

VICINITY MAP  
DAVIDSON COUNTY

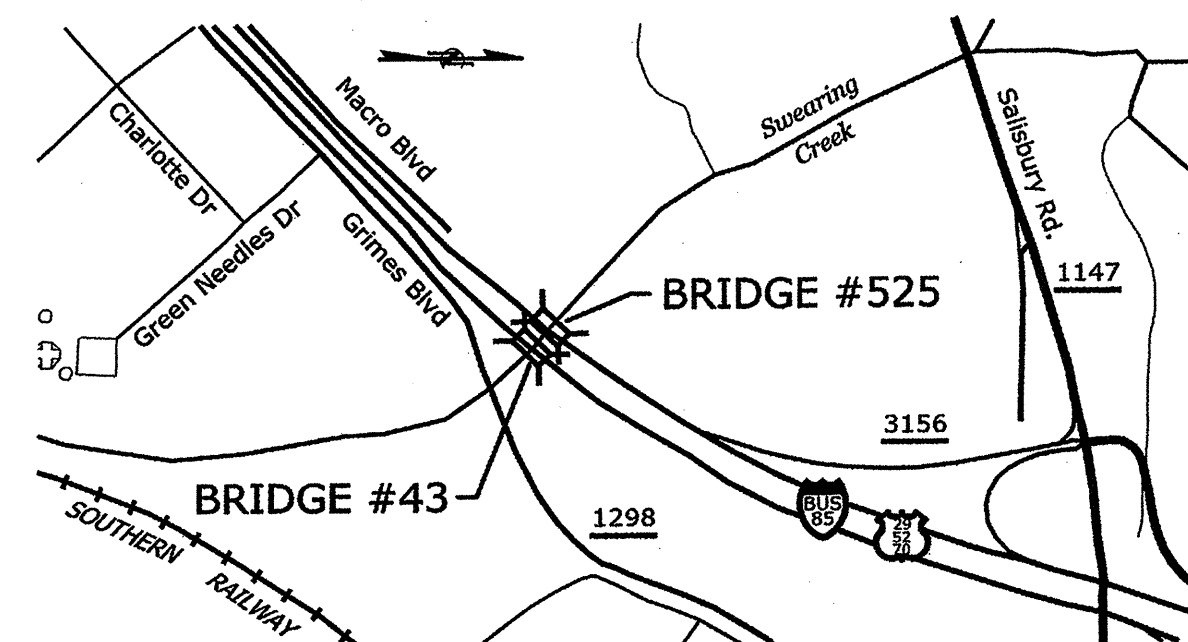
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**DAVIDSON COUNTY**

LOCATION: BRIDGE #43 ON US 29 & US 70 OVER SWEARING CREEK, DAVIDSON COUNTY  
BRIDGE #525 ON US 29 & US 70 OVER SWEARING CREEK, DAVIDSON COUNTY

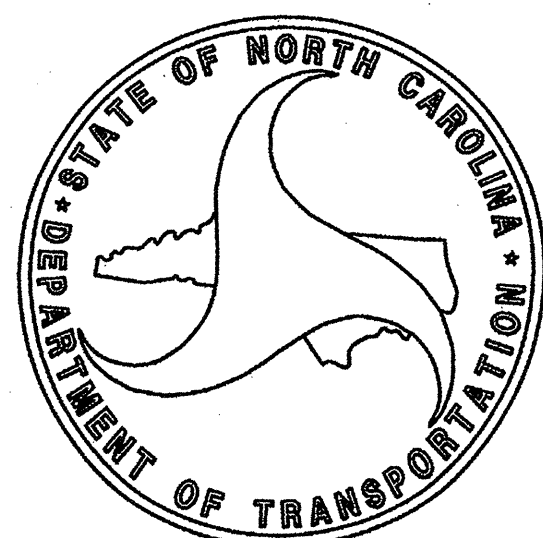
TYPE OF WORK: BRIDGE PRESERVATION: CONCRETE OVERLAY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	41665.6B	5-0	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41665.6B	NA	PE	
41665.6B	NA	CONSTR.	



VICINITY MAP  
BRIDGE #43 & #525

STV/Ralph Whitehead Associates, Inc.  
1000 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC LICENSE NO. F-0991



TRAFFIC DATA

BRIDGE #43 - ADT = 13,000  
BRIDGE #525 - ADT = 13,000

PROJECT LENGTH

BRIDGE	LENGTH	STRUCTURE	PROJECT
#43	.03 MILE		
#525	.03 MILE		

Prepared For:  
**STRUCTURES MANAGEMENT UNIT**

1000 BIRCH RIDGE DR. RALEIGH, NC 27610

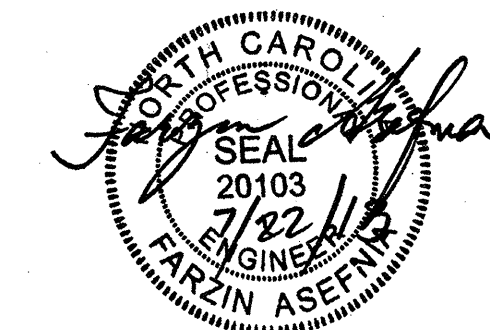
2012 STANDARD SPECIFICATIONS

LETTING DATE:

OCTOBER 15, 2013

PAUL KELLY, P.E.  
PROJECT ENGINEER

ENGINEER



FARZIN ASEFNIA, P.E.

PROJECT: 41665.6B

CONTRACT: C202664

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	41665.6B	S-0A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41665.6B	NA	PE	
41665.6B	NA	CONSTR.	

**DAVIDSON COUNTY**

**LOCATION: BRIDGE #43 ON US 29 & US 70 OVER SWEARING CREEK, DAVIDSON COUNTY  
BRIDGE #525 ON US 29 & US 70 OVER SWEARING CREEK, DAVIDSON COUNTY**

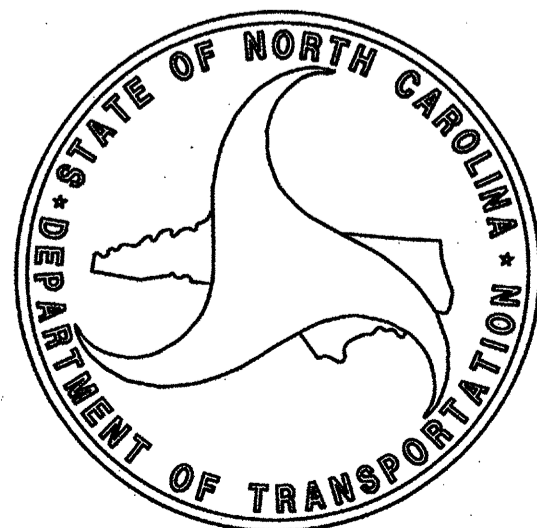
**TYPE OF WORK: BRIDGE PRESERVATION: CONCRETE OVERLAY**

INDEX OF SHEETS

S-0	TITLE SHEET
S-0A	INDEX OF SHEETS
STRUCTURES	
S-1 - S-4	BRIDGE #43
S-5 - S-8	BRIDGE #525
SN	STRUCTURAL STANDARD NOTES

**PROJECT: 41665.6B**

**CONTRACT: C202664**



Prepared For:  
**STRUCTURES MANAGEMENT UNIT**  
1000 BIRCH RIDGE DR. RALEIGH, NC 27610

**LETTING DATE:**  
OCTOBER 15, 2013

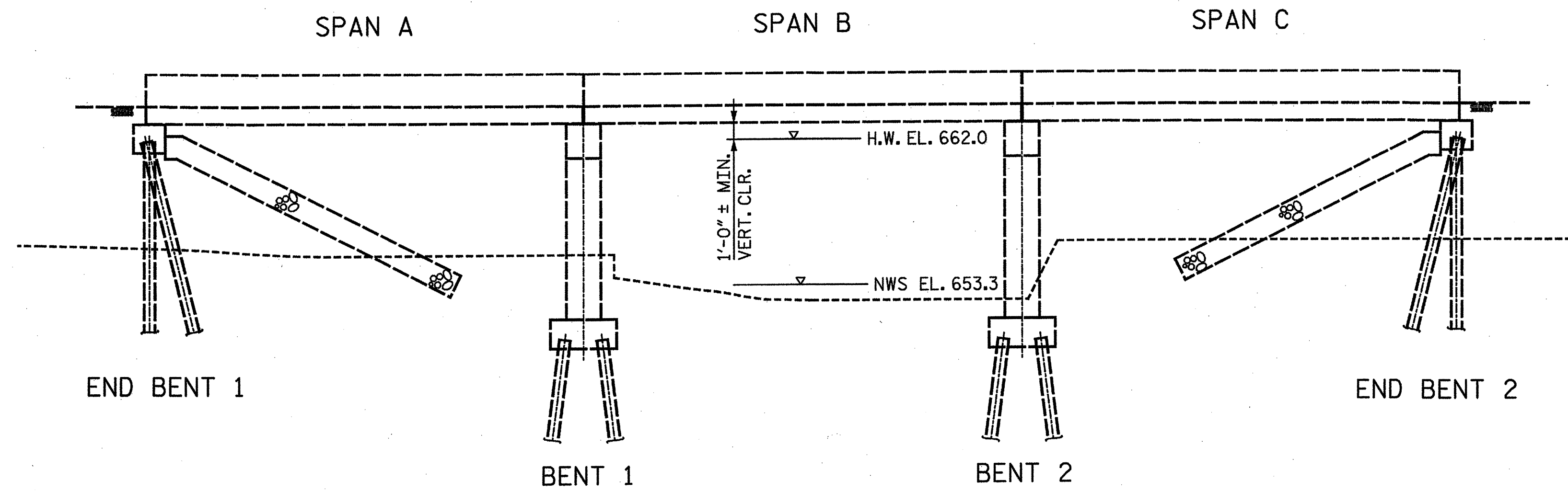
PAUL KELLY, P.E.  
PROJECT ENGINEER

**ENGINEER**

FARZIN ASEFNIA, P.E.

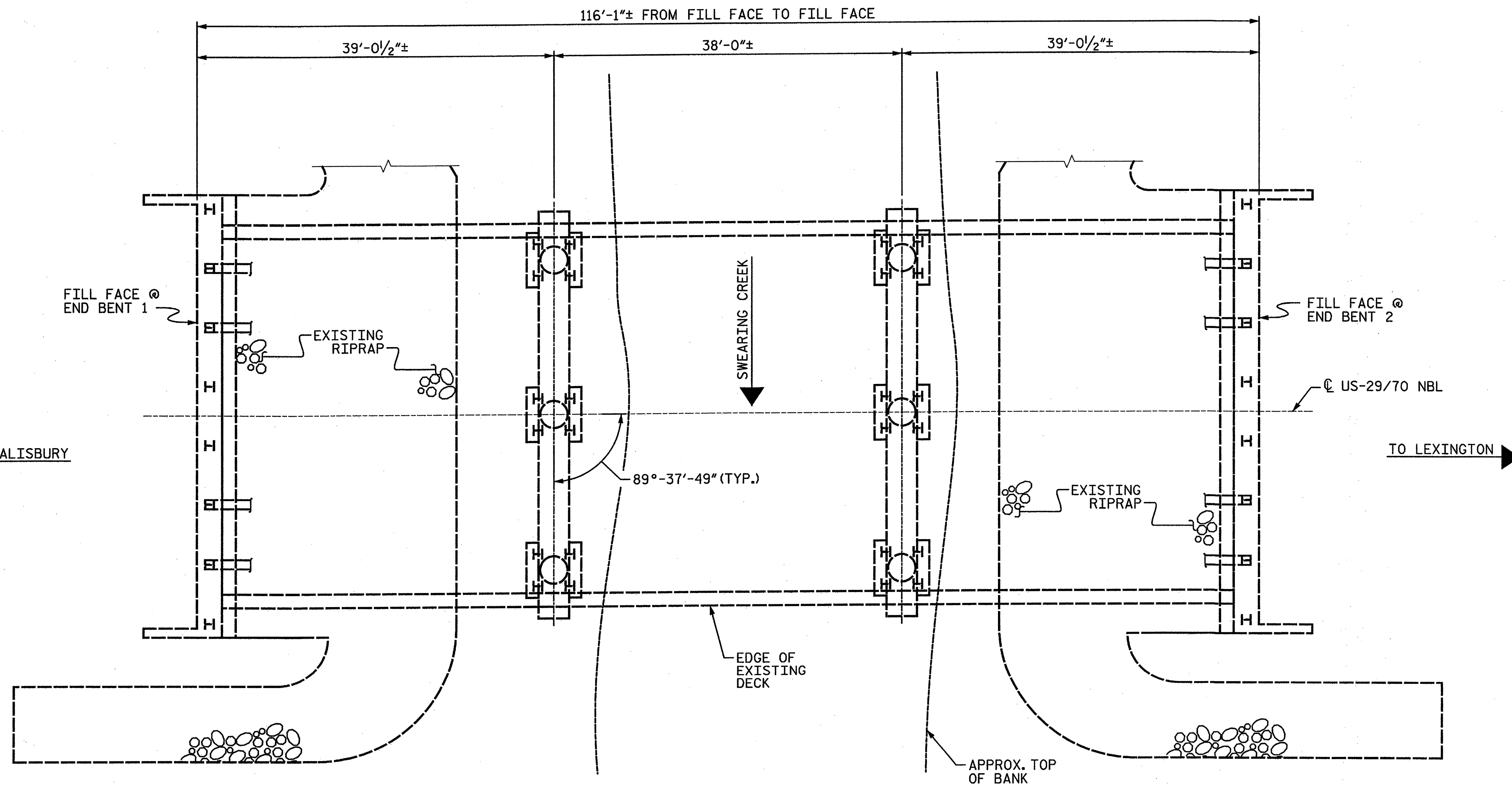
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NOTES:  
EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.



