

1. **BUILDING CODE:**
- A. INTERNATIONAL BUILDING CODE – 2009 EDITION
- B. ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
2. **MINIMUM LOADING REQUIREMENTS:**
- A. **ROOF SNOW LOADS:** (EXCEPT AT DRIFTING SNOW LOCATIONS AND THOSE LISTED BELOW)
- a. GROUND SNOW LOAD: $P_g = 60.0$ PSF
- i. IMPORTANCE FACTOR: $I = 1.0$
- ii. COLD ROOF SLOPE FACTOR: $C_s = 1.0$
- iii. THERMAL FACTOR: $C_t = 1.1$
- iv. EXPOSURE FACTOR: $C_e = 1.0$
- v. TERRAIN CATEGORY: $P_f = 46.2$ PSF
- b. FLAT ROOF SNOW LOAD:
- i. DRIFT – AS INDICATED ON THE DRAWINGS.
- B. **ROOF DEAD LOAD:** 25.0 PSF
- C. **FLOOR DEAD LOAD:** 45.0 PSF
- D. **ROOF LIVE LOAD:**
- a. STANDARD ROOF LIVE LOAD: 20 PSF
- E. **FLOOR LIVE LOADS:**
- | | UNIFORM | CONCENTRATED | PARTITION |
|---|-------------|--------------|-----------|
| a. CORRIDORS – 1 ST FLOOR | 100 PSF | | |
| b. OFFICE BUILDINGS | | | |
| i. FILE & COMPUTER ROOMS | (DETERMINE) | (DETERMINE) | |
| ii. LOBBIES AND 1 ST FLOOR CORRIDORS | 100 PSF | 2,000# | |
| iii. OFFICES | 50 PSF | 2,000# | 15 PSF |
| iv. CORRIDORS ABOVE 1 ST FLOOR | 80 PSF | 2,000# | |
| v. STORAGE AREAS ABOVE CEILING | 20 PSF | | |
- F. **WIND:**
- a. FACTORS:
- i. BASIC WIND SPEED: 100 MPH
- ii. EXPOSURE CATEGORY: "C"
- iii. IMPORTANCE FACTOR: 1.0
- iv. BUILDING HEIGHT: <60'
- b. WIND DESIGN PRESSURE
- i. MWFRS
1. END ZONE WIDTH: 9 FEET
2. TRANSVERSE
- a. INTERIOR ZONE: 13 PSF
- b. END ZONE: 17 PSF
3. LONGITUDINAL
- a. INTERIOR ZONE: 13 PSF
- b. END ZONE: 17 PSF
- ii. COMPONENTS AND CLADDING
1. END ZONE WIDTH: 5 FEET
2. WALLS
- a. FIELD: 22 PSF
- b. END ZONES: 25 PSF
- iii. ROOF UPLIFT (IBC 2009)
1. FIELD: 19 PSF
2. PERIMETER: 27 PSF
3. CORNERS: 42 PSF
4. STRIP WIDTH: 9 FEET
- G. **SEISMIC**
- a. COEFFICIENTS:
- i. RESPONSE SPECTRAL ACC. (0.2 SEC.) $S_D = 0.24G$
- ii. RESPONSE SPECTRAL ACC. (1.0 SEC.) $S_1 = 0.08G$
- iii. SOIL CLASSIFICATION: "D"
- iv. SITE COEFFICIENTS: $F_a = 1.60$; $F_v = 2.40$
- v. MAX. CONSIDERED EARTHQUAKE ACC @ 5% DAMPED DESIGN: $S_{DS} = 0.26$; $S_{D1} = 0.13$
- vi. RISK CATEGORY: II
- vii. SEISMIC DESIGN CATEGORY FOR 0.1 AND 1.0 SECONDS: B
- viii. FUNDAMENTAL PERIOD: $T_a = 0.391$ SEC
- ix. SEISMIC RESPONSE COEFFICIENT: $C_s = 0.086$
- x. SEISMIC BASE SHEAR: $V = 15.2$ KIPS (EQUIVALENT LATERAL FORCE PROCEDURE)
- b. DESIGN COEFFICIENTS AND FACTORS FOR SEISMIC FORCE RESISTING SYSTEMS
- i. MOMENT RESISTING FRAME SYSTEMS
1. ORDINARY STEEL MOMENT FRAMES
- a. RESPONSE MODIFICATION: $R = 3.5$
- b. SYSTEM OVERSTRENGTH FACTOR: $D_n = 3$
- c. DEFLECTION AMPLIFICATION FACTOR: $C_d = 3$
