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Ben Campbell Date: 2025.07.22 11:19:48-05'00'

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MICHAEL BAKER INTERNATIONAL, INC.
5100 POPLAR AVENUE, 27TH FLOOR
MEMPHIS, TN 38137
BENJAMIN LUCAS CAMPBELL, P.E. NO. 116536

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 SHEETS	ROADWAY-SIGN1
TITLE SHEET	1
ROADWAY INDEX AND STANDARD ROADWAY DRAWINGS	1A
PROJECT COMMITMENTS	1B
ESTIMATED ROADWAY QUANTITIES	2
ENVIRONMENTAL NOTES	2E
TRAFFIC CONTROL PLANS	T1 – T12

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Salvador (Sal) Vilches Digitally signed by Salvador (Sal) Vilches Date: 2025.07.22 11:31:41-05'00'

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MICHAEL BAKER INTERNATIONAL, INC.
320 SEVEN SPRINGS WAY, SUITE 250
BRENTWOOD, TN 37027
SALVADOR VILCHES, P.E. NO. 120564

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	ROADWAY-SIGN1
INDEX AND STANDARD DRAWINGS	1A
LAYOUT OF BRIDGE TO BE REPAIRED	BR-133-135
ESTIMATED BRIDGE QUANTITIES	2A (BR-133-136)
BRIDGE GENERAL NOTES	BR-133-137
SUPERSTRUCTURE REPAIRS - DECK	BR-133-138
SUPERSTRUCTURE REPAIRS - STEEL	BR-133-139
SUPERSTRUCTURE REPAIR DETAILS	BR-133-140
ABUTMENT 1 REPAIRS	BR-133-141
ABUTMENT 2 REPAIRS	BR-133-142
BENT 1 REPAIRS	BR-133-143
BENT 3 REPAIRS	BR-133-144
MISCELLANEOUS REPAIR DETAILS	BR-133-145

YEAR	PROJECT NO.	SHEET NO.
2025	191040-M3-018	ROADWAY-SIGN1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

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\\Norcga1hub\norcfs1\atlanta\Roadways\191428\ElmHillPike\DGN\00 - ROADWAYSIGN1.dgn

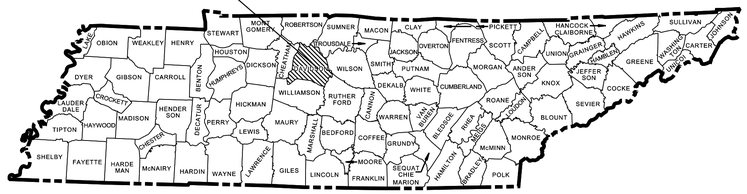
Index Of Sheets
SEE SHEET NO. 1A

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

DOES THIS PROJECT QUALIFY FOR UTILITY CHAPTER 86	YES	(NO)
WORK ZONE SIGNIFICANCE DETERMINATION		
SIGNIFICANT	(YES)	NO

TENN.	YEAR	SHEET NO.
	2025	1
FED. AID PROJ. NO.	N/A	
STATE PROJ. NO.	19I040-M3-018	

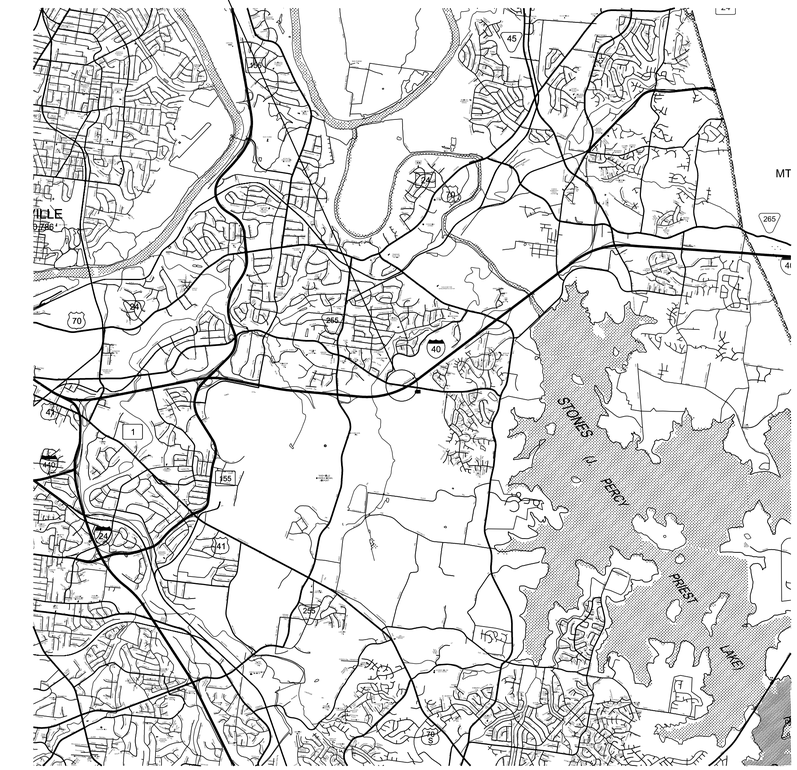
PROJECT LOCATION
BRIDGE ID. # 19I00400133



PS&E
(BRIDGE REPAIR)

INTERSTATE 40 F.A.H.S. NO. 40

PROJECT LOCATION
BRIDGE ID. # 19I00400133



SCALE: 1"= 1 MILE

N

ELM HILL PIKE
ROAD TO BE CLOSED DURING CONSTRUCTION

LAND DISTURBANCE LESS THAN 1 ACRE

THIS PROJECT WILL BE BUNDLED WITH PIN 133533.00 AND PIN 134893.00

SEALED BY
BENJAMIN LUCAS CAMPBELL
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 116556
STATE OF TENNESSEE
7/21/25

APPROVED:
WILL REID, CHIEF ENGINEER

DATE:

APPROVED:
WILL REID, COMMISSIONER

I-40

TRAFFIC DATA	
ADT (2023)	139511
POSTED SPEED	70 MPH

ELM HILL PIKE

TRAFFIC DATA	
ADT (2021)	10948
POSTED SPEED	40 MPH

PROJECT LENGTH 2.119 MILES

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2021 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT REPAIR OFFICE DESIGN MANAGER : JOSEPH BENDER, PE

DESIGNER : BEN CAMPBELL, PE CHECKED BY : TIM LEWIS, PE

P.E. NO. 19I040-M3-018

PIN NO. 113872.01

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	1A
PS&E	2025	19I040-M3-018	1A

ROADWAY INDEX

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

BRIDGE INDEX

LIST OF REFERENCE DRAWINGS

SHEET NAME	SHEET NO.
1961 ORIGINAL BRIDGE PLANS	SHEETS K-7-122 THRU K-7-126
2001 BRIDGE REPAIRS	SHEETS BR-50-99 THRU BR-50-102
2008 BRIDGE REPAIR PLANS	SHEETS BR-87-28 THRU BR-87-31
2011 BRIDGE REPAIR PLANS	SHEETS BR-105-76 THRU BR-105-79

STANDARD ROADWAY DRAWINGS

DWG.	REV.	DESCRIPTION
10-100.00 STANDARD ROADWAY TITLE SHEET, ABBREVIATIONS, AND LEGENDS		
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
10-107.00 DESIGN - TRAFFIC CONTROL		
T-WZ-13	05-01-20	TWO-OUTSIDE LANE CLOSURE FOR EXPRESSWAY AND FREEWAYS

LIST OF SPECIAL PROVISIONS

DWG.	REV.	DESCRIPTION
SP712PTQ	02-13-23	TRAFFIC QUEUE PROTECTION

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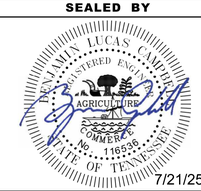

7/21/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ROADWAY INDEX
AND
STANDARD
ROADWAY
DRAWINGS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	1B
PS&E	2025	19I040-M3-018	1B

PROJECT COMMITMENTS

COMMITMENT ID	SOURCE DIVISON	DESCRIPTION	STA. / LOCATION
EDHZ001	Environmental Division, Hazardous Materials	An Asbestos Containing Material (ACM) survey was completed on Bridge No. 19I00400133 Elm Hill Pike over I-40 LM 1.25 (19-04167-01.25). The bridge has 38 deck drains and 2 abutment drains at 30% chrysotile. Please see the report for further details and photographs.	Drains
EDHX002	Environmental Division, Hazardous Materials	The State of Tennessee asbestor accreditation requirements (TDEC Rules Chapter 1200-01-20) mandates that ACM abatement work be performed by an accredited firm (contractor) using accredited abatement workers and supervisors. Abatement of this material shall be accomplished per SP202ACM Special Provision Regarding Removal of Asbestos-Containing Materials. ACM abatement should be completed prior to any demolition activities if possible. Prior to the demolition or rehabilitation of any structure (bridge or building), the contractor is required to submit the National Emission Standards for Hazardous Air Pollutants standard 10-day notice of demolition to the TDEC Division of Air Pollution Control (per TDOT Standard Specifications for Road and Bridge Construction (January 1, 2021) Sections 107.08.D and 202.03).	Drains
EDEC001	Environmental Division	Cliff Swallow and Barn Swallow nests, eggs, or birds (young and adults) will not be disturbed between April 15 and July 31. From August 1 to April 14, nests may be removed or destroyed, and measures may be implemented to prevent future nest building at the site (e.g., closing off area using netting).	Entire Project Site

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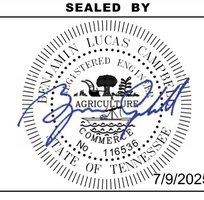

7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROJECT COMMITMENTS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	2
PS&E	2025	19I040-M3-018	2

GENERAL NOTES

ROAD CLOSURE

(1) NO LESS THAN SEVEN (7) DAYS PRIOR TO THE CLOSURE OF THE ROAD, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS OR AGENCIES COMPLETELY DESCRIBING THE AFFECTED ROADS AND THE APPROXIMATE DURATION OF THE CONSTRUCTION: THESE PARTIES INCLUDE, BUT ARE NOT LIMITED TO: (1) LOCAL LAW ENFORCEMENT OFFICE, (2) LOCAL FIRE DEPARTMENT, (3) AMBULANCE SERVICE, (4) LOCAL SCHOOL SUPERINTENDENT, (5) UNITED STATES POSTAL SERVICE, AND (6) LOCAL ROAD SUPERINTENDENT.

CONSTRUCTION WORK ZONE & TRAFFIC CONTROL

(2) ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.

(3) IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER. COSTS OF REMOVAL, COVERING, AND REINSTALLING SIGNS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT ALL COSTS SHALL BE INCLUDED IN THE ORIGINAL UNIT PRICE BID FOR ITEM NO. 712-06, SIGNS (CONSTRUCTION) PER SQUARE FOOT.

(4) A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS A FLAGGER SIGN, MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.

(5) TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.

(6) USE OF BARRICADES, PORTABLE BARRIER RAILS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELED WAY BEFORE OR AFTER USE UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL INCREASE TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

(7) THE CONTRACTOR SHALL NOT BE PERMITTED TO PARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THIRTY (30) FEET OF THE EDGE OF PAVEMENT WHEN THE LANE IS OPEN TO TRAFFIC UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO PARK WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

(8) ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

(9) ALL DETOURS SHALL BE PAVED, STRIPED, SIGNED, AND FLEXIBLE DRUMS ARE TO BE IN PLACE BEFORE IT IS OPENED TO TRAFFIC.

(10) THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING CONSTRUCTION SIGNS. THE COST OF THIS WORK SHALL BE INCLUDED IN ITEM NO. 712-06, SIGNS (CONSTRUCTION), S.F.

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY NA
	712-01	TRAFFIC CONTROL	LS	0.33
	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	184
	712-05.03	WARNING LIGHTS (TYPE C)	EACH	114
	712-06	SIGNS (CONSTRUCTION)	S.F.	1128
	712-07.03	TEMPORARY BARRICADE (TYPE III)	L.F.	40
	712-08.03	ARROW BOARD (TYPE C)	EACH	4
(1)	712-08.12	QUEUE PROTECTION TRUCK	DAY	72
(2)	713-16.04	CHANGEABLE MESSAGE SIGN UNIT (SLOW TRAFFIC ON I-40)	EACH	8
	717-01	MOBILIZATION	LS	0.33

FOOTNOTES

(1) CONTRACTOR SHALL UTILIZE 2 TRUCKS IN EACH DIRECTION.

(2) CONTRACTOR SHALL COORDINATE UTILIZATION AND PLACEMENT WITH REGION 3 TRAFFIC OPERATIONS. MESSAGE BOARDS ARE INTENDED FOR ON-RAMPS TO I-40 AT BRILEY PARKWAY, DONELSON PIKE, STEWARTS FERRY, AND OLD HICKORY BOULEVARD.

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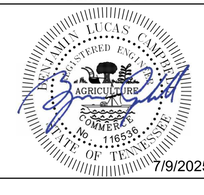

7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ESTIMATED ROADWAY QUANTITIES & NOTES

ENVIRONMENTAL NOTES

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	2E
PS&E	2025	19I040-M3-018	2E

ENVIRONMENTAL GENERAL NOTES

NATURAL RESOURCES

(1) SOIL MATERIALS MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. EPSC MEASURES TO PROTECT NATURAL RESOURCES AND WATER QUALITY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. APPROPRIATE EPSC MEASURES MUST BE INSTALLED ALONG THE BASE OF ALL FILLS AND CUTS, ON THE DOWNHILL SIDE OF STOCKPILED SOIL, AND ALONG NATURAL RESOURCES IN CLEARED AREAS TO PREVENT SEDIMENT MIGRATION INTO STREAMS, WETLANDS OR OTHER NATURAL FEATURES IN ACCORDANCE WITH TDOT STANDARDS. EPSC MEASURES SHALL BE INSTALLED ON THE CONTOUR, ENTRENCHED AND STAKED, AND EXTEND THE WIDTH OF THE AREA TO BE CLEARED.

(2) NEW CHANNEL CONSTRUCTION SHALL BE COMPLETED IN THE DRY AND STABILIZED FOR AT LEAST 72 HOURS PRIOR TO DIVERTING WATER FROM THE EXISTING AND/OR TEMPORARY CHANNEL.

(3) INSTREAM EPSC DEVICES REQUIRE THE TDOT ENVIRONMENTAL DIVISION, PERMITS SECTION REVIEW AND MUST BE PROCESSED BY THE PERMITS SECTION TO OBTAIN WATER QUALITY PERMITS.

(4) THE OPERATION OF EQUIPMENT IN WATERS OF THE STATE/U.S., INCLUDING WETLANDS AND EPHEMERAL, INTERMITTENT, AND PERENNIAL STREAMS, IS NOT ALLOWED.

(5) THE WIDTH OF THE FILL ASSOCIATED WITH TEMPORARY CROSSINGS SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR THE ACTUAL CROSSING, NOT TO EXCEED THE WIDTH SPECIFIED IN THE STANDARD DRAWING.

(6) STREAM BEDS SHALL NOT BE USED AS TRANSPORTATION ROUTES FOR CONSTRUCTION EQUIPMENT. TEMPORARY CULVERT CROSSINGS SHALL BE LIMITED TO ONE POINT PER STREAM AND EPSC MEASURES SHALL BE USED WHERE THE STREAM BANKS ARE DISTURBED. WHERE THE STREAMBED IS NOT COMPOSED OF BEDROCK, A PAD OF CLEAN ROCK SHALL BE USED AT THE CROSSING POINT AND CULVERTED TO PREVENT THE IMPOUNDMENT OF WATER FLOW. CLEAN ROCK IS ROCK OF VARIOUS TYPE AND SIZE, DEPENDING UPON APPLICATION, WHICH CONTAINS NO FINES, SOILS, OR OTHER WASTES OR CONTAMINANTS. OTHER MATERIALS USED FOR ALL TEMPORARY FILLS SHALL BE COMPLETELY REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED AND THE AFFECTED AREAS RETURNED TO PREEXISTING ELEVATIONS. ALL TEMPORARY CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DWG. EC-STR-25 UNLESS SPECIFICALLY ADDRESSED IN THE EPSC PLANS. ALTERNATIVELY, PLACING A TEMPORARY BRIDGE (E.G. BAILEY BRIDGE OR EQUIVALENT, TIMBERS, ETC.) FROM TOP OF BANK TO TOP OF BANK OR THE APPROPRIATE USE OF BARGES AT THE CROSSING TO AVOID DISTURBANCE OF THE STREAMBED IS AN ACCEPTABLE OPTION.

(7) HEAVY EQUIPMENT WORKING IN WETLANDS WITH PERMITTED TEMPORARY IMPACTS SHALL BE PLACED ON MATS, OR OTHER MEASURES MUST BE TAKEN TO MINIMIZE SOIL DISTURBANCE AND COMPACTION UNLESS SPECIFICALLY ADDRESSED IN THE CONSTRUCTION PLANS. ANY MATS AND OTHER MEASURES USED FOR HEAVY EQUIPMENT SHALL BE REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED. ALL AFFECTED AREAS SHOULD BE RETURNED TO PRE-EXISTING CONDITIONS.

(8) WETLANDS SHALL NOT BE USED AS EQUIPMENT STORAGE, STAGING, OR TRANSPORTATION AREAS, UNLESS SPECIFICALLY PROVIDED FOR IN THE CONSTRUCTION PLANS AND PERMITS.

(9) THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS PRIOR TO ANY CONSTRUCTION AND MAINTENANCE ACTIVITIES TO ENSURE THAT ENVIRONMENTAL FEATURES (E.G., STREAMS, WETLANDS, SPRINGS, ETC.) ARE NOT IMPACTED BEYOND PERMITTED LOCATIONS. IF THE CONTRACTOR OR TDOT INSPECTOR IS UNSURE OF THE IDENTITY OF AN ENVIRONMENTAL FEATURE, THE INSPECTOR SHALL CONTACT THE TDOT REGION ENVIRONMENTAL TECH GROUP IMMEDIATELY.

SPECIES

(10) NO ACTIVITY MAY SUBSTANTIALLY DISRUPT THE MOVEMENT OF THOSE SPECIES OF AQUATIC LIFE INDIGENOUS TO THE WATER BODY, INCLUDING THOSE SPECIES THAT NORMALLY MIGRATE THROUGH THE AREA.

(11) SHOULD CLIFF SWALLOW OR BARN SWALLOW NESTS, EGGS, OR BIRDS (YOUNG AND ADULTS) BE PRESENT, THE CONTRACTOR SHALL CONTACT THE REGIONAL ECOLOGY OFFICE TO DETERMINE IF SEASONAL RESTRICTIONS WILL BE NECESSARY. GENERALLY, BIRDS, NESTS, AND EGGS MAY NOT BE DISTURBED BETWEEN APRIL 15 AND JULY 31. FROM AUGUST 1 TO APRIL 14, NESTS CAN BE REMOVED OR DESTROYED SO LONG AS BIRDS OR EGGS ARE NOT PRESENT, AND MEASURES IMPLEMENTED TO PREVENT FUTURE NEST BUILDING AT THE SITE (I.E., CLOSING OFF AREA USING NETTING).

(12) IF THE REMOVAL OF ANY TREES WITH A DIAMETER AT BREAST HEIGHT (DBH) GREATER THAN 3 INCHES IS DEEMED NECESSARY THE TDOT SUPERVISOR SHALL CONTACT THE TDOT ENVIRONMENTAL DIVISION, ECOLOGY SECTION IMMEDIATELY.

PERMITS, PLANS & RECORDS

(13) THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND OBTAIN ANY NECESSARY ENVIRONMENTAL PERMITS OR APPROVALS, INCLUDING BUT NOT LIMITED TO ARCHAEOLOGY, ECOLOGY, HISTORICAL, HAZARDOUS MATERIALS, AIR AND NOISE, TDEC ARAP/401, USACE SECTION 404, TVA SECTION 26A, AND TDEC NPDES PERMITS, FROM FEDERAL, STATE AND/OR LOCAL AGENCIES REGARDING ANY MATERIAL AND STAGING AREAS AND THE OPERATION OF ANY PROJECT-DEDICATED ASPHALT AND/OR CONCRETE PLANTS TO BE USED. ANY SUCH PERMITS SHALL BE SUPPLIED TO THE TDOT PROJECT RESPONSIBLE PARTY PRIOR TO THE USE OF THE PERMITTED AREA(S).

(14) ANY DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, THE PROJECT AS CONSTRUCTED, AND THE PERMIT(S) ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE TDOT PROJECT RESPONSIBLE PARTY. THE ENVIRONMENTAL DIVISION, DESIGN DIVISION, AND HEADQUARTERS CONSTRUCTION OFFICE SHALL BE CONTACTED IN THESE INSTANCES AND DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLANS REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.

(15) IF A CHANGE IN PROJECT SCOPE OCCURS DURING CONSTRUCTION, INCLUDING VALUE ENGINEERING, THE TDOT PERMIT SECTION SHALL BE CONTACTED TO DETERMINE WHETHER PERMIT REVISIONS ARE NEEDED. THE ROADWAY DESIGN DIVISION SHALL BE CONTACTED TO DETERMINE IF ANY PLAN REVISIONS ARE NEEDED.

(16) THE CONTRACTOR SHALL REVIEW ALL EXISTING PERMITS TO ENSURE THAT WORK AT PERMITTED SITES DOES NOT EXCEED EXPIRATION DATE. IF WORK IS GOING TO BE CONTINUED AFTER EXPIRATION DATES, THE CONTRACTOR SHALL CONTACT THE TDOT PROJECT RESPONSIBLE PARTY TO COMMENCE PERMIT RENEWAL PROCESS.

(17) ALL WATER QUALITY PERMITS SHALL BE POSTED NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE ACCESSIBLE TO THE PUBLIC. THE NAME, COMPANY NAME, EMAIL ADDRESS, TELEPHONE NUMBER AND ADDRESS OF THE PROJECT SITE OWNER, OPERATOR, OR A LOCAL CONTACT PERSON WITH A BRIEF DESCRIPTION OF THE PROJECT SHALL ALSO BE POSTED. IF POSTING THIS INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE, THE INFORMATION SHALL BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION NEAR WHERE THE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY. THIS LOCATION SHALL BE POSTED AT THE CONSTRUCTION SITE. ALL POSTINGS SHALL BE MAINTAINED IN LEGIBLE CONDITION.

SUPPORT ACTIVITIES

(18) MATERIALS AND STAGING AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE/U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY ENVIRONMENTAL PERMITS, OBTAINED SOLELY BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW ALL EXISTING PERMITS TO ENSURE THAT WORK AT PERMITTED SITES DOES NOT EXCEED EXPIRATION DATES. IF WORK IS GOING TO BE CONTINUED AFTER EXPIRATION DATES, THE CONTRACTOR SHALL CONTACT THE TDOT PROJECT RESPONSIBLE PARTY TO COMMENCE PERMIT RENEWAL PROCESS.

ENVIRONMENTAL

(20) EXCEPT AS OTHERWISE SPECIFIED, THERE ARE NO KNOWN SPECIAL ENVIRONMENTAL FACTORS PRESENT ON THIS PROJECT THAT INDICATE A NEED FOR SEASONAL LIMITATIONS ON THE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OPERATIONS OR ON THE TOTAL AREA OF EXPOSED SOIL.

ENVIRONMENTAL SPECIAL NOTES

ENVIRONMENTAL

(1) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION COMPLIANCE AND FIELD SERVICES OFFICE SHALL BE INVITED TO ALL PRE-CONSTRUCTION MEETINGS.

ECOLOGY

(2) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION OR A DESIGNEE SHALL ADVISE THE CONTRACTOR DURING THE PRE-CONSTRUCTION MEETING WHEN ENVIRONMENTAL DIVISION PERSONNEL OR A DESIGNATED CONSULTANT WILL NEED TO BE ONSITE FOR WORK BEING DONE WHICH COULD AFFECT WATERS OF THE STATE/U.S. OR SPECIES.

(3) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION OR A DESIGNEE SHALL ATTEND THE PRE-CONSTRUCTION MEETING FOR ALL PROJECTS WHICH HAVE THREATENED OR ENDANGERED SPECIES OR CRITICAL HABITAT PROXIMAL TO SCHEDULED WORK. THIS WILL PROVIDE THE OPPORTUNITY TO ENSURE THAT PERSONNEL INCLUDING THE CONTRACTOR'S PERSONNEL AND SUBCONTRACTORS ARE MADE AWARE OF THE NECESSARY PRECAUTIONS THAT MUST BE FOLLOWED.

(4) ALL PROJECTS WITH LEGALLY PROTECTED SPECIES OR CRITICAL HABITAT IDENTIFIED SHALL HAVE MEASURES IN PLACE TO CONTAIN CONCRETE DUST, CEMENT DUST AND ALL OTHER MATERIALS. THESE MATERIALS ARE NOT ALLOWED TO ENTER WATERS OF THE STATE/U.S.

PROJECT COMMITMENTS

(5) SEE PROJECT COMMITMENTS, SHEET 1B, FOR DETAILS RELATING TO SPECIAL ENVIRONMENTAL COMMITMENTS REQUIRED BY THIS PROJECT.

SCOPE OF WORK

(6) FOR SCOPE OF WORK SEE SHEET B1.

SEALED BY

BENJAMIN LUCAS CAMPBELL
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 116536
STATE OF TENNESSEE
7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL NOTES

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\\Norcga1hub\norcfs1\atlanta\Roadways\191428\ElmHillPike\DGN\02A - ENVIRONMENTAL NOTES.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T1
PS&E	2025	19I040-M3-018	T1

TRAFFIC CONTROL SIGN TABULATION

M.U.T.C.D. SIGN NO.	LEGEND	SIZE IN INCHES L	X	W	S.F.	NO. REQUIRED PHASE I	NO. REQUIRED PHASE II	TOTAL NO. REQUIRED	ITEM NO. 712-06 S.F.	STANDARD DRAWING NO.	REMARKS
W20-1	ROAD WORK 1 MILE	48"		48"	16	4	4	4	64.00	T-WZ-13	
W20-1	ROAD WORK 1/2 MILE	48"		48"	16	4	4	4	64.00	T-WZ-13	
W20-1	ROAD WORK 1000 FT	48"		48"	16	4	4	4	64.00	T-WZ-13	
W20-5L	LEFT TWO LANES CLOSED 1/2 MILE	48"		48"	16	4		4	64.00	T-WZ-13	
W20-5L	LEFT TWO LANES CLOSED 1500 FT	48"		48"	16	4		4	64.00	T-WZ-13	
W4-2L	LANE ENDS (LEFT)	48"		48"	16	8		8	128.00	T-WZ-13	
W20-5R	RIGHT TWO LANES CLOSED 1/2 MILE	48"		48"	16		4	4	64.00	T-WZ-13	
W20-5R	RIGHT TWO LANES CLOSED 1500 FT	48"		48"	16		4	4	64.00	T-WZ-13	
W4-2R	LANE ENDS (RIGHT)	48"		48"	16		8	8	128.00	T-WZ-13	
G20-2	END ROAD WORK	48"		24"	8	4	4	4	32.00	T-WZ-13	
TN-55	WORKERS PRESENT	78"		60"	33	2	2	2	65.00	T-WZ-13	
	ELM HILL PIKE	36"		18"	5	24	24	24	108.00		
M4-9L	DETOUR (LEFT)	30"		24"	5	8	8	8	40.00		
M4-9R	DETOUR (RIGHT)	30"		24"	5	12	12	12	60.00		
R11-2	ROAD CLOSED	48"		30"	10	2	2	2	20.00		
W20-3	ROAD CLOSED 500 FT	48"		48"	16	2	2	2	32.00		
W20-3	ROAD CLOSED 1000 FT	48"		48"	16	2	2	2	32.00		
M4-8A	END DETOUR	24"		18"	3	2	2	2	6.00		
M4-8	DETOUR	24"		12"	2	2	2	2	4.00		
R11-3A	ROAD CLOSED 1 MILE AHEAD	60"		30"	13	1	1	1	12.50		
R11-3A	ROAD CLOSED 1-1/4 MILE AHEAD	60"		30"	13	1	1	1	12.50		
								TOTAL	1128	S.F.	

GENERAL NOTES FOR TRAFFIC CONTROL

1. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
2. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
3. DO NOT STOP TRAFFIC IN ANY DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
4. NOTHING IN THIS PLAN IS INTENDED TO SUPERSEDE OR RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF INSTALLING THE APPROPRIATE TRAFIC CONTROL DEVICES IN ACCORDANCE WITH THE CURRENT MUTCD.
5. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE BEFORE ANY WORK BEGINS.
6. SIZES OF ALL SIGNS SHALL COMPLY WITH THE MUTCD.
7. ALL TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL MEET THE STANDARD PRESCRIBED IN THE MUTCD AND SHALL COMPLY WITH STATE OF TENNESSEE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
8. CONTRACTOR SHALL COVER ALL EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLAN SIGNS OR DEVICES DURING THE WORK AND THEY SHALL REMAIN COVERED DURING THE WORK AND UNTIL SUCH TIME THAT NO CONFLICT EXISTS.
9. ALL TRAFFIC CONTROL SIGNS SHALL MEET THE MINIMUM RETROREFLECTIVITY LEVELS SPECIFIED IN THE CURRENT EDITION OF THE MUTCD.
10. NIGHTIME CLOSURES SHALL NOT BE IMPLEMENTED UNTIL 8:00 PM AND SHALL BE RE-OPENED TO TRAFFIC BY 5:00 AM. SCHEDULING OF NIGTHTIME CLOSURES SHALL BE COORDINATED AND APPROVED BY REGION TRAFFIC ENGINEER.
11. CONTRACTOR SHALL COORDINATE ALL TRAFFIC CONTROL MEASURE IMPLEMENTATION WITH ANY AND ALL ADJACENT PROJECTS.
12. QUEUE PROTECTION TRUCKS SHALL BE UTILIZED AS TRAFFIC NECESSITATES IN ACCORDANCE WITH TDOT SP712PTQ. A MINIMUM OF 2 QUEUE PROTECTION TRUCKS SHALL BE UTILIZED IN EACH DIRECTION.

SEE BRIDGE PLANS FOR TYPICAL SECTION

TRAFFIC CONTROL STAGING NOTES

STAGE 1 - ON I-40, THE TWO INTERIOR LANES AND SHOULDER SHALL BE CLOSED IN BOTH WESTBOUND AND EASTBOUND DIRECTIONS. I-40 CLOSURES SHALL BE LIMITED TO NIGHTTIME CLOSURES ONLY.
ELM HILL PIKE DETOUR SHALL BE INSTALLED. ELM HILL PIKE DETOUR SHALL BE LIMITED TO WEEKEND NIGHTS.

DETOUR SHALL RUN EAST FROM THE PROJECT SITE ALONG ELM HILL PIKE APPROXIMATELY 1-1/4 MILES TO BELL ROAD. THEN RUN NORTH ALONG BELL ROAD/STEWARTS FERRY PIKE APPROXIMATELY 3 MILES TO LEBANON PIKE. THEN RUN WEST ALONG LEBANON PIKE APPROXIMATELY1/2 MILE TO DONELSON PIKE. THEN SOUTH ALONG DONELSON PIKE APPROXIMATELY 1-1/3 MILES TO ELM HILL PIKE. THEN EAST ALONG ELM HILL PIKE APPROXIMATELY 1 MILE TO THE PROJECT SITE.

STAGE 2 - ON I-40, THE TWO EXTERIOR LANES AND SHOULDER SHALL BE CLOSED IN BOTH WESTBOUND AND EASTBOUND DIRECTIONS. I-40 CLOSURES SHALL BE LIMITED TO NIGHTTIME CLOSURES ONLY.
ELM HILL PIKE DETOUR SHALL BE MAINTAINED. ELM HILL PIKE DETOUR SHALL BE LIMITED TO WEEKEND NIGHTS.

SPECIAL NOTES FOR TRAFFIC CONTROL

1. CONTRACTOR SHALL UTILIZE THE EXISTING LANES AND LANE SHIFTS IN PLACE FROM THE DONELSON PIKE INTERCHANGE PROJECT. CONTRACTOR SHALL COORDINATE WITH OFFICIALS FROM THE DONELSON PIKE INTERCHANGE PROJECT WHEN PLACING AND SCHEDULING TRAFFIC CONTROL.

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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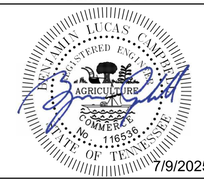


7/9/2025

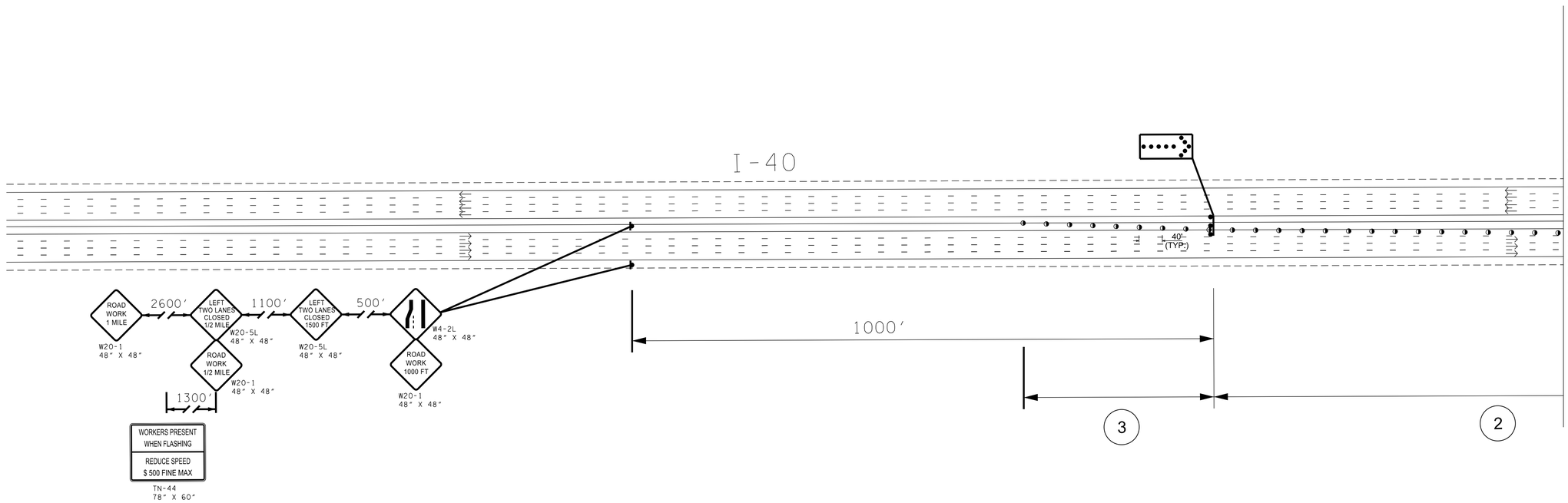
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PHASING NOTES, LEGEND AND TABULATION

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

1. 730' WORKSPACE BUFFER SPACE (T-WZ-13 FOR 70 MPH)
2. LANE DROP TAPER=L=WS=12'X80=960' (T-WZ-13 FOR 70 MPH)
3. SHOULDER TAPER=L/3=(14'*70)/3=327' (T-WZ-13 FOR 70 MPH)
4. LANE DROP BUFFER SPACE = 2L = 1920' (T-WZ-13 FOR 70 MPH)
5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T2
PS&E	2025	19I040-M3-018	T2



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BENJAMIN LUCAS CAMPBELL
REGISTERED ENGINEER
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COMMERCE
No. 116536
STATE OF TENNESSEE

7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 1

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T3
PS&E	2025	19I040-M3-018	T3

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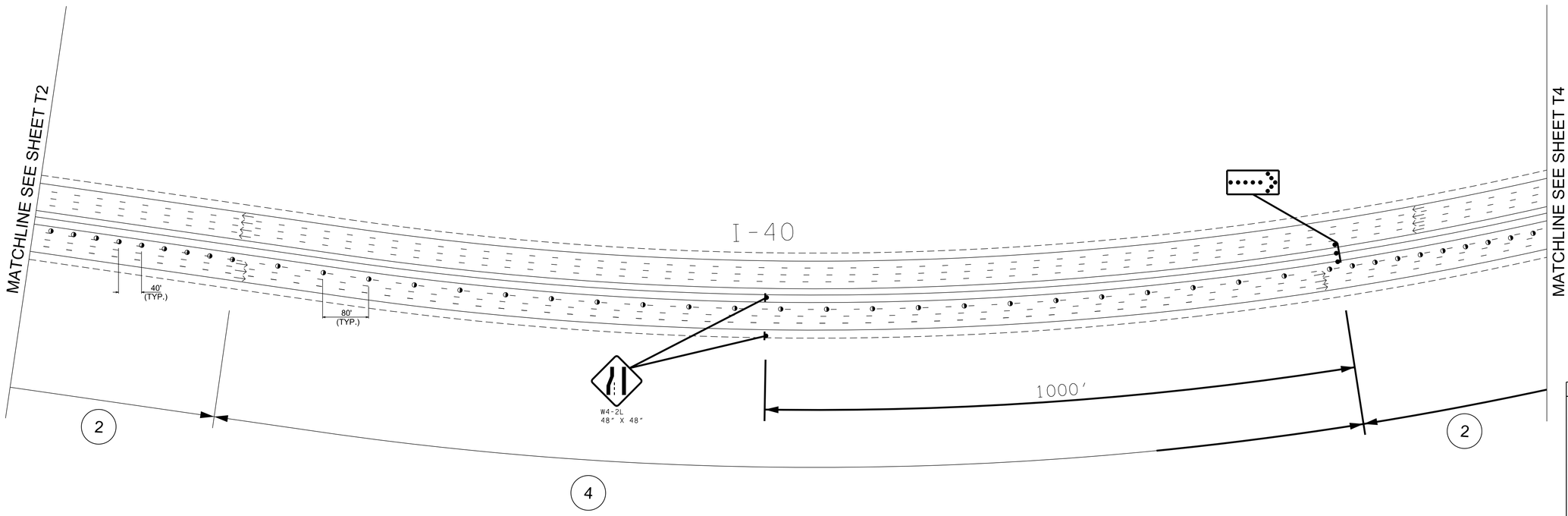

