

STRUCTURAL NOTES, SPECIFICATIONS AND GENERAL REQUIREMENTS

DESIGN CRITERIA

D-1	CODES: - FLORIDA BUILDING CODE 7th EDITION 2020 - ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"
D-2	DESIGN LIVE LOADS: ROOF: 20 PSF FLOOR: 50 PSF STAIRS: 100 PSF
	DESIGN DEAD LOADS: ROOF: 30 PSF FLOOR DECK: 70 PSF CONCRETE: 150 PCF 8" MASONRY WALLS: 55 PSF

D-3 DESIGN WIND SPEED: $V_{ult} = 140$ MPH (3 SECOND GUST) PER FIGURE 1609B
 $V_{std} = 108$ MPH PER SECTION 1609.3.1

RISK CATEGORY II (PER TABLE 1604.5)
SURFACE ROUGHNESS B PER SECTION 1609.4
WIND EXPOSURE CATEGORY: B PER SECTION 1609.4
MEAN ROOF HEIGHT: 31 FT
ENCLOSED BUILDING INTERNAL PRESSURE COEFFICIENT
 $Gcpi = +/- 0.18$

ASSUMPTIONS:
A. BUILDING IS ASSUMED TO BE ENCLOSED AS DEFINED BY SECTION 1609.2 FBC

THE BUILDING SATISFIES THE REQUIREMENTS OF SECTION 1609.6 "ALTERNATE ALL-HEIGHTS METHOD" AND ALL STRUCTURAL MEMBERS, CLADDING, FASTENERS, AND SYSTEMS PROVIDING THE STRUCTURAL INTEGRITY OF THE BUILDING HAVE BEEN DESIGNED FOR LOADS FROM TABLES LISTED IN ASCE 7-16 CHAPTER 27 - DIRECTIONAL PROCEDURE OF ASCE 7.

C. ALL COMPONENTS AND CLADDING SUBJECT TO WIND LOADINGS, I.E. DOORS, WINDOWS, JAMBS, ROOFING, ETC. SHALL BE DESIGNED AND FASTENED TO RESIST DESIGN WIND PRESSURES FOR COMPONENTS AND CLADDING, AS SHOWN ON PLAN.

D. ALL PRE-MANUFACTURED MAIN WIND FORCE RESISTING COMPONENTS, I.E. TRUSSES SHALL BE DESIGNED TO RESIST MAIN WIND FORCE RESISTING DESIGN FORCES, AS SPECIFIED ON PLAN AND SHALL BE IN AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

E. ALL GLAZING IS HAVE EITHER IMPACT RESISTANT GLAZING OR BE PROTECTED WITH AN IMPACT RESISTANT COVERING.
1. GLAZED OPENINGS LOCATED WITHIN 30 FT OF GRADE SHALL MEET THE REQUIREMENTS OF THE LARGE MISSILE TEST OF ASTM E 1998.
2. GLAZED OPENING LOCATED MORE THAN 30 FT ABOVE GRADE SHALL MEET THE REQUIREMENTS OF THE SMALL IMPACT TEST ASTM E 1996.

F. OWNER OR CONTRACTOR SHALL OBTAIN NECESSARY INSTALLATION SPECIFICATIONS AND INSPECTIONS REQUIRED TO COMPLY WITH MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF COMPONENTS AND CLADDING FOR HURRICANE PRONE REGIONS.

D-4 SEISMIC: ZONE 0

D-5 ASSUMED ALLOWABLE BEARING CAPACITY OF 2000 PSF. IF SITE CONDITIONS DO NOT ALLOW FOR ASSUMED ALLOWABLE BEARING CAPACITY CONTACT ENGINEER.

GENERAL NOTES

G-1 REVIEW ALL PROJECT DOCUMENTS PRIOR TO FABRICATION AND START OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO ARCHITECT OR STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH WORK.

G-2 THE MASONRY WALLS ARE NOT DESIGNED TO WITHSTAND TEMPORARY CONSTRUCTION LOADS. IT IS THE CONTRACTOR'S RESPONSIBILITY AT ALL TIMES TO MAINTAIN WALL STABILITY DURING THE CONSTRUCTION PHASE OF THIS PROJECT.

G-3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE DURING CONSTRUCTION.

G-4 NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN SIZE OR STRENGTH WITHOUT PRIOR APPROVAL IN WRITING FROM THE STRUCTURAL ENGINEER.

G-5 COORDINATE STRUCTURAL AND OTHER DRAWINGS THAT ARE PART OF THE CONTRACT DOCUMENTS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS WHICH MAY AFFECT THE STRUCTURAL DRAWINGS (I.E. MECHANICAL, ELECTRICAL, PLUMBING, DUCTWORK, ETC.)

G-6 ALL DETAILS AND SECTIONS ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUCTED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT EXCEPT WHERE A SEPARATE DETAIL IS SHOWN.

G-7 THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO PROVIDE ALL NECESSARY DETAILS TO CONSTRUCT A COMPLETE STRUCTURE. WHEN SPECIFIC INFORMATION IS MISSING OR IS IN CONFLICT, THE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.

G-8 THE ENGINEER SHALL NOT BE RESPONSIBLE FOR LAYOUT, DIMENSIONAL ERRORS OR DISCREPANCIES RESULTING FROM THE REPRODUCTION AND USE OF CONTRACT DRAWINGS FOR ERECTION AND SHOP DRAWINGS. USE OF CONTRACT DRAWINGS REPRODUCED IN WHOLE OR ANY PART IN SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR NOR SUBCONTRACTORS FROM THEIR RESPONSIBILITY TO ACCURATELY LAYOUT, COORDINATE, DETAIL, FABRICATE AND INSTALL A COMPLETE STRUCTURE.

G-9 REVIEW ALL SHOP DRAWINGS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND FOR COMPLETENESS AND ANSWER ALL CONTRACTOR RELATED QUESTIONS. STAMP AND INITIAL ALL SHEETS PRIOR TO SUBMITTING SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR REVIEW. NON-COMPLIANCE WITH THIS REQUIREMENT WILL RESULT IN REJECTION OF SUBMITTAL.

G-10 PRIOR TO ANY WORK, CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS TO VERIFY THE WORK CAN BE DONE AS INTENDED BY THESE DRAWINGS TO PRODUCE A FIRST CLASS PIECE OF WORK. CONTRACTOR SHALL CUT OPEN WALLS AND CEILINGS AS DEEMED NECESSARY TO VERIFY STRUCTURE IS AS ASSUMED BY THESE DRAWINGS. CONTACT M.K. STRUCTURAL WITH ANY DISCREPANCIES OF DRAWINGS OR ASSUMED CONDITIONS PRIOR TO ANY WORK.

SHALLOW FOUNDATIONS

SF-1 SOIL TO BE STRIPPED, COMPACTED AND TESTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOILS ENGINEER AND PROJECT SPECIFICATIONS.

SF-2 CENTER ALL FOOTINGS UNDER THEIR RESPECTIVE COLUMNS OR WALLS UNLESS OTHERWISE SHOWN ON PLANS. MAXIMUM MISPLACEMENT OR ECCENTRICITY - 2". TOLERANCE FOR MISLOCATION OF COLUMN DOWELS OR ANCHOR BOLTS TO BE PER ACI OR AISI STANDARDS.

SF-3 HORIZONTAL JOINTS IN FOOTINGS WILL NOT BE PERMITTED.

SF-4 COORDINATE PLUMBING LINES WITH FOOTING LOCATIONS FOR INTERFERENCE. INDIVIDUAL FOOTINGS CAN BE LOWERED WITH THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER. CONTINUOUS WALL FOOTINGS SHOULD BE STEPPED AS DETAILED ON THE DRAWINGS.

SF-5 EXCAVATING UNDER OR NEAR IN-PLACE FOOTINGS/FOUNDATIONS WHICH DISTURBS THE COMPACTED SOIL BENEATH THE FOOTINGS/FOUNDATIONS WILL NOT BE PERMITTED.

SF-6 REINFORCING SHALL BE SUPPORTED ON PRECUTS CONCRETE PADS. DOWELS FOR COLUMNS AND FILLED CELLS SHALL BE SECURED IN PLACE PRIOR TO POURING CONCRETE. USE TEMPLATES FOR SETTING COLUMN DOWELS AND ANCHOR BOLTS.

DRILL-IN BOLTS, HEADED STUDS, SCREWS AND DOWELS

DI-1 WEDGE BOLTS SHALL BE ITW RAMSET/REDHEAD BOLTS OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. DO NOT CUT EXISTING REINFORCING TO INSTALL.

