STRUCTURAL NOTES

STRUCTURAL NOTES:

A. ELECTRONIC VERSIONS OF STRUCTURAL DRAWINGS ARE THE SOLE, COPYRIGHTED PROPERTY OF TRC WORLDWIDE ENGINEERING. ELECTRONIC VERSIONS OF DRAWINGS ARE NOT TO BE USED OR TRANSFERRED WITHOUT THE EXPRESS, WRITTEN PERMISSION OF TRC WORLDWIDE ENGINEERING.

1010 GENERAL:

A. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR DEPRESSIONS, DIMENSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

B. DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

C. WHERE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT RESTRICTIONS AND REQUIREMENTS SHALL GOVERN.

D. PLAN NOTES, DETAILS AND SECTIONS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES. TYPICAL DETAILS AND SECTIONS NOT CUT ON PLANS SHALL APPLY UNLESS NOTED OTHERWISE.

E. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND IT'S COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT CONSTRUCTION COMPLIES WITH OSHA REGULATION INCLUDING DESIGN OF CONNECTIONS OF MEMBERS THAT WILL NOT BE FULLY COMPLETED AT THE TIME OF INSTALLATION.

F. TOWER CRANES ARE A CONTRACTOR RESPONSIBILITY AND SHALL BE DESIGNED FOR APPLICABLE CRITERIA INCLUDING BUT NOT LIMITED TO INSURANCE REQUIREMENTS AND APPLICABLE BUILDING CODES AT THE PROJECT LOCATION. THE CONTRACTOR SHALL SUBMIT A CRANE LAYOUT, SHOP DRAWINGS, CALCULATIONS AND REACTIONS FOR BOTH FOUNDATIONS AND CRANE TIE-IN LOCATIONS, SIGNED AND SEALED BY A FLORIDA LICENSED PROFESSIONAL ENGINEER. THE ENGINEER OF RECORD SHALL BE RETAINED BY THE CONTRACTOR TO EVALUATE CRANE TIE-IN FORCES ON THE BUILDING STRUCTURE AND TO PROVIDE CRANE FOUNDATION DESIGN.

1011 CONTRACTOR PROPOSED CHANGES AND SUBSTITUTIONS:

A. PROPOSED CHANGES OR SUBSTITUTIONS TO STRUCTURAL DETAILS OR PLANS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD (EOR) FOR REVIEW AND APPROVAL. SUBMITTALS SHALL CONTAIN FULL DOCUMENTATION OF CHANGES OR SUBSTITUTIONS WITH SUPPORTING, SEALED CALCULATIONS (WHERE APPLICABLE). THE REVIEW OF CHANGES AND SUBSTITUTIONS, RE-ANALYSIS AND/OR RE-DRAFTING TO INCORPORATE CHANGES OR SUBSTITUTIONS INTO CONTRACT DOCUMENTS ARE ADDITIONAL SERVICES FOR EOR. EOR IS NOT RESPONSIBLE FOR DETERMINING THE COST EFFECTIVENESS OF PROPOSED CHANGES.

1012 CONTRACTOR REQUIRED REMEDIAL WORK:

A. DESIGN OF REMEDIAL WORK RELATED TO CONSTRUCTION ERRORS, INSTALLATIONS NOT IN CONFORMANCE WITH CONTRACT DOCUMENTS, OR IN ANY WAY BROUGHT ABOUT BY ACTIVITIES OF THE CONTRACTOR, IS NOT WITHIN THE SCOPE OF CONSTRUCTION ADMINISTRATION SERVICES PROVIDED BY TRC WORLDWIDE ENGINEERING. THE CONTRACTOR SHALL CARRY IN THEIR BASE BID THE COSTS FOR ENGINEERING WORK ASSOCIATED TRC PROVIDING ADDITIONAL SERVICES IN REACTION TO NON-CONFORMING WORK.

1060 DESIGN AND CONSTRUCTION STANDARDS:

A. THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES AND REFERENCED STANDARDS:

(FBC 2023)	FLORIDA BUILDING CODE 8th EDITION BY THE INTERNATIONAL CODE COUNCIL, INC
(ACI 318-19)	2019 EDITION OF AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
(AISC 15 ED)	FIFTEENTH EDITION OF THE STEEL CONSTRUCTION MANUAL BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION
(ASCE 7-22)	MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS

B. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ABOVE REFERENCED CODES AND STANDARDS AND THE FOLLOWING:

(ACI 117-10)	SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION MATERIALS
(ACI 301-16)	SPECIFICATIONS FOR TOLERANCES FOR STRUCTURAL CONCRETE CONSTRUCTION MATERIALS
(ACI 304R-00)	RECOMMENDED PRACTICES FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.
(ACI 305R-10)	HOT WEATHER CONCRETING
(ACI 309R-05)	GUIDE FOR CONSOLIDATION OF CONCRETE
(ACI 315-18)	DETAILS AND DETAILING OF CONCRETE REINFORCING
(MNL-15 (16))	FIELD REFERENCE MANUAL: SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301-16) WITH SELECTED ACI AND ASTM REFERENCES
(AWS D1.1-20)	STRUCTURAL WELDING CODE - STEEL
(AWS D1.4-17)	STRUCTURAL WELDING CODE - REINFORCING STEEL

1061 DESIGN LOADS:

A. THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 5TH EDITION.

B. WIND DESIGN LOADS: ASCE 7-10

H = <22.5> FT Vult = 147 MPH (3 SECOND GUST)
Vasd = 114 MPH (3 SECOND GUST)
I = <1.0> EXPOSURE C
Kz = <0.95> Kzt = 1.0
Kd = <0.85> GCpi = 0.0
RISK CATEGORY: I

BUILDING IS CONSIDERED TO BE OPEN

1120 SHOP DRAWING REVIEW:

A. SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ALL COMPONENTS SHOWN ON THESE STRUCTURAL CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO:

a. CONCRETE MIXES
b. CONCRETE REINFORCING
c. ALL FASTENERS, ANCHORS, BOLTS, EPOXY ADHESIVES
d. WELDER QUALIFICATIONS/CERTIFICATIONS FOR STEEL AND ALUMINUM

B. SHOP DRAWINGS SHALL PROVIDE ACCURATE, DETAILED DIMENSIONAL INFORMATION AS WELL AS COMPLETE SHOP AND FIELD ERECTION DETAILS NOT SHOWN ON CONTRACT DOCUMENTS NECESSARY FOR FABRICATION AND INSTALLATION OF COMPONENT.

1120 SHOP DRAWING REVIEW CONTINUED:

C. SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY THE CONTRACTOR'S FIELD ENGINEER PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. DRAWINGS SUBMITTED WITHOUT REVIEW WILL BE RETURNED UNCHECKED.

D. SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC.

E. SHOP DRAWING SUBMITTALS SHALL BE SUBMITTED IN ELECTRONIC PDF FILE FORMAT ONLY.

F. SHOP DRAWINGS SHALL NOT CONTAIN DETAILS COPIED OR REPRODUCED FROM THE CONTRACT DOCUMENTS. REPRODUCTION OF THE CONTRACT DOCUMENTS WILL RESULT IN A REJECTION OF THE SHOP DRAWINGS

G. ELECTRONIC VERSIONS OF STRUCTURAL CONTRACT DOCUMENTS ARE THE SOLE, COPYRIGHTED PROPERTY OF TRC WORLDWIDE ENGINEERING. ELECTRONIC VERSIONS OF DRAWINGS ARE NOT TO BE USED OR TRANSFERRED WITHOUT THE EXPRESS, WRITTEN PERMISSION OF TRC WORLDWIDE ENGINEERING. USERS WILL SIGN A RELEASE AND REIMBURSE TRC WORLDWIDE ENGINEERING. FOR EXPENSES INCURRED IN PREPARING AND TRANSMITTING ELECTRONIC DRAWINGS AT THE RATE TO BE DETERMINED UPON REQUEST.

H. THE CONTRACT DOCUMENTS SHALL GOVERN OVER THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER.

I. CHANGES AND ADDITIONS MADE ON RE-SUBMITTALS SHALL BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RE-SUBMITTALS SHALL BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ENGINEER REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RE-SUBMITTAL.

J. ELECTRONIC SUBMITTALS OF SHOP DRAWINGS WILL ONLY BE ACCEPTED AND REVIEWED PENDING ABOVE CONDITIONS ARE MET. TRC WORLDWIDE ENGINEERING. WILL ELECTRONICALLY RETURN SUBMITTAL IN PDF FORMAT AND WILL NOT BE RESPONSIBLE FOR PRINTING MULTIPLE COPIES FOR DISTRIBUTION.

1121 SHOP DRAWINGS FOR SPECIALTY ENGINEERED PRODUCTS:

A. THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS PREPARED BY A DELEGATED ENGINEER. DELEGATED ENGINEER SHALL POSSESS CURRENT PROFESSIONAL LICENSURE IN THE JURISDICTION OF THE PROJECT. THE SPECIALTY/DELEGATE ENGINEER SHALL POSSESS AND MAINTAIN A MINIMUM OF $1,000,000 LIMIT OF PROFESSIONAL LIABILITY INSURANCE.

a. METAL BUILDING

A. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.

