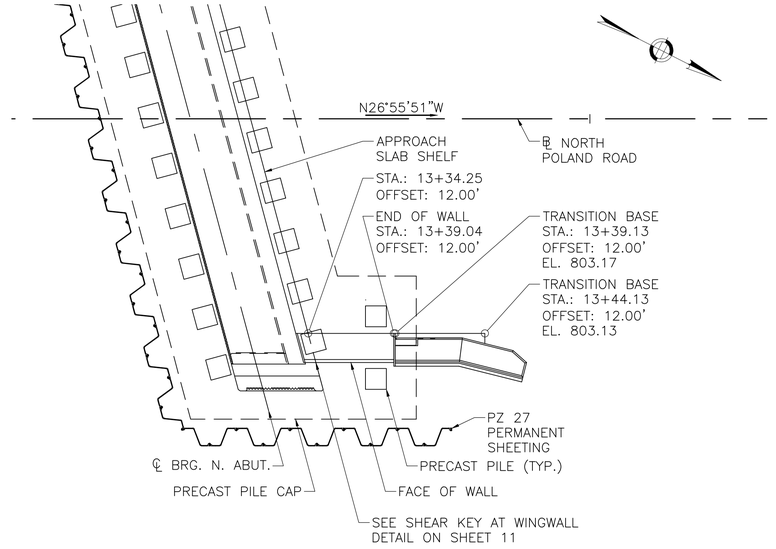


SOUTHEAST WINGWALL PLAN

SCALE: $\frac{1}{4}$" = 1'–0"



NORTHEAST WINGWALL PLAN

SCALE: $\frac{1}{4}$" = 1'–0"

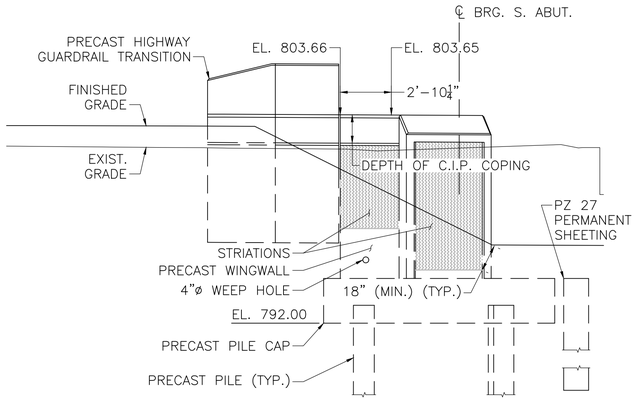
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	25	42
PROJECT FILE NO.	609082		

BRIDGE
WINGWALL PLANS & ELEVATIONS (1 OF 2)

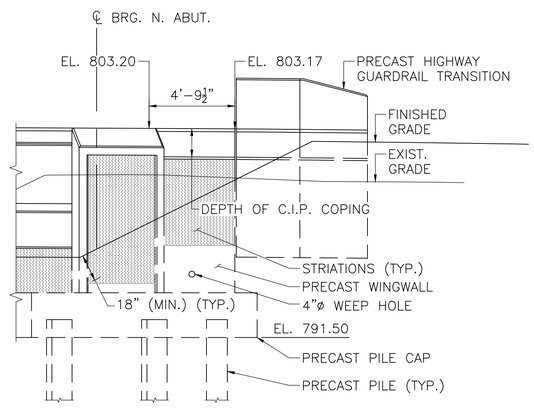
WINGWALL NOTES:

1. SUPERSTRUCTURE, ABUTMENT CAP JOINTS, ABUTMENT JOINTS, ABUTMENT VOIDS, PILE CAP JOINTS, PILE CAP BLOCK–OUTS, AND APPROACH SLAB NOT SHOWN FOR CLARITY. REFER TO ABUTMENT PLANS, ELEVATIONS, AND JOINT LAYOUT PLANS.
2. DIMENSIONS, TOP OF WALL ELEVATIONS ARE TAKEN FROM BACK OF WALL AT AND ALONG STATION–OFFSET CALL–OUTS IN PLAN.
3. ELEVATIONS ARE LOOKING WEST.



SOUTHEAST WINGWALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"



NORTHEAST WINGWALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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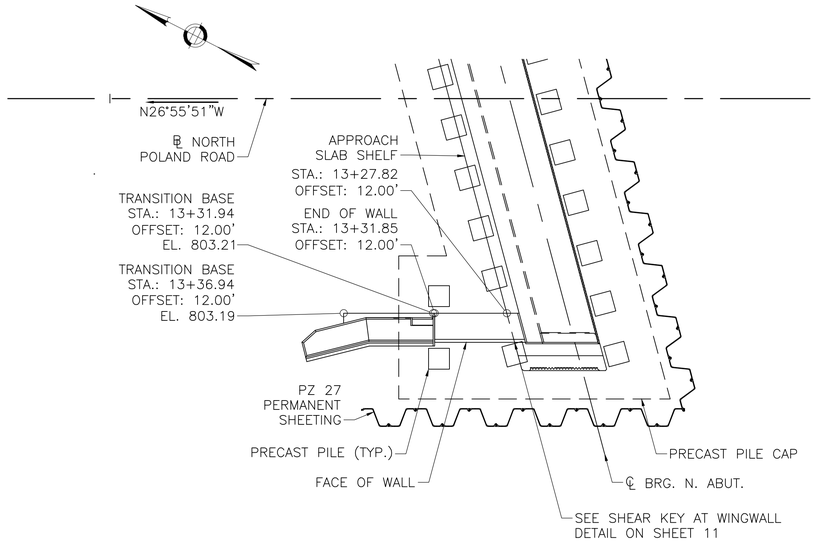
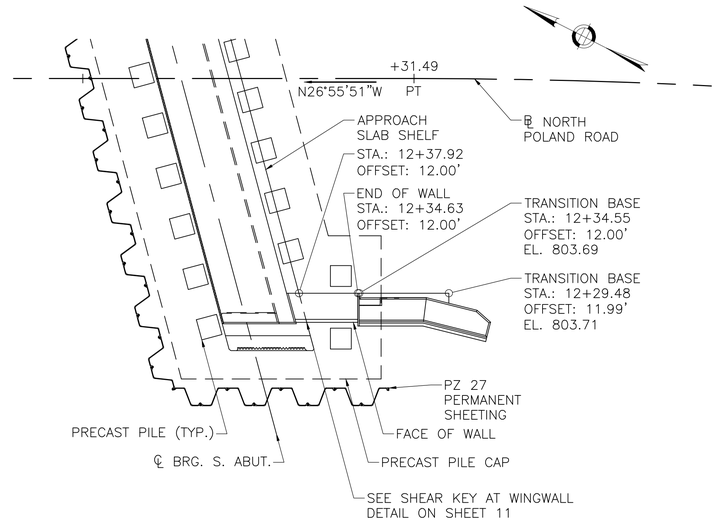


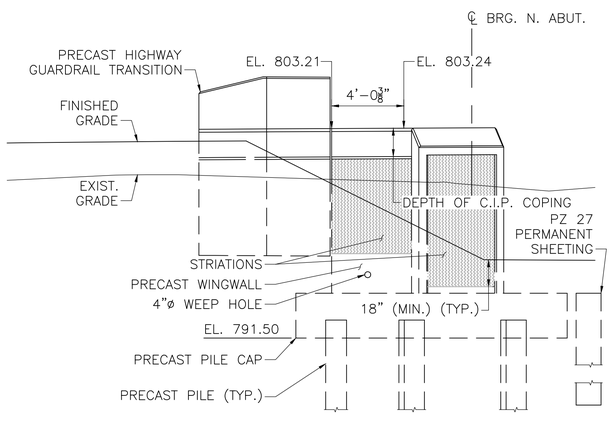
NORTHWEST WINGWALL PLAN

SCALE: $\frac{1}{4}$" = 1'–0"



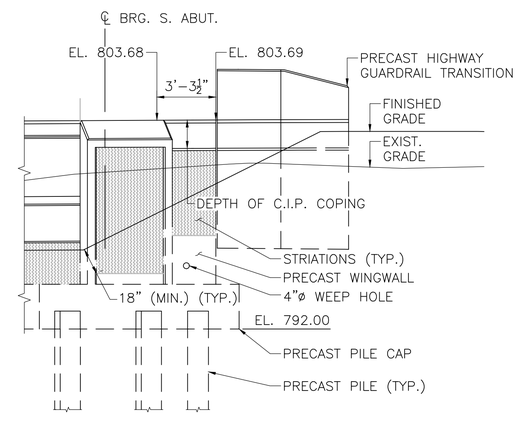
SOUTHWEST WINGWALL PLAN

SCALE: $\frac{1}{4}$" = 1'–0"



NORTHWEST WINGWALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"



SOUTHWEST WINGWALL ELEVATION

SCALE: $\frac{1}{4}$" = 1'–0"

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	26	42
PROJECT FILE NO.	609082		

BRIDGE
WINGWALL PLANS & ELEVATIONS (2 OF 2)

WINGWALL NOTES:

1. SUPERSTRUCTURE, ABUTMENT CAP JOINTS, ABUTMENT JOINTS, ABUTMENT VOIDS, PILE CAP JOINTS, PILE CAP BLOCK–OUTS, AND APPROACH SLAB NOT SHOWN FOR CLARITY. REFER TO ABUTMENT PLANS, ELEVATIONS, AND JOINT LAYOUT PLANS.
2. DIMENSIONS, TOP OF WALL ELEVATIONS ARE TAKEN FROM BACK OF WALL AT AND ALONG STATION–OFFSET CALL–OUTS IN PLAN.
3. ELEVATIONS ARE LOOKING EAST.

DATE	DESCRIPTION
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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER

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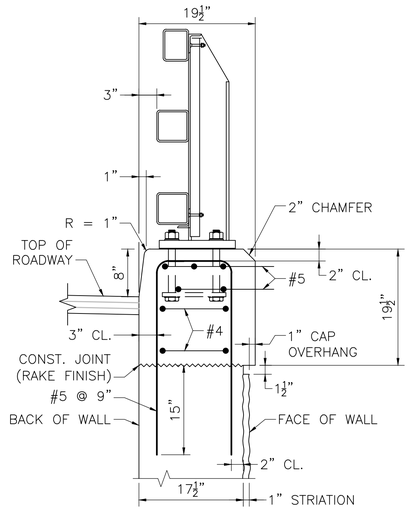
CONWAY
NORTH POLAND ROAD

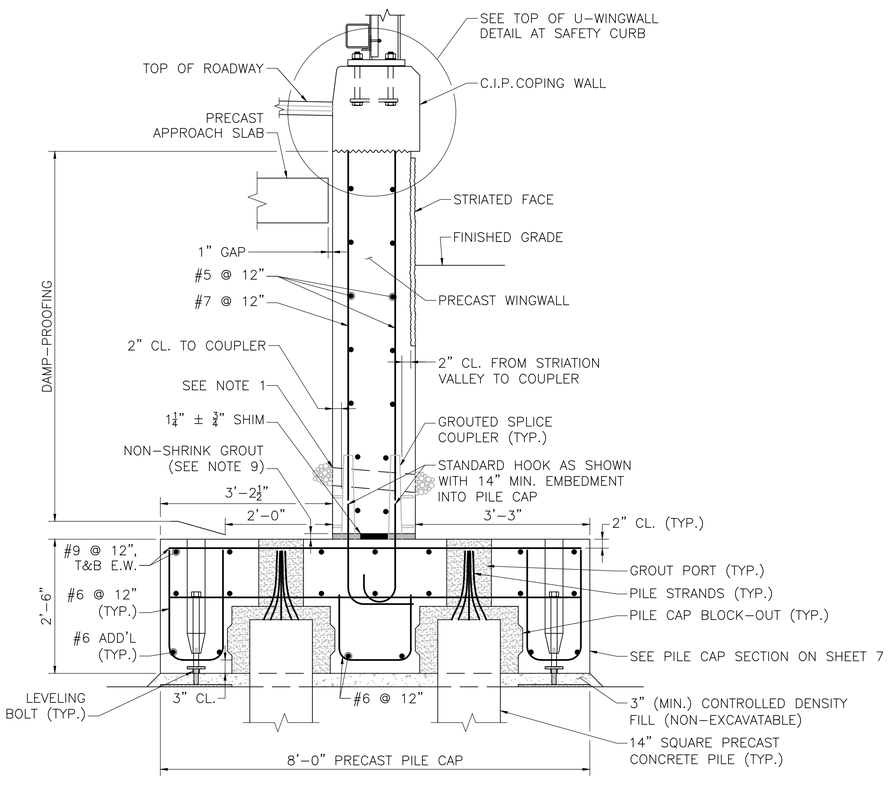
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	27	42
	PROJECT FILE NO. 609082		

BRIDGE
WINGWALL DETAILS



TOP OF U–WINGWALL
DETAIL AT SAFETY CURB

SCALE: 1" = 1'–0"



TYPICAL WINGWALL SECTION

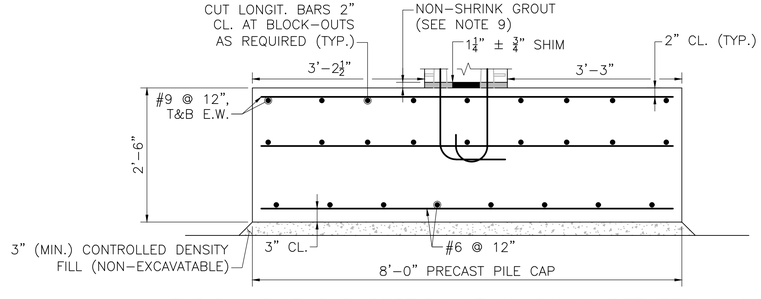
SCALE: ¾" = 1'–0"

WINGWALL NOTES:

1. A 4"ø WEEP HOLE SHALL BE PROVIDED AT MID–POINT OF WALL LOCATED 12" ABOVE THE HEEL OF THE FOOTING SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
2. ALL CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE.
3. ALL REINFORCING BARS SHALL BE EPOXY COATED, EXCEPT AT THE PILE CAP, WHICH SHALL BE GALVANIZED.
4. THE FACTORED MAXIMUM AXIAL DESIGN LOAD PER PILE IS 70.9 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS EXTREME II LOAD COMBINATION.

   THE FACTORED MINIMUM AXIAL DESIGN LOAD PER PILE IS –25.8 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS EXTREME II LOAD COMBINATION.

   THE FACTORED LATERAL DESIGN LOAD PER PILE IS 16.9 KIPS AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
5. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS 81.4 KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF 180.9 KIPS AND A RESISTANCE FACTOR OF 0.45.
6. THE ESTIMATED PILE TIP ELEVATION IS 755.0 FEET. PILES SHALL NOT BE DRIVEN BELOW ELEVATION 747.0 TO AVOID IMPACTING UNDERLYING ARTESIAN CONDITIONS.
7. DETERMINATION OF THE DRIVEN PILE RESISTANCE, PILE DRIVING CRITERIA, AND PILE INTEGRITY SHALL BE PERFORMED USING THE PILE DRIVING ANALYZER WITH A RESISTANCE FACTOR OF 0.65.
8. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION, AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER. PILES SHALL BE INSTALLED TO ACHIEVE A FACTOR DRIVEN RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED AXIAL DESIGN LOAD.
9. PRE–BED PRECAST ELEMENT WITH NON–SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK.



TYPICAL PILE CAP SECTION AT WINGWALL BETWEEN PILES

SCALE: ¾" = 1'–0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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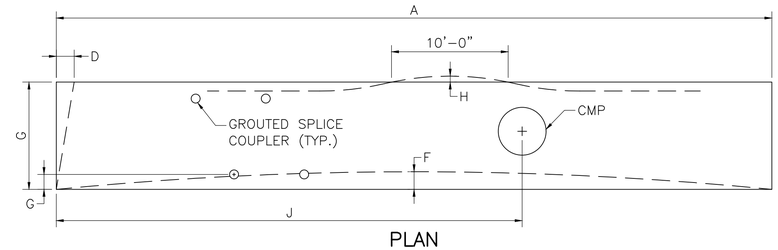
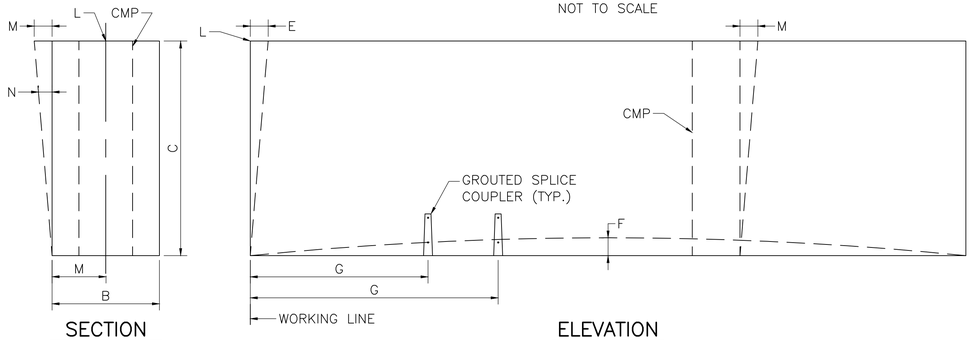


PLAN

NOT TO SCALE

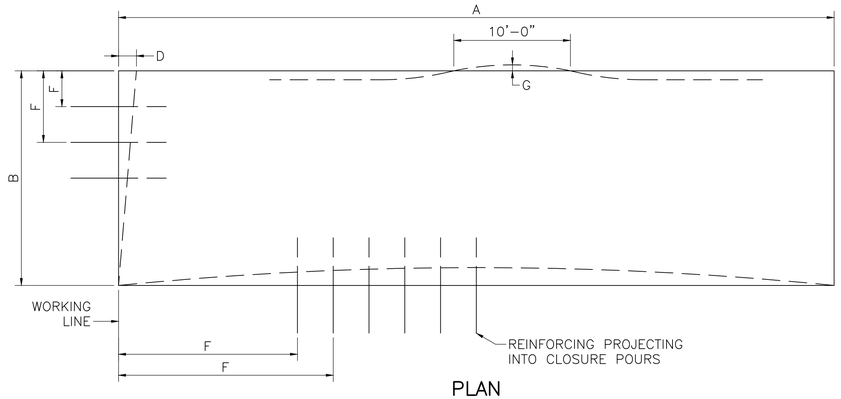


SECTION

NOT TO SCALE

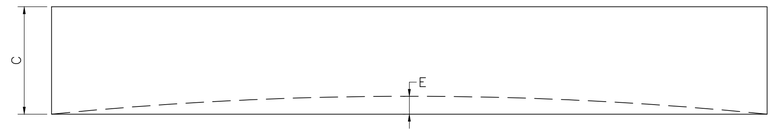
ELEVATION

NOT TO SCALE



PLAN

NOT TO SCALE



ELEVATION

NOT TO SCALE

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	28	42
PROJECT FILE NO.	609082		

BRIDGE
PRECAST TOLERANCES

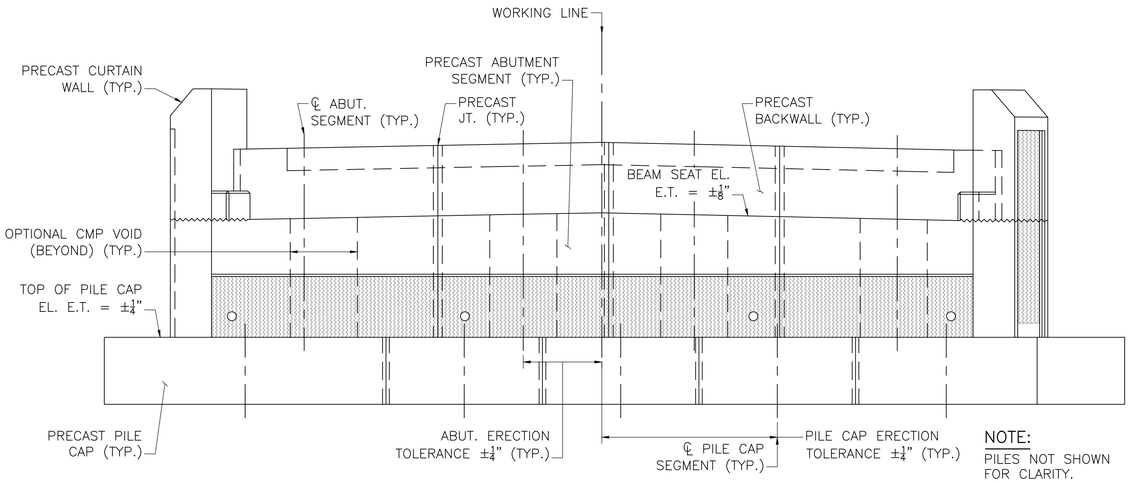
WALL SEGMENT ELEVATION ERECTION TOLERANCES

A	LENGTH	$\pm\frac{1}{4}$"
B	WIDTH (OVERALL)	$\pm\frac{1}{4}$"
C	DEPTH (OVERALL)	$\pm\frac{1}{4}$"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	$\pm\frac{1}{2}$"
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	$\pm\frac{3}{8}$"
F	SWEEP OVER MEMBER LENGTH	$\pm\frac{1}{4}$"

G	LOCATION OF GROUTED SPLICE COUPLER MEASURED FROM A WORKING LINE	$\pm\frac{1}{4}$"
H	LOCAL SMOOTHNESS OF ANY SURFACE	$\pm\frac{1}{4}$" IN 10 FEET
J	LOCATION OF BLOCKOUT FOR PILES OR VOIDS	$\pm\frac{1}{2}$"
K	MAXIMUM PLUMB CARIATION OVER HEIGHT OF CMP VOID	$\pm\frac{1}{2}$"
L	TOP ELEVATION FROM NOMINAL TOP ELEVATION	$\frac{1}{4}$"
M	MAXIMUM PLUMB CARIATION OVER HEIGHT OF PANEL	$\frac{1}{2}$"
N	PLUMB IN ANY 10 FEET OF PANEL HEIGHT	$\frac{1}{4}$"

APPROACH SLAB FABRICATION & PILE CAP TOLERANCES

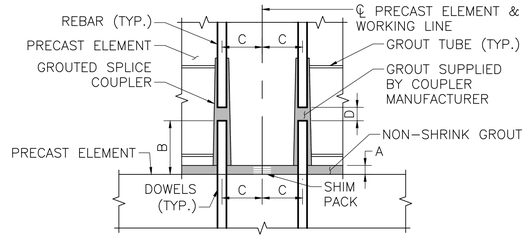
A	LENGTH (OVERALL)	$\pm\frac{1}{4}$"
B	WIDTH (OVERALL)	$\pm\frac{1}{4}$"
C	DEPTH (OVERALL)	$\pm\frac{1}{4}$"
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	$\pm\frac{1}{2}$"
E	SWEEP OVER MEMBER LENGTH	$\pm\frac{3}{8}$"
F	LOCATION OF PROJECTING REINFORCING MEASURED FROM A WORKING LINE	$\pm\frac{1}{2}$"
G	LOCAL SMOOTHNESS OF ANY SURFACE	$\pm\frac{1}{4}$" IN 10 FEET



NOTE:
PILES NOT SHOWN FOR CLARITY.

ABUTMENT ERECTION TOLERANCES

NOT TO SCALE



NOTES:

1. USE MATCHING TEMPLATES FOR THE LOCATION OF REINFORCEMENT AND GROUTED SPLICE COUPLER PLACEMENT WITHIN THE ELEMENTS TO CONTROL THE CRITICAL DIMENSION "C".
2. CONSULT MANUFACTURER OF THE GROUTED SPLICE COUPLER FOR PROPER DIMENSIONS "B" AND "D" AND FOR TOLERANCES ON THESE AND ALL DIMENSIONS.
3. BEFORE EXECUTING GROUTED SPLICE COUPLER ASSEMBLIES, ALWAYS SEEK INSTALLATION RECOMMENDATIONS FROM THE MANUFACTURER OF THE GROUTED SPLICE COUPLER USED.

