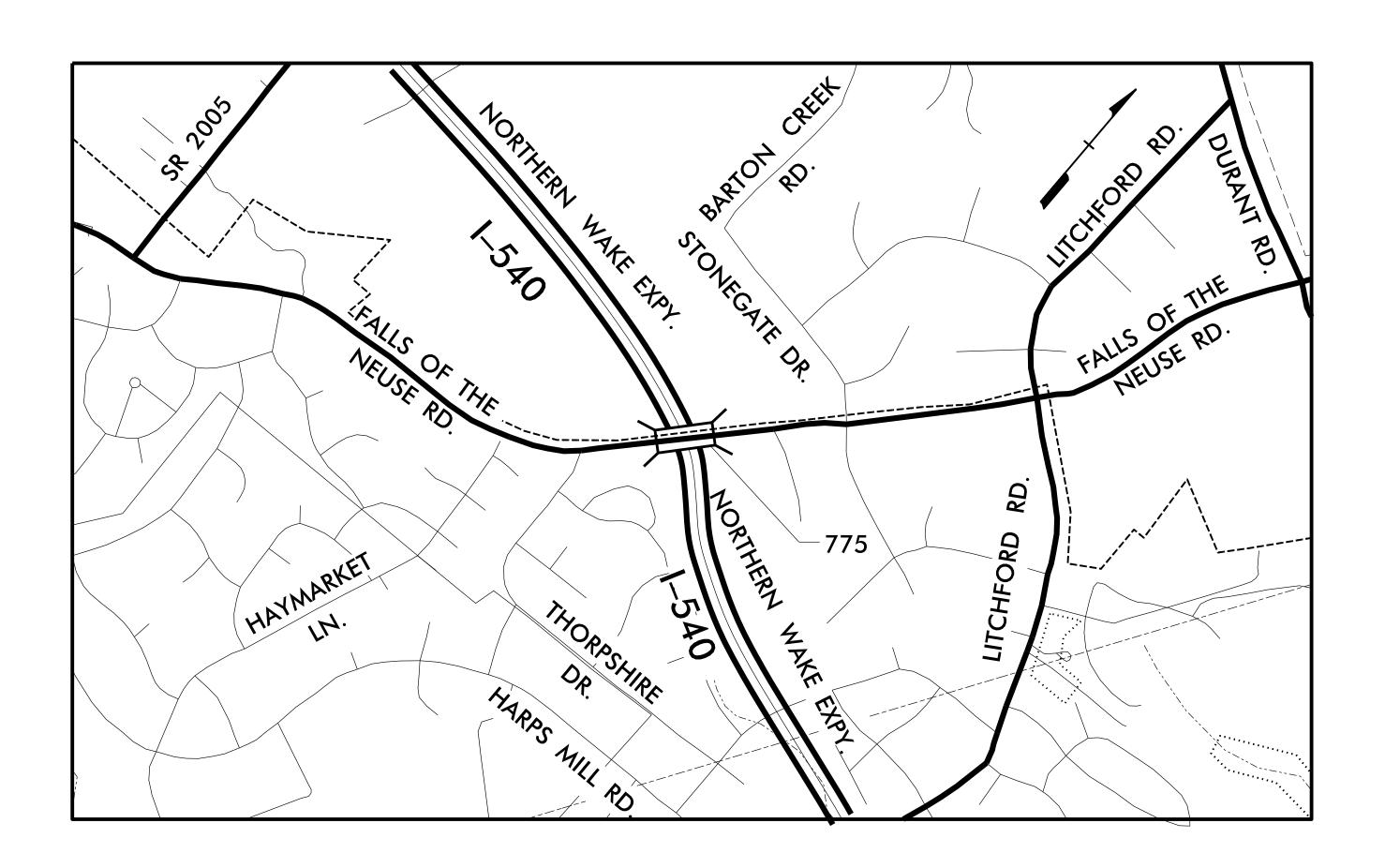


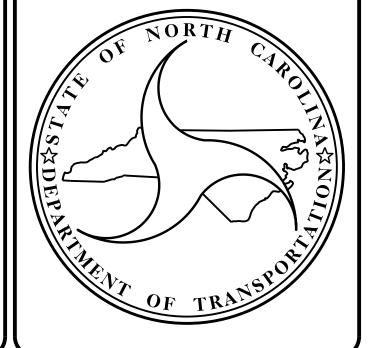
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

WAKE COUNTY

LOCATION: BRIDGE #775 ON SR 2000 (FALLS OF NEUSE ROAD) OVER I-540 (NORTHERN WAKE EXPY.)

