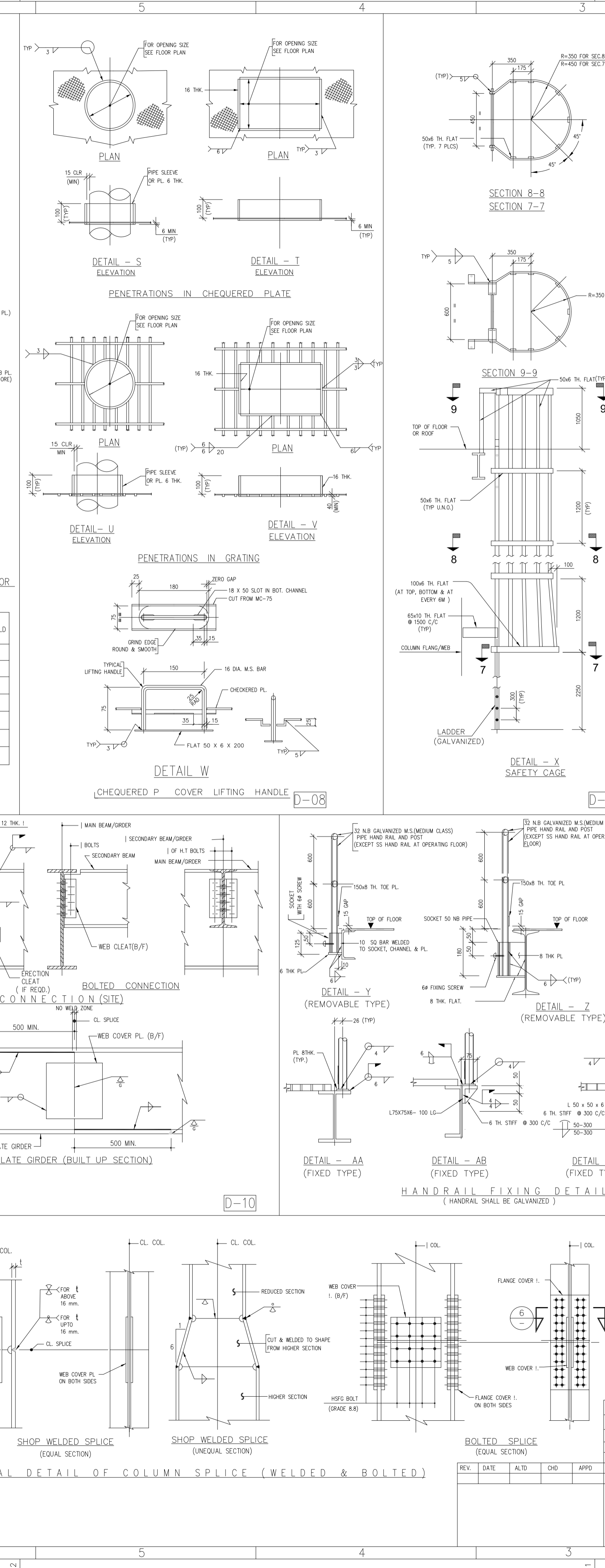
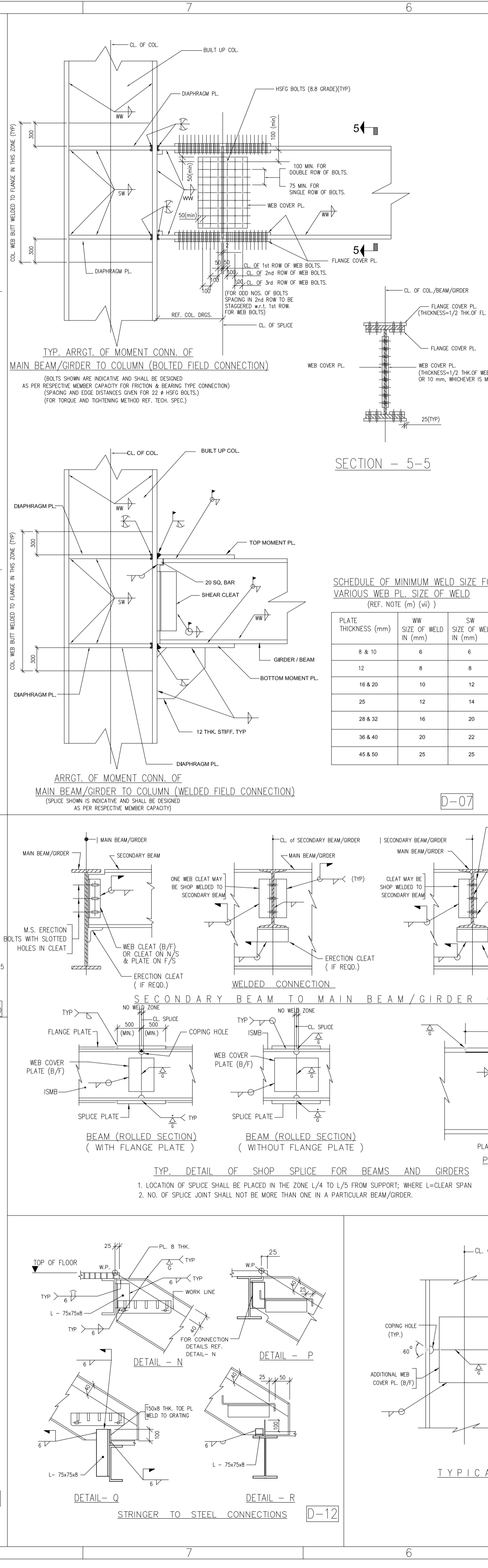