B. SHOP DRAWINGS AND CALCULATIONS SHALL BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE DELEGATED ENGINEER. SHOP DRAWINGS AND CALCULATIONS REQUIRE THE IMPRESSED SEAL (OR ELECTRONICALLY SIGNED AND SEALED PER FLORIDA RULES), DATE AND SIGNATURE OF THE DELEGATED ENGINEER.

C. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD OF SUBMITTALS IS LIMITED TO VERIFYING THE FOLLOWING:

a. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHED.
b. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE DELEGATED ENGINEER.
c. THAT THE DELEGATED ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE).
d. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. (NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE).

D. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED.

1122 RFI REVIEW:

A. ALL OF CONTRACTOR'S REQUEST(S) FOR INFORMATION (RFI's) SHALL STATE CONTRACTOR'S SUGGESTION(S) FOR RESOLUTION AND COST IMPLICATIONS FOR SUGGESTION(S). ENGINEER OF RECORD IS NOT RESPONSIBLE FOR DETERMINING COST OR COST EFFECTIVENESS OF RFI RESPONSES.

2010 FOUNDATIONS: (NO GEOTECH REPORT)

A. FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 2,000 PSF ON COMPACTED FILL. BEFORE CONSTRUCTION COMMENCES, SOIL BEARING CAPACITY SHALL BE VERIFIED BY A SUBSURFACE INVESTIGATION, AS WELL AS FIELD AND LABORATORY TESTS PERFORMED BY A CERTIFIED TESTING LABORATORY, WHO'S REPORT SHALL INCLUDE ANALYSIS AND RECOMMENDATIONS FOR SITE PREPARATION IN ORDER TO BEAR THE FOUNDATION LOADS. ABOVE REPORT SHALL BE PREPARED AND SEALED BY A GEOTECHNICAL ENGINEER, LICENSED WITHIN THE JURISDICTION OF THE PROJECT AND SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.

2011 FOUNDATIONS:

A. RESERVED FOR GEOTECHNICAL REPORT INFORMATION BY CONTRACTOR.

B. NO APPROVAL OR VERIFICATION OF RECOMMENDATIONS MADE WITHIN THE ABOVE NOTED GEOTECHNICAL REPORT IS IMPLIED THROUGH REFERENCE OR USE BY TRC.

C. A GEOTECHNICAL ENGINEER, LICENSED WITHIN THE JURISDICTION OF THE PROJECT, SHALL VERIFY IN THE FIELD THAT ALL SITE PREPARATION FILL OPERATIONS, BEARING CONDITIONS, FOUNDATION TESTING AND INSTALLATION COMPLY WITH THE SOILS REPORT.

D. FOUNDATION DESIGN FOR SHALLOW FOUNDATIONS SYSTEMS ARE BASED UPON AN ALLOWABLE NET SOIL BEARING PRESSURE *,*** PSF AS PROVIDED BY ABOVE GEOTECHNICAL REPORT.

E. FOUNDATION WALLS ARE DESIGNED FOR THE FOLLOWING DESIGN LOADS:

a. SOIL WEIGHT:..... 120 PCF
b. AT-REST PRESSURE: (BRACED AT TOP)..... 60 PCF
c. ACTIVE PRESSURE:..... 40 PCF
d. PASSIVE PRESSURE:.....240 PCF
e. FRICTION COEFFICIENT:.....0.35

F. SUBGRADE PREPARATION AND VAPOR RETARDER INSTALLATION FOR SLAB-ON-GRADE SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT GEOTECHNICAL REPORT.

G. CONCRETE FOR FOOTINGS SHALL BE PLACED IMMEDIATELY AFTER FINAL INSPECTION AND ACCEPTANCE BY THE GEOTECHNICAL ENGINEER. IN NO CASE SHALL FOOTING EXCAVATIONS BE ALLOWED TO STAND OPEN OVERNIGHT OR DURING RAIN.

H. GRADE SHALL BE SUCH THAT THICKNESS OF FOUNDATION, SLAB ON GRADE, ETC. IS NOT REDUCED BY MORE THAN 5% OF THAT SHOWN ON DRAWINGS.

3101 FORMWORK AND SHORING (CONCRETE SLABS AND BEAMS):

A. NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH (& ALL TENDONS STRESSED FOR PT SLABS). A MINIMUM OF 3 STORIES OF SHORING AND (/OR) RESHORING SHALL BE USED WHICH SHALL CONSIST OF ONE COMPLETE SET OF VERTICAL SHORES AND TWO SETS OF VERTICAL SHORES THAT COMPRISE AT LEAST 50% OF A COMPLETE SET.

B. DRAWINGS FOR SHORING AND RESHORING SHALL BE PREPARED BY AN ENGINEER LICENSED WITHIN THE JURISDICTION OF THE PROJECT.

C. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RESHORES SHALL MEET REQUIREMENTS SET FORTH IN ACI STANDARDS 347 AND 301.

D. SUBMIT SIGNED & SEALED SHORING DRAWINGS INCLUDING POUR SEQUENCE AND CALCULATIONS, WHERE NECESSARY, TO DEMONSTRATE THAT THE POUR SEQUENCE AND SHORING/RE-SHORING METHODS DO NOT OVERSTRESS THE STRUCTURE. THIS ANALYSIS SHALL INCLUDE STRESSES CAUSED BY SHRINKAGE OF STRUCTURAL SLAB. PROVIDE LOCATION AND DETAILS OF POUR STRIPS IF REQUIRED TO REDUCE SHRINKAGE AND RESTRAINT CRACKS.

E. SHORING INSPECTIONS SHALL BE PERFORMED BY THE SHORING ENGINEER.

F. UNLESS ARCHITECT SPECIFIES OTHERWISE, CONSTRUCT FORMWORK SO CONCRETE SURFACES CONFORM TO THE TOLERANCE LIMITS OF ACI 117 [STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION MATERIALS]. THE CLASS OF SERVICE FOR OFFSET BETWEEN ADJACENT PIECES OF FORMWORK FACING MATERIAL SHALL BE CLASS B FOR SURFACES PERMANENTLY EXPOSED TO PUBLIC VIEW AND CLASS D FOR SURFACES THAT WILL BE PERMANENTLY CONCEALED.

3104 CONSTRUCTION JOINTS AND CONTROL JOINTS:

A. CONSTRUCTION JOINTS AND CONTROL JOINTS SHALL BE LOCATED AS SHOWN IN PLAN OR SECTION.

B. UNLESS NOTED OTHERWISE, CONTROL JOINTS IN SLABS ON GRADE SHALL BE PROVIDED SO THAT THE MAXIMUM DISTANCE BETWEEN JOINTS SHALL BE NO MORE THAN 3 TIMES THE SLAB THICKNESS IN FEET (OR AS SHOWN ON PLANS). SAWCUT CONTROL JOINTS SHALL BE MADE AS SOON AS SLAB WILL SAFELY SUPPORT MEN AND EQUIPMENT AND THE SLAB WILL NOT BE DAMAGED BY EQUIPMENT. ASPECT RATIO (LONGSIDE TO SHORTSIDE OF CONCRETE AREA) SHALL NOT EXCEED 1.5.

C. DEVIATION FROM OR ADDITION TO CONSTRUCTION OR CONTROL JOINT LOCATIONS SHOWN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL AND ARE ACCEPTABLE ONLY AS A CHANGE ORDER THAT WILL INCLUDE ENGINEERING CHARGES BY THE ENGINEER OF RECORD FOR REDESIGN OF THE STRUCTURE AS REQUIRED. SHORING REQUIREMENTS TO IMPLEMENT REVISED CONSTRUCTION JOINTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3201 REINFORCING STEEL:

A. CONTRACTOR SHALL CARRY AN ALLOWANCE IN THEIR BID FOR SUPPLYING AND ERECTING (5) TONS OF REINFORCING STEEL IN ADDITION TO THAT SHOWN ON PLANS AND WITHIN SECTIONS, DETAIL AND SCHEDULES TO BE USED AT THE DISCRETION OF THE STRUCTURAL ENGINEER.

B. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 DEFORMED BARS (WELDABLE REINFORCING "DBA" SHALL CONFORM TO ASTM A-706 GRADE 60), FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAM AND PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. SECURE APPROVAL OF SHOP DRAWINGS PRIOR TO COMMENCING FABRICATION. REINFORCING BAR DETAILING SHALL COMPLY WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" AND CRSI MANUAL OF STANDARD PRACTICE.

