

## STRUCTURAL GENERAL NOTES

- ALL DOCUMENTS ARE INSTRUMENTS OF SERVICE AND ARE COPYRIGHT PROPERTY OF THEY MAY NOT BE REPRODUCED, ALTERED OR REUSED WITHOUT THE EXPRESS WRITTEN CONSENT OF OWNER.
- DRAWINGS REPRESENT THE DESIGN INTENT OF THE PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION TO TRANSFORM THE DESIGN INTENT INTO THE PHYSICAL STRUCTURE.
- STRUCTURAL DRAWINGS ARE NOT INDEPENDENT DOCUMENTS AND ARE INTENDED TO BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS. REFER TO AND COORDINATE WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL AND APPROVED SHOP DRAWINGS FOR LOCATION AND DIMENSIONS OF CHASES, INSERTS, OPENINGS, SLEEVES, DEPRESSIONS, ETC. AND ATTACHMENT OF FINISHES.
- REFER TO THE PROJECT MANUAL FOR GENERAL CONTRACT REQUIREMENTS AND DETAILED REQUIREMENTS FOR MATERIALS, WORKMANSHIP AND SHOP DRAWING SUBMITTALS. THESE NOTES SUPPLEMENT THE SPECIFICATIONS, WHICH SHALL BE REFERRED TO FOR ADDITIONAL REQUIREMENTS.
- DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE FIELD COORDINATED BY THE CONTRACTOR WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND APPROVED SHOP DRAWINGS. REPORT ANY INCONSISTENCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
- GENERAL CONTRACTOR SHALL COORDINATE PREPARATION AND PROCESSING OF SUBMITTALS WITH PERFORMANCE OF CONSTRUCTION ACTIVITIES. ALL DIMENSIONS SHOWN THROUGHOUT THE STRUCTURAL SHEETS ARE COORDINATED FOR THE BASIS-OF-DESIGN PRODUCTS, INCLUDING BUT NOT LIMITED TO THE HYDRAULIC ELEVATOR SHAFTS AND GLAZED ALUMINUM CURTAIN WALLS. IF DIFFERENT PRODUCTS ARE SUBMITTED BY THE GENERAL CONTRACTOR AND APPROVED, ADJUSTMENTS SHALL BE MADE BY OTHER TRADES AT NO ADDITIONAL COST TO THE OWNER.
- IF AN INCONSISTENCY EXISTS BETWEEN SPECIFICATIONS, PLANS, DETAILS AND GENERAL NOTES, THE MOST STRINGENT REQUIREMENT GOVERNS. DETAILS TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- THE STRUCTURAL DESIGN OF THE BUILDING IS BASED ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS. NO PROVISIONS HAVE BEEN MADE FOR CONDITIONS OCCURRING DURING CONSTRUCTION. ANY FAILURE TO MAKE PROPER AND ADEQUATE PROVISIONS FOR STRESSES AND STABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION SHALL BE THE SOLE RISK AND RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD. NOTIFY THE OWNER IMMEDIATELY, IN WRITING, OF ANY FIELD CONDITION UNCOVERED DURING CONSTRUCTION THAT IS NOT CONSISTENT WITH THE PLANS, THAT MAY BE STRUCTURALLY INADEQUATE, OR THAT WILL IMPAIR ARCHITECTURAL LAYOUTS OR ATTACHMENT OF FINISHES.
- THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWING SUBMITTALS PRIOR TO SUBMITTAL TO THE ARCHITECT. ALL COPIES OF ALL SHOP DRAWINGS SHALL BEAR A STAMP FROM THE CONTRACTOR VERIFYING THEY HAVE REVIEWED AND APPROVED THE DRAWINGS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. SHOP DRAWINGS NOT BEARING THE CONTRACTOR'S APPROVAL STAMP WILL NOT BE REVIEWED AND SHALL BE RETURNED "REJECTED."
- DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS NOTED OTHERWISE (U.N.O.).
- CAD FILES WILL NOT BE MADE AVAILABLE TO THE BIDDER FOR ANY PURPOSE.

## DESIGN LOADS

THE NEW STRUCTURE IS DESIGNED TO CARRY THE FOLLOWING LIVE LOADS, IN ADDITION TO SPECIFIC MACHINERY AND EQUIPMENT LOADS, IN CONFORMANCE WITH CHAPTER 16 OF THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE, THE 2005 EDITION OF ASCE-7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES."