GROUTED SPLICE COUPLER TOLERANCES

A	SHIM PACK HEIGHT	$1\frac{1}{4}$"$\pm\frac{3}{4}$"
B	DOWEL HEIGHT	CONSULT MANUFACTURER
C	LOCATION OF REINFORCING, GROUTED SPLICE COUPLER, AND DOWELS MEASURED FROM A WORKING LINE	$\pm\frac{1}{4}$"
D	GAP BETWEEN DOWELS AND REINFORCING	CONSULT MANUFACTURER

GROUTED SPLICE COUPLER DETAILS

NOT TO SCALE

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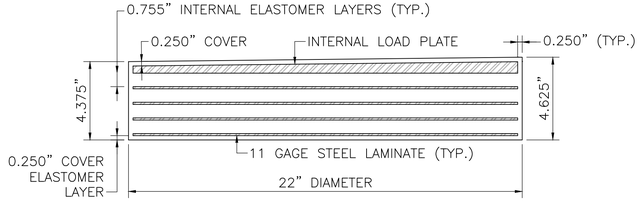
CONWAY
NORTH POLAND ROAD

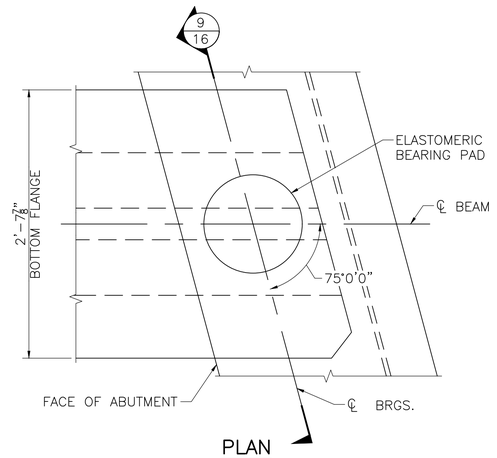
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	29	42
PROJECT FILE NO.	609082		

BRIDGE
BEARING DETAILS



NORTH ELASTOMERIC BEARING PADS

SCALE: 3" = 1'–0"

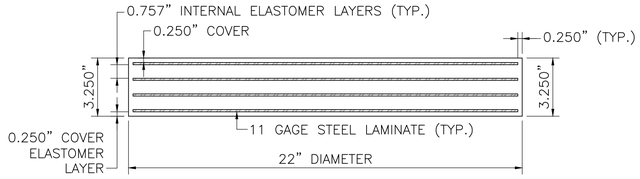


PLAN

SCALE: ¾" = 1'–0"

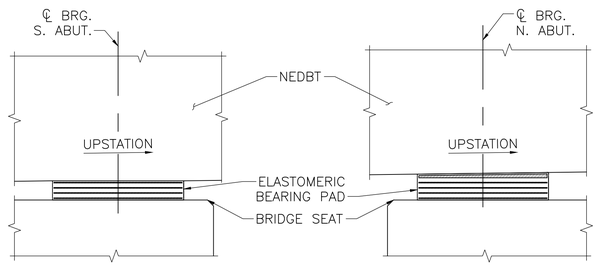
BEARING NOTES:

1. ELASTOMER SHALL HAVE SHEAR MODULUS OF 0.160 KSI.
2. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER.
3. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 163.26 KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL O 0.43 KSI.
4. TAPERED INTERNAL LOAD PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36.
5. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A $\frac{1}{32}$" DEEP DIRECTION ARROW THAT POINTS UP–STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.



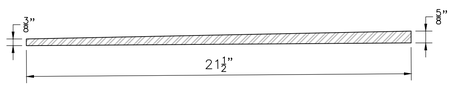
SOUTH ELASTOMERIC BEARING PADS

SCALE: 3" = 1'–0"



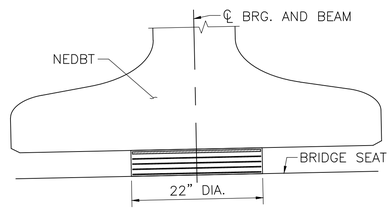
BEARING ELEVATION

SCALE: 1" = 1'–0"



NORTH INTERNAL LOAD PLATE DETAILS

SCALE: 3" = 1'–0"



SECTION 9/16

SCALE: 1" = 1'–0"

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CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	30	42
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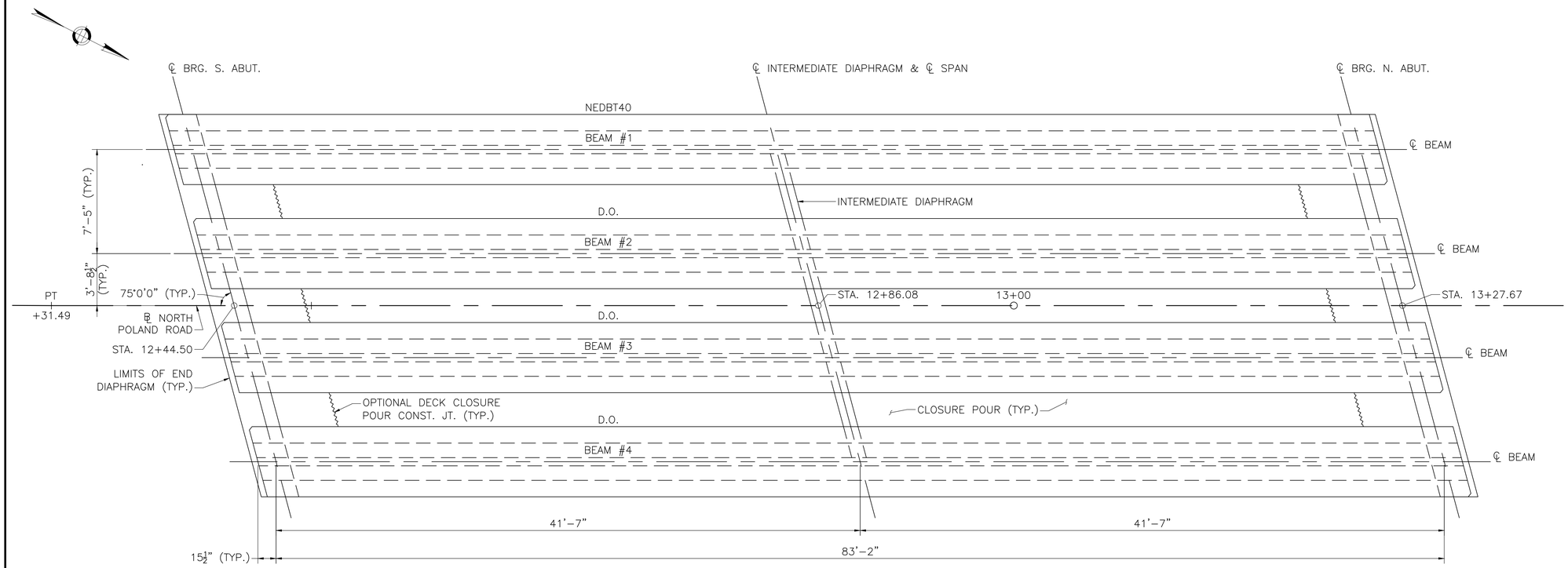
BRIDGE
FRAMING PLAN



FRAMING PLAN
SCALE: ¼" = 1'-0"

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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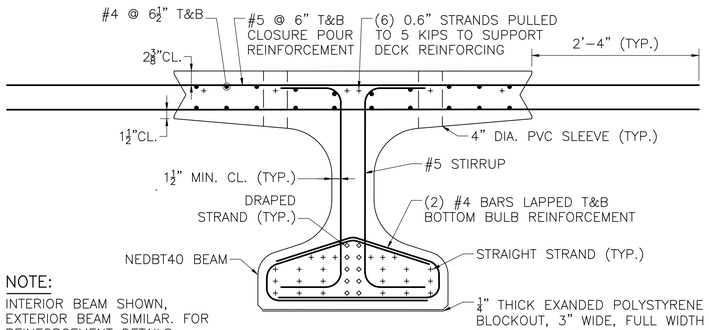
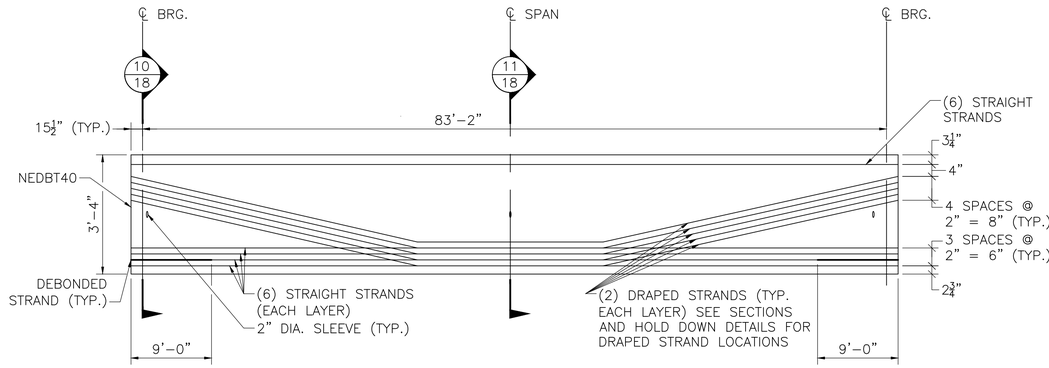


NOTE:
INTERIOR BEAM SHOWN, EXTERIOR BEAM SIMILAR. FOR REINFORCEMENT DETAILS SPECIFIC TO EXTERIOR BEAMS, SEE TYPICAL EXTERIOR NEDBT40 SECTION.

TYPICAL SECTION AND REINFORCING DETAIL

SCALE: 1" = 1'-0"



TYPICAL PRESTRESSING STRAND LAYOUT

HORIZONTAL SCALE: ⅛" = 1'-0"
VERTICAL SCALE: ½" = 1'-0"

CONWAY
NORTH POLAND ROAD

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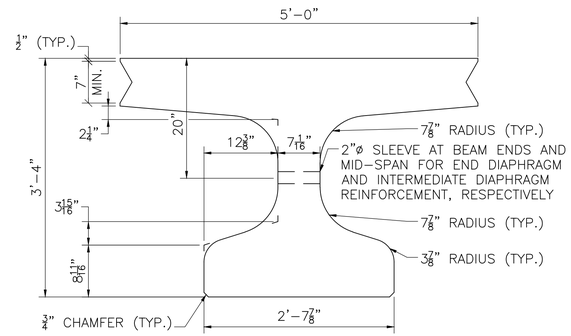
BRIDGE
BEAM DETAILS

LEGEND:

+ DENOTES PRESTRESSING STRAIGHT STRANDS
◇ DENOTES PRESTRESSING DRAPED STRANDS
⊕ DENOTES PRESTRESSING DEBONDED STRAIGHT STRANDS 9'-0" FROM ENDS

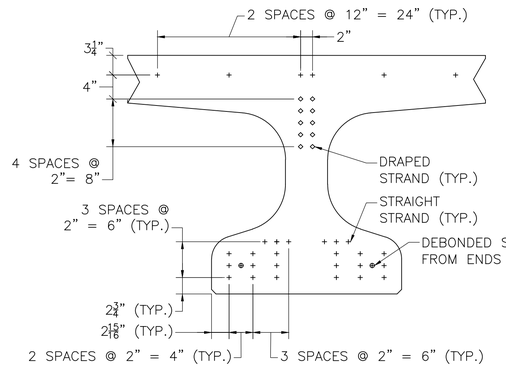
BEAM NOTES:

1. ALL PRETENSIONING ELEMENTS SHALL BE 0.6"ø, UNCOATED SEVEN-WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
2. THE NOMINAL TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
3. THE INITIAL TENSION PER 0.6"ø STRAND SHALL BE 44 KIPS, EXCEPT AT THE TOP (6) STRANDS IN THE FLANGE, WHICH SHALL BE 5 KIPS.
4. APPROXIMATELY 50% OF ALL STRANDS SHALL BE DEBONDED FOR THE FIRST 6" FROM THE END OF THE BEAM TO CONTROL END CRACKING.
5. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 8000 PSI.
6. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, OF AT LEAST 4500 PSI.
7. THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTIONS PROCEDURE.
8. ALL REINFORCEMENT IN THESE DETAILS SHALL BE EPOXY COATED.
9. STRANDS SHOWN ARE TYPICAL EACH BEAM.
10. FOR ADDITIONAL SLEEVES AND REINFORCEMENT DETAILS REQUIRED AT BEAM ENDS, SEE DETAILS AT ABUTMENT – ROADWAY SECTION ON SHEET 10.
11. HORIZONTAL DIMENSIONS ARE TAKEN ALONG BEAM CENTERLINES.



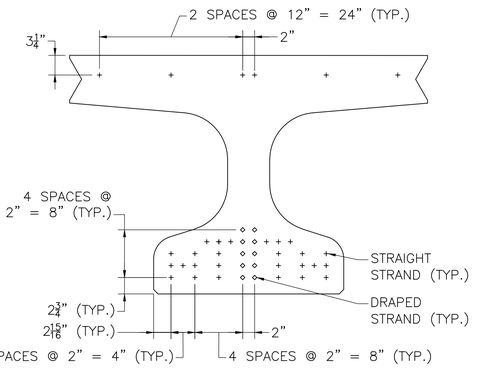
TYPICAL INTERIOR NEDBT40 SECTION

SCALE: 1" = 1'-0"



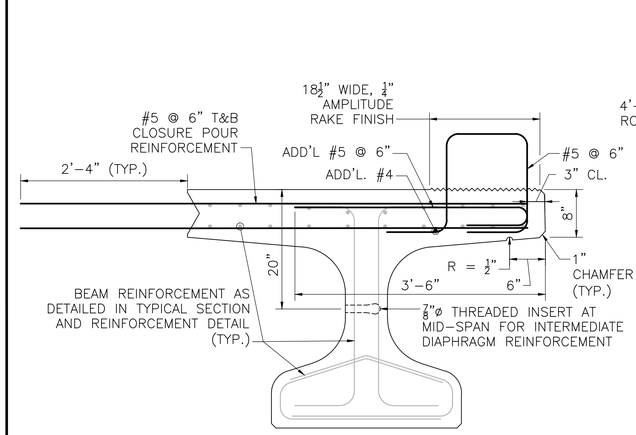
SECTION 10/18

SCALE: 1" = 1'-0"



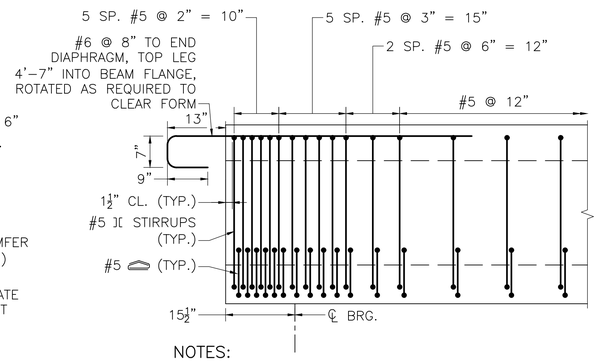
SECTION 11/18

SCALE: 1" = 1'-0"



TYPICAL EXTERIOR NEDBT40 SECTION

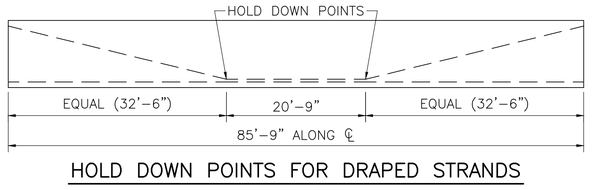
SCALE: 1" = 1'-0"



NOTES:
1. DECK REINFORCEMENT NOT SHOWN FOR CLARITY.
2. BEAM REINFORCEMENT IS SYMMETRICAL ABOUT CL. SPAN.

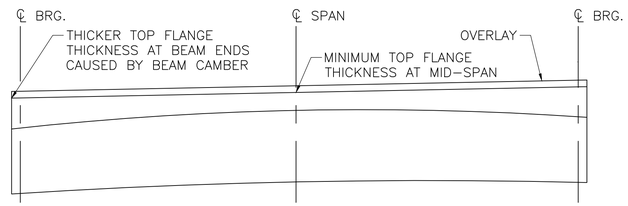
LONGITUDINAL SECTION

SCALE: ¾" = 1'-0"



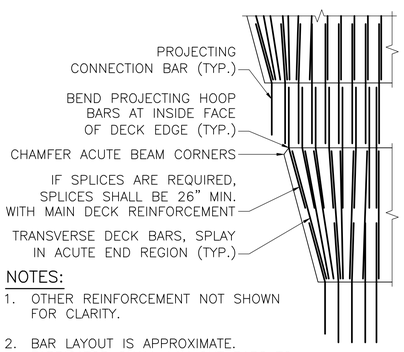
HOLD DOWN POINTS FOR DRAPED STRANDS

NOT TO SCALE



BEAM FLANGE ADJUSTMENT FOR TANGENT PROFILE

NOT TO SCALE



NOTES:
1. OTHER REINFORCEMENT NOT SHOWN FOR CLARITY.
2. BAR LAYOUT IS APPROXIMATE. FABRICATOR SHALL LAY OUT BARS TO PROVIDE A MAXIMUM OF 6" SPACING BETWEEN ADJACENT TRANSVERSE DECK BARS.

PLAN

MAIN DECK REINFORCEMENT DETAILS AT SKEWED BEAM ENDS

SCALE: ⅜" = 1'-0"

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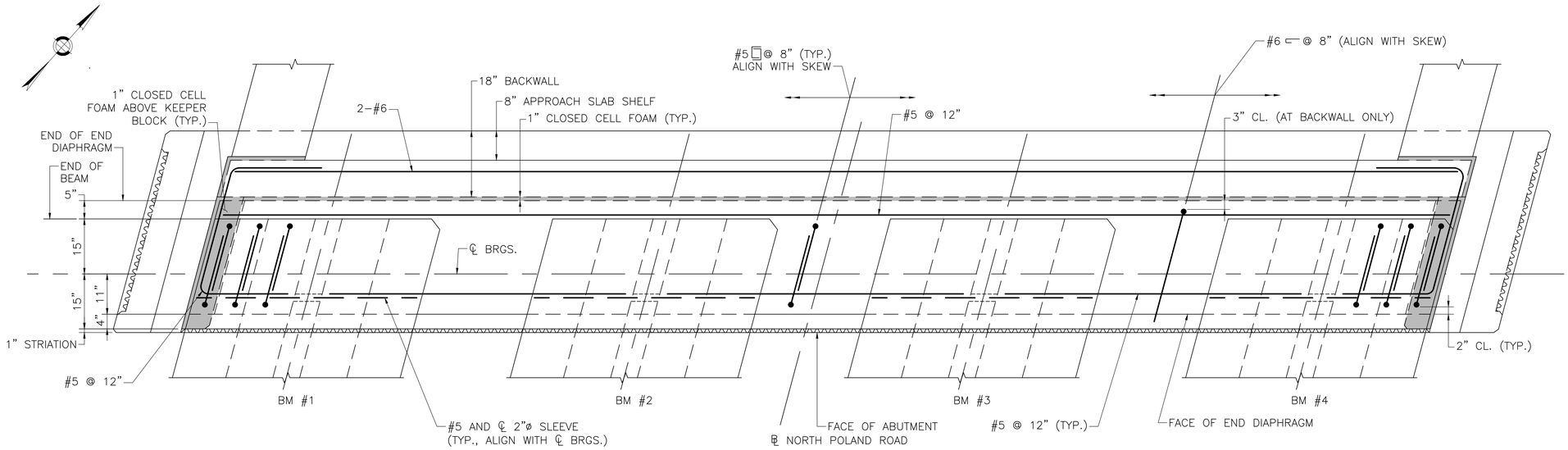
MA	HIP(BR)-003S(779)X	32	42
	PROJECT FILE NO. 609082		

BRIDGE
END DIAPHRAGM PLAN & ELEVATION

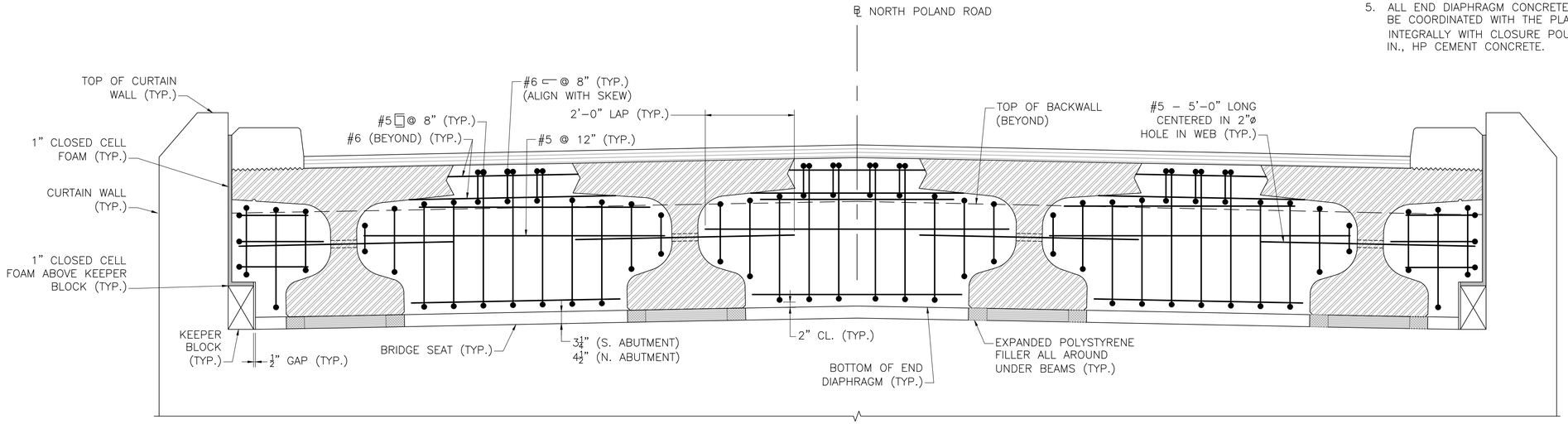


END DIAPHRAGM PLAN

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

END DIAPHRAGM NOTES:

1. NORTH ABUTMENT SHOWN. SOUTH ABUTMENT SIMILAR.
2. CONTRACTOR MAY USE EXPANDED POLYSTYRENE FILLER OR A REMOVABLE FORM TO FORM THE BOTTOM OF THE END DIAPHRAGM.
3. END DIAPHRAGM REINFORCEMENT STEEL DIRECTLY BEHIND END OF BEAM NOT SHOWN IN ELEVATION FOR CLARITY.
4. ALL REINFORCEMENT IN THESE DETAILS SHALL BE EPOXY COATED.
5. ALL END DIAPHRAGM CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE AND SHALL BE COORDINATED WITH THE PLACEMENT OF THE CLOSURE POURS. IF POURED INTEGRALLY WITH CLOSURE POURS, END DIAPHRAGM CONCRETE SHALL BE 8000 PSI, $\frac{3}{8}$ IN., HP CEMENT CONCRETE.



