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2 (BR-116-125)	ESTIMATED QUANTITIES
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4	TRAFFIC CONTROL

# STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION BUREAU OF ENGINEERING

## SHELBY COUNTY

TENN.	YEAR	SHEET NO.
	2015	1
FED. AID PROJ. NO.		
STATE PROJ. NO.	79006-4195-04	

**LIST OF STANDARD DRAWINGS**

DWG. NO.	DATE OF LAST REV.	TITLE
T-FAB-I	5-27-97	FLASHING YELLOW ARROW BOARD
T-PBR-I	6-30-09	INTERCONNECTED PORTABLE BARRIER RAIL
T-WZ-II	3-13-09	ONE LANE CLOSURE ON DIVIDED HIGHWAYS

**LIST OF REFERENCE DRAWINGS**

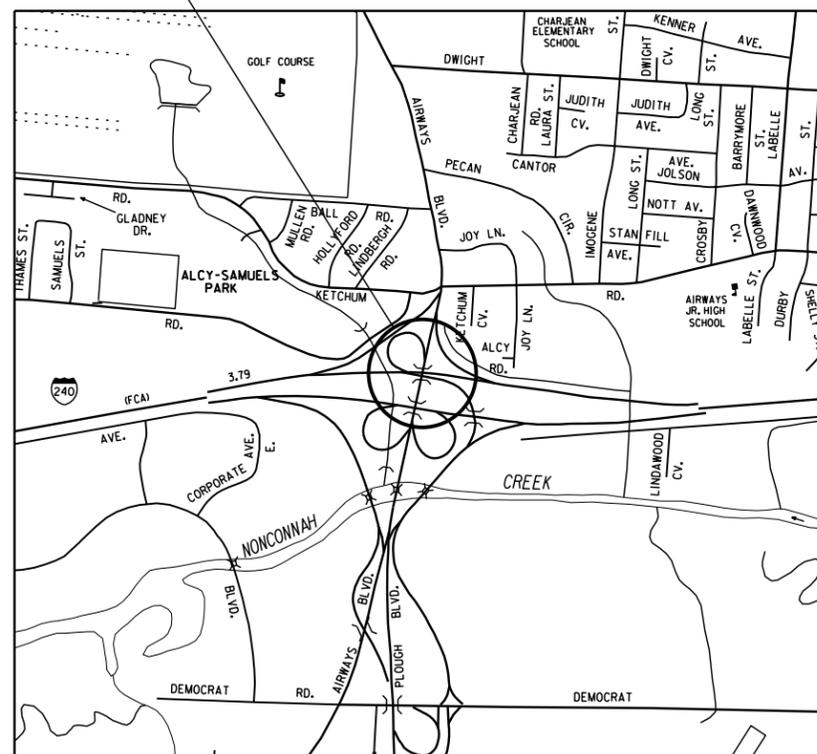
(TO BE PRINTED WITH PLANS)

DWG. NO.	DATE OF LAST REV.	TITLE
M-148-140		LAYOUT
M-148-143		SUPERSTRUCTURE
M-148-144		SUPERSTRUCTURE DETAILS
M-148-149		PRESTRESSED BOX BEAM - SPAN 2
M-148-152		BENTS NO. 1 AND 2
H-9-1		BRIDGE LAYOUT
H-9-2		GEOMETRY LAYOUT
H-9-5		SUPERSTRUCTURE SLAB
H-9-6		SUPERSTRUCTURE SLAB DETAILS
H-9-8		PRESTRESSED BEAM SPAN 2

WEST BOUND INTERSTATE 240 OVER AIRWAYS BLVD.

STATE HIGHWAY NO.      F.A.H.S. NO. N/A

BRIDGE ID. NO. 79-1240-7.88 L



PROJECT LOCATION

NO EQUATIONS  
NO EXCLUSIONS

**LIST OF BRIDGE DRAWINGS**

DWG. NO.	DATE OF LAST REVISION	TITLE
BR-116-124		LAYOUT OF BRIDGE
BR-116-125		ESTIMATED QUANTITIES
BR-116-126		GENERAL NOTES
BR-116-127		FRAMING PLAN
BR-116-128		BEAM REPAIR DETAILS 1 OF 2
BR-116-129		BEAM REPAIR DETAILS 2 OF 2

**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 MARCH 1, 2006 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT

DES. ENG. SV. MIKE LAWSON  
 DESIGNED BY PARSONS TRANSPORTATION GROUP  
 DESIGNER J.B. McELYEA CHECKED BY D.R. NOLTE  
 P. E. NO. 79006-4195-04 PIN 104401.01

APPROVED: Paul D. Degges  
 PAUL D. DEGGES, CHIEF ENGINEER

DATE: \_\_\_\_\_

APPROVED: John Schroer  
 JOHN SCHROER, COMMISSIONER

UNOFFICIAL  
SET

NOT FOR  
BIDDING

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_  
 DIVISION ADMINISTRATOR      DATE

**ESTIMATED QUANTITIES**

TYPE	DESCRIPTION	SIZE	EA.	SF	ROADWAY ITEMS	UNIT	TOTAL
G20-2a	END ROAD WORK	36 X 18	1	4.5	PORTABLE IMPACT ATTENUATOR	EA.	1
R1-2	YIELD	36X36X36	1	5	TYPE C WARNING LIGHTS	EA.	12
SPECIAL	SIDEWALK CLOSED	24 X 12	2	2	TYPE C ARROW BOARD	EA.	2
W3-2A	YIELD AHEAD	36 X 36	1	9	INTERCONNECTED PORTABLE BARRIER RAIL	L.F.	290
W4-1	MERGE	48 X 48	1	16	FLEXIBLE CHANNELIZING DRUMS	EA.	24
W4-2R	LEFT LANE MERGE SYMBOL	48 X 48	2	32			
W20-1	ROAD WORK AHEAD	48 X 48	2	48			
W20-5R	RIGHT LANE CLOSED	48 X 48	1	16			
<b>TOTAL</b>			<b>11</b>	<b>118.5</b>			