TYPE OF WORK: BRIDGE PRESERVATION – SHOTBLASTING CONCRETE DECK, SILANE DECK TREATMENT, AND JOINT DEMOLITION AND REPLACEMENT.





DESIGN DATA

BRIDGE #775 - ADT 2013 - 44,000

PROJECT LENGTH

BRIDGE #775 - 0.05 MILE

Prepared in the Office of:

DIVISION OF HIGHWAYS

STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2018 STANDARD SPECIFICATIONS

LETTING DATE:

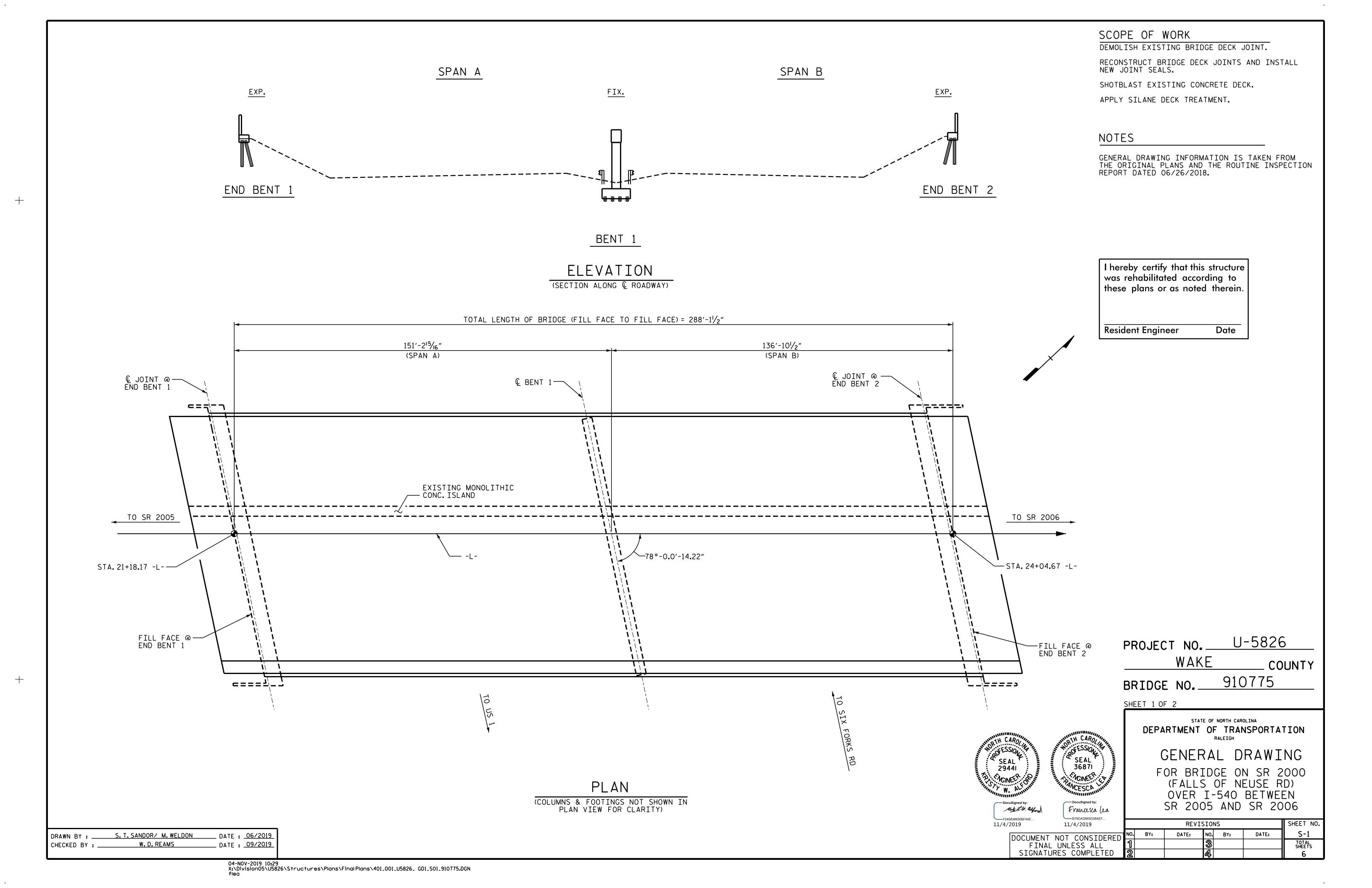
APRIL 18, 2023

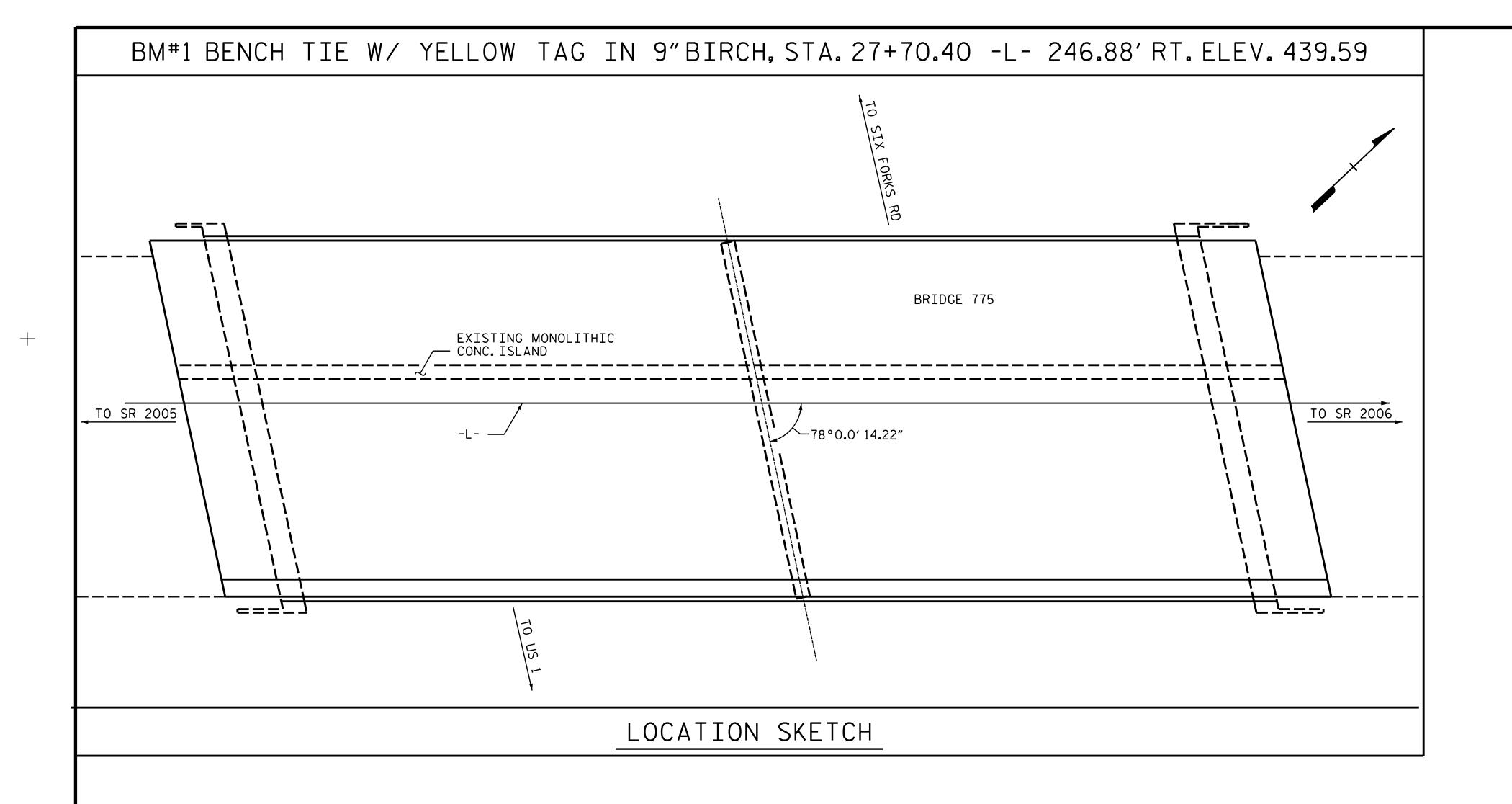
KRISTY ALFORD, P.E.

