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DESIGN ENGINEER OF RECORD : LEM DATE : _____

ASSUMED LIVE LOAD-----HL-93 OR ALTERNATE LOADIN

DESIGN FILL------3.84' MAX. AND 2.95' MIN.

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SI

THE EXISTING STRUCTURE CONSISTING OF ONE SPAN WITH 5 LINES OF 5" \times 11/2" TIMBER JOISTS WITH A CLEAR ROADW, CONCRETE ABUTMENTS AND LOCATED AT THE PROPOSED STRUC THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LI THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE [THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR S PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANC

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DE INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING & ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJEC

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH T

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL 2. THE REMAINING PORTIONS OF THE WALLS AND WINGS F

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERL

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL RE EMBEDDED IN BARREL ARE SHOWN ON THE WING SHEET.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICA STEEL IN THE INTERIOR FACE OF THE EXTERIOR WALL AND OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOI LENGTH SHALL BE 2'-2"FOR #5 BARS AND 1'-9"FOR #4 BARS. OF STEEL DUE TO SPLICES SHALL BE PAID FOR BY THE CON

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENG APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST R BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHO THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST RET

STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERM EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PA

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROS

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO

FOR BOX CULVERT EXCAVATION, SEE SECTION 414 OF THE ST

THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED

BASED ON THE SUBSURFACE CONDITIONS AT THE SITE, ROCK TO HIGHWAY STRUCTURES, SEE STANDARD SPECIFICATIONS A

BED MATERIAL PLACED BETWEEN SILLS IN THE CULVERT SHA THE MATERIAL SHALL BE NATIVE MATERIAL EXCAVATED FROM SUBJECT TO APPROVAL BY THE ENGINEER. IF ENOUGH NATIVE CLASS B RIP RAP MAY BE USED TO SUPPLEMENT THE NATIV IT SHALL BE USED IN THE BOTTOM OF THE CULVERT BARREL SURFACE OF THE NATIVE BED MATERIAL SHALL BE PLACED A OF PLACEMENT OF THE NATIVE BED MATERIAL SHALL BE INC