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 1

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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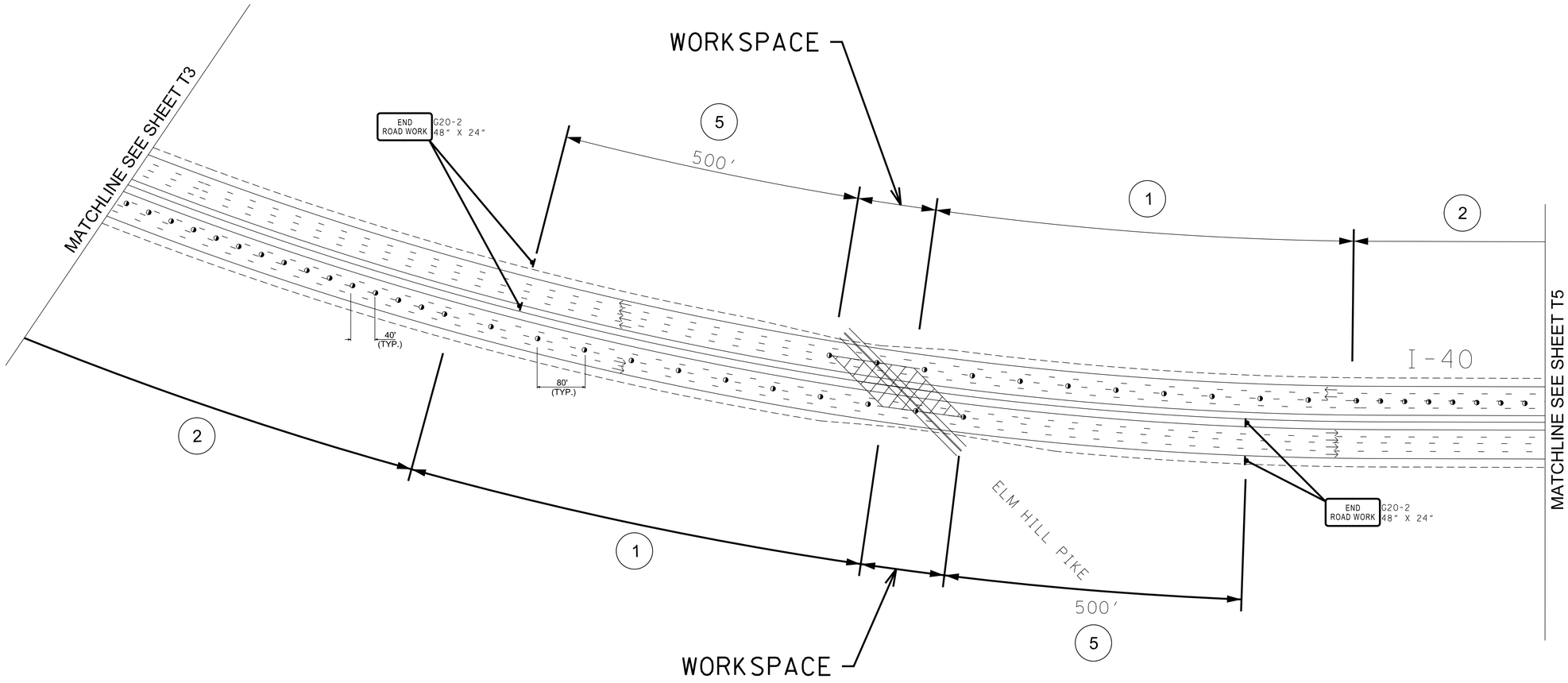
5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T4
PS&E	2025	19I040-M3-018	T4



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7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 1

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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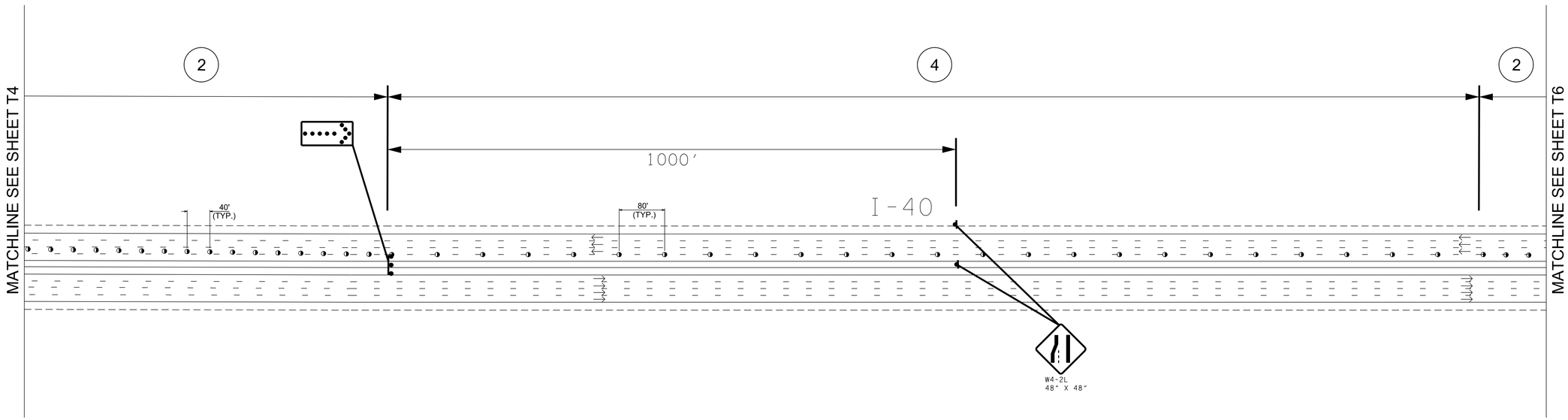
5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T5
PS&E	2025	19I040-M3-018	T5



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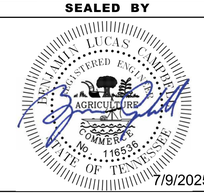

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 1

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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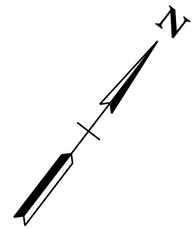
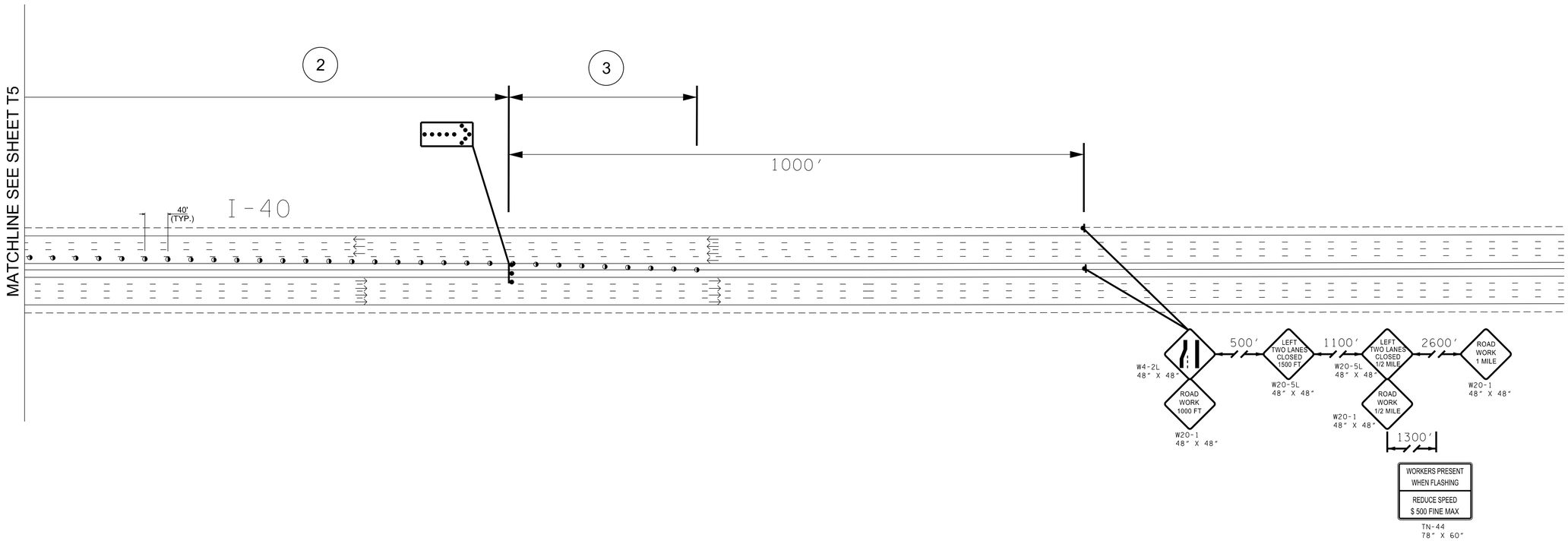
4. LANE DROP BUFFER SPACE = 2L = 1920' (T-WZ-13 FOR 70 MPH)
5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T6
PS&E	2025	19I040-M3-018	T6





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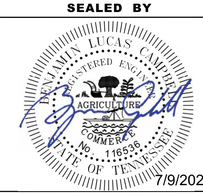

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 1

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T7
PS&E	2025	19I040-M3-018	T7

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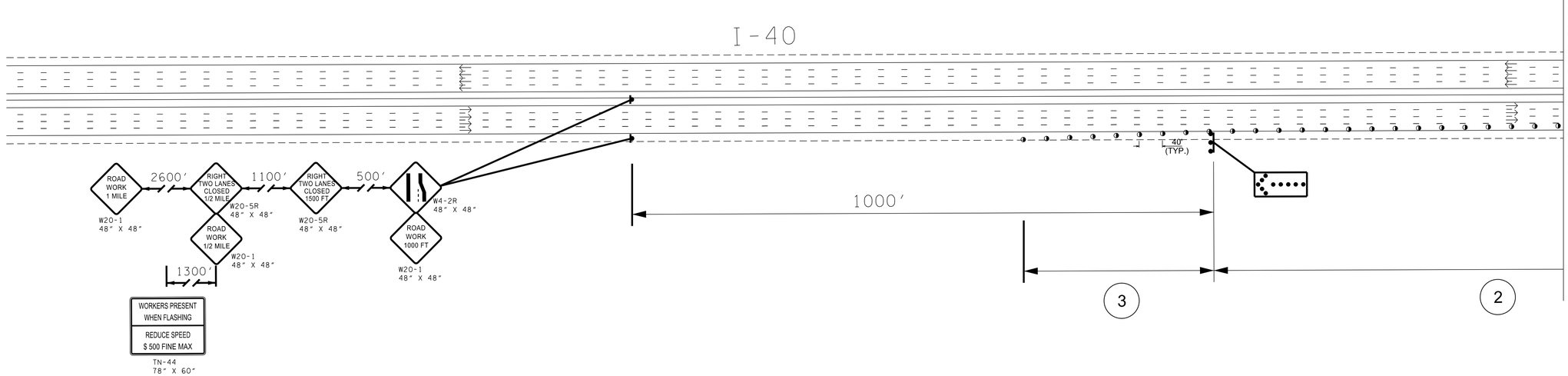

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 2

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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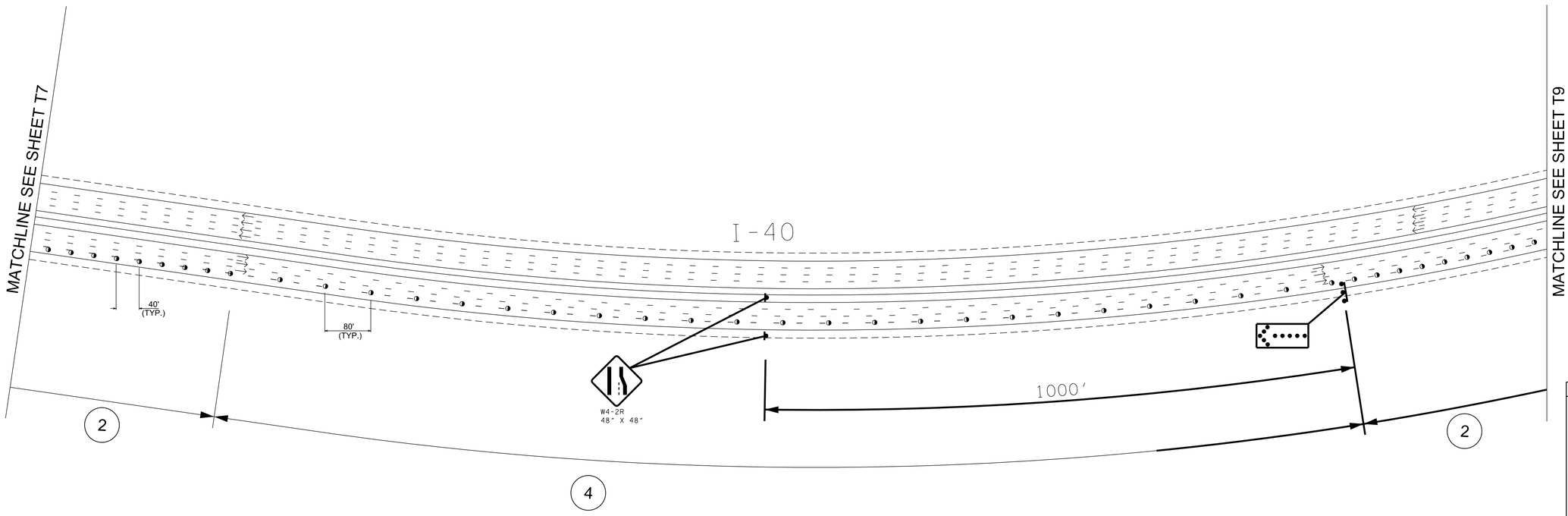
TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T8
PS&E	2025	19I040-M3-018	T8	



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7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 2

SCALE: 1"=100'

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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
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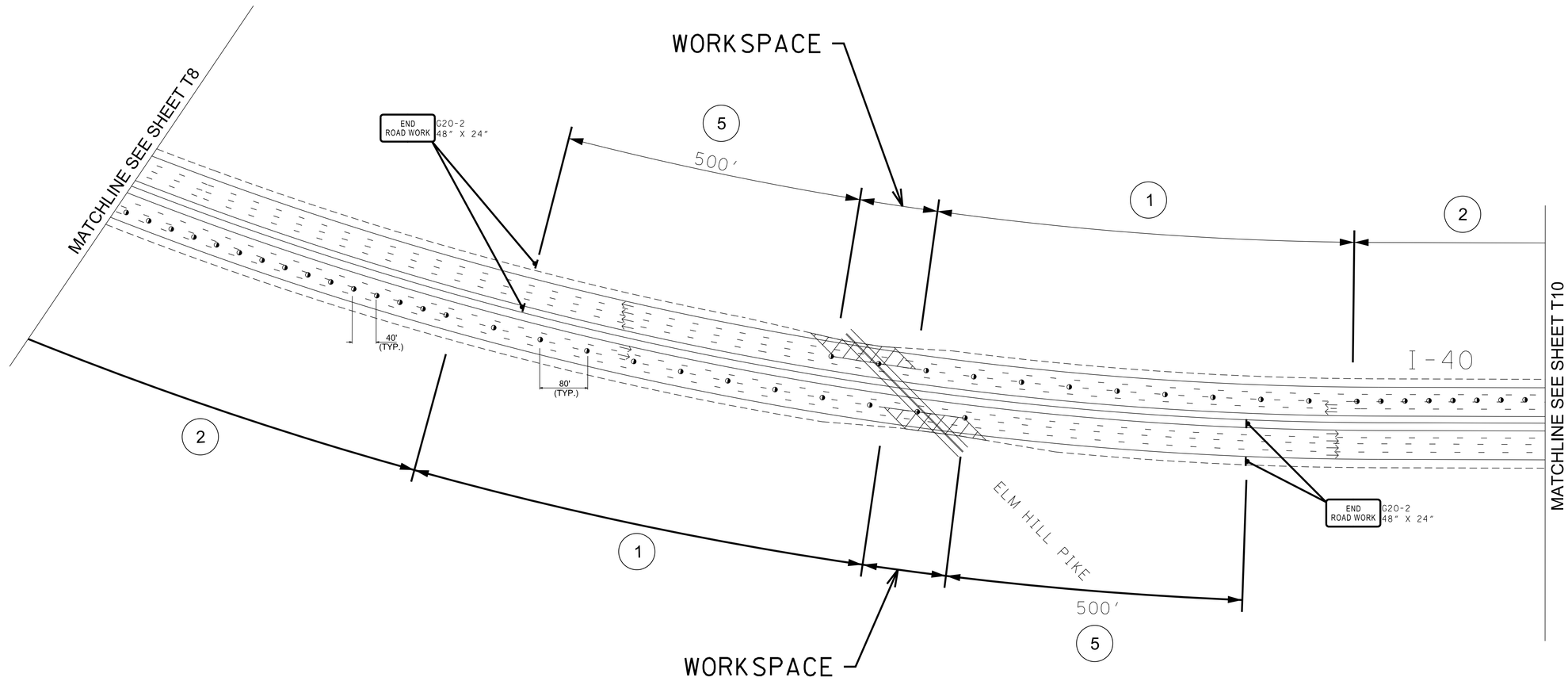
5. T-WZ-13

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T9
PS&E	2025	19I040-M3-018	T9



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BENJAMIN LUCAS CAMPBELL
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No. 116598
STATE OF TENNESSEE

7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 2

SCALE: 1"=100'

7/8/2025 9:33:04 AM
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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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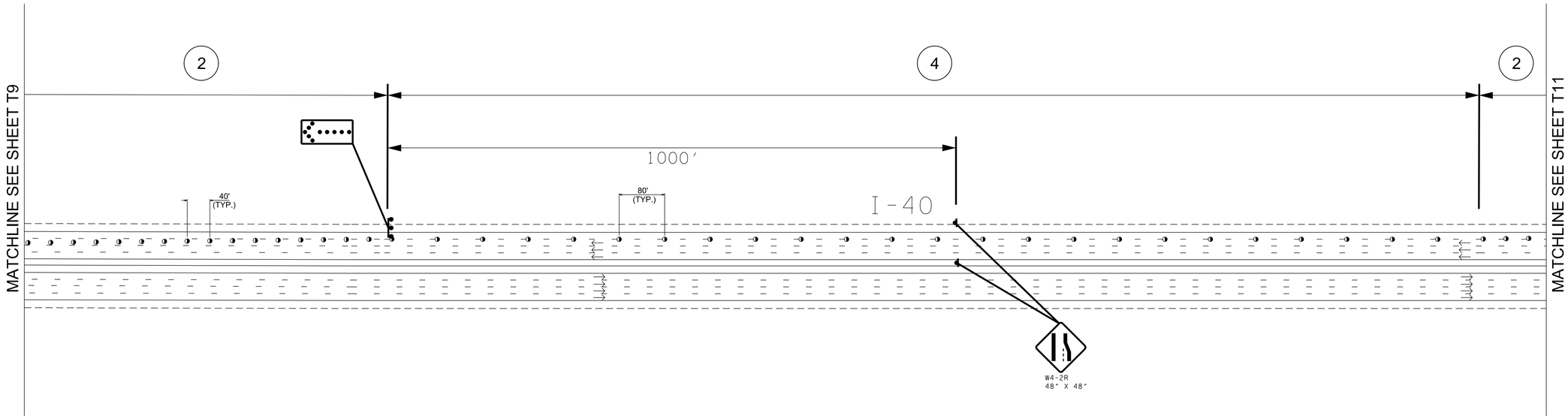
TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T10
PS&E	2025	19I040-M3-018	T10



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BENJAMIN LUCAS CAMPBELL
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AGRICULTURE
COMMERCE
No. 116536
STATE OF TENNESSEE

7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

STAGE 2

SCALE: 1"=100'

7/8/2025 9:33:07 AM
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TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
→	TRAFFIC FLOW
	ARROW BOARD TYPE C (SINGLE ARROW)

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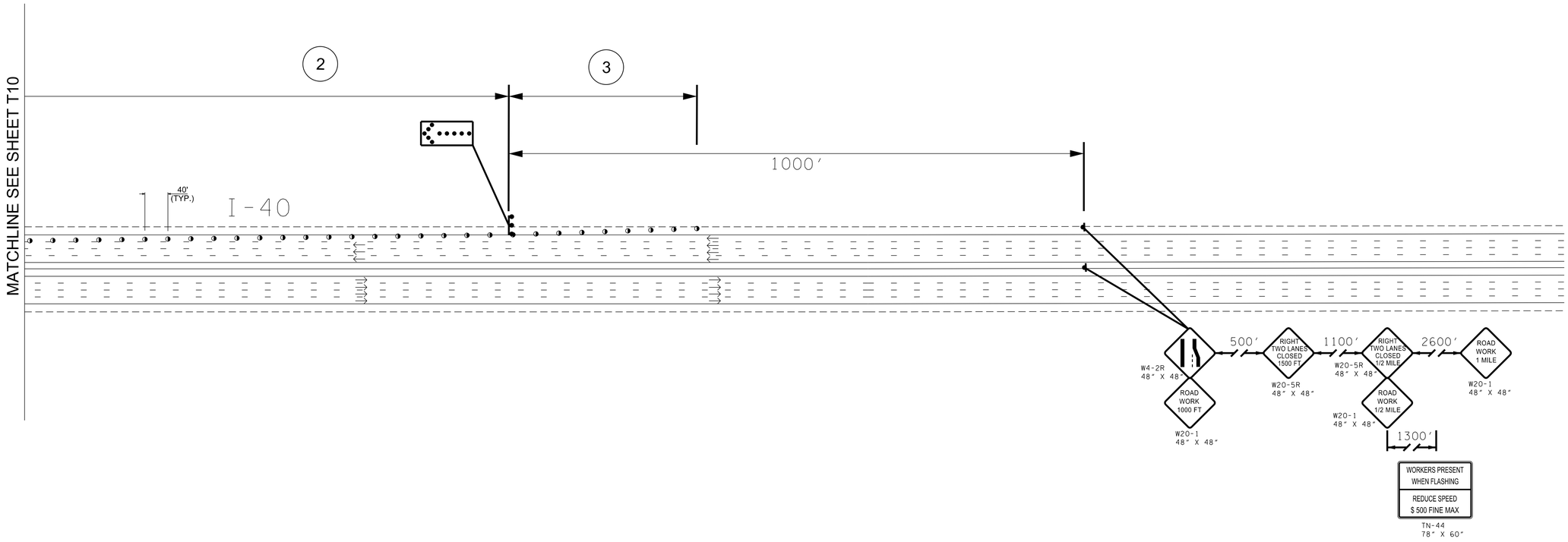
TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T11
PS&E	2025	19I040-M3-018	T11



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REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 116536
STATE OF TENNESSEE

7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

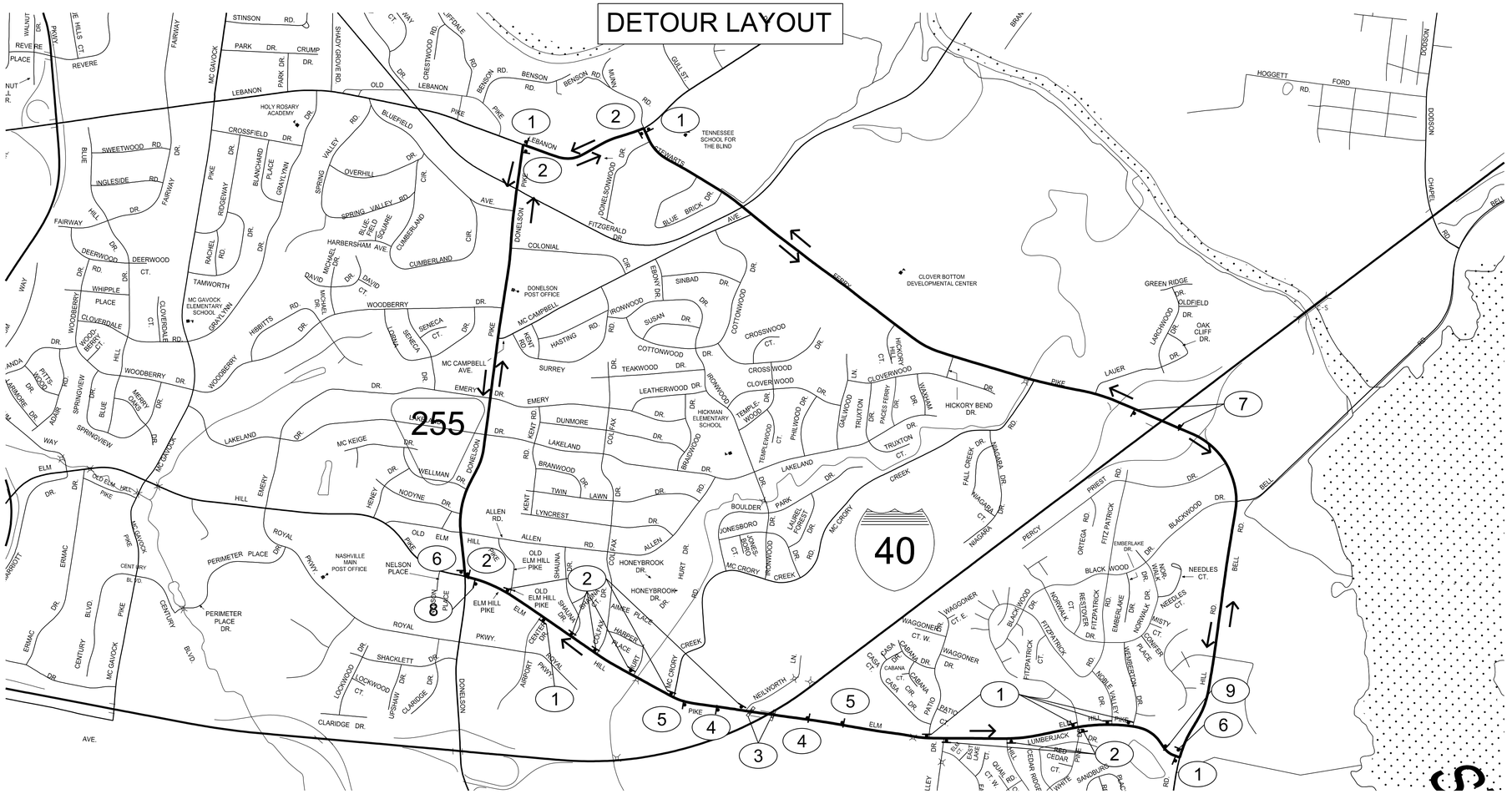
STAGE 2

SCALE: 1"=100'

7/8/2025 9:33:10 AM
\\Norcga1hub\norcfs1\atlanta\Roadways\191428\ElmHillPike\DGN\T11.dgn

DETOUR LAYOUT

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2025	19I040-M3-018	T12
PS&E	2025	19I040-M3-018	T12



SIGN LEGEND

1
ELM HILL PIKE 36" X 18"
DETOUR M4-9L 30" X 24"

2
ELM HILL PIKE 36" X 18"
DETOUR M4-9R 30" X 24"

3
ROAD CLOSED
R11-2
48" X 30"

4
ROAD CLOSED 500 FT
W20-3
48" X 48"

5
ROAD CLOSED 1000 FT
W20-3
48" X 48"

6
ELM HILL PIKE 36" X 18"
END DETOUR M4-8A 24" X 18"

7
ELM HILL PIKE 36" X 18"
DETOUR M4-8 24" X 12"

8
ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
R11-3A
60" X 30"

9
ROAD CLOSED
1-1/4 MILE AHEAD
LOCAL TRAFFIC ONLY
R11-3A
60" X 30"

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	SIGN (CONSTRUCTION)
	TEMPORARY BARRICADE (TYPE III)

SEALED BY
BENJAMIN LUCAS CAMPBELL
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 116536
STATE OF TENNESSEE
7/9/2025

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS
ELM HILL PIKE DETOUR
SCALE: 1"=100'

7/8/2025 9:33:38 AM
\\Norcgathub\norcfs1\atlanta\Roadways\191428\ElmHillPike\DGN\T-12 - Elm Hill Detour.dgn

P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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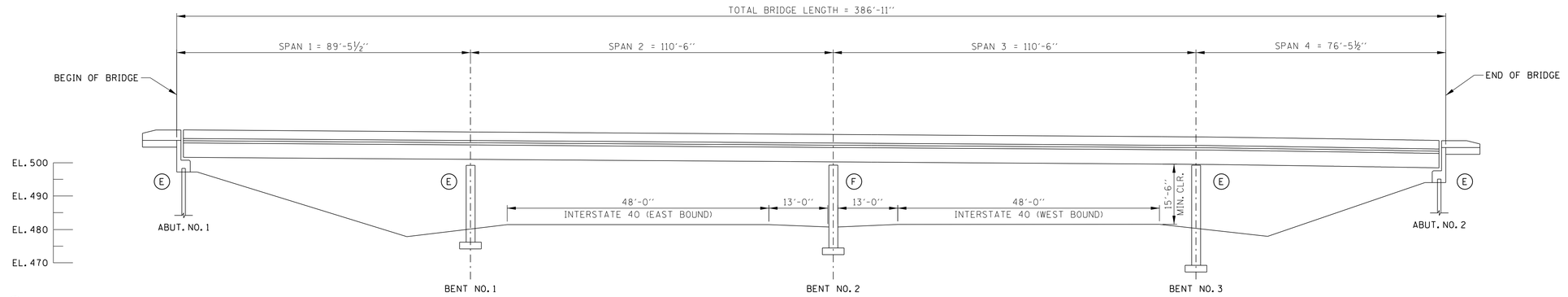
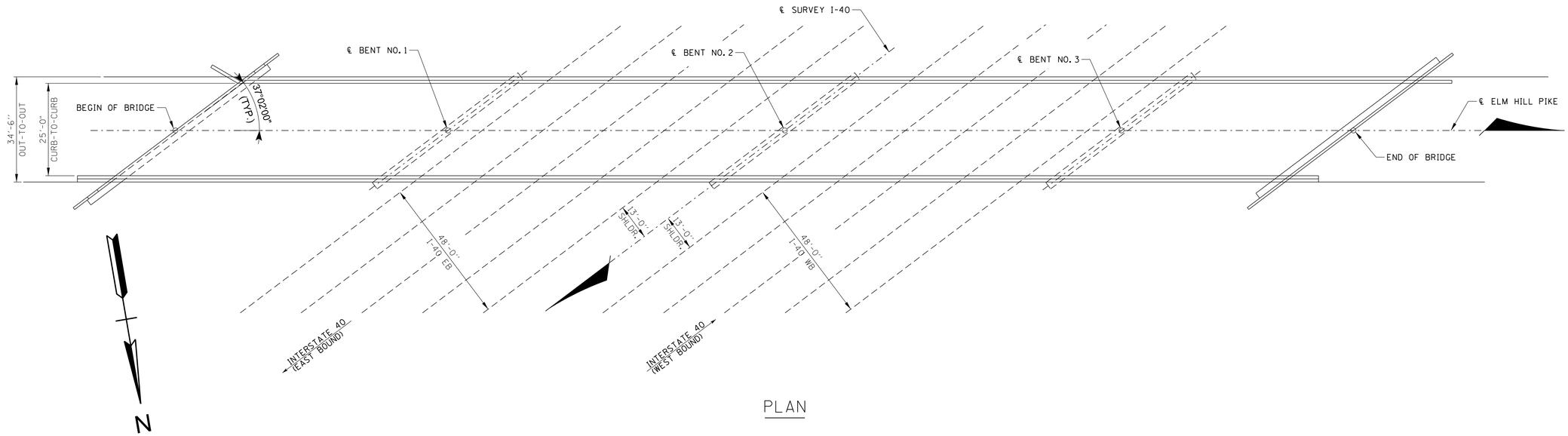


ELEVATION



PLAN

GENERAL SCOPE OF WORK

1. CARE SHALL BE TAKEN TO KEEP TRAFFIC OFF THE AFFECTED GIRDERS DURING REPAIR AS TO NOT SUBJECT THEM TO LIVE LOAD. PROVIDE REQUIRED TRAFFIC CONTROL AND PHASED CONSTRUCTION. FOR STEEL REPAIR WORK ABOVE I-40 EAST AND WEST, CONTRACTOR MUST MAINTAIN A MINIMUM OF TWO LANES ON I-40 AND ELM HILL PIKE SHALL BE CLOSED TO TRAFFIC DURING PREAPPROVED NIGHTS (8P.M. TO 5 A.M.) DURING ALL OTHER INSTANCES I-40 SHALL REMAIN OPEN TO TRAFFIC AND ELM HILL PIKE SHALL MAINTAIN, AT MINIMUM, ONE LANE OF ALTERNATING TRAFFIC. SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL DETAILS. COST ASSOCIATED WITH THE MAINTENANCE OF TRAFFIC ON ELM HILL PIKE DURING SUPERSTRUCTURE REPAIRS SHALL BE INCLUDED IN ITEM 712-01.
2. REPAIR DAMAGED/DETERIORATED AREAS OF CONCRETE ON SUBSTRUCTURE UNITS.
3. EPOXY-INJECT CRACKS IN SUBSTRUCTURE UNIT.
4. CLEAN AND MAINTAIN EXISTING DECK DRAINS AND JOINTS.
5. REMOVE VEGETATION FOR A DISTANCE OF TEN FEET ALONG EACH SIDE OF THE BRIDGES AS DIRECTED BY THE ENGINEER.
6. REPAIR STEEL GIRDER USING HEAT STRAIGHTENING, SEE SUPERSTRUCTURE DETAILS.
7. SPOT CLEAN AND PAINT STEEL SUPERSTRUCTURE IN AREA OF REPAIRS, SEE GENERAL NOTES AND FOOTNOTES FOR ADDITIONAL INFORMATION AND LOCATIONS.
8. CLEAN DECK AND SHOULDER AREAS AFTER COMPLETION OF WORK.

LIST OF BRIDGE REFERENCE DRAWINGS

(TO BE PRINTED WITH PLANS)

1961 ORIGINAL BRIDGE PLANS	- - - - - - - - - -	SHEETS K-7-122 THRU K-7-126
2001 BRIDGE REPAIRS	- - - - - - - - - -	SHEETS BR-50-99 THRU BR-50-102
2008 BRIDGE REPAIR PLANS	- - - - - - - - - -	SHEETS BR-87-28 THRU BR-87-31
2011 BRIDGE REPAIR PLANS	- - - - - - - - - -	SHEETS BR-105-76 THRU BR-105-79

LIST OF SPECIAL PROVISIONS

DESCRIPTION	DWG. NO.

LIST OF STANDARD DRAWINGS

DESCRIPTION	DWG. NO.

SEALED BY

PIN NO.:	113872.01	
DESIGN BY:	C. GIBBS	DATE: JANUARY/2023
DRAWN BY:	J. LIPSCOMB	DATE: JANUARY/2023
SUPERVISED BY:	S. VILCHES	DATE: APRIL/2025
CHECKED BY:	R. FRYE/A. TILTON	DATE: APRIL/2025

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REPAIRED
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-135

P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	2A

REVISIONS

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ESTIMATED BRIDGE QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL
(1)	201-05.31	VEGETATION REMOVAL	LS	1
(2)	602-10.51	STRUCTURAL STEEL REPAIR(GIRDER REPAIRS)	EACH	3
(3)	602-10.52	STRUCTURAL STEEL REPAIR(BOLT REPLACEMENT)	EACH	1
(4)	602-10.53	STRUCTURAL STEEL REPAIR(CROSS FRAME REPAIR)	EACH	1
(5)	602-10.81	HEAT STRAIGHTENING	LS	1
(6)	603-02.01	REPAINTING EXISTING STEEL STRUCTURES (BRIDGE NO. 19-04167-1.25)	LS	1
(7)	604-10.05	CONCRETE	S.F.	304
(8)	604-10.54	CONCRETE REPAIRS	S.F.	304
(9)	604-10.58	EPOXY INJECTION (INJECTION)	GAL.	1
(10)	604-10.62	EPOXY INJECTION REPAIR (COMPLETE AND IN PLACE)	L.F.	6
	719-01.02	ROADWAY SWEEPING	L.M.	0.08
	719-01.08	CLEAN DRAIN	EACH	44

FOOTNOTES:

(1) INCLUDES COST OF ALL LABOR AND MATERIALS NECESSARY FOR THE REMOVAL AND DISPOSAL OF VEGETATION WITHIN 10 FEET OF THE STRUCTURE AND ANY OTHER LOCATIONS NECESSARY TO COMPLETE THE WORK, AS DIRECTED BY THE ENGINEER. WHERE POSSIBLE, STUMPS AND ROOTS ARE TO REMAIN TO PREVENT GROUND DISTURBANCE

(2) INCLUDES COSTS OF ALL LABOR, MATERIALS, EQUIPMENT, SUPPORT, AND INCIDENTALS RELATED TO REPAIRING OF BEAMS INCLUDING BOTTOM FLANGES AND STIFFENERS AFTER HEAT STRAIGHTENING AS INDICATED IN THE PLANS.

(3) INCLUDES COSTS OF ALL LABOR, MATERIALS, EQUIPMENT, SUPPORT, AND INCIDENTALS RELATED TO THE REPLACEMENT OF BOLTS AT BEAM SPLICE AS INDICATED IN THE PLANS.

(4) INCLUDES COSTS OF ALL LABOR, MATERIALS, EQUIPMENT, SUPPORT, AND INCIDENTALS RELATED TO THE REPLACEMENT OF THE CROSS FRAME INDICATED IN THE PLANS INCLUDING 3 (THREE) NEW L3X3X5/16" ANGLES AND NEW 3/4" DIA. HIGH STRENGTH BOLTS WITH HEX NUTS AND WASHERS.

(5) INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE HEAT STRAIGHTENING OF DAMAGED MEMBERS AS SHOWN IN PLANS.

(6) INCLUDES ALL LABOR AND MATERIALS NECESSARY FOR THE SURFACE PREPARATION AND PAINTING OF STEEL GIRDERS AROUND STEEL REPAIR AREAS (2' BEYOND EITHER SIDE OF REPAIR) AND THE END 10' OF EACH GIRDER AT BOTH ABUTMENTS.

(7) INCLUDES ALL LABOR AND MATERIALS NECESSARY TO PLACE HIGH EARLY STRENGTH CONCRETE FOR REPAIR OF INDICATED AREAS.

(8) INCLUDES COST OF ALL LABOR AND MATERIALS NECESSARY TO PLACE A POLYMER MODIFIED CEMENTITIOUS STRUCTURAL PATCHING MATERIAL FOR REPAIR OF INDICATED AREAS.

(9) INCLUDES ALL COST ASSOCIATED WITH PROVIDING EPOXY.

(10) INCLUDES ALL COSTS ASSOCIATED WITH PROVIDING EPOXY INJECTION TO LOCATIONS SHOWN IN THE PLANS.

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ESTIMATED BRIDGE QUANTITIES
ELM HILL PIKE OVER
INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-136

PIN NO.: 113872.01
DESIGN BY: C. GIBBS DATE: JANUARY/2023
DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023
SUPERVISED BY: S. VILCHES DATE: APRIL/2025
CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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GENERAL NOTES

SPECIFICATIONS AND LOADING

(1) CONSTRUCTION SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (JANUARY 1, 2021 EDITION), AND THE 4TH EDITION (2017) AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS WITH INTERIMS.

(2) DESIGN SPECIFICATIONS: 10TH EDITION (2024) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH INTERIMS, AND THE 2ND EDITION (2011) AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN WITH INTERIMS.

(3) LOADING:
A. HL-93 LIVE LOADING
B. SEISMIC CATEGORY B WITH AS = 0.084, SDS = 0.204, SD1 = 0.077, (1000 YEAR RETURN PERIOD).
C. DEAD LOAD INCLUDES 35 LB/SQ.FT. FOR FUTURE WEARING SURFACE.