DI-2 MASONRY AND CONCRETE SCREWS SHALL BE MANUFACTURED BY RAMSET/REDHEAD "TAPCONS" OR APPROVED EQUAL INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

DI-3 ANCHORING ADHESIVE SHALL BE A TWO-COMPONENT SOLID EPOXY-BASED DISPENSED THROUGH A STATIC-MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD SIDE-BY-SIDE CARTRIDGE AND EPOXY SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM C-881 SPECIFICATION FOR TYPE I, II, IV AND V, GRADE 3, CLASS B AND C AND MUST DEVELOP A MINIMUM 10,500 PSI COMPRESSIVE YIELD STRENGTH AFTER 7-DAY CURE.

DI-4 GROUTED ANCHORS SHALL BE SIMPSON EPOXY-TIE ADHESIVE SYSTEM OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

DI-5 DRILL-IN REBAR DOWELS AND THREADED ROD ANCHORS (A307) SHALL BE SET USING A TWO-PART EPOXY AS DESCRIBED ABOVE.

DI-6 HEADED STUDS (H.S.) SHALL BE "NELSON" OR APPROVED EQUAL. INSTALL USING MANUFACTURER'S SPECIFICATIONS AND IN ACCORDANCE WITH AWS D1.1. ATTACHMENT OF STUDS SHALL BE SUFFICIENT TO DEVELOP THE FULL CAPACITY OF EACH INDIVIDUAL STUD (PER AWS D1.1).

DI-7 EXPANSION ANCHORS MAY BE SUBSTITUTED FOR ANCHOR BOLTS ONLY WITH THE APPROVAL OF THE ENGINEER OF RECORD IN WRITING. EXPANSION ANCHORS USED SHALL BE HILTI, SIMPSON, RAWL, OR APPROVED EQUAL.

STEEL JOISTS

SJ-1 WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR OPEN-WEB STEEL JOISTS AND LONG SPAN STEEL JOISTS, OF THE STEEL JOIST INSTITUTE, LATEST REVISION.

SJ-2 HANGERS FOR SUPPORT OF EQUIPMENT, OR MEMBERS SUPPORTING SUCH HANGERS, SHALL BE LOCATED AT PANEL POINTS OF JOISTS.

SJ-3 JOISTS SHALL BE DESIGNED TO SUPPORT THE LOADS LISTED, THOSE INDICATED ON PLANS AND AN ADDITIONAL CONCENTRATED DEAD LOAD NOT TO EXCEED 500# TO BE PLACED AT ANY PANEL POINT ALONG THE LENGTH OF THE JOIST. DEAD LOADS SHALL BE IN ACCORDANCE WITH THE MATERIALS SHOWN WITHIN THE CONTRACT DOCUMENTS AND SHALL BE NOTED ON THE SHOP DWG SUBMITTAL BY THE JOIST MANUF.

SJ-4 JOIST BOTTOM CHORDS SHALL BE DOUBLE ANGLES.

SJ-5 ROOF JOISTS AND BRIDGING SHALL BE DESIGNED TO RESIST A NET UNFACTORED UPLIFT PRESSURE AS SHOWN ON PLANS.

SJ-6 JOIST SIZES SHOWN ON PLANS SHALL BE THE MINIMUM ACCEPTABLE.

SJ-7 EXTEND AND CONNECT ALL BOTTOM CHORDS AFTER THE DEAD LOAD IS APPLIED AT LOCATIONS ON PLANS.

SJ-8 JOIST SHOP DWGS SHALL BE SUBMITTED WITH CALCULATIONS SIGNED/SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SHOP DWGS SUBMITTED NOT SIGNED/SEALED WILL BE RETURNED WITHOUT REVIEW.

SJ-9 JOIST MANUFACTURER SHALL COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL LOADS DUE TO EQUIPMENT TO BE HUNG FROM ROOF STRUCTURE. ALL ADDL LOADS SHALL BE CLEARLY INDICATED ON SHOP DWG SUBMITTALS.

SJ-10 JOIST TO BE DESIGNED TO ALLOW 1" MAXIMUM DIFFERENCE IN CAMBER BETWEEN ADJACENT PARALLEL JOISTS.

SJ-11 ALL STEEL JOISTS GREATER THAN FORTY FEET IN LENGTH REQUIRE A ROW OF BOLTED BRIDGING TO BE IN PLACE PRIOR TO SLACKENING OF HOIST LINES.

METAL DECKING

MD-1 ROOF METAL DECK AND FLOOR METAL DECK SHALL BE 1.5 TYPE "B" (G-60) OR APPROVED EQUAL.

MD-2 METAL DECK MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE AND ALL DESIGN SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS.

MD-3 SEE FASTENER REQUIREMENTS ON SHEET S1.0 FOR SCREWING AND SIDE LAP REQUIREMENTS.

MD-4 DECK SUBMITTALS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER AND SHALL INCLUDE THE INTENDED FASTENING PATTERNS AND SHALL INDICATE THE CAPACITY UNDER COMBINED STRESSES DUE TO UPLIFT & DIAPHRAGM ACTION.

MD-5 2nd FLOOR METAL DECK SHALL BE 1.5 TYPE "VL" GALVANIZED COMPOSITE FLOOR DECK (G-60) OR APPROVED EQUAL. SEE FLOOR DECK FASTENING PATTERN

REINFORCED CONCRETE

RC-1 ALL CONCRETE DESIGN AND PLACEMENT SHALL BE IN STRICT ACCORDANCE WITH THE ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," ACI 318.

RC-2 PROVIDE (4) TEST CYLINDERS FOR EACH 50 C.Y. OF CONCRETE PLACED OR FRACTION THEREOF.

RC-3 STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS AND SHALL DEVELOP THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:

SPREAD AND WALL FOOTINGS	3000 PSI
COLUMNS AND WALLS	3000 PSI
BEAMS AND SLABS	3000 PSI
TILT UP WALLS	3000 PSI
ALL OTHER CONCRETE	3000 PSI

RC-4 USE REGULAR WEIGHT CONCRETE.

RC-5 STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301 AND HAVE THE FOLLOWING SLUMPS, WATER CEMENT RATIO & AGGREGATE REQUIREMENTS:

LOCATION	SLUMP	W/C RATIO	MAX. AGGREGATE
FOOTINGS	4"+1"	0.55	ASTM #57
SLABS ON GRADE	4"+1"	0.52	ASTM #57
COLUMNS	5"+1"	0.48	ASTM #57
BEAMS AND SLABS	5"+1"	0.48	ASTM #57
TILT UP WALLS	5"+1"	0.48	ASTM #57
TIE BMS & TIE COL'S	5"+1"	0.48	ASTM #8 PEAROCK

RC-6 MAXIMUM WATER TO CEMENT RATIO WHEN NO BACK-UP DATA IS AVAILABLE:
a) 3000 PSI, 28 DAY COMPRESSIVE STRENGTH; W/C RATIO 0.58 MAXIMUM (NON-AIR ENTRAINED), 0.47 MAXIMUM (AIR ENTRAINED)

RC-7 FLYASH, WHEN USED, SHALL BE LIMITED TO 20% OF THE CEMENTITIOUS MATERIAL. DO NOT USE FOR EXPOSED SLABS

RC-8 SUBMIT COPIES OF CONCRETE MIX DESIGN TO ENGINEER FOR APPROVAL INFORMATION SHALL INCLUDE CEMENT CONTENT, WATER/CEMENT RATIO, SLUMP, ENTRAINED AIR, ADMIXTURE CONTENT AND QUANTITY.

RC-9 ALL REINFORCEMENT SHALL BE FASTENED AND SECURED TOGETHER TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR THE PLACING OF CONCRETE.

RC-10 THE USE OF JITTERBUGS TO CONSOLIDATE CONCRETE WILL NOT BE PERMITTED.

RC-11 ALL PUMPED CONCRETE WITH #57 AGGREGATE IS TO CONTAIN A HIGH RANGE WATER REDUCING AGENT. MINIMUM SIZE OF DISCHARGE TO BE 4" I.D.

RC-12 2" I.D. DISCHARGE MAY BE USED WITH #6 AGGREGATE. USE PLASTICIZER ADMIXTURE IF NECESSARY TO INCREASE SLUMPS BEYOND THAT NOTED ABOVE.

RC-14 ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND INSTALLED IN ACCORDANCE WITH ACI 318 AND ACI DETAILING MANUAL, ACI-315 LATEST EDITION.

RC-15 REINFORCEMENT WITH RUST, MILL SCALE OR A COMBINATION OF BOTH SHALL BE CONSIDERED SATISFACTORY, PROVIDED THE MINIMUM DIMENSIONS (INCLUDING HEIGHT OF DEFORMATION) AND WEIGHT OF A HAND-WIRE-BRUSHED TEST SPECIMEN ARE NOT LESS THAN APPLICABLE SPECIFICATION REQUIREMENTS IN THE ASTM STANDARDS REFERENCE IN ACI 318. REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60, LATEST REVISION, WITH SUPPLEMENT (S1), MARKED "S".