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVI

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND R



		۸
G.	<u>HIDRAULIC DAI</u>	<u>A</u>
	DESIGN DISCHARGE:FREQUENCY OF DESIGN FLOOD:	650 CFS 25 YRS.
HEET.	DESIGN HIGH WATER ELEVATION: DRAINAGE AREA:	241.1 1.31 SQ.MI.
16'-4" LIMBER DECK ON AY WIDTH OF 19'-1" ON	BASE DISCHARGE (Q100):BASE HIGH WATER ELEVATION:	900 CFS 242.0
EGAL LOAD LIMIT, SHOULD	Overtopping DA	ТΔ
MAY BE REDUCED AS FOUR		
N A MANNER THAT PREVEN HALL SUBMIT DEMOLITIO E WITH ARTICLE 402-2 O	TS FREQUENCY OF OVERTOPPING: N OVERTOPPING FLOOD ELEVATION: F	. 800 CFS . 50 YRS. . 241.7
N THE PLANS IS FROM TH IS SHOWN FOR THE HAVE NO CLAIM WHATSOEN LAYS OR ADDITIONAL CO BRIDGE SUBSTRUCTURE SH CT SITE.	E /ER ST OWN	
HE SPECIFICATIONS.	TOTAL STRUCTURE QUANT	ITIES
ORDER: VERTICAL WALLS.	REMOVAL OF EXISTING STRUCTURE	LUMP SUM
ULL HEIGHT	ASBESTOS ASSESSMENT	LUMP SUM
	CULVERT EXCAVATION @ STA.13+03.00 -L-	LUMP SUM
Y TAKE CARE	FOUNDATION CONDITIONING MATERIAL	
INFORCING STEEL	TOTAL:	103 TONS
	CLASS A CUNCRETE	104 1 C Y
AL REINFORCING BOTH FACES	WINGS, ETC	<u>18.1</u> C.Y.
NT.THE SPLICE EXTRA WEIGHT	TOTAL	<u>122.2</u> C.Y.
TNEER FOR	REINFORCING STEEL	17 971 I BS
EINFORCED CONCRETE	WINGS, ETC.	680 LBS.
BARRELS AS USED	TOTAL	<u>18,651</u> LBS.
ITTED CONSTRUCTION JO ID FOR BY THE CONTRAC ION CONTROL PLANS. D THE FILL FACE OF THE	ENT AT THE CONTRACTOR'S OPTION. TOR. WING COVERING THE ENTIRE	
ANDARD SPECIFICATIONS ON THE STANDARD 1.0 FO	• OT BLANKET OF FOUNDATION	
BLASTING MAY BE NECES RTICLE 410-9.	SARY.FOR BLASTING ADJACENT	
ALL PROVIDE A CONTINUO M THE STREAM BED OR FL E MATERIAL IS NOT AVAI E MATERIAL.IF RIP RAP LS AND TOPPED WITH A M ND LEVELED TO A FLAT S CLUDED IN THE LUMP SUM SIONS.	US LOW FLOW CHANNEL BETWEEN THE LOWER S OODPLAIN DURING CULVERT EXCAVATION AND LABLE TO BACKFILL THE HIGH FLOW BARRELS IS USED TO SUPPLEMENT THE NATIVE MATER INIMUM 6"LAYER OF NATIVE MATERIAL. THE SURFACE TO ALLOW FOR ANIMAL PASSAGE. THE BID FOR CULVERT EXCAVATION.	SILLS. IS IAL, TOP COST
	PROJECT NO. 17BP.10.	.R.128
	ANSON	COUNTY
ENOVATION	STATION: 13+03.00	<u>-L-</u>
-Docusindertha CARO	REPLACES BRI STATE OF NORTH CAROLINA	DGE NO.234
LAND OF LOS SWIG 1		RTATION
	DOUBLE 12'-O" X 5	'-0"
A E. MELTIN	AT CABBAGE BOX CUL	VEKI NCH
7/31/2018	ON SR 1637	
STV ENGINEERS, IN	NC. BEIWEEN SR 161 AND US-HWY 52	.4
100 900 West Trade St., Suit Charlotte, NC 28202 NC License Number F-0	90°-00'-00" SKE	W
MENT NOT CONSIDERED	REVISIONS NO. BY: DATE: NO. BY: DATE	SHEET NO. C-1
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	LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS															
										STRENGTH	I LIM	IT SI	TATE			
										MOMENT				SHEAR		1
LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING #	MINIMUM RATING FACTORS (RF)	TONS = W × RF	LIVE-LOAD FACTORS (Y _{LL})	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (f+)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (f†)	COMMENT NUMBER
		HL-93 (INVENTORY)	NZA	$\langle 1 \rangle$	1.06		1.75	1.06	1 & 2	ROOF SLAB	5.46′	1.18	1 & 2	ROOF SLAB	12.00′	
DESIGN		HL-93 (OPERATING)	N⁄A		1.38		1.35	1.38	1 & 2	ROOF SLAB	5.46′	1.53	1 & 2	ROOF SLAB	12.00′	
RATING		HS-20 (INVENTORY)	36.000	2	1.07	38.520	1.75	1.07	1 & 2	ROOF SLAB	5.46′	1.49	1 & 2	ROOF SLAB	12.00′	
		HS-20 (OPERATING)	36.000		1.38	49.680	1.35	1.38	1 & 2	ROOF SLAB	5.46′	1.94	1 & 2	ROOF SLAB	12.00′	
		SNSH	13.500		1.95	26.325	1.40	1.95	1 & 2	ROOF SLAB	5.46′	2.79	1 & 2	ROOF SLAB	12.00′	
		SNGARBS2	20.000		1.82	36.400	1.40	1.82	1 & 2	ROOF SLAB	5.46′	2.57	1 & 2	ROOF SLAB	12.00′	
	ICLE	SNAGRIS2	22.000		1.95	42.900	1.40	1.95	1 & 2	ROOF SLAB	5.46′	2.71	1 & 2	ROOF SLAB	12.00′	
	VEH.	SNCOTTS3	27.250	3	1.33	36.243	1.40	1.33	1 & 2	ROOF SLAB	5.46′	1.50	1 & 2	ROOF SLAB	12.00′	
	ILE (S	SNAGGRS4	34.925		1.55	54.134	1.40	1.55	1 & 2	ROOF SLAB	5.46′	1.71	1 & 2	ROOF SLAB	12.00′	
	ING	SNS5A	35.550		1.47	52.259	1.40	1.47	1 & 2	EXTERIOR WALL	0.88′	1.67	1 & 2	ROOF SLAB	12.00′	
		SNS6A	39.950		1.49	59.526	1.40	1.49	1 & 2	ROOF SLAB	5.46′	1.61	1 & 2	ROOF SLAB	12.00′	
LEGAL		SNS7B	42.000		1.54	64.680	1.40	1.54	1 & 2	ROOF SLAB	5.46′	1.61	1 & 2	ROOF SLAB	12.00′	
RATING	ER	TNAGRIT3	33.000		1.95	64.350	1.40	1.95	1 & 2	ROOF SLAB	5.46′	2.15	1 & 2	FLOOR SLAB	12.09′	
	RAIL	TNT4A	33.075		1.58	52.259	1.40	1.58	1 & 2	EXTERIOR WALL	0.88′	1.72	1 & 2	ROOF SLAB	12.00′	
	1-I/	TNT6A	41.600		1.58	65.728	1.40	1.58	1 & 2	EXTERIOR WALL	0.88′	1.62	1 & 2	ROOF SLAB	12.00′	
	SEA ST)	TNT7A	42.000		1.57	65.940	1.40	1.57	1 & 2	EXTERIOR WALL	0.88′	1.65	1 & 2	ROOF SLAB	12.00′	
	TOR (TT	TNT7B	42.000		1.51	63.420	1.40	1.51	1 & 2	ROOF SLAB	5.46′	1.67	1 & 2	ROOF SLAB	12.00′	
	TRA(TNAGRIT4	43.000		1.58	67.940	1.40	1.58	1 & 2	EXTERIOR WALL	0.88′	1.67	1 & 2	ROOF SLAB	12.00′	
	JCK	TNAGT5A	45.000		1.67	75.150	1.40	1.72	1 & 2	ROOF SLAB	5.46′	1.67	1 & 2	ROOF SLAB	12.00′	
	TRI	TNAGT5B	45.000		1.56	70.200	1.40	1.56	1 & 2	ROOF SLAB	12.75′	1.64	1 & 2	ROOF SLAB	12.00′	