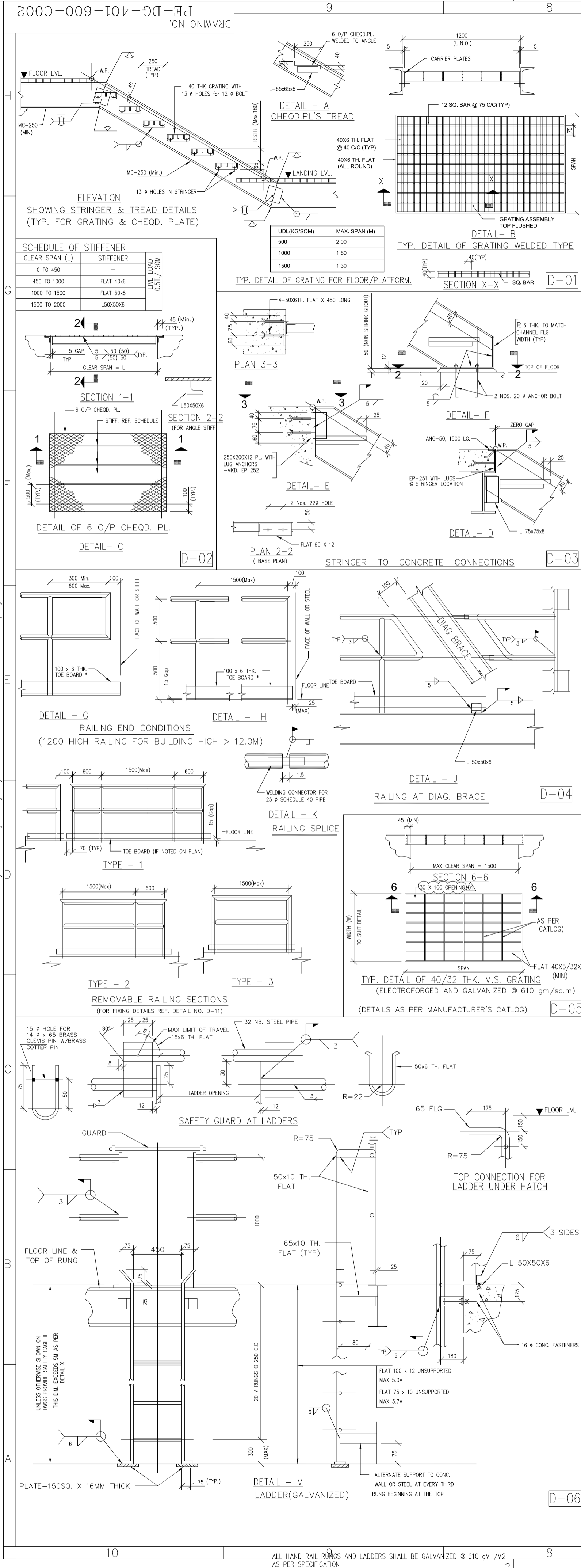


