STRUCTURAL GENERAL NOTES

1. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING READER'S CONVENIENCE. SEE ALSO INDIVIDUAL DRAWING NOTES AND PROJECT SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.
2. ALL REFERENCED STANDARDS HEREIN ARE TO MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE IN PROJECT SPECIFICATIONS OR ON THE DRAWING.
3. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) ELEVATIONS SHOWN ON DRAWINGS ARE REFERENCED TO THIS DATUM UNLESS NOTED OTHERWISE.
4. ALL EXISTING DIMENSIONS SHOWN WITH THE ± SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
5. DIMENSIONS MARKED WITH A "X" SHALL BE DETERMINED BY EQUIPMENT MANUFACTURER AND COORDINATED BY CONTRACTOR
6. SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES AS SPECIFIED IN PROJECT SPECIFICATIONS.

ADD'L	ADDITIONAL
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECT(URAL)
B.O.F	BOTTOM OF FOOTING
B.O.S.	BOTTOM OF STEEL
BLDG.	BUILDING
BOT.	BOTTOM
BRG.	BEARING
BTWN	BETWEEN
CCJ	CRACK CONTROL JOINT
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
DEMO	DEMOLISH
DIA	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DN	DOWN
DTL.	DETAIL
DWG(S)	DRAWING(S)
DWL	DOWEL
E/EXIST.	EXISTING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL / ELEV.	ELEVATION
ELEC	ELECTRIC(AL)
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ESES	ANCHOR BOLT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
F.V.	FIELD VERIFY
FD	FLOOR DRAIN
FFE	FINISH FLOOR ELEVATION
FIN	FINISH (ED)
FLR	FLOOR
FND.	FOUNDATION
FRMG	FRAMING
FT	FOOT
FTG	FOOTING
GR.	GRADE
GRTG	GRATING
HK	HOOK
HORIZ	HORIZONTAL
HT	HEIGHT
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
I.J.	ISOLATION JOINT
IN.	INCH
INSUL	INSULATION
L	ANGLE
L.P.	LOW POINT
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MID	MIDDLE / MIDPOINT
MIN	MINIMUM, MINUTE
MISC.	MISCELLANEOUS
MTL	METAL
N	NEW
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
NA	NOT APPLICABLE
NO	NUMBER
NOM	NOMINAL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPH	OPPOSITE HAND
OPNG	OPENING
PERP	PERPENDICULAR
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PRCST	PRECAST
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
QTY	QUANTITY
R	RISER
RAD.	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF.	REINFORCEMENT
REQ/REQ'D	REQUIRED
REV	REVISION
RO	ROUGH OPENING
SCHED	SCHEDULE
SF	SQUARE FOOT
SHT.	SHEET
SIM.	SIMILAR
SPA.	SPACE
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STAG.	STAGGER
STD	STANDARD
STL	STEEL
STL JST	STEEL JOIST
STRUCT	STRUCTURE(AL)
SYM	SYMMETRICAL
T	TREAD
T/	TOP OF
TEMP	TEMPORARY
THK	THICKNESS
TOF	TOP OF FOOTING
TOS	TOP OF SLAB
TRANSV.	TRANSVERE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VERT	VERTICAL
W.P.	WORK POINT
W/	WITH
W/O	WITHOUT
WS	WATER STOP.
WWF	WELDED WIRE FABRIC

DESIGN CRITERIA

A. REFERENCES:

A. ICC INTERNATIONAL BUILDING CODE, 2021 EDITION, RISK CATEGORY III IN ACCORDANCE WITH TABLE 1604.5
B. STATE BUILDING CODE: 2023 FLORIDA BUILDING CODE, 8TH EDITION
C. ASCE/SEI 7-22 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

B. DEAD LOADS:

ROOF DEAD LOAD	= (SELF WEIGHT)
DEAD LOAD AVAILABLE TO RESIST UPLIFT	= SELF WEIGHT OF STRUCTURAL FRAMING ONLY
FLOOR DEAD LOAD	= (SELF WEIGHT)

C. LIVE LOADS (U.N.O.):

ROOF	= 20 PSF
STAIRS, WALKWAYS, OR PLATFORMS	= 100 PSF
PROCESS EQUIPMENT FLOOR	= 250 PSF

D. WIND LOAD:

BASIC DESIGN WIND SPEED, V	= 181 MPH
RISK CATEGORY	= III
WIND EXPOSURE CATEGORY	= C
DIRECTIONALITY FACTOR, Kd	= 0.85
TOPOGRAPHIC FACTOR, Kzt	= 1.0
INTERNAL PRESURE COEFFICIENT	=±.18
BUILDING ENCLOSURE CLASSIFICATION	=ENCLOSED
GENERATOR AND TANK PRESSURES FOR COMPONENT & CLADDING PRESSURES,	= REFER TO CHART
E. DESIGN FLOOD ELEVATION	=11.00

DEFERRED SUBMITTALS

1. IN ACCORDANCE WITH THE SPECIFICATIONS DESIGNS FOR THE ITEMS LISTED BELOW ARE NOT INCLUDED IN THE CONTRACT DOCUMENTS. DESIGN OF THESE ELEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA:
   1. ALUM. GUARDRAIL AND HANDRAIL SYSTEMS AND THEIR CONNECTIONS
   2. ALUM. STAIR FRAMING, PLATFORM AND THEIR CONNECTIONS
   3. ALUM. GRATING AND CHECKER PLATE SURFACES (DESIGN FOR MINIMUM SIZES PROVIDED)
   4. GENERATOR AND OTHER EQUIPMENT ANCHORAGE
   5. PRESTRESSED CONCRETE TANK
   6. PRESTRESSED CONCRETE PILES
2. DESIGN OF THE ITEMS LISTED ABOVE SHALL BE IN ACCORDANCE WITH THE ICC INTERNATIONAL BUILDING CODE, 2021 EDITION, FLORIDA BUILDING CODE, 2023 EDITION, OSHA AND SHALL INCLUDE ALL ATTACHMENTS TO THE STRUCTURE

FOUNDATIONS

1. SEE GEOTECHNICAL/SUBSURFACE INVESTIGATION REPORT BY UES DATED FEB 15, 2022. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHETHER OR NOT ADDITIONAL GEOTECHNICAL INFORMATION IS REQUIRED AND TO PROVIDE SUCH INFORMATION AS THE CONTRACTOR DEEMS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
2. ALLOWABLE BEARING PRESSURES AS FOLLOWS:

   A. MAT FOUNDATIONS: 1500 PSF (ASSUMED)
   B. 12" PRECAST PILES MIN 35 FT EMBED LEGNTH (ALLOWABLE CAPACITIES)
      a. COMPRESSION CAPACITY 88 KIPS
      b. TENSION CAPACITY 24 KIPS
      c. LATERAL CAPACITY 8 KIPS (0.5- INCH DEFLECTION)

A. PRIOR TO PLACING ENGINEERED FILL, THE SITE SHALL BE STRIPPED AND PROOF ROLLED. ANY SOFT SPOTS ENCOUNTERED SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL. REFER TO EARTHWORK SPECIFICATION FOR ADDITIONAL INFORMATION.

B. INITIAL SITE PREPARATION SHALL CONSIST OF PERFORMING STRIPPING AND CLEARING OPERATIONS. THIS SHALL BE DONE WITHIN, AND TO A DISTANCE OF FIVE (5) FEET BEYOND, THE PERIMETER OF THE PROPOSED BUILDING/PAD FOOTPRINT (INCLUDING EXTERIOR ISOLATED COLUMNS). DURING THE CLEARING AND GRUBBING OPERATION, ROOTS WITH A DIAMETER GREATER THAN 1-INCH OR SMALL ROOTS IN HIGH DENSITY SHALL BE COMPLETELY REMOVED.

C. FOLLOWING SITE STRIPPING AND PRIOR THE PLACEMENT OF ANY FILL, AREAS OF SURFICIAL SAND (NOT EXPOSED LIMESTONE) SHALL BE COMPACTED ("PROOF ROLLED") AND TESTED. USE A STEEL DRUM VIBRATORY ROLLER WITH SUFFICIENT STATIC WEIGHT AND VIBRATORY IMPACT ENERGY TO ACHIEVE THE REQUIRED COMPACTION. DENSITY TESTS SHALL BE PERFORMED ON THE PROOF ROLLED SURFACE AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 2,500 SQUARE FEET, OR A MINIMUM OF FOUR (4) TESTS, WHICHEVER IS GREATER. AREAS OF EXPOSED INTACT LIMESTONE SHALL BE VISUALLY CONFIRMED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO FILL PLACEMENT, IN LIEU OF PROOF ROLLING.

D. FILL MATERIAL MAY THEN BE PLACED IN THE BUILDING PAD AS REQUIRED. THE FILL MATERIAL SHALL BE INORGANIC (CLASSIFIED AS SP, SW, GP, GW, SP-SM, SW-SM, GW-GM, GP-GM) CONTAINING NOT MORE THAN 5 PERCENT (BY WEIGHT) ORGANIC MATERIALS. FILL MATERIALS WITH SILT-SIZE SOIL FINES IN EXCESS OF 12% SHALL NOT BE USED. FILL SHALL BE PLACED IN LIFTS WITH A MAXIMUM LIFT THICKNESS NOT EXCEEDING 12-INCHES. EACH LIFT SHALL BE COMPACTED AND TESTED PRIOR TO THE PLACEMENT OF THE NEXT LIFT. DENSITY TESTS SHALL BE PERFORMED WITHIN THE FILL AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 2,500 SQUARE FEET PER LIFT IN THE BUILDING AREAS, OR A MINIMUM OF FOUR (4) TESTS PER LIFT, WHICHEVER IS GREATER. IF FILL IS PLACED INSIDE PARTIALLY COMPLETED WALLS OR OTHER STRUCTURAL ELEMENTS, CARE TO BE EXERCISED TO AVOID DAMAGE TO THESE ELEMENTS.

E. FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE TOP 1 FOOT UNDER STRUCTURAL AREAS SHOULD BE COMPACTED TO A MINIMUM OF 98%. ALL DENSITY TESTS SHOULD BE PERFORMED USING THE NUCLEAR METHOD (ASTM D-6938) OR THE SAND CONE METHOD (ASTM D-1556).

F. ALL EXISTING TIMBER PILES ARE TO BE CUT OFF, SO THE TOP OF THE PILES ARE A MINIMUM OF 2-FEET BELOW THE BOTTOM OF THE PILE CAP/STRUCTURAL SLAB FOUNDATION. ALL SITEWORK AND FILL PLACEMENT OPERATIONS SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF PILES TO AVOID ADVERSE IMPACTS SUCH AS DAMAGE TO THE PILES AND/OR NEGATIVE SKIN FRICTION RESULTING IN INCREASED PILE SETTLEMENT; THIS ALSO INCLUDES ALL NECESSARY WORK WITH THE EXISTING STRUCTURE AND EXISTING FOUNDATIONS.

G. CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING A GEOTECHNICAL ENGINEER TO PROVIDE OBSERVATION AND TESTING SERVICES DURING THE GRADING AND FOUNDATION PHASE OF CONSTRUCTION. INSPECTION AND TESTING REPORTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER.

H. THERE SHALL BE NO BACKFILLING OPERATIONS UNTIL THE CONCRETE WALLS HAVE REACHED THEIR 28 DAY DESIGN STRENGTH, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER.

I. FOR STRUCTURES WITH CONCRETE TOP SLABS, THERE SHALL BE NO BACKFILLING OPERATIONS UNTIL THE TOP SLAB IS IN PLACE, HAS BEEN CURED A MINIMUM OF 7 DAYS, AND HAS REACHED 70% OF ITS 28 DAY DESIGN STRENGTH, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER.

J. HEAVY EQUIPMENT OR WHEELED/TRACKED VEHICLES EXCEEDING 20 PSF CONTACT PRESSURE ARE NOT ALLOWED ON ELEVATED SLABS, ROOFS, OR WITHIN 10 FT OF EARTH RETAINING WALLS UNLESS NOTED OTHERWISE ON PLANS OR APPROVED BY STRUCTURAL ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

CONCRETE

1. REFERENCES

   A. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   B. ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES
   C. ACI SP-66 ACI DETAILING MANUAL
   D. ACI 301-16 SPECIFICATION FOR STRUCTURAL CONCRETE
   E. ACI 117-10 SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS
   F. CRSI MSP-2-01 MANUAL OF STANDARD PRACTICE
   G. CRSI REINFORCING BAR DETAILING
   H. CRSI PLACING REINFORCING BARS

2. MATERIALS

   A. STRUCTURAL CONCRETE

      a. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (f'c): 4500 PSI
      b. UNLESS NOTED OTHERWISE ON THE PLANS, ALL CONCRETE TO HAVE THE FOLLOWING EXPOSURE CLASSIFICATION AS DEFINED IN ACI 318-19, CHAPTER 19: F3, S0, W1, C2
      c. ALL CONCRETE EXPOSED TO THE ELEMENTS SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ASTM C260. SEE SPECIFICATIONS.
      d. ALL CONCRETE IN 8" WALLS OR COLUMNS WITH TWO PLANES OF REINFORCEMENT SHALL HAVE MAXIMUM 3/4" AGGREGATE. IT IS RECOMMENDED THAT THE CONTRACTOR CONSIDER SUPER-PLASTICIZED CONCRETE PER SPECIFICATIONS.
      e. ALL CONCRETE AGGREGATE SHALL COMPLY WITH ASTM C33 (NORMAL WEIGHT).
      f. WATER TO CEMENT RATIO (MAX) = 0.42
      g. AIR CONTENT PERCENT BY VOLUME = 3 +/- 1½
      h. SLUMP AT POINT OF PLACEMENT
         - WITH WATER REDUCING ADMIXTURE: 2" - 4"
         - WITH HIGH RANGE WATER REDUCING ADMIXTURE: 6" - 8"
      i. FLY ASH: ASTM C 618, TYPE C OR TYPE F (CORROSIVE ENVIRONMENTS) WITH LOSS ON IGNITION NOT MORE THAN 6 PERCENT. REPLACEMENT QUANTITY OF CEMENT CONTENT BY WEIGHT SHALL BE NOT LESS THAN 15 PERCENT OR MORE THAN 25 PERCENT IN CONCRETE
      j. WATER-REDUCING ADMIXTURE: ASTM C 494, TYPE A.
      k. PROHIBITED ADMIXTURES: CALCIUM CHLORIDE THYOCYANATES OR ADMIXTURES CONTAINING MORE THAN 0.1 PERCENT CHLORIDE IONS.
      l. CEMENT CONTENT PER CUBIC YARD OF CONCRETE: 564 LBS

   B. REINFORCEMENT

      a. REINFORCING BARS: ASTM A615, GRADE 60

   C. ACCESSORIES

      a. BAR SUPPORTS CLASS 1, MAXIMUM PROTECTION (CRSI MANUAL OF STANDARD PRACTICE) FOR ALL SLABS AND BEAMS WITH SOFFITS EXPOSED TO VIEW

   D. CAST-IN-PLACE ANCHOR RODS

      a. SHALL BE GALVANIZED, FURNISHED WITH CHAMFERED ENDS, AND SHALL MEET STRENGTH AND DUCTILITY REQUIREMENTS EQUIVALENT ASTM F1554, GR 55 WELDABLE MATERIAL.

   E. GROUT: HIGH STRENGTH, NON-SHRINK STRUCTURAL GROUT. SEE SPECIFICATIONS.

3. REINFORCEMENT DETAILING

   A. ALL REINFORCING STEEL DETAILS SHALL BE IN ACCORDANCE WITH THE ACI CODE REQUIREMENTS (ACI 318 OR 350 - CURRENT EDITIONS).
   B. REINFORCING STEEL PLACING DRAWINGS AND BAR LISTS SHALL CONFORM TO THE ACI OR CRSI DETAILING MANUALS. ALL BAR AND MESH SUPPORTS MUST BE CLEARLY DETAILED
   C. CONCRETE COVER FOR REINFORCING SHALL BE INDICATED ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. HOWEVER, NO REINFORCING IN AREAS EXPOSED TO EARTH, WEATHER ,SEWAGE OR WATER SHALL HAVE COVER LESS THAN TWO INCHES.

CONCRETE - (CONTINUED)

D. SPECIFIED COVER FOR REINFORCING PER ACI 318 (BUILDING STRUCTURES):

FOOTINGS (BOTTOM)	3.0" (CAST AGAINST EARTH)
FOOTINGS	2.0" (FORMED)
COLUMNS (TIES)	1.5"
WALLS (EXTERIOR)	1.5"
WALLS (INTERIOR)	3/4"
SUSPENDED SLABS (BOTTOM)	3/4"
SUSPENDED SLABS (TOP)	1.5"
BEAMS	1.5"
SLAB-ON-GRADE (REBAR)	2" FROM TOP OF SLAB (U.N.O.)

