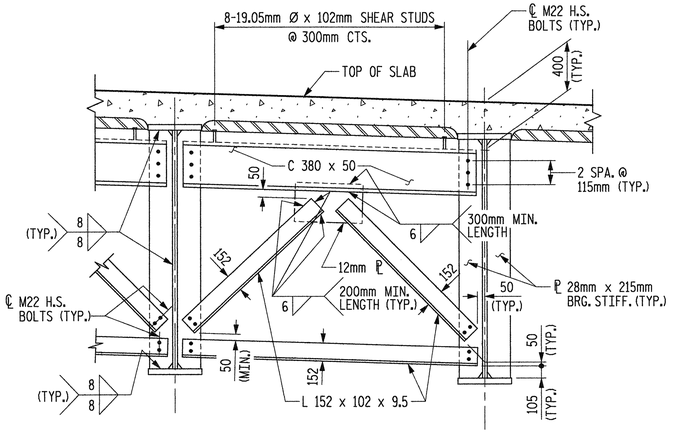
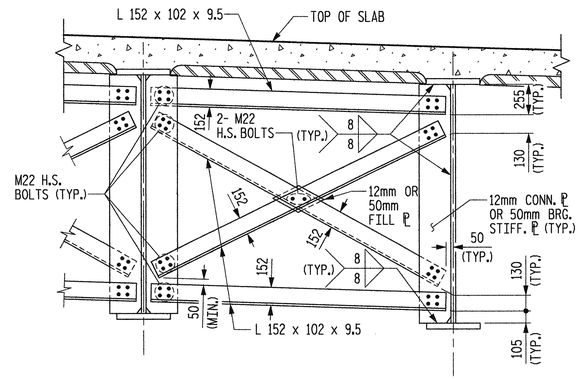
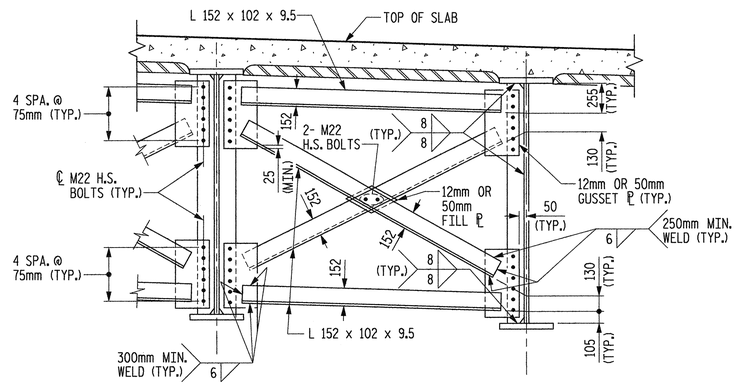


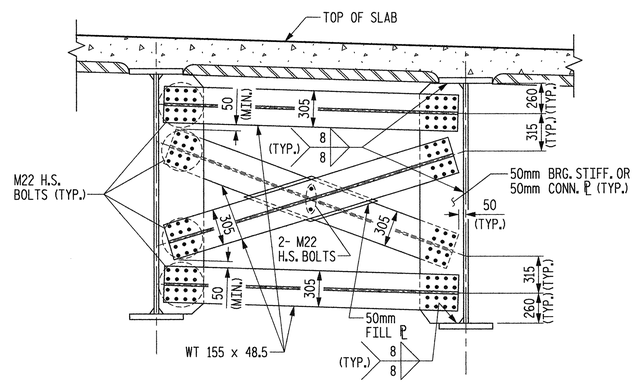
END BENT CROSS FRAME CF-1



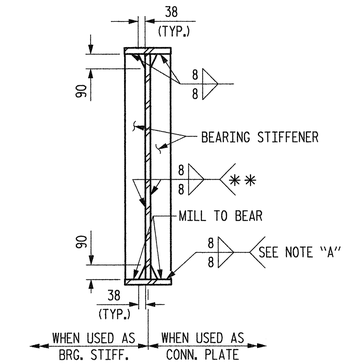
INTERMEDIATE CROSS FRAME CF-2



OPTIONAL INTERMEDIATE CROSS FRAME CF-2



INTERMEDIATE CROSS FRAME CF-3

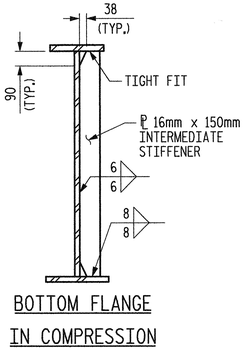


BEARING STIFFENER

NOTE "A":
ONLY WELD BEARING STIFFENER TO BOTTOM FLANGE IF CROSSFRAME IS ATTACHED TO BEARING STIFFENER.

