

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

MATERIALS

Concrete:  
Structural Wearing Surface ..... Class "A1"  
Barriers, Curbs, Sidewalks & Transition Barriers ..... Class "A"  
All Other ..... Class "A"

BASIC DESIGN STRESSES

Concrete:  
Class "A" ..... f'c = 4,000 psi  
Class "A1" ..... f'c = 4,000 psi

TRAFFIC DATA

Current (2023) AADT ..... 9,790  
Future (2043) AADT ..... 10,770  
DHV - % of AADT ..... 11%  
Design Hour Volume ..... 1185  
Heavy Trucks (% of AADT) ..... 8%  
Heavy Trucks (% of DHV) ..... 5%  
Directional Distribution (% of DHV) ..... 65%  
18 kip Equivalent P 2.0 ..... 275  
18 kip Equivalent P 2.5 ..... 262  
Design Speed (mph) ..... 25

MECHANIC FALLS  
ANDROSCOGGIN COUNTY  
MECHANIC FALLS BRIDGE  
OVER  
LITTLE ANDROSCOGGIN RIVER  
ROUTE 11 & 121 (PLEASANT STREET)  
PROJECT NO. 027078.00  
PROJECT LENGTH 0.055 mi  
BRIDGE NO. 2540

LIST OF DRAWINGS

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Temporary Traffic Signal Plan - Stage 1 & Stage 2 ..... 8-9

UTILITIES

Firstlight  
Central Maine Power  
Charter Communications  
Consolidated Communications  
Mechanic Falls Sanitary District  
Mechanic Falls Water Company

MAINTENANCE OF TRAFFIC

Maintain one 11'-0" wide lane of alternating  
one - way traffic using traffic signals.

PROJECT LOCATION	Pleasant Street over the Little Androscoggin River. Located 0.08 of a mile Northwest of Elm Street. Lat./Long. 44°06'39.57" N 70°23'28.29" W
PROGRAM AREA	Highway Bridge - Traditional
OUTLINE OF WORK	Bridge Wearing Surface Replacement

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

APPROVED  
  
COMMISSIONER

DATE  
6-2-25  
CHIEF ENGINEER:

SIGNATURE  
  
P.E. NUMBER  
13553  
DATE  
5-28-25

PROJECT INFORMATION

PROGRAM	Bridge
PROJECT MANAGER	Brian Nichols
DESIGNER	Erin Brewer
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

MECHANIC FALLS  
MECHANIC FALLS BRIDGE

TITLE SHEET

SHEET NUMBER

1

OF 9

Date:5/23/2025

Username: Brian.Nichols

Division: BRIDGE

Filename:\00\BRIDGE\WSTA\001\_Title.dgn

WIN 027078.00

02707800

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.202	REMOVING PAVEMENT SURFACE	270	SY
202.30	REMOVING EXISTING CONCRETE WEARING SURFACE (80 CY)	1	LS
203.20	COMMON EXCAVATION	15	CY
304.10	AGGREGATE SUBBASE COURSE GRAVEL	10	CY
403.2081	12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	22	T
403.2131	12.5 MM POLYMER MODIFIED HMA BASE	36	T
409.15	BITUMINOUS TACK COAT - APPLIED	15	G
424.304	HIGH MOL WGHT METHACRYLATE CRACK SEAL	85	G
502.29	STRUCTURAL CONCRETE WEARING SURFACE ON BRIDGE (80 CY)	1	LS
502.291	SAW CUT GROOVING (590 SY)	1	LS
502.75	PLUGGING EXISTING BRIDGE DRAINS	6	EA
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	7,040	LB
503.13	REINFORCING STEEL, PLACING	7,040	LB
503.17	MECHANICAL/WELDED SPLICE	189	EA
506.144	FIELD PAINTING NEW AND EXISTING STRUCTURAL STEEL (9,520 LB)	1	LS
506.17	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	1	LS
506.18	CONTAINMENT AND POLLUTION CONTROL	1	LS
506.191	DISPOSAL OF SPECIAL WASTE OR HAZARDOUS WASTE MATERIAL	1	LS
515.21	PROTECTIVE COATING FOR CONCRETE SURFACE (125 SY)	1	LS
518.50	REPAIR OF UPWARD FACING SURFACES - TO REINFORCING STEEL < 8 IN.	70	SF
518.51	REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 IN.	270	SF
518.60	REPAIR OF VERTICAL SURFACES < 8 IN.	80	SF
518.70	REPAIR OF OVERHEAD SURFACES < 8 IN.	200	SF
526.301	PORTABLE CONCRETE BARRIER TYPE I (200 LF)	1	LS
527.34	WORK ZONE CRASH CUSHIONS	2	UN
608.08	REINFORCED CONCRETE SIDEWALK	30	SY
608.26	CURB RAMP DETECTABLE WARNING FIELD	20	SF
609.21	CONCRETE SLIPFORM CURB	43	LF
627.18	12" SOLID WHITE PAVEMENT MARKING	56	LF
627.55	12" TEMPORARY TAPE PAVEMENT, WHITE	180	LF
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1,200	LF
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	84	SF
627.77	REMOVING PAVEMENT MARKINGS	300	SF
627.78	TEMP 4 INCH PAINT PAVE MARK LINE, WHITE OR YELLOW	800	LF
629.05	HAND LABOR, STRAIGHT TIME	40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	10	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	10	HR
639.19	FIELD OFFICE TYPE B	0.5	EA
643.72	TEMPORARY TRAFFIC SIGNAL	1	LS
645.292	REGULATORY, WARNING, CONFIRMATION & ROUTE ASSEMBLY SIGN, TYPE 2	33	SF
652.311	TYPE II BARRICADE	3	EA
652.312	TYPE III BARRICADE	7	EA
652.33	DRUM	50	EA
652.34	CONE	30	EA
652.35	CONSTRUCTION SIGNS	250	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.38	FLAGGER	100	HR
652.381	TRAFFIC OFFICER	40	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	5	EA
652.55	TEMPORARY SOUND WALLS	1	LS
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS

GENERAL CONSTRUCTION NOTES

1. Existing signs within the Project limits shall be removed and reset as directed by the Resident. Payment for removal and reinstallation of existing signs will be considered incidental to the Contract. No separate payment will be made.
2. Project information referred to below may be accessed at the following MaineDOT web address: <http://www.maine.gov/mdot/contractors/>
3. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.
4. The bridge deck evaluation report of the existing bridge may be accessed at the MaineDOT web address. The report contains visual inspection information and deck core data of the bridge. There is no assurance that the information or data is a true representation of the conditions of the entire deck.
5. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.
6. The Resident will direct placement of the crosswalk signs. There will be a crosswalk sign facing each approach on both sides of the shoulder. Each crosswalk sign will consist of a W11-2 and W16-7P sign. There may be signs facing both approaches attached to the same post.
7. Apply Item 424.304 High Molecular Weight Methacrylate Crack Sealer to sidewalks and concrete curb (both bridge and approach sections), and concrete wearing surface. Apply to curb faces at the edge of roadway with a brush.
8. The Saw Cut Grooving shall be in a longitudinal direction.
9. Protective Coating for Concrete Surfaces (Item 515.21) shall be applied to the following areas:

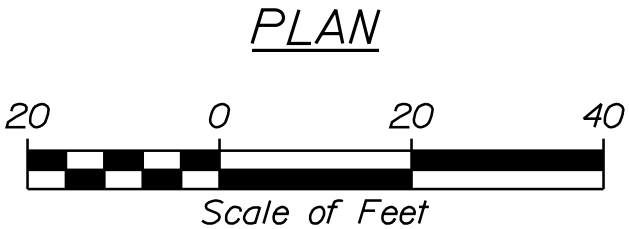
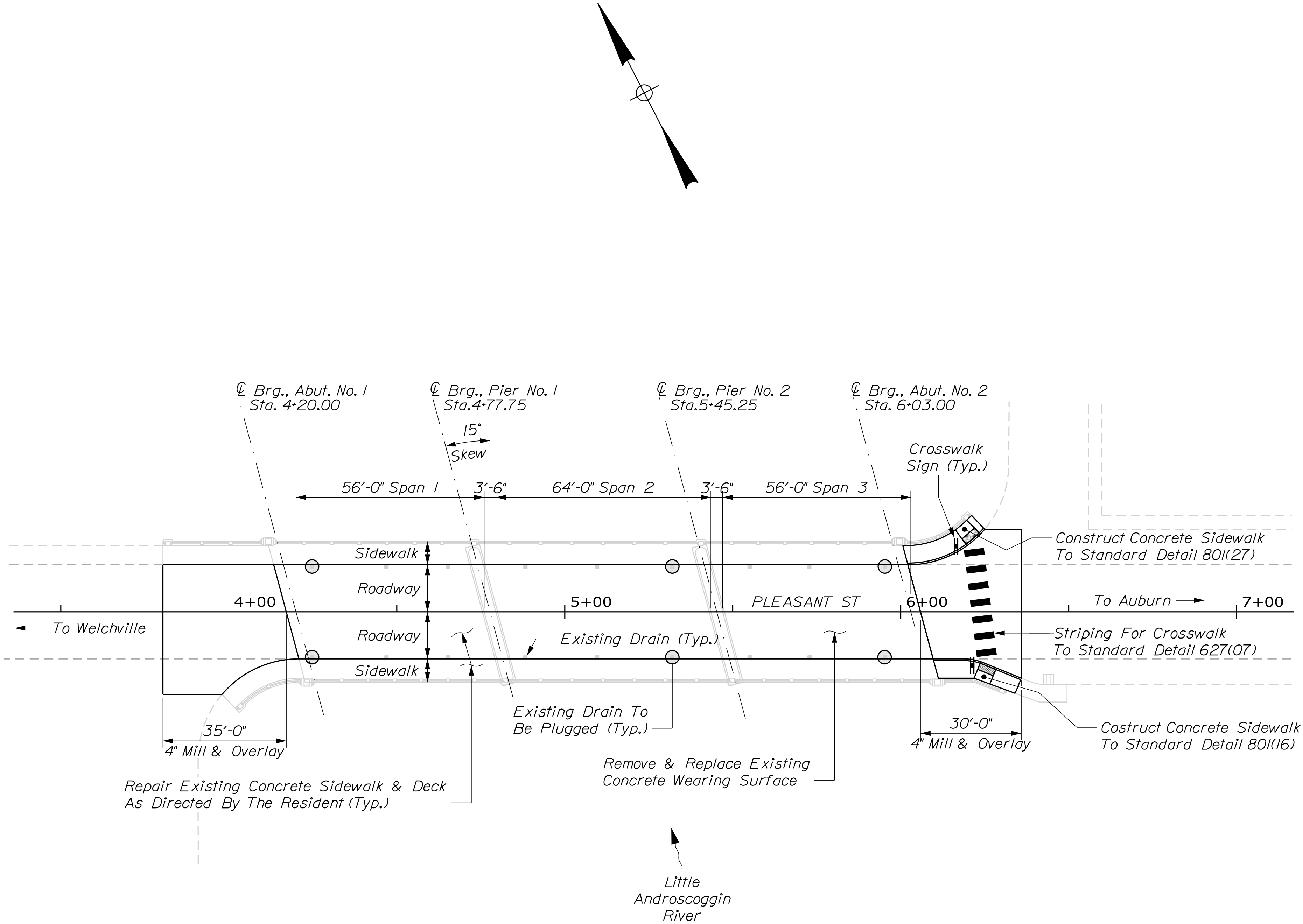
Concrete Bridge Posts

Concrete Approach Posts
10. The existing concrete sidewalk will need to be removed where the new concrete sidewalk will be constructed as show on Sheet 3. Payment for removal of existing concrete sidewalk will be paid for by Item 203.20.
11. The Structural Steel that shall be painted is the bridge rail on the bridge and the rail on the approaches to bridge. Payment for painting of steel will be paid for by Item 506.144, Item 506.17, Item 506.18, and Item 506.191.

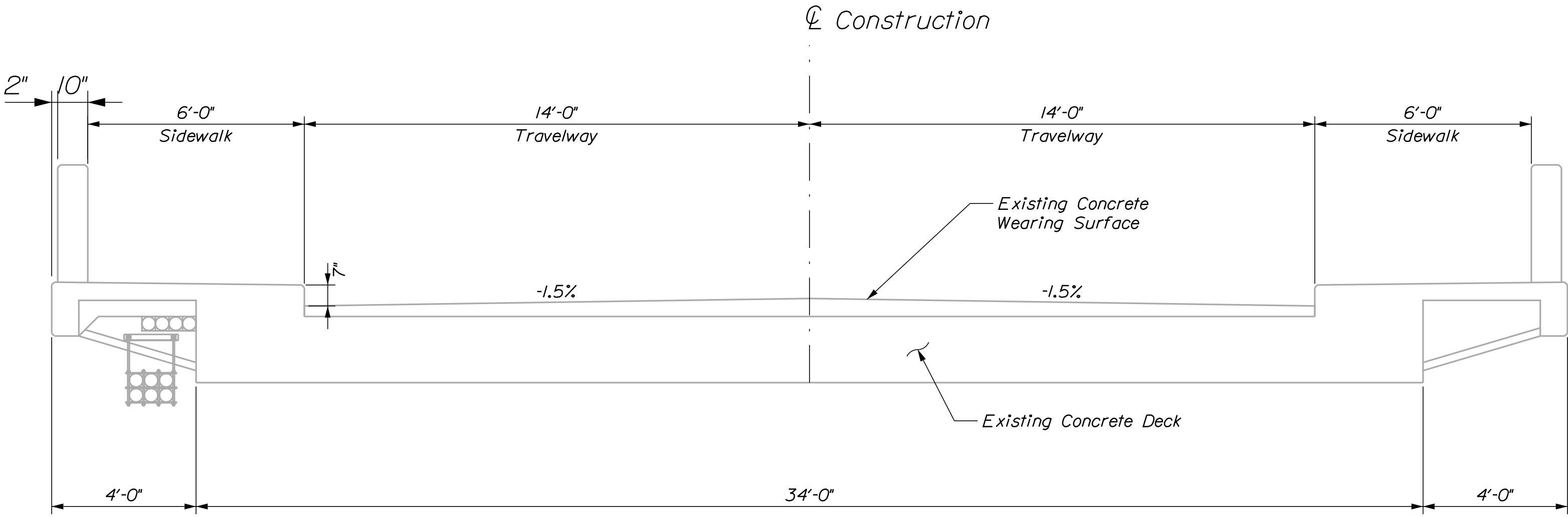
STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
  
02707800  
  
WIN  
027078.00  
BRIDGE NO. 2540  
BRIDGE PLANS

MECHANIC FALLS BRIDGE  
LITTLE ANDROSCOGGIN RIVER  
MECHANIC FALLS ANDROSCOGGIN COUNTY  
ESTIMATED QUANTITIES &  
GENERAL CONSTRUCTION NOTES

