METRIC

# GENERAL SHOP NOTES

SPECIFICATIONS:
ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AND ITS LATEST REVISIONS.

MATERIAL:
UNLESS NOTED OTHERWISE, ALL STEEL TO BE AASHTO M270M GRADE 345W.
(T) INDICATES ZONE 2 CHARPY V-NOTCH TESTING REQUIRED.

IN UNPAINTED AREAS SHOP BOLTS TO BE HIGH STRENGTH AASHTO M164 TYPE 3 (FRICTION) (RCT) WITH HEAVY HEX HEAD AND AASHTO M291 GRADE DH3 HEAVY HEX NUT, WITH ONE AASHTO M293 WEATHERING WASHER PER BOLT.
IN PAINTED AREAS SHOP BOLTS TO BE HIGH STRENGTH AASHTO M164 TYPE 1 (FRICTION) (RCT) WITH HEAVY HEX HEAD AND AASHTO M291 GRADE DH HEAVY HEX NUT, WITH ONE AASHTO M293 WASHER PER BOLT, GALV. TO AASHTO M298, CLASS 50.
(RCT) INDICATES ROTATIONAL CAPACITY TESTED BOLTS. DO NOT MIX NUTS, BOLTS AND WASHERS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS, BOLTS AND WASHERS HAVE THE SAME LOT NUMBER.

SHOP PROCEDURE:
ALL FLANGE AND WEB PLATE SPLICES TO BE MADE BEFORE FINAL FITTING AND WELDING INTO GIRDER.
CAMBER TOLERANCE: -0 mm TO +19 mm
ALL RE-ENTRANT CUTS TO HAVE 25 MIN. RADIUS.
℄ INDICATES SET LINE.

BEARING AREA, AS NOTED ON GIRDER DETAILS, INDICATES AREA THAT MUST BE FLAT AND TRUE TO RECEIVE SOLE PLATE.
USE LOW STRESS DIE STAMPS PLACED IN AN AREA NOT EXPOSED ON THE FINISHED STRUCTURE.

DOR INDICATES DIRECTION OF ROLLING.
(CG) INDICATES CORNER GRINDING.
CORNER GRINDING IS REQUIRED FOR ALL MAIN MEMBER FLANGE PLATES, FIELD SPLICE PLATES, CROSSFRAMES AND CONNECTION PLATES AS WELL AS SECONDARY MEMBERS IN PAINTED AREAS.

INSPECTION:
SHOP INSPECTION BY TO BE DETERMINED

WELDING:
ALL WELDING IS TO CONFORM TO AWS D1.5-02 & AASHTO GUIDE FOR HIGHWAY BRIDGE FABRICATION WITH HPS 70W (485W) STEEL.
WELDING METHODS, PROCEDURES, AND MATERIALS SHALL COMPLY WITH THE SPECIFIC PROCEDURE DESIGNATED IN THE WELD SYMBOL TAIL.
FOR WELDING STIFFENERS AND CONNECTION PLATES TO GIRDERS, SEE TYPICAL WELDING DETAIL.
IDENTIFICATION OF HOLE PLACEMENT:
FOR WELDING CROSSFRAMES, SEE SECONDARY MEMBER WELDING DETAIL.
UNLESS NOTED OTHERWISE, BOLT HOLES IN MATERIAL 16mm OR LESS IN THICKNESS MAY BE CNC (COMPUTER NUMERICALLY CONTROLLED) PUNCHED OR CNC DRILLED FULL SIZE UNASSEMBLED. ALL MATERIAL THICKER THAN 16mm IS TO BE DRILLED.

NON-DESTRUCTIVE TESTING:
FLANGE AND WEB PLATE SPLICES TO BE RADIOGRAPHICALLY TESTED, AS CALLED FOR ON DRAWINGS PREFIXED "FS" AND "WC", BY H.S.S.I.

MAGNETIC PARTICLE INSPECTION IS REQUIRED ON AT LEAST 300 mm OF EVERY 3000 mm LENGTH OF FILLET WELDS AND 300 mm OF SUCH WELDS LESS THAN 3000 mm IN LENGTH ON GIRDER WEB TO FLANGE, CONNECTION PLATES AND BEARING STIFFENERS TO WEB AND FLANGE AND CROSSFRAME WELDS. TESTING PER THE YOKE METHOD, USING DC. EXCEPT WELDS TO HPS 485W STEEL, SHALL BE TESTED BY THE YOKE TECHNIQUE MODIFIED TO TEST USING AC.

DT DRILLED TO TEMPLATE
SINGLE PLY CONNECTION DRILLED FULL SIZE USING TEMPLATE WITH HARDENED BUSHINGS WHILE UNASSEMBLED.

NCD NUMERICALLY CONTROLLED DRILLING
EACH PART IS DRILLED FULL SIZE USING A MACHINING CENTER, PORTABLE CNC DRILL OR DRILL LINE WHILE UNASSEMBLED.

CLEANING:
ALL STEEL TO BE BLAST CLEANED TO SSPC-SP10 (NEAR WHITE), (ASTM D2200 GRADE SA 2-1/2), AFTER FABRICATION.
BLAST CLEANING ANCHOR PROFILE TO BE FROM 38 TO 64 MICROMETERS DEEP IN PAINTED AREAS.