C. CLEAR COVER TO REINFORCING SHALL BE AS INDICATED BELOW. WHERE A SPECIFIC CONDITION IS NOT NOTED, REFER TO ACI REQUIREMENTS FOR COVER:

	TOP	BOTTOM	SIDES/EDGES
FRAMED SLABS ON GRADE.....	1"	3"	NA
FOUNDATION WALL/PILASTER..	NA	NA	2" EXTERIOR 1 1/2" INTERIOR
SPREAD FOOTING.....	2"	3"	3"
COLUMNS & WALLS.....	NA	NA	2" AGAINST SOIL 1 1/2" TYPICAL
EXTERIOR NON-PT			
- #5 AND SMALLER.....	1"	1 1/2"	2"
- #6 AND LARGER.....	2"	2"	2"
BEAMS			
(INTERIOR).....	1 1/2"	1 1/2"	1 1/2"
(EXTERIOR EXPOSURE).....	2"	1 1/2"	1 1/2"

NOTE: MAXIMUM DEVIATION IN BAR PLACEMENT SHALL BE AS DICTATED BY ACI.

D. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR DRIPS, CHAMFERS, REGLETS, SLOTS, SLEEVES, ANCHORS, AND INSERTS. UNLESS SHOWN ON STRUCTURAL DRAWINGS NO OPENINGS LARGER THAN 12"x12" SHALL BE PLACED IN SLABS OR WALLS. FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, APPROVALS MUST BE OBTAINED FROM THE ENGINEER PRIOR TO FABRICATION OF STEEL AND PLACEMENT OF CONCRETE. SEE NOTES ON EMBEDDED ITEMS FOR ADDITIONAL LIMITATIONS.

E. PROVIDE CONTINUOUS REINFORCING WHERE POSSIBLE, SPLICE ONLY AS SHOWN ON DRAWINGS OR AS APPROVED BY STRUCTURAL ENGINEER. PROVIDE CORNER BARS AT ALL WALL, GRADE BEAM AND STRIP FOOTING CORNERS. BARS SHALL BE THE SAME SIZE AND SPACING AS THE HORIZONTAL REINFORCING. INTERSECTING WALLS, GRADE BEAMS AND STRIP FOOTINGS SHALL BE DOWELED TOGETHER IN THE SAME MANNER. PROVIDE 2 NO. 4 TOP DIAGONAL BARS 4'-0" LONG AT ALL REENTRANT CORNERS IN ALL SLABS ON GRADE AND ELEVATED SLABS.

F. SHOP DRAWINGS SHALL ADEQUATELY DEPICT THE REINFORCING BAR SIZES AND PLACEMENT. SHOP DRAWINGS SHALL INCLUDE ADEQUATE SECTIONS, ELEVATIONS AND DETAILS. WRITTEN DESCRIPTIONS ARE NOT ACCEPTABLE. ALL CONCRETE WALLS SHALL BE DETAILED IN ELEVATION.

G. SPLICING OF REINFORCING SHALL BE AS SHOWN OR AS INDICATED IN SCHEDULE. MECHANICAL SPLICING DEVICES SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH (FY) OF THE BAR. STAGGER MECHANICAL SPLICES WHERE POSSIBLE. ALL STEEL NOTED AS CONTINUOUS SHALL BE A CLASS "B" SPLICE PER SCHEDULE.

H. DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.

I. TIE ALL REINFORCING AND EMBEDS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT AND EMBEDS WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES.

J. THE SHOP DRAWINGS FOR REINFORCING STEEL SHALL INCLUDE SCALE ELEVATIONS OF ALL CONCRETE WALLS.

K. OPENINGS THROUGH CONCRETE WALLS, SLABS OR OTHER STRUCTURAL ELEMENTS NOT DETAILED ON THE STRUCTURAL DRAWINGS MUST BE LOCATED AND SHOWN ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. THE FINAL LOCATION OF ALL OPENINGS MUST BE REVIEWED BY THE A/E BEFORE THE CONCRETE IS POURED.

3301 CAST-IN-PLACE CONCRETE:

A. ALL CAST-IN-PLACE CONCRETE SHALL BE PER AN APPROVED MIX DESIGN PROPORTIONED TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

CONCRETE DESIGN CRITERIA

MINIMUM 28-DAY COMPRESSIVE STRENGTH	MAXIMUM SLUMP	USED FOR:
4000 PSI	4 (±1)*	ALL CONCRETE

* HIGHER SLUMPS ARE PERMITTED WHEN HIGH RANGE WATER REDUCER (HRWR) ADMIXTURES (SUPER PLASTICIZER) ARE USED PENDING ENGINEER OF RECORD APPROVAL OF MIX DESIGN.

B. CONCRETE SHALL BE PLACED AND CURED ACCORDING TO ACI 301(16) STANDARDS AND SPECIFICATIONS.

C. PRIOR TO CONCRETE PLACEMENT, MIX DESIGN SHALL BE SUBMITTED AND ACCEPTED BY ENGINEER FOR USE. MIX DESIGN SHALL INCLUDE THE FOLLOWING:

a. MIX DESIGN WHICH SHALL INCLUDE TESTED, STATISTICAL BACK-UP DATA AS PER ACI 301, ARTICLE 4.2.3.
b. ONLY TYPE II CEMENT SHALL BE USED FOR SLAB-ON GRADE CONCRETE.
c. CONCRETE MIX DESIGNS SHALL INCLUDE A WRITTEN DESCRIPTION INDICATING WHERE EACH PARTICULAR MIX IS TO BE PLACED WITHIN THE STRUCTURE. FAILURE TO COMPLY MAY RESULT IN REJECTION OF THE MIX. IF ACCEPTED, PEA ROCK PUMP MIX USE IS LIMITED TO VERTICAL ELEMENT POURS AND BEAM POURS LESS THAN 60 LINEAL FEET PER POUR
d. MIX DESIGN SHALL MEET THE REQUIREMENTS OF ASTM C33 FOR COARSE AGGREGATE.
e. CALCIUM CHLORIDES SHALL NOT BE UTILIZED
f. OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.
g. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING STRUCTURAL DRAWINGS AND SPECIFYING THE USE OF WATER REDUCERS WHERE REINFORCING CONGESTION WARRANTS.

D. CONCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1 1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE.

E. SLABS SHALL BE CURED USING A DISSIPATING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1-D AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY.

F. WATER/CEMENTITIOUS MATERIAL RATIO FOR CONCRETE BELOW OR AT GRADE AND FOR CONCRETE SUBJECTED TO DEICERS AND/OR SPECIFIED TO BE WATERTIGHT SHALL NOT EXCEED 0.45 BY WEIGHT. MAXIMUM PERMISSIBLE W/C RATIO: 0.50 FOR ALL OTHER CONCRETE AND CONCRETE BELOW GRADE SUBJECTED TO FREEZE/THAW.

G. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR-ENTRAINED. FOR SURFACE FINISHES AND OTHER REQUIREMENTS, REFER TO THE CONCRETE SPECIFICATIONS.

H. WHERE SPECIFIED COLUMN CONCRETE STRENGTH IS 1.4 TIMES THE SPECIFIED SLAB CONCRETE STRENGTH, SEE COLUMN SCHEDULE FOR PUDDLING REQUIREMENTS. IF REQUIRED, THE STRENGTH OF THE PUDDLED CONCRETE SHALL BE AT LEAST EQUAL TO THE STRENGTH OF THE COLUMN CONCRETE. PUDDLING SHALL EXTEND 2'-0" MINIMUM FROM FACE OF COLUMN IN ALL DIRECTIONS.

I. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR DRIPS, CHAMFERS, REGLETS, SLOTS, SLEEVES, ANCHORS, AND INSERTS. UNLESS SHOWN ON STRUCTURAL DRAWINGS NO OPENINGS LARGER THAN 12"x12" SHALL BE PLACED IN SLABS OR WALLS. FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, APPROVALS MUST BE OBTAINED FROM THE ENGINEER PRIOR TO FABRICATION OF STEEL AND PLACEMENT OF CONCRETE. LOCATION DRAWINGS FOR ALL SLEEVES AND BLOCKOUTS IN THE CONCRETE SHALL BE SUBMITTED FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT.

J. CONCRETE WALLS SHALL BE CAST MONOLITHIC WITH ADJOINING COLUMNS UNLESS SPECIFICALLY NOTED OTHERWISE. CONCRETE FOR SUCH WALLS SHALL BE THE SAME TYPE AND STRENGTH AS SPECIFIED COLUMNS.

K. CONTRACTOR SHALL CONFORM TO ACI 306R FOR COLD WEATHER CONCRETING AND ACI 305R FOR HOT WEATHER CONCRETING WHEN ANY COMBINATION OF HIGH TEMPERATURE, LOW RELATIVE HUMIDITY AND WIND VELOCITY TEND TO IMPAIR THE QUALITY OF THE CONCRETE. CONCRETE IS TO BE REJECTED IF ITS TEMPERATURE AT TIME OF PLACEMENT IS 90°F OR ABOVE. PROTECT SURFACES OF EXPOSED CONCRETE FROM PRECIPITATION DAMAGE UNTIL ADEQUATE STRENGTH IS GAINED TO PREVENT DAMAGE.