E. REINFORCEMENT IN WALLS AND STRIP FOOTINGS SHALL BE CONTINUOUS. HORIZONTAL BAR LAP SPLICES SHALL BE STAGGERED
F. PROVIDE CORNER BARS AT ALL WALL AND FOUNDATION CORNERS, AND LAP WITH THE HORIZONTAL BARS. CORNER BARS ARE TO MATCH THE HORIZONTAL BARS IN SIZE, GRADE AND SPACING UNLESS OTHERWISE SHOWN.
G. HOOKS AND BENDS SHALL MEET ACI STANDARD UNLESS OTHERWISE INDICATED.
H. SPLICES: CONTINUOUS REINFORCING BARS SHALL BE FURNISHED WITH CLASS 'B' TENSION LAPS SPLICES INCLUDING CORNER BARS, UNLESS NOTED OTHERWISE.
I. MECHANICAL SPLICES SHALL NOT BE PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER
J. REINFORCING STEEL FABRICATION AND PLACEMENT SHALL BE IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE AND CRSI PLACING REINFORCING BARS (LATEST EDITIONS).
K. REINFORCING STEEL IN FOOTINGS SHALL BE ASSEMBLED IN MAT GRILLES EQUALLY SPACED AND SECURELY WIRED TOGETHER BEFORE THE CONCRETE IS POURED.
L. WALL FOOTING DOWELS ARE TO HAVE A FULL TENSION LAP SPLICE WITH THE WALL STEEL UNLESS NOTED OTHERWISE.
M. PIER REINFORCEMENT SHALL BE DOWELED TO THE FOOTING. PROVIDE DOWELS EQUAL IN SIZE, NUMBER AND GRADE TO THE PIER REINFORCEMENT UNLESS OTHERWISE INDICATED. DOWELS SHALL BE HOOKED 90 DEGREES AT THE BOTTOM LEVEL OF FOOTING REINFORCEMENT. DOWELS SHALL BE LAPPED WITH THE PIER REINFORCEMENT
N. SPREAD BARS AROUND SMALL OPENINGS AND SLEEVES IN SLABS AND WALLS WHERE POSSIBLE AND WHERE BAR SPACING WILL NOT EXCEED 1.5 TIMES THE NORMAL SPACING. DISCONTINUE BARS AT LARGE OPENINGS WHERE NECESSARY AND PROVIDE AN AREA OF REINFORCEMENT EQUAL TO THE INTERRUPTED REINFORCEMENT DISTRIBUTING ONE-HALF OF THIS REINFORCEMENT EACH SIDE OF THE OPENING (TENSION LAP SPLICED). HOLES LARGER THAN 12 INCHES IN ANY DIRECTION SHALL HAVE (2) #6 X 4'-0" DIAGONAL BARS IN BOTH FACES AT EACH CORNER
O. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONCRETE
P. NO REINFORCING STEEL SHALL BE FIELD BENT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. FIELD BENDING OF PLAIN REINFORCEMENT, IF PERMITTED, SHALL BE PERFORMED USING AN APPROVED AND APPROPRIATE SIZED PORTABLE HYDRAULIC DEVICE THAT MAKES ACI STANDARD RADIUS BENDS. NO OTHER FIELD BENDING METHOD SHALL BE PERMITTED.
Q. WELDING, INCLUDING TACK WELDING, FOR REINFORCING STEEL IS PROHIBITED. WELDING OF REINFORCING STEEL AND HIGH STRENGTH BOLTS, IE. A36, F1554, WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF THE ENGINEER.
R. ALL OPENINGS THROUGH WALLS, SLABS OR OTHER STRUCTURAL ELEMENTS NOT DETAILED ON THE STRUCTURAL DRAWINGS MUST BE LOCATED BY THE CONTRACTOR AND SHOWN ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. THE FINAL LOCATION OF ALL OPENINGS MUST BE REVIEWED BY THE ENGINEER BEFORE THE CONCRETE IS POURED.
S. MODIFICATION AND REPAIR TO EXISTING CONCRETE:

   a. SEE CONCRETE SPECIFICATIONS FOR COMPLETE EXPLANATION.
   b. CONNECTION METHODS:
      1. METHOD A - BONDING TO SATURATED SURFACE
      2. METHOD B - BONDING BY USING BONDING AGENT
      3. METHOD C - DOWELS USING EPOXY BONDING AGENT

4. FOOTINGS

   A. CENTER ALL FOOTINGS ON WALL, PIER OR COLUMN ABOVE UNLESS OTHERWISE INDICATED.
   B. UNLESS OTHERWISE INDICATED, CONTINUOUS WALL FOOTINGS SHALL BE TWICE THE WIDTH OF THE WALL ABOVE AND THE FOOTING DEPTH SHALL BE EQUAL TO THE WIDTH OF THE WALL ABOVE. THE MINIMUM FOOTING DEPTH SHALL BE ONE FOOT. PROVIDE (3) #4 BOTTOM BARS, CONTINUOUS IN FOOTINGS UNDER WALLS. UNLESS SHOWN OTHERWISE, SPACE BARS A MINIMUM OF 3 TIMES THE BAR DIAMETER ON CENTER.

5. FORMWORK

   A. SEE SPECIFICATIONS
   B. CAMBER: PROVIDE CAMBER TO COMPENSATE FOR DISPLACEMENT OF FORMS (SEE ALSO SPECS.) AND TO PROVIDE AS-CAST MEMBER CAMBER AS NOTED ON DRAWINGS.
   C. RUSTICATION STRIPS, CHAMFERS, DRIPS, MISC. EMBEDS, ETC. SEE DRAWINGS AND/OR ARCHITECTURAL DRAWINGS.
   D. PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, WALLS ETC. UNLESS OTHERWISE NOTED.
   E. OPENINGS FOR MEP TRADES ARE TO BE INCLUDED IN THE BID. ALL HOLES FOR OTHER TRADES WHICH MUST BE CUT OR FORMED AND WHICH ARE NOT SHOWN ON THE STRUCTURAL DESIGN DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. ANY STRENGTHENING OR ADDITIONAL REINFORCEMENT REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.

6. CONCRETE FINISHES: SEE SPECIFICATIONS

   A. FORMED SURFACES:

      a. EXPOSED TO VIEW: GROUT CLEANED FINISH.
      b. COVERED OR AS NOTED ON PLANS: AS-CAST

   B. FLATWORK:

      a. EXPOSED TO VIEW: TROWELED
      b. TILED OR CARPETED: TROWELED
      c. STAIRS OR RAMPS: BROOMED
      d. SIDEWALKS, DRIVEWAYS: BROOMED

7. CURING AND PROTECTION: SEE SPECIFICATIONS.
8. SEE THE MECHANICAL, ELECTRICAL AND SUPPLIERS DRAWINGS AND THE SPECIFICATIONS FOR THE LOCATIONS OF SPECIAL ANCHORS, CHAMFERS, SLEEVES, PIPES, CONDUITS AND OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
9. EMBEDDED PIPES OR CONDUIT. MAXIMUM DIAMETER ONE THIRD x SLAB OR WALL THICKNESS, SPACED MINIMUM OF 3 TIMES DIAMETER ON CENTER. ALL EMBEDDED PIPES OR CONDUITS SHALL BE APPROVED BY ENGINEER OF RECORD PRIOR TO INSTALLING
10. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE AS REQUIRED BY THE EQUIPMENT MANUFACTURER. ALL CONDUIT PLACED IN SLAB SHALL BE APPROVED BY STRUCTURAL ENGINEER OF RECORD PRIOR TO INSTALLING CONDUIT AND POURING SLAB.
11. ANY CONSTRUCTION JOINTS IN STRUCTURES WHERE WATERSTOPS ARE USED SHALL BE PROTECTED BY WATERSTOP UNLESS OTHERWISE NOTED. CONTRACTOR SHALL SUBMIT A CONSTRUCTION JOINT LAYOUT PLAN FOR APPROVAL BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
12. CONTRACTOR SHALL DESIGN, FURNISH, INSTALL, TEST, OPERATE, MONITOR, AND MAINTAIN A DEWATERING SYSTEM TO CONTROL HYDROSTATIC PRESSURE AND GROUND WATER ENTERING THE EXCAVATION.
13. SUBMITTALS

   A. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING THE FOLLOWING DOCUMENTS TO THE ENGINEER OF RECORD:

      a. CONCRETE MIX DESIGN
      b. CONCRETE REINFORCING DRAWINGS

TETRA TECH
www.tetratech.com
10600 CHEVROLET WAY, SUITE 102
ESTERO, FL 33928
TEL: (239) 390-1467 FAX: (239) 390-1769

DATE

Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

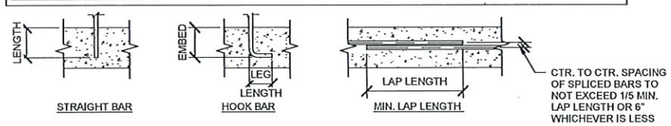
STRUCTURAL GENERAL NOTES AND DESIGN CRITERIA

PROJ:	200-08486-22002
DESN:	MLC
DRWN:	MLC
CHKD:	TJM

S-001

Bar measures 1 inch, otherwise drawing is not to scale

TENSION DEVELOPMENT / LAP SPLICE SCHEDULE (UNCOATED BARS)							
BAR SIZE	DEVELOPMENT / LAP SPLICE LENGTH IN CONCRETE (f'c = 4500 PSI)						
	DEVELOPMENT LENGTH (IN)		CLASS 'B' LAP SPLICE LENGTH (IN)		STD 90 DEG. HOOK (IN)		
	BAR TYPE 1	BAR TYPE 2	BAR TYPE 1	BAR TYPE 2	EMBED	LEG LENGTH	BEND DIA.
4	18	27	24	35	9	8	3
5	23	34	30	44	12	10	3 3/4
6	27	41	35	53	14	12	4 1/2
7	40	59	51	77	16	14	5 1/4
8	45	67	59	88	18	16	6
9	51	76	66	99	21	20	9 1/2
10	57	86	74	111	23	22	10 1/4



BAR TYPE 1 - CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN Db, CLEAR COVER NOT LESS THAN Db, AND STIRRUPS OR TIES THROUGHOUT Ld NOT LESS THAN CODE MINIMUM
OR
CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 2*Db AND CLEAR COVER NOT LESS THAN Db.

