

GENERAL

- 1. THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.
2. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE. ALL APPLICABLE SAFETY REGULATIONS TO BE FOLLOWED STRICTLY.
3. THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATIONS OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING ERECTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS.
4. THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND GRADE CONDITIONS (BOTH NEW AND EXISTING), REPORTING ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH ANY PHASE OF THE WORK.
5. THE CONTRACTOR SHALL COMPARE STRUCTURAL SECTIONS WITH ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.
6. DO NOT SCALE DIMENSIONS FROM DRAWINGS. THE CONTRACTOR SHALL REQUEST, FROM THE ARCHITECT, NECESSARY DIMENSIONS NOT SHOWN ON THE DRAWINGS.
7. IF ANY DOUBT IS IN DOUBT AS TO THE INTENT OF THE PLANS OR SPECIFICATIONS, THEY SHALL REQUEST AN INTERPRETATION FROM THE ARCHITECT IN WRITING AT LEAST TEN (10) DAYS PRIOR TO THE SCHEDULED BID DATE.
8. PRINCIPAL OPENINGS IN THE STRUCTURE ARE SHOWN ON THESE DRAWINGS. THE GENERAL CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR REQUIRED OPENINGS AS THEY SHALL BE PROVIDED FOR WHETHER SHOWN ON THESE DRAWINGS OR NOT. GENERAL CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH ALL SUB-CONTRACTORS PRIOR TO CONSTRUCTION.
9. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, FLOOR SLOPES, AND THE LOCATION OF DERESSED FLOOR AREAS.
10. WHERE A CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS OCCUR THE MORE STRINGENT REQUIREMENT SHALL APPLY.
11. WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS EVEN THOUGH NOT REFERENCED SPECIFICALLY ON THE DRAWINGS.

DESIGN CRITERIA

- 1. APPLICABLE CODES:
A. 2012 NORTH CAROLINA STATE BUILDING CODE (2009 INTERNATIONAL BUILDING CODE WITH REVISIONS)
B. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-05)
C. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08)
D. BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-08)
E. STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 325-05)
F. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-05)
G. AMERICAN WELDING SOCIETY STRUCTURAL STEEL DESIGN CODE (D1.1-04)
H. DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (AISI S100-07)
2. LIVE LOADS UNIFORM (PSF) CONCENTRATED (LB)
CORRIDORS (GROUND) 100 2,000
OFFICE 50 + 15 = 65* 2,000
PUBLIC AREAS, LOBBIES 100 2,000
ROOF 20 300
* ADDITIONAL 15 PSF PARTITION LOAD INCLUDED
3. OCCUPANCY CATEGORY III
4. SNOW LOAD Ps = 10 PSF
GROUND SNOW LOAD Ps = 1.1
IMPORTANCE FACTOR Is = 1.1
SNOW EXPOSURE FACTOR Ce = 1.0
THERMAL FACTOR Tc = 1.0
FLAT SNOW ROOF LOAD Pp = 11 PSF
5. WIND LOAD:
BASIC DESIGN WIND VELOCITY V = 95 MPH
EXPOSURE CATEGORY C
IMPORTANCE FACTOR I = 1.15
INTERNAL PRESSURE COEFFICIENTS +/-0.18
BASE SHEAR Vx = 35k Vy = 24k

COMPONENTS AND CLADDING - ALL BUILDING COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR WIND LOADS DETERMINED PER THE NORTH CAROLINA STATE BUILDING CODE FOR THE BASIC DESIGN WIND VELOCITY, IMPORTANCE FACTOR, AND EXPOSURE LISTED ABOVE.

- 1. SEISMIC LOAD (2008 USGS SEISMIC DESIGN MAPS):
DESIGN METHOD - EQUIVALENT LATERAL FORCE PROCEDURE
Sa 28.8 %g
S1 11.6 %g
Sps 30.1 %g
Sd1 18.1 %g
Sd2 16.2 %g
IMPORTANCE FACTOR I (ASSUMED) 1.15
SEISMIC RESPONSE COEFFICIENT Csx = 0.126 Cay = 0.126
SEISMIC DESIGN CATEGORY C
BASE SHEAR Vx = 35k Vy = 24k
2. BASE SHEAR Vx = 35k Vy = 35k
3. SEISMIC FORCE-RESISTING SYSTEM - STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE, EXCLUDING CANTILEVER COLUMN SYSTEMS RESPONSE MODIFICATION COEFFICIENT DEFLECTION AMPLIFICATION FACTOR BASE SHEAR

NONSTRUCTURAL COMPONENT ANCHORAGE - ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS ARE TO BE ATTACHED AS REQUIRED BY ASCE CHAPTER 13, "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". EACH INDIVIDUAL CONTRACTOR RESPONSIBLE FOR THE COMPONENT MUST PROVIDE PROJECT SPECIFIC DESIGN AND DOCUMENTATION PREPARED BY AN ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA. CHAPTER 13 DEFINES THE FORCE REQUIRED TO SUPPORT THE COMPONENT FOR THE ANCHORAGE AND BRACING. THE COST OF PREPARING THIS INFORMATION AND DESIGN SHALL BE INCLUDED IN EACH CONTRACTOR'S BID THAT IS PROVIDING THE COMPONENT.