PROJECT ENGINEER

FRANCESCA LEA, P.E.

PROJECT DESIGN ENGINEER





TOTAL BILL OF MATERIALS					
	FOAM JOINT SEALS FOR PRESERVATION	ELASTOMERIC CONCRETE FOR PRESERVATION	BRIDGE JOINT DEMOLITION	SHOTBLASTING BRIDGE DECK	SILANE DECK TREATMENT
	LN.FT.	CU.FT.	SQ.FT.	SQ. YD.	SQ. YD.
TOTAL	201	50 . 2	201.0	2975.3	2975.3

NOTES:

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION, ONLY. CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING THE BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR SILANE DECK TREATMENT AND SHOTBLASTING BRIDGE DECK, SEE "SILANE DECK TREATMENT" SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/ REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

PROJECT NO. U-5826

WAKE COUNTY
BRIDGE NO. 910775



Docusigned by:

Kristy Alterd

F245838930BF40E...

02/08/2023

SEAL
36871

NCINEER
DocuSigned by:

Prancusia lua

B79DADB65D584EF...
2/08/2023

GENERAL DRAWING

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

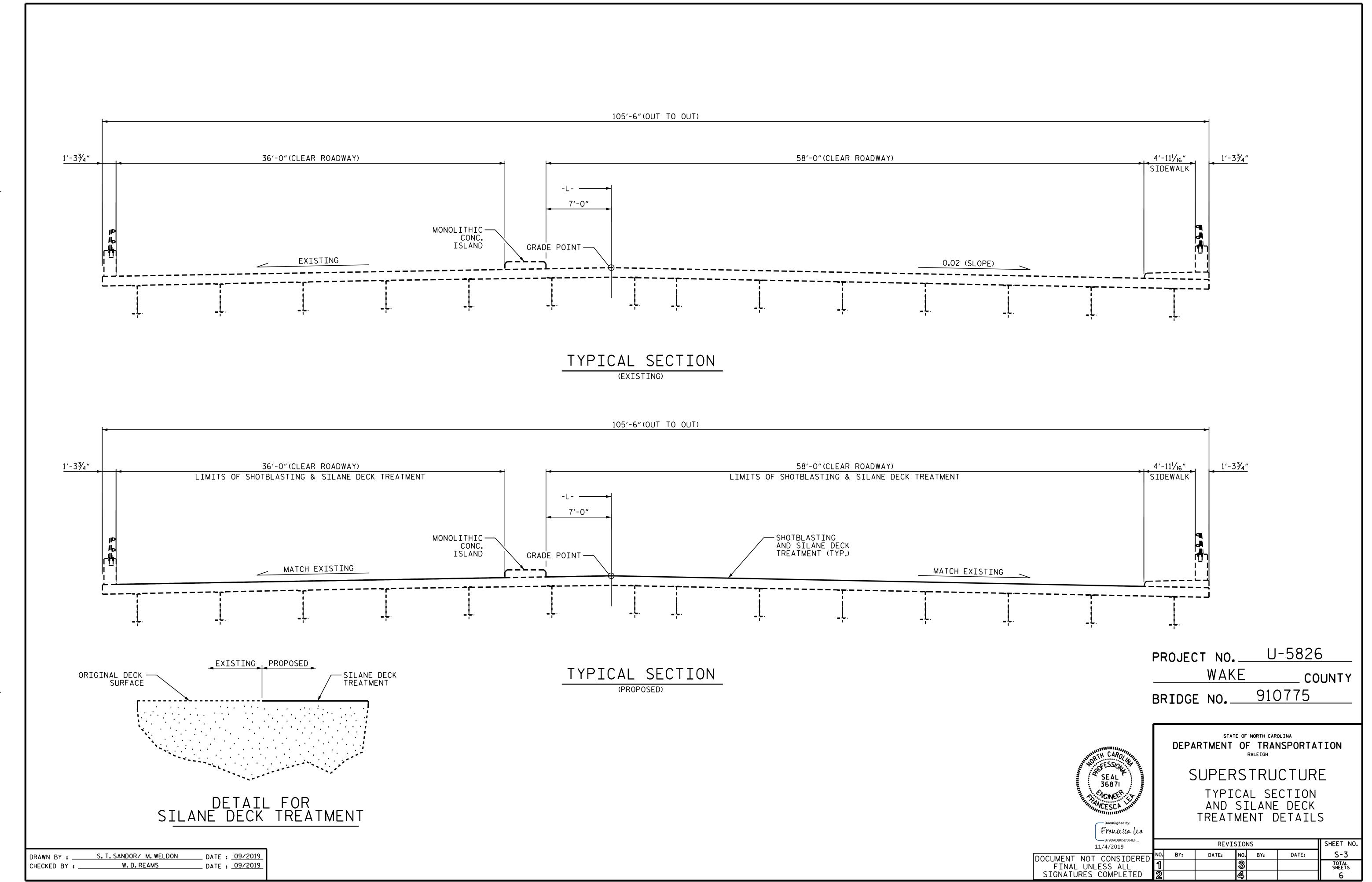
FOR BRIDE ON SR 2000 (FALLS OF NEUSE RD.)
OVER I-540 BETWEEN SR 2005 AND SR 2006