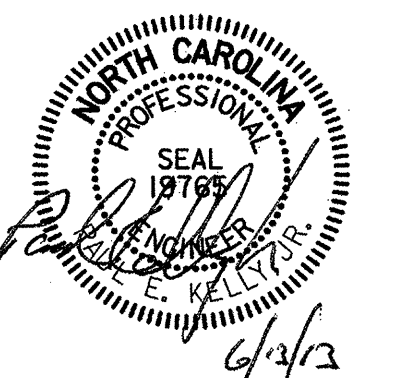
**ELEVATION**

(SECTIONS AT BENTS AND END BENTS ARE AT RIGHT ANGLES)



**PLAN**

(SPANS ARE MEASURED FROM FILL FACE TO FILL FACE)



PROJECT NO. **41665.6B**  
**DAVIDSON** COUNTY  
 BRIDGE NO.: **43**  
 REHAB. OF BRIDGE NO. 43

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING  
 PLAN & ELEVATION**  
 BRIDGE ON US-29 & 70  
 (NORTHBOUND)  
 OVER SWEARING CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			8

DRAWN BY : **KMG** DATE : **05-12**  
 CHECKED BY : **AC** DATE : **05-12**

**STV/ Ralph Whitehead Associates, Inc.**  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991



(SEE TYPICAL SECTIONS, THIS SHEET)

NOTES:  $\Delta$

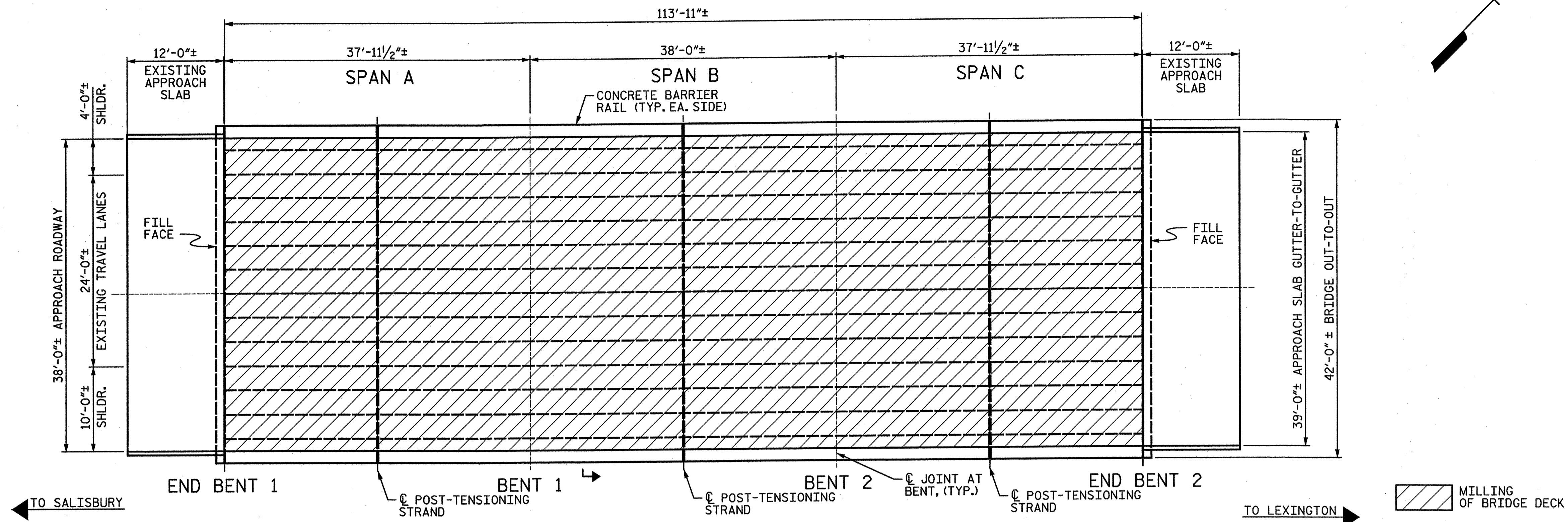
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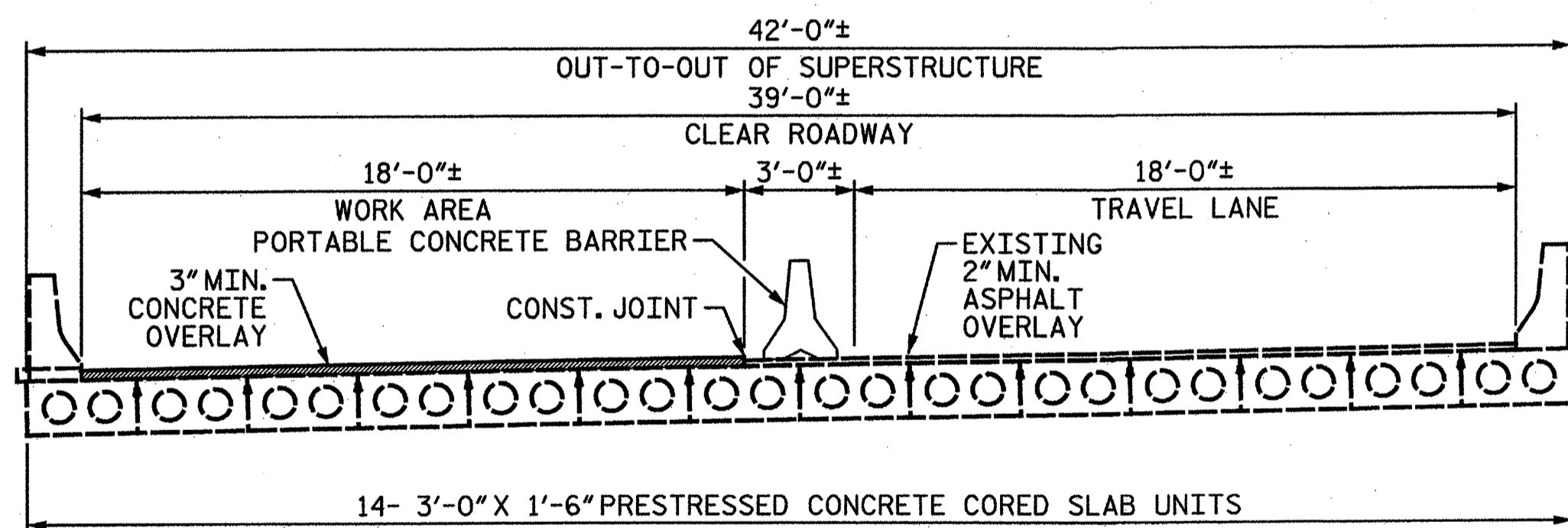
THE POST TENSIONING STRANDS WILL BE REPLACED PRIOR TO ANY OTHER BRIDGE WORK.

CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.

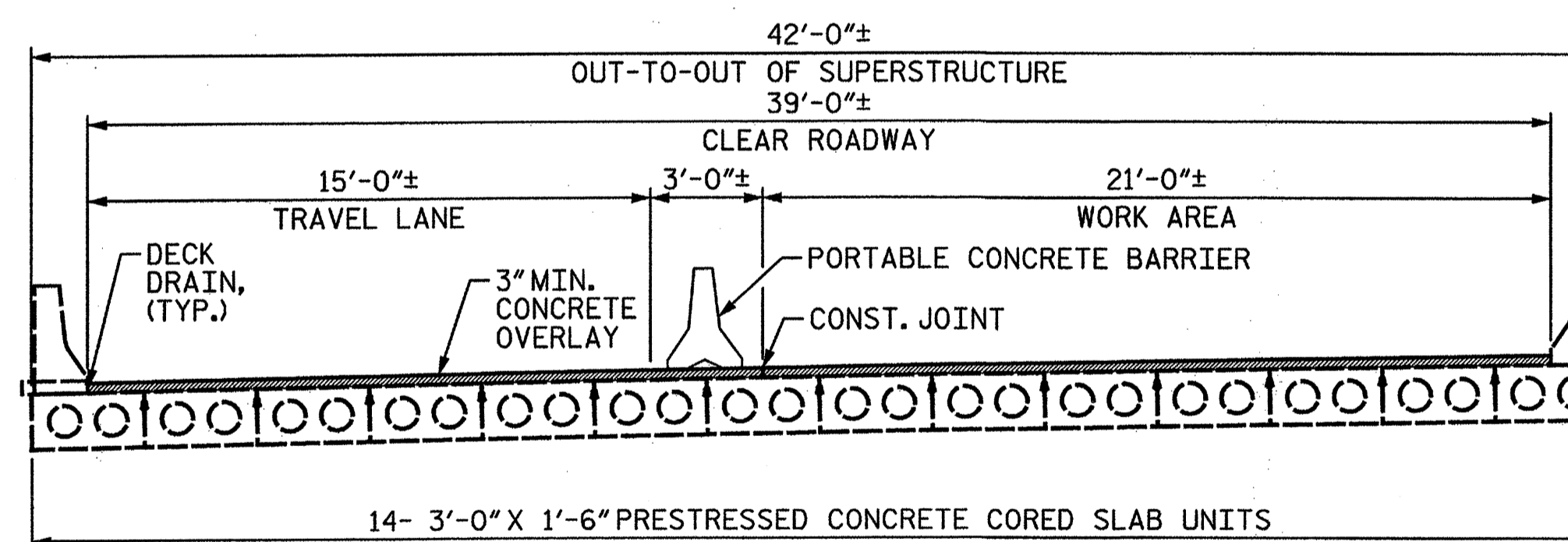
FOR TRAFFIC CONTROL, SEE TRAFFIC MANAGEMENT PLANS.



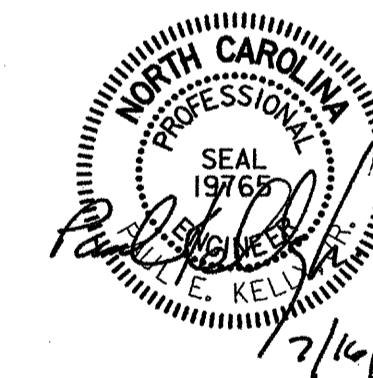
PLAN OF SPANS - PLACEMENT OF CONCRETE OVERLAY  $\Delta$



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II



PROJECT NO. **41665.6B**  
**DAVIDSON** COUNTY  
 BRIDGE NO.: **43**  
 REHAB. OF BRIDGE NO. 43

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**FRAMING PLAN &  
 TYPICAL SECTIONS**  
 BRIDGE ON US-29 & 70  
 (NORTHBOUND)  
 OVER SWEARING CREEK

REVISIONS

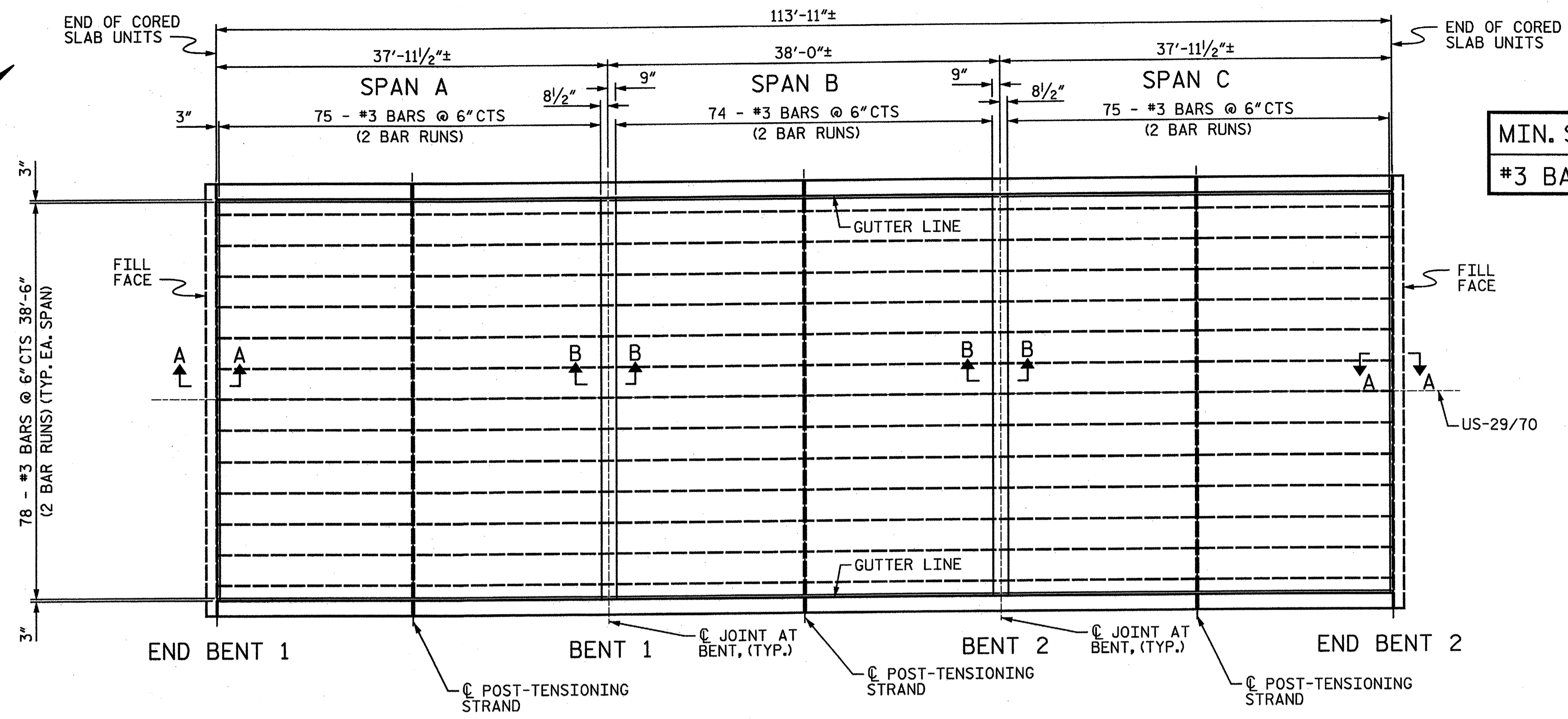
NO.	BY:	DATE:	NO.	BY:	DATE:
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2	STV	7-13	4		

SHEET NO.	S-2
TOTAL SHEETS	8

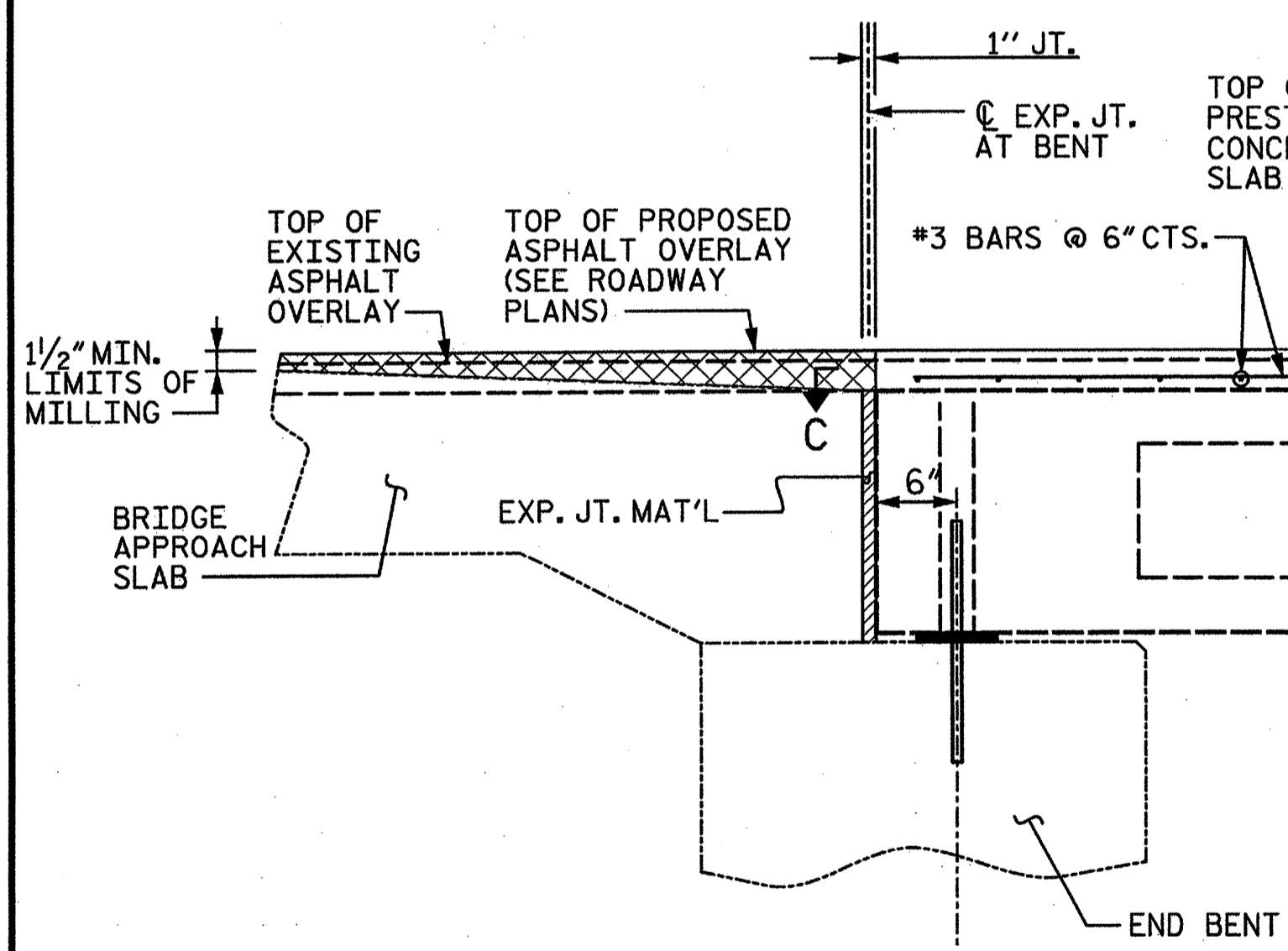
**STV / Ralph Whitehead Associates, Inc.**  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