CAD FILE NAME: D:\Projects\Uncharhar\Submissions to Customer\Other than Structures\Standard Details & Drawings\PE-DG-401-600-C002 RO GENERAL NOTES & STANDARD DETAILS FOR STRUCTURAL STEEL WORKS.dwg
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GENERAL NOTES FOR STRUCTURAL STEEL AND MISCELLANEOUS STEEL WORKS

A. GENERAL

- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT FLOOR ELEVATIONS AND PLANT GRID WHICH ARE IN METER UNLESS STATED OTHERWISE.
- ALL ELEVATIONS ARE WITH RESPECT TO MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL.(±)0.00 M. WHICH CORRESPONDS TO RL. +107.00 M. ABOVE M.S.L.
- ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE TERMS, CONDITIONS AND SPECIFICATIONS OF THE CONTRACT.
- THE FABRICATION & ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH IS:800 - CODE OF PRACTICE FOR GENERAL CONSTRUCTION IN STEEL AND AS SPECIFIED IN THE CONTRACT TECHNICAL SPECIFICATIONS.
- ALL MATERIALS SHALL BE NEW, CLEAN, RUST FREE AND STRAIGHTENED IF NECESSARY BEFORE BEING WORKED.
- ALL WELDING ELECTRODES SHALL BE OF LOW HYDROGEN TYPE CONFORMING TO IS:814 AND SHALL BE ES:5428/54 TYPE. ALL ELECTRODES, FLUX, WIRE ETC. SHALL BE OF ADOR WELDING LTD., ESAB INDIA LTD., DASH SECHERON ELECTRODES PVT. LTD. OR EQUIVALENT, CERTIFIED VENDOR.
- ALL MILD STEEL BOLTS SHALL BE OF PROPERTY CLASS 4.6 GRADE-C CONFORMING TO IS:1367.
- ALL HIGH STRENGTH STRUCTURAL BOLTS SHALL BE OF PROPERTY CLASS 8.8 GRADE-A CONFORMING TO IS:1367 & SHALL BE SUPPLIED CONFORMING TO IS:3757.
- ALL NUTS SHALL BE OF HEAVY DUTY HEXAGONAL TYPE AND SHALL BE COMPATIBLE WITH THE BOLTS. MS NUTS SHALL BE OF CARBON STEEL PRODUCT GRADE-C OF IS:1363 AND OF PROPERTY CLASS 5 CONFORMING TO IS:1367.
- ALL NUTS & WASHERS FOR HIGH STRENGTH BOLTS (H.S.F.C.) SHALL CONFORM TO IS:6623 & IS:6649 RESPECTIVELY.
- WASHERS FOR MILD STEEL BOLTS SHALL BE OF MILD STEEL CONFORMING TO IS:5359 / IS:5372 OR IS:5374 OR IS:2016 AS THE CASE MAY BE.
- ALL ANCHOR BOLTS SHALL BE MILD STEEL OF GRADE 4.6
- ALL STRUCTURAL AND MISCELLANEOUS STEEL WORK SHALL BE OF MILD STEEL CONFORMING TO FOLLOWING INDIAN STANDARDS:-
 - i) STRUCTURAL SHAPES IS:2062 (GRADE A)
 - ii) PLATE UP TO 20 MM THICKNESS IS:2062 (GRADE A)
 - iii) PLATE ABOVE 20 MM AND BELOW 40MM IS:2062 (GRADE B) THICKNESS (KILLED)
 - iv) PLATE BEYOND 40MM THICKNESS (KILLED AND NORMALIZED ULTRASONICALLY TESTED) IS:2062 (GRADE C)
 - v) PLATE FOR CRANE ORDER IS:2062 (GRADE B)
 - vi) STRUCTURAL PIPES IS:806 (YST 25)
 - vii) STRUCTURAL HOLLOW SECTIONS (SQUARE & RECTANGULAR) IS:4923
 - viii) M.S PIPES HANDRAIL IS:1161,4736(MEDIUM CLASS)
 - ix) CHEQUERED PLATE (6 MM THK.) IS:3502
 - x) GRATING IS:2062 (GRADE A)
- IN ALL CASES, THE UNWELDED PORTION OF THE BOLT SHALL BE LESS THAN THE MEMBERS CONNECTED. A WORKER OF ADEQUATE THICKNESS MAY BE PROVIDED TO UNTHREAD THE THREADS FROM THE BEARING THICKNESS IF A LARGER CRIP BOLT HAS TO BE USED FOR THIS PURPOSE. ALL ERECTION BOLT HOLES SHALL BE SUITABLY PLOUGED.
- FOR CONNECTIONS DEVELOPED IN LINE WITH GOOD ENGINEERING PRACTICE AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- THE SIZE OF FILLET WELD SHALL BE 6 MM. MINIMUM UNLESS NOTED OTHERWISE.
- THE FIELD CONNECTION OF PURLINS SHALL BE WITH WELDED & FOR SAG ANGLE & WALL BEAMS SHALL BE DONE WITH M.S BOLTS.
- THE DIAMETER OF BOLT SHALL BE 20MM (MINIMUM) FOR HIGH STRENGTH FRICTION CRIP AND 16 MM (MINIMUM) FOR M.S BOLTS.
- THE WELDING SEQUENCE/PROCESS SHALL BE SO ADOPTED THAT NO ACCUMULATION OF SECONDARY WELDING STRESSES TAKES PLACE IN THE MEMBERS.
- LENGTH OF FILLET WELDS SHALL NOT BE LESS THAN FOUR TIMES OF THE NOMINAL SIZE OF THE WELD OR 40 MM, WHICHEVER IS MORE.