STEEL, CONCRETE, REINFORCING, AND FORMING

(4) STRUCTURAL STEEL: SHALL CONFORM TO ASTM A709 GRADE 36 UNLESS OTHERWISE NOTED.

(5) REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

(6) 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.

(7) BOLTS: SHALL BE HIGH TENSILE STRENGTH BOLTS GRADE A325 TYPE 1, UNLESS OTHERWISE NOTED. BOLT SIZE TO BE AS NOTED ON PLANS. SEE SECTION 602 OF THE STANDARD SPECIFICATIONS. EXISTING CONTACT SURFACES SHALL BE CLEANED OF ALL EXISTING PAINT AND RUST TO BARE METAL PRIOR TO ATTACHMENT OF NEW MEMBERS. BOLTS USED ARE TO BE GALVANIZED BOLTS. FOR GALVANIZING, SEE SECTION 908 IN THE STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

(8) CONCRETE: TO BE CLASS A F'C = 3000 PSI EXCEPT AS NOTED OTHERWISE.

(9) 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.

(10) CONCRETE CURING: ALL CONCRETE IN REPAIR AREAS SHALL BE CURED ACCORDING TO THE STANDARD SPECIFICATIONS.

STEEL REPAIR

(11) HEAT STRAIGHTENING: HEAT STRAIGHTENING IS TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF A LEAD SUPERVISOR POSSESSING THE KNOWLEDGE AND EXPERIENCE TO APPLY HEAT IN SUCH A MANNER, SEQUENCE, AND AMOUNT THAT THE FINAL STRAIGHTENED MEMBER RETAINS AS LITTLE RESIDUAL STRESS AS POSSIBLE. THE LEAD SUPERVISOR SHALL HAVE SUCCESSFULLY COMPLETED 3 PROJECTS IN THE PAST 5 YEARS. THE WORK SHALL HAVE BEEN ACCOMPLISHED USING TECHNIQUES SHOWN IN FHWA REPORT: FHWA-IF-99-004, HEAT STRAIGHTENING REPAIRS OF DAMAGED STEEL BEAMS, A TECHNICAL GUIDE AND MANUAL OF PRACTICE.

(12) THE LEAD SUPERVISOR SHALL BE ON SITE AT ALL TIMES WHILE THE HEAT STRAIGHTENING WORK IS PERFORMED.

(13) HEATING AND OVER-JACKING (HOT MECHANICAL STRAIGHTENING) IS NOT ALLOWED.

THE FOLLOWING SHALL BE SUBMITTED PRIOR TO BEGINNING WORK:

(14) WRITTEN DOCUMENTATION SHOWING THE CONTRACTOR'S $^{5}/_{32}$S SUCCESSFUL HEAT STRAIGHTENING EXPERIENCE, USING TECHNIQUES IN FHWA REPORT: FHWA-IF-99-004, WITH COMPARABLE BRIDGE BEAMS/GIRDERS, ALONG WITH PHOTOGRAPHS OF THE WORK COMPLETED. THE DOCUMENTATION SHALL BE FROM THE CONTRACTOR'S $^{5}/_{32}$S 3 SUCCESSFUL PROJECTS IN THE PAST 5 YEARS.

(15) A WORK PLAN SHOWING ANTICIPATED HEATING PATTERNS, HEATING LOCATIONS, AND RESTRAINT METHODS FOR GENERAL APPROVAL. THE WORK PLAN SHALL INCLUDE:
A: FRAMING PLAN SHOWING AREAS TO BE REPAIRED
B: SEQUENCE OF WORK
C: SHAPE, SIZE, AND TEMPERATURE OF HEATING PATTERNS
D: LOCATION AND LIMITS OF JACKS, PULLING, OR RESTRAINING FORCES

(16) HEAT SHALL BE APPLIED AT OR BELOW 1100 DEGREES F AND MONITORED WITH CONTACT THERMOMETERS, INFRARED DEVICES, PYROMETRIC STICKS, OR OTHER HEAT INDICATING DEVICES. THESE DEVICES SHALL BE SUPPLIED BY THE CONTRACTOR AND MADE AVAILABLE TO THE INSPECTOR AT ALL TIMES. HEATING THICKNESSES EQUALING 1 ¼" OR MORE SHALL REQUIRE HEATING BOTH FACES CONCURENTLY. AFTER COMPLETING A PLANNED SET OF HEAT PATTERNS ALONG THE MEMBER, DO NOT APPLY ADDITIONAL HEAT UNTIL THE ENTIRE MEMBER HAS COOLED TO AT LEAST 250 DEGREES F BEFORE STARTING THE NEXT HEATING PATTERN CYCLE.

(17) DO NOT ACCELERATE COOLING WITH WATER, WATER MIST, OR OTHER COOLING ACCELERANTS. AFTER THE STEEL SURFACE TEMPERATURE IS 600 DEGREES F OR LESS, COOLING MAY BE ACCELERATED WITH DRY COMPRESSED AIR.

(18) THE STRAIGHTENING SHALL BE ACCOMPLISHED WITH AS LITTLE MECHANICAL FORCE AS POSSIBLE. THE BEAM MAY BE RESTRAINED FROM MOVING DURING THE HEATING PROCESS. JACKS OR "COME-ALONGS" MAY BE USED TO MECHANICALLY AUGMENT THE HEAT STRAIGHTENING PROCESS.

(19) THE JACKING AND RESTRAINING FORCES SHALL NOT BE ADJUSTED DURING HEATING OR BEFORE THE TEMPERATURE IN THE MEMBER HAS COOLED TO 250 DEGREES F OR LESS. ADJUSTMENTS SHALL BE MADE BEFORE STARTING THE NEXT HEATING CYCLE.

(20) THE CONTRACTOR SHALL ADEQUATELY BRACE THE ADJACENT BEAMS AT THE JACKING LOCATIONS IN ORDER TO PREVENT OVERLOADING DUE TO APPLIED LATERAL LOADS. POSITION JACKS AND RESTRAINING FORCES SUCH THAT STRAIGHTENING SHRINKAGE WILL RELIEVE THE FORCE DURING THE COOLING CYCLE.

(21) MEMBERS THAT ARE CRACKED OR DAMAGED DURING HEAT STRAIGHTENING SHALL BE REPAIRED AT NO COST TO THE DEPARTMENT.

(22) TOLERANCES SHALL MEET REQUIREMENTS AS SHOWN IN SECTION 3.5 OF THE CURRENT AASHTO/AWS BRIDGE WELDING CODE D1.5. TOLERANCE MEASUREMENTS SHALL NOT BE TAKEN UNTIL THE HEATED AREAS HAVE COOLED TO 160 DEGREES F. TOLERANCES SHALL BE CHECKED BEFORE ANY CROSS-FRAMES OR OTHER RESTRAINING DEVICES ARE ATTACHED. FORCING MEMBERS WITHIN TOLERANCES BEFORE ATTACHING CROSS-FRAMES TO HOLD THE MEMBER IN PLACE IS NOT ALLOWED.

(23) WELDING: SEE CURRENT EDITION OF THE AASHTO/AWS D1.5 BRIDGE WELDING CODE. CONTRACTOR IS TO SUBMIT WELDING PROCEDURE SPECIFICATIONS (BASED ON SUCCESSFUL TEST RESULTS AS RECORDED IN A PROCEDURE QUALIFICATION TEST RECORD, SEE AASHTO/AWS D1.5 SECTION 1.9 AND SECTION 5 (QUALIFICATION)) AND WELDER QUALIFICATIONS TO THE ENGINEER FOR REVIEW BEFORE WELDING WILL BE ALLOWED. WELDER QUALIFICATION SHALL INCLUDE PROOF OF CONTINUOUS WORK USING THE SPECIFIED WELDING PROCESS. WELDING PROCEDURE SPECIFICATIONS ARE NOT REQUIRED FOR TEMPORARY WELDS (STAY-IN-PLACE METAL DECK FORMS ARE CONSIDERED TEMPORARY.) THE WELDING PROCEDURE SPECIFICATIONS SHALL BE ON SITE FOR WELDER AND INSPECTOR REVIEW. WELDING IS TO BE DONE BY QUALIFIED WELDERS. SUPERVISION OF NON-QUALIFIED WELDERS IS NOT PERMITTED. TDOT HAS THE OPTION OF HAVING THE WELDER RECERTIFIED IF QUESTIONABLE WORK IS OBSERVED. THE COST OF THIS REQUALIFICATION IS TO BE PAID FOR BY THE CONTRACTOR. WELDER QUALIFICATION POSITIONS FOR FILLET AND GROOVE WELDS: FLAT (F), HORIZONTAL (H), VERTICAL (V), OVERHEAD (OH). SEE FIG 7.4 OR FIG 7.5 IN AASHTO/AWS D1.5 FOR POSITION LIMITS.

QUALIFICATION TEST	TYPE OF WELD AND POSITION OF WELDING QUALIFIED		
WELD	POSITION	GROOVE	FILLET
GROOVE	1G 2G 3G 4G 3G AND 4G	F F, H F, H, V F, OH ALL	F, H F, H F, H, V F, H, OH ALL
FILLET	1F 2F 3F 4F 3F AND 4F		F F, H F, H, V F, H, OH ALL

FROM TABLE 7.10, WELDER QUALIFICATION - TYPE AND POSITION LIMITATIONS, AASHTO/AWS D1.5

MISCELLANEOUS GENERAL NOTES

(24) SHOP DRAWINGS: REFER TO SECTION 105.02 OF THE STANDARD SPECIFICATIONS. IF USING PAPER COPIES, SHOP DRAWINGS ARE TO BE SENT TO THE BRIDGE REPAIR OFFICE IN THE DIVISION OF STRUCTURES, FOR ELECTRONIC SUBMITTALS, SEE SECTION 105.02 OF THE STANDARD SPECIFICATIONS. EACH SHOP DRAWING SHALL CONTAIN IN THE TITLE BLOCK THE FOLLOWING: THE STATE PROJECT NUMBER, COUNTY, BRIDGE NAME, BRIDGE NUMBER (OR STRUCTURE TYPE AND NUMBER), STATION, AND CONTRACT NUMBER. SHOP DRAWINGS WITH TITLE BLOCKS NOT INCLUDING THE FOREGOING IDENTIFICATION WILL BE RETURNED FOR CORRECTION BEFORE ANY REVIEWS FOR APPROVAL ARE CONDUCTED.

(25) DEMOLITION: THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ANY PARTS OF THE STRUCTURE THAT ARE NOT TO BE REMOVED SPECIFICALLY. FOR FULL DEPTH SLAB REMOVAL, EXCEPT OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 90 POUND CLASS. FOR PARTIAL DEPTH SLAB REMOVAL AND ANY WORK OVER THE BEAMS, THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS; CHIPPING HAMMERS OF THE 15 POUND CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL. SAWING OR CUTTING OF THE CONCRETE IS ACCEPTABLE AS LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING REINFORCING STEEL IS MAINTAINED. EXPANSION JOINT REMOVAL SHALL FOLLOW THE SAME RESTRICTIONS AS FULL DEPTH SLAB REMOVAL. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.

(26) TEXTURE COAT CONTAINING ASBESTOS: TEXTURE COAT REMOVAL WILL BE REQUIRED IN AREAS WHERE NEW CONCRETE WILL BE CAST AGAINST THE EXISTING CONCRETE SURFACE OR WHERE EPOXY INJECTION WILL BE PLACED. OTHER AREAS BEING TEXTURE-COATED ARE TO RECEIVE A WATER WASH AND BE OVERCOATED. TEXTURE-COAT DEBRIS IS TO BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH SPECIAL PROVISION 202ACM.

(27) GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED ½" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT, AND THE BAR DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY TDOT MATERIALS AND TESTS.

(28) QUICK-SET PATCHING MATERIAL: QUICK-SET PATCHING MATERIAL SHALL BE A POLYMER MODIFIED CEMENTITIOUS PATCHING MATERIAL. SEE TDOT QUALIFIED PRODUCTS LIST 13.009 POLY MOD CEMENT STRUCT PATCH VERT & OVER FOR ACCEPTABLE PATCHING MATERIALS.

(29) CONTAINMENT AND DISPOSAL: OUR RECORDS SHOW THAT THIS BRIDGE HAS OR HAS HAD LEAD-BASED/CHROMATE-BASED PAINT APPLIED TO IT DURING ITS HISTORY; THEREFORE, THE CONTRACTOR SHALL ASSUME THAT REMNANTS OF THAT PAINT REMAIN ON THE BRIDGE. SEE SECTION 603.13 OF THE STANDARD SPECIFICATIONS FOR SPECIAL PRECAUTIONS THAT MUST BE TAKEN IN THE REMOVAL; CONTAINMENT AND DISPOSAL OF THE SURFACE PREPARATION WASTE AND PAINT REMOVAL MEDIA; AND WORKER AND PUBLIC SAFETY.

(30) SPECIAL NOTE SURFACE PREPARATION FOR PAINT: OUR RECORDS SHOW THAT THIS BRIDGE HAS OR HAS HAD LEAD-BASED/CHROMATE-BASED PAINT APPLIED TO IT DURING ITS HISTORY. THEREFORE, THE CONTRACTOR SHALL ASSUME THAT REMNANTS OF THAT PAINT REMAIN ON THE BRIDGE ALONG WITH THE POSSIBILITY OF THE PRESENCE OF MILLSCALE. CONTRACTOR SHALL BID ACCORDINGLY.

(31) WORKER PROTECTION: OUR MAINTENANCE RECORDS INDICATE THAT THIS BRIDGE WAS ORIGINALLY PAINTED WITH MATERIALS CONTAINING LEAD AND/OR CHROMATES AND THE CONTRACTOR SHALL BE REQUIRED TO PROCEED ACCORDINGLY AND TAKE ALL MANDATORY SAFEGUARDS PRESCRIBED BY THE STATE AND FEDERAL LAW FOR WORKER PROTECTION AND HAZARDOUS MATERIALS DISPOSAL.

(32) THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING REPAIRS AND CONSTRUCTION.

(33) ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF THE CONSTRUCTION DURING THE LIFE OF THE PROJECT SHALL BE REPAIRED BT THE CONTRACTOR AT HIS EXPENSE.

(34) FORMS AND FALSEWORK: ALL CONCRETE FORMS SHALL BE REMOVED AFTER REPAIRS ARE COMPLETED. COST OF REMOVAL SHALL BE INCLUDED IN THE ITEMS BID ON. THIS WORK SHALL BE COMPLETED BEFORE FINAL PAYMENT IS MADE.

SPOT PAINTING AREAS NOTES

(35) SPOT CLEANING AND PAINTING: AREAS REQUIRING REPAINTING OF STEEL SHALL BE CLEANED IN ACCORDANCE WITH SECTION 603.05(B.1) OF THE STANDARD SPECIFICATIONS. HAND (SSPC-SP 2) OR POWER (SSPC-SP 3) TOOL CLEANING SHALL REMOVE ALL RUST, SCALE, LOOSE PAINT, AND DIRT. THESE AREAS SHALL BE SPOT PRIMED IMMEDIATELY AFTER CLEANING. CLEANED AND PRIMED STEEL SHALL RECEIVE A SYSTEM "B" (QPL 3.005) OR "C" (QPL 3.006) PAINT SYSTEM IN ACCORDANCE WITH SECTION 603.06(B) OF STANDARD SPECIFICATIONS. THE COLOR OF THE FINISH COAT SHALL COMPLY WITH AMS-STD-595A, FEDERAL STANDARD NO. 595B, 14110, BRIGHT GREEN. SEE SECTIONS 603 AND 910 OF THE STANDARD SPECIFICATIONS.

(36) SEE THE TDOT QUALIFIED PRODUCTS LIST 3.005 OR 3.006 FOR ACCEPTABLE COATINGS FOR THE PAINT SYSTEM. THE SAME MANUFACTURER SHALL SUPPLY ALL PRODUCTS USED, INCLUDING THINNERS.

PAINTING NEW STEEL NOTES

(37) PAINTING OF NEW STEEL: ALL STRUCTURAL STEEL SHALL BE BLAST CLEANED AND SHOP PRIMED. BLAST CLEANING SHALL BE IN ACCORDANCE WITH 603.05(B.2) OF THE STANDARD SPECIFICATIONS. PAINT SHALL BE SYSTEM "A", INORGANIC ZINC SYSTEM (QPL 3.001), AS STATED IN SECTION 603.06(A) OF THE STANDARD SPECIFICATIONS. COLOR OF THE URETHANE FINISH COAT SHALL COMPLY WITH AMS-STD-595A, FEDERAL STANDARD NO. 595B, 14110, BRIGHT GREEN. SEE SECTIONS 603 AND 910 OF THE STANDARD SPECIFICATIONS. COST OF SHOP PRIMECOAT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STRUCTURAL STEEL. THE CONTRACTOR SHALL ALSO HAVE THE OPTION TO USE ORGANIC ZINC WHEN USING A PAINT SYSTEM FROM QPL 3.002. ORGANIC ZINC SYSTEMS SHALL BE FROM QPL 3.002.

(38) SEE THE TDOT QUALIFIED PRODUCTS LIST 3.001 OR 3.002 FOR ACCEPTABLE COATINGS FOR THE PAINT SYSTEM. THE SAME MANUFACTURER SHALL SUPPLY ALL PRODUCTS USED, INCLUDING THINNERS.

SPECIAL NOTES

(39) ALL DIMENSIONS, INCLUDING REPAIR AREAS, AND VERTICAL ELEVATIONS ARE BASED ON EXISTING PLAN INFORMATION, FIELD MEASUREMENTS OR CONTRACTOR MEASUREMENTS. PRIOR TO CONSTRUCTION, IT IS THE RESPONSIBLILTY OF THE CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.

(40) THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING THE SUPERSTRUCTURE DURING THE REPAIR OF GIRDER SECTIONS. DETAILS OF THE SUPPORT SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE ANY GIRDER REPAIR IS BEGUN. THE COST OF THE SUPPORT SYSTEM SHALL BE INCLUDED IN ITEM NO. 602-10.01, STEEL REPAIRS, L.S.

(41) FOLLOWING THE COMPLETION OF ALL STRUCTURAL STEEL REPAIRS AND PRIOR TO PAINTING, AN INSPECTION FOR CRACKS SHALL BE MADE IN ALL REPAIR AREAS OF THE SPAN. CRACKS DISCOVERED AS A RESULT OF THIS INSPECTION SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE GENERAL NOTES
ELM HILL PIKE OVER
INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-137

PIN NO.: 113872.01
DESIGN BY: C. GIBBS DATE: JANUARY/2023
DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023
SUPERVISED BY: S. VILCHES DATE: APRIL/2025
CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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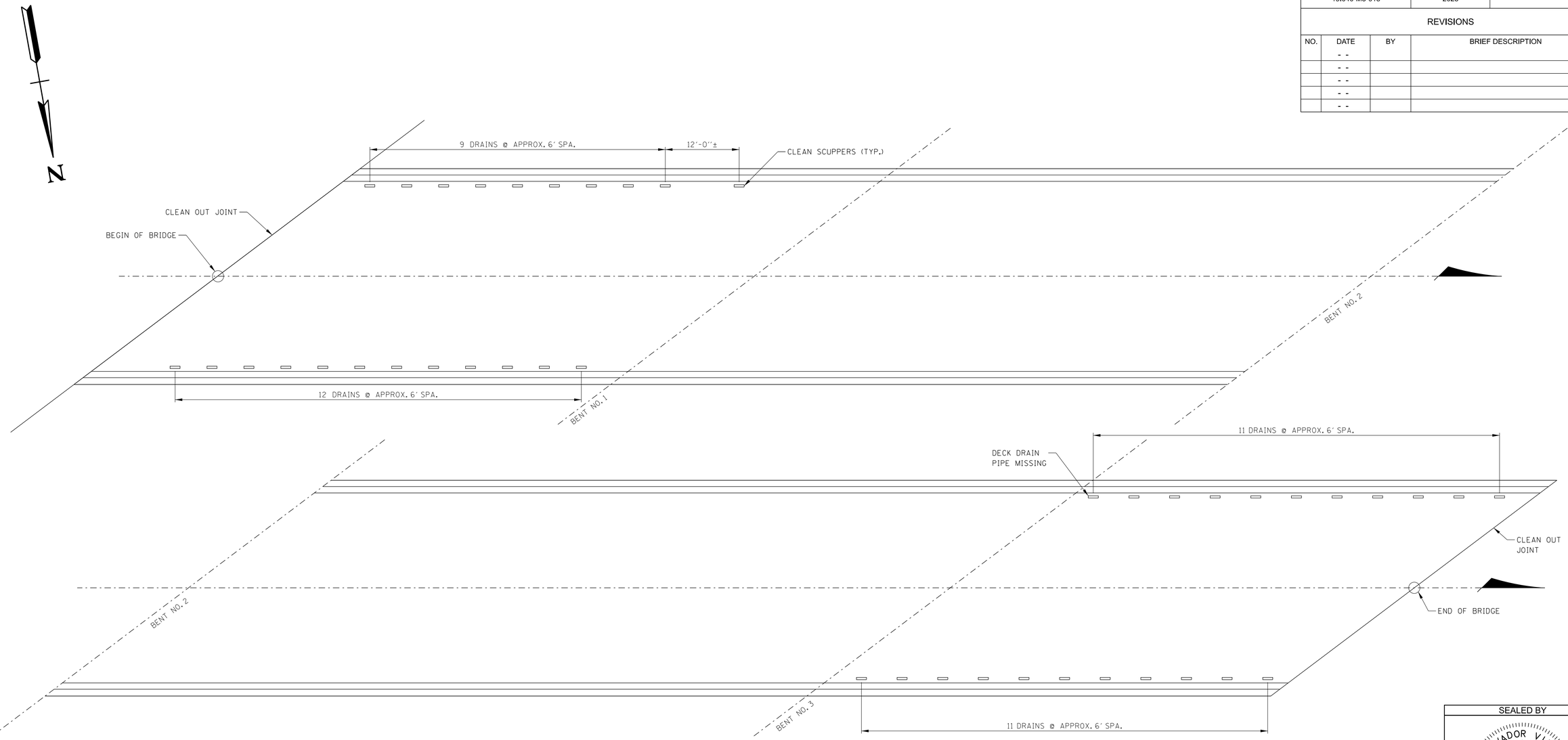

NOTES:

1. THE CONTRACTOR SHALL CLEAN ALL BRIDGE SCUPPERS OF ALL DEBRIS AND SEDIMENT AND FLUSH OUT THE SCUPPER AND DRAINAGE SYSTEM WITH WATER TO ASSURE THAT THE SYSTEM IS FREE FLOWING. ALL DEBRIS THAT IS CLEANED FROM THE BRIDGE SCUPPERS AS WELL AS THE FLUSH WATER SHALL BE COLLECTED AND PROPERLY DISPOSED OF SO AS NOT TO BE A HAZARD TO THE TRAVELING PUBLIC. WORK SHALL BE PAID FOR UNDER ITEM 719-01.08.

2. ENTIRE BRIDGE DECK SHALL BE CLEANED AFTER ALL DECK WORK IS COMPLETED. WORK SHALL BE PAID FOR UNDER ITEM NO. 719-01.02.

DECK PLAN

SEALED BY

SALVADOR VILCHES
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 0120564
STATE OF TENNESSEE
07/09/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIRS - DECK
ELM HILL PIKE OVER
INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-138

PIN NO.: 113872.01

DESIGN BY:	C. GIBBS	DATE: JANUARY/2023
DRAWN BY:	J. LIPSCOMB	DATE: JANUARY/2023
SUPERVISED BY:	S. VILCHES	DATE: APRIL/2025
CHECKED BY:	R. FRYE/A. TILTON	DATE: APRIL/2025

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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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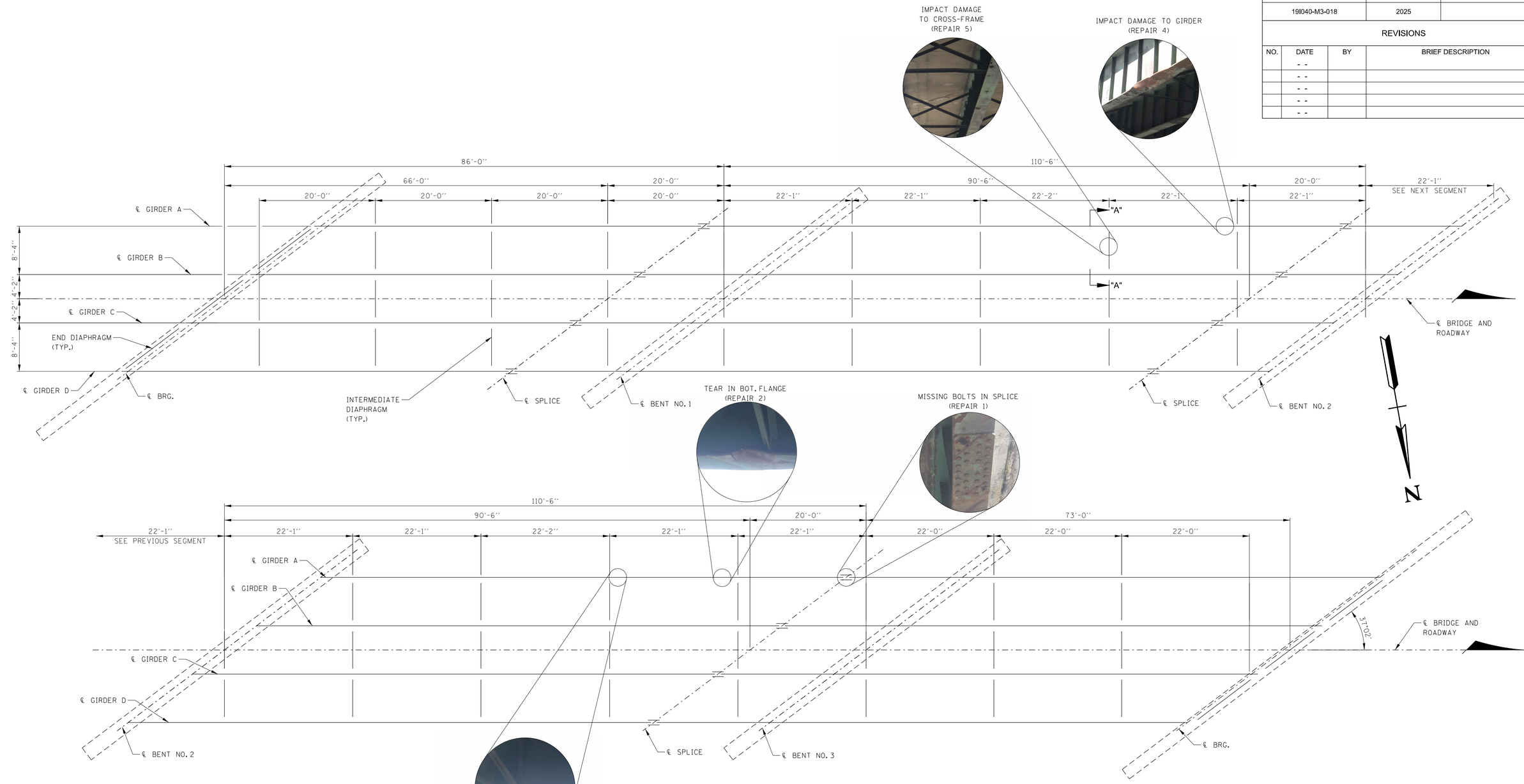

REPAIR LOCATION & FRAMING PLAN

NOTES:

1. FOR STEEL REPAIR DETAILS, SEE SUPERSTRUCTURE REPAIR DETAILS ON SHEET BR-XX-XX.
2. STRUCTURAL STEEL REPAIR TO BE PAID FOR UNDER ITEM 602-10.50, STRUCTURAL STEEL REPAIR.
3. FOR LANE CLOSURES, SEE ROADWAY SHEETS.

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SALVADOR VILCHES REGISTERED ENGINEER AGRICULTURE No. 120364 STATE OF TENNESSEE

07/09/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIRS - STEEL
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-139

PIN NO.: 113872.01
DESIGN BY: C. GIBBS DATE: JANUARY/2023
DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023
SUPERVISED BY: S. VILCHES DATE: APRIL/2025
CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

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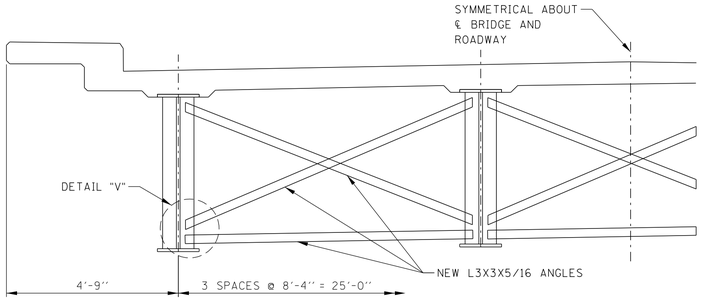
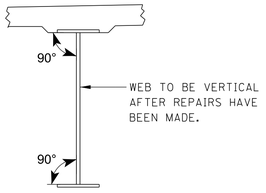


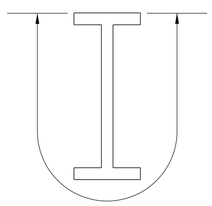
SECTION "A"-"A"

NOTE: REPLACE PORTIONS OF EXTERIOR DIAPHRAGM ON SOUTH SIDE OF BRIDGE. SEE FRAMING PLAN FOR LOCATION OF DAMAGED DIAPHRAGM.



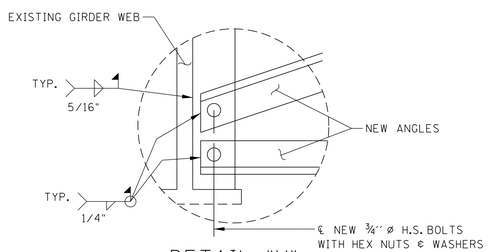
SECTION SHOWING DETAILS FOR FLANGE AND WEB ALIGNMENT

(APPLIES TO ALL GIRDERS BEING HEAT STRAIGHTENED)



LIMITS OF GIRDER TO BE PAINTED

(IN AREAS OF HEAT STRAIGHTENING OR REPAIRED AREAS)



DETAIL "V"

SHOWING NEW BOLTED AND WELDED CONNECTION @ D1

PIN NO.:	113872.01	
DESIGN BY:	C. GIBBS	DATE: JANUARY/2023
DRAWN BY:	J. LIPSCOMB	DATE: JANUARY/2023
SUPERVISED BY:	S. VILCHES	DATE: APRIL/2025
CHECKED BY:	R. FRYE/A. TILTON	DATE: APRIL/2025

7/3/2025 9:38:44 AM
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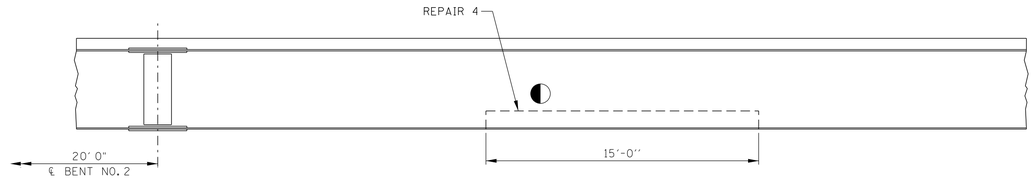
◑ DENOTES: TEAR IN BOTTOM FLANGE, TO BE WELDED AFTER HEAT STRAIGHTENING

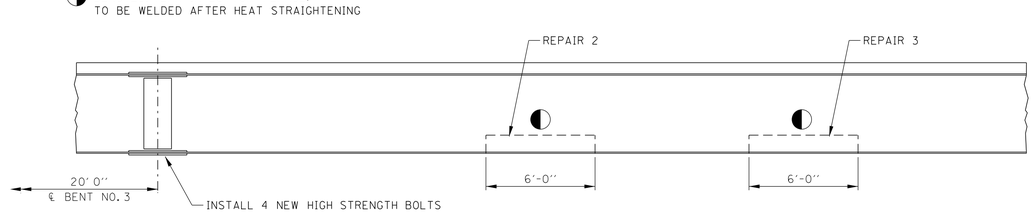


NOTE: EXISTING STIFFENERS TO BE HEAT STRAIGHTENED AND WELDED IN DAMAGED AREA.

GIRDER A - SPAN 2

(LOOKING NORTH)

◑ DENOTES: TEAR IN BOTTOM FLANGE, TO BE WELDED AFTER HEAT STRAIGHTENING



NOTE: EXISTING STIFFENERS TO BE HEAT STRAIGHTENED AND WELDED IN DAMAGED AREA.

GIRDER A - SPAN 3

(LOOKING NORTH)

SEALED BY

NOTES:

1) CARE SHALL BE TAKEN TO KEEP TRAFFIC OFF THE AFFECTED GIRDERS DURING REPAIR AS TO NOT SUBJECT THEM TO LIVE LOAD. PROVIDE REQUIRED TRAFFIC CONTROL AND PHASED CONSTRUCTION. FOR STEEL REPAIR WORK ABOVE I-40 EAST AND WEST, CONTRACTOR SHALL BE LIMITED TO A SINGLE LANE CLOSURE ON I-40 AND ELM HILL PIKE SHALL BE CLOSED TO TRAFFIC DURING PREAPPROVED WEEKEND NIGHTS (7 P.M. TO 6 A.M. FRIDAY-SUNDAY.) DURING ALL OTHER INSTANCES, I-40 SHALL REMAIN OPEN TO TRAFFIC AND ELM HILL PIKE SHALL MAINTAIN, AT MINIMUM, ONE LANE OF ALTERNATING TRAFFIC. SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL DETAILS. COST ASSOCIATED WITH THE MAINTENANCE OF TRAFFIC ON ELM HILL PIKE DURING SUPERSTRUCTURE REPAIRS SHALL BE INCLUDED IN ITEM 712-01.

2) FOR LOCATIONS OF REPAIRS 1, 2, 3, 4, AND 5, SEE SUPERSTRUCTURE REPAIR - STEEL, SHEET XX.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIR DETAILS
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-140

P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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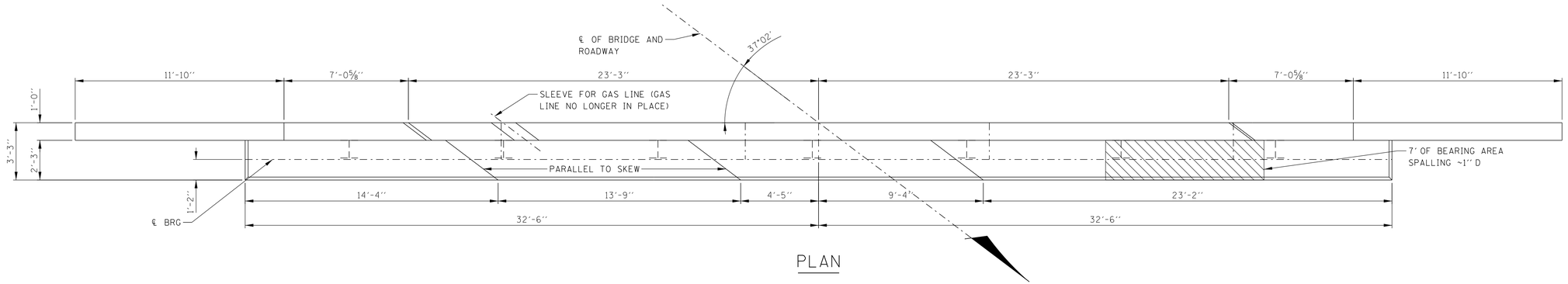
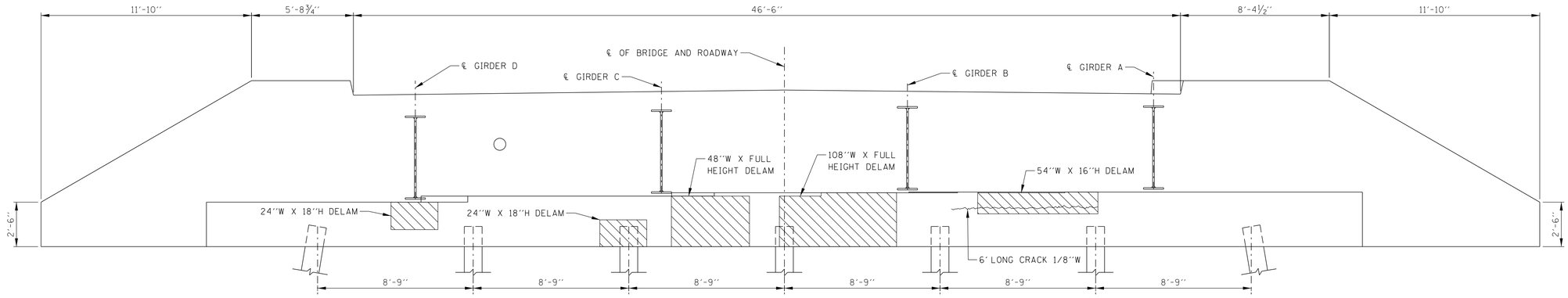
ESTIMATED QUANTITIES

SUBSTRUCTURE ELEMENT	ITEM NO. 604-10.05 OR ITEM NO. 604-10.54 APPROX. REPAIR AREAS (SF)	ITEM NO. 604-10.62 APPROX. REPAIR AREA (LF)
ABUTMENT 1	65	6



PLAN



ELEVATION

(LOOKING BACK ON SURVEY)

DENOTES: AREA TO BE REPAIRED UNDER ITEM NO. 604-10.05 AND/OR 604-10.54. FOR REPAIR DETAILS SHOWING AREAS OF EXISTING SPALLED OR DELAMINATED CONCRETE SURFACES TO BE REMOVED AND REPAIRED, SEE SHEET XX-XXX-XXX.

DENOTES: CRACK TO BE REPAIRED UNDER ITEM NO. 604-10.58 AND 604-10.62, SEE EPOXY INJECTION NOTES ON SHEET XX-XXX-XXX.

NOTE: REMOVE VEGETATION FOR A DISTANCE OF 10 FEET ALONG EACH SIDE OF ABUTMENT 1 AND CONCRETE SLOPE.