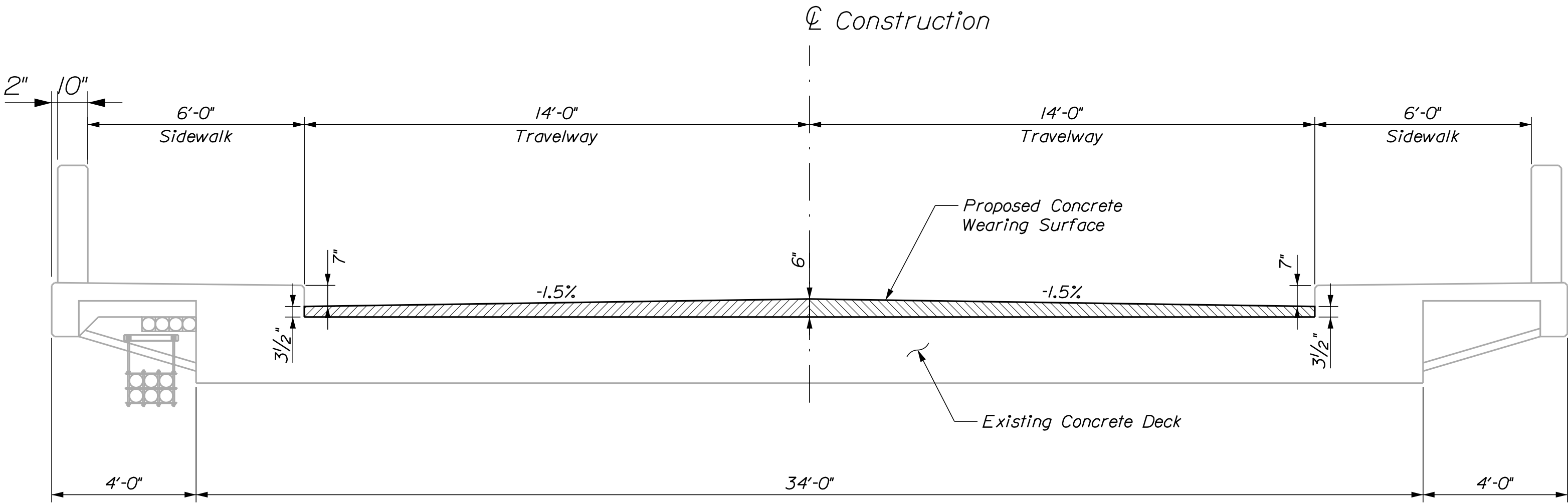
SHEET NUMBER  
  
2  
  
OF 9



MECHANIC FALLS BRIDGE LITTLE ANDROSCOGGIN RIVER MECHANIC FALLS ANDROSCOGGIN COUNTY		PROJ. MANAGER		BRIAN NICHOLS	BY	DATE
		DESIGN-DETAILED		Erin Brewer	MRP	5-2025
		CHECKED-REVIEWED		G. Gustafson	Erin Brewer	5-2025
		DESIGN2-DETAILED2				
GENERAL PLANS		DESIGN3-DETAILED3				
		REVISIONS 1				P.E. NUMBER
		REVISIONS 2				
		REVISIONS 3				
		REVISIONS 4				DATE
SHEET NUMBER  3  OF 9		FIELD CHANGES				
STATE OF MAINE DEPARTMENT OF TRANSPORTATION						
BRIDGE NO. 2540		WIN				
		027078.00				
BRIDGE PLANS						

