# STRUCTURAL NOTES

#### GENERAL NOTES

- FLORIDA BUILDING CODE ("THE BUILDING CODE" REFERENCED IN THE FOLLOWING NOTES)
- 1.-TO THE BEST OF OUR KNOWLEDGE, THE STRUCTURAL DRAWINGS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE GOVERNING BUILDING CODE.
- 2.-CONSTRUCTION IS TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE NOTED ABOVE AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES, STANDARDS, REGULATIONS, AND LAWS
- 3.-THE CONTRACTOR SHALL COMPARE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE COMMENCING WITH THE WORK AND SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES REQUIRING CLARIFICATION OR REVISIONS. DO NOT SCALE STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN. SEE "DIMENSION" SECTION OF GENERAL NOTES FOR ADDITIONAL NOTES.
- 4.-THE CONTRACTOR SHALL USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS TO COORDINATE LOCATION OF DEPRESSED SLABS, SLOPES, DRAINS, OUTLETS, RECESSES, OPENINGS, 4.-CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE AS FOLLOWS REGLETS, BOLT SETTINGS, SLEEVES, DIMENSIONS, ETC. (DRAWINGS ARE NOT TO BE SCALED)
- 5.-DISCREPANCIES BETWEEN INFORMATION PRESENTED WITHIN PROJECT SPECIFICATIONS AND WITHIN STRUCTURAL NOTES ON PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BY THE CONTRACTOR PRIOR TO PRESENTING HIS OR HER BID. IF SUCH A DISCREPANCY IS DISCOVERED SUBSEQUENT TO BIDDING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE OPTION SUBSEQUENTLY SELECTED BY THE ENGINEER AT NO ADDITIONAL COST.
- 6.-CONTRACTORS SHALL BE RESPONSIBLE FOR FINAL VERIFICATION OF ALL DIMENSIONS, ELEVATIONS, CLEARANCES, ETC. OF THE FRAMING SHOWN ON THE STRUCTURAL DRAWINGS AGAINST INFORMATION PROVIDED BY MANUFACTURER OF SELECTED MECHANICAL EQUIPMENT PRIOR TO PROCEEDING WITH ANY RELATED PORTION OF WORK. ITEMS REQUIRING SUCH REVIEW SHALL INCLUDE ELEVATORS (ELEVATOR PITS, BEAMS ABOVE ELEVATORS DOORS, ETC ), ESCALATORS, DUCTS, COOLING TOWERS, ETC. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY REMEDIAL WORK AND FOR ITS IMPACT ON THE WORK SCHEDULE RESULTING FROM FAILURE TO PROVIDE EARLY NOTIFICATION OF SUCH CONFLICTS TO THE DESIGN TEAM.
- 7.-POTENTIAL CONFLICTS, ERRORS OR OMISSIONS PRESENT WITHIN THE DRAWINGS (WHETHER WITHIN STRUCTURAL DRAWINGS OR BETWEEN STRUCTURAL, ARCHITECTURAL, AND M.E.P DRAWINGS) SHALL BE IDENTIFIED BY THE CONTRACTOR DURING HIS/HER EARLY REVIEW OF THE PROJECT DOCUMENTS. SUCH CONFLICTS, ERRORS OR OMISSIONS SHALL BE COMMUNICATED TO THE ARCHITECT IN WRITING PRIOR TO COMMENCEMENT OF WORK. IN THE EVENT OF FAILURE TO PROVIDE SUCH A NOTICE AND SUFFICIENT TIME FOR A RESPONSE. THE CONTRACTOR SHALL BECOME RESPONSIBLE FOR COST OF ALL WORK OR REMEDIAL WORK RESULTING FROM SUCH CONFLICTS, ERRORS OR OMISSION, AS WELL AS FOR ITS IMPACT ON THE PROJECT SCHEDULE
- 8.-ALL COSTS OF INVESTIGATION AND/OR REDESIGN, DUE TO CONTRACTOR MISLOCATION OR STRUCTURAL ELEMENTS OR OTHER LACK OF CONFORMANCE WITH THE PROJECT DOCUMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 9.- IN THE EVENT THAT CERTAIN DETAILS OF THE CONSTRUCTION ARE NOT FULLY SHOWN OR NOTED ON THE DRAWINGS, THEIR CONSTRUCTION SHALL BE OF THE SAME TYPE AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED, SUBJECT TO THE STRUCTURAL ENGINEER'S APPROVAL. DETAILS LABELED "TYPICAL" APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING THE APPLICABILITY OF TYPICAL DETAILS SHALL BE RESOLVED BY THE PROJECT ARCHITECT.
- 10.-SEE THE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
- 10.1.-SIZE AND LOCATIONS OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, INSERTS, ETC. EXCEPT AS SHOWN. 10.2-SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS EXCEPT AS SHOWN.
- 10.3-SIZE AND LOCATION OF ROOF AND FLOOR OPENINGS, FLOOR AND ROOD PUNISHES, TYPES OF WATER PROOFING AND DAMP PROOFING. 10.4.-FINISHED FLOOR AND EXTERIOR ELEVATIONS.
- 10.5-DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
- 10.6.-FIRE PROTECTION REQUIREMENTS.
- 10.7.-MISC. STEEL TUBES, CHANNELS, ANGLES, AND PLATES FOR METAL PANEL WALL AND CURTAIN
- WALL SUPPORT. 10.8-EMBEDS FOR MISC METAL FRAMING AND CLADDING ANCHORAGE.
- 10.9-SIZE AND LOCATIONS OF MASONRY, DRYWALL, NON-LOAD BEARING PARTITIONS AND EXTERIOR WALL. PROVIDE SLIP CONNECTIONS THAT ALLOW VERTICAL MOVEMENT AT THE HEADS OF ALL SUCH PARTITIONS, CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE TOP OF THE WALLS LATERALLY FOR THE CODE-REQUIRED LATERAL LOAD.
- 11.-SEE THE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING: 11.1.-PIPE AND DUCT RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
- 11.2.-ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
- 11.3.-CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES 11.4.-ANCHOR BOLTS FOR MOTOR MOUNTS, EXCEPT AS SHOWN OR NOTED.
- 11.5-SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES (HOUSEKEEPING PADS). NOTE THAT HOUSEKEEPING PADS SHOWN
- ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE AND ARE INCLUDED FOR GENERAL REFERENCE ONLY. 12.-OPENINGS, POCKETS, ETC., LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, OR WALLS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., LARGER THAN 6" WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.
- 13.-ALL SUSPENDED MECHANICAL, ELECTRICAL, OR OTHER SYSTEM LOADS EXCEEDING 100 POUNDS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION UNLESS SPECIFICALLY DETAILED ON THE DRAWINGS. ANY REINFORCEMENT, ETC. REQUIRED BY SUCH LOADS SHALL BE BY THE TRADE REQUIRING THE EQUIPMENT. 14.-YHCE, CONSULTING ENGINEERS, INC. SHALL NEITHER HAVE CONTROL OVER OR CHARGE OF, NOR BE RESPONSIBLE FOR. THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. SINCE THESE ARE SOLELY THE CONTRACTOR'S RIGHTS AND RESPONSIBILITIES UNDER THE CONTRACT DOCUMENTS HAS SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S OR ANY SUBCONTRACTOR'S FAILURE TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY, HIS OWN WORK, AND THE PUBLIC FROM HARM. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY INCLUDING ALL SHAN REQUIREMENTS.
- 15.-THE STRUCTURE WAS DESIGNED TO BE SELF-SUPPORTING AND STABLE FOLLOWING INSTALLATION OF ALL COMPONENTS AS INDICATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE METHOD AND SEQUENCE OF ERECTION PROCEDURES (INCLUDING IMPLEMENTATION OF TEMPORARY SHORING, BRACING, ETC.) AND TO ENSURE SAFETY THROUGH THE PERIOD OF CONSTRUCTION. CONTRACTOR AGREES THAT HE WILL HOLD OWNER, ARCHITECT, ENGINEER, AND/OR ANY OF THEIR EMPLOYEES OR AGENTS. HARMLESS FROM ANY AND ALL DAMAGE AND CLAIMS WHICH MAY ARISE BY A REASON OF ANY NEGLIGENCE ON THE PART OF THE CONTRACTOR, OR ANY OF HIS SUBCONTRACTORS, OR ANY MATERIAL AND EQUIPMENT SUPPLIERS. AND/OR ANY OF THEIR EMPLOYEES OR AGENTS. IN THE PERFORMANCE OF THIS CONTRACT. IN CASE ANY ACTION IS BROUGHT AGAINST THE OWNER, OR ARCHITECT, OR ENGINEER, OR ANY OF THEIR EMPLOYEES OR AGENTS, CONTRACTOR SHALL ASSUME LULL RESPONSIBILITY FOR DEFENSE THEREOF, TO THE FULL SATISFACTION OF THE LATTER PARTY.
- 16.-DO NOT PLACE CONCRETE WITHOUT APPROVED STRUCTURAL SHOP DRAWINGS MECHANICAL/ARCHITECTURAL SHOP DRAWINGS RELATED TO THE CONCRETE WORK. RELATED ITEMS INCLUDE LOCATIONS OF OPENINGS. PIPE SLEEVES, REGLETS, DOVETAIL SLOTS, DRIPS, INSERTS FOR MECHANICAL EQUIPMENTS, HUNG CEILINGS, AND ANY OTHER ITEMS REQUIRED TO BE INSTALLED AND/OR TO BE COORDINATED BY THE ARCHITECTURAL/MECHANICAL TRADES
- 17.-CONTRACTOR IS TO PROVIDE DURING CONSTRUCTION AND MAKE ALLOWANCE FOR DESIGN, DETAILING, AND PURCHASE, DURING BID PHASE FOR ALL MISCELLANEOUS STEEL REQUIRED FOR THE SUPPORT OF ARCHITECTURAL FEATURES THAT ARE NOT STRUCTURAL ITEMS TO THE BASE STRUCTURE. SUCH ITEMS INCLUDE MEP HANGINGS, CEILING, AND CURTAIN WALL SUPPORTS.
- 18.-SUPPLEMENT SKETCHES/DRAWINGS: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FORWARD A COPY OF ALL CORRESPONDENCE AFFECTING THE STRUCTURE TO THE PROJECT'S INSPECTOR THROUGHOUT THE DURATION OF CONSTRUCTION