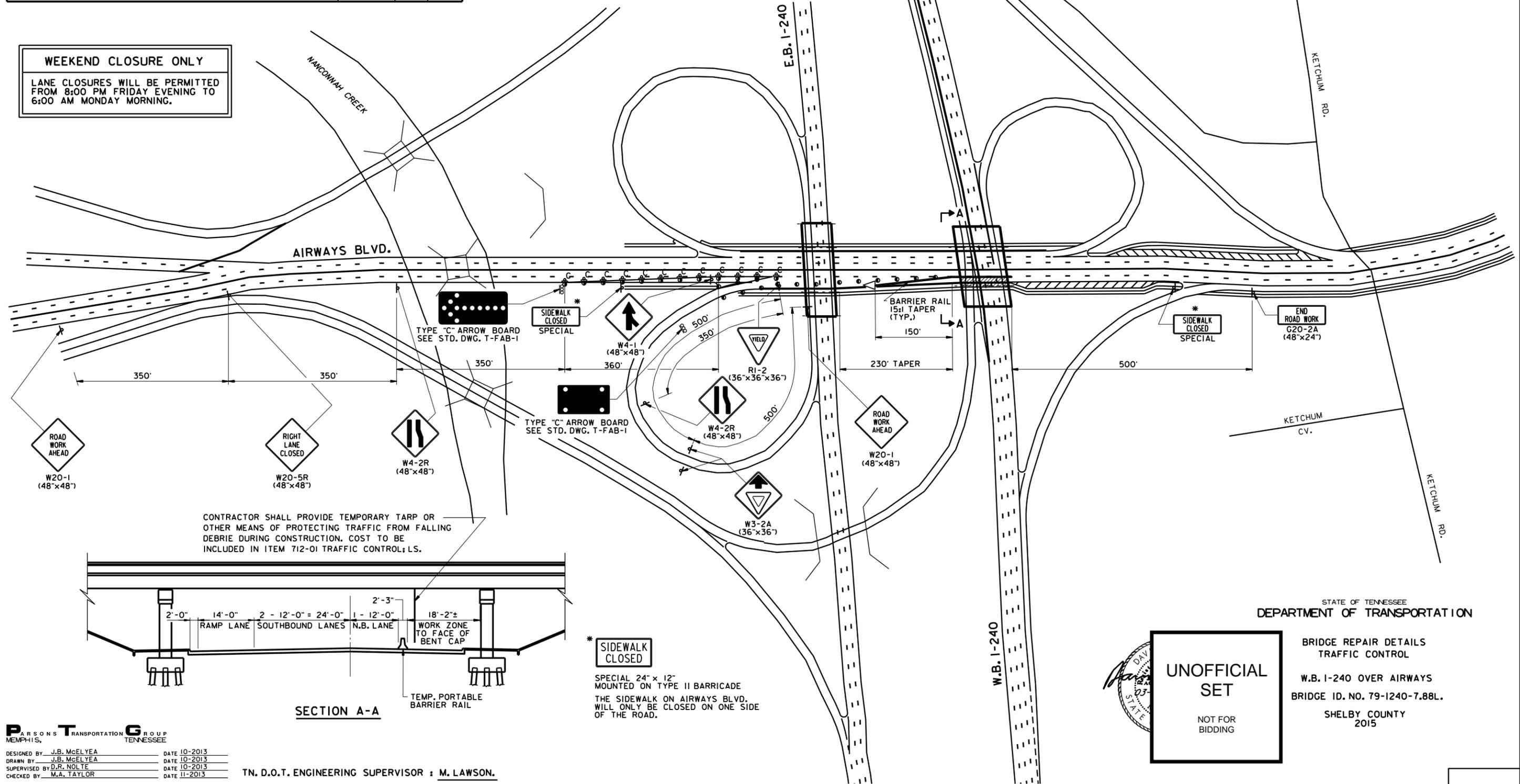
**LEGEND**

- TRAFFIC SIGN
- CHANNELIZING DRUMS
- CHANNELIZING DRUMS WITH TYPE "C" WARNING LIGHTS ATTACHED
- PORTABLE BARRIER RAIL
- ATTENUATOR
- ARROW BOARD
- WORK ZONE

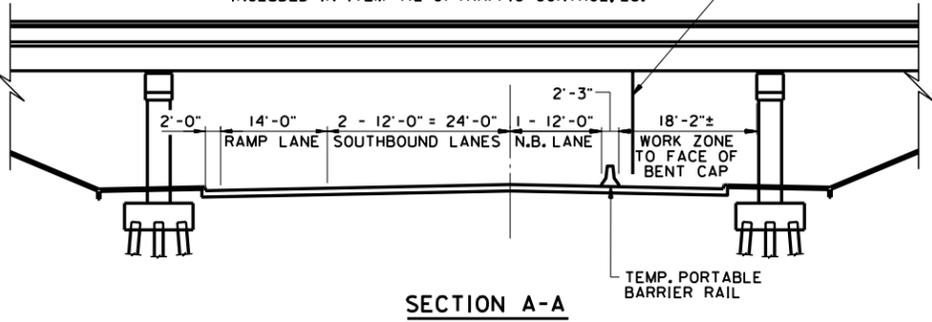
PROJECT NO.	YEAR	SHEET NO.	
79006-4195-04	2015	4	
REVISIONS			
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**WEEKEND CLOSURE ONLY**  
 LANE CLOSURES WILL BE PERMITTED FROM 8:00 PM FRIDAY EVENING TO 6:00 AM MONDAY MORNING.



