STRUCTURAL STEEL

1. DESIGN, DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE BUILDING CODE SPECIFIED EDITION OF THE FOLLOWING PUBLICATIONS, EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS:
   - AISC STEEL CONSTRUCTION MANUAL
   - AISC 360, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
   - AISC 341, SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS
   - RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS
   - AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
   - AISC 326, DETAILING FOR STEEL CONSTRUCTION
   - AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE D1.1, D1.3 & D1.6
   - OSHA - CFR TITLE 29 PART 1926 SUBPART R - STEEL ERECTION
2. CONTRACTOR SHALL SUBMIT NAME AND CONTACT INFORMATION OF FABRICATOR, SUB-FABRICATORS, ENGINEERS, DETAILER, ERECTOR AND SPECIAL INSPECTORS WITH BID PER THE STRUCTURAL STEEL SPECIFICATION SECTION. CONTRACTOR SHALL SCHEDULE THE STRUCTURAL STEEL PRE-DETAILING MEETING WITHIN 2 BUSINESS DAYS AFTER BID AWARD. THIS MEETING MUST BE COMPLETED A MINIMUM OF 5 BUSINESS DAYS BEFORE THE FIRST SHOP DRAWING SUBMITTAL IS SENT FOR REVIEW. SHOP DRAWINGS SUBMITTED PRIOR TO THIS MEETING WILL BE REJECTED AND RETURNED WITHOUT REVIEW.
3. CONNECTIONS FOR ANY PORTION OF THE STRUCTURE NOT COMPLETELY DETAILED ON THE DRAWINGS SHALL BE DELEGATED TO, AND DESIGNED BY, THE FABRICATOR'S ENGINEER LICENSED IN THE STATE OF THE PROJECT. STANDARD, AISC TABULATED CONNECTIONS SHALL BE USED WHERE POSSIBLE.
4. IN COMPLIANCE WITH AISC'S CODE OF STANDARD PRACTICE FOR OPTION 3 FOR DELEGATED CONNECTION DESIGN, THE FABRICATOR SHALL SUBMIT IN A TIMELY MANNER REPRESENTATIVE SAMPLES OF THE REQUIRED SUBSTANTIATING CONNECTION INFORMATION TO THE ENGINEER OF RECORD PRIOR TO THE SUBMISSION OF THE SHOP DRAWINGS. AT THE TIME OF SHOP DRAWING SUBMITTAL, THE FABRICATOR'S ENGINEER CONFIRM IN WRITING, AS A PART OF THE SUBSTANTIATING CONNECTION INFORMATION, THAT THE SHOP DRAWINGS SUBMITTED FOR APPROVAL PROPERLY INCORPORATE THE CONNECTION DESIGNS.
5. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

• WIDE FLANGE AND WT SHAPES	ASTM A992
• S/ST SHAPES, CHANNELS, ANGLES, & PLATES	ASTM A36
• SMOOTH ROD/THREADED ROD	ASTM A36
• HSS, RECTANGULAR OR SQUARE	ASTM A500 GR.B 46 KSI
• HSS, ROUND	ASTM A500 GR.B 42 KSI
• STEEL PIPE	ASTM A53, GR B
• ANCHOR RODS	ASTM F1554 GR 55 WITH WELDABILITY SUPPLEMENT S1
• HIGH STRENGTH BOLTS	ASTM F3125 GR A325
• TWIST OFF TENSION CONTROL BOLTS	ASTM F3125 GR. F1852 FOR A325 BOLTS
• HARDENED WASHERS	ASTM F436 TYPE 1
• HEAVY HEX NUTS	ASTM A563 GR A
• ROLLED STEEL FLOOR PLATE	ASTM A786
• SHEAR CONNECTORS AND HEADED STUDS	ASTM A108, GR 1010 TO 1020
• WELDING ELECTRODES	AWS A5.1 OR A5.5 E70XX

