

GENERAL STRUCTURAL NOTES

SPECIAL CONDITIONS, REQUIREMENTS AND NOTES TO OWNER, DEVELOPER AND CONTRACTORS

CONTRACTOR, BUILDER AND SUBCONTRACTORS INVOLVED IN ANY FORM OF CONSTRUCTION USING THESE DOCUMENTS SHALL INFORM THE OWNER AND DEVELOPER IN WRITING PRIOR TO CONSTRUCTION OF THE FOLLOWING RESPONSIBILITIES, PERFORMANCE CRITERIA AND LIMITATIONS AND RISKS ASSOCIATED WITH CONSTRUCTION. IF THE OWNER, DEVELOPER OR CONTRACTOR IS NOT ABLE TO ACCEPT RESPONSIBILITIES OR PERFORMANCE CRITERIA AND LIMITATIONS, NOTIFY OUR OFFICE PRIOR TO START OF CONSTRUCTION. IT SHALL BE EXPRESSLY UNDERSTOOD THAT THE ENGINEER IS NOT RESPONSIBLE OR LIABLE FOR THE LACK OF PERFORMANCE OF MATERIALS, SYSTEMS OR DESIGNS NOT BEING LIMITED TO ITEMS OUTLINED BELOW. CONTRACTORS AND SUBCONTRACTORS SHALL THOROUGHLY REVIEW ALL CONDITIONS AND RESPONSIBILITIES STATED IN THESE NOTES, GENERAL STRUCTURAL NOTES, PLANS, SECTIONS AND DETAILS AND SHALL NOTIFY THE ENGINEER AND OWNER IN WRITING PRIOR TO CONSTRUCTION OF ANY CONDITIONS OR RESPONSIBILITIES WHICH ARE NOT ACCEPTABLE OR NOT UNDERSTOOD.

1. PLAIN CONCRETE, REINFORCED CONCRETE, POST-TENSIONED CONCRETE, OR CONCRETE MASONRY DEVELOP CRACKS. THE CRACKS ARE DUE TO INHERENT SHRINKAGE, CREEP AND RESTRAINING EFFECTS. CRACKS ARE NORMALLY COSMETIC AND THE SYSTEM MAINTAINS SERVICEABILITY AND STRENGTH REQUIREMENTS. JOINTS MAY BE INDICATED TO CONTROL CRACKING, BUT ARE NOT MEANT TO ELIMINATE ALL CRACKING, AS THIS IS NOT PRACTICAL. THE CONTRACTOR SHALL USE ALL STANDARDS MEANS TO INSURE PROPER PROTECTION AND CURING OF CONCRETE MATERIALS TO REDUCE CRACKING. SURFACE SPALLING OR EXTREME CRACKING MAY BE CAUSED BY POOR MATERIAL OR PLACEMENT. CONTACT OUR OFFICE FOR POSSIBLE REPAIR REQUIREMENTS.

2. VARIATION IN DIMENSIONS MAY OCCUR AS A RESULT OF THERMAL INFLUENCES, NATURAL DEFLECTIONS AND/OR CAMBERS OF MEMBERS. AS A RESULT, QUANTITIES MAY VARY AND ARCHITECTURAL FINISHES MAY BE AT RISK OF COSMETIC VARIATION OR DAMAGE.

3. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR VARIATIONS TO PLANS BETWEEN BID PROCESS AND FINALIZED APPROVED DOCUMENTS RELEASED FOR CONSTRUCTION. ADDITIONS AND ALTERATIONS MAY BE MADE BETWEEN RELEASE OF BID DOCUMENTS AND FINALIZED CONSTRUCTION DOCUMENTS.