BAR TYPE 2 - TOP BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW AND OTHER CASES

CONCRETE POST-INSTALLED ANCHORS

1. MECHANICAL (TORQUE-CONTROLLED) ANCHORS

   A. APPROVED SYSTEMS INCLUDE HILTI KWIK BOLT TZ (ICC ESR 1917) OR HILTI KWIK HUS-EZ (ICC ESR 3027) OR EQUAL CONSIDERING LOAD RESISTANCE. MECHANICAL ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER AC 193. CURRENT ICC-ESR SHALL BE SUBMITTED. ALL PERSONNEL INSTALLING ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST

2. ADHESIVE ANCHORS

   A. APPROVED SYSTEMS INCLUDE HILTI HIT-RE 500 V3 (ICC ESR 3814) OR HILTI HIT-HY 200 ADHESIVE WITH HAS/HIT-V THREADED ROD WITH SAFESET TECHNOLOGY (ICC ESR 3187) OR EQUAL CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OR COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ADHESIVE ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER AC 308. CURRENT ICC-ESR SHALL BE SUBMITTED.
   B. ALL PERSONNEL INSTALLING ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST.
   C. HOLE SIZES AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII)
   D. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH SHALL BE BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO SATURATED HOLES DRILLED USING A CARBIDE DRILL BIT INTO CONCRETE THAT HAS BEEN CURED FOR AT LEAST 21 DAYS.
   E. ANY ADHESIVE ANCHOR INSTALLED HORIZONTALLY OR IN A VERTICALLY INCLINED PLANE SHALL BE INSTALLED BY CERTIFIED ADHESIVE ANCHOR INSTALLER, PER ACI 318-19 17.8.2.2, AND SHALL BE INSPECTED PER ACI 318-19 17.8.2.4.
   F. FILL IN ALL ABANDONED HOLES WITHIN 2" OF NEW ANCHOR LOCATIONS.
   G. WHERE REQUIRED, A PROGRAM FOR ON-SITE PROOF LOADING, THAT IS, PROOF LOADING PROGRAM, TO BE CONDUCTED AS PART OF THE SPECIAL INSPECTION AND SHALL BE ESTABLISHED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD AND SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS:

      a. FREQUENCY OF PROOF LOADING BASED ON ANCHOR TYPE, DIAMETER, AND EMBEDMENT.
      b. PROOF LOADS BY ANCHOR TYPE, DIAMETER, EMBEDMENT, AND LOCATION.
      c. ACCEPTABLE DISPLACEMENTS AT PROOF LOAD.
      d. REMEDIAL ACTION IN THE EVENT OF FAILURE TO ACHIEVE PROOF LOAD OR EXCESSIVE DISPLACEMENT.

      UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD, PROOF LOADS SHALL BE APPLIED AS CONFINED TENSION TESTS (4.7.2.3). PROOF LOADS LEVELS SHALL NOT EXCEED THE LESSER OF 50 PERCENT OF THE EXPECTED PEAK LOAD BASED ON ADHESIVE BOND STRENGTH, OR 80 PERCENT OF THE ANCHOR YIELD STRENGTH. MAINTAIN THE PROOF LOAD AT THE REQUIRED LOAD LEVEL FOR A MINIMUM OF 10 SECONDS.

3. EQUIPMENT ANCHORS:
   A. SIZE, LENGTH, AND LOCATION OF EQUIPMENT ANCHORS SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

CONCRETE MASONRY

1. REFERENCES

   A. TMS 402/ACI 530-08/ASCE 5-08 BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES.

2. MATERIALS

   A. MASONRY WALLS SHALL CONSIST OF ASTM C-90, GRADE N-1, HOLLOW CONCRETE MASONRY UNIT
   B. MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH f'm = 2000 PSI.
   C. MORTAR SHALL COMPLY WITH ASTM C-270, AND SHALL BE TYPE S (1800 PSI)
   D. CORE FILL GROUT SHALL COMPLY WITH ASTM C-476, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI.

3. MASONRY SHALL BE LAID IN A RUNNING BOND PATTERN UNLESS OTHERWISE NOTED. NO CONTINUOUS VERTICAL JOINTS ARE PERMITTED AT WALL CORNERS, INTERSECTIONS, AND OPENING EDGES. SAW TOOTH BLOCK EACH ALTERNATE COURSE AT THESE LOCATIONS TO ACHIEVE MONOLITHIC CONSTRUCTION.

4. VERTICAL REINFORCEMENT: LOCATION, SIZE AND SPACING SHALL BE AS INDICATED ON THE STRUCTURAL DRAWINGS. WALLS SHALL BE REINFORCED FULL HEIGHT IN GROUT FILLED CELLS AT ALL WALL CORNERS, INTERSECTIONS, ENDS, AND ADJACENT TO OPENINGS.

5. PROVIDE REINFORCING STEEL DOWELS INTO STRUCTURE ABOVE AND BELOW WITH SIZE AND SPACING TO MATCH VERTICAL REINFORCEMENT, UNLESS OTHERWISE NOTED.

6. PROVIDE DOWELS TO THE FOUNDATIONS WITH SIZE AND SPACING TO MATCH VERTICAL REINFORCING. LAP SPLICES SHALL BE MEASURED ABOVE THE STEM WALL.

7. VERTICAL REINFORCEMENT SHALL BE CENTERED IN GROUT FILLED CELLS UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL BE HELD SECURELY IN POSITION AT THE TOP AND BOTTOM OF WALL.

8. HORIZONTAL JOINT REINFORCEMENT SHALL BE 9 GAGE GALVANIZED DUR-O-WAL LADDER TYPE OR ENGINEER APPROVED SUBSTITUTE, LOCATED AT SIXTEEN (16) INCHES VERTICALLY.

9. PROVIDE HORIZONTAL JOINT REINFORCING IN PARAPETS AND FREE STANDING WALLS AT EIGHT (8) INCHES VERTICALLY.

10. CONTROL JOINTS SHALL BE PROVIDED AS SPECIFIED ON PLAN AND COORDINATED WITH ARCHITECT. TERMINATE JOINT REINFORCEMENT EACH SIDE OF CONTROL JOINTS. SEE ARCHITECTURAL DRAWINGS FOR SEALANT REQUIREMENTS AT CONTROL JOINTS.

11. MASONRY CONTROL JOINTS SHALL BE LOCATED A MINIMUM OF 2'-0" FROM ALL WALL OPENINGS, INTERSECTIONS, AND CORNERS, UNLESS NOTED OTHERWISE.

12. MASONRY CONTROL JOINTS SHALL NOT BE LOCATED ABOVE OR BELOW ANY WALL OPENING.

13. GROUTING: CONTRACTOR SHALL SUBMIT PROPOSED GROUT MIX DESIGN FOR ENGINEER REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. GROUT SLUMP SHALL BE BETWEEN 8 AND 11 INCHES. USE OF SUPERPLASTICIZER IS PROHIBITED. CELLS WHICH ARE TO RECEIVE GROUT SHALL BE VERTICALLY ALIGNED WITH A CLEAR, UNOBSTRUCTED AND CONTINUOUS VERTICAL SPACE. CELLS SHALL BE FILLED COMPLETELY AND VIBRATION CONSOLIDATED. GROUTING OPERATIONS SHALL BE CONTINUOUS AND SHALL NOT BE STOPPED FOR A PERIOD EXCEEDING ONE HOUR. WALL SHALL BE CONSTRUCTED IN MAXIMUM 5'-0" LIFTS BETWEEN GROUT POURS

14. GROUTING AND REINFORCING: ALL MASONRY AND GROUTING AND REINFORCING WORK SHALL BE PERFORMED BY MASONRY CRAFTWORKERS WHO HAVE SUCCESSFULLY COMPLETED THE INTERNATIONAL MASONRY INSTITUTE (1-800-IMI-0988) TRAINING COURSE FOR GROUTING AND REINFORCED MASONRY CONSTRUCTION, OR EQUAL."

15. ELECTRICAL CONDUITS NOT PERMITTED IN GROUT FILLED CELLS OF CMU WALL UNLESS APPROVED BY EOR PRIOR TO PLACEMENT. CONTRACTOR TO COORDINATE WITH ELECTRICAL DRAWINGS. VERTICAL CONDUITS, PIPES OR SLEEVES PLACED IN MASONRY COLUMNS OR PILASTERS SHALL NOT DISPLACE MORE THAN 2 PERCENT OF THE NEW CROSS SECTION.

16. CONDUITS, PIPES AND SLEEVES IN HOLLOW MASONRY SHALL BE SPACED NO CLOSER THAN 3X THEIR DIAMETER ON CENTER. MINIMUM SPACING OF CONDUITS, PIPES OR SLEEVES OF DIFFERENT DIAMETER SHALL BE DETERMINED USING LARGER DIAMETER.

STRUCTURAL ALUMINUM

1. REFERENCES:

   A. AA ALUMINUM DESIGN MANUAL
   B. AA ALUMINUM STANDARDS AND DATA
   C. ANSI/DWS D1.2 ALUMINUM WELDING CODE

2. MATERIALS:

   A. PLATES AND ROLLED SHAPES: 6061-T6
   B. STRUCTURAL BOLTS: 316 STAINLESS STEEL

3. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER CONSTRUCTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THE COMPLETION OF THE PROJECT.

4. PROVIDE MIN. (2) 3/4" STAINLESS STEEL BOLTS (316), WASHERS, AND NUTS FOR ALL CONNECTIONS, UNLESS NOTED OTHERWISE. ALL SS BOLTS SHALL HAVE CORROSION INHIBITING GREASE AND SHALL BE SEPARATED FROM DISSIMILAR METALS TO PREVENT CORROSION.

5. ALL WELDING SHALL CONFORM TO AWS D1.2. SHOP DRAWINGS SHALL SHOW ALL SHOP AND ERECTION DETAILS INCLUDING CUTS, COPE CONNECTIONS, HOLES, THREADED FASTENERS, RIVETS, AND WELDS. GRIND ALL WELDS FOR SMOOTH TRANSITIONS.