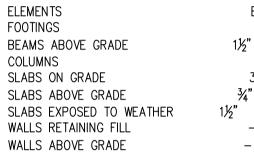
#### FOUNDATIONS:

THE FOUNDATION IS DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2020 7TH EDITION. EXISTING SOILS, SOILS PREPARATION & ALLOWABLE BEARING AS FOLLOW:

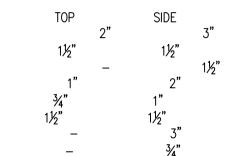
- 1.-FOUNDATION SYSTEM CONSISTS OF SHALLOW SPREAD FOOTINGS DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF. FOOTINGS SHALL BEAR ON UNDISTURBED LIMEROCK, BASED ON GEOTECHNICAL REPORT AND BORINGS BY DYNATECH ENGINEERING CORP. ON, DATED NOVEMBER 15. 2019. THE E.O.R. SHALL CERTIFY THIS LOAD BEARING CAPACITY PRIOR TO POURING THE FOUNDATION.
- 2.-ALL AREAS OF NEW CONSTRUCTION SHALL BE STRIPPED OF EXISTING CONSTRUCTION TO BE REMOVED, PLANT, TOP SOIL AND OTHER DELETERIOUS MATERIAL. WHERE REQUIRED, THE EXISTING SOIL SHALL BE EXCAVATED SO THAT UNDERLYING LIMEROCK IS EXPOSED. IF NO LIMEROCK IS FOUND AT THE SITE, CONTACT ARCHITECT / ENGINEER FOR DIRECTIONS. THE CONTRACTOR SHALL CONTACT THE ARCHITECT / ENGINEER OF RECORD FOR INSPECTION. THE ENTIRE AREA, PLUS A FIVE FOOT PERIMETER, SHALL BE THOROUGHLY COMPACTED BY AT LEAST TEN OVERLAPPING PASSES IN PERPENDICULAR DIRECTIONS OF A VIBRATORY COMPACTOR TO ACHIEVE A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED IN THEN ALL FOOTING BEARING LEVELS SHALL ALSO BE COMPACTED TO MINIMUM OF 98% OF MAXIMUM DENSITY USING A HAND OPERATED VIBRATORY PLATE COMPACTOR. EXISTING CONSTRUCTION SHALL BE CONTINUOUSLY MONITORED DURING SOIL COMPACTION. IF CRACKING OR OTHER SIGNS OF SETTLEMENT OCCUR, CEASE SOIL COMPACTION AND CONTACT ENGINEER. WHERE REQUIRED, CRUSHED LIMEROCK FILL (NO ROCKS GREATER THAN 2 INCHES) SHALL BE PLACED. EXCAVATED MATERIAL MAY BE USED IF FREE OF ORGANIC, MUCK OR OTHER DELETERIOUS MATERIALS. FILL SHALL BE PLACED IN MAXIMUM TWELVE-INCH LIFTS. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY. 3.-ALL LAYERS OF EXISTING SOILS AND FILL SHALL BE TESTED FOR DENSITY. SUBMIT TEST REPORTS TO THE ARCHITECT/
- ENGINEER OF RECORD BEFORE POURING THE FOOTINGS AND SLAB.