RC-16 ALL SLABS ON GRADE SHALL REINFORCED WITH:
6"x6"-10"10 WELDED WIRE FABRIC LOCATED IN THE MIDDLE TO UPPER PORTION OF THE SLAB. WELDED WIRE FABRIC SHALL BE SUPPORTED WITH APPROVED MATERIALS OR SUPPORTS NOT EXCEEDING 3 FT OR IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

RC-17 WELDED WIRE FABRIC TO COMPLY WITH ASTM A185 SHEETS ONLY, NO ROLLS. INSTALL ON BRICKS OR BOLSTERS, AT MID-DEPTH OF THE SLAB.

RC-18 LAP CONTINUOUS REINF. AS NOTED IN LAP SPLICE SCHEDULE OR MIN 40 BAR DIA. LAP CONT. BOTTOM STEEL OVER SUPPORT AND CONT. TOP STEEL AT MIDSPAN UNLESS OTHERWISE SPECIFIED.

RC-19 TERMINATE ALL DISCONTINUOUS TOP BARS WITH STANDARD 90 DEGREE HOOK (PLACED VERTICALLY) UNLESS NOTED OTHERWISE.

RC-20 PROVIDE CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS, UNLESS OTHERWISE NOTED: LOCATION AND CONDITION:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: ALL BARS 3"

B. CONCRETE EXPOSED TO EARTH OR WEATHER #6 OR GREATER 2" #5 OR SMALLER 1-1/2"

C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND #11 OR SMALLER 3/4" #14-#18 1-1/2"

D. SLABS ON GRADE: 2. BEAMS AND COLUMNS: (PRIMARY REINFORCEMENT, TIES, STIRRUPS, AND SPIRALS) ALL BARS 1-1/2" SINGLE MAT, TOP 1/2 TO 1/3 OF THICKNESS

RC-21 SLEEVE ALL PENETRATIONS THROUGH BEAMS AND SLABS INDIVIDUALLY. CORE DRILLING WILL NOT BE PERMITTED. SUBMIT LOCATION AND SIZE OF SLEEVES THROUGH BEAMS TO ENGINEER PRIOR TO CASTING CONCRETE. WHERE PIPING PENETRATES CONCRETE BEAMS, PLACE TWO #3 STIRRUPS @ 3" O.C. EACH SIDE OF PIPE, UNLESS OTHERWISE NOTED.

RC-22 NO REINFORCING BARS SHALL BE CUT TO ACCOMMODATE THE INSTALLATION OF ANCHORS, EMBEDS OR OTHER ITEMS.

RC-23 USE THE STRUCTURAL DRAWINGS INCLUDING REVISIONS AND APPENDA IN CONJUNCTION WITH REVIEWED SHOP DRAWINGS FOR PLACEMENT OF REINFORCING.

RC-24 AT CHANGES IN DIRECTION OF CONCRETE WALLS, BEAMS & STRIP FOOTINGS, PROVIDE CORNER BARS OF SAME SIZE AND QUANTITY UNLESS NOTED OTHERWISE AS HORIZONTAL STEEL.

RC-25 ALL EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE PRIOR TO CONCRETE PLACEMENT.

RC-26 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CONSTRUCTION OF ALL FORMWORK IN ACCORDANCE WITH ACI 347.

RC-27 PLACE CONCRETE PER ACI 304. USE INTERNAL MECHANICAL VIBRATION FOR ALL CONCRETE. LIMIT MAXIMUM FREE FALL DROP OF CONCRETE TO 6'-0" FOR #57 AGGREGATE AND 8'-0" FOR #8 AGGREGATE. ALL PRECAUTIONS SHOULD BE TAKEN TO AVOID SEGREGATION OF CONCRETE DURING PLACEMENT.

RC-28 FOOTING SIZES SHOWN ARE FOR FOOTINGS CONSTRUCTED WITH SIDE FORMS. IF SOIL MATERIAL CAN HOLD A VERTICAL SHAPE, IT CAN BE USED AS AN EARTH FORM PROVIDED FOOTING WIDTH IS INCREASED 1" IN EACH HORIZONTAL DIRECTION. ALL SLOUGHED MATERIAL SHALL BE REMOVED FROM EXCAVATION BEFORE AND DURING PLACEMENT OF CONCRETE.

RC-29 PLACEMENT OF CONDUIT AND PIPES IN CONCRETE SHALL CONFORM TO ACI 318, SECTION 6.3.

REINFORCED MASONRY

M-1 MASONRY CONSTRUCTION SHALL CONFORM TO ACI "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI/ASCE 530-08) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI/ASCE 530.1-08), ASTM C-476, ASTM C-1019 AND NCMAT TEK 107, EXCEPT AS AMENDED BELOW.

M-2 CONTRACTOR SHALL OBTAIN COPY OF MASONRY CODE AND SPECIFICATIONS FOR REFERENCE AT THE JOBSITE.

M-3 STRUCTURE HAS BEEN DESIGNED AS A BEARING WALL STRUCTURE. ALL MASONRY UNITS SHALL BE LAID PRIOR TO CONCRETE PLACEMENT OF COLUMNS, BEAMS AND SLABS FOR THE SAME STORY.

M-4 USE TYPE "M" MORTAR FOR ABOVE GRADE APPLICATIONS AND TYPE "S" MORTAR FOR BELOW GRADE APPLICATIONS. MORTAR SHALL CONFORM TO ASTM C270 (PROPORTION OR PROPERTY SPECIFICATION)

M-5 MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT, TYPE II. MINIMUM NET COMPRESSIVE UNIT STRENGTH OF 2000 PSI TO PROVIDE NET AREA COMPRESSIVE STRENGTH OF MASONRY (Fm) OF 1500 PSI.

M-6 ALL COLUMNS AND BEAMS INTEGRATED IN CMU WALLS ARE 8" AND 12" NOMINAL AND 7.58" AND 11.58" ACTUAL DIMENSIONS.

M-7 COARSE GROUT SHALL CONFORM TO ASTM C476, LATEST REVISION:
a) 2500 PSI AT 28 DAYS
b) 1/4" MAXIMUM AGGREGATE SIZE
c) 8" TO 11" SLUMP
d) PROVIDE CLEANOUTS FOR LIFTS GREATER THAN 5'-0" IN HEIGHT. PUMP 4'-0" MAXIMUM GROUT LIFTS. FOR HIGH LIFT (12'-0" MAX), GROUTING WITH 30 MINUTE DELAY BETWEEN LIFTS.

M-8 A REINFORCED CONCRETE TIE BEAM OR MASONRY TIE BEAM SHALL BE PROVIDED IN ALL WALLS SHOWN ON THE STRUCTURAL DRAWINGS AT EACH FLOOR AND THE ROOF. USE GALVANIZED MESH TYPE CELL CAPS. PROVIDE CORNER BARS AT ALL BEAM CORNERS TO MATCH HORIZONTAL BARS.

M-9 UNLESS NOTED OTHERWISE, THE BEAMS SHALL BE:
a) 8"x24" CAST-IN-PLACE CONCRETE TIE BEAM REINFORCED W/ (2) #5 TOP AND BOTTOM W/ #3 STIRRUPS @ 16" O.C.

M-10 VERTICAL REINFORCING FOR FILLED CELLS SHALL CONFORM TO ASTM 615.

M-11 PROVIDE VERTICAL REINFORCEMENT IN GROUT FILLED CELLS:
A. AS SHOWN ON THE DRAWINGS
B. MAXIMUM 48" O.C.
C. AT ALL CORNERS AND INTERSECTIONS
D. AT ANCHORAGE OF CONNECTIONS OR BEARING OF BEAMS

M-12 REINFORCING BARS SHALL BE LAPPED 48 BAR DIAMETERS WHERE SPLICED AND SHALL BE WIRED TOGETHER. LAP VERTICAL REINFORCEMENT ABOVE GRADE BEAM AND ABOVE EACH FLOOR UNLESS NOTED OTHERWISE.

M-13 REINFORCE WALLS WITH LADDER-TYPE REINFORCEMENT EQUAL TO STANDARD DUR-O-WAL IN BED JOISTS 9-GA OR APPROVED EQUAL AT 16" O.C. MEASURED VERTICALLY U.O.N. PLACE PER MFR. RECOMMENDATIONS. EXTEND INTO COLUMNS, OR PROVIDE DOVETAIL ANCHORS TO SECURE MASONRY TO COLUMNS. PROVIDE PREFABRICATED "TEE" OR CORNER SECTIONS AT WALL INTERSECTIONS.

M-14 PROVIDE FULL MORTAR BEDDING AROUND ALL FILLED CELLS WITH VERTICAL REINFORCING.