3. STRUCTURAL STEEL SHALL BE DESIGNED USING THE 13TH EDITION OF THE AISC STEEL CONSTRUCTION MANUAL. STEEL BEAMS SHALL CONFORM TO ASTM A992, $F_y = 50$ KSI; HSS SECTIONS SHALL CONFORM TO ASTM A500, GRADE B, $F_y = 46$ KSI; MISCELLANEOUS PLATES, SHAPES, CHANNELS, ANGLES ETC. SHALL CONFORM TO ASTM A36, $F_y = 36$ KSI.
4. STEEL JOIST SHALL CONFORM TO THE LATEST S.J.I. STANDARDS.
5. SEE ARCHITECTURAL WALL SECTIONS AND DETAILS FOR MISCELLANEOUS STEEL.
6. STEEL ROOF DECK SHALL BE 2" X 20 GAUGE ACOSITICAL DECKING (HIGH BAY ROOF). FASTENED TO STEEL BEAMS, BAR JOIST, AND PERIMETER ANGLES AS NOTED BELOW UNLESS DIRECTED OTHERWISE ON STRUCTURAL DETAILS. INSULATION TO BE PROVIDED BY DECK MANUFACTURER AND INSTALLED BY ROOFING CONTRACTOR.
- A. PRIME-PAINTED STEEL SHEET: ASTM A 1008/A 1008M, STRUCTURAL STEEL (SS), GRADE 33 MINIMUM, SHOP PRIMED WITH MANUFACTURER'S STANDARD BAKED-ON, RUST-INHIBITIVE PRIMER. COLOR: MANUFACTURER'S STANDARD.
- B. DECK PROFILE: ACOUSTICAL PROFILE – BASIS OF DESIGN MANUFACTURER: NEW MILLENIUM BUILDING SYSTEMS/CSI
- C. PROFILE DEPTH: 2 INCHES, DOVETAIL TYPE
- D. DESIGN UNCOATED-STEEL THICKNESS: 20 GAUGE
- E. SPAN CONDITION: DOUBLE SPAN
- F. SIDE LAPS: FASTENERS #10 TEK SCREWS (1 PER SPAN).
- G. FIELD FASTENING: 5/8" PUDDLE WELDS ON A 36/3 PATTERN
- H. EDGE ANGLE/BEAM FASTENING: 5/8" PUDDLE WELDS AT 6" O.C.
- I. PERIMETER ZONE AND CORNERS: 5/8" PUDDLE WELDS AT 6" O.C.
7. STEEL ROOF DECK: FABRICATE PANELS, WITHOUT TOP-FLANGE STIFFENING GROOVES, TO COMPLY WITH "SDI SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK," IN SDI PUBLICATION NO. 30, AND WITH THE FOLLOWING:
- A. PRIME-PAINTED STEEL SHEET: ASTM A 1008/A 1008M, STRUCTURAL STEEL (SS), GRADE 33 MINIMUM, SHOP PRIMED WITH MANUFACTURER'S STANDARD BAKED-ON, RUST-INHIBITIVE PRIMER. COLOR: MANUFACTURER'S STANDARD.
- B. DECK PROFILE: TYPE NR, NARROW RIB
- C. PROFILE DEPTH: 1-1/2 INCHES, TYPE B
- D. DESIGN UNCOATED-STEEL THICKNESS: 20 GAUGE
- E. SPAN CONDITION: DOUBLE SPAN
- F. FIELD FASTENING: 5/8" PUDDLE WELDS ON A 36/3 PATTERN
- G. SIDE LAPS: FASTENERS #10 TEK SCREWS (1 PER SPAN).
- H. EDGE ANGLE/BEAM FASTENING: 5/8" PUDDLE WELDS AT 6" O.C.
- I. PERIMETER ZONE AND CORNERS: 5/8" PUDDLE WELDS AT 6" O.C.
8. STEEL FLOOR FORM DECK SHALL BE 9/16" X 20 GAUGE FORM DECKING, FASTENED TO STEEL BEAMS, BAR JOIST, AND PERIMETER ANGLES AS NOTED BELOW UNLESS DIRECTED OTHERWISE ON STRUCTURAL DETAILS.
- A. PRIME-PAINTED STEEL SHEET: ASTM A 1008/A 1008M, STRUCTURAL STEEL (SS), GRADE 33 MINIMUM, WITH UNDERSIDE SURFACE SHOP PRIMED WITH MANUFACTURER'S STANDARD BAKED-ON, RUST-INHIBITIVE PRIMER.
- B. COLOR: GRAY
- C. PROFILE DEPTH: 9/16 INCH
- D. DESIGN UNCOATED-STEEL THICKNESS: 0.0358 INCH.
- E. SPAN CONDITION: DOUBLE SPAN
- F. FASTENING: 5/8" PUDDLE WELDS ON A 36/3 PATTERN