6. THE APPROVAL OF THE SHOP DRAWINGS WILL BE FOR SIZE AND ARRANGEMENT OF PRINCIPAL AND AUXILIARY MEMBERS AND STRENGTH OF CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIMENSIONS SHOWN ON THE SHOP DRAWINGS.

7. LAYOUT AND DESIGN FOR GUARDRAIL, HANDRAIL AND THEIR COMPONENTS SHALL ADHERE TO THE APPLICABLE BUILDING CODES.

8. BURNING OF HOLES IN ALUMINUM IS NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

9. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED WITH BITUMINOUS PAINT.

COMPONENTS & CLADDING WIND PRESSURES

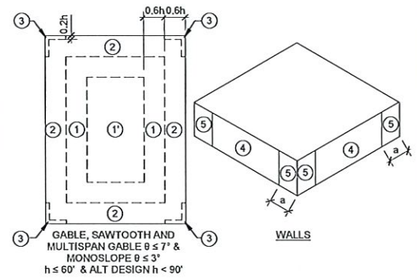
FACTORED (ULTIMATE) COMPONENTS & CLADDING WIND PRESSURES (PSF)			
FLAT/ HIP/ GABLE ROOF 0 TO 7 DEGREES			
ROOF ZONES	EFFECTIVE TRIBUTARY AREA*		
	10 SF	50 SF	100 SF
NEGATIVE ZONE 1	-115.6	-97.9	-90.2
NEGATIVE ZONE 1'	-66.4	-66.4	-66.4
NEGATIVE ZONE 2	-152.4	-129.7	-119.9
NEGATIVE ZONE 3	-207.8	-162.2	-142.6
POSITIVE ALL ZONES	29.5	25.2	23.4
OVERHANG ZONE 2	-141.4	-111	-98
OVERHANG ZONE 3	-196.7	-143.6	-120.7

WALLS			
WALL ZONES	EFFECTIVE TRIBUTARY AREA*		
	10 SF	100 SF	500 SF
NEGATIVE ZONE 4	-71.9	-62.1	-55.3
NEGATIVE ZONE 5	-88.5	-69	-55.3
POSITIVE ZONE 4 & 5	66.4	56.6	49.8

NOTES:

1. EDGE DISTANCE 0.2h = 2' - 6"
   0.6h = 7' - 6"
2. * EFFECTIVE TRIBUTARY AREA: SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN 1/3 THE SPAN LENGTH
3. NEGATIVE VALUE DENOTES PRESSURE ACTING AWAY FROM THE SURFACE
4. UNFACTORED (NOMINAL) COMPONENTS AND CLADDING PRESSURES MAY BE OBTAINED BY MULTIPLYING THE VALUES IN THE TABLE BY 0.60

LOCATION OF WIND PRESSURE ZONES



DEMOLITION

1. REFER TO WORK RESTRICTIONS IN THE PROJECT SPECIFICATIONS. CLOSELY FOLLOW THE PROJECT SPECIFICATIONS FOR THE LOCATIONS AND TYPES OF BARRICADES, WORKING HOURS, AND NOTIFICATIONS TO THE OWNER. COORDINATE DEMOLITION TO MAINTAIN PROTECTION OF THE EXISTING FACILITIES.
2. COORDINATE DEMOLITION WORK WITH ALL DISCIPLINES.
3. ITEMS SHOWN OR NOTED TO BE DEMOLISHED ON THE DRAWINGS ARE EXISTING ITEMS TO BE REMOVED FROM SITE BY CONTRACTOR.
4. PRIOR TO EXCAVATION FIELD LOCATE EXISTING UTILITIES. CONTRACTOR SHALL ALSO CONDUCT LAYOUT FOR HARDWARE AND BELOW GRADE SUBSTRUCTURES. MARK AND LOCATE PRIOR TO START OF EXCAVATION WORK. TETRA TECH AND THE OWNER SHALL BEAR NO RESPONSIBILITY FOR EXPENSES INCURRED AS A RESULT OF FAILURE ON THE PART OF THE CONTRACTOR TO VERIFY SITE CONDITIONS PRIOR TO BEGINNING WORK. DO NOT SCALE DRAWINGS.
5. ALL HAZARDOUS MATERIALS WILL BE ADDRESSED BY GOVERNMENT REGULATIONS. IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS THE CONTRACTOR SHALL NOTIFY THE OWNER AS WELL AS LOCAL, STATE AND FEDERAL AUTHORITIES IMMEDIATELY.
6. CONTRACTOR IS RESPONSIBLE TO REMOVE SITE DEBRIS, TRASH, AND OTHER DISCARDED MATERIALS AND/OR EQUIPMENT RESULTING FROM DEMOLITION OPERATIONS. TRANSPORT AND LEGALLY DISPOSE OFF SITE. ALL DEMOLITION SHALL BE DISPOSED OF IN A MANNER ACCEPTABLE TO LOCAL AND STATE REGULATORY AGENCIES OR AS DIRECTED BY OWNER.
7. SURFACES ADJACENT TO AREAS OF DEMOLITION WHICH ARE AFFECTED BY THE WORK SHALL BE REPAIRED AND FINISHED TO MATCH EXISTING CONDITIONS AND ADJACENT SURFACES (MATERIAL, COLOR, SLOPE, TEXTURE AND APPEARANCE).
8. CONTRACTOR SHALL PROVIDE TEMPORARY MEANS TO MITIGATE DUST AND DEBRIS FROM TRAVELING OFF-SITE. USE WATER MIST, TEMPORARY ENCLOSURES, AND OTHER SUITABLE METHODS TO LIMIT SPREAD OF DUST AND DIRT. COMPLY WITH ENVIRONMENTAL PROTECTION REGULATIONS.
9. CONDUCT DEMOLITION AND DEBRIS REMOVAL OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT ROADS, WALKWAYS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY GOVERNING REGULATIONS.
10. WHERE BELOW GRADE STRUCTURES ARE INDICATED TO BE REMOVED, SUCH AS FOUNDATIONS, THESE AREAS ARE TO BE BACKFILLED WITH ENGINEERED FILL AND MATCH EXISTING CONDITIONS AND ADJACENT SURFACES. FILL TO BE PLACED TO AN ELEVATION MATCHING EXISTING GRADE AND SLOPED TO PROVIDE DRAINAGE AWAY FROM THE EXISTING FACILITIES.
11. DEMOLITION CONTRACTOR IS TO USE CARE WHEN REMOVING STRUCTURAL ELEMENTS SCHEDULED FOR REMOVAL THAT ARE ADJACENT OR ABOVE EXISTING STRUCTURES THAT ARE SCHEDULED TO REMAIN. CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO PROTECT REMAINING STRUCTURES FROM DAMAGE.
12. PROVIDE AND MAINTAIN SHORING BRACING, OR STRUCTURAL SUPPORT TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ITEMS TO BE SELECTIVELY DEMOLISHED OR STABILIZED AND ITEMS WHICH ARE IMMEDIATELY ADJACENT TO THOSE BEING REMOVED.
13. PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES. ERECT TEMPORARY PROTECTION SUCH AS FENCES, RAILINGS, CANOPIES, AND COVERED PASSAGEWAYS, WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.
14. IN PLACES WHERE BELOW GRADE CONSTRUCTION IS REMOVED, MAINTAIN APPROPRIATE TEMPORARY SECURITY AROUND ALL OPENINGS IN GRADE TO MAINTAIN SAFETY.
15. PROMPTLY PATCH AND REPAIR DAMAGE CAUSED TO ADJACENT CONSTRUCTION BY DEMOLITION WORK. RESTORE EXPOSED FINISHES OF PATCHED AREAS IN A MANNER THAT ELIMINATES EVIDENCE OF PATCHING AND REFINISHING.
16. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO EXISTING CONDITION BEFORE DEMOLITION OPERATIONS BEGAN.
17. CONTRACTOR SHALL FOLLOW THE OWNER'S REQUIREMENTS AS WELL AS LOCAL AND STATE REGULATIONS FOR EROSION PROTECTION CONTROL.