CONTRACTOR SHALL PROVIDE TEMPORARY TARP OR OTHER MEANS OF PROTECTING TRAFFIC FROM FALLING DEBRIS DURING CONSTRUCTION. COST TO BE INCLUDED IN ITEM 712-01 TRAFFIC CONTROL; LS.



**\* SIDEWALK CLOSED**  
 SPECIAL 24" x 12" MOUNTED ON TYPE II BARRICADE  
 THE SIDEWALK ON AIRWAYS BLVD. WILL ONLY BE CLOSED ON ONE SIDE OF THE ROAD.

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

**UNOFFICIAL SET**  
 NOT FOR BIDDING

BRIDGE REPAIR DETAILS  
 TRAFFIC CONTROL  
 W.B. I-240 OVER AIRWAYS  
 BRIDGE ID. NO. 79-1240-7.88L.  
 SHELBY COUNTY  
 2015

**PARSONS TRANSPORTATION GROUP**  
 MEMPHIS, TENNESSEE  
 DESIGNED BY: J.B. McELYEA DATE: 10-2013  
 DRAWN BY: J.B. McELYEA DATE: 10-2013  
 SUPERVISED BY: D.R. NOLTE DATE: 10-2013  
 CHECKED BY: M.A. TAYLOR DATE: 11-2013

TN. D.O.T. ENGINEERING SUPERVISOR : M. LAWSON.



**GENERAL NOTES**

1. SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 2006 EDITION)
2. LOADING: AS DESIGNED HS20-44
3. DESIGN SPECIFICATIONS: AASHTO 2002 - 17th EDITION.
4. ALL CONCRETE: TO BE CLASS "D" CONCRETE (f'c = 3500 psi), UNLESS NOTED OTHERWISE.  
 THE CONTRACTOR SHALL SUBMIT A CONCRETE DESIGN CAPABLE OF OBTAINING 3500 PSI IN 18 HRS. TO THE MATERIALS AND TEST DIVISION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION FOR APPROVAL AND VERIFICATION THAT THE CONCRETE WILL MEET THE MINIMUM STRENGTH REQUIREMENTS IN THE ALLOTTED TIME. THE DESIGN SUBMITTAL AND TESTING SHALL BE COMPLETED BEFORE ANY WORK ON THE BRIDGE IS BEGUN. NO LOADING SHALL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3000 PSI. NO LOADING SHALL BE PERMITTED UNTIL THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF 18 HOURS.  
 NOTE: CONCRETE USED IN PRESSTRESS BEAM BOTTOM FLANGE REPAIR SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI.
5. CONCRETE CURING: ALL CONCRETE IN REPAIR AREAS SHALL BE CURED ACCORDING TO THE STANDARD SPECIFICATION.
6. REQUIREMENTS AND RESTRICTIONS FOR PHASED CONSTRUCTION:  
 AIRWAYS BLVD. WEEKEND WORK ONLY  
 CLOSE OUTSIDE LANE NORTHBOUND AIRWAYS.
7. APPROVAL OF MATERIALS: NO FABRICATION SHALL BE STARTED UNTIL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS, WITH A COPY OF THE TEST REPORTS ALSO GOING TO THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.
8. ROADSIDE BANKS/SLOPES USED BY CONTRACTOR FOR WORK ACCESS, PARKING, AND ANY OTHER OPERATIONS THAT ARE DISTURBED BY HIS OPERATIONS SHALL BE REPAIRED BY REGRADING, RESEEDING, MULCHING OR WHATEVER MEANS ARE NECESSARY TO RESTORE THE BANKS/SLOPES TO THE ORIGINAL CONDITION. ALL RESTORATION WORK SHALL MEET THE FULL SATISFACTION OF THE ENGINEER. COST OF ALL RESTORATION WORK SHALL BE INCLUDED IN ITEMS BID ON.
9. 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 SLAB REMOVAL AND ANY WORK OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS. SAWING OR CUTTING IS ACCEPTABLE SO LONG AS ANY SPECIFIED PROJECTION OF EXISTING REINFORCING STEEL IS MAINTAINED. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.
10. FIELD VERIFICATIONS: THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL MEASUREMENTS AND DIMENSIONS PRIOR TO FABRICATION.
11. DISPOSAL OF MATERIALS: ALL MATERIALS NOT USED IN THE COMPLETED STRUCTURE NOR TO BE FURNISHED TO THE DOT SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR.
12. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE BEAMS TO PREVENT DAMAGE DUE TO TWISTING OR OVERTURNING DURING ALL PHASES OF CONSTRUCTION.
13. THE CONTRACTOR SHALL PROVIDE 100% UNCONDITIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 15 FEET.

**UTILITIES NOTE**

1. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC., AT 1-800-351-1111 AS REQUIRED BY TCA 65-31-106 WILL BE REQUIRED.
2. UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED ON CONTRACTS WHERE THERE ARE CONSTRUCTION STAKES, LINES, AND GRADES, OR OTHER ESSENTIAL SURVEY STAKING TO PREVENT CONFLICTS WITH THE HIGHWAY CONSTRUCTION. FREQUENTLY, THIS WILL BE REQUIRED AS THE FIRST ITEM OF WORK AND AT ANY LOCATION ON THE PROJECT DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION 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 BID FOR OTHER ITEMS OF CONSTRUCTION.
4. PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED 'AROUND' UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE SPECIFICATIONS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION. ANY ADDITIONAL COST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CLEARING ITEM SPECIFIED IN THE PLANS.
5. THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY IN ACCORDANCE WITH TCA 65-31-106.

PROJECT NO.	YEAR	SHEET NO.	
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**CONST. WORK ZONE TRAFFIC CONTROL**

1. ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE (1) WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.
2. 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.
3. A LONG TERM BUT SPORADIC USE OF WARNING SIGN, SUCH AS FLAGGER SIGNS MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.  
 TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.
4. USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS 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. 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 THIRTY (30) FEET SETBACK. THE ENGINEER SHALL APPROVE ALTERNATE LOCATIONS.
5. ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
6. THE CONTRACTOR WILL 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. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO BE PARKED WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS THIRTY (30) FEET SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEERS APPROVAL TO USE THEM.