- 1. FUTURE LOADS:
UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOORS, ROOFS, OR OTHER LOADS.

FOUNDATIONS

- 1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT BY ECS DATED 02/08/2018. (ECS PROJECT # 31-4250). THE DESIGN ALLOWABLE SOIL BEARING PRESSURE IS 2,000 PSF, BASED ON THIS REPORT.
2. FOOTINGS SHALL BE CARRIED TO LOWER ELEVATIONS THAN THOSE SHOWN ON THE DRAWINGS IF REQUIRED BY THE GEOTECHNICAL ENGINEER OR TESTING LAB TO REACH SOIL CAPABLE OF PROVIDING THE DESIGN ALLOWABLE SOIL BEARING PRESSURE.
3. THE SUBGRADE AND UNDERLOOR FILL SHALL BE PREPARED TO A POINT THAT EXTENDS 3'-0" MINIMUM BEYOND THE LIMITS OF THE FOUNDATION.
4. MINIMUM SUBGRADE PREPARATION REQUIREMENTS ARE AS FOLLOWS: COMPACT ALL FILL UNDER BUILDING TO 98% MAXIMUM DENSITY AS DETERMINED BY ASTM D698. PLACE IN LAYERS OF 8" MAXIMUM LOOSE THICKNESS. VERIFY FIELD DENSITY, ASTM D1556, WITH AT LEAST ONE TEST PER 2,000 SQUARE FEET PER LAYER. SEE SPECIFICATIONS FOR OTHER TESTING REQUIREMENTS.
5. WALLS RETAINING SOIL SHALL BE TEMPORARILY BRACED DURING BACKFILLING AND UNTIL ALL SUPPORTING SOIL AND SLABS ARE IN PLACE AND ARE AT DESIGN STRENGTH UNLESS NOTED OTHERWISE ON PLANS AND DETAILS.
6. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS OF ALL SUCH CONDITIONS PRIOR TO CONSTRUCTION.