## CONCRETE AND STEEL REINFORCEMENT NOTES

- ALL WORK SHALL BE IN CONFORMANCE WITH STRUCTURAL DRAWINGS, SPECIFICATIONS AND THE REQUIREMENTS OF THE 2020 1.-ALL CONCRETE WORK SHALL BE IN CONFORMANCE WITH THE SPECIFICATION SECTION 03200 AND 03300. AND AMERICAN 1.-ALL MASONRY WORK SHALL BE IN CONFORMANCE WITH THE TMS 402-2019/602-2016 REFERENCE STANDARS, THE CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AC 318 -14 ("ACI"). FLORIDA BUIDING CODE, 2020, SEVENTH EDITION AND THE FOLLOWING NOTES: 1.1.-"ACI MANUAL OF CONCRETE PRACTICE" - PART 1 TO 6, BY AMERICAN CONCRETE INSTITUTE. 1.1.-ACI 530/ASCE 5, "BUILDING CODE REQUIREMENTS LOR CONCRETE MASONRY STRUCTURES" 1.2.-"MANUAL OF STANDARD PRACTICE" BY CRSI. 1.2.-ACI 5.30.1 /ASCE 6, "SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD-BEARING CONCRETE MASONRY". 1.3.—"ACI DETAILING MANUAL" BY ACI. 2.-ALL HOLLOW CONCRETE MASONRY UNITS (C.M.U.) SHALL BE NORMAL WEIGHT UNITS CONFORMING TO ASTM C90, TYPE 1
  - 2.-NO CONCRETE LOOTING, FOUNDATION PIER, OR FOUNDATION WALL SHALL BE PLACED UNTIL SUBGRADE FOR SAME HAS BEEN AGGREGATES SHALL CONFORM TO ASTM C331, ALL HOLLOW AND SOLID C.M.U. SHALL ATTAIN A MINIMUM ULTIMATE APPROVED BY A LICENSED PROFESSIONAL ENGINEER. COMPRESSIVE STRENGTH OF 1900 PSI AS DETERMINED BY A.S.T.M. 0–140, YIELDING A PRISM STRENGTH (F'M) OF 1500 PSI 3.-ALL CONCRETE SHALL BE NORMAL WEIGHT CONTROLLED CONCRETE (U.O.N) AND COMPLY WITH THE BUILDING CODE, PROJECT MINIMUM AS DETERMINED BY ASTM E447. USE 50% SOLID, NOMINAL 16" OR 12"x8"x16" CMU UNITS PER PLAN. SAW OUT SPECIFICATIONS, ACI 301, AND ACI 318. APPLICATION FOR CONTROLLED CONCRETE WITH CONCRETE DESIGN MIX PREPARED UNITS WHICH ARE NOT IN MULTIPLES OF 8" COURSING, UNITS SHALL BE AT LEAST 8" LONG. BOND CORNERS BY LAPPING BY AN APPROVED LABORATORY MUST BE SUBMITTED TO THE ENGINEER FOR RILING WITH THE BUILDING DEPARTMENT. NO ENDS 8" IN SUCCESSIVE VERTICAL COURSES. CONCRETE SHALL BE PLACED WITHOUT THE DESIGN MIX BEING APPROVED BY THE BUILDING DEPARTMENT.
  - CONC WALLS ------ 5000 PSI. W/ WATER/CEMENT RATIO OF 0.40.
  - STRUCTURAL SLABS ON GRADE ----- 3000 PSI, W/ WATER/CEMENT RATIO OF 0.40. STRUCTURAL SLABS AND BEAMS ----- 5000 PSI MIN, SEE PLANS COLUMNS ----- SEE COLUMN SCHEDULE
  - SHFAR WALL ----- SEE SHEAR WALL PLANS. 5.-MASONRY CONSTRUCTION SHALL NOT COMMENCE UNTIL TEST RESULTS HAVE BEEN APPROVED BY BOTH THE ALL OTHER CONCRETE ----- 3000 PSI ARCHITECT/ENGINEER AND THE GENERAL CONTRACTOR. ALL COSTS ASSOCIATED WITH THIS PRE-CONSTRUCTION TESTING 5.-THE STEEL REINFORCEMENT SHALL BE HOT ROLLED NEW BILLET STEEL, ASTM A615 AS NOTED IN THE FOLLOWINGS AND IN 1.-STRUCTURAL STEEL SHALL COMPLY WITH AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS/AISC STEEL SHALL BE BORNE BY THE GENERAL CONTRACTOR. THE DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL THE NECESSARY CHAIRS, REBARS, TIES, SPACERS, ETC., TO .-MINIMUM EQUIVALENT SOLID THICKNESS, AS DETERMINED BY A.S.T.M. 0140, OF INDIVIDUAL C.M.U. AND FIRE-RATED C.M.U. CONSTRUCTION MANUAL 15th EDITION. SECURE AND SUPPORT THE STEEL REINFORCEMENTS WHILE PLACING THE CONCRETE. REINFORCING SHALL BE EPOXY COATED 2.-STRUCTURAL STEEL WIDE FLANGE SHAPES AND PLATES SHALL CONFORM TO ASTM A 572, FY 50 KSI, EXCEPT OTHER WALLS SHALL BE AS FOLLOWS: OR GALVANIZED WHERE INDICATED IN THESE NOTES AND/OR ON PLANS. 6.5.-ONE HOUR FIRE -RATED WALL: 3.0" SHAPES WHICH SHALL CONFORM TO ASTM A 36, FY 36 KSI. 6.1.-4" CMU.: 2.28" 5.1-STEEL REINFORCING BARS FOR SIZE #3 TO #10: GRADE 60 (FY =60 KSI, FU = 90 KSI) 3.-STRUCTURAL STEEL TUBES SHALL CONFORM TO ASTM A500, GRADE B, FY=46 KSI. 6.2.-6" CMU.: 3.21" 6.6.-TWO HOUR FIRE -RATED WALL: 4.5"
  - 5.2.-STEEL REINFORCING BARS FOR SIZE #11 AND #18: GRADE 75 (FY =75 KSI, FU = 100 KSI) 6.-ALL DETAILING. FABRICATION AND ERECTION OF REINFORCING BARS SHALL COMPLY WITH THE REQUIREMENTS OF ACI 315 AND ACI 318. THE CONTRACTOR MUST SUBMIT REINFORCING SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW. NO CONSTRUCTION IS TO BE STARTED UNTIL THE SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER AND APPROVED BY THE
  - BUILDING DEPARTMENT. 7.- THE THRESHOLD INSPECTOR SHALL CHECK AND APPROVE ALL STEEL REINFORCEMENT PRIOR TO CONCRETE PLACEMENT. THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF ADDITIONAL 5% OF THE TOTAL REINFORCING STEEL, INCLUDING MATERIAL, FABRICATION, BENDING, FURNISHING AND PLACING. THIS EXTRA STOCK SHALL BE USED FOR SPECIAL CONDITIONS AS DIRECTED BY THE ARCHITECT, THE ARCHITECT'S AGENT OF THE OWNER'S CONSTRUCTION SUPERVISOR. THE COST OF ALL UN-USED EXTRA STOCK SHALL BE CREDITED TO THE OWNER'S ACCOUNT.
  - B.-REINFORCING SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE, WITH APPROPRIATE BAR SUPPORTS AND SPACERS. LAP CONTINUOUS REINFORCING THE GREATEST OF 48 BAR DIAMETER AND LAP SPLICE TABLES INDICATED ON DRAWING. LAP BOTTOM STEEL OVER SUPPORTS AND TOP STEEL AT MIDSPAN (UNO). HOOK DISCONTINUOUS ENDS OF ALL TOP BARS AND ALL BARS IN WALLS (UNO) PROVIDE COVER REINFORCING AS FOLLOWS:



- 9.-ALL SPLICES SHALL BE LAPPED IN ACCORDANCE WITH ACI 318. THE LOCATIONS SHALL BE INDICATED ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER OR RECORD. GENERALLY, ALL SPLICES SHALL BE STAGGERED AND LOCATED AWAY FROM THE SECTION OF MAXIMUM TENSILE STRESS. ALL REINFORCEMENT SHALL BE ACCURATELY PLACED AND SECURELY WIRED TO PREVENT DISLOCATION FROM PROPER POSITION. PROVIDE CHAIRS FOR SUPPORT OR ALL REINFORCEMENTS. LILTING OF BARS OR MESH DURING PLACEMENT OF CONCRETE IS NOT PERMITTED.
- 10.-VERTICAL CONSTRUCTION JOINTS IN ALL WALLS SHALL BE LOCATED AT LEAST 4-0" FROM ANY SUPPORTING COLUMN OR WALL OPENING. THE DISTANCE BETWEEN JOINTS IN A WALL SHALL BE AS PER SPECS. HORIZONTAL JOINTS IN WALLS, OTHER THAN THOSE DETAILED, SHOULD BE AVOIDED UNLESS UNAVOIDABLE, ADDITIONAL REINFORCING REQUIRED IN SUCH CASES SHALL BE AS DIRECTED BY THE ENGINEER AT NO COST TO THE CLIENT. NO HORIZONTAL JOINTS WILL BE ALLOWED IN GRADE BEAMS.
- 11.-THE CONTRACTOR IS TO INSTALL ALL PIPE SLEEVES, BOXED OPENINGS, ANCHOR BOLTS, ETC., AS REQUIRED FOR THE VARIOUS TRADES. WALL POCKETS TO RECEIVE BEAMS AND SLABS SHALL BE PROVIDED AS REQUIRED FOR THE SUPERSTRUCTURE SHOP DRAWINGS SHOWING POSITION OR OPENINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER RIOR TO PLACING CONCRETE. ALL LOCATIONS ARE TO BE OBTAINED FROM MEP AND ARCHITECTURAL DRAWINGS. 12.-FOR PIER SIZES SEE STRUCTURAL DRAWINGS. WHERE A PIER IS REQUIRED BUT THE SIZE IS NOT SHOWN ON PLANS: THE
- SIZE OF THE PIER SHOULD BE 4" LARGER ON EACH SIDE THAN THE BUTTRESS OR COLUMN BASE PLATE, WITH A MINIMUM PIER SIZE OF 24"X24". THE PIER SHOULD BE REINFORCED WITH 8#9 VERTICAL BARS AND #4@12 TIES. 13.--PROVIDE POCKETS AND DOWELS FOR ALL BEAMS FRAMING INTO FOUNDATION WALLS. ALL PIER DEPRESSIONS AT COLUMNS OR BEAMS BEARING ON WALLS SHALL BE FILLED WITH CONCRETE TO THE TOP ELEVATION OF ADJACENT WALLS ALTER
- AND RECONSOLIDATE THE PREVIOUS LIFT. COLUMNS AND BEAMS ARE IN PLACE KEYS ARE TO BE PROVIDED FOR ALL DEPRESSIONS EXCEEDING 12" IN DEPTH. PROVIDE 11.7.-USE LINE GROUT WHEN FILLING BOND BEAMS AND BLOCK CORES WHEN THE LEAST HORIZONTAL DIMENSION OF THE MINIMUM 2#5 BARS ALL AROUND OPENINGS HORIZONTALLY, VERTICALLY, AND DIAGONALLY UNLESS OTHERWISE SHOWN ON OPENING TO BE FILLED IS LESS THAN 4". DETAILS. BARS SHALL BE EXTENDED 2'-0" BEYOND OPENINGS. 11.8-USE COARSE GROUT WHEN FILLING BOND BEAMS AND CORES WHEN THE LEAST HORIZONTAL DIMENSION OF THE 14.-DO NOT INCREASE QUANTITY OF WATER IN EXCESS OF THAT ESTABLISHED BY DESIGN MIX. IF LOSS OF SLUMP OCCURS OPENING TO BE FILLED IS GREATER THAN OR EQUAL TO 4".
- BECAUSE OF THE USE OF FIBERMESH; ADD SUPERPLASTICIZER IN ACCORDANCE WITH TESTING LABORATORIES INSTRUCTIONS 12.-HORIZONTAL JOINT REINFORCING SHALL BE INSTALLED IN EVERY OTHER COURSE. OVERLAP DISCONTINUOUS ENDS MINIMUM 15.-WHEN MEAN-DAILY-TEMPERATURE RISES ABOVE 90E. PROVIDE HOT WEATHER PROTECTION IN ACCORDANCE WITH ACI-305. 6 INCHES, USE PREFABRICATED CORNERS AND TEES, JOINT REINFORCING SHALL CONFORM WITH THE FOLLOWING: WHEN MEAN-DAILY-TEMPERATURE FALLS BELOW 40E, PROVIDE COLD WEATHER PROTECTION IN ACCORDANCE WITH ACI 306. 12.1.-TWO #9 GAUGE DEFORMED LONGITUDINAL STEEL WIRES CONFORMING TO ASTM A82. SUBMIT PROPOSED METHODS FOR COLD AND/ HOT WEATHER CONCRETING FOR REVIEW. 12.2.-#12 GAUGE SMOOTH LADDER-TYPE STEEL CROSS WIRES CONFORMING WITH ASTM A82, WELDED TO THE 16.-DESIGN AND CONSTRUCTION OR FORMWORK IS TO COMPLY WITH THE ACI CODE. PROVIDE 3/4" CHAMFER FOR ALL EXPOSED
- CORNERS 17.-WHERE NO REINFORCEMENT IS SPECIFIED ON DRAWINGS, PROVIDE MINIMUM TEMPERATURE REINFORCEMENT IN ACCORDANCE WITH ACI-318; BUT, NOT LESS THAN #4 REBARS AT 16" ON CENTER.
- 18.-WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OR ANY EXISTING REINFORCING AND DESTRUCTION OF THE CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.
- 19.-WEATHER RESISTANCE TOP OR FLAT CONCRETE SURFACE REMAINING EXPOSED TO THE ELEMENTS THROUGHOUT THE LIFE OF THE STRUCTURE ARE TO BE TREATED WITH A CLEAR, NONFLAMMABLE PENETRATING SEALER (SONNEBORN PENETRATING SEALER 20, HYDROZO ENVIROSEAL 20 OR AN ENGINEER APPROVED SUBSTITUTE). COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION (COMPATIBILITY WITH FINISHES).
- 20.-FORM REMOVAL FORMS SHALL NOT BE REMOVED PRIOR TO STRUCTURAL CONCRETE REACHING A MINIMUM OF 3/3 14.2.-HORIZONTALS: DUR-O-WALL JOINT REINFORCING AT 16 INCHES ON CENTER WITH PRE-FABRICATED CORNERS AT (COLUMNS) OR 3/4 (BEAMS AND SLAB) OF ITS SPECIFIED 28 DAY COMPRESSIVE STRENGTH. INTERSECTIONS. LAP JOINT REINFORCING A MINIMUM OF 8". 21.-DETAILS AND SECTIONS: ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL (WHETHER 15.-OPENINGS REQUIRED IN MASONRY ELEMENTS AND NOT SHOWN IN THE STRUCTURAL CONTRACT DOCUMENTS SHALL BE