M-15 PLACE ALL MASONRY IN RUNNING BOND WITH 3/8" MORTAR JOINTS.

M-16 AT INTERSECTING WALLS FIFTY PERCENT OF THE MASONRY SHALL BE LAID IN OVERLAPPING MASONRY BONDING PATTERN

M-17 REFER TO TYPICAL WALL SECTIONS FOR MAXIMUM CONSTRUCTION HEIGHT OF MASONRY WALLS. PROVIDE CLEAN-OUT HOLES AT BASE OF FILLED CELL WHEN THE CONCRETE POUR EXCEEDS 5 FEET IN HEIGHT.

M-18 GROUT FOR FILLED CELLS SHALL BE VIBRATED DURING PLACEMENT USING A "PENCIL" TYPE VIBRATOR.

M-19 VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT THE TOP AND BOTTOM OF BAR AND AT 8'-0" OC MAXIMUM WITH A MINIMUM CLEARANCE OF 1/2" FROM MASONRY. THE CLEAR DISTANCE BETWEEN BARS SHALL NOT BE LESS THAN ONE BAR DIAMETER OR 1". CENTER BARS IN WALLS UNLESS NOTED OTHERWISE.

M-20 ALL REINFORCED CELLS ARE TO BE CLEAN AND FREE OF ANY FOREIGN MATERIAL OR DEBRIS.

M-21 TESTING OF GROUT TO COMPLY WITH ASTM C-1019.

M-22 OPENINGS SHALL HAVE BLOCK CELL AT EACH JAMB FILLED WITH GROUT AND REINFORCED.

STRUCTURAL STEEL

S-1 FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION," FIFTEENTH EDITION AND THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS," LATEST EDITION.

S-2 MATERIAL SHALL CONFORM TO THE FOLLOWING, EXCEPT AS NOTED:
STRUCTURAL STEEL, GRADE A992 (Fy = 50 ksi)
ANGLES AND PLATES: ASTM A36 (Fy = 36 ksi)
ANCHOR BOLTS AND MACHINE BOLTS: ASTM A307 OR A36
STRUCTURAL STEEL TUBING: ASTM A500, GRADE B, TYPE E OR S
HEADED STUD ANCHORS: ASTM A108 GRADE S 1010 THRU 1020

S-3 UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE 5/8" DIAMETER A-325 AND SHALL BE BEARING TYPE CONNECTIONS.

S-4 ALL SHOP AND FIELD WELDING SHALL BE DONE BY CURRENTLY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE," LATEST EDITION.

S-5 USE E70XX ELECTRODES FOR ALL WELDING UNLESS NOTED OTHERWISE. GRIND SMOOTH ALL EXPOSED WELDS.

S-6 DO NOT WELD TO EMBEDS UNTIL CONCRETE HAS CURED AT LEAST 72 HOURS. USE APPROPRIATE WELDING PROCESSES TO LIMIT HEAT BUILDUP IN EMBED TO AVOID PLATE EXPANSION AND CRACKING OF CONCRETE.

S-7 HEADED STUD ANCHORS SHALL BE A307 AS MANUFACTURED BY NELSON STUD OR APPROVED EQUIVALENT. STUD WELDING SHALL CONFORM TO AWS D1.1 "STRUCTURAL WELDING CODE."

S-8 SURFACE PREPARATION AND SHOP PAINTING OF ALL STRUCTURAL STEEL MEMBERS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE "CODE OF STANDARD PRACTICE" OF AISC.

S-9 SHOP PAINT-METAL ALKYLID-OIL PRIMER, ANY OF THE FOLLOWING. SEE ARCHITECT FOR PREFERRED COLOR. MANUFACTURER DESIGNATION PORTER NO. 296 MOBILE NO. 13F812 TNEIMIC NO. 1009 AMERON NO. 5102 AMERODAT.

S-10 SHOP PAINT ALL STEEL EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE. FIELD WELDED, OR COVERED WITH SPRAY ON FIRE PROOFING, APPLY PAINT IN ACCORDANCE WITH SSPC-PAL SHOP PAINT AND MAINTENANCE PAINTING. APPLY PAINT IN SUFFICIENT VOLUME OR COATS TO PROVIDE A MINIMUM DRY FILM THICKNESS OF AT LEAST 3 MILS BUT NOT MORE THAN 5 MILS.

S-11 GROUT UNDER BEARING PLATES SHALL BE NON-METALLIC, NON-SHRINK TYPE WITH A COMPRESSIVE STRENGTH OF AT LEAST 6000 PSI IN 7 DAYS. VIBROPRUF #11, BY LAMBERT CORPORATION, OR ACCEPTED SUBSTITUTE.

S-12 ALL STEEL EXPOSED TO EXTERIOR CONDITIONS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

STEEL STAIRS

PE-1 ENGINEERED STAIR SYSTEM AND ALL STAIR SYSTEM CONNECTIONS TO THIS STRUCTURE SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA. SUBMIT SHOP DRAWINGS AND CALCULATIONS BEARING THE EMBOSSED SEAL AND SIGNATURE OF THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. THE CONFIGURATION OF THE STAIR SYSTEM SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. STAIR SYSTEM AND ALL CONNECTIONS SHALL BE DESIGNED FOR ALL APPLICABLE LOADS AS INDICATED ON THE PLANS AND IN THE BUILDING CODE. THE LOADS SHALL BE CLEARLY INDICATED ON ALL SHOP DRAWINGS. SHOP DRAWINGS SHALL SHOW AND SPECIFY ALL CONNECTIONS UTILIZED WITHIN THE STAIR SYSTEM AS WELL AS CONNECTIONS TO AND LOADS IMPOSED UPON THE STRUCTURAL SYSTEM SHOWN ON THESE PLANS.

LIGHT GAUGE METAL STUDS

LG-1 LIGHT GAGE METAL STUDS AND THEIR CONNECTIONS TO EACH OTHER SHALL BE DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SIGNED AND SEALED EMBOSSED SHOP DRAWINGS SHOWING STUD CONFIGURATION WITH MEMBER SIZES & CONNECTIONS, DESIGN LOADS, DURATION FACTORS AND ERECTION DETAILS MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.

LG-2 STEEL GRADES:
12 & 14 GA. STUDS FY (MIN) = 50 KSI; 16 GA. STUDS FY (MIN) = 33 KSI
18, 20 GA. STUDS (AND ALL TRACK) FY (MIN) = 33 KSI
FINISH: GALVANIZED IN ACCORDANCE WITH ASTM A924. (60 IN CONFORMANCE WITH ASTM C955). SECTION PROPERTY AND DESIGN TO BE IN COMPLIANCE WITH AISI SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.

LG-3 MISCELLANEOUS FRAMING AND DETAILS NOT SHOWN TO BE INCLUDED AS REQUIRED TO PERFORM INTENDED FUNCTION ALSO. REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL DESIGN DETAIL REQUIREMENTS. DEFLECTION TO BE LIMITED TO L/240. BRIDGING TO BE SUPPLIED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS. (5'-0" O.C. MAX. AND WITHIN 1'-0" OF DEFLECTION TRACKS)