4. DESIGNS HAVE BEEN COMPLETED USING THE CODE STATED IN THE BASIS FOR DESIGN. WHERE MORE THAN ONE REFERENCE IS LISTED BELOW, THE REFERENCE THAT CORRESPONDS TO THE CODE STATED IN THE BASIS OF DESIGN SHALL BE USED. OTHER SPECIALIZED CODES OR DIRECTIVES (AISC, AASHTO, ACI, ETC.) ARE NOT USED IN THE PREPARATION OF THESE DOCUMENTS AND ARE NOT REFERENCED.

5. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY NECESSARILY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR, SUBCONTRACTOR AND/OR WORKPERSONS WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, IT IS UNDERSTOOD THAT THE CONTRACTOR WILL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR ALL WORK NOT EXPLICITLY SHOWN.

6. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DESIGN AND PROVIDE BRACING, BRACING, FORMWORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. CONSTRUCTION MATERIALS SHALL BE UNIFORMLY SPREAD OUT SUCH THAT DESIGN LIVE LOAD PER SQUARE FOOT AS STATED HEREIN IS NOT EXCEEDED. VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED BEFORE START OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

9. ALL INSPECTIONS REQUIRED BY THE BUILDING CODES, LOCAL BUILDING OFFICIALS, OR BY THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR, THE BUILDING DEPARTMENT. INSPECTION REQUIREMENTS STATED HEREIN ARE PARTIAL. COMPLETE INSPECTION REQUIREMENTS SHALL BE AS DIRECTED BY THE LOCAL BUILDING DEPARTMENT. SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN INSPECTION, UNLESS SPECIFICALLY CONTRACTED FOR.

10. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS. SHOP DRAWINGS ARE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE STRUCTURAL DRAWINGS. REVIEW DOES NOT INDICATE THAT THE SHOP DRAWINGS ARE CORRECT OR COMPLETE. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DRAWINGS SHALL BE CLOUDED. ANY OF THE AFOREMENTIONED SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW UNLESS SPECIFICALLY NOTED ACCORDINGLY. THE SHOP DRAWINGS DO NOT SUPERSEDE OR REPLACE THE ORIGINAL CONTRACT DRAWINGS. ANY ENGINEERING PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN APPROPRIATELY REGISTERED ENGINEER. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ADEQUACY OF ENGINEERING DESIGNS PERFORMED BY OTHERS. ALLOW THE WORKING DAYS FOR THE ENGINEER'S REVIEW. ONE COPY OF EACH SUBMITTAL WILL BE RETAINED FOR THE ENGINEER'S RECORDS.

BASIS FOR DESIGN

- BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE (IBC)
- RISK CATEGORY: IV
- WIND LOAD: 115 MPH, 3-SECOND GUST ULTIMATE DESIGN WIND SPEED
EXPOSURE B
INTERNAL PRESSURE COEFFICIENT, $C_{pi} = +/-0.18$
COMPONENT & CLADDING DESIGN PRESSURE = 25 PSF
- SEISMIC DESIGN DATA:
MAPPED SPECTRAL RESPONSE ACCELERATIONS: $S_a = 0.558$, $S_1 = 0.173$
SPECTRAL RESPONSE COEFFICIENTS: $S_{ds} = 0.504$, $S_{d1} = 0.244$
SITE CLASS = D
SEISMIC DESIGN CATEGORY = D
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
- SNOW LOAD: N/A
- FLOOD LOAD: N/A
- SPECIAL LOADS: N/A