6. CONNECTIONS SHALL BE DESIGNED FOR THE FORCES INDICATED ON THE STRUCTURAL DRAWINGS. FORCES SHOWN ON THE PLANS ARE ASD UNFACTORED. WHERE FORCES ARE NOT SHOWN OR THE STEEL CONNECTIONS ARE NOT SPECIFICALLY DETAILED, USE THE FOLLOWING:
   A. NON- COMPOSITE FRAMED BEAM CONNECTIONS SHALL DEVELOP 50% OF THE UNIFORM LOAD CAPACITY FOR LATERALLY SUPPORTED BEAMS FOR THE GIVEN MEMBER SIZE, SPAN LENGTH AND GRADE.
   B. COMPOSITE FRAMED BEAM CONNECTIONS SHALL DEVELOP 75% OF THE UNIFORM LOAD CAPACITY FOR LATERALLY SUPPORTED BEAMS FOR THE GIVEN MEMBER SIZE, SPAN LENGTH AND GRADE.
   C. HORIZONTAL AND VERTICAL BRACING CONNECTIONS SHALL DEVELOP 50% OF THE GROSS TENSION CAPACITY FOR THE GIVEN MEMBER GRADE.
   D. HANGER CONNECTIONS SHALL DEVELOP 100% OF THE GROSS TENSION CAPACITY FOR THE GIVEN MEMBER GRADE.
   E. SPLICES:
      a. BEAM SPLICES SHALL DEVELOP THE FOLLOWING FOR THE GIVEN MEMBER GRADE:
         - MOMENT SPLICES: 100% OF THE GROSS FLEXURAL AND SHEAR CAPACITY
         - SHEAR SPLICES: 100% OF THE GROSS SHEAR CAPACITY
7. SEQUENCE DRIVEN SHARED CONNECTIONS WILL NOT BE PERMITTED AND MAY BE UNSAFE DURING THE CONNECTION PROCESS UNDER CERTAIN CONDITIONS. PROVIDE STAGGERED CLIP ANGLES, ERECTION SEATS ON BOTH SIDES OF COLUMN WEBS, OR SHEAR TAB TYPE CONNECTIONS IN COMPLIANCE WITH OSHA 1926 SUBPART R TO ALLOW FOR MEMBERS TO BE INSTALLED FROM EITHER DIRECTION REGARDLESS OF SEQUENCE.
8. IF SPLICE LOCATIONS ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS, COORDINATE SPLICE LOCATIONS WITH ENGINEER OF RECORD PRIOR TO FABRICATION.
9. CONTRACTOR SHALL BEGIN FABRICATION ONLY AFTER SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD, MARKED AS "PROCESS", AND RETURNED.
10. GROUT SHALL BE NON-METALLIC, SHRINK RESISTANT AND CONFORM TO ASTM C1107 AND HAVE A 28-DAY COMPRESSIVE STRENGTH OF AT LEAST 5500 PSI. GROUT UNDER BASE PLATES SHALL BE ONE OF THE FOLLOWING:
    - SIKA GROUT 212 AS MANUFACTURED BY SIKA CORPORATION
    - EUCLID NS GROUT
    - L&M CONSTRUCTION CHEMICALS' CRYSTEX NON-SHRINK GROUT
    - WR MEADOWS 588 GROUT
    - DAYTON SUPERIOR HIGH PERFORMANCE
    - MASTER BUILDERS MASTERFLOW 928 GROUT
    - APPROVED EQUAL
11. ALL SHOP CONNECTIONS SHALL BE WELDED OR BOLTED. FIELD CONNECTIONS SHALL BE BOLTED WHERE POSSIBLE.
12. BEAM CONNECTIONS SHALL DEVELOP A MINIMUM STRENGTH OF 10 KIPS **[ASD/LRFD]** AND CONSIST OF A MINIMUM OF TWO 3/4" DIAMETER BOLTS.
13. DOUBLE CLIP ANGLES SHALL BE USED FOR BIDDING. ALTERNATIVE FRAMING CONNECTIONS (SHEAR TAB, SINGLE ANGLES, ETC.) MAY BE SUBMITTED FOR REVIEW. THERE IS NO GUARANTEE THAT ALTERNATIVE CONNECTIONS WILL BE APPROVED.
14. CONNECTION ANGLES SHALL BE 5/16" MINIMUM THICKNESS, UNLESS NOTED OTHERWISE.
15. GUSSET PLATES AND SHEAR TABS SHALL BE 3/8" MINIMUM THICKNESS, UNLESS NOTED OTHERWISE.
16. UNLESS NOTED OTHERWISE, MINIMUM BOLT SIZE IS 3/4" DIAMETER GRADE A325N. INSTALL HIGH STRENGTH BEARING BOLTS TO A SNUG TIGHT CONDITION AS DEFINED BY AISC. LOCK WASHERS AND LOCK NUTS ARE STRICTLY PROHIBITED. GRADE A490 BOLTS ARE ACCEPTABLE WHEN REQUIRED FOR HIGHER LOAD CONDITIONS. DO NOT USE THE SAME DIAMETER OF GRADE A325 AND A490 BOLTS ON THE PROJECT.
17. UNLESS NOTED OTHERWISE, PROVIDE PRETENSIONED GRADE A325N BOLTS WHERE THE FOLLOWING CONDITIONS OCCUR: COLUMN SPLICES, BRACING CONNECTIONS, HANGERS, CONNECTIONS IN STRUCTURES WITH CRANES OVER 5 TON CAPACITY, CONNECTIONS FOR SUPPORTS OF RUNNING MACHINERY OR OTHER SOURCES OF IMPACT AND OTHER CONNECTIONS IDENTIFIED ON THE DRAWINGS. PRETENSIONED BOLTS SHALL BE INSTALLED USING TURN-OF-THE-NUT TIGHTENING, DIRECT TENSION INDICATORS, OR GRADE F1852 TWIST OFF TYPE BOLTS, PER AISC REQUIREMENTS. GRADE F2280 TWIST OFF TYPE BOLTS ARE ACCEPTABLE WHEN REQUIRED FOR HIGHER LOAD CONDITIONS. DO NOT USE THE SAME DIAMETER OF GRADE F1852 AND F2280 BOLTS ON THE PROJECT.
18. UNLESS NOTED OTHERWISE, PROVIDE SLIP CRITICAL GRADE A325SC BOLTS, USING CLASS "A" SURFACE VALUES (CLEAN MILL SCALE) AT ALL AREAS WHERE SLIPPAGE IS OBJECTIONABLE, BRACKETS, MOMENT CONNECTIONS, SLOTTED HOLES (WITH FORCE IN DIRECTION OF SLOT), OVERSIZED HOLES AND OTHER CONNECTIONS IDENTIFIED ON THE DRAWINGS. SLIP CRITICAL BOLTS SHALL BE INSTALLED USING TURN-OF-THE-NUT TIGHTENING, DIRECT TENSION INDICATORS, OR TWIST OFF TYPE BOLTS PER AISC REQUIREMENTS. GRADE A490SC BOLTS ARE ACCEPTABLE WHEN REQUIRED FOR HIGHER LOAD CONDITIONS. DO NOT USE THE SAME DIAMETER OF GRADE A325SC AND A490SC BOLTS ON THE PROJECT.
19. AT EXPOSED HSS AND PIPE MEMBER ENDS, PROVIDE 3/16" END PLATE WITH 1/8" MINIMUM SEAL WELD ALL AROUND, UNLESS A LARGER PLATE OR WELD IS INDICATED.
20. PROVIDE WEEP HOLE NEAR BOTTOM OF ALL CLOSED HSS AND PIPE MEMBERS.
20. THE CONTRACTOR IS RESPONSIBLE FOR ALL ERECTION METHODS AND PROCEDURES. COORDINATE WITH OWNER'S REPRESENTATIVE REGARDING ANY SPECIFIC REQUIREMENTS RELATED TO START POINT AND DIRECTION OF ERECTION SEQUENCING.
21. STEEL FABRICATION AND/OR ERECTION FOUND TO BE SUBSTANDARD IN ACCORDANCE WITH SPECIFIED TOLERANCES OR REFERENCED AISC STANDARDS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
22. ALL STEEL LOCATED BELOW GRADE SHALL BE ENCASED IN AT LEAST 3" OF CONCRETE OR PROVIDED WITH A MASTIC COATING. ACCEPTABLE MASTIC COATING PRODUCTS ARE SHERWIN-WILLIAMS TAR GUARD B69B60 OR TNEMEC 46-465 COAL RESIN.
23. NO PART OF THE STRUCTURE MAY BE USED AS A TIE OFF POINT DURING CONSTRUCTION UNLESS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS OR WITHOUT PRIOR WRITTEN PERMISSION OF THE ENGINEER OF RECORD.
24. NO FLAME CUTTING WILL BE ALLOWED IN THE SHOP OR THE FIELD WITHOUT WRITTEN PERMISSION FROM THE ENGINEER OF RECORD AND OWNER. THIS INCLUDES CUTTING OF STEEL, CORRECTING MISALIGNMENT AND ENLARGING OR ADDING HOLES. CUTS AND HOLES REQUIRED FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP.
25. WHERE HOLES ARE FOUND TO BE UNSATISFACTORY, INFORM ENGINEER OF RECORD AND UNLESS DIRECTED OTHERWISE, FIELD DRILL NEW CONFORMING HOLES AS REQUIRED. PLUG WELD AND GRIND SMOOTH ALL ABANDONED HOLES.
26. NO HANGING LOADS OR UTILITIES MAY BE SUPPORTED BY HORIZONTAL OR VERTICAL BRACING, JOIST BRIDGING, GIRTS, METAL DECK OR GRATING, UNLESS SHOWN ON THE DRAWINGS.
27. THE RE-ENTRANT CORNERS OF COPES, BLOCKOUTS, AND CUTS SHALL BE SHAPED TO A SMOOTH RADIUS.
28. BUILT UP MEMBERS SHALL HAVE STITCH PLATES COMPLYING WITH AISC REQUIREMENTS. TENSION MEMBERS SHALL HAVE AT LEAST ONE STITCH PLATE LOCATED AT MID-LENGTH AND BUILT UP COMPRESSION MEMBERS SHALL HAVE AT LEAST TWO STITCH PLATES LOCATED AT THIRD POINTS. ASSUME BUILT UP MEMBERS ARE COMPRESSION MEMBERS UNLESS NOTED OTHERWISE ON DRAWINGS.
29. PROVIDE FIRE WATCH PROTECTION ACCEPTABLE TO OWNER AND OWNER'S INSURANCE CARRIER DURING ALL FIELD OPERATIONS THAT INVOLVE WELDING OR AN OPEN FLAME.
30. PROVIDE SHELF ANGLES ON COLUMNS AS REQUIRED TO SUPPORT METAL DECK, STEEL GRATING AND/OR CHECKERED PLATE.
31. COMPOSITE STEEL BEAMS SHALL HAVE BENT PLATES AND OTHER ACCESSORIES WELDED SUCH THAT THEY DO NOT INTERFERE WITH THE INSTALLATION OF THE HEADED STUDS.
32. ALL GRATING SHALL BE ANCHORED TO STEEL FRAMING WITH APPROVED MECHANICAL GRATING FASTENERS AT A MAXIMUM SPACING OF 2'-0", WITH A MINIMUM OF ONE AT EACH GRATING PANEL CORNER AND A MINIMUM OF TWO AT INTERIOR SUPPORT BEAM.
33. PROVIDE 3/16" THICK BANDING PLATE, WELDED (SHOP OR FIELD) TO THE ENDS OF EACH BEARING BAR AT THE FOLLOWING LOCATIONS:
    - EXPOSED OPEN ENDS OF GRATING.
    - AT PENETRATIONS WHERE BEARING BARS ARE CUT.
34. ALL PROJECTED CORNERS, BURRS, AND EXPOSED EDGES SHALL BE GROUND SMOOTH.
35. HARDENED WASHERS SHALL BE INSTALLED OVER SHORT SLOTTED OR OVERSIZE HOLES OCCURRING IN THE OUTER PLY OF A CONNECTION. A PLATE WASHER OF AT LEAST 5/16 INCH THICKNESS WITH STANDARD HOLES SHALL BE INSTALLED OVER LONG SLOTTED HOLES OCCURRING IN AN OUTER PLY OF A CONNECTION.

STEEL COATINGS

1. ALL EXISTING STEEL PAINT IS ASSUMED TO BE LEAD BASED. THEREFORE, DO NOT CUT, GRIND, DRILL, BURN OR WELD ON ANY PAINTED EXISTING STEEL WITHOUT PRIOR DOCUMENTED TESTING DATA FROM THE OWNERS REPRESENTATIVE. ALL PAINT WITHOUT DOCUMENTED TESTING DATA SHALL BE TESTED BY THE CONTRACTOR FOR LEAD CONTENT. ALL PAINT SUBSEQUENTLY IDENTIFIED AS LEAD BASED PAINT MUST BE PROPERLY ABATED BY THE CONTRACTOR PRIOR TO PERFORMING ANY OF THESE ACTIVITIES.
2. ALL STRUCTURAL STEEL SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH :
   A. INTERIOR STEEL: SSPC - SP3 POWER TOOL CLEANING
   B. EXTERIOR STEEL: SSPC – SP6 COMMERCIAL BLAST CLEANING
3. ALL INTERIOR STEEL SHALL BE
   A. EPOXY PAINTED
4. ALL EXTERIOR STEEL SHALL BE
   A. GALVANIZED
5. IMMEDIATELY AFTER SURFACE PREPARATION, APPLY PRIMER IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND AT RATE RECOMMENDED BY SSPC TO PROVIDE A MINIMUM DRY FILM THICKNESS OF 1.5 MILS. USE PRIMING METHODS THAT RESULT IN FULL COVERAGE OF JOINTS, CORNERS, EDGES, AND EXPOSED SURFACES. COORDINATE COLOR WITH OWNER'S REPRESENTATIVE.
6. DO NOT PAINT:
   A. CONTACT SURFACES AT SLIP CRITICAL CONNECTIONS.
   B. WITHIN 2" OF FIELD WELDS.
   C. WITHIN 2" OF WELDED SHEAR STUDS OR ENTIRE TOP FLANGE OF COMPOSITE BEAMS
   D. SURFACES IN CONTACT WITH CONCRETE, GROUT OR MORTAR.
   E. STRUCTURAL STEEL TO RECEIVE FIREPROOFING. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIREPROOFING OF STRUCTURAL STEEL MEMBERS. PRIMERS COMPATIBLE WITH FIREPROOFING MAY BE SUBMITTED AS AN ALTERNATE.
   F. MEMBERS TO BE GALVANIZED.
7. APPLY MASTIC COATING TO COLUMNS, BASE PLATES, ANCHOR RODS AND ANY OTHER STEEL ITEMS WHICH ARE BELOW GRADE AND EXPOSED TO BACKFILL. COATING SHALL BE SHERWIN WILLIAMS TAR GUARD B69B60 OR TNEMEC 46-465 COAL TAR RESIN OR APPROVED EQUAL. SURFACE PREPARATION PER MANUFACTURER'S RECOMMENDATIONS
8. ANY STRUCTURAL STEEL COATING, WITH EXCEPTION OF GALVANIZING, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED. AFTER ERECTION. CLEAN AND PREPARE SURFACES PER SSPC-SP2 OR 3 AND APPLY A TOUCH-UP COAT OF SAME PRIMER AS USED FOR THE SHOP COAT TO ALL SCARRED, CHAFED, AND OTHER AREAS WHERE SHOP PRIMER HAS BEEN DAMAGED, AND TO ALL FIELD BOLTS, WELDS, AND ADJACENT AREAS LEFT UNPAINTED IN THE SHOP AND WHERE LACK OF SHOP PRIMER HAS ALLOWED RUST TO FORM. AREAS AROUND BOLT HEADS SHALL BE THOROUGHLY "BRUSHED-IN" TO INSURE ADEQUATE PAINT COVERAGE.
9. STRUCTURAL STEEL MEMBERS DESIGNATED AS GALVANIZED SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 UNLESS NOTED OTHERWISE. PROVIDE VENT AND DRAIN HOLES IN ALL HSS OR CONFINED MEMBERS AS REQUIRED. AFTER ERECTION OF GALVANIZED MEMBERS APPLY A TOUCH-UP COAT OF GALVANIZING REPAIR PAINT, CONFORMING TO ASTM A780, APPLY TO ALL SCARRED, CHAFED, OTHER AREAS WHERE GALVANIZING HAS BEEN DAMAGED, AND TO ALL FIELD BOLTS AND WELDS. AREAS AROUND BOLT HEADS SHALL BE THOROUGHLY "BRUSHED-IN".
10. APPLY STRUCTURAL STEEL COATINGS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

METAL DECK

1. DESIGN, DETAILING, FABRICATION, AND ERECTION OF METAL DECK SHALL CONFORM TO THE BUILDING CODE SPECIFIED EDITION OF THE FOLLOWING PUBLICATIONS, EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS:
   - SDI MANUAL OF CONSTRUCTION OF STEEL DECK
   - SDI CODE OF STANDARD PRACTICE
   - OSHA - CFR TITLE 29 PART 1926
2. A SERVICE LEVEL CONSTRUCTION ALLOWANCE OF 20 PSF OR 150 PLF CONCENTRATED LIVE LOAD, IN ADDITION TO CONCRETE (WHERE CONCRETE IS SPECIFIED) AND DECK SELF WEIGHT, IS INCLUDED IN THE DESIGN OF THE STEEL DECK. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ACTUAL CONSTRUCTION LOADING IS LESS THAN OR EQUAL TO THIS ALLOWANCE.

   ---->NO CONCENTRATED POINT OR LINE LOADS SHALL BE INDUCED ON METAL DECK.<------
3. WHERE POSSIBLE, METAL DECK SHALL BE CONTINUOUS OVER 3 SPANS, HOWEVER 2 SPANS ARE ACCEPTABLE. CONTACT ENGINEER OF RECORD FOR APPROVAL IF 1 SPAN IS REQUIRED BASED ON SITE CONDITIONS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. REFER TO SCHEDULE FOR ATTACHMENT REQUIREMENTS.
5. PROVIDE STANDARD CLOSURES, CANT STRIPS, SUMP PANS, FINISH STRIPS AND OTHER ACCESSORIES AS REQUIRED. PROVIDED ACCESSORIES SHALL BE MINIMUM THICKNESS OF DECK GAGE SPECIFIED.
6. METAL ROOF DECK SHALL CONFORM TO ASTM A653 AND HAVE A ZINC COATING CONFIRMING TO ASTM A924 G90 (Z275).

ANCHOR RODS

1. ANCHOR RODS SHALL BE PROVIDED BY THE STRUCTURAL STEEL CONTRACTOR AND SET PLUMB AND VERTICAL BY THE FOUNDATION CONTRACTOR.
2. INSTALLATION OF ANCHOR RODS SHALL BE IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE.
3. THE FOUNDATION CONTRACTOR SHALL EMPLOY A LICENSED PROFESSIONAL SURVEYOR TO PROVIDE A DETAILED SURVEY OF BOTH THE ANCHOR ROD LAYOUT AND THE FINAL ANCHOR ROD LOCATIONS. SURVEY AND MARK, BY SCRIBING, THE COLUMN CENTERLINES BETWEEN ALL ANCHOR RODS.
4. THE FOUNDATION CONTRACTOR IS RESPONSIBLE FOR SETTING ANCHOR RODS AND SHALL BE RESPONSIBLE FOR ALL COSTS RELATED TO REQUIRED MODIFICATION DUE TO MISPLACED ANCHOR RODS.
5. THE FOUNDATION EXCAVATIONS SHALL BE DEWATERED AFTER EACH RAIN EVENT WHILE KEEPING THE ANCHOR RODS CLEAN AND PROTECTED AT ALL TIMES.

COLD FORM METAL FRAMING

1. ALL COLD-FORMED METAL FRAMING AND CONNECTIONS INCLUDING ANCHORAGE TO THE PRIMARY STRUCTURAL FRAME, SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS AS A FORMAL SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD. PROVIDE A SEALED LETTER CERTIFYING THAT THE INFORMATION SHOWN IN THE SUBMITTAL IS IN CONFORMANCE WITH THE DESIGN.
2. ALL COLD-FORMED METAL FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI) AND THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA).
3. AS RECOMMENDED BY THE MANUFACTURER FOR THE COLD-FORMED METAL FRAMING, PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT LIMITED TO, TRACKS, CLIPS, STIFFENERS, ANCHORS, FASTENING DEVICES, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.
4. COLD-FORMED METAL FRAMING AND CONNECTIONS, SHALL BE COATED PER ASTM A653 G60 AND SHALL COMPLY WITH THE FOLLOWING UNLESS NOTED OTHERWISE:
   A. GAGE 12, 14 AND 16, ASTM A1003, TYPE H. WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI.
   B. GAGE 18 AND 20, ASTM A1003, TYPE H. WITH A MINIMUM YIELD STRENGTH OF 33,000 PSI.
5. COLD-FORMED METAL FRAMING MEMBERS SHALL NOT BE SPLICED WITHOUT PRIOR APPROVAL OF STRUCTURAL ENGINEER.
6. COLD-FORMED METAL FRAMING CONSTRUCTION FOR NON-BEARING WALL SYSTEMS SHALL HAVE VERTICAL SLIP CONNECTIONS. DO NOT ATTACH MEMBERS TO THE STRUCTURE IN ANY WAY THAT WOULD PREVENT THE COLD-FORMED METAL FRAMING FROM DEFLECTING UNDER SUPERIMPOSED LOADS (CUMULATIVE L/**[240]** DEFLECTION OF STRUCTURAL FRAMING SYSTEM). THE VERTICAL SIDE CLIPS SHALL HAVE A RATED CAPACITY (BY THE MANUFACTURER) OF **[200]** LBS (ASD) LATERAL LOAD RESISTANCE.
7. FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS, COMPLYING WITH COLD-FORMED STEEL ENGINEERS INSTITUTE (CFSEI), TECHNICAL NOTE F701-12, OR WELDING, COMPLYING WITH CFSEI F140-16.
8. ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN COLD-FORMED METAL FRAMING WORK. WELDING MAY ONLY BE USED ON 20 GAGE AND THICKER MEMBERS. ALL WELDS OF PAINTED COLD-FORMED METAL FRAMING SHALL BE TOUCHED UP WITH PAINT MATCHING THE PROPERTIES OF THE ADJACENT PAINTED SURFACES. ALL WELDS OF GALVANIZED COLD-FORMED METAL FRAMING SHALL BE TOUCHED UP WITH APPROVED ZINC-RICH PAINT.

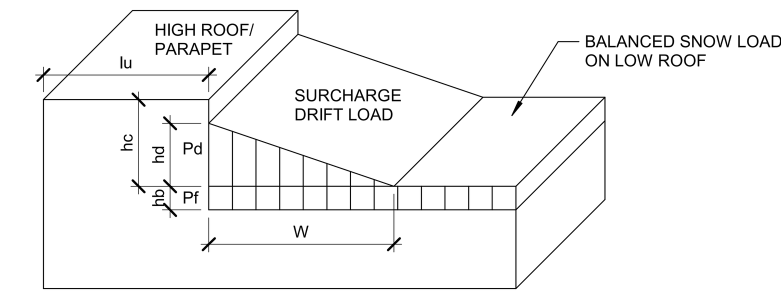
MASONRY

1. THE FOLLOWING GOVERN THE DESIGN, DETAILING, FABRICATION AND CONSTRUCTION OF ALL UNREINFORCED AND REINFORCED CONCRETE MASONRY ELEMENTS AND STRUCTURES:
   - ACI 530 / ASCE 5 / TMS 402, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
   - ACI 530.1 / ASCE 6 / TMS 602, SPECIFICATION FOR MASONRY STRUCTURES
2. MASONRY COMPRESSIVE STRENGTH f'm = 2,000 PSI MINIMUM. MATERIAL COMBINATIONS MAY BE CHOSEN BY ANY METHOD APPROVED BY THE SPECIFICATION. OWNER RESERVES THE RIGHT TO HAVE PRISMS ASSEMBLED IN THE FIELD AND TESTED FOR COMPLIANCE.
3. CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C90. UNIT STRENGTH TO BE APPROPRIATE FOR SPECIFIED MASONRY COMPRESSIVE STRENGTH.
4. MORTAR SHALL BE PER ASTM C270 AND SHALL BE AT LEAST EQUAL TO THE UNIT COMPRESSIVE STRENGTH.
   - PROVIDE TYPE 'M' MORTAR, 2,500 PSI MINIMUM, AT ALL ABOVE AND BELOW GRADE LOAD BEARING MASONRY, REINFORCED WALLS AND MASONRY BOND BEAMS AND LINTELS.
   - PROVIDE TYPE 'S' MORTAR, 1,800 PSI MINIMUM, AT ALL ABOVE AND BELOW GRADE UNREINFORCED NON-LOAD BEARING MASONRY AND FOR ALL OTHER CONDITIONS.
5. GROUT SHALL BE PER ASTM C476 (COARSE OR FINE), 4,000 PSI MINIMUM. LIFT HEIGHTS DICTATED PER ACI 530.
6. REINFORCING BARS SHALL CONFORM TO ASTM A615. BARS SHALL BE GRADE 60 (DEFORMED). SUBMIT MASONRY REINFORCING SHOP DRAWINGS SHOWING ELEVATIONS OF ALL WALLS.
7. GROUT SOLID ALL MASONRY AND VOIDS BELOW GRADE.
8. PROVIDE 9 GA HORIZONTAL LADDER TYPE JOINT REINFORCING WITH 9 GA CROSS RODS AT EXACTLY 16" OC IN ALL WALLS.
9. REFER TO ARCHITECTURAL DRAWINGS FOR FLASHING, WATERPROOFING, INSULATION AND RELATED WALL MATERIALS AND DETAILS.
10. MASONRY SHALL BE LAID IN RUNNING BOND WITH FACE SHELL MORTAR BEDDING. PROVIDE MORTAR AT WEBS ADJACENT TO GROUTED CELLS.
11. INTERSECTING WALLS SHALL BE CONNECTED IN ACCORDANCE WITH ACI 530. PROVIDE DETAILS WITHIN MASONRY SUBMITTAL.
12. CONTROL JOINTS SHALL BE AS INDICATED ON DRAWINGS. WHERE NOT INDICATED, CONTROL JOINTS SHOULD BE PLACED SUCH THAT THE WALL PANEL LENGTH TO HEIGHT RATIO DOES NOT EXCEED 1.5, WITH THE SPACING NOT TO EXCEED 20'-0" ON CENTER. JOINTING ELEVATIONS SHALL BE SUBMITTED FOR REVIEW.
13. WHERE THERE IS ONLY ONE VERTICAL BAR IN A CMU CELL, PLACE BAR IN CENTER OF CELL. WHERE TWO BARS ARE REQUIRED, PLACE BARS AT OPPOSITE FLANGES 1/2" CLEAR FROM THE INSIDE FACE OF THE FLANGE, UNO.
14. AT VERTICAL PLATES WITH EMBEDDED HEADED STUDS, GROUT SOLID A MINIMUM OF ONE FULL COURSE ABOVE AND BELOW STUDS AND A MINIMUM OF ONE FULL CELL TO EITHER SIDE OF THE STUDS.
15. AT HORIZONTAL PLATES WITH EMBEDDED HEADED STUDS, GROUT SOLID A MINIMUM OF ONE FULL COURSE BELOW STUDS AND A MINIMUM OF ONE FULL CELL TO EITHER SIDE OF THE STUDS.
16. AT MASONRY LINTELS, GROUT SOLID ALL CELLS DIRECTLY BELOW LINTEL END BEARING TO BOTTOM OF WALL.
17. AT STEEL LINTELS, GROUT COURSE SOLID ABOVE LINTEL AND GROUT SOLID ALL CELLS DIRECTLY BELOW LINTEL END BEARING TO BOTTOM OF WALL.
18. BOND BEAMS:
    A. SHALL BE GROUTED SOLID
    B. CORNER BARS SHALL LAP AND MATCH HORIZONTAL REINFORCEMENT.

REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL JOINTS.

DESIGN CRITERIA

- MEZZANINE FLOOR DEAD LOADS
  - GRATING 10.0 PSF
  - MP&E 10.0 PSF
  - FIRE PROTECTION 5.0 PSF
  - FRAMING SELF WEIGHT 25.0 PSF
  - TOTAL 50.0 PSF
- MEZZANINE UNIFORM LIVE LOADS
  - WALKWAYS AND ELEVATED PLATFORMS 60 PSF
  - ALLOWANCE FOR MAINTENANCE HOIST 40 PSF
- URT EQUIPMNET ROOMS DEAD LOADS
  - 2 1/2" CONC ON 1 1/2" VLR METAL DECK (4" TOTAL) 50.0 PSF
  - FRAMING SELF WEIGHT 10.0 PSF
  - SUPER IMPOSTED DEAD LOADS 5.0 PSF
- URT EQUIPMNET ROOMS LIVE LOADS 60.0 PSF
- OFFICE FLOOR DEAD LOADS
  - 3 1/2" CONC ON 1 1/2" VLR METAL DECK (5" TOTAL) 56.0 PSF
  - MP&E, AND FIRE PROTECTION 14.0 PSF
  - FRAMING SELF WEIGHT 10.0 PSF
  - TOTAL 80.0 PSF
- OFFICE FLOOR UNIFORM LIVE LOADS
  - OFFICE 50 PSF
  - PARTITION 20 PSF
- ROOF LIVE LOAD 20 PSF (REDUCIBLE BY CODE)
- SNOW LOAD
  - SNOW LOAD IMPORTANCE FACTOR, Is 1.00
  - GROUND SNOW LOAD, Pg 5 PSF
  - FLAT ROOF SNOW LOAD, Pf 4 PSF
  - MINIMUM SNOW LOAD Pm 5 PSF
  - RAIN-ON-SNOW SURCHARGE 9 PSF
  - SNOW EXPOSURE FACTOR, Ce 1.0
  - THERMAL FACTOR, Ct 1.0
  - SNOW DRIFT LOADS AND SLIDING SNOW LOADS IN ACCORDANCE WITH ASCE 7
- WIND LOADS (FOR TANKS AND EXTERIOR STRUCTURES)
  - RISK CATEGORY IV
  - BASIC WIND SPEED:
    a. ULTIMATE WIND SPEED, Vult 119 MPH
  - EXPOSURE CATEGORY C
  - INTERNAL PRESSURE COEFFICIENT, GCpil +/- 0.18
  - COMPONENTS AND CLADDING WIND PRESSURE SEE TABLE
- THE MAXIMUM DEFLECTIONS OF THE STRUCTURE SHALL BE WITHIN THE FOLLOWING:
  - TYPICAL FLOOR FRAMING
    - I LIVE LOADS AND DEAD LOADS SPAN / 240
    - II LIVE LOADS SPAN / 360
  - TYPICAL ROOF FRAMING
    - I LIVE LOADS AND DEAD LOADS SPAN / 180
    - II LIVE LOADS SPAN / 240
  - TYPICAL WALL GIRT FRAMING
    - WIND LOADS (10 YEAR MRI) SPAN / 120
  - TYPICAL LINTEL BEAM
    - DEAD LOAD AND LIVE LOAD SPAN/600 OR 0.3 INCHES MAX
  - LATERAL FLOOR TO FLOOR DISPLACEMENT (10 YEAR MRI)
    - METAL SIDING AND GIRTS H FLOOR / 200
  - SLAB-ON-GRADE LIVE LOADS:
    - GENERAL **X** PSF
    - WHEEL LOADS SEE DIAGRAM



