SCDOT
South Carolina
Department of Transportation

DM0699

May 28, 1999

MEMORANDUM TO GROUP LEADERS & CONSULTANTS

SUBJECT: NEW FIELD WELDING NOTE & SUPPLEMENTAL SPECIFICATION

The attached revised Bridge Design standard notes sheets should be used for bridge projects beginning with the August 1999 letting. Your attention is directed to a new note entitled, **"FIELD WELDING"**.

This change was required to address concerns about the quality of welding done by the Contractor's personnel. The note and the new Supplemental Specification allows for selective inspection and testing of field welding.

The attached new Supplemental Specification entitled "FIELD WELDING" will be included in all bridge projects beginning with the August 1999 letting.

Plans that are complete and that will be let in August 1999 or later must be revised to include this revision. Your cooperation in this matter is appreciated.

Randy R. Cannon, P.E.
Bridge Design Engineer

Attachments:

cc: Assistant Bridge Design Engineers

File: PC/REL

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July 19, 1999

FIELD WELDING

South Carolina Department of Transportation Standard Specifications for Highway Construction, Edition of 1986 are revised as follows:

Subsection 709.22 "Structural Welding" is revised by removing the last sentence in paragraph A.1.(b) and all of part B "Field Welding" and replaced with the following Subsection 709.22B "Field Welding".

709.22B "Field Welding":

(1) General. All field welding, except welding of reinforced pile tips, temporary false-work (unless specified), SIP form-work, armor plate at bridge ends and armor plate at expansion joints shall be considered structural welding and shall be performed by a SCDOT certified welder. All field personnel welding structural steel, steel reinforcement, steel pile splices, and other types of field structural welds shall have been qualified to perform the type of welding in accordance with the qualification procedure of ANSI/AASHTO/AWS D 1.5 Bridge Welding Code as follows: A welder or tacker (hereafter known as "welder") may be qualified by preparing test specimens in accordance with section 5.22, figure 5.7A, Position 2G for limited thickness groove welding (butt welding) and section 5.23, figure 5.8A, Position 2F for fillet welding. Testing as shown in Figure 5.8B will not suffice for fillet welding qualification.

The above testing is minimum and will qualify the welder for general welding at the job site. By choice of the welder, he may qualify for additional positions and unlimited metal thickness as part of the above testing. Specialized welding and welding positions at the job site may require additional welder qualification testing if required by the Engineer.

The test specimens shall be prepared in the presence of and tested and evaluated by an independent laboratory person qualified as a Welding Inspector. All radiographic nondestructive testing shall be performed by an ASNT Level II or III technician. The independent laboratory shall furnish a welder qualification test report on company letterhead stationery stating the type welding approved, name of the welder, the welder's social security number, along with a statement that the welder is duly qualified as a field welder in accordance with the SCDOT requirements. The report shall show the name of the independent laboratory technician(s) making the evaluation and be signed by the independent laboratory manager.

The independent laboratory shall submit a copy of the report to: Research and Materials Engineer, Research and Materials Laboratory, SCDOT, P. O. Box 191, Columbia, SC 29202, for processing. The welder will be forwarded a SCDOT certification good for two years and renewable every two years provided the welder has been engaged in welding procedures during the preceding two year period.

A list of qualified independent laboratories capable of administering this testing may be obtained from the SCDOT Research and Materials Laboratory. An independent laboratory may request to be included on the list by furnishing to the Research and Materials Engineer a letter stating their qualifications to perform the testing and the names of their personnel who will be performing the evaluations.

(2) **Submittals. The Contractor shall notify the Resident Construction Engineer and the Research and Material Engineer ten (10) calendar days prior to performing any field welding including the welding of reinforced pile tips, armored plated at bridge joints, temporary false-work and SIP form-work. The Contractor shall document this notification by completing the attached form Entitled "SCDOT Sample Welding Procedure Specification" and forwarding one copy each to the Resident Construction Engineer and the Research and Materials Engineer.**

Date 99-07-19

SCDOT WELDING PROCEDURE SPECIFICATION

Material specification _____
Welding process _____
Manual or machine _____
Position of welding _____
Filler metal specification _____
Filler metal classification _____
Flux _____
Shielding gas _____ Flow rate _____
Single or multiple pass _____
Single or multiple arc _____
Welding current _____
Polarity _____
Welding progression _____
Root treatment _____
Preheat and interpass temperature _____
Postheat temperature _____
Heat input Min. _____ Max. _____
Welder's Name _____ Certified Welder Required: Yes _____ No _____
If required Welder's SCDOT Certification No. _____

WELDING PROCEDURE

Pass No.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitations of variables given in AWS D1.5, section 5.

Procedure no. _____ Contractor _____
Revision no. _____ Authorized By _____
Date _____

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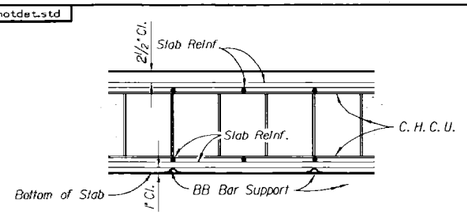


BAR SUPPORT DETAIL
SECTION PARALLEL TO ℄ ROADWAY

NOTE:

TERMS AND SYMBOLS USED BELOW REFER TO STANDARD TYPE BAR SUPPORTS AND CLASSES OF PROTECTION AS SPECIFIED IN C.R.S.I. MANUAL OF STANDARD PRACTICE, DATED 1997.

BAR SUPPORTS SHALL BE SPACED TO PROVIDE ADEQUATE SUPPORT FOR SLAB REINFORCING STEEL. THE LOWER LAYER OF SLAB STEEL SHALL BE SUPPORTED BY BEAM BOLSTERS (BB) BAR SUPPORTS WITH ONE ROW NEAR EACH END OF SPAN AND INTERIOR ROWS SPACED APPROXIMATELY 2'-0" ON CENTER. BB BAR SUPPORTS SHALL HAVE CLASS 1 MAXIMUM PROTECTION. TOP REINFORCING STEEL SHALL BE SUPPORTED BY CONTINUOUS HIGH CHAIRS UPPER (CHCU) AS SHOWN IN THE ABOVE DETAIL. SPACED 2'-6" ON CENTER MAXIMUM.