- G. EDGE ANGLE/BEAM FASTENING: 5/8" PUDDLE WELDS AT 12" O.C.
- H. SIDE LAPS: INTERLOCKING SEAM.
9. ALL STRUCTURAL STEEL TO RECEIVE STANDARD PRIMER. ALL EXPOSED STRUCTURAL STEEL TO RECEIVE MIN. (2) COATS TNEEC GLOSS SILVER PAINT, EXCEPT ROOF DECKING AND ROOF FRAMING TO RECEIVE WHITE DRYFALL PAINT. ALL PORTIONS OF STEEL SUPPORTING MECHANICAL EQUIPMENT AND MOMENT CONNECTION WELDS SHALL BE UNPAINTED AND UNPRIMED. SEE ARCHITECTURAL FOR FURTHER DETAILS.
10. PROVIDE L4 X 4 X 1/2" SLAB SUPPORT ANGLE AS REQUIRED AT COLUMNS WHERE STRUCTURAL MEMBERS DO NOT FRAME IN AT ALL FOUR SIDES.
11. BASE PLATE ANCHOR BOLTS IN NEW CONSTRUCTION SHALL BE
- A. ANCHOR RODS: 3/4" Ø ASTM F1554, UNO
- B. NUTS: ASTM A563, GRADE DH
- C. WASHERS: ASTM F436
12. INSPECTION REPORTS SHALL BE FURNISHED TO THE OWNER, BUILDING OFFICIAL, ARCHITECT AND SER. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR AND IF NOT CORRECTED, SHALL BE REPORTED TO THE OWNER, BUILDING OFFICIAL, ARCHITECT AND SER.
13. STRUCTURAL STEEL JOISTS
- A. JOISTS SHALL CONFORM TO THE REQUIREMENTS OF THE STEEL JOIST INSTITUTE (SJI) STANDARD SPECIFICATIONS AND INSTALLATION REQUIREMENTS.
- B. PROVIDE CONTINUOUS BAR JOIST BOTTOM CHORD "UPLIFT BEARING" AT THE FIRST PANEL POINT FROM EACH END AND SIZED AS REQUIRED TO SATISFY THE NET WIND UPLIFT REQUIREMENTS LISTED IN THE MINIMUM LOAD REQUIREMENTS.
- C. JOIST MANUFACTURER SHALL DESIGN ROOF JOISTS FOR A NET WIND UPLIFT OF -19 PSF. ALLOWABLE STRESSES SHALL NOT BE INCREASED BY 1/2 ALLOWABLE STRESS FACTOR FOR WIND LOADING.
- D. K-SERIES AND LH JOISTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MAINE AND DESIGN CALCULATIONS SHALL BE SUBMITTED FOR REVIEW AND SHALL BE CONSIDERED AN INTEGRAL PART OF THE BAR JOIST SHOP SUBMITTAL. FINAL APPROVAL OF JOIST SHOPS IS CONTINGENT UPON REVIEW AND ACCEPTANCE OF THE JOIST CALCULATIONS.
- E. KCS-SERIES JOISTS HAVE BEEN DESIGNED BY THE ENGINEER OF RECORD.
- F. WELD BAR JOIST TO BEAMS OR BEARING PLATES WITH (2) FILLET WELDS AT EACH END. SIZE AND LENGTH AS INDICATED ON THE STRUCTURAL DRAWINGS OR AS REQUIRED BY THE STEEL JOIST INSTITUTE.