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 CHECKED BY: AC DATE: 05-12  $\Delta$  REV. PER NCDOT COMMENTS

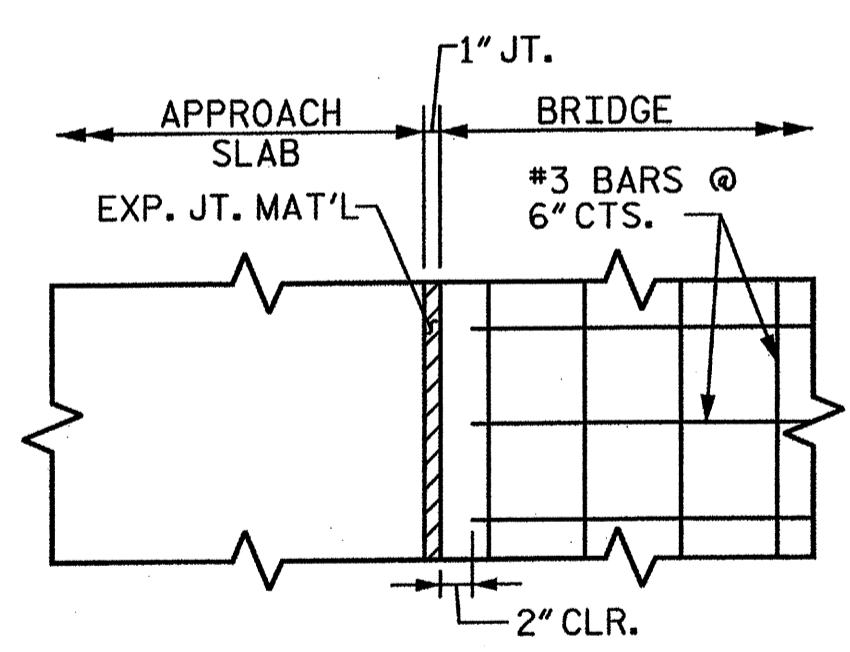
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 7/16/2013  
 dveycc



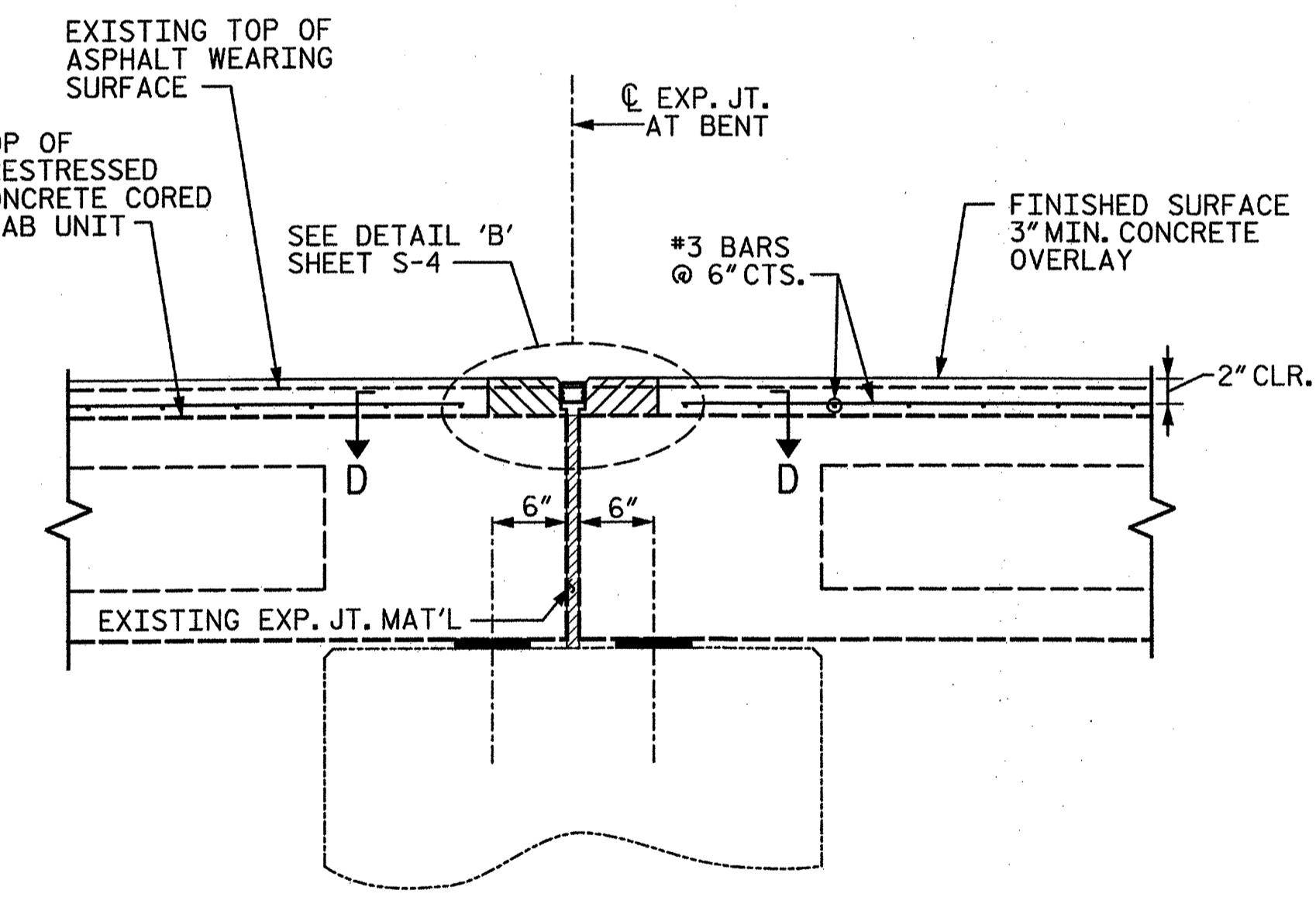
PLAN



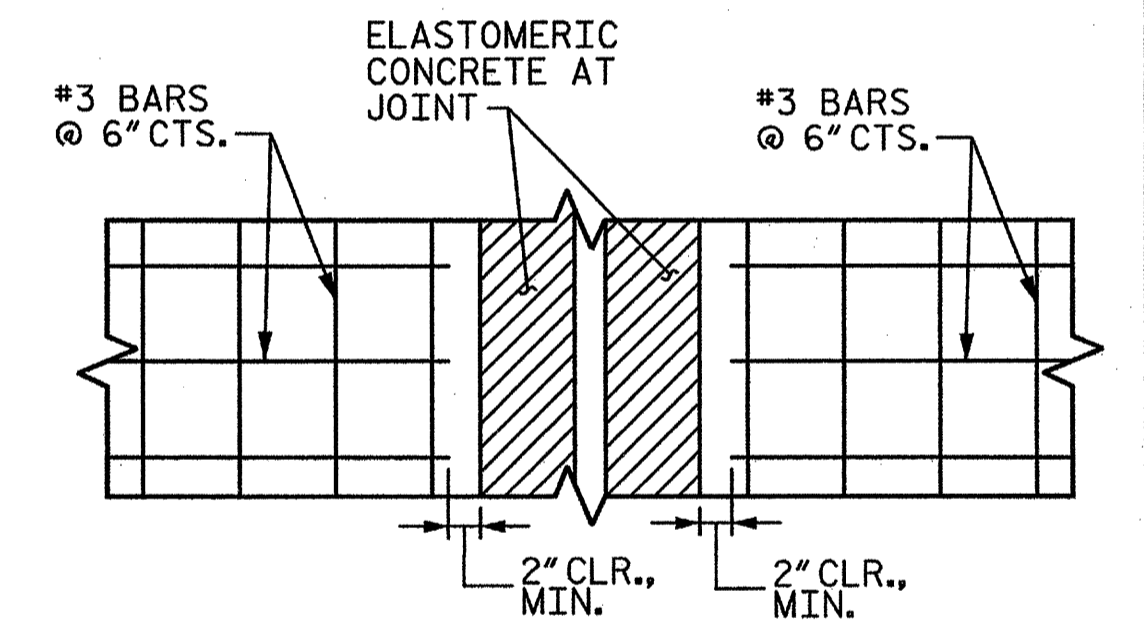
SECTION A-A ΔΔ



SECTION C-C



SECTION B-B ΔΔ



SECTION D-D

TOTAL BILL OF MATERIAL ΔΔ				
MILLING OF BRIDGE DECK	CONCRETE WEARING SURFACE	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	POST-TENSIONING STRAND REPLACEMENT
SQ. YDS.	SQ. FT.	LUMP SUM	SQ. FT.	LUMP SUM
493.7	4443	LUMP SUM	3984	LUMP SUM

PROJECT NO. 41665.6B  
 DAVIDSON COUNTY  
 BRIDGE NO.: 43  
 REHAB. OF BRIDGE NO. 43



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN  
 DECK REPAIRS  
 BRIDGE ON US-29 & 70  
 (NORTHBOUND)  
 OVER SWEARING CREEK

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1	STV	6-12	3			S-3
2	STV	7-13	4			8

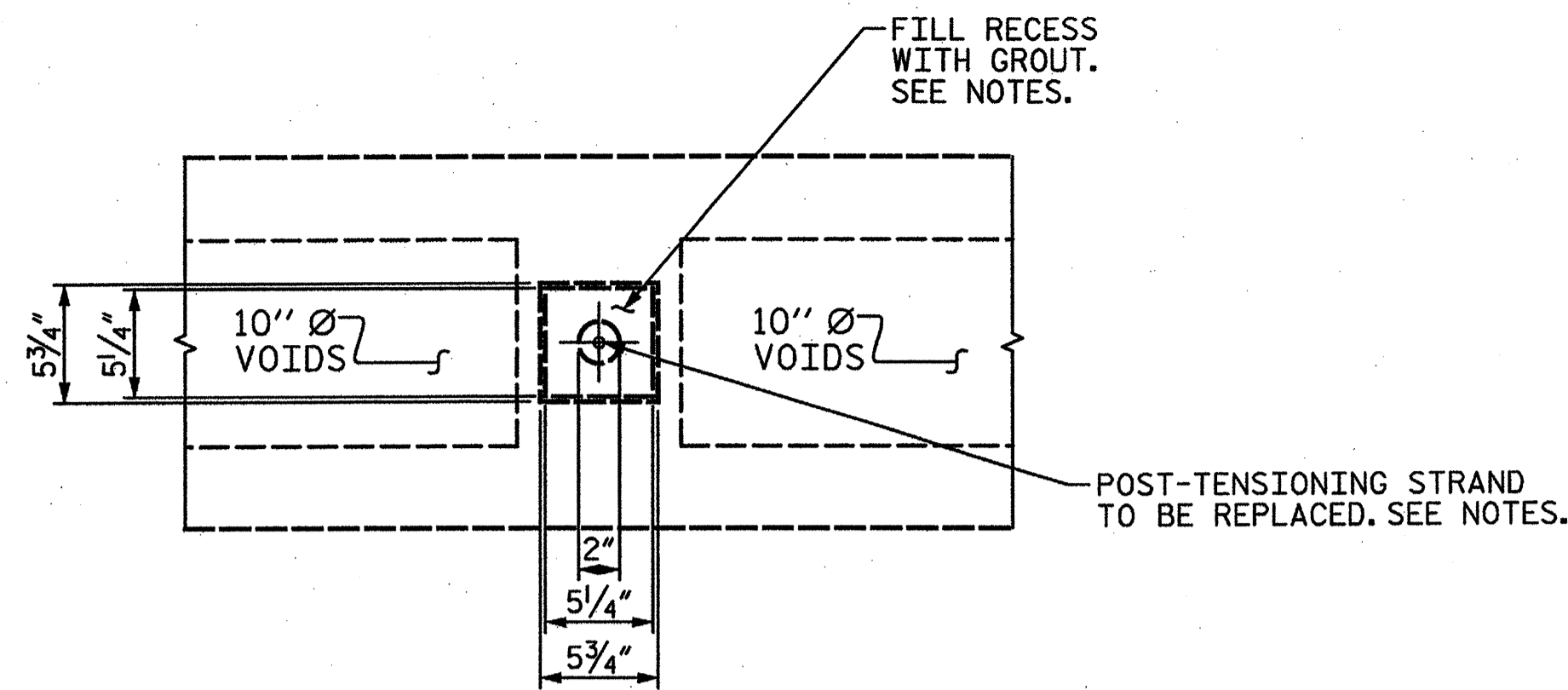
STV/Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

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 7/16/2013  
 dlvayoc

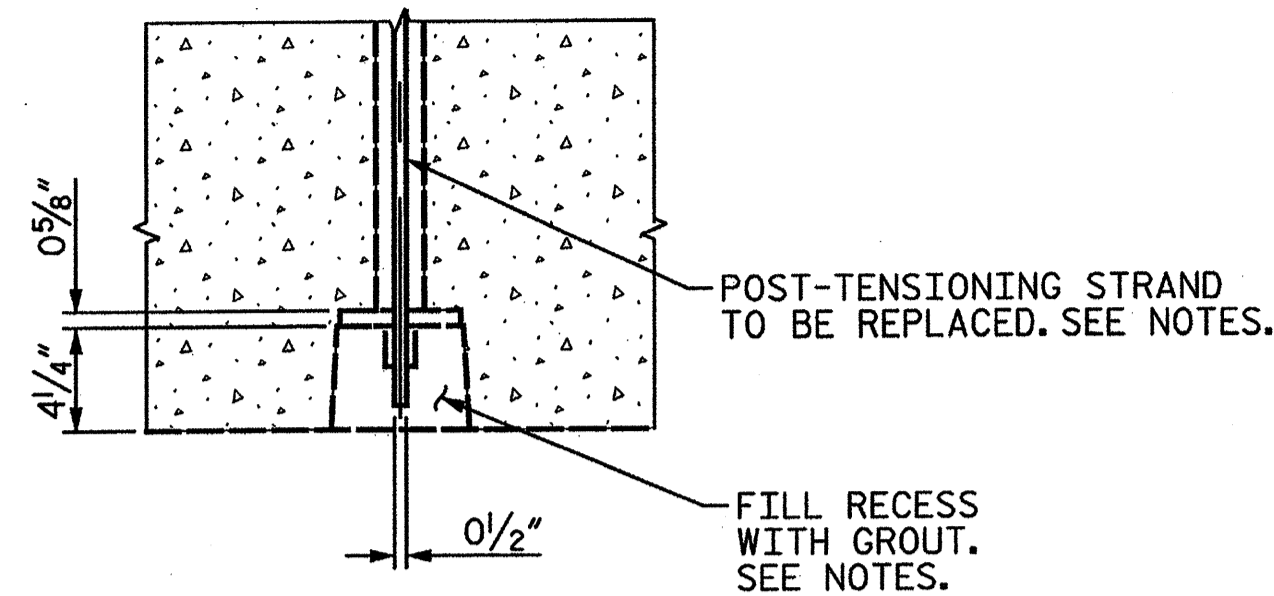
DRAWN BY: KMG DATE: 05-12  
 CHECKED BY: AC DATE: 05-12

REV. PER NCDOT COMMENTS  
 REV. PER NCDOT COMMENTS





ELEVATION VIEW



PLAN VIEW

DETAIL 'A'

GRADE 270 STRANDS	
	1/2" Ø L.R.
AREA ( SQUARE INCHES )	0.153
ULTIMATE STRENGTH ( LBS. PER STRAND )	41,300
APPLIED PRESTRESS ( LBS. PER STRAND )	30,980

ELASTOMERIC CONCRETE	
	18 CU. FT.

CLASS AA CONCRETE FOR WEARING SURFACE	
	41.2 CU. YDS.

REINFORCING STEEL FOR CONCRETE WEARING SURFACE	
	6625 LBS.

