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NASHVILLE, TN 37204  
RANDALL T. KEMP, P.E. NO. 100992

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE OF TENN. CODE ANN. §62-2-306.

SHEET NAME	SHEET NO.
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ESTIMATED ROADWAY QUANTITIES .....	2, 2-1
TRAFFIC PHASING NOTES, LEGEND, AND TRAFFIC CONTROL QUANTITIES .....	T2
TRAFFIC CONTROL PLANS .....	T6

**STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION**

# SIGNATURE SHEET

12/3/2025 9:15:49 AM  
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ROADWAY INDEX

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NOTE: THE ALPHABETICAL LETTERS "I", "O" & "Q" ARE NOT USED IN NUMBERING OF SHEETS.	


STANDARD ROADWAY DRAWINGS

DWG.	REV.	DESCRIPTION
<b>10-100.00 STANDARD ROADWAY TITLE SHEET, ABBREVIATIONS, AND LEGENDS</b>		
RD-TP-1	10-01-24	STANDARD ROADWAY DRAWINGS TITLE SHEET
RD-A-1	02-20-20	STANDARD ABBREVIATIONS A THROUGH L
RD-A-2		STANDARD ABBREVIATIONS M THROUGH Z
RD-L-1	02-20-20	STANDARD LEGEND
RD-L-1A		STANDARD LEGEND
RD-L-2	02-20-20	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-3	03-01-23	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-4	10-01-24	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-5	07-30-24	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-6	02-20-20	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-7	02-20-20	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
<b>10-101.00 STANDARDS ROADWAY DRAWINGS</b>		
RD11-SE-1		TRANSITION AND CROSS SLOPE DETAILS
RD11-SE-3		SUPERELEVATION TRANSITION DETAILS FOR DIVIDED ROADWAYS
RD11-SE-3A		SUPERELEVATION TRANSITION SECTIONS FOR DIVIDED ROADWAYS
RD11-TS-5	06-28-19	DESIGN STANDARDS FOR FREEWAYS WITH DEPRESSED MEDIAN (4 AND 6 LANE)
RD11-TS-5B		DESIGN STANDARDS FOR FREEWAYS WITH MEDIAN BARRIER (4 AND 6 LANE)
RD11-TS-5W	06-15-21	TYPICAL DETAIL FOR INSIDE LANE WIDENING OF FREEWAYS
RD11-LR-1		MINIMUM RUNOFF LENGTHS (LR) FOR URBAN HIGHWAYS
RD11-LR-2		MINIMUM RUNOFF LENGTHS (LR) FOR RURAL HIGHWAYS
RD11-S-11		DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT
RD11-SA-1	01-09-24	SAFETY APPROACH TO UNDERPASSES GRADING DESIGN AND SLOPE PROTECTION
RD11-SD-5		INTERSECTION SIGHT DISTANCE 4-LANE DIVIDED HIGHWAYS
RD-UD-3	01-09-24	UNDERDRAIN DETAILS
RD-UD-4	06-28-19	UNDERDRAIN LATERAL DETAILS
RD-UD-8	06-28-19	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 5:1 SLOPES
RD-UD-9	06-28-19	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 6:1 SLOPES
<b>10-102.00 AQUATIC ORGANISM PASSAGE (AOP) DESIGN, PIPE CULVERTS, AND ENDWALLS</b>		
D-PB-1	03-01-23	STANDARD DETAILS FOR CONCRETE PIPE INSTALLATION
D-PG-3	06-28-19	FERROUS AND ALUMINUM CORRUGATED METAL PIPE
D-PO-1	06-28-19	STANDARD OVAL AND REINFORCED CONCRETE ARCH PIPE CULVERT
D-PE-30A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 30" PIPE WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-30B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 30" PIPE, BILL OF STEEL AND PRECAST NOTES

DWG.	REV.	DESCRIPTION
D-SEW-1A	07-07-23	TYPE "SAFETY" SIDE ENDWALL WITH STEEL PIPE GRATE, FOR 15" THRU 48" PIPES, 6:1 SLOPE
D-PEW-1		PROTECTED ENDWALLS FOR ROUND & OVAL PIPES (PIPE SIZES 18" TO 72", ALL SKEWS, 2:1 & 3:1 SLOPES)
D-PEW-2		PROTECTED ENDWALLS FOR ROUND PIPES DETAILS & QUANTITIES (PIPE SIZES 18" TO 72", ALL SKEWS, 2:1 & 3:1 SLOPES)
D-PEW-4		PROTECTED STRAIGHT ENDWALLS (PIPE SIZES 18" TO 30" & EQU. OVAL PIPES)
<b>10-104.00 CATCH BASINS AND MANHOLES</b>		
D-CB-38RB	03-04-21	STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN
D-CB-38S	03-04-21	STANDARD 32" X 32" SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SB	03-04-21	STANDARD 4' X 4' SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-42RB	02-20-20	STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN
D-CB-42S	02-20-20	STANDARD 32" X 32" SQUARE CONCRETE NO. 42 CATCH BASIN
D-JBS-1	02-20-20	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 JUNCTION BOX
<b>10-105.00 ROADWAY, PAVEMENT APPURTENANCES, AND FENCES</b>		
S-F-1	03-01-23	HIGH VISIBILITY FENCE
<b>10-107.00 SAFETY DESIGN AND GUARDRAILS</b>		
S-CZ-1	06-28-19	CLEAR ZONE CRITERIA
S-PL-1	03-01-23	SAFETY PLAN FOR BARRIER LENGTH OF NEED
S-PL-3	03-01-23	SAFETY PLAN MINIMUM INSTALLATION AT BRIDGE ENDS
S-PL-4	01-09-24	SAFETY PLAN FOR BRIDGE PIERS IN DEPRESSED MEDIAN
S-PL-4A	01-09-24	SAFETY PLAN TO FOR BRIDGE PIERS/ ABUTMENTS OUTSIDE THE SHOULDER
S-PL-5	06-28-19	SAFETY PLAN FOR BRIDGE ENDS IN MEDIANS
S-PL-6	07-30-24	SAFETY PLAN SAFETY HARDWARE PLACEMENT ON OUTSIDE EDGE
S-PL-6A	06-28-19	SAFETY PLAN SAFETY HARDWARE PLACEMENT IN MEDIAN
S-CB-1	01-09-24	CABLE BARRIER PLACEMENT
S-CB-2	07-07-23	HIGH TENSION CABLE BARRIER
S-CC-1	10-01-24	CRASH CUSHION
S-GR31-1	03-13-25	GUARDRAIL DETAILS
S-GR31-1A	06-28-19	GUARDRAIL AND BLOCK-OUT DETAILS
S-GR31-1B		GUARDRAIL FASTENING HARDWARE
S-GR31-1C	07-07-23	GUARDRAIL GENERAL NOTES AND POST DETAILS
S-AGT-1		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-2		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-3		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-4		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-5		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-6		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-7		LONG SPAN APPROACH GUARDRAIL TRANSITION

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	18100-4148-04	1A
PS&E	2025	18100-4148-04	1A
REV. 12-03-25: ADDED ROADWAY-SIGN2 TO INDEX OF SHEETS.			

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STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

ROADWAY INDEX  
AND  
STANDARD  
ROADWAY  
DRAWINGS

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ESTIMATED ROADWAY QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY 18100-4148-04
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	1
(36) 201-01	CLEARING AND GRUBBING	LS	1
(17) 202-01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1
(3)(4) 203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	5928
(4) 203-03	BORROW EXCAVATION (UNCLASSIFIED)	C.Y.	3165
203-04	PLACING AND SPREADING TOPSOIL	C.Y.	308
203-06	WATER	M.G.	178
(15) 204-08.01	BACKFILL MATERIAL (FLOWABLE FILL)	C.Y.	10
(1)(5) 209-03.23	FILTER SOCK (24 INCH)	L.F.	604
(1)(5) 209-05	SEDIMENT REMOVAL	C.Y.	122
(1)(5) 209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	10263
(1)(5) 209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	475
(1)(5) 209-08.08	ENHANCED ROCK CHECK DAM	EACH	15
(1)(5) 209-08.09	FILTER SOCK CHECK DAM	EACH	144
(1)(5) 209-09.01	SANDBAGS	BAG	176
(1)(5) 209-20.03	POLYETHYLENE SHEETING (6 MIL. MINIMUM)	S.Y.	6
209-40.30	CATCH BASIN PROTECTION (TYPE A)	EACH	5
209-40.33	CATCH BASIN PROTECTION (TYPE D)	EACH	7
209-40.41	CATCH BASIN FILTER ASSEMBLY(TYPE 1)	EACH	16
209-40.42	CATCH BASIN FILTER ASSEMBLY(TYPE 2)	EACH	2
209-65.03	TEMPORARY DIVERSION CHANNEL	L.F.	40
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	41749
(14) 303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	4146
307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING A	TON	77
307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING B-M2	TON	79
307-01.22	ASP. CONC. MIX(PG76-22) (BPMB-HM) GR. A-S	TON	4949
307-03.01	ASPHALT CONCRETE MIX (PG76-22) (BPMB-HM) GRADING A	TON	12008
307-03.08	ASPHALT CONCRETE MIX (PG76-22) (BPMB-HM) GRADING B-M2	TON	1969
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	57
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	197
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	62
407-20.05	SAW CUTTING ASPHALT PAVEMENT	L.F.	9670
411-01.10	ACS MIX(PG64-22) GRADING D	TON	209
411-03.10	ACS MIX(PG76-22) GRADING D	TON	7041
411-12.01	SCORING SHOULDERS (CONTINUOUS) (16IN WIDTH)	L.M.	5.5
411-12.03	SCORING FOR RUMBLE STRIPE (NON-CONTINUOUS) (8IN WIDTH)	L.M.	0.3
415-01.01	COLD PLANING BITUMINOUS PAVEMENT	TON	9383
(8) 607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	2174
(8) 607-03.05	18" CONCRETE PIPE CULVERT(CLASS IV)JACKED-IN-PLACE	L.F.	64
(8) 607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	L.F.	776
(8) 607-05.05	24" CONCRETE PIPE CULVERT(CLASS IV) JACKED-IN-PLACE	L.F.	68
(8) 607-06.02	30" CONCRETE PIPE CULVERT (CLASS III)	L.F.	129
(8) 607-16.02	30"X 19" HORIZONTAL OVAL CONCRETE PIPE CULVERT	L.F.	168
(8)(18) 607-37.01	15" CORRUGATED METAL PIPE CULVERT	L.F.	8
(8)(18) 607-37.02	18" CORRUGATED METAL PIPE CULVERT	L.F.	8
(8) 607-37.04	30" CORRUGATED METAL PIPE CULVERT	L.F.	20
611-02.10	JUNCTION BOX, TYPE 1	EACH	1
611-07.01	CLASS A CONCRETE (PIPE ENDWALLS)	C.Y.	4.1
611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB.	122
611-07.33	30IN ENDWALL (SIDE DRAIN)	EACH	1
611-07.61	30IN ENDWALL (CROSS DRAIN) 4:1	EACH	1
611-07.62	30IN ENDWALL (CROSS DRAIN) 6:1	EACH	1
611-38.01	CATCH BASINS, TYPE 38, 0' - 4' DEPTH	EACH	13
611-38.02	CATCH BASINS, TYPE 38, > 4' - 8' DEPTH	EACH	3
611-39.01	CATCH BASINS, TYPE 39, 0' - 4' DEPTH	EACH	1
611-42.02	CATCH BASINS, TYPE 42, > 4' - 8' DEPTH	EACH	5
620-05.10	CONCRETE PARAPET CURVED WALL (<= TO 40 MPH)	L.F.	24