PIN NO.: 113872.01
DESIGN BY: C. GIBBS DATE: JANUARY/2023
DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023
SUPERVISED BY: S. VILCHES DATE: APRIL/2025
CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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SALVADOR VILCHES REGISTERED ENGINEER STATE OF TENNESSEE NO. 120564 09/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT 1 REPAIRS
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-141

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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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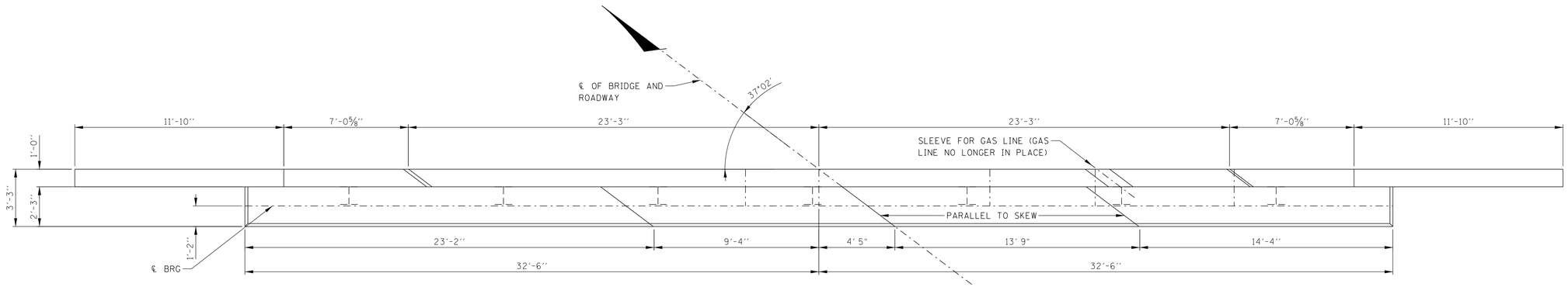
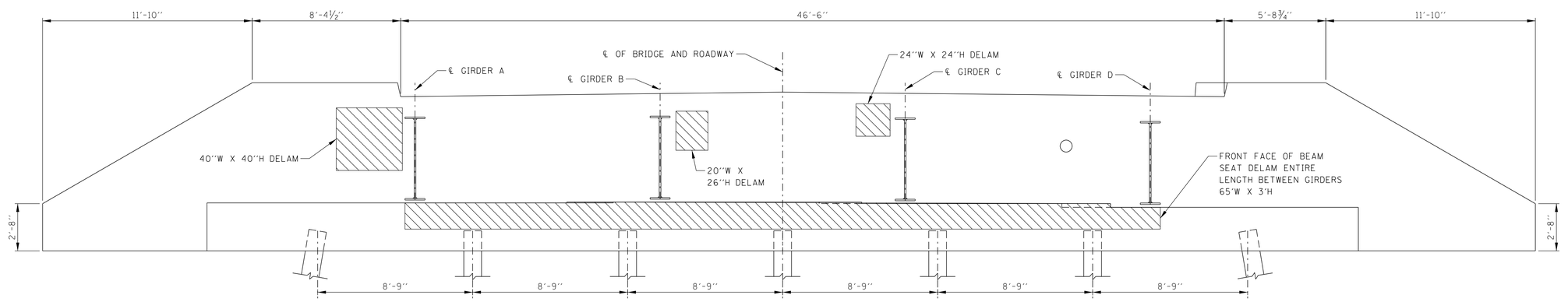
ESTIMATED QUANTITIES

SUBSTRUCTURE ELEMENT	ITEM NO. 604-10.05 OR ITEM NO. 604-10.54 APPROX. REPAIR AREAS (SF)	ITEM NO. 604-10.62 APPROX. REPAIR AREA (LF)
ABUTMENT 2	214	-



PLAN



ELEVATION

(LOOKING BACK ON SURVEY)

▨ DENOTES: AREA TO BE REPAIRED UNDER ITEM NO. 604-10.05 AND/OR 604-10.54. FOR REPAIR DETAILS SHOWING AREAS OF EXISTING SPALLED OR DELAMINATED CONCRETE SURFACES TO BE REMOVED AND REPAIRED, SEE SHEET XX-XXX-XXX.

NOTE: REMOVE VEGETATION FOR A DISTANCE OF 10 FEET ALONG EACH SIDE OF ABUTMENT 1 AND CONCRETE SLOPE.

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PIN NO.: 113872.01
DESIGN BY: C. GIBBS DATE: JANUARY/2023
DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023
SUPERVISED BY: S. VILCHES DATE: APRIL/2025
CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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SALVADOR VILCHES
REGISTERED ENGINEER
AGRICULTURE
No. 120564
STATE OF TENNESSEE
07/09/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT 2 REPAIRS
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-142

P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

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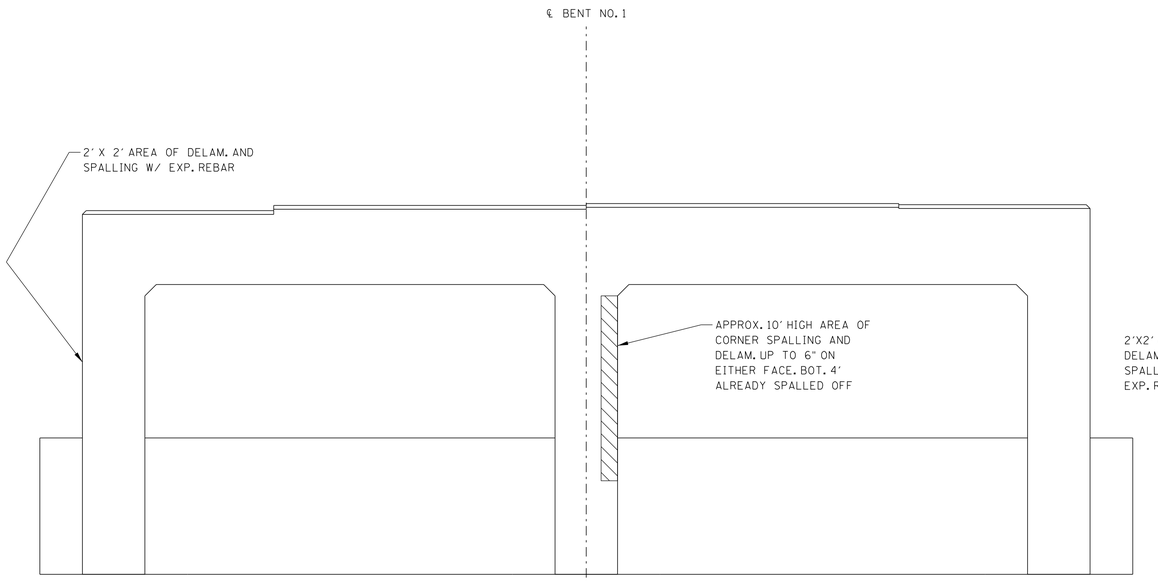
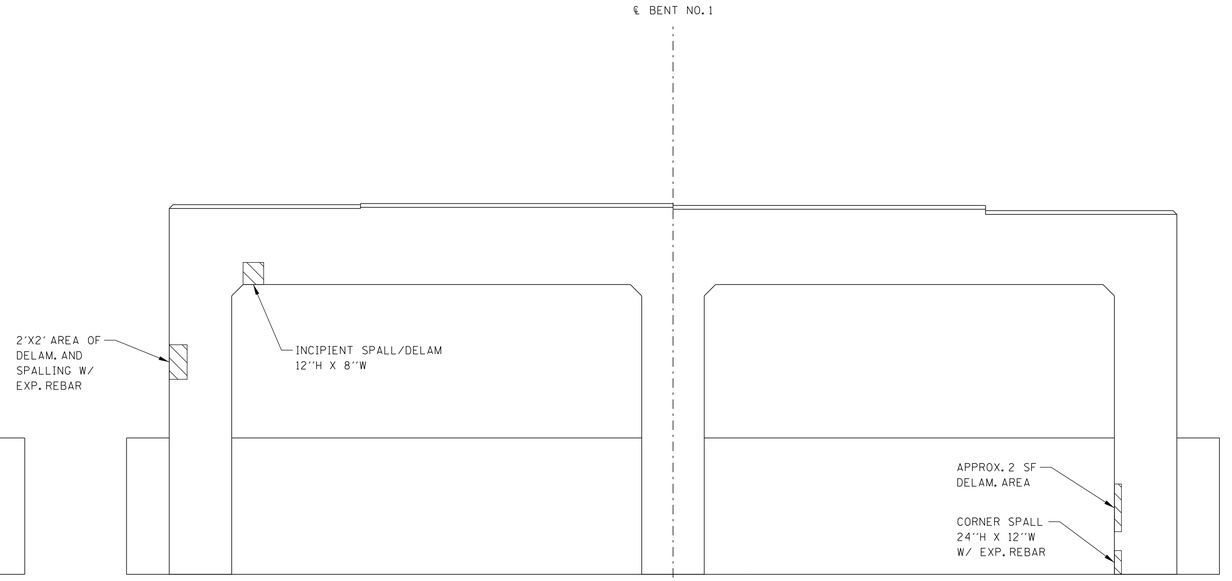
ESTIMATED QUANTITIES

SUBSTRUCTURE ELEMENT	ITEM NO. 604-10.05 OR ITEM NO. 604-10.54 APPROX. REPAIR AREAS (SF)	ITEM NO. 604-10.62 APPROX. REPAIR AREA (LF)
BENT 1	23	-



BENT 1

(LOOKING BACK ON SURVEY)



BENT 1

(LOOKING FORWARD ON SURVEY)

DENOTES: AREA TO BE REPAIRED UNDER ITEM NO. 604-10.05 AND/OR 604-10.54. FOR REPAIR DETAILS SHOWING AREAS OF EXISTING SPALLED OR DELAMINATED CONCRETE SURFACES TO BE REMOVED AND REPAIRED. SEE SHEET XX-XXX-XXX.

PIN NO.: 113872.01

DESIGN BY: C. GIBBS DATE: JANUARY/2023

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SUPERVISED BY: S. VILCHES DATE: APRIL/2025

CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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04/09/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT 1 REPAIRS
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-143

7/3/2025
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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

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NO.	DATE	BY	BRIEF DESCRIPTION
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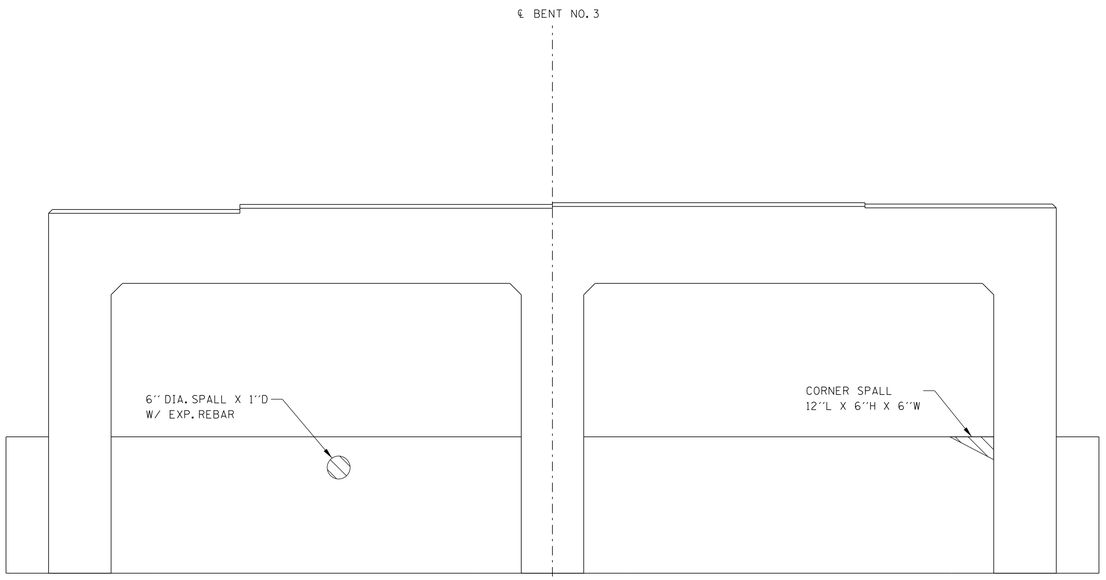
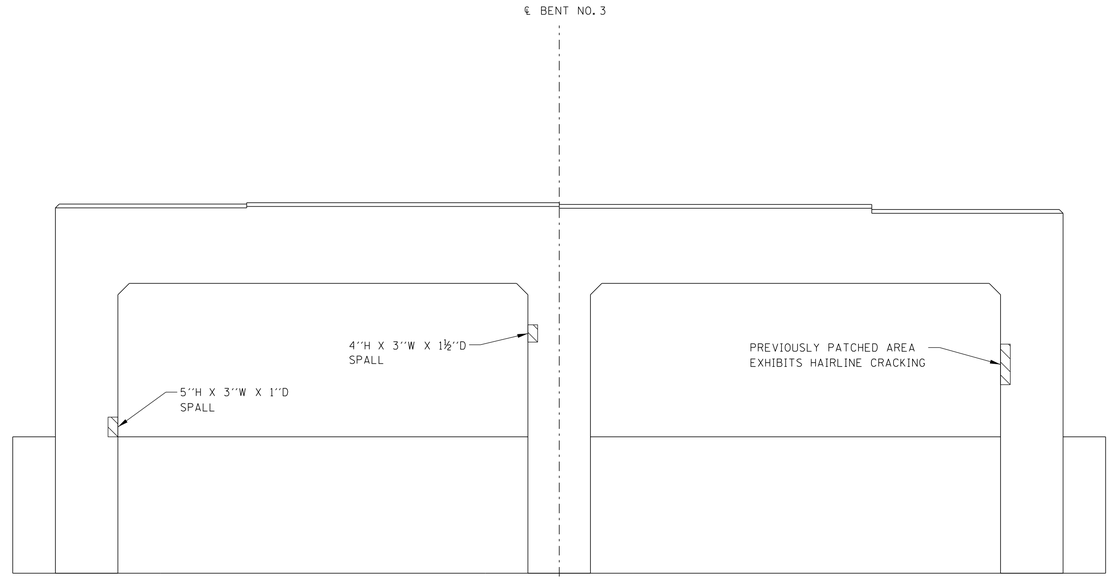
ESTIMATED QUANTITIES

SUBSTRUCTURE ELEMENT	ITEM NO. 604-10.05 OR ITEM NO. 604-10.54 APPROX. REPAIR AREAS (SF)	ITEM NO. 604-10.62 APPROX. REPAIR AREA (LF)
BENT 3	2	-



BENT 3

(LOOKING BACK ON SURVEY)



BENT 3

(LOOKING FORWARD ON SURVEY)

DENOTES: AREA TO BE REPAIRED UNDER ITEM NO. 604-10.05 AND/OR 604-10.54. FOR REPAIR DETAILS SHOWING AREAS OF EXISTING SPALLED OR DELAMINATED CONCRETE SURFACES TO BE REMOVED AND REPAIRED. SEE SHEET XX-XXX-XXX.

PIN NO.: 113872.01

DESIGN BY: C. GIBBS DATE: JANUARY/2023

DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023

SUPERVISED BY: S. VILCHES DATE: APRIL/2025

CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

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SALVADOR VILCHES
REGISTERED ENGINEER
AGRICULTURE
No. 120564
STATE OF TENNESSEE
07/09/25

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT 3 REPAIRS
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

BR-133-144

7/3/2025
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P.E. NO.: 19I040-M3-018

CONST. NO.:

PROJECT NO.	YEAR	SHEET NO.
19I040-M3-018	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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SPECIAL NOTES FOR EPOXY INJECTION

UNLESS OTHERWISE NOTED, THE INTENT OF THIS SPECIFICATION IS FOR DESIGNATED CRACKS TO BE INJECTED THEIR FULL LENGTH AND DEPTH.

DESIGNATED CRACKS SHALL BE INJECTED WITH AN APPROVED EPOXY RESIN ADHESIVE FILLING ALL VOIDS FOR THE CRACK DEPTH OR THICKNESS OF THE MEMBER. THE EPOXY RESIN ADHESIVE SHALL BE ON THE CURRENT QUALIFIED PRODUCTS LIST MAINTAINED BY THE DIVISION OF MATERIALS AND TEST. ALL CRACKS SHALL BE INJECTED USING AN ADHESIVE SUITABLE FOR THE FIELD CONDITIONS (CRACK WIDTH, TEMPERATURE, HUMIDITY, ETC.) RECOMMENDED BY THE ADHESIVE MANUFACTURER AS SHOWN ON MATERIAL DATA SHEETS. FOLLOWING INJECTION, ALL INJECTION PORTS AND CAPPING MATERIAL SHALL BE REMOVED FROM EXPOSED SURFACES, LEAVING THE SURFACE SMOOTH AND FLUSH WITH THE SURROUNDING CONCRETE SURFACES. THIS WORK ALSO INCLUDES MAKING ANY EXISTING INJECTION PORTS (FROM A PREVIOUS REPAIR PROJECT) SMOOTH AND FLUSH WITH THE SURROUNDING CONCRETE SURFACES.

THE CONTRACTOR SHALL HAVE SUFFICIENT EXPERIENCE AND TRAINING TO PERFORM THE EPOXY INJECTION IN ACCORDANCE WITH THESE PLANS. PRIOR TO PERFORMING ANY WORK, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A WRITTEN PROCEDURE FOR PERFORMING THE EPOXY INJECTION. THE PROCEDURE SHALL DESCRIBE IN DETAIL HOW THE WORK WILL BE PERFORMED. THE PROCEDURE SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING INFORMATION:

1) DESCRIPTION OF EQUIPMENT
   - A. THE INJECTION EQUIPMENT SHALL BE OF THE TYPE THAT MIXES ADHESIVE COMPONENTS AT THE INJECTION HEAD.
   - B. THE INJECTION EQUIPMENT SHALL BE CAPABLE OF DISCHARGING MIXED ADHESIVE AT ANY PRESSURE UP TO 300 PSI. THE INJECTION EQUIPMENT SHALL BE EQUIPPED WITH GAUGES WHICH CAN MEASURE THE INJECTION PRESSURE AND VOLUME
2) EQUIPMENT CALIBRATION PROCEDURES AND SCHEDULE.
3) MATERIALS TO BE USED (INCLUDING MANUFACTURER DATA SHEETS)
   - A. CAPPING MATERIAL
   - B. EPOXY ADHESIVE (TYPE TO BE APPROPRIATE FOR CRACK SIZES TO BE INJECTED)
4) PORT SPACING
   - A. PORT SPACING SHALL NOT BE LESS THAN THE THICKNESS OF THE CONCRETE IN THAT LOCATION.
5) INJECTION SEQUENCE
   - A. INJECTION SHALL PROCEED FROM LOWER END OF CRACK ALONG ADJACENT PARTS.
   - B. SKIPPING OF PORTS DURING INJECTION SHALL NOT BE ALLOWED.

THE CONTRACTOR SHALL HAVE THE MANUFACTURER$^{5}/_{32}$S INSTRUCTIONS FOR PROPORTIONING AND MIXING AVAILABLE AT THE JOB SITE AT ALL TIMES AND SHALL ENSURE THAT THE EQUIPMENT IS SUPPLYING THE MIXED ADHESIVE IN THE CORRECT PROPORTIONS.

TO ENSURE PROPER MIXING AND PROPORTIONING, SAMPLES SHALL BE TAKEN FROM THE INJECTOR HEAD. SAMPLES SHALL BE TAKEN AT THE START OF EACH WORKDAY AND EACH TIME THE ADHESIVE RESERVOIRS ARE REFILLED. THE SAMPLES SHALL BE IN A TEST CUP. THE SAMPLE SHALL BE MONITORED TO ENSURE THAT THE CURE TIME IS IN COMPLIANCE WITH THE MANUFACTURER$^{5}/_{32}$S DATA SHEETS. IF THE SAMPLES DO NOT CURE IN THE SPECIFIED TIME, THEN THE EQUIPMENT USED TO PRODUCE THE SAMPLE SHALL NOT BE USED UNTIL THE PROBLEM IS CORRECTED.

CORE SAMPLES SHALL BE TAKEN AS VERIFICATION OF THE QUALITY OF WORK. THE CONTRACTOR SHALL TAKE ONE (1) TWO (2) INCH DIAMETER (FULL DEPTH OF CONCRETE AT LOCATION CORED) CORE SAMPLE STARTING WITH THE FIRST REPAIR LOCATION, THEN EVERY TENTH REPAIR LOCATION. AFTERWARDS WORK SHALL NOT PROCEED UNTIL THE CORE SAMPLE IS TAKEN AND ACCEPTED. ALL CORE SAMPLES AND HOLES SHALL BE INDEXED FOR FUTURE REFERENCE. THE ENGINEER SHALL DESIGNATE ALL LOCATIONS TO BE CORED. IF ANY CORES SHOW UNACCEPTABLE RESULTS, ALL WORK SHALL BE STOPPED UNTIL THE CONTRACTOR SUBMITS A PROPOSAL FOR CORRECTING UNACCEPTABLE WORK.

THE INITIAL CORE WILL ALSO SERVE TO QUALIFY THE FOREMAN FOR THIS WORK. IF AT ANY TIME A NEW FOREMAN IS USED, HE SHALL BE QUALIFIED WITH A CORE SAMPLE.

THE CONTRACTOR, AT HIS EXPENSE, SHALL REPAIR ALL CORE HOLES WITH AN APPROVED CEMENTITIOUS PATCHING MATERIAL.

CORE SAMPLES SHALL BE VISUALLY INSPECTED TO CONFIRM THAT CRACKS ARE COMPLETELY FILLED WITH ADHESIVE. ANY CORE HAVING LESS THAN 95% OF THE CRACK FILLED WITH ADHESIVE SHALL BE CONSIDERED UNACCEPTABLE AND BE REJECTED.

CORE SAMPLES SHALL BE TESTED FOR BOND STRENGTH. SAMPLES MAY BE FRACTURED BY HAMMER BLOW TO CRACK AREA OR THROWN AT A HARD SURFACE. IF ADHESIVE FAILURE OCCURS BEFORE CONCRETE FAILURE, THE CORE SHALL BE CONSIDERED UNACCEPTABLE AND REJECTED.

PAYMENT FOR EPOXY INJECTION CRACK REPAIR SHALL BE MADE UNDER ITEM NUMBERS:

604-10.62, EPOXY INJECTION REPAIR (COMPLETE AND IN PLACE), L.F. AND
604-10.58, EPOXY INJECTION (INJECTION), GAL

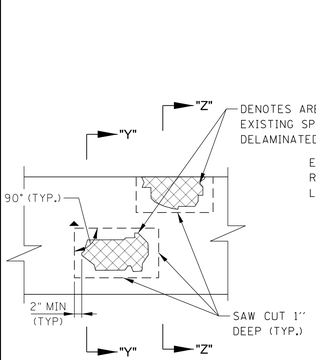
PRICE BID FOR ITEM NUMBER 604-10.62, EPOXY INJECTION REPAIR (COMPLETE AND IN PLACE), L.F., SHALL INCLUDE COST OF ALL LABOR AND MATERIALS (EXCEPT ADHESIVE) FOR GRINDING FOR SURFACE PREPARATION, CRACK PREPARATION, CAPPING, INJECTION OF ADHESIVE, ALL SAMPLING AND TESTING, REMOVAL OF CAPPING MATERIAL AND PORTS, AND OTHER INCIDENTALS. CRACKS SHALL BE MEASURED FOR PAYMENT ALONG THE LENGTH OF THE VISIBLE SURFACE CRACK.

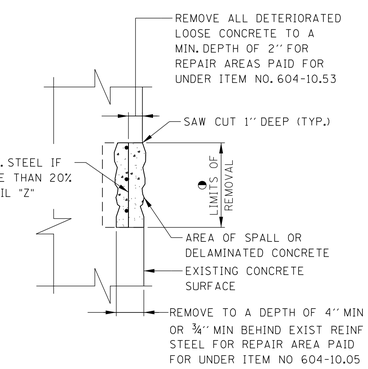
PRICE BID ALSO INCLUDES ALL COSTS ASSOCIATED WITH MAKING THE EXISTING INJECTION PORTS (FROM A PREVIOUS REPAIR PROJECT) SMOOTH AND FLUSH WITH THE SURROUNDING CONCRETE SURFACE.

PRICE BID FOR ITEM NUMBER 604-10.58, EPOXY INJECTION (INJECTION), GAL, SHALL INCLUDE COST FOR ADHESIVE MATERIAL INJECTED ONLY.

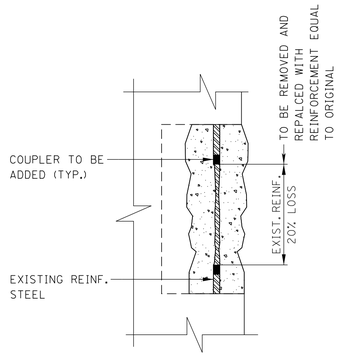
NO PAYMENT SHALL BE MADE FOR REWORK DEEMED NECESSARY BY FAILURE OF ADHESIVE SAMPLES OR CORE SAMPLES.

ALL WORK INCLUDING SAMPLING AND TESTING SHALL BE IN THE PRESENCE OF THE ENGINEER OR HIS REPRESENTATIVE OR CONTRACT INSPECTORS. ANY WORK DONE WITHOUT INSPECTORS PRESENT SHALL NOT BE PAID FOR. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WEEKELY SCHEDULES OF WORK TO BE PERFORMED. SCHEDULES SHALL BE SUBMITTED AT LEAST THREE (3) DAYS IN ADVANCE OF WORK TO BE DONE. THE ENGINEER SHALL BE NOTIFIED OF ANY CHANGE IN THE SCHEDULE A MINIMUM OF TWENTY-FOUR (24) HOURS IN ADVANCE OF CHANGE.

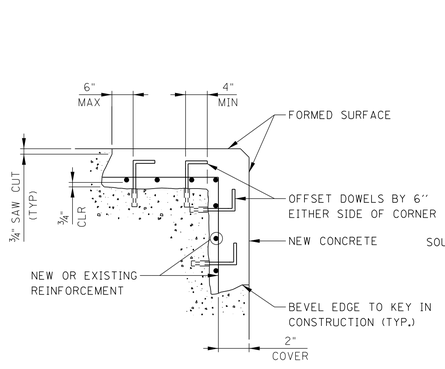




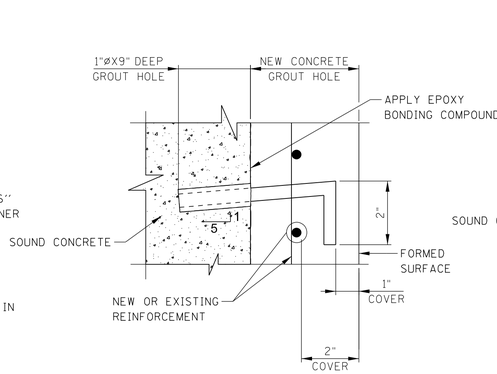
SECTION "Y"-"Y"



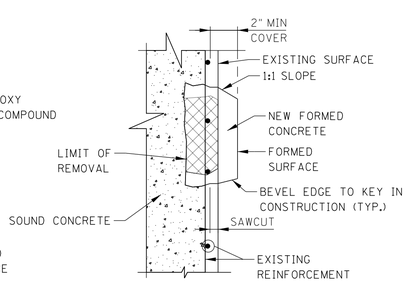
DETAIL "Z"



SECTION "Z"-"Z"



TYPICAL DOWEL DETAIL



BLISTER DETAIL

NOTES:

1. CONCRETE REPAIR DETAIL FOR AREAS WITH EXISTING REINFORCEMENT HAVING LESS THAN 2" OF COVER.
2. FOR CONCRETE REPAIR DETAIL ITEM 601-10.05 AREAS WITH EXISTING REINFORCEMENT HAVING LESS THAN 2" OF COVER.

DETAILS SHOWING AREAS OF EXISTING SPALLED OR DELAMINATED CONCRETE SURFACES TO BE REMOVED AND REPAIRED

◑ DENOTES: LIMITS AND LOCATION OF REPAIRS TO BE DESIGNATED BY THE ENGINEER.

▲ DENOTES: SAW CUT EXISTING CONCRETE SURFACES SO AS TO OBTAIN SQUARED CORNER.

EXTREME CARE SHALL BE TAKEN WHEN REMOVING THE EXISTING SPALLED OR DELAMINATED CONCRETE SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. ALL EXPOSED EXISTING REINFORCING STEEL SHALL RECEIVE A COMPLETE CLEANING TO REMOVE ALL RUST. ALL EXISTING REINFORCEMENT SHALL REMAIN IN PLACE. ALL WORK MUST MEET WITH THE FULL APPROVAL OF THE ENGINEER.

THE ENGINEER SHALL HAVE THE OPTION OF DESIGNATING A SPALLED OR DELAMINATED AREA TO BE REPAIRED UNDER ITEM NO. 604-10.05 OR 604-10.54. PATCHING MATERIAL FOR ITEM NO. 604-10.05 SHALL BE HIGH EARLY STRENGTH CONCRETE. PATCHING MATERIAL FOR ITEM NO. 604-10.54 SHALL BE A POLYMER MODIFIED CEMENTITIOUS STRUCTURAL PATCHING MATERIAL. SEE QUALIFIED PRODUCTS LIST (SECTION B, QPL 13.009).

PNEUMATICALLY PLACED CONCRETE IS NOT ALLOWED.

COST OF SAW CUTTING, REMOVING SPALLED OR DELAMINATED CONCRETE, CLEANING, PATCHING MATERIAL, LABOR, AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN TO BE INCLUDED ITEM NO. 604-10.54, CONCRETE REPAIRS, S.F. OR ITEM NO. 604-10.05, CONCRETE, S.F.

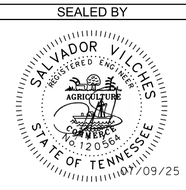
THE ENGINEER SHALL DESIGNATE ALL SPALLED OR DELAMINATED CONCRETE REPAIR AREAS IN THE FIELD. QUANTITIES GIVEN ARE APPROXIMATE. ITEM NO. 604-10.05 AND 604-10.54 MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.

POWER DRIVEN HAND TOOLS USED FOR REMOVAL OF UNSOUND CONCRETE ARE SUBJECT TO THE FOLLOWING RESTRICTIONS:

1. PNEUMATIC HAMMERS HEAVIER THAN THE 35 LB. CLASS SHALL NOT BE USED.
2. CHIPPING HAMMERS OF THE 15 LB. CLASS SHALL BE USED TO REMOVE CONCRETE FROM BEHIND REINFORCING STEEL.

PIN NO.: 113872.01
DESIGN BY: C. GIBBS DATE: JANUARY/2023
DRAWN BY: J. LIPSCOMB DATE: JANUARY/2023
SUPERVISED BY: S. VILCHES DATE: APRIL/2025
CHECKED BY: R. FRYE/A. TILTON DATE: APRIL/2025

SEALED BY



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS REPAIR DETAILS
ELM HILL PIKE OVER
INTERSTATE 40
BRIDGE NO. 19-04167-1.25
FED. BRIDGE NO. 19I00400133
DAVIDSON COUNTY
2025

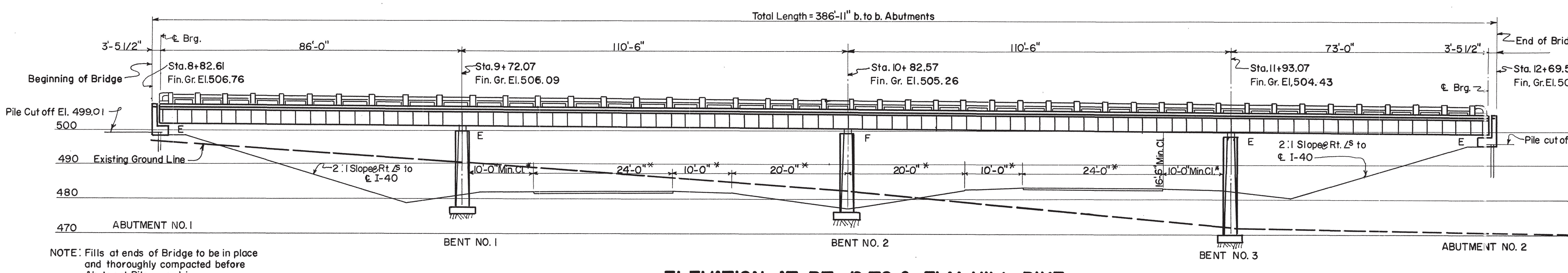
BR-133-145

7/3/2025 9:39:08 AM C:\USERS\PUBLIC\MBIPW3\D0107381\CONC_REPAIR_DETAILS.DGN

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19	42	335

I-40-5(11)213

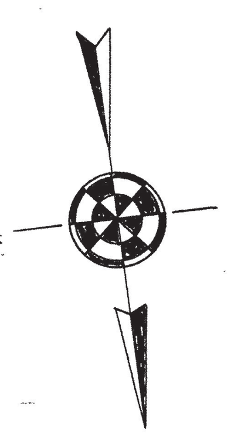
NOTE:
E = Expansion
F = Fixed

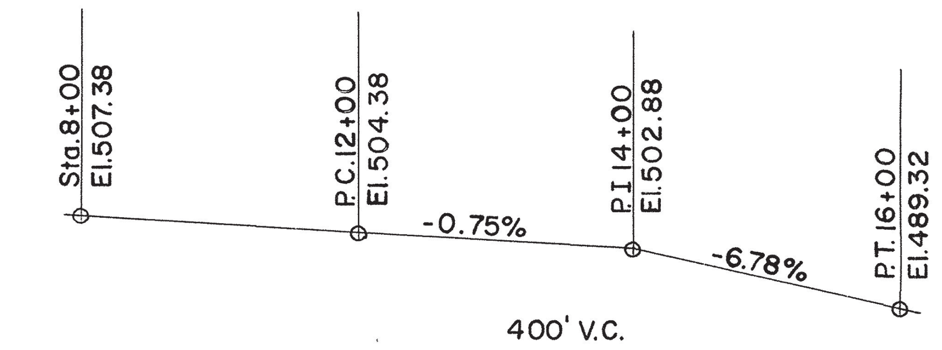


NOTE: Fills at ends of Bridge to be in place and thoroughly compacted before Abutment Piles are driven.

ELEVATION AT RT. ∠s TO ℄ ELM HILL PIKE

*NOTE: Measured@ Rt. ∠s to ℄ I-40
Scale: 1"=20'





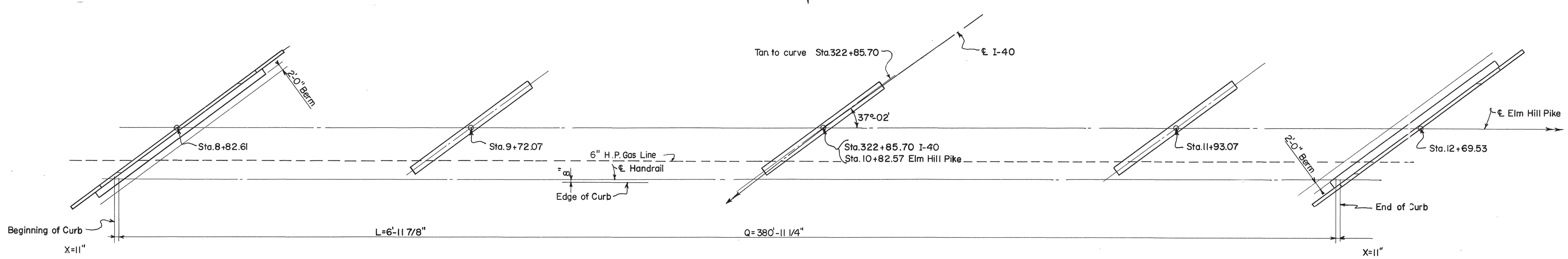
SKETCH SHOWING GRADES FOR ALTERNATE "WS"
NOTE: Elevations shown are based on Finished Grade.

GENERAL NOTES

SPECIFICATIONS: Standard Road & Bridge Specifications of the Tennessee Department of Highways
LOADING: H20-S16-44
CONCRETE: To be Class "A"
REINFORCING STEEL: To be intermediate or hard grade. See Specifications. Standard Hook details as recommended by C.R.S.I. shall apply.
STRUCTURAL STEEL: See notes on Dwg. No. K-7-124
RADIOGRAPHIC INSPECTION: See notes on Dwg. No. K-7-124
FORMS & FINISH: See **Specifications.**
HIGH TENSILE BOLTS: See **notes on Dwg. No. K-7-124.**
STUD WELDING: See Special Provisions.
PILES: To be 10" BP 42#
ROCK FOUNDATIONS: See Specifications.
WELDED STEEL STRUCTURES: See Special Provision regarding Welded Girder Structures.
Foundation Note:
When foundations for Bents have been uncovered, holes 6' deep shall be drilled into rock at points designated by the Engineer.
PAINT: Basic Lead Silico Chromate. See Special Provisions regarding Section 132 Steel Structures (Painting) No Paint shall be applied to the top surfaces of the top flanges or in the way of field welds and High Strength Bolts.

SPECIAL PILE NOTE

All piles to be driven to rock or a minimum bearing of 36 Tons.



PLAN

LIST OF DRAWINGS

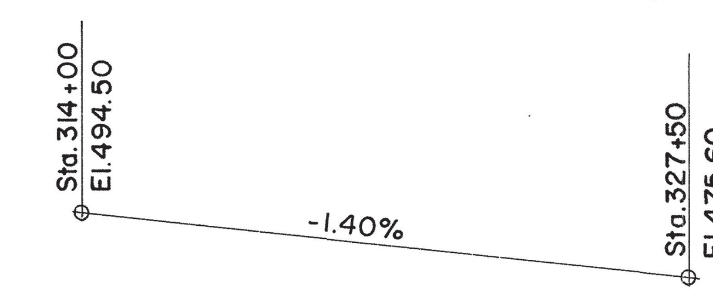
LIST OF DRAWINGS	DWG. NO.
HANDRAIL - See note this sheet	H-5-110
STRUCTURAL STEEL DETAILS	K-7-123 & K-7-124
ABUTMENTS NO. 1 & 2	K-7-125
BENTS NO. 1, 2 & 3	K-7-126
BEARING DEVICES & ROADWAY EXPANSION PLATES	K-7-123
PILE SPLICE DETAILS	G-10-42

Required - 44 - 3"⌀ x 1'-3" Transite Drains (or equal).

NOTE: The cost of all utilities including Pipe Sleeve, Hangers and labor necessary for a complete installation of the above utilities on this structure shall be borne by others and shall not be paid for as part of this contract. The contractor for this project shall co-operate with the utility company in the installation of the utilities, but no additional compensation will be allowed the contractor due to expense incurred by complying with this co-operative requirement.

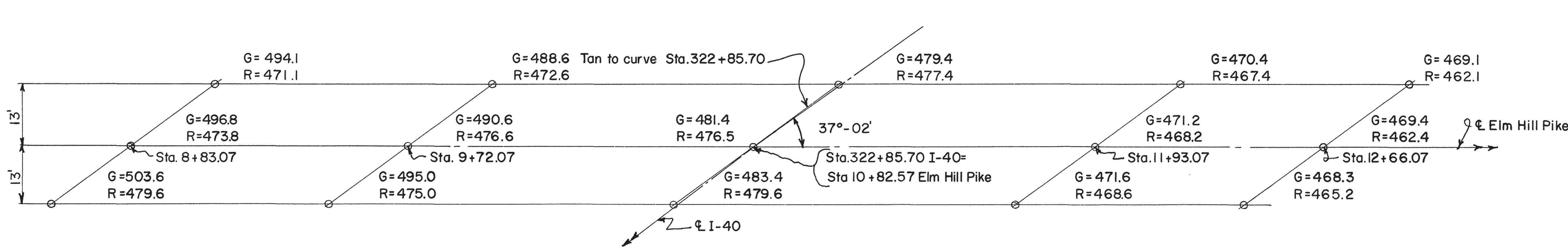
HANDRAIL NOTE

Build Handrail according to Standard Drawing H-5-110 with L, Q & X as shown on Plan this sheet. Post spacing same for both sides of Bridge.