NOTES:  $\Delta$

- SEE SHEET NO. S-SN FOR GENERAL NOTES.
- EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- THE ELASTOMERIC CONCRETE SHALL BE CONSIDERED INCIDENTAL TO THE FOAM JOINT SEAL PAY ITEM.
- CONTRACTOR SHALL COVER AND PROTECT THE JOINT CONSTRUCTION TO PREVENT DAMAGE DURING CONCRETE CURING AND AS NEEDED TO MAINTAIN TRAFFIC, AS DIRECTED BY THE ENGINEER.
- THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

FOAM JOINT OPENING WIDTHS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS IS CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

FOR CONCRETE WEARING SURFACE SEE SPECIAL PROVISIONS.

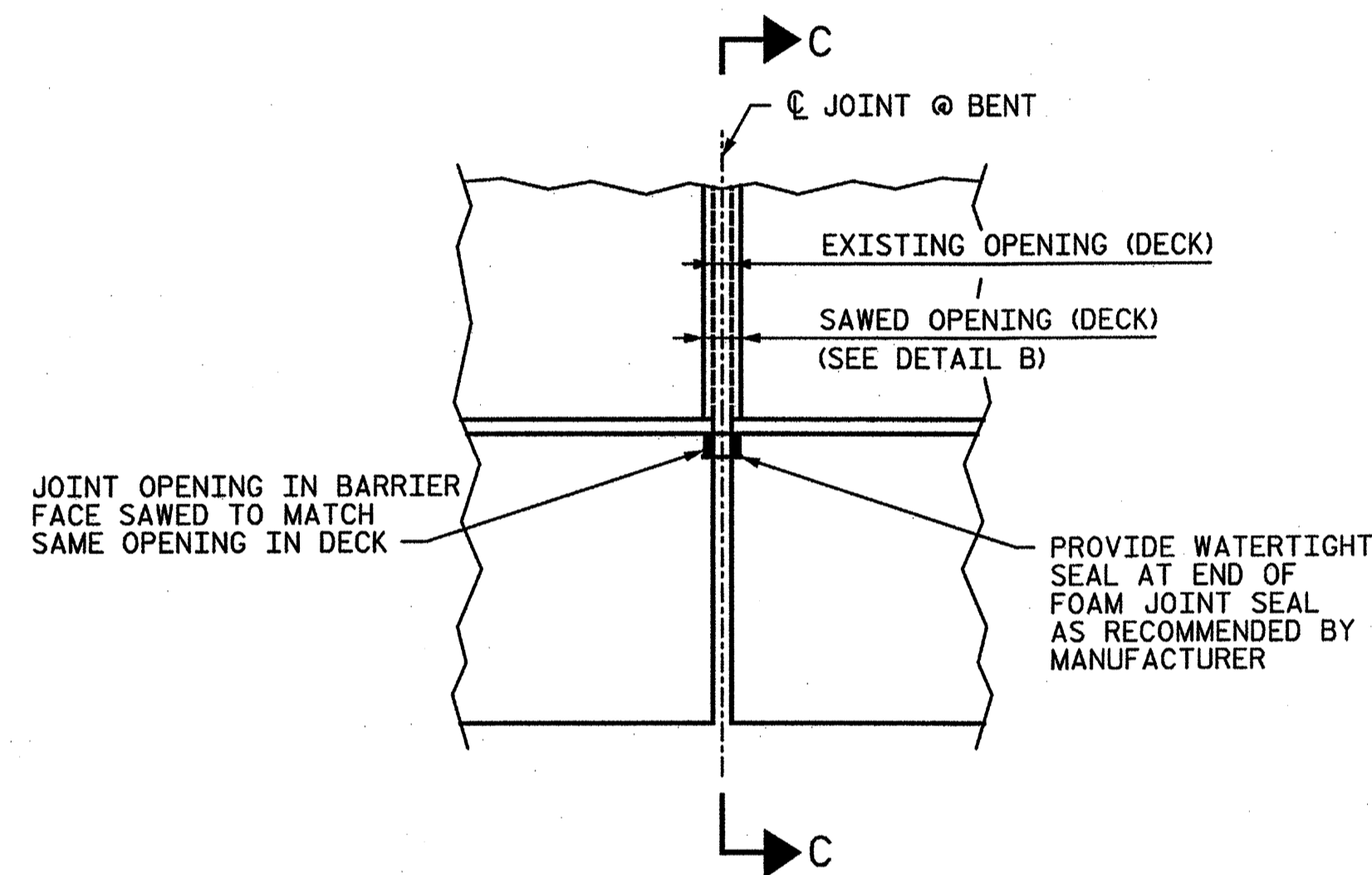
THE COST OF THE #3 BARS CAST WITH THE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".

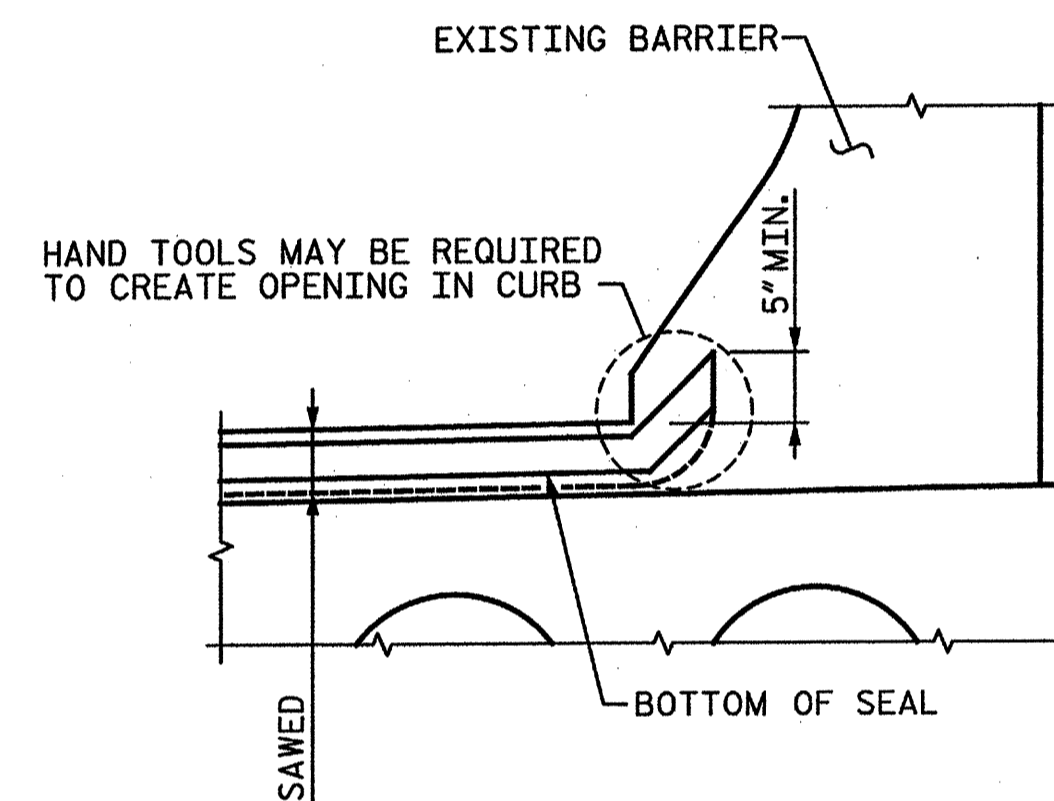
ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

REPLACEMENT OF POST-TENSIONING STRANDS:

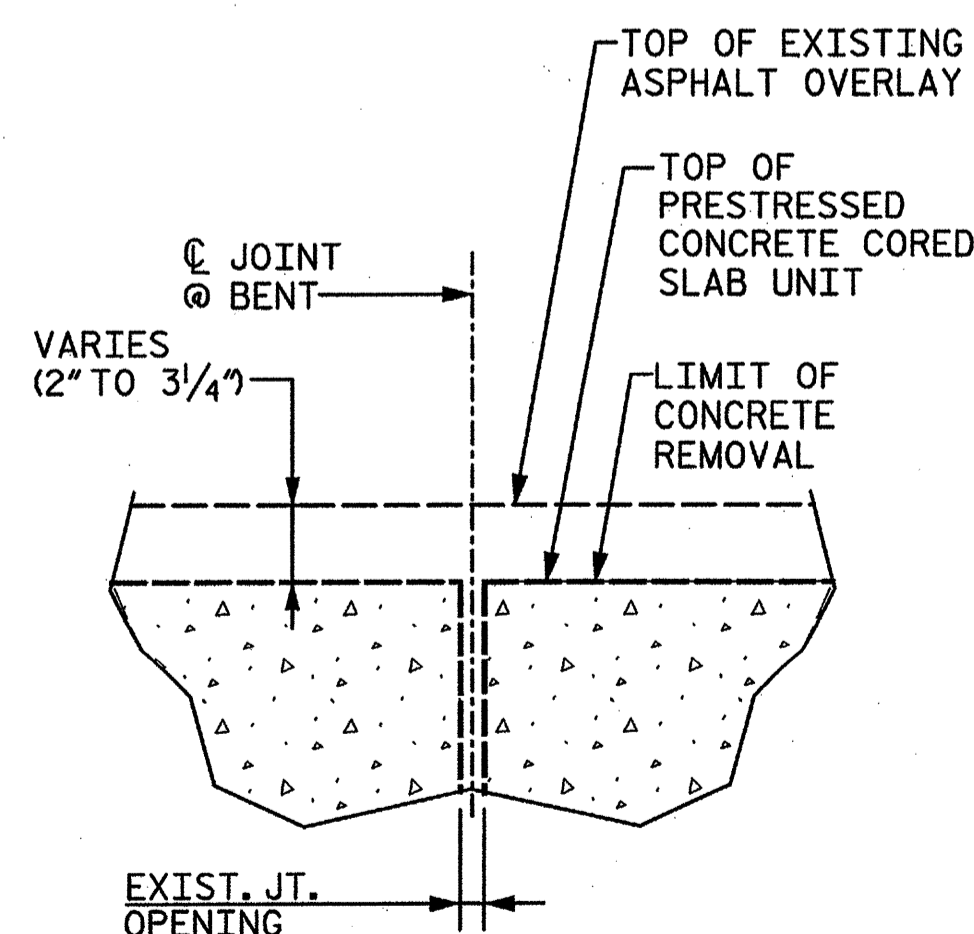
1. DETERMINE THE POST-TENSIONING STRANDS TO BE REPLACED.
2. PLACE THE 1/2" DIAMETER TRANSVERSE POST-TENSIONING STRANDS AND TENSION TO 30,980 LB IN EACH SPAN.
3. AFTER TENSIONING THE 1/2" DIAMETER TRANSVERSE STRAND IN A SPAN, FILL RECESSES AT THE ENDS OF THE TRANSVERSE STRANDS WITH AN APPROVED NON-METALLIC, NONSHRINK GROUT AND CURE FOR 3 DAYS MINIMUM AND UNTIL THE GROUT REACHES A COMPRESSIVE STRENGTH OF 3,000 PSI.



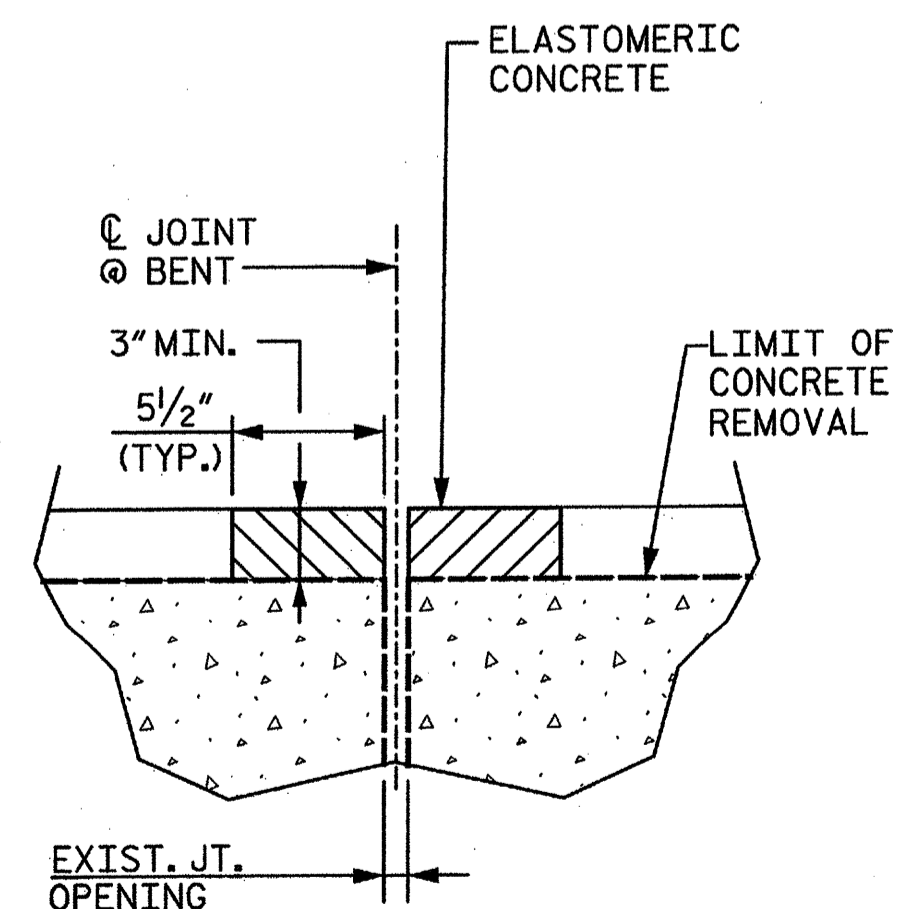
PLAN OF JOINT SEAL AT CURB



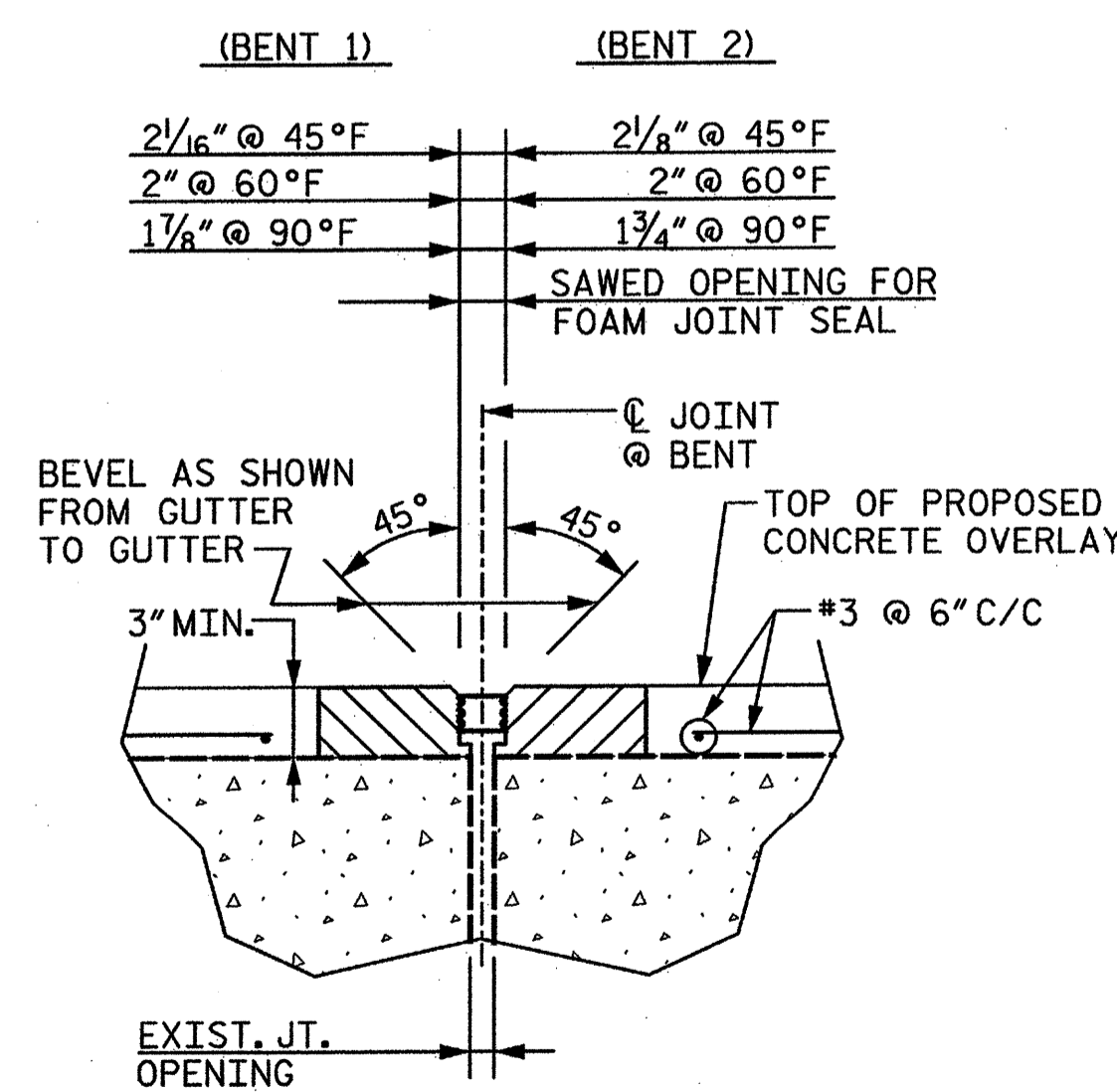
SECTION C-C



CONCRETE REMOVAL DETAIL @ EXISTING JOINT DETAIL



FOAM JOINT SEAL (DETAIL BEFORE SAWING)