WEIGHT OF BAR SUPPORTS ARE NOT INCLUDED IN THE REINFORCING STEEL QUANTITIES. BAR SUPPORTS SHALL BE CONSIDERED INCIDENTAL TO THE REINFORCING STEEL AND ALL COSTS OF FURNISHING AND PLACING BAR SUPPORTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REINFORCING STEEL.

PLASTIC BAR SUPPORTS:

PLASTIC BAR SUPPORTS MAY BE USED IN LIEU OF BB WIRE SUPPORTS.

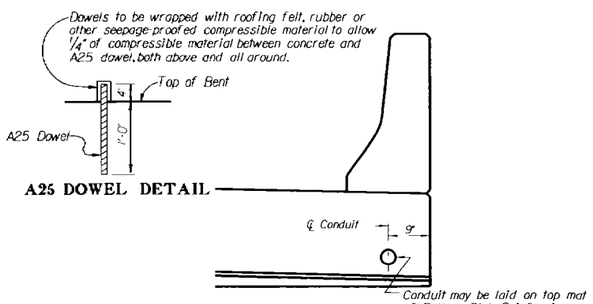
PLASTIC BAR SUPPORTS SHALL MEET THE FOLLOWING REQUIREMENTS:

1. CHAIRS AND BOLSTERS MUST BE OF ADEQUATE STRENGTH TO RESIST A 300 POUND CONCENTRATED LOAD WITHOUT PERMANENT DEFORMATION OR BREAKAGE.
2. THE MATERIAL FROM WHICH PLASTIC BAR SUPPORTS ARE MANUFACTURED SHALL BE EITHER VIRGIN RESIN OR FIRST GENERATION RECYCLED THERMOPLASTIC RESIN, BE COLORED WHITE, GRAY, OR BLACK, AND BE CHEMICALLY INERT IN CONCRETE.
3. PLASTIC REBAR SUPPORTS SHALL BE MOLDED IN A CONFIGURATION WHICH DOES NOT RESTRICT CONCRETE FLOW AND CONSOLIDATION AROUND AND UNDER THE REBAR SUPPORT.

INDEX PILES:

NOTE:

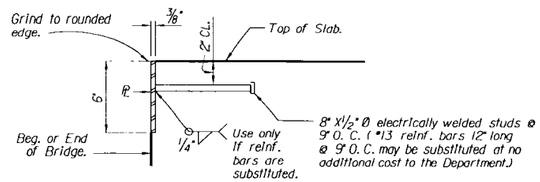
THE PILE LENGTHS GIVEN ARE FOR BID ESTIMATION PURPOSES ONLY. ONE 18-IN. SQUARE PRESTRESSED INDEX PILE 41 FT. LONG SHALL BE DRIVEN AT AN INTERIOR BENT AS DIRECTED BY THE ENGINEER. THE DEPARTMENT RESERVES THE RIGHT TO ADD, DELETE, OR SHIFT INDEX PILINGS. ANY ADDITIONAL INDEX PILES WILL BE PAID FOR AS PRESTRESED INDEX PILE (18-IN. SQ.). THE REMAINDER OF THE PILES SHALL NOT BE CAST UNTIL ALL INDEX PILES FOR THAT BRIDGE HAVE BEEN DRIVEN AND PILE LENGTHS APPROVED BY THE ENGINEER. ALL COSTS OF MATERIAL, EQUIPMENT, AND LABOR NECESSARY TO INSTALL THE INDEX PILES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED INDEX PILING (18-IN. SQ.). THE ENGINEERING MAY REQUIRE THE CONTRACTOR TO PRE-DRILL OR SPUD IN ORDER TO OBTAIN THE NECESSARY PENETRATION. ALL COST FOR PRE-DRILLING OF SPUDDING WILL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE PILING (18-IN. SQ.).



A25 DOWEL DETAIL

Note:
Conduits necessary for utilities to be furnished by the utility company and placed at no expense to the department. Use Slip Coupling on Conduits at Expansion Joints.

DETAIL SHOWING CONDUIT PLACEMENT



ARMOR PLATE DETAIL

NOTE:
THE 3/8 " THICK PLATES WILL BE REQUIRED AT THE BEGINNING AND END OF THE BRIDGE.

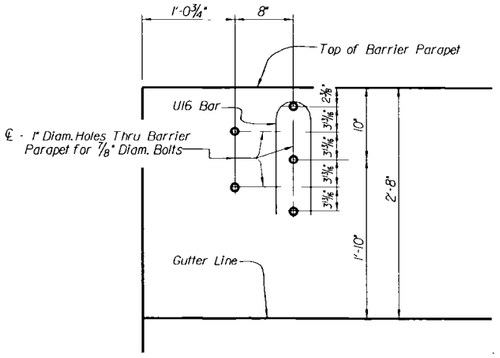
STEEL FOR THE ARMOR PLATES SHALL CONFORM TO THE LATEST AASHTO M270 GRADE 50W (ASTM A709 GR. 50W) STEEL AND NEITHER THE PLATES NOR THE ANCHOR STUDS NEED BE PAINTED.

THE FABRICATED PLATES SHALL CONFORM TO THE CROWN AND GRADE OF THE ROADWAY AND SHALL EXTEND FROM GUTTER LINE TO GUTTER LINE. THE PLATES MAY BE FABRICATED IN REASONABLE LENGTHS AND CONNECTED AT THE JOB SITE WITH FULL PENETRATION BUTT WELDS GROUND FLUSH ALONG THE TOP FACE OF CONNECTED PLATES.

IF NECESSARY, LONGITUDINAL REINFORCING BARS OF THE SLAB MAY BE SHIFTED LATERALLY TO CLEAR ANCHOR STUDS.

IF DESIRED BY THE CONTRACTOR, 9/16 "Ø HOLES SPACED APPROXIMATELY 2'-0" O.C., MAY BE PROVIDED IN LOWER PORTION OF THE PLATES TO BOLT THE PLATES TO THE FORMS.

ALL COSTS OF MATERIAL AND WORKMANSHIP TO FABRICATE, FURNISH AND INSTALL THE ARMOR PLATES AND ANCHOR STUDS COMPLETE IN PLACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "D" CONCRETE.