SKETCH SHOWING I-40 GRADE
NOTE: Elevations shown are based on Finished Grade.

TRAFFIC DATA: ADT(1975)=1067



SOUNDING SKETCH

G = Ground Elevation
R = Rock Elevation

ESTIMATED QUANTITIES

ITEM	Excavation* Cu. Yds. Dry	Excavation* Cu. Yds. Rock	Concrete Class "A" Cu. Yds.	Steel-Pounds Reinforcing	Steel-Pounds Structural	Concrete Handrail Lineal Feet	10" BP 42# Steel Piles Lineal Feet	Rock Drilling Lineal Feet
Superstructure			293.4	93,510 — 93,299	Lump Sum**			
Abutment No.1			39.6	3,940				
Abutment No.2			41.0	3,940				
Bent No.1	15	37	43.7	8,268 — 8364				
Bent No.2		14	41.4	7,852 — 7958				
Bent No.3	61	18	46.7	8,757 — 8853				
TOTALS	76	69	505.8	126,267 — 126,354	Lump Sum	762	413	36

*Excavation based on lower road profile.
** Lump Sum - Total weight Structural Steel 316,365 Lbs. Includes Bearing Devices, Roadway Expansion Devices, Shear Connectors and 4,420 Lbs. of Weld Metal.
NOTE: Cost of Transite Drains (or equal) to be included in the unit price bid for Class A Concrete.

28'-0" ROADWAY WITH SAFETY CURBS
ALTERNATE "WS"

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

LAYOUT OF BRIDGE
ELM HILL PIKE OVER I-40
STA. 322+85.70
DAVIDSON-WILSON COUNTIES
1961

DESIGNED BY	W.P. Greer	DATE	April, 1961
DRAWN BY	Jack B. Crockett	DATE	April, 1961
TRACED BY	Jack B. Crockett	DATE	May 5, 1961
CHECKED BY	ARB	DATE	

CORRECT Fred Greve — BRIDGE ENGINEER
APPROVED W.D. Lang — STATE HIGHWAY ENGINEER

K-7-122

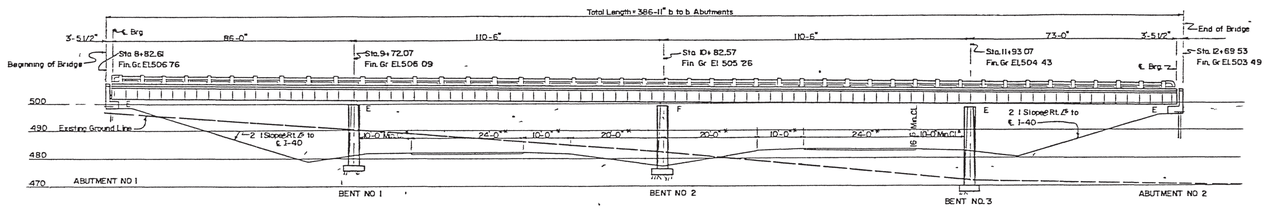
Δ Revised 8-15-62 (Quantities)
Rev. 10-6-61 Revised 8/16/61 8/25/61 (Paint Note added)

PROJECT NO	YEAR	SHEET NO

REVISIONS

NO	DATE	BY	BRIEF DESCRIPTION

NOTE:
E = Expansion
F = Fixed

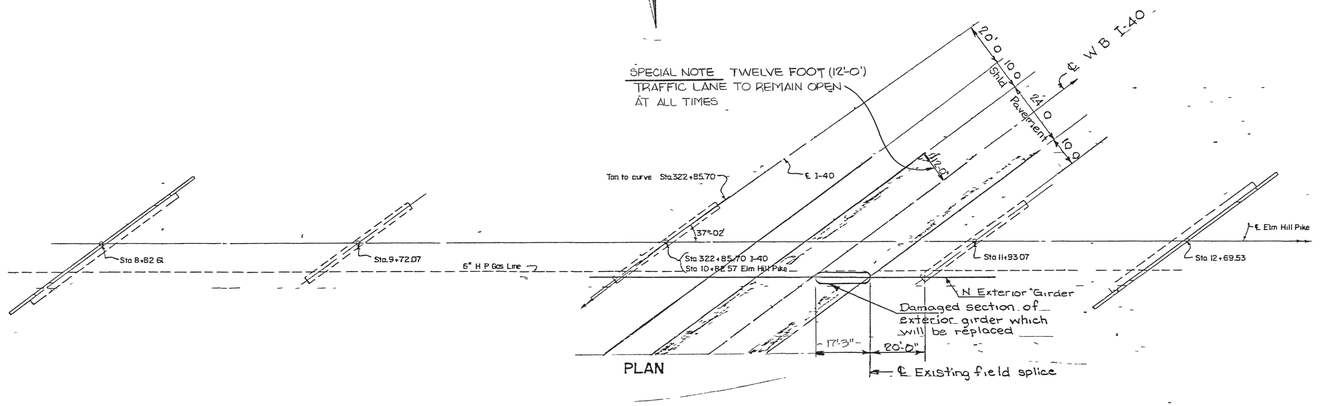


ELEVATION AT RT ℄ TO ℄ ELM HILL PIKE

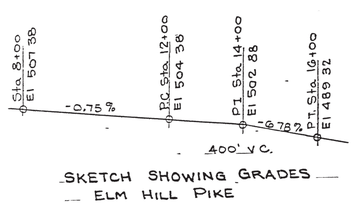
*NOTE Measured Rt ℄ to ℄ I-40

Bridge No. 19-0Z318-0568

SPECIAL NOTE: TWELVE FOOT (12'-0") TRAFFIC LANE TO REMAIN OPEN AT ALL TIMES



PLAN



SKETCH SHOWING GRADES
ELM HILL PIKE

ESTIMATED QUANTITIES
FOR BRIDGE NO.

ITEM NO.	ITEM	QUANTITY	UNIT
602-10.01	STRUCTURAL STEEL REPAIRS	1	LUMP SUM ①
712-01	TRAFFIC CONTROL	1	LUMP SUM
717-01	MOBILIZATION	1	LUMP SUM

① See General Notes on Dwg K-7-122 for description of requirements covered under Item No. 602-10.01.

SPECIAL NOTE:

The Contractor will be required to support the bridge when repairing the damaged section of girder. The inside lane of Westbound I-40 shall remain open at all times The outside lane of Westbound I-40 shall only be closed from 10.00 A.M. on a Friday until 6:00 A.M. the following Monday.

The Contractor shall be responsible for maintaining the traffic flow on Elm Hill Pike during the complete repair phase

GENERAL NOTES

SPECIFICATIONS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION <MARCH 1981 EDITION>

WELDING SEE SPECIAL PROVISION NO 602 AND NOTES ON DWG. NO K-7-122 B

STRUCTURAL STEEL SHALL CONFORM TO AASHTO M-183<ASTM A36>
BOLTS ASTM A325 FOR SPLICE

LIST OF DRAWINGS

	DWG NO	LAST REV. DATE
STRUCTURAL STEEL REPAIRS	K-7-122A	
STRUCTURAL STEEL REPAIRS	K-7-122 B	

REFERENCE DRAWINGS K-7-122, 123 & 124

LIST OF SPECIAL PROVISIONS

SPECIAL PROVISION NO 602 REGARDING SECTION 602, STEEL STRUCTURES — SEPT 8, 1981

SCOPE OF WORK <GENERAL>

1) COLLISION DAMAGE TO NORTH EXTERIOR GIRDER IN SPAN NO 3 TO BE REPAIRED BY FIELD STRAIGHTENING PORTIONS OF THE DAMAGED GIRDER AND ALSO BY REMOVING A 17'3" SECTION OF THE BOTTOM FLANGE AND WEB, AND REPLACING SAME WITH NEW GIRDER
2) ONE INTERMEDIATE DIAPHRAGM TO BE REMOVED AND REPLACED

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

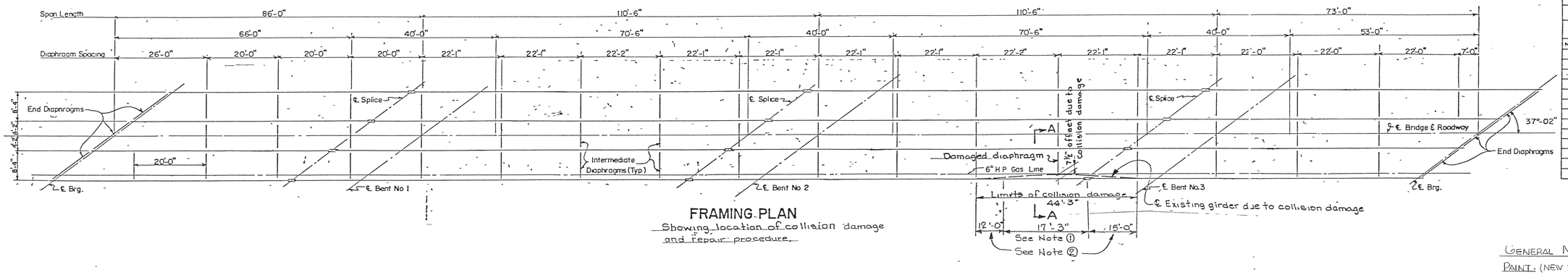
STRUCTURAL STEEL REPAIRS
ELM HILL PIKE OVER I-40
BRIDGE No. 19-0Z318-0568
DAVIDSON COUNTY
1982

DESIGNED BY R B GENTRY DATE MAY 11, '82
DRAWN BY DENISE WHITE DATE MAY '82
SUPERVISED BY R B GENTRY & W McINTURFF DATE MAY '82
CHECKED BY R B GENTRY DATE MAY '82

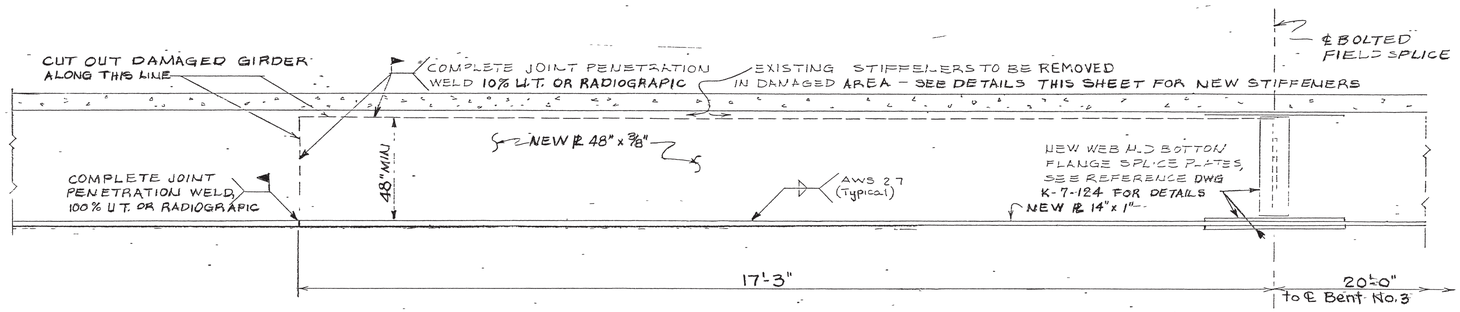
CORRECT Gilton L Sweall
ENGINEER OF STRUCTURES

APPROVED Lewis Lyons
DIRECTOR OF HIGHWAYS

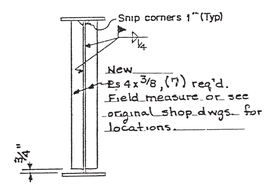
K-7-122 A



FRAMING PLAN
Showing location of collision damage and repair procedure.



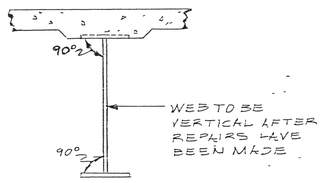
ELEVATION SHOWING NORTH - EXTERIOR GIRDER REPAIR



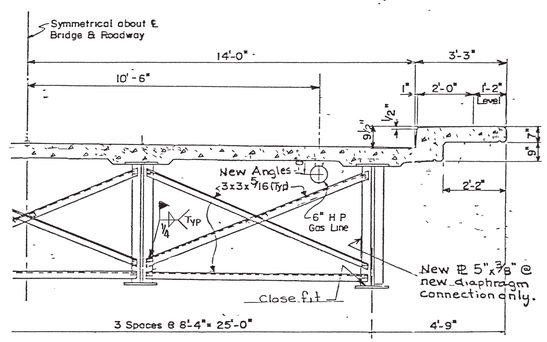
TYPICAL INTERMEDIATE STIFFENERS

For replacement section of girder.

Note: See Section A-A, this sheet, for details of new diaphragm connection plate.



SECTION SHOWING DETAILS FOR FLANGE & WEB ALIGNMENT
(APPLIES TO ALL GIRDERS BEING STRAIGHTENED OR REPAIRED)



SECTION A-A
Note. Replace one exterior diaphragm on north side of bridge See Framing Plan above for location of damaged diaphragm.

PROJECT NO	YEAR	SHEET NO.

REVISIONS

NO	DATE	BY	BRIEF DESCRIPTION

GENERAL NOTES. —

PAINT. (NEW WORK ONLY) SYSTEM A SILICO CHROMATE TOP COAT TO MATCH EXISTING STRUCTURE SEE STANDARD SPECIFICATIONS SECTION 603 AND 910

NOTE ①. 17'-3" OF THE NORTH EXTERIOR GIRDER TO BE REMOVED AND REPAIRED AS DETAILED IN THE ELEVATION VIEW, THIS SHEET. NEW ⅞" DIAM A325 HIGH STRENGTH BOLTS AND NEW WEB AND BOTTOM FLANGE SPLICE PLATES SHALL BE USED AT THE FIELD SPLICE TEMPORARY FALSEWORK MUST BE USED WHILE REPAIRS ARE BEING MADE

NOTE ②. A 12'-0" AND 15'-0" SECTION OF THE NORTH EXTERIOR GIRDER ARE TO BE FIELD STRAIGHTENED WITHIN THE LIMITS SHOWN ON THE FRAMING PLAN THIS SHEET

NOTE. THE LUMP SUM BID FOR STRUCTURAL STEEL REPAIRS, ITEM NO 602-10.01 SHALL BE FULL COMPENSATION FOR ALL WELDING, MATERIALS, TOOLS, SCAFFOLDING, SUPPORTS, LABOR, INCIDENTALS AND THE WORKMANSHIP NECESSARY TO COMPLETE THE REPAIRS SHOWN ON THIS SHEET

NOTE TO CONTRACTOR. ORIGINAL SHOP PLANS ARE AVAILABLE FOR INSPECTION AT THE DIVISION OF STRUCTURES THE CONTRACTOR IS RESPONSIBLE FOR FIELD VARIFICATION OF ALL DIMENSIONS AND MEASUREMENTS NECESSARY TO FABRICATE THE NEW SECTION OF GIRDER AND DIAPHRAGM SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEERING DIRECTOR, STRUCTURES FOR REVIEW BEFORE FABRICATION BEGINS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

STRUCTURAL STEEL REPAIRS
ELM HILL PIKE OVER I-40
BRIDGE No. 19-0Z318-05.68
DAVIDSON COUNTY
1982

CORRECT Clellon L Loveall
ENGINEER OF STRUCTURES

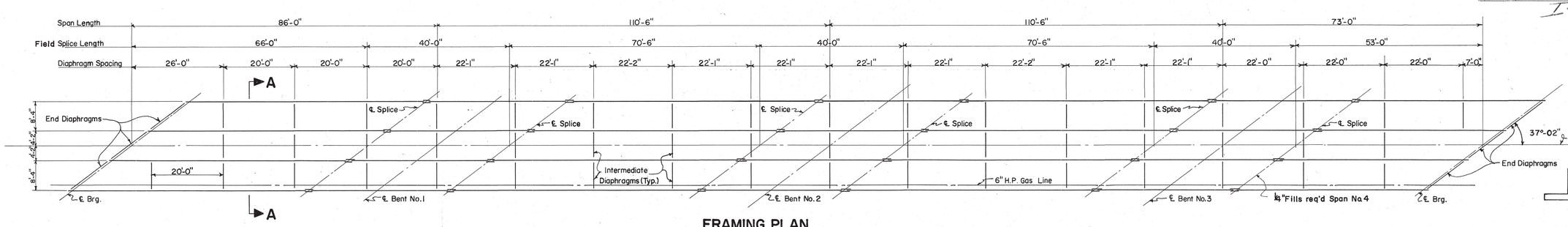
APPROVED Lewis Evans
DIRECTOR OF HIGHWAYS

K-7-122 B

DESIGNED BY R B. GENTRY DATE MAY 11, 1982
DRAWN BY ____ DATE ____
SUPERVISED BY ____ DATE ____
CHECKED BY ____ DATE ____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19	92	385

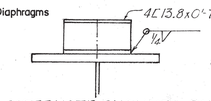
I-40-5(11)213



FRAMING PLAN

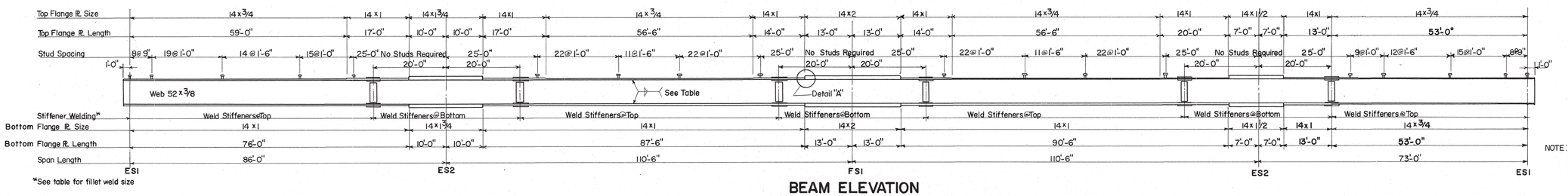
For Section A-A See Dwg. No. K-7-124

NOTE: Intermediate stiffners to be 4"x3/8" on each side of Web ℞. Stiffners at ℄ Interior Bearings to be 6 1/2"x 1" each side of Web ℞. Stiffners at End Bearings to be 6"x1/2" each side of Web ℞. Max. 4'-4" spacing for all intermediate stiffners. At all Interior bearing points top of stiffner to fit, bottom welded to flange. (See Dwg. No. K-7-124 for fillet weld size.) At both end bearing mill bottom of Bearing Stiffner to bear, weld top to flange. (See Dwg. No. K-7-124 for fillet weld size.)



ALTERNATE CHANNEL SHEAR CONNECTOR DETAIL

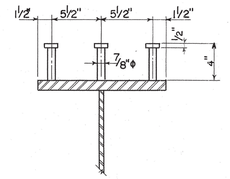
NOTE: Spacing same as for studs.



*See table for fillet weld size

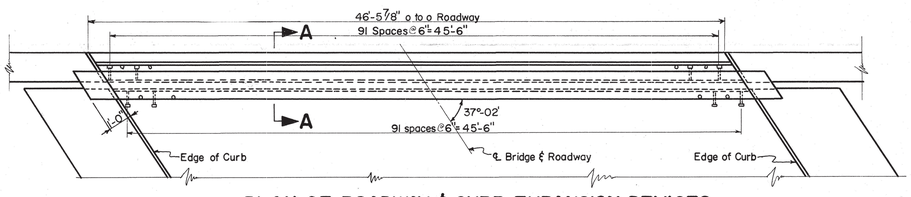
BEAM ELEVATION

Same For All Beams



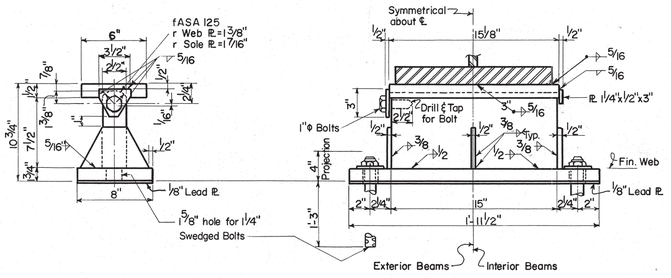
STUD DETAIL

NOTE: Studs shall be placed in sets of 3 and spaced as shown this sheet. Studs shall be Solid or Granular Fluxed and automatically end welded to the beam. See Special Provision regarding Stud welding.



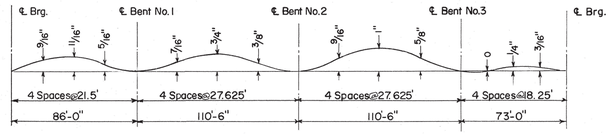
PLAN OF ROADWAY & CURB EXPANSION DEVICES

Plan above shows one set - two sets required



FIXED BEARING FSI

4 Required

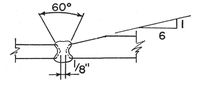


DEAD LOAD CORRECTION CURVE

Same For All Beams

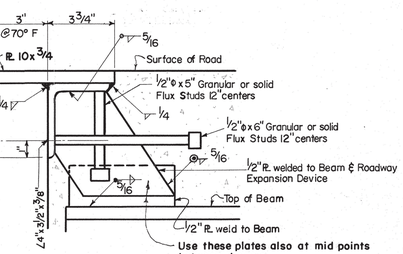
DETAIL AT SHOP WEB SPLICE

NOTE: Use Detail also for equal thickness flange plates



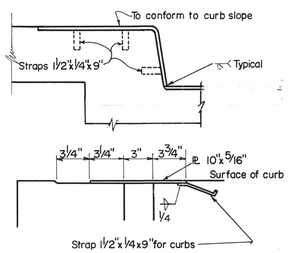
DETAIL A

FLANGE TO	WEB WELDS
Flange Thickness	Fillet Weld Size
Over 1/2 to 3/4	1/4
Over 3/4 to 1 1/2	5/16
Over 1 1/2 to 2 1/4	3/8

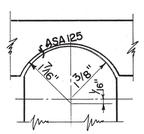


SECTION A-A AT ABUTMENT NO. 1*

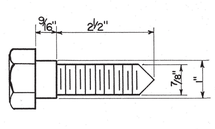
NOTE: Fabricate to fit slope of Roadway and skew of Bridge as required.
*Similar at Abutment No. 2.



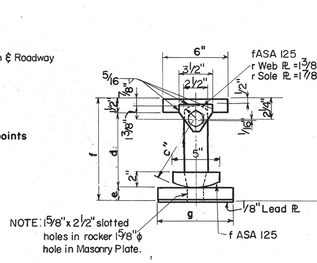
DETAIL OF CURB EXPANSION DEVICES

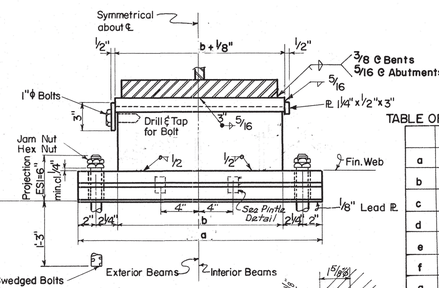


TOP BEARING DETAIL



BOLT DETAIL





EXPANSION BEARING ESI & ES2

8 Required ESI
8 Required ES2

TABLE OF DIMENSIONS

	ES1	ES2
a	1'-8 1/2"	1'-11 1/2"
b	12"	15"
c	5 1/2"	7"
d	6 1/4"	7 3/4"
e	1 1/2"	1 1/2"
f	9 1/4"	10 3/4"
g	7"	8"

ALTERNATE "WS"

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURAL STEEL DETAILS
ELM HILL PIKE OVER INTERSTATE 40
STATION 322+85.70
DAVIDSON-WILSON COUNTIES
1961

DESIGNED BY Willie P Greer, Jr. DATE April, 1961
DRAWN BY Willie P Greer DATE April, 1961
TRACED BY Jack B. Crockett DATE May 11, 1961
CHECKED BY WPG DATE

CORRECT Fred Greene BRIDGE ENGINEER
APPROVED [signature] STATE HIGHWAY ENGINEER

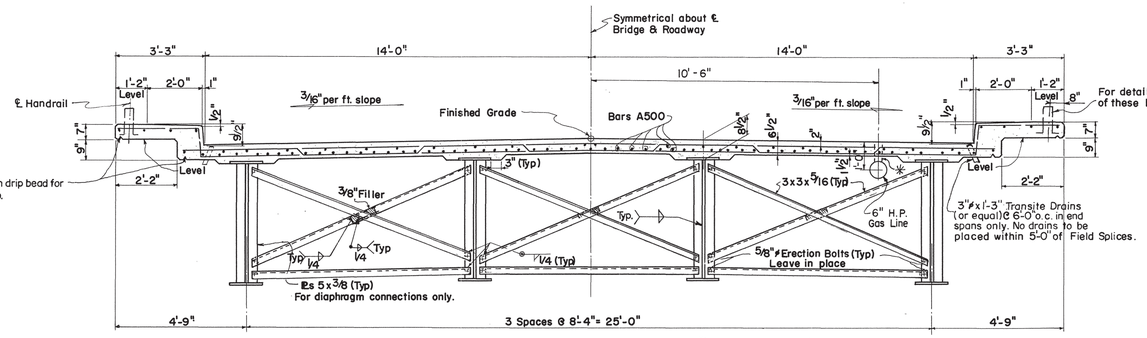
K-7-123

MICROFILMED

Revised 1-22-62 Added Pintle Detail & Channel Alternate.
Rev. 10-6-61
Revised 7/18/61

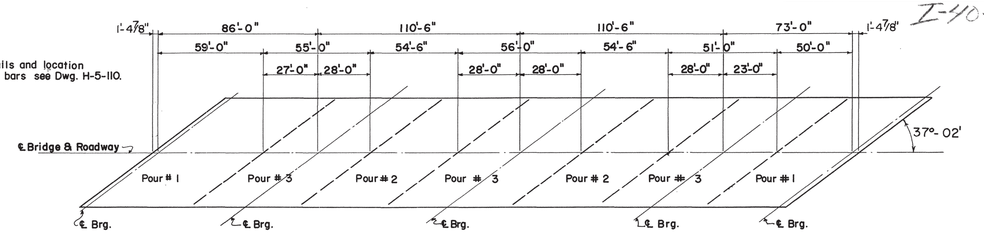
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19	93	385

I-40-5(11)213



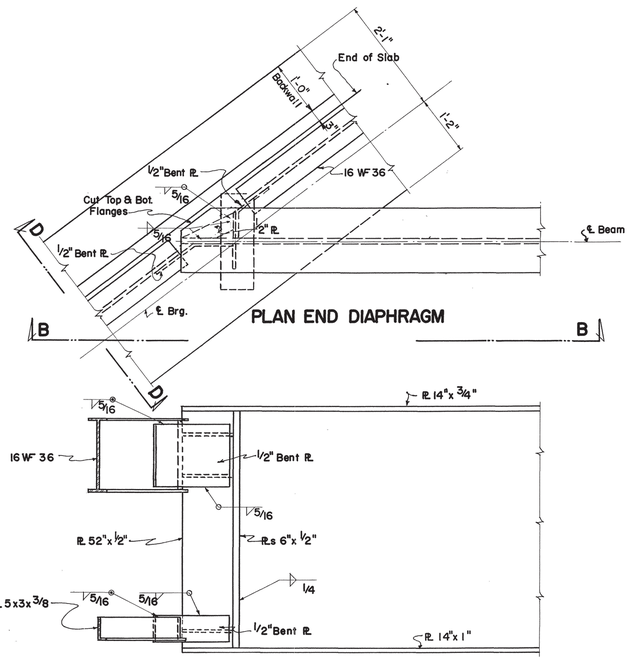
SECTION A-A
Looking Forward on Survey

✳ NOTE: Place C. B. Universal Concrete Inserts, for 5/8" Bolts, in Deck on 15'-0" centers.

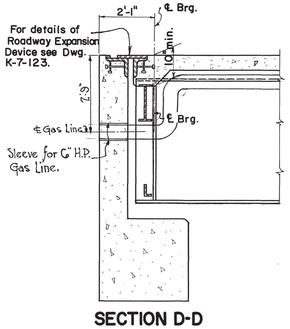


POURING DIAGRAM

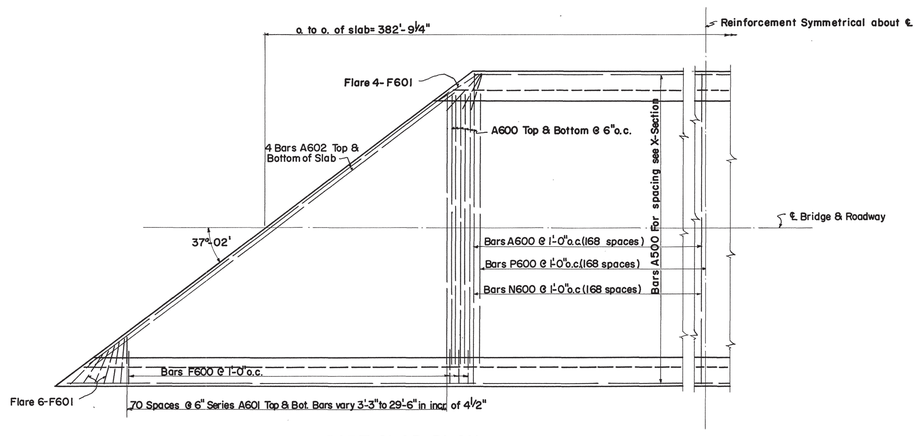
NOTE: Pours are to be made in numerical sequence. Pours with same number designation may be made simultaneously.



SECTION B-B



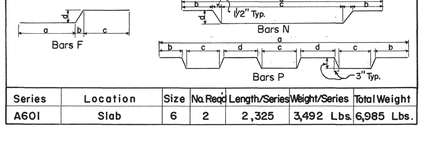
SECTION D-D



PART SLAB PLAN

BILL OF STEEL

Bar	Location	Size	No. Req'd.	Bending Dimensions A	B	C	D	Length
A500	Slab	5	850					40'-0"
A600	Slab	6	361					29'-6"
A602	Slab	6	8					49'-0"
F600	Slab & Curbs	6	76	2'-0"	1 1/2"	2'-9"	1'-1"	5'-10"
F601	Slab & Curbs	6	20	3'-4"	1 1/2"	4'-6"	1'-1"	8'-11"
N600	Slab & Curbs	6	338	34'-0"	2'-9"	28'-3"	1'-1"	35'-11"
P600	Slab	6	337	29'-6"	4'-1"	4'-2"	3'-8"	30'-2"



Series	Location	Size	No. Req'd.	Length/Series	Weight/Series	Total Weight
A601	Slab	6	2	2,325	3,492 Lbs.	6,985 Lbs.

NOTES

STRUCTURAL STEEL: For Web Plates, Flange Plates, Stiffeners, Bent Plates, Bearing Devices and Diaphragms shall conform to A.S.T.M. A373. Structural Steel for Roadway Expansion Devices shall conform to A.S.T.M. A7.

FIELD CONNECTIONS shall be 7/8" ϕ High Tensile Strength Bolts unless otherwise shown. See AASHO Specifications Article 2.10.20 with amendments thereto. *All high strength bolted connections are the friction type.*

PAINT: Basic Lead Silico Chromate. See Special Provisions regarding Section 132 Steel Structures (Painting). No Paint shall be applied to the top surfaces of the top flanges or in way of field welds and High Strength Bolts.

WELDING & RADIOGRAPHIC INSPECTION: See Special Provisions regarding Welded Girder Structures. The cost of Radiographic Inspection is to be included in the price bid for Structural Steel.

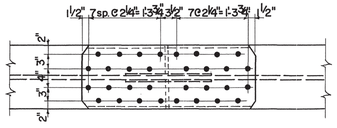
BEARINGS: See Drawing No. K-7-123.

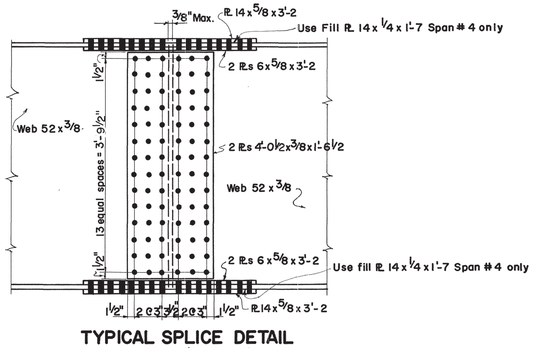
ROADWAY EXPANSION DEVICES: See Drawing No. K-7-123.

CAMBER: Girders shall be cambered to compensate for Dead Load Deflection and Vertical Curve. See Drawing No. K-7-123 for Dead Load Correction Curve.

FOR GENERAL NOTES See Drawing No. K-7-122.

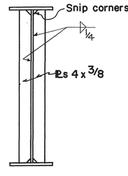
FOR OTHER STRUCTURAL DETAILS See Drawing No. K-7-123.





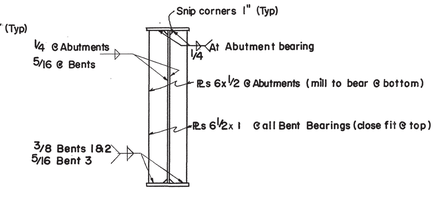
TYPICAL SPLICE DETAIL

NOTE: Splices to be sub-punched 1/4" smaller and reamed to size and match marked while assembled in the shop.



TYPICAL INTERMEDIATE STIFFENERS

NOTE: See Dwg. K-7-123 for Stiffener Welding. A close fit to flange is required at end not welded.



STIFFENERS AT ℄ OF BEARINGS

ALTERNATE "WS"

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURAL STEEL DETAILS ELM HILL PIKE OVER I-40 STA. 322+85.70 DAVIDSON-WILSON COUNTIES 1961

DESIGNED BY W. P. Greer DATE
DRAWN BY N. B. Crocker II DATE
TRACED BY J. W. Sutherland & C. D. Mullins DATE 5/18/61
CHECKED BY DATE

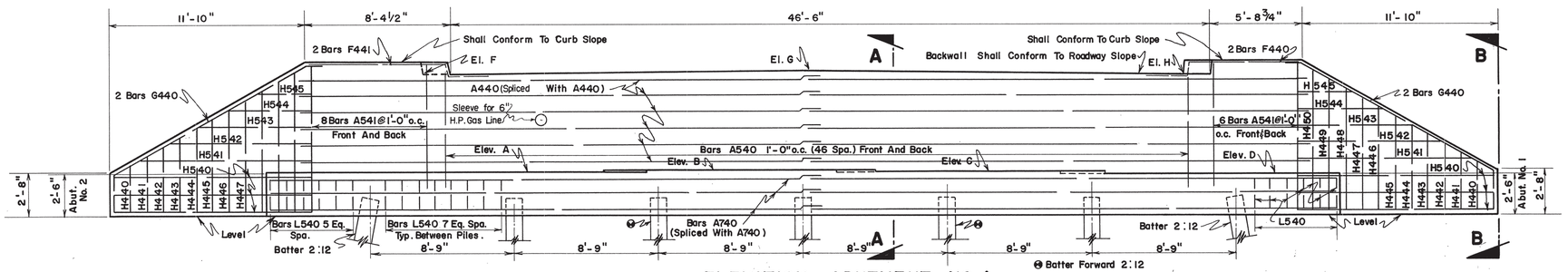
CORRECT Fred Groves
BRIDGE ENGINEER
APPROVED
STATE HIGHWAY ENGINEER

K-7-124

Revised 8-15-62
Revised 12-26-62 Noted friction nuts.
Revised 10-6-61
Revised 11-8-61

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19	94	385

I-40-5(11)213

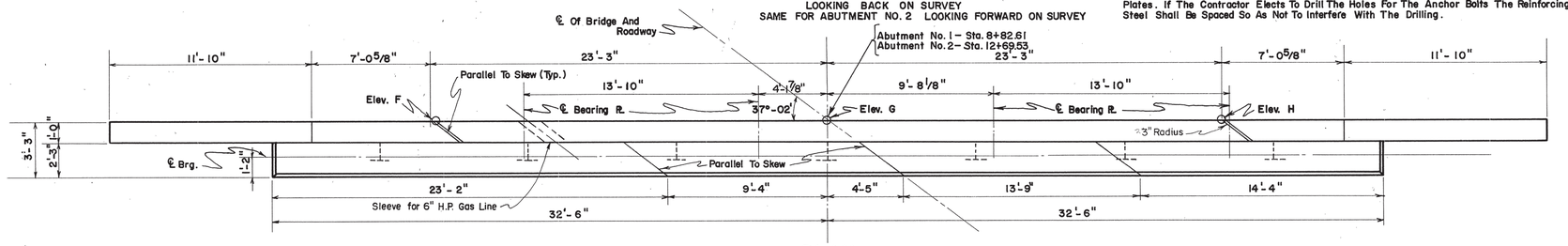


ELEVATION ABUTMENT NO. 1

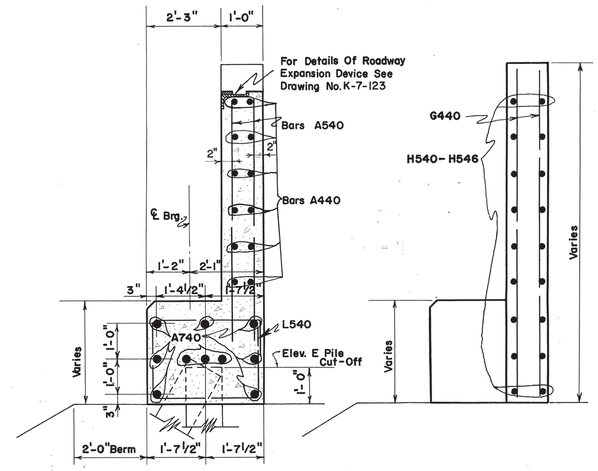
LOOKING BACK ON SURVEY
SAME FOR ABUTMENT NO. 2 LOOKING FORWARD ON SURVEY

Ⓑ Batter Forward 2:12

NOTE: When Pouring Cap Beam, Provisions Shall Be Made For Setting Anchor Bolts For Bearing Plates. If The Contractor Elects To Drill The Holes For The Anchor Bolts The Reinforcing Steel Shall Be Spaced So As Not To Interfere With The Drilling.