**P**ARSONS **T**RANSPORTATION **G**ROUP  
 MEMPHIS, TENNESSEE

DESIGNED BY: J.B. McELYEA DATE 10-2013  
 DRAWN BY: J.B. McELYEA DATE 10-2013  
 SUPERVISED BY: D.R. NOLTE DATE 10-2013  
 CHECKED BY: M.A. TAYLOR DATE 11-2013

TN. D.O.T. ENGINEERING SUPERVISOR : M. LAWSON.

**UNOFFICIAL SET**  
  
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 DEPARTMENT OF TRANSPORTATION

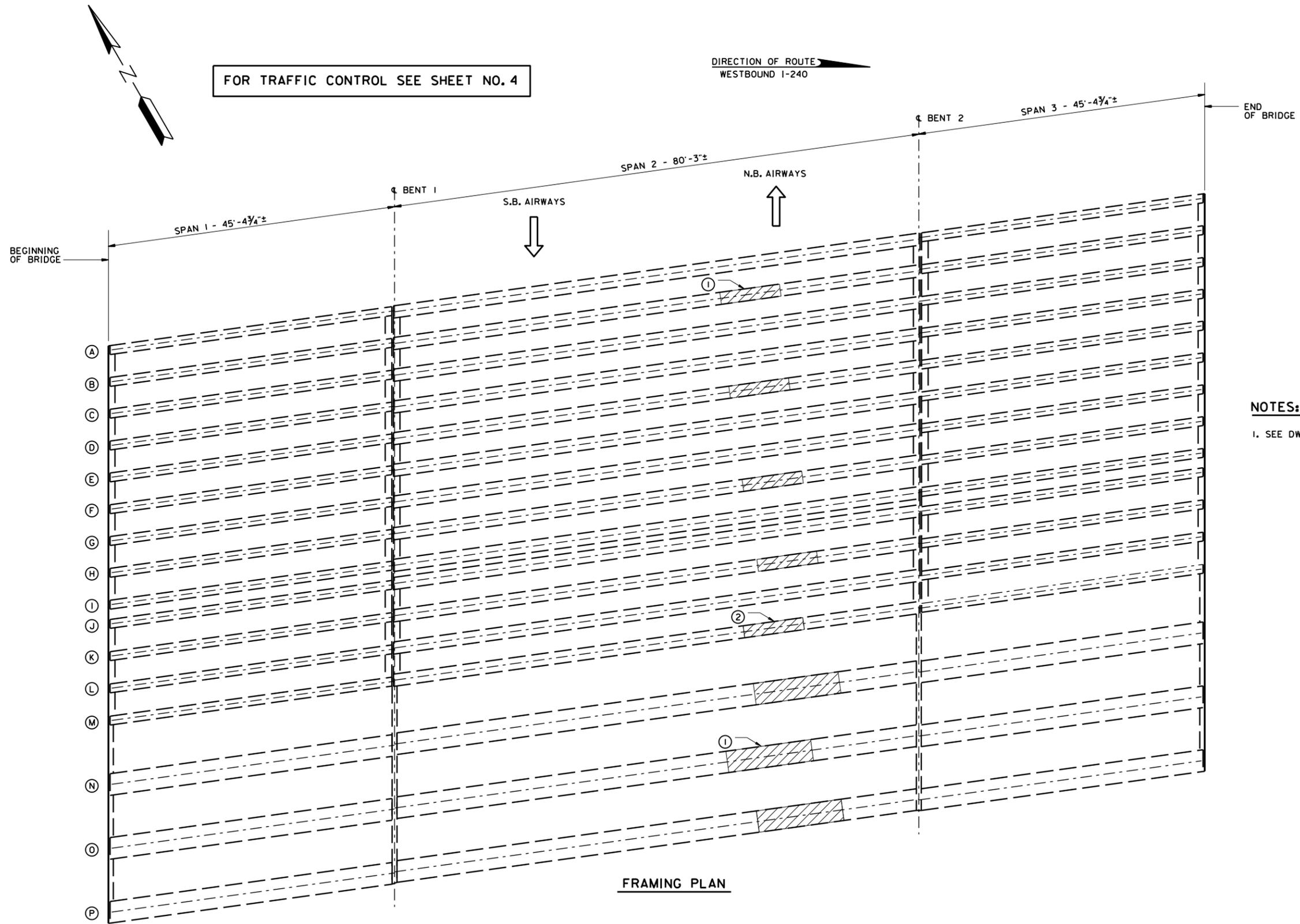
BRIDGE REPAIR DETAILS  
 GENERAL NOTES  
 W.B. I-240 OVER AIRWAYS  
 BRIDGE ID. NO. 79-1240-7.88L  
 SHELBY COUNTY  
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PROJECT NO.	YEAR	SHEET NO.	
79006-4195-04	2015		
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FOR TRAFFIC CONTROL SEE SHEET NO. 4