- GRAVITY LOADS:
  - FLOOR LIVE LOADS:
    - LOBBIES: 100 PSF; 2,000 LB CONCENTRATED LOAD
    - STAIRS: 100 PSF
    - ASSEMBLY AREAS AND THEATERS:
      - MOVABLE SEATS: 100 PSF
      - BALCONY SEATING: 100 PSF
      - STAGE: 150 PSF
    - ALL OTHER FLEXIBLE OPEN PLAN EVENT AREAS: 100 PSF
  - ROOF SNOW LOAD: (UNBALANCED, DRIFTING AND SLIDING SNOW IN ACCORDANCE WITH CHAPTER 7 OF ASCE 7-05)
    - GROUND SNOW LOAD,  $P_g$ : 50 PSF
    - FLAT ROOF SNOW LOAD,  $P_f$ : 39 PSF
    - SNOW EXPOSURE FACTOR,  $C_e$ : 1.0
    - BUILDING RISK CATEGORY: III
    - SNOW LOAD IMPORTANCE FACTOR,  $I_s$ : 1.1
    - THERMAL FACTOR,  $C_t$ : 1.0
- LATERAL LOADS:
  - WIND DESIGN DATA:
    - BASIC WIND SPEED (3-SECOND GUST): 100 MPH
    - WIND IMPORTANCE FACTOR,  $I_w$ : 1.15
    - BUILDING RISK CATEGORY: III
    - WIND EXPOSURE CATEGORY: B
    - INTERNAL PRESSURE COEFFICIENT: +/-0.18
    - COMPONENTS AND CLADDING: VARIES BASED ON TRIBUTARY AREA AND LOCATION; COMPLY WITH ASCE 7-05 FOR WIND PRESSURES TO BE USED FOR THE DESIGN OF EXTERIOR COMPONENT AND CLADDING MATERIALS NOT SPECIFICALLY DESIGNED BY THE REGISTERED DESIGN PROFESSIONAL.
  - EARTHQUAKE DESIGN DATA:
    - SEISMIC IMPORTANCE FACTOR,  $I_e$ : 1.25
    - SEISMIC OCCUPANCY CATEGORY: III
    - MAPPED SPECTRAL RESPONSE ACCELERATIONS,  $S_s$  AND  $S_1$ : 0.314g AND 0.077g RESPECTIVELY (USING 2008 USGS HAZARD DATA)
    - SITE CLASS: 'D' (AS PER S.W. COLE [PORTLAND OFFICE] GEOTECHNICAL REPORT DATED APRIL 8, 2016)
    - SPECTRAL RESPONSE COEFFICIENTS,  $S_{ds}$  AND  $S_{d1}$ : 0.324g AND 0.123g RESPECTIVELY
    - SEISMIC DESIGN CATEGORY: B
    - BASIC SEISMIC FORCE RESISTING SYSTEM: STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
    - DESIGN BASE SHEAR: 140 KIPS
    - SEISMIC RESPONSE COEFFICIENT,  $C_s$ : 0.13
    - RESPONSE MODIFICATION FACTOR,  $R$ : 3
    - ANALYSIS PROCEDURE UTILIZED: EQUIVALENT LATERAL FORCE

## EXCAVATIONS AND STRUCTURAL FILL

- GROUND EXCAVATION RETENTION MEASURES WILL BE REQUIRED FOR INSTALLATION OF NEW FOUNDATIONS. REFER TO DRAWINGS FOR ANTICIPATED LOCATIONS OF RETENTION MEASURES REQUIRED. EXACT EXTENTS AND RETENTION MEANS AND METHODS ARE TO BE DETERMINED BY THE CONTRACTOR. THE GENERAL FOUNDATION EXCAVATION SCHEME REQUIRES A VERTICAL EXCAVATION 4'-0" OUT BEYOND THE FOOTPRINT OF THE NEW BUILDING. THE CONTRACTOR MUST RETAIN A SPECIALIZED, EXPERIENCED GROUND EXCAVATION RETENTION FIRM WITH A LICENSED PROFESSIONAL ENGINEER TO DEVELOP A SEQUENCE OF OPERATIONS, AND DIRECTLY OVERSEE THE FIELD WORK TO ENSURE THAT EXISTING BUILDINGS, STREETS AND UTILITIES ARE SAFE AT ALL TIMES. THE ENTIRE PLAN MUST BE SUBMITTED FOR REVIEW TO THE ARCHITECT PRIOR TO PROCEEDING.
- THE EXISTING SOILS PROFILES ARE KNOWN TO CONSIST OF FILLS OVERLYING ORGANIC LAYERS OVERLYING NATIVE GRANULAR SOILS AND GLACIAL TILL. AT ALL COLUMN FOOTING LOCATIONS, OVEREXCAVATION TO THE GRANULAR SOIL LAYER AND PLACEMENT OF STRUCTURAL FILL IS REQUIRED. AT PERIMETER WALL FOOTINGS OVEREXCAVATE A MINIMUM OF 12" BELOW THE FOOTING. ALL FOOTINGS SHALL BEAR ON A MINIMUM 12" LAYER OF COARSE AGGREGATE OR NATIVE GRANULAR SOIL OR COMPACTED STRUCTURAL FILL HAVING A MINIMUM BEARING CAPACITY OF 1.0 TONS PER SQUARE. STRUCTURAL FILL SHALL BE PREPARED IN THE FOLLOWING MANNER:
  - REMOVE ALL UNSUITABLE MATERIAL (INCLUDING, BUT NOT LIMITED TO, EXISTING FILL, TOPSOIL AND OTHER ORGANICS) WITHIN THE BUILDING FOOTPRINT AND AS REQUIRED FOR STABLE EXCAVATION.
  - PREPARE THE APPROVED SUBGRADE IN ACCORDANCE WITH THE SPECIFICATIONS. IN ADDITION, PROOF ROLL THE APPROVED SUBGRADE WITH FULLY LOADED GRAVEL TRUCKS OR MECHANICAL COMPACTORS. CHOKE FINE SAND ON SITE WITH SIX INCHES OF CRUSHED STONE IF NECESSARY.
  - PLACE STRUCTURAL FILL, CONSISTING OF SAND-GRAVEL MIXTURE IN APPROVED LIFTS, EACH LIFT COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS MEASURED BY ASTM 1557.
  - FILLING AND COMPACTION SHALL BE CARRIED OUT ONLY WHILE THE EARTHWORK INSPECTOR IS ON SITE.
- PUMP EXCAVATIONS TO REMOVE SURFACE AND GROUND WATER TO PERMIT FINISHING OF EXCAVATION AND PLACEMENT OF FOUNDATIONS IN THE DRY.