L. CONCRETE SHALL BE VIBRATED BY MECHANICAL VIBRATORS.

M. A PRE-CONCRETE CONFERENCE SHALL BE HELD BY THE CONTRACTOR WITH SUBCONTRACTORS, TESTING LAB PERSONNEL, ARCHITECT AND ENGINEERS. THESE CONFERENCES SHALL BE HELD WELL IN ADVANCE OF CONSTRUCTION TO ENSURE PROPER INTERPRETATION OF DESIGN INTENT. STEEL ERECTOR SHALL FIELD VERIFY CORRECTNESS OF FOUNDATION, ANCHOR RODS, OR OTHER EXISTING WORK AFFECTING THE STEEL BEFORE STARTING ERECTION.

SHEET INDEX

Paul Moerschel
Digitally signed by Paul Moerschel
Date: 2025.04.09 15:15:51 -04'00'

This item has been electronically signed and sealed by Paul S. Moerschel, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

100% SUBMITTAL

PAUL S. MOERSCHEL LICENSE No. 60487 STATE OF FLORIDA PROFESSIONAL ENGINEER

Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION - PARKING CANOPY
STRUCTURAL NOTES & DESIGN CRITERIA

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	RHE
CHKD:	PSM

S-101

WORLDWIDE ENGINEERING
CERTIFICATE OF AUTHORIZATION NO. 35826
11926 Fairway Lakes Drive
FORT MYERS, FL 33913
PHONE: (239) 939-1414
FAX: (239) 278-4289

PROJ No. 24FTM225

Bar Measures 1 inch, otherwise drawing not to scale

STRUCTURAL NOTES

3304 CONCRETE TESTING:

A. AN INDEPENDENT TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST-IN-PLACE CONCRETE:

a. ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE."
b. ASTM C39 - "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS." A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDER(S) QUANTITIES AND TEST AGE AS FOLLOWS:

28 DAY SPEC:
1. EARLY CYLINDERS (AS NEEDED): 1, 2, AND 3 DAY BREAKS ARE A GOOD RANGE TO HAVE FOR STRESSING OR OTHER EARLY NEEDS. EACH TEST REQUIRES (3) CYLINDERS.
2. (3) 7 DAY CYLINDERS
3. (3) 28 DAY CONFORMANCE CYLINDERS
4. (3) 56 DAY HOLD CYLINDERS (TO BE TESTED IF THE 28 DAY CYLINDERS DO NOT MEET SPEC AND CAN BE TESTED AT ANY TIME AT THE REQUEST/DISCRETION OF THE ENGINEER/CONTRACTOR).

56 DAY SPEC:
1. EARLY CYLINDERS (AS NEEDED): 1, 2 AND 3 DAY BREAKS ARE A GOOD RANGE TO HAVE FOR STRESSING OR OTHER EARLY NEEDS. EACH TEST REQUIRES (3) CYLINDERS.
2. (3) 7 DAY CYLINDERS
3. (2) 28 DAY CYLINDERS
4. (3) 56 DAY CONFORMANCE CYLINDERS

3307 PENETRATIONS:

A. NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE SPECIFICALLY DESIGNATED ON THE STRUCTURAL DRAWINGS WITHOUT PREVIOUS APPROVAL OF THE ENGINEER. CONTRACTOR SHALL SUBMIT A PENETRATION PLAN FOR APPROVAL INDICATING ANY PENETRATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS PRIOR TO CONCRETE PLACEMENT.

3601 POST-INSTALLED ANCHORS:

A. POST INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.

B. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN ANCHORS.

C. CARE SHALL BE GIVEN TO AVOID DAMAGING EXISTING REBAR WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED PER MANUFACTURER'S INSTRUCTIONS.

D. UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED FOR SUPPORT OF THE INTENDED LOAD, ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCE AND/OR SPACING INDICATED IN THE MANUFACTURER'S LITERATURE.

E. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED BELOW SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL WITH CALCULATIONS PREPARED, SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE JURISDICTION OF THE PROJECT SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE.

F. ACCEPTABLE PRODUCTS FOR ANCHORS NOT EXPOSED TO WEATHER ARE AS FOLLOWS:

a. EXPANSION ANCHORS FOR NON-CRACKED CONCRETE ONLY:
- WEDGE-ALL (WA) BY SIMPSON STRONG-TIE
- KWIK BOLT 3 BY HILTI

b. CRACKED CONCRETE MECHANICAL ANCHORS:
- STRONG-BOLT (STB) BY SIMPSON STRONG-TIE
- KWIK BOLT (TZ) BY HILTI

c. SCREW ANCHORS:
- TITEN HD (THD) BY SIMPSON STRONG-TIE
- HUS-H BY HILTI

d. ADHESIVE ANCHORS INTO SOLID CONCRETE OR FULLY GROUTED CMU:
- ACRYLIC –TIE (AT)
- SET EPOXY-TIE (SET) WITH RETROFIT BOLTS (RFB) BY SIMPSON STRONG-TIE
- HY 200 MAX BY HILTI

e. FOR ANCHORING INTO HOLLOW BASE MATERIAL:
- CONTACT ENGINEER

G. ACCEPTABLE PRODUCTS FOR ANCHORS EXPOSED TO WEATHER OR FOR ENVIRONMENTAL STRUCTURES ARE AS FOLLOWS:

a. CONCRETE MECHANICAL ANCHORS:
- TRUBOLT BY ITW REDHEAD - AISI 316 STAINLESS STEEL
- KWIK BOLT 3 BY HILTI - AISI 316 STAINLESS STEEL
- POWER STUD BY POWERS - AISI 316 STAINLESS STEEL

b. SCREW ANCHORS:
- TAPPER BY POWERS - AISI 316 STAINLESS STEEL
- HUS-H BY HILTI

c. CONCRETE OR SOLID GROUTED CMU ADHESIVE ANCHORS:
- HY 200 MAX BY HILTI - AISI 316 STAINLESS STEEL

13120 PRE-ENGINEERED METAL BUILDING:

A. THE PRE-ENGINEERED METAL BUILDING SHALL CONSIST OF ROOF DECK, RIGID FRAMES, BRACING, CANOPY FRAMING, AND FLASHING. DEVIATION FROM BAY SPACING SHOWN ON THE PLANS SHALL NOT BE PERMITTED TO SUIT MANUFACTURERS STANDARDS.

B. THE SYSTEM SHALL BE DESIGNED AND DETAILED BY THE MANUFACTURER TO SUSTAIN THE DESIGN LOADS SPECIFIED AS A STAND ALONE STRUCTURE. THE DESIGN SHALL BE IN ACCORDANCE TO AISC AND AISI SPECIFICATIONS AND MBMA "METAL BUILDING SYSTEMS MANUAL" DESIGN PRACTICES, LATEST ISSUES.

C. THE MANUFACTURER SHALL BE REGULARLY ENGAGED IN METAL BUILDING DESIGN AND MANUFACTURING. CURRENT MBMI BUILDINGS ARE APPROVED, OTHERS SHALL SUBMIT PRODUCT DATA FOR REVIEW.

D. SHOP DRAWINGS AND A LETTER OF CERTIFICATION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO FABRICATION, AND SHOP DRAWINGS SHALL BEAR THE SIGNATURE AND IMPRESSED SEAL OF A REGISTERED PROFESSIONAL ENGINEER WITHIN THE JURISDICTION OF THE PROJECT. SHOP DRAWINGS SHALL INDICATE THE DESIGN LOADS, LOAD PATH AND JOB NAME AND NUMBER. THEY SHALL INCLUDE DRAWINGS OF THE FRAMING MEMBERS WITH THE CONNECTIONS, THE ANCHOR BOLT PLAN AND REACTIONS. STANDARD CUT SHEETS OF THE ABOVE ARE NOT ACCEPTABLE. STANDARD CUT SHEETS MAY BE SUBMITTED FOR SECONDARY FRAMING CONNECTION DETAILS, FLASHING AND SHEETING DETAILS, ETC.

E. ANCHOR BOLTS SHALL BE HEADED BOLTS WITH DIAMETER AND LOCATION SPECIFIED BY THE METAL BUILDING DESIGNER. ANCHOR BOLT LENGTHS TO BE SPECIFIED BY STRUCTURAL ENGINEER AFTER REACTIONS, DIAMETER, AND LOCATIONS ARE PROVIDED. ANCHOR BOLTS SHALL BE PURCHASED AND INSTALLED BY THE GENERAL CONTRACTOR.

F. BEFORE FOOTING INSTALLATION, THE ANCHOR BOLT EMBEDMENT LENGTHS MUST BE VERIFIED BY THE STRUCTURAL ENGINEER. THE FOOTING DEPTH SHALL BE THE SCHEDULED DEPTH OR THE ANCHOR BOLT EMBEDMENT LENGTH PLUS 3 INCHES, WHICHEVER IS GREATER.