B. MATERIAL

- MOMENT CONNECTIONS DESIGNATED AS 'MC' TO BE DESIGNED FOR THE FULL CAPACITY OF THE MEMBER.
- SHEAR CONNECTIONS WILL BE DESIGNED FOR 60% OF SECTION STRENGTH FOR ROLLED SECTIONS AND 80% OF SECTION STRENGTH FOR BUILT UP SECTION OR ROLLED SECTION WITH COVER PLATES IN ANY CASE, THE DESIGNED VALUE SHALL NOT BE LESS THAN THE ACTUAL SHEAR.
- CONNECTIONS FOR BEAMS IN MAIN AXIS/GRID TO BE DESIGNED FOR THE MINIMUM AXIAL LOAD OF 7.5 MT.(TENSION/COMPRESSION) UNLESS HIGHER LOAD IS SPECIFIED IN ADDITION TO REQUIRED SHEAR/ MOMENT LOAD IN ANY CASE, THE DESIGNED AXIAL LOAD SHALL NOT BE LESS THAN THE ACTUAL TENSION/ COMPRESSION.
- COLUMN SPLICE TO BE DESIGNED FOR FULL CAPACITY PLUS 5% ADDITION CAPACITY OF LOWER SECTIONS.
- CONNECTION FOR ALL TRUSS MEMBERS TO BE DESIGNED FOR FULL TENSILE STRENGTH OF THE MEMBER.
- CONNECTION FOR BRACING MEMBERS TO BE DESIGNED FOR FULL TENSILE STRENGTH OF THE MEMBER.
- SIZE OF FILLET WELD FOR FLANGE TO WEB CONNECTION FOR BUILT UP SECTION SHALL BE AS FOLLOWS
 - a) FULL SHEAR CAPACITY FOR BOX SECTION.
 - b) 80% OF FULL SHEAR CAPACITY OR ACTUAL SHEAR OR 0.5 OF WEB THICKNESS, WHICHEVER IS MORE. FOR BUILT-UP SECTION, WELD SHALL BE DOUBLE FILLET.
- THE CONNECTION BETWEEN TOP FLANGE AND WEB OF CRANE ORDER SHALL BE FULL PENETRATION BUTT WELD AND FOR BOTTOM FLANGE CONNECTION, FILLET OR BUTT WELD MAY BE PROVIDED.
- CONNECTION OF BASE PLATE AND GUSSET MEMBERS WITH COLUMNS SHALL BE DONE CONSIDERING THAT TOTAL LOAD GETS TRANSFERRED THROUGH WELD, HOWEVER MINIMUM WELD SIZE, (DOUBLE FILLET) SHALL NOT BE LESS THAN 0.6 TIMES THE THICKNESS OF STIFFENERS.
- OVER HEAD WELDING SHALL NOT BE RESORTED TO UNLESS SPECIFICALLY PROVIDED IN DRAWINGS.
- PROPER PRE-HEATING TEMPERATURE SHALL BE MAINTAINED AS PER SPEC.
- THE WELDING SEQUENCE/PROCESS SHALL BE SO ADOPTED THAT NO ACCUMULATION OF SECONDARY WELDING STRESSES TAKES PLACE IN THE MEMBERS.