## DEMOLITION - SHORING - UNDERPINNING

- BEFORE PROCEEDING WITH ANY DEMOLITION, THE AREA MUST BE SURVEYED AND EVALUATED BY THE CONTRACTOR TO ENSURE THAT NO DAMAGE WILL BE MADE TO ANY STRUCTURE, PROPERTY OR EQUIPMENT BEYOND THE DEMOLITION.
- PROVIDE TEMPORARY SHORING AND BRACING FOR FLOORS, ROOFS, PIERS AND WALLS DURING DEMOLITION AND MAINTAIN THIS TEMPORARY STRUCTURE IN PLACE UNTIL THE NEW STRUCTURAL WORK IS COMPLETED AND TIED TO THE REMAINING EXISTING CONSTRUCTION. REMOVE DEMOLISHED ITEMS PROMPTLY FROM THE BUILDING. DO NOT OVERLOAD EXISTING FLOORS WITH CONSTRUCTION DEBRIS.
- REFER TO DRAWINGS FOR ANTICIPATED LOCATIONS AND EXTENTS OF TEMPORARY SHORING REQUIRED. EXACT EXTENTS AND SHORING MEANS AND METHODS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR MUST RETAIN A SPECIALIZED, EXPERIENCED SHORING FIRM WITH A LICENSED PROFESSIONAL ENGINEER TO DEVELOP A SEQUENCE OF OPERATIONS, AND DIRECTLY OVERSEE THE FIELD WORK TO ENSURE THAT THE EXISTING BUILDING IS SAFE AT ALL TIMES AND THAT THE PROPOSED NEW CONSTRUCTION IS PROPERLY SUPPORTED. THE ENTIRE PLAN MUST BE SUBMITTED FOR REVIEW TO THE ARCHITECT PRIOR TO PROCEEDING.
- REFER TO DRAWINGS FOR ANTICIPATED LOCATION AND EXTENT OF FOUNDATION UNDERPINNING REQUIRED. THE GENERAL UNDERPINNING SCHEME REQUIRES THAT THE EXISTING FOUNDATIONS BE SUPPORTED BY NEW CONCRETE FOOTINGS CAST IN SECTIONS BELOW THE EXISTING FOUNDATION WALL STRIP FOOTING. THE CONTRACTOR MUST RETAIN A SPECIALIZED, EXPERIENCED UNDERPINNING FIRM WITH A LICENSED PROFESSIONAL ENGINEER TO DEVELOP A SEQUENCE OF OPERATIONS, AND DIRECTLY OVERSEE THE FIELD WORK TO ENSURE THAT THE EXISTING BUILDING IS SAFE AT ALL TIMES AND THAT THE PROPOSED NEW CONSTRUCTION IS PROPERLY SUPPORTED. THE ENTIRE PLAN MUST BE SUBMITTED FOR REVIEW TO THE ARCHITECT PRIOR TO PROCEEDING.
- REMOVE AND RELOCATE AS REQUIRED UTILITIES CROSSING EXCAVATIONS AND NEW FOUNDATION WORK. CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY SUPPORT FOR ALL UTILITY LINES ADJACENT TO NEW FOUNDATION WORK.
- PROTECT STREETS, SIDEWALKS AND ADJACENT BUILDING FOUNDATIONS DURING EXCAVATION BY STEEL SHEET PILING, BRACING, SHORING, ETC. AS REQUIRED BY FIELD CONDITIONS. EXCAVATIONS AND SHORING SHALL BE DESIGNED BY A COMPETENT PROFESSIONALLY LICENSED STRUCTURAL ENGINEER EMPLOYED BY THE CONTRACTOR.
- REMOVE ALL EXISTING FOUNDATIONS INTERFERING WITH NEW WORK. CONTRACTOR SHALL PROVIDE ALL INFORMATION PERTAINING TO EXISTING FOUNDATIONS SO THAT THE ARCHITECT CAN ASSESS ANY NECESSARY CHANGE TO NEW FOUNDATIONS.