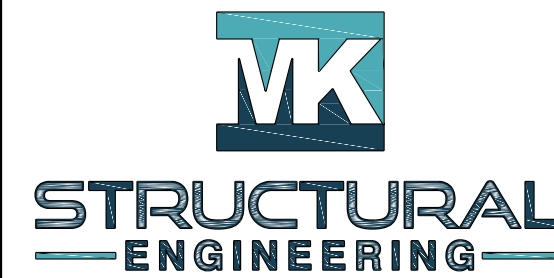
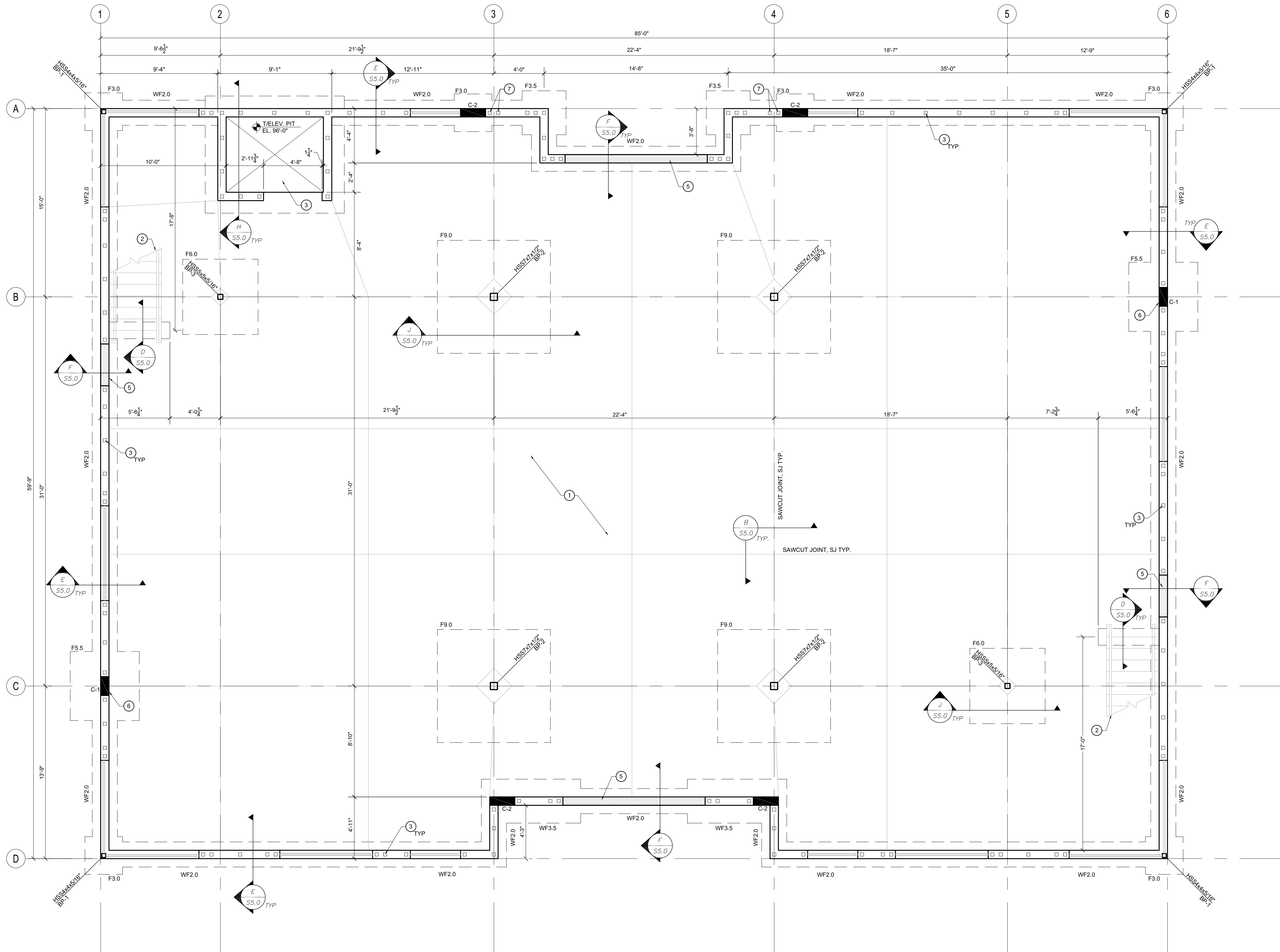
COMPONENT AND CLADDING DESIGN WIND PRESSURES

NOTES:

- 1 4" THICK 3000 PSI (MIN) CONCRETE SLAB ON GRADE U.N.O. W/6x6 W2.1xW2.1 W.W.M. OR FIBERMESH ON CLEAN COMPACTED FILL AND TREATED AGAINST TERMITES OVER 6 MIL. U.V. RESISTANT VAPOR BARRIER
- 2 PRE-ENGINEERED METAL PAN STAIRS AND LANDING, SEE GENERAL NOTES FOR REQUIREMENTS
- 3 8" MASONRY WALL REINF. W/ #5 BARS @ 48" O.C. OM GROUT FILLED CELLS, TYP. U.N.O.
- 4 CONTRACTOR TO COORDINATE FINAL ELEVATOR PIT DEPTH WITH ARCHITECTURAL AND ELEVATOR MANUFACTURER PRIOR TO CONSTRUCTION
- 5 COORDINATE WITH CONTRACTOR AND/OR ARCHITECT ON ANY DOOR RECESS REQUIREMENTS
- 6 CAST-IN-PLACE CONCRETE COLUMN, SEE DETAIL D/S8.0 FOR SIZE AND REINF.
- 7 ALIGN FILLED CELLS WITH STEEL GIRDER BEAM ATTACHMENT ABOVE. FILLED CELLS TO RUN FULL HEIGHT OF MASONRY WALL.

ELEVATION NOTES:

- T/SLAB 100'-0" TYP. U.N.O.
 T/FOUNDATION EL. 98'-8" TYP. U.N.O.



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Certificate of Authorization#: CA 27800

project number
MK 22-196

TUSKAWILLA OPTOMETRY

WINTER SPRINGS, FL 32708

issued for	date
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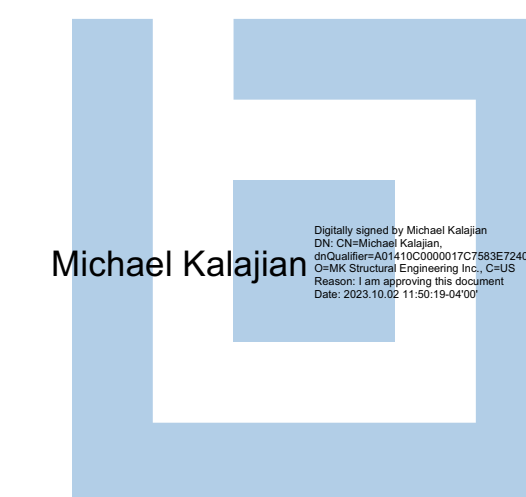
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FOUNDATION PLAN

seal/signature



Registered Engineer: Michael A. Kalajian
 Registered Engineer License: PE 60133

sheet number

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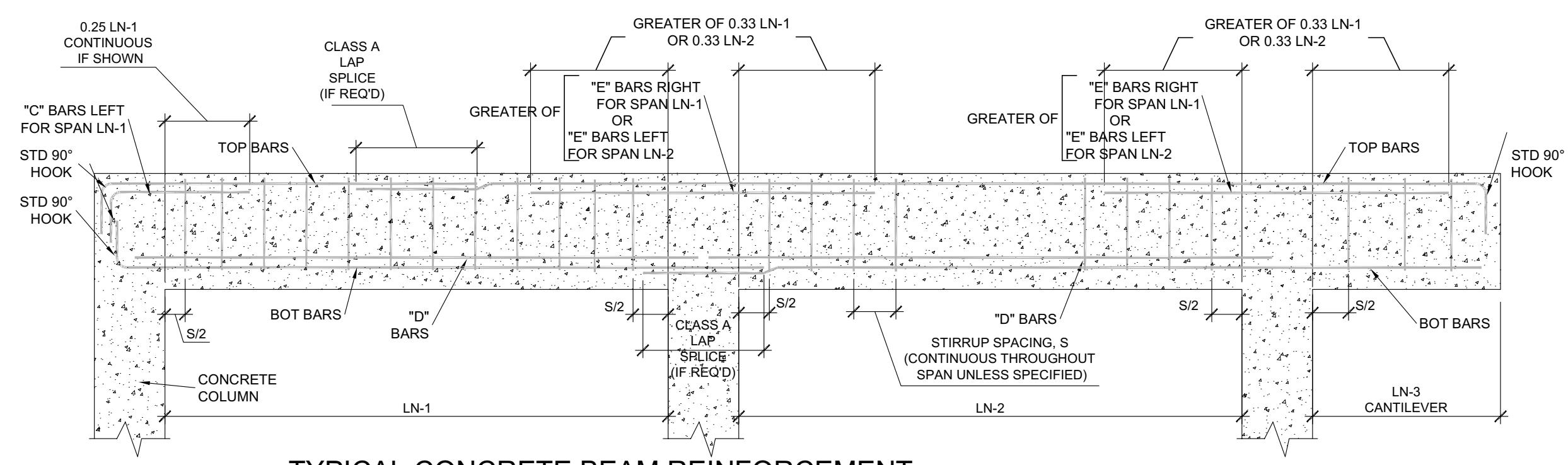
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FOUNDATION PLAN

SCALE: 1/4"=1'-0"

CONCRETE BEAM SCHEDULE												
MARK	BEAM SIZE		TOP OF BEAM ELEVATION	REINFORCEMENT				STIRRUPS			REMARKS	
	WIDTH	DEPTH		TOP BARS	"C" OR "E" BARS LEFT	"C" OR "E" BARS RIGHT	BOT BARS	"D" BARS	SIZE	TYPE		SPACING
SECOND FLOOR FRAMING BEAMS												
2CB-1	8"	16"	110'-10"	(2) #5	-	-	(2) #5	-	#3	□	6" O.C.	SEE NOTE 1
2CB-2	8"	20"	115'-8 1/2"	(2) #6	-	-	(2) #6	-	#3	□	8" O.C.	SEE NOTE 1
2CB-3	8"	20"	115'-8 1/2"	(2) #6	-	-	(2) ROWS OF (2) #6	-	#3	□	6" O.C.	
2CB-4	8"	34"	117'-0"	(2) #5	-	-	(2) #5	-	#3	□	16" O.C.	SEE NOTE 2
2CB-5	8"	16"	110'-10"	(2) #5	-	-	(2) #5	-	#3	□	16" O.C.	
ROOF FRAMING BEAMS												
RCB-1	8"	38"	129'-4"	(2) #5	-	-	(2) #5	-	#3	□	16" O.C.	SEE NOTE 2
RCB-2	8"	16"	128'-9"	(2) #5	-	-	(2) #5	-	#3	□	6" O.C.	SEE NOTE 1
RCB-3	8"	16"	127'-6"	(2) #5	-	-	(2) #5	-	#3	□	6" O.C.	SEE NOTE 1