PLAN

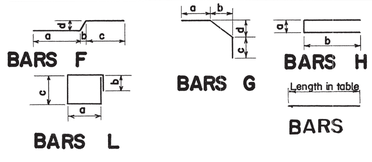


SECTION A–A

SECTION B–B

BILL OF STEEL ABUTMENTS NO 1 & 2

Bar	Location	Size	No. Req'd.	Bending Dimensions A	B	C	D	Length
A440	Backwall	4	48					31'-6"
A540	Backwall	5	188					7'-6"
A541	Backwall	5	56					8'-3"
A740	Abutment Beam	7	40					33'-9"
F440	Curb	4	4	3'-0"	1"	5'-0"	9"	8'-9"
F441	Curb	4	4	3'-0"	1"	6'-3"	9"	10'-0"
G440	Wingwall	4	8	9"	11'-7"	2'-3"	7'-0"	16'-6"
H440	"	4	4	6"	2'-9"			6'-0"
H441	"	4	4	6"	3'-6"			7'-6"
H442	"	4	4	6"	4'-0"			8'-6"
H443	"	4	4	6"	4'-6"			9'-6"
H444	"	4	4	6"	5'-0"			10'-6"
H445	"	4	4	6"	5'-6"			11'-6"
H446	"	4	4	6"	6'-0"			12'-6"
H447	"	4	4	6"	6'-9"			14'-0"
H448	"	4	4	6"	7'-3"			15'-0"
H449	"	4	4	6"	7'-9"			16'-0"
H450	"	4	4	6"	8'-6"			17'-6"
H540	"	5	12	7"	11'-0"			22'-7"
H541	"	5	4	7"	9'-6"			19'-7"
H542	"	5	4	7"	7'-9"			16'-1"
H543	"	5	4	7"	6'-0"			12'-7"
H544	"	5	4	7"	4'-3"			9'-1"
H545	Wingwall	5	4	7"	2'-6"			5'-7"
L540	Abutment Beam	5	120	2'-11"	1'-0"	2'-2"		11'-2"

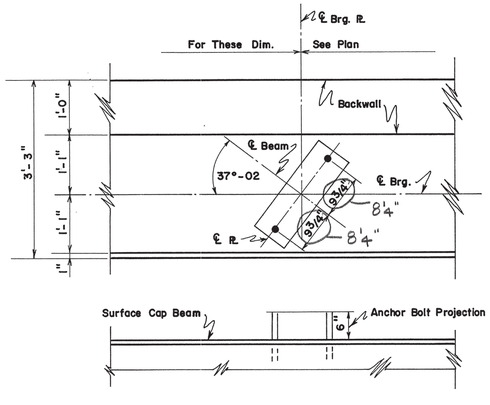


ESTIMATED QUANTITIES

Location	Concrete Class "A" Cubic Yards	Reinforcing Steel Pounds
Abutment No.1	39.6	3940
Abutment No.2	41.0	3940

TABLE OF ELEVATIONS

	A	B	C	D	E	F	G	H
Abutment No.1	500.76	500.81	500.72	500.51	499.01	506.68	506.76	506.40
Abutment No.2	497.17	497.51	497.70	497.74	495.67	502.91	503.49	503.58



SKETCH SHOWING ANCHOR BOLT LOCATION AND PROJECTION

MICROFILMED
Rev. 10-6-61 Revised 8-5-62 Revised 7/1/63 Revised 6/29/62 Anchor bolt location

DESIGNED BY _____ DATE _____
DRAWN BY Jack B. Crockett Jr. DATE May 2, 1961
TRACED BY Joe B. Cantrell Jr. DATE May 8, 1961
CHECKED BY _____ DATE _____

ALTERNATE "WS"
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

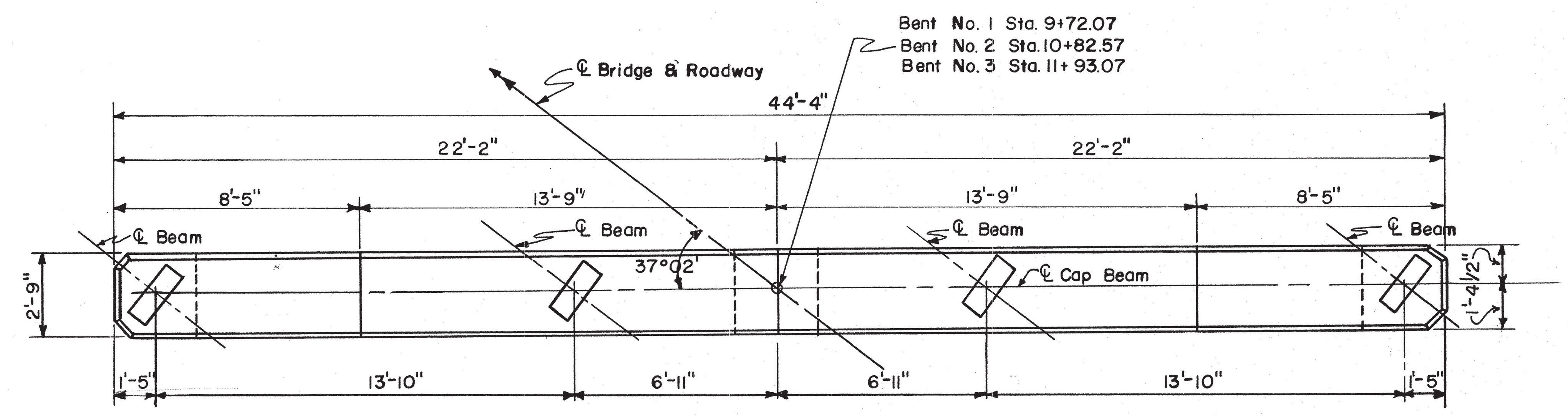
ABUTMENTS NO. 1 AND 2
ELM HILL PIKE OVER INTERSTATE 40
STATION 322 + 85.70
DAVIDSON – WILSON COUNTIES
1961

CORRECT Fred Greve
BRIDGE ENGINEER
APPROVED _____
STATE HIGHWAY ENGINEER

K-7-125

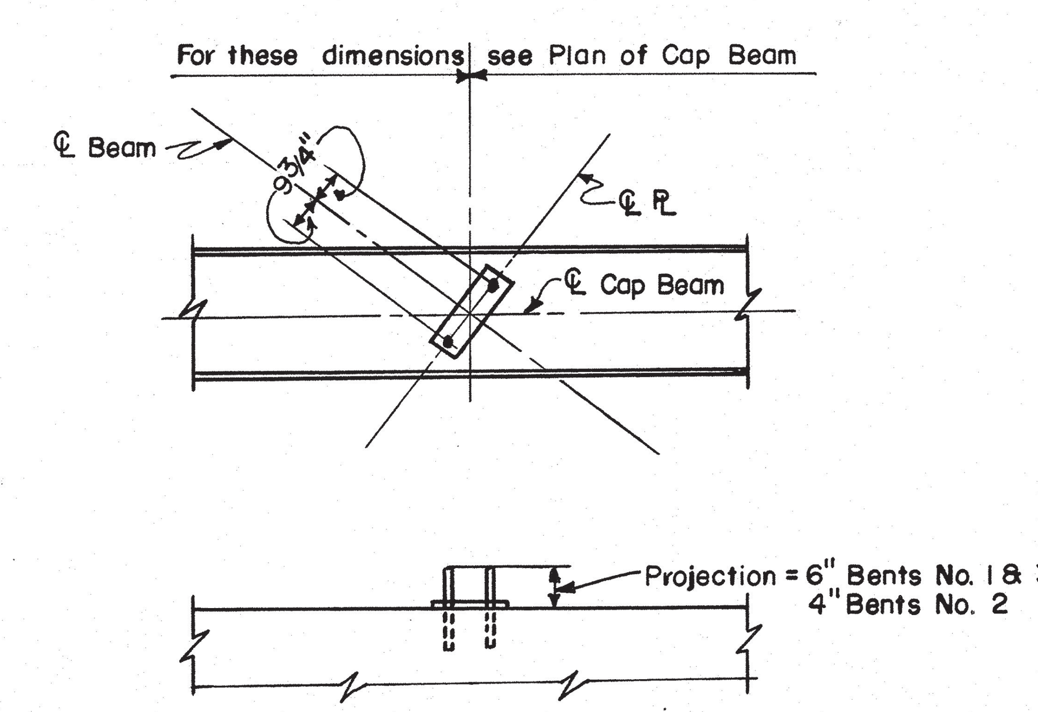
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19	95	385

I-40-5(11)213

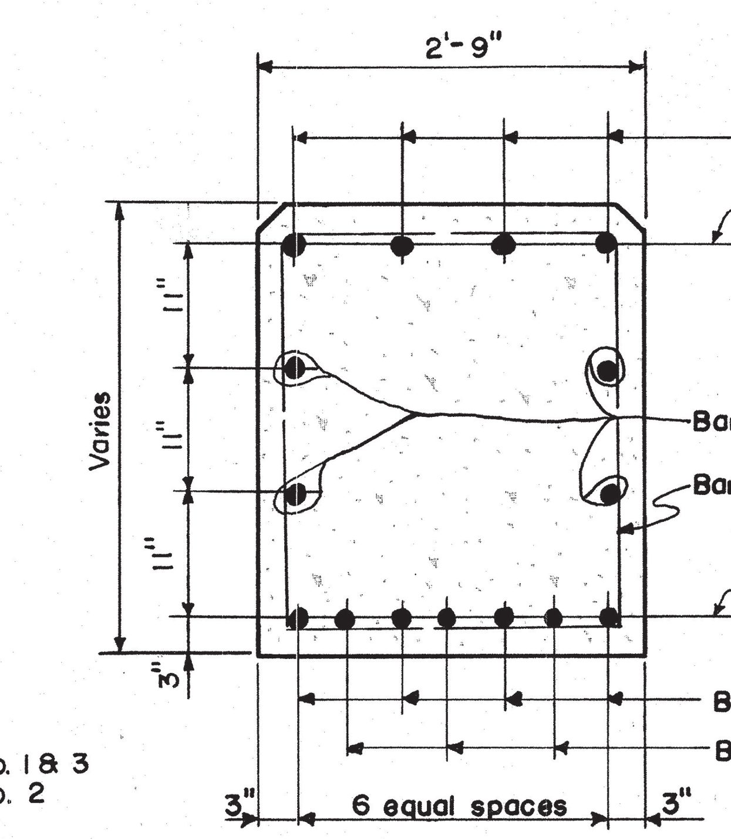


PLAN

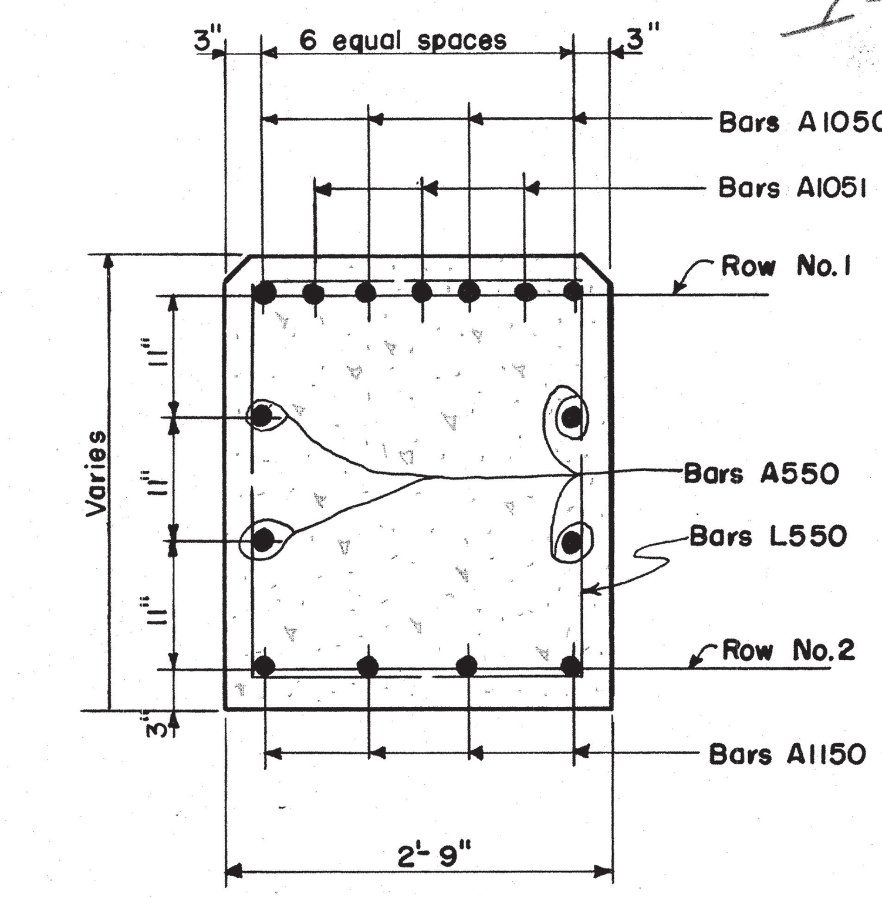
NOTE: When pouring Cap Beams, provisions shall be made for setting Anchor Bolts for Bearing Plates. If the contractor elects to drill the holes for the Anchor Bolts, the reinforcing steel shall be spaced so as not to interfere with the drilling.



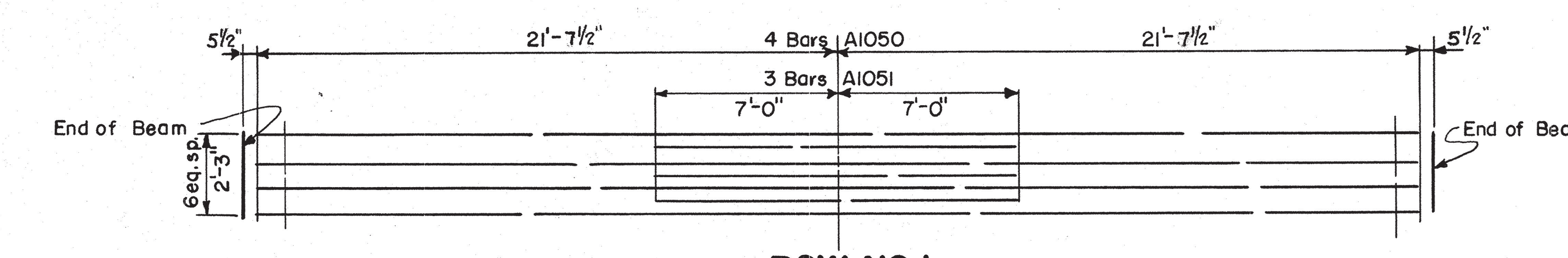
SKETCH SHOWING ANCHOR BOLT LOCATION & PROJECTION



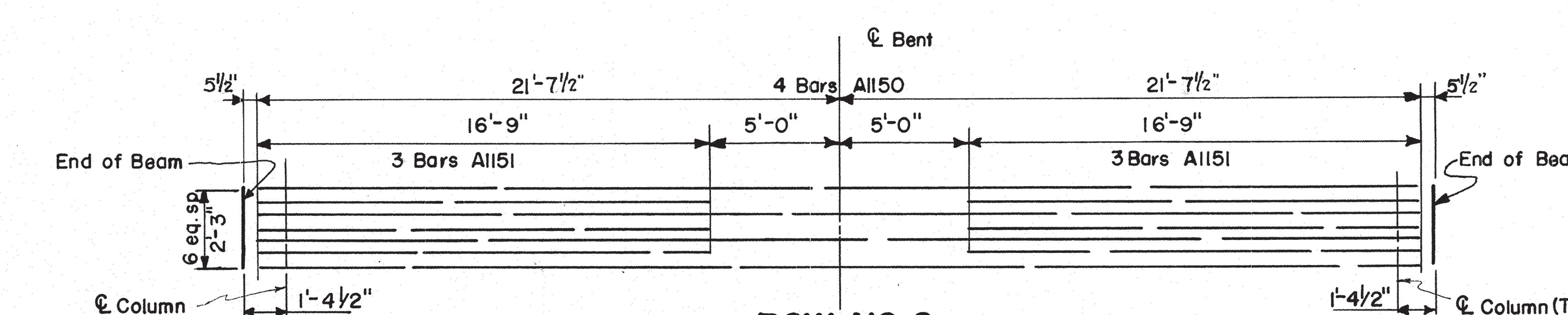
SECTION A-A



SECTION B-B

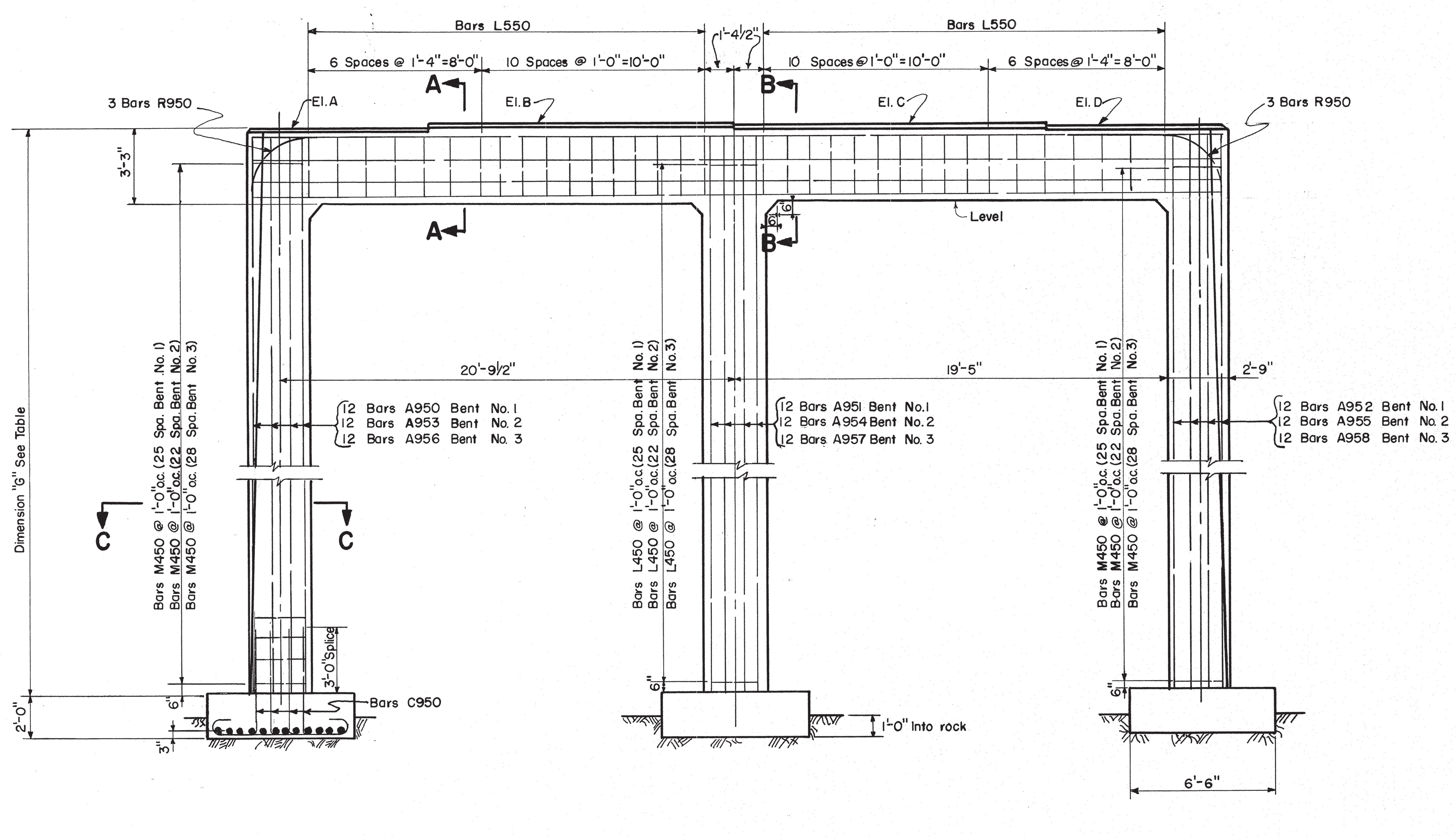


ROW NO. 1



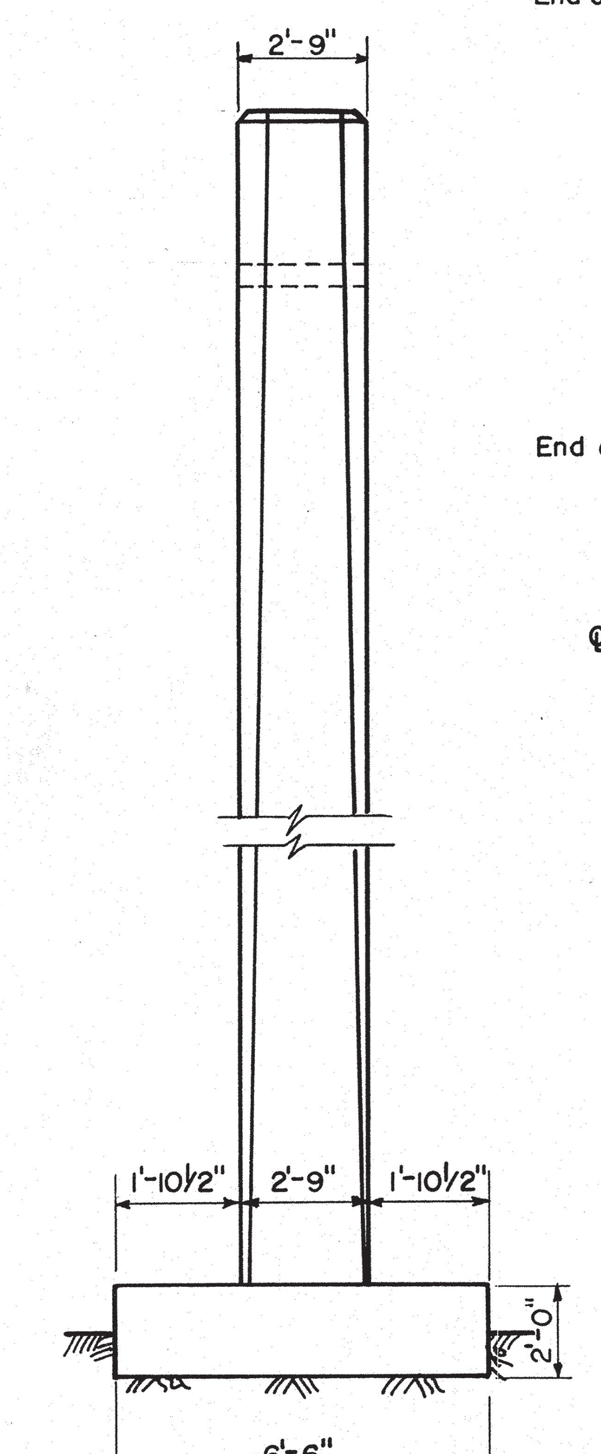
ROW NO. 2

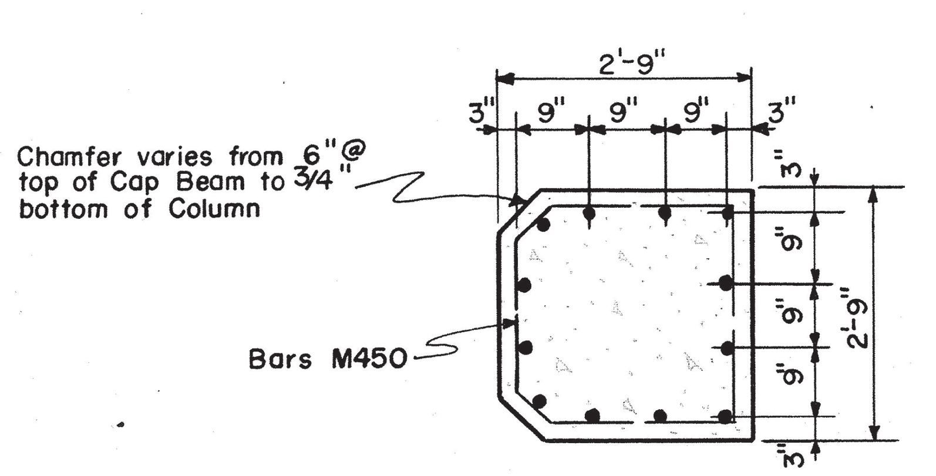
PLAN OF MAIN REINFORCEMENT CAP BEAM



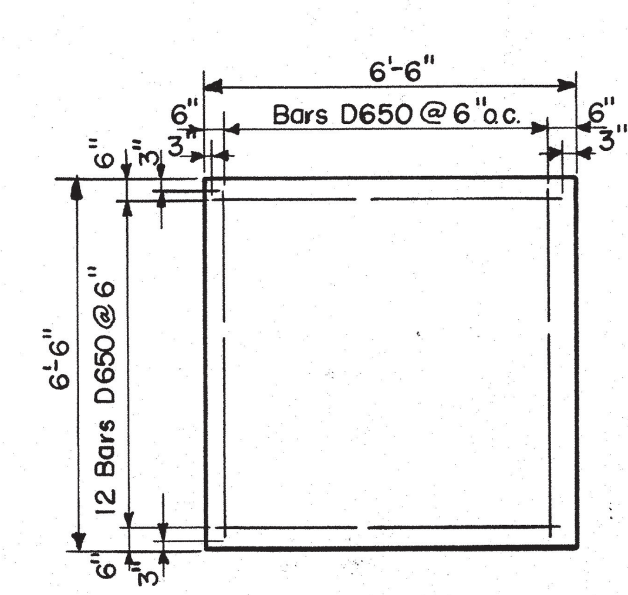
BENT ELEVATION

Looking Forward on Survey





SECTION C-C



PLAN SHOWING FOOTING REINFORCEMENT

TABLE OF DIMENSIONS & ELEVATIONS

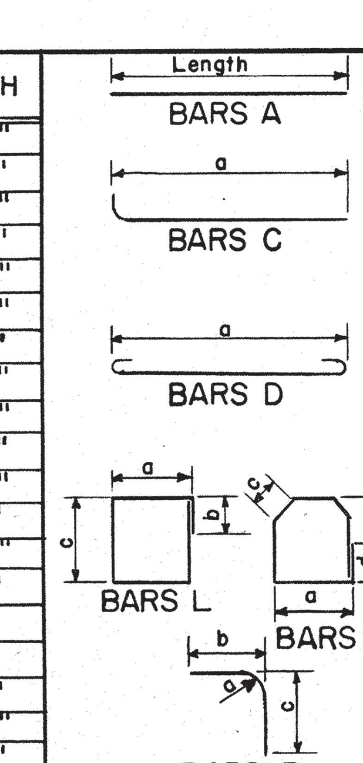
ITEM	Dimension "G"	Elevations			
		A	B	C	D
Bent No. 1	25'-9"	499.68	499.90	499.98	499.92
Bent No. 2	23'-0"	498.83	499.05	499.13	499.07
Bent No. 3	29'-3"	498.03	498.26	498.34	498.29

ESTIMATED QUANTITIES

ITEM	Concrete Cl. "A"	Reinforcing Steel
Bent No. 1	43.7	~~8268~~ 8364
Bent No. 2	41.4	~~7852~~ 7958
Bent No. 3	46.7	~~8757~~ 8853

BILL OF STEEL

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS a	b	c	d	LENGTH
A550	Cap Beam	5	12					43'-3"
A950	Column Bent No. 1	9	12					25'-6"
A951	" " No. 2	9	12					22'-9"
A952	" " No. 3	9	12					29'-0"
A953	" " No. 1	9	12					25'-9"
A954	" " No. 2	9	12					22'-9"
A955	" " No. 3	9	12					29'-3"
A956	" " No. 1	9	12					25'-9"
A957	" " No. 2	9	12					22'-9"
A958	Column Bent No. 3	9	12					29'-3"
A1050	Cap Beam	10	12					43'-3"
A1051	" "	10	9					14'-0"
A1150	" "	11	12					43'-3"
A1151	Cap Beam	11	18					16'-9"
C950	Footings	9	108	4'-9"				5'-4"
D650	Footings	6	216	6'-0"				7'-4"
L450	Columns	4	78	2'-4"	1'-0"	2'-4"		10'-4"
L550	Cap Beam	5	102	2'-4"	1'-0"	2'-10"		11'-4"
M450	Columns	4	156	2'-4"	2'-4	6"	1'-0"	10'-0"
R950	Cap Beam	9	18	2'-0"	6'-0"	6'-0"		11'-2"



ALTERNATE "WS"

STATE OF TENNESSEE

DEPARTMENT OF HIGHWAYS

NASHVILLE

BENTS NO. 1, 2 & 3
ELM HILL PIKE OVER I-40
STATION 322+85.70
DAVIDSON-WILSON COUNTIES
1961

DESIGNED BY W. Greer DATE
DRAWN BY W. Greer DATE
TRACED BY J. D. Woosley DATE 5-8-61
CHECKED BY DATE

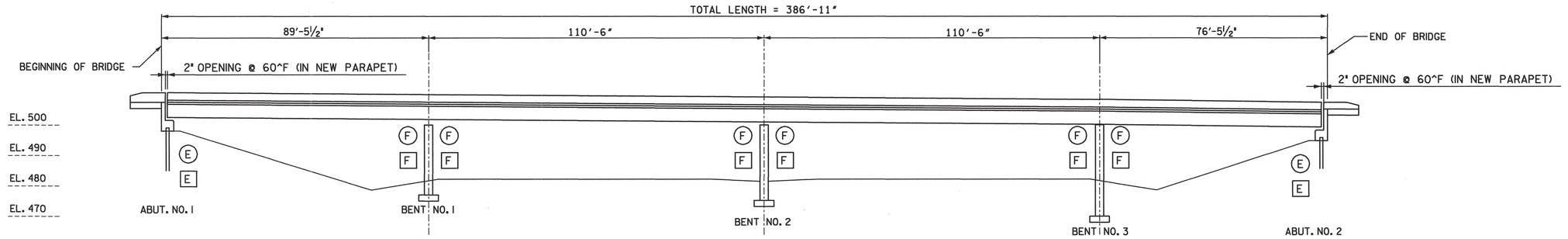
Revised 8-15-62

MICROFILMED

CORRECT Fred Greve BRIDGE ENGINEER

APPROVED STATE HIGHWAY ENGINEER

K-7-126



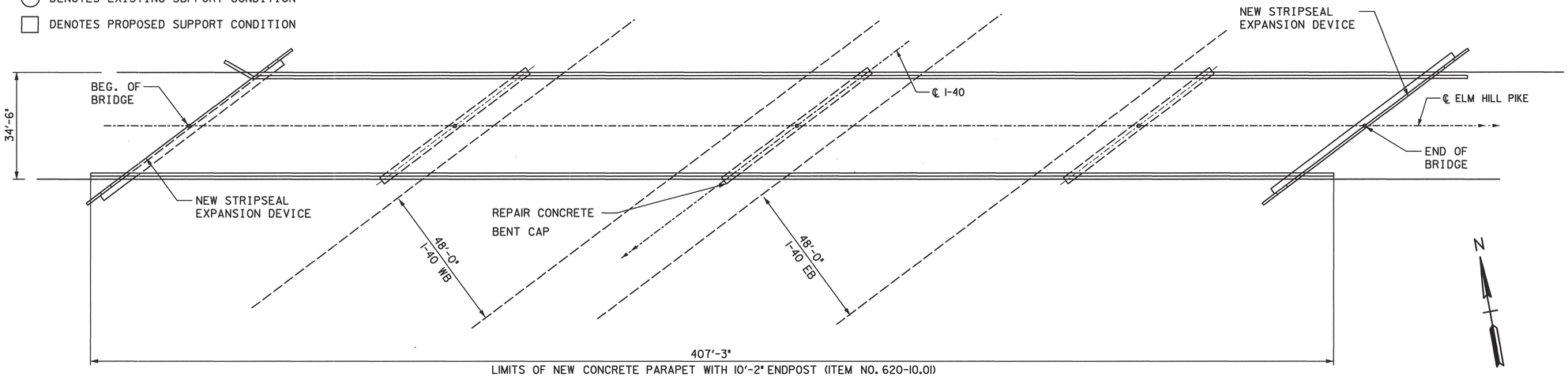
E DENOTES EXPANSION

F DENOTES FIXED

◯ DENOTES EXISTING SUPPORT CONDITION

□ DENOTES PROPOSED SUPPORT CONDITION

ELEVATION AT RIGHT ANGLES TO ℄ ELM HILL PIKE



PLAN

SCALE: FEET

0 20 40 60 80 100

PROJECT NO.	YEAR	SHEET NO.
19959-4229-04	2001	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

SCOPE OF WORK

1. PROVIDE TRAFFIC CONTROL TO MAINTAIN ONE LANE OF TRAFFIC ON EXISTING BRIDGE USING SIGNALS.
2. PROVIDE FULL AND PARTIAL DEPTH DECK REPAIR PER DECK SURVEY PROVIDED.
3. CONSTRUCT NEW CONCRETE PARAPETS AND INSTALL NEW METAL APPROACH GUARDRAIL ON ALL FOUR CORNERS. MODIFY PARAPET END POST ON THE NORTHWEST CORNER AS SHOWN ON SHEET NO. 6.
4. INSTALL STRIP SEAL EXPANSION JOINT (TYPE "A") REPLACEMENT AT ABUTMENT NOS. 1 AND 2.
5. APPLY TEXTURE FINISH TO CONCRETE PARAPET AND OVERHANG.
6. CONSTRUCT A NEW 3¼" ASPHALT OVERLAY WITH BRIDGE DECK SEALANT ON BRIDGE AND APPROACH TRANSITION LIMITS.
7. REPAIR CONCRETE BENT CAP AT BENT NO. 2.
8. EXISTING CONCRETE BRIDGE RAIL TO BE REMOVED.

LIST OF BRIDGE DRAWINGS

DWG. NO.	TITLE
BR-50-99	LAYOUT OF BRIDGE TO BE REPAIRED
BR-50-100	ESTIMATED BRIDGE QUANTITIES AND GENERAL NOTES
BR-50-101	DEMOLITION PLAN
BR-50-102	SUPERSTRUCTURE

LIST OF BRIDGE REFERENCE DRAWINGS

DWG. NO.	TITLE
K-7-122	LAYOUT OF BRIDGE
K-7-123	STRUCTURAL STEEL DETAILS
K-7-124	STRUCTURAL STEEL DETAILS
K-7-125	ABUTMENTS NO. 1 & 2
K-7-126	BENTS NO. 1, 2, & 3
G-10-42	STANDARD BRIDGE DETAILS
H-5-110	CONCRETE HANDRAIL

NOTE: EXISTING REFERENCE DRAWINGS ARE TO BE PRINTED WITH PLANS.

LIST OF STANDARD DRAWINGS

CURRENT REVISION

DRAWING NO.	DATE	DESCRIPTION
✳ STD-1-2	1-05-01	STEEL SLIDER PLATE ASSEMBLIES FOR CONCRETE PARAPET AND BRIDGE DECK DRAIN DETAILS - 1993
STD-9-1	12-19-94	REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS
SBR-2-115	1-04-96	GENERAL NOTES AND DETAILS FOR EXPANSION JOINT REPLACEMENT CONSTRUCTION TYPES "A" THRU "J" - 1991
SBR-2-116	1-04-96	GENERAL DETAILS FOR STRIP SEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPES "A" THRU "J" -1991
SBR-2-117	5-30-96	STRIP SEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPE "A" -1991
SBR-2-124	1-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10'-2" ENDPOST - 1988
SBR-2-125	1-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10'-2" ENDPOST - 1988
SBR-2-126	1-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10'-2" ENDPOST - 1988

✳ DENOTES TO BE PRINTED WITH PLANS

LIST OF SPECIAL PROVISIONS

DRAWING NO.	LAST REV. DATE	REGARDING
105A	**	APPROVAL OF SHOP DRAWINGS
108B	**	PROJECT COMPLETION AND LIQUIDATION DAMAGES
604S	**	STRIP SEAL EXPANSION JOINTS

** DENOTES: CURRENT REVISION DATE AS PER CONTRACT DOCUMENTS

DESIGNED BY _____ DATE _____
DRAWN BY _____ DATE _____
SUPERVISED BY _____ DATE _____
CHECKED BY _____ DATE _____

REGISTERED ENGINEER — COMMERCE — NO. 22089 — STATE OF TENNESSEE — 7/6/01

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

LAYOUT OF BRIDGE TO BE REPAIRED

BRIDGE NO. 19-4167-1.25 ELM HILL PIKE OVER I-40 DAVIDSON COUNTY 2001

BR-50-99

PROJECT NO.	YEAR	SHEET NO.
19959-4229-04	2001	2

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ESTIMATED BRIDGE QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
(3)	202-04.01	REMOVAL OF STRUCTURES (BR. NO. 19-4167-1.25)	LS.	1
(1)	602-10.05	BRACING REPAIRS	LS.	1
	604-04.02	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	S.Y.	1220
(5)	604-10.05	CONCRETE	S.F.	9
(2)	604-10.30	BRIDGE DECK REPAIR (FULL DEPTH OF SLAB)	S.Y.	61
	604-10.50	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB)	S.Y.	244
	604-10.32	EXPANSION JOINT REPAIRS (TYPE A)	L.F.	93
	617-01	BRIDGE DECK SEALANT	S.Y.	1196
(4)	620-10.01	CONCRETE PARAPET (BRIDGERAIL REPLACEMENT)	L.F.	814

FOOTNOTES

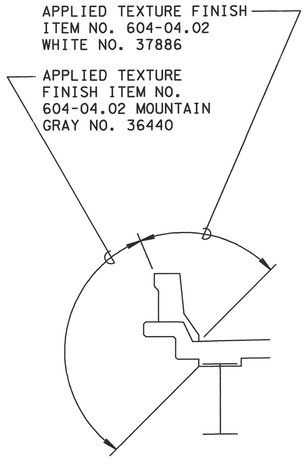
(1) FOR GENERAL LOCATION AND NOTES FOR BRACING, SEE DWG. NO.'S BR-50-101 AND BR-50-102.

(2) INCLUDES ALL QUANTITIES FOR FULL OR PARTIAL DEPTH DECK REPAIRS AS SHOWN IN DETAIL ON DWG. NO. BR-50-101. ITEM NOS. 604-10.30 AND 604-10.50 ARE CONTINGENCY ITEMS THAT MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.

(3) INCLUDES THE COST OF REMOVING THE EXISTING RAILING ON BOTH SIDES OF THE BRIDGE. ALSO, INCLUDES THE COST OF REMOVING RAIL POST REINFORCING STEEL TO 1" BELOW EXISTING CONCRETE SURFACE AND EPOXY PATCHING FLUSH TO ORIGINAL SURFACE.

(4) INCLUDES THE COST FOR ALL LABOR AND MATERIALS (EXCEPT TEXTURE FINISH) TO REPLACE THE EXISTING BRIDGERAIL WITH A NEW CONCRETE PARAPET AND 10'-2" ENDWALLS. FOR DETAILS SEE DWG. NO. BR-50-102 AS WELL AS STANDARD DWG.'S SBR-2-124, SBR-2-125, AND SBR-2-126. CARE SHALL BE TAKEN TO ASSURE THE PROFILE OF PARAPET IS CORRECT FOR THE ENTIRE LENGTH OF BRIDGE.