DIRECTION OF ROUTE  
WESTBOUND I-240

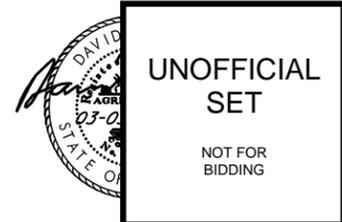


- LEGEND:**
- BEAM REPAIR AREA
  - 1 STRAND SPLICE
  - 2 STRAND SPLICES
  - S. B. SOUTHBOUND
  - N. B. NORTHBOUND

**NOTES:**

1. SEE DWG. NO. BR-116-128 AND BR-116-129 FOR BEAM REPAIR DETAILS.

FRAMING PLAN



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

BRIDGE REPAIR DETAILS  
FRAMING PLAN

W.B. I-240 OVER AIRWAYS  
BRIDGE ID. NO. 79-1240-7.88L  
SHELBY COUNTY  
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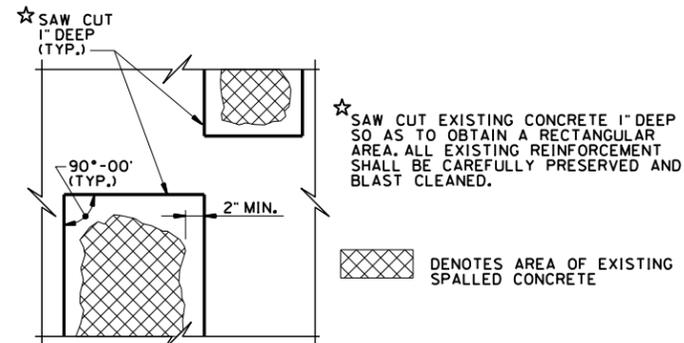
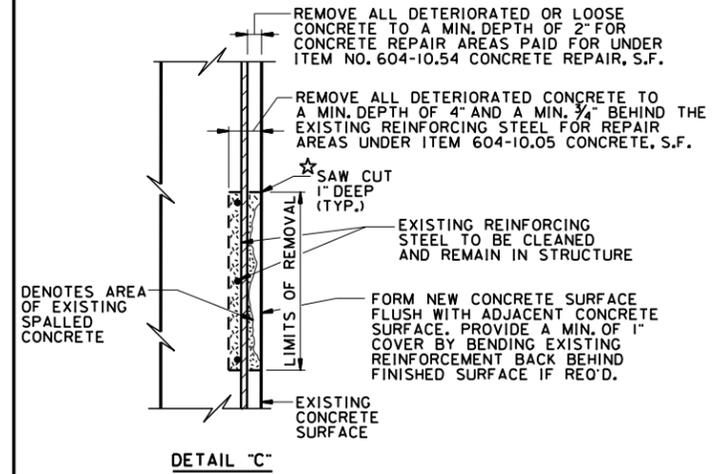
**PARSONS TRANSPORTATION GROUP**  
MEMPHIS, TENNESSEE

DESIGNED BY: J.B. McELYEA DATE: 10-2013  
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 SUPERVISED BY: D.R. NOLTE DATE: 10-2013  
 CHECKED BY: M.A. TAYLOR DATE: 11-2013

TN. D.O.T. ENGINEERING SUPERVISOR : M. LAWSON.

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**LEGEND:**  
 ——— DENOTES PROPOSED STRUCTURE  
 - - - DENOTES EXISTING STRUCTURE  
 ▨ DENOTES AREA TO BE REMOVED



**SPALL SURFACE REPAIR DETAILS**

**NOTES FOR ITEM 604-10.05**

COST OF CUTTING, REMOVING SPALLED OR CRACKED CONCRETE, BLAST CLEANING, CONCRETE, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN SHALL BE INCLUDED IN ITEM NO. 604-10.05, CONCRETE, S.F. CONCRETE SHALL BE CLASS "A" CONCRETE, HIGH EARLY STRENGTH, f'c = 5000 PSI.

**NOTES FOR ITEM 604-10.54**

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

PATCHING MATERIAL SHALL BE A POLYMER-MODIFIED CEMENTITIOUS STRUCTURAL PATCHING VERTICAL AND OVERHEAD MATERIAL. SEE T.D.O.T. QUALIFIED PRODUCTS LIST 13, SPEC. CATEGORY J, SUBLIST F FOR ACCEPTABLE PATCHING MATERIALS.

AFTER CONCRETE REMOVAL OF THE 2" DEPTH HAS TAKEN PLACE THE ENGINEER SHALL HAVE THE OPTION TO REMOVE ADDITIONAL CONCRETE DEPTH AND SHALL DESIGNATE THIS AREA TO BE REPAIRED AND PAID FOR UNDER ITEM NO. 604-10.05 INSTEAD OF UNDER ITEM 604-10.54.