02/08/2023REVISIONSSHEET NO.DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETEDNO. BY: DATE: NO. BY: DATE: S-2

SHEET 2 OF 2

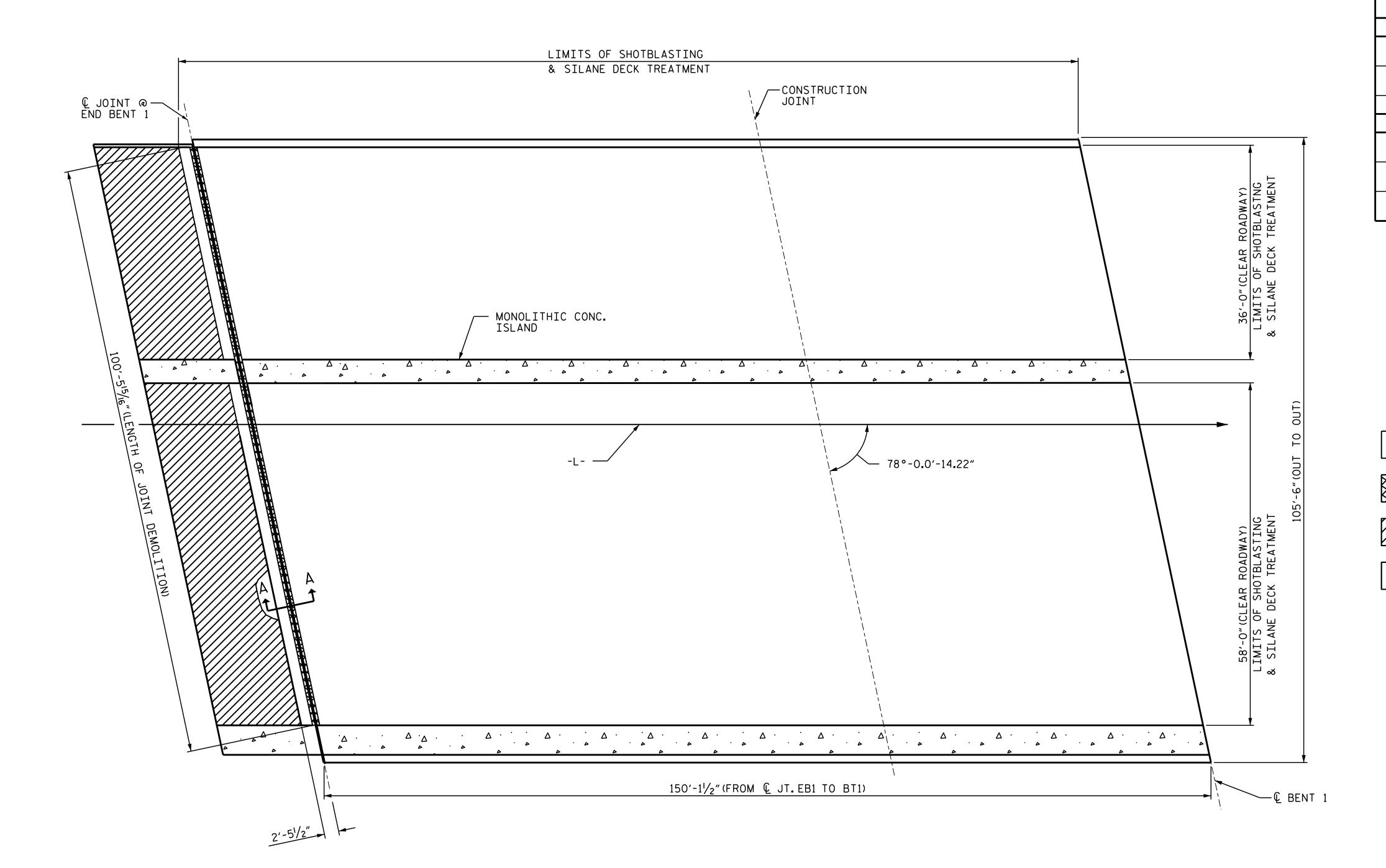
 DRAWN BY :
 W. D. REAMS / M. WELDON
 DATE :
 09/2019

