

DESIGN LOADS: <u>JOISTS</u> GIRDERS DEAD LOAD: SEE 6/S1.1 SEE 6/S1.1 NOTE 4A NOTE 4A* SEE 6/S1.1 SEE 6/S1.1 NOTE 4B** NOTE 4B** * DOES NOT INCLUDE SELF WEIGHT ** LIVE LOAD MAY BE REDUCIBLE

4" SPRINKLER MAIN - 18 PLF

6" SPRINKLER MAIN - 32 PLF

GIRDER AND JOIST AXIAL LOADS: 2.1. SPECIFIED AXAIL LOADS ARE FROM SEISMIC OR WIND FORCE AND SHALL NOT BE COMBINED WITH ROOF LIVE LOAD. JOIST MANUFACTURE TO ADD THE FOLLOWING ADDITIONAL SPRINKLER MAIN

LOADS, WHERE APPLICABLE. JOIST MANUFACTURE SHALL APPLY PANEL POINT LOADS TO GIRDERS AND JOISTS. 3.1. THESE ARE MINIMUM SPRINKLER LOADS, THE JOIST MANUFACTURE MUST DESIGN THE JOIST BASED ON THE FIRE SPRINKLER LAYOUT.

8" SPRINKLER MAIN - 50 PLF 3.2. SPRINKLER RISERS - 2,250# (WHERE SUPPORTED FROM ROOF STRUCTURE, SEE SPRINKLER PLAN FOR RISER LOCATIONS) 3.3. <u>SPRINKLER BRACE LOADS</u> — SEE SPRINKLER PLANS FOR LOADS AND DIRECTION. BRACE LOADS PERPENDICULAR TO JOIST SHALL NOT BE

COMBINED WITH ROOF LIVE LOAD OR SPECIFIED AXAIL LOADS. SEE ROOF PLAN FOR JOIST & GIRDER DESIGNATION & LOAD **GIRDER:** XG XN X.0

— TOTAL POINT LOAD AT LOAD POINTS. - NUMBER OF SPACES BETWEEN LOAD POINTS - GIRDER DESIGNATION. (SJI DESIGNATION) TL/LL

- JOIST TYPE (SJI DESIGNATION)

— JOIST DEPTH 4.1. JOIST LOADS DO NOT INCLUDE MECHANICAL UNIT LOADS. THE STEEL JOIST MANUFACTURE MUST INCLUDE THE MECHANICAL LOADS PER "SPECIAL DESIGN LOADS FOR GIRDER/JOIST" DETAIL.

— TOTAL DISTRIBUTED TRUSS LOAD/TOTAL DISTRIBUTED

4.2. LIVE LOAD MUST MEET BUILDING CODE REQUIREMENTS. ADDITIONAL DESIGN LOADS FOR JOISTS U.N.O:

5.a. FOR MECHANICAL UNITS WITH TOTAL WEIGHT LESS THAN 1,000 LBS. (COORDINATE FINAL WEIGHTS WITH MECHANICAL AND OWNER/CONTRACTOR FINAL UNIT SELECTION). JOISTS SHALL BE DESIGNED FOR AN ADDITIONAL 500 LBS. CONCENTRATED LOAD. JOIST MANUFACTURE SHALL LOCATE THESE LOADS FOR WORST DESIGN CONDITIONS (ADD LOAD). 5.b. FOR MECHANICAL UNITS WITH TOTAL WEIGHT LESS THAN 1,000 LBS.

(COORDINATE FINAL WEIGHTS WITH MECHANICAL AND OWNER/CONTRACTOR FINAL UNIT SELECTION) AT JOIST ABOVE OFFICE/RETAIL OR FUTURE OFFICE/RETAIL SPACE, JOISTS SHALL BE DESIGNED FOR AN ADDITIONAL 1000 LBS. CONCENTRATED ADD LOAD OR TWO 750 LBS. LOADS IN LIEU OF THE 500 LBS. ADD LOAD INDICATED ABOVE IN NOTE 5.a.