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ESTIMATED ROADWAY QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY 18100-4148-04
621-03.02	18" TEMPORARY DRAINAGE PIPE	L.F.	104
703-01	PORTLAND CEMENT CONCRETE DITCH PAVING	C.Y.	236
705-02.10	GUARDRAIL TRANSITION 27IN TO 31IN	EACH	4
705-06.01	W BEAM GR (TYPE 2) MASH TL3	L.F.	4850
705-06.10	GR TERMINAL TRAILING END (TYPE 13) MASH TL3	EACH	1
705-06.20	TANGENT ENERGY ABSORBING TERM MASH TL-3	EACH	5
705-06.25	THRIE BEAM BRIDGE TRANSITION MASH TL-3	EACH	11
705-06.28	THRIE BEAM AGT (LONG SPAN) MASH TL-3	EACH	1
705-06.50	CABLE BARRIER (MASH TL-4)	L.F.	809
705-06.51	CABLE BARRIER ANCHOR (MASH TL-4)	EACH	1
705-20.20	LOW MAINT CRASH CUSHN NARROW (MASH TL-3)	EACH	1
706-01	GUARDRAIL REMOVED	L.F.	1052
706-80.18	CABLE BARRIER TERMINAL (REMOVAL)	EACH	1
706-80.19	CABLE BARRIER (REMOVAL)	L.F.	784
707-08.11	HIGH-VISIBILITY CONSTRUCTION FENCE	L.F.	2906
(1)(5) 709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	200
(2) 709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	217
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	153
710-05	LATERAL UNDERDRAIN	L.F.	300
710-06.15	LATERAL UNDERDRAIN ENDWALL (6:1)	EACH	6
711-05.69	36IN SINGLE SLOPE CONCRETE BARRIER WALL	L.F.	58
712-01	TRAFFIC CONTROL	LS	1
712-02.10	PORTABLE BARRIER RAIL (MASH TL-3)	L.F.	13350
712-02.12	PORTABLE BARRIER RAIL, REDUCED DEFLECTION (MASH TL-3)	L.F.	960
712-02.60	TEMPORARY WORK ZONE CRASH CUSHION (MASH TL-3)	EACH	8
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	453
712-04.50	BARRIER RAIL DELINEATOR	EACH	632
712-05.01	WARNING LIGHTS (TYPE A)	EACH	457
712-06	SIGNS (CONSTRUCTION)	S.F.	1275
712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	48
712-08.03	ARROW BOARD (TYPE C)	EACH	2
712-08.08	SPEED FEEDBACK SIGN ASSEMBLY	EACH	2
712-08.09	DIGITAL SPEED LIMIT SIGN ASSEMBLY	EACH	4
712-08.12	QUEUE PROTECTION TRUCK	DAY	40
712-09.04	REMOVABLE PAVEMENT MARKING (STOP LINE)	L.F.	36
716-05.20	PAINTED PAVEMENT MARKING (6" LINE)	L.M.	1.2
712-10.02	TEMPORARY TRANSVERSE RUMBLE STRIPS	L.F.	960
713-01.01	CLASS A CONCRETE (FOUNDATION FOR SIGN SUPPORTS)	C.Y.	0.24
713-01.02	STEEL BAR REINFORCEMENT(FOUNDATION FOR SIGN SUPPORTS)	LB.	50
713-02.04	DELINEATOR (MILE MARKER) & STEEL POST	EACH	4
713-02.14	FLEXIBLE DELINEATOR (WHITE)	EACH	422
713-11.02	PERFORATED/KNOCKOUT SQUARE TUBE POST	LB.	243.5
713-11.21	P POST SLIP BASE	EACH	2
713-13.02	FLAT SHEET ALUMINUM SIGNS (0.080" THICK)	S.F.	15
713-13.03	FLAT SHEET ALUMINUM SIGNS (0.100" THICK)	S.F.	32
713-15	REMOVAL OF SIGNS, POSTS AND FOOTINGS	LS	1
713-16.01	CHANGEABLE MESSAGE SIGN UNIT	EACH	6
716-01.21	SNOWPLOWABLE RAISED PAVEMENT MARKERS (BI-DIR) (1 COLOR)	EACH	11
716-01.22	SNOWPLOWABLE RAISED PAVEMENT MARKERS (MONO-DIR) (1 COLOR)	EACH	735
716-01.23	SNOWPLOWABLE RAISED PAVEMENT MARKERS (BI-DIR) (2 COLOR)	EACH	226
716-01.30	REMOVAL OF SNOWPLOWABLE REFLECTIVE MARKER	EACH	972
716-02.07	PLASTIC PAVEMENT MARKING (24" BARRIER LINE)	L.F.	2325
716-05.49	PAINTED PAVEMENT MARKINGS (8" LINE)	L.M.	6
716-08.20	REMOVAL OF PAVEMENT MARKING (LINE)	L.M.	17.8
716-09.94	CONTRAST PAVEMENT SHADOW MARKING 6"	L.M.	0.1
716-12.02	ENHANCED FLATLINE THERMO PVMT MRKNG (6IN LINE)	L.M.	8
(34) 716-13.03	SPRAY THERMO PVMT MRKNG (60 mil) (8IN BARRIER LINE)	L.F.	56070

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	18100-4148-04	2
PS&E	2025	18100-4148-04	2
REV. 12-03-25: ADDED FOOTNOTE (36) TO ITEM 201-01 AND UPDATED QUANTITIES FOR ITEMS 203-01 AND 712-06.			

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STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

ESTIMATED  
ROADWAY  
QUANTITIES

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ESTIMATED ROADWAY QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY 18100-4148-04
717-01	MOBILIZATION	LS	1
(35) 725-21.07	PORTABLE SMART WORK ZONE SYSTEM	DAY	365
(30) 730-40	TEMPORARY TRAFFIC SIGNAL SYSTEM	EACH	1
730-50.20	RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (SOLAR POWERED)	EACH	2
(14) 740-07.04	GEOGRID REINFORCEMENT TYPE 2	S.Y.	8323
(1)(5) 740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	449
(16) 740-10.04	GEOTEXTILE (TYPE IV)(STABILIZATION)	S.Y.	2406
(1)(5) 740-11.04	TEMPORARY SEDIMENT TUBE 20IN	L.F.	2560
(9)(20) 801-01	SEEDING (WITH MULCH)	UNIT	74
(9) 801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	80
801-01.36	SPECIAL WETLAND SEED MIXTURE	UNIT	1
(23) 801-01.38	NATVE SEED MX FINAL STABLIZATN OF SLOPES	UNIT	5
(7) 801-03	WATER (SEEDING & SODDING)	M.G.	71
801-07	SEED (SUPPLEMENTAL APPLICATION)	LB.	128
(10) 801-08	FERTILIZER (SUPPLEMENTAL APPLICATION)	TON	1
803-01	SODDING (NEW SOD)	S.Y.	4409
806-02.03	PROJECT MOWING	CYCL	4

FOOTNOTES	
(1)	SEE SUBSECTION 209.07 OF THE STANDARD SPECIFICATION FOR MAINTENANCE REPLACEMENT.
(2)	INCLUDES 35 TONS FOR BRIDGE END FLUME CONSTRUCTION (ALSO INCLUDES GROUT WITHIN THE FIRST 5 FEET OF THE FLUME DRAIN), 138 TONS FOR PIPE OUTLET DITCH, 39 TONS FOR EPSC, AND 5 TONS FOR MITIGATION OF SOIL PIPING.
(3)	INCLUDES 39 C.Y. FOR EROSION CONTROL, 24 C.Y. FOR CONSTRUCTION OF BRIDGE END RIP-RAP FLUMES, AND 5865 C.Y. FOR GRADING.
(4)	SEE GRADING SPECIAL NOTES ON SHEET "2D".
(5)	ALL QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER.
(6)	CONTRACTOR SHALL USE THE RIBBON METHOD FOR APPLICATION.
(7)	INCLUDES 11 THOUSAND GALLONS FOR EROSION PREVENTION AND SEDIMENT CONTROL.
(8)	THE BEDDING MATERIAL SHALL BE INCLUDED IN THE COST OF THE PROPOSED PIPE CULVERT.
(9)	THE COST OF FERTILIZER AND LIME USED IN INITIAL SEED BED PREPARATION IS TO BE INCLUDED IN THE COST OF SEEDING. SEE SECTION 801 OF TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
(10)	THE COST OF ANY NECESSARY LIME TO BE USED IN CONJUNCTION WITH SUPPLEMENT FERTILIZER IS TO BE INCLUDED IN THE COST OF THE SUPPLEMENTAL FERTILIZER. SEE SECTION 801 OF TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
(11)	LATERAL UNDERDRAIN AND ENDWALLS WILL BE NEEDED IF EXISTING UNDERDRAIN IS ENCOUNTERED DURING CONSTRUCTION OF THE PAVEMENT WIDENING FOR TRAFFIC CONTROL.
(12)	DAY SHALL BE MEASURED IN 8 HOUR SHIFTS
(13)	FOR TEMPORARY MARKINGS FOR TRAFFIC CONTROL AND FOR STRIPING ON INTERMEDIATE PAVEMENT LAYERS.
(14)	4141 TONS FOR PAVEMENT AT BRIDGE ENDS AND 5 TONS FOR EPSC.
(15)	TO BE USED TO PLUG EXISTING CULVERT AT STA. 767+00 OF I-40 AND STA. 20+60 OF SR-24.
(16)	2356 S.Y. FOR PAVEMENT AT BRIDGE ENDS AND 50 S.Y. FOR BRIDGE FLUME.
(17)	SEE SHEET "2F" FOR REMOVAL OF STRUCTURES TABLE.
(18)	TO BE USED FOR REPLACING DAMAGED PIPE DURING EXISTING CATCH BASIN REMOVAL.
(19)	MILE MARKER SIGNS, AUTHORIZED VEHICLES ONLY, AND BRIDGES ICE BEFORE ROAD ARE TO BE REMOVED AND REPLACED.
(20)	TO BE USED ALONG S.R. 24 NEAR BRIDGE PIERS FOR FINAL STABILIZATION AS DIRECTED BY FIELD ENGINEER.
(21)	INCLUDES 6.0 L.M. FOR MAINTENANCE OF TRAFFIC.
(22)	INCLUDES 735 FOR MAINTENANCE OF TRAFFIC.
(23)	PERMANENT STABILIZATION WITH NATIVE OR NATURALIZED PERENNIAL VEGETATION IS REQUIRED IN ALL AREAS AUTHORIZED FOR TEMPORARY AND PERMANENT IMPACTS TO STREAMS AND RIPARIAN AREAS, INCLUDING ADJACENT BUFFER ZONES WITHIN 60 FT OF THE EDGE OF WATER. THE APPROPRIATE SEED MIXTURE FOR THE REGION AND SITE CONDITIONS SHALL BE SELECTED FROM TABLE 7.9-1 (PREFERRED SEED MIXES USING NATIVES OR NATURALIZED PLANTS AND PLANTING DATES) FOUND IN CHAPTER 7.9 (PERMANENT VEGETATION) OF THE TENNESSEE DEPARTMENT OF ENVIRONMENTA AND CONSERVATION (TDEC) TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK 4TH EDITION.