CONNECTIONS:

1. ALL DETAILS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED OTHERWISE.
2. FIELD CONNECTIONS SHALL BE FIELD BOLTED WITH A325N HIGH STRENGTH BOLTS (U.N.O.) EXCEPT WHERE SLIP CRITICAL CONNECTIONS ARE REQUIRED AND NOTED BY A325 (SC) ON THE DRAWINGS. WASHERS SHALL CONFORM TO ASTM F436. NUTS SHALL CONFORM TO ASTM A563 DH. PROVIDE SLIP CRITICAL (SC) CONNECTIONS AT ALL MOMENT CONNECTIONS, BRACED FRAMES, RELIEVING ANGLES AND WHERE OTHERWISE NOTED.
3. ALL SLIP CRITICAL (S.C.) BOLTED CONNECTIONS SHALL BE CHECKED AND INSPECTED USING ONE OF THE FOLLOWING:
- A. TURN OF THE NUT
- B. CALIBRATED WRENCH
- C. ALTERNATE DESIGN FASTENER
- D. DIRECT TENSION INDICATOR
- E. ALL OTHER BOLTED CONNECTIONS SHALL BE TIGHTENED TO "SNUG TIGHT" CONDITION UNLESS NOTED OTHERWISE.
4. UNLESS NOTED OTHERWISE, CONNECTIONS SHALL BE WELDED OR BOLTED WITH 3/4" DIAMETER A325, A490 BOLTS (BEARING TYPE, DESIGNATION N, THREADS IN SHEAR PLANE) BEAM TO COLUMN CONNECTIONS SHALL BE FULL DEPTH (BOLT SPACING 3" ON-CENTER).
5. OVERSIZE OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY ENGINEER OF RECORD.
6. MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE 2.
7. ALTERNATE CONNECTIONS WILL BE ACCEPTED ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTABILITY. THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE SPECIFIC DETAILS SHOWN ON THE DRAWINGS. IN ANY EVENT THE FABRICATOR'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS AND ASSOCIATED CALCULATIONS SHALL BE SUBMITTED WITH THE OVERALL SUBMITTAL.
8. ALL WELDS INDICATED SHALL BE THE MINIMUM WELD SIZED SPECIFIED BY THE AISC MANUAL OF STEEL DESIGN (SINGLE PASS, AS REQUIRED). ALL BUTT AND FULL PENETRATION WELDS SHALL BE MADE USING RUN-OFF TABS THAT SHALL BE REMOVED AND GROUND SMOOTH AFTER WELD IS COMPLETED. ALL WELD BACK-UP BARS SHALL BE REMOVED AND GROUND SMOOTH AFTER WELD IS COMPLETED.
9. SHOP CONNECTIONS, UNLESS NOTED OTHERWISE, SHALL BE WELDED. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, BEAM CONNECTION CAPABILITIES SHALL BE CALCULATED IN ACCORDANCE WITH AISC'S "THE STEEL CONSTRUCTION MANUAL", 13TH EDITION, FOR EACH SHEAR CONNECTION PROVIDE THE GREATER OF THE FOLLOWING SHEAR CAPACITIES:
- A. BEAMS: SUPPORT A REACTION 1/3 EQUAL TO HALF TOTAL UNIFORM LOAD CAPACITY OF BEAM FOR GIVEN SHAPE, SPAN AND STEEL SPECIFICATION (AISC) WITH EFFECT OF CONCENTRATED LOADS ACCOUNTED FOR OR THE (UNFACTORED) REACTIONS SHOWN ON PLAN, WHICHEVER IS GREATER.
10. CONNECTION DESIGN IS THE RESPONSIBILITY OF THE FABRICATOR FOR OTHER THAN THE STANDARD CONNECTIONS NOTED ON S.003. CONNECTIONS CALCULATIONS SHALL BE SIGNED, SEALED BY A PE REGISTERED IN THE PROJECT STATE AND SUBMITTED FOR REVIEW WITH THE SHOP DRAWINGS. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. PARTIAL SUBMITTAL PACKAGES WILL BE RETURNED.

SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS: AN INDEPENDENT INSPECTIONS PROGRAM AND SCHEDULE SHALL BE ARRANGED BY THE BUILDING OWNER AND THE STRUCTURAL ENGINEER OF RECORD.
2. A QUALIFIED PERSON APPROVED BY THE BUILDING OFFICIALS SHALL MAKE SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE IBC-2009, AND AS DEFINED. SPECIAL INSPECTOR SHALL OBSERVE WORK FOR CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS.
3. INSPECTION REPORTS SHALL BE FURNISHED TO THE OWNER, BUILDING OFFICIAL, ARCHITECT AND SER. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR AND IF NOT CORRECTED, SHALL BE REPORTED TO THE OWNER, BUILDING OFFICIAL, ARCHITECT AND SER.
4. THE FOLLOWING TYPES OF WORK SHALL RECEIVE SPECIAL INSPECTION OVERSITE: STRUCTURAL STEEL FABRICATION, ERECTION AND CONNECTIONS, METAL DECK FASTENING, INSTALLATION OF REINFORCING STEEL FOR CONCRETE, ALL CONCRETE PLACEMENT AND STRENGTH TESTING, AND STRUCTURAL FILL PLACEMENT.

FIELD TESTING:

1. BOLTED CONNECTIONS: 100% OF COMPONENTS AND FASTENERS IN SLIP CRITICAL CONNECTIONS, AS IDENTIFIED IN THE PROJECT CONTRACT DOCUMENTS SHALL BE VISUALLY INSPECTED AND TESTED FOR TIGHTNESS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR STRUCTURAL JOINTS, PARTS 8 AND 9.

FOUNDATIONS:

1. THE SITE SHALL BE PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY S.W. COLE ENGINEERING, INC., DATED DECEMBER 8, 2015. FOUNDATION DESIGNS BASED ON THE DESIGN SOIL BEARING CAPACITIES DESCRIBED IN REPORT ABOVE. FOUNDATION SYSTEMS HAVE BEEN DESIGNED WITH AN ASSUMED BEARING CAPACITY OF 2500 PSF.
2. ALL FOOTING BOTTOMS SHALL BE INSPECTED AND APPROVED, IN WRITING, BY A REGISTERED SOILS ENGINEER PRIOR TO PLACING CONCRETE. WRITTEN APPROVAL SHALL SPECIFY THAT THE SOIL HAS THE CAPACITY TO SUPPORT THE DESIGNED BEARING PRESSURE.
3. ALL BEDDING AND FILL PROFILES BENEATH SLABS ON GRADE AND FOUNDATION FOOTINGS SHALL COMPLY WITH THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT REFERENCED ABOVE.
4. FOUNDATION WALL REINFORCING WILL BE ADJUSTED AS REQUIRED NOT TO INTERFERE WITH BASE PLATE ANCHOR BOLTS
5. EXCAVATIONS FOR BUILDING FOUNDATIONS AND STRUCTURES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. BRACED EXCAVATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE. DO NOT UNDERMINE EXISTING ADJACENT FOUNDATIONS.
6. INTERSECTING CONCRETE WALLS SHALL BE TIED WITH #4 L-BARS 3'-0" LONG (BENT 18-INCHES - 18-INCHES), SPACED AT 12-INCHES ON-CENTER, OUTSIDE FACE ONLY.
7. IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION WALL. IF THE CONTRACTOR DEEMS IT NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'-0", THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND AT HIS OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR WALL BRACES TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.
8. FOUNDATION WALL CONTROL JOINTS SHALL BE PLACED AS SHOWN ON THE BUILDING ELEVATIONS (EXTERIOR) AND AT A MAXIMUM SPACING OF 15'-0" (INTERIOR).
9. CONCRETE SHALL NOT BE PLACED ON FROZEN GROUND OR IN WATER.
10. UNDERDRAINS SHALL BE PLACED AS SHOWN ON THE SITE DRAWINGS. UNDERDRAINS SHALL BE INSTALLED TO POSITIVELY DRAIN TO A SUITABLE DISCHARGE POINT AWAY FROM THE STRUCTURE. REFER TO SITE DRAWINGS FOR ADDITIONAL INFORMATION.
- 11.

