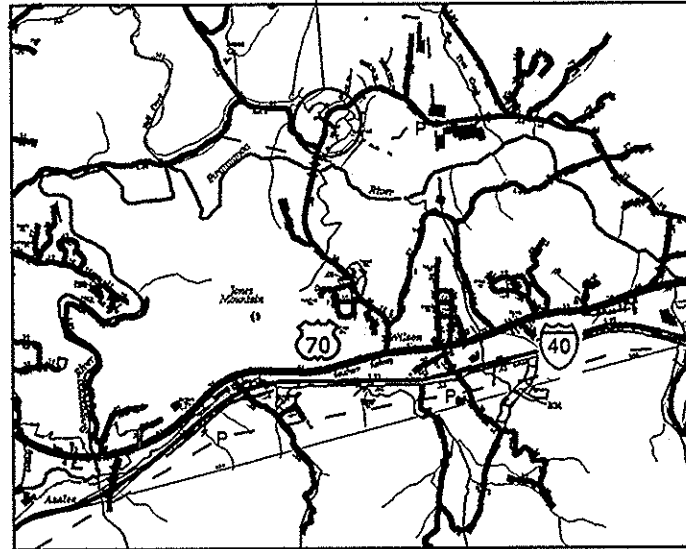


PROJECT: 17BP.13.H.1

BRIDGE #859



VICINITY MAP

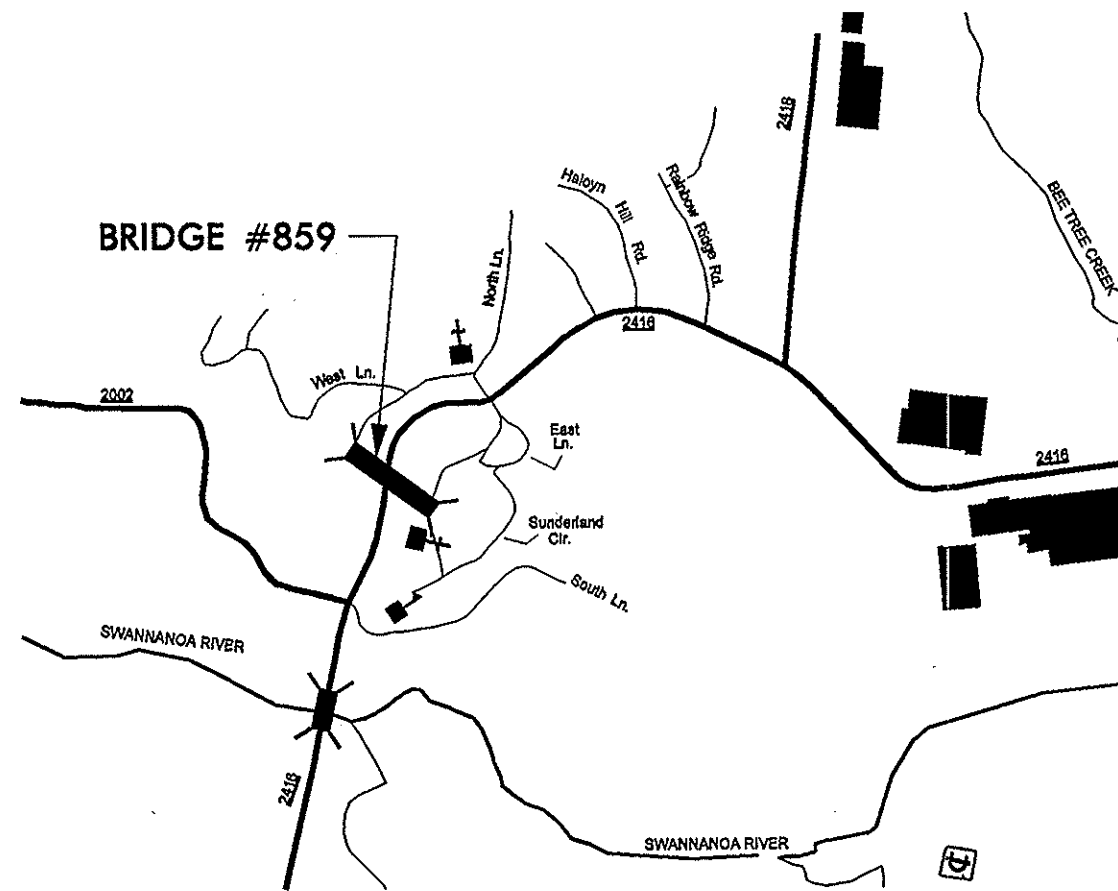
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

LOCATION: PEDESTRIAN BRIDGE #859 OVER SR-2416

TYPE OF WORK: BRIDGE PRESERVATION: SUPERSTRUCTURE REPLACEMENT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.13.H.1	1	7
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.13.H.1	NA	PE	
17BP.13.H.1	NA	CONSTR.	



VICINITY MAP



PROJECT LENGTH		
BRIDGE	LENGTH	STRUCTURE PROJECT
#859	.06 MILE	

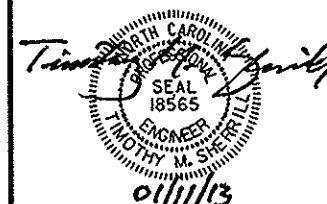
Prepared For:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

LETTING DATE:
FEBRUARY 20, 2013

RICK NELSON, P.E.
PROJECT ENGINEER

ENGINEER



TIMOTHY M. SHERRILL, P.E.
PROJECT DESIGN ENGINEER

\$FILES \$TIMES \$DATES

PROJECT: 17BP.13.H.1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

LOCATION: PEDESTRIAN BRIDGE #859 OVER SR-2416

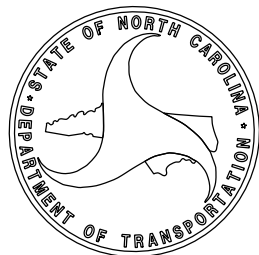
TYPE OF WORK: BRIDGE PRESERVATION: SUPERSTRUCTURE REPLACEMENT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.13.H.1	1A	7
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.13.H.1	NA	PE	
17BP.13.H.1	NA	CONSTR.	

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
S1-S3	STRUCTURES
SN	STANDARD NOTES

\$DATE\$ \$TIME\$ \$FILES\$

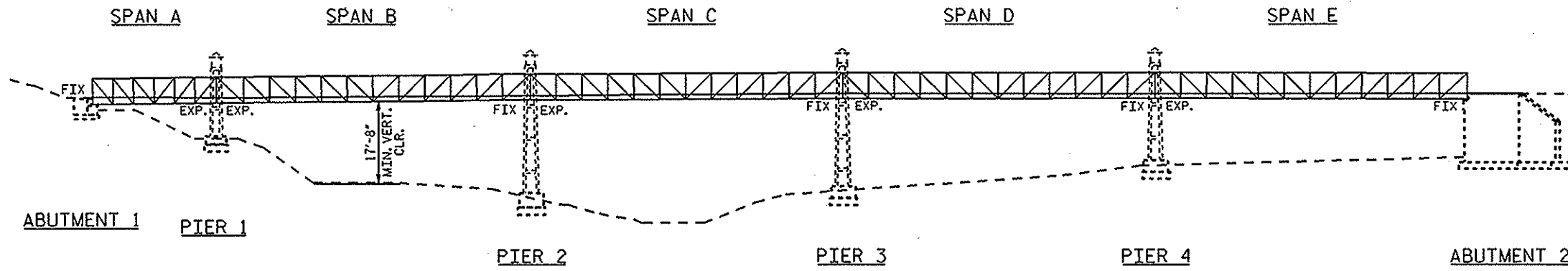


Prepared For:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

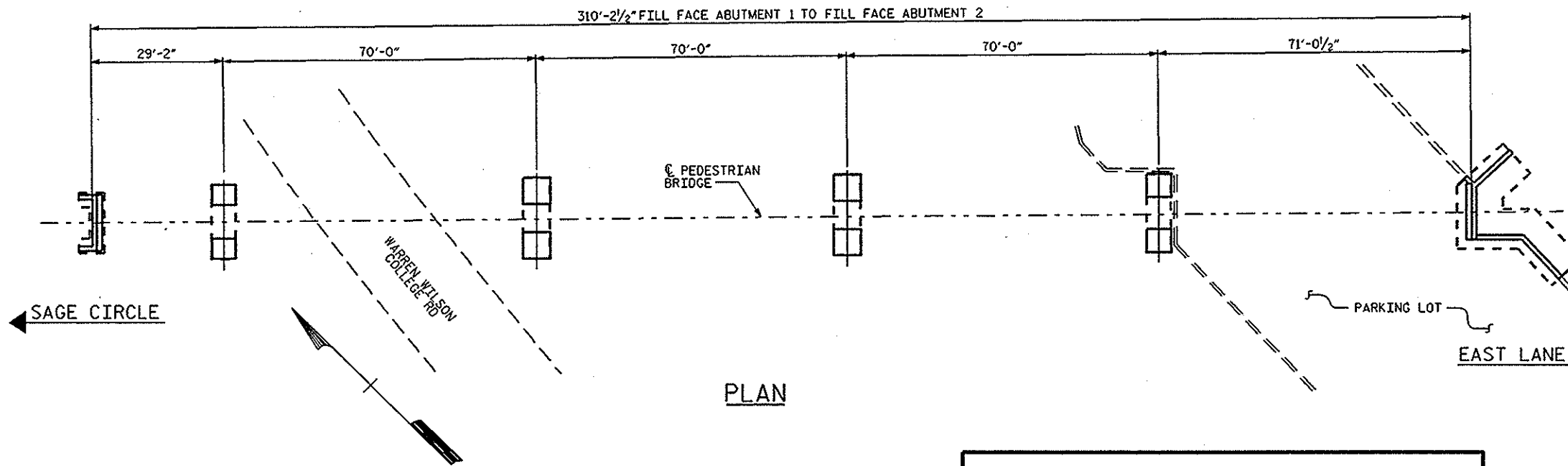
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 SUMMARY OF QUANTITIES FOR PROJECT 17BP.13.H.1

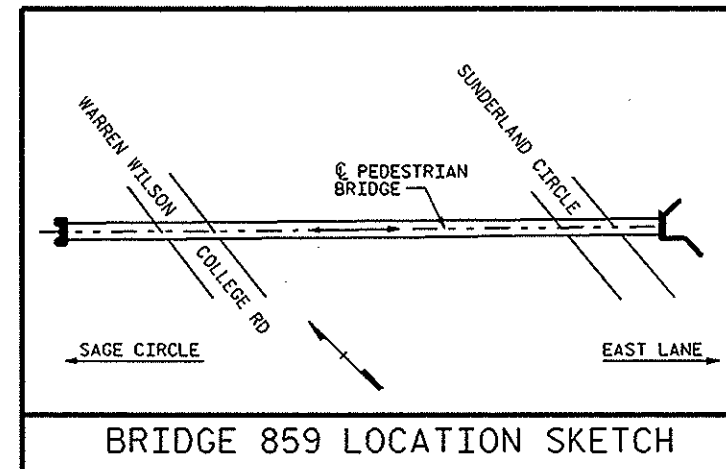
Item No.	Sect. No.	Description	Unit	Quantity
0000100000-N	800	MOBILIZATION	LS	1
4400000000-E	1110	STATIONARY WORK ZONE SIGNS	SF	176
4410000000-E	1110	BARRICADE MOUNTED WORK ZONE SIGNS	SF	48
4430000000-N	1130	DRUMS	EA	25
4445000000-N	1145	BARRICADES (TYPE III)	LF	64
4455000000-N	1150	FLAGGER (BY DAY)	DAY	20
8154000000-E	420	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONCRETE)	SF	2363
8280000000-E	440	APPROXIMATELY 4000 LBS STRUCTURAL STEEL FOR SUPPORT BEAM ASSEMBLIES	LS	1
8860000000-N	SP	PARTIAL REMOVAL OF EXISTING STRUCTURE AT BRIDGE 859	LS	1
8860000000-N	SP	PREFABRICATED PEDESTRIAN BRIDGE SUPERSTRUCTURE FOR BRIDGE NO. 859	LS	1
8860000000-N	SP	FOAM JOINT SEALS	LS	1



SECTION ALONG C OF BRIDGE



PLAN



BRIDGE 859 LOCATION SKETCH

GENERAL NOTES:

EXISTING BRIDGE AND DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

DIMENSIONS IN THESE PLANS ARE BASED ON ORIGINAL PLANS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL TAKE THE NECESSARY STEPS TO PREVENT DEBRIS AND MATERIALS FROM FALLING, ROLLING, OR BLOWING INTO TRAFFIC FROM THE WORK AREA. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT TRAFFIC ADJACENT TO THE WORK AREA.

IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL OSHA AND STATE SAFETY REQUIREMENTS.

ALL STRUCTURAL STEEL FOR THIS PROJECT SHALL BE NEW HIGH-STRENGTH, LOW-ALLOY, ATMOSPHERIC CORROSION RESISTANT ASTM A 847 COLD-FORMED, WELDED SQUARE AND RECTANGULAR TUBING AND/OR ATMOSPHERIC CORROSION RESISTANT ASTM A588, ASTM A242, AND ASTM A606 PLATE AND STRUCTURAL SHAPES (Fy=50,000 psi).

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH CURRENT AWS SPECIFICATIONS AND BY A CERTIFIED WELDER.

DEBRIS AND VEGETATION SHALL BE REMOVED FROM EXISTING ABUTMENTS, TOWERS, AND PEDESTALS. ALL COST ASSOCIATED WITH DEBRIS AND VEGETATION REMOVAL SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

THE COST OF LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR REMOVAL AND DISPOSAL OF EXISTING STRUCTURE COMPONENTS SHALL BE INCLUDED IN THE BID PRICE FOR THE 'PARTIAL REMOVAL OF EXISTING STRUCTURE AT BRIDGE 859'.

THERE ARE POTENTIAL UTILITY CONFLICTS WITH SUPERSTRUCTURE REPLACEMENT OPERATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TEMPORARY SUPPORT NECESSARY FOR CONDUIT. CONTRACTOR MAY NEED TO SHIFT CONDUIT SLIGHTLY TO ACCOMMODATE SUPERSTRUCTURE REPLACEMENT SHOWN IN THESE PLANS.

CONTRACTOR SHALL PERFORM ALL NONDESTRUCTIVE TESTING PER THE DIRECTION OF THE ENGINEER. ALL COST ASSOCIATED SHALL BE CONSIDERED INCIDENTAL TO THE BID PRICE FOR 'STRUCTURAL STEEL FOR SUPPORT BEAM ASSEMBLIES'.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

WORKING DRAWINGS FOR STRUCTURAL STEEL SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PER SECTION 1072-8 OF THE STANDARD SPECIFICATIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR NEW SUPERSTRUCTURE OF BRIDGE NO. 859, SEE 'PREFABRICATED PEDESTRIAN BRIDGE SUPERSTRUCTURE' IN THE SPECIAL PROVISIONS.

FOR SAND LIGHTWEIGHT CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

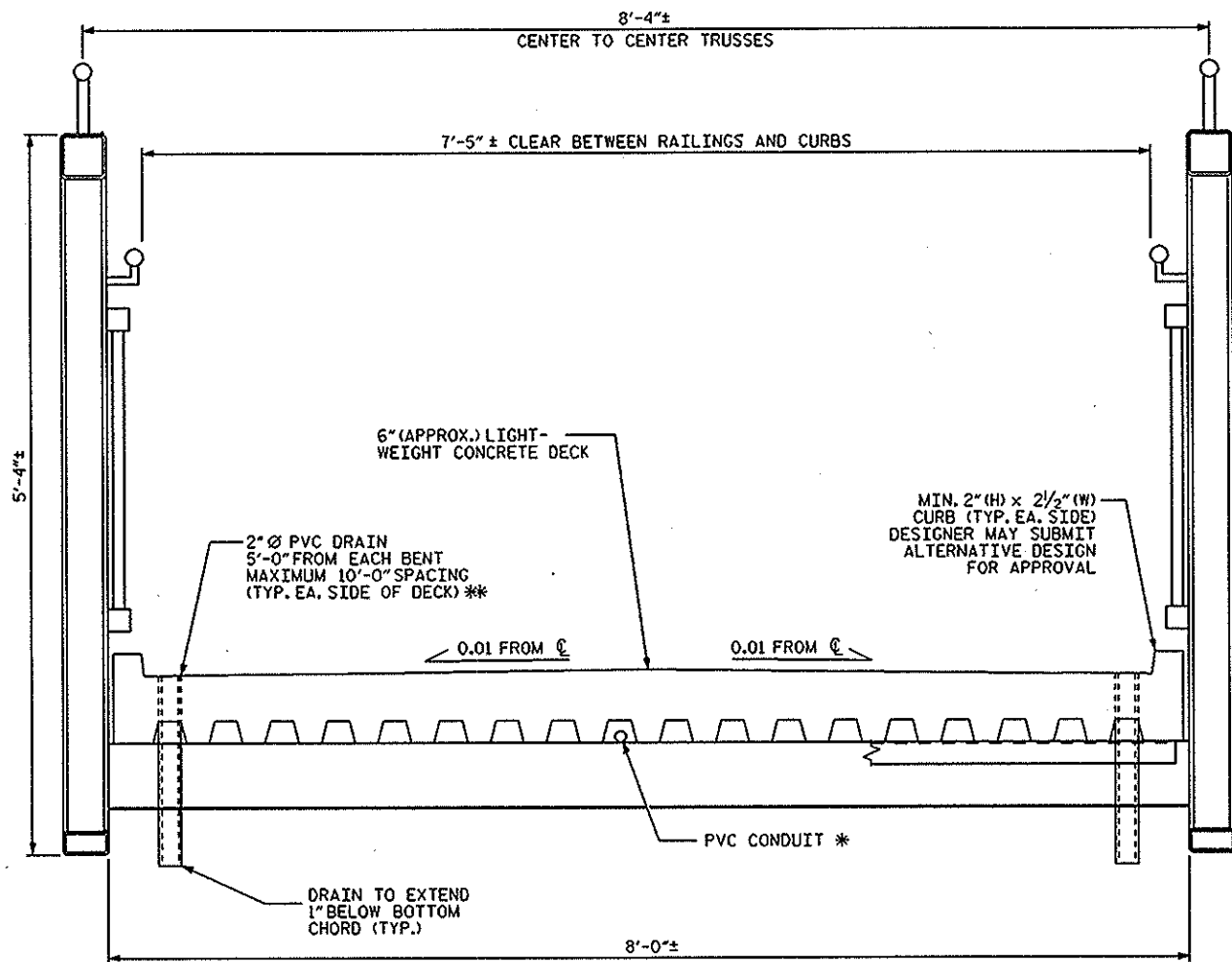
PROJECT NO. 17BP.13.H.1
BUNCOMBE COUNTY
 BRIDGE NO.: 859

TOTAL BILL OF MATERIAL				
PARTIAL REMOVAL OF EXISTING STRUCTURE AT BRIDGE 859	PREFABRICATED PEDESTRIAN BRIDGE SUPERSTRUCTURE FOR BRIDGE 859	APPROX. 4000 LBS. STRUCTURAL STEEL FOR SUPPORT BEAM ASSEMBLIES	FOAM JOINT SEALS	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONCRETE)
LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	SQUARE FEET
LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	2363

Professional Engineer Seal for Timothy M. Sherrill, No. 18565, State of North Carolina. Date: 01/11/13.