FOOTNOTES	
(24)	ALL COSTS ASSOCIATED WITH INSTALLING, STROING, AND RE-INSTALLING ALL TRAFFIC CONTROL DEVICES DURING AND BETWEEN THE DIFFERENT TRAFFIC CONTROL PHASES SHALL BE INCLUDED IN THE PRICE BID FOR EACH ITEM. DURING THE TIME BETWEEN DIFFERENT TRAFFIC CONTROL PHASES, THE CONTRACTOR SHALL STROE ALL TRAFFIC CONTROL DEVICES IN A PROPER LOCATION THAT WILL NOT INTERFERE WITH THE TRAFFIC FLOW. ALL WORK MUST MEET THE FULL APPROVAL OF THE TDOT ENGINEER.
(25)	ITEM INCLUDES COST OF INSTALLING AND RELOCATING PORTABLE BARRIER RAIL.
(26)	THIS ITEM SHALL BE A PORTABLE ENERGY ABSORBING TERMINAL MEETING THE REQUIREMENTS OF AASHTO MASH FOR TEST LEVEL 3. THE UNIT BID ITEM WILL INCLUDE FURNISHING AND INSTALLING ALL COMPONENTS AS SHOWN ON THE MANUFACTURER'S DRAWINGS.
(27)	ANY LOSS OR DAMAGE TO THE SIGNS SHALL BE PAID FOR BY THE CONTRACTOR.
(28)	INCLUDES QUANTITY FOR FOUR (4) QUEUE TRUCKS, TWO (2) FOR EACH DIRECTION ON I-40. QUEUE TRUCKS ARE TO REMAIN ON-SITE FOR THE DURATION OF THE PROJECT, AND ARE TO BE USED DURING PHASES 1 & 4, DURING ANY LANE CLOSURES, AND ANY OTHER TIMES AS DIRECTED BY THE ENGINEER.
(29)	QUANTITY INCLUDES FOUR (4) UNITS TO BE USED ALONG I-40 AND TWO (2) UNITS ALONG SR-24. MESSAGES AND LOCATIONS TO BE DIRECTED BY THE ENGINEER.
(30)	ITEM INCLUDES TEMPORARY SIGNALS AND TWO (2) RESIDENTIAL DRIVEWAY TEMPORARY SIGNALS AT LOCATIONS SHOWN IN THE PLANS.
(31)	LOCATIONS TO BE DETERMINED BY THE ENGINEER. QUANTITY INCLUDES ONE SIGN FOR EACH DIRECTION.
(32)	SPEED AND LOCATIONS TO BE DETERMINED BY THE ENGINEER BASED ON FIELD CONDITIONS.
(33)	ITEM INCLUDES ALL COST ASSOCIATED WITH REMOVAL OF TEMPORARY RUMBLE STRIPS.
(34)	SPRAY THERMO PAVEMENT MARKINGS TO BE USED FOR TEMPORARY STRIPING IN PHASE 2 ONLY.
(35)	INCLUDES COST OF ALL EQUIPMENT FOR 2 COMPLETE TDOT APPROVED SOLAR ADVANCED WARNING SYSTEMS (SAWS) THAT ALERT DRIVERS OF CONSTRUCTION VEHICLES EMERGING FROM THE WORK ZONE INTO THE ROADWAY. COST INCLUDES 2 RADAR TRAILERS AND 2 LED REGULATORY SIGN TRAILERS TOTAL. 1 SYSTEM REQUIRED IN EACH DIRECTION ON I-40 DURING PHASE 2. SYSTEMS MUST UTILIZE EIGHT (8) OR MORE ENCRYPTED CHANNELS OF FIELD PROGRAMMABLE RADIO FREQUENCY COMMUNICATION TO TRIGGER AN ARRAY OF EDGE LIT WIG-WAG SIGNS WITH BEACONS THAT ALERT THE DRIVERS ONLY DURING ACTIVE EGRESS FROM THE WORK ZONE. QUANTITY REPRESENTS THE TOTAL NUMBER OF 24HR CALENDAR DAYS ESTIMATED FOR PHASE 2 ONLY. ITEM INCLUDES ALL COSTS ASSOCIATED DEPLOYING, PROGRAMMING, AND MAINTAINING THE SAWS SYSTEMS PER THE MANUFACTURERS SPECIFICATIONS FOR THE DURATION OF USE. LOCATIONS OF RADAR AND REGULATORY SIGN TRAILERS TO BE DETERMINED BY THE ENGINEER.
(36)	INCLUDES COST OF ALL LABOR AND MATERIALS NECESSARY FOR THE REMOVAL AND DISPOSAL OF VEGETATION WITHIN 10 FEET OF THE BRIDGES AND ANY OTHER AREAS NECESSARY TO COMPLETE THE WORK, AS DIRECTED BY THE ENGINEER. WHERE POSSIBLE, STUMPS AND ROOTS ARE TO REMAIN TO PREVENT GROUND DISTRUBANCE.

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	18100-4148-04	2-1
PS&E	2025	18100-4148-04	2-1

REV. 12-03-25: UPDATED FOOTNOTES (3) AND (30), AND ADDED FOOTNOTE (36).

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STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

ESTIMATED  
ROADWAY  
QUANTITIES

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TRAFFIC CONTROL SIGN TABULATION												
M.U.T.C.D. SIGN NO.	LEGEND	SIZE IN INCHES			S.F.	NO. REQUIRED	NO. REQUIRED	NO. REQUIRED	TOTAL	ITEM NO.	STANDARD	REMARKS
		L	X	W		PHASE I	PHASE II	PHASE III	NO.	712-06	DRAWING	
									REQUIRED	S.F.	NO.	
G20-2	END ROAD WORK	48"	X	24"	8	7	7	4	7	56.00		
R4-9	STAY IN LANE	48"	X	60"	20		4	4	4	80.00		
R10-11	NO TURN ON RED	36"	X	48"	12	3	3		3	36.00		
R10-6	STOP HERE ON RED	24"	X	36"	6	3	3		3	18.00		
R10-6(MOD)	STAY IN LANE TO EXTEND GREEN	24"	X	36"	6	2	2		2	12.00		
R11-2	ROAD CLOSED	48"	X	30"	10	2	2		2	20.00		
SPECIAL	MAXIMUM X MINUTE RED	42"	X	48"	14	3	3		3	42.00		
SPECIAL	MAINTAIN X MPH SPEED	42"	X	36"	11	2	2		2	21.00		
SPECIAL	WAIT TURN ONLY IN DIRECTION OF ARROW	24"	X	36"	6	2	2		2	12.00		
SPECIAL	TRUCKS ENTERING/EXITING	48"	X	48"	16		8		8	128.00		
SPECIAL	TRUCKS ENTERING HIGHWAY	48"	X	48"	16		4		4	64.00		
SPECIAL	WHEN FLASHING	60"	X	12"	5		2		2	10.00		
TN-78	RUMBLE STRIPS AHEAD	48"	X	48"	16		4	4	4	64.00		
W1-4	LANE SHIFT RIGHT	48"	X	48"	16	1	1		1	16.00		
W1-4BL	TWO LANE SHIFT (LEFT)	48"	X	48"	16		4	4	4	64.00		
W1-4BR	TWO LANE SHIFT (RIGHT)	48"	X	48"	16		4	4	4	64.00		
W3-3	SIGNAL AHEAD	48"	X	48"	16	2	2		2	32.00		
W3-4	BE PREPARED TO STOP	48"	X	48"	16	3	3		3	48.00		
W4-2R	LANE ENDS (RIGHT)	48"	X	48"	16	4			4	64.00		
W16-2P	500 FEET PLAQUE	30"	X	24"	5		4		4	20.00		
W16-3P	1/2 MILE PLAQUE	30"	X	24"	5		4		4	20.00		
W20-1	ROAD WORK 1 MILE	48"	X	48"	16	4	4	4	4	64.00		
W20-1	ROAD WORK 1/2 MILE	48"	X	48"	16	2	6	4	6	96.00		
W20-1	ROAD WORK AHEAD	48"	X	48"	16	4	4		4	64.00		
W20-4	ONE LANE ROAD (1500 FT)	48"	X	48"	16	2	2		2	32.00		
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"	X	48"	16	4			4	64.00		
W20-5	RIGHT LANE CLOSED 1500 FT	48"	X	48"	16	4			4	64.00		
TOTAL									1275	S.F.		