G. HORIZONTAL FORCE TRANSFER FROM METAL BUILDING COLUMN BASE TO CONCRETE BY THE METAL BUILDING SUPPLIER.

H. METAL BUILDING FRAMES AND COMPONENTS RESISTING LATERAL LOAD AND CONNECTED TO OR SUPPORTING MASONRY (CMU AND/OR BRICK) SHALL BE DESIGNED TO LIMIT LATERAL DEFLECTIONS AS NOTED BELOW, BASED ON ASCE 7-16 WIND PRESSURES. THE DESIGN CERTIFICATION LETTER SHALL INDICATE THAT THE DESIGN MEETS THESE REQUIREMENTS.

a. MAIN BUILDING FRAMES:
- LIMIT DRIFT TO H/100 WITH V=105 MPH MRI=50 YEARS

b. X- BRACE OR PORTAL FRAMES:
- LIMIT DRIFT TO H/100 WITH V=105 MPH MRI=50 YEARS

c. STRUCTURAL ROOFING AND SIDING MADE OF METAL SHEETS:
- LIMIT TOTAL DEFLECTION TO L/60

d. STRUCTURAL ROOF PURLINS:
- LIMIT LIVE LOAD DEFLECTION TO L/150 WHEN SUPPORTING METAL ROOFING

e. FOR METAL BUILDING GIRTS:
- LIMIT WIND* DEFLECTION TO L/90
- * COMPONENTS AND CLADDING WIND FORCES MAY BE MULTIPLIED BY 0.42 TIMES ULTIMATE PRESSURES FOR COMPUTING WIND DEFLECTION.

f. FOR OTHER LIMITS OF DEFLECTION SEE 2020 FLORIDA BUILDING CODE

g. ALLOWABLE STRESS INCREASES FOR SHORT TERM WIND LOADINGS IS NOT PERMITTED

I. METAL BUILDING SYSTEM NOT DESIGNED TO SUPPORT FUTURE MECHANICAL EQUIPMENT, CRANES, AND IS NOT DESIGNED FOR ANY FUTURE EQUIPMENT. METAL BUILDING COLUMNS ARE DESIGNED FOR MEZZANINES WITH LOADS LISTED IN GENERAL NOTES AND WITH LIMITS MEZZANINE DEFINED ON MEZZANINE FRAMING PLAN.

ABBREVIATIONS

ADDL	- ADDITIONAL	FS	- FAR SIDE	PAF	- POWER ACTUATED FASTENERS
AR	- ANCHOR ROD	FT	- FOOT	PART	- PARTITION
ALT	- ALTERNATE	F#	- FOOTING	PARTL	- PARTIAL
APPROX	- APPROXIMATELY	FTG	- FOOTING	PCJ	- PRECAST CONCRETE JOIST
ARCH	- ARCHITECT	FV	- FIELD VERIFY	PJP	- PARTIAL JOINT PENETRATION
ARCHL	- ARCHITECTURAL	GA	- GAUGE	PL	- PLATE
B/	- BOTTOM OF	GALV	- GALVANIZED	PLF	- POUNDS PER LINEAR FOOT
BC	- BOTTOM CHORD	GC	- GENERAL CONTRACTOR	PSF	- POUNDS PER SQUARE FOOT
BLDG	- BUILDING	GT	- GIRDER TRUSS	PSI	- POUNDS PER SQUARE INCH
BM	- BEAM	HC	- HOLLOW CORE	PT	- POST TENSIONED
BOTT	- BOTTOM	HCP	- HOLLOW CORE PLANK	PrT	- PRESSURE TREATED
BRG	- BEARING	HDG	- HOT DIPPED GALVANIZED	PNL	- PANEL
C/C	- CENTER TO CENTER	HG	- HIP GIRDER	R	- RADIUS
CF	- CONTINUOUS FOOTING	HK	- HOOK	REG	- REGULAR
CIP	- CAST IN PLACE	HORIZ	- HORIZONTAL	REINF	- REINFORCING
CJ	- CONTRACTION JOINT	HP	- HIGH POINT	REM	- REMAINDER
CJP	- COMPLETE JOINT PENETRATION	HS	- HIGH STRENGTH	REQD	- REQUIRED
CL, ℄	- CENTERLINE	IJ	- ISOLATION JOINT	REV	- REVISED/REVISION
CLR	- CLEAR	INFO	- INFORMATION	RM	- ROOM
CMU	- CONCRETE MASONRY UNIT	INS	- INSULATION	RO	- ROUGH OPENING
COL	- COLUMN	INT	- INTERIOR	RQMTS	- REQUIREMENTS
CONC	- CONCRETE	IRR	- IRREGULAR	SCHED	- SCHEDULE
CONFIG	- CONFIGURATION	JB	- JOIST BEARING	SECT	- SECTION
CONT	- CONTINUOUS	JBE	- JOIST BEARING ELEVATION	SIM	- SIMILAR
CONTR	- CONTRACTOR	JR	- JAMB REINFORCING	SL	- SLOPE
CTR	- CENTER	JT	- JOINT	SOG	- SLAB-ON-GRADE
DBL	- DOUBLE	K	- KIP(s), 1000 POUNDS	SP	- SPIRAL
DD	- DECK DRAIN	KLF	- KIPS PER LINEAR FOOT	SQ	- SQUARE
DTL	- DETAIL	KJ	- CONSTRUCTION JOINT	SS	- STAINLESS STEEL
DIA	- DIAMETER	L	- ANGLE	STD	- STANDARD
DIM	- DIMENSION	LG	- LONG	STL	- STEEL
DN	- DOWN	LLH	- LONG LEG HORIZONTAL	STRUCTL	- STRUCTURAL
DR	- DRAIN	LLV	- LONG LEG VERTICAL	SW#	- SHEARWALL
DWG	- DRAWING	LP	- LOW POINT	SW	- SHORT WAY
EA	- EACH	LW	- LONG WAY	T/	- TOP OF
EE	- EACH END	LWT	- LIGHTWEIGHT	TB	- TIE BEAM
EF	- EACH FACE	MFR	- MANUFACTURER	TC	- TIE COLUMN
EJ	- EXPANSION JOINT	MAS	- MASONRY	TEMP	- TEMPERATURE
EL	- ELEVATION	MO	- MASONRY OPENING	TG	- TRUSS GIRDER
ELEV	- ELEVATOR	MATL	- MATERIAL	TH	- TRUSS HIP
ENGR	- ENGINEER	MAX	- MAXIMUM	THK	- THICK
EOR	- ENGINEER OF RECORD	MECHL	- MECHANICAL	TJ	- TRUSS JACK
EOS	- EDGE OF SLAB	MTL	- METAL	TR	- TRUSS
EQ	- EQUAL	MIN	- MINIMUM	TYP	- TYPICAL
EW	- EACH WAY	MISC	- MISCELLANEOUS	UNO	- UNLESS NOTED OTHERWISE
EXIST	- EXISTING	NS	- NEAR SIDE	VERT	- VERTICAL
EXP	- EXPANSION	NIC	- NOT IN CONTRACT	W/	- WITH
EXT	- EXTERIOR	NTS	- NOT TO SCALE	W/O	- WITHOUT
FIN	- FINISH	NW	- NORMAL WEIGHT	WD	- WOOD
FLR	- FLOOR	OC	- ON CENTER	WF	- WALL FOOTING
FD	- FLOOR DRAIN	OH	- OPPOSITE HAND	WP	- WORK POINT
FND	- FOUNDATION	OPNG	- OPENING	WWR	- WELDED WIRE REINFORCING
FOM	- FACE OF MASONRY				