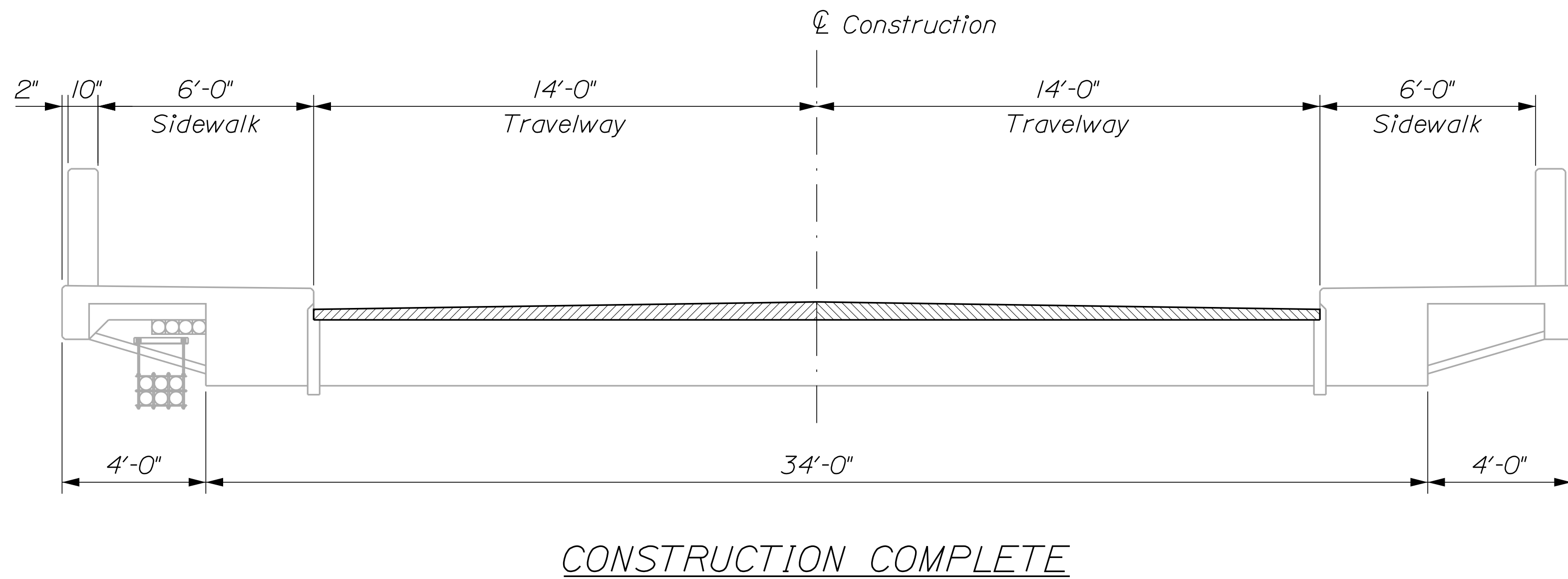


EXISTING SECTION

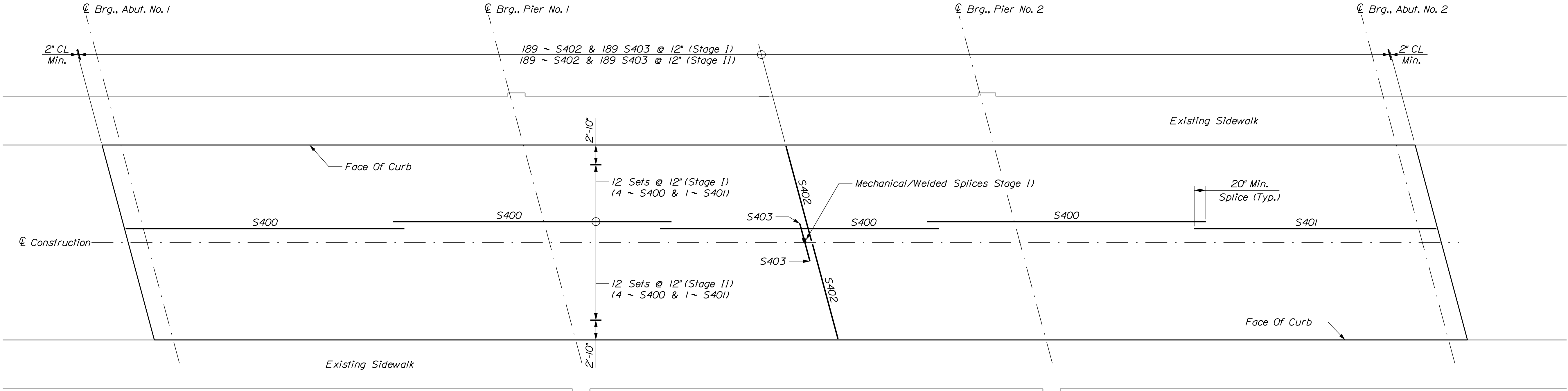


PROPOSED SECTION

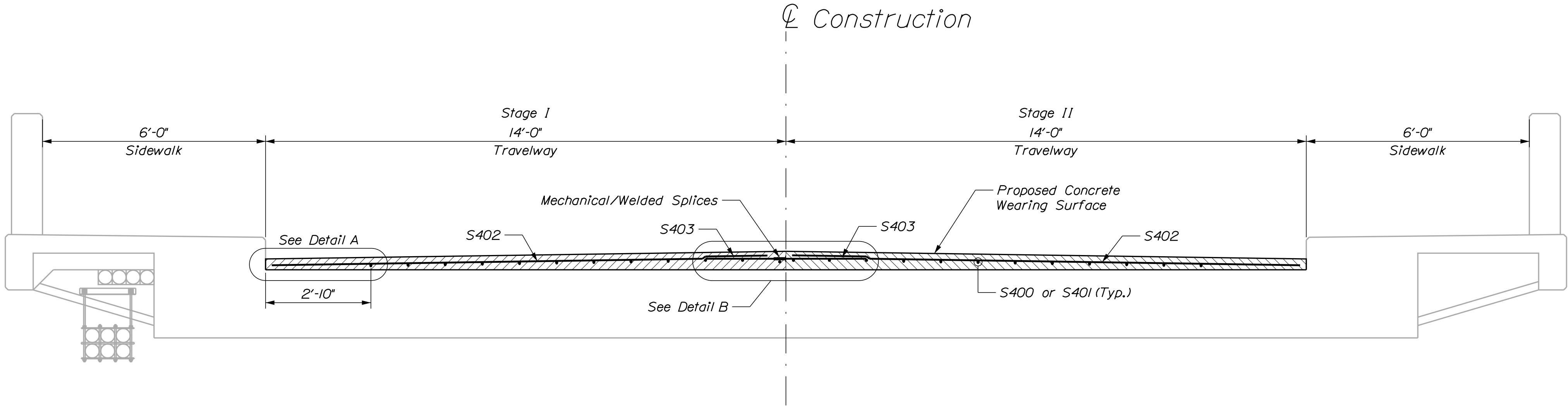
<div>MECHANIC FALLS BRIDGE</div> <div>LITTLE ANDROSCOGGIN RIVER</div> <div>MECHANIC FALLS ANDROSCOGGIN COUNTY</div> <div>TYPICAL SECTIONS</div>	PROJ. MANAGER		BRIAN NICHOLS	BY	DATE
	DESIGN-DETAILED		Erin Brewer	MRP	5-2025
	CHECKED-REVIEWED		G. Gustafson	Erin Brewer	5-2025
	DESIGN2-DETAILED2				
	DESIGN3-DETAILED3				
	REVISIONS 1				P.E. NUMBER
	REVISIONS 2				
	REVISIONS 3				
	REVISIONS 4				DATE
	FIELD CHANGES				
SHEET NUMBER		STATE OF MAINE			
4		DEPARTMENT OF TRANSPORTATION			
OF 9		02707800			
		BRIDGE NO. 2540			
		WIN			
		027078.00			
		BRIDGE PLANS			