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

DRAWN BY: T.M. SHERRILL DATE: 11/12
 CHECKED BY: F. ASEFNIA DATE: 11/12



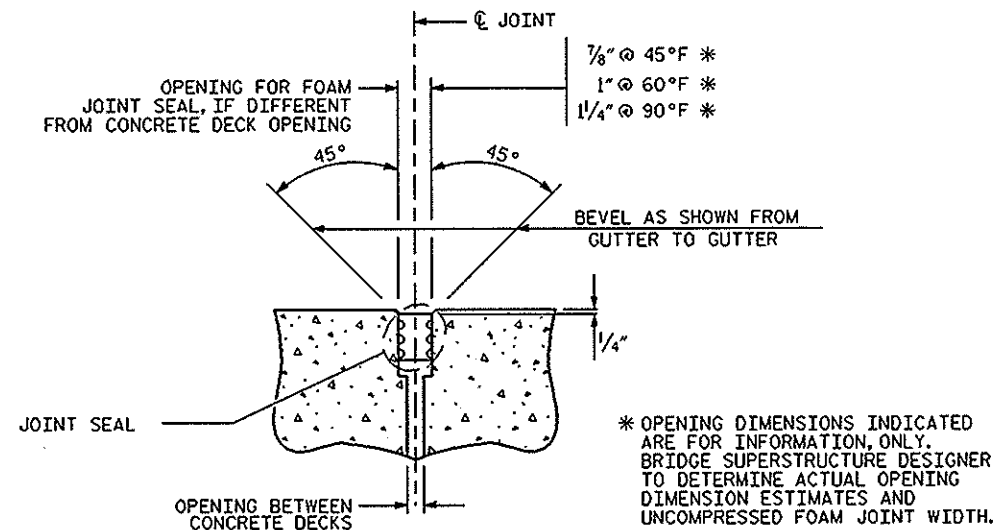
TYPICAL TRUSS SUPERSTRUCTURE SECTION

REPLACEMENT SEQUENCE

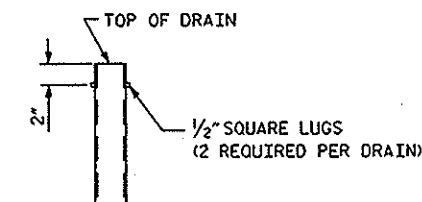
1. REMOVE EXISTING BRIDGE TRUSS SUPERSTRUCTURE AND SUPPORT BEAM ASSEMBLIES BETWEEN TOWERS.
2. INSTALL NEW SUPPORT BEAM ASSEMBLIES.
3. INSTALL NEW BRIDGE TRUSS SUPERSTRUCTURES AND STAY-IN-PLACE DECK FORMS.
4. PLACE REINFORCING STEEL AND LIGHTWEIGHT CONCRETE DECK.
5. INSTALL FOAM JOINT SEALS.
6. INSTALL RAILS AND/OR OTHER TRIM, AS NECESSARY.

*MATCH PVC CONDUIT SIZE TO EXISTING. INDICATE NEW ATTACHMENT LOCATIONS AND METHOD.

**DRAIN SPACING IS INDICATED FOR SPANS A, C, D, & E. DRAINS FOR SPAN B TO BE LOCATED ON EACH SIDE OF THE BRIDGE, AT ONLY 5' AND 15' FROM PIERS 1 & 2. NO OTHER DRAINS SHALL BE LOCATED OVER WARREN WILSON COLLEGE ROAD.



PROPOSED FOAM JOINT SEAL



DRAIN PIPE DETAIL
(56 DRAINS REQUIRED)

NOTES

EXISTING PREFABRICATED TRUSS SUPERSTRUCTURE SHALL BE REMOVED AND REPLACED WITH NEW PREFABRICATED TRUSS SUPERSTRUCTURE WITH SAND LIGHTWEIGHT CONCRETE DECK.

NEW TRUSS SUPERSTRUCTURES SHALL BE DESIGNED TO MATCH SPAN, WIDTH, AND HEIGHT DIMENSIONS AND GENERAL GEOMETRY OF THE EXISTING TRUSS SUPERSTRUCTURES. DESIGN DIMENSIONS AND GEOMETRIES THAT VARY FROM THE EXISTING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. AFTER AWARD OF BID, COPIES OF ORIGINAL SUPERSTRUCTURE PLANS WILL BE PROVIDED TO CONTRACTOR.

DESIGN SHALL BE IN ACCORDANCE WITH THE PREFABRICATED PEDESTRIAN BRIDGE SPECIAL PROVISIONS. TRUSS MEMBERS TO BE SIZED, AS NECESSARY, FOR REQUIRED LOADINGS.

REACTIONS FROM NEW PREFABRICATED TRUSS SUPERSTRUCTURES AT EACH BEARING LOCATION SHALL BE LIMITED TO THE FOLLOWING:

SPANS B-E		
DEAD LOAD:	9,200 lbs.	(VERTICAL)
UNIFORM LIVE LOAD:	11,900 lbs.	(VERTICAL)
VEHICLE LOAD:	5,000 lbs.	(VERTICAL)
WIND UPLIFT:	+/- 2,300 lbs.	(VERTICAL)
WIND:	3,300 lbs.	(HORIZONTAL)
SPAN A		
DEAD LOAD:	3,650 lbs.	(VERTICAL)
UNIFORM LIVE LOAD:	4,700 lbs.	(VERTICAL)
VEHICLE LOAD:	5,000 lbs.	(VERTICAL)
WIND UPLIFT:	+/- 800 lbs.	(VERTICAL)
WIND:	1,300 lbs.	(HORIZONTAL)

EXISTING ANCHOR BOLTS AT BENTS SHALL BE REUSED. CARE SHALL BE TAKEN DURING REMOVAL OF EXISTING TRUSS SUPERSTRUCTURES TO ENSURE THE ANCHOR BOLTS ARE NOT DAMAGED. SHOULD DAMAGE TO EXISTING ANCHOR BOLTS OCCUR, NEW ANCHOR BOLTS SHALL BE INSTALLED AT CONTRACTOR'S EXPENSE. SUBMIT NEW ANCHOR BOLT SYSTEM/ PLAN FOR REVIEW AND APPROVAL.

REMOVE THE EXISTING SUPPORT BEAM ASSEMBLIES (CONSISTING OF TWO W10x15 BEAMS) AT EACH BENT. REPLACE WITH NEW SUPPORT BEAM ASSEMBLIES. SEE DETAILS FOR NEW SUPPORT BEAM ASSEMBLIES.

EXISTING CONNECTOR PLATES, BEARING PLATES, AND OTHER PIECES SHALL BE RETAINED AND REUSED, UNLESS NOTED OTHERWISE. SHOULD DAMAGE TO EXISTING PLATES OR PIECES OCCUR, NEW PLATES OR PIECES SHALL BE INSTALLED AT CONTRACTOR'S EXPENSE.

CONCRETE DECK SHALL BE DESIGNED BY PREFABRICATED STEEL TRUSS SUPERSTRUCTURE DESIGNER. PLANS SHALL INDICATE CONCRETE DECK THICKNESS, SIZES AND SPACING OF STEEL REINFORCING, AND OTHER APPROPRIATE INFORMATION REQUIRED FOR CONSTRUCTION OF CONCRETE DECK.

CONCRETE IN THE DECK SHALL BE SAND LIGHTWEIGHT CONCRETE AND SHALL MEET THE REQUIREMENTS OF THE SPECIAL PROVISIONS.

CONCRETE IN THE DECK SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS, TO PARTIALLY SUBSTITUTE CLASS F FLY ASH FOR PORTLAND CEMENT, IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB. OF FLY ASH PER 1.0 LB. OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION, AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

ALL BAR SUPPORTS IN THE DECK AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE MINIMUM CONCRETE COVER FOR THE DECK REINFORCING STEEL SHALL BE AS FOLLOWS:
TOP OF SLAB: 2 1/2"
BOTTOM OF SLAB: 1 1/4"

THE STAY-IN-PLACE FORMS FOR THE LIGHTWEIGHT CONCRETE DECK SHALL BE SIZED APPROPRIATELY FOR THE DESIGN OF THE DECK. THE DECKING SHALL BE APPROPRIATELY GALVANIZED FOR A CORROSIVE ENVIRONMENT.

FOAM JOINT SEALS SHALL BE PROVIDED AT ABUTMENTS AND INTERIOR BENTS. THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL IS ANTICIPATED TO BE 1 1/2" AT ALL BENTS. THE PREFABRICATED BRIDGE SUPERSTRUCTURE DESIGNER SHALL DETERMINE AND INDICATE THE JOINT OPENINGS AND APPROPRIATE SIZES FOR FOAM JOINT SEAL. FOAM JOINT SEALS SHALL BE TURNED UP AT CURBS.

CONTRACTOR SHALL DETERMINE LOCATION AND ATTACHMENT METHOD FOR NEW ELECTRICAL CONDUIT. CONDUIT SHALL BE ROUTED AND ATTACHED TO EXISTING CONDUIT AT TOWERS AND BENTS AS NECESSARY. THE COST OF THE CONDUIT AND TIE-INS TO EXISTING POWER AND LIGHTING SHALL BE CONSIDERED AS INCIDENTAL TO THE COST OF THE INSTALLATION OF THE NEW SUPERSTRUCTURE.

PARTICULAR CARE SHALL BE TAKEN TO ENSURE THE EXISTING LANTERNS AND ASSOCIATED APPURTENANCES, GLASS, ETC. ARE NOT DAMAGED DURING WORK. DAMAGE TO THE EXISTING LANTERNS AND ASSOCIATED APPURTENANCES, GLASS, ETC. SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AND AT THE CONTRACTOR'S EXPENSE.

NOTES FOR DRAINS:

TOP OF FLOOR DRAIN TO BE SET 3/8" BELOW SURFACE OF SLAB.

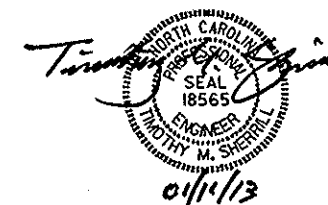
2 - 1/2" SQUARE LUGS TO BE GLUED TO THE PVC PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 2" FROM THE TOP OF THE PIPE.

THE 2" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

PROJECT NO. 17BP.13.H.1
BUNCOMBE COUNTY
BRIDGE NO. 859

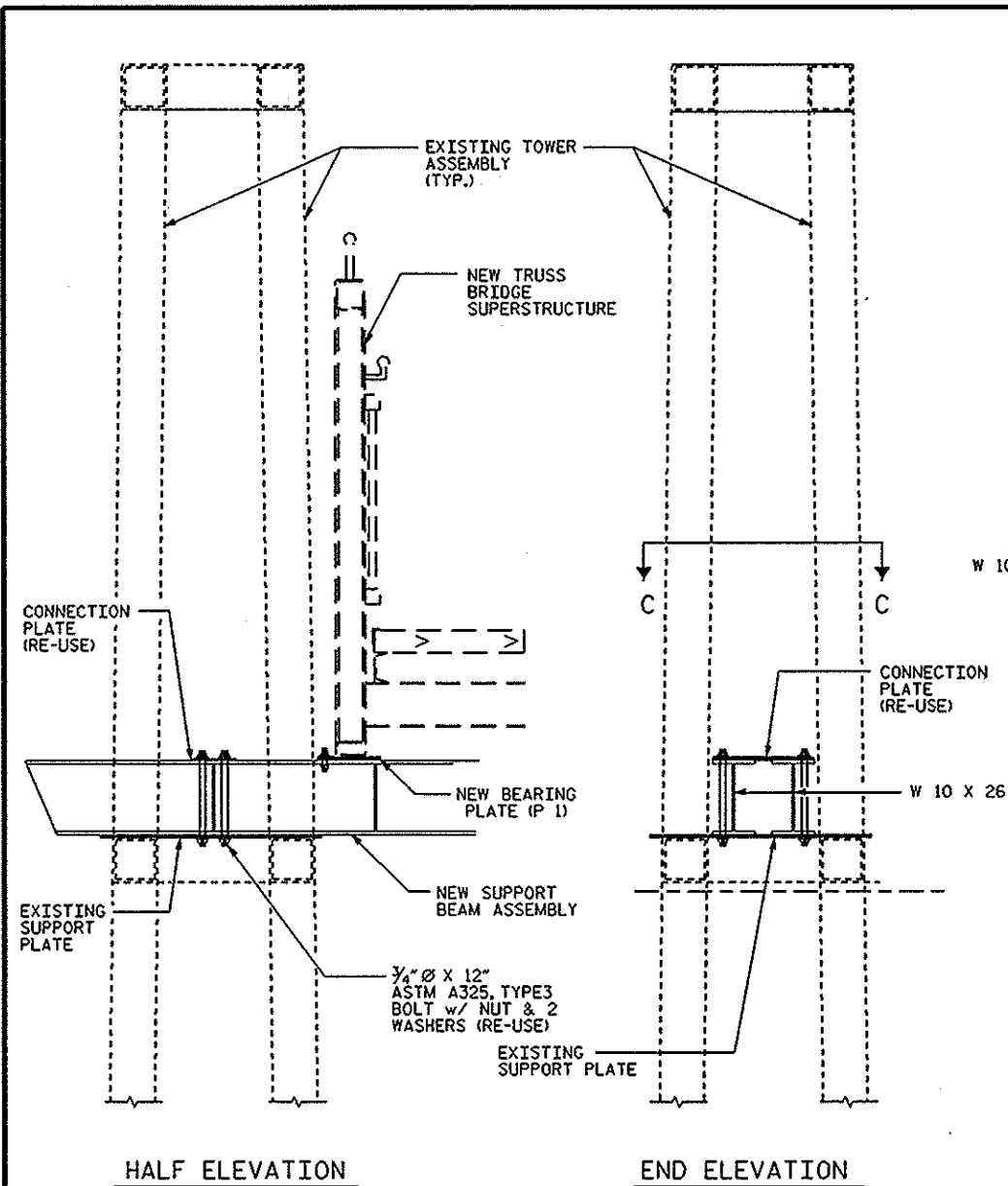
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND DETAILS

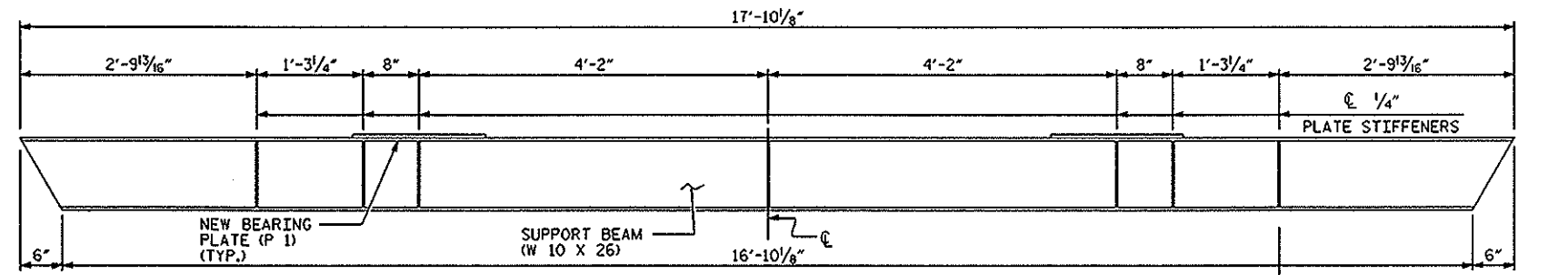


DRAWN BY: T.M. SHERRILL DATE: 11/12
CHECKED BY: F. ASEFNIA DATE: 11/12

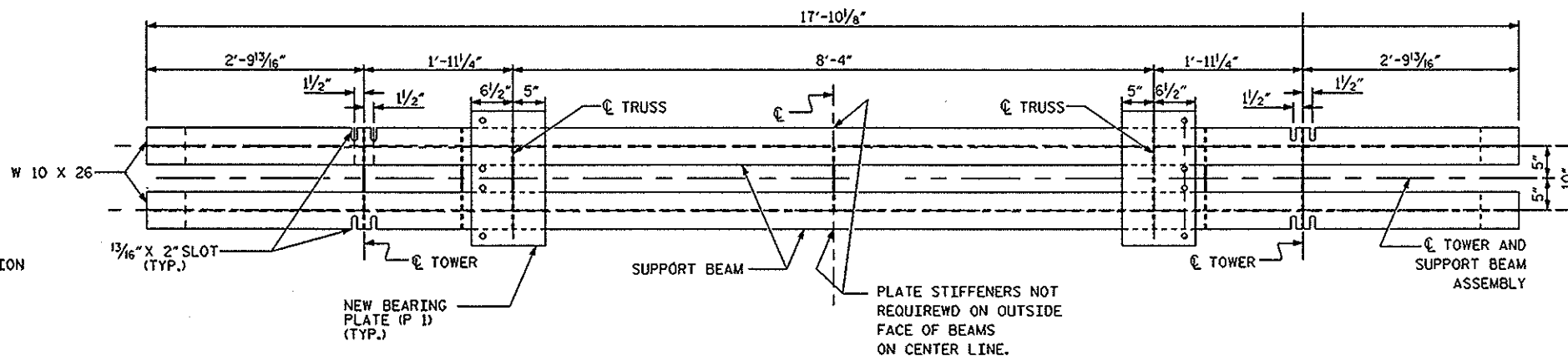
REVISIONS						SHEET NO. S-2
NO.	BY	DATE	NO.	BY	DATE	
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2			4			