CONCRETE / REINFORCING STEEL

- 1. CONCRETE COMPRESSIVE STRENGTH IN 28 DAYS:
COLUMNS, BASEMENT WALLS, SITE WALLS 4,500 PSI, NORMAL WEIGHT
SLAB ON GRADE, FOOTINGS, GRADE BSAMS 3,000 PSI, NORMAL WEIGHT
2. REINFORCING:
TYPICAL - ASTM A615, GRADE 60
REINFORCING TO BE WELDED - ASTM A706
DEFORMED BAR ANCHORS - ASTM A 695
WELDED WIRE FABRIC - ASTM A1064 (FLAT SHEETS ONLY)
3. GROUT UNDER BASE PLATES TO BE HIGH STRENGTH (5,000 PSI), NON-SHRINK.
4. REFER TO THE DRAWINGS FOR REINFORCING LAP REQUIREMENTS. WHERE LAP SPLICES ARE NOT SHOWN, LAP PER ACI 318 OR CRSI STANDARDS.
5. LAP WELDED WIRE FABRIC SHEETS 8" MINIMUM.
6. CLEAR COVER FROM FACE OF CONCRETE:
CAST IN PLACE CONCRETE (MEASURE TO OUTERMOST REINFORCING) - 3"
CONCRETE CAST AGAINST AND EXPOSED TO EARTH 2" FOR #6 BARS AND LARGER
1 1/2" ELSE
3/4" FOR SLABS AND WALLS
1 1/2" FOR BEAMS AND COLUMNS (TO TIES)
CONCRETE NOT EXPOSED TO EARTH/WEATHER 1 1/2" ELSE
7. PROVIDE REINFORCING IN SLABS ON GRADE, 1-1/2" FROM TOP OF SLAB:
4" SLABS 6#-W2, 1#W2,1
6" SLABS #3@12"OC EACH WAY
8. WHERE SCHEDULED BARS ARE NOT PRESENT, PROVIDE CONTINUOUS #5 TOP AND BOTTOM BARS TO SUPPORT STIRRUPS AS REQUIRED FOR THE LENGTH OF THE STIRRUP SPACING IN ALL BEAMS.
9. WALL FOOTING REINFORCING SHALL BE CONTINUOUS THROUGH ADJACENT COLUMN FOOTINGS.
10. PROVIDE VERTICAL DOVETAIL SLOTS AT 24"OC WITH TIES AT 16"OC VERTICALLY IN ALL CONCRETE WALLS BACKING-UP MASONRY VENEER.
11. BAR SUPPORTS FOR CONCRETE EXPOSED TO VIEW SHALL HAVE PLASTIC COATED LEGS OR BE HOT DIP GALVANIZED AFTER FABRICATION.
12. MECHANICAL AND ELECTRICAL CONDUIT IN SLABS ON GRADE AND ELEVATED SLABS SHALL RUN UNDER TOP LAYER OF SLAB REINFORCING. PROVIDE A MINIMUM OF 1-1/2" CLEAR BETWEEN CONDUITS AND BETWEEN REINFORCING AND ADJACENT CONDUITS SABLE. TO REINFORCING. IF MAXIMUM SIZE OF CONDUIT EXCEEDS ONE THIRD OF THE SLAB DEPTH, ADDITIONAL FRAMING OR REINFORCING MAY BE NECESSARY AT ENGINEER'S DISCRETION.
13. MECHANICAL AND ELECTRICAL CONDUIT IN ELEVATED SLABS ON METAL DECK IS NOT ALLOWED UNLESS SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT.
14. HEADED CONCRETE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A108, GRADES 1010, 1015, 1017, OR 1020. STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR FIELD IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. EMBED PLATES MUST BE SET IN THE FORM BEFORE POURING CONCRETE, NOT PLACED INTO TOP OF WET CONCRETE. THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR CORRECTIVE DETAILS FOR ANY EMBED PLATES LEFT OUT OF CONCRETE POURS.
16. FOR SLABS ON GRADE, SLAB AND FOOTING REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS WITH SAND PLATES, OR PRECAST CONCRETE BAR SUPPORTS AS DESCRIBED IN CHAPTER 3.9 OF THE CRSI MANUAL, OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED AT A MAXIMUM OF 4'-0"OC BOTH WAY ROOFS, CHL, OR CLAY BRICK WILL NOT BE USED AS SUPPORTS.
17. THE CONTRACTOR SHALL ASSUME CONCRETE OVERAGES IN ELEVATED DECK POURS DUE TO MEMBER AND DECK DEFLECTIONS, UNLESS SHOWN ON PLANS, BEAMS ARE NOT CAMBERED. CONCRETE OVERAGES MAY BE CALCULATED BY THE CONTRACTOR FOR BAR DEFLECTIONS EQUALING L/300 INCLUDING ADDITIONAL DEFLECTIONS DUE TO PONDING AND DECK DEFLECTIONS PER SOI.
18. REBAR SHALL NOT BE HEATED WITH A TORCH IN THE FIELD.
19. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER FAR ENOUGH IN ADVANCE (48 HOURS) OF EACH CONCRETE POUR TO ALLOW AMPLE TIME TO CHECK THE LAYOUT OF THE STEEL BEFORE THE BEGINNING OF THE ACTUAL POUR, BUT NOT PRIOR TO 90% OF THE STEEL HAVING BEEN PLACED.

CONCRETE CONSTRUCTION JOINTS

- 1. CONTRACTOR SHALL PROVIDE NECESSARY CONSTRUCTION JOINTS IN MONOLITHIC CONCRETE POURS SO THAT THE QUALITY OF PLACEMENT AND FINISH MEETS THE REQUIREMENTS OF PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT A PLAN SHOWING THE LOCATION OF ALL CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER FOR APPROVAL.
2. THERE SHALL BE NO CONCRETE JOINTS IN CONCRETE POURS. ALL VERTICAL CONSTRUCTION JOINTS IN SLABS AND BEAMS SHALL BE MADE WITH BULKHEADS. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE AS SPECIFIED BY THE STRUCTURAL ENGINEER. SEE TYPICAL CONSTRUCTION JOINT DETAILS.

STRUCTURAL MASONRY

- 1. LOAD-BEARING MASONRY WALLS, PILLARS, PIERS, RETAINING WALLS, FOUNDATION WALLS AND ANY OTHER MASONRY SO DESIGNATED ON DRAWINGS IS CONSIDERED HERE TO BE STRUCTURAL MASONRY.
2. REQUIRED COMPRESSIVE STRENGTH OF MASONRY UNITS:
SOLID CLAY UNITS - 2,800 PSI
CONCRETE UNITS - 2,000 PSI ON NET AREA
3. CONCRETE MASONRY UNITS (CMU) SHALL BE LIGHT WEIGHT (105 PCF) GRADE N, CONFORMING TO ASTM C90. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR UNIT SIZE, FACE, COLOR, JOINTING, ETC.
4. MORTAR SHALL BE TYPE S, ASTM C270.
5. GROUT FOR REINFORCED MASONRY SHALL BE FINE GROUT, ASTM C476. MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 2000 PSI.
6. MINIMUM 28-DAY COMPRESSIVE STRENGTH (f'm) OF THE MASONRY WALLS SHALL BE 2,000 PSI. MASONRY STRENGTH SHALL BE DETERMINED BY THE UNIT STRENGTH METHOD OR THE PRISM TEST METHOD AS DESCRIBED BY ACI 530.
7. REINFORCING:
TYPICAL - ASTM A615, GRADE 60
ALL REINFORCING TO BE WELDEABLE - ASTM A706
8. REFER TO THE DRAWINGS FOR REINFORCING LAP TYPICAL DETAIL AND SCHEDULE REQUIREMENTS. WHERE LAP SPLICES ARE NOT SHOWN, LAP SPLICE BAR DIAMETERS PER ACI 530 AS MODIFIED BY THE STATE BUILDING CODE, UNLESS NOTED ON DRAWINGS.
9. MAXIMUM HEIGHT TO WHICH MASONRY SHALL BE LAID BEFORE GROUTING IS 5 FEET ABOVE CONSTRUCTION SURFACE OR PREVIOUSLY GROUTED MASONRY. IF GROUT POUR HEIGHT EXCEEDS 5 FEET, THEN "HIGH LIFT" GROUTING PROCEDURE MUST BE FOLLOWED. PROVIDE CLEANOUT OPENING THE BOTTOM OF EACH GROUT LIFT. CLEANOUT OPENINGS SHALL BE PROVIDED AT EACH CELL TO BE FILLED WITH GROUT.
10. ALL GROUT PLACED OVER 12" IN HEIGHT SHALL BE MECHANICALLY CONSOLIDATED DURING GROUTING. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED.
11. MAXIMUM GROUT LIFT (GROUT Poured IN ONE CONTINUOUS OPERATION) IS 5 FEET. THIS LIMIT ALSO APPLIES TO "HIGH LIFT" GROUTING.
12. REINFORCE MASONRY WHERE SHOWN ON STRUCTURAL DRAWINGS. THE REINFORCING IN POSITION AND PLACEMENT OF GROUT AROUND REINFORCING TO PUSH REINFORCING DOWN INTO PREVIOUSLY PLACED GROUT FILL. SET BOLTS SIMILARLY.
13. THE MASONRY WITHES WITH HORIZONTAL REINFORCING AS SPECIFIED.
14. PROVIDE VERTICAL BARS, SIZE MATCHING WALL REINFORCING, AT ALL CORNERS, ENDS OF WALLS, AND EACH SIDE OF WALLS AND EACH SIDE OF WALL OPENINGS. TIE EACH BAR TO THE FOUNDATION WITH A MATCHING DOWEL. SEE ARCHITECTURAL DRAWINGS FOR DETAILS OF CONSTRUCTION JOINTS.
15. ALL CORNERS AND INTERSECTIONS OF STRUCTURAL MASONRY WALLS SHALL BE CONSTRUCTED BY INTERLOCKING JOINTS.
16. ALL LINTELS TO BEAR 8" MINIMUM EACH SIDE OF OPENING, UNLESS NOTED OTHERWISE.
17. GROUT ALL MASONRY WALLS AND CAVITY BELOW GRADE SOLID. GROUT ALL WALLS ABOVE GRADE AT THE REINFORCED CELLS (MIN) OR AS INDICATED IN SPECIFIC SECTIONS.
18. ONE 3/4" (MAXIMUM) VERTICAL CONDUIT ALLOWED IN AN REINFORCED CELL PROVIDED 1" CLEAR IS MAINTAINED BETWEEN REINFORCED CELL AND CONDUIT. NO OTHER VERTICAL OR HORIZONTAL CONDUITS, PIPES, OR SLABS SHALL BE LOCATED IN REINFORCED CELLS UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER. CONTRACTOR SHALL COORDINATE ALL CONDUITS TO AVOID REINFORCED CELLS.

NON-LOAD BEARING COLD-FORMED STEEL / METAL STUDS

- 1. ALL COLD-FORMED LIGHT GAUGE METAL FRAMING AND CONNECTIONS SHALL BE DESIGNED BY THE SUPPLIER'S ENGINEER, AT ARCHITECTS' OR ENGINEER'S REQUEST CONTRACTOR SHALL SUBMIT CALCULATIONS AND DESIGN DETAILS FOR ALL COLD-FORMED METAL FRAMING USED TO SUPPORT CEILING AND EXTERIOR CLADDING.
2. ALL MEMBERS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE, "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED LIGHT STRUCTURAL MEMBERS".
3. ALL MEMBERS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 33 KSI AND BE COATED FROM STEEL HAVING A G-60 GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM A955.
4. ALL THE COLD-FORMED LIGHT STRUCTURAL MEMBERS SHALL COME FROM A SINGLE SOURCE MANUFACTURER. ONLY MANUFACTURERS WHO ARE MEMBERS OF THE STEEL MANUFACTURERS ASSOCIATION (SMA) OR THE STEEL FRAMING INDUSTRY ASSOCIATION (SFI) WILL BE ACCEPTED. THE INSTALLATION SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. SHOP DRAWINGS FOR NON-LOAD-BEARING METAL FRAMING USED TO SUPPORT CEILING AND EXTERIOR CLADDING, SHOP DRAWINGS SHALL SHOW: MEMBER SIZE AND TYPE, MEMBER SHOWING TYPE, SIZE, GAUGE, NUMBER, LOCATION AND SPACING. THEY SHALL ALSO INDICATE SUPPORTS, BRACING, BUNDLING, SPICES, BRIDGING, ACCESSORIES AND DETAILS REQUIRED FOR PROPER INSTALLATION.
6. SHOP DRAWINGS SHALL SHOW SIZE AND LENGTH OF WELDS FOR ALL WELDED CONNECTIONS AND TYPE, SIZE AND NUMBER OF SCREWS FOR ALL SCREWED CONNECTIONS. SUBMIT MANUFACTURER'S DATA GIVING STRENGTH VALUES FOR SCREWS USED.
7. SHOP DRAWINGS SUBMITTED MUST BE PREPARED UNDER THE SUPERVISION OF AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
8. ALL STRUCTURAL FRAMING ACCESSORIES SHALL BE FORMED FROM STRUCTURAL QUALITY STEEL WITH A MINIMUM YIELD STRENGTH OF 50 KSI AND WITH A MINIMUM PROTECTIVE COATING EQUAL TO ASTM A653-G60 GALVANIZED COATING.
9. VERTICAL DEFLECTION CLIPS ARE REQUIRED TO BE CAPABLE OF ACCOMMODATING UPWARD AND DOWNWARD VERTICAL DISPLACEMENT OF THE STRUCTURE THROUGH POSITIVE MECHANICAL ATTACHMENT TO STUD WEB. MECHANICAL ATTACHMENT TO STUDS AND SCREW ATTACHMENT TO STUD WEBS USING STER-BUSHINGS TO PERMIT FRICTIONLESS VERTICAL MOVEMENT. CONNECTORS MUST BE TESTED IN ACCORDANCE TO ICC AC208 CRITERIA AND HOLD A VALID ICC-ES EVALUATION SERVICE REPORT TO BE ACCEPTABLE.

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL:
WIDE FLANGE SHAPES (W SECTIONS) - ASTM A992, GRADE 50 (FY=50 KSI)
CHANNELS, ANGLES, RODS, AND BARS - A36 (FY=36 KSI)
PLATES - ASTM A572, GRADE 50 (FY=50 KSI) OR ASTM A36 (FY=36 KSI)
SQUARE AND RECTANGULAR TUBES - ASTM A500, GRADE B (FY=46 KSI)
PIPES - ASTM A53, GRADE B (FY=35 KSI)
2. ANCHOR BOLTS AND TIEBARS SHALL CONFORM TO ASTM F1554, GRADE 36.
3. DESIGN, FABRICATION AND ERECTION SHALL BE AS PER SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-05).
4. BEAM SIMPLE SHEAR AND BRACED FRAME CONNECTIONS NOT DETAILED ON STRUCTURAL DRAWINGS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REVIEWED BY THE STEEL SUPPLIER AND SEALD BY THE STATE IN WHICH THE PROJECT IS LOCATED. THE CONNECTIONS FOR NON-COMPOSITE BEAMS SHALL BE DESIGNED FOR REACTIONS SHOWN ON DRAWINGS OR FOR REACTIONS DETERMINED BY USING THE ALLOWABLE UNIFORM LOAD AS TABULATED IN PART 3 OF THE AISC STEEL CONSTRUCTION MANUAL FOR THE SECTION, SPAN AND STRENGTH OF STEEL SPECIFIED. CONNECTIONS SHALL BE MADE WITH ASTM A325 3/4" DIA BOLTS (MINIMUM), TIGHTENED TO A SNUG-TIGHT CONDITION PER AISC REQUIREMENTS.
5. THE CONNECTIONS FOR COMPOSITE BEAMS SHALL BE DESIGNED FOR REACTIONS SHOWN ON THE DRAWINGS. FOR COMPOSITE BEAM REACTIONS NOT SHOWN ON THE DRAWINGS, REACTIONS SHALL BE PROVIDED TO THE SELECTED FABRICATOR. A MINIMUM OF 65% UDL SHALL BE USED FOR UNSPECIFIED CONNECTIONS.
6. REACTIONS MAY BE OMITTED ON PLANS FOR CLARITY. REACTIONS CAN BE PROVIDED ONCE A CONTRACT IS AWARDED. NOTIFY ENGINEER OF REQUEST.
7. THE CONNECTION ENGINEER SHALL SUBMIT A SIGNED AND SEALED LETTER STATING THEY HAVE REVIEWED THE STEEL SHOP DRAWINGS AND THE CONNECTIONS ARE CONSISTENT WITH THEIR CALCULATIONS AND INTENT.
8. WHERE STEEL MEMBERS ARE WELDED AND NO SIZE IS SPECIFIED, PROVIDE FULL LENGTH FILLET WELDS BOTH SIDES OF MEMBER. WELD SIZES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
MEMBER THICKNESS WELD SIZE
3/16" 3/16"
1/4" 3/16"
5/16" 3/16"
3/8" 1/4"
7/16" 1/4"
1/2" 5/16"
9/16" 3/8"
5/8" 7/16"
9. SPACING OF STRUCTURAL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER AS TO LOCATION AND TYPE OF SPLICE TO BE MADE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON SHOP DRAWINGS WILL BE REJECTED.
10. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE. USE E70 SERIES ELECTRODES FOR ALL STRUCTURAL STEEL WELDS.
11. SEE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL ITEMS REQUIRED TO BE HOT-DIP GALVANIZED AFTER FABRICATION.
12. STRUCTURAL STEEL SHALL BE FINISHED FOR WOOD BLOCKING, NAILS, CLIPS AND TIES IN ACCORDANCE WITH ARCHITECTURAL/STRUCTURAL DETAILS.
13. ULTRASONIC INSPECTION BY THE TESTING LABORATORY SHALL BE PROVIDED FOR ALL WELDS CALLED FOR ON THE STRUCTURAL DRAWINGS OR SHOP DRAWINGS AS FULL PENETRATION WELDS.
14. ALL STEEL EXPOSED TO VIEW SHALL BE CLASSIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) AS DEFINED BY THE AISC CODE OF STANDARD PRACTICE AND SHALL BE TREATED AS SUCH.

STEEL JOISTS

- 1. ALL STEEL JOISTS SHALL BE OPEN-WEB TYPE CONFORMING TO THE LATEST "STANDARD LOAD TABLE DESIGN, FABRICATION AND ERECTION REQUIREMENTS" PUBLISHED BY THE STEEL JOIST INSTITUTE.
2. PROVIDE BRIDGING PER STEEL JOIST INSTITUTE STANDARD SPECIFICATION. ALL BRIDGING SHALL BE SPACED AND WELDED AT ALL JOIST ENDS AND AT CROSSINGS AND ANCHORED TO SPAN/REL MEMBERS. ALL BRIDGING FOR JOISTS USED AS ANCHOR MEMBERS (AT EDGE OF DECK) SHALL BE WELDED TO BRIDGING. SIZE OF BRIDGING SHALL BE DETERMINED BY THE JOIST SUPPLIER. JOIST SUPPLIER TO PROVIDE ADDITIONAL BRIDGING AS REQUIRED FOR UPLIFT LOADS.
3. ALL JOISTS SHALL HAVE ANGLE BOTTOM CHORD MEMBERS UNLESS OTHERWISE APPROVED.
4. ALL K-SERIES JOISTS SHALL BE WELDED TO SUPPORT STEEL WITH A MINIMUM 1/8" FILLET WELD AT BOTH ENDS OF JOIST SEAT.
5. WHERE JOISTS FRAME TO COLUMNS, JOISTS SHALL BE FIELD BOLTED TO COLUMNS WITH TWO 1/2" DIAMETER A307 BOLTS AT EACH END OF THE JOIST TO PROVIDE LATERAL STABILITY DURING CONSTRUCTION.
6. PROVIDE DIAGONAL BRIDGING WHERE REQUIRED PER THE JOIST INSTITUTE STANDARD SPECIFICATIONS. JOIST SHOP DRAWINGS SHALL INDICATE ALL JOISTS WHICH SHALL HAVE A ROW OF BOLTED BRACES IN PLACE BEFORE LOCKING IN EXISTING LINES.
7. JOIST MANUFACTURER SHALL BE PREPARED TO SUBMIT CALCULATIONS FOR ALL JOISTS AND ARCHITECTS OR ENGINEER'S REQUEST. CALCULATIONS SHALL HAVE LOAD DIAGRAMS FOR EACH MEMBER CLEARLY INDICATED. UNIFORM AND CONCENTRATED LOADS. ALL CALCULATIONS SHALL BEAR THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
8. JOISTS SHALL BE DESIGNED FOR A NET WIND UPLIFT LOAD OF 15 PSF UNLESS NOTED OTHERWISE.

ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS

- 1. ANCHORS, REINFORCING STEEL, THREADED RODS, CHANDRILLS, AND OTHER EMBEDDED STEEL ITEMS SHALL BE SET INTO HARDENED CONCRETE OR MECHANICAL POST-INSTALLED ANCHOR ONLY WHERE DETAILED ON THE DRAWINGS OR WHERE APPROVED BY THE ARCHITECT/ENGINEER.
2. PRE-APPROVED ANCHORS ARE HELIX, EPSON STRONG-TIE, AND DEWALT. WHERE DETAILS INDICATE SPECIFIC ADHESIVE OR MECHANICAL POST-INSTALLED ANCHOR, IT IS ACCEPTABLE AT THE CONTRACTOR'S OPTION TO SUBMIT AN ALTERNATE SIMILAR PRODUCT PROVIDED BY A REGISTERED PROFESSIONAL ENGINEER.
3. MANUFACTURER'S DATA FOR ALL ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. SUBMITTALS FOR ADHESIVE ANCHOR PRODUCTS SHALL INCLUDE ICC-ES EVALUATION REPORTS. STRICTLY FOLLOW THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS. HEED ALL LABEL WARNINGS. INSTALL IN ACCORDANCE WITH APPLICABLE SAFETY LAWS.
4. ALL HOLES SHALL BE DRILLED WITH A DIAMETER NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE STEEL MEMBER BEING INSTALLED.
5. ALL HOLES SHALL BE CLEANED WITH COMPRESSED AIR AND SHALL BE DRY PRIOR TO INSTALLATION OF ADHESIVE. HOLES SHALL BE FREE OF ALL DELETERIOUS MATERIAL SUCH AS LANTANE, DUST, DIRT, AND OIL.
6. CONTRACTOR PERFORMING ADHESIVE WORK SHALL BE AN APPROVED CONTRACTOR BY THE MANUFACTURER FURNISHING THE ADHESIVE MATERIALS, AND SHALL HAVE NO LESS THAN FIVE YEARS EXPERIENCE IN THE VARIOUS TYPES OF ADHESIVE RELATED WORK REQUIRED IN THIS PROJECT. A CERTIFICATION FROM THE MANUFACTURER ATTESTING TO THE TRAINING SHALL BE SUBMITTED TO THE ENGINEER/ARCHITECT ALONG WITH THE PROPOSAL TO DO THE WORK.
7. WHERE ADHESIVE ANCHORS ARE TO BE INSTALLED IN HOLLOW MATERIAL WITH UNKNOWN CAPACITY, THE CONTRACTOR SHALL INSTALL THE ANCHOR IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. THE ADHESIVE SHALL BE INSTALLED IN THE HOLLOW BASE MATERIAL USING SCREEN TUBES SUPPLIED BY THE MANUFACTURER. THE ADHESIVE SHALL BE CAPABLE OF SUSTAINING MINIMUM TENSION AND SHEAR LOAD CAPACITIES NOTED ON THE DRAWINGS MULTIPLIED BY A FACTOR OF SAFETY OF 4.
9. ALL HARDWARE AND MATERIAL SHALL BE SUPPLIED BY THE ANCHOR MANUFACTURER.
10. THE ULTIMATE TENSION AND SHEAR CAPACITIES SHALL BE DETERMINED BY A JOB SITE TEST PERFORMED ON A MINIMUM OF FIVE INSTALLED SAMPLES WHICH ARE REPRESENTATIVE OF THE ACTUAL INSTALLATIONS. TESTING SHALL BE PERFORMED BY THE ADHESIVE ANCHOR MANUFACTURER OR HIS APPROVED REPRESENTATIVE AND SHALL BE DOCUMENTED FOR THE DESIGN PROFESSIONAL.

DEMOLITION

- 1. THE CONTRACTOR SHALL NOTIFY ALL LOCAL AGENCIES HAVING JURISDICTION, AND SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR THE DEMOLITION AND REMOVAL OF THE DEBRIS RESULTING FROM THE DEMOLITION.
2. CONTRACTOR SHALL RETAIN, AT THEIR EXPENSE, A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED, TO DETERMINE ALL CONSTRUCTION PHASE SHORING REQUIREMENTS. CONTRACTOR SHALL SUBMIT TO THE OWNER AND THE ENGINEER OF RECORD, SIGNED AND SEALED DRAWINGS, OUTLINING OPERATIONAL SEQUENCES, SHORING CONCEPTUAL PLANS, METHODS USED FOR THE PROTECTION OF STRUCTURES TO REMAIN AND NEIGHBORING STRUCTURES.
3. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION AND STABILITY OF EXISTING AND NEW STRUCTURES DURING CONSTRUCTION.
4. BEFORE UNDERTAKING ANY DEMOLITION WORK OR ORDERING MATERIAL, ASCERTAIN BY SURVEY THE EXISTING CONDITIONS OF THE PROPERTIES AND BUILDINGS ADJOINING OR IN CLOSE PROXIMITY TO THE PREMISES. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCY.
5. PROVIDE AND MAINTAIN BRACING AND SHORING AS NEEDED. KEEP SUPPORTING STRUCTURE IN PLACE DURING NEW CONSTRUCTION AND UNTIL NEW STRUCTURE IS COMPLETED.
6. STORE AND PROTECT ALL MATERIAL TO BE REMOVED AND REUSED.
7. IF SAFETY OR INTEGRITY OF STRUCTURAL SYSTEM APPEARS TO BE COMPROMISED, CEASE OPERATIONS IMMEDIATELY AND NOTIFY THE OWNER AND THE ENGINEER. PROPERLY BRACE AND SUPPORT STRUCTURE BEFORE RESUMING OPERATIONS.
8. ANY DAMAGE OCCURRING TO THE EXISTING STRUCTURE, ADJACENT STRUCTURES, STREETS, SIDEWALKS, UTILITY LINES OR ANY OTHER PUBLIC OR PRIVATE PROPERTIES, SHALL BE REINSTALLED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER OR THE ENGINEER.
9. ALL OPENINGS IN EXISTING CONSTRUCTION SHALL BE SAW CUT OR DRILLED.
10. ALL EXISTING INFORMATION SHOWN IS REFERENCED FROM EXISTING DRAWINGS PREPARED BY GARDNER, ELSEVEY, & KLINE, DATED FEB 25, 1966.