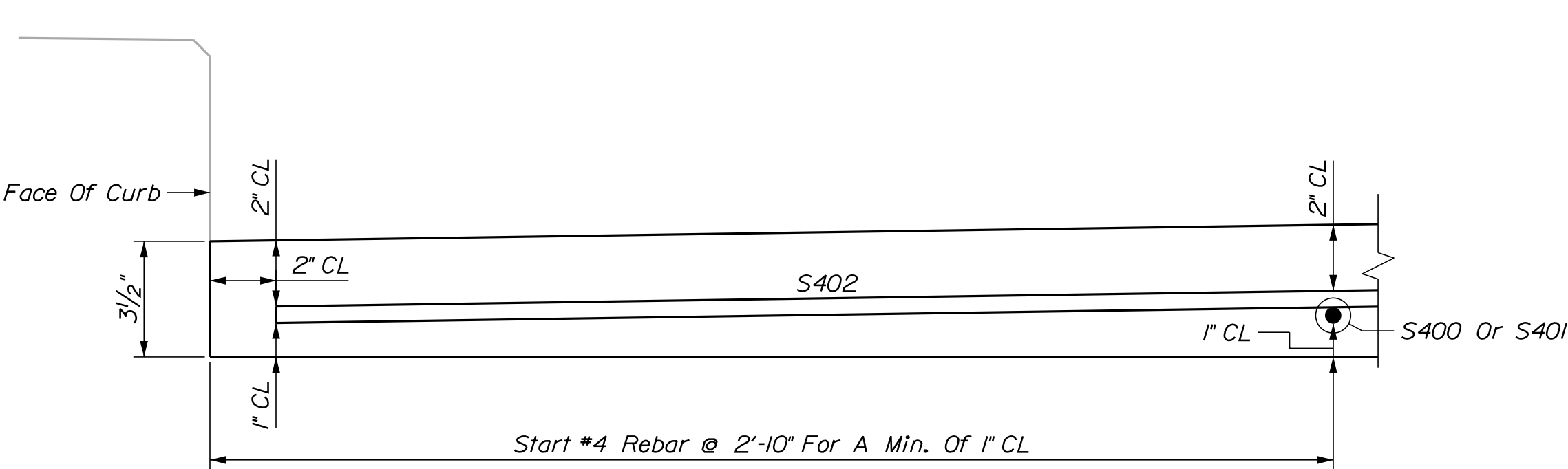




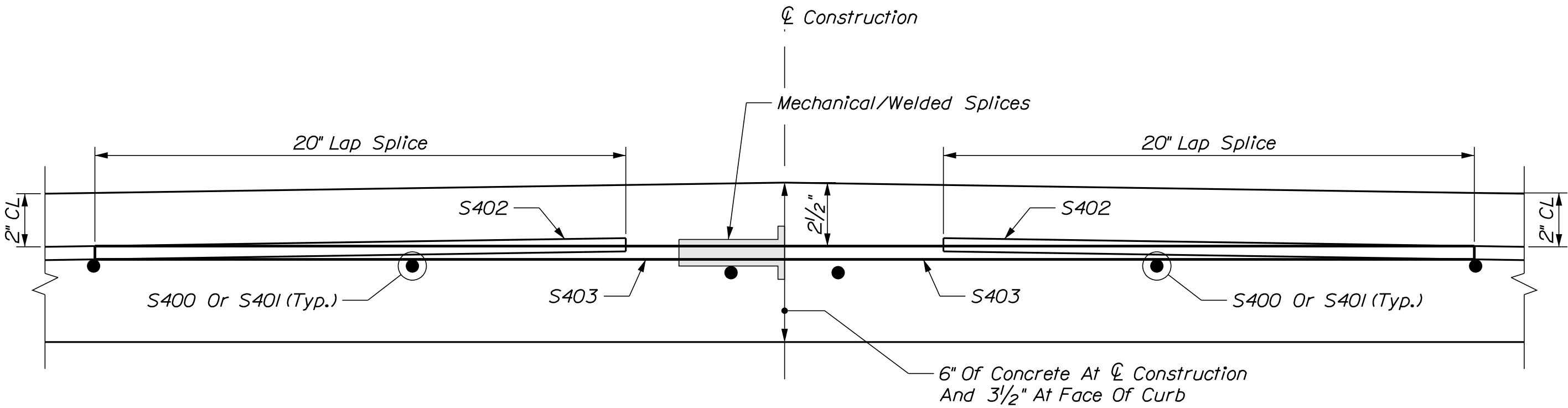
SUPERSTRUCTURE PLAN



SUPERSTRUCTURE SECTION



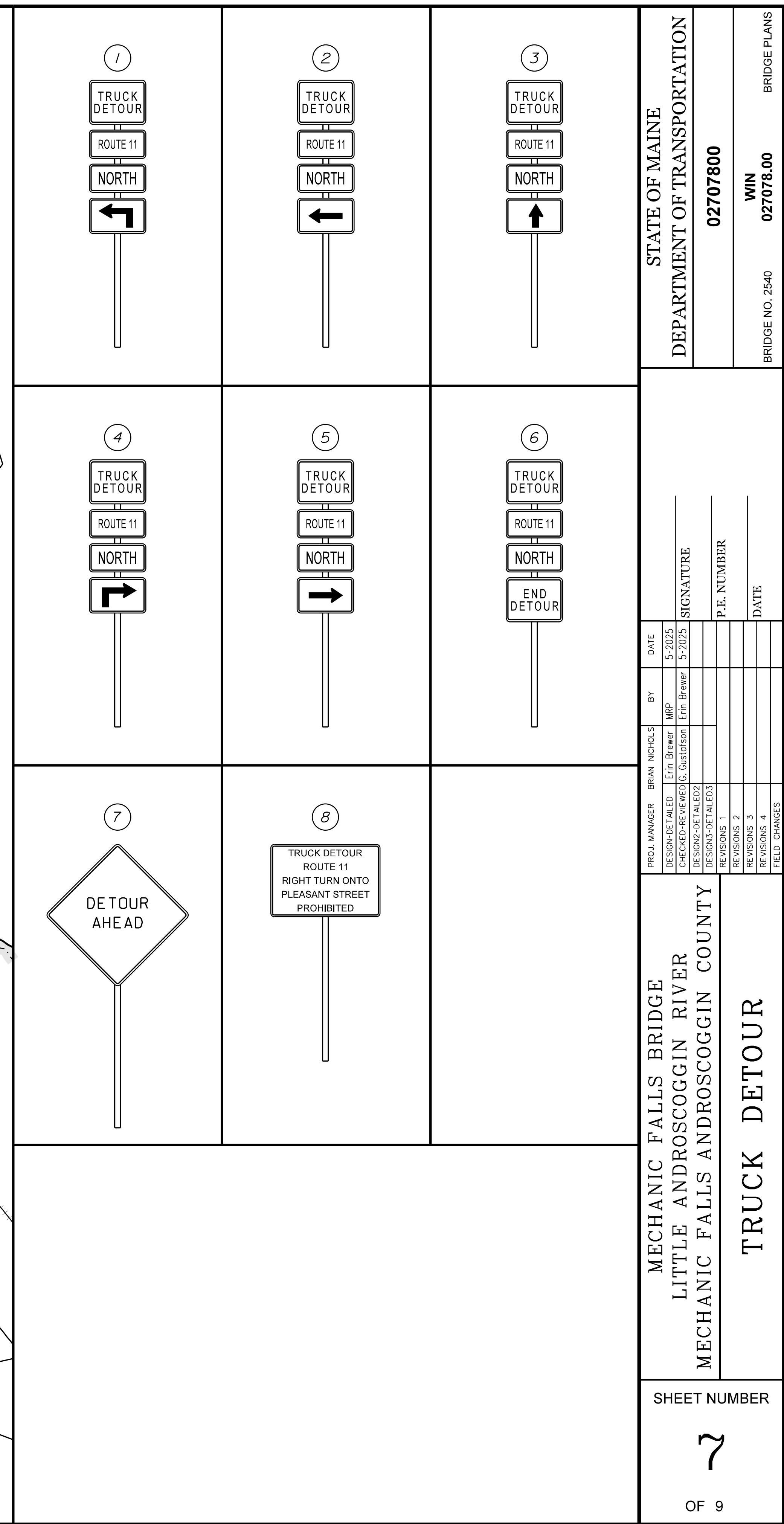
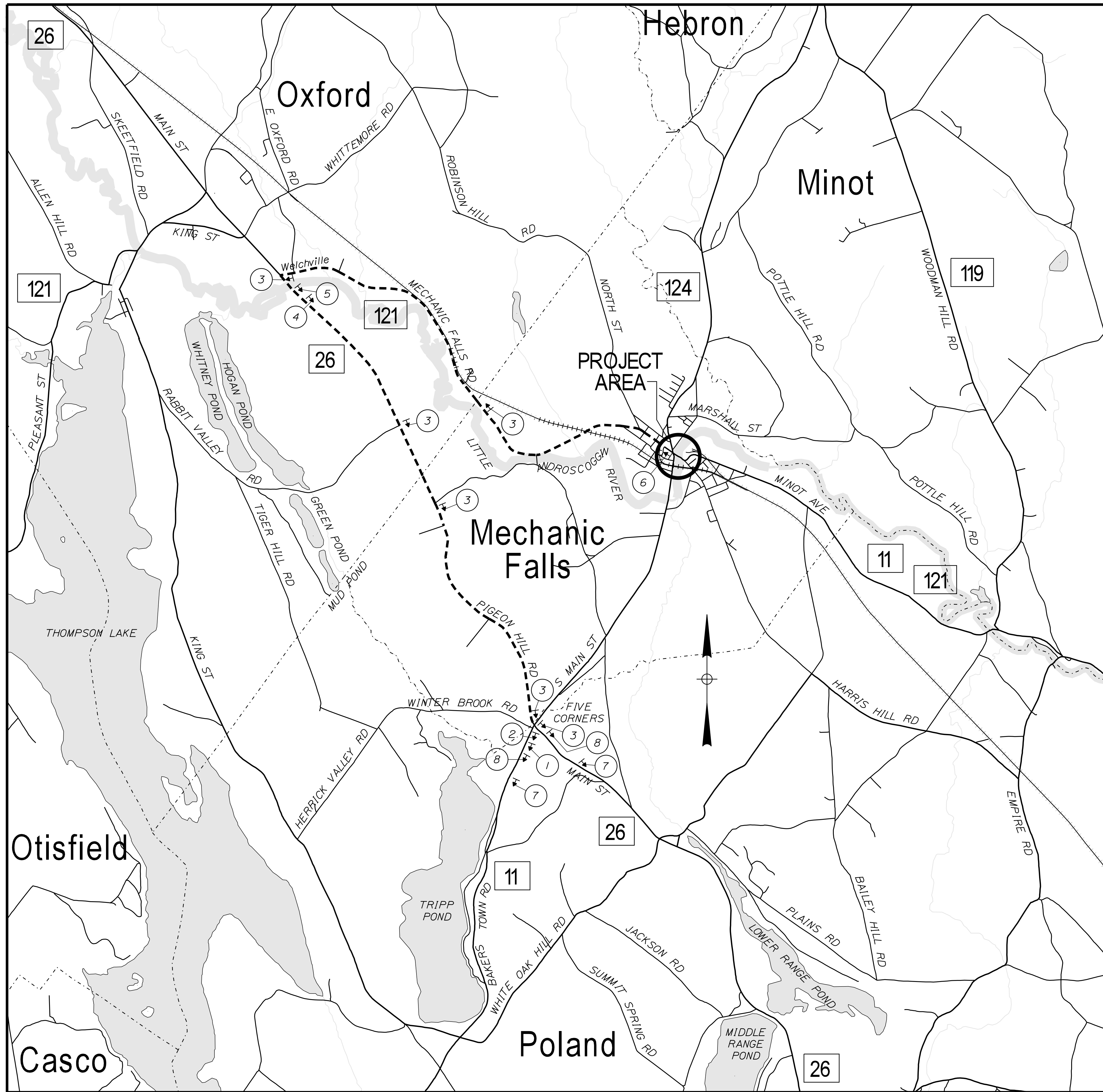
DETAIL A