- OR NOT NOTED AS SUCH) AND SHALL BE ASSUMED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, INSTALLED ONLY WITH THE APPROVAL OF THE ENGINEER AND WITH THE PROPER LOOSE LINTELS OR ADDITIONAL UNLESS A DIFFERENT DETAIL, OR A SECTION, IS SHOWN. REINFORCING AS SHOWN IN THE CONTRACT DOCUMENTS AT MISCELLANEOUS INTERIOR DOOR AND WINDOW OPENINGS 22.-EMBEDDED ELEMENTS AND FASTENERS AT POST-TENSIONED CONCRETE SLABS/BEAMS TYPE NUMBER LOCATION, ETC. OF PROVIDE LOOSE LINTELS, REINFORCED CONCRETE LINTEL BEAMS, ETC. AS REQUIRED. HOT DIP GALVANIZED (G90) ALL ALL EMBEDDED ELEMENTS TO BE CAST IN CONCRETE (INSERTS, STUDS, BOLTS, DOWELS, ETC.) FOR STRUCTURAL, LINTELS INCLUDING RELIED ANGLE, SHELL ANGLES, ETC. AT EXTERIOR WALL, PROVIDE LINTELS OR HEADERS WITH MINIMUM MECHANICAL AND ARCHITECTURAL ITEMS SHALL BE COORDINATED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE 8" BEARING OVER ALL MASONRY OPENINGS. RESPONSIBLE FOR ADJUSTMENT OF LOCATION OF TENDONS (SO AS TO AVOID FUTURE CONFLICT WITH FASTENERS) AND FOR 16.-ALL BOND BEAMS. MASONRY LINTELS, KNOCK-OUT WEB BLOCK, REINFORCED VERTICAL CORES, AND ALL OTHER CORES MARKING THE FINAL LOCATION OF TENDONS WITHIN SLAB/BEAM PRIOR PLACEMENT OF CONCRETE (CHALK MARKS ON FORM SHOWN IN THE CONTRACT DOCUMENTS SHALL BE GROUTED SOLID, THE GROUT FILL SHALL BE VIBRATED. DO NOT USE WORK VISIBLE FOLLOWING REMOVAL OF FORMS) AT ALL LOUVERS, DOORS, SLIDING DOORS, ETC. FASTENED INTO CONCRETE MORTAR WHERE GROUT IS SPECIFIED. 16.1.-ALL CONCRETE BLOCK BELOW GRADE SHALL BE FILLED SOLID WITH GROUT. EMBEDMENT DEPTH FOR FASTENERS TO BE USED AT ANY ARBITRARY LOCATION OF SLAB SHALL BE LIMITED TO V AND 16.2.-ALL PARAPET WALLS SHALL BE SOLIDLY GROUTED. BEAM TO 1/" (CONTRACTOR TO REVIEW SUB-CONTRACTORS DRAWINGS FOR CONFORMANCE). CONTRACTOR SHALL BE SOLELY
- 16.3.-ALL WALL SECTIONS AND PIERS LESS THAN 4 SQUARE FEET IN CROSS-SECTIONAL AREA TO BE FULLY GROUTED OR ACCURACY OF HIS/HER CALCULATIONS AND COMPLIANCE WITH THE APPLICABLE CODES AND STANDARDS. RESPONSIBLE FOR WORK INVOLVING DETERMINATION OF CABLE LOCATIONS AND FOR REPAIR OP DAMAGED CABLES. OR 100% SOLID MASONRY UNITS MAY BE USED IF MASONRY IS NOT REINFORCED. 11.-TOWER CRANE (SHOP DRAWINGS REQUIRED): FOUNDATIONS AND BRACING FOR THE CRANE SHALL BE DESIGNED BY A 23.-THE STEEL REINFORCEMENT SHALL BE HOT ROLLED NEW BILLET STEEL, ASTM A615 AS NOTED IN THE FOLLOWINGS AND IN 16.4.-CONCRETE BLOCK BELOW BEAM BEARING POINTS SHALL BE FILLED SOLID FOR A MINIMUM OR TWO COURSES IN REGISTERED PROFESSIONAL ENGINEER. SIGNED AND SEALED SET OF SHOP DRAWINGS AND CALCULATIONS SHALL BE THE DRAWINGS CONTRACTOR SHALL FURNISH AND INSTALL ALL THE NECESSARY CHAIRS, REBARS, TIES, SPACERS, ETC., DEPTH AND A MINIMUM OF WIDTH 16" WIDER THAN THE BEARING PLATE BUT NOT LESS THAN 32" IN WIDTH, U.O.N. SUBMITTED TO THE THRESHOLD INSPECTOR FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION. LOCATION SHALL BE TO SECURE AND SUPPORT THE STEEL REIN FOR CEMENTS WHILE PLACING THE CONCRETE REINFORCING SHALL BE EPOXY WHERE A STEEL PIPE OR TUBE COLUMN BEARS DIRECTLY ON A BLOCK WALL, FILL ALL BLOCKS SOLID WITHIN A APPROVED BY THE ENGINEER/ARCHITECT. ADDITIONAL RE-DESIGN WORK REQUIRED AS A RESULT OF CONFLICT BETWEEN COATED OR GALVANIZED WHERE INDICATED IN THESE NOTES AND/OR ON PLANS. WIDTH OF 32", CENTERED ON THE COLUMN. CRANE AND THE STRUCTURE SHALL BE BILLED TO THE CONTRACTOR BY THE ENGINEER OR RECORD AT AN HOURLY RATE. 24.1.-STEEL REINFORCING BARS FOR SIZE #3 TO #10: GRADE 60 (FY =60 KSI, FU =90 KSI) 17.-WHERE ANCHOR BOLTS. WEDGE ANCHORS, OR ANCHORS SET IN EPOXY ARE INSTALLED IN A MASONRY WALL, FILL CELLS COST OF ADDITIONAL MATERIALS AND LABOR FOR THE STRUCTURAL REVISIONS ASSOCIATED WITH PLACEMENT OF CRANE 24.2.-STEEL REINFORCING BARS FOR SIZE #11 AND #18: GRADE 75 (FY =75 KSI, FU =100 KSI) WITH GROUT FOR BOLTED COURSE, ONE COURSE ABOVE AND TWO COURSES BELOW. SHALL BE COVERED BY THE CONTRACTOR.
- 24.-VOID DORMERS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE RIGID CLOSED CELL EXPANDED POLYSTYRENE 18.-PROTECT MASONRY WORK FROM COLD WEATHER IN ACCORDANCE WITH NCMA "TEK-SERIES 16-A". CONFORMING TO ASTM 0578. VOID FORMERS SHALL UNDERGO 10% DEFORMATION WHEN SUBJECTED TO THE FOLLOWING 19.-DURING MASONRY CONSTRUCTION. THE GENERAL CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY SHORING. BRACING LOADS AS PER ASTM D1621. AND SUPPORTS TO RESIST ALL DEAD, CONSTRUCTION AND LIVE LOADS, TO PROVIDE STABILITY FOR WALLS AND 24.1.-COMPRESSIBLE VOID FORMERS 5.0 PSI
- 24.2.-RIGID VOID DORMERS 25.0 PSI ACCORDANCE WITH AASHTO-180C OR ASTM D1557. IF FOOTINGS ARE EXCAVATED AFTER BUILDING AREA COMPACTION, 25-ALL CONCRETE ELEMENTS IN THE FLOOR SYSTEM SHALL BE PLACED MONOLITH 10ALLY CONCRETE IN COLUMNS AND WALLS DESIGNS SHALL BE PREPARED IN ACCORDANCE WITH THE "SPECIFICATIONS" 20.-ALL TEMPORARY SHORING, BRACING AND SUPPORTS SHALL REMAIN SECURELY IN PLACE UNTIL THE NEW PRIMARY SHALL BE NO LONGER PLASTIC BEFORE PLACING THE FLOOR MEMBERS SUPPORTED THEREON. BEAMS. GIRDERS. BRACKETS. STRUCTURAL COMPONENTS HAVE BEEN INSTALLED, CURED, AND CONNECTED SO AS TO PROVIDE THE PERMANENT BRACING COLUMN CAPITALS AND HAUNCHES SHALL BE CONSIDERED AS PART OR THE FLOOR SYSTEM AND SHALL BE PLACED AND SUPPORT. MONOLITH 10ALLY THEREWITH.
  - 21, FOR ADDITIONAL REQUIREMENTS NOTES, AND DETAILS SEE TYPICAL MASONRY DETAIL DRAWINGS. 26.-FLOOR SLAB CAMBER NOTES: 26.1.-CONTRACTOR SHALL PROVIDE A LEVEL FLOOR WITHIN CONTRACT SPECIFIED TOLERANCES. 26.2.-PERIODIC LEVEL READINGS SHALL BE SUPPLIED TO THE ENGINEER AND ADJUSTMENTS TO CAMBER BE MADE ON SUBSEQUENT FLOORS AS NECESSARY, BASED ON SUCH READINGS. 1.—WIND DESIGN HAS BEEN DONE IN ACCORDANCE WITH ASCE 7—16 AND 2020 FBC (7TH EDITION), HVHZ. 26.3.-WHERE CAMBER IS INDICATED (OR FOR SUBSEQUENT FLOORS ROUND REQUIRED BY FIELD MEASUREMENT OF 2.-EXPOSURE "C" OBSERVATIONS) RAISE BOTTOM FORMS AND SLOPE GRADUALLY. THICKNESS OF CONCRETE SLAB SHALL NOT BE 3.-RISK CATEGORY:
  - 4.-INTERNAL PRESSURE COEFFICIENT. GCpi= :0.18. REDUCED.
  - 26.4.-THE CONCRETE SLABS SHALL BE FINISHED FLAT AND LEVEL WITHIN TOLERANCE, TO THE ELEVATION INDICATED ON 5.-ULTIMATE WIND VELOCITY, V= 175 MPH THE DRAWINGS. CONTRACTOR SHALL PROVIDE ADDITIONAL CONCRETE REQUIRED DUE TO FORM WORK AND FRAMING DEFLECTION TO ACHIEVE THIS FINISHED TOP OP SLAB ELEVATION