## FOUNDATIONS, BACKFILL AND DRAINAGE

- TEST BORINGS ARE PROVIDED IN THE SPECIFICATIONS TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION, AND REPRESENT CONDITIONS ONLY AT THOSE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE.
- ALL FOOTINGS SHALL BEAR ON A MINIMUM 12" LAYER OF COARSE AGGREGATE ON NATURAL GRANULAR SOIL OR STRUCTURAL FILL ON NATURAL GRANULAR SOIL HAVING A MINIMUM BEARING CAPACITY OF 1 TON PER SQUARE FOOT.
- ASSUMED BEARING MATERIAL, DESIGN BEARING PRESSURE AND FOOTING ELEVATIONS INDICATED ON THE DRAWINGS ARE BASED ON AVAILABLE INFORMATION DESCRIBED IN A GEOTECHNICAL REPORT BY S.W. COLE ENGINEERING DATED APRIL 8TH 2016 PROVIDED BY THE OWNER. IF ACCEPTABLE BEARING MATERIAL IS NOT ENCOUNTERED UPON EXCAVATION TO THE LEVELS INDICATED, AS DETERMINED BY THE EARTHWORK INSPECTOR, NOTIFY THE OWNER FOR REVIEW AND DIRECTION.
- ALL SUBGRADES AT FOOTING EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE DESIGNATED EARTHWORK INSPECTOR BEFORE CONCEALING WITH STRUCTURAL FILL AND BEFORE THE FOOTINGS ARE FORMED AND CAST.
- ALL EXTERIOR CONSTRUCTION SHALL BE CARRIED DOWN A MINIMUM OF 4.5 FEET BELOW FINISHED EXTERIOR GRADE, UNLESS OTHERWISE SHOWN ON PLANS.
- ALL WALLS AND PIERS SHALL BE CENTERED OVER FOOTINGS, UNLESS DETAILED OTHERWISE.
- ALL FOUNDATION AND RETAINING WALLS SHALL BE BRACED DURING THE OPERATIONS OF BACKFILLING AND TAMPING. BRACING SHALL BE LEFT IN POSITION UNTIL PERMANENT RESTRAINTS HAVE BEEN INSTALLED.
- NO CONCRETE SLAB OR FOOTING SHALL BE PLACED IN WATER, ON MUD OR FROZEN MATERIAL.
- MATERIAL ADJACENT TO AND BELOW FOOTING SHALL BE KEPT FROM FREEZING AT ALL TIMES. IF ANY MATERIAL IS FOUND TO BE FROZEN, IT SHALL BE REMOVED AND REPLACED WITH FROZEN MATERIAL IS FOUND BELOW THE SLAB ON GRADE IT SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL COMPACTED TO 95% MAXIMUM DRY DENSITY.
- BACKFILL UNDER SLABS ON GRADE AND AGAINST FOUNDATION WALLS INSIDE AND OUTSIDE THE BUILDING WITH STRUCTURAL FILL. COMPACT EACH LIFT TO 95% MAXIMUM DRY DENSITY PER ASTM D-1557. ENTIRE FILLING AND COMPACTION OPERATION TO BE MONITORED AND TESTED BY THE EARTHWORK INSPECTOR.
- REFER TO ALL CONTRACT DOCUMENTS FOR REQUIRED FOUNDATION DRAINAGE SYSTEMS. COORDINATE INSTALLATION OF FOUNDATION DRAINS WITH STRUCTURAL ELEMENTS.
- PROVIDE CONTINUOUS VAPOR RETARDER UNDER ALL SLABS ON GRADE. SEE TYPICAL DETAIL FOR MORE INFORMATION.
- SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PERIMETER FOUNDATION INSULATION AND THERMAL BREAKS.