(5) INCLUDES COST TO REPAIR CONCRETE BENT CAP AT BENT # 2.



TEXTURE COATING DETAIL

NOTE: COST OF TEXTURE COATING SHALL BE INCLUDED IN ITEM NO. 604-04.02 AND INCLUDES ENDPOSTS AS SHOWN ON STANDARD DWG. NO. SBR-2-125.

NOTE: BEFORE APPLYING ANY TEXTURE FINISH, ALL SURFACES SHALL BE COMPLETELY CLEANED OF ALL DEBRIS AND FOREIGN MATERIALS.

NOTE: THE CONTRACTOR SHALL USE CONTAINMENT SCREENS OR OTHER MEASURES AS NECESSARY TO PREVENT ANY TEXTURE COATING FROM ENTERING THE ENVIROMENT. CONTAINMENT MEASURES SHALL BE APPROVED BY THE ENGINEER AND COST SHALL BE INCLUDED IN ITEMS BID ON.

NOTE: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO MOUNTAIN GRAY, FEDERAL SPECIFICATION NO. 36440, FEDERAL COLOR STANDARD NO. 595a, EXCEPT THAT THE INSIDE FACE AND TOP OF THE PARAPET SHALL BE WHITE, FEDERAL SPECIFICATION NO. 37886. A COLOR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAUL OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEM 604-04.02.

DESIGNED BY _____ DATE _____
DRAWN BY _____ DATE _____
SUPERVISED BY _____ DATE _____
CHECKED BY _____ DATE _____

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1995 EDITION).

DESIGN SPECIFICATIONS: AASHTO 1996 EDITION WITH ADDENDA.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE ("C") IN THE SUBSECTION 604.23 OF THE STANDARD SPECIFICATIONS.

CONCRETE CURING: ALL CONCRETE TO BE CURED ACCORDING TO THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: SEE THE STANDARD SPECIFICATIONS.

DEMOLITION: THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ANY PARTS OF THE STRUCTURE THAT ARE NOT TO BE REMOVED SPECIFICALLY. THE CONTRACTOR IS NOT ALLOWED TO USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILARLY HEAVY EQUIPMENT FOR CONCRETE REMOVAL. PNEUMATIC HAMMERS MAY BE USED TO REMOVE UNSOUND CONCRETE. FOR FULL DEPTH OF CONCRETE SLAB REMOVAL EXCEPT OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 90 POUND CLASS. FOR PARTIAL DEPTH OF CONCRETE SLAB REMOVAL AND ANY WORK OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS. SAWING OR CUTTING OF THE CONCRETE IS ACCEPTABLE SO LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING REINFORCING STEEL IS MAINTAINED. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.

EXPANSION JOINTS: FOR ADDITIONAL GENERAL NOTES APPLICABLE TO STRIP SEAL EXPANSION JOINTS, SEE STANDARD DRAWING NO'S. SBR-2-115, SBR-2-116 AND SBR-2-117. ALSO SEE SPECIAL PROVISION NO. 604S.

SHOP DRAWINGS: SHALL BE SUBMITTED ACCORDING TO SPECIAL PROVISION NO. 105A, SHOP DRAWINGS SHALL BE SUBMITTED TO THE BRIDGE REPAIR OFFICE OF THE DIVISION OF STRUCTURES.

WELDING: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS.

CONCRETE: CLASS 'A' CONCRETE SHALL BE HIGH EARLY STRENGTH.

HIGH EARLY STRENGTH CONCRETE: SHALL BE HIGH EARLY STRENGTH CONCRETE WITH A COMPRESSIVE STRENGTH OF 3,000 PSI AT 18 HOURS. THE CONTRACTOR SHALL PROVIDE PROOF PRIOIR TO BEGINNING WORK THAT THE PROPOSED CONCRETE MIX SHALL OBTAIN REQUIRED PROPERTIES. PROOF SHALL BE PROVIDED BY AN INDEPENDANT TESTING COMPANY AND SUBMITTED TO THE MATERIALS AND TEST DIVISION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION FOR APPROVAL. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIR AREAS UNTIL TEST SPECIMENS ATTAIN A COMPRESSIVE STRENGTH OF 3,000 PSI MINNIMUM AND THE CONCRETE HAS BEEN IN PLACE A MINNIMUM OF 18 HOURS.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED ½" IN DIAMATER LARGER THAN THE BAR. CLEANED. PACKED WITH NON-SHRINK GROUT AND THE BAR ROTATED (NOT DRIVEN) INTO IT'S SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMATER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND BAR DRIVEN TO IT'S SEAT. ALL GROUTING MATERIALS SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS

GENERAL TIME LIMITATIONS AND WORK RESTRICTIONS, WEEKEND WORK ONLY:

THE FOLLOWING WORK SHALL BE COMPLETED ON THE WEEKENDS ONLY.
1) PLACING AND REMOVING BRACING UNDER THE BRIDGE DECK OVER INTERSTATE TRAFFIC.
2) REPAIR WORK REQUIRED FOR THE SPALLED AREA ON BENT #2.

SEE SPECIAL PROVISION 108B FOR ADITIONAL TIME LIMITATIONS AND WORK RESTRICTIONS. A WEEKEND IS THE PERIOD BETWEEN 8:00 PM FRIDAY AND 5:00 AM MONDAY. (2) WEEKENDS SHALL BE ALLOWED FOR THE WEEKEND WORK.

PARAPET STRENGTH AND CURE TIME:

THE NEW CONCRETE FOR THE PARAPET SHALL OBTAIN A COMPRESSIVE STRENGTH OF 3000 PSI AND A TIME OF THREE DAYS MUST EXPIRE AFTER CONCRETE PLACEMENT BEFORE TRAFFIC IS ALLOWED ADJACENT TO THESE PROTECTIVE WALLS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ESTIMATED BRIDGE QUANTITIES AND GENERAL NOTES

BRIDGE NO. 19-4167-1.25
ELM HILL PIKE OVER I-40
DAVIDSON COUNTY
2001

BR-50-100

NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING FORMWORK BELOW THE EXISTING BRIDGE DECK. THE FORMWORK IS REQUIRED SO THAT NO DEBRIS WILL FALL ON TO TRAFFIC ON I-40 DURING SLAB REPAIR. DETAILS OF TEMPORARY SUPPORT SYSTEM OR FALSEWORK REQUIRED SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND SHALL MEET WITH THE FULL SATISFACTION OF THE ENGINEER BEFORE ANY DEMOLITION IS BEGUN. COST OF FORMWORK SHALL BE INCLUDED IN ITEM NO. 602-10.05, BRACING REPAIRS, L.S.

NOTE: THE COST OF REMOVING AND DISPOSING OF PARTIAL AREAS OF THE EXISTING CONCRETE SLAB, WITHIN THE LIMITS SHOWN, IS TO BE INCLUDED IN ITEM NOS. 604-10.30 AND 604-10.50.

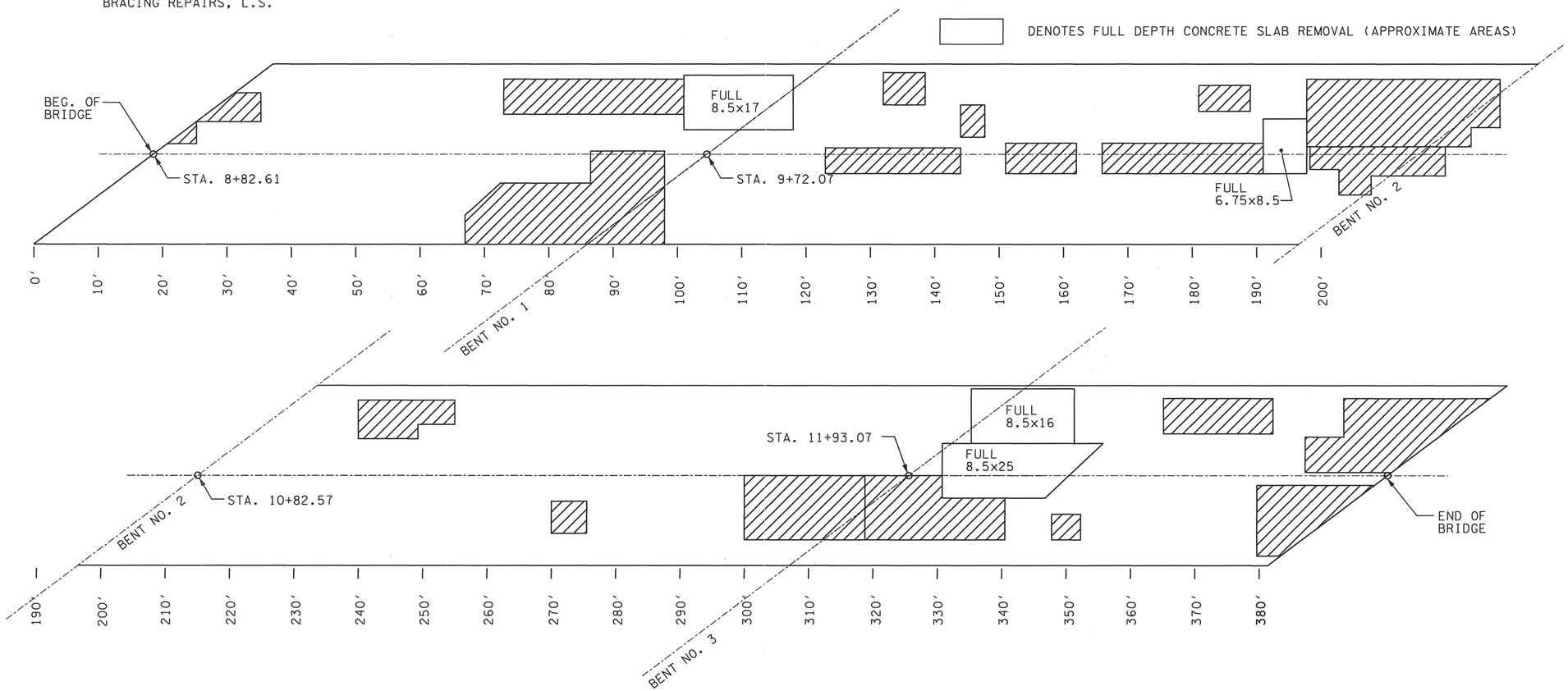
DENOTES PARTIAL DEPTH CONCRETE SLAB REMOVAL (APPROXIMATE AREAS)

DENOTES FULL DEPTH CONCRETE SLAB REMOVAL (APPROXIMATE AREAS)

PROJECT NO.	YEAR	SHEET NO.
19959-4229-04	2001	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



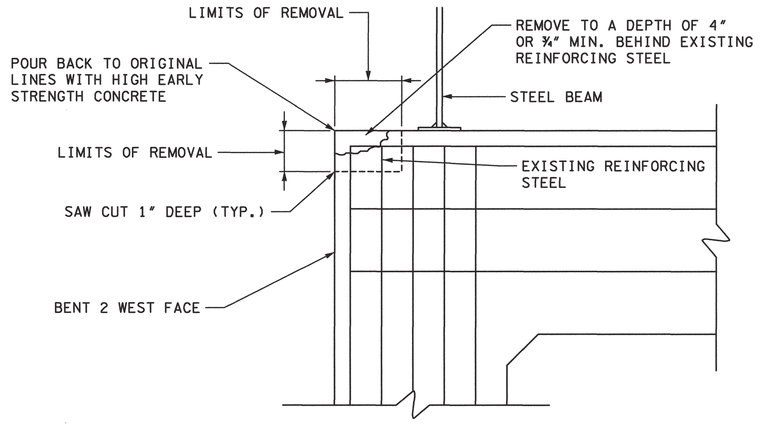
BENT NO. 2 CONCRETE REPAIR NOTES

NOTE: THE COST OF REMOVING PORTIONS OF THE EXISTING CONCRETE WITHIN THE LIMITS SHOWN, SAW CUTTING, COMPLETELY CLEANING EXISTING REINFORCING STEEL, HIGH EARLY STRENGTH CONCRETE, FORMING, LABOR AND ALL MISCELLANEOUS MATERIAL NECESSARY TO COMPLETE THE REPAIRS AS SHOWN SHALL BE INCLUDED IN PRICE BID FOR ITEM NO. 604-10.05, CONCRETE, S.F.

NOTE: SAW CUT EXISTING CONCRETE SURFACES SO AS TO OBTAIN A SQUARE AREA. EXISTING REINFORCING STEEL SHALL BE COMPLETELY CLEANED TO REMOVE ALL RUST. POWER DRIVEN HAND TOOLS USED FOR REMOVAL OF UNSOUND CONCRETE ARE SUBJECT TO THE FOLLOWING RESTRICTIONS :
1. PNEUMATIC HAMMERS HEAVIER THAN THE 35 LB. CLASS SHALL NOT BE USED.
2. CHIPPING HAMMERS OF THE 15 LB. CLASS SHALL BE USED TO REMOVE CONCRETE FROM BEHIND REINFORCING STEEL.

NOTE: THE ENGINEER SHALL DESIGNATE ALL SPALLED CONCRETE REPAIR AREAS IN THE FIELD. QUANTITIES GIVEN ARE APPROXIMATE. ITEM 604-10.05 SHALL BE BID WITH THE CONTINGENCY THAT IT MAY BE INCREASED, DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.

NOTE: THE REPAIR AREAS SHALL NOT BE WORKED DIRECTLY UNDER TRAFFIC.



DETAIL SHOWING AREA OF CRACKED CONCRETE ON BENT 2 TO BE REMOVED AND REPAIRED

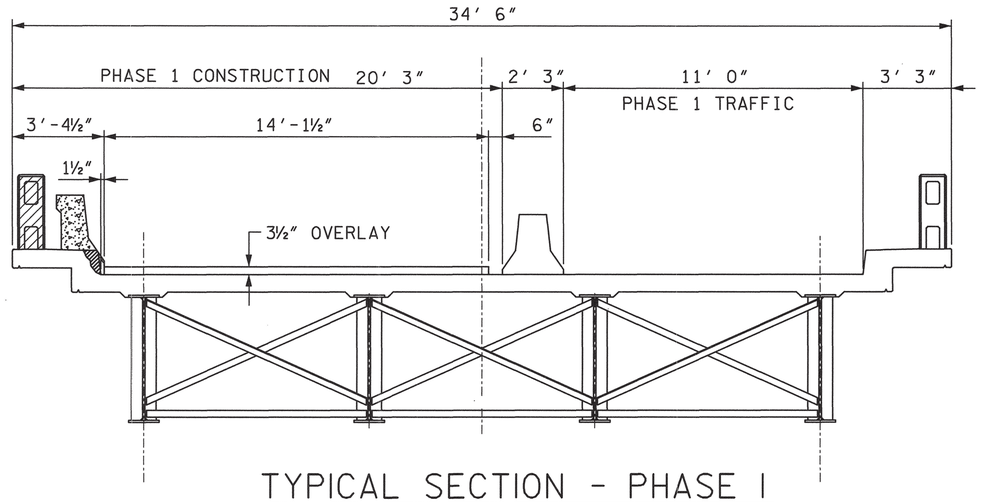
NOTES: LIMITS AND LOCATION OF REPAIRS TO BE DESIGNATED BY THE ENGINEER.
SAW CUT EXISTING CONCRETE SURFACES SO AS TO OBTAIN SQUARED CORNERS.

DESIGNED BY _____ DATE _____
DRAWN BY _____ DATE _____
SUPERVISED BY _____ DATE _____
CHECKED BY _____ DATE _____

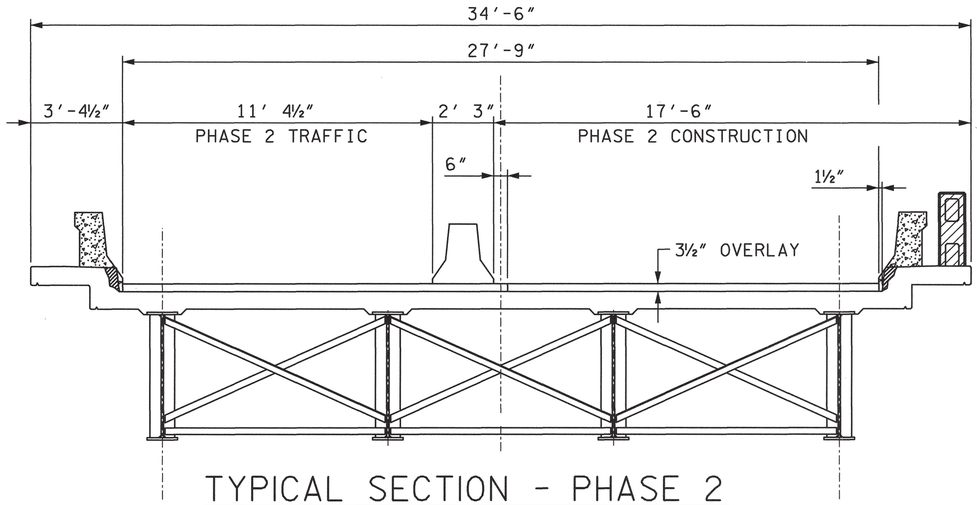
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

DEMOLITION PLAN
BRIDGE NO. 19-4167-1.25
ELM HILL PIKE OVER I-40
DAVIDSON COUNTY
2001

BR-50-101



TYPICAL SECTION - PHASE I

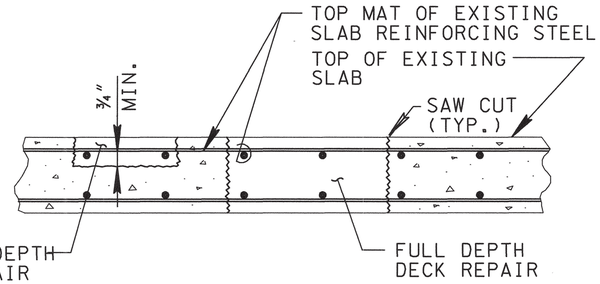


TYPICAL SECTION - PHASE 2

PROJECT NO.	YEAR	SHEET NO.
19959-4229-04	2001	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



DETAIL SHOWING FULL AND PARTIAL DEPTH REPAIR

NOTE: REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF ¾″ BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE COMPLETELY CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE BRIDGE REPAIR OFFICE. INSPECTIONS TO DETERMINE AREAS OF DECK REPAIR SHALL BE SCHEDULED WITH THE BRIDGE REPAIR OFFICE AT LEAST THREE (3) DAYS IN ADVANCE. DECK REPAIR WILL BE PAID FOR UNDER ITEM NO. 604-10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), AND ITEM NO. 604-10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB). DURING PARTIAL DEPTH REPAIRS, SHOULD DETERIORATED CONCRETE BE ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB, THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604-10.30. POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL AND FULL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTRICTIONS : 1) (PARTIAL DEPTH REAIRS) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 60 POUND CLASS SHALL NOT BE USED. 2) (FULL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 90 POUND CLASS SHALL NOT BE USED. ALSO ALL DECK REPAIR OVER BEAMS WILL BE RESTRICTED TO 60 POUND PNEUMATIC HAMMERS. 3) CHIPPING HAMMERS OF THE 15 POUND CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.

NOTE: CONCRETE FOR DECK REPAIR SHALL BE POURED TO THE ORIGINAL DECK LEVEL USING HIGH EARLY STRENGTH CONCRETE.

NOTE: ITEM NO. 604-10.30 AND 604-10.50 SHALL BE BID WITH THE CONTIGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.

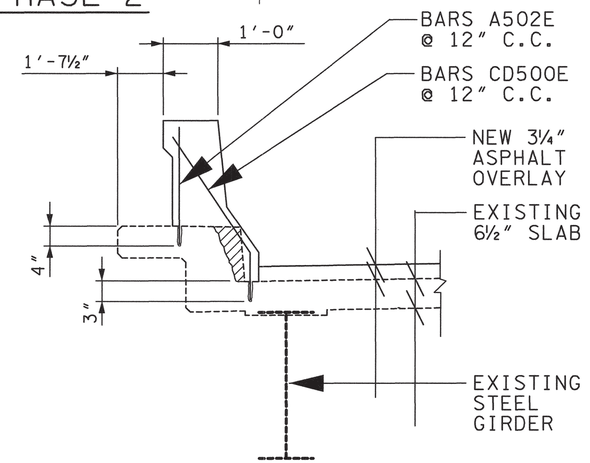
NOTE: COST OF FORMING, HIGH EARLY STRENGTH CONCRETE, COMPLETELY CLEANING REINFORCING STEEL, LABOR AND CONCRETE REMOVAL BY PNEUMATIC HAMMERS AND ANY MISCELLANEOUS MATERIALS TO COMPLETE THE PARTIAL AND FULL DEPTH REPAIRS SHALL BE INCLUDED IN ITEM NO'S. 604-10.30 AND 604-10.50

NOTE: THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD ALL EXISTING UTILITIES FROM DAMAGE DURING CONTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE OF ITEMS BID ON.

DESIGNED BY _____ DATE _____
DRAWN BY _____ DATE _____
SUPERVISED BY _____ DATE _____
CHECKED BY _____ DATE _____

DENOTES EXISTING CONCRETE RAIL TO BE REMOVED.

DENOTES NEW CONCRETE RAIL (SBR-2-124 THRU SBR-2-126).



DETAIL "B"

(SHOWING END SPANS PARAPET REINFORCEMENT)

DENOTES LIMITS OF CURB REMOVAL. SEE DETAILS ON DWG. NO. BR-45-03.

NOTE : HOLES FOR GROUTED BARS SHALL BE IN ACCORDANCE WITH NOTE "B" ON STD. DWG. SBR-2-124

NOTE : SEE STD. DWG. NO'S. SBR-2-124 THROUGH SBR-2-126 FOR ADDITIONAL DETAILS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

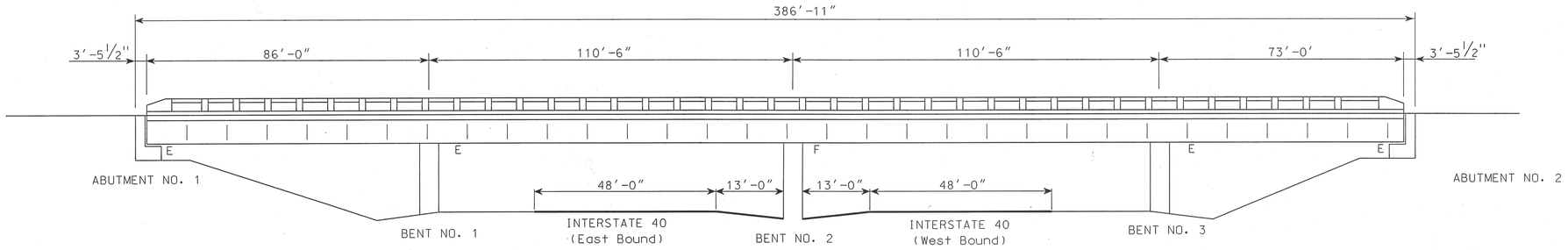
SUPERSTRUCTURE
BRIDGE NO. 19-4167-1.25
ELM HILL PIKE OVER I-40
DAVIDSON COUNTY
2001

BR-50-102

PROJECT NO.	YEAR	SHEET NO.
19960-4110-04	2008	

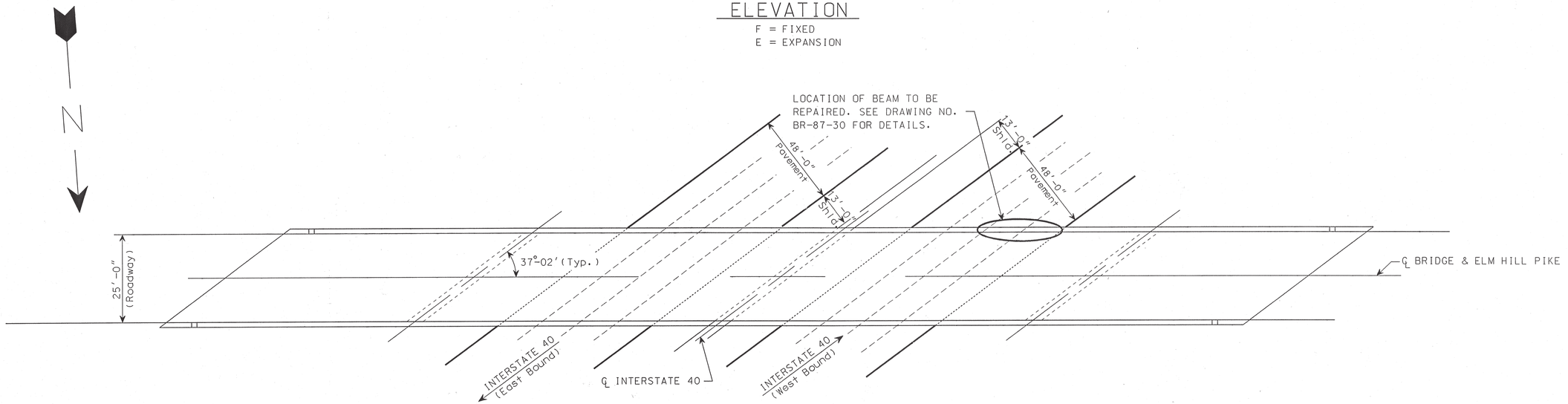
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION

F = FIXED
E = EXPANSION



PLAN

GENERAL SCOPE OF WORK

1. HEAT STRAIGHTEN DAMAGED STEEL I-BEAMS
2. REMOVE AND REPLACE DAMAGED STRUCTURAL COMPONENTS.
3. PAINT REPAIR AREAS.

LIST OF DRAWINGS

DRAWING NO.	LAST REV. DATE	DRAWING
BR-87-28	-----	LAYOUT OF BRIDGE TO BE REPAIRED
BR-87-29	-----	ESTIMATED QUANTITIES & GENERAL NOTES
BR-87-30	-----	STRUCTURAL STEEL REPAIRS
BR-87-31	-----	STRUCTURAL STEEL REPAIRS

LIST OF REFERENCE DRAWINGS

(To Be Printed With Plans)

DRAWING NO.	DRAWING
K-7-122, 123 & 124	EXISTING BRIDGE DRAWNGS

DESIGNED BY Terry Mackie DATE July, 2007
DRAWN BY Cory Hawkins DATE July, 2007
SUPERVISED BY Terry Mackie & T. Christianson DATE July, 2007
CHECKED BY Brian Egli DATE OCTOBER, 2007

BRIAN K. EGLI
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 107196
STATE OF TENNESSEE
10/2/07

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REPAIRED
ELM HILL PIKE OVER
INTERSTATE 40
BRIDGE NO. 19-4167-1.25
DAVIDSON COUNTY
2008

BR-87-28

PROJECT NO.	YEAR	SHEET NO.
19960-4110-04	2008	2

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY (BRIDGE NO.19-4167-1.25) ALT.'A'	ALT.'B'
①	602-03	STEEL STRUCTURES	LS	1	
②	602-10.01	STRUCTURAL STEEL REPAIRS	LS		1
③	602-10.06	STRUCTURAL STEEL	LBS	200	200

FOOTNOTES

1. INCLUDES COST OF REMOVING AND REPLACING A 16'-6" x 12" x 3/8" WEB PLATE, 16'-6" x 12" x 1" FLANGE PLATE, WELDING, PAINTING, ANY HEAT STRAIGHTENING, LABOR AND ALL MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN ON THESE PLANS.
2. INCLUDES COST OF ALL HEAT STRAIGHTENING STEEL REPAIRS, WELDING, PAINTING, LABOR AND ALL MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN ON THESE PLANS.
3. INCLUDES COST OF REMOVING AND REPLACING A PORTION OF STIFFENER AT "D1" (12" x 5" x 3/8"), PORTION OF 3 (THREE) INTERMEDIATE STIFFENERS (12" x 4" x 3/8"), 2 (TWO) NEW 3" x 3" x 5/16" ANGLES, NEW 3/4" DIAMETER HIGH STRENGTH BOLTS WITH HEX NUTS AND WASHERS.

SPECIAL NOTES:

ALTERNATE 'A':
THIS ALTERNATE CONSIST OF REMOVING THE DAMAGED STEEL AND REPLACING WITH NEW STEEL PLATES THERE MAY BE A SMALL AMOUNT OF HEAT STRAIGHTENING REQUIRED.

ALTERNATE 'B':
THIS ALTERNATE CONSIST OF MAINLY HEAT STRAIGHTENING THE EXISTING DAMAGED STEEL ROLLED BEAM AND REWELDING THE WEB AND BOTTOM FLANGE AT LOCATIONS WHERE THERE ARE TEARS.

DESIGNED BY Terry Mackie DATE July, 2007
DRAWN BY Cory Hawkins DATE July, 2007
SUPERVISED BY Brian Egli & Tommy Christianson DATE July, 2007
CHECKED BY Brian Egli & Terry Mackie DATE October, 2007

PAINT NOTES

COATING SYSTEM DESCRIPTION:

TO BE APPLIED OVER ALL DESIGNATED REPAIR AREAS.

THE COATING SPECIFIED HEREIN SHALL BE APPLIED IN ORDER TO MEET THE FOLLOWING REQUIREMENTS:

PAINT SHALL BE SYSTEM C IN ACCORDANCE WITH SUB SECTION 603.06. COLOR OF THE FINISH COAT SHALL COMPLY WITH FEDERAL STANDARD NO. 595B, 14110, BRIGHT GREEN. SEE SECTIONS 603 AND 910 OF THE STANDARDS SPECIFICATIONS.

THE UNIVERSAL PRIMER SHALL BE: AMERON AMERLOCK 400: CARBOLINE RUST BOND 8TH: OR DEVOE BAR-OX P-50: OR AN APPROVED EQUAL. QUALIFIED PRODUCTS LIST 3.

ALL PRODUCTS USED IN THIS COATING SYSTEM, INCLUDING THINNERS MUST BE SUPPLIED BY THE SAME MANUFACTURER.

SURFACE PREPARATION: (APPLICABLE TO ALL REPAIR AREAS).

1. ANY OIL OR GREASE SHALL BE REMOVED BY MEANS OF SOLVENT CLEANING IN ACCORDANCE WITH SSPC-SP1. SOLVENTS SHALL BE SAFE AND BIOGRADABLE. ALL CHALK, LOOSE COATINGS AND OTHER CONTAMINANTS SHALL BE REMOVED WITH A HIGH PRESSURE WATER WASH. HIGH PRESSURE WATER WASH IS DEFINED AS USING PRESSURES FROM 3,000 TO 6,000 PSI AT 8 TO 10 GPM WATER VOLUME.
2. A HAND OR POWER TOOL CLEANING, IN ACCORDANCE WITH TENNESSEE STANDARD SPECIFICATION. SUBSECTION 603.05 (A) SHALL BE APPLIED TO REPAIR AREAS THAT HAVE VISIBLE RUST OR EXPOSED STEEL. THE ENGINEER SHALL DESIGNATE ALL AREAS THAT ARE TO RECEIVE THE HAND OR POWER TOOL CLEANING. ALL HAND OR POWER TOOL CLEANING SHALL BE DONE TO THE COMPLETE SATISFACTION OF THE ENGINEER. ALL EXPOSED STRUCTURAL STEEL WITHIN THESE AREAS SHALL BE SPOT PRIMED IMMEDIATELY AFTER CLEANING.

CONTAINMENT:

THE EXISTING PAINT SYSTEM CONTAINS BASIC LEAD SILICO CHROMATE PAINT WHICH HAS BEEN DESIGNATED AS A HAZARDOUS MATERIAL. THE CONTRACTOR SHALL CONTAIN AND DISPOSE OF ALL PAINT REMOVAL WASTE IN ACCORDANCE WITH SECTION 603 OF STANDARD SPECIFICATIONS.

HEAT STRAIGHTENING NOTES

THIS ITEM INCLUDES HEAT STRAIGHTENING THE DAMAGED PORTIONS OF THE EXISTING GIRDER AS SHOWN ON THE PLANS. HEAT STRAIGHTENING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH AASHTO ARTICLE 11.4.7 (DIVISION II-CONSTRUCTION) AND AS NOTED ON PLANS.

THE REPAIRS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PERSON WHO SHALL PRESENT WRITTEN DOCUMENTATION PRIOR TO BEGINNING WORK OF HIS SUCCESSFUL HEAT STRAIGHTENING EXPERIENCES WITH COMPARABLE BRIDGE BEAMS/GIRDERS. THIS PERSON SHALL POSSESS THE KNOWLEDGE AND EXPERIENCE TO APPLY THE HEAT IN SUCH A MANNER, SEQUENCE, AND AMOUNT THAT THE FINAL STRAIGHTENED MEMBER RETAINS AS LITTLE RESIDUAL STRESS AS POSSIBLE. HEAT SHALL BE APPLIED AT OR BELOW 1200 DEGREES FAHRENHEIT AND MONITORED WITH CONTACT THERMOMETERS, PYROMETRIC STICKS, OR OTHER HEAT INDICATING DEVICES. THESE HEAT INDICATING DEVICES SHALL BE SUPPLIED BY THE CONTRACTOR AND MADE AVAILABLE TO THE INSPECTOR AT ALL TIMES. FORCED COOLING IS NO PERMITTED. THE STRAIGHTENING SHALL BE ACCOMPLISHED WITH AS LITTLE MECHANICAL FORCE AS POSSIBLE.

TOLERANCES SHALL MEET REQUIREMENTS AS SHOWN IN SECTION 3.5 OF THE AWS STRUCTURAL WELDING CODE.

THE COMPLETED STRAIGHTENING SHALL BE FOLLOWED BY AN INSPECTION FOR CRACKS ON THE FLANGE EDGES. CRACKS DISCOVERED AS A RESULT OF THIS INSPECTION SHALL BE REPAIRED BY THE CONTRACTOR.

ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.

GENERAL NOTES

SPECIFICATIONS:

STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 2006 EDITION)

DESIGN SPECIFICATIONS:

AASHTO 2002 EDITION WITH ADDENDA.

SHOP DRAWINGS:

SHALL BE SUBMITTED ACCORDING TO STANDARD SPECIFICATIONS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE BRIDGE REPAIR OFFICE OF THE DIVISION OF STRUCTURES.

STRUCTURAL STEEL:

SHALL CONFORM TO AASHTO M270 GRADE 36 (ASTM A709 GRADE 36) UNLESS OTHERWISE NOTED.

BOLTS:

SHALL BE HIGH TENSILE STRENGTH BOLTS (ASTM-A325), UNLESS OTHERWISE NOTED. SIZE TO BE AS NOTED ON PLANS. SEE AASHTO SPECIFICATIONS; ARTICLE 11.5.6 DIVISION II. EXISTING CONTACT SURFACES SHALL BE CLEANED TO SSPC-10 SPECIFICATIONS PRIOR TO ATTACHMENT OF STEEL MEMBERS.

WELDING:

SHALL BE IN ACCORDANCE WITH CURRENT AASHTO/AWS D1.5 BRIDGE WELDING CODE WITH ADDENDA'S AND THE STANDARD SPECIFICATIONS. ALL WELDING TO BE COMPLETED BY AWS CERTIFIED WELDERS.

WORKER PROTECTION:

OUR MAINTENANCE RECORDS INDICATE THAT THIS BRIDGE WAS ORIGINALLY PAINTED WITH MATERIALS CONTAINING LEAD AND/OR CHROMATES AND THE CONTRACTOR SHALL BE REQUIRED TO PROCEED ACCORDINGLY TO TAKE ALL MANDATORY SAFEGUARDS PRESCRIBED BY THE STATE AND FEDERAL LAW FOR WORKER PROTECTION AND HAZARDOUS MATERIALS DISPOSAL. ANY AREAS THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT, SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

THE CONTRACTOR SHALL PROVIDE 100 PERCENT CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 15 FEET.

FORMS AND FALSEWORK:

ALL CONCRETE FORM WORK, FALSE WORK AND TEMPORARY SUPPORTS SHALL BE REMOVED AFTER REPAIRS ARE COMPLETED. COST OF FORMS, FALSE WORK AND TEMPORARY SUPPORT REMOVAL, SHALL BE INCLUDED IN ITEMS BID ON. THIS WORK SHALL BE COMPLETED BEFORE FINAL PAYMENT IS APPROVED.

STEEL STRUCTURES:

SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.

RADIOGRAPHIC, ULTRASONIC AND MAGNETIC INSPECTION:

SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.

BRIAN K. EGLI
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 107196
STATE OF TENNESSEE
10/2/07

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

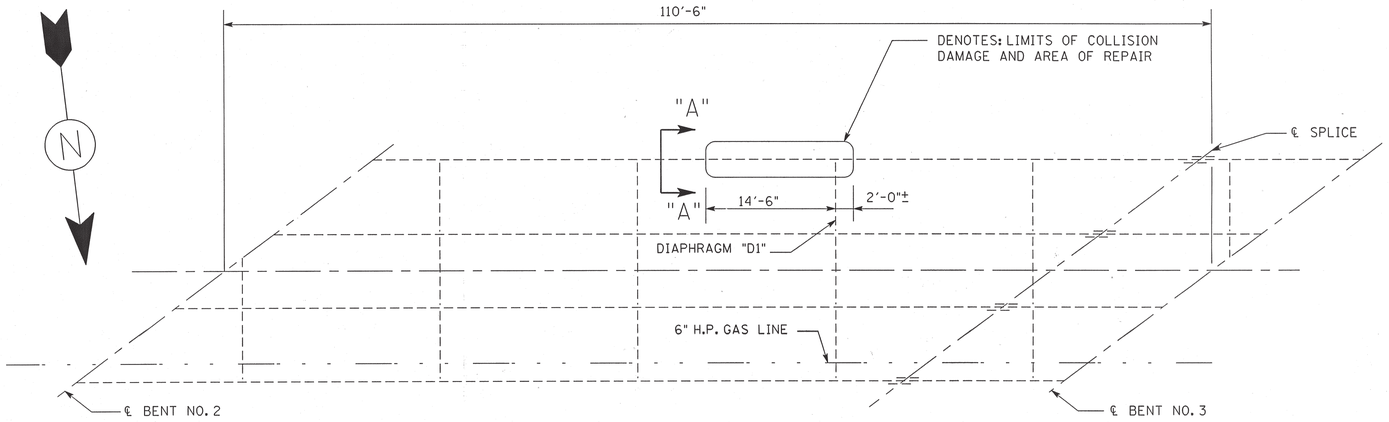
ESTIMATED BRIDGE QUANTITIES & GENERAL NOTES
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-4167-1.25
DAVIDSON COUNTY
2008

BR-87-29

PROJECT NO.	YEAR	SHEET NO.
19960-4110-04	2008	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



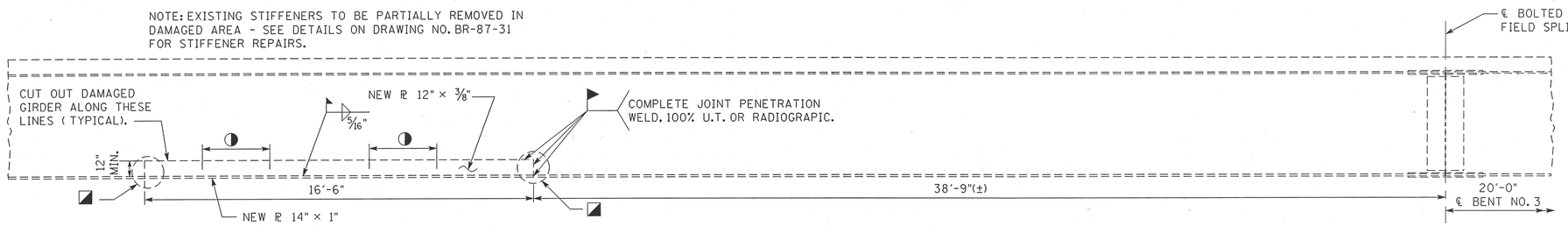
PARTIAL FRAMING PLAN

SHOWING LOCATION OF COLLISION DAMAGE AND REPAIR PROCEDURE.