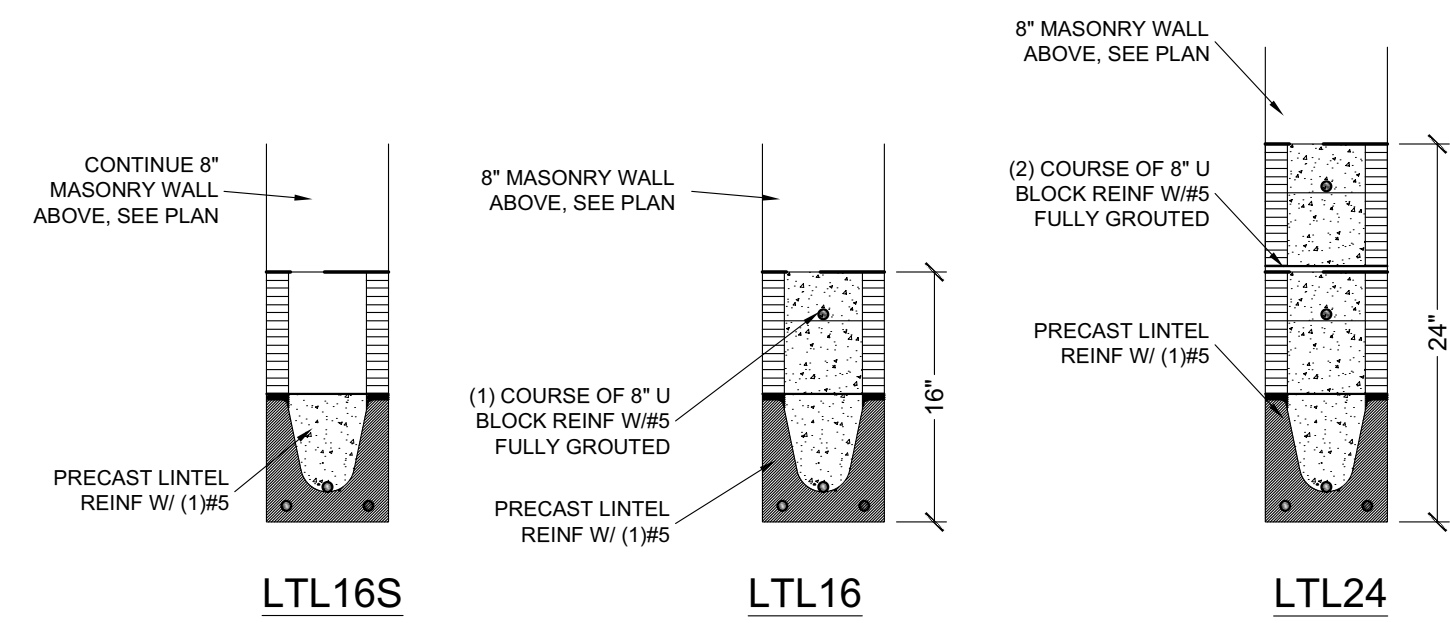
NOTES:
 1. STIRRUPS CAN BE REDUCED TO 16" O.C. WITHIN MIDDLE 1/3 OF SPAN
 2. ADD (2) #5 LONGITUDINAL REINF. EQUALLY SPACED FROM BOTTOM TO MID DEPTH ON EACH FACE, 4 BARS TOTAL
 ** CONTRACTOR TO VERIFY ALL BEAM SIZES PRIOR TO CONSTRUCTION REPORT ANY



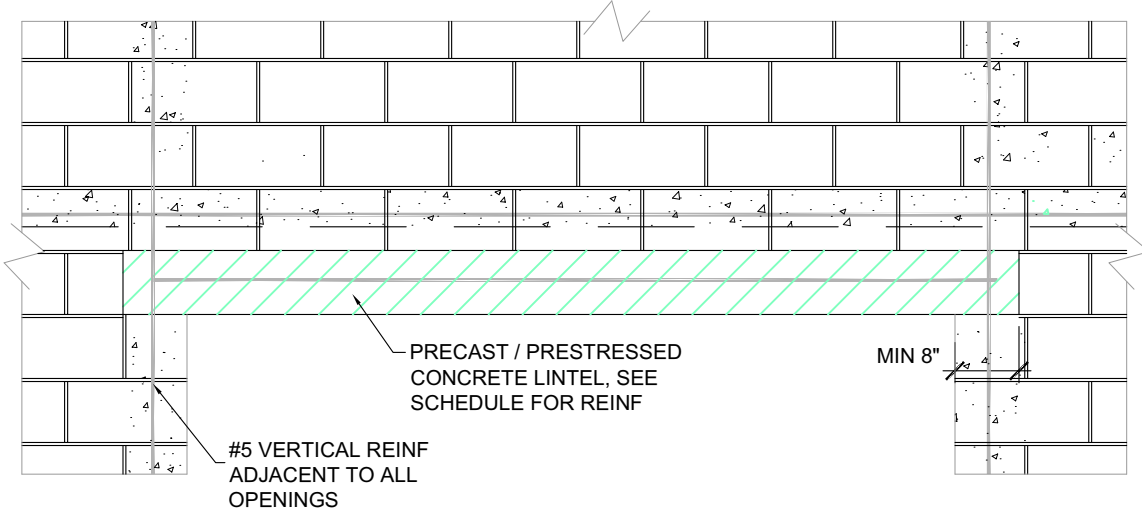
TYPICAL CONCRETE BEAM REINFORCEMENT

A TYPICAL CONCRETE BEAM REINF AND SCHEDULE

SCALE 1/2"=1'-0"