**EPOXY INJECTION NOTES**

- THESE QUANTITIES SHOWN ON THIS SHEET MAY INCREASE OR DECREASE AS DIRECTED BY THE ENGINEER FROM THE OFFICE OF INSPECTION AND REPAIR. ACTUAL LOCATIONS TO BE DESIGNATED BY THE ENGINEER FROM THE OFFICE OF INSPECTION AND REPAIR.
- THE CONTRACTOR SHALL TAKE EXTREME CARE WHEN REMOVING EXISTING CONCRETE SO AS NOT TO DAMAGE EXISTING REINFORCING STEEL. IF REINFORCING STEEL IS DAMAGED OR DEEMED UNSUITABLE BY THE ENGINEER A #5 DOWEL BAR (WITH 1'-0" EMBED. & 2'-2" INTO NEW CONC.) SHALL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.  
SEE DWG. NO. BR-116-126 FOR NOTE CONCERNING LIMITS OF HAMMER SIZE FOR STRUCTURE REMOVAL.
- ALL CRACKS SMALLER THAN 1/4" SHALL BE INJECTED WITH AN APPROVED EPOXY RESIN ADHESIVE. ALL CRACKS 1/4" OR LARGER SHALL BE INJECTED WITH AN APPROVED EPOXY RESIN ADHESIVE OF THE GEL TYPE.
- EXTREME CAUTION SHALL BE TAKEN WHEN SELECTING A PRESSURE NECESSARY TO COMPLETE THE EPOXY INJECTION CRACK REPAIR SO AS NOT TO DAMAGE THE STRUCTURE BY CAUSING ADDITIONAL CRACKING. IF ADDITIONAL DAMAGE OCCURS, THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY. ALL EPOXY INJECTION WORK SHALL MEET WITH THE FULL APPROVAL OF THE ENGINEER.
- ALL EPOXY INJECTION CONTRACTORS AND/OR SUBCONTRACTORS SHALL BE APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.
- AFTER EPOXY INJECTION IS COMPLETE, ALL INJECTION PORTS SHALL BE REMOVED AND ALL EXCESS SEALING MATERIAL AND EPOXY SHALL BE REMOVED FLUSH WITH THE SURROUNDING CONCRETE SURFACES.
- CRACK LOCATIONS SHOWN ON THIS SHEET ARE APPROXIMATE ONLY. THE ENGINEER FROM THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS WILL MARK EXACT CRACK LOCATIONS TO RECEIVE EPOXY INJECTION.
- CERTIFICATION OF THE STRENGTH AND QUALITY OF THE EPOXY RESIN FROM THE MANUFACTURER SHALL BE PROVIDED TO THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.
- IF THE CRACKS ARE NOT FULLY SEALED OR THE STRENGTH REQUIREMENTS ARE NOT MET, THEN REDUCTION IN PAYMENT DETERMINED BY THE ENGINEER WILL BE MADE TO THE CONTRACTORS BID PRICE OF ITEM NO. 604-10.62, EPOXY INJECTION REPAIRS (COMPLETE AND IN PLACE), L.F.
- THE ENGINEER FROM THE STRUCTURES DIVISION, BRIDGE INSPECTION AND REPAIR OFFICE SHALL DESIGNATE TWO (2) RANDOM LOCATIONS WHERE THE CRACKS HAVE BEEN EPOXY INJECTED FOR THE CONTRACTOR TO CORE. THE ONE (1) INCH DIAMETER CORES WILL BE IMMEDIATELY TURNED OVER TO THE ENGINEER FOR INSPECTION AND TO VERIFY FULL SEALING OF THE CRACKS. COST OF CORING SHALL BE INCLUDED IN ITEM NO. 604-10.62, EPOXY INJECTION REPAIRS (COMPLETE AND IN PLACE), L.F. CORES SHALL BE LOCATED TO MISS REINFORCING STEEL. IF REINFORCING STEEL IS ENCOUNTERED, THE CORE LOCATION SHALL BE SHIFTED TO AVOID THE REINFORCING STEEL.
- COST OF ALL LABOR AND MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE EPOXY INJECTION REPAIRS TO EXISTING CONCRETE CRACKS SHALL BE INCLUDED UNDER ITEM NO. 604-10.62, EPOXY INJECTION REPAIRS (COMPLETE AND IN PLACE), L.F. ITEM NO. 604-10.62 SHALL BE BID SUCH THAT THIS ITEM MAY BE INCREASED, DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.

ESTIMATED BRIDGE QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
604-10.05	CONCRETE	SF	50
604-10.54	CONCRETE REPAIRS	SF	200
604-10.62	EPOXY INJECTION REPAIRS (COMPLETE AND IN PLACE)	LF	100

**NOTE:** THESE QUANTITIES MAY INCREASE OR DECREASE AS DIRECTED BY THE ENGINEER FROM THE OFFICE OF INSPECTION AND REPAIR.  
 ACTUAL LOCATIONS TO BE DESIGNATED BY THE ENGINEER FROM THE OFFICE OF INSPECTION AND REPAIR.

**UNOFFICIAL SET**  
 NOT FOR BIDDING

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

BRIDGE REPAIR DETAILS  
 BEAM REPAIR SHEET 1 OF 2

W.B. 1-240 OVER AIRWAYS

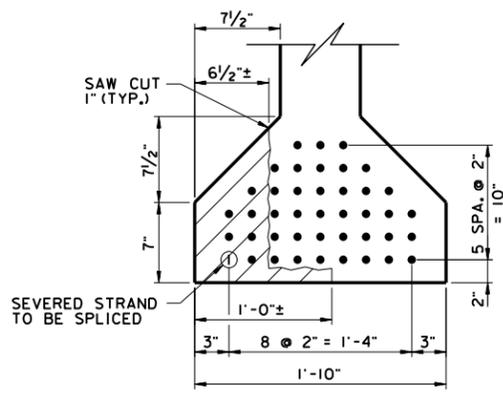
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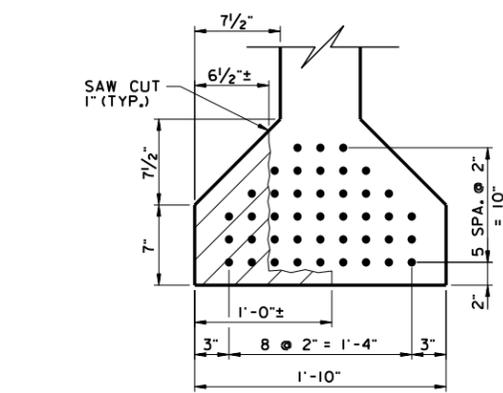
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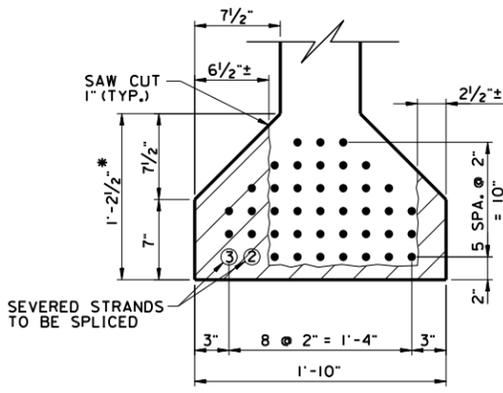
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SECTION A-A  
BEAM B