 CHECKED BY :
 W. D. REAMS
 DATE :
 10/2019



NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE TOTAL BILL OF MATERIALS.



PLAN - SPAN A FOR SECTION A-A, SEE "JOINT DETAIL" SHEET.

M. WELDON _ DATE : <u>09/2019</u> _ DATE : <u>09/2019</u>

04-N0V-2019 10:29

DRAWN BY :

CHECKED BY :

W.D.REAMS

APPROACH SLAB QUANTITIES

	ESTIMATE	ACTUAL
	SQ. YDS.	SQ. YDS.
SHOTBLASTING AT APPROACH SLAB	20.4	
SILANE DECK TREATMENT	20.4	

BRIDGE QUANTITIES

	ESTIMATE	ACTUAL
	AREA SQ.FT.	AREA SQ.FT.
BRIDGE JOINT DEMOLITION	100.5	
	ESTIMATE	ACTUAL
	SQ. YDS.	SQ. YDS.
SHOTBLASTING OF BRIDGE DECK	1562.7	
SILANE DECK TREATMENT	1562.7	



BRIDGE JOINT DEMOLITION

EXISTING ASPHALT WEARING SURFACE TO REMAIN

EXISTING MONOLITHIC CONC. ISLAND AND SIDEWALK TO REMAIN

> U-5826 PROJECT NO._ WAKE _ COUNTY BRIDGE NO. 910775



Francesca lea

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
RALEIGH

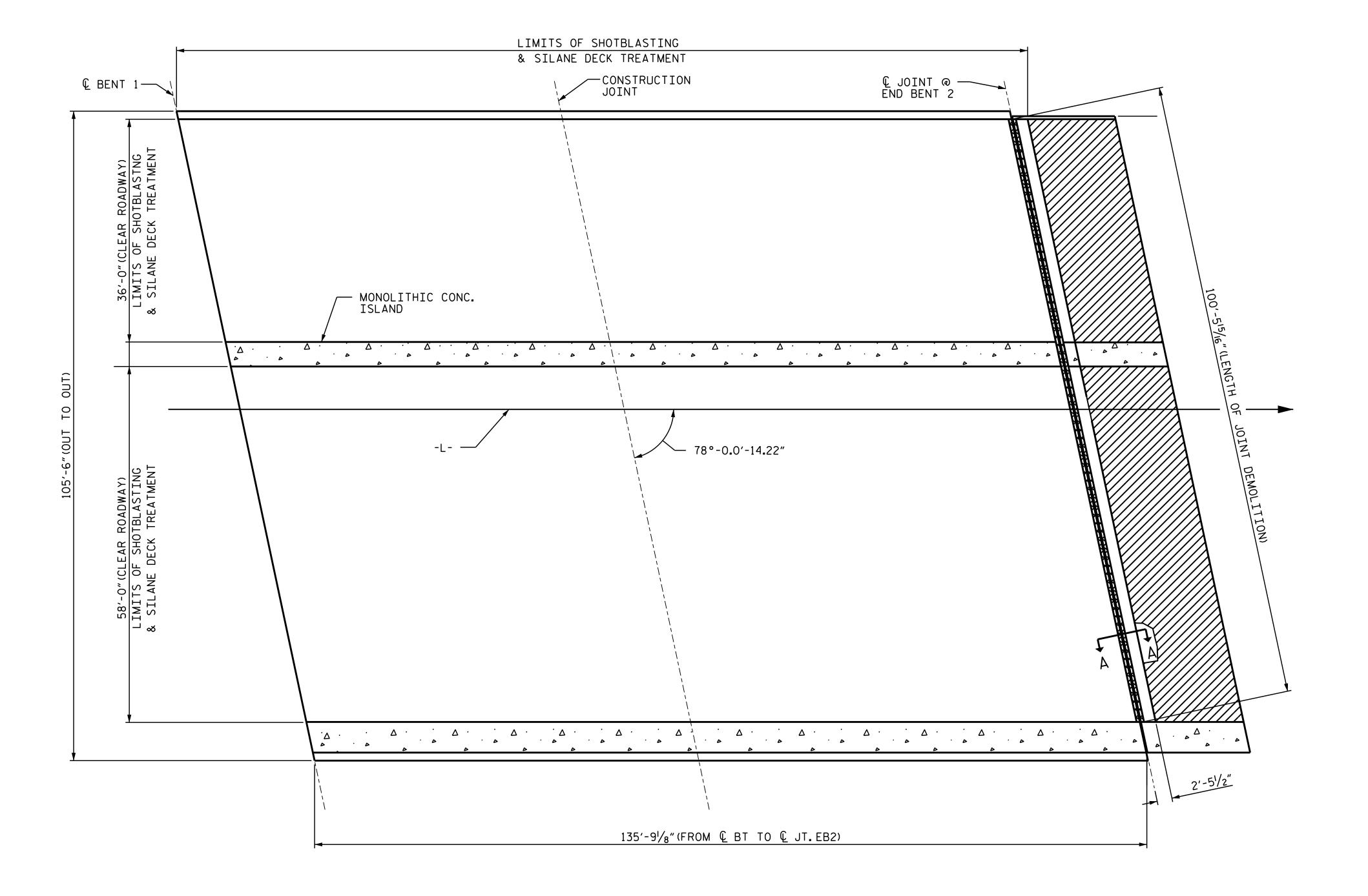
SURFACE PREPARATION & SILANE DECK TREATMENT

(SPAN A)