## REINFORCING STEEL

- ALL REINFORCING BAR DETAILING SHALL CONFORM TO THE ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES." DO NOT BEND BARS IN THE FIELD, COMPLETE ALL BAR BENDING IN THE FABRICATOR'S SHOP.
- SUBMIT COMPLETE SHOP DRAWINGS TO THE OWNER FOR APPROVAL PRIOR TO FABRICATION.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. WHERE WELDING OF DEFORMED BARS TO STRUCTURAL STEEL IS SHOWN, PROVIDE ASTM A706 GRADE 60 AND COMPLETE WELDING IN ACCORDANCE WITH AWS D1.4.
- WHERE CONTINUOUS BARS ARE CALLED FOR, INDICATED, OR REQUIRED THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS, DOWELED INTO INTERSECTING WALLS, LAPPED AT NECESSARY SPLICES, WITH SPLICES STAGGERED WHEREVER POSSIBLE, AND HOOKED AT DISCONTINUOUS ENDS. LAPS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 AND BE NO LESS THAN 40 BAR DIAMETERS.
- PROVIDE AND SCHEDULE WITH SHOP DRAWINGS, ALL NECESSARY ACCESSORIES TO HOLD THE REINFORCING SECURELY AND ACCURATELY IN POSITION. "WET-SETTING" OR "WET-STICKING" REINFORCING INTO GREEN CONCRETE IS NOT ACCEPTABLE. SPACE HIGH CHAIRS AT 4'-0" o/c MAXIMUM AND WIRE TO BOTTOM SLAB REINFORCING. SUPPORT BARS ON HIGH CHAIRS SHALL BE #5 MINIMUM. SPACE SLAB BOLSTERS AT 3'-6" o/c MAXIMUM.
- CLEARANCE OF REINFORCING BARS FROM CONCRETE SURFACES SHALL BE:
  - UNFORMED FACE IN CONTACT WITH EARTH: 3"
  - UNFORMED SLABS IN CONTACT WITH EARTH: 1-1/2"
  - FORMED FACE IN CONTACT WITH EARTH: 2"
  - FORMED FACE EXPOSED TO WEATHER: 2" FOR #6 AND LARGER BARS
  - FORMED FACE EXPOSED TO WEATHER: 1-1/2" FOR #5 AND SMALLER BARS
  - INTERIOR EXPOSED FACES OF WALLS: 1"
  - SLABS NOT EXPOSED TO EARTH OR WEATHER: 3/4"
  - TOPS OF STIRRUPS IN BEAMS: 1"
  - TOPS OF VERTICAL BARS IN WALLS AND PIERS: 1"
  - HORIZONTAL BARS FROM TOP OF WALL: 2" MAX.
  - TIES FROM TOP OF PIER OR COLUMN: 2" MAX.
- THE MAXIMUM ALLOWABLE DEVIATION FROM THE FIGURES ABOVE SHALL BE 1/4" FOR CONCRETE SHAPES 10" OR LESS IN DEPTH OR WIDTH AND 1/2" FOR CONCRETE SHAPES MORE THAN 10" IN DEPTH OR WIDTH.
- PROVIDE DOWELS FROM FOOTINGS TO MATCH VERTICAL WALL AND PIER REINFORCING. PROVIDE MINIMUM LAP LENGTH OF 40 BAR DIAMETERS.
- DO NOT CUT OR DISPLACE ANY REINFORCING STEEL TO ACCOMMODATE THE INSTALLATION OF ANY EMBEDDED ITEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER.
- COORDINATE THE INSTALLATION OF PIPES AND CONDUIT IN THE SLAB WITH THE PLACING OF THE REINFORCING STEEL TO ENSURE THAT ALL BARS ARE IN THEIR PROPER POSITION AND ARE NOT CUT OR DISPLACED BY CONDUIT OR PIPES.
- USE SLEEVES TO ACCOMMODATE PIPING WHICH MUST PASS THROUGH STRUCTURAL CONCRETE. SUBMIT LAYOUT OF SLEEVES TO OWNER/FOR APPROVAL PRIOR TO CASTING CONCRETE. ALL SLEEVES SHALL BE STEEL, CAST IRON PIPE OR PVC PIPE.