FOAM JOINT SEAL (DETAIL AFTER SAWING)

DETAIL 'B'

PROJECT NO. 41665.6B

DAVIDSON COUNTY

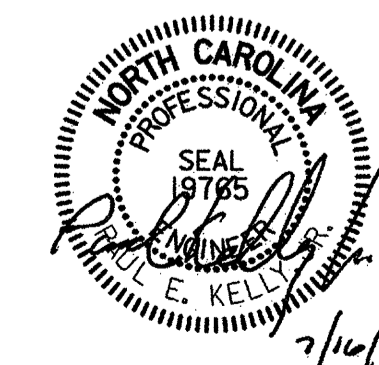
BRIDGE NO.: 43

REHAB. OF BRIDGE NO. 43 SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL DETAILS

BRIDGE ON US-29 & 70  
(NORTHBOUND)  
OVER SWEARING CREEK



REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1	STV	7-13	3		
2			4		

SHEET NO.

S-4

TOTAL SHEETS

8

STV / Ralph Whitehead Associates, Inc.  
1000 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC License No. F-0991

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CHECKED BY : AC DATE : 05-12

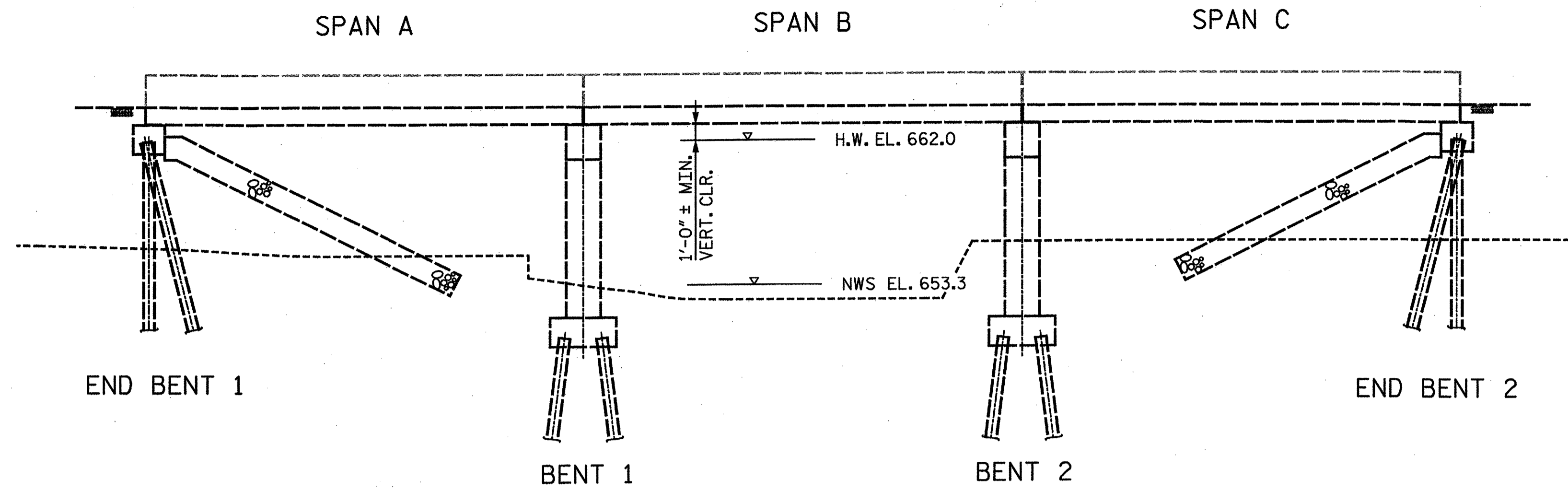
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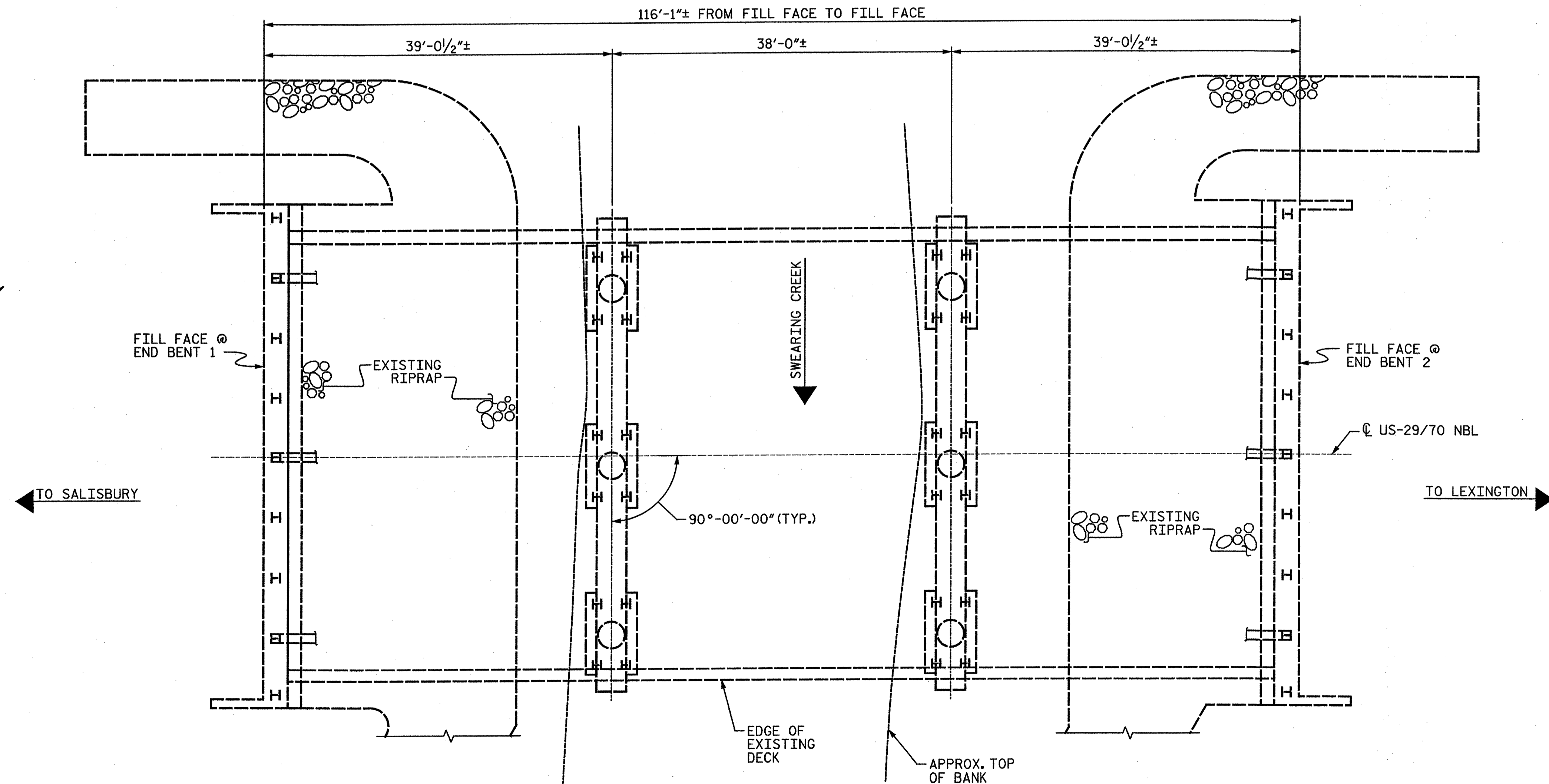
7/16/2013

NOTES:  
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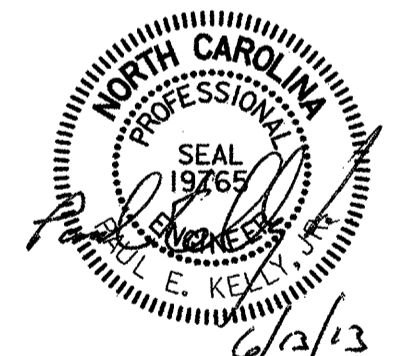
**ELEVATION**

(SECTIONS AT BENTS AND END BENTS ARE AT RIGHT ANGLES)



**PLAN**

(SPANS ARE MEASURED FROM FILL FACE TO FILL FACE)



PROJECT NO. 41665.6B  
DAVIDSON COUNTY  
 BRIDGE NO.: 525  
 REHAB. OF BRIDGE NO. 525

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 PLAN & ELEVATION  
 BRIDGE ON US-29 & 70  
 (SOUTHBOUND)  
 OVER SWEARING CREEK

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S-5
TOTAL SHEETS
8

STV / Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

DRAWN BY : KMG DATE : 05-12  
 CHECKED BY : AC DATE : 05-12

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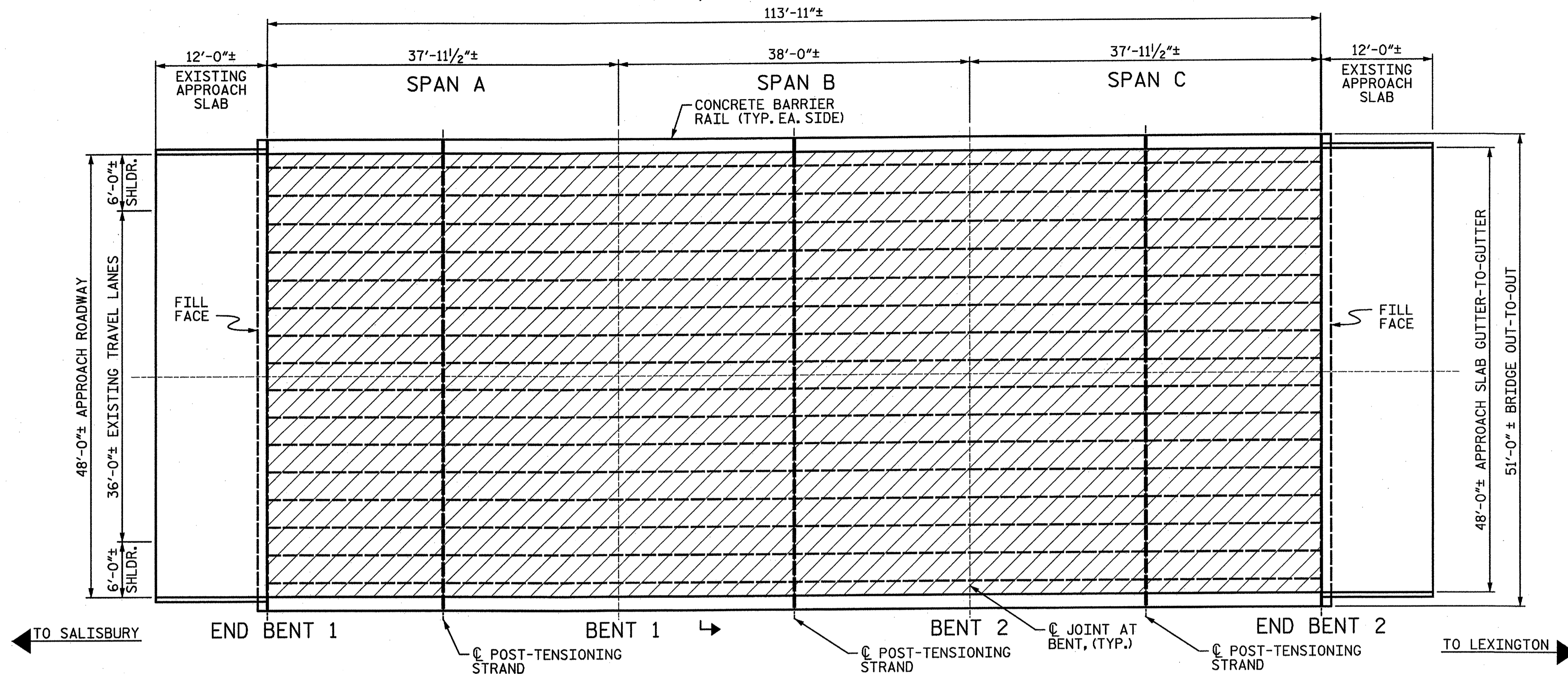
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6/13/2013

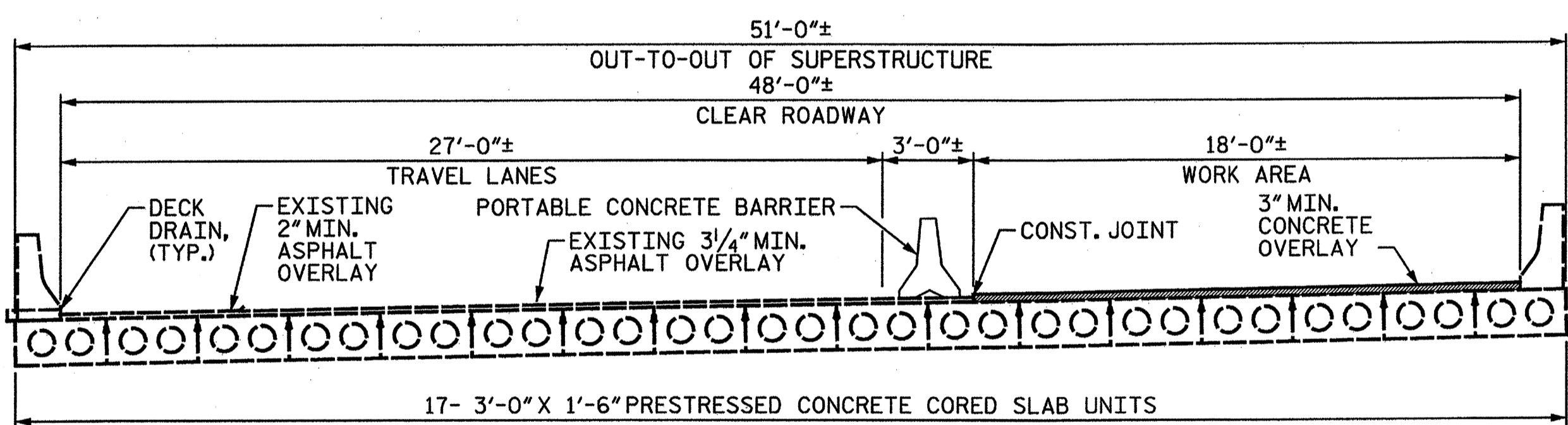


(SEE TYPICAL SECTIONS, THIS SHEET)