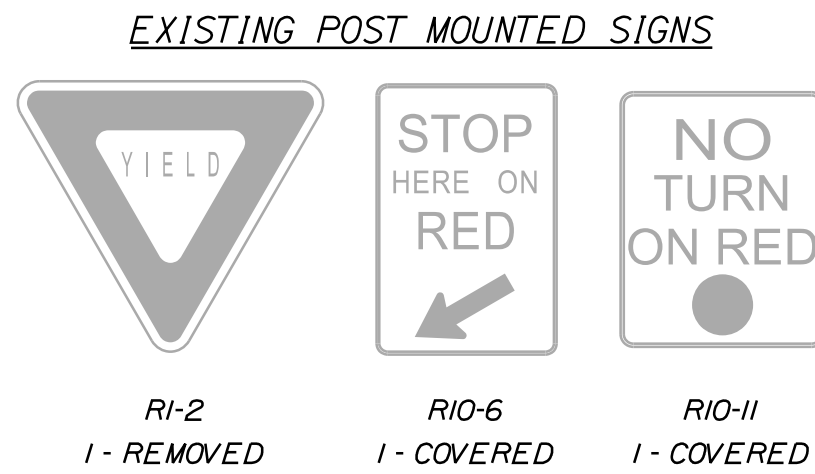
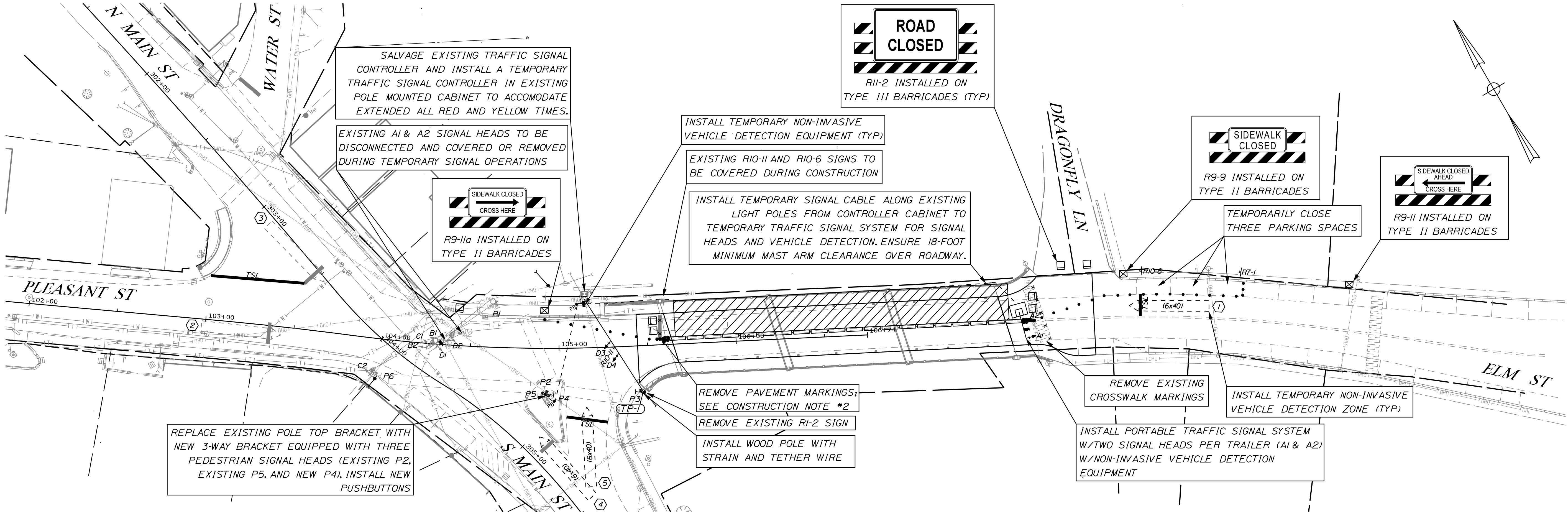
DETAIL B

STRAIGHT BARS			
MARK	QTY.	LENGTH	LOCATION
S400	96	40'-0"	Concrete Wearing Surface
S401	24	34'-9"	Concrete Wearing Surface
S402	378	13'-4"	Concrete Wearing Surface
S403	378	2'-2"	Concrete Wearing Surface
	189		Mechanical/Welded Splice
All Rebar Is Plain Steel			
GENERAL NOTES			
1. The first digit(s) following the letter(s) of the mark indicate the size of the bar. Mark "S404" = bar size #4 Mark "A602" = bar size #6 Mark "P805" = bar size #8 2. All dimensions are out-to-out of bar. 3. Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318. 4. Plain Reinforcing Steel: ASTM A 615, Grade 60 Stainless Steel Reinforcing: ASTM A955, Grade 75 Glass Fiber Reinforced Polymer: ASTM D7957 Low-Carbon Chromium Steel: ASTM A1035, Type CS, Grade 100			

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MECHANIC FALLS BRIDGE			
LITTLE ANDROSCOGGIN RIVER			
MECHANIC FALLS ANDROSCOGGIN COUNTY			
SUPERSTRUCTURE PLANS			
SHEET NUMBER			
6			
OF 9			