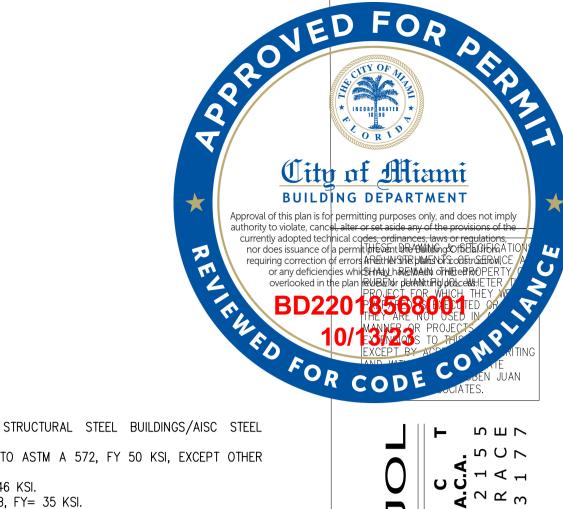


### MASONRY NOTES

- 3.-EXCEPT WHERE STACK BOND IS INDICATED ON THE ARCHITECTURAL DRAWINGS; E.G. AT MAIN ENTRY AND LOBBY, LAY UNITS IN RUNNING BOND USING TWO-CORE C.M LK THROUGHOUT THE PROJECT EXCEPT WHERE SOLID C.M.U. IS SPECIFIED IN THE CONTRACT DOCUMENTS OR REQUIRED FOR MAINTAINING A FIRE-RATED ASSEMBLY.
- 4.-PRIOR TO MASONRY CONSTRUCTION ONE SET OF THREE MASONRY PRISMS SHALL BE BUILT AND TESTED IN ACCORDANCE WITH A.S.T.M. E447. THE MATERIALS AND WORKMANSHIP USED TO BUILD THE PRISMS SHALL BE REPRESENTATIVE OF THOSE THAT WILL BE CONTAINED WITHIN THE ACTUAL PROJECT CONSTRUCTION. THE TEST RESULTS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW WITHIN 24-HOURS OF THE TEST.
  - 6.7.-THREE HOUR FIRE-RATED WALL: 5.7"
- 6.8.-FOUR HOUR FIRE-RATED WALL: 6.7" 6.4.-12" CMU.: 5.70"
- -WHERE A C.M.U. WALL IS SPECIFIED IN THE CONTRACT DOCUMENTS AS HAVING A PARTICULAR FIRE-RATING. THE MINIMUM 7.–ALL EXTERIOR STEEL SHAPES, PLATES, NUTS, BOLTS, WASHERS SHALL BE HOT–DIPPED GALVANIZED EQUIVALENT SOLID THICKNESS, AS SHOWN HEREIN ABOVE, ASSOCIATED WITH THE SPECIFIED EIRE-RATING SHALL BE 8.-SPLICING OF STEEL MEMBERS IS NOT ALLOWED, UNLESS SPECIFIED IN STRUCTURAL DRAWINGS OR APPROVED BY ENGINEER MAINTAINED FOR THE LULL HEIGHT AND LENGTH OF THE WALL WHETHER OR NOT THE NOMINAL C.M.U. THICKNESS VARIES OF RECORD. WITHIN THE WALL. 8.-ALL MORTAR SHALL CONFORM TO ASTM C270, TYPE N OR S, EXCEPT USE TYPE M MORTAR BELOW GRADE, WITH THE
- FOLLOWING CONSTITUENTS AND PROPORTIONS:
- 8.1.-PORTLAND CEMENT: ASTM C150 TYPE 1
- 8.2.-HYDRATED LIME ASTM C207, TYPE S. 8.3.—SAND: ASTM 0144
- 8.4.-WATER: POTABLE

6.3.-8" CMU.: 4.50"