5.c. FOR MECHANICAL UNITS THAT HAVE A TOTAL WEIGHT GREATER THAN 1.000 LBS. (AS SHOWN IN THE MECHANICAL PLANS - IF APPLICABLE IMPACTED JOISTS SHALL BE DESIGNED FOR 1/3 THE TOTAL SPECIFIED MECHANICAL UNIT WEIGHT AT EACH OF THE UNIT'S SUPPORT POINTS OR THE ACTUAL SUPPORT POINT LOAD AS PROVIDED BY THE MECHANICAL ENGINEER (WHICHEVER IS GREATER) IN ADDITION TO THE ADD LOADS SPECIFIED IN NOTE 5.a ABOVE. THIS NOTE DOES NOT APPLY TO UNITS WITHOUT SPECIFIC WEIGHTS LISTED FOR EACH

5.d. LOADS BETWEEN PANEL POINTS IN EXCESS OF 100 LBS. TO THE TOP CHORD OR ANY LOADS TO THE BOTTOM CHORD MUST HAVE AN AUXILIARY WEB MEMBER

5.e. WHEN APPLICABLE WOOD NAILER DESIGN LOAD = 720 LB./FT. TRANSFER CAPACITY BETWEEN NAILER & TRUSS TOP CHORD @ ALL STRUT/CHORD/COLLECTOR LINES, TYP. (WOOD NAILER ATTACHMENT @ TRUSSES ATTACHING TO CONCRETE WALL MUST BE #14 WOOD SCREWS @ 12" O.C. (MIN.), WOOD NAILER ATTACHMENT MUST BE ATTACHED W/ #14 WOOD SCREWS @24" O.C. MIN. @ ALL OTHER JOIST)

ADDITIONAL DESIGN LOADS FOR GIRDERS U.N.O: 6.a. GIRDERS SHALL BE DESIGNED FOR AN ADDITIONAL 3500 LBS CONCENTRATED LOAD OR THE TOTAL MECHANICAL LOADS THAT WILL IMPACT THE GIRDER (SEE THE MECHANICAL PLANS FOR UNIT WEIGHTS AND LOCATIONS) WHICHEVER IS GREATER. GIRDER MANUFACTURE SHALL LOCATE THESE LOADS AT A PANEL POINT FOR WORST DESIGN CONDITION AND SHALL ASSUME THE MECHANICAL UNITS MAY BE PLACED ANYWHERE ALONG THE SUPPORTING ADJACENT JOIST LENGTH FOR THE WORST GIRDER DESIGN CONDITION.

WEB STEEL JOISTS SHALL BE DESIGNED FOR THE LOADS SHOWN IN THE DESIGN DATA TABLE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K SERIES, BY THE STEEL JOIST INSTITUTE DATED DECEMBER 2005

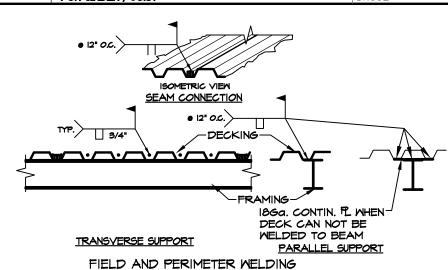
THE JOIST MANUFACTURER SHALL SUBMIT SHOP DRAWINGS OF THE JOISTS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL ALSO INCLUDE CALCULATIONS VERIFYING THE STRUCTURAL ADEQUACY OF THE JOISTS PER THE APPLICABLE BUILDING CODE AND SHALL BE STAMPED & SIGNED BY A LICENSED CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE PROJECTS

THE MANUFACTURE MUST PROVIDE THE NECESSARY TOP & BOTTOM CHORD BRIDGING REQUIRED BY THEIR DESIGN FOR THE LOADS GIVEN. D. CONCENTRATED LOADS GIVEN ARE TO BE APPLIED SIMULTANEOUSLY WITH TH UNIFORM DEAD LOADS AND UNIFORM LIVE LOADS. THE LOADS SHALL BE APPLIED TO PRODUCE MAXIMUM STRESS.

1. BEARING SEATS SHALL BE SLOPED WITH RESPECT TO THE TOP CHORD TO PROVIDE A LEVEL BEARING SURFACE.

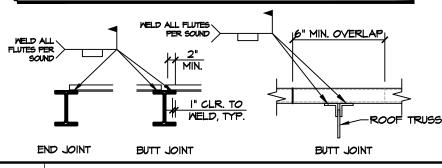
2. JOIST BEARING SEATS MUST BE DESIGNED TO TRANSFER THE PROJECT REQUIRED LATERAL LOADS WHERE APPLICABLE.