## CAST-IN-PLACE CONCRETE

- CONCRETE WORK SHALL COMPLY WITH THE LATEST EDITION OF ACI 301, "STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE IN BUILDINGS," AND ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
  - ALL STRUCTURAL CONCRETE IS CONTROLLED AND SHALL BE USED, PROPORTIONED, MIXED AND PLACED UNDER THE SUPERVISION OF THE STRUCTURAL INSPECTOR AS A PART OF THE STRUCTURAL INSPECTIONS REQUIRED FOR THE PROJECT.
  - ALL WORK SHALL BE PERFORMED TO SECURE FOR THE ENTIRE JOB HOMOGENOUS CONCRETE HAVING REQUIRED STRENGTH, DURABILITY AND WEATHERING RESISTANCE WITHOUT PLANES OF WEAKNESS OR OTHER STRUCTURAL DEFECTS, AND FREE OF PRONOUNCED HONEYCOMBS, AIR POCKETS, VOIDS AND PROJECTIONS, OFFSETS OF PLANE OR OTHER DEFAACEMENTS ON EXPOSED SURFACES.
  - CONCRETE FOR FOUNDATION WALLS, PIERS, SHAFT/SHEAR WALLS, FOOTINGS AND SLABS SHALL ATTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI, UNLESS NOTED OTHERWISE.
  - NOTIFY THE STRUCTURAL INSPECTOR AT LEAST 48 HOURS IN ADVANCE OF PLACING CONCRETE FOR INSPECTION OF THE REINFORCING STEEL. DO NOT CAST CONCRETE UNTIL THE INSPECTION HAS BEEN MADE OR WAIVED.
  - LEAN CONCRETE WHERE SPECIFIED SHALL BE NON-REMOVABLE BY A MECHANICAL EXCAVATOR WITH STRENGTH BETWEEN 800 AND 1200 PSI.
  - PROVIDE SIX PERCENT (PLUS/MINUS) AIR ENTRAINMENT IN ALL CONCRETE EXPOSED TO EARTH OR WEATHER, INCLUDING BUT NOT LIMITED TO FOOTINGS, FOUNDATIONS AND EXTERIOR SLABS.
  - ALL INTERIOR SLABS ON GROUND SHALL BE PLACED ON A LAYER OF GAS PERMEABLE GRANULAR MATERIAL.
  - PIERS, BEAMS, SLABS AND WALLS (EXCEPT SHAFT/SHEAR WALLS) SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS.
  - SUBMIT TO THE OWNER FOR APPROVAL PROPOSED LOCATION OF CONSTRUCTION JOINTS IN WALLS AND SLABS PROPERLY COORDINATED WITH THE REINFORCING STEEL SHOP DRAWINGS.
  - LOCATION OF EXPANSION JOINTS ARE MANDATORY AS SHOWN.
  - PROVIDE DOWELS AND KEYWAYS AT ALL CONSTRUCTION JOINTS. ALLOW 48 HOURS TO ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.
  - FOUNDATION WALL CONSTRUCTION JOINTS SHALL BE KEYS AND SPACED AT 50'-0" MAXIMUM o/c.
  - PROVIDE CONTROL JOINTS IN ALL SLABS ON GRADE SAWCUT WITHIN 12 HOURS OF PLACING CONCRETE.
  - ALL SHORING SHALL REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED 75% OF ITS 28 DAY STRENGTH.
  - DURING COLD-WEATHER CONCRETING PERIODS, ALL CONCRETE FORMWORK SHALL REMAIN IN PLACE FOR A MINIMUM OF THREE DAYS UNLESS AUTHORIZED OTHERWISE BY THE OWNER.
  - PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE UNLESS NOTED OTHERWISE.
  - ALL CONCRETE SURFACES THAT DO NOT RECEIVE A FINISHED FLOOR MATERIAL SHALL RECEIVE A PENETRATING LIQUID FLOOR TREATMENT IN ACCORDANCE WITH THE SPECIFICATIONS.
  - ALL HORIZONTAL EXTERIOR CONCRETE SURFACES, SUCH AS SIDEWALKS, EXPOSED TO DEICING CHEMICALS SHALL RECEIVE AN APPROVED LIQUID PENETRATING SEALER SUCH AS "SALTGUARD WB" BY CONSOLIDECK.
- STRUCTURAL STEEL WIDE-FLANGED SECTIONS SHALL CONFORM TO ASTM A992.
  - HOLLOW STRUCTURAL STEEL SHAPES (RECTANGULAR, SQUARE AND ROUND) SHALL CONFORM TO ASTM A500, GRADE B MINIMUM  $F_y=42$  KSI EXCEPT  $F_y=42$  KSI FOR ROUND HSS.
  - OTHER STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO ASTM A36, UNLESS NOTED OTHERWISE.
  - SHOP AND FIELD CONNECTIONS SHALL BE BY HIGH STRENGTH BOLTS OR WELDING.
  - THE DRAWINGS REPRESENT THE PERMANENT CONSTRUCTION ONLY. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY ERECTION FRAMING AND ACCESSORIES (INCL. BUT NOT LIMITED TO STABILIZER PLATES, SAFETY CABLES, BRIDGING, BRACING, ETC.) AS REQUIRED TO COMPLY WITH ALL GOVERNING OSHA ERECTION SAFETY REQUIREMENTS.
  - TEMPORARY ERECTION BRACING SHALL BE PROVIDED TO HOLD STRUCTURAL STEEL SECURELY IN POSITION. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL PERMANENT BRACINGS HAVE BEEN INSTALLED.
  - PROVIDE 3/8" THICK FITTED STIFFENER PLATE ON EACH SIDE OF STEEL BEAM WEB WHERE HANGERS OR POSTS OCCUR.
  - PROVIDE NON-SHRINK GROUT AND 1/4" THICK STEEL LEVELING PLATES UNDER ALL COLUMN BASE PLATES. ANCHOR ALL COLUMNS TO PIERS, WALLS OR FOOTINGS WITH MINIMUM FOUR ANCHOR RODS.
  - PROVIDE BRIDGING IN CONFORMANCE WITH ALL OSHA REQUIREMENTS.
  - ALL FIREPROOFED OR CONCRETE ENCASED STEEL SHALL NOT BE SHOP PRIMED.
  - OMIT SHOP PRIMER FROM ALL CONNECTIONS TO BE FIELD WELDED.
  - ALL HOLLOW TUBE COLUMNS SHALL HAVE A 1/2" DIAMETER WEEP HOLE IN THE SIDE WALL, SET 1" ABOVE FINISHED FLOOR FOR DRAINAGE DURING CONSTRUCTION, UNLESS TUBES ARE DELIVERED TO THE JOB SITE WITH A SEALED CAP PLATE AT EACH END.
  - ALL HOLLOW STRUCTURAL SECTIONS TO BE HOT-DIPPED GALVANIZED SHALL HAVE A 1" DIAMETER VENT HOLE IN BASE PLATE.
  - ALL STEEL DECKS SHALL CONFORM TO THE REQUIREMENTS OF THE STEEL DECK INSTITUTE FOR THE TYPE AND GAUGE INDICATED. SEE SPECIFICATION FOR WELDING PATTERNS AND ADDITIONAL REQUIREMENTS.
  - DO NOT START INSTALLATION OF METAL DECKING UNTIL CORRESPONDING STEEL FRAMEWORK HAS BEEN PLUMBED, ALIGNED AND COMPLETED AND UNTIL TEMPORARY SHORING, WHERE REQUIRED, HAS BEEN INSTALLED. REMOVE ANY OIL, DIRT, PAINT, ICE, WATER AND RUST FROM STEEL SURFACES TO WHICH METAL DECKING WILL BE WELDED.
  - WHERE MECHANICAL EQUIPMENT BEARS ON METAL DECK, DRY-PACK ALL FLUTES OVER STRUCTURAL SUPPORTS.
  - DO NOT ENCASE ANY STRUCTURAL STEEL IN CONCRETE OR FIREPROOFING UNTIL AN INSPECTION HAS BEEN MADE AND THE WORK HAS BEEN ACCEPTED.