① THRIE BEAM GUARD RAIL ATTACHMENT TO PARAPET

① NOTE:

THE 1" DIAM. HOLES MAY BE FORMED WITH PLASTIC OR PVC PIPE HAVING AN I.D. OF 1" (+ 1/8") OR 1" I.D. GALVANIZED STANDARD WEIGHT STEEL PIPE.

ALL COST OF PIPE AND INSTALLATION SHALL BE INCLUDED IN THE PRICE BID FOR REINFORCING STEEL.

ALL PIPE TO REMAIN IN PLACE WHEN FORMS ARE REMOVED.

THE RESIDENT ENGINEER SHALL CHECK THE LOCATION OF THE HOLES TO INSURE THAT THE GUARDRAIL SHOE WILL FIT PROPERLY WHEN INSTALLED.

ALL GUARDRAIL AND BOLTS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.

WORKING DRAWINGS

WHEN REQUIRED BY THE PLANS, SPECIFICATIONS OR SPECIAL PROVISIONS, THE CONTRACTOR SHALL SUBMIT SHOP PLANS, ERECTION PLANS, FALSEWORK PLANS, COFFERDAM PLANS OR ANY OTHER SUPPLEMENTARY PLANS TO THE ENGINEER FOR REVIEW. THESE PLANS, ALONG WITH ANY ASSOCIATED DESIGN CALCULATIONS, SHALL BEAR THE SEAL AND SIGNATURE OF A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH THE FOLLOWING EXCEPTIONS:

A) SHOP PLANS FOR ARMOR PLATES LOCATED AT BRIDGE ENDS OR APPROACH SLAB ENDS
B) SHOP PLANS FOR PRESTRESSED CONCRETE PILING THAT ARE FABRICATED IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS.

ALL COSTS FOR THE PREPARATION AND FURNISHING OF THE WORKING DRAWINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS PAY ITEMS OF WORK.

CONCRETE

THE CLASS OF CONCRETE SHALL BE AS NOTED ON OTHER SHEETS OF THESE PLANS.

BUILD-UPS ON BENT CAPS SHALL BE CAST MONOLITHIC WITH CAP UNLESS INDICATED OTHERWISE IN THESE PLANS. THE TOP OF EACH BUILD-UP SHALL BE LEVEL.

PAYMENT FOR CONCRETE IN SLAB WILL BE BASED ON THEORETICAL PLAN QUANTITY. ANY NECESSARY ADJUSTMENT IN QUANTITY DUE TO VARIATION IN CAMBER SHALL BE AT THE CONTRACTOR'S EXPENSE.

ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

THE MINIMUM ACCEPTABLE CONCRETE COVER FOR REINFORCING STEEL MAY BE ONE HALF INCH LESS THAN THE PLAN DIMENSIONS WHEN REQUIRED BY REINFORCING BAR FABRICATION TOLERANCES.

THE TOP ONE FOURTH INCH OF ALL CONCRETE SLABS SHALL BE CONSIDERED AS A WEARING SURFACE AND SHALL NOT BE INCLUDED IN THE SLAB DEPTH USED FOR THE CALCULATION OF SECTION PROPERTIES.

VALUE ENGINEERING PROPOSALS:

THE CONTRACTOR MAY INITIATE, DEVELOP, AND PRESENT TO THE DEPARTMENT OF TRANSPORTATION FOR CONSIDERATION, ANY COST REDUCTION PROPOSALS CONCEIVED BY THEM INVOLVING CHANGES IN THE DRAWINGS, DESIGNS, SPECIFICATIONS, OR OTHER REQUIREMENTS OF THE CONTRACT. ALL VALUE ENGINEERINC PROPOSALS SHALL COMPLY WITH THE REQUIREMENTS OF THE SPECIAL PROVISIONS.

REINFORCING STEEL

GRADE 420 REINFORCING STEEL CONFORMINC TO ASTM A 615M-96a WILL BE USED ON THIS PROJECT. UNLESS SHOWN OTHERWISE, ALL TIES & STIRRUPS SHALL HAVE 135° HOOKS WITH EXTENSIONS NOT LESS THAN THE LARGER OF TEN BAR DIAMETERS OR 6 INCHES.

REINFORCING BAR FABRICATION SHALL CONFORM TO THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE EXCEPT AS NOTED ABOVE.

THE CONTRACTOR MAY ELECT TO SUBSTITUTE MECHANICAL REINFORCING COUPLERS FOR THE LAP SPLICES DETAILED IN THE PLANS. ALL MECHANICAL REINFORCING COUPLERS SHALL COMPLY WITH THE SPECIAL PROVISIONS.

ALL COSTS FOR FURNISHING AND INSTALLING COUPLERS SHALL BE CONSIDERED INCIDENTAL TO PLACING REINFORCING STEEL. PAYMENT FOR MECHANICAL REINFORCING COUPLERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REINFOFCING STEEL.

WHEN APPROVED BY THE ENGINEER, WELDED LAP SPLICES SHALL BE MADE WITH LOW HYDROGEN TYPE ELECTRODES AND SHALL CONFORM WITH REQUIREMENTS OF AWS D1.4 STRUCTURAL WELDING CODE.

THE WELDING PROCEDURE AND TWO TEST SAMPLES SHALL BE SUBMITTED FOR APPROVAL BY THE DEPARTMENT PRIOR TO BEGINNING THE FABRICATION OF THE SPLICES.

LAP SPLICES IN COLUMN AND SHAFT REINFORCING STEEL SHALL NOT BE ALLOWED.

ALLOWANCE FOR DEAD LOAD DEFLECTION AND SETTLEMENT

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK AND LONG-TIME DEFLECTION SUCH THAT ON REMOVAL OF FALSEWORK THE TOP OF THE STRUCTURE SHALL CONFORM TO THEORETICAL FINISH GRADE PLUS THE ALLOWANCE FOR LONG-TIME DEFLECTION.

