SUPERIMPOSED DESIGN LOAD SCHEDULE (ALL LOADS SHOWN ARE IN POUNDS PER SQ. FT.) COMPONENT / AREA	2ND FLOOR	ROOF
FLOOR/ROOF FINISHES	1	2
M/E/P	8	8
CEILING	1	1
PONDING/FIREPROOF	-	3
MISC.	-	-
TOTAL DEAD LOAD	10	14
TOTAL LIVE LOAD	65	20

NOTES:
1. LOADS INDICATED WITHIN SCHEDULE INCLUDE SUPERIMPOSED DEAD & LIVE LOADS. (DOES NOT INCLUDE SELF-WEIGHT OF FLOOR STRUCTURE)
2. SELF-WEIGHT OF STRUCTURE ACCOUNTS FOR ALL COMPONENTS ASSOCIATED WITH FLOOR STRUCTURE INCLUDING BUT NOT LIMITED TO SLABS, SUB-FLOOR, METAL DECK, JOISTS, & BEAMS.
3. ALL LIVE LOADS LESS THAN 80psf INCLUDE 15psf FOR PARTITION LOADS.
4. STAIRS AND CORRIDORS HAVE BEEN DESIGNED FOR 100PSF LIVE LOADING.

SNOW LOAD CRITERIA:
Is: IMPORTANCE FACTOR..................1.0
CE: EXPOSURE FACTOR........................1.0
CT: THERMAL FACTOR..........................1.0
PG: GROUND SNOW LOAD...................0 PSF
Pf: FLAT ROOF SNOW LOAD............0 PSF
Cs: ROOF SLOPE FACTOR..................1.0
Ps: SLOPED ROOF SNOW LOAD.......0 PSF

ROOF STRUCTURE DESIGNED FOR THE GREATER OF SNOW LOAD OR LIVE LOAD INDICATED ON DESIGN LOAD SCHEDULE.

LATERAL LOAD DESIGN SCHEDULE ASCE 7-16

WIND LOAD			
ITEM	SYMBOL	VALUE	REFERENCE
BASIC WIND SPEED	V	143	SECTION 26.5.1
WIND EXPOSURE	-	D	SECTION 26.7.3
SEISMIC LOAD			
ITEM	SYMBOL	VALUE	REFERENCE
SEISMIC RISK CATEGORY	-	III	TABLE 11.5-1
SEISMIC IMPORTANCE FACTOR	I	1.00	SECTION 1.5-2
SEISMIC SITE CLASS	-	D	SECTION 11.4.2
SPECTRAL RESPONSE ACCELERATION	S_1	0.027g	SECTION 11.4.3
MAPPED SPECTRAL ACCELERATION	S_S	0.052g	SECTION 11.4.3
SEISMIC DESIGN CATEGORY	-	A	SECTION 11.6
BASIC SEISMIC-FORCE RESISTANCE SYSTEM	-	STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE	TABLE 12.2-1
RESPONSE MODIFICATION COEFFICIENT	R	3	TABLE 12.2-1
DEFLECTION AMPLIFICATION FACTOR	C_d	3	TABLE 12.2-1
SEISMIC BASE SHEAR ANAYL. PROC.	$V=C_sW$	EQUIVALENT LATERAL FORCE METHOD	SECTION 12.8

SPREAD FOOTING FOUNDATIONS & SUB-GRADE

1. FOUNDATIONS HAVE BEEN DESIGNED AND FOOTING ELEVATIONS ESTABLISHED ON THE BASIS OF A SUBSURFACE INVESTIGATION REPORT AND RECOMMENDATIONS PREPARED BY ATLAS TECHNICAL CONSULTANTS, LLC DATED OCTOBER 7, 2021. SEE THE REPORT FOR ADDITIONAL REQUIREMENTS. THE REQUIREMENTS CONTAINED IN THE GEOTECHNICAL REPORT ARE PART OF THE CONSTRUCTION DOCUMENTS.
2. THE FOUNDATION FOR THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING ALLOWABLE SOIL BEARING PRESSURES AT A BEARING DEPTH OF APPROXIMATELY 18" BELOW FINISHED FLOOR.

   TOTAL LOAD...........................2,500 PSF (NET)