HALF ELEVATION
END ELEVATION
TOWER ELEVATIONS

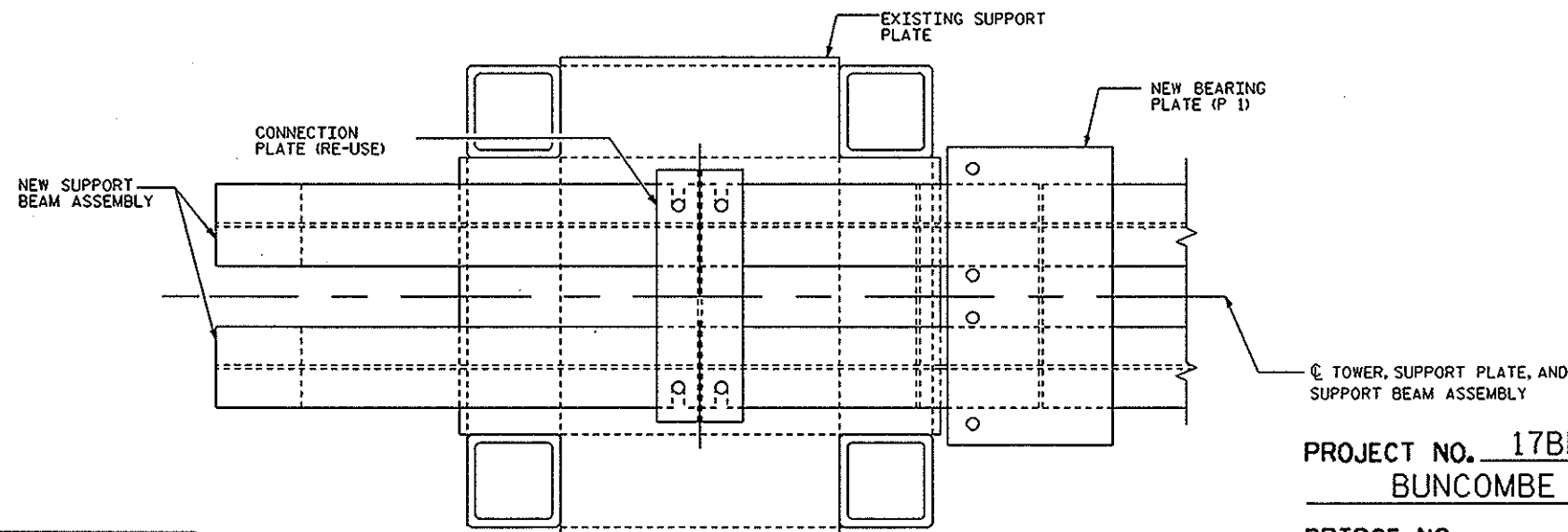


ELEVATION

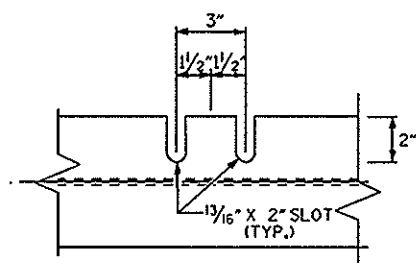


PLAN

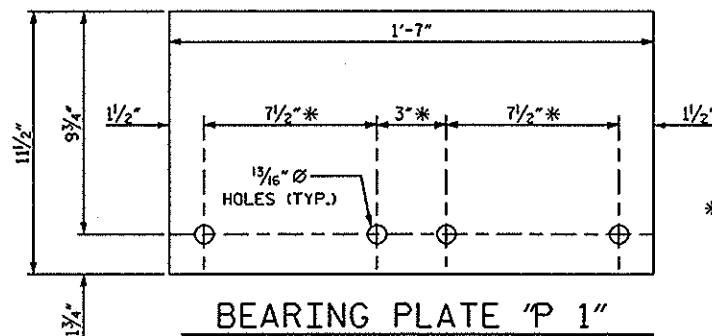
NEW SUPPORT BEAM ASSEMBLY



SECTION C-C



"SB 1" SLOT DETAIL



BEARING PLATE "P 1"

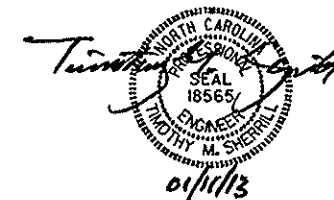
* DIMENSIONS MAY BE ADJUSTED, AS NECESSARY, BY THE DESIGNER, BUT MUST BE COORDINATED WITH EXISTING AND NEW MEMBER DIMENSIONS AND GEOMETRY

P 11 1/2" X 1/2" X 1'-9"

PROJECT NO. 17BP.13.H.1
BUNCOMBE COUNTY
BRIDGE NO.: 859

DRAWN BY: S. T. SANDOR DATE: 10/12
CHECKED BY: T. M. SHERRILL DATE: 11/12

10-JAN-2013 09:05
S:\P\RS\POC\Squad C\Preservation\Projects\17BP.13.H.1\Replace Superstructure\Support Beam Assembly S-3.dgn
tmsherrill



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

NEW SUPPORT BEAM ASSEMBLY DETAILS

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

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 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 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 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.

ENGLISH

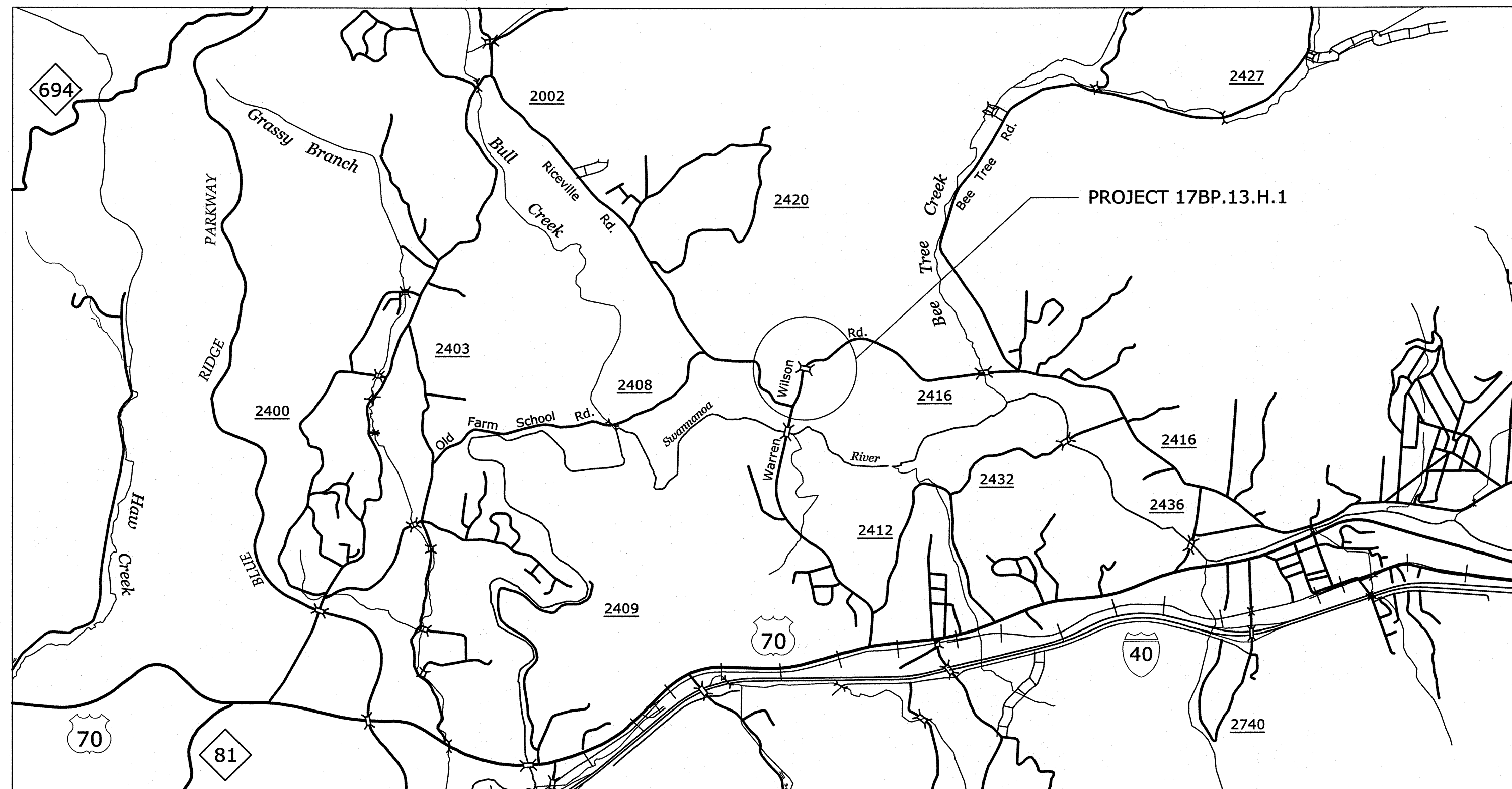
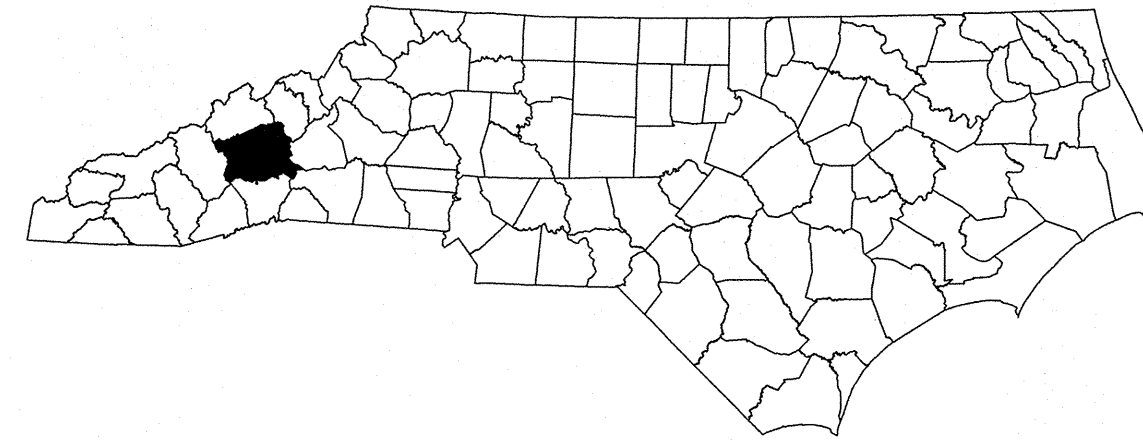
JANUARY, 1990

STD. NO. SN

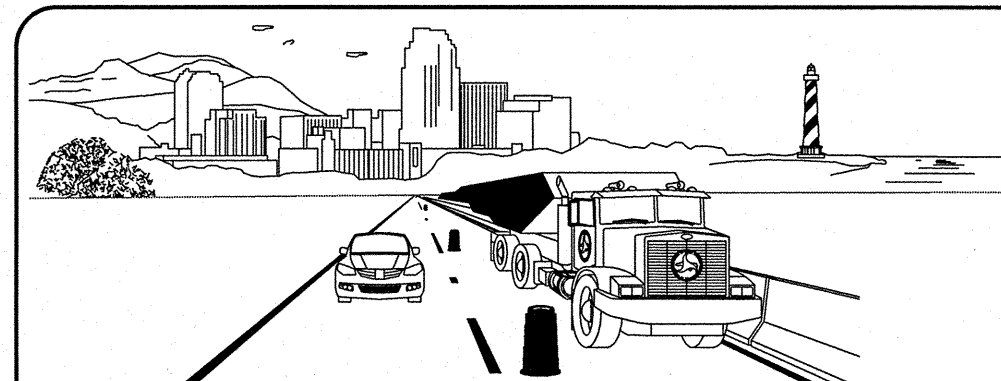
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

**BUNCOMBE COUNTY
DIVISION 13**

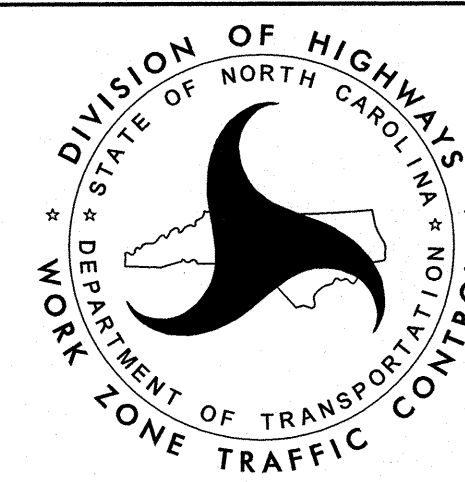


**LOCATION: BUNCOMBE COUNTY BRIDGE #859 PEDESTRIAN BRIDGE
OVER WARREN WILSON ROAD**
TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLAN PREPARED FOR NCDOT BRIDGE MANAGEMENT UNIT
RALEIGH, NC



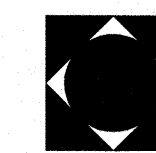
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	GENERAL NOTES AND PHASING
TMP-2	OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING

SHEET NO.

TMP-1

PROJECT: 17BP.13.H.1



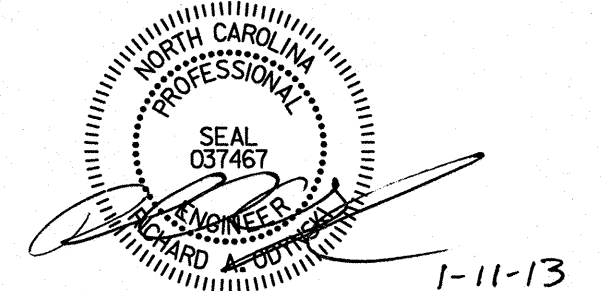
STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT ENGINEER **JOHN JOHNSON, PE**

DESIGN ENGINEER **RICHARD ODYSKI, PE**

APPROVED: _____
DATE: _____

SEAL



1-11-13

ROADWAY STANDARD DRAWINGS

REV. SEPTEMBER 2011






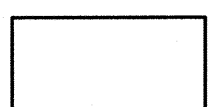
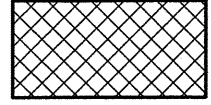
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:




STD.NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

LEGEND


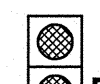

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  WORK AREA
-  REMOVAL

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN




SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY


PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES







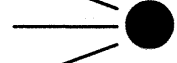

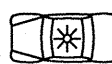
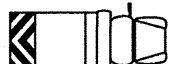

PAVEMENT MARKERS

-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

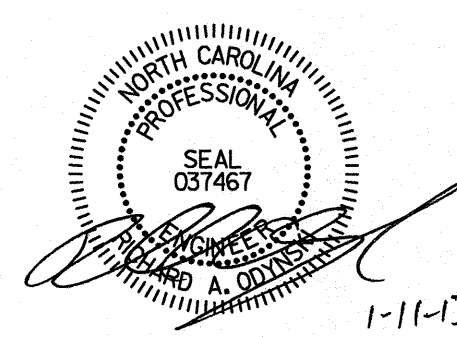
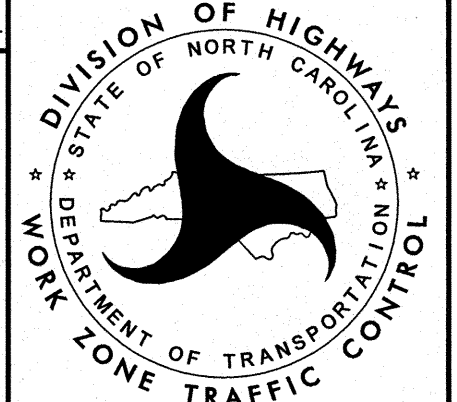
PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD (TYPE C)
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

12/19/2012
R:\TrafficControl\TCP\13.H.1\3.H.1.TCP_1A.dgn
odyrskrd

APPROVED:	DATE:			ROADWAY STANDARD DRAWINGS & LEGEND
		1-11-13		

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE THE ROADWAY(S) AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
SR 2416	12:00 A.M. JANUARY 1 TO 11:59 P.M. MAY 19 12:00 A.M. JUNE 1 TO 11:59 P.M. DECEMBER 31 6:00 A.M. TO 8:00 A.M. MAY 20 TO MAY 31

B) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

C) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

D) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

F) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

G) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

I) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

J) UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS, REPLACE PAVEMENT MARKINGS ON THE FINAL SURFACE WITH CONTRAST TAPE FOR SKIP LINES, RAISED PAVEMENT MARKERS, AND POLYUREA FOR ALL OTHER LINE TYPES.

PHASING

USE NCDOT RSD. 1101.01 SHEET 1 OF 3 TO INSTALL WORK ZONE ADVANCE WARNING SIGNS AT EACH LOCATION BEFORE BEGINNING WORK.

PHASE 1:


INTERMEDIATE CONTRACT TIME NUMBER 1: COMPLETE THE WORK REQUIRED OF PHASE 1, STEP 1 TO STEP 4 IN 12 CONSECUTIVE CALENDAR DAYS. (SEE SPECIAL PROVISIONS, INTERMEDIATE CONTRACT TIME NUMBER 1, AND LIQUIDATED DAMAGES)

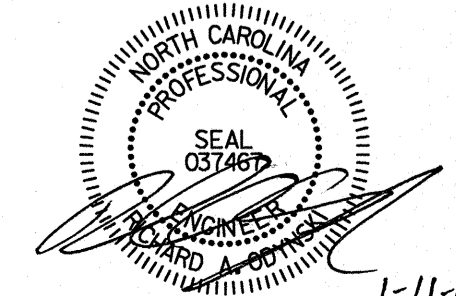

STEP 1: USING SHEET TMP-2, INSTALL DETOUR SIGNS AND DEVICES ALONG US 70, WARREN WILSON RD, BEE TREE RD, AND RIVERWOOD RD. COVER ALL SIGNS UNTIL DETOUR IS READY FOR OPERATION. ENGINEER APPROVAL IS REQUIRED BEFORE CLOSING THE ROAD.