FOR CONCRETE FLAT SLAB SPANS TWENTY TO THIRTY FEET IN LENGTH, SUB- SECTION 702.27 OF THE STANDARD SPECIFICATION IS AMENDED IN PART TO REQUIRE 1/8" OF CAMBER FOR DEAD LOAD AND LONG-TIME DEFLECTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

COMPLETION DATES

THE CONTRACTOR SHALL PLACE YEAR OF COMPLETION ON INSIDE FACE OF RIGHT SIDE BARRIER PARAPET/RAIL AT BEGINNING OF BRIDGE AND ON LEFT SIDE BARRIER PARAPET/RAIL AT END OF BRIDGE. NUMBERS ARE TO BE RECESSED IN THE CONCRETE USING NUMBERS THAT ARE FABRICATED FROM REUSABLE/DURABLE MATERIAL AND APPROVED BY THE ENGINEER. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUPPLYING THE NUMBERS WITH THE DIMENSIONS SHOWN ON STANDARD DRAWING NUMBERS.STD FOUND ON SCDOT INTERNET FTP SITE AT FTP.DOT.STATE.SC.US LOGON AS ANONYMOUS. LOCATED IN DIR=PUB/BR CONSULTANT/ESTANDARD OR A COPY CAN BE OBTAINED FROM THE RESIDENT ENGINEER.

FIELD WELDING

ANY AUTHORIZED STRUCTURAL FIELD WELDING THAT IS REQUIRED ON THIS PROJECT MAY BE SUBJECT TO INSPECTION AND TESTING, SEE SUPPLEMENTAL SPECIFICATIONS. FINAL DETERMINATION OF THE EXTENT OF INSPECTION AND TESTING WILL BE THE RESPONSIBILITY OF THE CONSTRUCTION OFFICE AND/OR THE RESEARCH AND MATERIALS ENGINEER. THE CONSTRUCTION OFFICE AND/OR THE RESEARCH AND MATERIALS ENGINEER MUST BE NOTIFIED WHEN ANY FIELD WELDING IS PERFORMED.

SHEET NO.	TOTAL SHEETS

EXCAVATION FOR END BENT

ALL COST OF EXCAVATION NECESSARY TO CONSTRUCT END BENTS AND TO REMOVE MATERIAL UNDER SUPERSTRUCTURE TO AN ELEVATION 1'-0" BELOW TOPS OF END BENT CAPS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "D" CONCRETE.

IF A CONCRETE FOOTING IS USED FOR THE END BENT, THE EXCAVATION BELOW THAT INCLUDED FOR THE CAP AND BERM IN THE ABOVE PARAGRAPH WILL BE PAID FOR AT THE UNIT PRICE BID FOR EXCAVATION. EXCAVATION ABOVE THIS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "D" CONCRETE.

BEARINGS

FOR CONCRETE SLABS BEARING ON CONCRETE, THE TOP OF CAPS UNDER BEARING AREAS SHALL RECEIVE A SUITABLE TROWEL FINISH TO INSURE A SMOOTH AND LEVEL BEARING SURFACE. SEE STANDARD SPECIFICATIONS PARAGRAPH 702.26.

DRIVING PILES THROUGH FILL

WHERE PILES OCCUR IN FILL EXCEEDING 10 FEET IN HEIGHT, THE FILL SHALL BE IN PLACE BEFORE PILES ARE DRIVEN.

TIMBER OR PRESTRESSED CONCRETE PILES WHICH ARE TO BE DRIVEN THROUGH FILL, SHALL BE INSTALLED IN PRE-BORED HOLES EXTENDING TO THE ORIGINAL GROUND.

HOLES FOR TIMBER PILES SHALL HAVE A 14" MINIMUM DIAMETER. HOLES FOR SQUARE PRESTRESSED CONCRETE PILES SHALL HAVE A MINIMUM DIAMETER OF 1.25 TIMES THE NOMINAL PILE SIZE. ALL COST OF PRE-BORING FILLS FOR PILE INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PILES.

REMOVAL OF FALSEWORK AND FORMS

SECTION 702.18 OF THE STANDARD SPECIFICATIONS IS AMENDED IN PART TO THE EXTENT THAT "UNDER URGENT CONDITIONS AND WITH THE WRITTEN APPROVAL OF THE ENGINEER, ADDITIONAL STRENGTH CONTROL CYLINDERS MAY BE MADE AND THE FALSEWORK STRUCK WHEN THESE CYLINDERS, CURED UNDER THE SAME CONDITIONS AS THE CONCRETE IN THE STRUCTURE, DEVELOP A UNIT STRENGTH OF 3,200 PSI. HOWEVER, SUCH CONCRETE SHALL NOT BE SUBJECTED TO A SUPERIMPOSED LOAD UNTIL THE COMPRESSIVE STRENGTH IS AT LEAST 4,000 PSI.

SPECIFICATIONS:

AASHTO 1996 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, AND INTERIMS.

ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE (LATEST EDITION) WITH ADDITIONS AND REVISIONS AS STATED IN THE SPECIAL PROVISIONS.

LIVE LOAD:

AASHTO HS25-44 LOADING OR AN ALTERNATE MILITARY LOADING OF 2 AXLES 4 FEET APART WITH EACH AXLE WEIGHING 24,000 POUNDS. WHICHEVER PRODUCES THE GREATEST STRESS.

DESIGN DATA:

STRENGTH DESIGN METHOD (LOAD FACTOR DESIGN)

CONCRETE: CLASS "D", f'_c = 4,000 P.S.I.

SPECIAL NOTE:

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 ON THIS SHEET AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE STANDARD SPECIFICATIONS SEC. 105.04.

MATERIAL AND WORKMANSHIP

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SOUTH CAROLINA DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1986 EDITION.

NOTE:

LEFT AND RIGHT SIDES, WHERE REFERRED TO IN THESE PLANS, ARE IN RELATION TO DIRECTION OF STATIONING.

REV.	REJ	JAR	3-99
	VALUE ENG. PRO.		
REV.	REJ	JAR	11-98
	COMPL. DATE		
REV.	REJ	JAR	11-98
	WORK DWGS.		
REVIEWED			
QUAN.			
DR.	REJ	HDJ	7-90
DES.			
	BY	CHK.	DATE

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BRIDGE DESIGN COLUMBIA, S.C.