END DIAPHRAGM ELEVATION

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

08/03/2024	ISSUED FOR CONSTRUCTION
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NORTH POLAND ROAD

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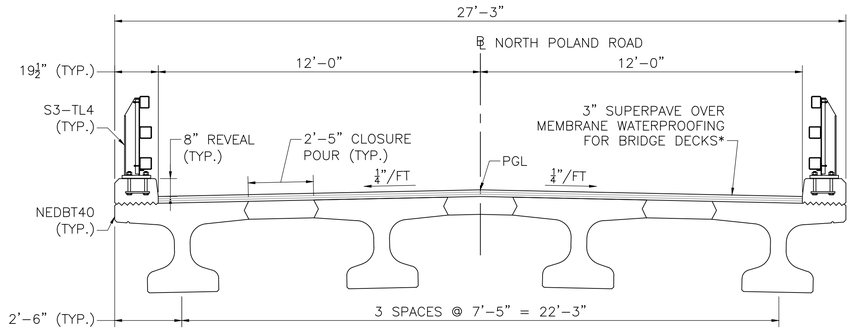
MA	HIP(BR)-003S(779)X	33	42
	PROJECT FILE NO. 609082		

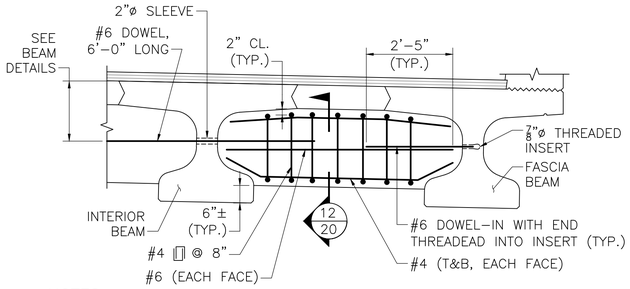
BRIDGE
SUPERSTRUCTURE DETAILS & CAMBER



* 1½" SUPERPAVE BRIDGE SURFACE COURSE – 9.5 POLYMER (SSC–B–9.5–P) OVER
1½" SUPERPAVE BRIDGE PROTECTIVE COURSE – 9.5 POLYMER (SPC–B–9.5–P)

TRANSVERSE SECTION

SCALE: ⅜" = 1'–0"

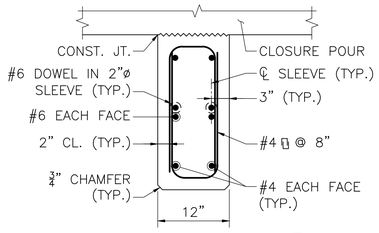


NOTES:

1. SLEEVES AND INSERTS SHALL BE ALIGNED WITH DIAPHRAGM SKEWS AS SHOWN ON THE FRAMING PLAN.
2. ⅞"ø THREADED INSERTS SHALL BE CAST INTO THE PRECAST BEAMS BY THE FABRICATOR AND SHALL PROVIDE A MINIMUM NOMINAL TENSILE RESISTANCE 21.0 KIPS AND A MINIMUM NOMINAL SHEAR RESISTANCE OF 21.0 KIPS IN 3000 PSI CONCRETE.
3. INTERMEDIATE DIAPHRAGM CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE. IF POURED INTEGRALLY WITH THE CLOSURE POURS, DIAPHRAGM CONCRETE SHALL BE 8000 PSI, ⅜ IN., HP CEMENT CONCRETE.

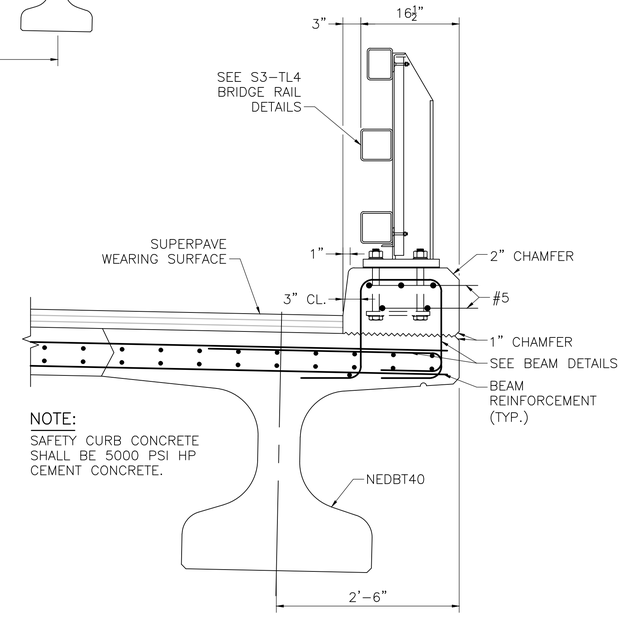
TYPICAL INTERMEDIATE DIAPHRAGM

SCALE: ½" = 1'–0"



SECTION 12/20

SCALE: 1" = 1'–0"



SECTION THRU SAFETY CURB

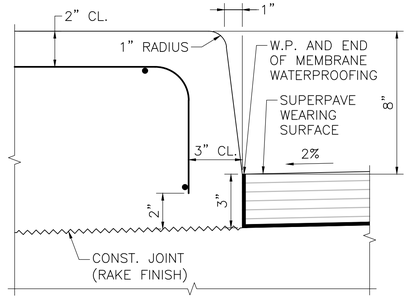
SCALE: 1" = 1'–0"

NOTE:
SAFETY CURB CONCRETE SHALL BE 5000 PSI HP CEMENT CONCRETE.

MIDSPAN DEFLECTION (INCHES) POSITIVE VALUES DENOTE UPWARD DEFLECTION			
BEAM	LOAD TYPE	INITIAL	ERECTION
BEAM #1	PRESTRESSING	3.47	6.24
	SELF WEIGHT	–1.49	–2.75
	NONCOMPOSITE DL	–	–0.22
	SUPERIMPOSED DL	–	–0.44
	TOTAL	1.98	2.82
BEAM #2	PRESTRESSING	3.47	6.24
	SELF WEIGHT	–1.49	–2.75
	NONCOMPOSITE DL	–	–0.44
	SUPERIMPOSED DL	–	–0.36
	TOTAL	1.98	2.68
BEAM #3	PRESTRESSING	3.47	6.24
	SELF WEIGHT	–1.49	–2.75
	NONCOMPOSITE DL	–	–0.44
	SUPERIMPOSED DL	–	–0.36
	TOTAL	1.98	2.68
BEAM #4	PRESTRESSING	3.47	6.24
	SELF WEIGHT	–1.49	–2.75
	NONCOMPOSITE DL	–	–0.22
	SUPERIMPOSED DL	–	–0.44
	TOTAL	1.98	2.82

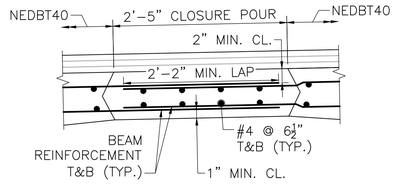
NOTES:

1. CAMBER AND DEFLECTIONS IN THE TABLE ARE NOT GUARANTEED AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
2. THE BEAM CONCRETE MODULUS OF ELASTICITY AT TRANSFER USED IN THE ABOVE BEAM CAMBER IS ASSUMED TO BE 4435 PSI.
3. THE BEAM CONCRETE MODULUS OF ELASTICITY USED IN THE ABOVE BEAM DEFLECTION IS ASSUMED TO BE 5363 PSI (AT 28 DAYS).



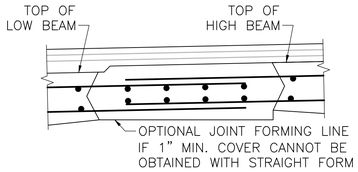
FACE OF CURB DETAIL

SCALE: 3" = 1'–0"



NOTES:

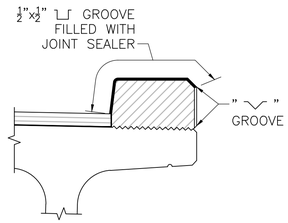
1. BEAM FLANGES AT THE CLOSURE POUR INTERFACE SHALL BE BLAST CLEANED AND WETTED WITH CLEAN WATER, IMMEDIATELY PRIOR TO PLACING CLOSURE POUR CONCRETE. EDGE OF BEAM FLANGE IN CLOSURE POUR TO HAVE EXPOSED AGGREGATE FINISH.
2. CLOSURE POUR REINFORCEMENT TO BE PLACED ALONG THE ENTIRE SPAN.
3. CLOSURE POUR REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO BEAM FLANGE.
4. CLOSURE POUR CONCRETE SHALL BE 8000 PSI, ⅜ IN., HP CEMENT CONCRETE.
5. AT THE CONTRACTOR'S OPTION, GALVANIZED INSERTS MAY BE CAST INTO THE BEAMS TO FACILITATE FORMING OF THE CLOSURE POUR. THE INSERTS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MAY NOT BE CLOSER THAN 2'–0" ON CENTER. CALCULATIONS SHALL BE PROVIDED ALONG WITH MANUFACTURER'S RECOMMENDATIONS DEMONSTRATING THAT THE INSERTS ARE SUFFICIENT FOR THE INTENDED PURPOSE.
6. WHEN MINIMUM COVER OVER THE BEAM FLANGE REINFORCEMENT IS LESS THAN 1", USE CAMBER DIFFERENTIAL DETAIL.
7. REFER TO MAIN DECK REINFORCEMENT DETAILS ON SHEET 18 FOR CONCEPTUAL REINFORCEMENT BAR LAYOUT PLAN.



CAMBER DIFFERENTIAL DETAIL

CLOSURE POUR DETAILS

SCALE: 1" = 1'–0"



NOTES:

1. ALL CONCRETE ABOVE BEAMS SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINT. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. JOINT SHALL BE SQUARE TO THE FACE OF CURB.

PARAFFIN JOINT DETAILS

SCALE: ¾" = 1'–0"

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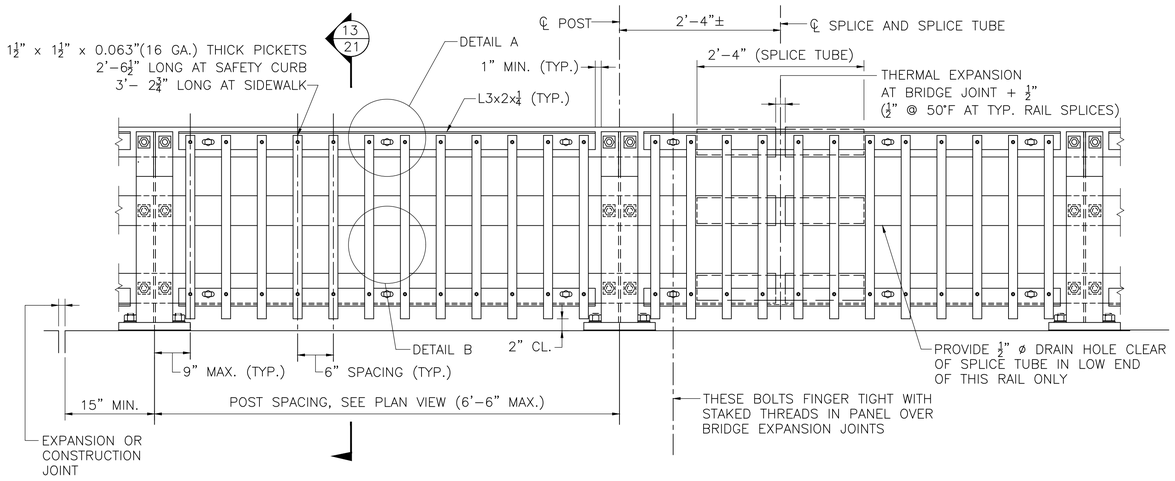
USE ONLY PRINTS OF LATEST DATE

CONWAY
NORTH POLAND ROAD

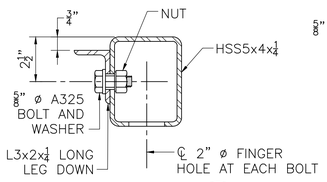
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	34	42
	PROJECT FILE NO. 609082		

BRIDGE
S3-TL4 DETAILS

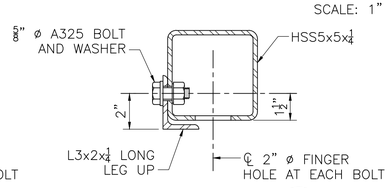


BRIDGE RAILING ELEVATION

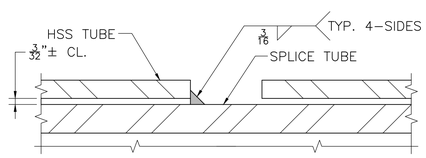
SCALE: 1" = 1'–0"



SECTION 14 / 21

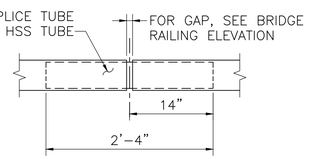


SECTION 16 / 21



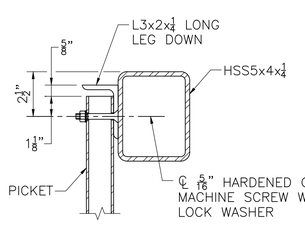
SPLICE DETAIL

FULL SIZE

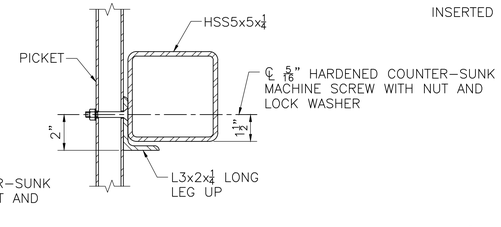


TYPICAL SPLICE

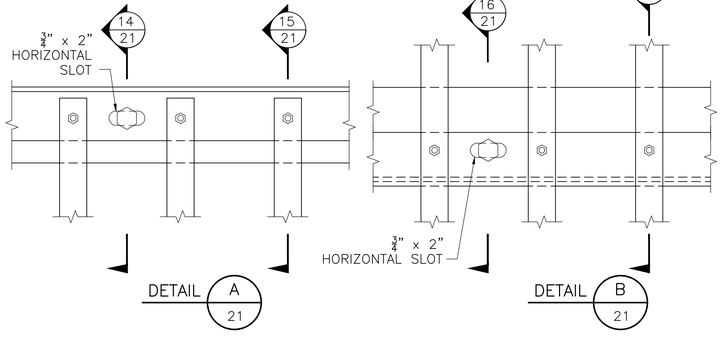
SCALE: 1" = 1'–0"



SECTION 15 / 21

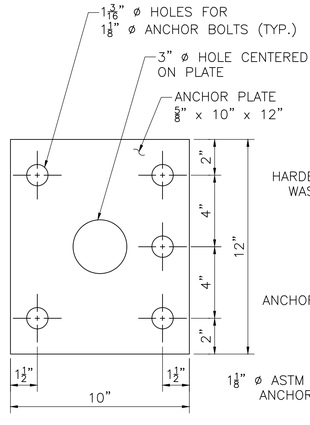


SECTION 17 / 21



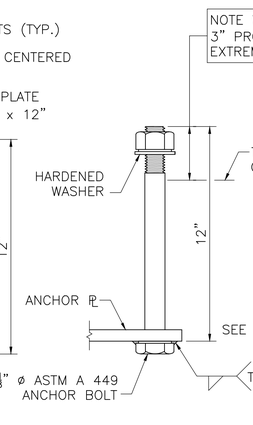
TYPICAL PICKET TO RAIL DETAILS

SCALE: 3" = 1'–0"



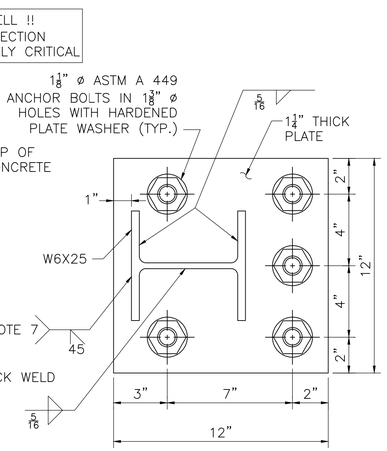
ANCHOR PLATE

SCALE: 3" = 1'–0"



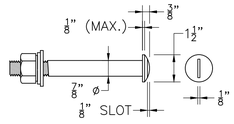
ANCHOR BOLT

SCALE: 3" = 1'–0"



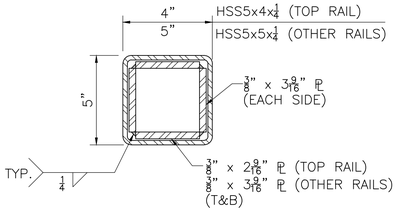
BASE PLATE

SCALE: 3" = 1'–0"



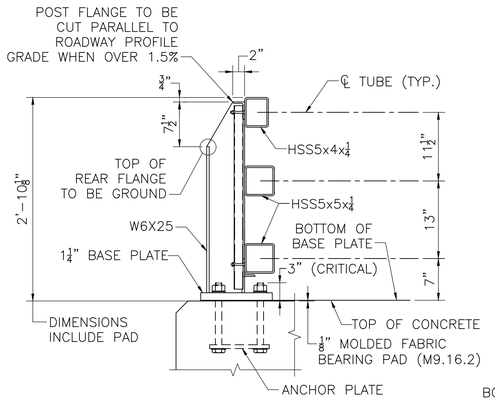
⅞" ø ROUND HEAD BOLT

SCALE: 3" = 1'–0"



SPLICE TUBE DETAILS

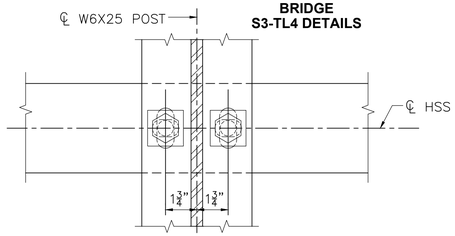
SCALE: 3" = 1'–0"



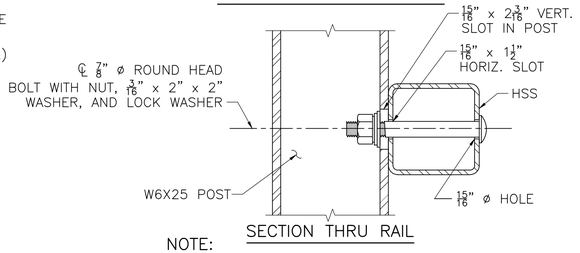
SECTION

SCALE: 1" = 1'–0"

13 / 21



SECTION THRU POST WEB



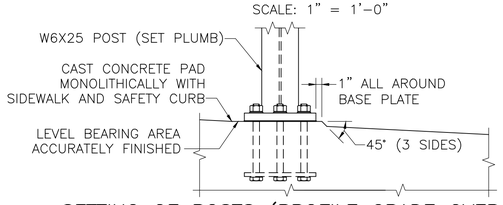
SECTION THRU RAIL

NOTE:

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

TYPICAL RAIL TO POST CONNECTIONS

SCALE: 1" = 1'–0"



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 M270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 WITH A CERTIFIED FY = 50KSI 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 M270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A513 WITH FY = 36 KS MIN. OR A500 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 ⅛ 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 PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
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 M164.

08/03/2024	ISSUED FOR CONSTRUCTION
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AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

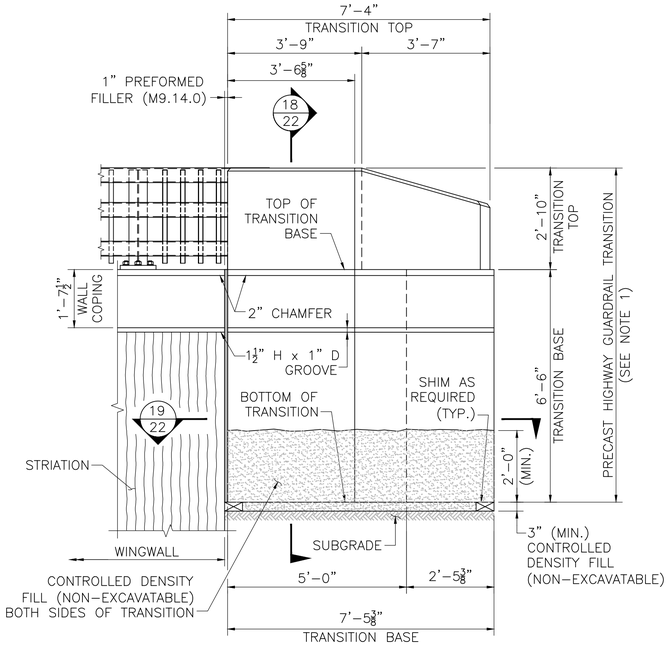
CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	35	42
PROJECT FILE NO.	609082		

BRIDGE
HIGHWAY GUARDRAIL TRANSITION (1 OF 2)

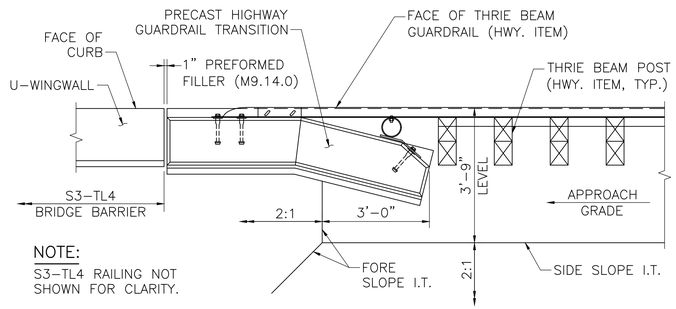
PRECAST GUARDRAIL TRANSITION NOTES:

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 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 FORM LINER.
5. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.



PRECAST GUARDRAIL TRANSITION ELEVATION

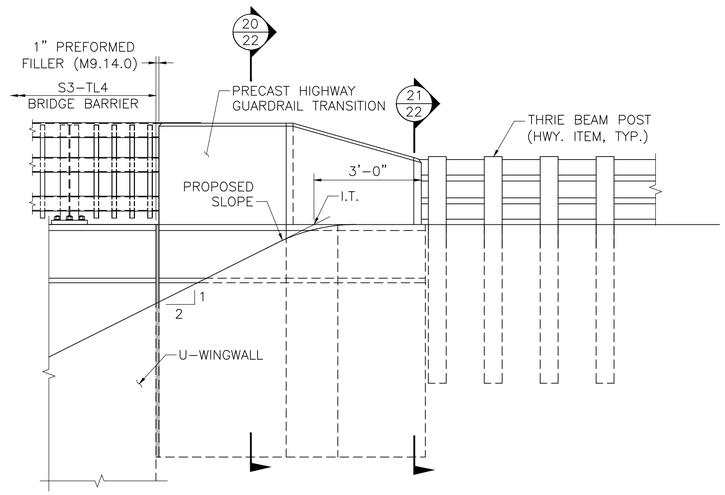
SCALE: $\frac{1}{2}$" = 1'–0"



NOTE:
S3–TL4 RAILING NOT SHOWN FOR CLARITY.