- SEISMIC LOADS (FOR BUILDING AND BOTREE PLATFORM STRUCTURES)
  - RISK CATEGORY II
  - SEISMIC IMPORTANCE FACTOR, Ie 1.00
  - SITE CLASS C
  - SEISMIC DESIGN CATEGORY B
  - MAPPED SPECTRAL ACCELERATION
    - I SPECTRAL RESPONSE COEFFICIENT, Ss 0.18g
    - II SPECTRAL RESPONSE COEFFICIENT, S1 0.082g
  - DESIGN SPECTRAL ACCELERATION
    - I SPECTRAL RESPONSE COEFFICIENT, SDS 0.156g
    - II SPECTRAL RESPONSE COEFFICIENT, SD1 0.182g
  - BASIC SEISMIC FORCE RESISTING SYSTEM(S): STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.
  - RESPONSE MODIFICATION FACTOR, R 3.0
  - SEISMIC RESPONSE COEFFICIENT(S), Cs 0.064
  - DESIGN BASE SHEAR, V = Cs *W X.X KIPS
  - ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE
- SEISMIC LOADS (FOR OFFICE STRUCTURE) & OTHER URT EQUIPMENT ROOMS
  - RISK CATEGORY II
  - SEISMIC IMPORTANCE FACTOR, Ie 1.00
  - SITE CLASS C
  - SEISMIC DESIGN CATEGORY B
  - MAPPED SPECTRAL ACCELERATION
    - I SPECTRAL RESPONSE COEFFICIENT, Ss 0.18g
    - II SPECTRAL RESPONSE COEFFICIENT, S1 0.082g
  - DESIGN SPECTRAL ACCELERATION
    - I SPECTRAL RESPONSE COEFFICIENT, SDS 0.156g
    - II SPECTRAL RESPONSE COEFFICIENT, SD1 0.182g
    - BASIC SEISMIC FORCE RESISTING SYSTEM(S): ORDINARY REINFORCED MASONRY SHEAR WALLS
  - RESPONSE MODIFICATION FACTOR, R 2.0
  - SEISMIC RESPONSE COEFFICIENT(S), Cs 0.078
  - DESIGN BASE SHEAR, V = Cs *W X.X KIPS

  ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE
- SEISMIC LOADS (FOR TANK FARM AND EXTERIOR STRUCTURES)
  - RISK CATEGORY IV
  - SEISMIC IMPORTANCE FACTOR, Ie 1.50
  - SITE CLASS C
  - SEISMIC DESIGN CATEGORY C
  - MAPPED SPECTRAL ACCELERATION
    - I SPECTRAL RESPONSE COEFFICIENT, Ss 0.18g
    - II SPECTRAL RESPONSE COEFFICIENT, S1 0.082g
  - DESIGN SPECTRAL ACCELERATION
    - I SPECTRAL RESPONSE COEFFICIENT, SDS 0.156g
    - II SPECTRAL RESPONSE COEFFICIENT, SD1 0.182g
    - BASIC SEISMIC FORCE RESISTING SYSTEM(S):
    - REFER TO THE DRAWINGS FOR IDENTIFIED ELEMENTS OF THE SEISMIC FORCE RESISTING SYSTEMS
  - RESPONSE MODIFICATION FACTOR, R 1.25
  - SEISMIC RESPONSE COEFFICIENT(S), Cs 0.187
  - DESIGN BASE SHEAR, V = Cs *W X.X KIPS
  - ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE

SSOE®

CONSULTANTS:

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CONSTRUCTION
04/29/2022
www.ssoe.com

SEAL ON THIS DOCUMENT AUTHORIZED BY:

GEORGIA REGISTERED No. PE030606 PROFESSIONAL ENGINEER WILLIAM B. KUSSRO
04/29/2022

PROJECT INFORMATION:

BROWNFIELD MODIFICATIONS

CLIENT INFORMATION:

ASCEND ELEMENTS

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COVINGTON, GA
30014

CLIENT PROJECT NO: XXX-XXXXX-XX

NO.	DATE	SUBJECT
A	04/29/22	FOR CONSTRUCTION - PKG 11C02

REVISION OR ISSUE

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PROJECT NO:	021-01975-00
PROJECT MANAGER:	R. FOX
DESIGNED:	H.FIRSTER
CHECKED:	D. LYKINS

DRAWING TITLE:
STRUCTURAL GENERAL NOTES

DRAWING NO:
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