3. THE FOOTING LEVEL SHALL BE TESTED USING DROP-BAR PERCUSSION TEST OR PENETROMETER TO A DEPTH OF 3 OR 4 FEET BELOW BEARING LEVELS TO INSURE ADEQUATE BEARING MATERIALS COMPLY WITH BORING LOGS AND DESIGN CRITERIA.
4. THE BOTTOM OF EXTERIOR FOOTINGS SHALL BE A MINIMUM OF ONE AND HALF (1.5) FEET BELOW FINISHED GRADE, OR AS REQUIRED BY LOCAL BUILDING CODES.
5. EXCAVATION SHALL BE PERFORMED SO AS NOT TO DISTURB EXISTING ADJACENT BUILDINGS, STREETS, AND UTILITY LINES. VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK. HAND EXCAVATE AROUND UTILITIES AS REQUIRED.
6. REMOVE EXISTING VEGETATION, TOPSOIL, AND UNSATISFACTORY SOILS MATERIALS. PROOF ROLL SUBGRADE TO OBTAIN UNIFORMLY DENSIFIED SUBSTRATA PRIOR TO PLACING FILL MATERIAL EVENLY IN 8" THICK (MAXIMUM) LAYERS AND COMPACTING TO REQUIRED DENSITY.
7. SEE THE GEOTECHNICAL REPORT FOR EXCAVATION, BACKFILL AND PREPARATION OF THE FOUNDATION AND SLAB-ON-GRADE SUBGRADE INCLUDING COMPACTION REQUIREMENTS. IF GEOTECHNICAL REPORT IS NOT AVAILABLE, GEOTECHNICAL ENGINEER SHALL BE CONTRACTED WITH TO PROVIDE SPECIFICATIONS.
8. THE OWNER SHALL RETAIN THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER, SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER, TO PERFORM SOIL TESTING AND INSPECTION. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE TO VERIFY BEARING LEVELS AND ENSURE THAT THE SAFE BEARING CAPACITY MEETS OR EXCEEDS THE DESIGN VALUE INDICATED ON CONTRACT DOCUMENTS. FIELD REPORTS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER OUTLINING THE WORK PERFORMED AND TEST RESULTS.
9. THE INSPECTION AND TESTING OF ALL SUBGRADE AND COMPACTED EARTHWORK SHALL BE CONDUCTED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHNICAL CONSULTANT. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER 24 HOURS PRIOR TO PLACEMENT OF CONCRETE IN THE FOOTINGS. IF UNSUITABLE SUBGRADE SOILS ARE ENCOUNTERED, THE CONTRACTOR SHALL SUBMIT RECOMMENDATIONS PREPARED BY A GEOTECHNICAL CONSULTANT TO THE STRUCTURAL ENGINEER FOR APPROVAL.
10. THE SUBGRADE AND EACH LAYER OF FILL OR BACKFILL SHALL BE COMPACTED TO A DRY DENSITY AT LEAST EQUAL TO 95% OF THE MAXIMUM DRY DENSITY ATTAINED BY THE MODIFIED PROCTOR TEST ASTM D1557.
11. IF CONDITIONS PROVE TO BE UNACCEPTABLE AT THE BEARING ELEVATIONS SHOWN, THE FOOTING BEARING ELEVATIONS MAY NEED TO BE LOWERED BASED ON THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER. FINAL BEARING ELEVATIONS AND BACKFILL RECOMMENDATIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO FIELD MODIFICATION. CONCRETE FOR FOUNDATIONS SHALL BE POURED ON THE SAME DAY THE SUBGRADE IS APPROVED BY THE GEOTECHNICAL ENGINEER.
12. CONCRETE FOUNDATIONS SHALL NOT BE PLACED IN WATER OR ON FROZEN EARTH.
13. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.
14. SLAB-ON-GRADE HAS BEEN DESIGNED USING A SUBGRADE MODULUS OF K=100 PCI AND DESIGN LOADING OF 100 PSF. THE GEOTECHNICAL ENGINEER SHALL ENSURE SUB-GRADE IS PREPARED TO MINIMUM SPECIFICATION, OTHERWISE THE DESIGNER IS NOT RESPONSIBLE FOR DIFFERENTIAL SETTLEMENT, SLAB CRACKING OR OTHER FUTURE DEFECTS RESULTING FROM UNREPORTEDCONDITIONS MITIGATING THE ABOVE ASSUMPTIONS.
15. SLAB-ON-GRADE SHALL BE UNDERLAIN BY A MINIMUM OF SIX INCHES OF STABLE GRANULAR MATERIAL AND 10 MIL VAPOR BARRIER.
16. THE CONTRACTOR SHALL OBSERVE WATER CONDITIONS AT THE SITE AND TAKE THE NECESSARY PRECAUTIONS TO ENSURE THAT THE FOUNDATION EXCAVATIONS REMAIN DRY DURING CONSTRUCTION.
17. DEWATERING OF THE SITE DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY SHEETING OR SHORING REQUIRED FOR DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR NOT TO UNDERMINE EXISTING FOUNDATIONS. METHOD OF DEWATERING AND CALCULATIONS FOR THE APPROPRIATE SYSTEM ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. PROVIDE A CONTINUOUS WATERSTOP AT ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN THE ELEVATOR PIT AND ALL OTHER PIT WALLS. REFERENCE CONCRETE NOTES FOR WATERSTOP SPECIFICATIONS.
19. BACKFILL SHALL BE BROUGHT UP SIMULTANEOUSLY ON EACH SIDE OF WALLS AND GRADE BEAMS WITH A GRADE DIFFERENCE NOT TO EXCEED 2'-0" AT ANY TIME.
20. BACK-FILLING AGAINST FOUNDATION WALLS WHICH RETAIN EARTH SHALL BE DONE CAREFULLY WITH SMALL COMPACTION EQUIPMENT, AFTER CONCRETE SLAB AND ELEVATED FLOOR SLAB ARE IN PLACE AND CONCRETE HAS OBTAINED THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH. TRUCKS BULLDOZERS, ETC., SHALL NOT BE ALLOWED CLOSER THAN 6'-0" TO ANY FOUNDATION WALL. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SHORING WHERE REQUIRED.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE NEED TO USE FOUNDATION REBAR AS A GROUNDING ELECTRODE SYSTEM AND SHALL BE RESPONSIBLE FOR INSTALLING THE BONDING CLAMP PRIOR TO PLACEMENT OF THE CONCRETE AS PER NJUCC BULLETIN NO. 02-2.

CAST-IN-PLACE CONCRETE SPECIFICATIONS

1. CONCRETE SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318), AND CONSTRUCTED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
2. CONCRETE SHALL HAVE NATURAL SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATES CONFORMING TO ASTM C33, TYPE 1 PORTLAND CEMENT CONFORMING TO ASTM C150.
3. CONCRETE IN THE FOLLOWING AREAS SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (F'c) AND MAXIMUM WATER/CEEMENT RATIO (W/CM) (REFERENCE PLANS AND SCHEDULES FOR PROJECT SPECIFIC REQUIREMENTS):

   FTG/GBS (F1 EXPOSURE)................................ 5000PSI.......0.55
   FNDN WALLS/PIERS (F1 EXPOSURE).............4000PSI.......0.55
   INTERIOR SOG (F1 EXPOSURE).......................4000PSI.......0.55
   EXTERIOR SOG (F3 EXPOSURE).....................5000PSI.......0.4
   COLUMNS (F1 EXPOSURE)................................5000PSI.......0.55
   STRUCTURAL SLAB (INT) (F0 EXPOSURE)...5000PSI.......0.5
   STRUCT SLAB (EXT) (F2 EXPOSURE)...........5000PSI.......0.4
   SLAB ON METAL DECK (F0 EXPOSURE).... 3500PSI........0.5