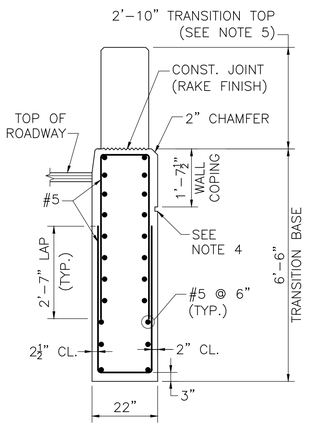
GRADING REQUIREMENTS – PLAN

SCALE: $\frac{1}{2}$" = 1'–0"



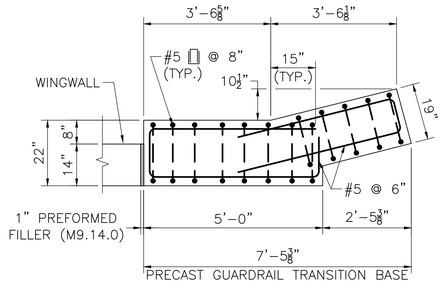
GRADING REQUIREMENTS – ELEVATION

SCALE: $\frac{1}{2}$" = 1'–0"



SECTION 18 / 22

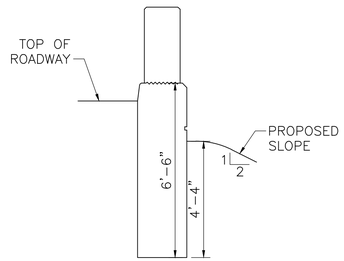
SCALE: $\frac{1}{2}$" = 1'–0"



NOTE:
WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

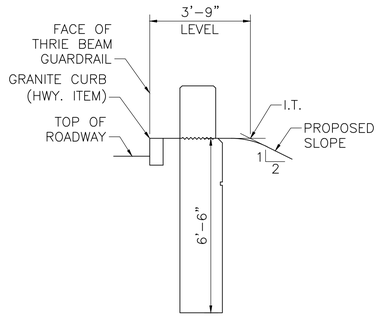
SECTION 19 / 22

SCALE: $\frac{1}{2}$" = 1'–0"



SECTION 20 / 22

SCALE: $\frac{3}{8}$" = 1'–0"



SECTION 21 / 22

SCALE: $\frac{3}{8}$" = 1'–0"

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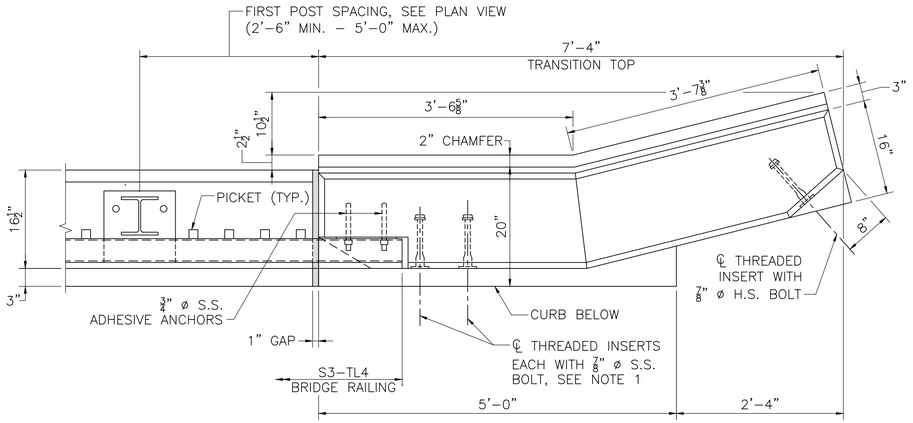
CONWAY
NORTH POLAND ROAD

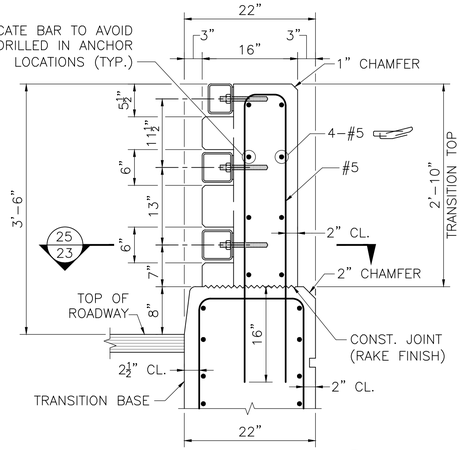
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	36	42
	PROJECT FILE NO. 609082		

BRIDGE
HIGHWAY GUARDRAIL TRANSITION (2 OF 2)



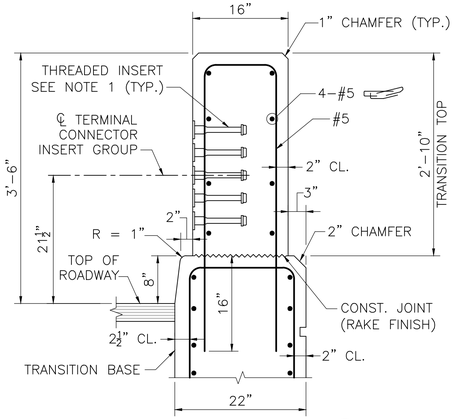
PLAN AT SAFETY CURB

SCALE: 1" = 1'-0"



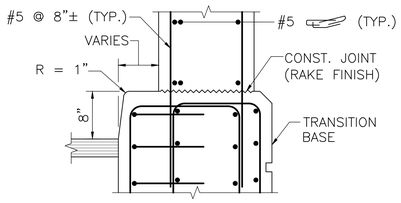
SECTION 22 / 23

SCALE: 1" = 1'-0"



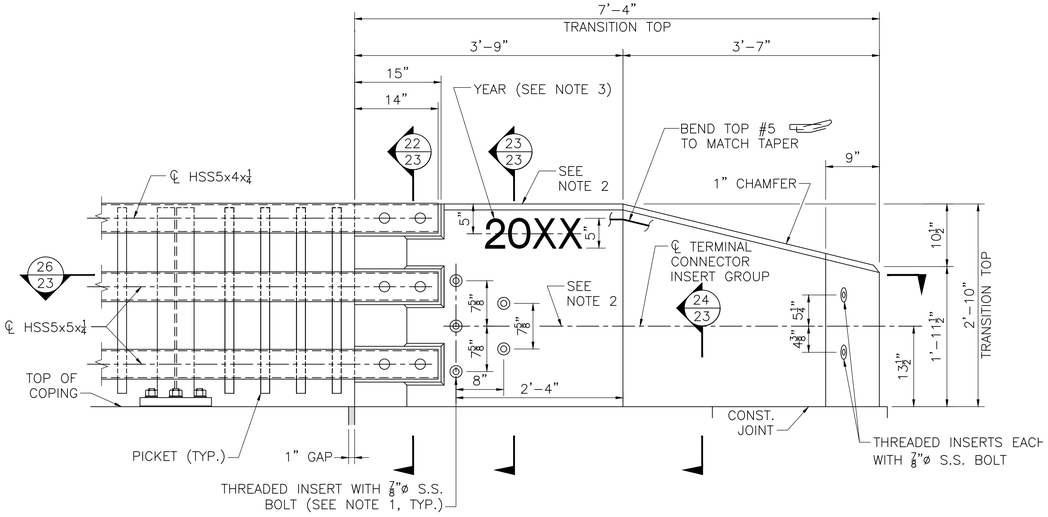
SECTION 23 / 23

SCALE: 1" = 1'-0"



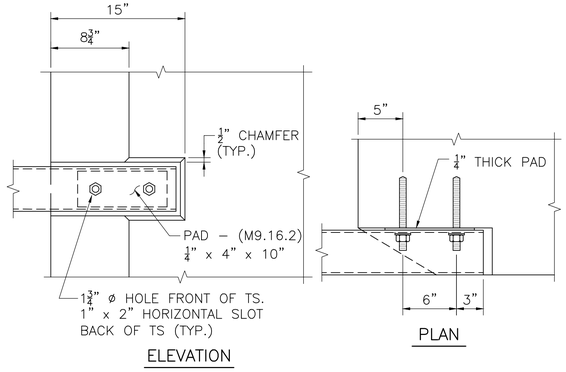
SECTION 24 / 23

SCALE: 1" = 1'-0"



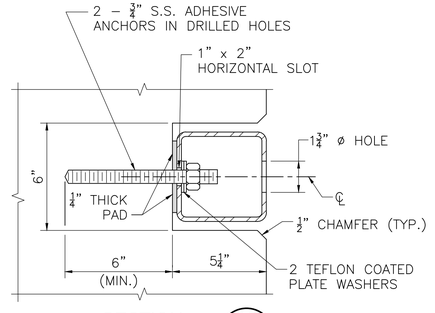
ELEVATION AT SAFETY CURB

SCALE: 1" = 1'-0"



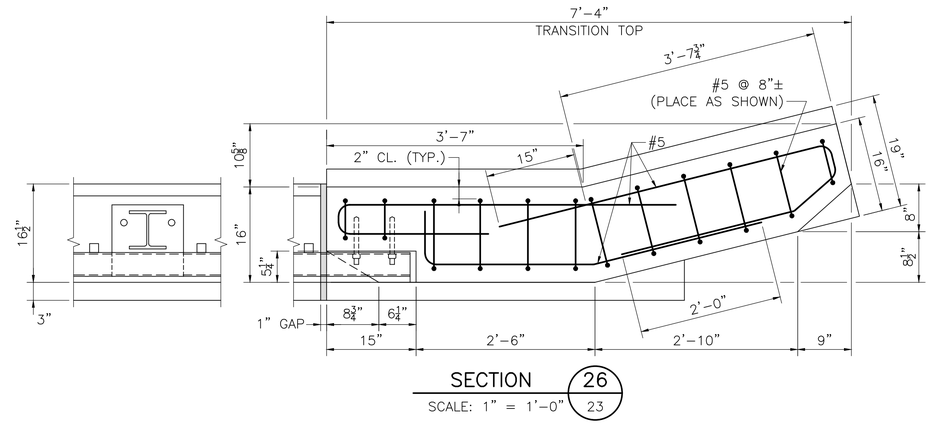
RAIL ATTACHMENT

SCALE: 1½" = 1'-0"



SECTION 25 / 23

SCALE: 3" = 1'-0"



SECTION 26 / 23

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. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF CURB SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
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.

08/03/2024	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION

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

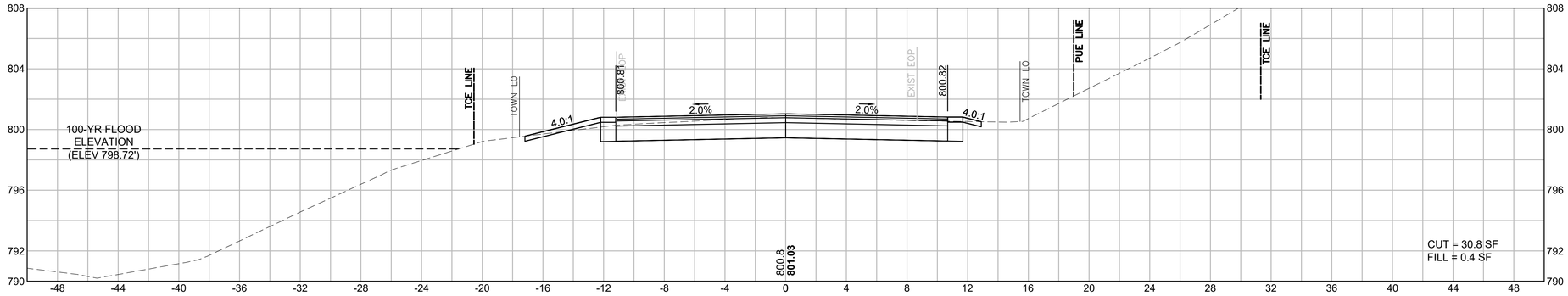
USE ONLY PRINTS OF LATEST DATE

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	37	42
	PROJECT FILE NO. 609082		

CROSS SECTIONS

11+00



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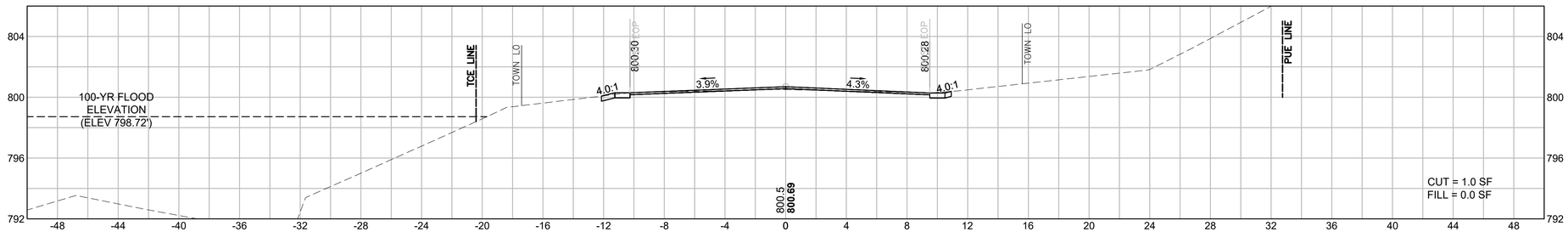

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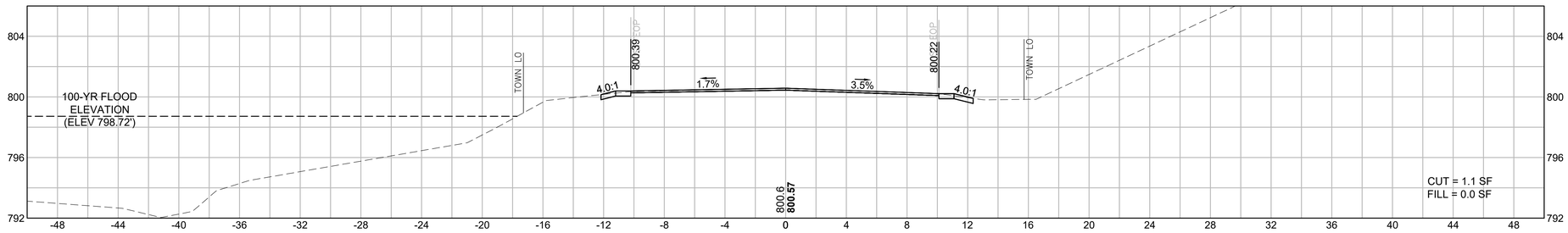

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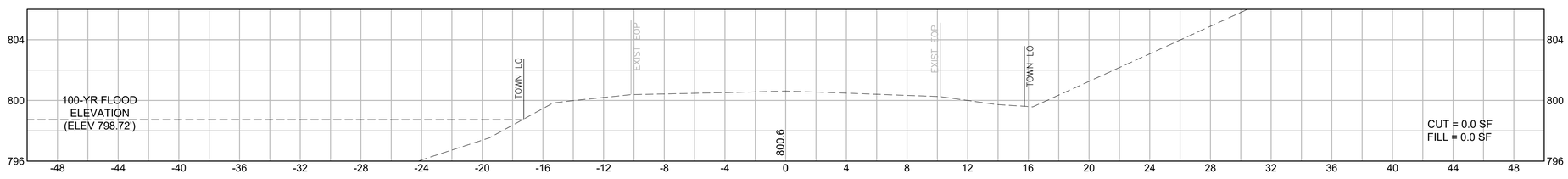


NOTE:

1. THE VERTICAL DATUM IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID 12B).

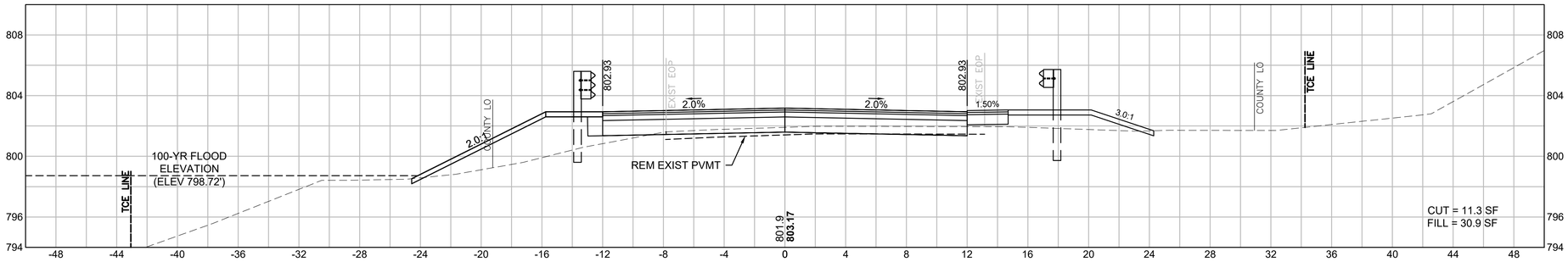
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	38	42
	PROJECT FILE NO. 609082		

CROSS SECTIONS

12+00



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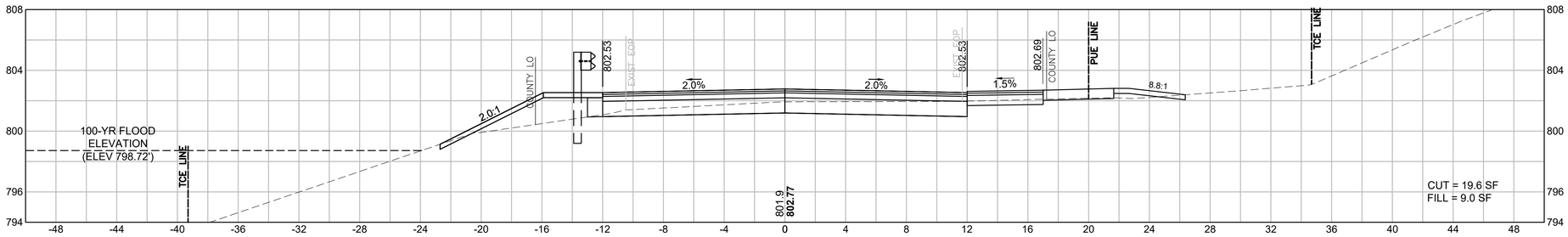

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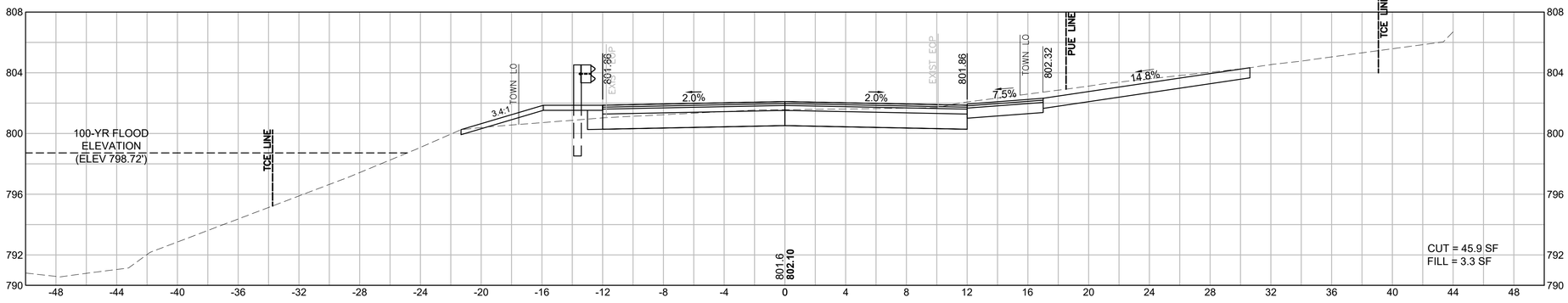

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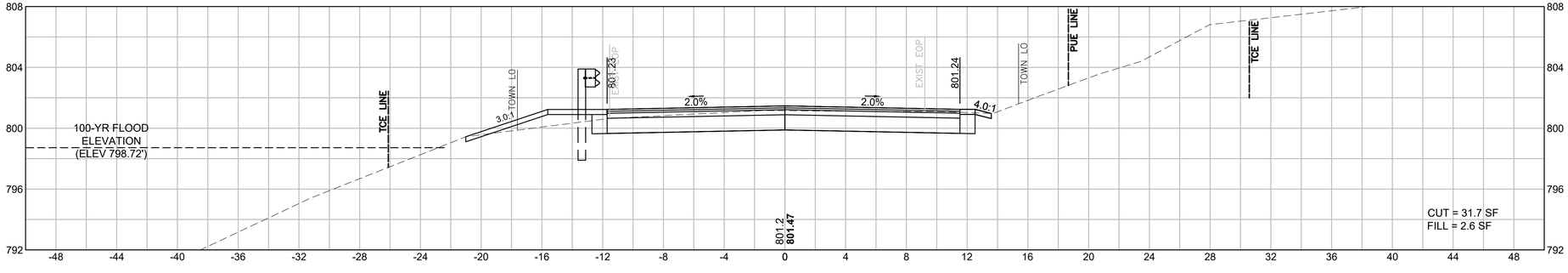

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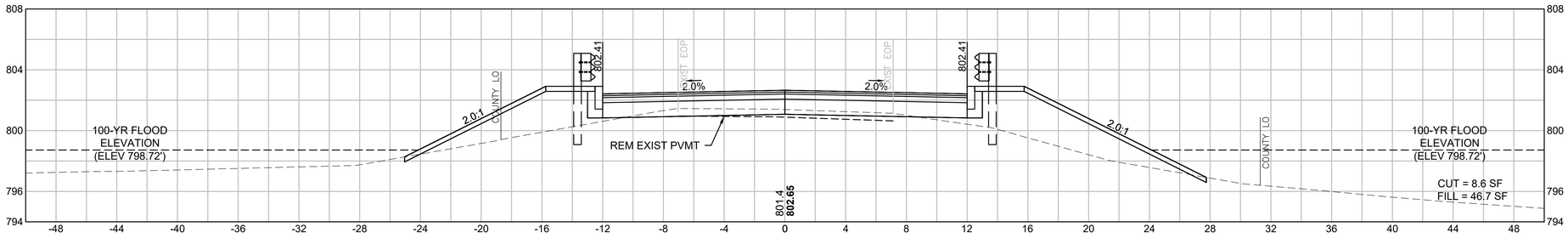
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	39	42
PROJECT FILE NO.	609082		

CROSS SECTIONS

13+50



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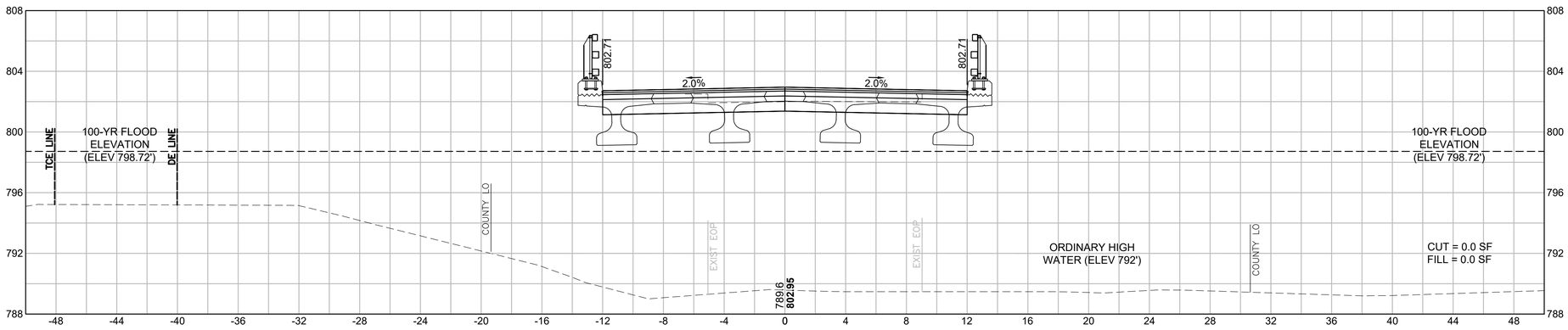

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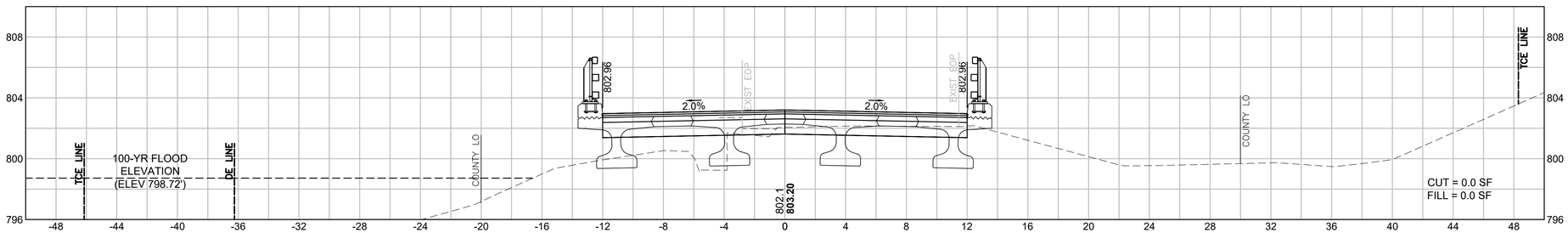