- (24) ALL COSTS ASSOCIATED WITH INSTALLING, STORING, AND RE-INSTALLING ALL TRAFFIC CONTROL DEVICES DURING AND BETWEEN THE DIFFERENT TRAFFIC CONTROL PHASES SHALL BE INCLUDED IN THE PRICE BID FOR EACH ITEM. DURING THE TIME BETWEEN DIFFERENT TRAFFIC CONTROL PHASES, THE CONTRACTOR SHALL STORE ALL TRAFFIC CONTROL DEVICES IN A PROPER LOCATION THAT WILL NOT INTERFERE WITH THE TRAFFIC FLOW. ALL WORK MUST MEET THE FULL APPROVAL OF THE TDOT ENGINEER.
- (25) ITEM INCLUDES COST OF INSTALLING AND RELOCATING PORTABLE BARRIER RAIL.
- (26) THIS ITEM SHALL BE A PORTABLE ENERGY ABSORBING TERMINAL MEETING THE REQUIREMENTS OF AASHTO MASH FOR TEST LEVEL 3. THE UNIT BID ITEM WILL INCLUDE FURNISHING AND INSTALLING ALL COMPONENTS AS SHOWN ON THE MANUFACTURER'S DRAWINGS.
- (27) ANY LOSS OR DAMAGE TO THE SIGNS SHALL BE PAID FOR BY THE CONTRACTOR.
- (28) INCLUDES QUANTITY FOR FOUR (4) QUEUE TRUCKS, TWO (2) FOR EACH DIRECTION ON I-40. QUEUE TRUCKS ARE TO REMAIN ON-SITE FOR THE DURATION OF THE PROJECT, AND ARE TO BE USED DURING PHASES 1 & 4, DURING ANY LANE CLOSURES, AND ANY OTHER TIMES AS DIRECTED BY THE ENGINEER.
- (29) QUANTITY INCLUDES FOUR (4) UNITS TO BE USED ALONG I-40 AND TWO (2) UNITS ALONG SR-24. MESSAGES AND LOCATIONS TO BE DIRECTED BY THE ENGINEER.
- (30) ITEM INCLUDES TEMPORARY SIGNALS AND TWO (2) RESIDENTIAL DRIVEWAY TEMPORARY SIGNALS AT LOCATIONS SHOWN IN THE PLANS.
- (31) LOCATIONS TO BE DETERMINED BY THE ENGINEER. QUANTITY INCLUDES ONE SIGN FOR EACH DIRECTION.
- (32) SPEED AND LOCATIONS TO BE DETERMINED BY THE ENGINEER BASED ON FIELD CONDITIONS.
- (33) ITEM INCLUDES ALL COST ASSOCIATED WITH REMOVAL OF TEMPORARY RUMBLE STRIPS.
- (34) SPRAY THERMO PAVEMENT MARKINGS TO BE USED FOR TEMPORARY STRIPING IN PHASE 2 ONLY.
- (35) INCLUDES COST OF ALL EQUIPMENT FOR 2 COMPLETE TDOT APPROVED SOLAR ADVANCED WARNING SYSTEMS (SAWS) THAT ALERT DRIVERS OF CONSTRUCTION VEHICLES EMERGING FROM THE WORK ZONE INTO THE ROADWAY. COST INCLUDES 2 RADAR TRAILERS AND 2 LED REGULATORY SIGN TRAILERS TOTAL, 1 SYSTEM REQUIRED IN EACH DIRECTION ON I-40 DURING PHASE 2. SYSTEMS MUST UTILIZE EIGHT (8) OR MORE ENCRYPTED CHANNELS OF FIELD PROGRAMMABLE RADIO FREQUENCY COMMUNICATION TO TRIGGER AN ARRAY OF EDGE LIT WIG-WAG SIGNS WITH BEACONS THAT ALERT THE DRIVERS ONLY DURING ACTIVE EGRESS FROM THE WORK ZONE. QUANTITY REPRESENTS THE TOTAL NUMBER OF 24HR CALENDAR DAYS ESTIMATED FOR PHASE 2 ONLY. ITEM INCLUDES ALL COSTS ASSOCIATED DEPLOYING, PROGRAMMING, AND MAINTAINING THE SAWS SYSTEMS PER THE MANUFACTURERS SPECIFICATIONS FOR THE DURATION OF USE. LOCATIONS OF RADAR AND REGULATORY SIGN TRAILERS TO BE DETERMINED BY THE ENGINEER.

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	SIGN (CONSTRUCTION)
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING) W/ TYPE "A" WARNING LIGHTS
	ARROW BOARD TYPE C (SINGLE ARROW)
	CRASH CUSHION
	CONST. COMPLETED IN PREVIOUS PHASE
	ARROW BOARD TYPE C
	PORTABLE BARRIER RAIL (WITH BARRIER RAIL DELINEATORS)
	SNOWPLOWABLE PAVEMENT MARKER (SEE APPROVED QUALIFIED PRODUCT LIST)
	TRAFFIC FLOW
	GUYING DEVICE VERTICAL ANCHOR (1/16 DIAMETER)
	CHANGEABLE MESSAGE SIGN UNIT
	WOOD POLE
	TEMPORARY TRAFFIC CONTROL SIGNAL
	TRANSVERSE RUMBLE STRIP
	SAWS WARNING SYSTEM RADAR TRAILER

CONSTRUCTION ACCESS LOCATIONS FOR PHASE 2 ARE PROVIDED IN THESE PLANS. REFER TO TDOT STANDARD DRAWING T-WZ-62 FOR SIGN DETAILS. ANY ALTERNATE DESIGN FOR CONSTRUCTION ACCESS SHALL MEET THE REQUIREMENTS OF T-WZ-62.

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	18100-4148-04	T2
PS&E	2025	18100-4148-04	T2

REV. 12-03-25: UPDATED SIGN QUANTITIES AND FOOTNOTE (30).

PHASE 1

1. INSTALL APPROPRIATE MEASURES TO CLOSE EB AND WB OUTSIDE LANE AND SHOULDER TO ALLOW FOR MOBILE MILLING OPERATION TO REMOVE EXISTING RUMBLE STRIPS.
2. MILL 3.25" TO REMOVE RUMBLE STRIPS AND PLACE BACK 1.25" OF "D" MIX AND 2.00" OF "BM-2" TO BRING MILLED AREA ON OUTSIDE SHOULDERS TO MATCH ROADWAY SUPERELEVATION.
3. REMOVE EXISTING PAVEMENT MARKINGS AND INSTALL TEMPORARY PAVEMENT MARKINGS TO ALLOW FOR TRAFFIC SHIFTS IN PHASE 2.
4. PHASE 1 CONSTRUCTION SHALL BE RESTRICTED TO NIGHT-TIME HOURS SUNDAY THRU THURSDAY (WB 7:00P.M. - 7:00A.M. & EB 6:00P.M. - 7:00A.M.).

PHASE 2

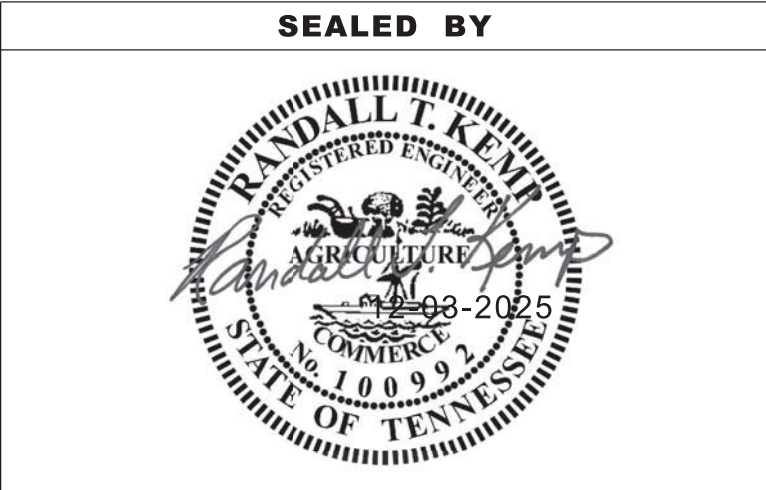
1. INSTALL APPROPRIATE MEASURES TO SHIFT I-40 EB AND WB TRAFFIC PARTIALLY ONTO THE OUTSIDE SHOULDER. WIDEN I-40 EB AND WB INSIDE LANES AND BRIDGES.
2. REMOVE TEMPORARY PAVEMENT MARKINGS AND INSTALL TEMPORARY PAVEMENT MARKINGS FOR PHASE 3 TRAFFIC.
3. PHASE 2 CONSTRUCTION SHALL NOT BE RESTRICTED TO NIGHT-TIME HOURS.

PHASE 3

1. INSTALL APPROPRIATE MEASURES TO SHIFT I-40 EB AND WB TRAFFIC ONTO THE NEWLY CONSTRUCTED INSIDE LANES AND BRIDGES. PRIOR TO TRAFFIC BEING SHIFTED INTO MEDIAN, ALL PERMANENT GUARDRAIL MUST BE IN PLACE.
2. CONSTRUCT THE REMAINING PORTION OF THE EB AND WB I-40 BRIDGES.
3. REPAIR OUTSIDE SHOULDERS ON THE HIGH SIDE OF SUPERELEVATED AREAS BACK TO STANDARD CROSS SLOPES.
4. REMOVE TEMPORARY PAVEMENT MARKINGS.
5. PHASE 3 CONSTRUCTION SHALL NOT BE RESTRICTED TO NIGHT-TIME HOURS.

PHASE 4

1. INSTALL APPROPRIATE MEASURES TO CLOSE EB AND WB LANES AND SHOULDERS TO ALLOW FOR MOBILE MILLING OPERATION FOR FINAL OVERLAY.
2. INSTALL FINAL RUMBLE STRIPS AND FINAL PAINT STRIPING.
3. PHASE 4 CONSTRUCTION SHALL BE RESTRICTED TO NIGHT-TIME HOURS SUNDAY THRU THURSDAY (WB 7:00P.M. - 7:00A.M. & EB 6:00P.M. - 7:00A.M.).