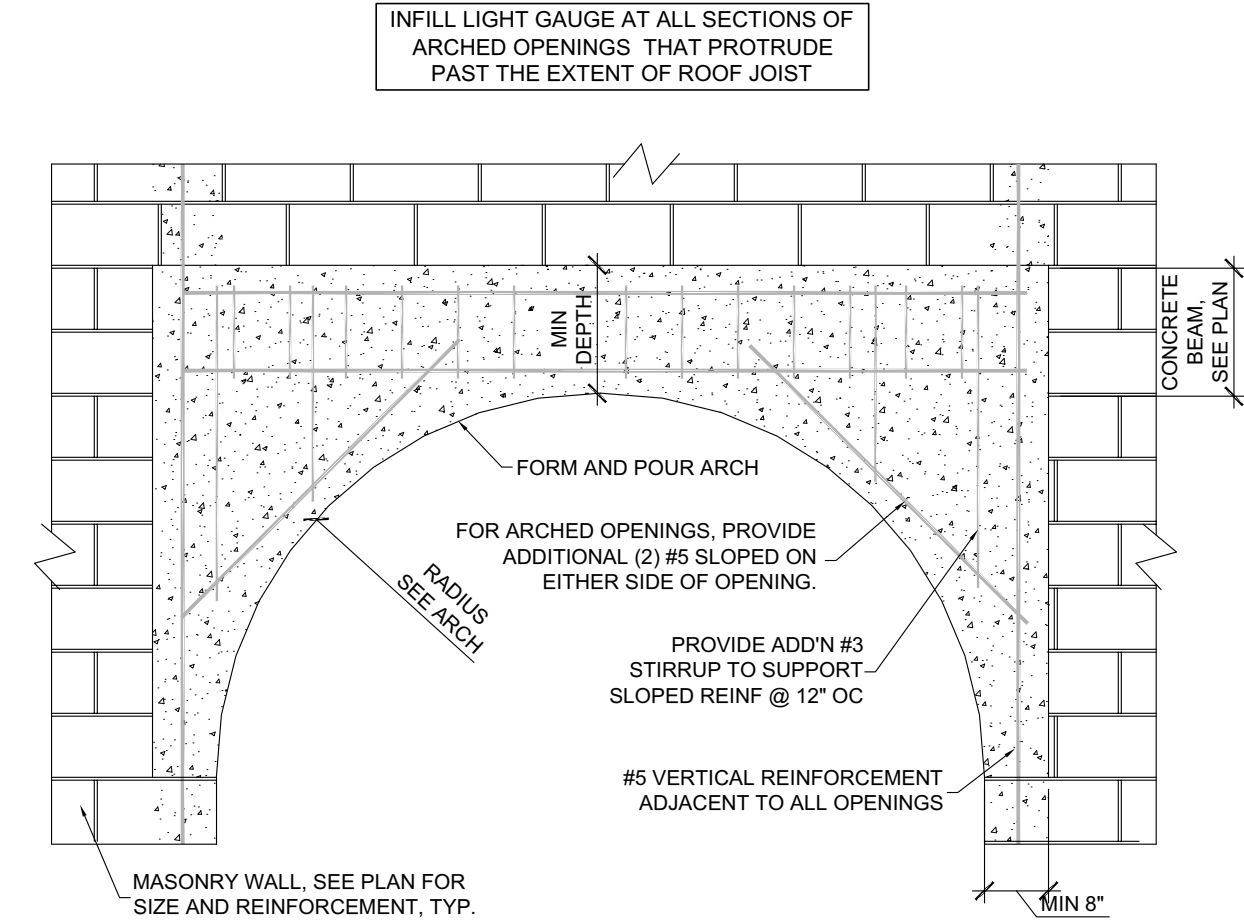


LTL16S LTL16 LTL24 LINTELS



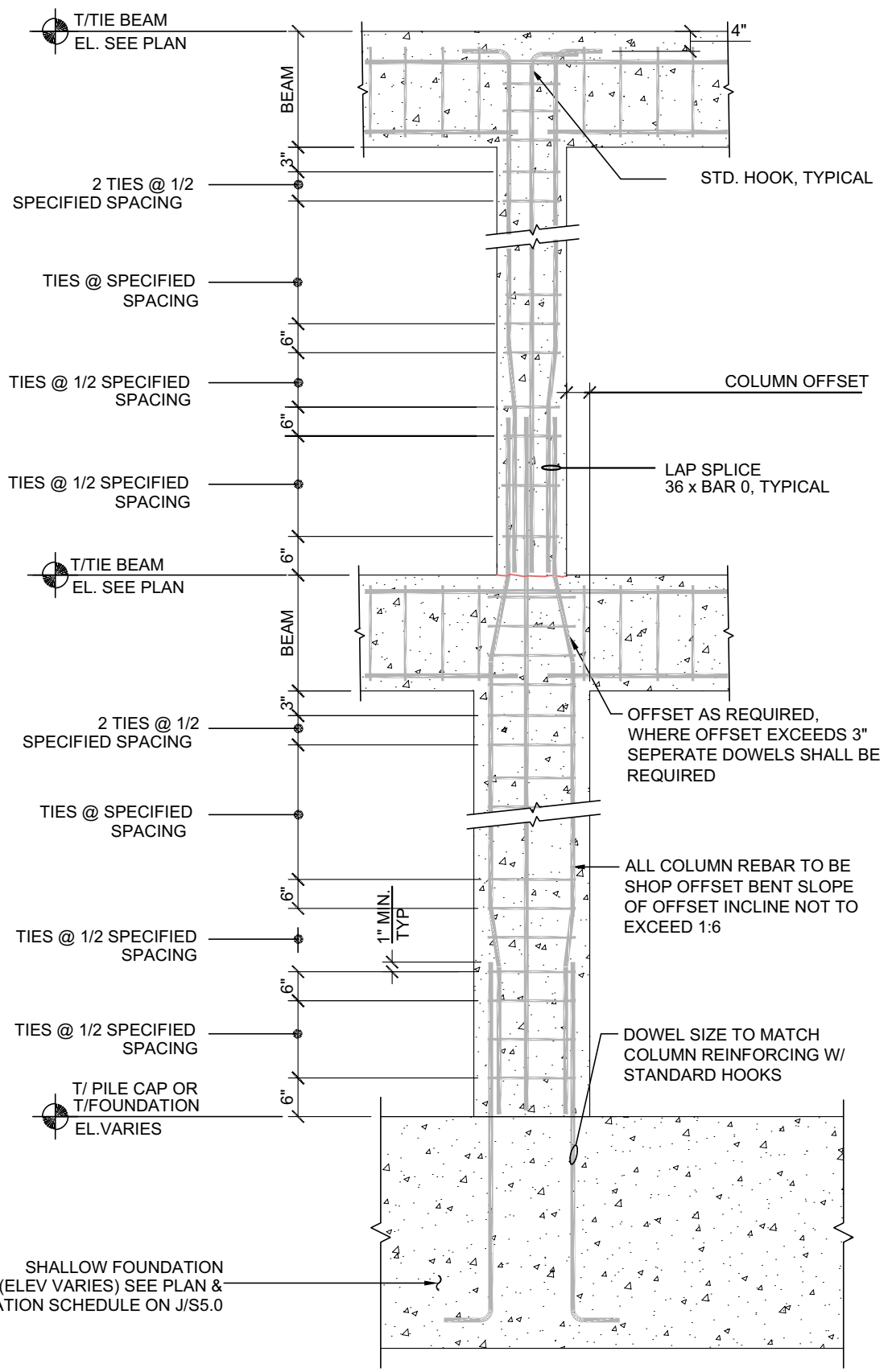
B TYPICAL PRECAST LINTEL

SCALE 1/2"=1'-0"



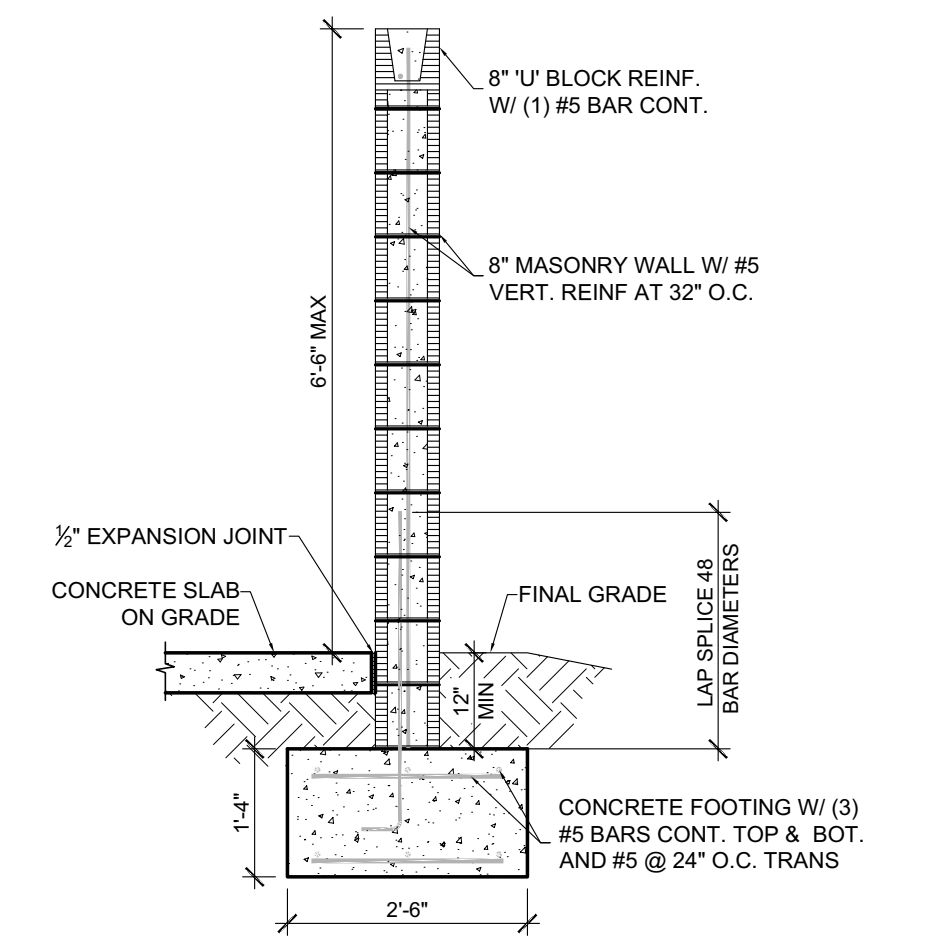
C ARCHED CONCRETE BEAM REINFORCING DETAIL

SCALE 1/2"=1'-0"