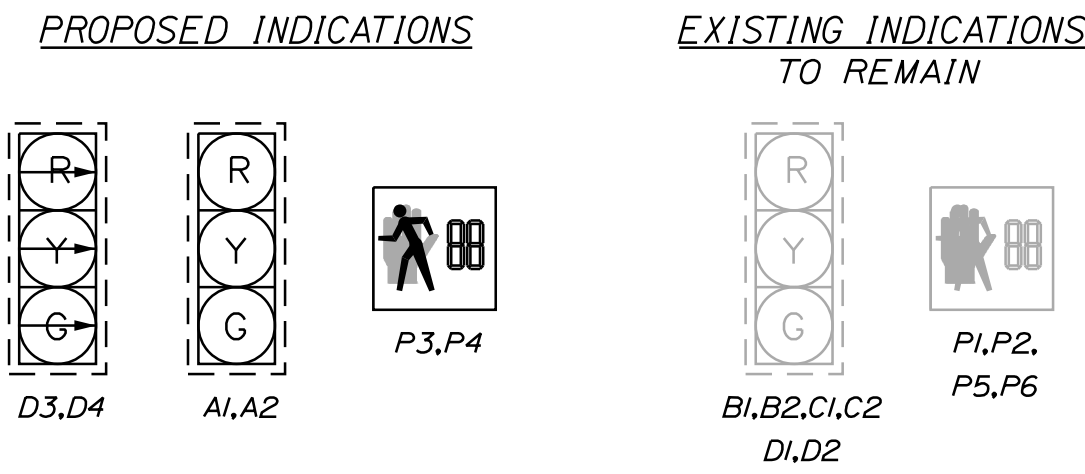




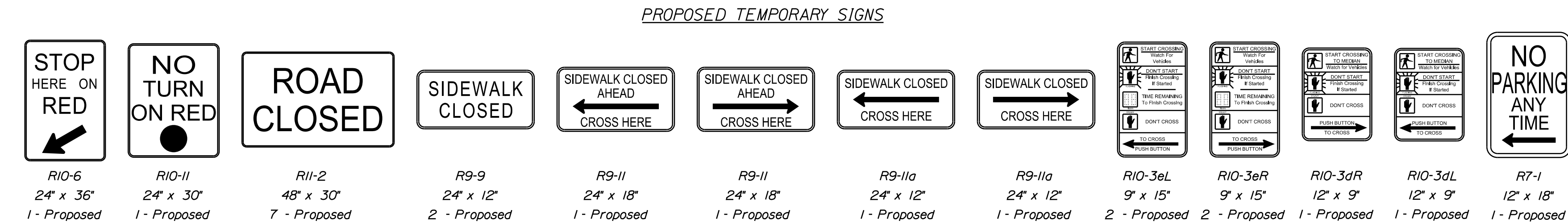


**STRUCTURE LIST**

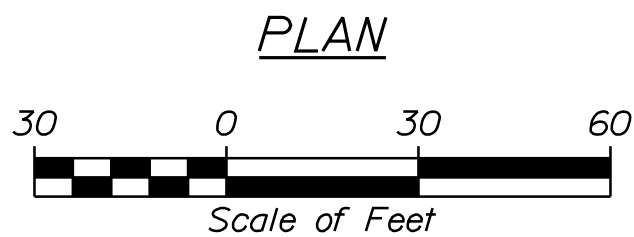
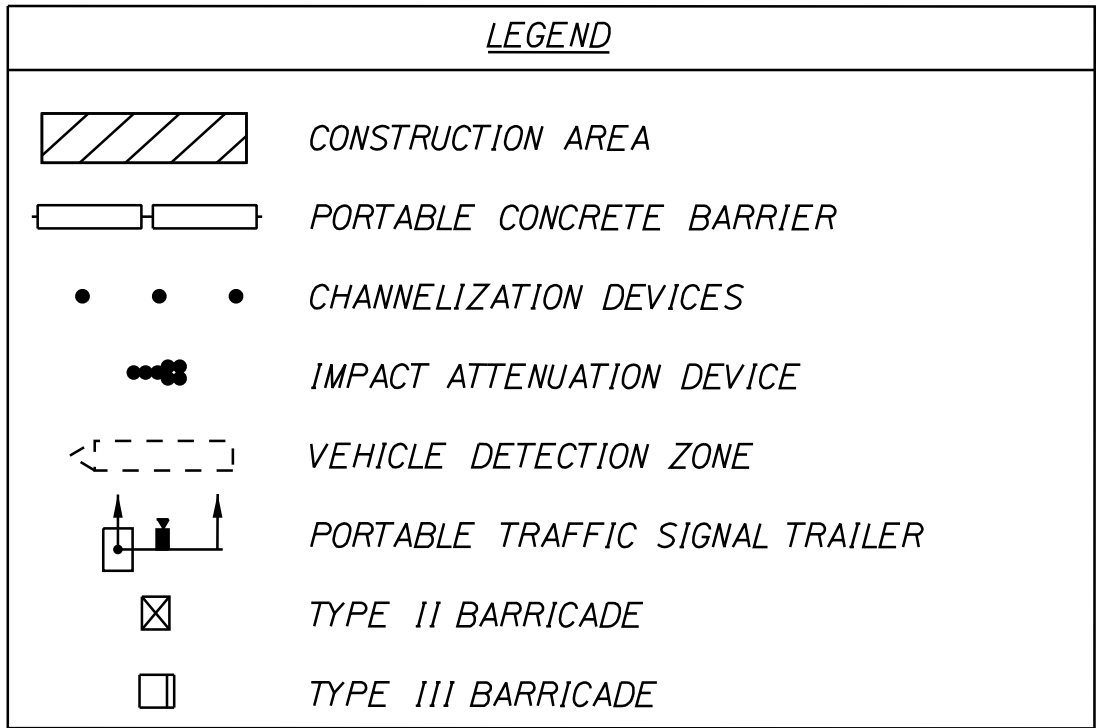
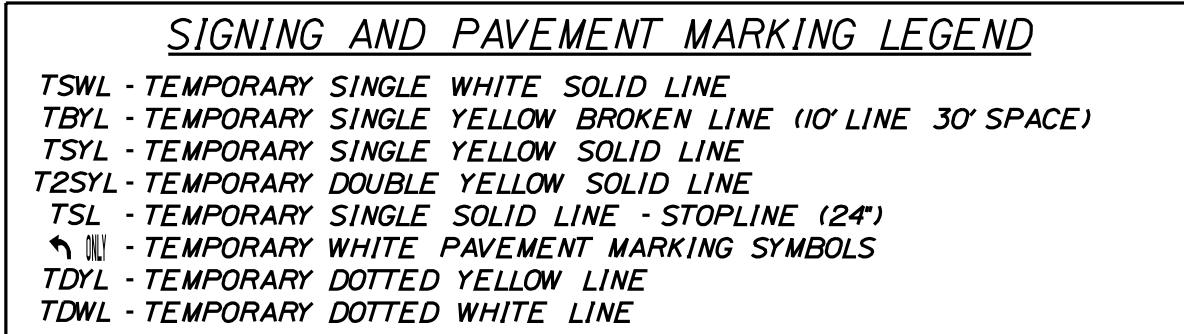
STRUCTURE	DESCRIPTION	REMARKS
(TP-1)	50' CLASS IV WOOD POLE	W/SCREW ANCHOR BACK TIES



- SIGNAL NOTES:**
- ALL PROPOSED INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5' LOUVERED RETROREFLECTIVE BACKPLATES.
  - PRIOR TO REMOVING THE EXISTING SIGNAL CONTROLLER, THE CONTRACTOR SHALL RECORD ALL TIMING AND PHASING PROGRAMMING CURRENTLY IN USE AND PROVIDE A COPY TO THE RESIDENT. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REPROGRAM THE NEW CONTROLLER TO THE PRE-EXISTING TIMING AND PHASING.
  - THE NEW WOOD POLE AT STA 105+46, RT WITH ITS ASSOCIATED SPAN WIRE SHALL REMAIN AT THE COMPLETION OF THE WORK. ALL OTHER TEMPORARY SIGNAL EQUIPMENT SHALL BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.
  - THE CONTRACTOR SHALL SET TIMING OF THE TEMPORARY TRAFFIC SIGNAL PER TIMING DATA PROVIDED. SIGNAL TIMING ADJUSTMENTS SHALL BE INCIDENTAL TO THE TRAFFIC SIGNAL SYSTEM.

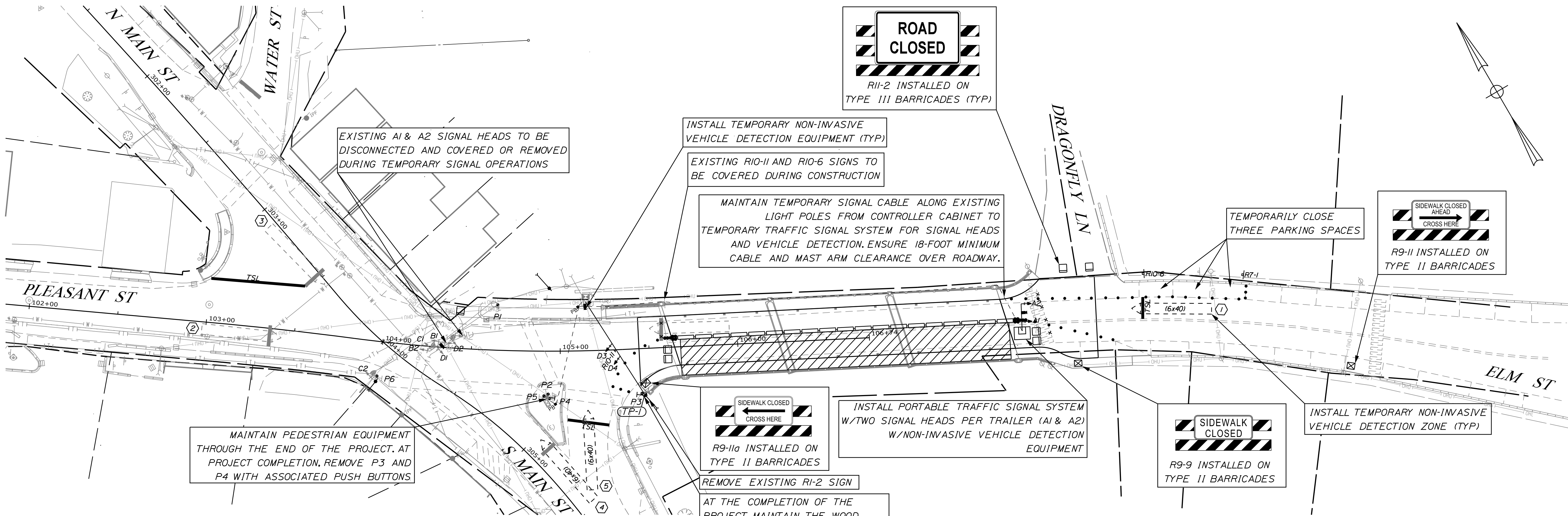


- CONSTRUCTION NOTES:**
- ERADICATE ALL EXISTING STRIPING IN CONFLICT WITH PROPOSED TEMPORARY PAVEMENT MARKING.
  - ERADICATE ALL LANE LINES EXTENDING BEYOND PROPOSED TEMPORARY STOP BARS.
  - SEE NEXT SHEET FOR SIGNAL TIMING AND PHASING DIAGRAMS. TIMING AND PHASING APPLIES TO BOTH STAGE 1 AND STAGE 2 OPERATIONS.