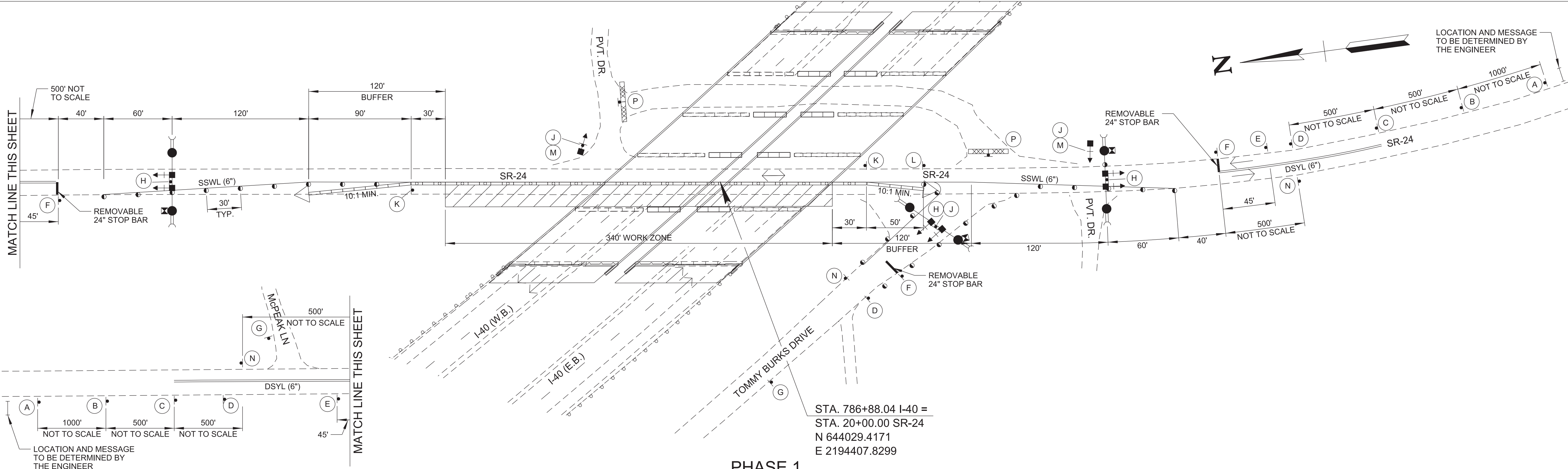


STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

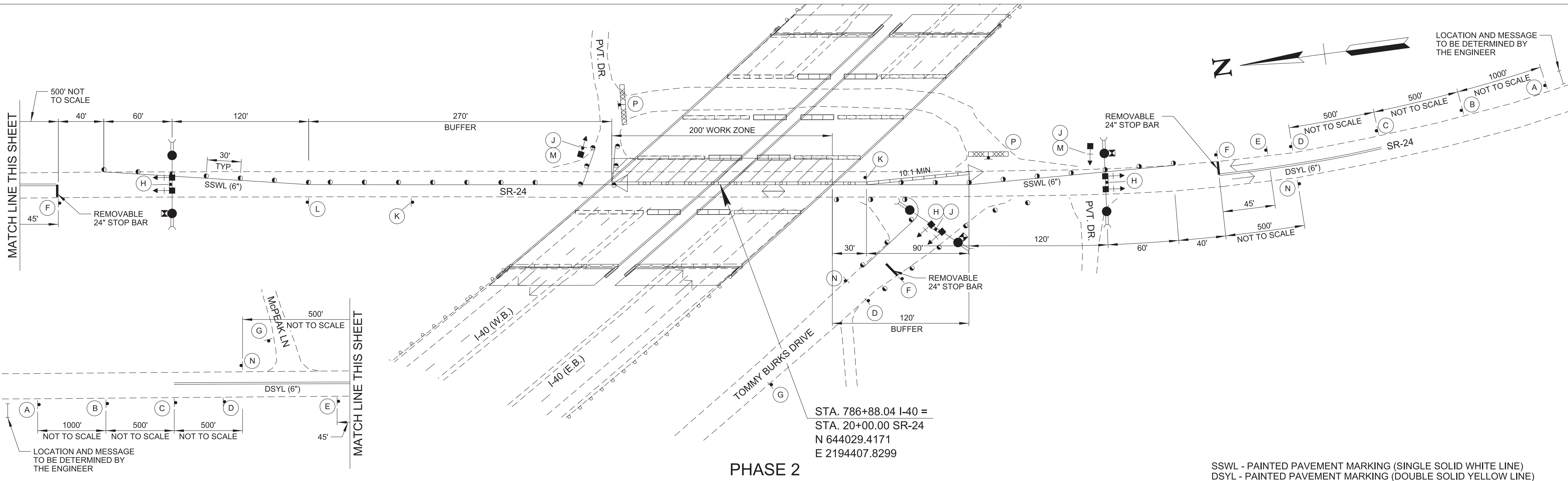
TRAFFIC PHASING NOTES,  
LEGEND, AND  
TRAFFIC CONTROL  
QUANTITIES

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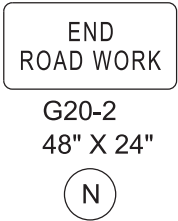
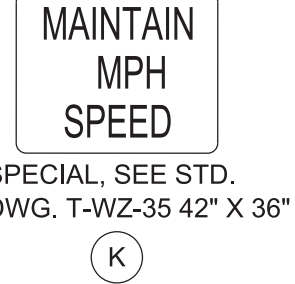
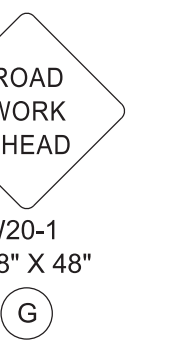
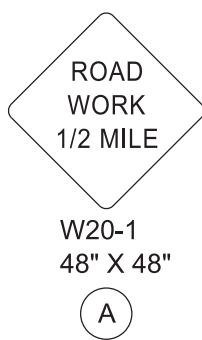


PHASE 1



PHASE 2

SSWL - PAINTED PAVEMENT MARKING (SINGLE SOLID WHITE LINE)  
DSYL - PAINTED PAVEMENT MARKING (DOUBLE SOLID YELLOW LINE)



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

TRAFFIC  
CONTROL  
PLANS  
SR-24  
SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	18100-4148-04	T6
PS&E	2025	18100-4148-04	T6

REV. 12-03-25: ADDED TEMPORARY  
DRIVEWAY SIGNAL FOR SOUTHERN  
PRIVATE DRIVEWAY.



THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Logan Colbert

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PALMER ENGINEERING CO.  
2817 ERICA PLACE  
NASHVILLE, TN 37204  
LOGAN COLBERT, P.E. NO. 117913

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE OF TENN. CODE ANN. §62-2-306.

**SHEET NAME**

**SHEET NO.**

SIGNATURE SHEET .....STRUCTURE-SIGN2

BRIDGE INDEX AND STANDARD STRUCTURE DRAWINGS .....B-1 (BR-133-174)

ESTIMATED BRIDGE QUANTITIES AND NOTES.....B-2 (BR-133-175)

BENT DETAILS.....BR-133-209

YEAR	PROJECT NO.	SHEET NO.
2025	18100-4148-04	STRUCTURE-SIGN2

**STATE OF TENNESSEE**  
**DEPARTMENT OF TRANSPORTATION**

## SIGNATURE SHEET

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BRIDGE INDEX 

SHEET NAME	SHEET NO.	LAST REV. DATE
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SIGNATURE SHEET .....	STRUCTURE-SIGN2	
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STANDARD STRUCTURE DRAWINGS

DWG.	REV.	DESCRIPTION
NEW STRUCTURES		
STD-1-1SS	07-09-25	BRIDGE RAILING SINGLE SLOPE CONCRETE PARAPET
STD-1-2SS	05-31-24	STEEL SLIDER PLATE ASSEMBLIES FOR SINGLE SLOPE CONCRETE PARAPET AND BRIDGE DECK DRAIN DETAILS
STD-1-5	06-05-23	REINFORCED CONCRETE PAVEMENT AT BRIDGE ENDS
STD-5-1		STANDARD PILE DETAILS
STD-6-1	12-08-23	STANDARD SEISMIC DETAILS
STD-9-1	10-07-08	STANDARD REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS
STD-10-1	06-05-23	MISCELLANEOUS ABUTMENT AND DRAINAGE DETAILS
STD-10-2	06-05-23	MISC. ABUTMENT & PAVEMENT AT BRIDGE ENDS BACKFILL DETAILS
STD-14-2	03-06-24	STANDARD DETAILS AND INTERMEDIATE DIAPHRAGM DETAILS FOR I-BEAMS

PROJECT NO.		YEAR	SHEET NO.
18100-4148-04		2025	B-1
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	12-03-25	RLC	ADDED STRUCTURE-SIGN2 & REV. DATES

SEALED BY



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
BRIDGE INDEX AND STANDARD  
STRUCTURE DRAWINGS  
BRIDGE NO. BR-18-I0040-00.24 (LT&RT)  
FED BRIDGE ID 18I00400001 & 18I00400002  
INTERSTATE 40 OVER STATE ROUTE 24  
CUMBERLAND COUNTY  
2025



PIN NO.:	105727.01	
DESIGN BY:	R.L. COLBERT	DATE: 09/2025
DRAWN BY:	M.D. SIMPSON	DATE: 09/2025
SUPERVISED BY:	G.S. WILSON	DATE: 09/2025
CHECKED BY:	R.L. COLBERT	DATE: 09/2025

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GENERAL NOTES

SPECIFICATIONS & LOADING

- (1) **CONSTRUCTION SPECIFICATIONS:** STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (JANUARY 1, 2021 EDITION), AND THE 4<sup>TH</sup> EDITION (2017) AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS WITH INTERIMS.
- (2) **DESIGN SPECIFICATIONS:** 10<sup>TH</sup> EDITION (2024) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THE 2<sup>ND</sup> EDITION (2011) AASHTO GUIDE SPECIFICATION FOR LRFD SIESMIC BRIDGE DESIGN WITH INTERIMS.
- (3) **LOADING:**  
A. HL-93 LIVE LOADING  
B. DEAD LOAD INCLUDES 35 LB/SQ. FT. FOR FUTURE WEARING SURFACE.

STEEL, CONCRETE, REINFORCING, AND FORMING

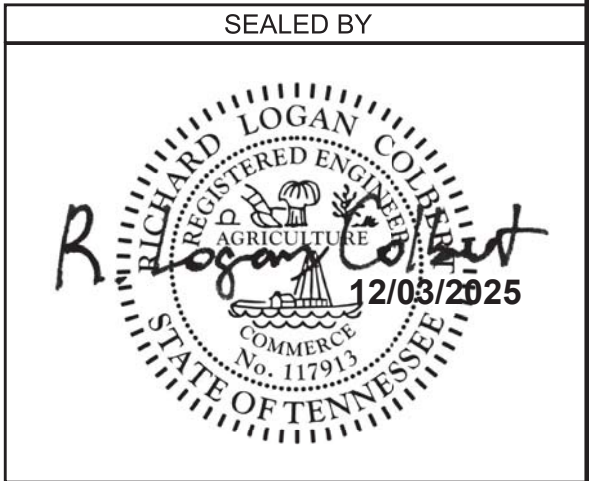
- (4) **REINFORCING STEEL:** SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.
- (5) **NOTE:** MECHANICAL BAR SPLICERS MUST BE ON THE TDOT QUALIFIED PRODUCTS LIST 27. THE BAR SPLICERS SHALL MEET AASHTO LRFD SPECIFICATIONS FOR MECHANICAL CONNECTION. WHEN EPOXY COATING IS REQUIRED, THE EXPOSED THREADS SHALL BE REPAIRED AFTER SPlicing ACCORDING TO SECTION 907 OF THE STANDARD SPECIFICATIONS. THE COST OF FURNISHING THE BAR SPLICERS, (AND EPOXY COATING WHEN REQUIRED) INCLUDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE INSTALLATION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE REINFORCING BARS, UNLESS NOTED OTHERWISE IN PLANS.
- (6) **CONCRETE:** TO BE CLASS A (CAST-IN-PLACE) F'C = 3000 PSI EXCEPT AS NOTED OTHERWISE.
- (7) **BRIDGE DECKS:** CLASS DS CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.
- (8) **BRIDGE DECK SURFACE FINISH:** TO BE IN ACCORDANCE WITH METHOD 3 IN ARTICLE 604.22 OF THE STANDARD SPECIFICATIONS.
- (9) **CONCRETE CURING:** ALL CONCRETE IN REPAIR AREAS SHALL BE CURED ACCORDING TO THE STANDARD SPECIFICATIONS.
- (10) **BRIDGE DECK FORMS:** BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS SHALL BE REMAIN-IN-PLACE STEEL. FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. TEMPORARY ERECTION DIAPHRAGMS MUST BE USED AT THE ENDS OF PRECAST CONCRETE GIRDERS WHERE END DIAPHRAGMS, SUPPORT DIAPHRAGMS, OR ABUTMENT ENDWALLS ARE TO BE POURED CONCURRENTLY WITH THE DECK AND SHALL BE PROVIDED ELSEWHERE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO PREVENT GIRDER ROTATION. SEE STANDARD DRAWING STD-14-2 AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.
- (11) **HIGH EARLY STRENGTH CONCRETE:** THE MIX IS TO MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, CLASS "X". THE CEMENT CONTENT SHALL BE A MINIMUM OF 714 LBS. THE WATER-CEMENT RATIO SHALL BE A MAXIMUM OF 0.40. DESIGN AIR CONTENT SHALL BE 6% WITH ±2% ACCEPTANCE RANGE IN THE FIELD. SLUMP SHALL BE 3±1 INCHES. IF USING A TYPE A, F, OR G WATER REDUCER, THE SLUMP SHALL BE MAXIMUM OF 8 INCHES. NO FLY ASH REPLACEMENT WILL BE PERMITTED. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 3,500 PSI. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIRED AREAS UNTIL TEST SPECIMENS ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AND THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF TEN (10) DAYS.