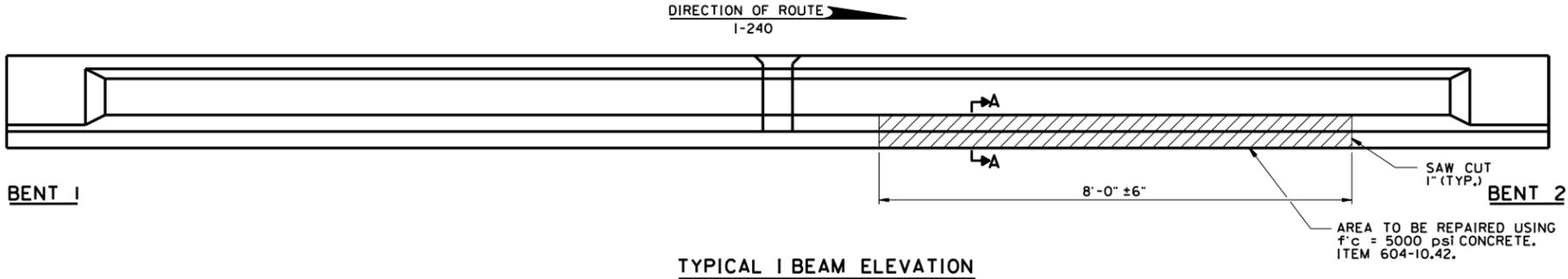


SECTION A-A  
BEAM E, H, & K

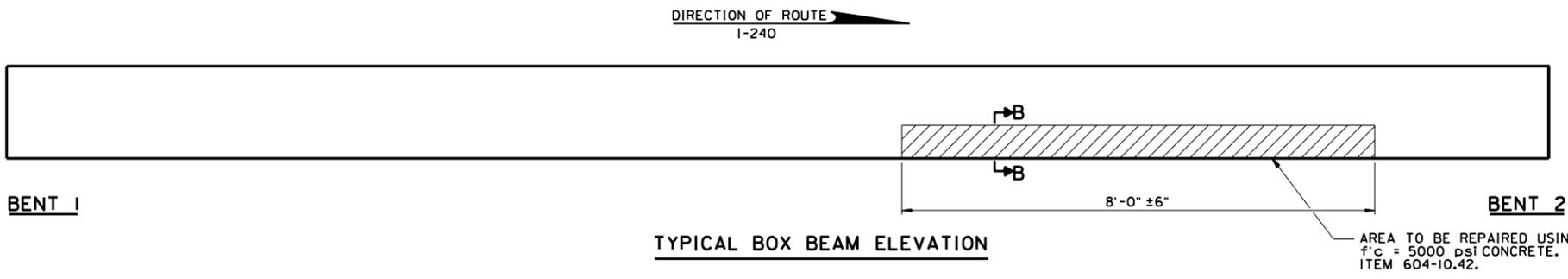


SECTION A-A  
BEAM M

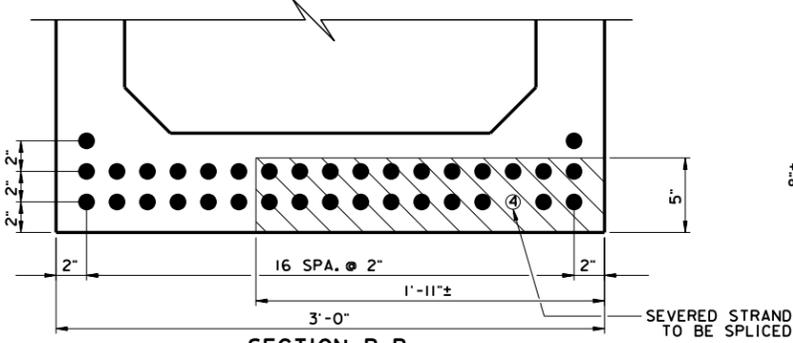
NOTE:  
CONTRACTOR SHALL TAKE EXTREME CARE WHEN REMOVING EXISTING CONCRETE SO AS NOT TO DAMAGE THE EXISTING PRESTRESSED STRANDS. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE FULL SATISFACTION OF THE ENGINEER.



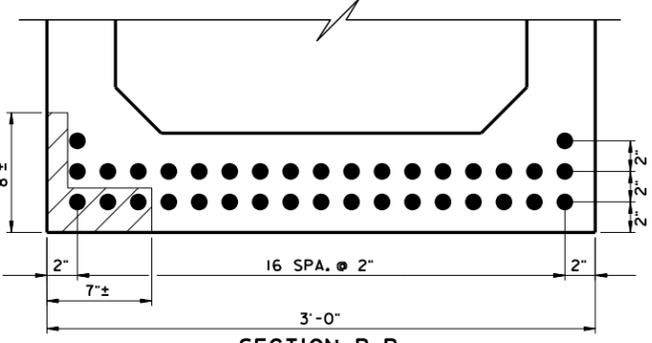
TYPICAL I BEAM ELEVATION



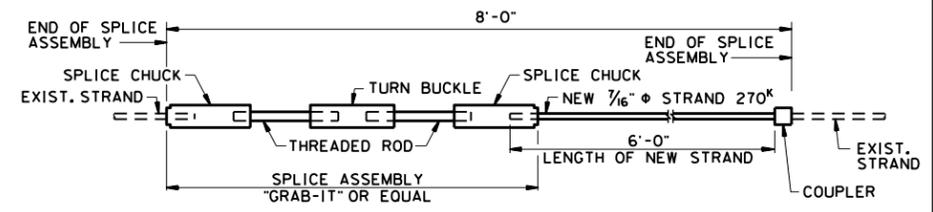
TYPICAL BOX BEAM ELEVATION



SECTION B-B  
BEAM O



SECTION B-B  
BEAM N & P



SINGLE STRAND SPLICE DETAIL  
THE COST OF SPLICE ASSEMBLIES & INSTALLATION SHALL BE INCLUDED UNDER ITEM 604-10.69, PRESTRESSED STRAND SPLICE.