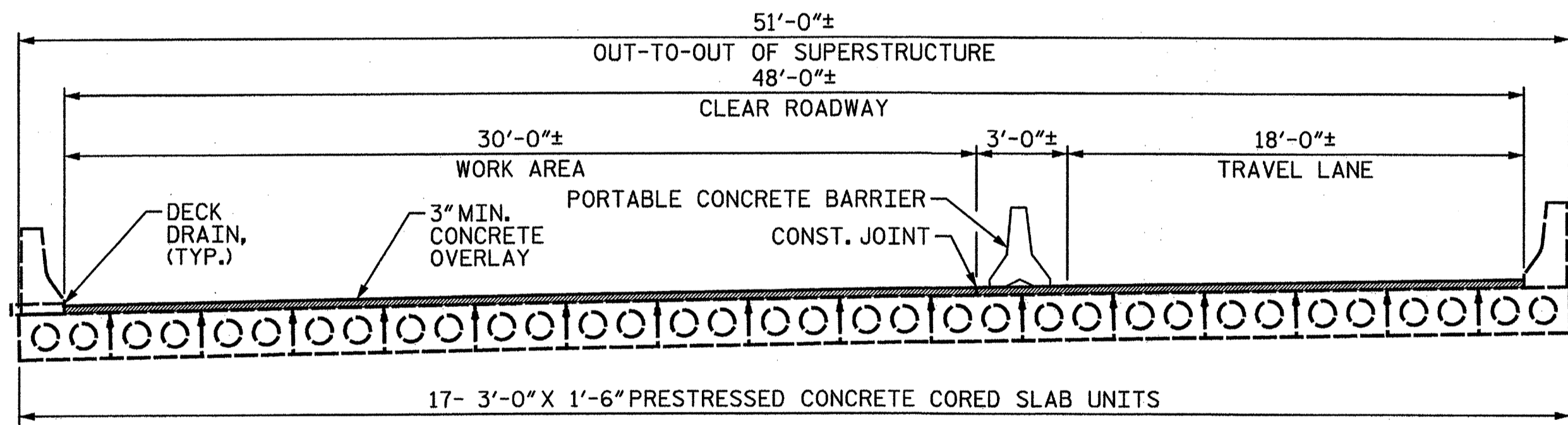
NOTES:  $\Delta$   
 SEE SHEET NO. S-SN FOR GENERAL NOTES.  
 EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.  
 THE POST TENSIONING STRANDS WILL BE REPLACED PRIOR TO ANY OTHER BRIDGE WORK.  
 CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.  
 FOR TRAFFIC CONTROL, SEE TRAFFIC MANAGEMENT PLANS.



PLAN OF SPANS - PLACEMENT OF CONCRETE OVERLAY  $\Delta$



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II



PROJECT NO. 41665.6B  
DAVIDSON COUNTY  
 BRIDGE NO.: 525  
 REHAB. OF BRIDGE NO. 525

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 FRAMING PLAN &  
 TYPICAL SECTIONS  
 BRIDGE ON US-29 & 70  
 (SOUTHBOUND)  
 OVER SWEARING CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1	STV	6-12	3			TOTAL SHEETS
2	STV	7-13	4			8

STV / Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

DRAWN BY: KMG DATE: 05-12  $\Delta$  REV. PER NCDOT COMMENTS  
 CHECKED BY: AC DATE: 05-12  $\Delta$  REV. PER NCDOT COMMENTS

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 7/16/2013 dveyac

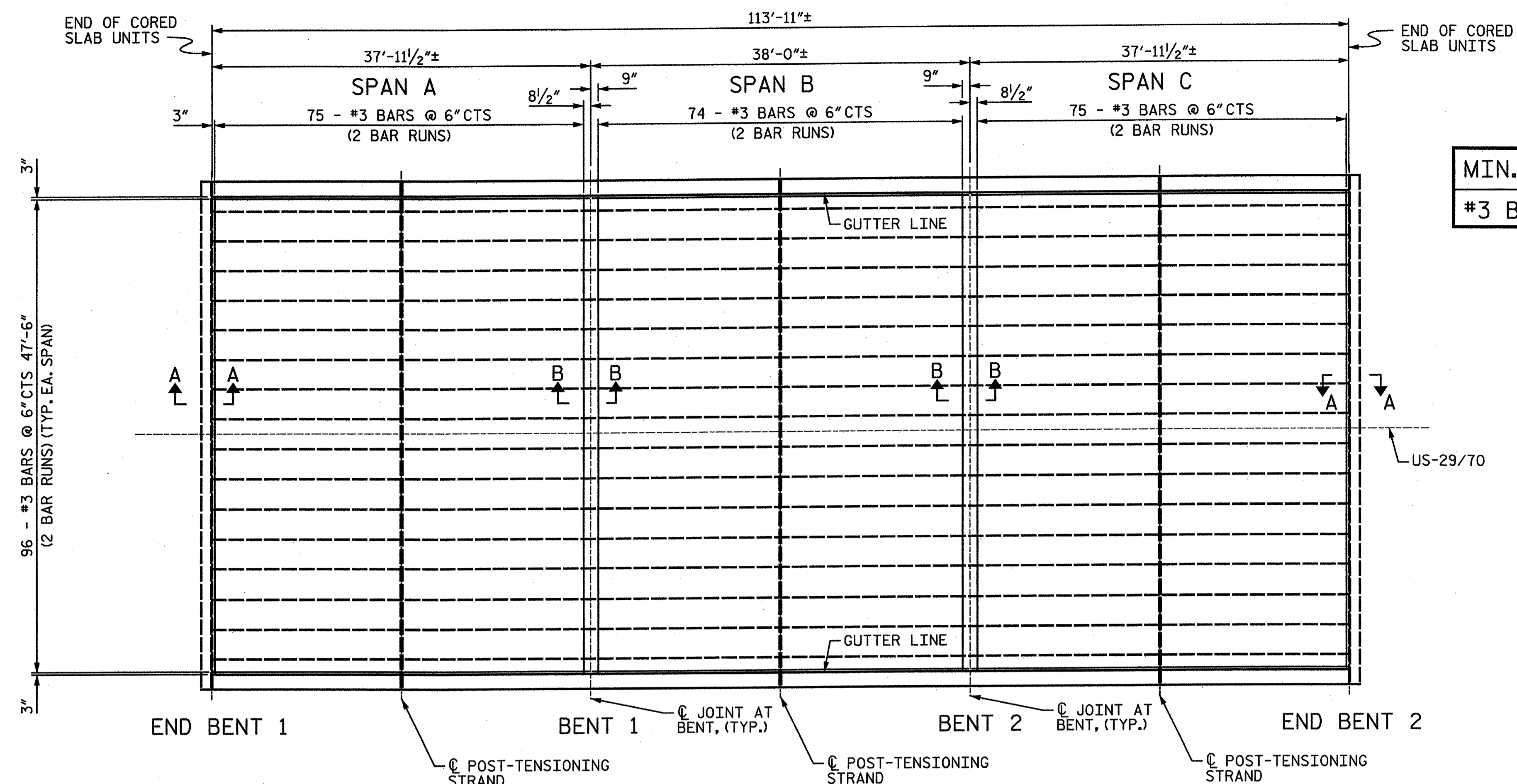


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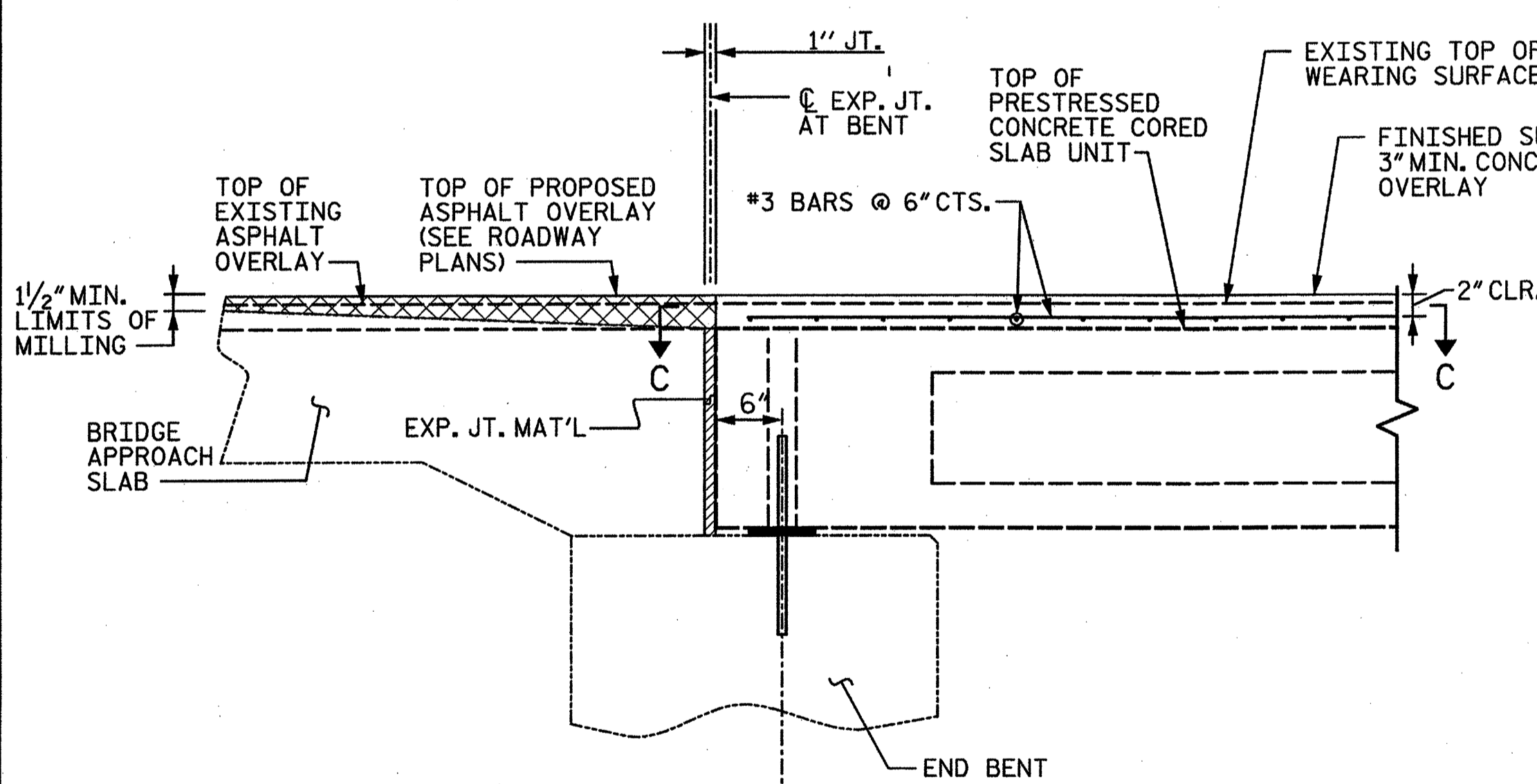
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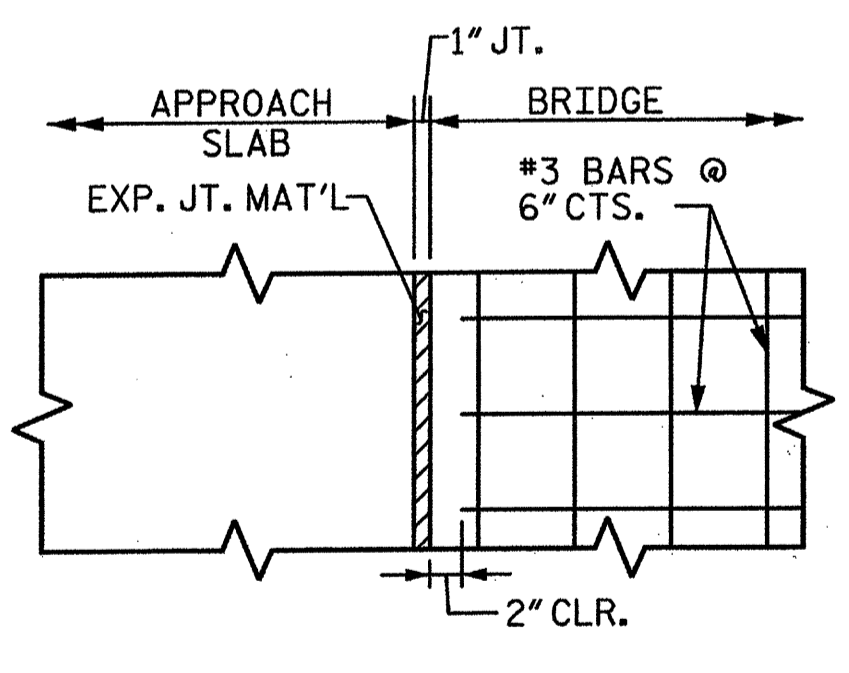
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 △ REV. PER NCDOT COMMENTS