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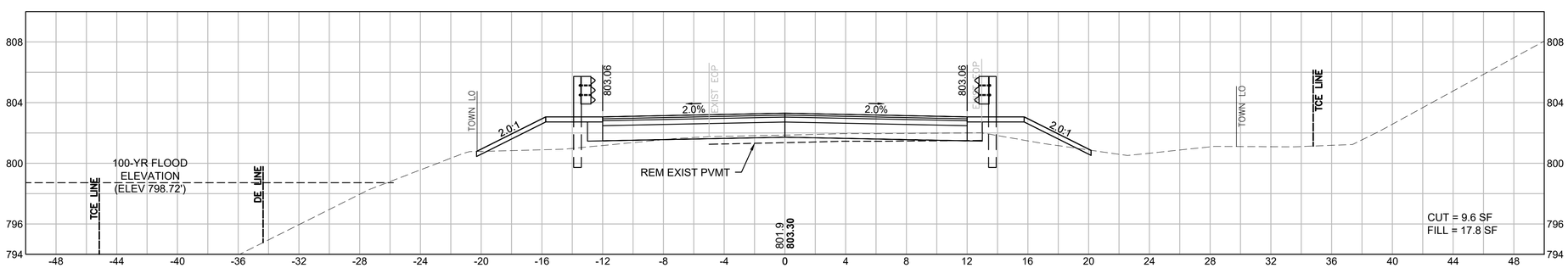

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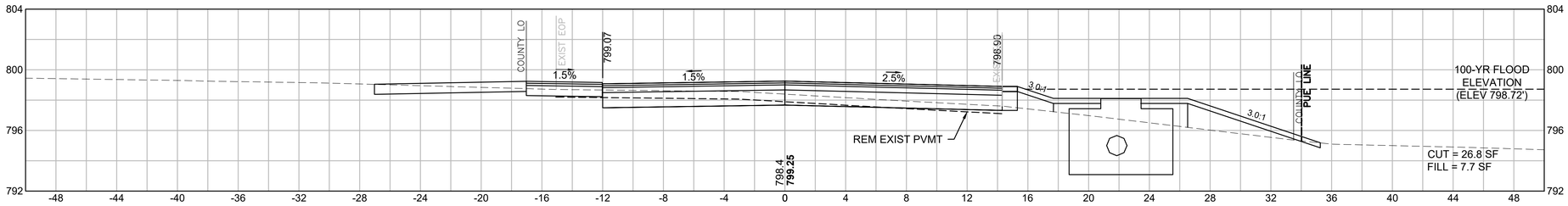
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	40	42
PROJECT FILE NO.	609082		

CROSS SECTIONS

14+75



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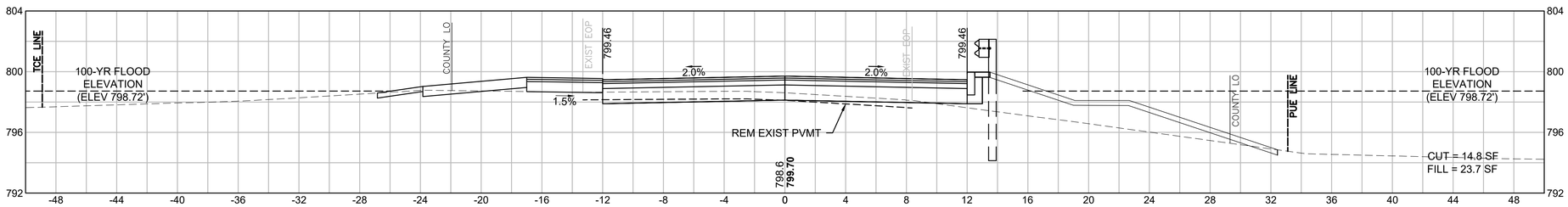

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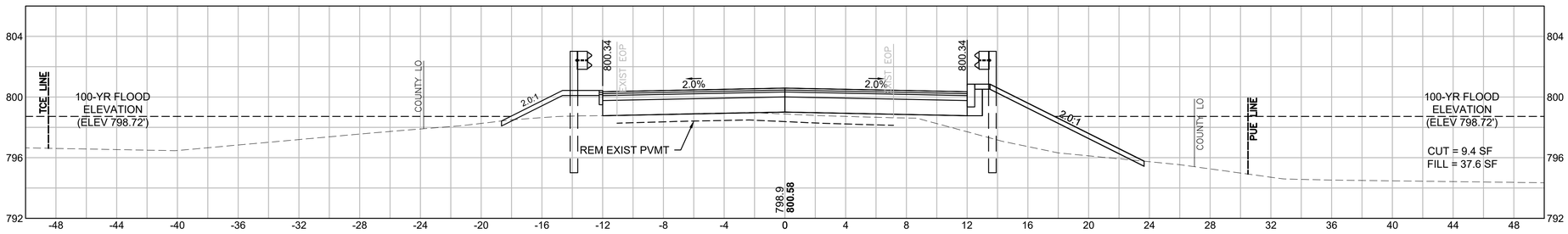

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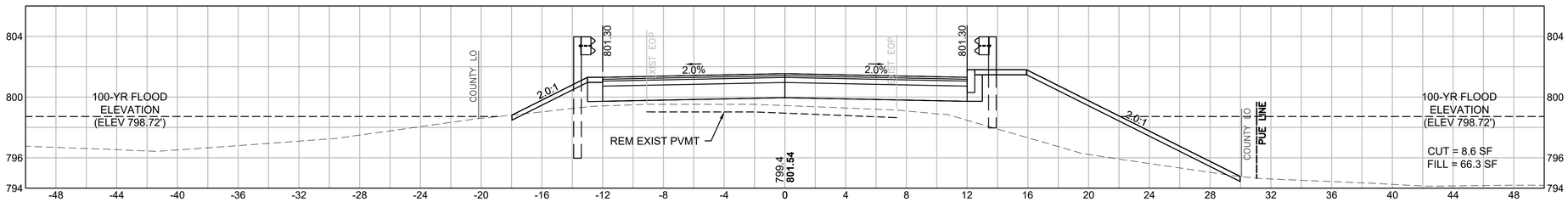

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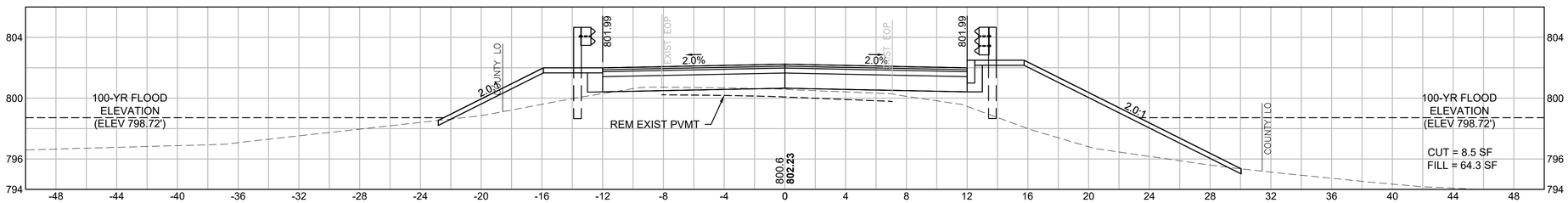

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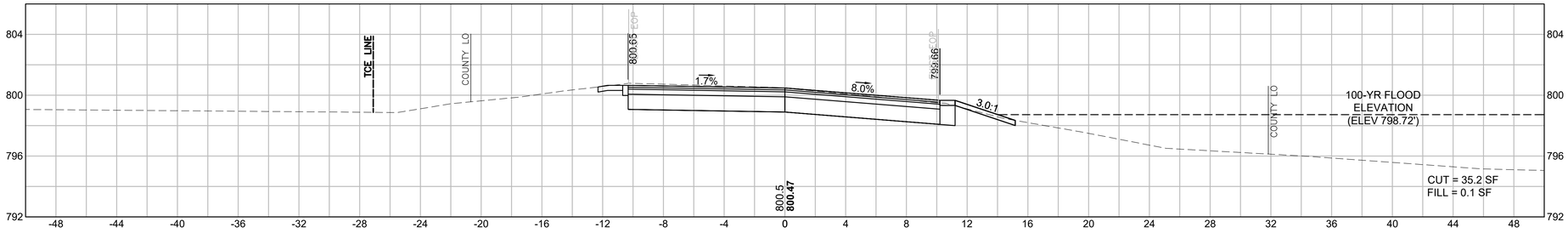
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	41	42
	PROJECT FILE NO. 609082		

CROSS SECTIONS

15+50



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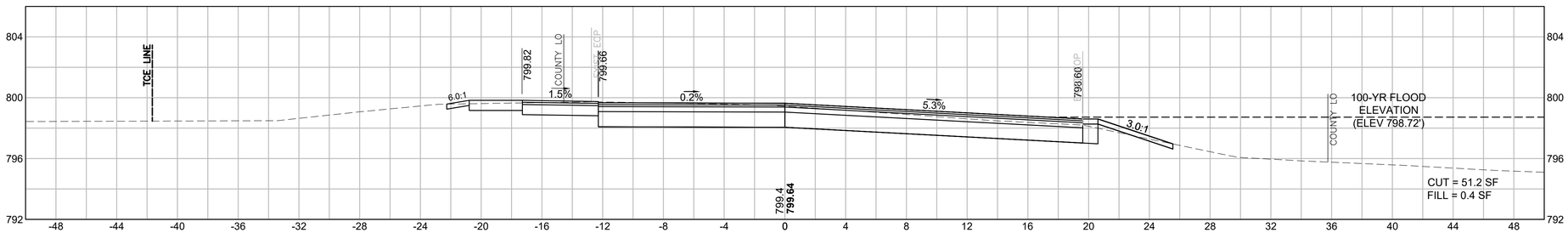

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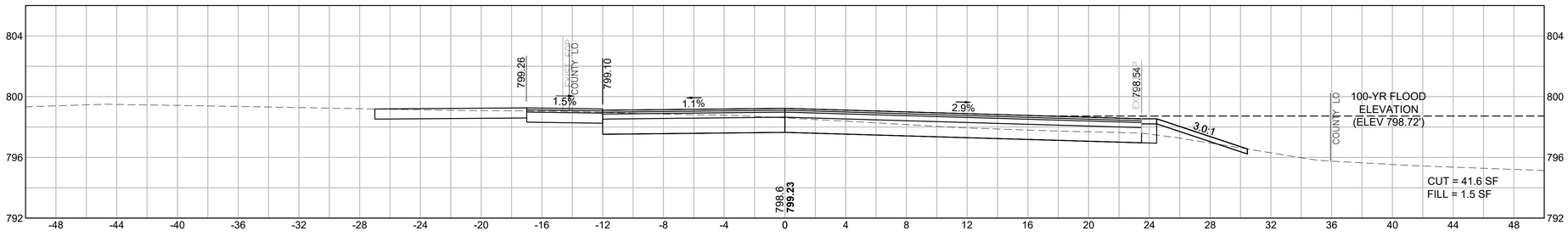

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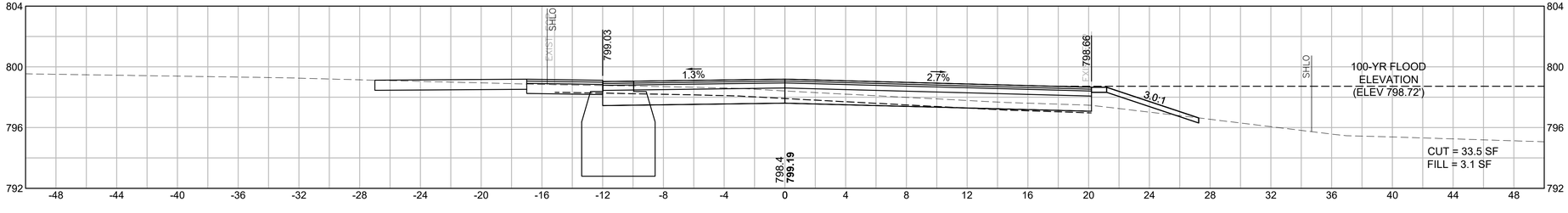

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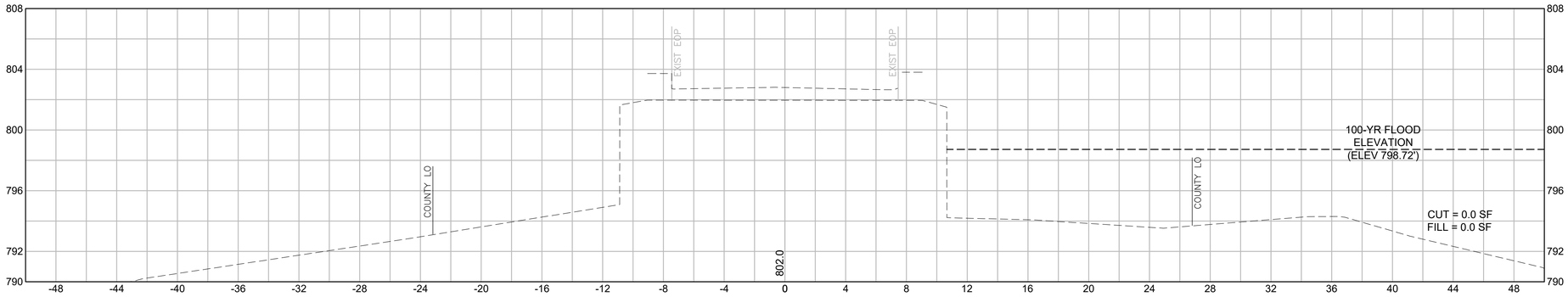
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CONWAY
NORTH POLAND ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-003S(779)X	42	42
	PROJECT FILE NO. 609082		

CROSS SECTIONS

16+25



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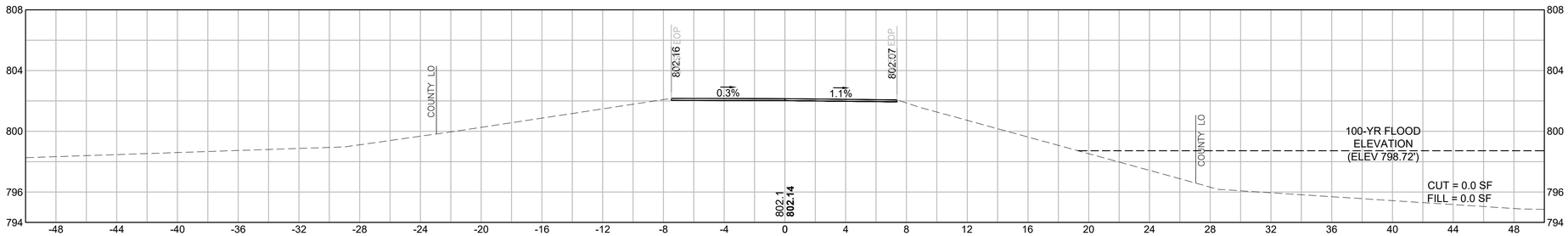

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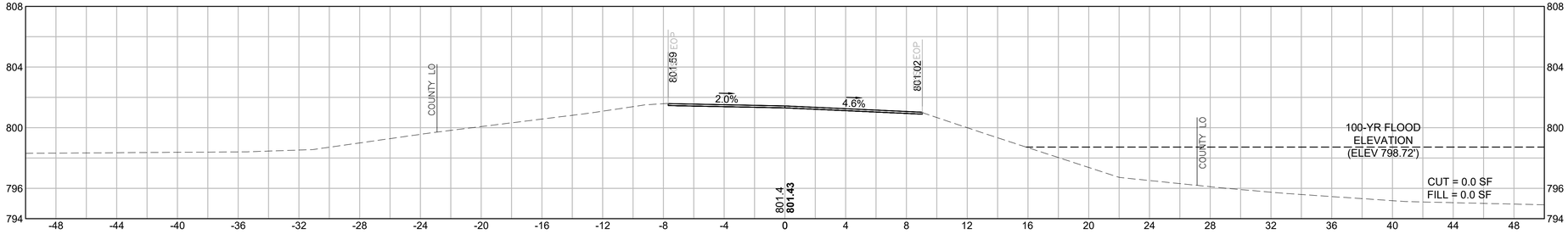

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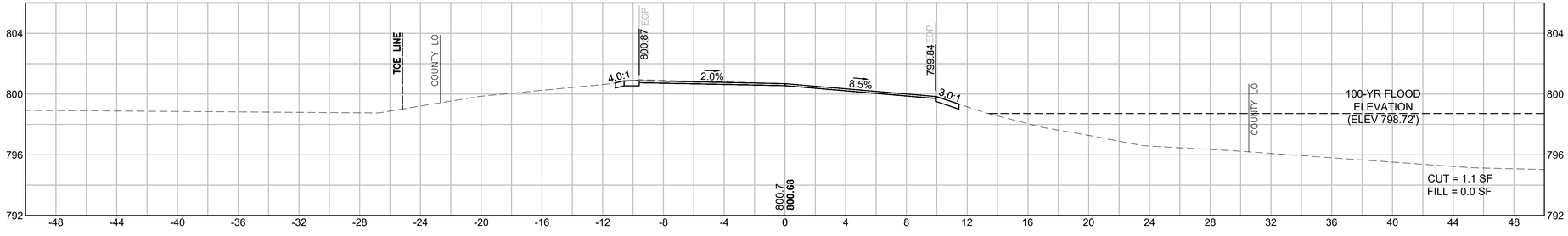

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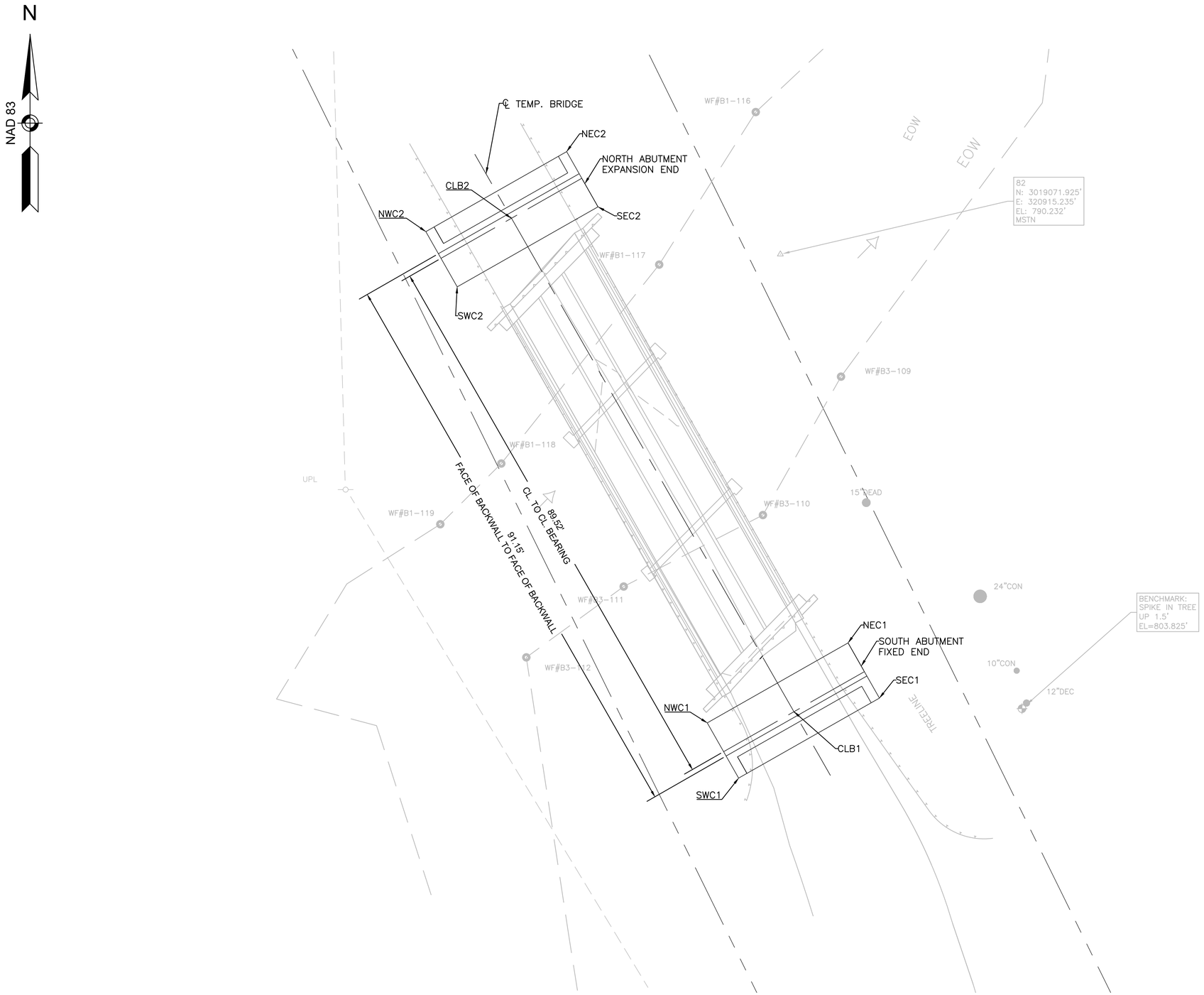
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CONWAY C-20-004 (0F1)
NORTH POLAND ROAD OVER POLAND BROOK

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#--------	1	1
	PROJECT FILE NO. 612214		

PLAN



PROPOSED TEMPORARY FOOTING PLAN
SCALE: 1 1/2" = 1'–0"

WORKING POINT LOCATION		
	SOUTH ABUTMENT	
DESCRIPTION	NORTHING	EASTING
NWC1	3013945.4017	320903.7242
NEC1	3013957.9984	320925.8955
SWC1	3013936.7071	320908.6641
SEC1	3013949.3038	320930.8354
CBL1	3013947.1716	320917.3827

WORKING POINT LOCATION		
	NORTH ABUTMENT	
DESCRIPTION	NORTHING	EASTING
NWC2	3014022.7489	320859.4028
NEC2	3014035.3456	320881.5740
SWC2	3014014.0543	320864.3427
SEC2	3014026.6510	320886.5139
CBL2	3014024.8452	320872.8758