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100% SUBMITTAL

PAUL S. MOERSCHEL LICENSE No. 60487 STATE OF FLORIDA PROFESSIONAL ENGINEER

Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES

RAW WATER BOOSTER PUMP STATION - PARKING CANOPY

STRUCTURAL NOTES & ABBREVIATIONS

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	RHE
CHKD:	PSM

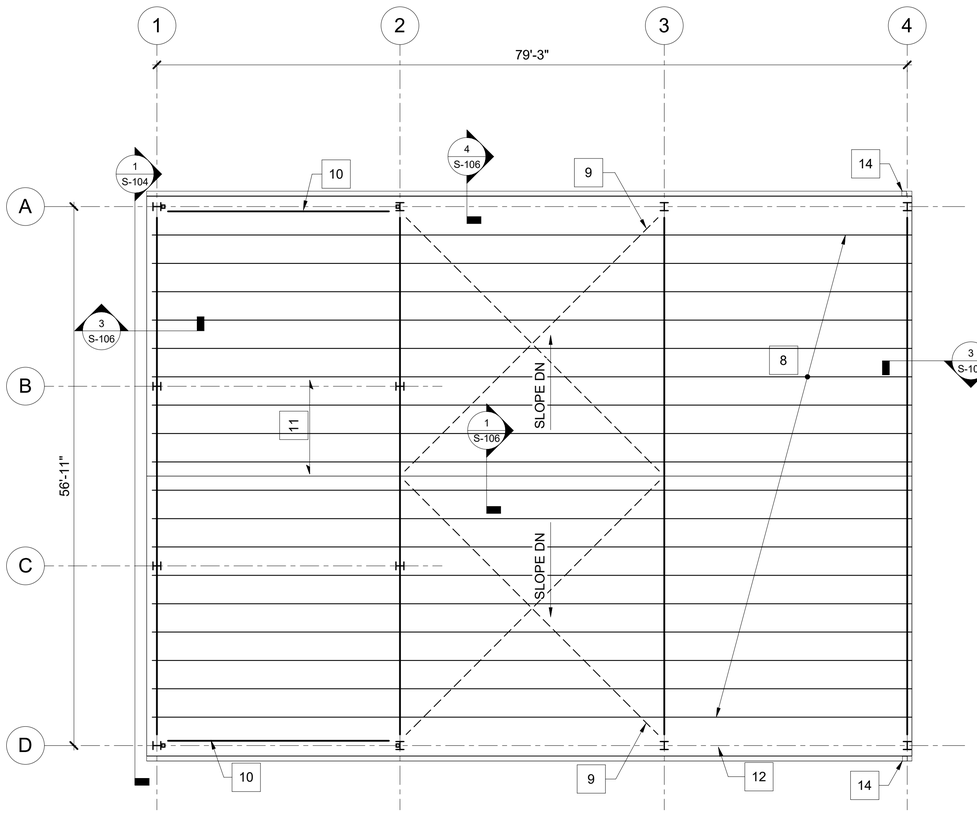
S-102

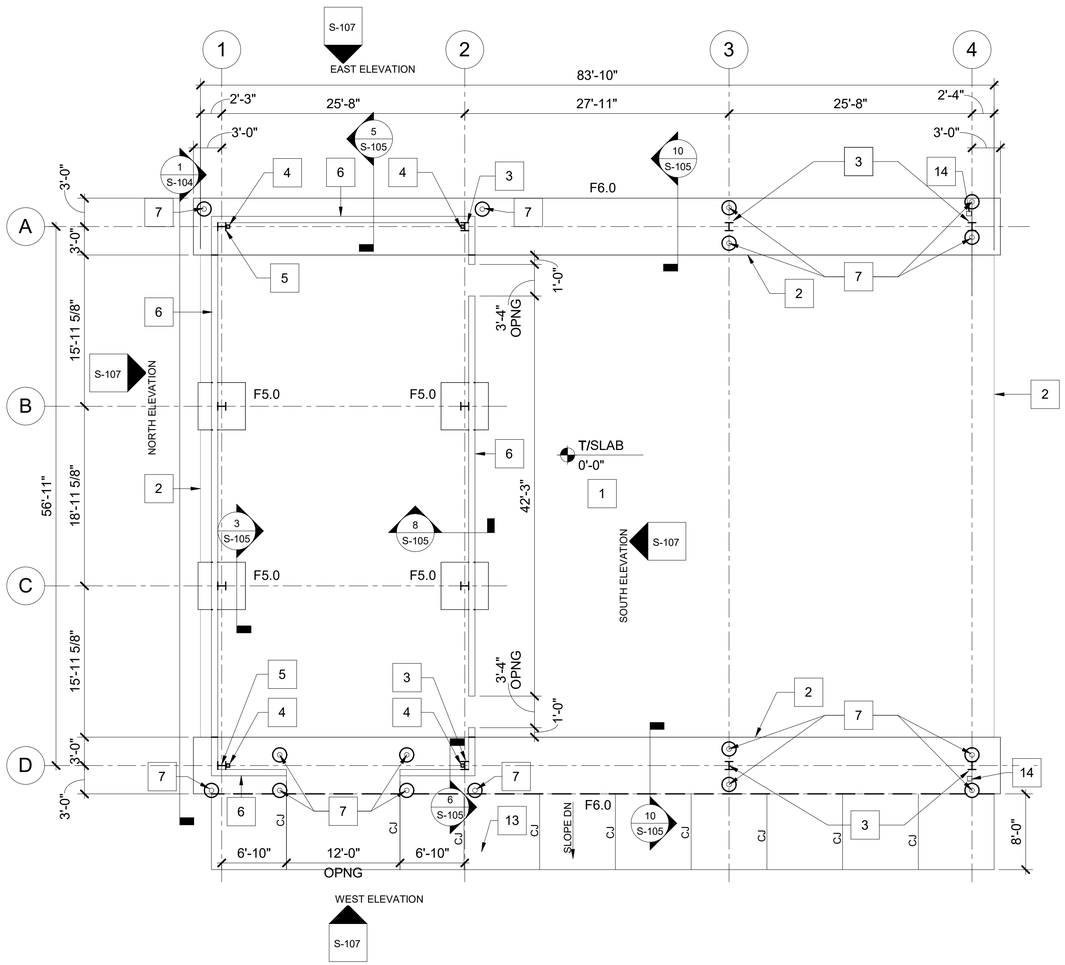
WORLDWIDE ENGINEERING
CERTIFICATE OF AUTHORIZATION NO. 35826
11926 Fairway Lakes Drive
FORT MYERS, FL 33913
PHONE: (239) 939-1414
FAX: (239) 278-4289

www.trcww.com

PROJ No. 24FTM225

Bar Measures 1 inch, otherwise drawing not to scale





2 S-103 ROOF PLAN

1/8" = 1'-0"

KEYNOTES

KEY	DESCRIPTION
1	EXISTING 4" THICK CONCRETE SLAB ON GRADE
2	EDGE OF EXISTING SLAB
3	PEMB FRAME COLUMNS
4	PEMB PORTAL FRAME COLUMNS
5	PEMB WIND COLUMN MINIMUM BASE SIZE = 8" DEPTH
6	CONTINUOUS CONCRETE CURB
7	PIPE BOLLARD, SEE 7/S-105
8	(2) PURLINS @3'-0" OC MAX
9	PEMB ROOF BRACING
10	PEMB PORTAL FRAME
11	PEMB STANDING SEAM ROOF
12	PEMB MFR TO PROVIDE 6" GUTTER WITH DOWNSPOUTS ALONG EAST AND WEST EDGE OF STRUCTURE ABOVE VEHICLE ENTRANCE
13	6" THICK 4,000 PSI(NW 145 PCF) CONCRETE SLAB ON GRADE AT SOUTH SIDE VEHICLE ENTRACE W/ 2% DOSE OF EUCLID EUCON SRA FLOOR. PROVIDE 6x6 W1.4xW1.4 WELDED WIRE REINFORCING (WWR) IN SHEETS NOT ROLLS CHAIRED TO TOP OF SLAB, SEE 11/S-105.
14	GUTTER, DOWNSPOUT AND SPLASH BLOCK PER PEMB MFR.

1 S-103 FOUNDATION PLAN

1/8" = 1'-0"

FOOTING SCHEDULE

MARK	LENGTH	WIDTH	THICKNESS	BOTTOM REINFORCING LW	BOTTOM REINFORCING SW	TOP REINFORCING LW	TOP REINFORCING SW	COMMENTS
F5.0	5'-0"	5' - 0"	1'-4"	(6) #6	(6) #6	(6) #6	(6) #6	
F6.0	CONT	6' - 0"	2'-6"	(6) #6	#6@12" OC	(6) #6	#6@12" OC	

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Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES

RAW WATER BOOSTER PUMP STATION - PARKING CANOPY

FOUNDATION AND ROOF PLANS

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	KLI / RHE
CHKD:	PSM

S-103

WORLDWIDE ENGINEERING
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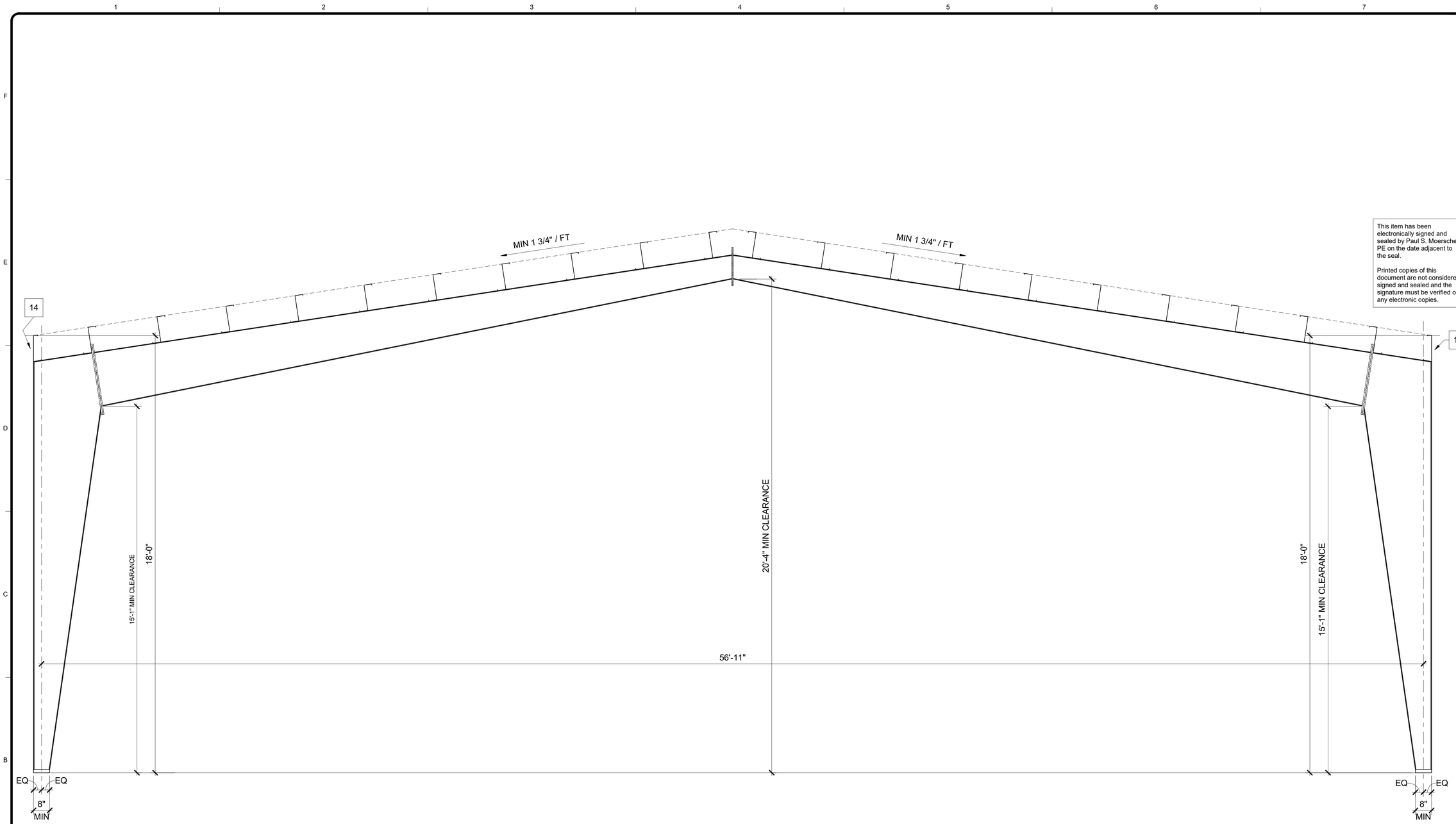
FORT MYERS, FL 33913
PHONE: (239) 939-1414
FAX: (239) 278-4289