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	02707800	WIN	027078.00	BRIDGE NO. 2540	BRIDGE PLANS
MECHANIC FALLS BRIDGE LITTLE ANDROSCOGGIN RIVER MECHANIC FALLS ANDROSCOGGIN COUNTY TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 1					
SHEET NUMBER 8 OF 9					



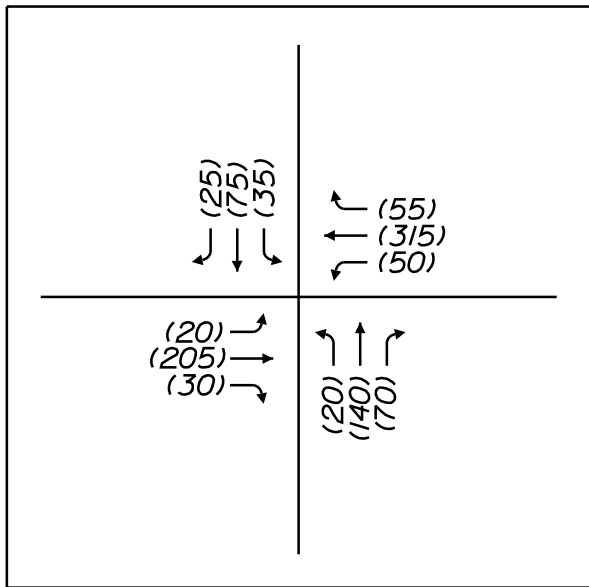


LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.72	QUANTITY
RECORD PROGRAMMING, REMOVE, AND SALVAGE EXISTING SIGNAL CONTROLLER.	1 EA
FURNISH AND INSTALL NEW SIGNAL CONTROLLER.	1 EA
FURNISH AND INSTALL SPAN AND TETHER WIRE.	65 LF
FURNISH AND INSTALL NEW SIGNAL CABLE.	1 LS
FURNISH AND INSTALL POLE RISERS.	1 EA
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH TRAFFIC SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY MOUNTED ON SPAN AND TETHER WIRE.	2 EA
FURNISH AND INSTALL ONE-WAY, 16 X 18-INCH LED TOP OF POST MOUNTED PEDESTRIAN SIGNAL HEAD.	2 EA
FURNISH AND INSTALL ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH 9" X 15" R10-3d INFORMATIONAL SIGN.	2 EA
FURNISH AND INSTALL ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH 9" X 15" R10-3e INFORMATIONAL SIGN.	2 EA
FURNISH AND INSTALL NON-INVASIVE STOP BAR VEHICLE DETECTION SYSTEM FOR 2 APPROACHES, COMPLETE.	1 LS
FURNISH AND INSTALL SPAN WIRE MOUNTED SIGNS.	1 EA
IMPLEMENT LOCAL SIGNAL TIMINGS.	-
REPROGRAM NEW SIGNAL CONTROLLER WITH PRE-EXISTING PHASING AND TIMING.	-
REMOVE AND SALVAGE EXISTING SIGNAL EQUIPMENT.	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

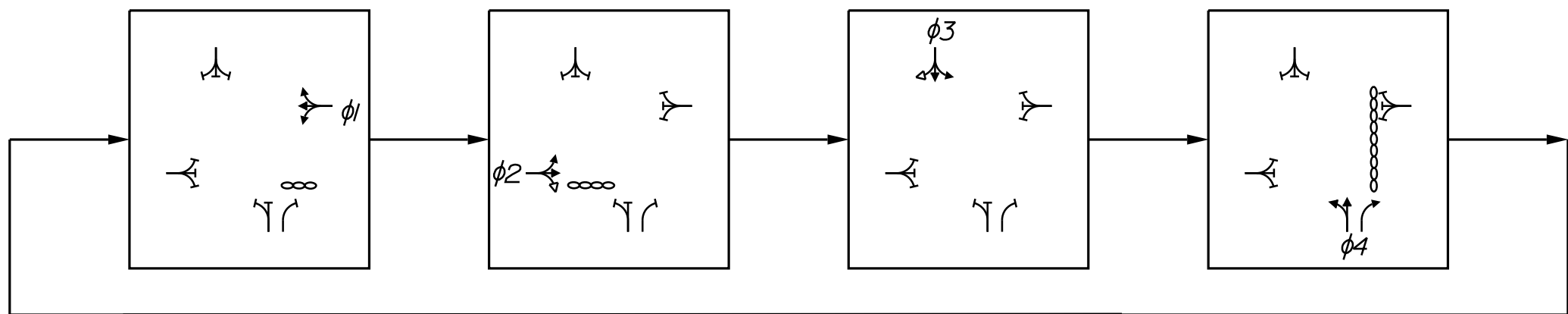
2025 CONSTRUCTION  
DESIGN VOLUMES (PM)



PROPOSED PHASE SEQUENCE

NEMA RING AND BARRIER DIAGRAM

1 2 3 4



SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ 1	φ 2	φ 3	φ 4	φ 5	φ 6	φ 7	φ 8
MOVEMENT	WB	EB	SB	NB	-	-	-	-
MINIMUM INITIAL	15	15	7	7	-	-	-	-
PASSAGE TIME	3.0	3.0	3.0	3.0	-	-	-	-
MAXIMUM 1	60	60	25	35	-	-	-	-
MAXIMUM 2	65	65	30	40	-	-	-	-
YELLOW	3.5	3.5	3.5	3.5	-	-	-	-
ALL RED	14.0	14.0	17.0	13.0	-	-	-	-
PED WALK	4.0	4.0	-	4.0	-	-	-	-
PED CLEAR	10.0	25.0	-	15.0	-	-	-	-
DYN MAX LIMIT	-	-	-	-	-	-	-	-
DYN MAX STEP	-	-	-	-	-	-	-	-
RECALL	0	0	0	0	-	-	-	-
DETECTOR	NL	NL	NL	NL	-	-	-	-
PRE-EMPT PRIORITY	-	-	-	-	-	-	-	-
FLASH	R	R	R	R	-	-	-	-
DUAL ENTRY	OFF	OFF	OFF	OFF	-	-	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK  
O = RECALL OFF R = RED  
L = LOCKING DETECTOR MEMORY  
NL = NON-LOCKING DETECTOR MEMORY

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ELM ST WB LEFT-THRU-RIGHT	1	1	B	-	-
②	PLEASANT ST EB LEFT-THRU-RIGHT	2	2	B	-	-
③	N MAIN ST SB LEFT-THRU-RIGHT	3	3	B	-	-
④	S MAIN ST NB LEFT-THRU	4	4	B	-	-
⑤	S MAIN ST NB RIGHT	4	4	B	-	-

PLAN



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

02707800

BRIDGE NO. 2540

WIN

027078.00

BRIDGE PLANS

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
MARK  
SHEPHERD  
REGISTERED PROFESSIONAL ENGINEER  
No. 11481

DATE  
05/09/2025

SIGNATURE  
11481

P.E. NUMBER  
05/09/2025

DATE

MECHANIC FALLS BRIDGE  
LITTLE ANDROSCOGGIN RIVER  
MECHANIC FALLS ANDROSCOGGIN COUNTY  
TEMPORARY TRAFFIC SIGNAL  
PLAN - STAGE 2

SHEET NUMBER  
9  
OF 9