DESIGNED BY
H.S AHMED
A. REHN

DRAWN BY
H.S AHMED

CHECKED BY
A. REHN
B. FUCHS

APPROVED FOR DESIGN BY
–

--- | ISSUED FOR CONSTRUCTION

massDOT Massachusetts Department of Transportation Highway Division

PROPOSED TEMPORARY BRIDGE SUBSTRUCTURE
CONWAY

N POLAND RD
OVER WATER POLAND BROOK

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

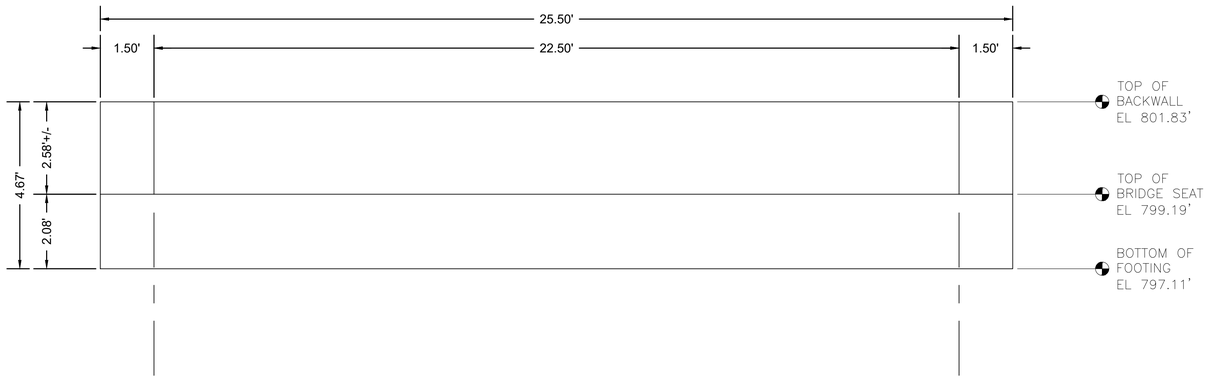
TITLE: STATE BRIDGE ENGINEER | CHIEF ENGINEER

SHEET 1 OF 3 BRIDGE NO. C–20–004 BIN (0F1)

CONWAY C-2-004 (0F1)
NORTH POLAND ROAD OVER POLAND BROOK

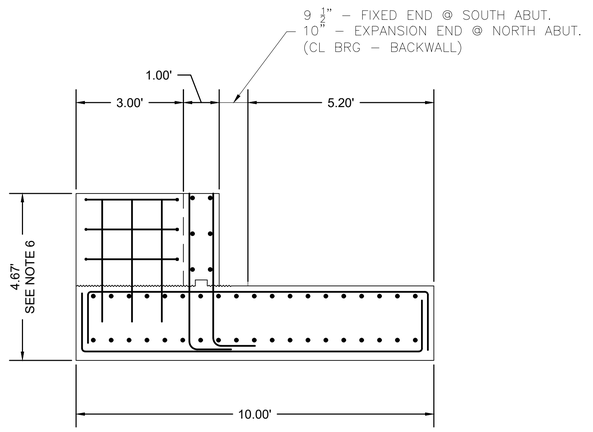
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#--------	1	1
PROJECT FILE NO.	612214		

PLANS AND DETAILS



TEMPORARY BRIDGE NORTH ABUTMENT ELEVATION

SCALE: 1" = 2'–0"

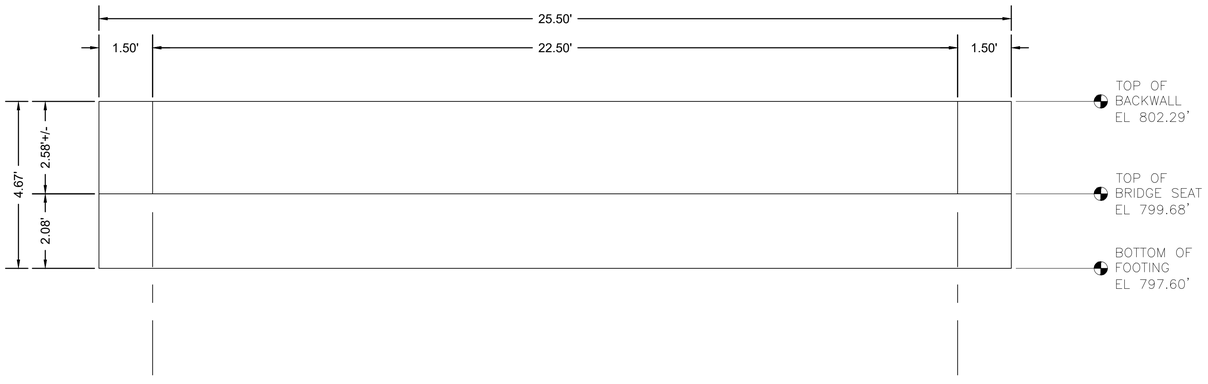


TEMPORARY ABUTMENT SECTION

SCALE: 1" = 2'–0"

TEMPORARY BRIDGE NOTES:

1. DESIGN OF THE TEMPORARY BRIDGE AND ALL RELATED ITEMS SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS, FOR HL–93 LOADING.
2. TEMPORARY ABUTMENT CONCRETE SHALL BE 4000 PSI, ¾" IN., 565 CEMENT CONCRETE.
3. THE STEEL REINFORCEMENT FOR THE TEMPORARY ABUTMENTS SHALL BE UNCOATED.
4. THE BRIDGE MANUFACTURER SHALL WARRANT THAT THEIR STEEL STRUCTURES SHALL BE FREE OF DEFECTS DUE TO DESIGN, MATERIALS AND WORKMANSHIP.
5. THE CONTRACTOR IS RESPONSIBLE TO VERIFY CLEARANCES TO ANY OBSTRUCTION, WHICH SHALL INCLUDE BUT IS NOT LIMITED TO OVERHEAD UTILITIES, UNDERGROUND UTILITIES, OR ANY OTHER MAN–MADE FEATURES THAT WOULD PREVENT THE CONSTRUCTION OF ANY PART OF THE TEMPORARY BRIDGE.
6. PRELIMINARY BACKWALL HEIGHT SHOWN.CONTRACTOR TO DETERMINE THE FINAL BACKWALL HEIGHT BASED ON ACTUAL ACROW CONFIGURATION SELECTED.
7. GRAVEL BORROW FOR BRIDGE FOUNDATIONS SHALL BE PLACED PER MASSDOT BRIDGE MANUAL 3.6.2



TEMPORARY BRIDGE SOUTH ABUTMENT ELEVATION

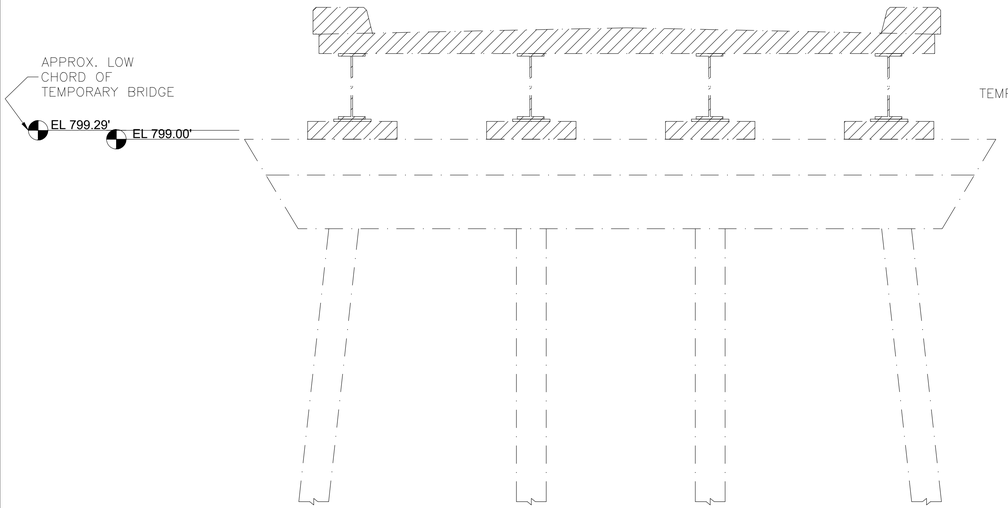
SCALE: 1" = 2'–0"

DESIGNED BY H.S AHMED A. REHN	--- ISSUED FOR CONSTRUCTION
DRAWN BY H.S AHMED	MassDOT Massachusetts Department of Transportation Highway Division PROPOSED TEMPORARY BRIDGE SUBSTRUCTURE **CONWAY** N POLAND RD OVER WATER POLAND BROOK MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION 10 PARK PLAZA BOSTON, MASS
CHECKED BY A. REHN B. FUCHS	
APPROVED FOR DESIGN BY –	TITLE: STATE BRIDGE ENGINEER / CHIEF ENGINEER

CONWAY C-20-004 (0F1)
NORTH POLAND ROAD OVER POLAND BROOK

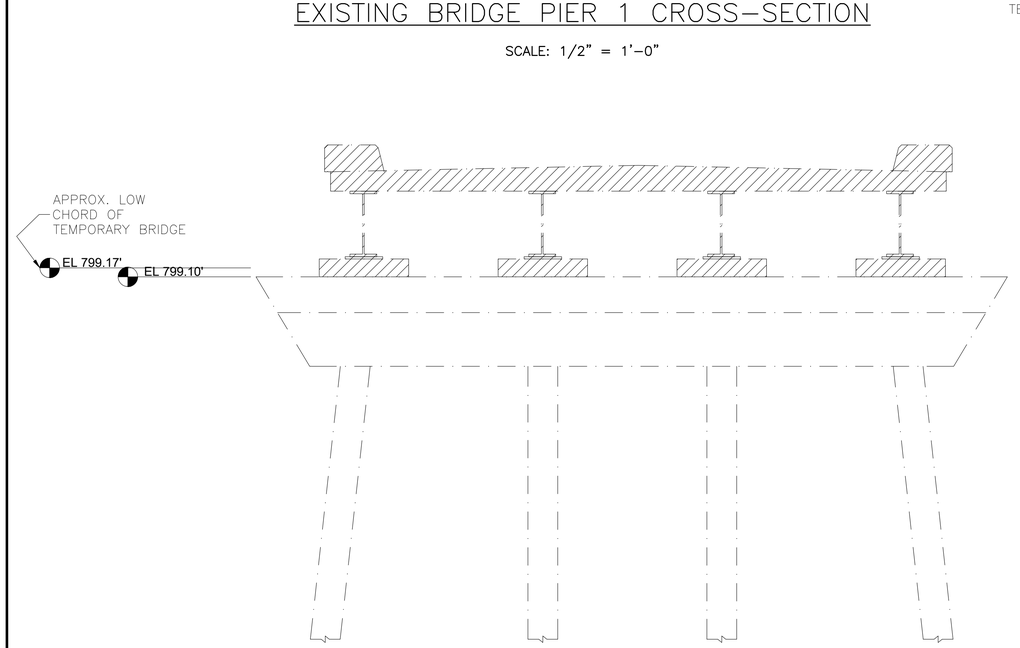
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#--------	1	1
	PROJECT FILE NO. 612214		

LIMITS OF DEMOLITION



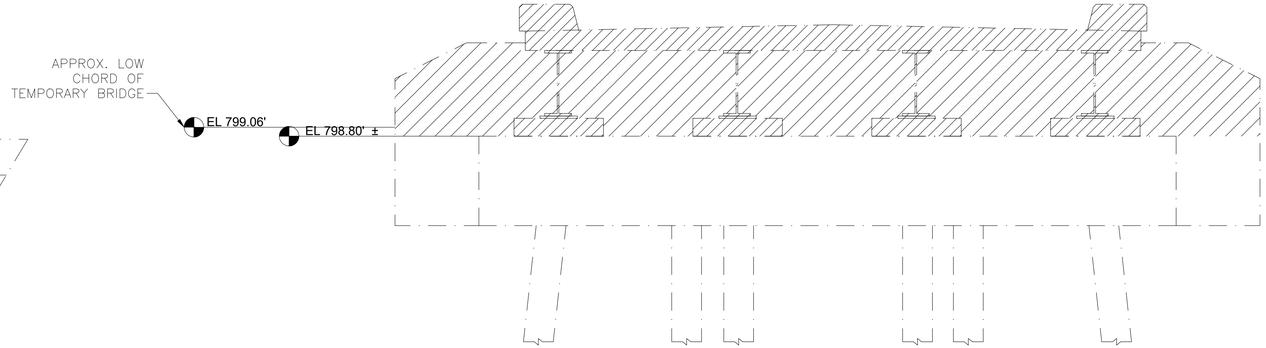
EXISTING BRIDGE PIER 1 CROSS-SECTION

SCALE: 1/2" = 1'-0"



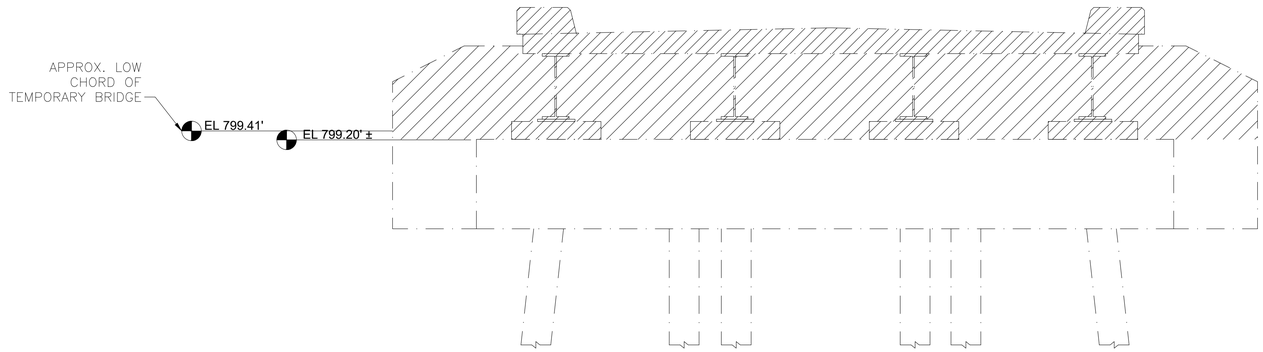
EXISTING BRIDGE PIER 2 CROSS-SECTION

SCALE: 1/2" = 1'-0"



BRIDGE NORTH END ABUTMENT CROSS-SECTION

SCALE: 1/2" = 1'-0"



BRIDGE SOUTH END ABUTMENT CROSS-SECTION

SCALE: 1/2" = 1'-0"

NOTE:
1) ALL ELEVATIONS UTILIZE THE 1988 DATUM.
2) EXISTING THICKNESS ABOVE BRIDGE SEAT (INCHES) = 2 (HMA) + 7*1/4 (CROSS SLOPE) + 6.5 (DECK) +21 (BEAM) + 1.5 (BEARING) + ((799.88 – 799.5)*12 PEDESTAL THICKNESS FOR BEAMS 1 AND 4) = 37 INCHES
PROPOSED DEPTH OF TEMPORARY BRIDGE FROM DECK = 30 + 4 = 34 INCHES

DESIGNED BY
H.S AHMED
A. REHN

DRAWN BY
H.S AHMED

CHECKED BY
A. REHN
B. FUCHS

APPROVED FOR DESIGN BY
–

ISSUED FOR CONSTRUCTION

massDOT Massachusetts Department of Transportation Highway Division

PROPOSED TEMPORARY BRIDGE SUBSTRUCTURE
CONWAY

N POLAND RD
OVER WATER POLAND BROOK

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

TITLE: STATE BRIDGE ENGINEER
CHIEF ENGINEER

SHEET 3 OF 3 BRIDGE NO. C-20-004 BIN (0F1)

CONWAY TEMP BRIDGE REVISED 2.DWG Plotted on 6-Jan-2023 3:52 PM

ACROW 700XS PANEL BRIDGE

GENERAL NOTES AND SPECIFICATIONS

TABLE OF CONTENTS

SHEET	DRAWING TITLE
1.	GENERAL NOTES AND SPECIFICATIONS
2.	BRIDGE ISOMETRIC VIEW
3.	GENERAL PLAN, ELEVATION, AND SECTION
4.	TYPICAL BRIDGE CONNECTION DETAILS
5.	GUARDRAIL LAYOUT & DETAILS
6.	BEARING LAYOUT & DETAILS

MASSDOT DISTRICT 1 SHOP DRAWING REVIEW

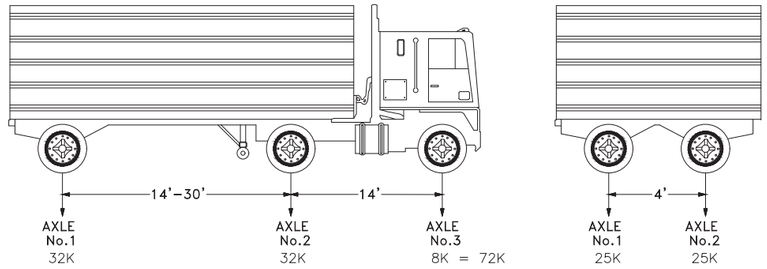
- ☑ (AP) APPROVED
- ○ (AN) APPROVED AS NOTED
- ○ (RE) REJECTED
- ○ (RR) REVISE AND RESUBMIT

CORRECTIONS OR COMMENTS MADE ON THIS SHOP DURING THIS REVIEW DO NOT RELIEVE CONTRACTORS FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND THE SPECIFICATIONS. APPROVAL IS ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT AND FOR COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES AND COORDINATION WITH OTHER TRADES. APPROVAL DOES NOT AUTHORIZE CHANGE TO CONTRACTOR REQUIREMENTS UNLESS STATED SEPARATELY OR IN CHANGE ORDER APPROVED BY THE OWNER. APPROVAL SHALL NOT RELIEVE THE CONTRACTOR OF CONTRACTUAL RESPONSIBILITY FOR ANY ERROR, OMISSION OR DEVIATION FROM CONTRACT REQUIREMENTS.

REVIEWED BY: PV
DATE: 12/22/2022

DIAGRAM OF PERMISSIBLE LIVE LOADS

AASHTO HL-93
UNITS: US KIPS & FEET



TRUCK LOAD

TANDEM LOAD

LANE LOAD

NOTE:

PERMIT VEHICLES ARE NOT TO USE THE BRIDGE UNLESS WRITTEN APPROVAL FROM ACROW HAS BEEN GIVEN. THE BRIDGE SHALL HAVE AT EACH END SIGNS INDICATING DIAGRAMMATICALLY THE PERMISSIBLE LIVE LOADS SHOWN ABOVE. IT SHOULD ALSO INDICATE THAT PERMIT VEHICLES ARE NOT ALLOWED.

GENERAL NOTES AND SPECIFICATIONS

DESIGN SPECIFICATION
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7th EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS

LIVE LOAD
1 LANE OF HL-93

WIND LOAD
AASHTO WIND LOADING (.450 KLF)

DEAD LOAD
AGGREGATE ANTI-SKID EPOXY COATED DECK
TL-3 GUARDRAIL SYSTEM

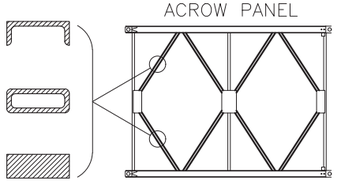
BRIDGE SPECIFICATIONS
(a) PANEL CHORDS, DIAGONALS & VERTICALS, PANEL REINFORCING CHORDS AND RAKERS
AASHTO M223 Gd. 65
(b) DECKING, RAKER BRACE, TRANSOM, DIAGONAL BRACE, CHORD BRACE, SWAYBRACE, TRANSOM BRACE
AASHTO M223 Gd. 50
(c) PANEL PINS
ASTM A193 Gd. B7
(d) BOLTS
AASHTO M164M-A325

FINISH
ALL MAJOR COMPONENTS GALVANIZED TO AASHTO M111-ASTM A123. ALL BOLTS ARE HOT DIPPED GALVANIZED. PINS ARE ELECTRO GALVANIZED.

TRUSS PANEL TYPES

SHAPE OF DIAGONALS

AB701 PANELS – CHANNELS
AB702 PANELS – TUBES
AB708 PANELS – SOLID BARS



BRIDGE BOLT TORQUE VALUES

BOLT	NAME	DIA ø	UNDER HEAD LENGTH ±1/8"	TORQUE (FT/LBS)
AB549A	SHORT BRACE BOLT	1"	2 3/4"	450
AB548A	LONG RAKER BOLT	1"	4"	450
AB547AS	TRANSOM SHEAR BOLT	1"	5 1/2"	450
AB547A	TRANSOM BOLT	1"	4 1/4"	450
AB546	DECK T BOLT	3/4"	N/A	110
AB536A	BRACE BOLT	1"	3 1/2"	450
AB584	CHORD BOLT	1 1/4"	3 1/2"	650

SEAL

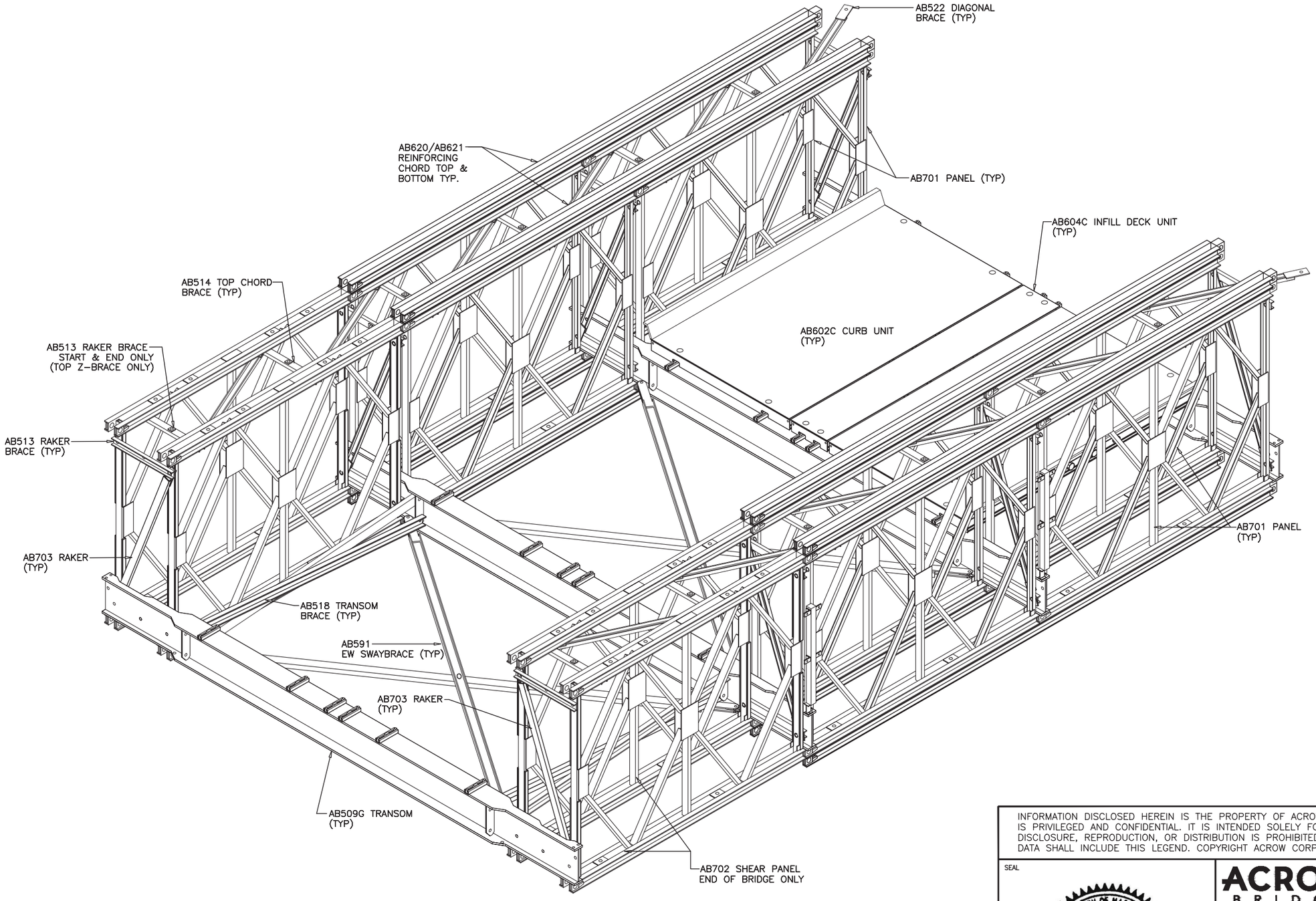
ACROW BRIDGE
Building Bridges. Connecting People.
Acrow Corporation of America
181 New Road, Parsippany, NJ 07054

GENERAL NOTES AND SPECIFICATIONS
90FT x EW x DSR2 BRIDGE
NORTH POLAND ROAD
CONWAY, MA

DRAWN BY	SJD	DATE DECEMBER 5, 2022	PROJECT NO.
CHECKED BY	SV	SCALE: NTS	22-02-3098
APPROVED BY	DK		

J.H. MAXYMILLIAN. INC.
PITTSFIELD, MA

DRAWING NO. AB2458 REV.
SHT 1 OF 6



ISOMETRIC VIEW OF FEMALE END OF BRIDGE

(GUARDRIAL NOT SHOWN FOR CLARITY)

REV.	DATE	DESCRIPTION	BY	CHK.	APPR.