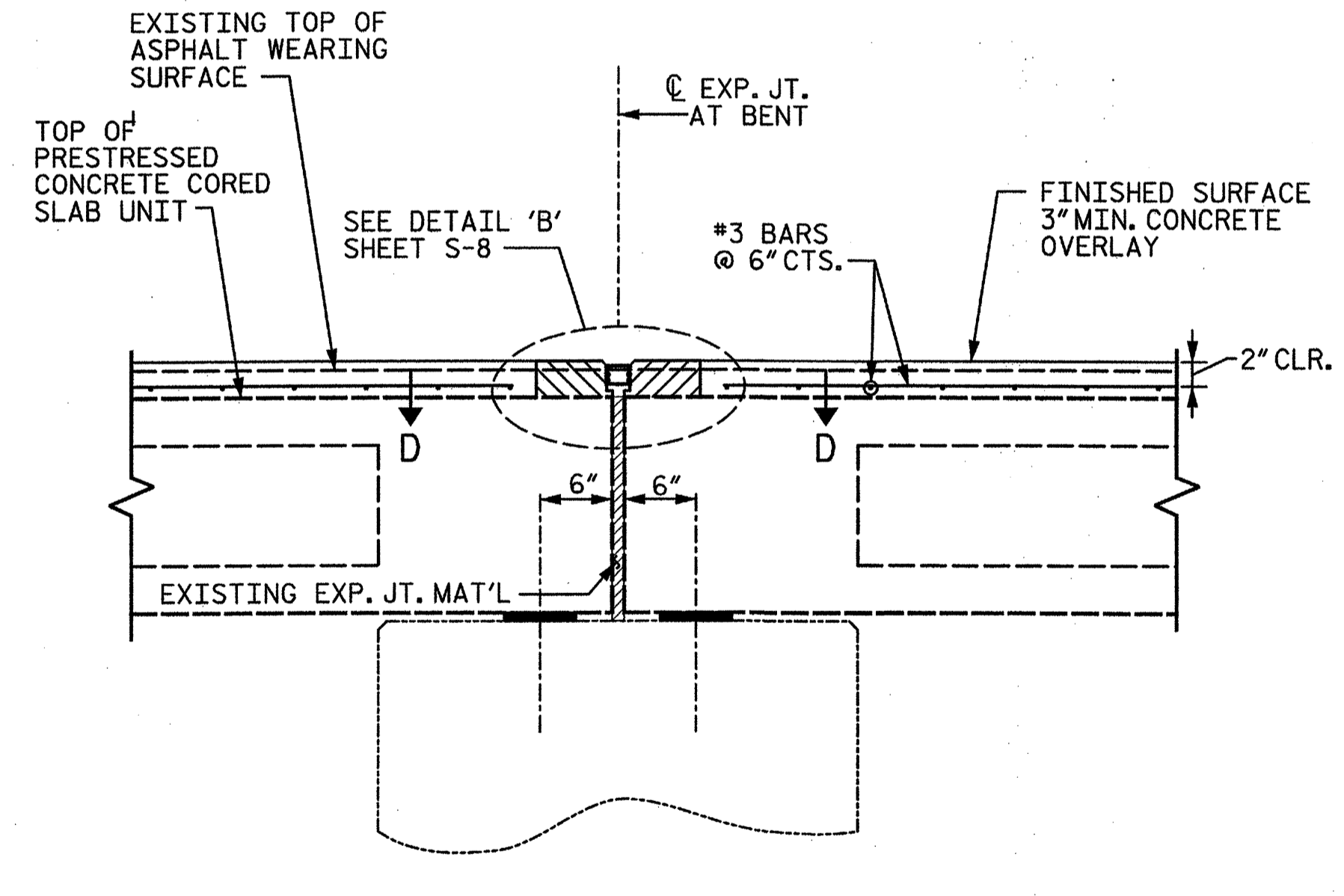
PLAN



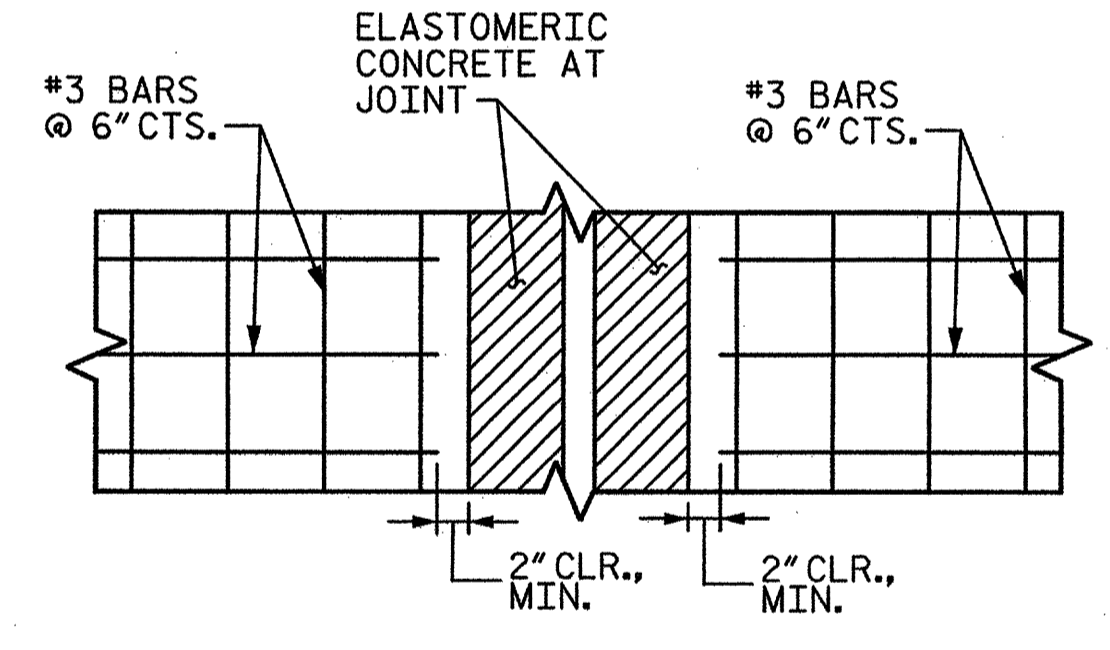
SECTION A-A △



SECTION C-C



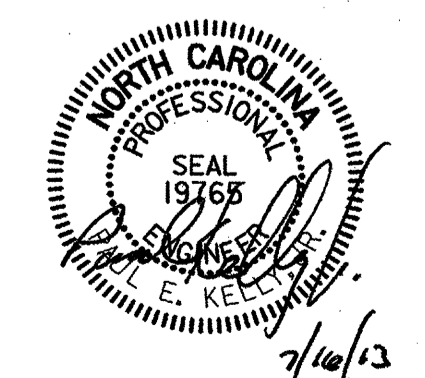
SECTION B-B △



SECTION D-D

TOTAL BILL OF MATERIAL △				
MILLING OF BRIDGE DECK	CONCRETE WEARING SURFACE	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	POST-TENSIONING STRAND REPLACEMENT
SQ. YDS.	SQ. FT.	LUMP SUM	SQ. FT.	LUMP SUM
607.6	5468	LUMP SUM	4980	LUMP SUM

PROJECT NO. **41665.6B**  
**DAVIDSON** COUNTY  
 BRIDGE NO.: **525**  
 REHAB. OF BRIDGE NO. 525

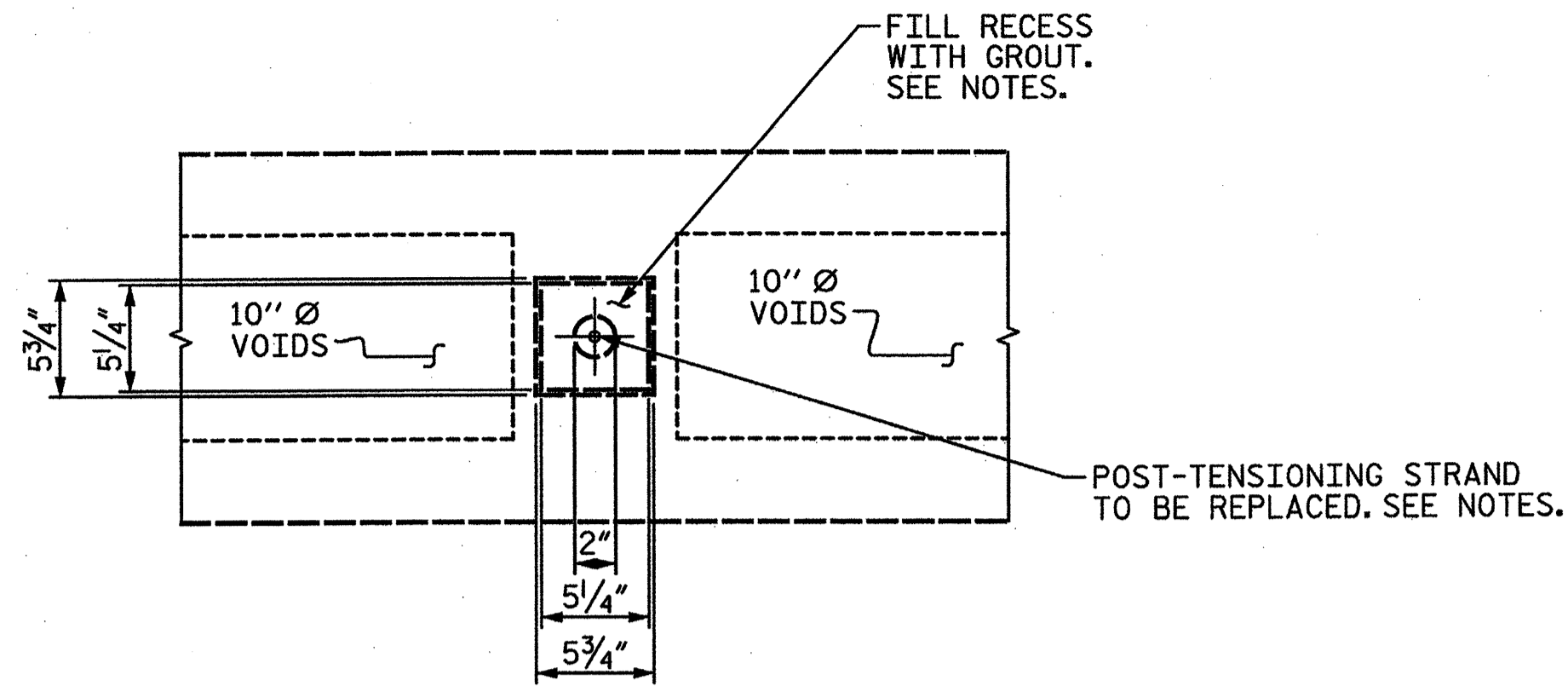


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN**  
**DECK REPAIRS**  
 BRIDGE ON US-29 & 70  
 (SOUTHBOUND)  
 OVER SWEARING CREEK

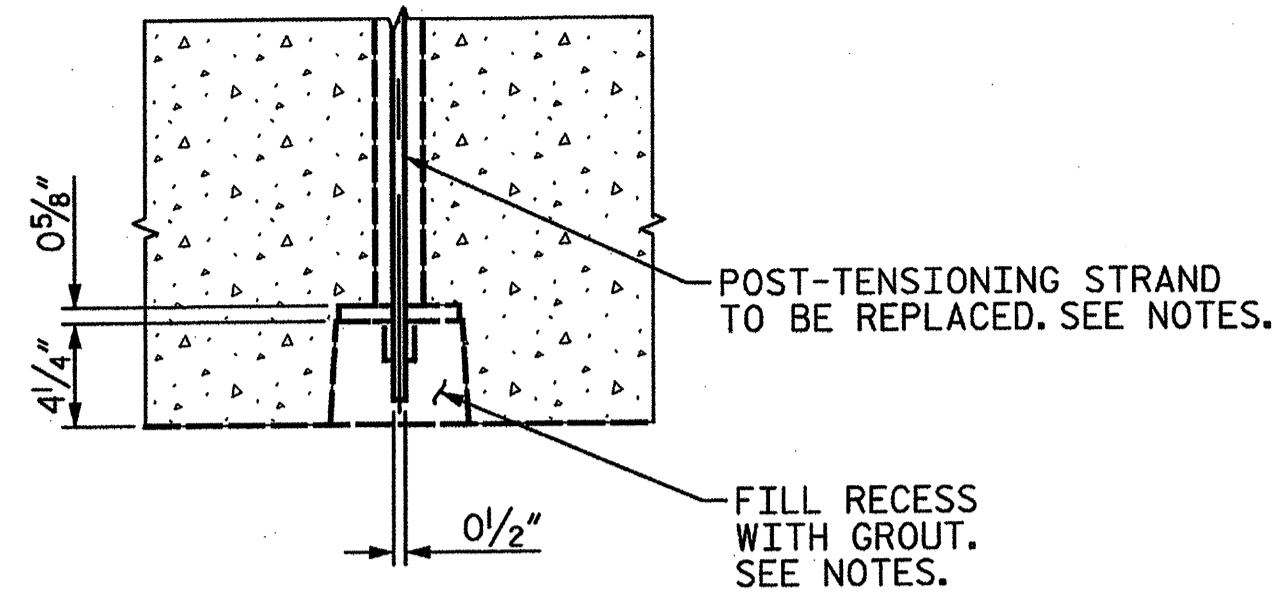
**STV/Ralph Whitehead Associates, Inc.**  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS					TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:
1	STV	6-12	3		
2	STV	7-13	4		