SPECIAL DESIGN LOADS FOR GIRDER / JOIST



ALL WELDS SHOWN ARE NET EFFECTIVE WELDS. WELD SIZE SHALL BE INCREASED AS REQUIRED BY DECK MANUFACTURER TO ACHIEVE NET WELD ALL DOWN FLUTES @ PERIMETERS PROVIDE POSITIVE CONTACT BETWEEN DECK AND SUPPORT BEFORE

MINIMUM LENGTH OF DECK SHEETS SHALL SPAN A MINIMUM OF THREE SPANS CONTINUOUS. ALL EDGES OF THE DECK MUST BE SUPPORTED B STEEL FRAMING (ie. JOIST, BEAM, GIRDER, ETC.) 5. SEE THE FRAMING PLAN FOR WELDING PATTERN CALLOUT & LOCATION



METAL DECK ATTACHMENT NO SCALE PRE-FRABRICATED MANUFACTURED ENGINEERED OPEN WEB STEEL JOISTS SHALL BE ENGINEERED, FABRICATED AND VERIFIED IN ACCORDANCE WITH THE CURRENT BUILDING CODE LISTED IN "DESIGN CRITERIA" NOTE #6 ON S1.1. CHAPTER 22. SECTION 2206. THE MANUFACTURER SHALL DESIGN JOIST AND GUIDES TO CARRY UNIFORM LOADS PLUS ADDITIONAL CONCENTRATED LOADS, AXIAL LOADS, AND BENDING LOADS NOTED ON THE FRAMING PLANS. ALIGN JOIST PANEL POINTS TO FACILITATE DUCT PASSAGE WHERE REQUIRED BY TH ARCHITECT OR MECHANICAL ENGINEER. THE ENGINEERED JOIST AND GIRDER DESIGN IS THE SOLE RESPONSIBILITY OF THE MANUFACTURER. THE CONTRACTOR SHALL ERECT THE JOIST AND GIRDERS IN CONFORMANCE WITH ALL REQUIREMENTS OF THE SJI, OSHA, AND THE MANUFACTURER'S

JOIST/GIRDERS SHALL BE PAINTED WITH GREY PRIMER U.N.O. BY THE PROJECT ARCHITECT.

STEEL JOIST & GIRDER MANUFACTURER SHALL SUBMIT PLACEMENT DRAWINGS FOR THE ENGINEER OF RECORD REVIEW AND APPROVAL. ANY COORDINATION/CLARIFICATION SHALL NOT RESULT IN ANY ADDED COST TO THE OWNER. THE MANUFACTURE SHALL ENCLOSE CERTIFICATION THAT THE JOIST DESIGN COMPLIES WITH CHAPTER 22 SECTION 2206 OF THE CURRENT BUILDING CODE LISTED IN "DESIGN CRITERIA" NOTE #6 ON S1.1

ALL JOIST BEAMING SEATS SHALL BE MIN. 1/4" THICK. WHERE STEEL JOIS' OR GIRDERS SLOPE EXCEEDS 1/4" PER FOOT, PROVIDE SLOPED BEARING SEAT. THE FOLLOWING JOIST & GIRDER DEPTHS AND SEAT BEARING LENGTHS SHALL BE UTILIZED UNLESS OTHERWISE NOTED ON PLANS - SMALLER BEARING LENGTHS SHALL BE CHECKED BY THE MANUFACTURER MUST SPECIFY MINIMUM SEAT DEPTHS.

JOIST TYPE SEAT DEPTH <u>SEAT DEPTH</u> BEARING (METAL DECK i.e (WOOD DECK i.e LENGTH. W/ WOOD NAILER) NO WOOD NAILER) K-SERIES 2 1/2" LH-SERIES 7 1/2" 11 1/2" 4.1. ALL SEAT DEPTHS MUST BE COMPLIANT WITH THE DETAILS (ie: IF

THE LEDGER IS 5 1/2" BELOW THE WOOD DECK AND A LH-SERIES JOIST IS REQUIRED THE MANUFACTURER MUST PROVIDE A BEARING SEAT SOLUTION FOR THE BEARING OF THE LH-SERIES JOIST THAT TRANSFER ALL APPLICABLE FORCES AND MEETS THE DETAILS REQUIREMENTS.