## MASONRY LOOSE LINTEL SCHEDULE (BY MISC. METAL FABRICATOR)

- UNLESS OTHERWISE INDICATED ON THE DRAWINGS, PROVIDE ONE ANGLE FOR EACH 4" OF MASONRY THICKNESS FOR ALL MASONRY VENEER OPENINGS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

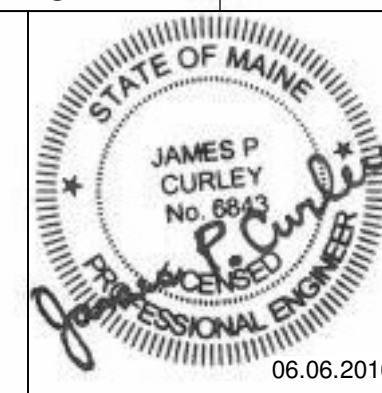
MAXIMUM MASONRY OPENING	
UP TO 4'-0"	L4x3-1/2x3/8
4'-1" TO 6'-0"	L5x3-1/2x3/8
6'-1" TO 8'-0"	L6x3-1/2x3/8
8'-1" TO 10'-0"	L7x4x3/8
10'-1" TO 12'-0"	L8x4x1/2
- ANGLE LONG LEG SHALL BE VERTICAL.
- THE SIZES IN THE SCHEDULE ABOVE ARE INVALID IF VERTICAL CONTROL JOINTS ARE MADE ON EACH END OF THE MASONRY OPENING. A SINGLE VERTICAL CONTROL JOINT IS ACCEPTABLE ON ONE END.
- ALL EXTERIOR LINTELS SHALL BE GALVANIZED.
- LINTELS SHALL BE 12" LONGER THAN MASONRY OPENINGS AND HAVE MINIMUM 6" BEARING ON MASONRY AT EACH END. WHERE LINTEL ABUTS COLUMN PROVIDE STRUCTURAL CLIP ANGLE CONNECTION.