STANDARD NOTES AND DETAILS FOR FLAT SLABS

FILE NO.	ROUTE	COUNTY	DRAWING NO.
			STDNOTDET.STD

1435LOAD FACTOR

bsn.dgn

SHEET NO.	TOTAL SHEETS
2	

WIDENING EXISTING CONCRETE STRUCTURE

WHERE NEW CONCRETE IS TO BE CAST AGAINST EXISTING CONCRETE, THE CONTACT SURFACE OF THE OLD CONCRETE SHALL BE CLEANED OF ALL LOOSE CONCRETE, DIRT, OIL, GREASE AND ANY OTHER DELETERIOUS SUBSTANCE. IN ADDITION, BEFORE PLACING NEW DECK SLAB CONCRETE, THE EDGE OF EXISTING DECK SLAB SHALL BE THOROUGHLY ROUGHENED TO AN AMPLITUDE OF APPROXIMATELY 1/4". JUST PRIOR TO PLACING NEW CONCRETE, THE PORTION OF THE EXISTING SLAB FROM THE TOP SURFACE OF THE SLAB TO THE TOP LAYER OF REINFORCING SHALL BE COATED WITH A BONDING AGENT CONFORMING TO AASHTO SPECIFICATION M235 TYPE II APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE REMAINING PORTION OF THE VERTICAL FACE OF THE EXISTING SLAB SHALL BE FLUSHED WITH A 1:2 CEMENT MORTAR IMMEDIATELY PRIOR TO PLACING THE NEW CONCRETE.

ALL REINFORCING STEEL PROTRUDING BEYOND THE SURFACE AFTER REMOVAL OF CONCRETE SHALL BE IMBEDDED IN THE NEW CONCRETE IF FEASIBLE. REINFORCING STEEL WHICH CANNOT BE IMBEDDED IN NEW CONCRETE SHALL BE CUT OFF FLUSH WITH THE SURFACE OF THE CONCRETE WHEN IT WILL BE COVERED WITH A DECK OVERLAY. OTHERWISE, CUT REINFORCING OFF 1" BELOW THE CONCRETE SURFACE AND PATCH THE RESULTING HOLE WITH AN EPOXY MORTAR APPROVED BY THE ENGINEER.

THE ENTIRE COST OF THE ABOVE WORK INCLUDING ALL DRILLING, CHIPPING, REMOVING AND DISPOSING OF PORTIONS OF OLD STRUCTURE NECESSARY TO CONSTRUCT NEW STRUCTURE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "REMOVAL AND DISPOSAL OF DESIGNATED PORTIONS OF EXISTING BRIDGES."

THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS OWN EXPENSE, AND IN A MANNER SATISFACTORY TO THE ENGINEER, ANY PORTION OF THE EXISTING STRUCTURE DAMAGED AS A RESULT OF HIS CARELESSNESS OR NEGLIGENCE.

UNLESS OTHERWISE SPECIFIED IN THESE PLANS OR THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL PROVIDE NECESSARY TEMPORARY SUPPORTS FOR UTILITIES ATTACHED TO THE BRIDGE TO MAINTAIN SERVICE DURING CONSTRUCTION. THE OWNER WILL MAKE ALL NECESSARY CHANGES IN ALIGNMENT AND ELEVATION OF THE UTILITY AND FURNISH PERMANENT SUPPORTS WHICH SHALL BE PLACED IN THE CONCRETE BY THE CONTRACTOR. ALL COSTS OF THIS WORK TO BE PERFORMED BY THE CONTRACTOR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "D" CONCRETE.

ANY NECESSARY REPAIRS TO THE EXISTING STRUCTURE, IN THE OPINION OF THE ENGINEER , ARE TO BE PAID FOR AS EXTRA WORK, IF SUCH WORK IS NOT CALLED FOR IN THESE PLANS OR IN THE SPECIAL PROVISIONS FOR THIS PROJECT.

ALL DIMENSIONS OF NEW CONSTRUCTION ARE SUBJECT TO EXISTING CONDITIONS. IT IS RECOMMENDED THAT ALL DIMENSIONS WHICH MAY AFFECT MATERIALS AND QUANTITIES AS SHOWN ON THESE PLANS BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING THE MATERIALS.

DRIVING PILES THROUGH FILL

WHERE PILES OCCUR IN FILL EXCEEDING 10 FEET IN HEIGHT, THE FILL SHALL BE IN PLACE BEFORE PILES ARE DRIVEN.

TIMBER OR PRESTRESSED CONCRETE PILES WHICH ARE TO BE DRIVEN THROUGH FILL, SHALL BE INSTALLED IN PRE-BORED HOLES EXTENDING TO THE ORIGINAL GROUND.

HOLES FOR TIMBER PILES SHALL HAVE A 14" MINIMUM DIAMETER. HOLES FOR SQUARE PRESTRESSED CONCRETE PILES SHALL HAVE A MINIMUM DIAMETER OF 1.25 TIMES THE NOMINAL PILE SIZE. ALL COST OF PRE-BORING FILLS FOR PILE INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PILES.

REINFORCING STEEL

GRADE 420 REINFORCING STEEL CONFORMING TO ASTM A 615M-96a WILL BE USED ON THIS PROJECT. UNLESS SHOWN OTHERWISE, ALL TIES & STIRRUPS SHALL HAVE 135° HOOKS WITH EXTENSIONS NOT LESS THAN THE LARGER OF TEN BAR DIAMETERS OR 6 INCHES.

REINFORCING BAR FABRICATION SHALL CONFORM TO THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE EXCEPT AS NOTED ABOVE.

THE CONTRACTOR MAY ELECT TO SUBSTITUTE MECHANICAL REINFORCING COUPLERS FOR THE LAP SPLICES DETAILED IN THE PLANS. ALL MECHANICAL REINFORCING COUPLERS SHALL COMPLY WITH THE SPECIAL PROVISIONS.

ALL COSTS FOR FURNISHING AND INSTALLING COUPLERS SHALL BE CONSIDERED INCIDENTAL TO PLACING REINFORCING STEEL. PAYMENT FOR MECHANICAL REINFORCING COUPLERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REINFORCING STEEL.

WHEN APPROVED BY THE ENGINEER, WELDED LAP SPLICES SHALL BE MADE WITH LOW HYDROGEN TYPE ELECTRODES AND SHALL CONFORM WITH REQUIREMENTS OF AWS D1.4 STRUCTURAL WELDING CODE.