CONCRETE

- MINIMUM 28 DAY STRENGTH (f'_c) SHALL BE 4500 PSI, W/C = .45
- CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY AND APPROVED BY THE ENGINEER.
- ALL CONCRETE SHALL BE REGULAR WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARDROCK AGGREGATES. AGGREGATE USED IN CONCRETE SHALL CONFORM TO ASTM C33, CONCRETE AGGREGATES.
- MAXIMUM SLUMP FOR EXTERIOR SLABS SHALL BE 5 INCHES. MAXIMUM SLUMP FOR ALL OTHER CONCRETE SHALL BE 4 INCHES. WATER SHALL BE CLEAN AND POTABLE.
- PORTLAND CEMENT SHALL CONFORM TO ASTM C150. TYPE V CEMENT SHALL BE USED. MAXIMUM CHLORIDE ION, PERCENT BY WEIGHT OF CEMENT, SHALL NOT EXCEED 0.06.
- NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT, UNLESS APPROVED BY THE ENGINEER OR AUTHORIZED TESTING AGENCY.
- CONCRETE MIXING, PLACEMENT AND QUALITY SHALL BE PER IBC CHAPTER 19, ASTM C94, ASTM C685, AND ACI 302. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT SLABS ON GRADE. NEED ONLY BE VIBRATED OR THOROUGHLY RODDED AROUND EMBEDDED STRAPS OR HARDWARE. BOLTS FOR HOLDINGS, AS OCCURS: REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS AND COLUMNS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FEET. CARE SHALL BE TAKEN IN PLACING SLABS ON GRADE SO AS NOT TO DISTURB FILL MATERIAL.
- ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES, ETC. SHALL BE SECURELY POSITIONED IN THE FORMS BEFORE PLACING THE CONCRETE.
- NO PIPES OR ELECTRICAL CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. MAXIMUM PIPE SIZE SHALL BE 1/3 OF THE SLAB THICKNESS AND LOCATED AT THE MID-DEPTH. MINIMUM SPACING SHALL BE 3 TIMES THE PIPE DIAMETER. PIPES SHALL NOT IMPAIR THE STRENGTH OF THE MEMBER.
- PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH DUE TO COLD OR HOT WEATHER IN ACCORDANCE WITH ACI 305 AND 306 AND ACI 318 SECTIONS 5.12 AND 5.13.

REINFORCING STEEL (FOR CONCRETE)

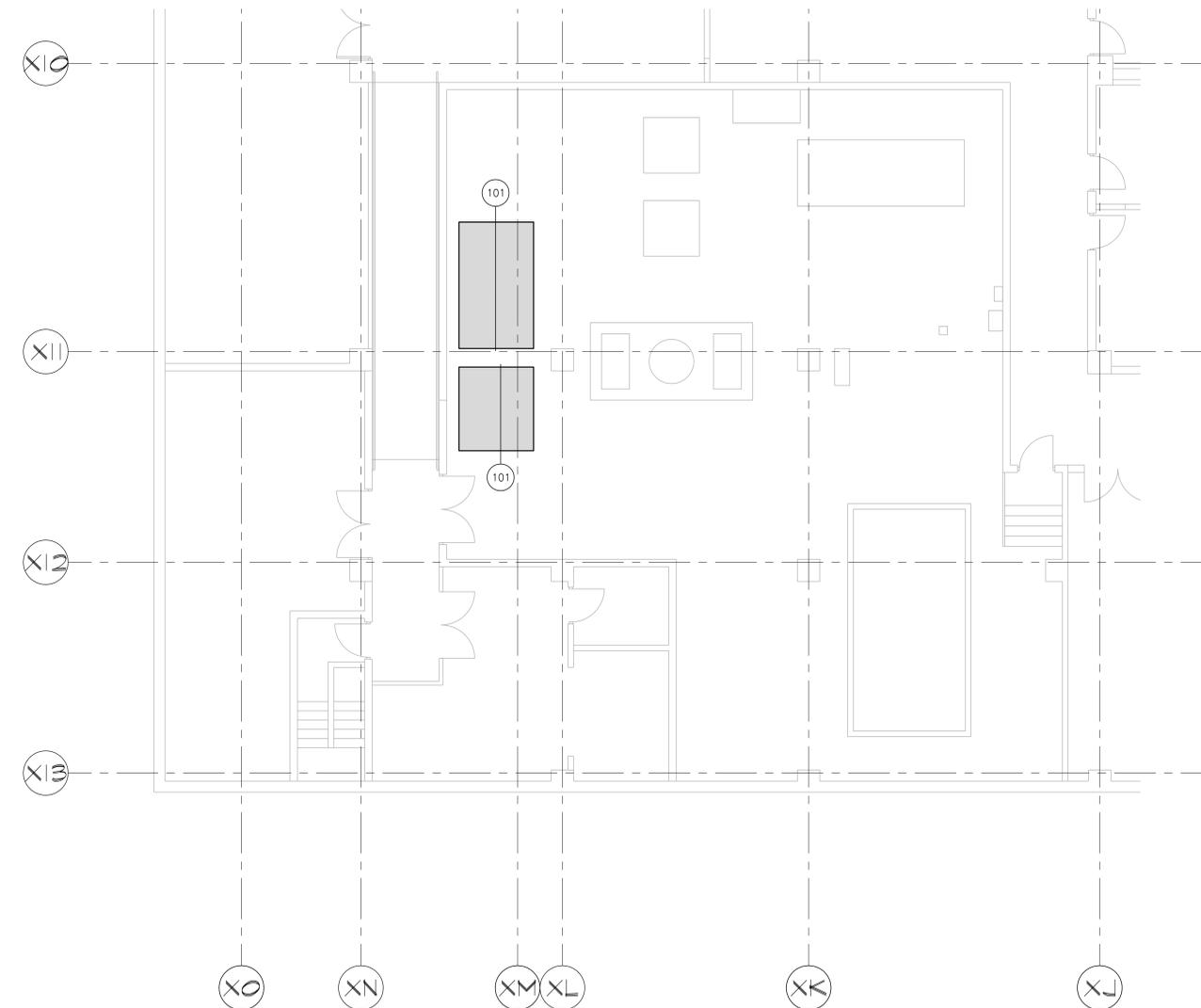
- REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615. REINFORCING SHALL BE GRADE 60 ($F_y = 60$ KSI) DEFORMED BARS. ALL REINFORCING TO BE WELDED SHALL BE ASTM A706, GRADE 60 LOW ALLOY WELDABLE STEEL.
- ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR" ARE TO CENTER OF STEEL. MINIMUM COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON PLANS OR DETAILS:

EXPOSURE CONDITION:	MINIMUM COVER:	TOLERANCES (+ / -):
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	3/8"
EXPOSED TO EARTH OR WEATHER:		
#5 AND SMALLER:	1-1/2"	3/8"
#6 AND LARGER:	2"	3/8"
SLABS ON GRADE:	1-1/2"	1/4"

- LAP SPICES OF REINFORCING STEEL IN CONCRETE BEAMS, SLABS AND FOOTINGS SHALL BE ACCORDING TO ACI 318 SCHEDULE 12 OR LAP SCHEDULE, WHERE PRESENT, UNLESS NOTED OTHERWISE. STAGGER SPICES A MINIMUM OF ONE LAP LENGTH. NO TACK WELDING OF REINFORCING BARS ALLOWED. LATEST ACI CODE AND DETAILING MANUAL APPLY. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. VERTICAL WALL BARS SHALL BE SPICED AT OR NEAR FLOOR LINES. SPICE BARS TOP BARS AT CENTER LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDRELS, BEAMS, GRADE BEAMS, ETC. UNLESS NOTED OTHERWISE.
- ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE STRAIGHTENED AND RE-BENT. FIELD BENDING OF REBAR SHALL NOT BE ALLOWED UNLESS SPECIFICALLY NOTED.
- WELDING OF REINFORCING BARS, METAL INSERTS, AND CONNECTIONS SHALL CONFORM WITH AWS D1.4 AND SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS.
- REINFORCING BAR SPACING SHOWN ON PLANS ARE AT MAXIMUM ON CENTERS. ALL BARS SHALL BE DETAILED AND PLACED PER CONCRETE REINFORCING STEEL INSTITUTE (CRSI) SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