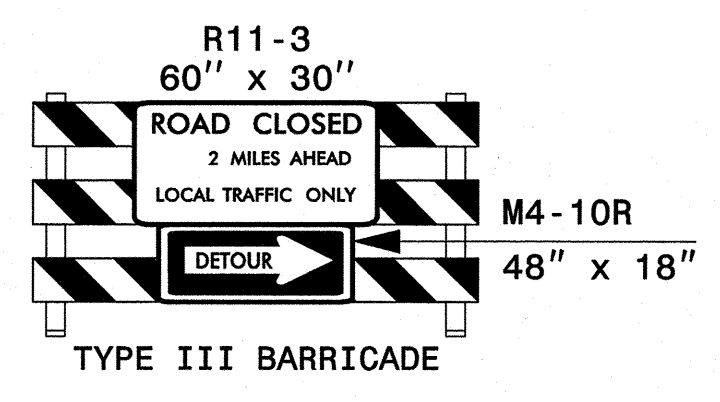
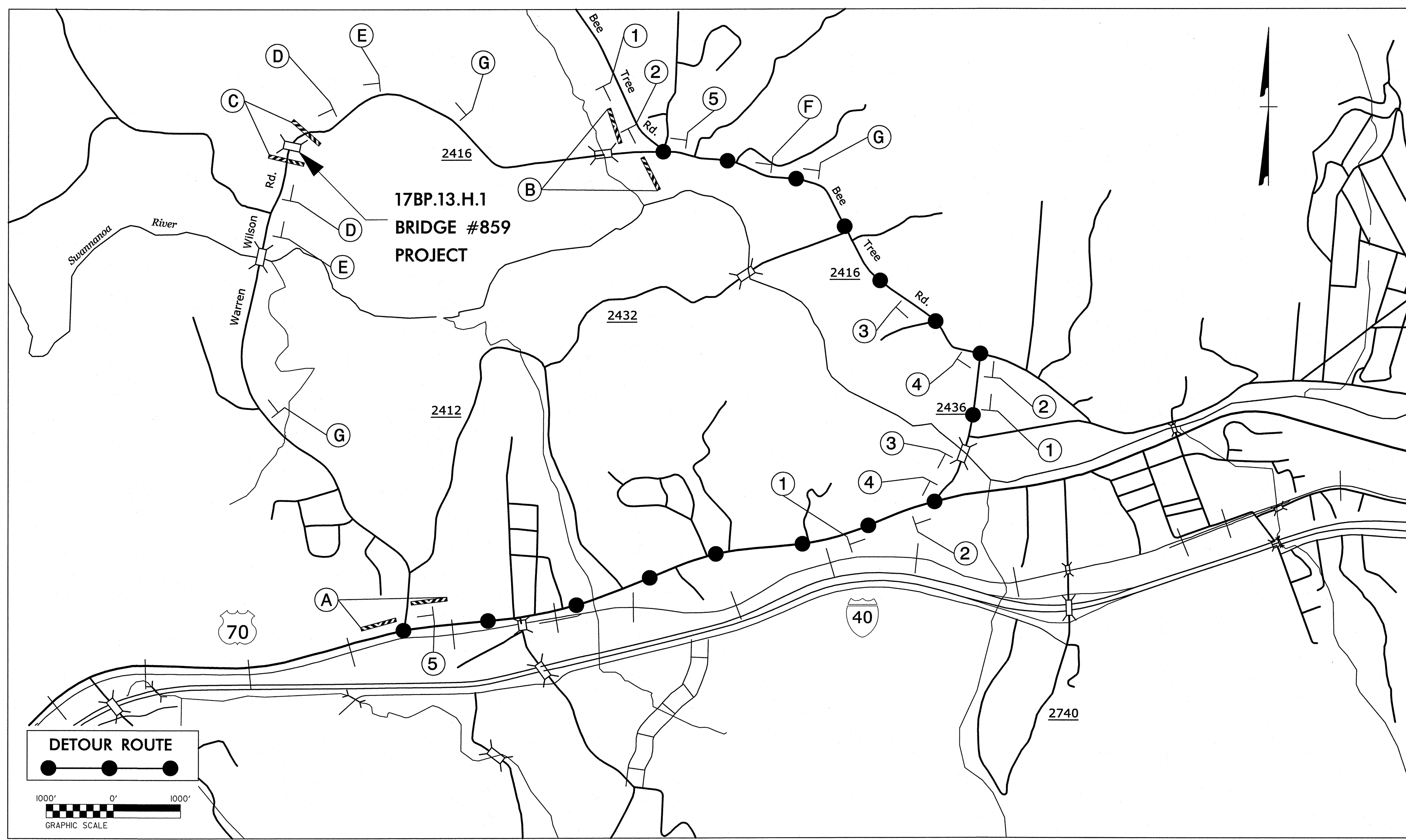
STEP 2: USE NCDOT RSD. 1101.03 SHEET 1 OF 9 TO CLOSE WARREN WILSON ROAD AND UNCOVER DETOUR SIGNS. THE ROAD SHALL BE REOPENED DURING PERIODS OF INACTIVITY OR AS DIRECTED BY THE ENGINEER. USE NCDOT RSD. 1101.02 SHEET 1 OF 15 AS NEEDED WHEN ROAD IS OPEN TO TRAFFIC.

STEP 3: REMOVE THE EXISTING STRUCTURE OVER THE ROADWAY, PREPARE THE SITE FOR CONSTRUCTION OF THE NEW SPAN, CONSTRUCT BRIDGE REPAIR WORK, INSTALL NEW SPAN OVER ROADWAY, OR PERFORM OTHER BRIDGE WORK THAT REQUIRES CLOSURE OF WARREN WILSON ROAD.

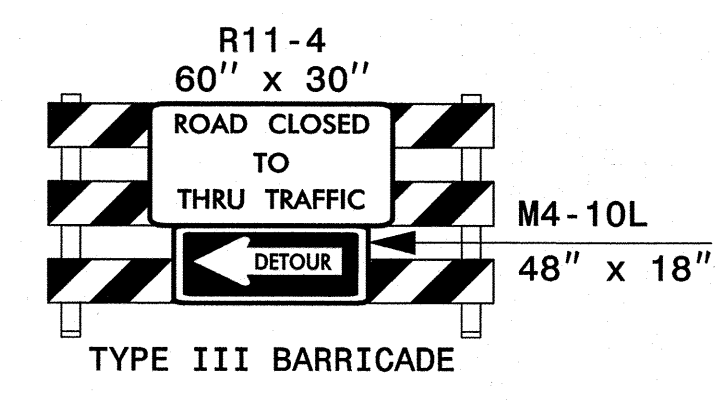
STEP 4: WHEN WORK IS COMPLETE, REMOVE ALL DETOUR SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL PATTERN.

PROJ. REFERENCE NO.	SHEET NO.
17BP.13.H.1	TMP-1B
 STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991	

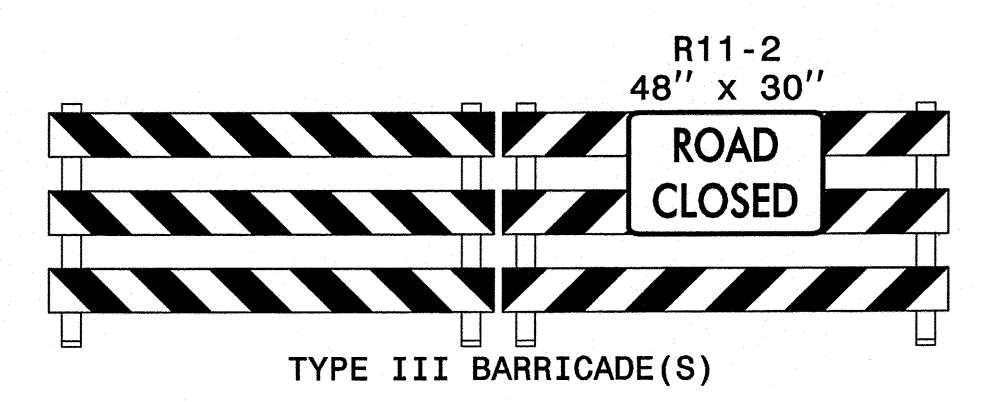
APPROVED: _____ DATE: _____ 		<h3>GENERAL NOTES AND PHASING</h3>
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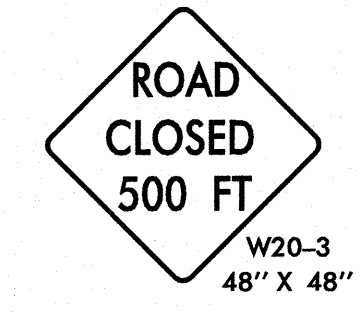
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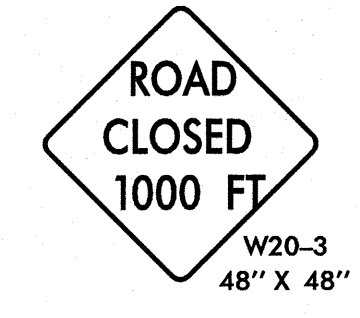
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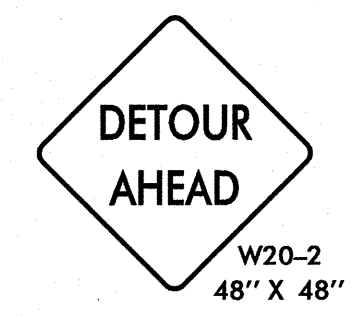
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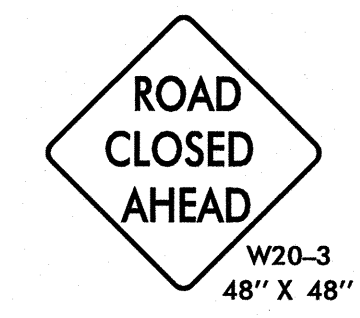
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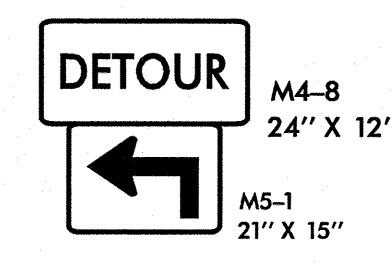
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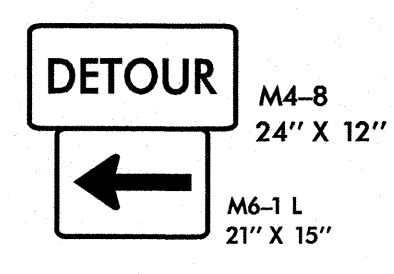
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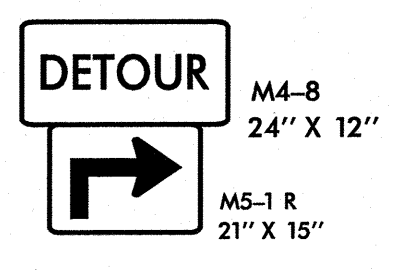
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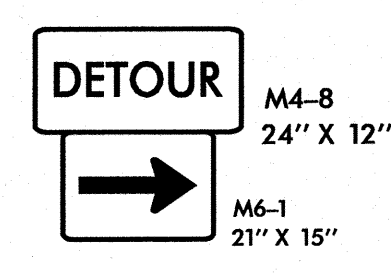
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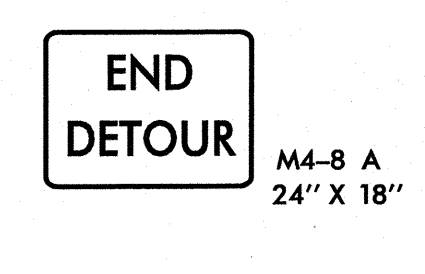
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(3)

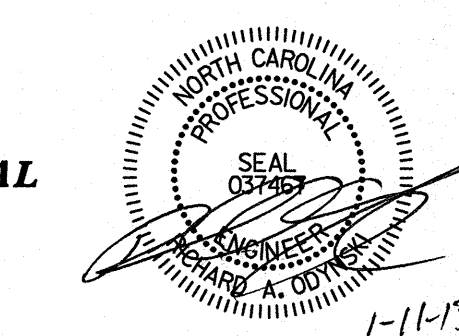


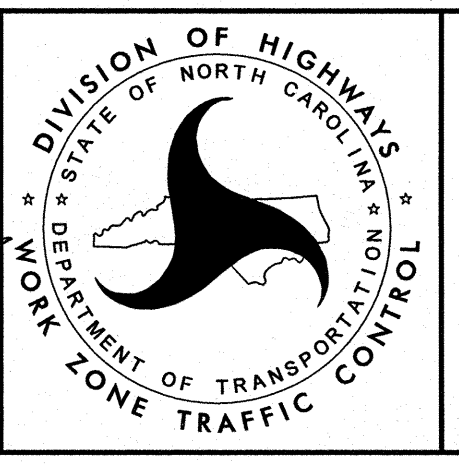
(4)



(5)

NOTES:
 TRAFFIC CONTROL DEVICES (A) THRU (G) SHALL BE INSTALLED PER NCDOT RSD. 1101.03 SHEET 1 OF 9.
 TRAFFIC CONTROL DEVICES (1) THRU (5) SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.

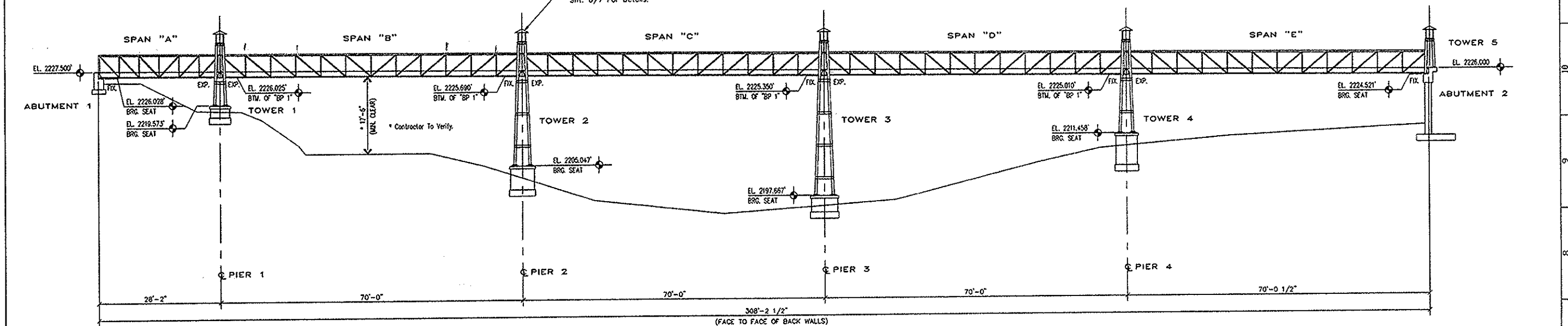
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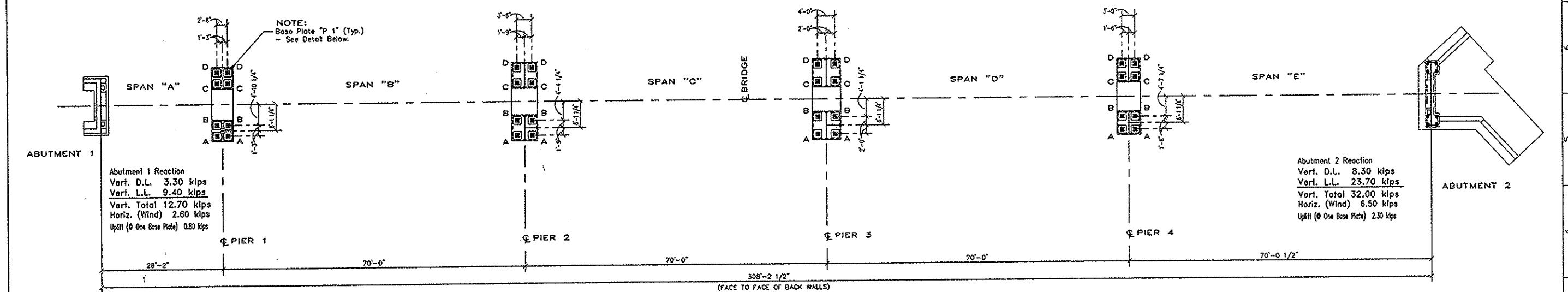
OFFSITE DETOUR
 SIGNING AND ROAD
 CLOSURE SIGNING

12/19/2012
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 odynskrk

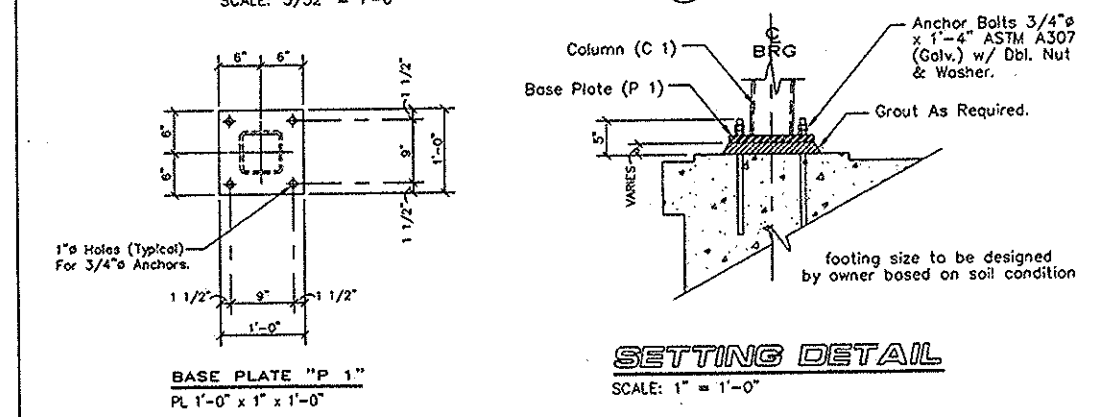
ORIGINAL STRUCTURE PLAN SHEETS



ELEVATION
SCALE: 3/32" = 1'-0"



PLAN
SCALE: 3/32" = 1'-0"



PIER 1 REACTIONS

LOAD	A	B	C	D
DL	-0.4	5.4	5.4	-0.4
LL	-2.2	14.0	14.0	-2.2
WLH	2.4	2.4	2.4	2.4
WLV	-14.1 to 15.1	9.4 to -16.0	-16.0 to 9.4	15.1 to -14.1

PIER 2 REACTIONS

LOAD	A	B	C	D
DL	1.0	4.7	4.7	1.0
LL	0.8	11.1	11.1	0.8
WLH	3.0	3.0	3.0	3.0
WLV	-32.4 to 32.0	27.5 to -32.8	-32.8 to 27.5	32.0 to -32.4

PIER 3 REACTIONS

LOAD	A	B	C	D
DL	1.6	4.4	4.4	1.6
LL	2.1	9.8	9.8	2.1
WLH	3.3	3.3	3.3	3.3
WLV	-35.8 to 34.8	30.3 to -34.9	-34.9 to 30.3	34.8 to -35.8

PIER 4 REACTIONS

LOAD	A	B	C	D
DL	2.6	5.1	5.1	2.6
LL	-0.8	12.6	12.6	-0.8
WLH	2.8	2.8	2.8	2.8
WLV	-24.1 to 24.5	19.5 to -25.9	-25.9 to 19.5	24.5 to -24.1