THE WELDING PROCEDURE AND TWO TEST SAMPLES SHALL BE SUBMITTED FOR APPROVAL BY THE DEPARTMENT PRIOR TO BEGINNING THE FABRICATION OF THE SPLICES.

LAP SPLICES IN COLUMN AND SHAFT REINFORCING STEEL SHALL NOT BE ALLOWED.

MATERIAL AND WORKMANSHIP

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SOUTH CAROLINA DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1986 EDITION.

STRUCTURAL STEEL

BEAMS SHALL BE CAMBERED FOR VERTICAL CURVE AND DEAD LOAD DEFLECTION, EITHER IN MILL OR IN SHOP.

LAYOUT DIMENSIONS AND STANDARD LENGTHS OF BEAMS SHOWN ARE HORIZONTAL DIMENSIONS WHICH MUST BE INCREASED WHEN BRIDGE IS ON GRADE.

SHOP INSPECTION OF THE STRUCTURAL STEEL WILL BE PERFORMED BY THE DEPARTMENT OR ITS AUTHORIZED INSPECTION AGENCY AND THE CONTRACTOR SHALL SO STIPULATE IN HIS ORDER TO THE FABRICATOR. ALSO, THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF THE NAME AND ADDRESS OF THE FABRICATOR OF THE STRUCTURAL STEEL AS SOON AS THE FABRICATOR HAS BEEN GIVEN THE CONTRACT TO FABRICATE SO THAT THE INSPECTION PROCEDURE CAN BE SET UP.

WELDING TO THE BEAMS AND PLATE GIRDERS FOR THE PURPOSE OF ATTACHING ERECTION HARDWARE, EITHER FIELD OR SHOP, WILL NOT BE PERMITTED.

PAINTING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS.

CHARPY V-NOTCH TOUGHNESS TEST

ALL STEEL FOR USE IN MAIN LOAD-CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE APPLICABLE CHARPY V-NOTCH IMPACT TEST REQUIREMENTS OF AASHTO M 270 (ASTM A 709) AS SPECIFIED FOR ZONE 2.

SPECIFICALLY, CHARPY TESTING SHALL BE REQUIRED AS FOLLOWS:

A) SIMPLE SPAN ROLLED BEAM - THE BEAM ITSELF AS WELL AS BOTTOM COVER PLATE, IF APPLICABLE.

B) SIMPLE SPAN PLATE GIRDER - THE WEB, BOTTOM FLANGE PLATE AND SPLICE PLATES FOR WEB AND BOTTOM FLANGE EXCLUDING ANY FILLER PLATES.

C) CONTINUOUS SPAN ROLLED BEAM - THE BEAM ITSELF AS WELL AS ANY TOP OR BOTTOM COVER PLATE LOCATED IN A TENSION REGION AS INDICATED IN THE PLANS. ALSO, ALL SPLICE PLATES FOR WEB AND TOP AND BOTTOM FLANGE PLATES EXCLUDING ANY FILLER PLATES.

D) CONTINUOUS SPAN PLATE GIRDER - ALL WEB PLATES, THE TOP FLANGE PLATES AND THE BOTTOM FLANGE PLATES LOCATED IN A TENSION REGION AS INDICATED IN THE PLANS. ALSO, ALL SPLICE PLATES FOR WEB AND TOP AND BOTTOM FLANGE PLATES EXCLUDING ANY FILLER PLATES.

E) CURVED GIRDER STRUCTURES -IN ADDITION TO CHARPY TESTING OF WEB, FLANGE & SPLICE PLATES AS APPLICABLE AND AS SPECIFIED IN (A) THRU (D) ABOVE, ALL DIAPHRAGM MEMBERS, CONNECTION PLATES AND GUSSET PLATES SHALL REQUIRE CHARPY TESTING.

HIGH STRENGTH BOLTED CONNECTIONS

ALL BOLTED CONNECTIONS SHALL HAVE 7/8" DIAM. ASTM A325 BOLTS. SEE SPECIAL PROVISIONS FOR STRUCTURAL STEEL FASTENERS. ALL BOLTED CONNECTIONS ARE DESIGNED AS SLIP-CRITICAL CONNECTIONS HAVING CLASS "B" CONTACT SURFACES.

GENERALLY, HOLES FOR 7/8" BOLTS SHALL BE 15/16" DIAM., HOWEVER, OVERSIZE HOLES, 3/16" LARGER THAN BOLT DIAM. MAY BE USED IN DIAPHRAGMS AND/OR CROSSFRAMES AND THEIR CONNECTION PLATES PROVIDED HARDENED WASHERS ARE INSTALLED OVER OVERSIZE HOLES IN THE OUTER PLY OF THE MATERIAL GRIPPED. IN EVERY CASE A HARDENED WASHER SHALL BE INSTALLED UNDER THE ELEMENT TURNED FOR EACH BOLT OF A BOLTED CONNECTION. THE SHOP PLANS SHALL INDICATE WHICH HOLES ARE TO BE OVERSIZE AND WHERE HARDENED WASHERS ARE REQUIRED. ALL COSTS OF USING OVERSIZE HOLES, TO INCLUDE FURNISHING ADDITIONAL HARDENED WASHERS AS NECESSARY, SHALL BE AT NO EXPENSE TO THE DEPARTMENT.

THE MINIMUM DISTANCE BETWEEN CENTERS OF 7/8" DIAM. BOLTS FOR DIAPHRAGM CONNECTIONS SHALL BE 3" AND THE EDGE DISTANCE SHALL BE 1 1/2" FROM THE CENTERLINE OF BOLTS.

ANCHOR BOLTS

ALL COMPONENTS OF ANCHOR BOLT ASSEMBLIES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232 AS APPLICABLE. THE WEIGHT OF ANCHOR BOLT ASSEMBLIES IS INCLUDED IN THE BENT QUANTITIES FOR REINFORCING STEEL. ALL COSTS OF FURNISHING AND INSTALLING ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN AND PAID FOR AT THE UNIT PRICE BID FOR REINFORCING STEEL.