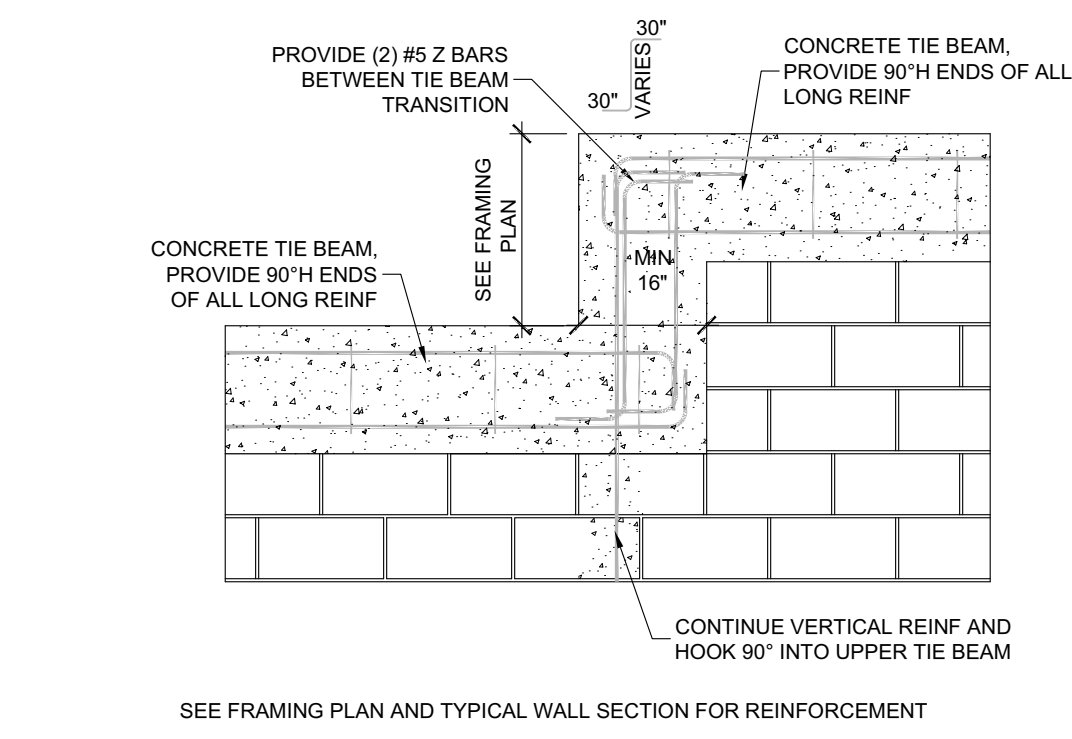
D TYPICAL CONCRETE COLUMN REINFORCEMENT

SCALE 3/4"=1'-0"



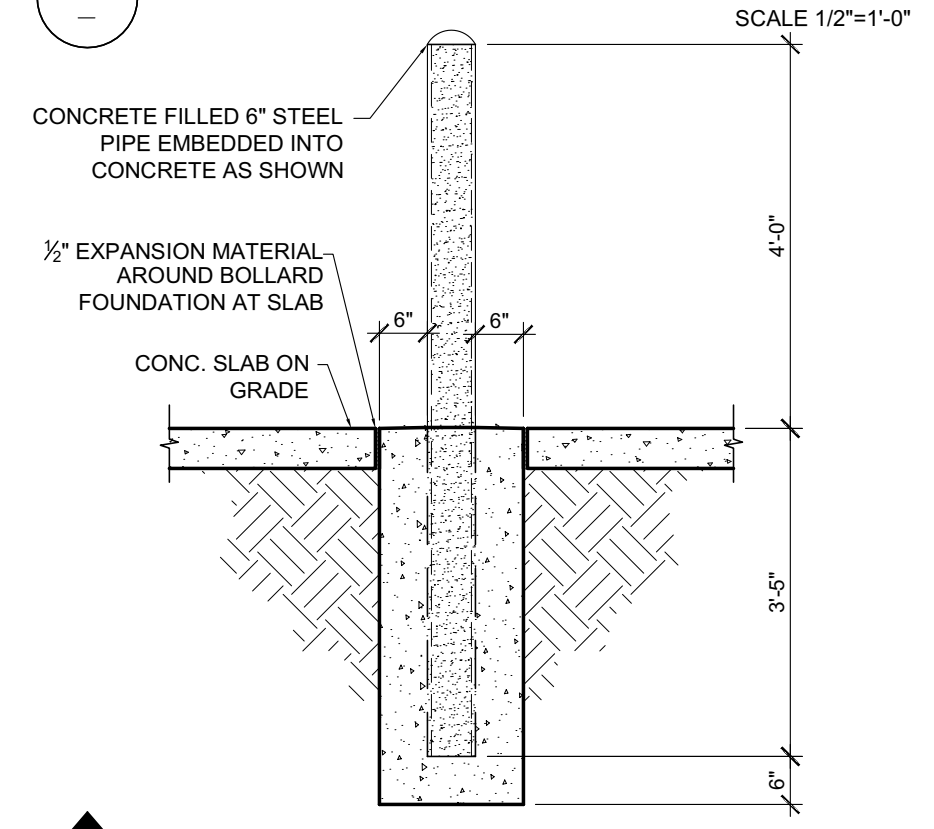
E DUMPSTER WALL FOOTING

SCALE 1/2"=1'-0"



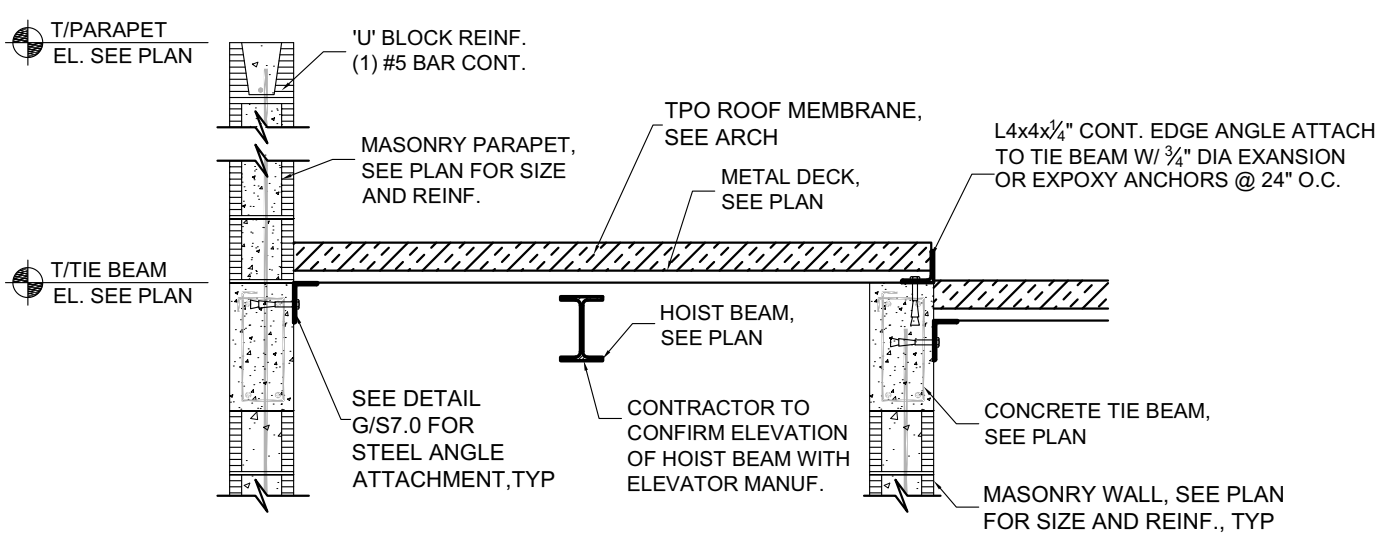
G STEP IN CONCRETE TIE BEAM

SCALE 1/2"=1'-0"



F BOLLARD DETAIL

SCALE 1/2"=1'-0"

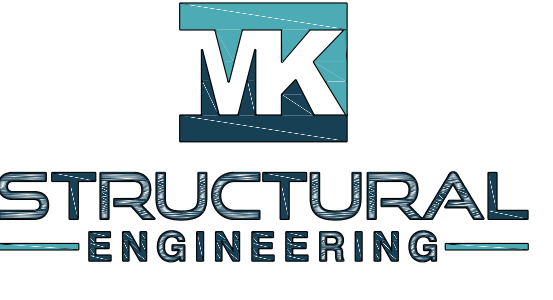


H ELEVATOR SHAFT CAP

SCALE 1/2"=1'-0"



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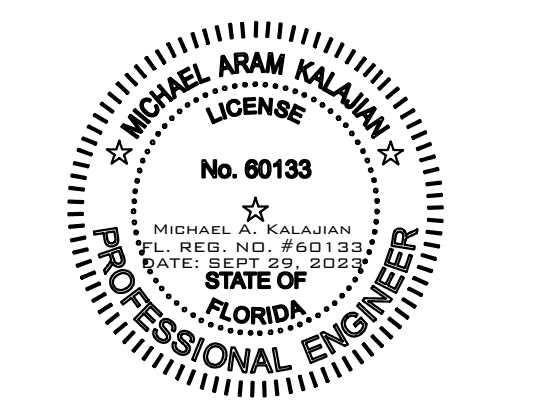
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