ESTIMATED BRIDGE QUANTITIES 

	ITEM NO.	DESCRIPTION	UNIT	LEFT BR.	RIGHT BR.	TOTAL
①	202-04.01	REMOVAL OF STRUCTURES (BR-18-10040-00.24 LT)	LS	1	-	1
①	202-04.02	REMOVAL OF STRUCTURES (BR-18-10040-00.24 RT)	LS	-	1	1
②	204-02.01	DRY EXCAVATION (BRIDGES)	C.Y.	2234	2234	4468
	204-04.01	ROCK EXCAVATION (BRIDGES)	C.Y.	15	15	30
	204-05	ROCK DRILLING (BRIDGES)	L.F.	48	48	96
	303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	80	80	160
⑬	604-02.03	EPOXY COATED REINFORCING STEEL	LB.	174003	171787	345790
④	604-03.01	CLASS A CONCRETE (BRIDGES)	C.Y.	199	189	388
⑮	604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LB.	53622	52549	106171
	604-03.04	PAVEMENT @ BRIDGE ENDS	S.Y.	478	470	948
⑤	604-03.32	CLASS DS CONCRETE	C.Y.	531	523	1054
⑥	604-04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	S.Y.	1726	1709	3435
⑥	604-04.02	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	S.Y.	1736	1676	3412
	604-05.31	BRIDGE DECK GROOVING (MECHANICAL)	S.Y.	2617	2578	5195
⑦	604-10.05	CONCRETE	S.F.	29	30	59
⑧	604-10.14	REMOVE EXISTING WEARING SURFACE	LS	0.5	0.5	1
⑨	604-10.22	CONCRETE PARAPET REPAIR	L.F.	80	80	160
	604-10.42	CONCRETE REPAIRS	C.F.	15	19	34
⑩	604-10.54	CONCRETE REPAIRS	S.F.	29	30	59
	604-10.55	CONCRETE (FOUNDATION REPAIRS)	C.Y.	1	1	2
	604-10.58	EPOXY INJECTION (INJECTION)	GAL.	8	6	14
	604-10.62	EPOXY INJECTION REPAIR (COMPLETE AND IN PLACE)	L.F.	73	60	133
	606-03.03	STEEL PILES (12 INCH)	L.F.	140	278	418
⑪	606-03.06	PILE TIPS (STEEL PILES, 12 INCH)	EACH	8	8	16
	615-01.03	PRESTRESSED CONCRETE I-BEAM (TYPE III)	L.F.	462	460	922
	615-01.04	PRESTRESSED CONCRETE I-BEAM (TYPE IV)	L.F.	426	423	849
⑫	620-05.01	CONC PARAPET SINGLE SLOPE (STD-1-1SS)	L.F.	665	655	1320
③	621-05.02	TEMPORARY SHORING	LS	0.5	0.5	1
	709-01.01	RUBBLE STONE RIP-RAP	C.Y.	4	-	4
⑬	709-04	REINFORCED CONCRETE SLOPE PAVEMENT	C.Y.	33	32	65
⑭	710-09.01	6" PERFORATED PIPE WITH VERTICAL DRAIN SYSTEM	L.F.	217	216	433
	710-09.02	6" PIPE UNDERDRAIN	L.F.	45	45	90

- ① INCLUDES ALL COSTS ASSOCIATED WITH REMOVAL OF PORTIONS OF THE STRUCTURE (I.E. DECK, PABE, PARAPETS, PORTION OF WING POSTS, AND PORTION OF ABUTMENT BACKWALL), CONDUIT USED FOR MONITORING OF BRIDGE DECKS AND THE WEATHER STATION LOCATED IN THE MEDIAN NEAR ABUTMENT 2, AND TRASH AND DEBRIS IN THE VICINTY OF THE BRIDGES.
- ② LIMITS OF EXCAVATION DETERMINED BASED ON EXISTING GROUND.
- ③ INCLUDES COST OF ALL NECESSARY TEMPORARY SHORING OF THE STRUCTURES FOR THE DURATION OF THE PROJECT. SHORING PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- ④ INCLUDES ALL COSTS ASSOCIATED WITH INSTALLING 56 ANCHOR BOLT ASSEMBLIES FOR DIAPHRAGMS AT NEW BENTS.
- ⑤ INCLUDES ALL COSTS FOR INSTALLING THE BRIDGE DECK CRACK SEALER (HMWM) INCLUDING CRACK PREPARATION, CLEANING, LABOR, AND ALL MISCELLANEOUS MATERIALS REQUIRED TO SEAL THE LONGITUDINAL CONSTRUCTION JOINT ACCORDING TO SPECIAL PROVISION 604CR AND MANUFACTURERS' SPECIFICATIONS. CRACK SEALING SHALL BE DONE AT THE END OF CONSTRUCTION TO ALLOW SHRINKAGE OF DECK CONCRETE CAUSING THE CRACK TO OCCUR.
- ⑥ INCLUDES ALL COST ASSOCIATED WITH APPLYING TEXTURE FINISH TO INDICATED AREAS. SEE DETAILS IN PLANS. ALSO INCLUDES SURFACE PREPARATION USING A HIGH PRESSURE WATER WASH TO REMOVE ALL LOOSE COATINGS, DEBRIS, ETC., AS DIRECTED BY THE ENGINEER.
- ⑦ INCLUDES ALL LABOR AND MATERIALS NECESSARY TO PLACE HIGH EARLY STRENGTH CONCRETE FOR REPAIR OF INDICATED AREAS.
- ⑧ INCLUDES COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REMOVE AND DISPOSE OF THE EXISTING ASPHALT WEARING SURFACE (APPROX. 4% INCHES) WITHIN THE LIMITS OF THE BRIDGE.
- ⑨ INCLUDES ALL COSTS ASSOCIATED WITH REPLACING BACK IN-KIND ANY PORTIONS OF CONCRETE PARAPETS REMOVED ON SR-24 BELOW BRIDGE FOR CONSTRUCTION OF NEW SUBSTRUCTURE FOOTINGS.
- ⑩ INCLUDES COST OF ALL LABOR AND MATERIALS NECESSARY TO PLACE A POLYMER MODIFIED CEMENTITIOUS STRUCTURAL PATCHING MATERIAL FOR REPAIR OF INDICATED AREAS.
- ⑪ INCLUDES ALL COST ASSOCIATED WITH FURNISHING AND INSTALLING CAST STEEL POINTS TO H-PILES.
- ⑫ INCLUDES COST OF BRIDGE PARAPET DRAINS.
- ⑬ INCLUDES COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO RECONSTRUCT CONCRETE SLOPE PAVEMENT IN AREAS REMOVED FOR CONSTRUCTION OF NEW SUBSTRUCTURES AND CONCRETE BARRIER WALLS. SEE GENERAL NOTES.
- ⑭ NEW PIPES TO BE PLACED ALONG FULL LENGTH OF NEW AND EXISTING ABUTMENTS AND WING WALLS. ITEM INCLUDES COST OF ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO REMOVE ANY EXISTING DRAIN PIPES BEHIND THE ABUTMENTS AND WING WALLS.
- ⑮ INCLUDES COST OF ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY FOR DRILLING AND GROUTING OF BARS INTO EXISTING CONCRETE.

PROJECT NO.		YEAR	SHEET NO.
18100-4148-04		2025	B-2
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	12-03-25	RLC	UPDATED QUANTITIES & FOOTNOTES

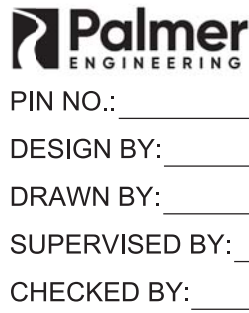


STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
ESTIMATED BRIDGE QUANTITIES  
AND NOTES  
BRIDGE NO. BR-18-10040-00.24 (LT&RT)  
FED BRIDGE ID 18100400001 & 18100400002  
INTERSTATE 40 OVER STATE ROUTE 24  
CUMBERLAND COUNTY  
2025