BEARING ASSEMBLIES

ALL STEEL BEARING ASSEMBLY COMPONENTS SHALL MEET AASHTO M270 GR. 36 (ASTM A709 GR. 36) UNLESS OTHERWISE SPECIFIED IN THE PLANS AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232 AS APPLICABLE.

AFTER THE REQUIRED FIELD WELDING OF HOT-DIP GALVANIZED BEARING ASSEMBLIES, THE WELD AREAS AND/OR ANY DAMAGED AREAS TO THE GALVANIZED COATING SHALL BE FIELD REPAIRED IN ACCORDANCE WITH ASTM A-780.

ALL COST OF FURNISHING AND INSTALLING STEEL BEARING ASSEMBLY COMPONENTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR STRUCTURAL STEEL IF A BID ITEM FOR STRUCTURAL STEEL IS INCLUDED IN THE PROJECT. OTHERWISE, THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED BEAMS.

ALLOWANCE FOR DEAD LOAD DEFLECTION AND SETTLEMENT

IN SETTING FORMS FOR STRUCTURAL STEEL OR PRESTRESSED CONCRETE BEAM SPANS, AN ALLOWANCE SHALL BE APPLIED TO DESIGN FINISH GRADE TO COMPENSATE FOR COMPUTED DEAD LOAD DEFLECTIONS.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK AND LONG-TIME DEFLECTION SUCH THAT ON REMOVAL OF FALSEWORK THE TOP OF THE STRUCTURE SHALL CONFORM TO THEORETICAL FINISH GRADE PLUS THE ALLOWANCE FOR LONG-TIME DEFLECTION.

FOR CONCRETE FLAT SLAB SPANS TWENTY TO THIRTY FEET IN LENGTH, SUB- SECTION 702.27 OF THE STANDARD SPECIFICATION IS AMENDED IN PART TO REQUIRE 1/8" OF CAMBER FOR DEAD LOAD AND LONG-TIME DEFLECTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CONTRACTOR'S OPTIONAL STAY-IN-PLACE FORMS

PERMANENT STEEL BRIDGE DECK FORMS MAY BE USED ON THIS PROJECT AT THE CONTRACTOR'S OPTION. AN EXTRA DEAD LOAD OF 16 P.S.F. HAS BEEN INCORPORATED INTO THE DESIGN OF THIS STRUCTURE TO ACCOMMODATE THE USE OF SUCH FORMS. SEE SUBSECTION 702.11(d) OF THE STANDARD SPECIFICATIONS FOR REQUIREMENTS.

SECTION 702.11 (d)-3 (b) OF THE STANDARD SPECIFICATIONS IS AMENDED TO REQUIRE THAT DEFLECTIONS CALCULATED USING THE WEIGHT OF THE FORMS, THE PLASTIC CONCRETE AND REINFORCEMENT SHALL MEET THE FOLLOWING CRITERIA AND IN NO CASE SHALL THIS LOADING BE LESS THAN 120 P.S.F. TOTAL.

DEFLECTIONS FOR FORM SPANS LESS THAN OR EQUAL TO 10 FEET SHALL NOT EXCEED 1/180 OF THE SPAN OR 1/2 INCH WHICHEVER IS LESS. DEFLECTIONS FOR FORM SPANS GREATER THAN 10 FEET SHALL NOT EXCEED 1/240 OF THE SPAN OR 3/4 INCH WHICHEVER IS LESS.

THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT AND THE FABRICATOR IF HE ELECTS TO USE THIS OPTION SO THAT SHOP PLANS CAN BE PROPERLY DETAILED.

CONCRETE

THE CLASS OF CONCRETE SHALL BE AS NOTED ON OTHER SHEETS OF THESE PLANS.

BUILD-UPS ON BENT CAPS SHALL BE CAST MONOLITHIC WITH CAP UNLESS INDICATED OTHERWISE IN THESE PLANS. THE TOP OF EACH BUILD-UP SHALL BE LEVEL.

PAYMENT FOR CONCRETE IN SLAB WILL BE BASED ON THEORETICAL PLAN QUANTITY. ANY NECESSARY ADJUSTMENT IN QUANTITY DUE TO VARIATION IN CAMBER SHALL BE AT THE CONTRACTOR'S EXPENSE.

SIMPLE SPANS 80 FEET OR LESS SHALL BE POURED WITHOUT A TRANSVERSE CONSTRUCTION JOINT. FOR SIMPLE SPANS OVER 80 FEET IN LENGTH, A TRANSVERSE STRIP OF THE SLAB CENTERED AT MID-SPAN AND COMPRISING APPROXIMATELY 2/3 OF THE SLAB SHALL BE POURED FIRST AND ALLOWED TO CURE FOR NOT LESS THAN 4 DAYS BEFORE THE REMAINING END SECTIONS ARE POURED. HOWEVER, WHEN FAVORABLE WEATHER CONDITIONS EXIST THE ENGINEER MAY PERMIT THE ENTIRE SLAB TO BE POURED PROVIDED A SUITABLE RETARDING AGENT IS USED IN SUCH AMOUNTS THAT NONE OF THE CONCRETE OF THE POUR SHALL REACH INITIAL SET PRIOR TO COMPLETION OF THE POUR.

ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

THE MINIMUM ACCEPTABLE CONCRETE COVER FOR REINFORCING STEEL MAY BE ONE HALF INCH LESS THAN THE PLAN DIMENSIONS WHEN REQUIRED BY REINFORCING BAR FABRICATION TOLERANCES.

THE TOP ONE FOURTH INCH OF ALL CONCRETE SLABS SHALL BE CONSIDERED AS A WEARING SURFACE AND SHALL NOT BE INCLUDED IN THE SLAB DEPTH USED FOR THE CALCULATION OF SECTION PROPERTIES.

REMOVAL OF FALSEWORK AND FORMS

SECTION 702.18 OF THE STANDARD SPECIFICATIONS IS AMENDED IN PART TO THE EXTENT THAT "UNDER URGENT CONDITIONS AND WITH THE WRITTEN APPROVAL OF THE ENGINEER, ADDITIONAL STRENGTH CONTROL CYLINDERS MAY BE MADE AND THE FALSEWORK STRUCK WHEN THESE CYLINDERS, CURED UNDER THE SAME CONDITIONS AS THE CONCRETE IN THE STRUCTURE, DEVELOP A UNIT STRENGTH OF 3,200 PSI. HOWEVER, SUCH CONCRETE SHALL NOT BE SUBJECTED TO A SUPERIMPOSED LOAD UNTIL THE COMPRESSIVE STRENGTH IS AT LEAST 4,000 PSI.