CONCRETE:

1. CONCRETE WORK SHALL COMPLY WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDINGS"; ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"; AND ACI 315 "ACI DETAIL MANUAL", AND CRSI "MANUAL OF STANDARD PRACTICE".
2. CONTRACTOR SHALL PROVIDE TIES AND BRACING WHERE NECESSARY DURING CONSTRUCTION, TO REMAIN IN PLACE UNTIL THE STRUCTURES ARE COMPLETE.
3. CONCRETE SHALL BE:
- a. FOOTING AND FOUNDATION WALLS: 3,000 PSI AT (28) DAYS. SLUMP SHALL NOT EXCEED 4-INCHES (WC = 0.46)
- b. INTERIOR SLABS ON-GRADE: 3,500 PSI CONCRETE AT (28) DAYS. SLUMP SHALL NOT EXCEED 3-INCHES (WC = 0.43).
- c. EXTERIOR SLABS ON GRADE SIDEWALKS, AND STAIRS SHALL BE 4000 PSI AT (28) DAYS. SLUMP SHALL NOT EXCEED 3-INCHES (WC = 0.45).
4. CONCRETE MATERIALS:
- a. PORTLAND CEMENT: ASTM C150, TYPE I OR II. USE ONE TYPE THROUGHOUT PROJECT.
- b. NORMAL WEIGHT AGGREGATES: ASTM C33. PROVIDE FROM SINGLE SOURCE FOR ENTIRE PROJECT. NO AGGREGATE CONTAINING SOLUBLE SALTS, IRON SULFIDES, PYRITE, MARCASITE, OR OCHRE WHICH CAN CAUSE STAINS ON EXPOSED CONCRETE SURFACES.
- c. LIGHTWEIGHT AGGREGATES: ASTM C330
- d. WATER: POTABLE
- e. AIR-ENTRAINING ADMIXTURE: ASTM C260
- f. HIGH RANGE WATER REDUCING ADMIXTURES (SUPER PLASTICIZER): ASTM C494, TYPE F OR G CONTAINING NOT MORE THAN 1% CHLORIDE IONS
- g. NORMAL RANGE WATER REDUCING ADMIXTURES: ASTM C494 TYPE A CONTAINING NO CALCIUM CHLORIDE
- h. ACCELERATING ADMIXTURES: ASTM 494, TYPE C OR E
5. 4-INCH SLABS ON GRADE SHALL BE REINFORCED WITH 6 X 6 X W2.9 X W 2.9 W/M UNLESS OTHERWISE NOTED.
6. PROVIDE PVC SLEEVES WHERE PIPES PASS THROUGH CONCRETE WALLS OR SLABS.
7. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BARS, AND SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH ACI 315-LATEST EDITION.
8. COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ALL ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.
9. WALLS EXCEEDING 90 FEET SHALL CONTAIN EXPANSION JOINTS AT 90 FEET ON CENTER SPACING.
10. ALL CONSTRUCTION JOINTS FOR SLABS SHALL BE KEY JOINTED AT MID-SPAN WITH REINFORCING DISCONTINUOUS AT JOINT.
11. FLOOR SLAB CONTROL JOINTS (INCLUDING ELEVATED SLAB) SHALL BE PLACED AS SHOWN ON THE FOUNDATION PLAN (SLAB ON GRADE) OR AS DIRECTED BY THE ENGINEER (ELEVATED SLABS). UNLESS OTHERWISE NOTED, CONTROL JOINTS WILL BE SPACED NOT TO EXCEED 12'-0" ON-CENTER IN BOTH DIRECTIONS AND SHALL BE FILLED WITH SEALANT AT THE COMPLETION OF THE PROJECT.
12. CONTRACTOR WILL CHECK WITH EACH TRADE TO ASSURE CORRECT LOCATION, SIZE, LINE AND ELEVATION OF SLEEVES, BOND-OUTS, ETC. REQUIRED IN CONCRETE FLOORS AND WALLS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FLOOR DRAIN SETTING AND EXTENTS OF AREA SLOPE TO DRAIN DEVELOPMENT. SEE ARCHITECTURAL AND PLUMBING PLANS TO ENSURE COMPLETE AREA DRAINAGE.
14. WELDING OF REINFORCEMENT IS NOT PERMITTED.
15. EXPOSED CONCRETE SHALL BE NEATLY FINISH-RUBBED.