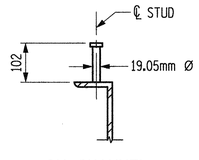
** PER BRIDGE WELDING CODE FIG. 2.3(c) BEVEL IF NECESSARY.

NOTE: BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE TO AVOID INTERFERENCE WITH THE ANCHOR BOLT.



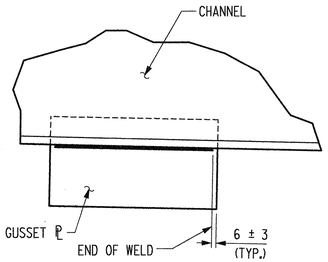
BOTTOM FLANGE IN COMPRESSION

INTERMEDIATE STIFFENER

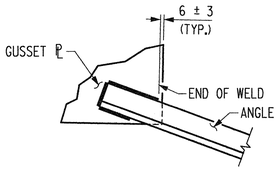


ON CHANNEL

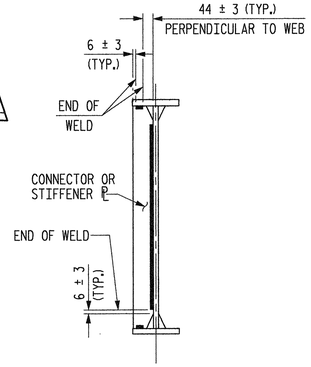
SHEAR STUD DETAILS



TYPICAL GUSSET PLATE CONNECTION



TYPICAL "ANGLE" TO GUSSET PLATE CONNECTION



TYPICAL STIFFNER OR CONNECTOR PLATE CONNECTIONS

WELD TERMINATION DETAILS

STRUCTURAL STEEL NOTES

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 345W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 22.23mm DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 18 METERS AND WEB PIECE LENGTHS TO 14 METERS. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 4.5 METERS OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 4.5 METERS OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 600mm MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 150mm MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 25mm IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-10 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

INTERMEDIATE CROSSFRAME CONNECTOR PLATES SHALL BE RADIAL TO THE GIRDER FLANGES AND WEB.

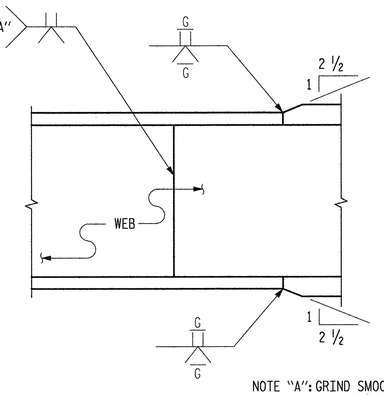
THE CONTRACTOR SHALL MAINTAIN STABILITY OF THE CURVED GIRDERS UNTIL ALL FIELD SPLICES AND CROSSFRAME CONNECTIONS HAVE BEEN COMPLETED. STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

CURVATURE OF STEEL GIRDERS MAY BE ACCOMPLISHED BY CUTTING PLATES TO THE REQUIRED CURVATURE OR BY HEAT TREATMENT.

HEAT CURVING OF STEEL GIRDERS IS ALLOWED, SEE SPECIAL PROVISION.

ALL INTERMEDIATE STIFFENERS SHALL BE PLACED ON ONE SIDE ONLY. STIFFENERS ON EXTERIOR GIRDERS SHALL BE PLACED ON THE INSIDE FACE.

FOR CHARPY V-NOTCH TEST, SEE SPECIAL PROVISIONS.



NOTE "A": GRIND SMOOTH AND FLUSH ON OUTER FACE OF EXTERIOR GIRDERS.

ELEVATION

TYPICAL FLANGE & WEB BUTT JOINT

PROJECT NO. R-2552AA

WAKE-JOHNSTON COUNTY

STATION: 27+51.601 -I1Y1-

SHEET 2 OF 3

METRIC

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL DETAILS

DRAWN BY B.E. LANNING DATE JAN. 2005
CHECKED BY J.C. KO / A.K. ORR DATE JAN. 2005

Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606
For Division of Highways

NORTH CAROLINA PROFESSIONAL SEAL 5601 ENGINEER CHIH KUO KO 2/23/05

DWG. NO. 16

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			429

PLOT: 01/28/2005 07:16:52 AM Ko & Associates, P.C.
FILE NAME: r:\r-2552aa_sd_se2_ar2.dgn