SEAL

COMMONWEALTH OF MASSACHUSETTS
DONALD J. VAN GERVE
STRUCTURAL
No. 36612
REGISTERED PROFESSIONAL ENGINEER
12/21/22

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NORTH POLAND ROAD
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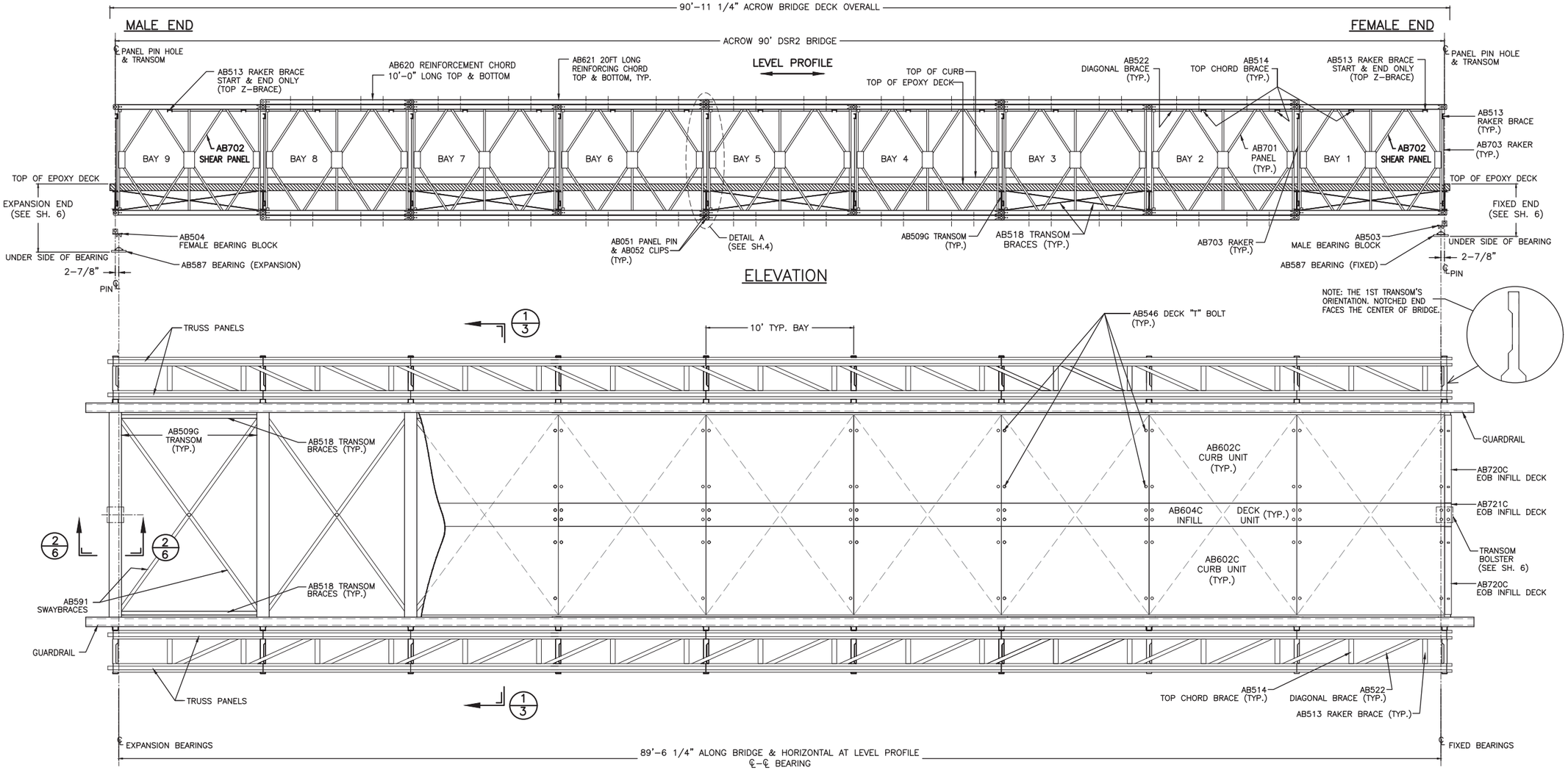
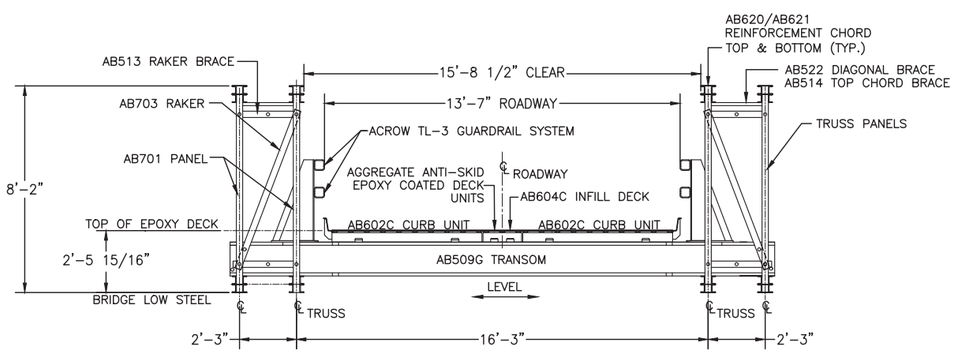
J.H. MAXYMILLIAN. INC.
PITTSFIELD, MA

DRAWING NO. AB2458 REV.

SHT 2 OF 6





1/3 SECTION

REV.	DATE	DESCRIPTION	BY	CHK.	APPR.

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COMMONWEALTH OF MASSACHUSETTS
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NORTH POLAND ROAD
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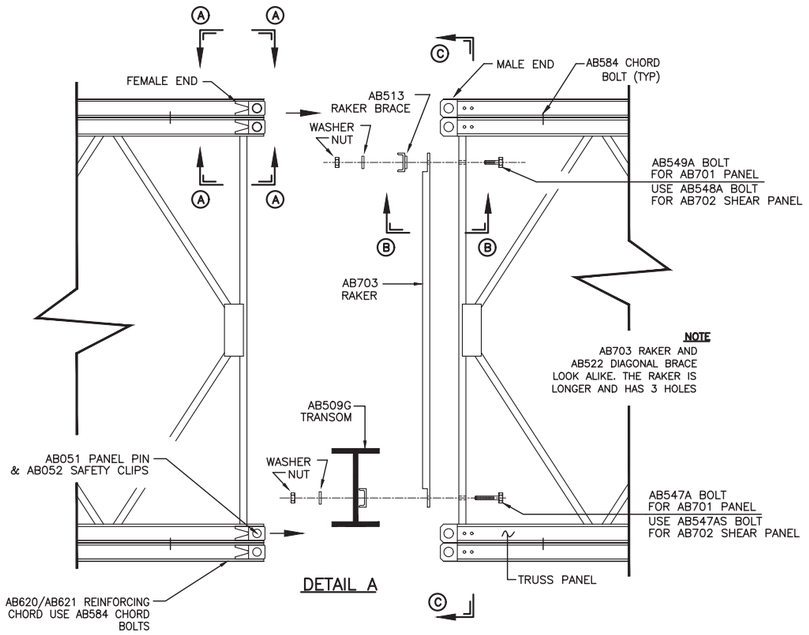
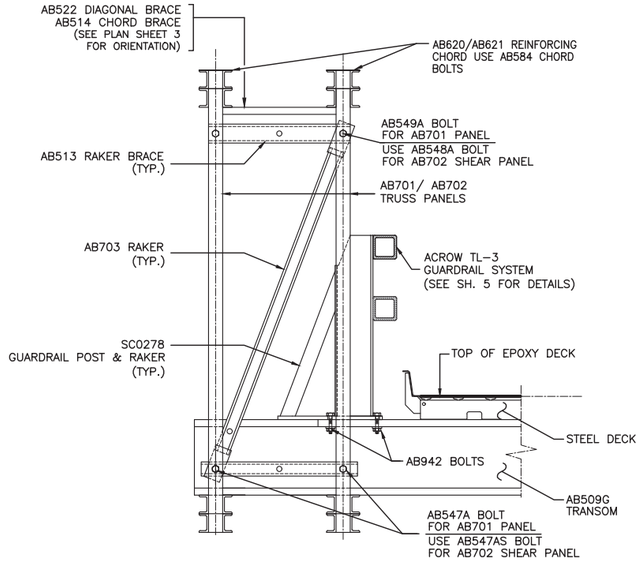
J.H. MAXYMILLIAN. INC.
PITTSFIELD, MA

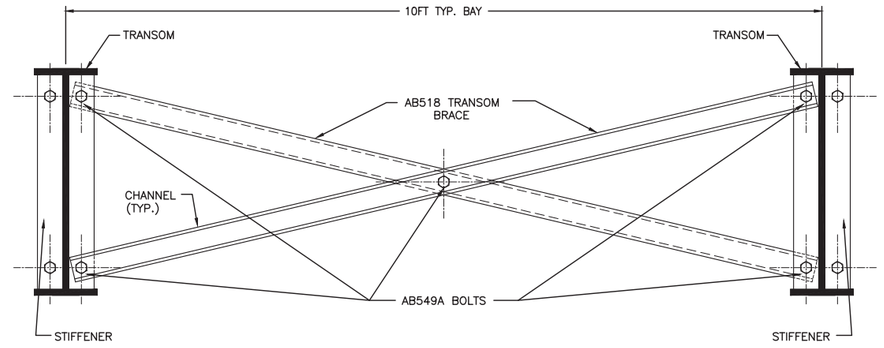
DRAWING NO. AB2458
REV.
SHT 3 OF 6



DETAIL A

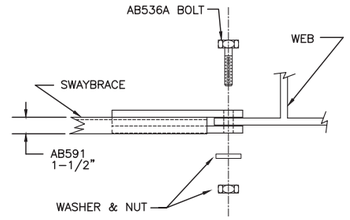


SECTION C–C
BOLT LOCATIONS

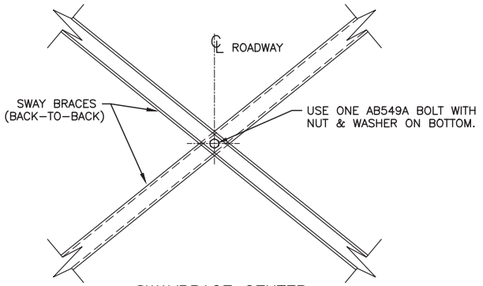


NOTE: THESE BRACES ARE BETWEEN EVERY OTHER PAIR OF TRANSOMS,
(SEE ELEVATION SHEET 3 FOR LOCATIONS)

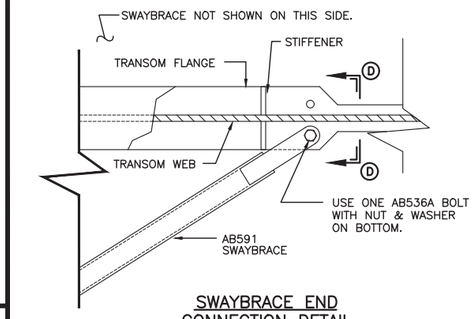
DETAIL – TRANSOM BRACES



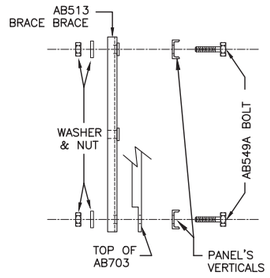
SECTION D–D



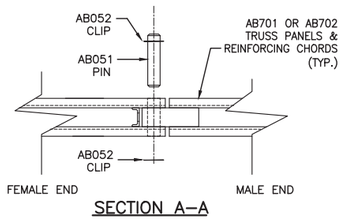
SWAYBRACE CENTER
CONNECTION DETAIL



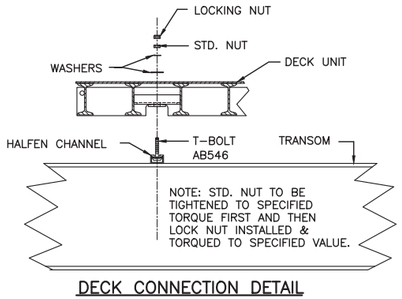
SWAYBRACE END
CONNECTION DETAIL



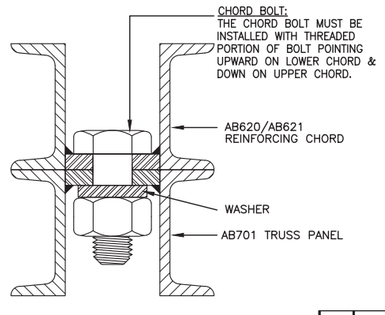
SECTION B–B



SECTION A–A



DECK CONNECTION DETAIL



CHORD BOLT DETAIL

REV.	DATE	DESCRIPTION	BY	CHK.	APPR.

SEAL

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GENERAL NOTES AND SPECIFICATIONS
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NORTH POLAND ROAD
CONWAY, MA

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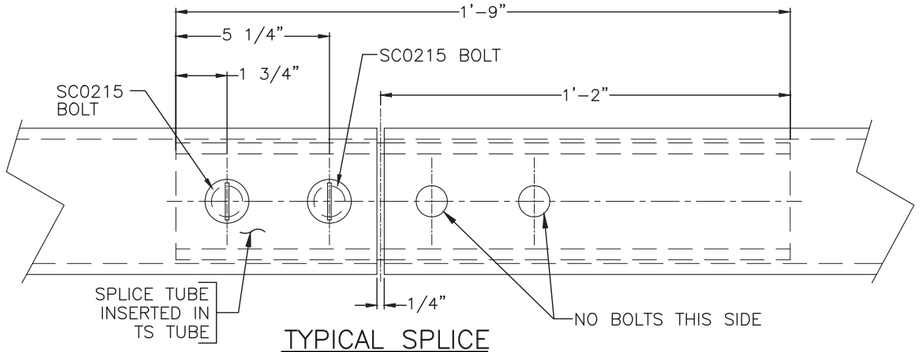
APPROVED BY	DK		

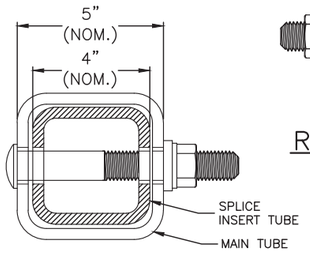
J.H. MAXYMILLIAN. INC.
PITTSFIELD, MA

DRAWING NO. AB2458 REV.

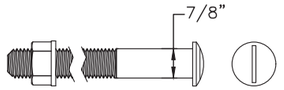
SHT 4 OF 6



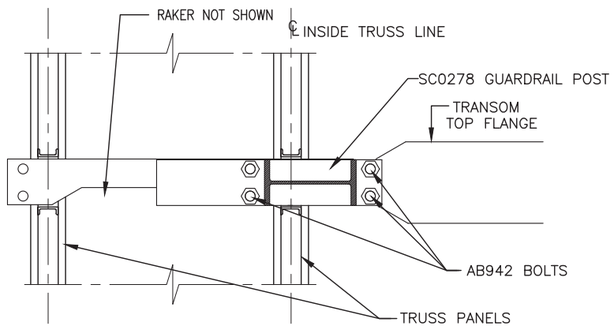
TYPICAL SPLICE



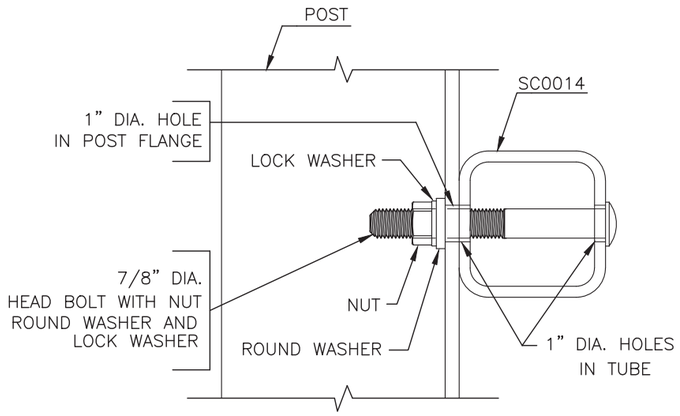
SPLICE TUBE DETAILS



SC0215
ROUND HEAD BOLT

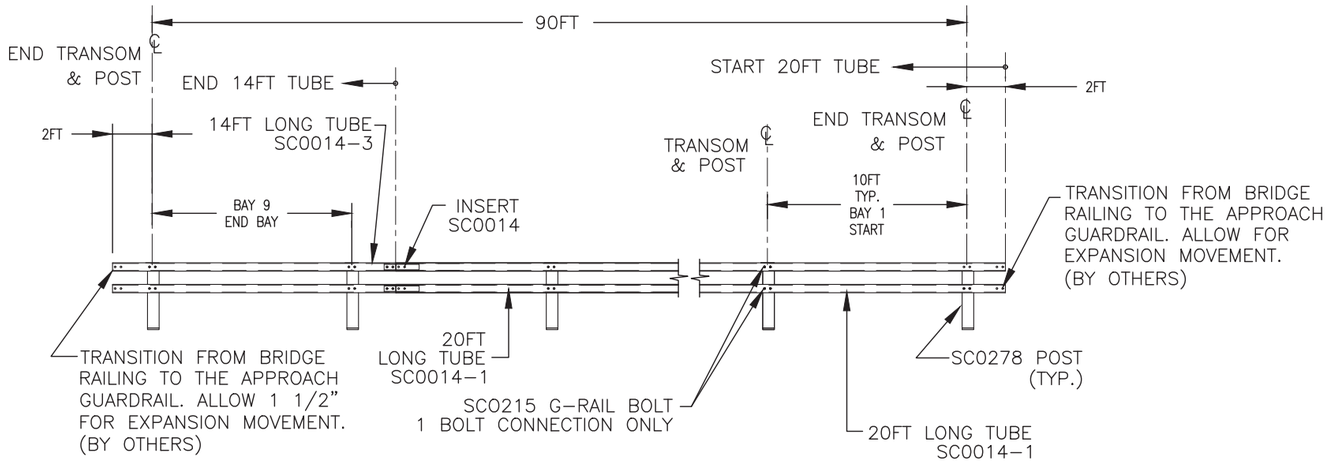


GUARDRAIL POST
CONNECTION DETAIL
AT TRANSOM

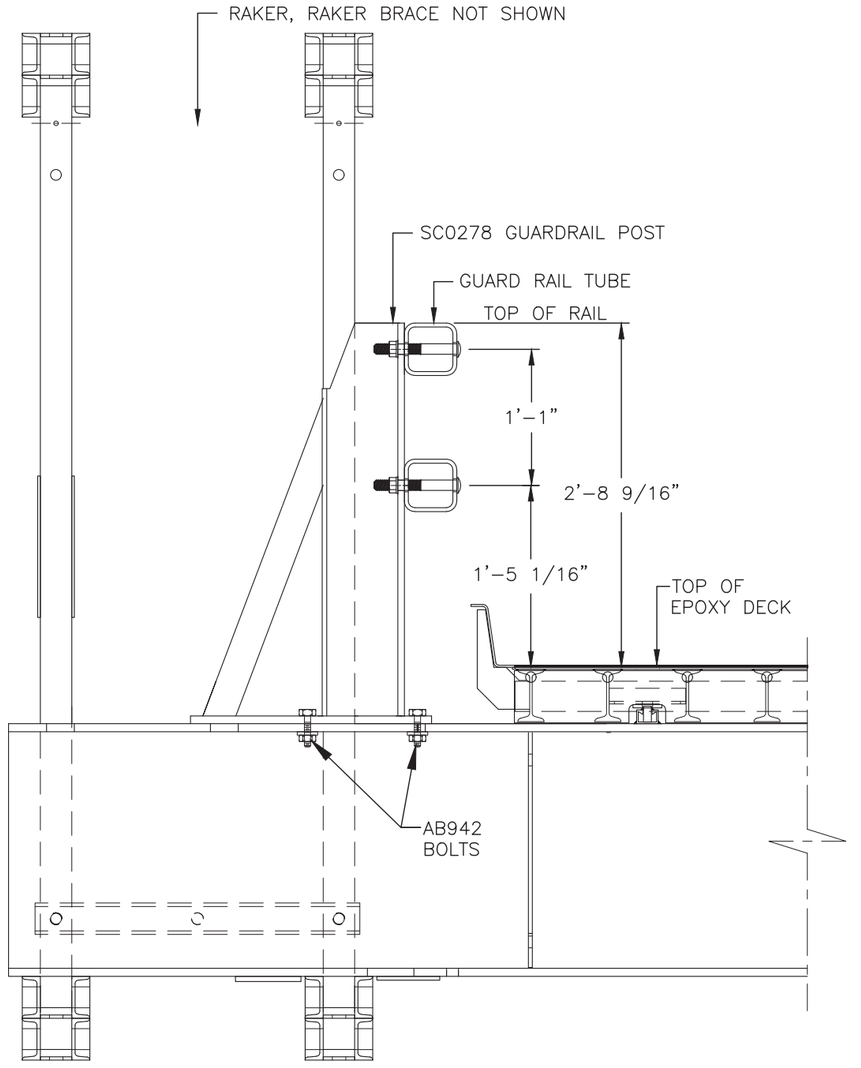


NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL–TO–POST CONNECTIONS



GUARDRAIL LAYOUT – ELEVATION



TYPICAL POST CONNECTION DETAIL

SEAL

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PITTSFIELD, MA

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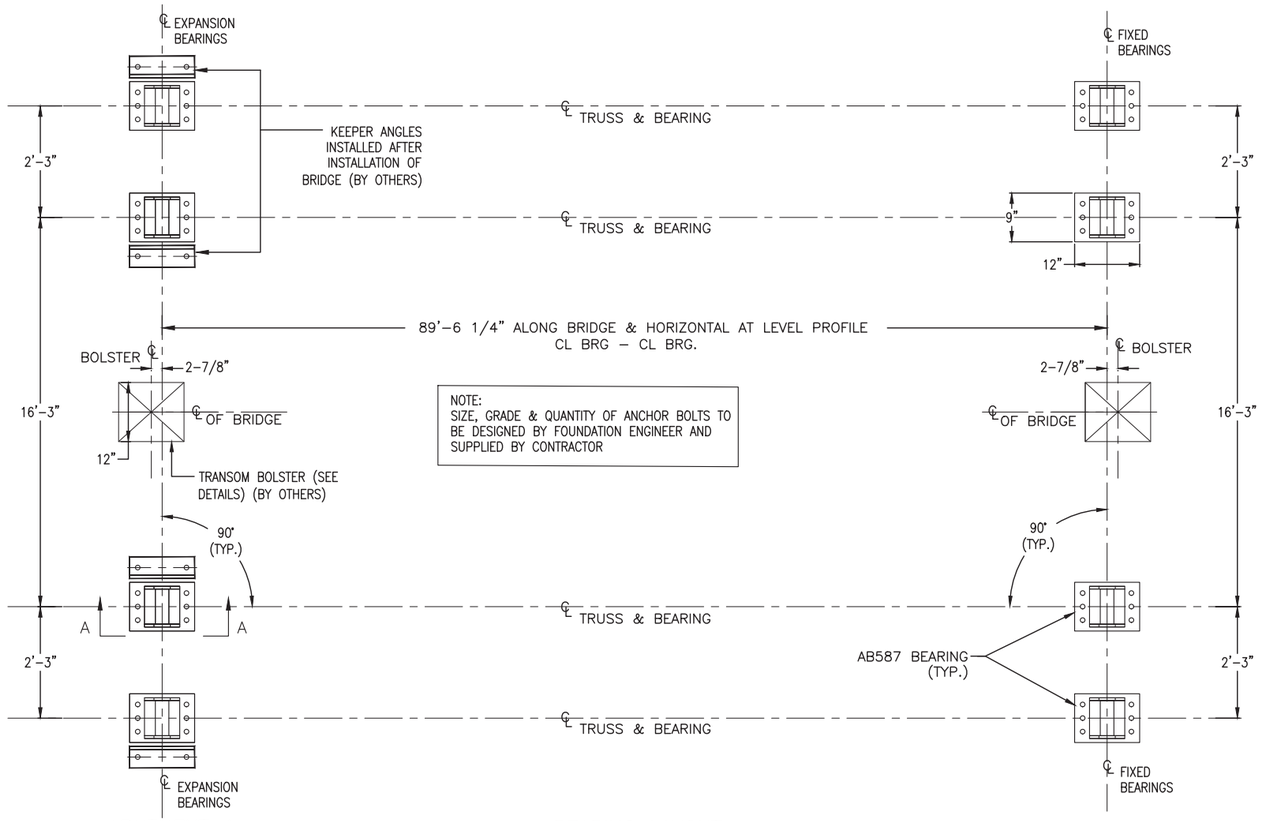
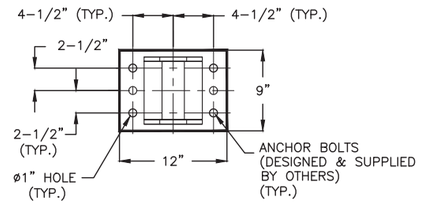
SHT 5 OF 6