4. AIR ENTRAINMENT SHALL BE A MINIMUM OF 6% IN ALL EXPOSED CONCRETE.
5. MAXIMUM AGGREGATE SIZE SHALL BE:
   FOOTINGS..1-1/2"
   WALLS / GRADE BEAMS / SLAB...............3/4"
6. NORMAL WEIGHT CONCRETE (145 PCF ± 5) SHALL BE PROVIDED WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE 1, WHERE NOTED, LIGHTWEIGHT SLAB CONCRETE (110 PCF ± 5) SHALL BE PROVIDED WITH ALL CEMENT CONFORMING TO ASTM C330, TYPE 1.
7. CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60.
8. WHERE NOTED ON PLAN, EPOXY COATED REINFORCING STEEL SHALL CONFORM TO ASTM A775.
9. REINFORCEMENT BARS SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR APPROVED BY THE STRUCTURAL ENGINEER, WELDING OF REINFORCEMENT BARS, WHEN APPROVED BY THE STRUCTURAL ENGINEER, SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD D1.4. ELECTRODES FOR SHOP AND FIELD WELDING OF REINFORCEMENT BARS SHALL BE CLASS E90XX.
10. WELDED WIRE FABRIC WHEN USED SHALL CONFORM TO ASTM A185. FABRIC SHALL BE SUPPLIED IN FLAT SHEETS. FABRIC SHALL BE LAPPED WITH MINIMUM TWO MESHES AT SPLICES. WELDED WIRE FABRIC SHALL BE LOCATED NO MORE THAN 1" FROM TOP OF SLAB.
11. FIBROUS REINFORCEMENT FOR SLABS SHALL BE FIBRILLATED POLYPROPYLENE FIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE COMPLYING WITH ASTM C 1116 TYPE III, 1/2" TO 1 1/2". UNIFORMLY DISPERSE FIBERS IN THE CONCRETE MIX AT THE MANUFACTURER'S RECOMMENDED RATE BUT NOT LESS THAN 1.5 POUNDS PER CUBIC YARD.
12. GROUT SHALL BE NON-SHRINK GROUT CONFORMING TO ASTM C827, AND SHALL HAVE SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF 5,000 PSI. PRE-GROUTING OF BASE PLATES IS NOT PERMITTED.
13. RIGID INSULATION USED AS FLOOR FILL SHALL BE STYROFOAM HIGHLOAD 40 EXTRUDED POLYSTYRENE INSULATION (40 PSI COMPRESSIVE STRENGTH) ASTM C578, TYPE VI MANUFACTURED BY DOW CHEMICAL COMPANY, OR APPROVED EQUAL.
14. ALL EMBEDDED STEEL SHALL BE ASTM A36. ALUMINUM INSERTS ARE NOT PERMITTED.
15. CONSTRUCT EXPANSION JOINTS WHERE INDICATED. EXPANSION JOINT FILLER SHALL BE NONEXTRUDING BITUMINOUS TYPE PER ASTM D1751 INSTALL TO FULL DEPTH OF CONCRETE RECESSED TO ACCOMODATE JOINT SEALANT AND BACKER ROD WHERE NECESSARY.
16. CONCRETE COVERING OF REINFORCING STEEL (INCLUDING TIES AND STIRRUPS) SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS (SEE ACI 318 FOR CONDITIONS NOT NOTED):
   CONCRETE POURED AGAINST EARTH.................................... 3"
   CONCRETE EXPOSED TO EARH OR WEATHER:
   #5 OR SMALLER.. 1 1/2"
   #6 OR LARGER.. 2"
   CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
   COLUMNS (TIES AND MAIN REINFORCING)........................... 1 1/2"
   SLABS, WALLS, JOISTS:
   #14 OR #18 BARS.. 1 1/2"
   #11 OR SMALLER... 1"
   BEAMS (STIRRUPS AND MAIN REINFORCING)..................... 1 1/2"
   ALL OTHER SURFACES NOT EXPOSED TO EARTH
   OR WEATHER... 3/4"

CAST-IN-PLACE CONCRETE TESTING/INSPECTIONS

1. EVALUATION AND ACCEPTANCE OF CONCRETE STRUCTURES SHALL BE IN ACCORDANCE WITH ACI 301.
2. CONCRETE SHALL NOT BE POURED UNTIL THE PLACEMENT OF REINFORCING HAS BEEN APPROVED BY THE INSPECTION AGENCY.
3. INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR WHO HAS BEEN APPROVED BY THE ENGINEER OF RECORD & BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL VERIFY THAT ALL REINFORCEMENT, TIES, ANCHORS, & SLEEVES WERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE APPLICABLE ICC ESR REPORTS AND THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. THE INSPECTION SHALL INCLUDE VERIFICATION OF ANCHOR SPACING, EMBEDMENT AND EDGE DISTANCE REQUIREMENTS.
4. REINFORCING STEEL SHALL BE INSTALLED TO WITHIN THE FOLLOWING TOLERANCES PER ACI 117, "STANDARD SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS":
   CONCRETE COVER FOR SLAB TOP AND BOTTOM BARS.......................... ±1/4"
   COVER FOR OTHER REINFORCING STEEL.. ±3/8"
   SPECIFIED SPACING BETWEEN PARALLEL BARS IN SLABS.......................... (SPECIFICED SPACING/4") BUT NOT TO EXCEED 1"
   HORIZONTAL DEVIATION FROM SPECIFIED LOCATION, U.N.O..................... ±3"
   SPACING AND LOCATION OF BEAM STIRRUPS.. (BEAM DEPTH IN INCHES/12) x 1"
   SPACING AND LOCATION OF COLUMN TIES.. (MIN. COL. DIM. IN INCHES/12) x 1"
   LOCATION OF ENDS OF BARS PERPENDICULAR TO SLAB EDGES........... ±1"