PROJ No. 24FTM225

Bar Measures 1 inch, otherwise drawing not to scale



1 S-104 TYPICAL PEMB FRAME ELEVATION

1/2" = 1'-0"

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Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES

RAW WATER BOOSTER PUMP STATION - PARKING CANOPY

PEMB FRAME ELEVATION

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	RHE
CHKD:	PSM

S-104

WORLDWIDE ENGINEERING
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www.trcww.com
PROJ No. 24FTM225

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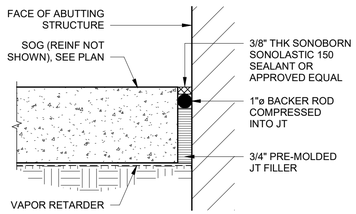
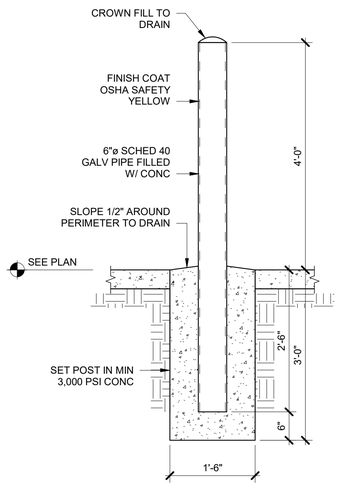
DOOR NUMBER	WIDTH	HEIGHT	DOOR THICKNESS	MANUFACTURER	SERIES	NOA NUMBER	REMARKS	CLOSER	LOCK TYPE	DESIGN PRESSURE (PSF) NEGATIVE	DESIGN PRESSURE (PSF) POSITIVE	RATED PRESSURE (PSF) POSITIVE	RATED PRESSURE (PSF) POSITIVE
1	3'-0"	7'-0"	1 3/4"	SCHLAGE LOCK CONPANY, LLC	STEELCRAFT H SERIES	23-0821.18	-	(2) UL RATED STAINLESS STEEL (304) SELF CLOSING HINGES PER DOOR. MUST MEET ANSI/BHMA A156 17 GRADE 1 REQUIREMENTS	RIM EXIT DEVICE MODEL XP98/99 (F) W/ STRIKE MODEL 909/954 BY VON DUPRIN	45	34	100	100
2	12'-0"	12'-0"	3"	OVERHEAD DOOR COORPORATION	626 STEEL ROLLING DOOR	FL15960 R9	INSULATED WITH 10"x1" VISION LITES	–	–	45	34	65	65

1 S-105 DOOR SCHEDULE
1/4" = 1'-0"

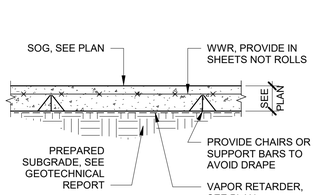


NOTES:
1. PROVIDE SEALANT FOR EXTERNAL JOINTS ONLY.
2. CLEAN AND PREPARE SURFACES TO RECEIVE SEALANT IN ACCORDANCE W/ MFR'S RECOMMENDATIONS.

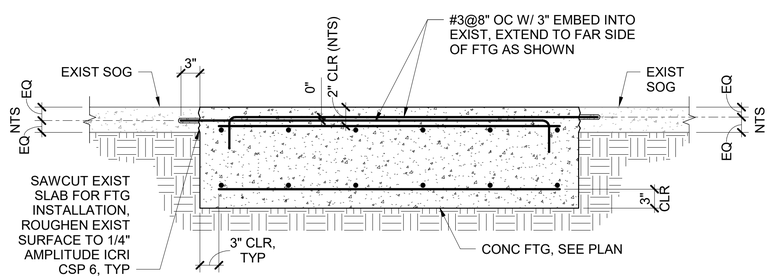
4 S-105 ISOLATION JOINT AT SOG (IJ)
3" = 1'-0"



7 S-105 PIPE BOLLARD
3/4" = 1'-0"



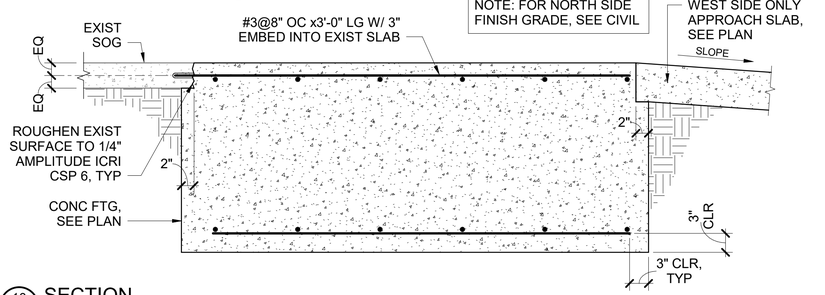
11 S-105 WWR AT SOG
1" = 1'-0"



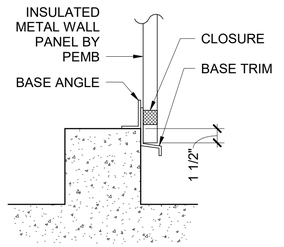
3 S-105 FOOTING AT EXISTING SLAB ON GRADE
1" = 1'-0"

6 S-105 SECTION AT PEMB FRAME COLUMN
1" = 1'-0"

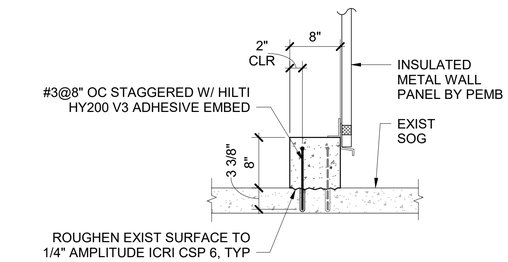
5 S-105 SECTION AT CURB
1" = 1'-0"



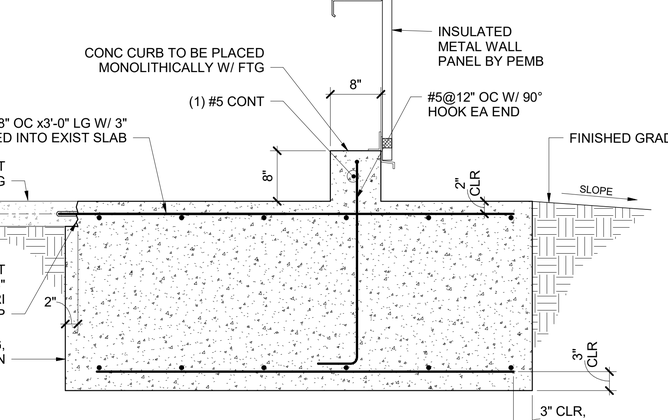
10 S-105 SECTION
1" = 1'-0"



9 S-105 WALL PANEL BASE DETAIL
1 1/2" = 1'-0"



8 S-105 CONCRETE CURB AT EXISTING SLAB
1" = 1'-0"



DOOR FRAME TYPE **DOOR TYPES**

2 S-105 DOOR DETAILS
1/4" = 1'-0"

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Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION - PARKING CANOPY
FOUNDATION SECTIONS AND DETAILS