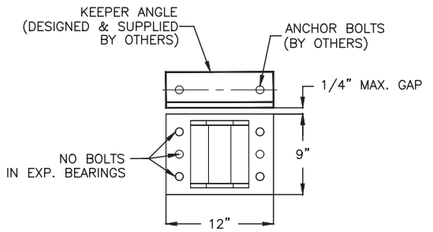
ABUTMENT 1

BEARING LAYOUT
(ALL DIMENSIONS AT 70°F)

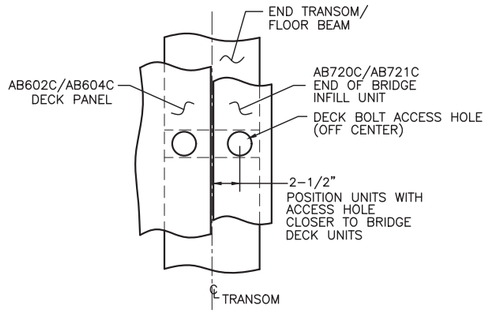
ABUTMENT 2



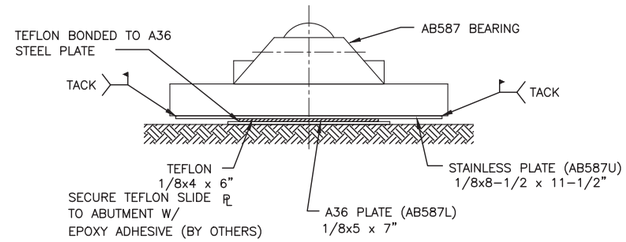
FIXED END – BEARING DETAIL
1-3/8" THICK PLATE



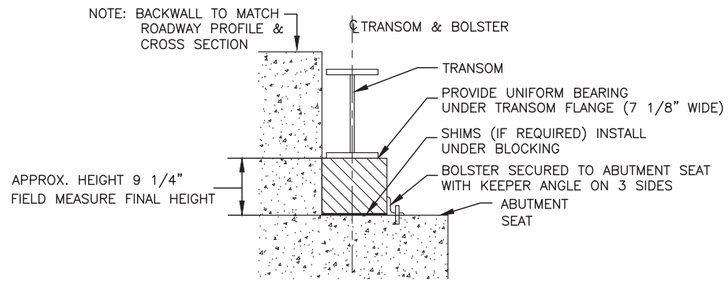
EXPANSION END – BEARING DETAIL



END OF DECK UNIT DETAIL
PLAN VIEW

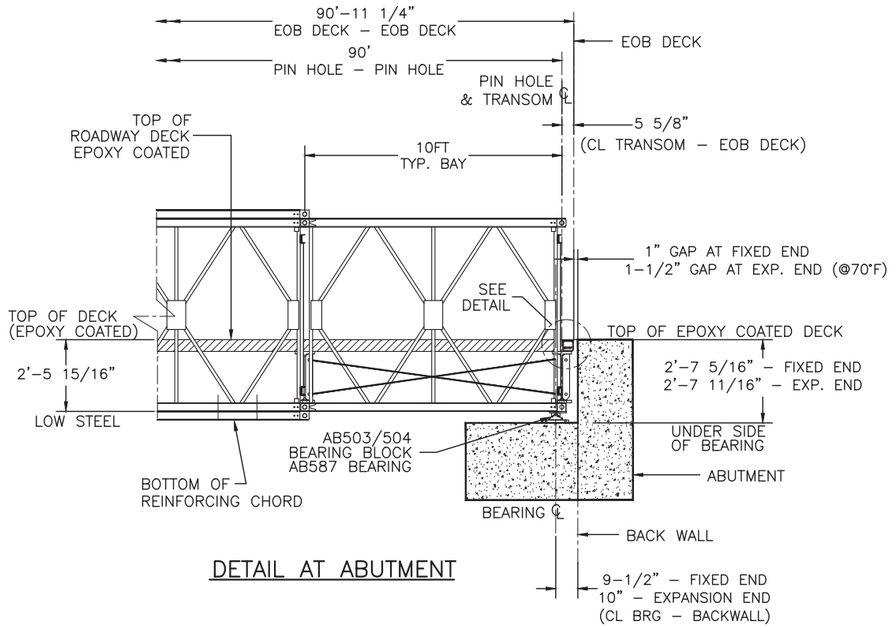


EXPANSION BEARING
ELEVATION VIEW A–A
ANGLE NOT SHOWN FOR CLARITY

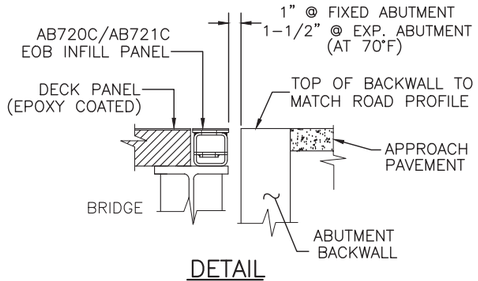


2/6 BOLSTER DETAIL

NOTE:
- HARDWOOD BLOCKING IS RECOMMENDED; FINAL BOLSTER DESIGN IS BY OTHERS
- BOLSTER HEIGHT WILL VARY BASED ON TRANSOM TYPE/DEAD LOADS
- BOLSTER TO MATCH SLOPE OF TRANSOM FLANGE
- INSTALL BOLSTER TO A TIGHT FIT AFTER BRIDGE & DECK ARE IN PLACE
- SHIM PLATES USED FOR TIGHT FIT ARE TO BE INSTALLED UNDER BLOCKING
- BOLSTER TO BE SECURED FROM MOVEMENT AFTER INSTALLATION



DETAIL AT ABUTMENT



DETAIL

REV.	DATE	DESCRIPTION	BY	CHK.	APPR.
	2021				

SEAL

COMMONWEALTH OF MASSACHUSETTS
DONALD J. VAN GERVE
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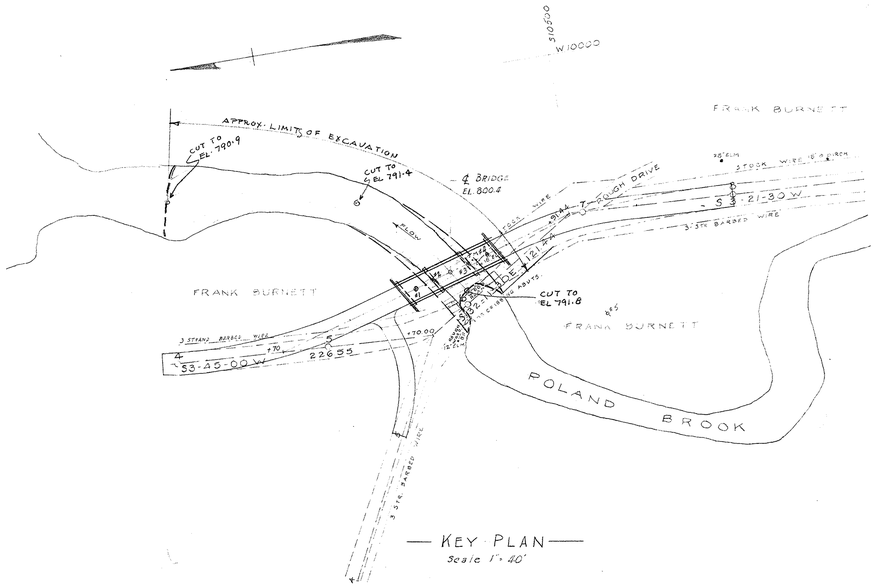
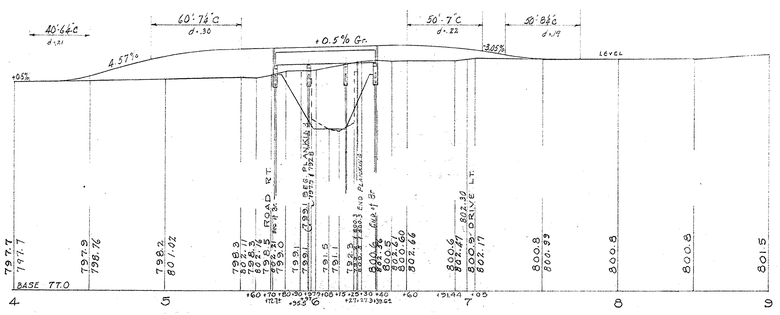
PITTSFIELD, MA

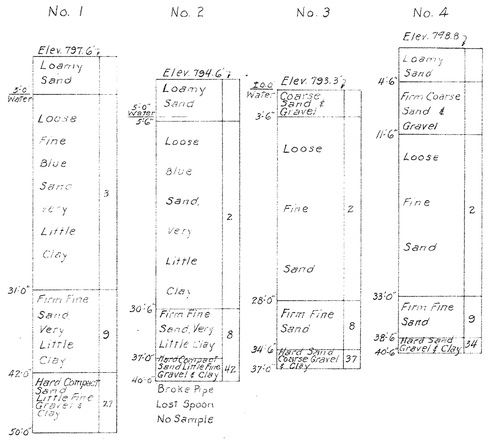
DRAWING NO. AB2458 REV.
SHT 6 OF 6



— KEY PLAN —
Scale 1" = 40'

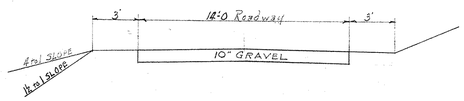


— PROFILE —
Hor. Scale 1" = 40'
Vert. Scale 1" = 80'



BORING DATA
SCALE 1" = 8'-0"
BORINGS TAKEN JAN. 29, 1940

BORING NOTES:
LOCATION OF BORINGS SHOWN ON KEY PLAN THUS ⊙
BORINGS TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW NATURE OF MATERIAL TO BE ENCOUNTERED IN CONNECTION WITH CONSTRUCTION OF THE BRIDGE.
FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE SAMPLING PIPE 1 FT, USING A 140 POUND WEIGHT FALLING 30 INCHES.
SAMPLES OBTAINED FROM TEST BORINGS ARE AVAILABLE AND MAY BE SEEN AT OFFICE OF BRIDGE ENGINEER, ROOM 609.



TYPICAL APPROACH SECTION
SCALE ¼" = 1'-0"

GENERAL NOTES

FINISH : ALL EXPOSED CONCRETE SURFACES TO BE RUBBED SMOOTH WITH CORUNDUM BRICK AND LEFT FREE FROM ALL FORM MARKS AND IMPERFECTIONS.

DATE : TO BE PLACED IN CENTER OF OUTSIDE FACE OF BOTH COPINGS. FOR SIZE AND CHARACTER OF NUMERALS SEE DETAILS ON ANOTHER SHEET.

STRUCTURAL STEEL: TO HAVE A COLOR COAT OF STRUCTURAL GREEN PAINT.

DESIGN : ACCORDING TO SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (1935 EDIT.) FOR H-15 LOADING.

BENCH MARK : STA. 7+95 LT. VERT. SPK. 30" ELM EL. = 802.02

CONCRETE : ALL CONCRETE TO BE CLASS "A".

LOCATION STR. STEEL: THE FOLLOWING STRUCTURAL STEEL AND PILES WILL BE FURNISHED BY THE COMMONWEALTH OF MASSACHUSETTS AND IS LOCATED AT THE FOLLOWING PLACES: 10 H-PILE COLUMNS FROM ROUTE 116 2± MILES EAST OF DEERFIELD SUNDERLAND BRIDGE, 8 21"x8 1/2" BEAMS 21'6 LG. FROM FORBES STREET BRIDGE STATE HIGHWAY STA. 202+ IN BUCKLAND, 4-21" WF 57# BEAMS FROM STATE HIGHWAY BRIDGE IN CONWAY STA. 288 ± ROUTE 116.

ESTIMATED QUANTITIES
(NOT GUARANTEED)

ROADWAY EARTH EXCAVATION	10 CU. YDS.
UNCLASSIFIED EXCAVATION	500 CU. YDS.
GRAVEL BORROW	260 CU. YDS
STRIPPING GRAVEL PITS.	26 CU. YDS
FINE GRADING	1300 SQ. YDS
STEEL PILES	940 LIN. FT.
CEM. CONC. MASONRY CLASS A	60 CU. YDS.
STRUCTURAL STEEL (NEW)	2,500 POUNDS
STRUCTURAL STEEL (ERECTED)	16,000 POUNDS
BRIDGE RAILING	144 LIN. FT.
RIP RAP	40 CU. YDS
REMOVAL OF PRESENT BRIDGE	LUMP SUM
HIGHWAY GUARD TYPE W & C	40 LIN. FT.
STEEL REINF. FOR STRUCTURES	11,500 POUNDS
TREES TO BE REMOVED	3 EACH
LEDGE EXCAVATION	20 CU. YDS.
ORDINARY BORROW	750 CU. YDS
PILE SPLICES	2 EACH
HIGHWAY GUARD POSTS W & C	4 EACH
FENCES REM'D & RESET	300 LIN. FT.
PILES LAGGED	2 EACH

GRADE REVISED 3/28/40

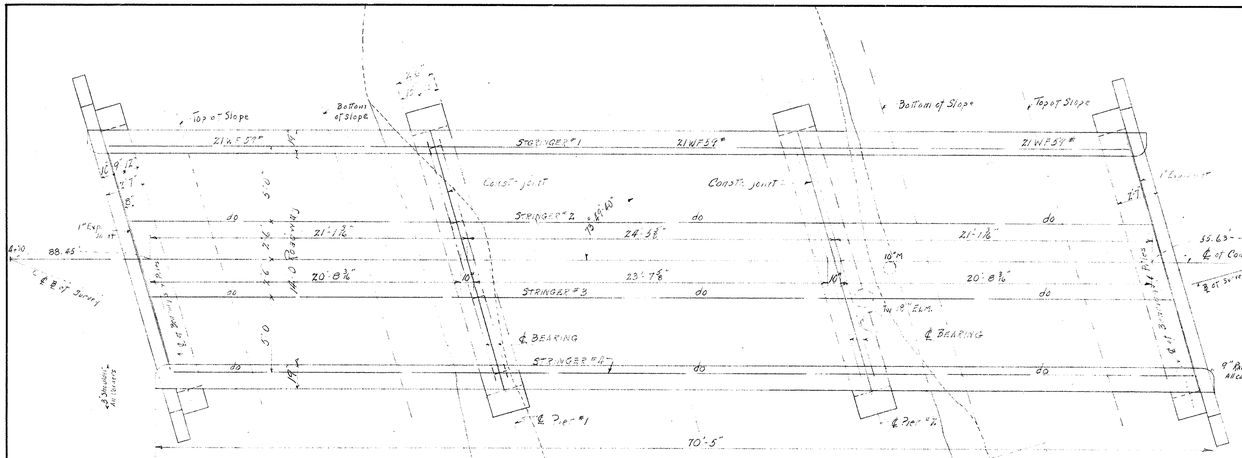
THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED BRIDGE
CONWAY NO. 7
NORTH POLAND ROAD BRIDGE
OVER POLAND BROOK
SCALES AS NOTED
OFFICE OF
DEPARTMENT OF PUBLIC WORKS
100 NASHUA ST. — BOSTON, MASS
FEBRUARY 1940

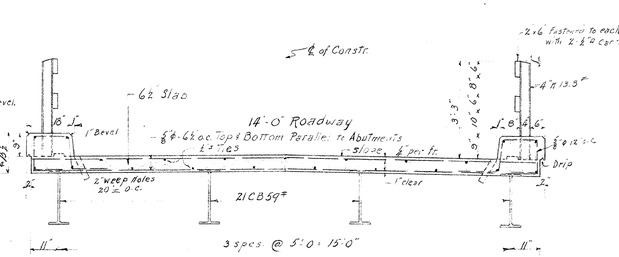
G. E. Parker, BRIDGE ENGINEER
R. Snow, CHIEF ENGINEER

DESIGNED BY E.A.R. DRAWN BY E.A.R. CHECKED BY P.C.M.

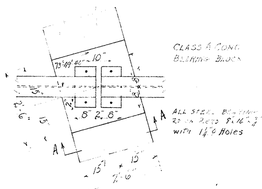
DATE OF ISSUE	
ADVERTISING	CONSTRUCTION
3/2/40	4-6-40

SHEET 1 OF 2 SHEETS BRIDGE NO C-20-4



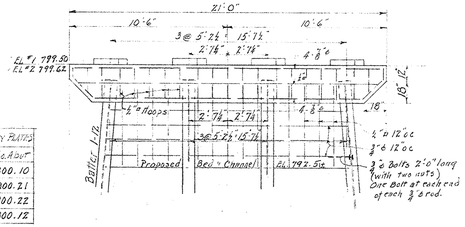


CROSS SECTION OF SUPERSTRUCTURE
Scale ½" = 1'-0"

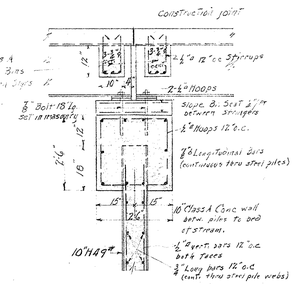


BEARING DETAILS
SLAB NOT SHOWN
Scale ½" = 1'-0"

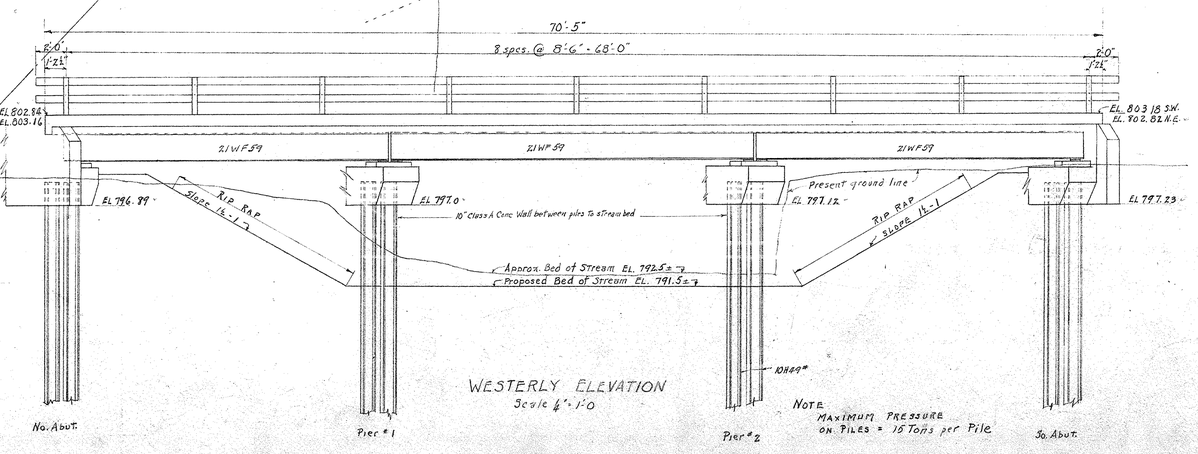
BRIDGE SEAT ELEVATIONS AT TOP OF MASONRY PLATES					
	No. Abut	Pier #1	Pier #2	So. Abut	
BEAM 1	799.76	799.87	799.99	800.10	
BEAM 2	799.87	799.98	800.10	800.21	
BEAM 3	799.88	799.99	800.11	800.22	
BEAM 4	799.76	799.89	800.01	800.12	



TYPICAL ELEVATION OF PIER
Scale ¼" = 1'-0"

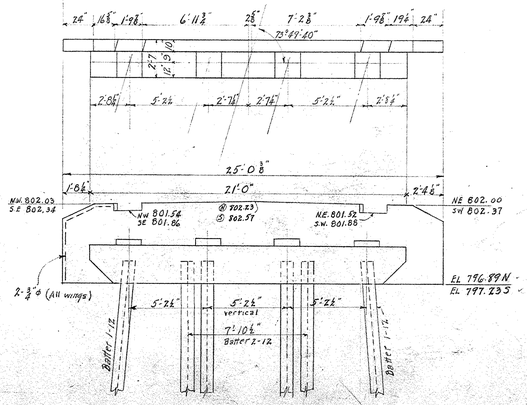


SECTION A-A
PIER DETAILS
Scale ½" = 1'-0"

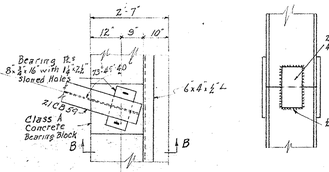


WESTERLY ELEVATION
Scale ¼" = 1'-0"

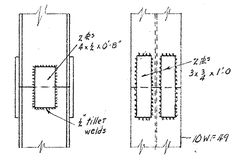
NOTE
MAXIMUM PRESSURE ON PILES = 15 Tons per Pile



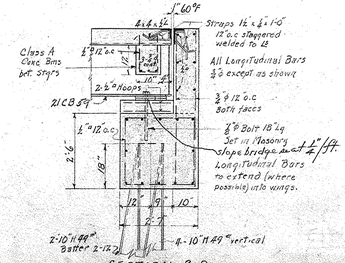
TYPICAL ABUTMENT ELEVATION
Scale ¼" = 1'-0"



BEARING DETAILS
SLAB NOT SHOWN
Scale ½" = 1'-0"



PILE SPLICE DETAIL
Scale 1" = 1'-0"



SECTION B-B
ABUTMENT DETAILS
Scale ½" = 1'-0"

4-6-40 CONSTRUCTION
GRADE REVISED 3/28/40

SHEET No. 2 OF 2 SHEETS BRIDGE No. C-20-4