   THE ABOVE LIST OF PERMITTED TOLERANCES MUST BE PROVIDED ON ALL REINFORCING STEEL PLACING DRAWINGS. PLACING
   DRAWINGS THAT DO NOT PROVIDE THIS LIST OF TOLERANCES WILL BE REJECTED.
5. THE CONCRETE SUPPLIER SHALL SUBMIT MIX DESIGNS FOR REVIEW. COMPRESSIVE STRENGTH MUST BE SUBSTANTIATED BY A SUITABLE EXPERIENCE RECORD OR BY THE METHOD OF LABORATORY TRIAL BATCHES. THE PERTINENT CRITERIA OF ACI 318 SHALL APPLY TO THE PROPORTIONING OF MIX DESIGNS AND TO THE ACCEPTANCE OF CONCRETE PRODUCED FOR THE JOB. IF DURING CONSTRUCTION ANY CLASS CONCRETE FAILS TO MEET THE ACCEPTANCE CRITERIA, THE CONTRACTOR SHALL TAKE SUCH STEPS AS ARE DEEMED NECESSARY BY THE STRUCTURAL ENGINEER TO IMPROVE SUBSEQUENT TEST RESULTS AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL ALSO BEAR THE COST OF SPECIAL INVESTIGATION, TESTING, OR REMEDIAL WORK NECESSARY BECAUSE OF EVIDENCE OF LOW STRENGTH OR NON-CONFORMING CONCRETE OR WORKMANSHIP.
6. PREPARE A MINIMUM OF (3) CONCRETE TEST CYLINDERS AT 7 DAYS / (3) CONCRETE TEST CYLINDERS AT 28 DAYS / (1) CONCRETE TEST CYLINDER AT 56 DAYS PER BATCH OF CONCRETE. CYLINDERS SHALL BE PROPERLY CURED AND STORED. SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172.
7. RETAIN LABORATORY TO PROVIDE TESTING SERVICE. SLUMP PER ASTM C143L AIR CONTENT PER ASTM C231 OR C173, CYLINDER TESTS PER ASTM C31 AND C39. ONE SET OF SEVEN (7) CYLINDERS FOR EACH 50 CUBIC YARDS FOR EACH MIX USED. REPORTS OF ALL TESTS TO BE SUBMITTED TO THE ENGINEER OF RECORD.
8. SLUMP TESTS SHALL BE MADE PRIOR TO THE ADDITION OF PLASTICIZERS. CONCRETE FOR THE PREPARATION OF TEST CYLINDERS SHALL BE TAKEN FROM THE HOSE END FOR CONCRETE PLACED BY PUMP. PROPORTION AND DESIGN MIXES TO RESULT IN CONCRETE SLUMP OF 3-1/2IN. ± 1 IN. AT THE POINT OF PLACEMENT. CONCRETE CONTAINING HIGH-RANGE WATER REDUCERS (HRWR) SHALL HAVE A SLUMP OF 4 IN. TO 8 IN.
9. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 117-90 "STANDARD SPECIFICATIONS FOR TOLERANCE FOR CONCRETE CONSTRUCTION AND MATERIALS" AND SHALL MEET THE FOLLOWING REQUIREMENTS:

   MINIMUM SLAB CONSTRUCTION TOLERANCE SPECIFICATIONS:

   - FLOOR FLATNESS (FF) = 32 OR GRATER +0" / -3/16 FOR EVERY 24"
   - FLOOR LEVELNESS (FL) = 30 OR GREATER (PRIOR TO REMOVAL OF FORMWORK)
   - ELEVATION ENVELOPE = +/-3/4" (FROM AVERAGE SLAB ELEVATION)
   - SLAB THICKNESS TOLERANCE = +/-3/8 IN. AND -1/4 IN. (FOR SLABS 12" THICK OR LESS)
   - FORMED SURFACE TOLERANCE = +/- 1/4"

   THE CONTRACTOR SHALL ALSO COORDINATE CONCRETE CLASS OF SURFACE WITH THE PROPOSED ARCHITECTURAL FINISHES.

   - CLASS A - SURFACE PROMINENTLY EXPOSED TO PUBLIC VIEW WHERE APPEARANCE IS OF SPECIAL IMPORTANCE.
   - CLASS B - COARSE-TEXTURED CONCRETE-FORMED SURFACE INTENDED TO RECEIVE PASTER, STUCCO OR WAINSCOTING.
   - CLASS C - STANDARD FOR EXPOSED SURFACE WHERE FINISHES ARE NOT SPECIFIED.
   - CLASS D - MINIMUM QUALITY OF SURFACE WHERE ROUGHNESS IS NOT OBJECTIONABLE.

CONSTRUCTION JOINTS

1. CONSTRUCTION JOINTS FOR SLABS ON METAL DECK SHALL BE LOCATED MIDWAY BETWEEN BEAMS WHERE THE JOINT IS PARALLEL TO THE BEAM SPAN. JOINTS SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF SPAN WHERE THE JOINT IS PERPENDICULAR TO THE BEAM SPAN. ANY STOP IN CONCRETE WORK MUST BE MADE WITH VERTICAL BULKHEADS, UNLESS OTHERWISE SHOWN. ALL REINFORCING IS TO BE CONTINUOUS THROUGH JOINTS.
2. HORIZONTAL JOINTING WILL NOT BE PERMITTED IN CONCRETE CONSTRUCTION EXCEPT AS SHOWN ON THE CONTRACT DOCUMENT. VERTICAL JOINTS SHALL OCCUR AT CENTER OF SPANS AT LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER.
3. CONSTRUCTION JOINTS BETWEEN FOOTINGS AND PILASTERS AND SIMILAR JOINTS SHALL BE PREPARED BY ROUGHENING THE CONTACT SURFACE IN AN APPROVED MANNER TO A FULL AMPLITUDE OF APPROXIMATELY 14 INCHES, LEAVING THE CONTACT SURFACE FREE AND CLEAR OF LAITANCE. REINFORCED (DOWELLED) JOINTS SHALL HAVE BINDER ADDITIVE APPLIED PRIOR TO POUR.
4. PROVIDE CONTINUOUS WATERSTOPS AT ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS AND/OR AS NOTED ON PLAN, SIZED AND CONFIGURED TO SUIT JOINTS. MINIMUM PROVIDED WATERSTOP SHALL BE 6" PVC RIBBED WITH CENTER BULB WATERSTOP BY "GREENSTREAK" OR APPROVED EQUAL. INSTALL TO FORM CONTINUOUS, WATERTIGHT DAM, WITH FIELD JOINTS FABRICATED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
5. CONSTRUCTION JOINTS FOR MILD-REINFORCED CONCRETE SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF SPAN. PROPOSED CONSTRUCTION JOINT LOCATIONS SHALL BE SHOWN ON REINFORCING STEEL SHOP DRAWINGS. ANY STOP IN CONCRETE WORK MUST BE MADE WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS, UNLESS OTHERWISE SHOWN. ALL REINFORCING IS TO BE CONTINUOUS THROUGH JOINTS.