◪ DENOTES: FOR DETAIL "W" SEE DRAWING NO. BR-87-31.

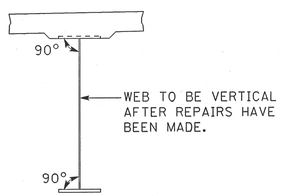
◑ DENOTES: 2-33 INCH TEARS BETWEEN WEB TO FLANGE CONNECTION.

NOTE: EXISTING STIFFENERS TO BE PARTIALLY REMOVED IN DAMAGED AREA - SEE DETAILS ON DRAWING NO. BR-87-31 FOR STIFFENER REPAIRS.



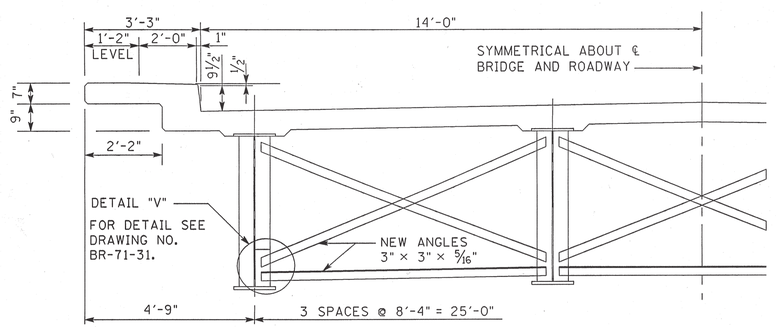
ELEVATION SHOWING INSIDE OF SOUTH EXTERIOR GIRDER REPAIR

(SHOWING ALT "A")



SECTION SHOWING DETAILS FOR FLANGE AND WEB ALIGNMENT

(APPLIES TO ALL GIRDERS BEING STRAIGHTENED OR REPAIRED)



SECTION A-A

NOTE: REPLACE PORTIONS OF EXTERIOR DIAPHRAGM ON SOUTH SIDE OF BRIDGE. SEE FRAMING PLAN ABOVE FOR LOCATION OF DAMAGED DIAPHRAGM.

ITEM NO. 602-10.01, STRUCTURAL STEEL REPAIRS, LUMP SUM FOR HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL

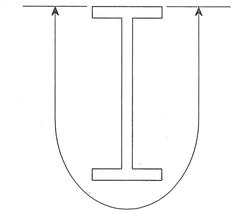
DESCRIPTION: - THIS ITEM SHALL CONSIST OF HEAT STRAIGHTENING THE DAMAGED PORTIONS OF THE EXISTING GIRDER AS SHOWN ON THE PLANS. HEAT STRAIGHTENING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH AASHTO ARTICLE 11.4.7 (DIVISION II - CONSTRUCTION) AND AS NOTED ON PLANS

THE REPAIRS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PERSON WHO SHALL PRESENT WRITTEN DOCUMENTATION PRIOR TO BEGINNING WORK OF HIS SUCCESSFUL HEAT STRIGHTENING EXPERIENCES WITH COMPARABLE BRIDGE BEAMS/GIRDERS. THIS PERSON SHALL POSSESS THE KNOWLEDGE AND EXPERIENCE TO APPLY THE HEAT IN SUCH A MANNER, SEQUENCE, AND AMOUNT THAT THE FINAL STRAIGHTENED MEMBER RETAINS AS LITTLE RESIDUAL STRESS AS POSSIBLE. HEAT SHALL BE APPLIED AT OR BELOW 1200 DEGREES FAHRENHEIT AND MONITORED WITH CONTACT THERMOMETERS, PYROMETRIC STICKS, OR OTHER HEAT INDICATING DEVICES. THESE HEAT INDICATING DEVICES SHALL BE SUPPLIED BY THE CONTRACTOR AND MADE AVAILABLE TO THE INSPECTOR AT ALL TIMES. FORCED COOLING SHALL NOT BE PERMITTED. THE STRAIGHTENING SHALL BE ACCOMPLISHED WITH AS LITTLE MECHANICAL FORCE AS POSSIBLE.

TOLERANCES SHALL MEET REQUIREMENTS AS SHOWN IN SECTION 3.5 OF THE AWS STRUCTURAL WELDING CODE.

THE COMPLETED STRAIGHTENING SHALL BE FOLLOWED BY AN INSPECTION FOR CRACKS ON THE FLANGE EDGES. CRACKS DISCOVERED AS A RESULT OF THIS INSPECTION SHALL BE REPAIRED BY THE CONTRACTOR.

ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.



LIMITS OF GIRDER TO BE PAINTED

(IN AREAS OF HEAT STRAIGHTENING OR REPAIRED AREAS)

BRIAN K. EGLI
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 107196
STATE OF TENNESSEE
11/2/07

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIRS
ELM HILL PIKE (04169)
OVER INTERSTATE 40 (I40)
BRIDGE NO. 19-04167-1.25
DAVIDSON COUNTY
2008

DESIGNED BY	Terry Mackie	DATE	July 2007
DRAWN BY	Don Kimber	DATE	July 2007
SUPERVISED BY	T.Christianson & T. Mackie	DATE	July 2007
CHECKED BY	T. Mackie & Brian Egli	DATE	July 2007

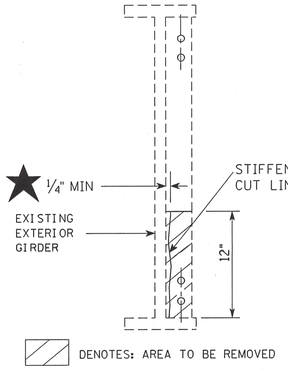
BR-87-30

PROJECT NO.	YEAR	SHEET NO.
19960-4110-04	2008	

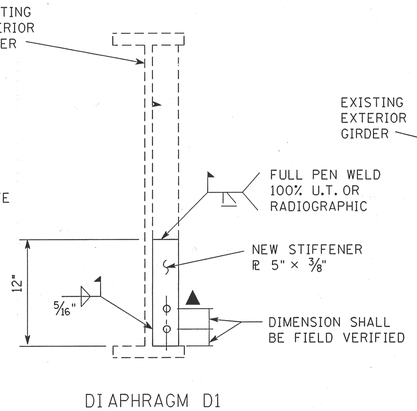
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

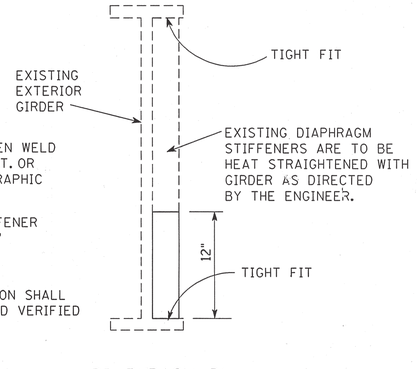
★ DENOTES: AFTER REMOVAL OF STIFFENER PLATE THE ADDITIONAL ¼" LEFT PROJECTING SHALL BE GROUND FLUSH WITH WEB AND FLANGE.



DIAPHRAGM D1
SHOWING AREA TO BE REPAIRED

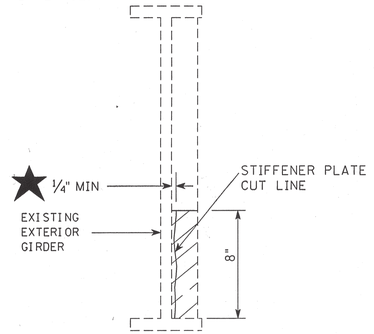


DIAPHRAGM D1
SHOWING NEW REPAIR AREA
▲ DENOTES: 13/16" HOLES FOR NEW ¾" Ø HIGH STRENGTH BOLTS

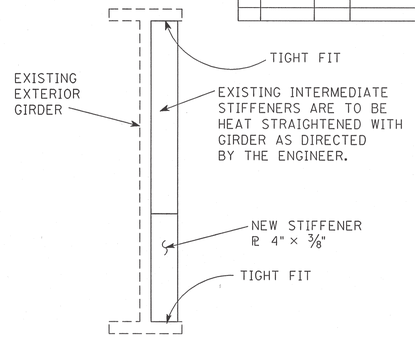


DIAPHRAGM D1

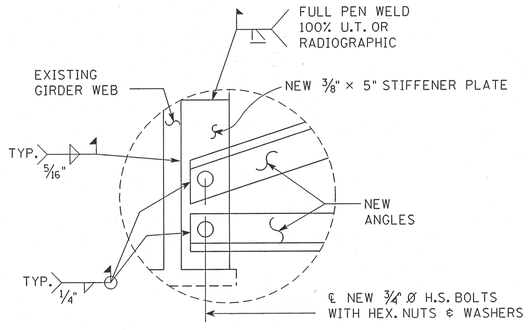
★ DENOTES: AFTER REMOVAL OF STIFFENER PLATE THE ADDITIONAL ¼" LEFT PROJECTING SHALL BE GROUND FLUSH WITH WEB AND FLANGE.



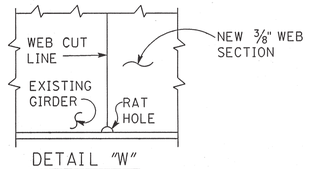
INTERMEDIATE STIFFENER
SHOWING AREA TO BE REPAIRED



INTERMEDIATE STIFFENER



DETAIL "V"
SHOWING NEW BOLTED AND WELDED CONNECTIONS @ D1



DETAIL "W"

* NOTE: ALL DIMENSIONS SHALL BE FIELD VERIFIED BEFORE ANY WORK IS BEGUN.

NOTE: ALL WORK SHALL MEET WITH THE APPROVAL OF THE ENGINEER.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIRS
ELM HILL PIKE (04169)
OVER INTERSTATE 40 (I40)
BRIDGE NO. 19-04167-1.25
DAVIDSON COUNTY
2008

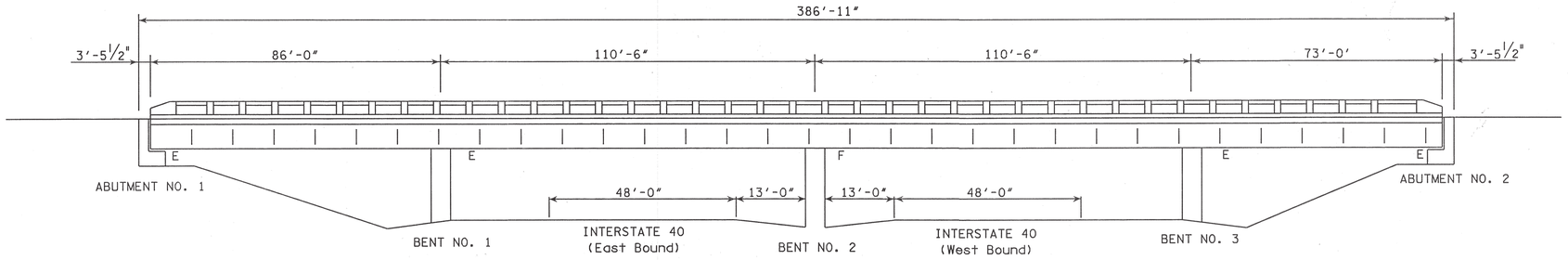
DESIGNED BY Terry Mackie DATE July 2007
DRAWN BY Don Kimber DATE July 2007
SUPERVISED BY T.Christianson & T. Mackie DATE July 2007
CHECKED BY T. Mackie & Brian Egli DATE July 2007

BR-87-31

PROJECT NO.	YEAR	SHEET NO.
19064-4106-04	2011	

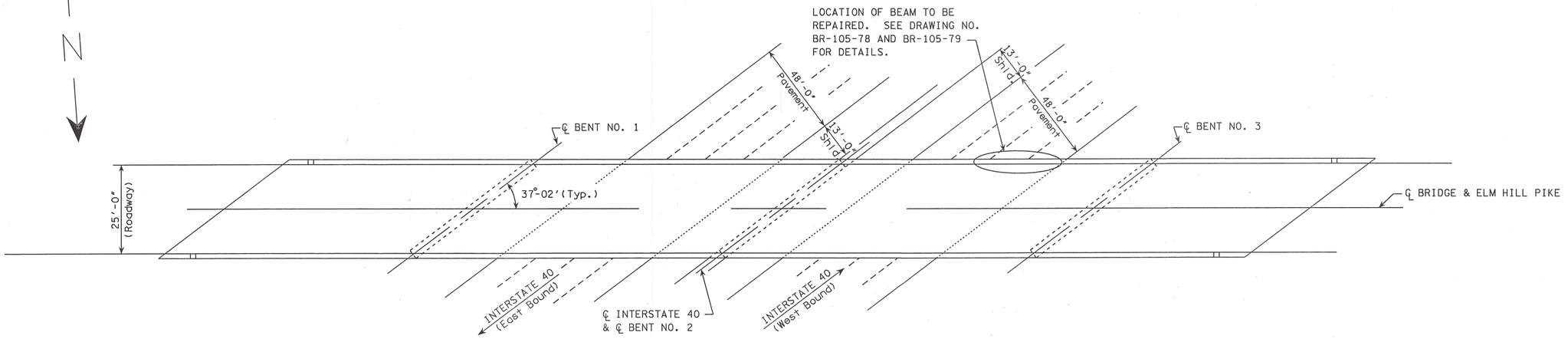
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION

F = FIXED
E = EXPANSION



PLAN

GENERAL SCOPE OF WORK

1. HEAT STRAIGHTEN DAMAGED STEEL I-BEAMS
2. REMOVE AND REPLACE DAMAGED STRUCTURAL COMPONENTS.
3. PAINT REPAIR AREAS.

LIST OF DRAWINGS

DRAWING NO.	LAST REV. DATE	DRAWING
BR-105-76	----	---- LAYOUT OF BRIDGE TO BE REPAIRED
BR-105-77	----	---- ESTIMATED QUANTITIES & GENERAL NOTES
BR-105-78	----	---- STRUCTURAL STEEL REPAIRS
BR-105-79	----	---- STRUCTURAL STEEL REPAIRS

LIST OF REFERENCE DRAWINGS

(To Be Printed With Plans)

DRAWING NO.	DRAWING
K-7-122 THRU K-7-124	EXISTING BRIDGE DRAWNGS

DESIGNED BY Terry Mackle DATE September, 2010
DRAWN BY Cory Hawkins DATE September, 2010
SUPERVISED BY Terry Mackle & T. Christianson DATE September, 2010
CHECKED BY Brian Egli DATE February, 2011

BRIAN K. EGLI REGISTERED ENGINEER AGRICULTURE No. 107796 STATE OF TENNESSEE 2/28/11

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REPAIRED
ELM HILL PIKE OVER
INTERSTATE 40
BRIDGE NO. 19-4167-1.25
DAVIDSON COUNTY
2011

BR-105-76

PROJECT NO.	YEAR	SHEET NO.
19064-4106-04	2011	2

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1)	602-10.01	STRUCTURAL STEEL REPAIRS	LS	1
2)	602-10.06	STRUCTURAL STEEL	LBS	160

FOOTNOTES

1) INCLUDES COST OF ALL HEAT STRAIGHTENING STEEL REPAIRS, WELDING, PAINTING, GRINDING, LABOR AND ALL MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN ON THESE PLANS. THE GIRDER TO BE HEATED IS OUT OF ALIGNMENT BY APPROXIMATELY 4 INCHES. ALSO INCLUDES HEAT STRAIGHTENING TWO AREAS ON THE BOTTOM FLANGE. (1) GIRDER "D" - 24" LONG AND BENT UPWARD 2". (2) GIRDER "C" - 12" LONG AND BENT UPWARD ½".

2) INCLUDES COST OF REMOVING AND REPLACING A PORTION OF STIFFENER AT "D1" (20" x 5" x ⅜"), PORTION OF STIFFENER AT "C1" (12" x 5" x ⅜"), 2 (TWO) INTERMEDIATE STIFFENERS (8" x 4" x ⅜"), 2 (TWO) INTERMEDIATE STIFFENERS (20" x 4" x ⅜"), 2 (TWO) NEW ANGLES (3" x 3" x 5/16"), NEW ¾" DIAMETER HIGH STRENGTH BOLTS WITH HEX NUTS AND WASHERS.

HEAT STRAIGHTENING NOTES

THIS ITEM INCLUDES HEAT STRAIGHTENING THE DAMAGED PORTIONS OF THE EXISTING GIRDER AS SHOWN ON THE PLANS. HEAT STRAIGHTENING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH AASHTO ARTICLE 11.4.7 (DIVISION II-CONSTRUCTION) AND AS NOTED ON PLANS.

THE REPAIRS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PERSON WHO SHALL PRESENT WRITTEN DOCUMENTATION PRIOR TO BEGINNING WORK OF HIS SUCCESSFUL HEAT STRAIGHTENING EXPERIENCES WITH COMPARABLE BRIDGE BEAMS/GIRDERS. THIS PERSON SHALL POSSESS THE KNOWLEDGE AND EXPERIENCE TO APPLY THE HEAT IN SUCH A MANNER, SEQUENCE, AND AMOUNT THAT THE FINAL STRAIGHTENED MEMBER RETAINS AS LITTLE RESIDUAL STRESS AS POSSIBLE. HEAT SHALL BE APPLIED AT OR BELOW 1200 DEGREES FAHRENHEIT AND MONITORED WITH CONTACT THERMOMETERS, PYROMETRIC STICKS, OR OTHER HEAT INDICATING DEVICES. THESE HEAT INDICATING DEVICES SHALL BE SUPPLIED BY THE CONTRACTOR AND MADE AVAILABLE TO THE INSPECTOR AT ALL TIMES. FORCED COOLING IS NO PERMITTED. THE STRAIGHTENING SHALL BE ACCOMPLISHED WITH AS LITTLE MECHANICAL FORCE AS POSSIBLE.

TOLERANCES SHALL MEET REQUIREMENTS AS SHOWN IN SECTION 3.5 OF THE AWS STRUCTURAL WELDING CODE.

THE COMPLETED STRAIGHTENING SHALL BE FOLLOWED BY AN INSPECTION FOR CRACKS ON THE FLANGE EDGES. CRACKS DISCOVERED AS A RESULT OF THIS INSPECTION SHALL BE REPAIRED BY THE CONTRACTOR.

GENERAL NOTES

SPECIFICATIONS:

STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 2006 EDITION)

DESIGN SPECIFICATIONS:

AASHTO 2002 EDITION WITH ADDENDA.

SHOP DRAWINGS:

SHALL BE SUBMITTED ACCORDING TO STANDARD SPECIFICATIONS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE BRIDGE REPAIR OFFICE OF THE DIVISION OF STRUCTURES.

STRUCTURAL STEEL:

SHALL CONFORM TO AASHTO M270 GRADE 36 (ASTM A709 GRADE 36) UNLESS OTHERWISE NOTED.

BOLTS:

SHALL BE HIGH TENSILE STRENGTH BOLTS (ASTM-A325), UNLESS OTHERWISE NOTED. SIZE TO BE AS NOTED ON PLANS. SEE AASHTO SPECIFICATIONS; ARTICLE 11.5.6 DIVISION II. EXISTING CONTACT SURFACES SHALL BE CLEANED TO SSPC-10 SPECIFICATIONS PRIOR TO ATTACHMENT OF STEEL MEMBERS.

WELDING:

SHALL BE IN ACCORDANCE WITH CURRENT AASHTO/AWS D1.5 BRIDGE WELDING CODE WITH ADDENDA'S AND THE STANDARD SPECIFICATIONS. ALL WELDING TO BE COMPLETED BY AWS CERTIFIED WELDERS.

WORKER PROTECTION:

OUR MAINTENANCE RECORDS INDICATE THAT THIS BRIDGE WAS ORIGINALLY PAINTED WITH MATERIALS CONTAINING LEAD AND/OR CHROMATES AND THE CONTRACTOR SHALL BE REQUIRED TO PROCEED ACCORDINGLY TO TAKE ALL MANDATORY SAFEGUARDS PRESCRIBED BY THE STATE AND FEDERAL LAW FOR WORKER PROTECTION AND HAZARDOUS MATERIALS DISPOSAL. ANY AREAS THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT, SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

THE CONTRACTOR SHALL PROVIDE 100 PERCENT CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 15 FEET.

STEEL STRUCTURES:

SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.

RADIOGRAPHIC, ULTRASONIC AND MAGNETIC INSPECTION:

SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.

PAINT NOTES

COATING SYSTEM DESCRIPTION:

TO BE APPLIED OVER ALL DESIGNATED REPAIR AREAS.

THE COATING SPECIFIED HEREIN SHALL BE APPLIED IN ORDER TO MEET THE FOLLOWING REQUIREMENTS:

PAINT SHALL BE SYSTEM C IN ACCORDANCE WITH SUB SECTION 603.06. COLOR OF THE FINISH COAT SHALL COMPLY WITH FEDERAL STANDARD NO. 595B, 14110, BRIGHT GREEN. SEE SECTIONS 603 AND 910 OF THE STANDARDS SPECIFICATIONS.

THE UNIVERSAL PRIMER SHALL BE: AMERON AMERLOCK 400: CARBOLINE RUST BOND 8TH: OR DEVOE BAR-OX P-50: OR AN APPROVED EQUAL. QUALIFIED PRODUCTS LIST 3.

ALL PRODUCTS USED IN THIS COATING SYSTEM, INCLUDING THINNERS MUST BE SUPPLIED BY THE SAME MANUFACTURER.

ALL NEW STEEL SHALL RECEIVE A SHOP COAT OF INORGANIC ZINC ACCORDING TO STANDARD SPECIFICATION 603.06

ALL AREAS OF EXPOSED STEEL SHALL BE PRIMED IMMEDIATELY AFTER CLEANING ACCORDING TO STANDARD SPECIFICATION.

SPECIAL NOTE SURFACE PREPARATION FOR PAINT:

OUR RECORDS SHALL THAT THIS BRIDGE HAS OR HAS HAD LEAD/CHROMATE PAINT APPLIED TO IT DURING IT'S HISTORY, THEREFORE THE CONTRACTOR SHALL ASSUME THAT REMNANTS OF THAT PAINT REMAIN ON THE BRIDGE ALONG WITH THE POSSIBILITY OF MILLSCALE. THE CONTRACTOR SHALL BID ACCORDINGLY.

SURFACE PREPARATION: (APPLICABLE TO ALL REPAIR AREAS).

1. ANY OIL OR GREASE SHALL BE REMOVED BY MEANS OF SOLVENT CLEANING IN ACCORDANCE WITH SSPC-SP1. SOLVENTS SHALL BE SAFE AND BIOGRADABLE. ALL CHALK, LOOSE COATINGS AND OTHER CONTAMINANTS SHALL BE REMOVED WITH A HIGH PRESSURE WATER WASH. HIGH PRESSURE WATER WASH IS DEFINED AS USING PRESSURES FROM 3,000 TO 6,000 PSI AT 8 TO 10 GPM WATER VOLUME.

2. A HAND OR POWER TOOL CLEANING, IN ACCORDANCE WITH TENNESSEE STANDARD SPECIFICATION. SUBSECTION 603.05 (A) SHALL BE APPLIED TO REPAIR AREAS THAT HAVE VISIBLE RUST OR EXPOSED STEEL. THE ENGINEER SHALL DESIGNATE ALL AREAS THAT ARE TO RECEIVE THE HAND OR POWER TOOL CLEANING. ALL HAND OR POWER TOOL CLEANING SHALL BE DONE TO THE COMPLETE SATISFACTION OF THE ENGINEER. ALL EXPOSED STRUCTURAL STEEL WITHIN THESE AREAS SHALL BE SPOT PRIMED IMMEDIATELY AFTER CLEANING.

CONTAINMENT:

THE EXISTING PAINT SYSTEM CONTAINS BASIC LEAD SILICO CHROMATE PAINT WHICH HAS BEEN DESIGNATED AS A HAZARDOUS MATERIAL. THE CONTRACTOR SHALL CONTAIN AND DISPOSE OF ALL PAINT REMOVAL WASTE IN ACCORDANCE WITH SECTION 603 OF STANDARD SPECIFICATIONS.

DESIGNED BY Terry Mackle — DATE September, 2010
DRAWN BY Cory Hawkins — DATE September, 2010
SUPERVISED BY Terry Mackle & T. Christianson — DATE September, 2010
CHECKED BY Brian Egli — DATE February, 2011

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIAN K. EGLI — REGISTERED ENGINEER — No. 107196 — STATE OF TENNESSEE — 4/8/11

ESTIMATED BRIDGE QUANTITIES & GENERAL NOTES
ELM HILL PIKE OVER INTERSTATE 40
BRIDGE NO. 19-4167-1.25
DAVIDSON COUNTY
2011

BR-105-77

ITEM NO. 602-10.01, STRUCTURAL STEEL REPAIRS, LUMP SUM FOR HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL

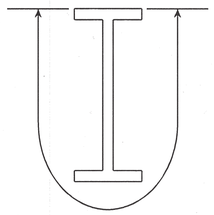
DESCRIPTION: - THIS ITEM SHALL CONSIST OF HEAT STRAIGHTENING THE DAMAGED PORTIONS OF THE EXISTING GIRDER AS SHOWN ON THE PLANS. HEAT STRAIGHTENING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH AASHTO ARTICLE 11.4.7 (DIVISION II - CONSTRUCTION) AND AS NOTED ON PLANS

THE REPAIRS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PERSON WHO SHALL PRESENT WRITTEN DOCUMENTATION PRIOR TO BEGINNING WORK OF HIS SUCCESSFUL HEAT STRIGHTENING EXPERIENCES WITH COMPARABLE BRIDGE BEAMS/GIRDERS. THIS PERSON SHALL POSSESS THE KNOWLEDGE AND EXPERIENCE TO APPLY THE HEAT IN SUCH A MANNER, SEQUENCE, AND AMOUNT THAT THE FINAL STRAIGHTENED MEMBER RETAINS AS LITTLE RESIDUAL STRESS AS POSSIBLE. HEAT SHALL BE APPLIED AT OR BELOW 1200 DEGREES FAHRENHEIT AND MONITORED WITH CONTACT THERMOMETERS, PYROMETRIC STICKS, OR OTHER HEAT INDICATING DEVICES. THESE HEAT INDICATING DEVICES SHALL BE SUPPLIED BY THE CONTRACTOR AND MADE AVAILABLE TO THE INSPECTOR AT ALL TIMES. FORCED COOLING SHALL NOT BE PERMITTED. THE STRAIGHTENING SHALL BE ACCOMPLISHED WITH AS LITTLE MECHANICAL FORCE AS POSSIBLE.

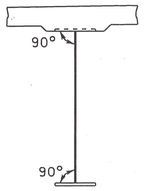
TOLERANCES SHALL MEET REQUIREMENTS AS SHOWN IN SECTION 3.5 OF THE AWS STRUCTURAL WELDING CODE.

THE COMPLETED STRAIGHTENING SHALL BE FOLLOWED BY AN INSPECTION FOR CRACKS ON THE FLANGE EDGES. CRACKS DISCOVERED AS A RESULT OF THIS INSPECTION SHALL BE REPAIRED BY THE CONTRACTOR.

ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.



LIMITS OF GIRDER TO BE PAINTED
(IN AREAS OF PAIRED AREAS)

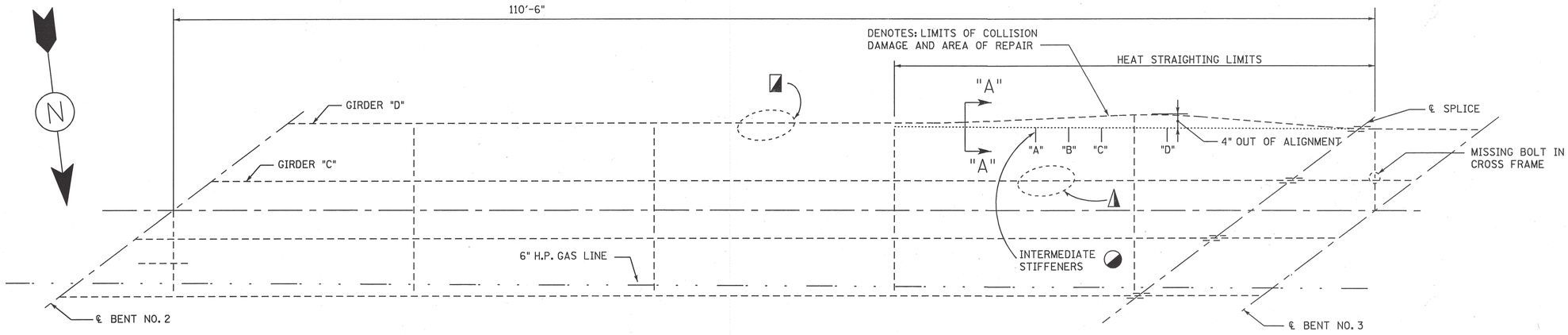


SECTION SHOWING DETAILS FOR FLANGE AND WEB ALIGNMENT
(APPLIES TO ALL GIRDERS BEING STRAIGHTENED OR REPAIRED)

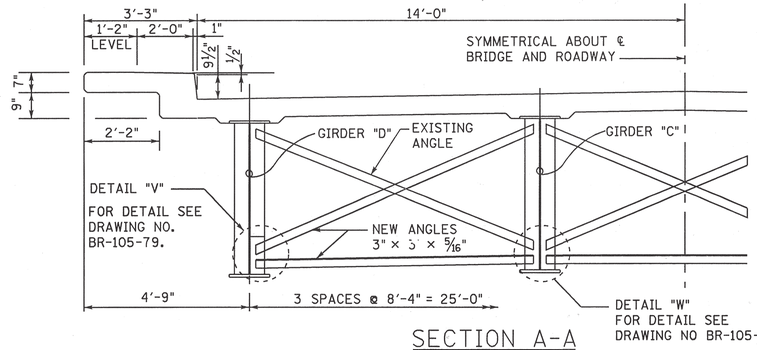
PROJECT NO.	YEAR	SHEET NO.
19064-4106-04	2011	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PARTIAL FRAMING PLAN
SHOWING LOCATION OF COLLISION DAMAGE AND REPAIR PROCEDURE.



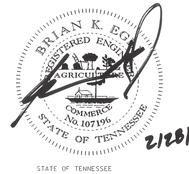
SECTION A-A

NOTE: REPLACE PORTIONS OF EXTERIOR DIAPHRAGM ON SOUTH SIDE OF BRIDGE. SEE FRAMING PLAN ABOVE FOR LOCATION OF DAMAGED DIAPHRAGM.

DENOTES: INTERMEDIATE STIFFENERS SHALL BE PARTIALLY REMOVED AND REPLACED. FOR DETAILS SEE DRAWING NO. BR-105-79.

DENOTES: COLLISION DAMAGE IN BOTTOM FLANGE THAT NEEDS HEAT STRAIGHTENING (24"x6"x2")

DENOTES: COLLISION DAMAGE IN BOTTOM FLANGE THAT NEEDS HEAT STRAIGHTENING (12"x6"x½")



2/28/11

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRUCTURAL STEEL REPAIRS
ELM HILL PIKE (04167)
OVER INTERSTATE 40 (I40)
BRIDGE NO. 19-04167-1.25
DAVIDSON COUNTY
2011

DESIGNED BY	Terry Mackie	DATE	Nov. 2010
DRAWN BY	Don Kimber	DATE	Nov. 2010
SUPERVISED BY	Brian Egli	DATE	Nov. 2010
CHECKED BY	T. Mackie & Brian Egli	DATE	Nov. 2010

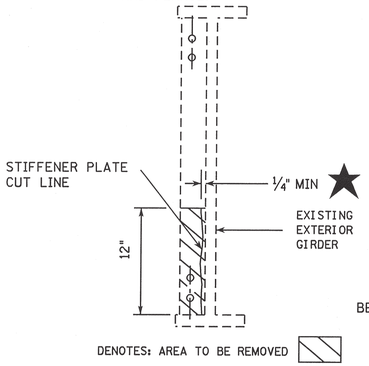
BR-105-78

PROJECT NO.	YEAR	SHEET NO.
19064-4106-04	2011	

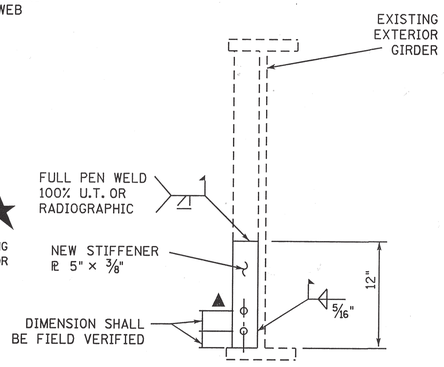
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

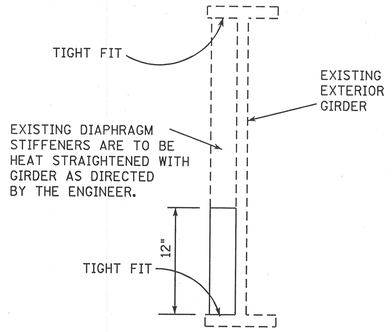
★ DENOTES: AFTER REMOVAL OF STIFFENER PLATE THE ADDITIONAL ¼" LEFT PROJECTING SHALL BE GROUND FLUSH WITH WEB AND FLANGE.



CROSS FRAME STIFFENER "C1"
SHOWING AREA TO BE REPAIRED



CROSS FRAME STIFFENER "C1"
SHOWING NEW REPAIR AREA
▲ DENOTES: 13/16" HOLES FOR NEW ¾" Ø HIGH STRENGTH BOLTS



CROSS FRAME STIFFENER "C1"

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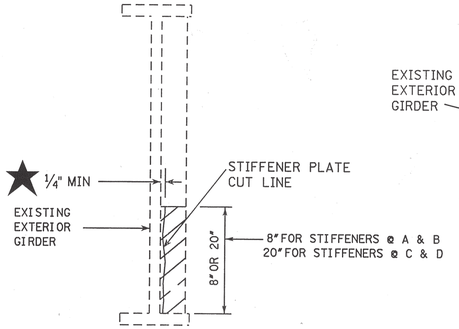
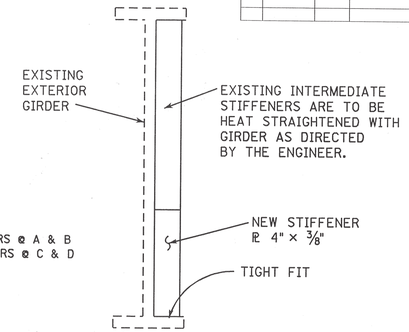


INTERMEDIATE STIFFENER
SHOWING AREA TO BE REPAIRED



INTERMEDIATE STIFFENER

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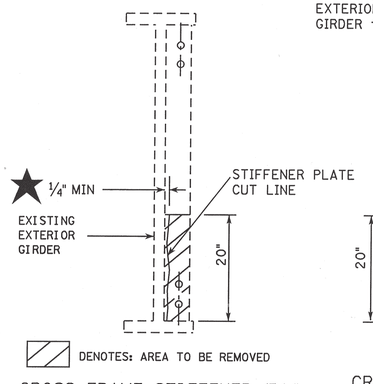
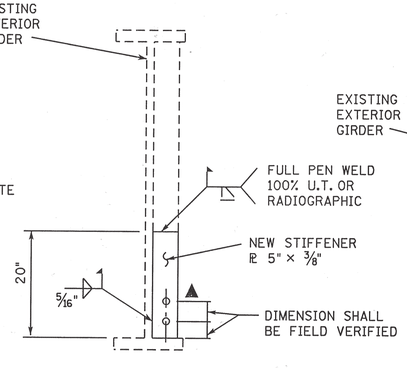
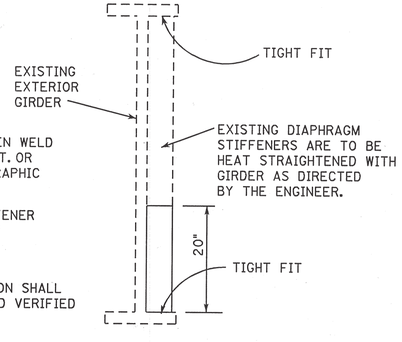


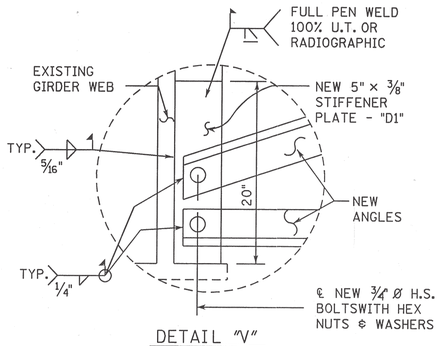
CROSS FRAME STIFFENER "D1"
SHOWING AREA TO BE REPAIRED



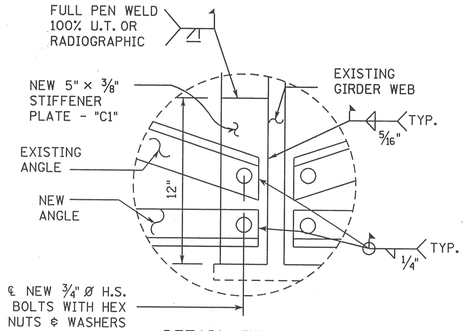
CROSS FRAME STIFFENER "D1"
SHOWING NEW REPAIR AREA
▲ DENOTES: 13/16" HOLES FOR NEW ¾" Ø HIGH STRENGTH BOLTS



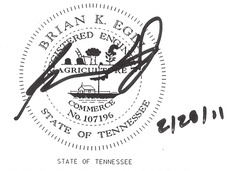
CROSS FRAME STIFFENER "D1"



DETAIL "V"
SHOWING NEW BOLTED AND WELDED CONNECTIONS ⊘ D1



DETAIL "W"
SHOWING NEW BOLTED AND WELDED CONNECTIONS ⊘ C1



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BR-105-79