- CONCRETE 8.5.-COLOR: AS PER ARCHITECT/ENGINEER. 13.-FOR FIREPROOFING OF STRUCTURAL STEEL MEMBERS SEE ARCHITECTURAL DRAWINGS 8.6.-PROPORTIONS: ONE PART PORTLAND CEMENT. 1/4 TO 1/2 PARTS HYDRATED LIME, 21/4 TO 3 PARTS SAND - ALL 14.-SEE ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL MISCELLANEOUS STRUCTURAL STEEL NOT MEASURED BY VOLUME OF CEMENT. SHOWN IN STRUCTURAL DRAWINGS.
- 8.7.-MASONRY CEMENT, BLENDED HYDRAULIC CEMENTS, ELY ASH, POZZOLANS AND GROUND GRANDULATED BLAST FURNACE SLAG SHALL NOT BE USED.
- 9.-MORTAR HEAD AND BED JOINTS SHALL BE  $\frac{3}{4}$ " FOR THE THICKNESS. REMOVE MORTAR PROTRUSIONS EXTENDING  $\frac{1}{2}$ " OR MORE INTO THE CELLS TO BE GROUTED. 9.1.-SOLID UNITS SHALL BE SET WITH LULL HEAD AND BED JOINTS.
- 9.2.-HOLLOW UNITS SHALL BE SET WITH LULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL LACE SHELLS
- 9.3.-FACE SHELL, WEBS ARE TO BE FULLY MORTARED IN ALL COURSES OF PIERS, COLUMNS, AND PILASTERS 9.4.-FULLY MORTAR IN THE STARTING COURSE AND WHERE AN ADJACENT CELL IS TO BE GROUTED.
- 10.-ALL GROUT SHALL CONFORM TO ASTM C476 WITH A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 3000 PSI AT THE END OF 28-DAYS AS DETERMINED BY ASTM C1019, A SLUMP AT POINT OP DISCHARGE OF 8 INCHES TO 10 INCHES AS DETERMINED BY ASTM C143 AND WITH THE FOLLOWING CONSTITUENTS AND PROPORTIONS: 10.1.-PORTLAND CEMENT: ASTM C150, TYPE 1. FLY ASH, POZZOLANS, AND GROUND IRON BLAST-FURNACE SLAG SHALL NOT BE USED.
- 10.2.-AGGREGATES; ASTM C404.
- 10.3.-WATER; POTABLE. 10.4.-LINE GROUT PROPORTIONS: ONE PART PORTLAND CEMENT, 24," TO 3 PARTS FINE AGGREGATE ALL MEASURED BY
- VOLUME OF CEMENT. 10.5.-COARSE GROUT PROPORTIONS; ONE PART PORTLAND CEMENT, 21/4" TO 3 PARTS FINE AGGREGATE, 1 TO 2 PARTS
- .- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE ARCHITECT'S REVIEW PRIOR TO COMMENCEMENT OF WORK. COARSE AGGREGATE (3/" MAXIMUM STONE SIZE) - ALL MEASURED BY VOLUME OF CEMENT. 2.-SHOP DRAWINGS WILL BE REVIEWED FOR COMPLIANCE WITH CONTRACT DOCUMENTS, CONSTRUCTION METHODS, DIMENSIONING 11.-ALL GROUTING PROCEDURES SHALL CONFORM TO ASTM C-476 AND NOMA "TEN SERIES #23A". ALL GROUT SHALL BE AND OTHER TRADE REQUIREMENTS BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE PROJECT ENGINEER. DRAWINGS "FINE" UNLESS OTHERWISE SPECIFIED ON PLANS OR DETAILS. WITHOUT CONTRACTOR'S APPROVAL STAMP SHALL BE RETURNED WITHOUT ENGINEER'S REVIEW. 11.1.-MINIMUM COMPRESSIVE STRENGTH SHALL BE 3000 PSI IN 28 DAYS. 3.-IN CASE OF A CONFLICT, INFORMATION PRESENTED ON STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THAT WITHIN 11.2.-AGGREGATE TO CONFORM TO ASTM C-404 FOR FINE GROUT, WITH SLUMP OP 8" TO 10".
- SHOP DRAWINGS, UNLESS SPECIFICALLY ADDRESSED BY THE ENGINEER IN WRITING. 11.3.-GROUT ALL MASONRY CONTAINING REINFORCING, ALL CELLS OF 4 HOUR RATED WALLS, AND WHERE INDICATED ON .-THROUGH THE PROCESS OF A CURSORY REVIEW, ENGINEER ASSUMES NO RESPONSIBILITY FOR DIMENSIONS, QUANTITIES, DRAWINGS ERRORS OR OMISSIONS. ANY ERRORS OR OMISSIONS IRRESPECTIVE OF ENGINEER'S COMMENTS OR DURATION OR THE REVIEW 11.4.-ALLOW MORTAR TO CURE 24 HOURS PRIOR TO GROUTING. SHALL BE THE RESPONSIBILITY OF AND MUST BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL SERVICE CHARGE EVEN IF SUCH WORK WAS DONE IN ACCORDANCE WITH THE SHOP DRAWINGS. TO TIE THE VERTICAL BAR TO THE DOWEL
- 11.5.-PROVIDE CLEANOUT OPENINGS AT THE BASE OF CELLS CONTAINING REINFORCING STEEL TO CLEAN THE CELL AND
- 11.6.-IN HIGH-LIFT GROUTING, USE ECO" (MAX.) LIFT, WITH ½", HOUR TO 1 HOUR BETWEEN LIFTS. VIBRATE EACH LIFT
- LONGITUDINAL WIRES AT 8-IKICHES ON CENTER. 12.3.-HOT-DIPPED GALVANIZED COATING AFTER FABRICATION CONFORMING TO ASTM A461, CLASS 1
- 13.-JOINT REINFORCING AND ANCHORS IN EXTERIOR WALLS SHALL CONFORM TO ASTM A153 CLASS B2, WITH A COATING THICKNESS OF 1.5 OZ/SF; CONFORM TO ASTM A641 FOR INTERIOR WALLS. EXTEND JOINT REINFORCING A MINIMUM OR 4"
- INTO TIE COLUMNS. 14.-REINFORCING SHALL BE ASTM A615, GRADE 60 KSI. EXCEPT AS OTHERWISE NOTED OR CALLED FOR ON PLANS AND DETAILS THE FOLLOWING MINIMUM REINFORCEMENT SHALL BE PROVIDED IN ALL EXTERIOR AND INTERIOR C.M.U. WALLS BOTH BEARING AND NON-BEARING
- 14.1.-VERTICALS: FOR INTERIOR CONDITION, (I) #5 BAR AT 48" ON CENTER, DOWELED 48 B.D. INTO THE FOUNDATION OR CONCRETE SLAB; FOR EXTERIOR CONDITION, (I) #5 AT 24" ON CENTER (UNO), DOWELED 48xB.D INTO THE FOUNDATION OR CONCRETE SLAB.
- SUPPORTS FOR LINTELS. SHORING, BRACING, & SUPPORTS SHALL BE IN ACCORDANCE WITH NCMA "TEK SERIES #72" ALL



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CONSULTANTS:

Adonai Design &

Construction, Inc.

2307 S. Douglas Rd

Ste. 501

Miami, FL 33145

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STRUCTURAL STEEL

- 4.-STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53, TYPE S, GRADE B, FY= 35 KSI. 5.-ANCHOR BOLTS SHALL CONFORM TO EITHER ASTM A 307 OR ASTM A 36.
- 6.-FRAMING BOLTS SHALL CONFORM TO ASTM 325. WITH HARDENED WASHERS AND HEX NUTS.
- 9.-ALL BOLTS, NUTS AND WASHERS SHALL BE NEW, RUST-FREE, CLEAN AND WELL LUBRICATED. 10.-BOLT HOLES THROUGH STEEL MEMBERS SHALL BE SHOP-DRILLED, CUT OR PUNCHED. DO NOT USE TORCH OR FLAME TO CUT OR ENLARGE HOLES.
- 11.-ALL STRUCTURAL STEEL TUBE OR PIPE COLUMNS SHALL BE FILLED WITH 3000 PSI, CONCRETE GROUT, PROVIDE "" DIAMETER WEEP HOLES EACH SIDE "3" FROM TOP AND BOTTOM OF COLUMN. 12.-DO NOT PAINT PARTS OF STEEL MEMBERS TO BE EMBEDDED IN CONCRETE AND SURFACES TO BE IN CONTACT WITH
- 15.-FOR PAINTING OF NON-GALVANIZED STRUCTURAL STEEL SEE STRUCTURAL STEEL PROJECT SPECIFICATIONS 16.-WELDING SHALL BE DONE WITH E-70 ELECTRODES, UNLESS OTHERWISE NOTED, CONFORMING TO AWS D1.1. (WELDING OF GRADE 60 REINFORCEMENT IS NOT PERMITTED)
- 17.-ALL SHOP AND FIELD WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 STRUCTURAL WELDING CODE, LATEST EDITION. ALL WELDERS SHALL BE AWS-CERTIFIED. SUBMIT WELDER CERTIFICATES TO ARCHITECT/ENGINEER FOR APPROVAL BEFORE ANY SHOP OR FIELD-WELDING IS STARTED.
- 18.-HEADED SHEAR STUDS SHALL BE NELSON ANCHORS WITH FLUXED ENDS OR APPROVED. DEFORMED BAR ANCHORS (O.B.A.) SHALL BE NELSON, TYPE D2L, OR APPROVED. STUDS AND D.B.A. SHALL BE AUTOMATICALLY END-WELDED WITH
- THE MANUFACTURER'S STANDARD EQUIPMENT IN ACCORDANCE WITH THEIR RECOMMENDATIONS 19.-EXPANSION BOLTS SHALL BE HILTI KWIK BOLT 3 OR APPROVED WITH EQUIVALENT ICC ALLOWABLE TENSION AND SHEAR VALUES. EXPANSION BOLTS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.
- 20.-THE STEEL STRUCTURE IS DESIGNED AS A WHOLE WITH THE FLOOR AND ROOF DIAPHRAGM ACTION BRACING THE FRAMES AGAINST GRAVITY AND LATERAL AND VERTICAL WIND FORCES. PROVIDE ALL TEMPORY BRACING AS REQUIRED IN ORDER SHOP AND ATH ATH ATH ATH AND STADE WILD BHA ATH AND SCOMPLETE.
- 5.-THE ENGINEER RESERVES TEN WORKING DAYS FOR SHOP DRAWING REVIEW TIME (FROM THE DATE OF RECEIPT). IN CASES WHERE THE VOLUME OF SUBMITTED SHOP DRAWINGS IS VIEWED AS EXCESSIVE, THE ENGINEER RESERVES THE RIGHT TO NOTIFY THE OWNER, ARCHITECT, AND THE CONTRACTOR OR THE ADDITIONAL TIME REQUIRED TO PERFORM A QUALITY REVIEW, ALL STRUCTURAL SHOP DRAWINGS AND PRODUCT SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY IN FULL SIZE PDF FORMAT. HARD COPY SUBMITTAL WILL NOT BE ACCEPTED.
- 6.-REPRODUCTION OR ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RESUBMITTED AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED 7.-ON FIRST SUBMITTAL, CLEARLY FLAG AND CLOUD ALL DIFFERENCES FROM THE CONTRACT DOCUMENTS ON RESUBMITTED, FLAG AND CLOUD ALL CHANGES AND ADDITIONS TO PREVIOUS SUBMITTAL; ONLY CLOUDED ITEMS WILL BE REVIEWED FOR RESUBMITTED SHOP DRAWINGS.
- 8.-THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DRAWINGS AND CALCULATIONS FOR ALL OF THE FOLLOWING ASSEMBLIES. THE DESIGN OF THESE ASSEMBLIES IS THE RESPONSIBILITY OF THE CONTRACTOR'S DELEGATED/SPECIALTY ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION ALL SUBMITTALS SHALL BEAR THIS ENGINEER'S SEAL & SIGNATURE. REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT PARAMETERS AS INDICATED ON THE DRAWINGS AND THE GENERAL NOTES
- 8.1.-NON-LOAD BEARING STUD WALL AND CURTAIN WALL SYSTEMS AND RELATED CONNECTIONS: DESIGN SHALL TAKE INTO ACCOUNT ALL VERTICAL AND LATERAL LOADS REQUIRED BY APPLICABLE BUILDING CODES. REFER TO SPECIFICATION FOR DETAILED REQUIREMENTS.
- 8.2.-PROVIDE COMPLETE SHORING AND RE-SHORING DRAWINGS PREPARED BY OR UNDER THE DIRECT SUPERVISION OR A DELEGATED / SPECIALTY ENGINEER AND CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS AND THE BUILDING CODE.
- 9.-DELEGATED / SPECIALTY ENGINEER SUBMITTALS: SUBMITTALS SHALL BE PREPARED IN ACCORDANCE WITH THE BUILDING CODE ENGINEERS NAME, LICENSE NUMBER AND BUSINESS ADDRESS SHALL BE LEGIBLY INDICATED ON ALL SIGNED AND SEALED DOCUMENTS. SPECIALTY ENGINEER SHALL BE SOLELY RESPONSIBLE FOR DIRECT CONTACT WITH THE BUILDING DEPARTMENT WHILE OBTAINING BUILDING DEPARTMENT'S APPROVAL FOR HIS/HER PORTION OR WORK (INCLUDING PROVIDING RESPONSES TO REVIEW COMMENTS, SUPPLYING ADDITIONAL CALCULATIONS AND PLANS, ATTENDING MEETINGS, ETC). DELEGATED/SPECIALTY ENGINEER IS DEFINED AS ONE WHO SPECIALIZES IN AND UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS INCLUDED IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT AND IS AN
- EMPLOYEE OR OFFICER OR, OR CONSULTANT TO, THE CONTRACTOR OR FABRICATOR RESPONSIBLE FOR THE SUBMITTAL. 10.-IN ADDITION TO THE ABOVE, THE STRUCTURAL ENGINEER'S REVIEW OF DELEGATED/SPECIALTY ENGINEER SUBMITTAL IS LIMITED TO VERIFYING THAT THE SPECIFIED STRUCTURAL SUBMITTAL HAS BEEN FURNISHED, SIGNED AND SEALED BY THE DELEGATED /SPECIALTY ENGINEER AND THAT THE DELEGATED/SPECIALTY ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND USED THE SPECIFIED STRUCTURAL CRITERIA NO DETAILED CHECK OF CALCULATIONS WILL BE MADE. THE DELEGATED/SPECIALTY ENGINEER IS SOLELY RESPONSIBLE FOR HIS/HER DESIGN, INCLUDING BUT NOT LIMITED TO THE