CAST-IN-PLACE ANCHORS

1. ALL ANCHORS SHALL ASSUME THE CRACKED CONCRETE DESIGN CONDITION, U.N.O.
2. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON SITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER OF RECORD SHALL RECEIVE DOCUMENTATION VERIFYING THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.
3. SURVEY ANCHOR BOLTS FOR PLACEMENT AND ALIGNMENT PRIOR TO CASTING CONCRETE.
4. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
5. ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE WHENEVER FEASIBLE. DRILLED OR POWDER DRIVEN FASTENERS WILL BE PERMITTED WHEN PROVEN TO THE SATISFACTION OF THE ENGINEER OF RECORD THAT THE FASTENERS WILL NOT SPALL THE CONCRETE AND HAVE THE SAME CAPACITY AS CAST-IN-PLACE INSERTS. WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.

CAST-IN-PLACE CONCRETE MISC. DIRECTIONS

1. MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS AND DETAILS OF ALL ARCHITECTURAL FEATURES IN THE CONCRETE; REFER TO THE ARCHITECTURAL DRAWINGS AND PROJECT SPECIFICATIONS FOR REQUIREMENTS FOR ALL CONCRETE FINISHES; REFER TO THE ARCHITECTURAL DRAWINGS FOR TOP OF WALL ELEVATIONS FOR ALL WALLS WHERE TOP OF WALL ELEVATIONS ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS.
3. THE CONTRACTOR IS RESPONSIBLE FOR DESIGN, ENGINEERING, AND CONSTRUCTION OF FORMWORK, CAPABLE OF SUPPORTING ALL APPLIED LOADS UNTIL THE CONCRETE IS ADEQUATELY CURED, WITHIN ALLOWABLE TOLERANCES AND DEFLECTION LIMITS.
4. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. ADDITIONAL BARS, STIRRUPS OR CHAIRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT AND PROVIDE MINIMUM REINFORCEMENT COVER FOR ALL BARS.
5. BONDING AGENT SHALL BE USED WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE.
6. ALL BEAMS, SPANDRELS AND SLABS ARE TO BE PLACED MONOLITHICALLY UNLESS OTHERWISE SHOWN.
7. WHERE MASONRY ABUTS CONCRETE WALLS, PROVIDE DOVETAIL SLOTS AND MASONRY ANCHORS.
8. THE CONCRETE SLABS SHALL BE FINISHED FLAT AND LEVEL WITHIN TOLERANCE, TO THE ELEVATION INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONCRETE REQUIRED DUE TO FORMWORK, METAL DECK, AND FRAMING DEFLECTION TO ACHIEVE THIS FINISHED TOP OF SLAB ELEVATION. THE CONTRACTOR SHALL PROVIDE FOR A MINIMUM OF 5/8" AVERAGE THICKNESS FOR ADDITIONAL CONCRETE DURING PLACEMENT FOR ALL SLABS SUPPORTED AND FORMED ON STEEL DECK OVER THE ENTIRE FLOOR AREA. THE CONTRACTOR SHALL PROVIDE THE MEANS BY WHICH THE MAXIMUM AND MINIMUM CONCRETE SLAB THICKNESS CAN BE MONITORED AND VERIFIED DURING AND AFTER THE PLACING AND FINISHING OPERATIONS.
9. REPAIR CONCRETE EXHIBITING VOIDS DUE TO SNAP TIES, "HONEYCOMBS," ROCK POCKETS, AND RUNS, SPALLS OR OTHERWISE DAMAGED SURFACES WITH DRY PACK OR CEMENT GROUT, AND FINISH FLUSH WITH ADJOINING SURFACES. AT THE DISCRETION OF THE STRUCTURAL ENGINEER OR AS QUALIFIED BY LAB TESTING, EXCESSIVE HONEYCOMBS OR EXPOSED REINFORCEMENT THAT JEOPARDIZE THE DESIGN, SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR.
10. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE INDICATED.
11. CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROTECT FINISHED SURFACES FROM STAINS OR ABRASIONS. NO FIRE SHALL BE ALLOWED IN DIRECT CONTACT WITH CONCRETE. PROVIDE ADEQUATE PROTECTION AGAINST INJURIOUS ACTION BY SUN OR WIND. FRESH CONCRETE SHALL BE THOROUGHLY PROTECTED FROM HEAVY RAIN, FLOWING WATER, AND MECHANICAL INJURY.
12. TOPS OF FOUNDATIONS SHALL BE TROWEL FINISHED AND SMOOTH.
13. PROVIDE 10 MIL. VAPOR BARRIER (SLAB) & WATERPROOFING MEMBRANE (ELEVATOR PIT) IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. REFERENCE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS FOR WATERPROOFING MEMBRANE.
14. WATER SHALL NOT BE ADDED TO THE CONCRETE AT THE JOBSITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE CONCRETE SUPPLIER AND PUMPER TO ENSURE PUMPABLE AND WORKABLE MIX WITHOUT THE ADDITION OF WATER AT THE JOBSITE. THE USE OF PLASTICIZERS, RETARDANTS AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR PROPER USE OF RETARDANTS AND OTHER ADDITIVES. USE OF CALCIUM E CHLORIDE OR OTHER CHLORIDE BEARING SALTS SHALL NOT BE PERMITTED.
15. PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL THE CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE SLAB SURFACE. FINISHING OF SLAB SURFACES SHALL COMPLY WITH ACI RECOMMENDATIONS 302-89 AND 304-89 FOR GARAGES.
16. CONTRACTOR SHALL PROTECT CONCRETE THAT IS NOT AIR ENTRAINED BUT WHICH IS EXPOSED TO WEATHER DURING CONSTRUCTION FROM FREEZE THAW DAMAGE UNTIL SUCH TIME AS THE CONDITIONS IS NO LONGER EXPOSED TO FREEZE/THAW CONDITIONS.
17. FOUNDATION SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED MUST BE FREE FROM STANDING WATER, MUD AND DEBRIS. SURFACES SHALL BE CLEAN AND FREE FROM OIL, OBJECTIONABLE COATINGS, AND LOOSE OR UNSOUND MATERIAL.
18. PROTECT CONCRETE FROM SUN AND RAIN. DO NOT PERMIT CONCRETE TO BECOME DRY DURING CURING PERIOD. CONCRETE SHALL NOT BE SUBJECTED TO ANY LOADS UNTIL CONCRETE IS COMPLETELY CURED, AND UNTIL CONCRETE HAS ATTAINED ITS 28 DAY STRENGTH AND 14 DAYS MINIMUM.
19. UPON COMPLETION OF FINISHING OPERATION, THE SURFACE OF SLABS SHALL BE SEALED AGAINST MOISTURE LOSS FOR 7 DAYS BY THE APPLICATION OF A CURING MEMBRANE OR BLANKET.
20. CONCRETE IN FORMS SHALL BE KEPT MOIST UNTIL REMOVAL. IMMEDIATELY UPON REMOVAL OF FORMS, AN APPROVED SPRAYED-ON CURING COMPOUND SHALL BE APPLIED TO THE CONCRETE SURFACES IN STRICT COMPLIANCE WITH THE MANUFACTURERS RECOMMENDATIONS. CURING SHALL BE MAINTAINED FOR 7 DAYS.
21. PROVIDE 7 DAY CURING IMMEDIATELY AFTER FINISHING USING ONE OF THE FOLLOWING METHODS:
    A. CONTINUOUSLY WATERED BURLAP
    B. WATERPROOF MEMBRANES
    C. SPRAYED-ON LIQUID MEMBRANE