4.2. THE MANUFACTURER SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE ANY FABRICATION OR CONSTRUCTION BEGINS ON 4.3. ANY CHANGES TO SEAT DEPTH ASSUMPTIONS IN DRAWINGS SHALL

BE COORDINATE WITH STEEL DETAILER TO INSURE THAT TRANSFER TUBES/ANGLES ARE CORRECT DEPTH FOR DECK ATTACHMENT REQUIREMENTS.

DEFLECTION CRITERIA IS AS FOLLOWS:

POINTS OF OPEN WEB STEEL JOISTS.

5.1. ROOF TOTAL LOAD = L / 240L / 360 5.2. ROOF LIVE LOAD = 5.3. FLOOR TOTAL LOAD = L / 2405.4. FLOOR LIVE LOAD = L / 360

DESIGN, WORKMANSHIP AND MATERIALS SHALL CONFORM TO SJI STANDARDS AND SPECIFICATIONS. JOIST MANUFACTURER'S SHALL BE RESPONSIBLE FOR PROVIDING ALL

BRIDGING AS REQUIRED BY THE BUILDING CODES AND AS SHOWN ON THE ENGINEERING CALCULATIONS & DRAWINGS, WET STAMPED AND SIGNED IN INK BY A CIVIL OR STRUCTURAL ENGINEER, LICENSED IN THE STATE OF THE

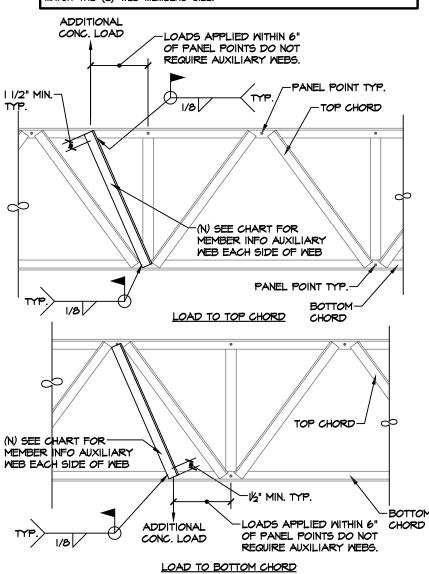
PROJECT, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER AND BUILDING DEPARTMENT ALONG WITH THE SHOP DRAWINGS FOR THEIR REVIEW AND APPROVAL BEFORE ANY FABRICATION BEGINS. TRUSS CONFIGURATION OF OPEN WEB STEEL JOISTS ARE AT MANUFACTURES OPTION BUT MUST TAKE INTO ACCOUNT ALL PROJECTS SPECIFIC REQUIREMENTS (DUCTING, CLEARANCE, ETC.) JOIST DEPTHS SHALL BE AS

FROM THE ENGINEER/ARCHITECT . OPEN WEB STEEL JOIST MANUFACTURER SHALL COORDINATE ALL JOIST BEARING SEAT CONNECTIONS WITH THE STRUCTURAL STEEL SUBCONTRACTOR. . ALL SUSPENDED LOADS BY ALL TRADES ARE TO BE LOCATED AT PANEL

SHOWN ON THE DRAWINGS AND SHALL NOT BE REVISED WITHOUT APPROVAL

OPEN WEB STEEL TRUSSES FOR QIRDER / JOIST

JOIST DEPTH 18" – 36" (2) <2x2x1/8 (2) <2x2x3/16 (2) <2 1/2x2 1/2x3/16 (N) AUX WEB MEMBER ARE MINIMUM SIZES. IF THE (E) WEB MEMBERS ARE LARGER THAN THE CHART MIN. MEMBERS USE (2) MEMBERS THAT MATCH THE (E) WEB MEMBERS SIZE.



NOTIFY THIS ENGINEER IF EXISTING STEEL TRUSS CONFIGURATION CONFLICTS WITH THE ADDITION OF THE AUXILIARY WEB MEMBERS AS SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR SHORING IN-SEVICE(ERECTED) TRUSSES DURING ALL WELDING PROCEDURES. THE SHORING MUST REMAIN IN PLACE UNTIL ALL METAL COOLS. THE SHORING SOLUTION IS BY OTHERS, TYP

FIELD INSTALLED AUXILIARY WEBS FOR CONCENTRATED LOADS

ALL BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS.