R.G. GRAHAM, III P.E.
1004 Seville Rd
FORT PAYNE, AL 35987

REGISTERED PROFESSIONAL ENGINEER
STATE OF ALABAMA
NO. 21705

RELEASED FOR FABRICATION

STEADFAST BRIDGES

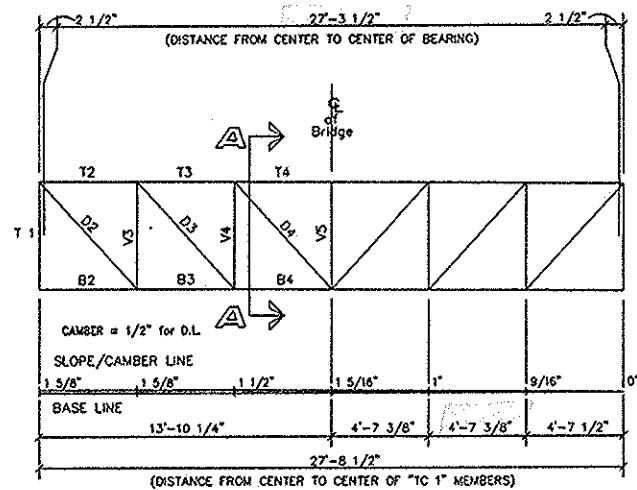
A DIVISION OF
BILTOLAST PRODUCTS INC.
119 4000 SL NB
FORT PAYNE, AL 35967-8139
1-800-749-7515

FOR SAUVANNA, NORTH CAROLINA
ADDRESS: SHERAULT CONSTRUCTION
555 LONG SHOALS ROAD
GREEN, NC 28724
ARCHITECT: PLANS BY OWNER
CONTRACTOR: SHERAULT CONSTRUCTION

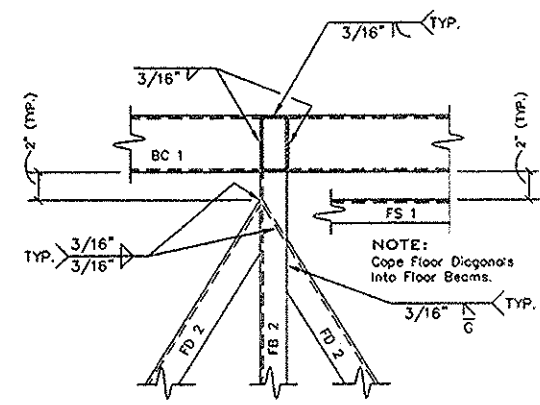
WARREN WILSON COLLEGE PEDESTRIAN BRIDGE
BRIDGE No. 000 LAYOUT

DATE: 8/2/01
DRAWN BY: TEB
CHECKED BY: DAG
DESIGNED BY: [Signature]

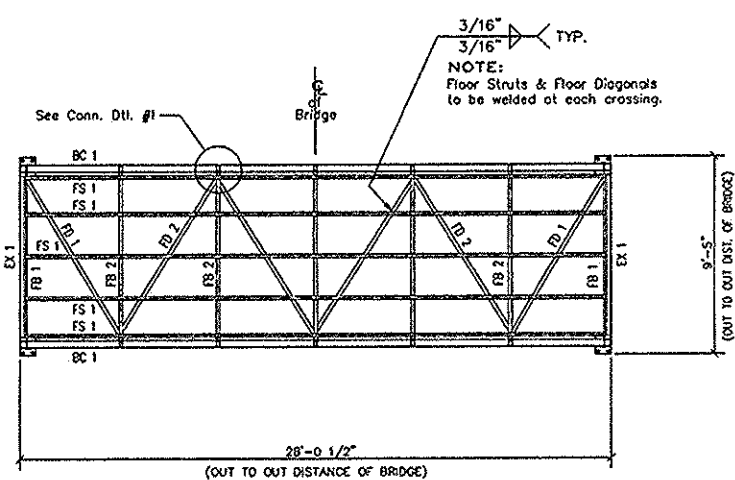
011404 1/7



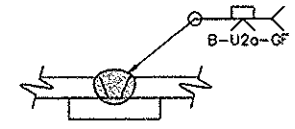
ELEVATION - SPAN "A"
SCALE: 1/4" = 1'-0"



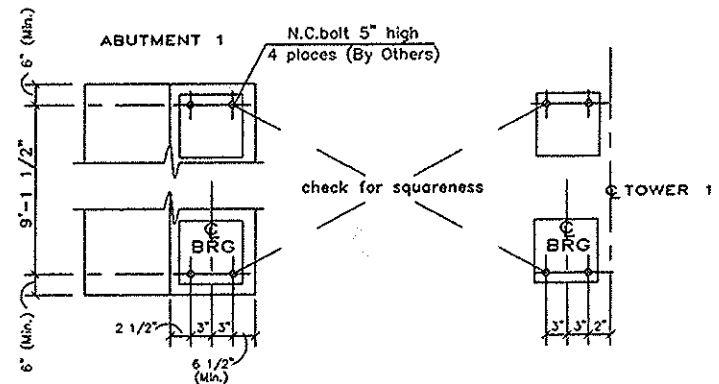
CONN. DTL. #1
SCALE: 2" = 1'-0"



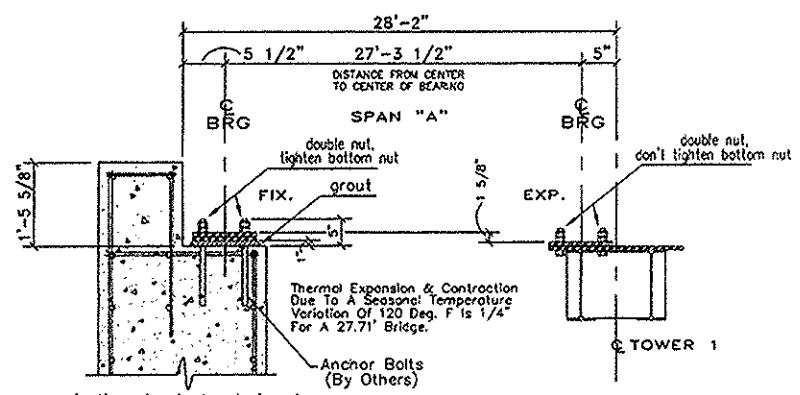
FLOOR PLAN - SPAN "A"
SCALE: 1/4" = 1'-0"



TOP & BTM. CHORD SHOP SPLICE DTL.
SCALE: NONE



BEARING PLAN
NOT TO SCALE



BEARING SECT.
NOT TO SCALE

BILL OF MATERIALS									
FOR 011404 FOR SWANNANOVA, NC SPAN A 28' x 27.71' CURVED									
STEEL ASTM A572-50 or A572-43 PLATE-ASTM A572									
NO.	MARK	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH	TOTAL AREA	TOTAL VOLUME
4	TC 1	HSS 4 x 4 x 1/4	5	4	12.21	269	22		
2	TC 2	HSS 4 x 4 x 1/4	28	0 1/2	12.21	696	57		
2	BC 1	HSS 4 x 2 x 3/16	27	4 1/2	6.67	378	55		
10	VS-VS	HSS 4 x 2 x 3/16	4	10	6.87	337	49		
12	O2-O4	HSS 2 x 2 x 3/16	6	7	4.32	342	79		
2	FB 1	HSS 8 x 4 x 3/16	8	0	11.97	192	18		
3	FB 2	C 6 x 8.2	8	0	8.20	328	40		
2	FD 1	L 2 x 2 x 3/16	8	9 15/16	2.44	59	18		
4	FD 2	L 2 x 2 x 3/16	9	0 1/4	2.44	91	37		
5	FS 1	C 4 x 5.4	28	0 1/2	5.40	282	141		
2	EX 1	L 2 1/2 x 2 1/2 x 3/16	7	8	3.07	50	16		
4	RI-R2	HSS 2 x 2 x 3/16	28	0 1/2	4.32	489	113		
184	FR-1	1/2" SOL. BAR (SOLID)	2	0	0.85	262	308		
2	GP 1	PL 9 x 3/8	1	0	11.50	46	4		
4	SP 1	PL 9 x 1/2	0	11 1/2	15.30	62	4		
2	MR 1	1 1/2" SOL. GR. PIPE (WEATHERING)	28	0 1/2	2.72	158	97		
14	RB 1	SRY ROL. RAL BRACKET (WEATHERING)	0	4 1/4	1.05	6	5		
2	BR 1	1 1/2" SOL. GR. PIPE (WEATHERING)	28	0 1/2	2.72	158	97		
14	RB 2	1 1/2" SOL. GR. PIPE (WEATHERING)	0	5 1/2	2.72	20	7		
28	PLATED PASSEAD TORQUE SCREWS - 1/4"		0	4	0.22	3	0		
278	PLATED CONCREX TORQUE SCREWS - 1/4"		0	3 1/2	0.21	17	0		
46	No. 1, TREATED, (S.Y.P.) 3 x 8		7	8	6.04	2,133	353		
2	OT 1	L 2 x 2 x 3/16	28	0 1/2	2.44	140	57		
SUB TOTAL						6,979			
ITEMS TO SHIP LOOSE WITH BRIDGE									
2	BP 2	PL 9 x 1/2	0	11 1/2	15.30	31	2		
4	FRICIONLESS PADS 8 x 1/8		0	11 1/2	0	1	4		

TOTAL LIFTING WEIGHT: 7,011
SPAN "A"

GENERAL NOTES

- All design stresses are in accordance with the specification of THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION and AASHTO.
- Welding to conform with the AMERICAN WELDING SOCIETY D1.1 latest revision. Welding to be performed by experienced welders qualified in accordance with A. V. S. procedures. Welding electrodes to be ASTM E-80XX series. Weld process to be FCAW.
- All structural steel to be 'WEATHERING STEEL' with a minimum yield strength of 50,000 psi.
- Structural welds will be a minimum of 3/16" fillet unless shown otherwise. Minimum weld does not apply to seal welds.
- Anchor bolts to be ASTM A-307 or threaded A-36 steel rods. Where noted 'Expansion', nuts on anchor bolts should be loosely 'hand tightened' so as to allow the bearing plates to slide on the setting plates or teflon pads. Place setting plate & teflon pads on shims, set bridge, and then grout under setting plates. If required Field splice connection bolts shall be ASTM A325 TYPE 3 and shall be tighten by the turn of the nut method to obtain proper torque.
- Exposed steel surfaces to be sandblasted to STEEL STRUCTURES PAINTING COUNCIL #6 'commercial sandblast finish'. After cleaning, care shall be taken to keep surfaces free of oil, grease, concrete and any foreign matter to allow the weathering steel to rust evenly.
- All wood to be #1 southern yellow pine with a CCA preservative treatment to 4 pounds retention of preservative per cubic foot.
- Hand rails and all other accessible surfaces to be ground smooth with no sharp edges or corners.
- Length of anchor bolts and foundation details are for general arrangement purposes only. Actual foundation and substructure design, railing, camber, and slope requirements, electrical grounding, and clearances (flood plain, roadway, and waterway) are the responsibility of others.

THIS BRIDGE IS DESIGNED BASED ON THE FOLLOWING CRITERIA.
(1) Dead load of 30 psf plus an evenly distributed live load of 85 psf.
(2) Bead load + concentrated load of 10,000 pounds + impact.
(3) Wind load (approx. 120 mph.) calculated on the entire vertical surface as though fully enclosed.

RELEASED FOR FABRICATION

RELEASED FOR FABRICATION	8/16/01	
RELEASED FOR APPROVAL	8/2/01	CJM
Rev	DESCRIPTION	BY/DATE

STEADFAST BRIDGES

A DIVISION OF
BILTOLAST PRODUCTS INC.
11940B SE 15
PORT PAYNE, AL 35967-8139
1-800-749-7515

ACTIVE MEMBER

WARREN WILSON COLLEGE PEDESTRIAN BRIDGE
BRIDGE No. 643 SPAN "A"

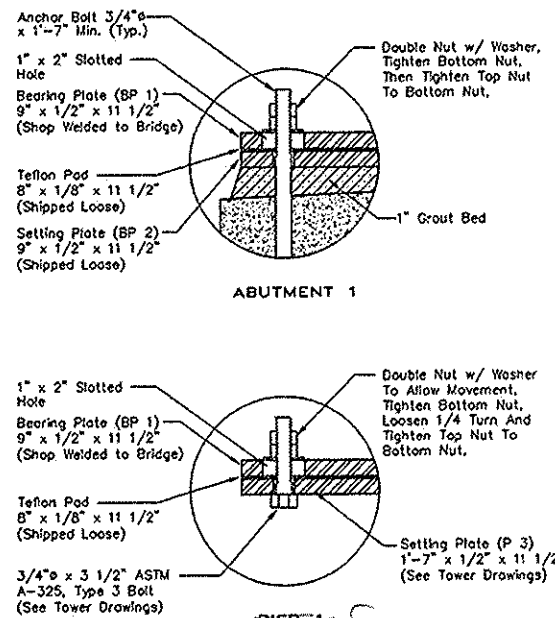
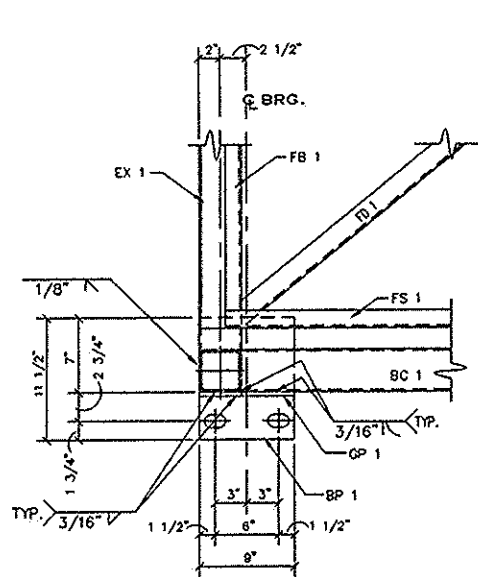
DESIGNED BY: WARREN WILSON
CHECKED BY: CJM
DATE: 8/2/01

PROJECT: WARREN WILSON COLLEGE PEDESTRIAN BRIDGE
ADDRESS: SES LONG SHOALS ROAD
ARLEN, NC 28704
ADDITION: PLANS BY OWNER
CONTRACTOR: SHERAUD CONSTRUCTION

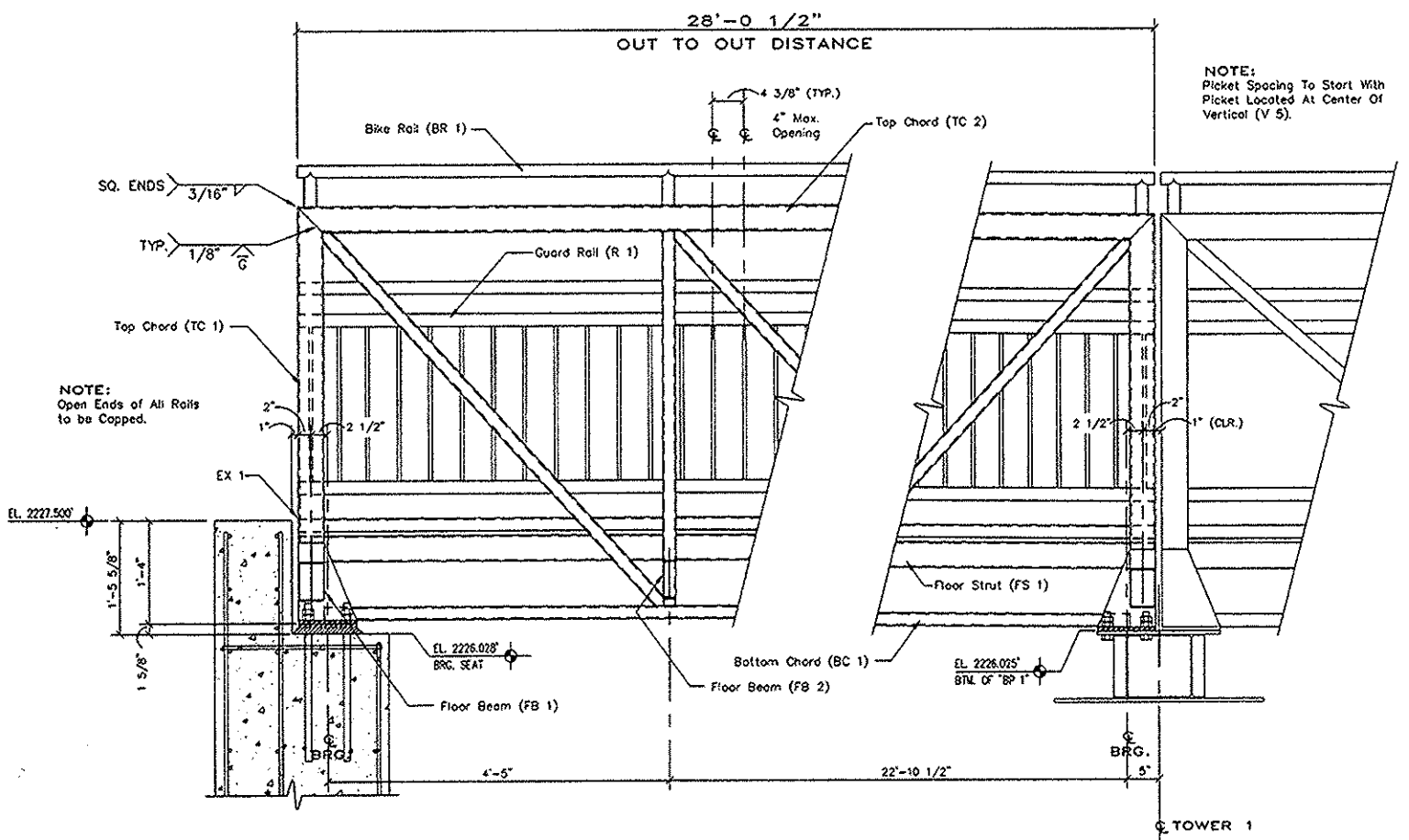
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DATE: 8/13/01