REPRODUCTION

- 1. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, DELAY OR IMPED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HERE ON.

ABBREVIATION LIST

Table with 2 columns: Abbreviation and Full Name. Includes terms like @ AT, & AND, Ø DIAMETER, ANCHOR BOLTS, AMERICAN CONCRETE INSTITUTE, ADDL ADDITIONAL, ADHESIVE, ABOVE FINISHED FLOOR, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, AMERICAN IRON AND STEEL INSTITUTE, ALT ALTERNATE, ARCH ARCHITECTS / ARCHITECTURAL, AMERICAN SOCIETY FOR TESTING AND MATERIALS, AMERICAN WELDING SOCIETY, B @ BOT BOTTOM CHORD EXTENSION, BCF BOTTOM FINISHED FLOOR, BFF BUILDING BEAM, BLS BOTTOM OF STEEL BEARING, BOS BETWEEN, BRG BRACING, CANT CANTILEVER, CNTR CONTROL JOINT, CL CENTERLINE, CLR CONCRETE MASONRY COLUMN, CMU CONC CONC, CONN CONNECTION, CONST JT CONSTRUCTION JOINT, CONT CONTINUOUS, COINTR CONTRIBUTE, COORD COORDINATE, CTRD CTR (FRONT), DBA DEFORMED BAR ANCHOR, DEF DEFLECTION, DEP DEPRESSION / DEPRESSED, DETAIL, DIAG DIAGONAL, DIM DIMENSION, DIST DISTANCE, DWG(S) DRAWING(S), DOWEL(S) DOWEL(S), EA EACH, EE EACH END, EF EACH FACE, EJ EXPANSION JOINT, ELV ELEVATION, EMBED EMBEDDED / EMBEDMENT, ENG ENGINEER, ESD EDGE OF DECK, ESO EDGE OF SLAB, EQ EQUAL, EQUIP EQUIPMENT, EQM EACH SIDE, EXIST EXISTING, EXP EXPANSION, EXT EXTENSION, FND FOUNDATION, FFE FINISHED FLOOR ELEVATION, FOM FACE OF MASONRY, FAW FAR SIDE, FRS FOOTING, GA GAUGE, GALV GALVANIZED, HD HEADED, HI HIGH, HORIZ HORIZONTAL, HOLLOW HOLLOW STRUCTURAL SECTION, INT INTERIOR, JNT JOINT, K KNEE BRACE, KSI KILO POUNDS PER SQUARE INCH, LBS POUNDS, LH LONG LEG HORIZONTAL, LV LONG LEG VERTICAL, LW LOW LOCATION, LSH LONG SIDE HORIZONTAL, LSV LONG SIDE VERTICAL, LWC LIGHT WEIGHT CONCRETE, MAX MAXIMUM, MC MOMENT CONNECTION, MECH MECHANICAL, MANUFACTURER, MID MINIMUM, MIS MISCELLANEOUS, MOW MIDDLE OF WALL, NTS MASONRY PLASTER, NP NUMBER, NS NEAR SIDE, NOT TO SCALE, NWC NORMAL WEIGHT CONCRETE ON CENTER, OPG OPENING, ORF OPPOSITE HAND, PAF POWDER ACTUATED FASTENER, PED PESTAL, PL PLATE, PSF POUNDS PER SQUARE FOOT, PSI POUNDS PER SQUARE INCH, PRT PRESSURE TREATED POST-TENSIONED, REF REFERENCE, REINF REINFORCING, REQ REQUIRED, SB SHORT BAR, SCHED SCHEDULE, SIM SIMILAR, SOG SLAB ON GRADE SPECIFICATION(S), SQ SQUARE, STD STANDARD, STIFF STIFFENER, STRR STRRUP(S), STR STRUCTURAL, T TOP, TCX TOP CHORD EXTENSION, TOP TOP OF CONCRETE, TOF TOP OF FOOTING, TOS TOP OF STEEL, TOW TOP OF WALL, TYP TYPICAL, UNO UNLESS NOTED OTHERWISE, VERT VERTICAL, VF VERT IN FIELD, W WITH, WWF WELDED WIRE FABRIC, WP WORK POINT



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BID DOCUMENTS

GENERAL NOTES & ABBREVIATIONS

DATE: 4-5-2019
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REVISIONS

NO. DATE: DESCRIPTION:

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