    REFER TO THE MANUFACTURER'S SPECIFICATIONS FOR REQUIREMENTS. PROTECT THE CONCRETE SURFACE BETWEEN FINISHING OPERATIONS ON HOT, DRY DAYS OR ANY TIME PLASTIC SHRINKAGE CRACKS DEVELOP USING WET BURLAP, PLASTIC MEMBRANES OR FOGGING. PROTECT CONCRETE DECK AT ALL TIMES FROM RAIN, HAIL OR OTHER INJURIOUS EFFECTS.
22. PROVIDE POUR STOP MATERIAL WHERE NOT INDICATED ON PLAN AS REQUIRED TO COMPLETE JOB.
23. HOT WEATHER CONCRETING (ABOVE 90°F):
    WHEN PLACING CONCRETE IN HOT WEATHER CONDITIONS THAT COULD ADVERSELY AFFECT THE PROPERTIES AND SERVICEABILITY OF CONCRETE, PREPARATIONS AND PROCEDURES OUTLINED IN ACI 305R-91 SHOULD BE FOLLOWED UNLESS OTHERWISE NOTED IN CONSTRUCTION SPECIFICATIONS.
24. COLD WEATHER CONCRETING (BELOW 40°F):
    WHEN PLACING CONCRETE IN COLD WEATHER CONDITIONS THAT COULD ADVERSELY AFFECT THE PROPERTIES AND SERVICEABILITY OF CONCRETE, PREPARATIONS AND PROCEDURES OUTLINED IN ACI 306R-88 SHOULD BE FOLLOWED UNLESS OTHERWISE NOTED IN CONSTRUCTION SPECIFICATIONS.

REBAR/SPLICING

1. PROVIDE TWO (2) #3 X 4'0" AT ALL RE-ENTRANT CORNERS, PLACED ON THE DIAGONAL WITH 1 1/2" CLEARANCE FROM THE CORNER AND TOP OF SLAB. REFER TO DETAIL.
2. SPLICES IN REINFORCING STEEL SHALL BE MADE ONLY AT THOSE LOCATIONS WHERE SPLICES ARE SHOWN ON THE STRUCTURAL DRAWINGS AND AT THOSE LOCATIONS WHERE SPLICES HAVE BEEN DETAILED ON THE REINFORCING STEEL PLACEMENT DRAWINGS THAT HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER OF RECORD. ALL SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES (SEE TENSION DEVELOPMENT LENGTH TABLE IN TYPICAL CONCRETE DETAILS), EXCEPT WHERE INDICATED OTHERWISE ON THE STRUCTURAL DRAWINGS. MECHANICAL SPLICE COUPLERS CAPABLE OF DEVELOPING 125% OF THE YIELD STRENGTH OF THE REINFORCING STEEL MAY BE USED INSTEAD OF TENSION LAP SPLICES AT THE CONTRACTOR'S OPTION AT ANY LOCATION. COMPRESSION LAP SPLICES (SEE COMPRESSION DEVELOPMENT AND LAP SPLICE LENGTHS TABLE IN TYPICAL CONCRETE DETAILS) MAY BE USED ONLY AT THOSE LOCATIONS WHERE SUCH SPLICES ARE SPECIFICALLY INDICATED. STAGGER SPLICES WHERE REQUIRED TO PROVIDE 1 1/2" CLEAR SPACING BETWEEN REINFORCING STEEL AT SPLICE LOCATIONS.
3. WHEREVER POSSIBLE, SPLICES OF MILD STEEL SHALL BE MADE IN A COMPRESSION AREA. NO MORE THAN 50% OF BARS (ALTERNATED) SHALL BE SPLICED IN A TENSION AREA.
4. VERTICAL DOWELS PROJECTING OUT OF FOUNDATIONS INTO WALLS SHALL BE THE SAME SIZE AND SPACING AS THE VERTICAL REINFORCING STEEL IN THE WALL, U.N.O. AND SHALL BE INSTALLED FOR THE FULL DEPTH OF THE FOUNDATION AND TERMINATE WITH STANDARD 90 DEGREE HOOKS, U.N.O.; VERTICAL DOWELS PROJECTING OUT OF THE TOPS OF WALLS INTO SLABS SHALL BE THE SAME SIZE AND SPACING AS THE VERTICAL STEEL IN THE WALLS, U.N.O. AND SHALL EXTEND TO THE TOP OF THE SLAB AND TERMINATE WITH STANDARD 90 DEGREE HOOKS, U.N.O.; ALL DOWELS SHALL BE SPLICED WITH CLASS "B" TENSION LAP SPLICES TO THE VERTICAL REINFORCING STEEL IN THE WALLS.
5. ALL HOOKS IN REINFORCING STEEL SHALL BE STANDARD 90 DEGREE HOOKS, U.N.O.
6. ALL HOOKS ON #5 AND SMALLER TOP REINFORCING STEEL IN SLABS SHALL BE STANDARD 90 DEGREE STIRRUP HOOKS; A CONTINUOUS PERPENDICULAR TOP BAR (#4 MINIMUM) SHALL BE INSTALLED INSIDE THE CORNERS OF ALL HOOKED BARS.
7. VERTICAL REINFORCING STEEL IN CONCRETE AND MASONRY WALLS WITH ONE LAYER OF REINFORCING BARS SHALL BE INSTALLED IN THE CENTER OF THE WALL, U.N.O.