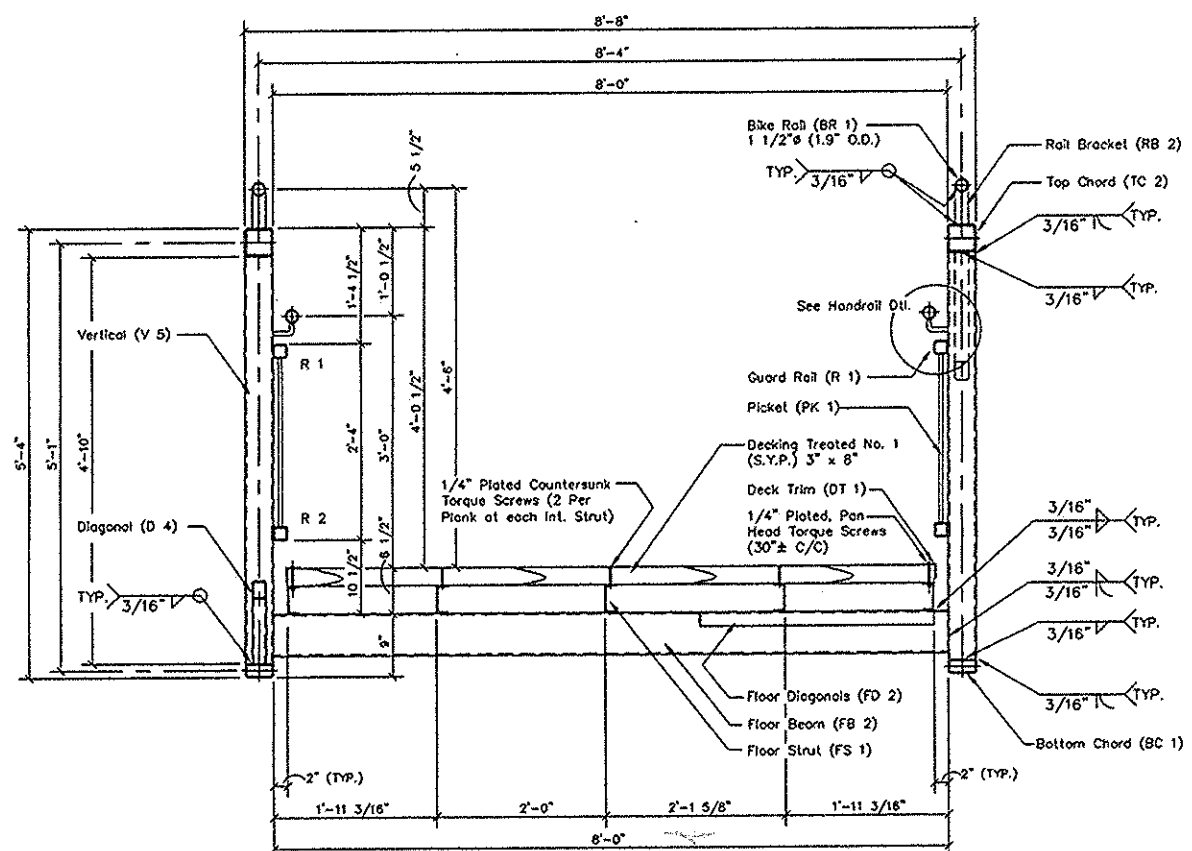
NO. 011404 2/7



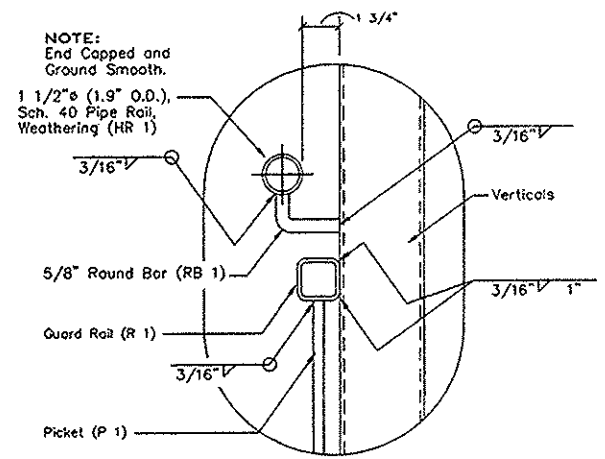
BRG. ASSEMBLY AND BRG. PLATES
SCALE: 1 1/2" = 1'-0"



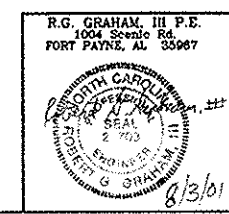
ELEVATION - SPAN "A"
SCALE: 1" = 1'-0"



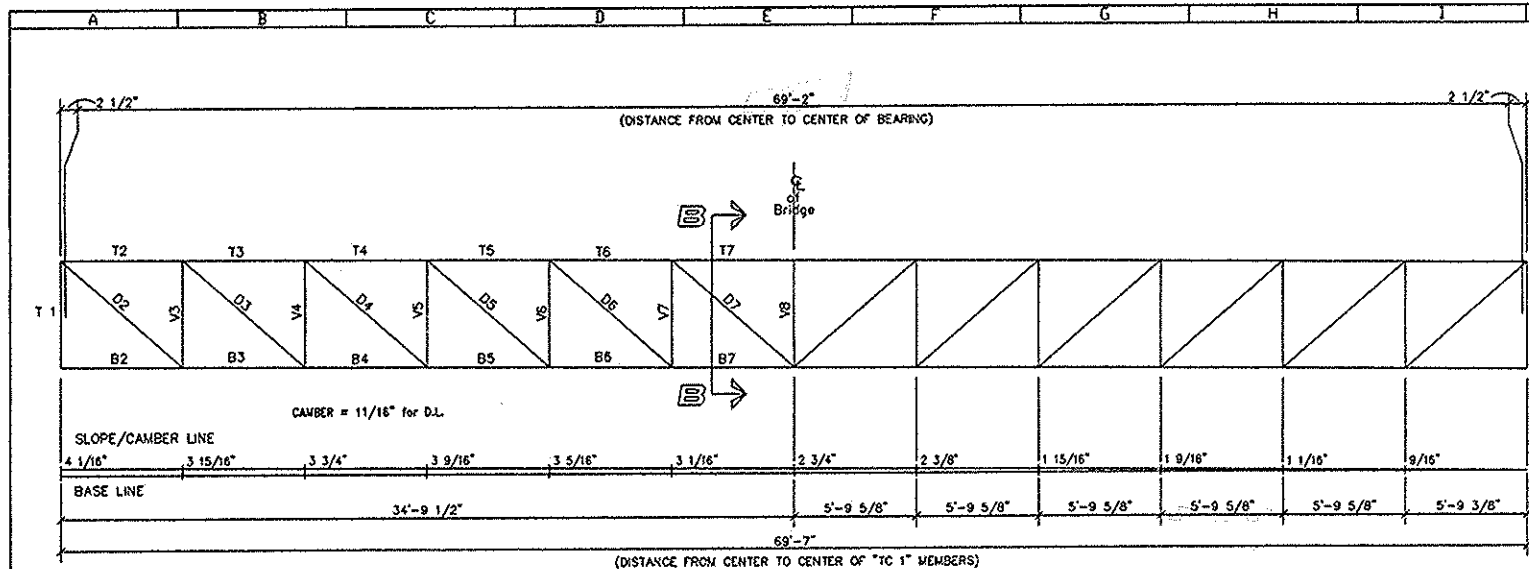
SECTION "A - A"
SCALE: 1" = 1'-0"



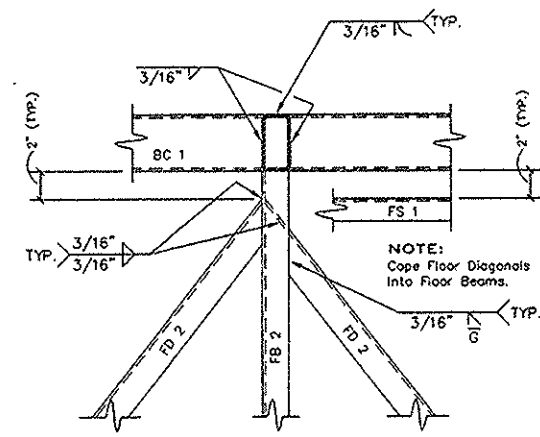
HANDRAIL DETAIL
SCALE: 3" = 1'-0"



RELEASED FOR FABRICATION			
Rev	DESCRIPTION	BY/DATE	CHK'D BY
A	RELEASED FOR APPROVAL	8/7/01	[Signature]
<p>STEADFAST BRIDGES A DIVISION OF BILTOLAST PRODUCTS INC. 119 ARDEN BLVD FORT PAYNE, AL 35967-8139 1-800-749-7515</p>			
<p>WARREN WILSON COLLEGE PEDESTRIAN BRIDGE BRIDGE No. 643 SPAN "A"</p>		<p>DATE: 8/2/01 APP'D BY: D.A.S. CHECKED BY: [Signature]</p>	<p>PROJECT NO: 011404 SHEET: 3/7</p>



ELEVATION - SPANS "B" - "E"
SCALE: 1/4" = 1'-0"



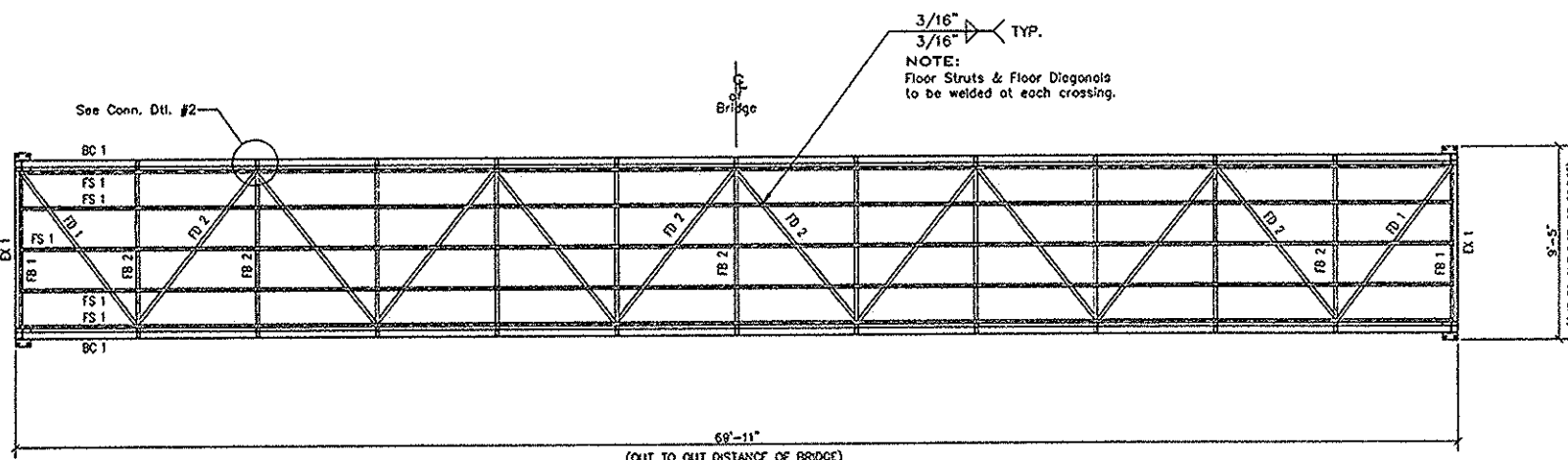
CONN. DTL. #2
SCALE: 2" = 1'-0"

BILL OF MATERIALS

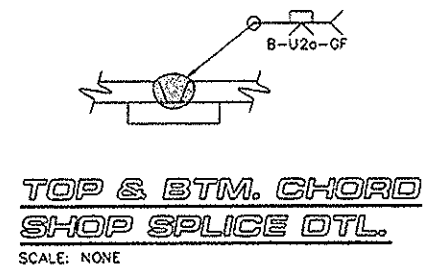
NO.	QTY	DESCRIPTION	FEET	INCHES	WEIGHT	TOTAL	UNIT
4	TC 2	HSS 4 x 4 x 1/4	5	4	12.21	269	22
2	TC 1	HSS 4 x 4 x 1/4	69	11	12.21	1,710	140
2	BC 1	HSS 4 x 2 x 3/16	69	3	6.87	955	139
22	V3-V8	HSS 4 x 2 x 3/16	4	10	6.87	738	107
24	D2-D7	HSS 2 x 2 x 3/16	7	5 5/16	4.32	774	179
2	FB 1	HSS 6 x 4 x 3/16	8	0	11.97	192	16
11	FB 2	C 8 x 8.2	8	0	8.20	722	88
2	FD 1	L 2 x 2 x 3/16	9	5 7/16	2.44	47	19
10	FD 2	L 2 x 2 x 3/16	9	8 3/8	2.44	240	98
5	FS 1	C 4 x 5.4	69	11	5.40	1,890	350
2	EX 1	L 2 1/2 x 2 1/2 x 3/16	7	8	3.07	50	16
4	R1-R2	HSS 2 x 2 x 3/16	69	11	4.32	1,210	280
384	PK 1	1/2" SQ. BAR (SOLID)	2	0	0.85	653	768
4	GP 1	PL 9 x 3/8	1	0	11.50	46	4
4	BP 1	PL 9 x 1/2	0	11 1/2	15.30	62	4
2	HR 1	1 1/2" SQ. PIPE (WEATHERING)	69	11	2.72	381	140
28	RB 1	3/8" SQ. RIG. BUCKET (WEATHERING)	0	4 1/4	1.05	11	10
2	BR 1	1 1/2" SQ. PIPE (WEATHERING)	69	11	2.72	381	140
28	RB 2	1 1/2" SQ. PIPE (WEATHERING)	0	5 1/2	2.72	33	12
64	PLATED PANHEAD TORQUE SCREWS - 1/4"		0	4	0.22	5	0
680	PLATED CONSTRUCTION TORQUE SCREWS - 1/4"		0	3 1/2	0.21	43	0
115	No. 1 TREATED (S.Y.P.) 3 x 8		7	8	6.04	5,328	882
2	DT 1	L 2 x 2 x 3/16	69	11	2.44	342	140
SUB TOTAL					16,080		

ITEMS TO SHIP LOOSE WITH BRIDGE
 2 BP 2 PL 9 x 1/2 15.30 31 2
 4 FRICTIONLESS PADS 8 x 1/8 0 1 1/2 0 1 4

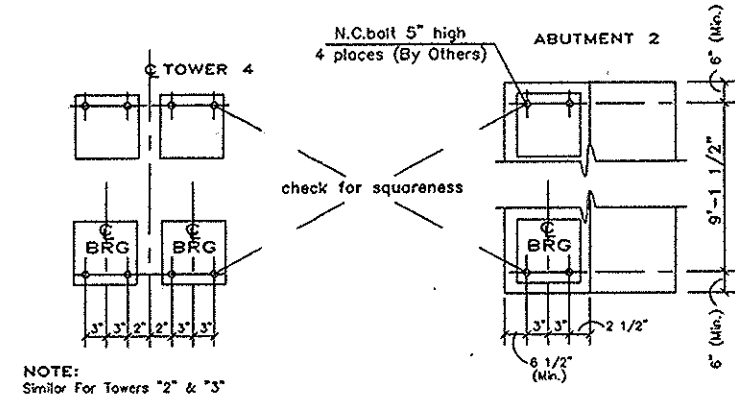
TOTAL LIFTING WEIGHT: 16,112
 SPAN "B", "C", "D" & "E"
 B.O.M. IS FOR ONE BRIDGE, FOUR ARE REQUIRED
 NOTE:
 "BP 2" Setting Plates are required only for Span "E" Bridge.
 NOTE:
 FOR GENERAL NOTES REFER TO SHEET 2/7.



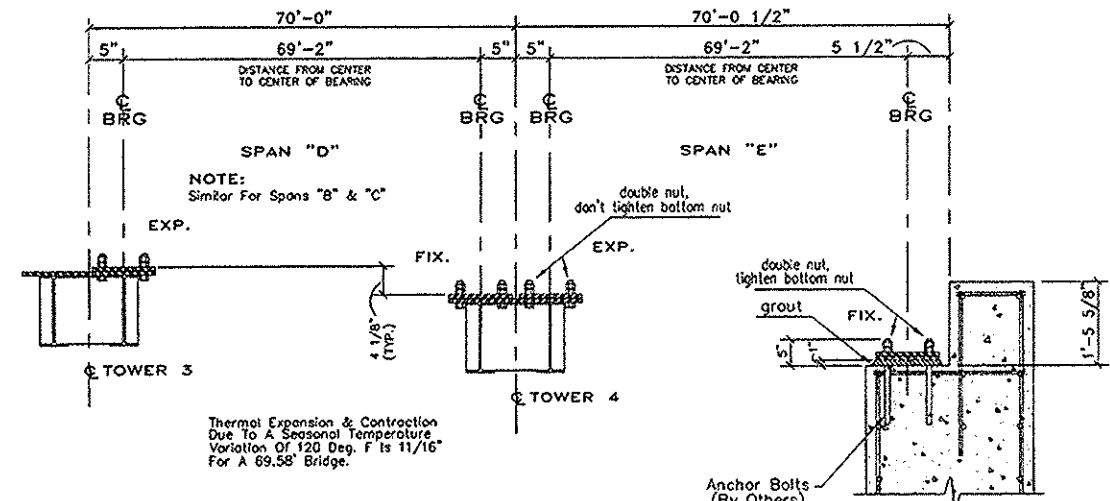
FLOOR PLAN - SPANS "B" - "E"
SCALE: 1/4" = 1'-0"