1. WORK SHALL BE DONE IN COMPLIANCE WITH THE LATEST EDITION OF IBC-2009.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL AND CIVIL DRAWINGS. ANY INCONSISTENCIES WITH THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED PORTIONS OF THE WORK.
3. THE CONTRACTOR SHALL VISIT THE SITE AT A DESIGNATED TIME APPROVED BY THE OWNER, TO VERIFY EXISTING CONDITIONS, DIMENSIONS, LOCATION OF EXISTING UTILITIES, ETC. THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES WITHOUT EXCEPTION.
4. THE STRUCTURE HAS BEEN DESIGNED AS A SELF-SUPPORTING SYSTEM ONCE ALL WORK CONTAINED ON THESE DRAWINGS HAS BEEN COMPLETED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCE OF INSTALLATION TO ENSURE SAFETY OF THE BUILDING AND ITS OCCUPANTS DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS AND TEMPORARY SHORING, PRECAUTIONS DURING BUILDING OPERATIONS, PROTECTION OF PUBLIC AND WORKERS, REMOVAL OF WASTE MATERIAL, PROTECTION OF ADJACENT PROPERTY, PROTECTION OF HAZARDOUS OPENINGS, SAFETY PRECAUTIONS, AND SANITARY PROVISIONS OF EMPLOYEES AND SUBCONTRACTORS AS REQUIRED FOR THE DURATION OF THE CONTRACT.
5. WORK SHALL BE DONE IN AN ORDERLY AND PROFESSIONAL MANNER. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK TO BE DONE BY SUBCONTRACTORS, LOCAL AUTHORITIES, STATE AGENCIES AND/OR UTILITY COMPANIES WHICH MAY HAVE JURISDICTION OVER THIS PROJECT.
6. UTILITY EXTENSIONS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH STATE AND LOCAL CODES OR AS INDICATED ON THE DRAWINGS.
7. CONTRACTOR SHALL REVIEW AND SUBMIT COMPLETE SHOP DRAWINGS FOR ALL SPECIFIED PARTS OF THE WORK, INCLUDING SHORING AND CONSTRUCTION METHODS/SEQUENCING WHERE APPLICABLE. NO PORTION OF THE WORK COVERED BY THESE SHOP DRAWINGS SHALL COMMENCE UNTIL RETURNED APPROVED SHOPS ARE RECEIVED BY THE CONTRACTOR. SEE STRUCTURAL NOTES FOR SPECIFIC SHOP SUBMITTAL REQUIREMENTS.
8. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY EXISTING ITEMS DAMAGED BY NEW CONSTRUCTION, AND FOR ANY INCIDENTAL REPAIRS OF EXISTING FINISHED SURFACES DISTURBED BY NEW CONSTRUCTION. SUCH REPAIRS SHALL MATCH EXISTING TO THE OWNER'S SATISFACTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING, HANDLING, AND STORAGE OF ITEMS/MATERIALS TO REMAIN THE PROPERTY OF THE OWNER WITH THE OWNER'S REPRESENTATIVE.