GENERAL NOTES FOR REPAIRING DAMAGED PRESTRESSED BEAMS

1. SAW CUT CONCRETE TO OBTAIN SQUARE AREAS AND REMOVE PORTIONS OF THE PRESTRESSED BEAM AS SHOWN IN THESE PLANS TO INSURE THAT SOUND CONCRETE IS REACHED IN ALL AREAS.
2. ASSEMBLE SPLICE, LOCATING SPLICE SLEEVES AND STRAND GRIPS TO ALLOW SEATING OF THE STRAND GRIPS AND SUFFICIENT THREAD LENGTHS IN THE SPLICE SLEEVES.
3. STRAND SPLICE ASSEMBLIES SHALL BE INSTALLED AND TORQUED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND DETAILS ON THIS SHEET. THE STRAND SPLICE ASSEMBLY SHALL BE A "GRAB-IT" CABLE SPLICE OR EQUIVALENT. "GRAB-IT" CAN BE OBTAINED FROM PRESTRESSED SUPPLY, INC. AT 1-800-328-8036. TORQUE LUBRICATED SPLICE SLEEVE TO APPROXIMATELY 14,000 POUNDS. THE STRANDS GRIPS MUST BE PREVENTED FROM ROTATION DURING TORQUING. SEE SINGLE STRAND SPLICE DETAIL ON THIS SHEET. A TOTAL OF SIX (6) STRANDS ARE TO BE SPLICED. SEE SECTIONS FOR LOCATION OF STRANDS TO BE REPAIRED.
4. FORM AND POUR REPAIR AREA TO ORIGINAL BEAM LINES USING f'c = 5000 psi CONCRETE. AGGREGATE USED SHALL BE SIZE NO. 6 MAXIMUM. THE FORMS MAY BE STRIPPED ONLY AFTER THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF NOT LESS THAN 2500 psi.
5. ASTM GRADE 270K, 7/16" DIAMETER 7 WIRE STRESS RELIEVED LOW RELAXATION STRANDS ARE TO BE USED FOR SPLICING EXISTING STRANDS. CONTRACTOR SHALL VERIFY THE SIZE OF EXISTING STRANDS PRIOR TO ORDERING. THE SIZE OF THE NEW STRANDS SHALL MATCH THE STRANDS BEING SPLICED.
6. APPROVAL OF MATERIALS: NO FABRICATION SHALL BE STARTED UNTIL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.
7. CONCRETE BARRIER OR OTHER SUITABLE MEASURE SHALL BE USED TO PROTECT THE CONCRETE WORK AREA DURING THE CURING PERIOD.
8. ALL OTHER SURFACE REPAIRS ON BEAM SHALL USE CEMENTITIOUS STRUCTURAL PATCHING MATERIAL IN ACCORDANCE WITH LOCATION AND DETAILS ON DWG. NO BR-116-128 AND BR-116-129 PAID FOR AS ITEM NO. 604-10.54.

ESTIMATED QUANTITIES

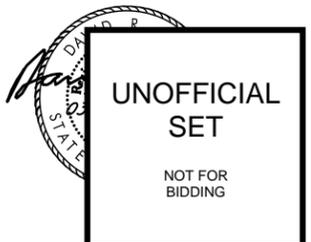
ITEM	DESCRIPTION	UNIT	QUANTITY
604-10.42	CONCRETE REPAIRS	C. F.	54
604-10.69	PRESTRESSED STRAND SPLICE	EACH	6

THESE QUANTITIES MAY INCREASE OR DECREASE AS DIRECTED BY THE ENGINEER FROM THE OFFICE OF INSPECTION AND REPAIR.  
ACTUAL LOCATIONS ARE DESIGNATED BY THE ENGINEER FROM THE OFFICE OF INSPECTION AND REPAIR.

NOTE:  
THE ESTIMATED QUANTITIES REQUIRED FOR THIS PROJECT INCLUDE 6 SPLICE ASSEMBLIES, 24 L.F. OF 7/16" DIAMETER STRANDS, 54 C.F. OF CONCRETE. THESE QUANTITIES ARE APPROXIMATE ONLY.

SPECIAL NOTE TO CONTRACTOR: PRESTRESSED CONCRETE BEAM REPAIRS SHOWN THIS SHEET ARE APPROXIMATE AREAS AND LENGTHS ONLY, AND MAY BE INCREASED OR DECREASED AS DIRECTED BY THE ENGINEER. ADDITIONAL BEAMS WITHIN THE BRIDGE MAY BE DESIGNATED TO RECEIVE SIMILAR TYPE REPAIRS. ALL AREAS OF PRESTRESSED BEAM REPAIR SHALL BE DESIGNATED BY THE ENGINEER FROM THE OFFICE OF INSPECTION & REPAIR. ANY ADDITIONAL AREAS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM NO. 604-10.42, (CONCRETE REPAIRS, C.F.) OR ITEM 604-10.54, (CONCRETE REPAIRS, S.F.)

CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE BRIDGE WHEN REPAIRING THE EXISTING PRESTRESSED BEAMS.



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

BRIDGE REPAIR DETAILS  
BEAM REPAIR DETAILS SHEET 2 OF 2

W.B. I-240 OVER AIRWAYS  
BRIDGE ID. NO. 79-I240-7.88L

SHELBY COUNTY  
2015

PARSONS TRANSPORTATION GROUP  
MEMPHIS, TENNESSEE  
DESIGNED BY: J.B. McELYEA DATE: 10-2013  
DRAWN BY: J.B. McELYEA DATE: 10-2013  
SUPERVISED BY: D.R. NOLTE DATE: 10-2013  
CHECKED BY: M.A. TAYLOR DATE: 11-2013

TN. D.O.T. ENGINEERING SUPERVISOR: M. LAWSON.