	DRAWN BY :	CL		DATE : _	6-18
-	CHECKED BY :	JWJ		DATE : _	7-18
Ď	DESIGN ENGINEER	OF RECORD :	LEM	DATE : _	7-18

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(LOOKING DOWNSTREAM)



BOX 2

LOAD FACTORS:

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	
WA	1.00	

DESIGN LOAD RATING FACTORS

NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

COMMENTS:

1.	
2.	
3.	

4.

(#) CONTROLLING LOAD RATING 1 DESIGN LOAD RATING (HL-93) 2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

* * SEE CHART FOR VEHICLE TYPE

	PROJEC	CT NO. ANSC DN:	<u>178</u> 0N 13+03	P.10.R.1 CO .00 -L·	.28 UNTY -
$\frac{CARO}{V}$	depa LR REI (NOM	RTMENT FR S NFOR BOX I-INTE	E OF NORTH CAR OF TRAI RALEIGH UMMA CED (CULV RSTATE	NSPORTA NSPORTA RY F CONCF ERTS E TRAF	TION OR RETE FIC)
J NC License Number F-0991		REVIS	SIONS		SHEET NO.
DOCUMENT NOT CONSIDERED	NO. BY:	DATE:	NO. BY:	DATE:	C-2
FINAL UNLESS ALL SIGNATURES COMPLETED	1		3 A		TOTAL SHEETS 5