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Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

STRUCTURAL GENERAL NOTES AND COMPONENT & CLADDING

PROJ:	200-08486-22002
DESN:	MLC
DRWN:	MLC
CHKD:	TJM

S-002

Bar measures 1 inch, otherwise drawing is not to scale

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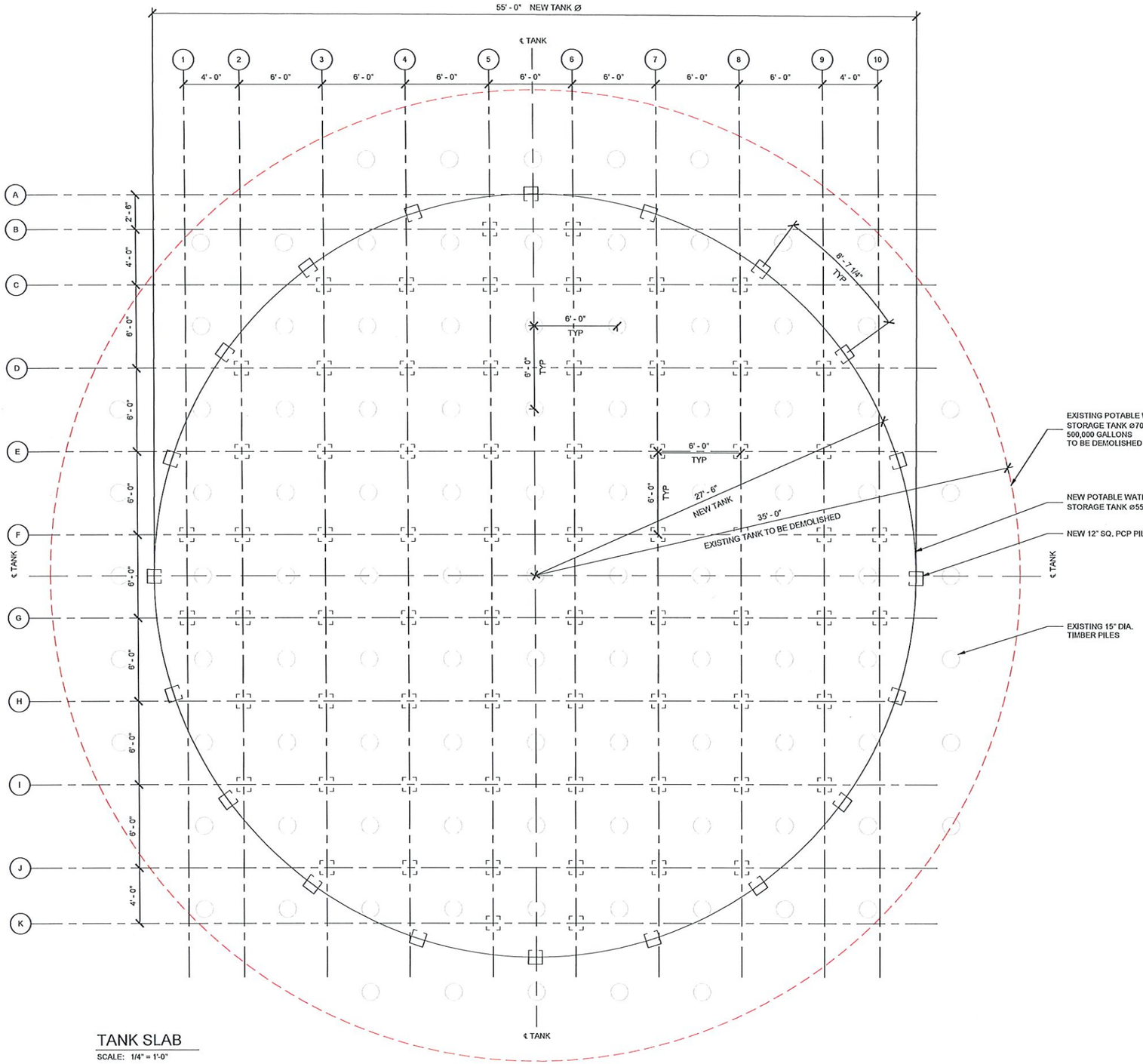

TANK SLAB

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

PLAN NOTES:

1. REFER TO S-001 AND S-002 FOR STRUCTURAL GENERAL NOTES AND S-501 AND S502 FOR TYPICAL DETAILS.
2. EXISTING TIMBER PILES LAYOUT NEEDS TO BE VERIFIED BY SURVEY ONCE EXISTING TANK DEMOLITION HAS BEEN COMPLETED.
3. REFER TO CIVIL DRAWING C-105 FOR OVERALL SITE PLAN.
4. COORDINATE ALL OPENING LOCATIONS, SIZE AND ELEVATION WITH PROCESS AND TANK MANUFACTURER PRIOR TO CONSTRUCTION.
5. REFER TO PROCESS AND CIVIL DRAWINGS FOR PIPING AND TANK REQUIREMENTS NOT SHOWN.
6. ALL UNDERGROUND PIPE ENCASEMENTS SHALL EXTEND 1'-0" MIN. OUTSIDE PERIMETER OF TANK FOUNDATION.
7. REFER TO CIVIL DRAWINGS FOR ORIENTATION OF TANK AND UNDERSLAB PIPING.
8. ALL EXISTING TIMBER PILES ARE TO BE CUT OFF, SO THE TOP OF THE PILES ARE A MINIMUM OF 2-FEET BELOW THE BOTTOM OF THE PILE CAP/STRUCTURAL SLAB FOUNDATION.
9. FOR BIDDING PURPOSES MIN FOUNDATION SLAB THICKNESS MUST BE 1'-7" THICK
10. PCP PILES MUST BE EMBEDDED MIN 3" INTO FOUNDATION SLAB
11. PRELIMINARY PILE LAYOUT SHOWN. FINAL PILE LAYOUT BASED ON TANK MFR FOUNDATION DESIGN

LEGENDS:

◯ EXISTING 15" TIMBER PILES

⬚ NEW 12" SQ. PCP PILES

FIVE TEST PILES SHOULD BE DRIVEN AT LOCATIONS THROUGHOUT THE MAT SLAB FOOTPRINT TO CONFIRM THE REQUIRED PRODUCTION PILE LENGTHS. TEST PILES CAN BE LOCATED AT PRODUCTION PILE LOCATIONS AND INCORPORATED INTO THE FOUNDATION SYSTEM OF THE TANK

TANK FOUNDATION PLANS AND DETAILS SHOW MINIMUM REQUIREMENTS FOR BIDDING PURPOSES ONLY. THE TANK MANUFACTURER IS FULLY RESPONSIBLE FOR THE DESIGN OF THE PRESTRESSED CONCRETE TANK AS WELL AS THE FOUNDATION THAT IT IS SUPPORTED ON. THE TANK FOUNDATION SHALL BE CONSIDERED AS THE CONCRETE STRUCTURAL FLOOR SLAB SUPPORTED ON PRECAST CONCRETE PILES. THE TANK MANUFACTURER SHALL PROVIDE SIGNED AND SEALED CALCULATIONS AND DRAWINGS FOR THEIR DESIGNS WHICH SHALL NOT BE LESS THAN THE MINIMUM REQUIREMENTS STATED IN THE BID DOCUMENTS.

N

4' 0' 4' 8'

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

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DATE

Collier County

MARK	DATE	DESCRIPTION

BY

COLLIER COUNTY PUBLIC UTILITIES

GOODLAND PUMP STATION IMPROVEMENTS

TANK FOUNDATION SLAB

PROJ:	200-08486-22002
DESN:	MLC
DRWN:	MLC
CHKD:	TJM

S-101

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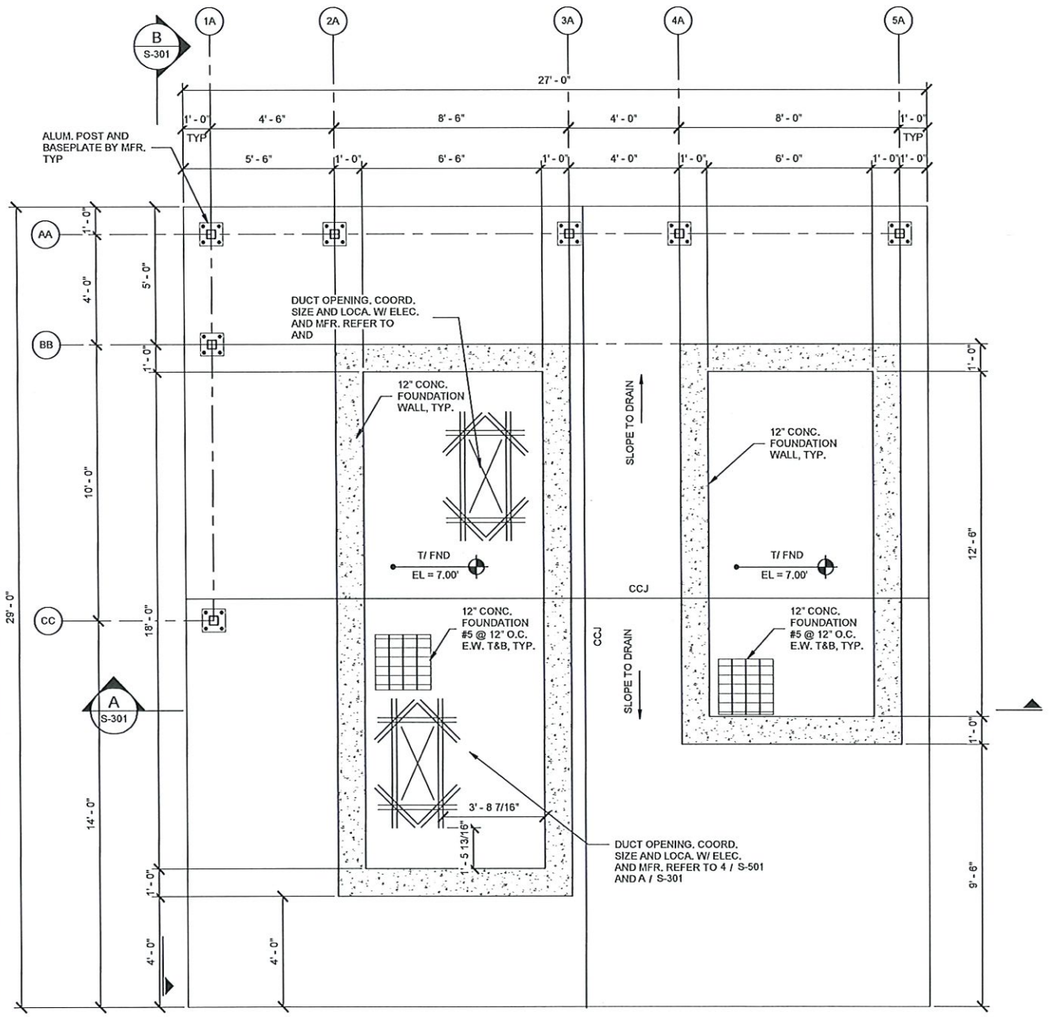
PLAN NOTES:

1. REFER TO S-001 AND S-002 FOR GENERAL NOTES.
2. REFER TO CIVIL DRAWINGS FOR THE STRUCTURE LOCATION ON SITE PLAN AND DEMO PLAN.
3. CONTRACTOR TO COORDINATE LOCATION, ELEVATION AND SIZE OF GENERATOR, ENCLOSURE AND STAIRS WITH EQUIPMENT MANUFACTURER PRIOR TO POURING CONCRETE.
4. PRE-ENGINEERED ALUMINUM STAIRS BY MANUFACTURER. PROVIDE SIGNED AND SEALED DRAWINGS AND CALCULATION BY REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA. DESIGN IN ACCORDANCE WITH THE ICC INTERNATIONAL BUILDING CODE, 2021 EDITION, 2023 FLORIDA BUILDING CODE, 8TH EDITION, OSHA AND SHALL INCLUDE ALL ATTACHMENTS TO THE STRUCTURE. REFER TO TYP DETAILS ON S-501 AND S502.
5. ALUMINUM SURFACE IN CONTACT WITH CONCRETE, GROUT OR DISSIMILAR METALS SHALL BE PROTECTED WITH A COAT OF BITUMINOUS PAINT OR OTHER APPROVED MATERIAL.
6. EQUIPMENT AND STAIRS ANCHOR BOLT SHALL BE DESIGNED BY THE EQUIPMENT MANUFACTURER.
7. COORD. GENERATOR AND ENCLOSURE LOCATION AND SIZE WITH ELECTRICAL AND EQUIP MFR. CONTRACTOR TO INFORM EOR IF WEIGHT OF EQUIP./FUEL EXCEEDS WEIGHTS LISTED BELOW PRIOR TO POURING CONC.:

GENERATOR WEIGHT W/ ENCLOSURE	= 12,300 LBS
FUEL TANK DRY WEIGHT	= 18,000 LBS
FUEL WEIGHT	= 7,000 LBS

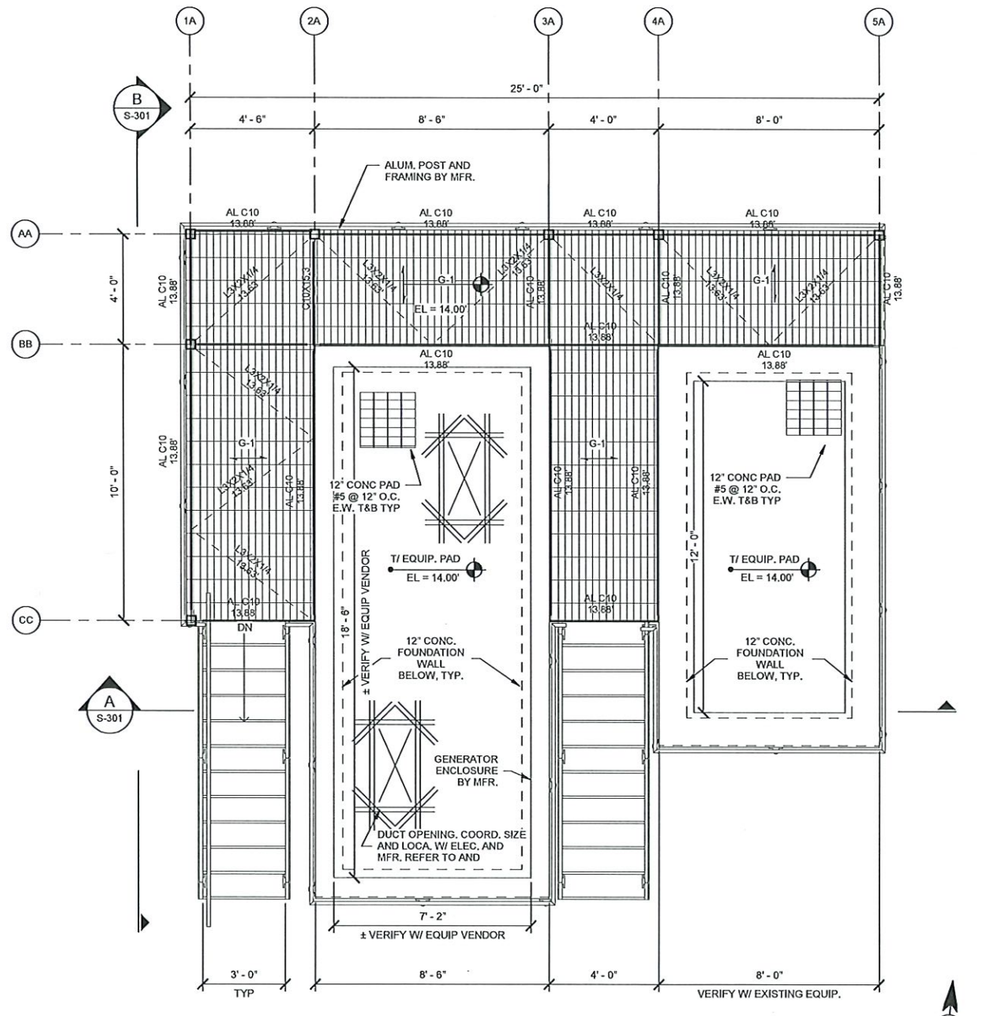
LEGENDS:

G-1	INDICATES SPAN DIRECTION OF 1 1/2" ALUM GRATING. DESIGNED FOR 100 PSF LIVE LOAD.
CCJ	CRACK CONTROL JOINT SEE 7 / S-501
———	DENOTES EQUIP. OUTLINE



PLATFORM FOUNDATION

SCALE: 3/8" = 1'-0"



PLATFORM GRATING / EQUIPMENT PADS

SCALE: 3/8" = 1'-0"

N

2' 0' 2' 4' 6'

SCALE: 3/8" = 1'-0"

Bar measures 1 inch, otherwise drawing is not to scale

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COLLIER COUNTY PUBLIC UTILITIES

GOODLAND PUMP STATION IMPROVEMENTS

EQUIPMENT PLAN

PROJ:	200-08486-22002
DESN:	MLC
DRWN:	MLC
CHKD:	TJM

S-102

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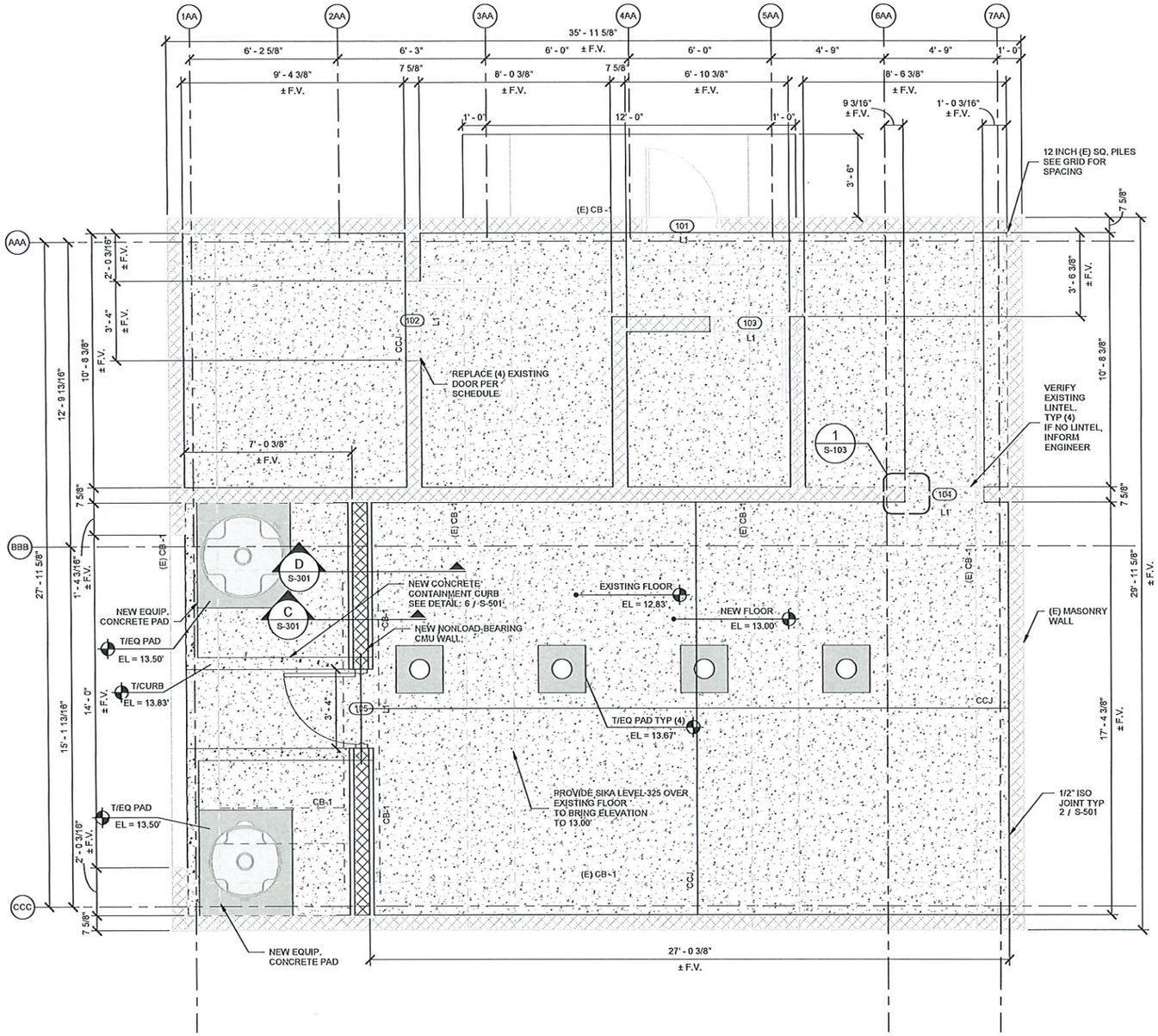