TOP & BTM. CHORD SHOP SPLICE DTL.
SCALE: NONE



BEARING PLAN
NOT TO SCALE



BEARING SECT.
NOT TO SCALE

R.G. GRAHAM, III P.E.
 1004 Scenic Rd.
 FORT PAYNE, AL 35967

RELEASED FOR FABRICATION

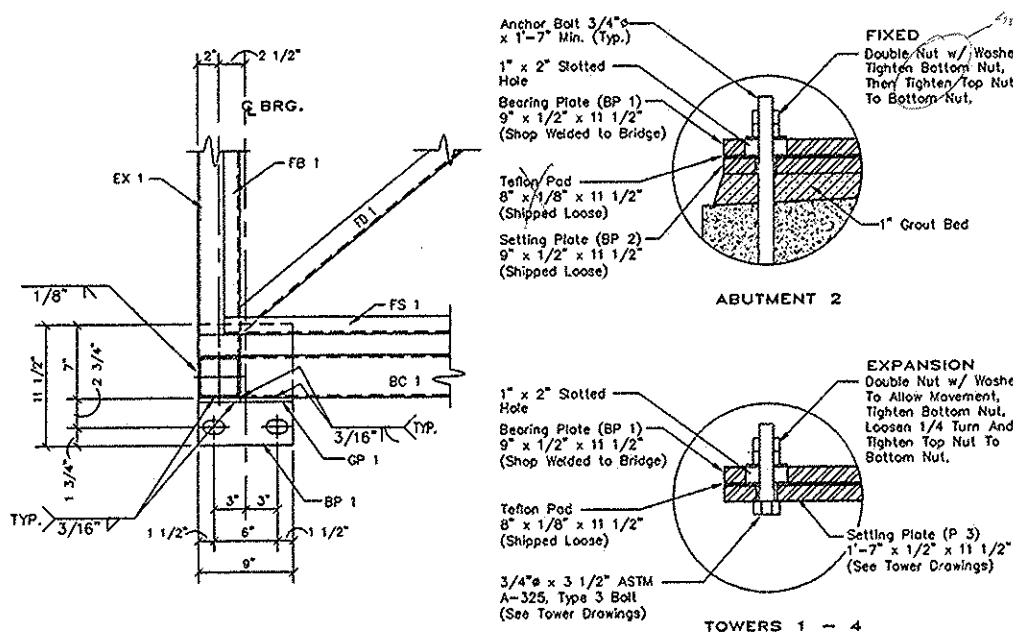
RELEASED FOR FABRICATION	8/16/01	CM/AA
RELEASED FOR APPROVAL	8/2/01	CM/AA

DESCRIPTION: WARREN WILSON COLLEGE PEDESTRIAN BRIDGE

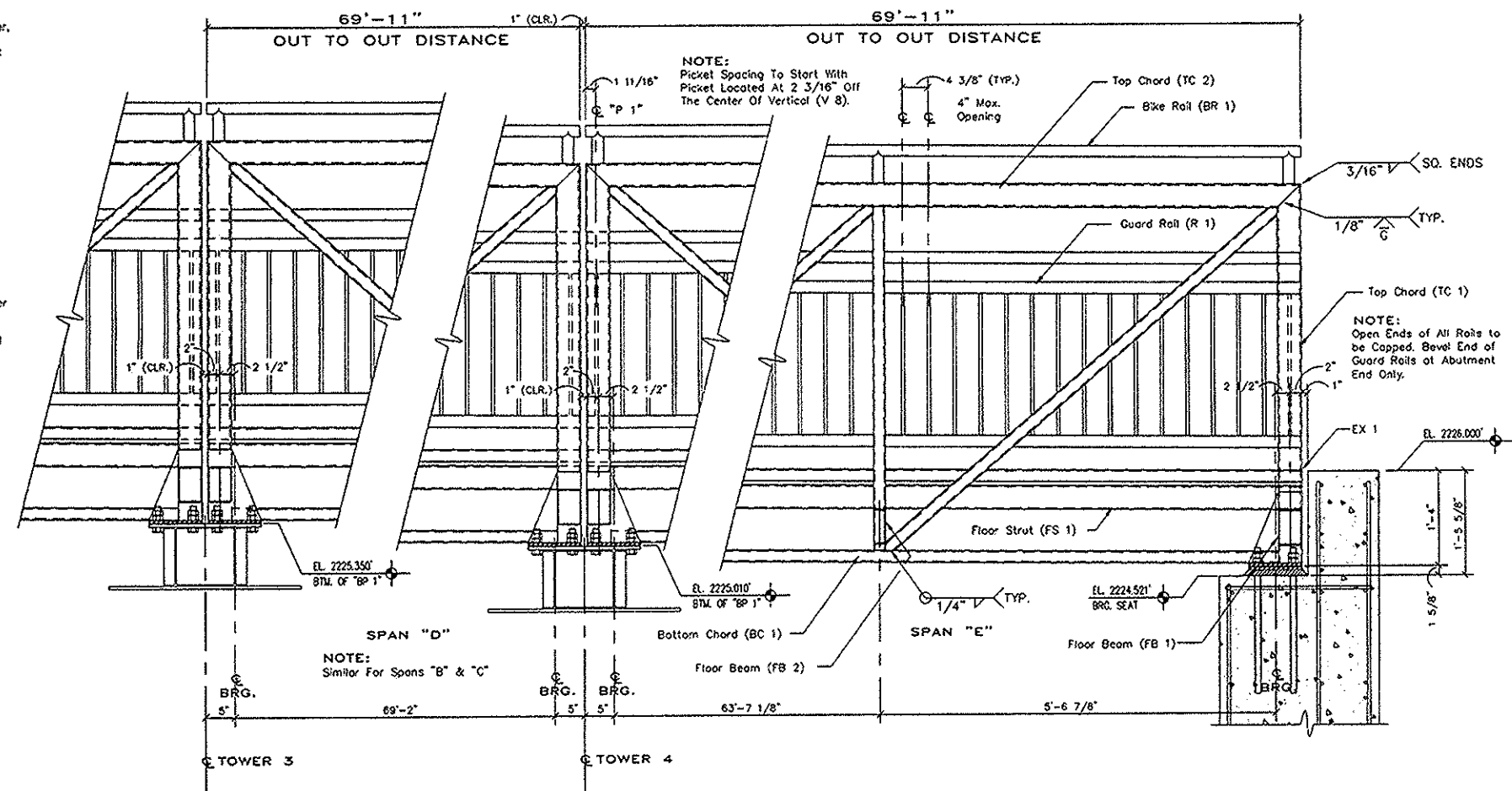
STEADFAST BRIDGES
 A DIVISION OF
 BILTOLAST PRODUCTS INC.
 119 40th St. NE
 FORT PAYNE, AL 35967-8139
 1-800-749-7515

WARREN WILSON COLLEGE PEDESTRIAN BRIDGE
 BRIDGE No. 644, 645, 646 & 647 SPAN "B", "C", "D", & "E"

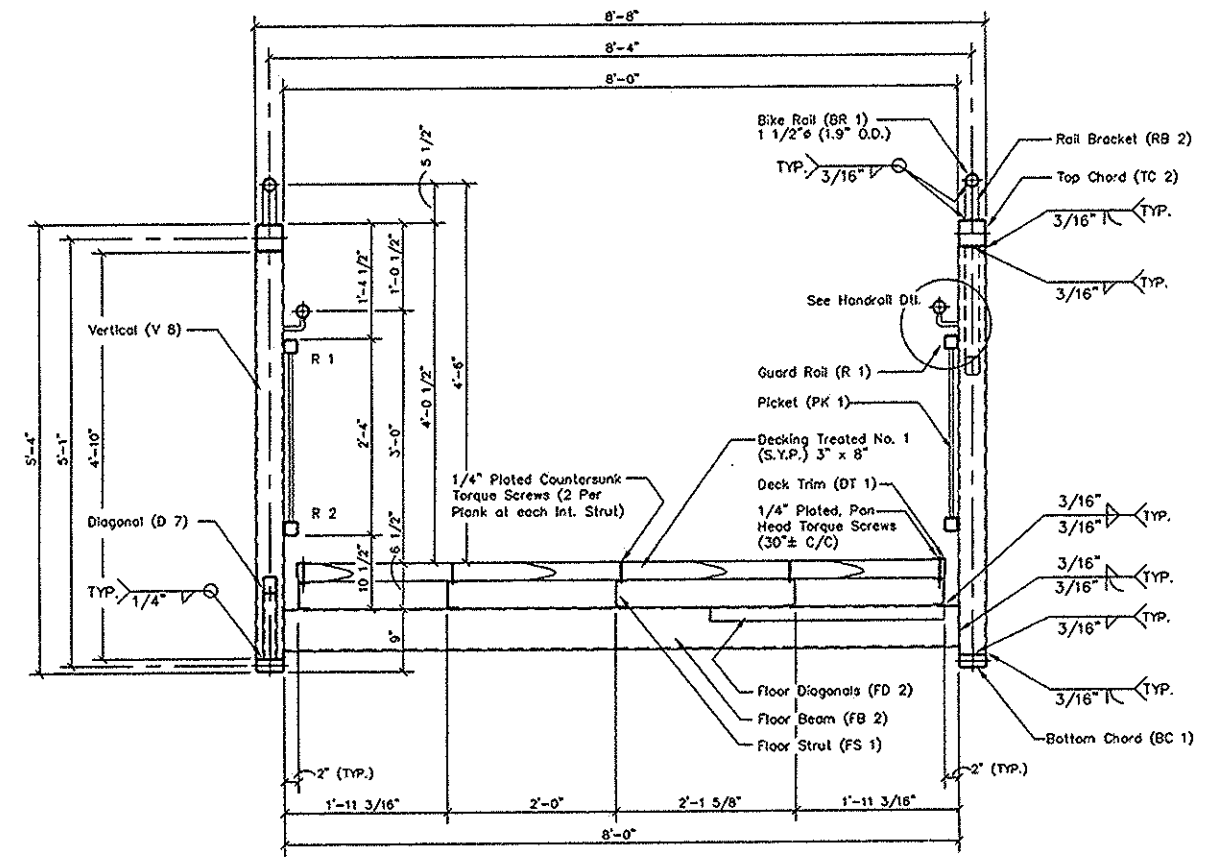
DATE: 8/16/01



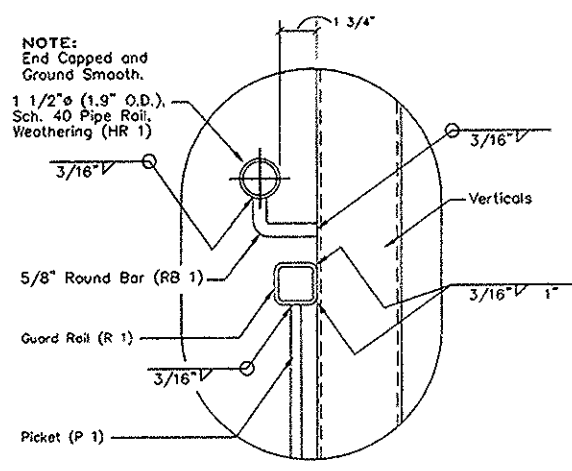
BRG. ASSEMBLY AND BRG. PLATES
SCALE: 1 1/2" = 1'-0"



ELEVATION - SPANS ⁰⁰D⁰⁰ - ⁰⁰E⁰⁰
SCALE: 1" = 1'-0"



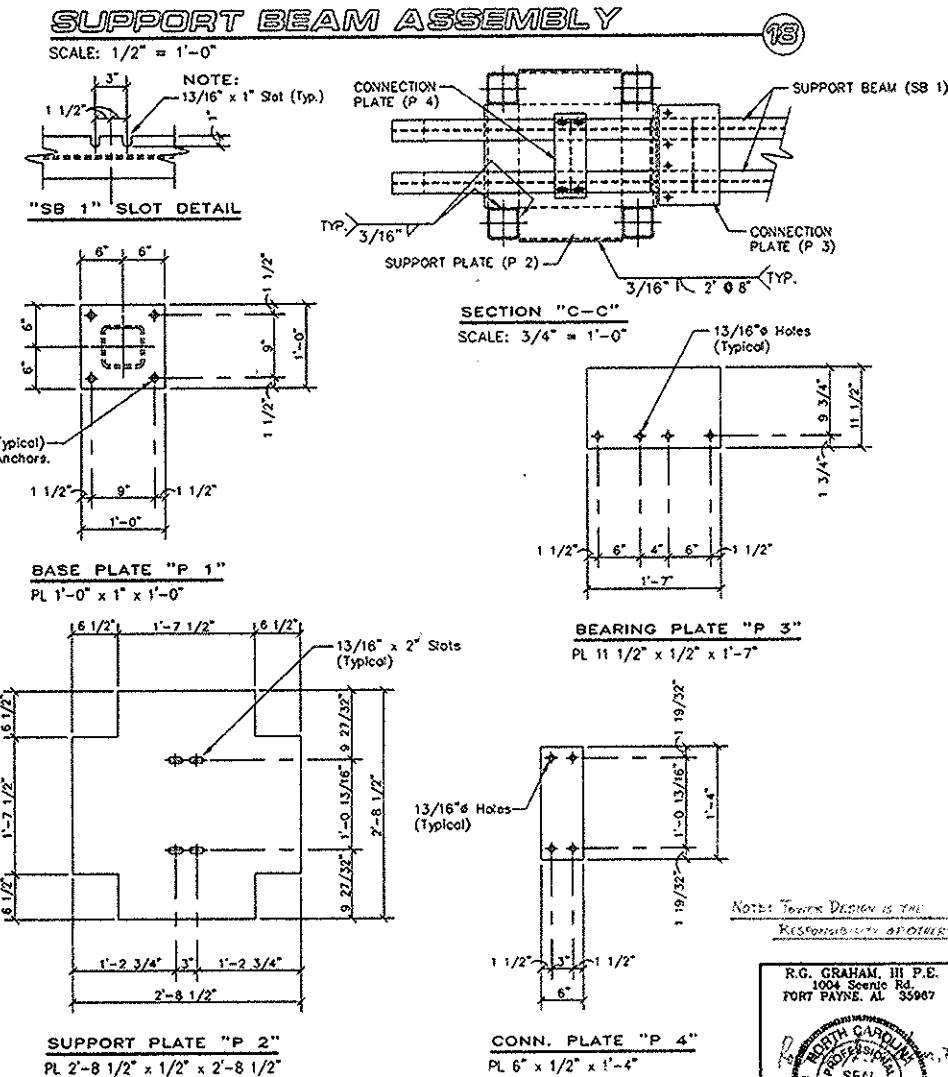
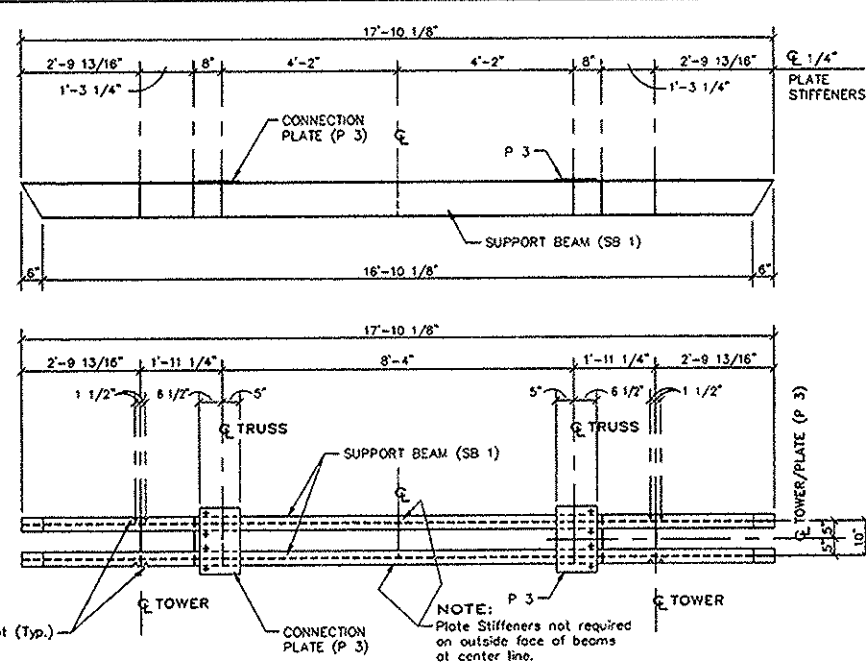
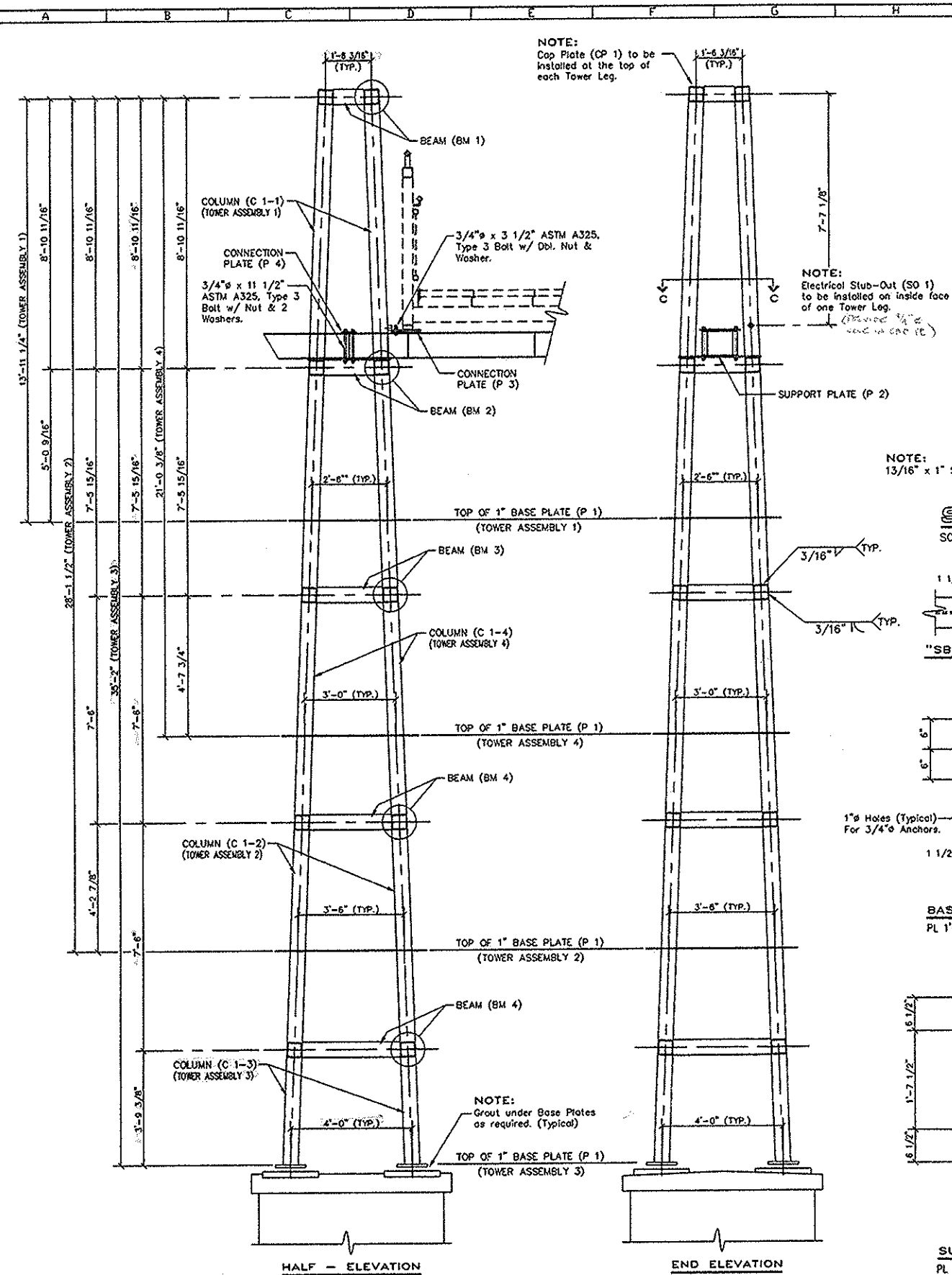
SECTION ⁰⁰B - B⁰⁰
SCALE: 1" = 1'-0"



HANDRAIL DETAIL
SCALE: 3" = 1'-0"