F9

GENERAL NOTES

16. MECHANICAL EQUIPMENT RESTING ON THE CONCRETE FLOOR SLAB SHALL HAVE A 4-INCH HIGH CONCRETE PAD UNDERNEATH, EXTENDING A MINIMUM OF 6-INCHES BEYOND UNIT EDGE (EACH DIRECTION), REINFORCED WITH #3 BARS AT 18-INCHES ON-CENTER EACH WAY.
17. STRUCTURAL STEEL BELOW FINISH FLOOR SHALL RECEIVE (2) COATS OF BITUMINOUS MASTIC.
18. ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED. CONCRETE SHALL NOT BE IN DIRECT CONTACT WITH ALUMINUM.
19. PROVIDE IN SLABS ON GRADE (2) BARS 4'-0" LONG AT EACH REINFRANT CORNER AND BOTH SIDES OF DOOR OPENINGS.
20. REFER TO ACI 318 (LATEST EDITION) FOR MINIMUM CONCRETE COVER FOR REINFORCING STEEL.
21. UNLESS OTHERWISE NOTED, REINFORCING LAP SPLICES SHALL BE ACI CLASS B SPLICES USING THE FOLLOWING LAP LENGTHS:
- | BAR SIZE (LAP IN.) | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--------------------|----|----|----|----|----|----|----|----|----|
| | 22 | 29 | 36 | 43 | 63 | 72 | 80 | 89 | 98 |
22. COORDINATE SLAB DEPRESSIONS AND ALL INTERIOR FLOOR SLOPES TO DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
23. SLAB THICKNESSES (ELEVATED OR ON-GRADE) INDICATED ON THE DRAWINGS ARE MINIMUMS. PROVIDE SUFFICIENT CONCRETE TO ACCOUNT FOR STRUCTURE DEFLECTION AND/OR SUBGRADE FLUCTUATIONS IN ORDER TO OBTAIN SPECIFIED SLAB ELEVATIONS AT THE FLATNESS AND LEVELNESS INDICATED IN THE SPECIFICATION.
24. DRILLED-IN ANCHOR BOLTS OR REBAR DOWELS SHALL BE INSTALLED AS FOLLOWS:
- LOCATE ANCHOR BOLTS OR DOWELS TO AVOID CUTTING EXISTING REBAR.
 - DEPTH IS BASED ON A CLEAN HOLE WITH ROUGH SIDES. ROTARY PERCUSSION EQUIPMENT AND COURSE ROCK CUTTING CHISELS ARE RECOMMENDED. DIAMOND CORE BITS SHOULD BE AVOIDED AS EMBEDMENT LENGTHS MAY NEED TO BE INCREASED. HOLE SIZE TO BE PER MANUFACTURER'S RECOMMENDATIONS.
 - CLEAN HOLES WITH COMPRESSED AIR OR VACUUM, REMOVE ANY FREE-STANDING WATER AND ALLOW HOLE TO DRY.
 - GROUT ANCHOR BOLTS OR DOWELS WITH HILTI HIT HY-150 ADHESIVE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. (HILTI HVA ADHESIVE CAPSULE MAY BE SUBSTITUTED FOR THE HILTI HIT HY-150 ADHESIVE.)
25. FOOTINGS SHALL BEAR ON STRUCTURAL BACKFILL COMPACTED TO ACHIEVE 95 PERCENT RELATIVE COMPACTION AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D1557). SEE GEOTECHNICAL REPORT, NOTED ABOVE, FOR STRUCTURAL FILL GRADATION REQUIREMENTS.

STRUCTURAL - NOTES

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A1 STRUCTURAL NOTES

A6 FOUNDATION AND CONCRETE NOTES

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