PIPES/CONDUITS/SHOP DWGS

1. SLEEVES AND OPENINGS THROUGH CAST-IN-PLACE CONCRETE FRAMING ARE PROHIBITED EXCEPT WHERE THOSE SLEEVES AND OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED REBAR PLACEMENT DRAWINGS. ALL SLEEVES AND OPENINGS SHALL BE INCLUDED WITHIN REBAR PLACEMENT (SHOP DRAWINGS) AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL.
2. CONTRACTOR SHALL SUBMIT A SINGLE DIMENSIONED AND COORDINATED DRAWING FOR EACH LEVEL SHOWING THE LOCATIONS OF THE FOLLOWING:
   - SLAB OPENINGS
   - SLEEVES (CAST IN PLACE & POST-INSTALLED FIELD CORED SLEEVES)
   - EMBEDDED PLATES AND ALL OTHER EMBEDS
   - SLAB EMBEDDED ELECTRICAL CABLE AND CONDUIT
3. SLEEVES, OPENINGS AND OTHER PENETRATIONS THROUGH CAST-IN-PLACE CONCRETE FRAMING SHALL BE CAST INTO THE CONCRETE; SAW CUTTING, CORING OR DRILLING OF SLEEVES OR OPENINGS THROUGH PREVIOUSLY CAST CONCRETE IS NOT PERMITTED EXCEPT WHERE SPECIFICALLY REVIEWED AND APPROVED BY THE ENGINEER OF RECORD.
4. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.
5. THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE END OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF ALL STEEL REINFORCING SHOP DRAWINGS
6. PIPES OR CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 THE SLAB THICKNESS AND SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTER. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN SLABS WITHIN 12 INCHES OF COLUMN FACE OR FACE OF BEARING WALL. NO CONDUITS MAY BE PLACED IN EXTERIOR SLABS OR SLABS SUBJECTED TO FLUIDS.
7. CONDUIT PLACED IN CONCRETE SLABS MUST BE PLACED IN ACCORDANCE WITH FOLLOWING GUIDELINES:
   - CONTRACTOR SHALL NOT INSTALL CONDUIT THAT IS NOT SHOWN ON MECHANICAL DRAWINGS.
   - DO NOT CROSS MORE THAN ONE LAYER OF CONDUIT OVER ANOTHER IN ANY GIVEN AREA.
   - PLACE CENTER OF CONDUIT OR CONDUIT GROUP AT THE MID-HEIGHT OF SLAB.
   - CONDUIT OR CONDUIT GROUP SHALL NOT EXTEND OUTSIDE THE MIDDLE 1/3" OF SLAB.
   - MAINTAIN A MINIMUM CLEAR SPACING BETWEEN THE CONDUIT OF 3" DIAMETER. THIS REQUIREMENT APPLIES EXCEPT WHERE CONDUITS ACCUMULATE AT "TURN DOWNS". THE CONDITIONS AT "TURN DOWN" LOCATIONS MUST BE EVALUATED AT EACH LOCATION BY THE ENGINEER OF RECORD. "TURN DOWNS" CANNOT OCCUR AT COLUMN LOCATIONS.
   - DO NOT PLACE ANY CONDUIT IN THE SLAB WITHIN 36" FROM THE EDGE OF ANY COLUMN OR WALL ABOVE OR BELOW THE SLAB.
   - SLAB REINFORCEMENT MUST NOT BE MOVED, CUT OR BENT TO ACCOMMODATE CONDUIT PLACEMENT.
   - CONDUIT SHALL NOT TO RUN THROUGH OR WITHIN COLUMN OR WALL.
   - ALUMINUM CONDUIT SHALL NOT BE EMBEDDED IN SLAB.

   ANY DEVIATIONS MUST BE SUBMITTED ON A SHOP DRAWING FOR APPROVAL BY THE ENGINEER OF RECORD PRIOR TO CONDUIT PLACEMENT.
8. ALL CONDUITS RUN HORIZONTALLY WITHIN STRUCTURAL CONCRETE SLAB CONSTRUCTION SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   - CONDUIT MUST BE LOCATED AT CENTERLINE OF SLAB AND SUPPORTED WITH CHAIRS TO KEEP CONDUIT AT MID-HEIGHT OF SLAB
   - NO CONDUIT WITHIN THE SHEAR CONE (36" AROUND COLUMNS)
   - NO CONDUITS LARGER THAN 2" OR ¼" THE SLAB THICKNESS, WHICHEVER IS LESS.
   - NO CROSSING OF CONDUIT
   - NO DISPLACEMENT OF TENDONS OR REBAR
   - NO METAL CONDUITS IN EXTERIOR SLABS
   - NO ALUMINUM CONDUITS
   - MINIMUM CENTER TO CENTER SPACING, IE 3 X DIA. OF CONDUIT
   - STACKING OF CONDUIT SHALL NOT BE PERMITTED
   - MAXIMUM OF (3) CONDUITS WITHIN A 6FT WIDTH OF SLAB

   SUBCONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO E.O.R. FOR FINAL APPROVAL PRIOR TO INSTALLATION OF CONDUITS WITHIN SLAB.

