

I. GENERAL

- A. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, SHOP DRAWINGS AND SPECIFICATIONS.
- B. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT TO ALL SUBCONTRACTORS AND SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.
- C. THE GENERAL CONTRACTOR SHALL COMPILE ALL CONTRACT DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN DISCIPLINES AND WITHIN A GIVEN DISCIPLINE TO THE ARCHITECT AND ENGINEER PRIOR TO FABRICATION AND ERECTION.
- D. CONFLICT EXISTS AMONG THE STRUCTURAL DRAWINGS, GENERAL NOTES, OR THE SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
- E. THE CONTRACTOR SHALL COORDINATE ALL ELEVATIONS AND DIMENSIONS, INCLUDING BUT NOT LIMITED TO THOSE FOR MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS, WITH THE ARCHITECTURAL, PLUMBING, ELECTRICAL, AND MECHANICAL PLANS.
- F. ALL DIMENSIONS, ELEVATIONS, AND ANY OTHER CONDITIONS OF ANY EXISTING STRUCTURES OR OTHER FEATURES SHALL BE VERIFIED BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES WITH THE CONTRACT DRAWINGS REPORTED TO THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.
- G. THE COMPLETED LATERAL-FORCE RESISTING SYSTEMS AND DIAPHRAGMS ARE REQUIRED FOR THE STRUCTURE TO RESIST LATERAL LOADS AND PROVIDE STABILITY UNDER GRAVITY LOADS. DURING THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL PROVIDE ALL REQUIRED BRACING DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF ALL STRUCTURAL ELEMENTS UNTIL THE LATERAL LOAD RESISTING OR STABILITY-PROVIDING SYSTEM IS COMPLETELY INSTALLED AND THE STRUCTURE IS COMPLETELY TIED TOGETHER.
- H. UNLESS NOTED OTHERWISE, DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.
- I. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS AND FOR SAFETY PRECAUTIONS AND PROGRAMS.
- J. BRITT, PETERS & ASSOCIATES, INC. SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR OR FOR THEIR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- K. PERIODIC SITE OBSERVATION BY BRITT, PETERS & ASSOCIATES, INC. IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS AND IS NOT EXHAUSTIVE OR CONCLUSIVE AS TO THE QUALITY OR QUANTITY OF THE WORK.
- L. THE BUILDING OWNER SHALL PROVIDE PERIODIC MAINTENANCE TO INSURE STRUCTURAL INTEGRITY, SUCH MAINTENANCE SHALL INCLUDE BUT IS NOT LIMITED TO PAINTING OF STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, GALVANIZED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS.

II. DESIGN CRITERIA

- A. THE CONTRACT DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE 2018 NORTH CAROLINA BUILDING CODE.
- B. TYPICAL FLOOR SYSTEMS: (25 PSF TOTAL)
 - 1. FLOOR: 10 PSF
 - 2. PARTITIONS AND FINISHES: 15 PSF
- C. TYPICAL ROOF SYSTEMS: (20 PSF TOTAL)
 - 1. FLOOR: 10 PSF
 - 2. PHOTOVOLTAIC PANEL SYSTEMS: 10 PSF
 - 3. INSTALLATION & ROOFING: 10 PSF
- D. MISCELLANEOUS CEILING AND HANGING WORK SUCH AS DUCT WORK AND SPRINKLER PIPES. PARTITION LOAD INCLUDED WITH LIVE LOAD FOR OFFICE SPACES.

C. LIVE LOADS

- 1. SEE LIVE LOADS TABLE.
- 2. LIVE LOADS ARE BASED ON THE MORE RESTRICTIVE OF THE UNIFORM LOAD LISTED BELOW OR THE CONCENTRATED LOAD LISTED ACTING OVER A 8.25 SQUARE FOOT AREA EXCEPT FOR PARKING GARAGES WHICH ACT OVER AN AREA OF 20 SQUARE FEET. LIVE LOADS HAVE BEEN REDUCED AS PRESCRIBED IN THE AFORESAID BUILDING CODE.