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END ELEVATION







F REINFORCING DR BARREL					
ΙΖE	TYPE	LENGTH	WEIGHT		
ŧ4	(1)	6′-6″	921		
‡4	1	6′-6″	921		
ŧ5	STR	25'-10"	2,856		
ŧ4	STR	25'-10″	1,829		
ŧ5	STR	25'-10″	2,856		
ŧ6	STR	25'-10"	4,113		
ŧ4	STR	6'-4"	897		
‡4	STR	6'-4"	542		
‡4	STR	25′-0″	2,772		
ŧ5	STR	25'-10″	216		
ŧ6	STR	2′-6″	30		
ŧ6	STR	1'-6"	18		
REINFORCING STEEL =					

17,971 LBS.

PROJE	CT NO.	17Bf	P.10.R.1	.28		
	ANSON					
STATI	ON:	13+03.	.00 -L·			
DEPA	state ARTMENT	OF NORTH CARG	DLINA NSPORTA	TION		
DOL CONC 9	DOUBLE 12'-0"X 5'-0" CONCRETE BOX CULVERT 90°-00'-00"SKEW					
	REVIS	IONS		SHEET NO.		
NO. BY:	DATE:	NO. BY:	DATE:	C-3		
12		<u>अ</u>		TOTAL SHEETS 5		

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DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINSIHED.



PROJE 	CT NO. 17E ANSON ON: 13+0	BP.10.R.128 COUNTY 3.00 -L-
DEP	STATE OF NORTH CA ARTMENT OF TRA RALEIGH	AROLINA ANSPORTATION
INC. Suite 715 202 F-0991	SILL DET	FAILS
	REVISIONS	SHEET NO.
NO. BY:	DATE: NO. BY:	DATE: C-4
1	3	SHEETS



STV ENGINEERS, 900 West Trade St., Su Charlotte, NC 2820 NC License Number F-

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FINAL UNL	ESS ALL
SNATURES	COMPLETED



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TYPICAL WING SECTION



SEAL 046314

7/31/2018





	PROJEC	T NO.	<u> 178</u>	P.10.R.1	.28		
	ANSON				UNTY		
	STATIO	.00 -L·	-				
	DEPA	STATI RTMENT	E OF NORTH CAR OF TRAN RALEIGH	OLINA NSPORTA	TION		
	STANDARD WINGS For						
EEDS INC	CONC	RETE	BOX	CUL SLOPE=	VERT		
EERS, INC. e St., Suite 715 NC 28202	90°SKEW						
	NO. BY:	REVIS		DATE:	SHEET NO. C-5		
ED	1		3 A		TOTAL SHEETS 5		
	l Col				5		

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS.PER SQ.IN.
- AASHTO M270 GRADE 50W	27,000 LBS.PER SQ.IN.
- AASHTO M270 GRADE 50	27,000 LBS.PER SQ.IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS.PER SQ.IN.
CONCRETE IN COMPRESSION	1,200 LBS.PER SQ.IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS.PER SQ.IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS.PER SQ.IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS.PER CU.FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS. AND APPROACH SLABS: AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ "WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 11/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ 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.

STANDARD NOTES

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION. VERTICAL CURVE ORDINATE. AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " Ø SHEAR STUDS FOR THE $\frac{3}{4}$ " Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ "ø studs for 4 - $\frac{3}{4}$ "ø studs, and stud spacing changes SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 1/8" Ø STUDS FOR 4 - $\frac{3}{4}$ " Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-O".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY. AT HIS OPTION. SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{5}{6}$ 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 VIGINCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAÍNTING, GALVANIZING, OR METALLIZING.

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB. UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

HANDRAILS AND POSTS:

