

GENERAL STRUCTURAL NOTES

SCOPE OF WORK

- WORK DETAILED ON THE DRAWINGS AND APPLICABLE ITEMS DESCRIBED IN THE GENERAL STRUCTURAL NOTES.

DRAWINGS AND SPECIFICATIONS

- DO NOT SCALE DRAWINGS FOR DIMENSIONS NOT GIVEN.
- ADVISE ENGINEER OF DIMENSIONAL DISCREPANCIES.
- VERIFY ALL EXISTING FIELD CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK AT ANY TIME WITHOUT CONTRACT DOCUMENTS OR, WHERE REQUIRED, APPROVED SHOP DRAWINGS, PRODUCT DATA OR SAMPLES FOR SUCH PORTION OF THE WORK.

CONSTRUCTION SAFETY

- THESE DRAWINGS DO NOT INCLUDE PROVISIONS TO SATISFY SAFETY REQUIREMENTS. CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING SAFETY DURING CONSTRUCTION AND FOR CONFORMANCE TO ALL APPLICABLE OSHA STANDARDS. JOBSITE VISITS BY ENGINEER SHALL NOT CONSTITUTE APPROVAL, AWARENESS OR LIABILITY FOR ANY HAZARDOUS CONDITIONS.

SHORING AND SUPPORT

- WHEN REMOVAL OF STRUCTURAL ELEMENTS FOR MODIFICATIONS MAY CAUSE TEMPORARY WEAKNESS, EXCESSIVE DEFLECTIONS OR STRUCTURAL INSTABILITY, SHORING OR OTHER SUITABLE SUPPORTS SHALL BE PROVIDED UNTIL COMPLETION AND ADEQUATE CURING OF MODIFICATIONS.
- THE CONTRACTOR SHALL SUBMIT CUT SHEETS WITH CERTIFIED CAPACITIES FOR SHORING TO BE USED. SHORING PLANS SHALL BE PREPARED, SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA.

VALUE ENGINEERING

- ANY CHANGES TO THE STRUCTURE SHALL HAVE BEEN REVIEWED AND APPROVED IN WRITING BY THE ENGINEER PRIOR TO COMMENCING WORK ON ITEMS AFFECTED.

FIELD MODIFICATIONS

- ANY CHANGES TO THE STRUCTURE SHALL HAVE BEEN REVIEWED AND APPROVED IN WRITING BY THE ENGINEER PRIOR TO COMMENCING WORK ON ITEMS AFFECTED.
- ANY CHANGES MADE WITHOUT PRIOR APPROVAL ARE SUBJECT TO REVIEW BY THE ENGINEER. CONTRACTOR SHALL PROVIDE SKETCHES, PHOTOGRAPHS AND WRITTEN DESCRIPTION OF EACH DEVIATION FROM THE PLANS FOR THE ENGINEER'S REVIEW.

BUILDING CODES AND SPECIFICATIONS

- FLORIDA BUILDING CODE 2007, WITH 2009 SUPPLEMENTS.
- MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES ASCE 7-05.
- BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES ACI 530-05 / ASCE 5-05 / TMS 402-05.
- BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI 318-05.
- AISC MANUAL OF STEEL CONSTRUCTION, 13TH EDITION.
- STRUCTURAL WELDING CODE D1.1.

DESIGN LOADS

- DEAD LOADS
 - TABLE C3-1: MINIMUM DESIGN LOADS, ASCE 7-05
- LIVE LOADS
 - ROOF20 PSF
 - STAIRS100 PSF
 - ELEVATED PLATFORMS.....100 PSF
- WIND LOAD
 - DESIGN WIND SPEED120 MPH (3 SECOND GUST)
 - EXPOSURE CATEGORYB
 - IMPORTANCE FACTOR1.15
 - HEIGHT AND EXPOSURE ADJUSTMENTN/A - ASCE 7-05
 - ASCE 7 BUILDING CATEGORYIII
 - ENCLOSED BUILDING
- EQUIPMENT LOADS PER MANUFACTURERS SPECIFICATIONS
 - COOLING TOWER (BALTIMORE AIRCOIL SERIES 3000).....95,360 lbs (DOUBLE CELL)
 - CHILLERS102,328 lbs (OPERATING WEIGHT)
- COMPONENT AND CLADDING
 - SPECIALTY ENGINEER DESIGNING THE COMPONENTS AND CLADDING SHOULD DETERMINE THE TRIBUTARY AREA FOR SUCH COMPONENTS AND CLADDING AND USE THE TABLE FOR THE AREA EQUAL TO OR SMALLER THAN THE ACTUAL TRIBUTARY AREA.
 - COMPONENTS AND CLADDING SUB-CONTRACTOR SHALL PROVIDE SIGNED AND SEALED DRAWINGS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA THAT INCLUDE THE DESIGN OF THE COMPONENTS AND CLADDING, AND CONNECTIONS TO THE MAIN STRUCTURE.

6. ROOF COMPONENTS AND CLADDING, GABLE ROOF AREA (> 0 TO 7 DEGREES), ASCE 7-05						
PRESSURE						
EFFECTIVE WIND AREA (SQ. FT.)	EXTERNAL PRESSURE COEFFICIENT GCp			INTERNAL PRESSURE COEFFICIENT GCpi	P (psf)	
	ZONE 1	ZONE 2	ZONE 3		ZONE 1	ZONE 3
	FIELD	EDGE	CORNER		FIELD	CORNER
< 10	0.300	0.300	0.300	0.18	15.57	15.57
20	0.250	0.250	0.250	0.18	13.94	13.94
50	0.220	0.220	0.220	0.18	12.97	12.97
100 <	0.200	0.200	0.200	0.18	12.32	12.32
SUCTION						
EFFECTIVE WIND AREA (SQ. FT.)	EXTERNAL PRESSURE COEFFICIENT GCp	INTERNAL PRESSURE COEFFICIENT GCpi	P (psf)			
	ZONE 1	ZONE 2	ZONE 3	ZONE 1	ZONE 2	ZONE 3
	FIELD	EDGE	CORNER	FIELD	EDGE	CORNER
< 10	-1.000	-1.800	-2.800	-0.18	-38.27	-44.21
20	-0.990	-1.600	-2.300	-0.18	-37.62	-57.73
50	-0.950	-1.300	-1.600	-0.18	-36.65	-48.00
100 <	-0.900	-1.100	-1.100	-0.18	-35.02	-41.51
OVERHANG						
EFFECTIVE WIND AREA (SQ. FT.)	EXTERNAL PRESSURE COEFFICIENT GCp			INTERNAL PRESSURE COEFFICIENT GCpi	P (psf)	
	ZONE 1	ZONE 2	ZONE 3		ZONE 1	ZONE 2
	FIELD	EDGE	CORNER	FIELD	EDGE	CORNER
< 10	-1.70	-1.70	-2.80	-0.18	-	-60.97
20	-1.65	-1.65	-2.20	-0.18	-	-59.35
50	-1.62	-1.62	-1.40	-0.18	-	-58.97
100 <	-1.60	-1.60	-0.80	-0.18	-	-57.73
ROOF CORNER ZONE WIDTH = 8'-0" ROOF CORNER ZONE LENGTH = 8'-0" ROOF EDGE ZONE WIDTH = 8'-0"						

7. WALL COMPONENTS AND CLADDING						
PRESSURE						
EFFECTIVE WIND AREA (SQ. FT.)	EXTERNAL PRESSURE COEFFICIENT GCp			INTERNAL PRESSURE COEFFICIENT GCpi	P (psf)	
	ZONE 4	ZONE 5	EDGE		ZONE 4	ZONE 5
	FIELD	EDGE		FIELD	EDGE	
< 10	1.000	1.000	0.18	38.27	38.27	
20	0.950	0.950	0.18	36.65	36.65	
50	0.900	0.900	0.18	35.02	35.02	
100	0.800	0.800	0.18	31.78	31.78	
200	0.767	0.767	0.18	30.71	30.71	
500	0.700	0.700	0.18	28.54	28.54	
SUCTION						
EFFECTIVE WIND AREA (SQ. FT.)	EXTERNAL PRESSURE COEFFICIENT GCp			INTERNAL PRESSURE COEFFICIENT GCpi	P (psf)	
	ZONE 4	ZONE 5	EDGE		ZONE 4	ZONE 5
	FIELD	EDGE		FIELD	EDGE	
< 10	-1.100	-1.400	-0.18	-41.51	-51.24	
20	-1.050	-1.300	-0.18	-39.89	-48.00	
50	-1.000	-1.150	-0.18	-38.27	-43.13	
100	-0.900	-1.100	-0.18	-35.02	-41.51	
200	-0.850	-0.950	-0.18	-33.40	-36.65	
500	-0.800	-0.800	-0.18	-31.78	-31.78	
WALL EDGE ZONE WIDTH = 16'-0"						

FOUNDATIONS - REFER TO SPECIFICATION 03300

- FOUNDATION DESIGN BASED ON 2000 PSF MINIMUM ALLOWABLE BEARING PRESSURE, PER SUBSURFACE INVESTIGATION REPORT PREPARED BY BTL ENGINEERING SERVICES, INC.
- NOTIFY ENGINEER IF FOOTING EXCAVATION REVEALS UNSUITABLE OR UNSTABLE SOILS OR MATERIALS OR CONDITIONS NOT PREVIOUSLY ANTICIPATED.
- CONTRACTOR SHALL CONSIDER THE POSSIBLE IMPACT OF GROUNDWATER ON CONSTRUCTION TECHNIQUES, SEASONAL VARIATIONS, ANY OTHER SITE INDICATORS AND HIS OWN JUDGMENT.
- SOIL DIRECTLY BELOW FOUNDATIONS AND SLAB ON GRADE SHALL BE COMPACTED TO 95% OF THE ASTM D 1557 (MODIFIED PROCTOR) MAXIMUM DRY DENSITY.
- PREPARE SITE AND SOILS IN ACCORDANCE WITH REPORT OF GEOTECHNICAL ENGINEERING SERVICES PREPARED BY BTL ENGINEERING SERVICES, INC. PROJECT NO. 5160-08-1491 DATED SEPTEMBER 17, 2008.
- WHEN EXCAVATIONS ADJACENT TO EXISTING STRUCTURES MAY CAUSE UNDERMINING, STRUCTURAL INSTABILITY OR ANY OTHER DETRIMENTAL CONDITION, A SOIL STABILIZATION SYSTEM SHALL BE EMPLOYED, I.E. SHEET PILING, THE SYSTEM SHALL BE ENGINEERED AND THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THE SYSTEM. SHOP DRAWINGS SHALL BE PREPARED, SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA.

PORTLAND CEMENT CONCRETE - REFER TO SPECIFICATION 03300

- CONCRETE QUALITY AND PLACEMENT
 - FOUNDATIONS 4000 PSI, 3" TO 5' SLUMP
 - FILLED CELLS IN CMU 3000 PSI, 8" TO 11" SLUMP, 3/8" PEA GRAVEL
 - SLABS ON GRADE 4000 PSI, 3" TO 5' SLUMP
 - FLY ASH SHALL NOT EXCEED 20 PERCENT BY WEIGHT OF TOTAL CEMENT, IF USED.
 - CONTRACTOR SHALL STRICTLY ADHERE TO SLUMP LIMITS. SUPERPLASTICIZER MAY BE USED AT THE CONTRACTOR'S OPTION TO INCREASE WORKABILITY.
 - MAXIMUM MIXING TIME (FROM BATCHING TO PLACEMENT)

AIR TEMPERATURE LESS THAN 85° F:	90 MINUTES
AIR TEMPERATURE 85° F TO 90° F:	75 MINUTES
AIR TEMPERATURE OVER 90° F:	60 MINUTES
- MINIMUM COVER FOR REINFORCEMENT
 - FOOTINGS, 3 INCHES TO BOTTOM AND UNFORMED SIDES, 2 INCHES TO FORMED SIDES
 - OTHER, 2 INCHES TO MAIN REINFORCING, 1 1/2 INCHES TO TIES AND STIRRUPS
- ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE BY STANDARD ACCESSORIES DURING CONCRETE PLACEMENT.
- REINFORCEMENT SHALL BE GRADE 60 CONFORMING TO ASTM A615.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- DETAIL AND FABRICATE REINFORCEMENT IN ACCORDANCE WITH "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315.
- PROVIDE MINIMUM LAP SPLICES PER ACI 318-05 FOR ALL REINFORCING BARS, UNLESS OTHERWISE NOTED. STAGGER SPLICES IN ADJACENT BARS AT LEAST 24 INCHES, EXCEPT IN BEAMS AND COLUMNS.
- IN WALL FOOTINGS, GRADE BEAMS AND BOND BEAMS, PROVIDE BENT BARS AT CORNERS AND INTERSECTIONS OF THE SAME NUMBER AND SIZE AS STRAIGHT BARS.
- APPLY CURING COMPOUND TO SLAB WITHIN TWO HOURS OF COMPLETION OF FINISHING OPERATIONS. USE LIQUID MEMBRANE FORMING COMPOUND COMPLYING WITH ASTM C309 TYPE I CLASS A. APPLY IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

CONCRETE SLAB ON GRADE - REFER TO SPECIFICATION 03300

- THE INTENDED USE OF THE SLAB ON GRADE IS FOR PEDESTRIAN TRAFFIC ONLY.
- MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 4000 PSI
- MINIMUM THICKNESS: 6"
- MAXIMUM SLUMP AT POINT OF DELIVERY: 5 INCHES"
- MAXIMUM AGGREGATE SIZE: 1 INCH
- ENTRAINED AIR CONTENT: 4.5%
- WELDED WIRE FABRIC SHALL BE WWF 6x6-w2.9 x w2.9, UNLESS OTHERWISE NOTED, CONFORMING TO ASTM A 185.
- THE WELDED WIRE FABRIC SHALL BE PLACED IN THE CENTER OF THE DEPTH OF SLAB ON GRADE UNLESS OTHERWISE NOTED. ALL MESH JOINTS SHALL BE LAPPED TWO FULL MESHES.
- INTERRUPT TYPICAL SLAB REINFORCEMENT AT ALL CONSTRUCTION AND EXPANSION JOINTS.
- CUT ALTERNATE WIRES ALONG THE LINE OF SAW CUT CONTROL JOINTS PRIOR TO PLACING CONCRETE. MAKE SAW CUTS WITHIN 12 HOURS OF CONCRETE PLACEMENT, OR AS SOON AS CUTTING CAN BE DONE SUCH THAT THE SAW BLADE DOES NOT DISLODGE AGGREGATE AND THE EDGES OF THE CUT DO NOT RAVEL.
- PROVIDE 1/2" PREFORMED EXPANSION JOINT MATERIAL WHERE SLAB ABUTS VERTICAL SURFACES SUCH AS WALLS AND COLUMNS.
- PROVIDE VAPOR PROTECTION TO SOIL PER FLORIDA BUILDING CODE 2007 BEFORE SLAB PLACEMENT.
- PROVIDE VAPOR BARRIER UNDER ALL SLABS ON GRADE IN ENCLOSED SPACE.
- APPLY CURING COMPOUND TO SLAB WITHIN TWO HOURS OF COMPLETION OF FINISHING OPERATIONS. USE LIQUID MEMBRANE FORMING COMPOUND COMPLYING WITH ASTM C 309 TYPE I CLASS A. THE COMPOUND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- THE CONTRACTOR SHALL CONFIRM THAT THE CURING COMPOUND WILL NOT INTERFERE WITH THE BONDING OF ANY APPLIED FLOOR SURFACE. IF THE CURING COMPOUND IS FOUND TO INTERFERE WITH BONDING, THE USE OF WET BURLAP AND TRICKLE HOSES IS ACCEPTABLE.
- FOR LARGE SLABS, IT IS RECOMMENDED THAT THE SLAB BE CAST IN ALTERNATING LONG STRIPS AND SAW CUT TRANSVERSELY TO MINIMIZE SHRINKAGE CRACKING.

CONCRETE MASONRY UNITS- TO SPECIFICATION 04200 AND 04230

- BLOCKS SHALL BE HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90 LATEST EDITION, TYPE II NON-MOISTURE CONTROLLED. THE MINIMUM NET AREA COMPRESSIVE STRENGTH SHALL BE 1900 PSI FOR AN AVERAGE OF THREE UNITS AND 1500 PSI FOR AN INDIVIDUAL UNIT. SAMPLE AND TEST MASONRY UNITS IN ACCORDANCE WITH ASTM C 140. SAMPLE AND TEST MASONRY GROUT FILL IN ACCORDANCE WITH ASTM C 39.
- MORTAR SHALL CONFORM TO ASTM C 270 LATEST EDITION. MORTAR FOR ABOVE GRADE WORK SHALL BE TYPE S WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 1800 PSI. MORTAR FOR BELOW GRADE WORK SHALL BE TYPE M MORTAR WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI. SAMPLE AND TEST MORTAR IN ACCORDANCE WITH ASTM C 109.
- PREFABRICATED HORIZONTAL JOINT REINFORCEMENT SHALL HAVE 9 GAGE SIDE RAILS FABRICATED FROM HIGH-STRENGTH COLD-DRAWN WIRE CONFORMING TO ASTM A82 AND SHALL BE GALVANIZED AFTER FABRICATION. PLACE JOINT REINFORCEMENT IN ALTERNATE COURSES IN ALL WALLS. PLACE THREE ROWS AT 8 INCHES ON CENTER IMMEDIATELY ABOVE ALL WALL OPENINGS AND AT THE TOP OF ALL WALLS. LAP SIDE RAILS AT LEAST 6 INCHES AT SPLICES. JOINT REINFORCEMENT TO BE TRUSS-TYPE.
- PROVIDE ALL SPECIAL, UNTEL, KNOCK-OUT, JAMB AND SASH BLOCK AS REQUIRED TO COMPLETE THE WALLS. MASONRY SAWS SHALL BE USED TO CUT THE BLOCK AS REQUIRED.
- BRACE FOUNDATION WALLS BEFORE BACKFILLING AGAINST THEM TO PREVENT OVERSTRESSING, BUCKLING OR ROTATION OF THE WALLS. BRACE ALL WALLS AGAINST WIND, CONSTRUCTION LOADS OR OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE WALL. BRACING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- IN ADDITION TO REQUIREMENTS ELSEWHERE IN THE DRAWINGS FOR FILLING MASONRY CELLS, FILL CELLS WITH CONCRETE AND ONE #5 BAR AT A MAXIMUM SPACING OF 48 INCHES UNLESS OTHERWISE NOTED. FILL FIRST CELL EACH SIDE OF ANY OPENING AND FILL FIRST CELL AT END OF WALL.
- EXTEND AND HOOK VERTICAL BARS INTO FOOTING. EXTEND AND HOOK VERTICAL BARS INTO TOP OF WALL BOND BEAM OR TIE BEAM.
- ALL VERTICAL BARS SHALL BE SECURELY TIED TO THE LOWER BAR AT ANY SPLICES, ESPECIALLY AT THE FOOTING DOWELS. BARS SHALL BE SECURED IN THEIR PROPER POSITIONS WITHIN THE CELLS BY THE WIRES, REBAR POSITIONERS OR BY OTHER APPROVED METHODS.
- PROVIDE CLEANOUTS AND/OR INSPECTION PORTS FOR FILLING CELLS IN LIFTS EXCEEDING 5 FEET. LIFTS SHALL NOT EXCEED 8 FEET.
- CONTROL JOINT SPACING ALONG A STRAIGHT WALL SHALL NOT EXCEED 25 FEET, NOR 3 TIMES THE WALL HEIGHT. USE PREFORMED NEOPRENE JOINT STRIPS AND STANDARD SASH BLOCKS.
- PROVIDE CONTROL JOINTS IN ACCORDANCE WITH DETAILS ON THE DRAWINGS AND IN ACCORDANCE WITH THESE GUIDELINES:
 - AT CHANGES IN WALL HEIGHT
 - AT CHANGES IN WALL THICKNESS
 - AT WALL OPENINGS LESS THAN 4'-0" WIDE, ONE SIDE
 - AT WALL OPENINGS 4'-0" OR WIDER, BOTH SIDES
 - AT CONTROL JOINTS IN APPLIED PLASTER OR MASONRY VENEER
 - AT CHASES AND RECESSES FOR PIPES, COLUMNS, ETC.
- IN ADDITION TO REQUIREMENTS ELSEWHERE IN THE DRAWING, PROVIDE A CONTINUOUS HORIZONTAL #5 IN FULLY GROUTED KNOCK OUT BLOCK BELOW WINDOW OPENINGS EXTENDED 8" BEYOND EACH SIDE OF OPENING.

STRUCTURAL STEEL - REFER TO SPECIFICATION 05120

- ALL W-SHAPED STEEL (BEAMS AND COLUMNS) SHALL CONFORM TO ASTM A992 GRADE 50.
- STEEL CHANNELS, ANGLES, PLATES, AND BARS CONFORM TO ASTM A36.
- RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500 GRADE B, Fy = 46 KSI.
- ROUND HOLLOW STRUCTURAL SECTIONS (RHSS) SHALL CONFORM TO ASTM A500 GRADE B, Fy = 42 KSI.
- STRUCTURAL STEEL PIPE SECTIONS SHALL CONFORM TO ASTM A53 GRADE B, Fy = 35 KSI.
- ANCHOR BOLTS AND RODS SHALL CONFORM TO ASTM F1554 GRADE 36.
- ALL BEAMS SHALL BE FABRICATED AND ERECTED WITH NATURAL CAMBER UP.
- ALL WALLS SHALL BE MADE WITH E70 LOW HYDROGEN ELECTRODES, BY QUALIFIED WELDERS AS PER AWS D1.1 REQUIREMENTS.
- ALL BOLTS, EXCEPT ANCHOR BOLTS, SHALL BE HIGH-STRENGTH ASTM A325, 3/4 IN. DIA., UNLESS NOTED OTHERWISE. USE HARDENED WASHERS UNDER TURNED ELEMENTS.
- CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING AND GUYING OF THE FRAMING AGAINST WIND, CONSTRUCTION LOADS OR OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE STRUCTURE.
- RETURN ALL WELDS AT CORNERS TWICE THE NOMINAL WELD SIZE MINIMUM.
- ANCHOR BOLTS SHALL BE FURNISHED WITH HEAVY HEX NUTS AND FLAT WASHERS AND SHALL BE THREADED WITH A NUT AT THE EMBEDDED END. TAC WELD NUT TO BOLT OR STRIKE THREADS.
- ALL COPES, BLOCKS, CUTOUTS AND OTHER CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL REINFRANT CORNERS SHAPED NOTCH-FREE TO A RADIUS OF 1/2 IN. MINIMUM.
- ALL STRUCTURAL STEEL SHALL RECEIVE TWO SHOP COATS OF PRIMER PAINT CONFORMING TO THE PERFORMANCE REQUIREMENTS OF FEDERAL SPECIFICATION TT-P-636 OR EQUAL.
- ENDS OF COLUMNS SHALL BE MILLED TO BEAR AT ALL SPLICES AND ATTACHMENT OF BASE PLATES.
- WELDS NOT OTHERWISE DESIGNATED SHALL BE 1/4 IN. MINIMUM FILLET WELDS.
- ADHESIVE ANCHORS SHALL BE THE HILTI HIT RE 500 ADHESIVE ANCHOR SYSTEM (OR APPROVED EQUAL) INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
- EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT III (OR APPROVED EQUAL) INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.
- WHEN SPECIFICALLY NOT DETAILED ON THE DESIGN DRAWINGS PROVIDE THE GREATER OF ONE OF THE FOLLOWING BEAM END CONNECTIONS:
 - MINIMUM 5/16 INCHES THICK DOUBLE ANGLE SHEAR CONNECTION, FULL DEPTH OF THE BEAM, WELDED OR BOLTED WITH VERTICAL BOLT SPACING = 3".
 - WHERE BEAM REACTIONS ARE SHOWN, CONNECTIONS SHALL DEVELOP THE REACTION GIVEN.
 - WHEN BEAM REACTIONS ARE NOT SHOWN, CONNECTIONS SHALL BE PROPORTIONED TO SUPPORT 60% OF THE TOTAL UNIFORM LOAD CAPACITY (ULC) SHOWN IN THE ALLOWABLE UNIFORM LOAD TABLES, PART 3 OF THE AISC STEEL CONSTRUCTION MANUAL, FOR THE GIVEN BEAM, SPAN, AND GRADE OF STEEL SPECIFIED, FOR COMPOSITE BEAMS, PROPORTION CONNECTIONS FOR 100% OF THE ULC.
 - CONNECTIONS SHALL BE PROPORTIONED FOR THE ECCENTRICITY BETWEEN THE CONNECTION CENTROID AND THE CENTROID OF THE SUPPORTING MEMBER.
- OPENINGS IN ROOF DECKING LARGER THAN 1 SQUARE FOOT SHALL BE FRAMED BY ANGLES 4x4x1/4 LEG DOWN, BEARING ON SUPPORTING MEMBER AT EACH END, UNLESS DETAILED OTHERWISE ON THE DRAWINGS. COPE VERTICAL LEG 4 INCHES EACH END. WELD ADDITIONAL ANGLES OF THE SAME SIZE TO FORM A RECTANGLE OF THE APPROPRIATE SIZE.
- SHOP DRAWINGS: SUBMIT SHOP DRAWINGS PREPARED UNDER SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER, INCLUDING COMPLETE DETAILS AND SCHEDULES FOR FABRICATION AND ASSEMBLY OF STRUCTURAL STEEL MEMBERS, PROCEDURES AND DIAGRAMS. INCLUDE DETAILS OF CUTS, CONNECTIONS, CAMBER, HOLES AND OTHER PERTINENT DATA. INDICATE WELDS BY STANDARD AWS SYMBOLS AND SHOW SIZE, LENGTH AND TYPE OF EACH WELD. STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER WHO SUPERVISED THEIR PRODUCTION.

STEEL ROOF DECK - REFER TO SPECIFICATION 05310

- ROOF DECK SYSTEM SHALL BE 1 1/2" X 22 GAUGE INTERMEDIATE-RIB GALVANIZED METAL DECK TYPE B, AS IDENTIFIED BY THE STEEL DECK INSTITUTE.
- THE DECK SHALL BE CAPABLE OF SUPPORTING A UNIFORMLY DISTRIBUTED LIVE LOAD OF 20 POUNDS PER SQUARE FOOT WITH THE LIVE LOAD DEFLECTION NOT TO EXCEED 1/240 OF THE SPAN LENGTH CENTER TO CENTER OF SUPPORTS AND WITH A UNIFORMLY DISTRIBUTED DEAD LOAD OF 20 POUNDS PER SQUARE FOOT WITHOUT EXCEEDING A UNIT STRESS OF 20,000 POUNDS PER SQUARE INCH.
- STEEL SHALL BE ASTM A653 STRUCTURAL QUALITY GRADE 33 OR HIGHER WITH A MINIMUM YIELD STRENGTH OF 33,000 POUNDS PER SQUARE INCH.
- WELDING WASHERS SHALL BE USED FOR ALL DECK UNITS WITH A METAL THICKNESS LESS THAN 0.028 INCHES.
- ROOF DECK SHALL BE LAID OUT SUCH THAT DECKING SHALL SPAN THREE SPANS WITHOUT INTERRUPTION WHEREVER POSSIBLE.
- DECKING AND ACCESSORIES SHALL BE GALVANIZED. GALVANIZING SHALL CONFORM TO ASTM A924 WITH A MINIMUM COATING CLASS OF G60 (Z180) AS DEFINED BY ASTM A653.
- DECKING SHALL BE FASTENED TO STEEL SUPPORTS IN A 36/7 PATTERN WITH 3/8" DIAMETER PUDDLE WELDS OR POWDER DRIVEN AND/OR PNEUMATIC FASTENERS. SIDE LAP CONNECTORS SHALL NOT BE SPACED MORE THAN 8 INCHES ON CENTER. SIDE LAP FASTENERS SHALL BE #10 TEK SCREWS MINIMUM. FASTEN DECK TO PERIMETER ANGLE WITH POWDER DRIVEN AND/OR PNEUMATIC FASTENERS AT 6 INCHES ON CENTER.
- PROVIDE ALL EAIVE PLATES, RIDGE PLATES AND OTHER PIECES AS REQUIRED FOR A WEATHER-TIGHT ASSEMBLY.
- TOUCH UP ALL WELDS AND ABRASIONS WITH GALVANIZING REPAIR PAINT - HIGH ZINC-DUST CONTENT PAINT FOR REPAIR OF DAMAGED GALVANIZED SURFACES AND WELDS COMPLYING WITH MILITARY SPECIFICATIONS MIL-P- 21035 (SHRPS)
- DECK AND SUPPORTING MEMBERS DAMAGED BY EXCESS WELDING HEAT SHALL BE REPAIRED OR REPLACED AS DETERMINED BY THE ENGINEER

LIGHT GAUGE METAL FRAMING- REFER TO SPECIFICATION 05400

- UNLESS NOTED OTHERWISE, MATERIALS FOR LIGHT GAUGE METAL FRAMING SHALL COMPLY WITH ASTM A 1003 / A 1003 M, STRUCTURAL GRADE, TYPE H, METALLIC COATED, OF GRADE AS REQUIRED BY STRUCTURAL PERFORMANCE. MINIMUM COATING SHALL BE G60 OR EQUIVALENT. ALL MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A525. OR ALUMINUM/ZINC COATED IN ACCORDANCE WITH ASTM A772.
- PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INDICATING ALL MEMBER GAUGES, SPACING, AND SIZES, INCLUDE COMPLETE DETAILS OF ALL CONNECTIONS. FABRICATION SHALL NOT BEGIN UNTIL SUCH SHOP DRAWINGS ARE REVIEWED.
- SHOP DRAWINGS : SHOW LAYOUT, SPACING, SIZES, THICKNESS, AND TYPES OF COLD-FORMED METAL FRAMING; FABRICATION; AND FASTENING AND ANCHORAGE DETAILS, INCLUDING MECHANICAL FASTENERS, SHOW REINFORCING CHANNELS, OPEN FRAMING, SUPPLEMENTAL FRAMING, STRAPPING, BRACING, BRIDGING, SPLICES, ACCESSORIES, CONNECTION DETAILS, AND ATTACHMENT TO ADJOINING WORK.
- THE STRUCTURAL DESIGN OF LIGHT GAUGE METAL FRAMING SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. THE DRAWINGS AND CALCULATIONS CARRYING THE SEAL OF THE REGISTERED STRUCTURAL ENGINEER SHALL BE SUBMITTED FOR REVIEW. NO FABRICATION SHALL BEGIN UNTIL SHOP DRAWINGS ARE APPROVED. DESIGN LOADS SHALL BE AS SPECIFIED BY THE STRUCTURAL CONTRACT DOCUMENTS AND/OR THE APPLICABLE CODES WHICH EVER IS MORE STRINGENT.
- ASIS SPECIFICATIONS AND STANDARDS : COMPLY WITH ASIS' "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND ITS "STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS."
- COMPLY WITH ASIS' "STANDARD FOR COLD-FORMED STEEL FRAMING - HEADER DESIGN."