ALL WELDING OF STRUCTURAL STEEL MEMBERS SHALL BE DONE BY CURRENTLY CERTIFIED WELDERS AND DONE IN CONFORMANCE WITH THE A.I.S.C. AND A.W.S. SPECIFICATIONS. ALL WELDING SHALL BE ACCOMPLISHED USING THE SHIELD METAL ARC WELDING PROCESS (SMAW) WITH E7-XX ELECTRODES OR THE SUBMERGED ARC WELDING PROCESS (SAW) WITH E7X-EXXX ELECTRODES OR THE FLUX-CORED ARC WELDING PROCESS (FCAW) WITH E7IT-8 ELECTRODES (E70T-4 ELECTRODES ALLOWED FOR SHOP WELDING ONLY) LOW HYDROGEN ELECTRODES SHALL BE USED AND KEPT DRY, AND PARENT METALS SHALL BE PREHEATED IN ACCORDANCE WITH AWS STANDARDS. NO WELDING PERMITTED ON MEMBERS SUPPORTING LOADS.

WHERE THE CONTRACTOR REQUESTS WELDING TO BE USED IN LIEU OF BOLTED CONNECTIONS SUCH WELDING SHALL BE DONE ONLY WITH THE ENGINEERS PRIOR

HOLES PUNCHED OR DRILLED IN BEAMS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWING: HOLES FOR BOLTS SHALL BE 1/16" LARGER THAN

THE NOMINAL DIAMETER OF THE BOLT WHERE CONNECTION IS OF SHEAR TYPE, AND

3/16" LARGER WHERE CONNECTION IS OF BEARING TYPE ON CONCRETE OR ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL SHALL RECEIVE ONE SHOP

COAT OF RED OXIDE OR ZINC CHROMATE OR APPROVED EQUAL BASE. ALL STRUCTURAL & MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING

a. WIDE FLANGE MEMBERS (W, S, AND HP SHAPES) ARE TO BE ASTM A992 (FY=50KSI) IN ACCORDANCE WITH AISC. b. CHANNELS, ANGLES, TEES, AND MISCELLANEOUS AISC STEEL SHAPES ARE TO BE

ASTM A36. FY=36 KSI MIN. UNO c. HIGH STRENGTH BOLTS: ASTM A325N 1/2" TO 1" DIAMETER INCLUSIVE FY=92

KSI. 1 1/8" TO 1 1/2" DIAMETER INCLUSIVE FY=81 KSI

d. ASTM A-307 BOLTS SHALL BE USED UNLESS OTHERWISE NOTED. e. STRUCTURAL PIPE SHALL CONFORM TO A.S.T.M. A-53 GRADE "B" FY=35 KSI.

f. STRUCTURAL TUBING SHALL CONFORM TO A.S.T.M. A-500 GRADE "B" FY=46

g. ANCHOR BOLTS: ASTM F1554 GR36 TYPICAL, U.N.O.

h. HEADED STUDS: ASTM A108.

PROJECT ARCHITECT.

i. WELDING ELECTRODES: E70XX j. ALL PLATES, MISC. SHAPES, AND STRUCTURAL SHAPES (AISC, ETC.) USED AS

PART OF A CONNECTION, DOUBLER PLATES, CONTINUITY PLATES, ETC. IN THESE PLANS SHALL BE MADE OF EQUAL MATERIAL (MATERIAL PROPERTIES, GRADE, YIELD STRENGTH, ETC.) AS THE MAIN STRUCTURAL MEMEBERS BEING

LIGHT GAUGE COLD-FORMED STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATIONS OF THE AISI - GENERAL - 04 AND AISI - NAS - 01 LIGHT GAUGE STRUCTURAL STEEL SHALL BE SHAPED AS SHOWN IN THE A.I.S.I.

DESIGN MANUAL, UNLESS SPECIFICALLY OTHERWISE CALLED FOR. ALL ENDS OF EXPOSED STRUCTURAL SHAPES AND TUBE STEEL MEMBERS SHALL

HAVE 1/4" CAP PLATE WITH WELDS GRIND SMOOTH. . THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL TEMPORARY SUPPORTS REQUIRED FOR ERECTION. IF ERECTION BRACING IS REQUIRED IT IS TO BE PREPARED BY A LICENSED ENGINEER.

ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST REVISED EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION, WHICH INCLUDES THE SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, THE CODE OF STANDARD PRACTICE AND THE AWS STRUCTURAL WELDING CODE. GROUTING OF COLUMN BASE PLATES: BASE PLATES SHALL BE DRYPACKED OR

GROUTED WITH 1 1/2" NON-SHRINK GROUT OR EQUAL. MINIMUM COMPRESSIVE STRENGTH SHALL BE 4000 PSI AT 28 DAYS. ALL SURFACES SHALL BE PROPERLY CLEANED OF FOREIGN MATERIAL PRIOR TO THE GROUTING OPERATION. . FULL PENETRATION WELDED CONNECTIONS (100%) AT MOMENT FRAMES, BRACED

FRAMES, AND ALL FULL PENETRATIONS FIELD WELDS SHALL HAVE ULTRASONIC TESTING FOR COMPLIANCE WITH AISC 13TH EDITION ULTRASONIC TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY THAT HAS BEEN INSPECTED BY THE NATIONAL STANDARDS. TESTING INSPECTIONS SHALL BE QUALIFIED BY ASNT BUREAU OF RECOMMENDED PRACTICE SNT-TC-A1. PROVIDE PROPER SURFACE PREP. AND BACKUP PLATES AS REQUIRED PER AISC AND AWS. . ALL EXPOSED WELDS SHALL BE FILLED AND GROUND SMOOTH WHERE METAL COULD COME IN CONTACT WITH THE PUBLIC. UNLESS WELDS ARE PERMITTED BY THE

. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THRU STRUCTURAL STEEL MEMBERS. BOLT HOLES SHALL CONFORM TO AISC SPECIFICATION, AND SHALL BE STANDARD HOLES UNLESS OTHERWISE NOTED. NO CUTTING OR BURNING OF STRUCTURAL STEEL WILL BE PERMITTED WITHOUT PRIOR CONSENT OF THIS ENGINEER.

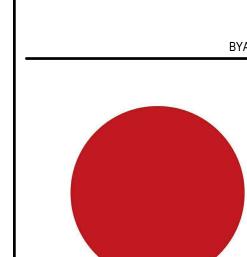
HIGH STRENGTH BOLTS WHERE INDICATED IN THE PLANS OR DETAILED SHALL CONFORM TO A.S.T.M. A325 OR A490, AND BE PROVIDED WITH HARDENED WASHERS CONFORMING TO A.S.T.M. F436. SLIP-CRITICAL TYPE BOLTS (A325-SC OR A490-SC) SHALL BE TWIST-OFF-TYPE TENSION-CONTROL BOLT ASSEMBLY. AT CONTRACTORS OPTION, THE COMBINATION OF HIGH STRENGTH BOLTS AND DIRECT TENSION LOAD NDICATING WASHERS CONFORMING TO ASTM F-959 ARE ACCEPTABLE SUBSTITUTIONS. CONTACT SURFACES SHALL BE CLEAN MILL SCALE OR CLASS A QUALIFIED COATINGS

ALL SHOP AND FIELD BOLTED CONNECTIONS SHALL BE IN ACCORDANCE WITH ASTM A-307 USING UNFINISHED AMERICAN STANDARD REGULAR BOLTS, UNLESS OTHERWISE NOTED. B. WHERE STEEL MEMBERS BEAR IN CONCRETE OR MASONRY WALLS, OPENINGS SHALL

9. PROVIDE SHOP DRAWINGS INDICATING SIZES. SPACING AND LOCATION OF JOISTS. GIRDERS, CONNECTIONS, BRIDGING, REINFORCING, ANCHORAGES, CAMBERS, AND LOADS. INDICATE WELDING CONNECTIONS USING STANDARD AWS WELDING SYMBOLS. INDICATE NET WELD LENGTHS. INDICATE RECOMMENDED PROCEDURES FOR JOIST SEATS WITH UNSUFFICENT BEARING.

. SMS ABBREVIATION AND / OR TEK SCREW CALL OUT IS GENERICALLY USED IN THESE PLANS AND REFERS TO HILTI KWIK - PRO SELF DRILLING SCREWS. THE CONTRACTOR MUST SELECT THE MANUFACTURE RECOMMENDED TIP BASED ON

MATERIAL THICKNESS. HWH HEAD STYLE IS REQUIRED. STEEL NOTES



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STANDARD **NOTES**

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