POST-INSTALLED ANCHORS

1. ALL POST INSTALLED ANCHORS SHALL BE HILTI UNLESS NOTED OTHERWISE ON PLAN.
2. ALL ALTERNATE FASTENER TYPE / MANUFACTURER SHALL BE SUBMIMTTED TO EOR FOR REVIEW / APPROVAL. SUBMITTALL SHALL INCLUDE DESIGN CALCULATIONS SIGNED & SEALED BY LICENSED PROFESSIONAL WITHIN PROJECT JURISDICTION.
3. POST-INSTALLED CONCRETE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
4. POST INSTALLED ANCHORS SHALL BE INSTALLED IN MANNER THAT DOE SNOT DAMAGE REINFORCING STEEL WITH CAST-IN-PLACE CONCRETE. CONTRACTOR SHALL SCAN ALL AREAS WITH REINFORCEMENT PRIOR TO INSTALLATION TO MITIGATE DAMAGE OF REINFORCEMENT.
5. NOTIFY EOR IF AS-BUILT LOCATION OF ANCHORAGE IS LARGER THEN 1/2" FROM LOCATION AS DESIGNATED WITHIN CONTRACT DOCUMENTS.
6. MECHANICAL ANCHORS (WEDGE / UNDERCUT) SHALL BE ANY OF THE FOLLOWING:
7. CHEMICAL ANCHORS (EPOXY SET) SHALL BE ANY OF THE FOLLOWING:
8. UNLESS NOTED OTHER, ALL DRILL & EPOXY SHALL REBAR SHALL USE HILTI HIT-HY-200 ADHESIVE, AND INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. MINIMUM EMBEDMENT LENGTHS SHALL BE AS FOLLOWS:
9. ALL ANCHORS SHALL ASSUME CRACKED CONCRETE DESIGN CONDITION.
10. CONTRACTOR SHALL ARRANGE FOR HILTI REPRESENTATIVE TO PROVIDE ON SITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE, THE STRUCTURAL ENGINEERING OF RECORD SHALL RECEIVE DOCUMENATION VERIFY THAT ALL OF CONTRACTOR'S PERSONNEL INSTALLING ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF ANCHOR INSTALLATION.
11. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED A MINIMUM OF 21 DAYS.
12. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE / MASONRY. INSTALL ANCHOR IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON DRAWINGS.
13. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN MANNER THAT DOES NOT DAMAGE REINFORCING STEEL, REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. WHERE THE ANCHOR LAYOUT CANNOT AVOID INTERFERENCE WITH REINFORCEMENT STEEL, THE CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN AN ALTERNATIVE ANCHOR LAYOUT.
14. ADHESIVE ANCHOR SHALL BE INSTALLED WITH A 6" EMBEDMENT DEPTH UNLESS NOTED OTHERWISE. ANCHORS OTHER THEN ADHESIVE ANCHORS SHALL BE INSTALLED WITH EMBEDMENT DEPTH EQUAL TO MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE UNLESS NOTED OTHERWISE ON PLAN. WHERE EMBEDMENT DEPTH IS SPECIFIED, THAT DEPTH IS REQUIRED FINAL EFECTIVE MINIMUM EMBEDMENT DEPTH.
15. POST INSTALLED ANCHORS SHALL BE INSPECTED PERIODICALLY DURING INSTALLATION.
16. POST INSTALLED ANCHORS IN VERTICAL AND OVERHEAD INSTALLATION ORIENTATIONS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION.
17. INSPECTIONS SHALL BE PERFORMED BY SPECIAL INSPECTOR WHO HAS BEEN APPROVED BY LOCAL BUILDING OFFICIAL. THE INSPECTOR SHALL VERIFY THAT ALL ANCHORS WERE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE APPLICABLE ICC ESR REPORTS AND THE MANUFACTURER'S INSTALLATION MANUAL. INSPECTIONS SHALL INCLUDE VERIFICATION OF ANCHOR SPACING, EMBEDMENT AND EDGE DISTANCE REQUIREMENTS.

POST INSTALLED ANCHORS SCHEDULE

INSTALLATION TYPE	HILTI ANCHOR SELECTION
CONCRETE EXPANSION ANCHOR	KWIK BOLT TZ
CONCRETE ADHESIVE ANCHOR	HIT-HY 200 SAFE SET W/ HIT-Z ROD HIT-HY 200 W/ HOLLOW DRILL BIT W/ HAS-E ROD HIT-RE 500 SD W/ HAS-E ROD
CONCRETE SCREW ANCHOR	KWICK HUS EZ
CONCRETE DOWEL REINFORCEMENT	HIT-HY 200 SAFE SET W/ HOLLOW DRILL BIT HIT-RE 500 SD
CMU - GROUT FILLED EXPANSION ANCHOR	KWIK BOLT 3
CMU - GROUT FILLED SCREW ANCHOR	KWIK HUS EZ
CMU - GROUT FILLED ADHESIVE ANCHOR	HIT-HY 70 W/ HAS-E ROD
CMU - HOLLOW BLOCK ADHESIVE ANCHOR	HIT-HY 70 W/ HAS-E ROD & SCREEN TUBE

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Jason Tarantino
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ISSUED FOR PERMIT

REVISIONS:

Mk	DATE:	REMARKS
	12/26/23	ISSUED FOR PERMIT

PROJECT:
Proposed Commercial Building
Okeechobee (Shopping Center)
FL-78 & Access Road
Okeechobee, Florida, 34978

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