WORKING DRAWINGS

WHEN REQUIRED BY THE PLANS, SPECIFICATIONS OR SPECIAL PROVISIONS, THE CONTRACTOR SHALL SUBMIT SHOP PLANS, ERECTION PLANS, FALSEWORK PLANS, COFFERDAM PLANS OR ANY OTHER SUPPLEMENTARY PLANS TO THE ENGINEER FOR REVIEW. THESE PLANS, ALONG WITH ANY ASSOCIATED DESIGN CALCULATIONS, SHALL BEAR THE SEAL AND SIGNATURE OF A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH THE FOLLOWING EXCEPTIONS:

A.) SHOP PLANS FOR ARMOR PLATES LOCATED AT BRIDGE ENDS OR APPROACH SLAB ENDS

B.) SHOP PLANS FOR PRESTRESSED CONCRETE PILING THAT ARE FABRICATED IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS.

ALL COSTS FOR THE PREPARATION AND FURNISHING OF THE WORKING DRAWINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS PAY ITEMS OF WORK.

PRESTRESSED BEAMS

MEMBRANE CURING COMPOUND SHALL NOT BE USED ON TOPS OR ENDS OF BEAMS.

BEAM LENGTHS GIVEN ARE BASED ON HORIZONTAL SPAN ONLY. LENGTHS SHALL BE INCREASED TO CORRECT FOR CONCRETE SHRINKAGE, CONCRETE SHORTENING WHEN THE STRANDS ARE CUT, AND FOR BEAMS BEING ON A GRADE.

SECTION 704.15 AND 704.16 OF THE STANDARD SPECIFICATIONS ARE AMENDED IN PART TO REQUIRE THAT PRESTRESSED CONCRETE BEAMS BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT.

SPECIFICATIONS:

AASHTO 1996 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AND INTERIMS.

ANSI/AASHTO/AWS C1.5 BRIDGE WELDING CODE (LATEST EDITION) WITH ADDITIONS AND REVISIONS AS STATED IN THE SPECIAL PROVISIONS.

LIVE LOAD:

AASHTO HS25-44 LOADING OR AN ALTERNATE MILITARY LOADING OF 2 AXLES 4 FEET APART WITH EACH AXLE WEIGHING 24,000 POUNDS, WHICHEVER PRODUCES THE GREATEST STRESS.

DESIGN DATA:

STRENGTH DESIGN METHOD (LOAD FACTOR DESIGN)

CONCRETE: CLASS "D" . f'_c = 4,000 P.S.I.

SPECIAL NOTE:

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 ON THIS SHEET AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE STANDARD SPECIFICATIONS SEC. 105.04.

VALUE ENGINEERING PROPOSALS:

THE CONTRACTOR MAY INITIATE, DEVELOP, AND PRESENT TO THE DEPARTMENT OF TRANSPORTATION FOR CONSIDERATION, ANY COST REDUCTION PROPOSALS CONCEIVED BY THEM INVOLVING CHANGES IN THE DRAWINGS, DESIGNS, SPECIFICATIONS, OR OTHER REQUIREMENTS OF THE CONTRACT. ALL VALUE ENGINEERING PROPOSALS SHALL COMPLY WITH THE REQUIREMENTS OF THE SPECIAL PROVISIONS.

EXCAVATION FOR END BENT

ALL COST OF EXCAVATION NECESSARY TO CONSTRUCT END BENTS AND TO REMOVE MATERIAL UNDER SUPERSTRUCTURE TO AN ELEVATION 1'-0" BELOW TOPS OF END BENT CAPS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "D" CONCRETE.

IF A CONCRETE FOOTING IS USED FOR THE END BENT, THE EXCAVATION BELOW THAT INCLUDED FOR THE CAP AND BERM IN THE ABOVE PARAGRAPH WILL BE PAID FOR AT THE UNIT PRICE BID FOR EXCAVATION. EXCAVATION ABOVE THIS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "D" CONCRETE.

COMPLETION DATES

THE CONTRACTOR SHALL PLACE YEAR OF COMPLETION ON INSIDE FACE OF RIGHT SIDE BARRIER PARAPET/RAIL AT BEGINNING OF BRIDGE AND ON LEFT SIDE BARRIER PARAPET/RAIL AT END OF BRIDGE. NUMBERS ARE TO BE RECESSED IN THE CONCRETE USING NUMBERS THAT ARE FABRICATED FROM REUSABLE/DURABLE MATERIAL AND APPROVED BY THE ENGINEER. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUPPLYING THE NUMBERS WITH THE DIMENSIONS SHOWN ON STANDARD DRAWING NUMBERS.STD FOUND ON SCDOT INTERNET FTP SITE AT FTP.DOT.STATE.SC.US LOGON AS ANONYMOUS. LOCATED IN DIR=PUB/BR CONSULTANT/ESTANDARDS OR A COPY CAN BE OBTAINED FROM THE RESIDENT ENGINEER.

FIELD WELDING

ANY AUTHORIZED STRUCTURAL FIELD WELDING THAT IS REQUIRED ON THIS PROJECT MAY BE SUBJECT TO INSPECTION AND TESTING, SEE SUPPLEMENTAL SPECIFICATIONS. FINAL DETERMINATION OF THE EXTENT OF INSPECTION AND TESTING WILL BE THE RESPONSIBILITY OF THE CONSTRUCTION OFFICE AND/OR THE RESEARCH AND MATERIALS ENGINEER. THE CONSTRUCTION OFFICE AND/OR THE RESEARCH AND MATERIALS ENGINEER MUST BE NOTIFIED WHEN ANY FIELD WELDING IS PERFORMED.

REV.				SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
REV.				BRIDGE DESIGN COLUMBIA, S.C.
REV.				
REVIEWED				STANDARD NOTES
QUAN.				
DR.			06-99	
DES.				
	BY	CHK.	DATE	FILE NO. / ROUTE / COUNTY / DRAWING NO.

AUTO DRAWN 06-99