STEEL STAIRS

- STAIR TREADS SHALL BE WELDED STEEL GRATING WITH 1" x 3/16" SERRATED BEARING BARS AT 1 3/16" CENTERS AND CROSS BARS AT 4" CENTERS. STAIR TREADS SHALL HAVE STEEL END PLATES AND CHECKERED PLATE NOSING.
- STAIR TREADS SHALL BE SHOP ASSEMBLED TO STRINGERS.
- ALL RISERS MUST BE EQUAL ON A SET OF STAIRS.
- STAIR STRINGERS SHALL BE C10 X 15.3.

PIPE HANDRAIL

- PIPE HANDRAIL SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B.
- AT CHANGES IN WALL HEIGHT
- AT WALL OPENINGS LESS THAN 4'-0" WIDE, ONE SIDE
- AT WALL OPENINGS 4'-0" OR WIDER, BOTH SIDES
- AT CONTROL JOINTS IN APPLIED PLASTER OR MASONRY VENEER
- AT CHASES AND RECESSES FOR PIPES, COLUMNS, ETC.
- IN ADDITION TO REQUIREMENTS ELSEWHERE IN THE DRAWING, PROVIDE A CONTINUOUS HORIZONTAL #5 IN FULLY GROUTED KNOCK OUT BLOCK BELOW WINDOW OPENINGS EXTENDED 8" BEYOND EACH SIDE OF OPENING.
- PIPE HANDRAIL SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B.
- POSTS AND RAILS SHALL BE STANDARD WEIGHT 1 1/2" NOMINAL DIAMETER PIPE.
- TOE PLATES SHALL BE 4" X 1/4".
- HANDRAIL SHALL BE SHOP ASSEMBLED WITH TOE PLATE IN COMPLETE PANELS REQUIRING NO FIELD SPLICES.
- EACH HANDRAIL PANEL SHALL HAVE A MINIMUM OF TWO POSTS.
- MINIMUM WELD SHALL BE 3/16" FILLET.
- ALL WELDED JOINTS SHALL BE COMPLETELY SEALED.
- ALL JOINTS AND WELDS IN TOP RAIL SHALL BE GROUND SMOOTH.
- BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" DIA. UNFINISHED BOLTS.
- ALL CORNERS SHALL BE MITER CUT OR MINIMUM RADIUS BEND. CORNERS AT LADDER OPENINGS SHALL BE MITER CUT.
- OPEN END OF ALL POSTS SHALL BE PLUGGED AND WELDED.

WELDED STEEL GRATING

- GRATINGS SHALL BE WELDED STEEL GRATING WITH 1-1/4" x 3/16" SERRATED BEARING BARS AT 1 3/16" CENTERS AND CROSS BARS AT 4" CENTERS (19W4).
- GRATING SHALL BE WELDED TO THE SUPPORT FRAMING EXCEPT THAT REMOVABLE GRATING SHALL BE FASTENED TO SUPPORT FRAMING WITH "GRATE-FAST" GRATING FASTENERS AS MANUFACTURED BY STRUCT-FAST INC., OR APPROVED EQUAL.
- THE LOCATION'S OF GRATING CUT-OUTS LARGER THAN 6" DIAMETER ARE INDICATED ON DESIGN DRAWINGS. GRATING CUT-OUTS LESS THAN 6" DIAMETER MAY BE CUT IN THE FIELD.
- HOLES THROUGH GRATING 6" IN DIAMETER AND LARGER SHALL BE BANDED, UNLESS TOE PLATE IS CALLED FOR ON THE DESIGN DRAWINGS.
- GRATING SHALL BE SHOP-CUT AND BANDED AT ALL COLUMNS, BRACING, POSTS, GUSSET PLATES AND OTHER LOCATIONS INDICATED ON THE DESIGN DRAWINGS.

DRAWING REVISIONS

REVISION COMMENTS:

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