SHEET NO. REVISIONS 11/4/2019 S-4 DATE: DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED TOTAL SHEETS

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE TOTAL BILL OF MATERIALS.



PLAN - SPAN B

FOR SECTION A-A, SEE "JOINT DETAIL" SHEET.

 DRAWN BY :
 M. WELDON
 DATE :
 09/2019

 CHECKED BY :
 W. D. REAMS
 DATE :
 09/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROACH SLAB QUANTITIES

	ESTIMATE	ACTUAL
	SQ. YDS.	SQ. YDS.
SHOTBLASTING AT APPROACH SLAB	20.4	
SILANE DECK TREATMENT	20.4	

BRIDGE QUANTITIES

	ESTIMATE	ACTUAL
	AREA SQ.FT.	AREA SQ.FT.
BRIDGE JOINT DEMOLITION	100.5	
	ESTIMATE	ACTUAL
	SQ. YDS.	SQ. YDS.
SHOTBLASTING OF BRIDGE DECK	1412.6	
SILANE DECK TREATMENT	1412.6	

SHOTBLAST BRIDGE DECK
& SILANE DECK TREATMENT

BRIDGE

BRIDGE JOINT DEMOLITION

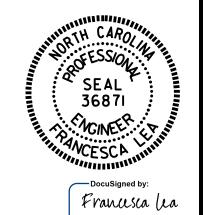
EXISTING ASPHALT WEARING SURFACE TO REMAIN

SURFACE TO

EXISTING MONOLITHIC CONC.
ISLAND AND SIDEWALK TO REMAIN

PROJECT NO. U-5826
WAKE COUNTY

BRIDGE NO. 910775



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DEPARTMENT OF TRANSPORTATION