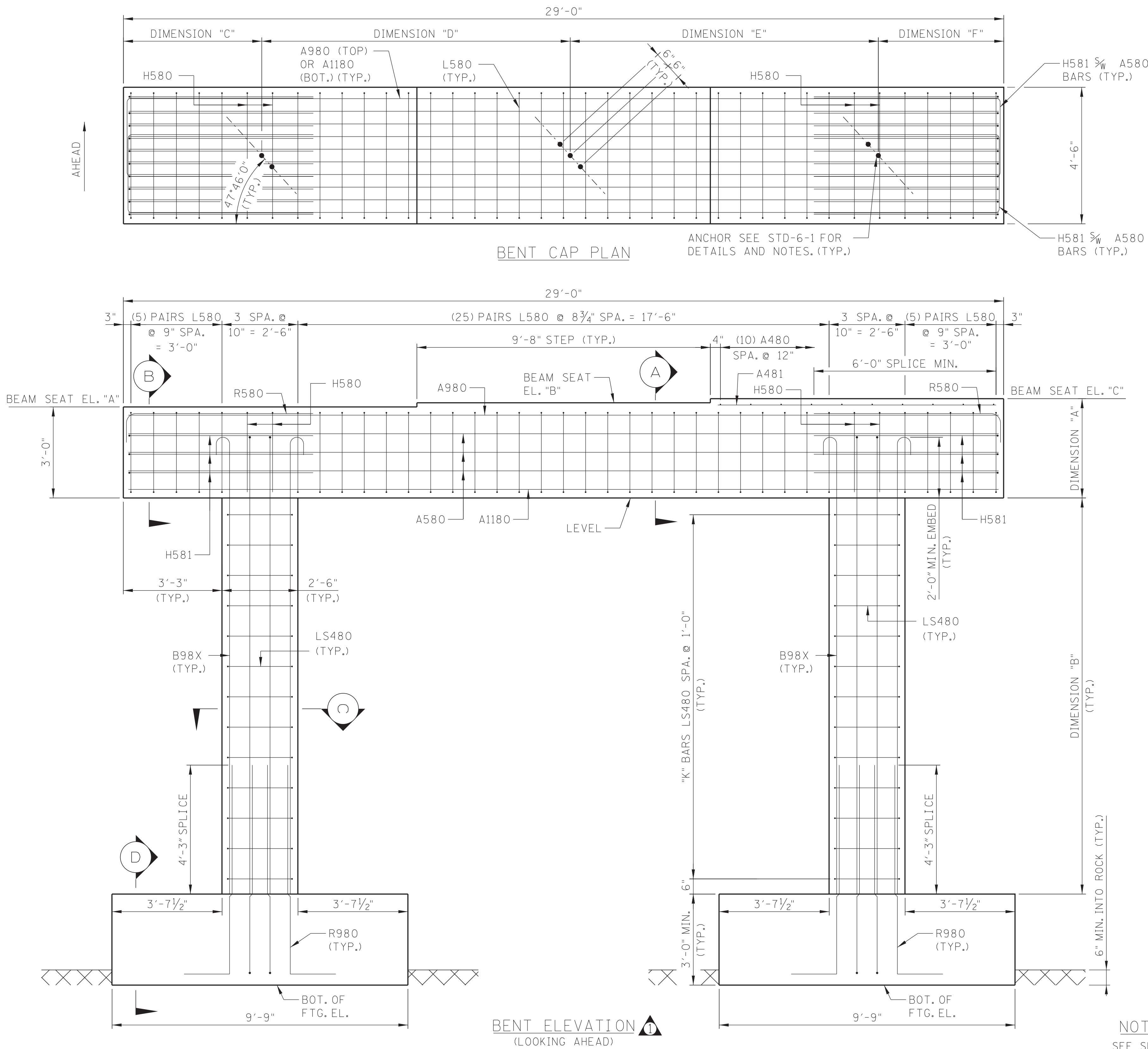


PIN NO.: 105727.01  
DESIGN BY: R.L. COLBERT DATE: 09/2025  
DRAWN BY: M.D. SIMPSON DATE: 09/2025  
SUPERVISED BY: G.S. WILSON DATE: 09/2025  
CHECKED BY: R.L. COLBERT DATE: 09/2025

12/3/2025 8:41:05 AM J:\Structures\11685-14\_CumberlandCo\_I-40\_over\_SR24\_(orig\_10705-35)\Drawings\Final\_dgn\11685-14\_STR\_SUBMOD.dgn



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DESIGN BY: R.L. COLBERT DATE: 09/2025  
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CHECKED BY: R.L. COLBERT DATE: 09/2025



BENT ELEVATION 1  
(LOOKING AHEAD)

BENT VARIABLES CHART

BENT	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	DIMENSION "D"	DIMENSION "E"	DIMENSION "F"	"K"	BOT. OF FTG. EL. (*)	BEAM SEAT EL. "A"	BEAM SEAT EL. "B"	BEAM SEAT EL. "C"
LT. BRIDGE											
1	3'-3 <sup>5</sup> / <sub>8</sub> "	24'-7 <sup>1</sup> / <sub>8</sub> "	4'-3 <sup>7</sup> / <sub>8</sub> "	10'-4 <sup>1</sup> / <sub>2</sub> "	10'-4 <sup>1</sup> / <sub>4</sub> "	3'-11 <sup>3</sup> / <sub>8</sub> "	25	2004.0	2034.59	2034.74	2034.89
2	3'-3 <sup>3</sup> / <sub>8</sub> "	24'-5 <sup>1</sup> / <sub>8</sub> "	4'-2 <sup>1</sup> / <sub>8</sub> "	10'-2 <sup>3</sup> / <sub>4</sub> "	10'-2 <sup>1</sup> / <sub>2</sub> "	4'-4 <sup>1</sup> / <sub>2</sub> "	24	2003.5	2033.92	2034.06	2034.20
3	3'-3 <sup>1</sup> / <sub>4</sub> "	24'-7 <sup>3</sup> / <sub>8</sub> "	4'-0 <sup>7</sup> / <sub>8</sub> "	10'-1 <sup>1</sup> / <sub>2</sub> "	10'-1 <sup>3</sup> / <sub>8</sub> "	4'-8 <sup>1</sup> / <sub>4</sub> "	25	2003.5	2034.11	2034.25	2034.38
4	3'-3 <sup>1</sup> / <sub>8</sub> "	23'-6"	3'-11 <sup>5</sup> / <sub>8</sub> "	10'-0 <sup>1</sup> / <sub>4</sub> "	10'-0 <sup>1</sup> / <sub>8</sub> "	5'-0"	23	2004.0	2033.50	2033.63	2033.76
RT. BRIDGE											
1	3'-3 <sup>5</sup> / <sub>8</sub> "	22'-9 <sup>1</sup> / <sub>2</sub> "	4'-1 <sup>1</sup> / <sub>2</sub> "	10'-3 <sup>3</sup> / <sub>4</sub> "	10'-3 <sup>1</sup> / <sub>2</sub> "	4'-3 <sup>3</sup> / <sub>8</sub> "	23	2004.5	2033.29	2033.44	2033.59
2	3'-3 <sup>3</sup> / <sub>8</sub> "	22'-1"	4'-6 <sup>5</sup> / <sub>8</sub> "	10'-2"	10'-1 <sup>3</sup> / <sub>4</sub> "	4'-1 <sup>5</sup> / <sub>8</sub> "	22	2004.5	2032.58	2032.72	2032.86
3	3'-3 <sup>1</sup> / <sub>8</sub> "	22'-3"	4'-10 <sup>1</sup> / <sub>4</sub> "	10'-0 <sup>3</sup> / <sub>4</sub> "	10'-0 <sup>5</sup> / <sub>8</sub> "	4'-0 <sup>3</sup> / <sub>8</sub> "	22	2004.5	2032.75	2032.88	2033.01
4	3'-3"	21'-7 <sup>3</sup> / <sub>8</sub> "	5'-1 <sup>5</sup> / <sub>8</sub> "	9'-11 <sup>5</sup> / <sub>8</sub> "	9'-11 <sup>3</sup> / <sub>8</sub> "	3'-11 <sup>1</sup> / <sub>4</sub> "	22	2004.5	2032.11	2032.24	2032.36

NOTES:

SEE SHEET BR-133-210 FOR BENT 2 RISER BLOCK DETAILS.  
SEE SHEET BR-133-212 THRU BR-133-214 FOR BILL OF STEEL.

WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING 6-1. BOLT PROJECTION 11".

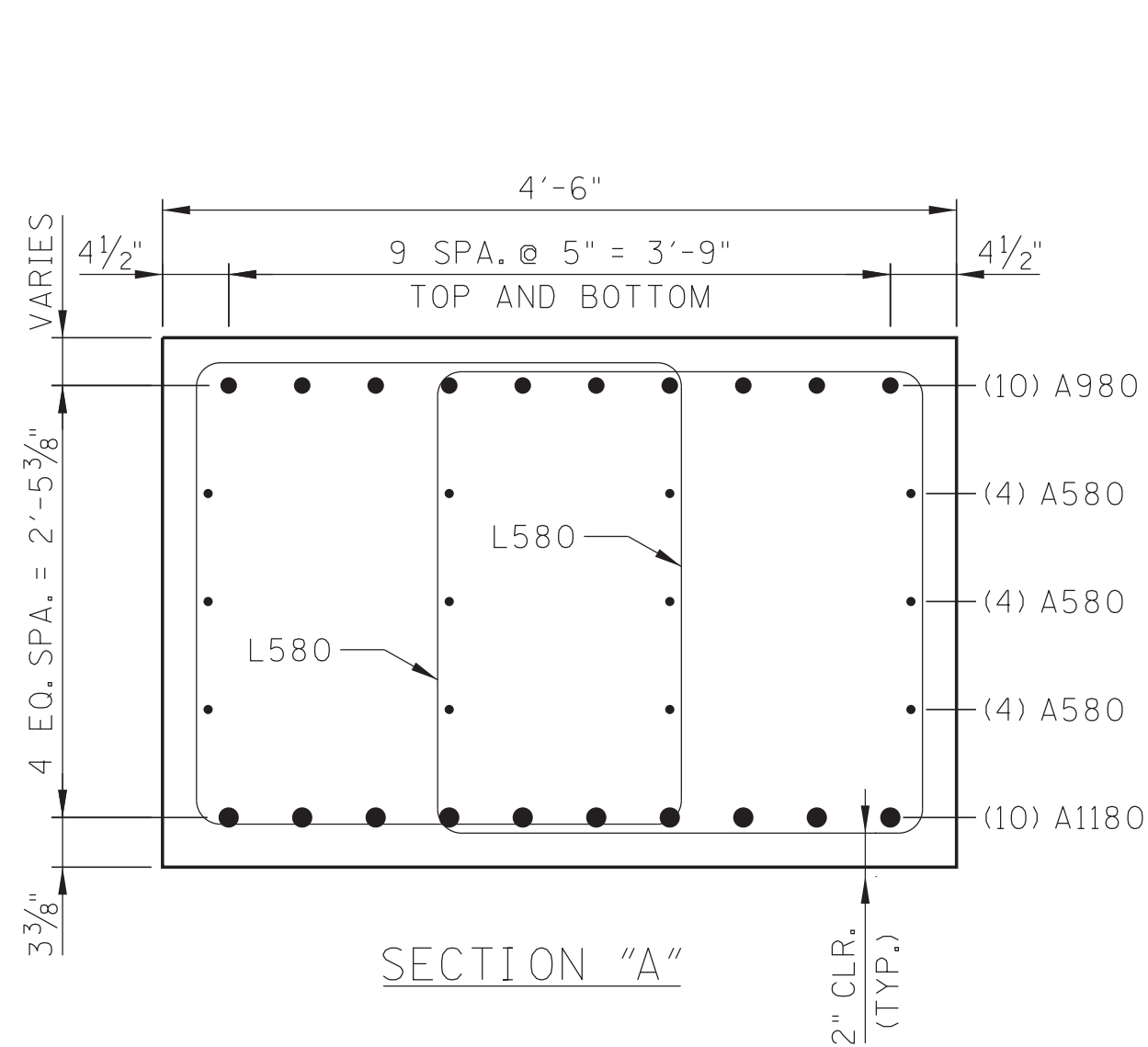
RISER BLOCKS ARE TO BE POURED MONOLITHICALLY WITH BENT CAP, AND RISER BLOCK BEARING SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