R.G. GRAHAM, III P.E.
1004 Seale Rd.
FORT PAYNE, AL 35967

RELEASED FOR FABRICATION		DATE: 8/3/01	BY: [Signature]
RELEASED FOR APPROVAL		DATE: 8/2/01	BY: [Signature]
DESCRIPTION		BY/DATE	CHK'D BY
STEADFAST BRIDGES A DIVISION OF BILTOLAST PRODUCTS INC. 119 4th St. NE FORT PAYNE, AL 35967-8139 1-800-749-7515			
69'8" x 69'8" "CONNECTOR" BRIDGE FOR SAVANNAH, NORTH CAROLINA CONTRACTOR: SHENAULT CONSTRUCTION 565 LONG SHOALS ROAD ARDEN, NC 28704 ARCHITECT: PLANS BY OWNER CONTRACTOR: SHENAULT CONSTRUCTION		DRAWN BY: [Signature] DATE: FEB 8/2/01 CHECKED BY: [Signature] DATE: [Signature]	PROJECT NO.: [Signature] SHEET NO.: 011404 TOTAL SHEETS: 5/7



BILL OF MATERIALS

STEEL ASTM A588 or A572 PLATE A588 or A572

ITEM NO.	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH
TOWER ASSEMBLY 1						
4 C 1-1	HSS 6 x 6 x 3/8	14	2 7/16	27.48	1,567	57
4 BM 1	HSS 6 x 6 x 3/8	1	0 3/8	27.48	158	5
4 BM 2	HSS 6 x 6 x 3/8	1	7 15/16	27.48	193	7
4 P 1	PL 12 x 1	1	0	40.80	164	4
4 P 2	PL 32 1/2 x 1/2	2	8 1/2	55.30	609	11
4 CP 1	PL 5 1/4 x 1/4	0	5 1/4	4.47	9	2
1 LS 1	HSS 4 x 2 x 3/16	1	0	6.87	7	1
1 SO 1	1 1/2" SCH 40 PIPE (WEATHERING)	0	3	2.44	1	0.25

TOTAL LIFTING WEIGHT: 2,688
B.O.M. IS FOR ONE TOWER ASSEMBLY, TWO ARE REQUIRED

ITEM NO.	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH
TOWER ASSEMBLY 2						
4 C 1-2	HSS 6 x 6 x 3/8	28	4 13/16	27.48	3,133	114
4 BM 1	HSS 6 x 6 x 3/8	1	0 3/8	27.48	138	5
4 BM 2	HSS 6 x 6 x 3/8	1	7 15/16	27.48	193	7
4 BM 3	HSS 6 x 6 x 3/8	2	2 5/16	27.48	248	9
4 BM 4	HSS 6 x 6 x 3/8	2	8 5/8	27.48	303	11
4 P 1	PL 12 x 1	1	0	40.80	164	4
4 P 2	PL 32 1/2 x 1/2	2	8 1/2	55.30	609	11
4 CP 1	PL 5 1/4 x 1/4	0	5 1/4	4.47	9	2
1 LS 1	HSS 4 x 2 x 3/16	1	0	6.87	7	1
1 SO 1	1 1/2" SCH 40 PIPE (WEATHERING)	0	3	2.44	1	0.25

TOTAL LIFTING WEIGHT: 4,805
B.O.M. IS FOR ONE TOWER ASSEMBLY, TWO ARE REQUIRED

ITEM NO.	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH
TOWER ASSEMBLY 3						
4 C 1-3	HSS 6 x 6 x 3/8	35	5 3/8	27.48	3,903	142
4 BM 1	HSS 6 x 6 x 3/8	1	0 3/8	27.48	138	5
4 BM 2	HSS 6 x 6 x 3/8	1	7 15/16	27.48	193	7
4 BM 3	HSS 6 x 6 x 3/8	2	2 5/16	27.48	248	9
4 BM 4	HSS 6 x 6 x 3/8	2	8 5/8	27.48	303	11
4 P 1	PL 12 x 1	1	0	40.80	164	4
4 P 2	PL 32 1/2 x 1/2	2	8 1/2	55.30	609	11
4 CP 1	PL 5 1/4 x 1/4	0	5 1/4	4.47	9	2
1 LS 1	HSS 4 x 2 x 3/16	1	0	6.87	7	1
1 SO 1	1 1/2" SCH 40 PIPE (WEATHERING)	0	3	2.44	1	0.25

TOTAL LIFTING WEIGHT: 5,933
B.O.M. IS FOR ONE TOWER ASSEMBLY, TWO ARE REQUIRED

ITEM NO.	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH
TOWER ASSEMBLY 4						
4 C 1-4	HSS 6 x 6 x 3/8	21	3 5/8	27.48	2,364	86
4 BM 1	HSS 6 x 6 x 3/8	1	0 3/8	27.48	138	5
4 BM 2	HSS 6 x 6 x 3/8	1	7 15/16	27.48	193	7
4 BM 3	HSS 6 x 6 x 3/8	2	2 5/16	27.48	248	9
4 P 1	PL 12 x 1	1	0	40.80	164	4
4 P 2	PL 32 1/2 x 1/2	2	8 1/2	55.30	609	11
4 CP 1	PL 5 1/4 x 1/4	0	5 1/4	4.47	9	2
1 LS 1	HSS 4 x 2 x 3/16	1	0	6.87	7	1
1 SO 1	1 1/2" SCH 40 PIPE (WEATHERING)	0	3	2.44	1	0.25

TOTAL LIFTING WEIGHT: 3,733
B.O.M. IS FOR ONE TOWER ASSEMBLY, TWO ARE REQUIRED

ITEM NO.	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH
SUPPORT BEAM ASSEMBLY						
2 SB 1	W 10 x 15	17	10 1/8	15.00	540	36
7 PS 1	PL 9 3/4 x 1/4	0	8 7/16	6.30	50	6
12 PS 2	PL 7 7/8 x 1/4	0	7 7/16	1.60	16	10
2 P 3	PL 11 1/2 x 1/2	1	7	19.60	79	4
SUB TOTAL					685	

ITEM NO.	DESCRIPTION	FEET	INCHES	WEIGHT PER FOOT	TOTAL WEIGHT	TOTAL LENGTH
ITEMS TO SHIP LOOSE WITH SUPPORT BEAM ASSEMBLY						
2 P 4	PL 6 x 1/2	1	4	10.20	31	3
6 3/4" ASTM A325 BOLT W/ NUT & 2 WASHERS		0	11 1/2	0	15	0
6 3/4" ASTM A325 BOLT W/ 2 NUTS & WASHER		0	3 1/2	0	8	0

TOTAL LIFTING WEIGHT: 7,055
B.O.M. IS FOR ONE SUPPORT BEAM ASSEMBLY, FOUR ARE REQUIRED

REV.	DESCRIPTION	BY/DATE	CHK'D BY
0	RELEASED FOR FABRICATION	8/16/01	DLW
1	RELEASED FOR APPROVAL	8/21/01	DLW

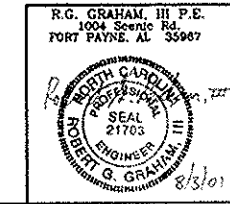
STEADFAST BRIDGES
A DIVISION OF
BILTOLAST PRODUCTS INC.
119 AND 52 N.E.
FORT PAYNE, AL 35967-8139
1-800-749-7515

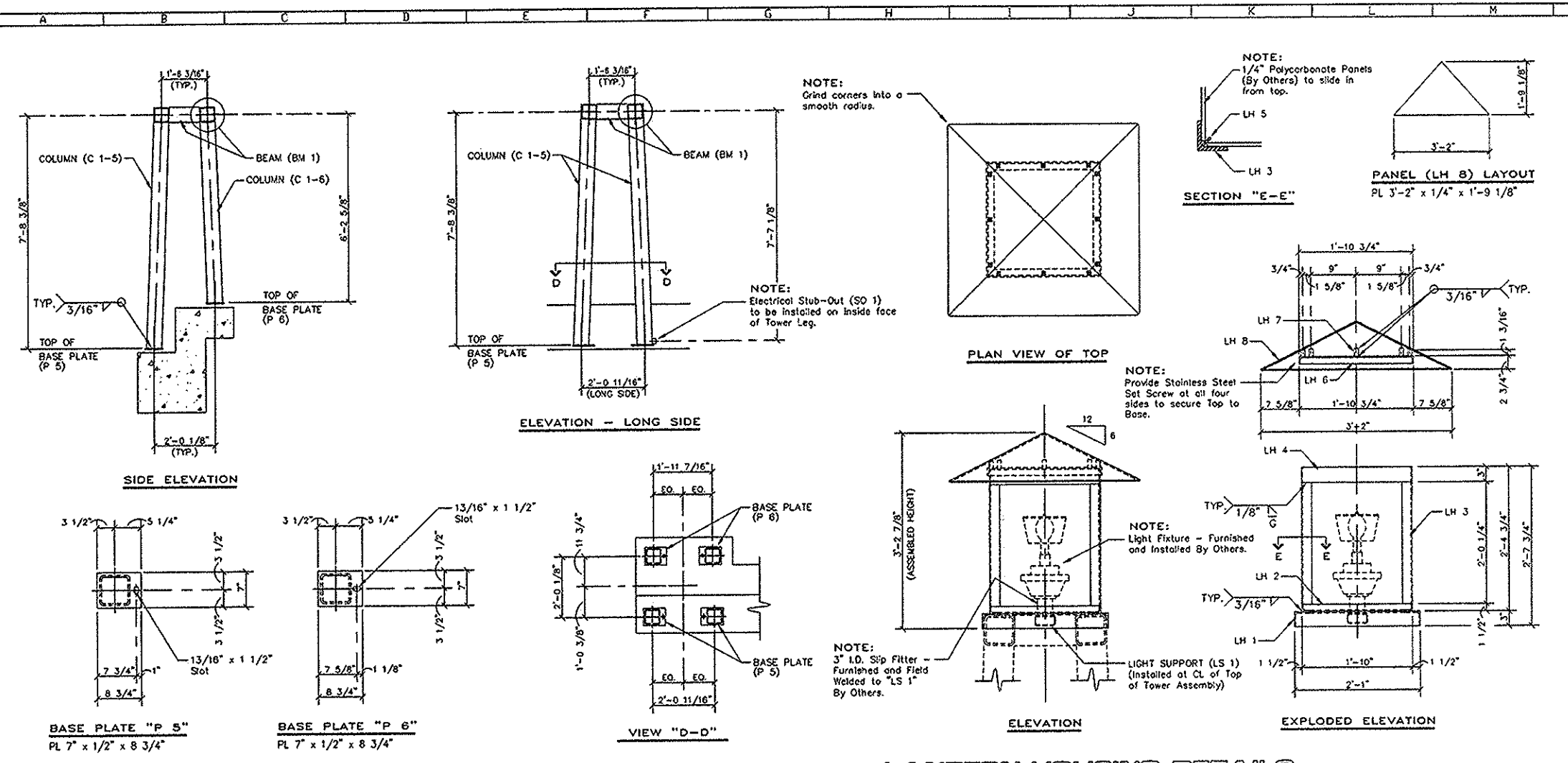
CONTRACTOR: SHENAUT CONSTRUCTION
PROJECT: WARREN WILSON COLLEGE PEDESTRIAN BRIDGE
BRIDGE No. 648 SUPPORT TOWERS

DATE: 8/31/01

TOWER ELEVATIONS
SCALE: 1/2" = 1'-0"

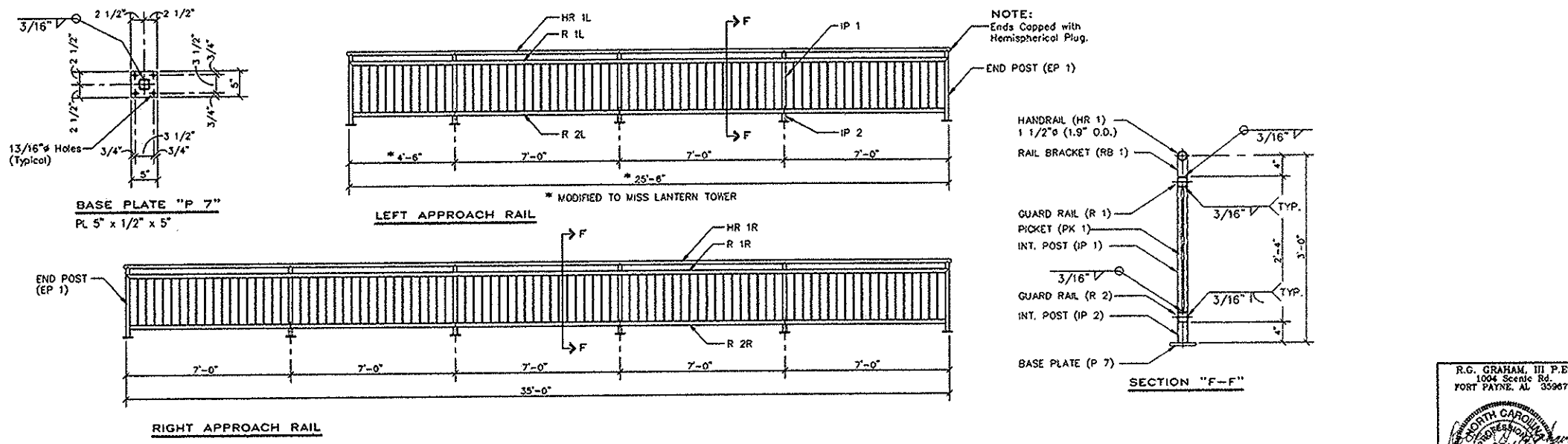
PLATE DETAILS
SCALE: 1" = 1'-0"





LANTERN TOWER ELEVATIONS/DETAILS
SCALE: 1/2" = 1'-0"

LANTERN HOUSING DETAILS
SCALE: 1" = 1'-0"



APPROACH RAIL DETAILS
SCALE: 3/8" = 1'-0"

BILL OF MATERIALS
JOB: 011404 FOR: SAVANNAH, NC. LANTERN HOUSING & RAILS

NO.	MARK	DESCRIPTION	FEET	INCHES	WEIGHT	TOTAL	UNIT
STEEL ASTM A588 or A242							
LANTERN TOWER ASSEMBLY							
2	C 1-5	HSS 6 x 6 x 3/8	7	11 7/16	27.48	440	16
2	C 1-6	HSS 6 x 6 x 3/8	6	5 11/16	27.48	358	13
4	BM 1	HSS 6 x 6 x 3/8	1	0 3/8	27.48	138	5
2	P 5	PL 7' x 1/2"	0	8 3/4	11.90	24	2
2	P 6	PL 7' x 1/2"	0	8 3/4	11.90	24	2
4	CP 1	PL 5 1/4 x 1/4	0	5 1/4	4.47	9	2
1	LS 1	HSS 4 x 2 x 3/16	1	0	6.87	7	1
1	SO 1	1 1/2" SOL. 40. PPE (WEATHERING)	0	3	2.44	1	0.25

TOTAL LIFTING WEIGHT: 1,001
B.O.M. IS FOR ONE TOWER ASSEMBLY, TWO ARE REQUIRED

LANTERN HOUSING							
4	LH 1	L 3 x 3 x 1/4	2	1	4.90	45	9
4	LH 2	L 1 1/2 x 1 1/2 x 1/4	1	10	2.34	19	8
4	LH 3	L 2 x 2 x 1/4	2	0 1/4	3.19	29	9
4	LH 4	L 3 x 1/4	1	10	2.55	21	8
4	LH 5	PL 3/4 x 1/8	2	4 1/2	0.32	4	10
4	LH 6	L 1 1/2 x 1 1/2 x 1/4	1	10 3/4	2.34	19	8
12	LH 7	3/4" SO. BAR (SOLID)	0	1 9/16	1.91	4	2
4	LH 8	PL 2 1/8 x 1/4	3	2	17.98	234	13
4	STAINLESS STEEL SET SCREW - 3/8"		0	1/2	0	1	0

TOTAL LIFTING WEIGHT: 376
B.O.M. IS FOR ONE LANTERN HOUSING, TEN ARE REQUIRED

LEFT APPROACH RAIL							
1	R 1L	HSS 2 x 2 x 3/16	25	6	4.32	113	26
1	R 2L	HSS 2 x 2 x 3/16	25	2	4.32	113	26
2	EP 1	HSS 2 x 2 x 3/16	2	8	4.32	26	6
3	IP 1	HSS 2 x 2 x 3/16	2	0	4.32	26	6
3	IP 2	HSS 2 x 2 x 3/16	0	4	4.32	5	1
65	PK 1	1/2" SO. BAR (SOLID)	2	0	0.85	111	130
5	P 7	PL 5 x 1/2"	0	5	8.51	26	3
1	HR 1L	1 1/2" SOL. 40. PPE (WEATHERING)	25	7	2.44	84	26
3	RB 1	1 1/2" SOL. 40. PPE (WEATHERING)	0	5 1/2	2.44	8	3

TOTAL LIFTING WEIGHT: 492

RIGHT APPROACH RAIL							
1	R 1L	HSS 2 x 2 x 3/16	35	0	4.32	152	35
1	R 2L	HSS 2 x 2 x 3/16	34	8	4.32	152	35
2	EP 1	HSS 2 x 2 x 3/16	2	8	4.32	26	6
4	IP 1	HSS 2 x 2 x 3/16	2	0	4.32	35	8
4	IP 2	HSS 2 x 2 x 3/16	0	4	4.32	9	2
90	PK 1	1/2" SO. BAR (SOLID)	2	0	0.85	153	180
6	P 7	PL 5 x 1/2"	0	5	8.51	26	3
1	HR 1L	1 1/2" SOL. 40. PPE (WEATHERING)	35	1	2.44	88	36
8	RB 1	1 1/2" SOL. 40. PPE (WEATHERING)	0	5 1/2	2.44	8	3

TOTAL LIFTING WEIGHT: 649

RELEASED FOR FABRICATION

RELEASER FOR FABRICATION: [Signature]

RELEASER FOR APPROVAL: [Signature]

Rev. DESCRIPTION BY/DATE CHK'D BY

STEADFAST BRIDGES

A DIVISION OF
BILTOCAST PRODUCTS INC.
119 408th St. NE
FORT PAYNE, AL 35967-8139
1-800-749-7515

FOR: SAVANNAH, NORTH CAROLINA
ADDRESS: SHENAUT CONSTRUCTION
565 LONG SPINALS ROAD
ARDEN, NC 28704
DESIGNED BY: [Signature]
CHECKED BY: [Signature]
CONTRACTOR: SHENAUT CONSTRUCTION

WARREN WILSON COLLEGE PEDESTRIAN BRIDGE
BRIDGE No. 648 SUPPORT TOWERS

DATE OF FABRICATION: [Blank]
DATE OF INSTALLATION: [Blank]

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