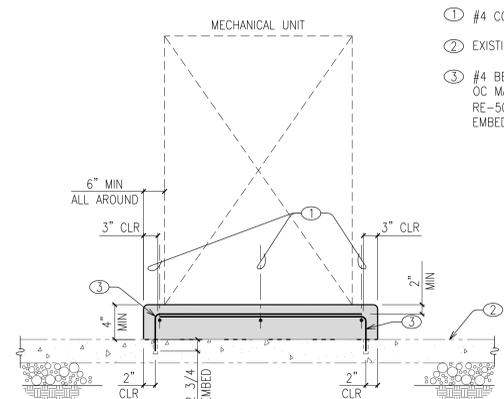
INSPECTION NOTES

- IN ADDITION TO THE STANDARD INSPECTIONS BY THE BUILDING OFFICIAL REQUIRED PER IBC CHAPTER 17, THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION FOR THE TYPES OF WORK LISTED IN THIS SECTION.
- THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
- THE SPECIAL INSPECTOR SHALL INSPECT THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED CONTRACT DRAWINGS AND SPECIFICATIONS. SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. THEN, IF UNCORRECTED, TO THE ENGINEER AND THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE CODE PROVISIONS.
- INSPECTORS SHALL INSPECT FROM AN APPROVED SET OF CONTRACT DRAWINGS. SHOP DRAWINGS SHALL NOT BE USED IN LIEU OF THE APPROVED CONTRACT DRAWINGS FOR INSPECTION PURPOSES.
- TYPES OF WORK TO BE INSPECTED BY THE SPECIAL INSPECTOR ARE AS FOLLOWS:
 - DURING THE TAKING OF TEST SPECIMENS AND PLACING OF REINFORCED CONCRETE AND SHOTCRETE. EXCEPTION: FOUNDATION CONCRETE, OTHER THAN CAST-IN-PLACE DRILLED PILES OR CAISSONS, WHERE THE STRUCTURAL DESIGN IS BASED ON AN f'_c NO GREATER THAN 2,500 PSI DOES NOT REQUIRE SPECIAL INSPECTION. FREQUENCY AND TYPE OF TEST SPECIMENS SHALL BE PER IBC SECTION 1903.1.
 - DURING THE PLACING OF REINFORCING FOR ALL CONCRETE REQUIRED TO HAVE SPECIAL INSPECTION NOTED ABOVE.
 - DURING ALL EPOXY ANCHORING OPERATIONS FOR BOLTS, REBAR, THREADED ROD, ETC., INCLUDING VERIFICATION OF BOLT OR BAR MATERIALS, HOLE DEPTH AND DIAMETER, HOLE CLEANOUT, EPOXY MIXING AND PLACEMENT PROCEDURES, AND EMBEDMENT DEPTH IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- CERTIFICATE OF APPROVAL REGARDING MATERIALS AND INSPECTION OF PREFABRICATED ITEMS SHALL BE PROVIDED IN ACCORDANCE WITH IBC SECTION 1703 THE QUALITY ASSURANCE PROGRAM.



FOUNDATION PLAN

SCALE: 3/16" = 1'-0"



- #4 CONTINUOUS AT 18" OC MAX
- EXISTING CONCRETE SLAB ON GRADE
- #4 BENT DOWEL AT EACH END AND AT 18" OC MAX INTO DRILLED HOLE WITH HILTI RE-500-SD EPOXY GROUT. 2 3/4" MIN EMBEDMENT

NOTE
1. SPECIAL INSPECTION REQUIRED FOR ALL EPOXY INSTALLATIONS.
2. COORDINATE EXACT LOCATION AND DIMENSIONS OF PADS WITH MECHANICAL DRAWINGS.

101 NEW HOUSE KEEPING PAD AT EXISTING SLAB
101-15204

NO SCALE



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Project
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NORTHEAST BUILDING MEDICAL AIR PUMPS
UNIVERSITY MEDICAL CENTER
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Drawing Title:
GSM, PLAN AND DETAILS

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HSAA Project:
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