SHEET NO. S-7  
TOTAL SHEETS 8

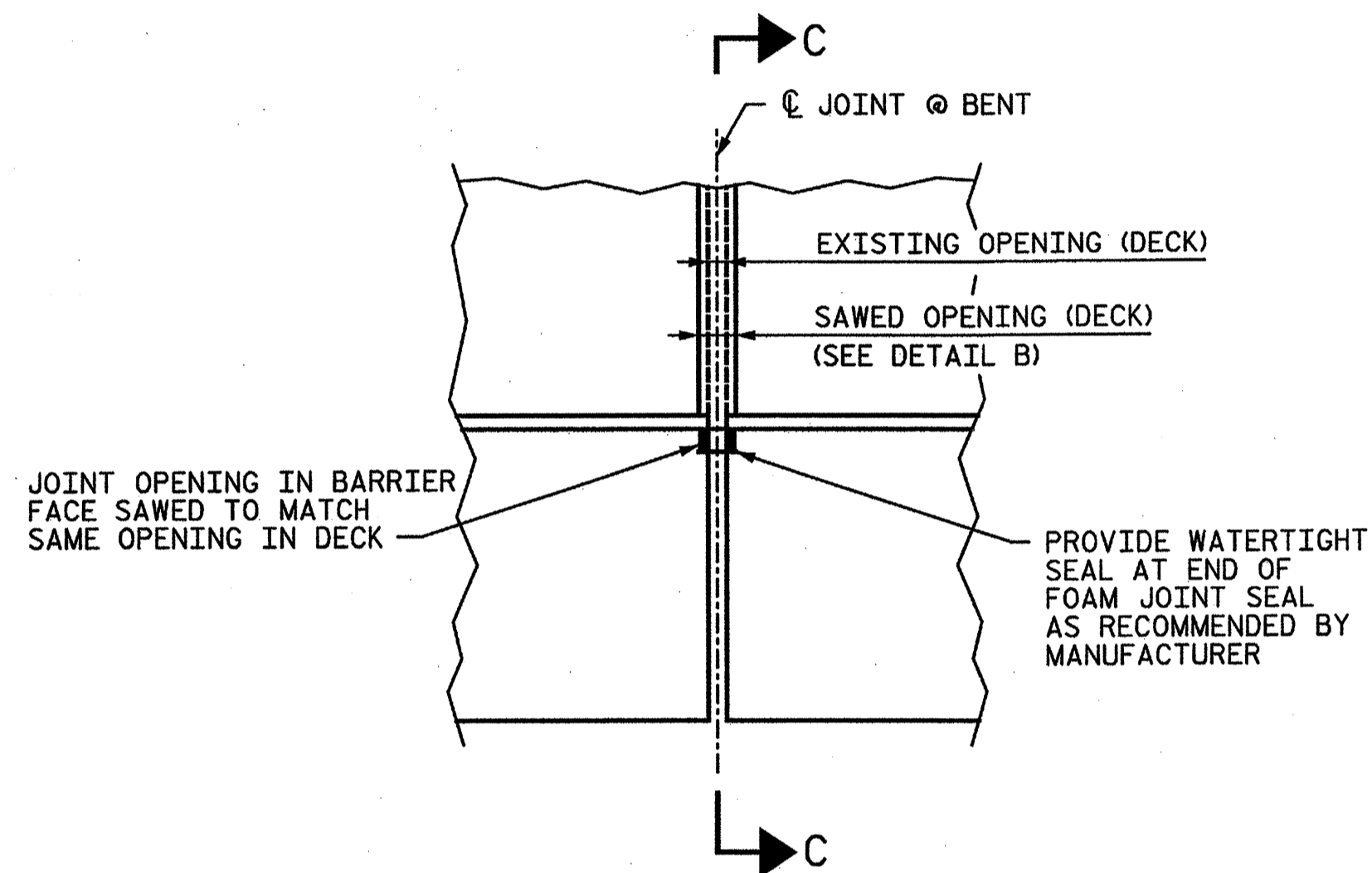


ELEVATION VIEW

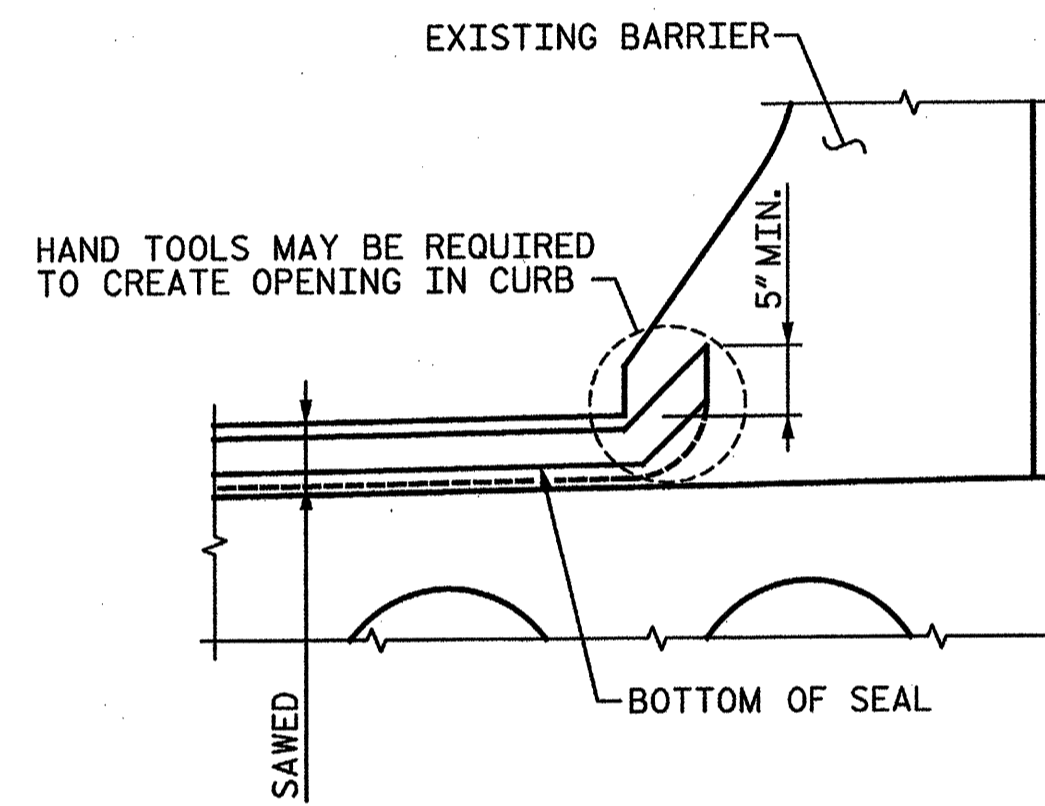


PLAN VIEW

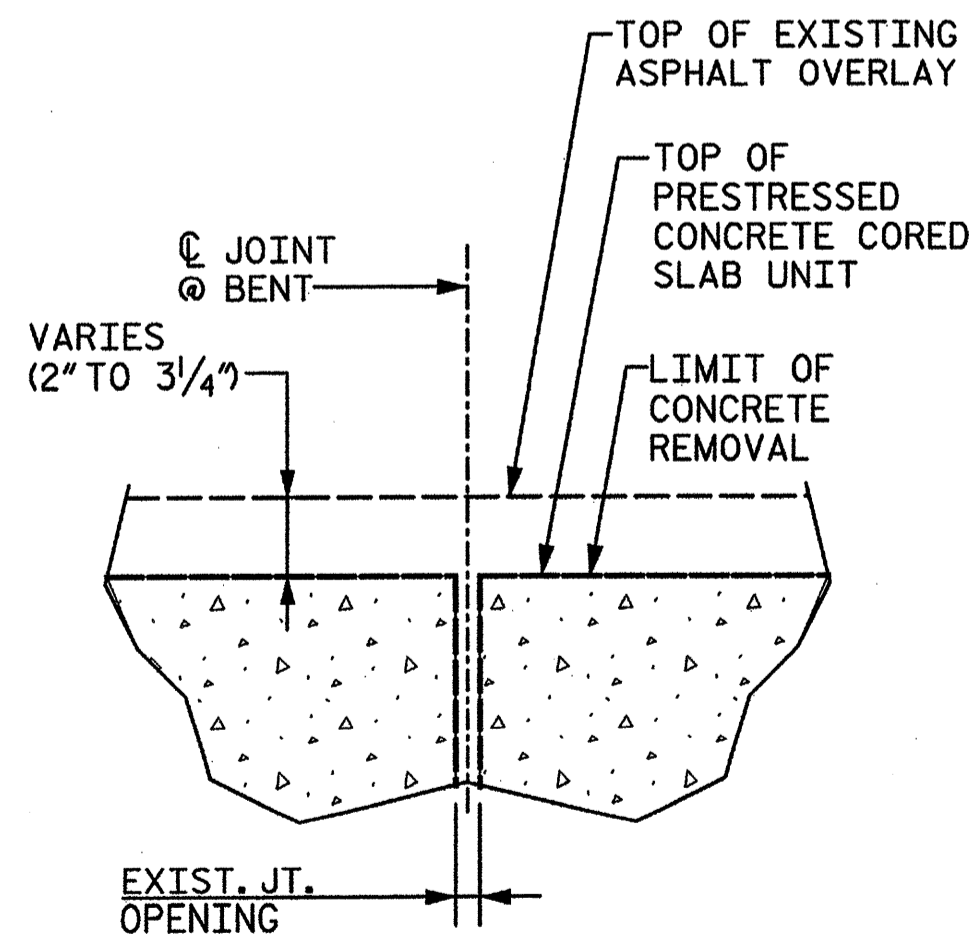
DETAIL 'A'



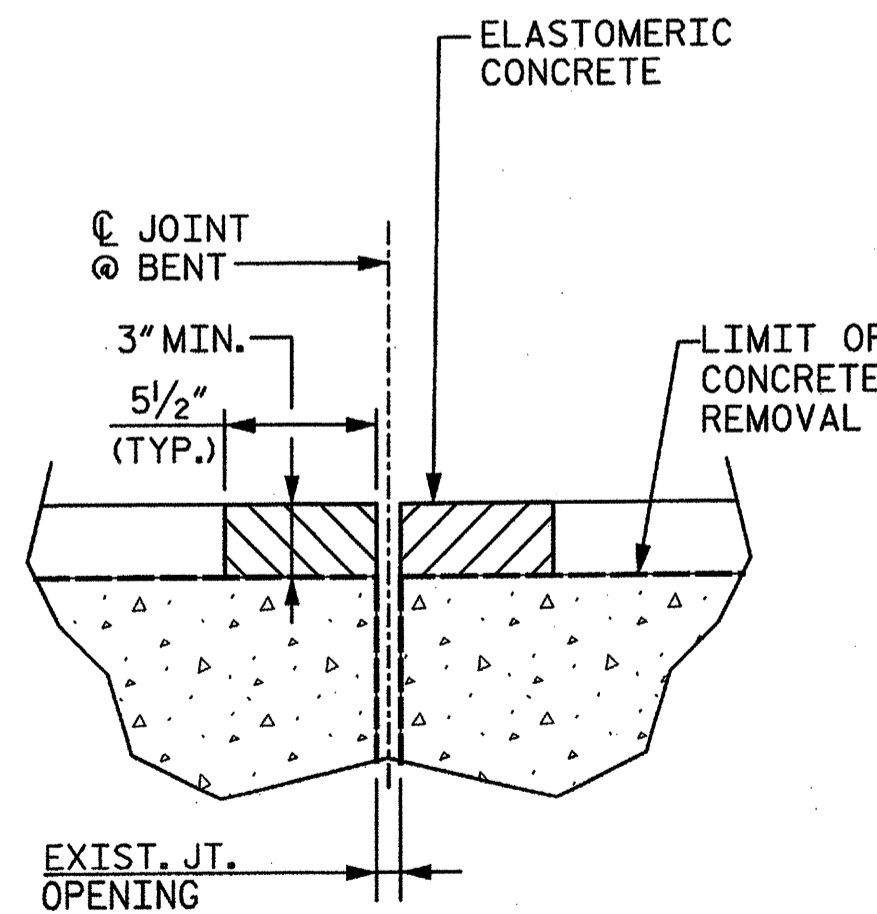
PLAN OF JOINT SEAL AT CURB



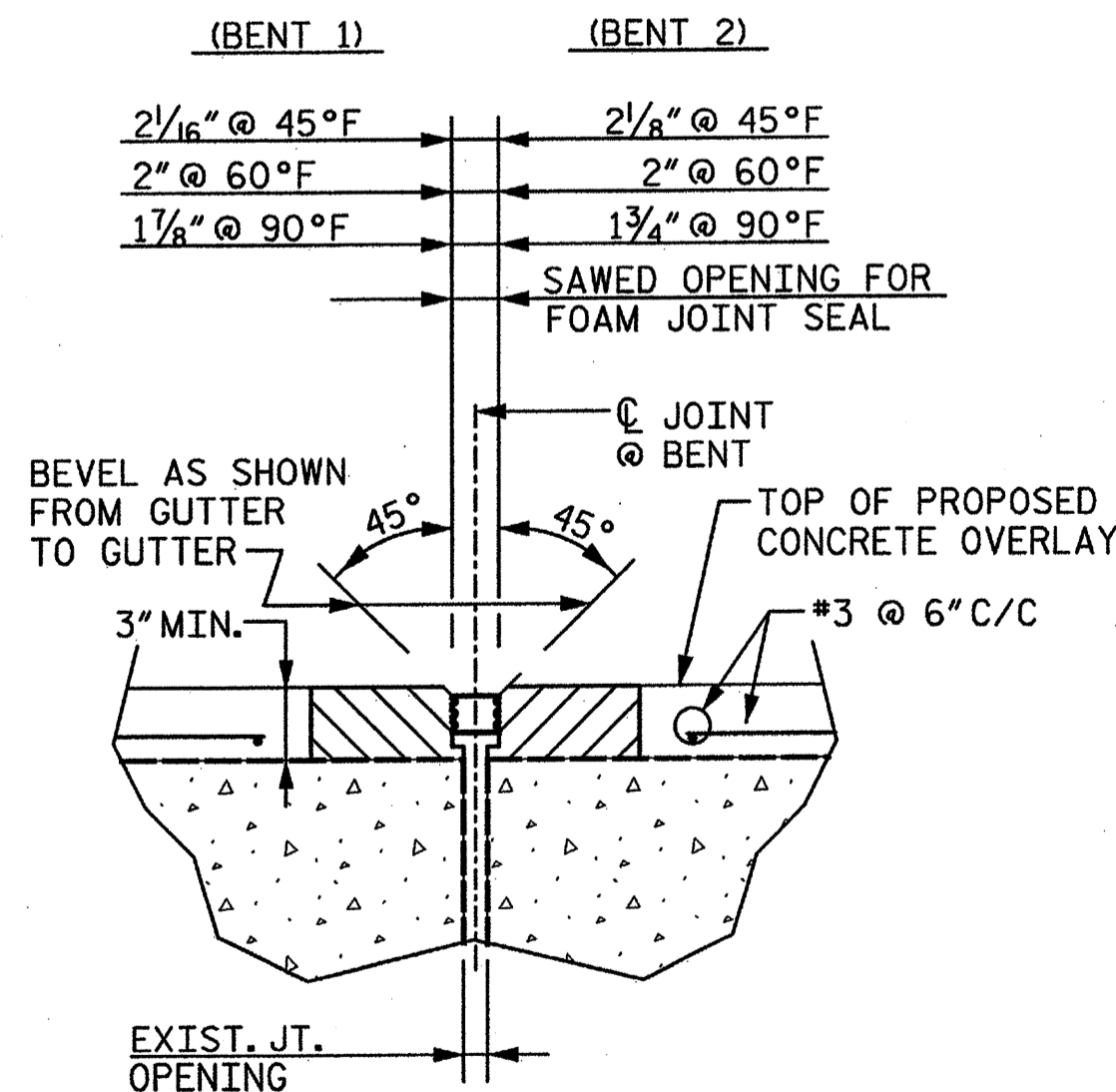
SECTION C-C



CONCRETE REMOVAL DETAIL @ EXISTING JOINT DETAIL



FOAM JOINT SEAL (DETAIL BEFORE SAWING)



FOAM JOINT SEAL (DETAIL AFTER SAWING)

DETAIL 'B'

GRADE 270 STRANDS	
AREA (SQUARE INCHES)	1/2" Ø L.R. 0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

ELASTOMERIC CONCRETE
22 CU. FT.

CLASS AA CONCRETE FOR WEARING SURFACE
50.6 CU. YDS.

REINFORCING STEEL FOR CONCRETE WEARING SURFACE
8158 LBS.

NOTES:  $\Delta$

SEE SHEET NO. S-SN FOR GENERAL NOTES.  
EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.  
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

THE ELASTOMERIC CONCRETE SHALL BE CONSIDERED INCIDENTAL TO THE FOAM JOINT SEAL PAY ITEM.

CONTRACTOR SHALL COVER AND PROTECT THE JOINT CONSTRUCTION TO PREVENT DAMAGE DURING CONCRETE CURING AND AS NEEDED TO MAINTAIN TRAFFIC, AS DIRECTED BY THE ENGINEER.

THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

FOAM JOINT OPENING WIDTHS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS IS CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

FOR CONCRETE WEARING SURFACE SEE SPECIAL PROVISIONS.

THE COST OF THE #3 BARS CAST WITH THE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

REPLACEMENT OF POST-TENSIONING STRANDS:

1. DETERMINE THE POST-TENSIONING STRANDS TO BE REPLACED.
2. PLACE THE 1/2" DIAMETER TRANSVERSE POST-TENSIONING STRANDS AND TENSION TO 30,980 LB IN EACH SPAN.
3. AFTER TENSIONING THE 1/2" DIAMETER TRANSVERSE STRAND IN A SPAN, FILL RECESSES AT THE ENDS OF THE TRANSVERSE STRANDS WITH AN APPROVED NON-METALLIC, NONSHRINK GROUT AND CURE FOR 3 DAYS MINIMUM AND UNTIL THE GROUT REACHES A COMPRESSIVE STRENGTH OF 3,000 PSI.

PROJECT NO. 41665.6B

DAVIDSON COUNTY

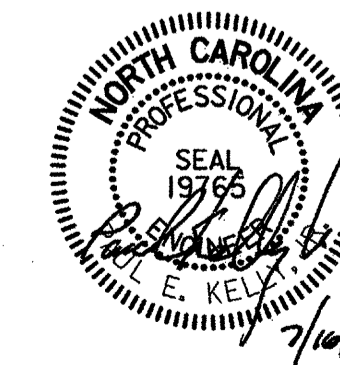
BRIDGE NO.: 525

REHAB. OF BRIDGE NO. 525

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL DETAILS

BRIDGE ON US-29 & 70  
(SOUTHBOUND)  
OVER SWEARING CREEK



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1	STV	7-13	3			TOTAL SHEETS
2			4			8

STV / Ralph Whitehead Associates, Inc.  
100 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC License No. F-0991

DRAWN BY: KMG DATE: 05-12  
CHECKED BY: AC DATE: 05-12  
REV. PER NCDOT COMMENTS

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7/16/2013 divyoc



**STANDARD NOTES**

**EXISTING STRUCTURES:**

DRAWINGS SHOWN ON THESE PLANS HAVE BEEN DRAWN PER AS-BUILT DRAWINGS.

**DESIGN DATA:**

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,600 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

**MATERIAL AND WORKMANSHIP:**

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

**CONCRETE:**

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA SAND LIGHTWEIGHT CONCRETE (MAXIMUM UNIT WEIGHT OF 120 PCF) SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP. FOR LIGHTWEIGHT CONCRETE, SEE SPECIAL PROVISIONS FOR SAND LIGHTWEIGHT CONCRETE.

**CONCRETE CHAMFERS:**

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

**DOWELS:**

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

**ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:**

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

**REINFORCING STEEL:**

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

**STRUCTURAL STEEL:**

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0". EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED. WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

**HANDRAILS AND POSTS:**

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

**SPECIAL NOTES:**

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

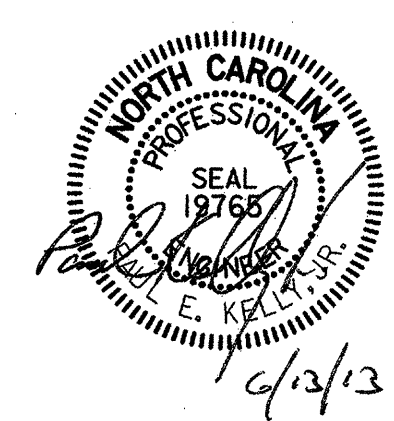
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diveycc

6/13/2013

DRAWN BY : JWK      DATE : 05-12  
 CHECKED BY : MR      DATE : 05-12

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PROJECT NO. 41665.6B  
DAVIDSON / ROWAN COUNTY  
 BRIDGE NO.: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>STANDARD NOTES</b>					
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