C. CONNECTIONS

- UNLESS STATED OTHERWISE, ALL SHOP AND FIELD CONNECTIONS SHALL BE BY WELDING. FIELD BOLTED CONNECTION USING HIGH STRENGTH FRICTION CRIP (HSFC) BOLTS OF 8.8 GRADE SHALL ALSO BE USED WHENEVER REQUIRED.
- ALL CONNECTIONS SHALL BE DEVELOPED IN LINE WITH GOOD ENGINEERING PRACTICE AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- THE SIZE OF FILLET WELD SHALL BE 6 MM. MINIMUM UNLESS NOTED OTHERWISE.
- THE FIELD CONNECTION OF PURLINS SHALL BE WITH WELDED & FOR SAG ANGLE & WALL BEAMS SHALL BE DONE WITH M.S BOLTS.
- THE DIAMETER OF BOLT SHALL BE 20MM (MINIMUM) FOR HIGH STRENGTH FRICTION CRIP AND 16 MM (MINIMUM) FOR M.S BOLTS.
- THE WELDING SEQUENCE/PROCESS SHALL BE SO ADOPTED THAT NO ACCUMULATION OF SECONDARY WELDING STRESSES TAKES PLACE IN THE MEMBERS.
- LENGTH OF FILLET WELDS SHALL NOT BE LESS THAN FOUR TIMES OF THE NOMINAL SIZE OF THE WELD OR 40 MM, WHICHEVER IS MORE.

D. PAINTING

- FOR INDOOR & OUTDOOR STEEL STRUCTURES (ALL STRUCTURAL STEEL AND M.S. GALVANIZED HANDRAILS SHALL BE PAINTED AS FOLLOWS)
 - a) ONE SHOP COAT OF INORGANIC ZINC SILICATE PRIMER SHALL BE APPLIED ON ALL EXTERIOR AND INTERIOR SURFACES (OFT NOT LESS THAN 75 MICRONS) OVER BLAST CLEANED SURFACE TO NEAR WHITE METAL CONFORMING TO S2-1/2 FINISH.
 - b) INTERMEDIATE COAT, SHALL BE APPLIED FOR ALL INTERIOR AND EXTERIOR SURFACE SHALL CONSIST OF POLYAMIDE CURED TITANIUM DI-OXIDE/MICACEOUS IRON OXIDE PIGMENTED EPOXY COATING (OFT NOT LESS THAN 75 MICRONS).
 - c) FINISH COAT, SHALL BE OF POLYAMIDE CURED COLORED PIGMENTED EPOXY BASED PAINT (EITHER SINGLE COAT AT SHOP OR TWO COAT APPLICATION ONE AT SHOP AND OTHER AT SITE) (OFT NOT LESS THAN 75 MICRON)
 - d) FINAL FINISH COAT, SHALL BE OF POLYURETHANE COLORED PIGMENTED PAINT. (OFT NOT LESS THAN 25 MICRON)

NTPC DRG. No. 1450-001R-PEM-C-PVC-W-002

PROJECT
 FERROZE GANDHI UNCHAHAH THERMAL POWER PROJECT
 STAGE-IV 1X500MW

OWNER
 NTPC Limited
 (A Joint Venture Company of NTPC & BHEL)

CONTRACTOR
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 (A Joint Venture Company of NTPC & BHEL)
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DEPT
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 NEW DELHI

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TITLE
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SCALE 1:100
DRAWING NO. PE-DG-401-600-C002
SHEET 1 OF 1
REV. 0

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