RALEIGH

SURFACE PREPARATION & SILANE DECK TREATMENT

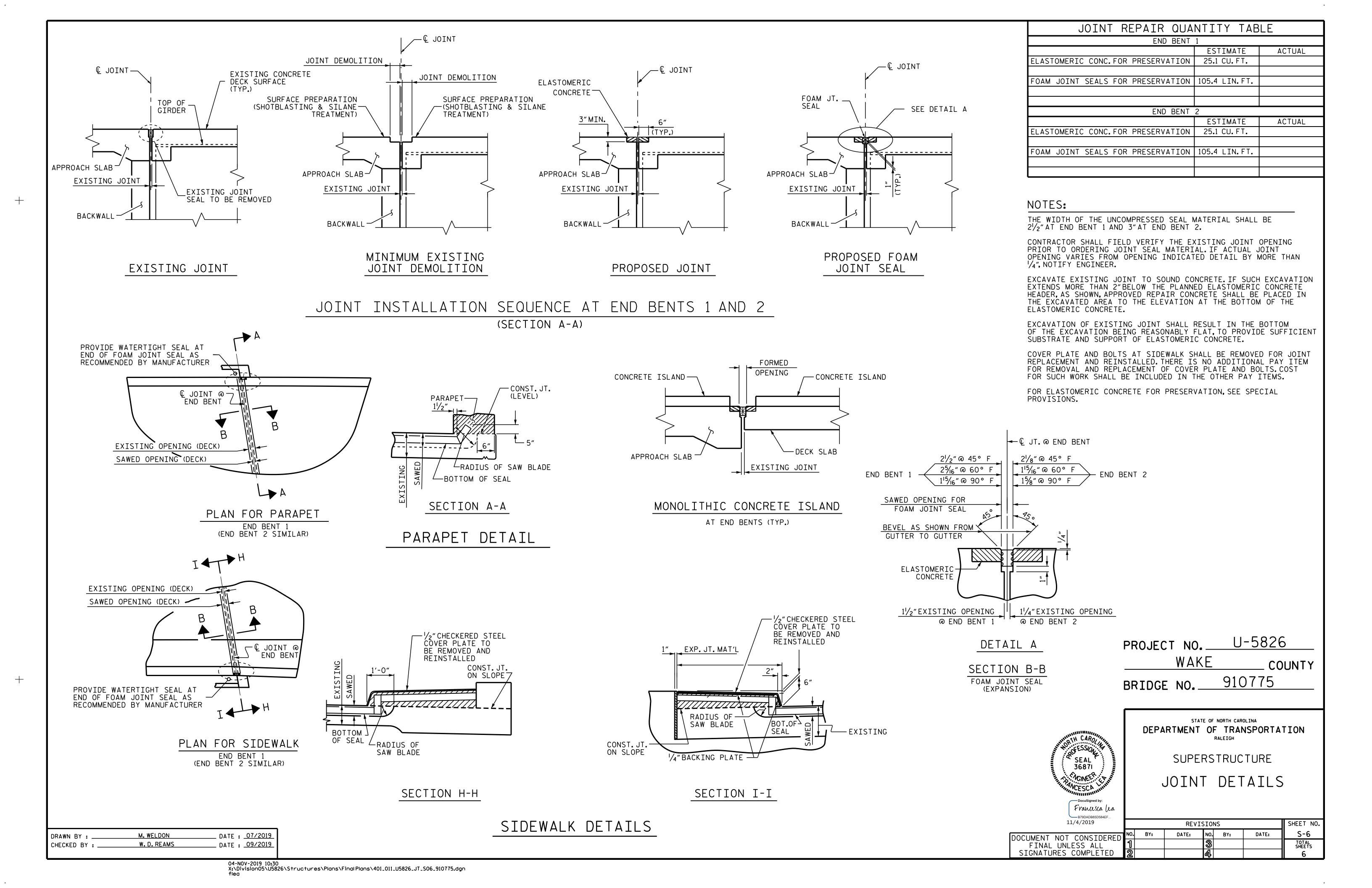
(SPAN B)

REVISIONS
SHEET NO.

BY: DATE: NO. BY: DATE: S-5

TOTAL SHEETS

6



STANDARD NOTES

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 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
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 2018 "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 CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

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 11/2" 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 $\frac{1}{8}$ " Ø SHEAR STUDS FOR THE $\frac{3}{4}$ " Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{1}{8}$ " Ø STUDS FOR 4 - $\frac{3}{4}$ " Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{1}{8}$ " Ø STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " Ø STUDS BASED ON THE RATIO OF 3 - $\frac{1}{8}$ " Ø STUDS FOR 4 - $\frac{3}{4}$ " 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 \(\frac{5}{16} \)" 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 1/6 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. FINS 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.

ENGLISH

JANUARY, 1990