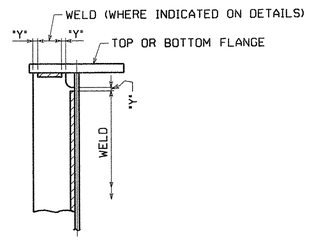
PAINTING:
ALL STEEL TO BE PAINTED (UNLESS NOTED) WITHIN 5600mm FROM THE END OF THE GIRDERS AT ABUTMENTS WITH A 3 COAT SYSTEM AS FOLLOWS:
PRIME COAT: CARBOZINC 859 (ORGANIC ZINC) WITH 75 TO 250 MICROMETERS D.F.T.
INTER. COAT: CARBOGUARD 888 (EPOXY) WITH 75 TO 200 MICROMETERS D.F.T.
FINISH COAT: CARBOTHANE 133 LH (POLYURETHANE) WITH 75 TO 150 MICROMETERS D.F.T.
FINISH COAT COLOR TO BE DARK BROWN, FEDERAL STANDARD 595, COLOR #20059.
PRIME COAT ONLY WITHIN 75 mm OF OPEN HOLES (150 MICROMETERS MAX. D.F.T.), UNLESS NOTED "P".
PRIME COAT TO BE APPLIED WITHIN 8 HOURS AFTER BLAST CLEANING.
STRIPE COAT ALL EDGES OF PLATES, ANGLES OR OTHER SHAPES WITH SHARP EDGES, BOLTS, AND NUTS PRIOR TO THE APPLICATION OF THE FULL PRIME COAT.
TOP FLANGE OF GIRDERS, AS SHOWN IN "TYPICAL PAINT SECTION", SHALL RECEIVE A LIGHT RUST PREVENTIVE COAT OF PRIMER IN PAINTED AREAS, NOT TO EXCEED 38 MICROMETERS D.F.T.
INTERMEDIATE AND FINISH COATS SHALL BE STAGGERED A MINIMUM OF 13 mm FROM THE FAYING SURFACES AND EACH OTHER.
PAINT MANUFACTURER: THE CARBOLINE CO. ST. LOUIS, MO.

MINIMUM COLD-BENDING RADII

| THICKNESS mm (t) | UP TO 19.1 | OVER 19.1 TO 25.4, INCL. | OVER 25.4 TO 50.8, INCL. | OVER 50.8 |
|---|---|---|---|---|
| ASTM A709M/ AASHTO M270M GRADE | | | | |
| 250 | 1.5t | 1.5t | 1.5t | 2.0t |
| 345 | 1.5t | 1.5t | 2.0t | 2.5t |
| 345W | 1.5t | 1.5t | 2.0t | 2.5t |
| HPS485W | 1.5t | 1.5t | 2.5t | 3.0t |
| 690 | 1.75t | 2.25t | 4.5t | 5.5t |
| 690W | 1.75t | 2.25t | 4.5t | 5.5t |

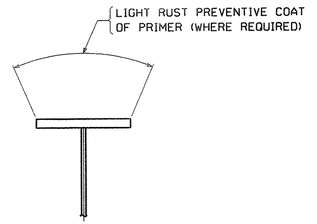
DRAWING REFERENCE:

| | |
|---|---|
| FLANGE SPLICES | -PREFIXED "FS" |
| WEB CAMBERS | -PREFIXED "WC" |
| GIRDER JOB STANDARDS | -PREFIXED "X" |
| CROSSFRAME JOB STDS. | -PREFIXED "M" |
| SHOP ASSEMBLY | -PREFIXED "SA" |
| HORIZONTAL CURVE | -PREFIXED "HC" |
| WELDING PROCEDURE | -PREFIXED "WP" |



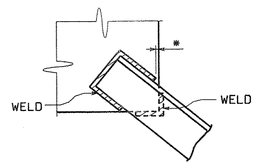

"Y" = 15±5

STIFFENER WELDING DETAIL
(WELDS MUST STOP 25 mm MIN. FROM EDGE OF FLANGE)




TYP. PAINT SECTION

ALL CROSSFRAME WELDS ARE TO BE TERMINATED FROM EDGE OF GUSSET PLATES, FILL PLATES OR ANGLES AS INDICATED.




* = 6 MIN., 13 MAX. (TYP.)

SECONDARY MEMBER WELDING DETAIL

TVGA CONSULTANTS
☒ NO EXCEPTIONS TAKEN ☐ REJECTED
☐ FURNISH AS CORRECTED
☐ REVISE AND RESUBMIT
ENGINEER has reviewed Shop Drawings and Samples and other data which Contractor is required to submit, only for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. Such reviews do not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions and programs incident thereto. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades.
BY:
DATE: 1/8/08

| NO. | REVISION | BY | CHK'D | DATE |
|---|---|---|---|---|
| | | | | |
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HOLES
BOLTS
COATING
CODE(S)
SCALE N.T.S.

HIGH STEEL STRUCTURES INC.
An ISO 9001:2000 Certified Company
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GENERAL SHOP NOTES
VT ROUTE 279 OVER FURNACE BROOK
VT ROUTE 279 STA. 8+542.000 TO STA. 8+685.000
TOWN OF BENNINGTON VERMONT, BRIDGE B12
STATE OF VERMONT
AGENCY OF TRANSPORTATION

| | | | |
|---|---|---|---|
| | AC NH F019-1(53) | FED. AID PROJ. NO. | |
| GENERAL CONTRACTOR | J.A. McDONALD, INC. | HSSI PROJ. MGR | DEB KUPRES |
| SHPMT 3 | DRAWING MANAGER: BRITIGAN (IH) | MADE BY: Kma | CHK'D BY: SJA | DATE: 9/13/07 |
| STATE VT | HSSI PROJECT NUMBER: S-1070147 | HSSI STRUCT. ID: A | DRAWING NUMBER: GN1 OF GN1 |

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BY: MKreidel
SHIPMENT 01
PM&ENG: 5002817 PROJ: 5002818 SHIP&ERECT.: 5002819

1070147A X1 12/3/07 12/3/07Approval TO:J.A. McDonald, Inc.