D. DESIGN SNOW LOAD

GROUND SNOW LOAD	P _g	10	PSF
FLAT ROOF SNOW LOAD	P _f	10	PSF
EXPOSURE FACTOR	C _e	1.0	
SNOW THERMAL FACTOR	C _t	1.0	
SNOW IMPORTANCE FACTOR	I _s	1.0	

E. DESIGN WIND LOADS

BASIC WIND SPEED	V _{ult}	115	MPH (3-SEC GUST)
BASIC WIND DIRECTION	V _{wind}	115	MPH (3-SEC GUST)
RISK CATEGORY	R	II	
EXPOSURE	C	B	
INTERNAL PRESSURE COEFF	G _{ci}	0.18	

COMPONENTS & CLADDING WIND PRESSURES (ULTIMATE)

WIDTH OF ZONE = a + 30FT

ALLOWABLE INTERSTORY DRIFT = 0.0025"H (BY YEAR SERVICE LEVEL WIND)

Design Wind Pressure (psf):

	Walls:	Effective Wind Area (sqft)					
		10	20	50	100	200	500
Interior	Area 4	+ 42.3	-42.3	-89.0	-38.4	-36.7	-34.5
	Area 5	+ 42.3	-42.3	-39.0	-36.4	-33.9	-30.6
	Edge	+ -77.8	-77.8	-68.7	-61.9	-55.2	-49.2
Roof:	10		20		500		
	Interior	Area 1	+ 16.0	-16.0	16.0	16.0	16.0
	Area 2	+ 16.0	-16.0	16.0	16.0	16.0	16.0
Corner	Area 3	+ 16.0	-16.0	16.0	16.0	16.0	16.0
Overhang:	10		20		500		
	Interior	Area 1	+ 16.0	-16.0	16.0	16.0	16.0
	Area 2	+ 16.0	-16.0	16.0	16.0	16.0	16.0
Corner	Area 3	+ 16.0	-16.0	16.0	16.0	16.0	16.0
Parapet Design Pressure (psf):	10		20		500		
	Edge	Area 2	+ 125.8	-121.0	-111.2	-103.8	-96.3
	Area 3	+ -70.8	-70.8	-65.2	-61.0	-56.7	-51.1
Corner	Area 3	+ -106.2	-106.2	-93.9	-84.6	-75.2	-62.9

F. SEISMIC LOADS

- 1. SHORT PERIOD SPECTRAL RESPONSE ACCELERATION, S_s 0.239
- 2. 1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION, S₁ 0.103
- 3. SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION, S_{ds} 0.255
- 4. 1-SEC PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION, S_{d1} 0.164
- 5. RISK CATEGORY II

G. SEISMIC DESIGN CATEGORY

- 1. THE CONTRACTOR SHALL SUBMIT FINAL ELEVATOR SHOP DRAWINGS SHOWING ALL LOADS PRIOR TO THE FABRICATION OF THE SUPPORTING STRUCTURE.
- 2. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
- 3. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE. CONTACT MANUFACTURER PRIOR TO ANCHOR INSTALLATION. IF TRAINING IS REQUIRED.
- 4. UNLESS NOTED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD.
- 5. ADHESIVE ANCHOR DESIGN BOND STRENGTH HAS BEEN BASED ON CRACKED CONCRETE, ACI 308.4 TEMPERATURE CATEGORY B, AND INSTALLATIONS INTO DRY HOLES DRILLED USING A HAMMER DRILL INTO CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER (ACI 308.4 D.9.2.2) (ACI 318-11) D.9.2.2 (ACI 318-14 17.8.2.1) WHERE INDICATED ON THE CONTRACT DOCUMENTS. INSTALLATION REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11, D.9.2.4.
- 6. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE LISTED ABOVE, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE.