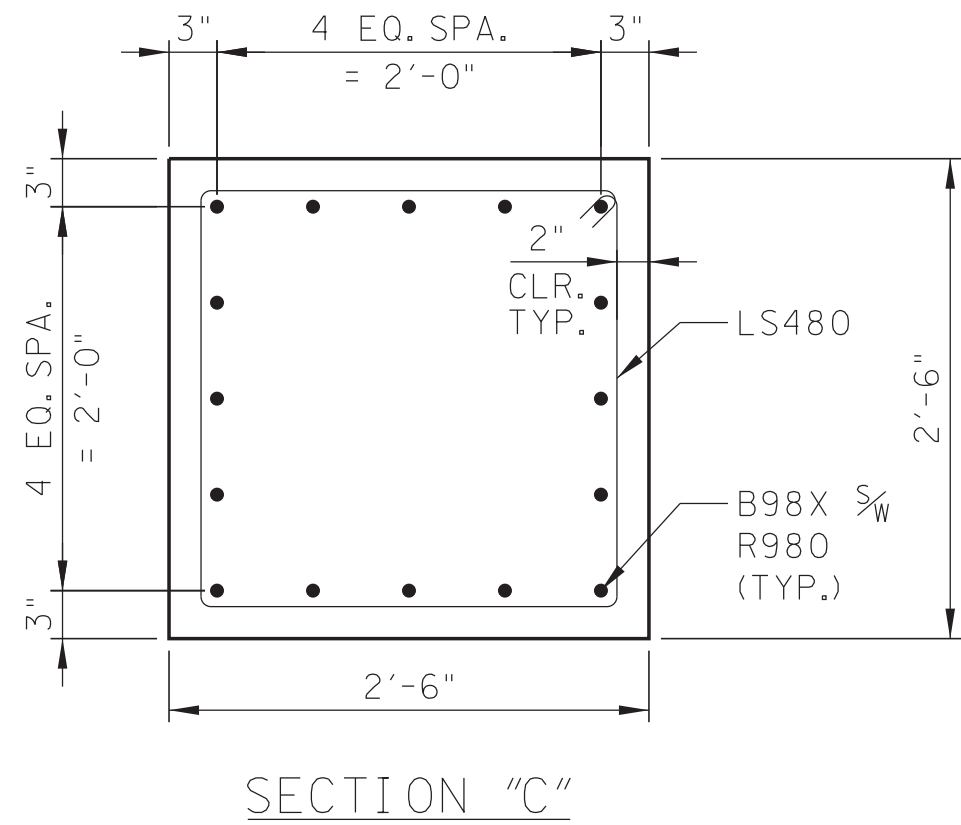
COLUMN STEEL TO EXTEND 2 FEET INTO BENT CAP.

(\*) PROJECTED BEARING ELEVATIONS FROM GEOTECH REPORT.

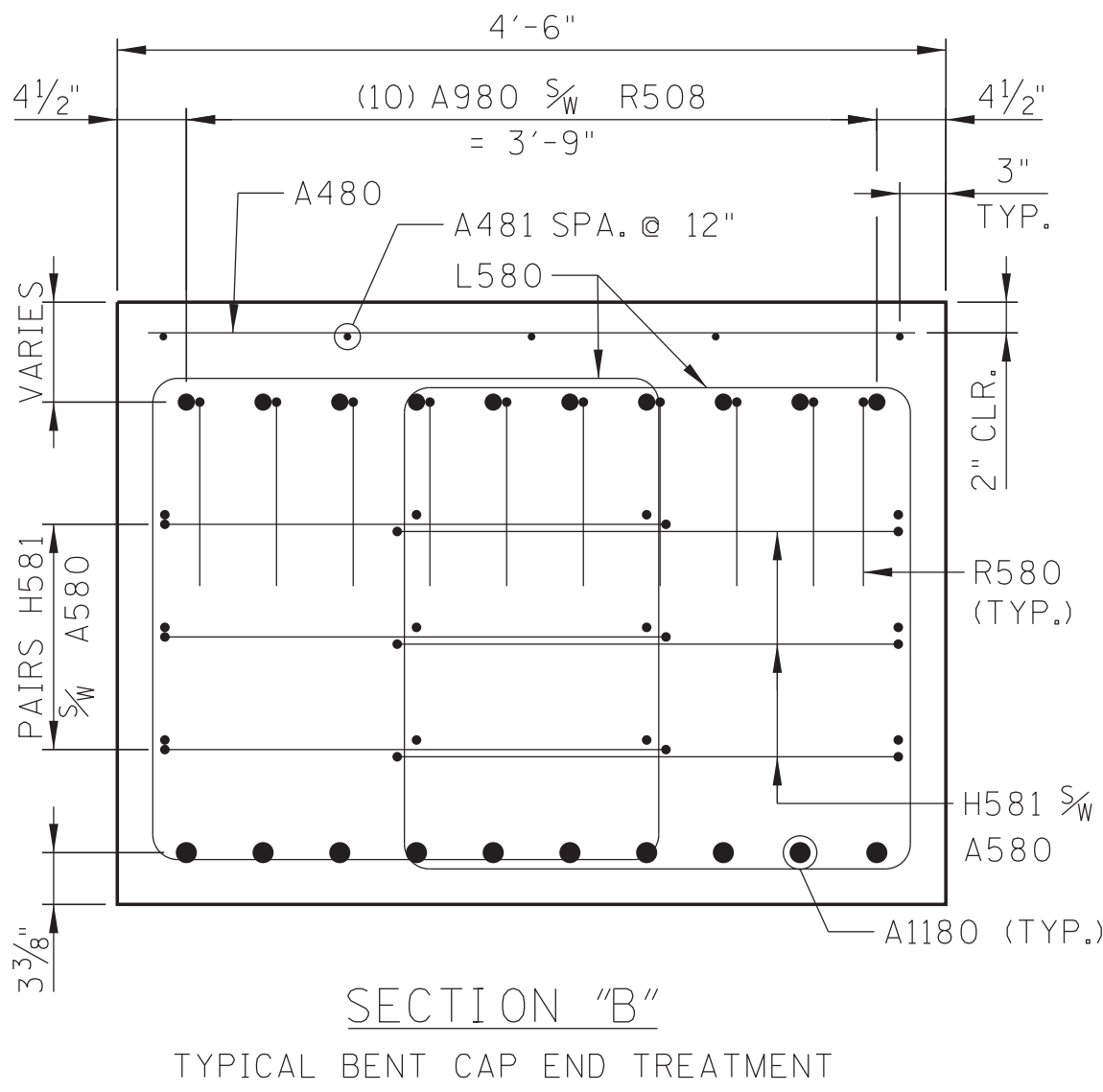
PROJECT NO.		YEAR	SHEET NO.
18100-4148-04		2025	
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	12-03-25	RLC	ROCK LINE ADDED TO ELEVATION



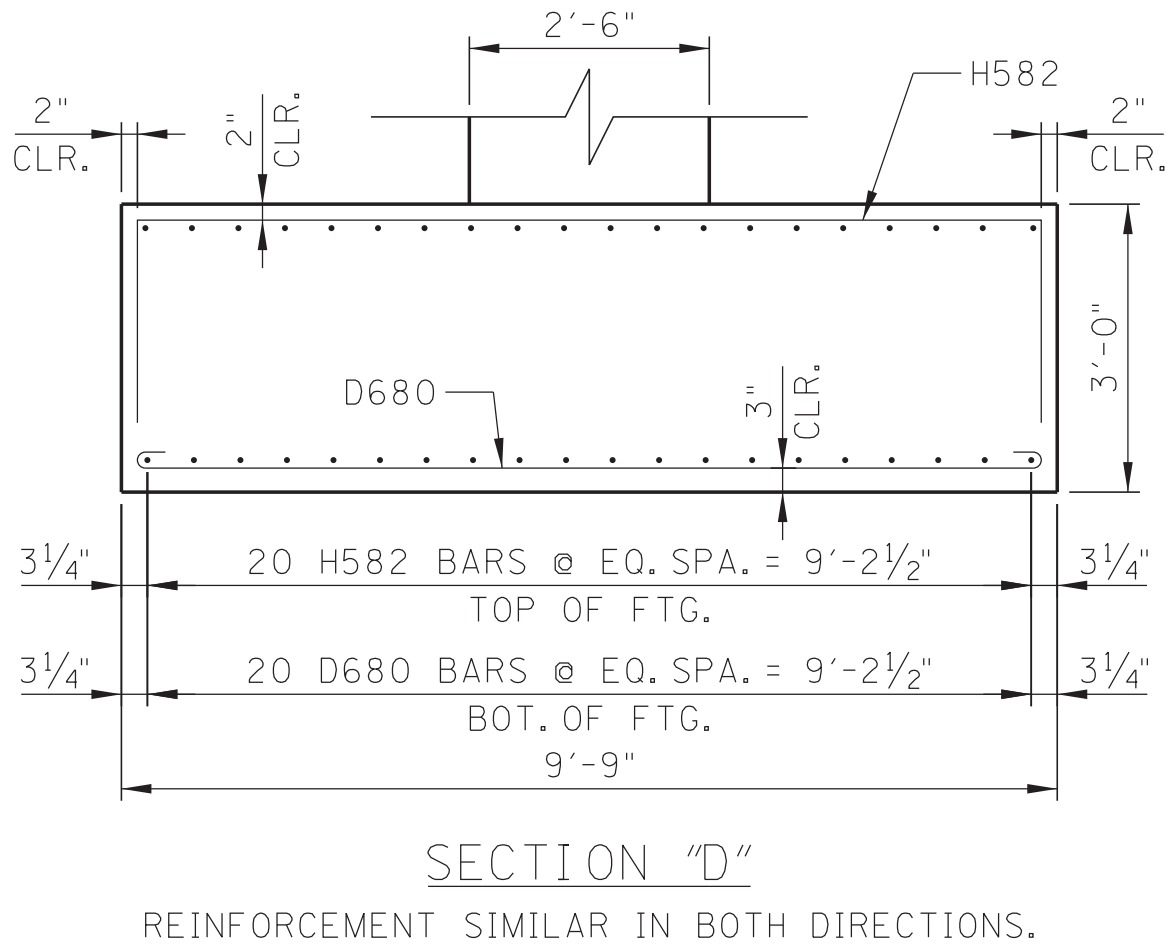
SECTION "A"



SECTION "C"



SECTION "B"  
TYPICAL BENT CAP END TREATMENT



SECTION "D"  
REINFORCEMENT SIMILAR IN BOTH DIRECTIONS.

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

BENT DETAILS  
BRIDGE NO. BR-18-I0040-00.24 (LT&RT)  
FED BRIDGE ID 18I00400001 & 18I00400002  
INTERSTATE 40 OVER STATE ROUTE 24  
CUMBERLAND COUNTY  
2025

BR-133-209

SEALED BY