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	RHE
CHKD:	PSM

S-105

WORLDWIDE ENGINEERING
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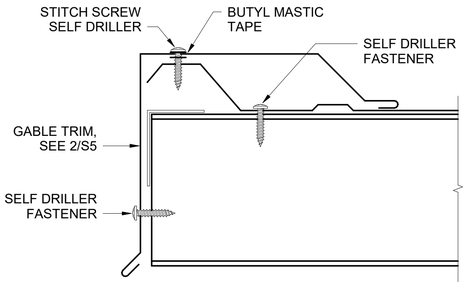
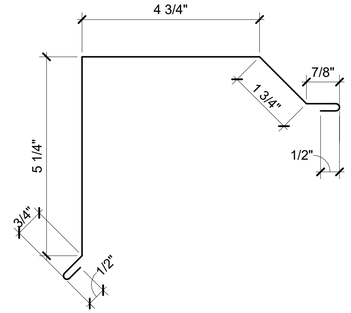
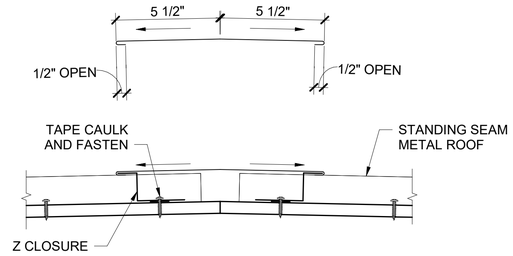


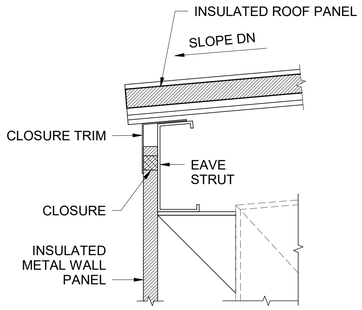
3 S-106 **GABLE END DETAIL**
6" = 1'-0"



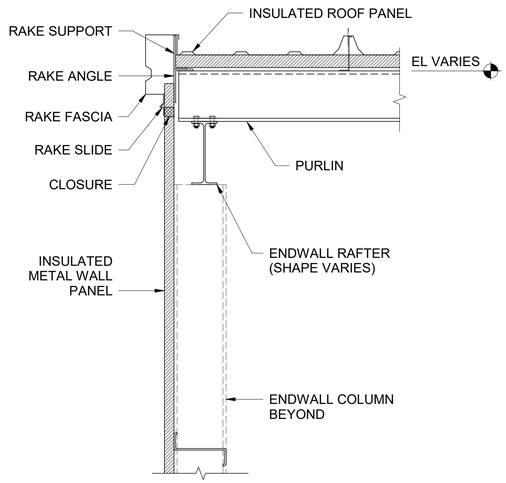
2 S-106 **TYPICAL GABLE TRIM DETAIL**
6" = 1'-0"



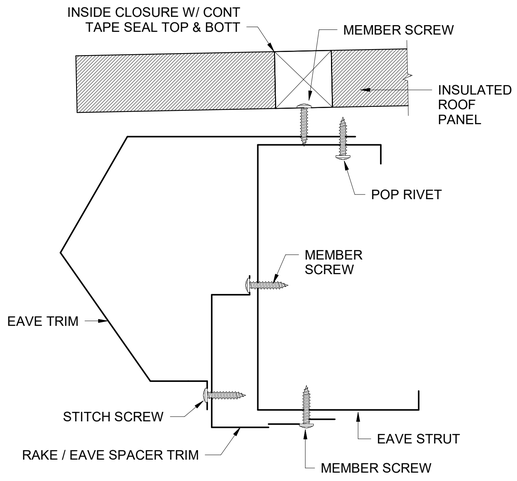
1 S-106 **TYPICAL RIDGE CAP (UNVENTED)**
3" = 1'-0"



6 S-106 **SIDEWALL SECTION**
1 1/2" = 1'-0"



5 S-106 **ENDWALL SECTION**
1" = 1'-0"



4 S-106 **TYPICAL EAVE FLASHING**
6" = 1'-0"

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100% SUBMITTAL

PAUL S. MOERSCHEL LICENSE No. 60487 STATE OF FLORIDA PROFESSIONAL ENGINEER

Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES

RAW WATER BOOSTER PUMP STATION - PARKING CANOPY

ROOF SECTIONS AND DETAILS

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	KLI / RHE
CHKD:	PSM

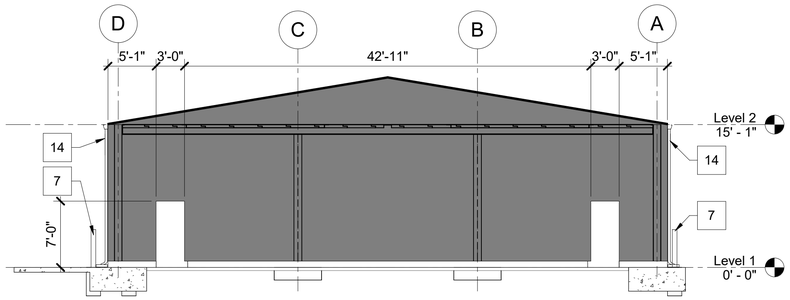
S-106

WORLDWIDE ENGINEERING
CERTIFICATE OF AUTHORIZATION NO. 35826
11926 Fairway Lakes Drive
FORT MYERS, FL 33913
PHONE: (239) 939-1414
FAX: (239) 278-4289

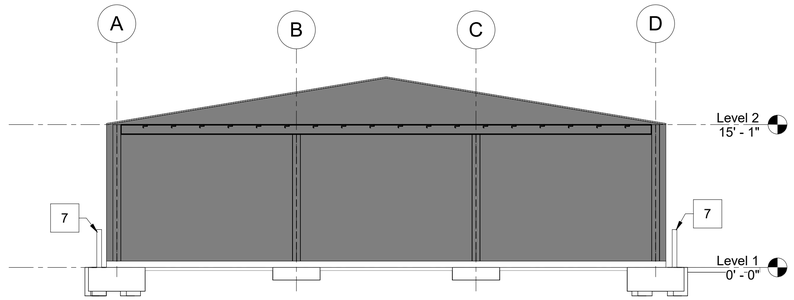
www.trcww.com

PROJ No. 24FTM225

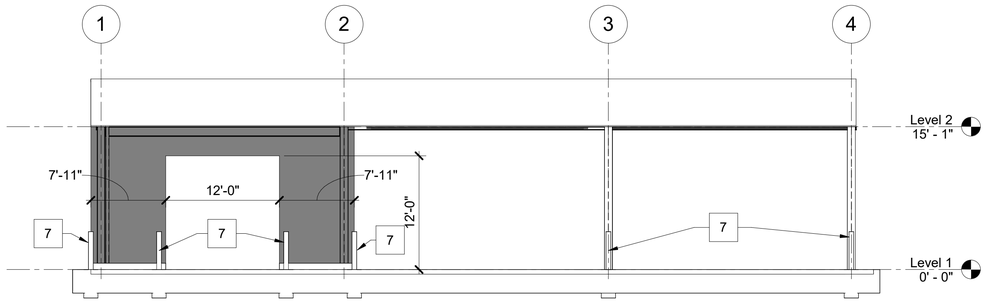
Bar Measures 1 inch, otherwise drawing not to scale



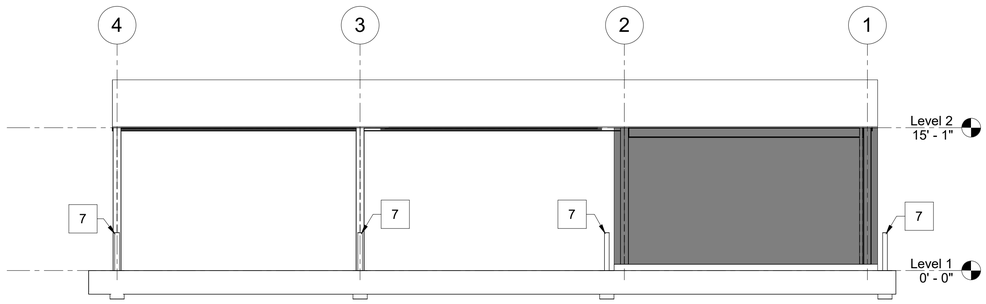
2 S-107 SOUTH ELEVATION
1/8" = 1'-0"



1 S-107 NORTH ELEVATION
1/8" = 1'-0"



3 S-107 WEST ELEVATION
1/8" = 1'-0"



4 S-107 EAST ELEVATION
1/8" = 1'-0"

KEYNOTES

KEY	DESCRIPTION
7	PIPE BOLLARD, SEE 7/S-105
14	GUTTER, DOWNSPOUT AND SPLASH BLOCK PER PEMB MFR.

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MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES

RAW WATER BOOSTER PUMP STATION - PARKING CANOPY

ELEVATIONS

PROJ:	200-08486-24001
DESN:	PSM
DRWN:	TRC
CHKD:	PSM

S-107

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