H. ACCEPTABLE PRODUCTS ARE:

	USE	STRENGTH (PSI)	TYPE	COMMENTS	DURABILITY CLASSIFICATION
ALL CONCRETE NOT OTHERWISE SPECIFIED	4000	NWT			FO, SO, PO, CO
COLUMNS AND SHEAR WALLS	SEE PLAN	NWT			FO, SO, PO, CO
FOUNDATION WALLS, GRADE BEAMS	3000	NWT			FI, SO, PO, C1
METAL DECK SLABS, EXTERIOR	4000	NWT/LWT			FI, SO, PO, C1
METAL DECK SLABS, INTERIOR	4000	NWT/LWT			FI, SO, PO, C1
TOPPING OVER SLABS, EXTERIOR	4000	NWT/LWT			FI, SO, PO, C1
TOPPING OVER SLABS, INTERIOR	3000	NWT/LWT			FO, SO, PO, CO

I. POST-INSTALLED ANCHORS:

- 1. CONCRETE MECHANICAL ANCHORS:
 - a. HLT/HT
 - b. HLT/HT KW/HT HUS-EZ
 - c. SIMPSON STRONG-TIE "ITEN-HD"
 - d. SIMPSON STRONG-TIE "STRONG-BOLT 2"
- 2. CONCRETE ADHESIVE ANCHORS:
 - a. HLT/HT 200
 - b. SIMPSON STRONG-TIE "SET-XP"
 - c. SIMPSON STRONG-TIE "AT-XP"
- 3. MASONRY MECHANICAL ANCHORS:
 - a. SOLID GROUTED CMU
 - b. HLT/HT KW/HT HUS-EZ
 - c. SIMPSON STRONG-TIE "ITEN-HD"
 - d. SIMPSON STRONG-TIE "STRONG-BOLT 2"
- 4. MASONRY ADHESIVE ANCHORS:
 - a. SOLID-GROUTED CMU
 - b. SIMPSON STRONG-TIE "SET-XP"
 - c. SIMPSON STRONG-TIE "AT-XP"
 - d. HLT/HT 200
 - e. HOLLOW CMU
 - f. SIMPSON STRONG-TIE "SET"
 - g. SIMPSON STRONG-TIE "PERMETER"

J. LIVE LOADS

ASSEMBLY AREAS (PLATFORMS)	CATEGORY	UNIFORM LOAD (PSF)	CONCENTRATED LOAD (LBS)
CORRIDORS		100	100
DINING ROOMS/RESTAURANTS		100	100
KITCHENS		100	100
OFFICE BUILDING (PARTITIONS)		15	2,000
OFFICE BUILDINGS: LOBBIES AND FIRST FLOOR CORRIDORS		50"	2,000
OFFICE BUILDINGS: OFFICES		50"	2,000
ROOFS: ORDINARY ROOF		20	100
STORES, RETAIL		100	100

IV. CONCRETE

- A. CONCRETE SHALL CONFORM TO THE CONCRETE PROPERTIES SPECIFIED IN THE CONCRETE PROPERTIES TABLE.
- B. ALL CONCRETE SHALL HAVE ALLOWABLE UNIT SHRINKAGE OF 0.045% AT 28 DAYS. (SEE ASTM C157) (0.03% CAN BE ACHIEVED BY THE GENERAL CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT TO ALL SUBCONTRACTORS AND SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS).
- C. ALL SLABS TO RECEIVE MOISTURE SENSITIVE FLOOR COVERINGS SHALL HAVE MAXIMUM WATER/CEMENT RATIO OF 0.45.
- D. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE CURRENT PRACTICES AND MANUFACTURER'S LITERATURE.
- E. MASS CONCRETE SHALL BE DEFINED AS ANY ELEMENT WITH A LEAST HORIZONTAL DIMENSION OF 9" OR GREATER AND SHALL BE CONSTRUCTED BY THE PRINCIPLES AND PRACTICES OF ACI 207.1R AND SHALL CONFORM TO THE REQUIREMENTS OF ACI 301. SECTION 7 FOR MASS CONCRETE.
- F. MAXIMUM CURING TEMPERATURE DURING CURING SHALL NOT EXCEED 100 DEGREES FAHRENHEIT.
- G. MAXIMUM DIFFERENTIAL TEMPERATURE BETWEEN CONCRETE CORE AND CONCRETE SURFACE DURING CURING SHALL NOT EXCEED 10 DEGREES FAHRENHEIT.
- H. CONCRETE SUPPLIER SHALL SUBMIT THERMAL MODELING OF MIX DESIGNS USED IN MASS CONCRETE APPLICATIONS TO THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.
- I. TYPE I CEMENT AND/OR FLY ASH UP TO 10% OF THE CEMENTITIOUS MATERIAL CONTENT SHALL BE USED TO MINIMIZE THE RISK OF HYDRATION.
- J. PLACE CONCRETE IN LAYERS NOT MORE THAN 24" THICK.
- K. ALL BOLTS SHALL BE SNUG TIGHT, UNLESS NOTED OTHERWISE.
- L. ALL BOLTS FOR NORMAL WEIGHT CONCRETE SHALL MEET ASTM A 307.
- M. ANCHOR RODS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
 - 1. ALL REINFORCING, UNW: ASTM A615 GRADE 60
 - 2. ANCHOR RODS SHALL CONFORM TO ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE
 - 3. EPOXY-COATED REINFORCING: ASTM A775
 - 4. GALVANIZED REINFORCING: ASTM A707 CLASS II (2.0 OZ. ZINC PFS)
 - 5. WELDED REINFORCING: ASTM A706
 - 6. WELDED WIRE REINFORCEMENT (WWR): ASTM A 185 (65KSI)
 - 7. DEFORMED WIRE: ASTM A 497 (70KSI)
- N. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE I OR II.
- O. CONCRETE MIX ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDED DOSAGES.
- P. A STEEL AND POLYPROPYLENE FIBER BLEND MAY BE USED TO SUBSTITUTE WWR IN SLABS ON GRADE, WHEN ADDED TO CONCRETE MIX ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDED DOSAGES.
- Q. SPECIAL MOMENT FRAMES: ASTM 706 GRADE 60
- R. SPECIAL STRUCTURAL STEEL: ASTM 500 GRADE 50
- S. COLUMNS AND BEAMS (IN SDC D, E & F): ASTM 706 GRADE 60

REINFORCEMENT DETAILING

- 1. REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 318.
- 2. DEVELOPMENT AND SPICE LENGTHS ARE IN TENSION UNLESS OTHERWISE INDICATED AND SHALL BE AS TABULATED IN THE SPICE LENGTH TABLE (THIS SHEET), UNLESS OTHERWISE INDICATED. INCLUDE STANDARD DETAIL "REINFORCEMENT SPICE LENGTH TABLE".
- 3. REBAR AND COLUMN REINFORCEMENT SHALL BE IN COMPRESSION UNLESS OTHERWISE INDICATED AS TENSION-CONTROLLED.
 - a. COMPRESSION EMBEDMENT: 2X BAR DIAMETER (4 BAR DIAMETERS, GRADE 75)
 - b. COMPRESSION LAP: 12 BAR DIAMETERS (12 BAR DIAMETERS, GRADE 75)
 - c. LAP WWR OR CROSSWISE SPACING PLUS 2"
- 4. PROVIDE CORNER BARS AT ALL FOOTINGS AND WALL INTERSECTIONS TO MATCH HORIZONTAL REINFORCING SIZE AND LENGTH. SHEAR KEYS SHALL BE PROVIDED AT EACH CONSTRUCTION JOINT AND SHALL BE LOCATED AT 10 POINTS OF INTERSECTION.
- 5. REINFORCEMENT SHALL BE SECURELY PLACED TO PREVENT DISPLACEMENT DURING CONSTRUCTION. PROVIDE THE FOLLOWING CONCRETE COVER FOR REINFORCING (ACI 318 SECTION 7.7 AND IBC TABLE 701.1), UNLESS SPECIFICALLY NOTED OTHERWISE:
 - a. CAST AGAINST EARTH: #4 THROUGH #10: 3"
 - b. EXPOSED TO EARTHWEATHER: #5 & SMALLER: 1 1/2"
 - c. SLABS, WALLS, JOISTS: #14 & #18: 1 1/2"
 - d. SLABS, WALLS, JOISTS: #11 & SMALLER: 3/4"
 - e. BEAMS, COLUMNS: #6 & LARGER: 1 1/2"
 - f. SHELLS FOLDED PLATE MEMBERS: #6 & SMALLER: 3/4"
 - g. SHELLS FOLDED PLATE MEMBERS: #6 & SMALLER: 3/4"
- 6. PROVIDE DETAILS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS NOTED OTHERWISE.
- 7. FOUNDATION WALLS, GRADE BEAMS AND FOOTINGS SHALL BE CAST IN ALTERNATE PANELS NOT TO EXCEED 60" IN LENGTH. SHEAR KEYS SHALL BE PROVIDED AT EACH CONSTRUCTION JOINT AND SHALL BE LOCATED AT 10 POINTS OF SPANS.
- 8. CONCRETE WALLS SHALL BE TEMPORARILY BRACED AGAINST EARTH PRESSURE AND OTHER FORCES UNTIL FLOOR SLABS ARE IN PLACE AND HAVE ATTAINED REQUIRED STRENGTHS.
- 9. DRAWINGS OF THE EQUIPMENT TO BE INSTALLED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - a. PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
 - b. PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
 - c. PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
- 10. SLABS AND BEAMS OR JOISTS SHALL BE CAST MONOLITHICALLY UNLESS NOTED OTHERWISE.
- 11. CHAMFER ALL PERMANENTLY EXPOSED CONCRETE EDGES UNLESS NOTED OTHERWISE.
- 12. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS OF OPENINGS AND SLEEVES IN CONCRETE WALLS AND SUPPORTED LOADS. PROVIDE REINFORCEMENT FOR OPENINGS AND SLEEVES IN CONCRETE WALLS AND SUPPORTED LOADS UNLESS NOTED OTHERWISE.
- 13. PROVIDE DETAILS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS NOTED OTHERWISE.
- 14. NO HOLES OR OPENINGS THROUGH FOUNDATION WALLS AND/OR FOOTINGS WITHOUT ENGINEER'S APPROVAL.
- 15. ALUMINUM SHALL NOT BE EMBEDDED IN ANY CONCRETE.

V. DECKING

- A. STEEL DECK SHALL BE DESIGNED AND FABRICATED IN COMPLIANCE WITH THE LATEST EDITION OF THE "STEEL DECK MANUFACTURER'S DESIGN MANUAL FOR PARTIAL JOINT PENETRATION GROOVE WELDS WHICH CONFORM TO ALL AWS D1.1 STEEL BEAM REQUIREMENTS AND WHICH MEETS ALL THE SPECIFIC CONDITIONS SHOWN.
- B. PROVIDE DECK IN LENGTHS ADEQUATE FOR A THREE-SPAN CONDITION WHERE POSSIBLE.
- C. THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES, INSERTS, ETC. WITH SHOP DRAWINGS. DRAWINGS OF THE EQUIPMENT TO BE INSTALLED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - a. PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
 - b. PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
 - c. PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
- D. STEEL DECK SHALL BE ATTACHED TO ALL MEMBERS ON WHOM IT BEARS.
- E. PROVIDE DETAILS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS NOTED OTHERWISE.
- F. PROVIDE DETAILS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS NOTED OTHERWISE.
- G. PROVIDE CORNER BARS AT ALL FOOTINGS AND WALL INTERSECTIONS TO MATCH HORIZONTAL REINFORCING SIZE AND LENGTH. SHEAR KEYS SHALL BE PROVIDED AT EACH CONSTRUCTION JOINT AND SHALL BE LOCATED AT 10 POINTS OF INTERSECTION.
- H. BAR GRATING SHALL BE STEEL 1/2" x 3/16" GALVANIZED GRATING. GRATING SHALL BE CLAMPED TO SUPPORT BEAMS WITH GALVANIZED CLAMP BARS THAT ARE NON-SHRINK GROUT WITH A MINIMUM STRENGTH OF 6000 PSI WHEN BEARING ON 3000 PSI CONCRETE OR LESS, METALLIC, NON-SHRINK GROUT WITH A MINIMUM STRENGTH BETWEEN 3000 AND 4000 PSI.
- I. ALL STRUCTURAL STEEL SHALL BE SHIPPED WITH ONE COAT OF SHOP PRIMER EXCEPT THOSE MEMBERS THAT ARE GALVANIZED OR IN AREAS SCHEDULED TO RECEIVE FIRE PROOFING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AREAS TO BE FIRE PROOFED.

CONCRETE PROPERTIES TABLE

	USE	STRENGTH (PSI)	TYPE	COMMENTS	DURABILITY CLASSIFICATION
ALL CONCRETE NOT OTHERWISE SPECIFIED	4000	NWT			FO, SO, PO, CO
COLUMNS AND SHEAR WALLS	SEE PLAN	NWT			FO, SO, PO, CO
FOUNDATION WALLS, GRADE BEAMS	3000	NWT			FI, SO, PO, C1
METAL DECK SLABS, EXTERIOR	4000	NWT/LWT			FI, SO, PO, C1
METAL DECK SLABS, INTERIOR	4000	NWT/LWT			FI, SO, PO, C1
TOPPING OVER SLABS, EXTERIOR	4000	NWT/LWT			FI, SO, PO, C1
TOPPING OVER SLABS, INTERIOR	3000	NWT/LWT			FO, SO, PO, CO

COMPOSITE DECK

- A. MINIMUM SECTION PROPERTIES:
 - SP = 0.341 IN⁴/FT
 - SN = 0.362 IN³/FT
 - SLAB DEPTH: 1.5"
 - MAXIMUM UNSHORED CONSTRUCTION SPANS: SINGLE = 12'-0", DOUBLE = 24'-0", TRIPLE = 10'-0"
 - DECK ATTACHMENT: #10 SELF-DRILLING SCREWS AT 12" OC AT EXTREME EDGE
- B. MINIMUM SECTION PROPERTIES:
 - SP = 0.208 IN⁴/FT
 - SN = 0.193 IN³/FT
 - SLAB DEPTH: 1.5"
 - MAXIMUM UNSHORED CONSTRUCTION SPANS: SINGLE = 12'-0", DOUBLE = 24'-0", TRIPLE = 10'-0"
 - DECK ATTACHMENT: #10 SELF-DRILLING SCREWS AT 12" OC AT EXTREME EDGE
- C. NON-COMPOSITE FORM DECK:
 - TYPE - "1" CONFORM DECK
 - GAUGE: 24
 - FINISH: GALVANIZED G60
 - MINIMUM SECTION PROPERTIES:
 - SP = 0.152 IN⁴/FT
 - SN = 0.152 IN³/FT
 - SLAB DEPTH: 1.5"
 - MAXIMUM UNSHORED CONSTRUCTION SPANS: SINGLE = 12'-0", DOUBLE = 24'-0", TRIPLE = 10'-0"
 - DECK ATTACHMENT: #10 SELF-DRILLING SCREWS AT 12" OC AT DECK SIDELAPS
- D. ROOF DECK:
 - TYPE - "112" WIDE-RIB
 - GAUGE: 24
 - FINISH: PARTIALLY GALVANIZED G60
 - MINIMUM SECTION PROPERTIES:
 - SP = 0.186 IN⁴/FT
 - SN = 0.186 IN³/FT
 - SLAB DEPTH: 1.5"
 - MAXIMUM UNSHORED CONSTRUCTION SPANS: SINGLE = 12'-0", DOUBLE = 24'-0", TRIPLE = 10'-0"
 - DECK ATTACHMENT: #10 SELF-DRILLING SCREWS AT 12" OC AT DECK SIDELAPS
- E. #5/8" PUDDLE WELDS IN #4/4 PATTERN AT SUPPORTS
- F. #5/8" PUDDLE WELDS AT 12" OC AT EXTREME EDGE
- G. #5/8" PUDDLE WELDS AT 12" OC AT DECK SIDELAPS
- H. #10 SELF-DRILLING SCREWS AT 12" OC AT DECK SIDELAPS
- I. #5/8" PUDDLE WELDS IN #4/4 PATTERN AT SUPPORTS
- J. #5/8" PUDDLE WELDS AT 12" OC AT EXTREME EDGE
- K. #10 SELF-DRILLING SCREWS AT 12" OC AT DECK SIDELAPS
- L. #5/8" PUDDLE WELDS IN #4/4 PATTERN AT SUPPORTS
- M. #5/8" PUDDLE WELDS AT 12" OC AT EXTREME EDGE
- N. #10 SELF-DRILLING SCREWS AT 12" OC AT DECK SIDELAPS
- O. #5/8" PUDDLE WELDS IN #4/4 PATTERN AT SUPPORTS
- P. #5/8" PUDDLE WELDS AT 12" OC AT EXTREME EDGE
- Q. #10 SELF-DRILLING SCREWS AT 12" OC AT DECK SIDELAPS

VI. STRUCTURAL STEEL

- A. ALL HOT ROLLED STEEL PLATES, SHAPES, SHEET PLING, AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A994.
- B. STRUCTURAL STEEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - 1. WIDE FLANGE SHAPES ASTM A992 F_y = 50 KSI
 - 2. STEEL PIPE ASTM A53 GRADE B F_y = 35 KSI
 - 3. STRUCTURAL RECTANGULAR TUBING ASTM A500 GRADE C F_y = 50 KSI
 - 4. STRUCTURAL ROUND TUBING ASTM A500 GRADE B F_y = 42 KSI
 - 5. ALL OTHER STRUCTURAL STEEL ASTM A36 F_y = 36 KSI
- C. CONNECTION MATERIALS:
 - a. BEAM COLUMN STIFFENER PLATES AND DOUBLER PLATES: ASTM A572 GRADE 50
 - b. ALL OTHER CONNECTION MATERIAL, UNW: ASTM A36
- D. UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (65KSI), F7XX-E6XX (SAW), E80XX (SAW), OR E70XX (FCW), WEATHERING STEEL ELECTRODES SHALL CONFORM TO THE ANSII/ISO D11 MANUAL, ELECTRODES FOR GRADE 60 OR GRADE 65 MATERIAL SHALL CONFORM TO E80XX (SAW), F8XX-E8XX (SAW), E80XX (SAW), OR E80XX (FCW).
- E. WELDS INDICATED "CP" (P/P) SHALL BE COMPLETE PARTIAL JOINT PENETRATION GROOVE WELDS. FABRICATOR SHALL PROVIDE COMPLETE COMPLETE PARTIAL JOINT PENETRATION GROOVE WELDS WHICH CONFORM TO ALL AWS D1.1 STEEL BEAM REQUIREMENTS AND WHICH MEETS ALL THE SPECIFIC CONDITIONS SHOWN.
- F. ALL ERECTION DRAWINGS SHALL SHOW ALL FIELD WELDS REQUIRED.
- G. CONNECTIONS SHALL BE DESIGNED TO RESIST FACTOR OF SAFETY OF 1.5 ON ALL FIELD WELDS.
- H. CONNECTION DETAILS NOT COMPLETELY DETAILED ON THE DRAWINGS SHALL BE DESIGNED BY THE CONTRACTORS ENGINEER TO RESIST FACTOR OF SAFETY OF 1.5 ON ALL FIELD WELDS.
- I. CONNECTIONS ARE INTENDED FOR USE WITH THE LOAD AND RESISTANCE FACTOR DESIGN METHOD, WHERE NONE ARE INDICATED, UNLESS NOTED OTHERWISE. TRACKS SHALL BE THE SAME DEPTH AS STUDS OR JOISTS AND OF EQUAL OR THICKER GAUGE IN THE UNIFORM LOAD TABLES OF THE AISC MANUAL. THE CONTRACTOR SHALL EMPLOY THE ASSISTANCE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. DESIGN CALCULATIONS FOR THE CONNECTIONS DESIGNED BY THE SPECIALTY ENGINEER SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER. CALCULATIONS SHALL BEAR THE SEAL OF THE PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. SHOP DRAWINGS CONTAINING CONNECTIONS FOR WHICH CALCULATIONS HAVE NOT BEEN RECEIVED WILL BE RETURNED UNCHECKED AS AN INCOMPLETE SUBMITTAL. CONNECTIONS ECCENTRICITY SHALL BE TAKEN INTO ACCOUNT WHEN DESIGNING AND DETAILING THE CONNECTION.
- J. WHERE THE WORK OF OTHER TRADES REQUIRES CUTS, HOLES, ETC. IN STRUCTURAL STEEL MEMBERS, CUTS, HOLES, ETC. SHALL BE MADE IN THE SHOP AND SHOWN ON THE SHOP DRAWINGS. MAKING HOLES OR CUTS IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED WITHOUT SPECIFIC APPROVAL OF THE ENGINEER.
- K. ALL MEMBERS MARKED "AESS" SHALL MEET THE REQUIREMENTS OF AISC 308-16 FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL LEVEL UNLESS NOTED OTHERWISE.
- L. BAR GRATING SHALL BE STEEL 1/2" x 3/16" GALVANIZED GRATING. GRATING SHALL BE CLAMPED TO SUPPORT BEAMS WITH GALVANIZED CLAMP BARS THAT ARE NON-SHRINK GROUT WITH A MINIMUM STRENGTH OF 6000 PSI WHEN BEARING ON 3000 PSI CONCRETE OR LESS, METALLIC, NON-SHRINK GROUT WITH A MINIMUM STRENGTH BETWEEN 3000 AND 4000 PSI.
- M. ALL STRUCTURAL STEEL SHALL BE SHIPPED WITH ONE COAT OF SHOP PRIMER EXCEPT THOSE MEMBERS THAT ARE GALVANIZED OR IN AREAS SCHEDULED TO RECEIVE FIRE PROOFING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AREAS TO BE FIRE PROOFED.

VII. MASONRY

- A. HOLLOW CONCRETE BLOCK (MASONRY) UNITS SHALL BE LIGHTWEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET AREA AND 1000 PSI ON THE GROSS AREA (F_m = 1900PSI) AND SHALL CONFORM TO ASTM C-90.
- B. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-90, TYPE II OR S. ALL GROUT FOR USE IN MASONRY SHALL CONFORM TO ASTM C-776, MIN. 3000 PSI.
- C. GRADE 60 CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-270, TYPE II OR S. ALL GROUT FOR USE IN MASONRY SHALL CONFORM TO ASTM C-776, MIN. 3000 PSI.
- D. VERTICAL AND HORIZONTAL REINFORCING SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 12 BAR DIAMETERS.
- E. HORIZONTAL REINFORCING SHALL BE TRUE AND ACCURATELY LOCATED IN WALLS AS DETAIL. INSTALL REBAR POSITIONERS 8" 4" OC MAXIMUM THAT ARE DESIGNED TO HOLD REBAR IN PROPER LOCATION UNTIL THE GROUTED CELL.
- F. POSITIONERS 8" 4" OC MAXIMUM THAT ARE DESIGNED TO HOLD REBAR IN PROPER LOCATION UNTIL THE GROUTED CELL.
- G. ALL REINFORCED MASONRY COLUMN AND WALL SECTIONS REQUIRE DOWELS FROM FOOTING, SAME SIZE AND QUANTITY AS