## CONCRETE BLOCK MASONRY (CMU)

- MASONRY WALLS SHOWN ON STRUCTURAL DRAWINGS ARE 8" NOMINAL THICKNESS UNLESS NOTED OTHERWISE.
- ALL CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI AND CONFORM TO THE REQUIREMENTS OF ASTM C90, UNLESS NOTED OTHERWISE.
- ALL GROUT SHALL BE COARSE GROUT CONFORMING WITH ASTM C476 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI.
- ALL GROUTING PROCEDURES SHALL CONFORM TO ACI PROCEDURES.
- MORTAR SHALL BE TYPE S HIGH STRENGTH MORTAR.
- ALL MASONRY EXTERIOR WALLS AND ANY OTHER WALLS SO NOTED ON THE DRAWINGS SHALL BE REINFORCED, AND ALL REINFORCED CORES GROUTED SOLID. WHERE SOLID GROUTING IS CALLED FOR, ALL SLOTS AND CELLS SHALL BE FILLED WITH GROUT, AND SPECIAL CARE TAKEN TO KEEP CORES FREE OF MORTAR DROPPINGS.
- MINIMUM VERTICAL REINFORCEMENT FOR 6" AND 8" WALLS SHALL BE (1)-#5 AT 32" o/c.
- ALL REINFORCED MASONRY WALLS SHALL HAVE MINIMUM #9 GAUGE WIRE LADDER TYPE HORIZONTAL REINFORCEMENT AT 16" o/c. IN ADDITION, PROVIDE THE FOLLOWING REINFORCING:
  - (2)-#5 FULL HEIGHT VERTICAL BARS AT EACH SIDE OF WALL OPENINGS, CORNERS AND WALL ENDS.
  - (1)-#5 VERTICAL UNDER ALL BEAM POCKETS OR OTHER BEARINGS.
  - (2)-#5 CONTINUOUS HORIZONTAL BARS WITH TWO COURSES GROUTED SOLID IMMEDIATELY UNDER EACH FLOOR.
  - (2)-#5 CONTINUOUS HORIZONTAL BARS AT 4'-0" MAXIMUM VERTICAL SPACING, OR CONTINUOUS AT TOPS AND BOTTOMS OF WINDOWS WHERE APPLICABLE.
  - OVER WALL OPENINGS UP TO 4'-0" WIDE: PROVIDE (2)-#5 HORIZONTAL BARS. WALL OPENINGS GREATER THAN 4'-0" WIDE: PROVIDE TWO COURSES GROUTED SOLID WITH (2)-#5 BARS TOP AND BOTTOM. EXTEND BARS 4'-0" BEYOND EACH SIDE OF THE OPENING; PROVIDE BENT BARS AS NECESSARY AT WALL ENDS AND CORNERS.
  - ALL REINFORCING BARS SHALL BE SECURELY HELD IN POSITION WITH 9 GAUGE WIRE SUPPORTS PRIOR TO GROUTING.
  - ANY ADDITIONAL REINFORCEMENT SHOWN ON THE DRAWINGS.
- LAP ALL REINFORCING BARS IN MASONRY A MINIMUM OF 48 BAR DIAMETERS. LAP HORIZONTAL WIRE REINFORCEMENT A MINIMUM OF 1'-0".
- GROUT SHALL BE PLACED USING HIGH OR LOW LIFT GROUTING PROCEDURE PER ACI RECOMMENDATIONS.
- ALL REINFORCED MASONRY CONSTRUCTION SHALL BE INSPECTED BY THE STRUCTURAL INSPECTOR.

## COLD FORMED METAL FRAMING

- SUBMIT TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION, DETAILED SHOP DRAWINGS AND DESIGN CALCULATIONS BEARING THE STAMP OF A STRUCTURAL ENGINEER LICENSED IN THE STATE OF MAINE. SHOP DRAWINGS SHALL INCLUDE WALL ELEVATIONS AND ROOF FRAMING PLANS, CONNECTION DETAILS, SIZES OF ALL MEMBERS AND TYPICAL WALL SECTIONS.
- DESIGN, FABRICATE AND INSTALL ALL WALL AND ROOF ELEMENTS IN ACCORDANCE WITH THE AISI STANDARD SPECIFICATION FOR THE DESIGN OF LIGHT GAUGE, COLD-FORMED STEEL STRUCTURAL MEMBERS.
- DEPTH AND GAUGE OF METAL STUDS SHALL NOT BE LESS THAN SPECIFIED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- USE SCREWED CONNECTIONS FOR ATTACHING LIGHT GAGE MEMBERS TO STRUCTURAL STEEL MEMBERS AND POWDER DRIVEN FASTENERS FOR ATTACHING TO CONCRETE.
- ALL ROOF JOISTS MUST LINE UP DIRECTLY OVER WALL STUDS.
- PROVIDE ONE ROW OF HORIZONTAL BRIDGING IN WALL PANELS AT MID HEIGHT FOR WALLS GREATER THAN 8'-0" IN HEIGHT. PROVIDE TWO ROWS OF HORIZONTAL BRIDGING, EQUALLY SPACED, FOR WALLS GREATER THAN 14'-0" IN HEIGHT.
- THE LICENSED DESIGN PROFESSIONAL ENGINEER WHOSE STAMP APPEARS ON THE SUBMITTED SHOP DRAWINGS SHALL INSPECT ALL COLD-FORMED METAL CONSTRUCTION.

0	ISSUED FOR BID	06 JUNE 2016
REV.	DESCRIPTION	DATE
		
<b>WBRC</b> ARCHITECTS • ENGINEERS WWW.WBRCAE.COM BANGOR, MAINE 207-947-4511 PORTLAND, MAINE 207-838-4511 SARASOTA, FLORIDA 241-556-0757		
<b>ASYLUM</b>		
PROJECT: <b>STRUCTURAL GENERAL NOTES</b>		
SHEET TITLE:		
WBRC CAD FILE: C:\Users\jrb\Documents\407110 - ASYLUM DANCE CLUB - STRUCT_3066.dwg		
PROJECT No: 4071.10	GRAPHIC SCALE:	0" = 1"
SCALE: 1/2" = 1'-0"	SHEET No: <b>S-001</b>	
PROJECT MANAGER: JRB	DRAWN BY: ADG/RAD/JHW	
CHECKED BY: JPC		