PUMP BUILDING PLAN

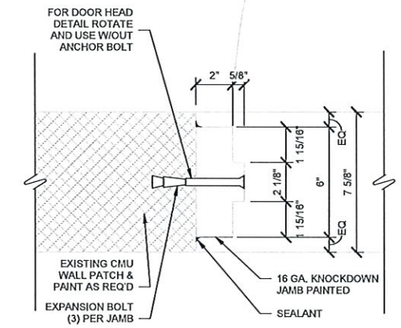
SCALE: 3/8" = 1'-0"

PLAN NOTES:

1. SEE SHEETS S-001 - S-002 FOR GENERAL NOTES
2. PUMP BUILDING FLOOR TO BE RAISED FROM EL 12.83 TO EL 13.00
3. PROVIDE 2" SIKA LEVEL - 325 LEVELING COMPOUND EXTENDED WITH 3/8" COARSE AGGREGATE. PROVIDE C.C.J. AS INDICATED ON PLANS
4. ALL DOORS TO BE REPLACED. SEE PLAN AND DOOR SCHEDULE
5. ALL DIMENSIONS OF EXISTING BUILDING TO BE FIELD VERFIED PRIOR TO ANY WORK.
6. FOR DOOR HEAD DETAIL ROTATE AND USE DOOR JAMB DETAIL W/OUT ANCHOR BOLT
7. BASIS OF DESIGN
   NEW PUMPS WEIGHTS = 1,538 LB/ EACH
   CHEM TANKS = 2,800 LB/ EACH
1. ALL EXISTING CONCRETE FRAMING MUST BE FIELD VERIFIED. ANY DISCREPANCIES OR INCONSISTENCIES DISCOVERED DURING THIS VERIFICATION PROCESS MUST BE PROMPTLY NOTIFIED TO THE ENGINEER FOR REVIEW AND RESOLUTION. IT IS IMPORTANT TO NOTE THAT THE EXISTING FRAMING DEPICTED IN THIS DRAWING IS BASED ON NUMEROUS RENOVATION DRAWINGS THAT HAVE BEEN PRODUCED OVER THE YEARS. THEREFORE, A THOROUGH AND ACCURATE ASSESSMENT OF THE CURRENT CONDITIONS IS CRUCIAL TO VERIFY PRIOR TO ANY NEW WORK IN THE PUMP ROOM.

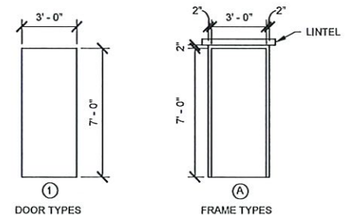
LEGENDS:

C.C.J.	- DENOTES CRACK CONTROL JOINT SEE DETAIL 7 / S-501
L1	- LINTEL SEE DETAIL 9 / S-501
	- DENOTES 2" TOPPING
	- DENOTES CONCRETE EQUIPMENT PAD 10 / S-501
	- DENOTES 8" CMU WALL W/ #5 VERT. BARS (CT'D) @ 32" O.C. MAX., CORNERS AND INTERSECTIONS U.N.O. FOR ALL OPENINGS, SEE DETAIL ON S-501
(E) CB-1	- DENOTES EXISTING 2'-0" X 2'-0" CONCRETE BEAM
CB-1	- DENOTES NEW 1'-4" X 1'-6" CONCRETE BEAM



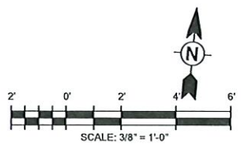
1 / S-103 DOOR JAMB/HEAD DETAIL

SCALE: 3" = 1'-0"



2 / S-103 DOOR TYPE

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



DOOR SCHEDULE

# NO.	TYPE	DOOR SIZE WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	DETAILS JAMB	COMMENTS
101	TYPE 1	3' - 0"	7' - 0"	0' - 1 3/4"	H.M.	PAINTED	A	H.M.	PAINTED	1/S-103	DOOR SHALL BE 16GA METAL FRAME SHALL BE 16GA METAL KNOCK DOWN FRAMES
102	TYPE 1	3' - 0"	7' - 0"	0' - 1 3/4"	H.M.	PAINTED	A	H.M.	PAINTED	1/S-103	DOOR SHALL BE 16GA METAL FRAME SHALL BE 16GA METAL KNOCK DOWN FRAMES
103	TYPE 1	3' - 0"	7' - 0"	0' - 1 3/4"	H.M.	PAINTED	A	H.M.	PAINTED	1/S-103	DOOR SHALL BE 16GA METAL FRAME SHALL BE 16GA METAL KNOCK DOWN FRAMES
104	TYPE 1	3' - 0"	7' - 0"	0' - 1 3/4"	H.M.	PAINTED	A	H.M.	PAINTED	1/S-103	DOOR SHALL BE 16GA METAL FRAME SHALL BE 16GA METAL KNOCK DOWN FRAMES
105	TYPE 1	3' - 0"	7' - 0"	0' - 1 3/4"	H.M.	PAINTED	A	H.M.	PAINTED	1/S-103	DOOR SHALL BE 16GA METAL FRAME SHALL BE 16GA METAL KNOCK DOWN FRAMES

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COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

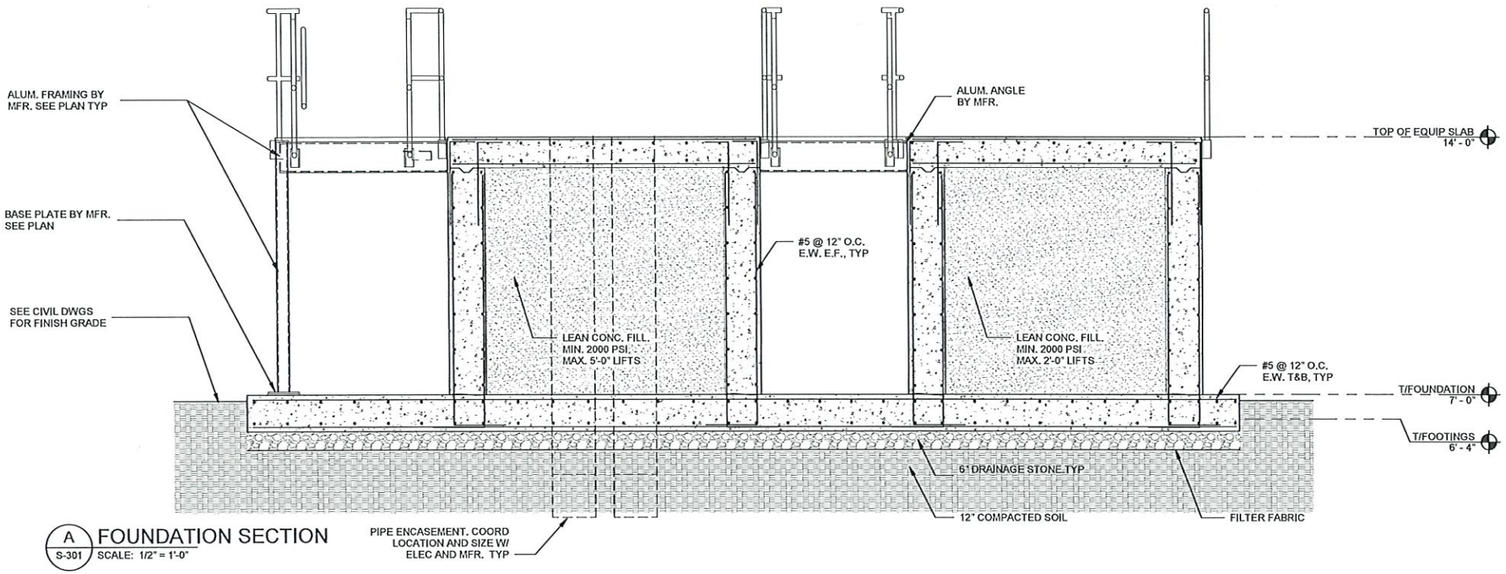
SLAB PLAN

PROJ:	200-08486-22002
DESN:	MLC
DRWN:	MLC
CHKD:	TJM

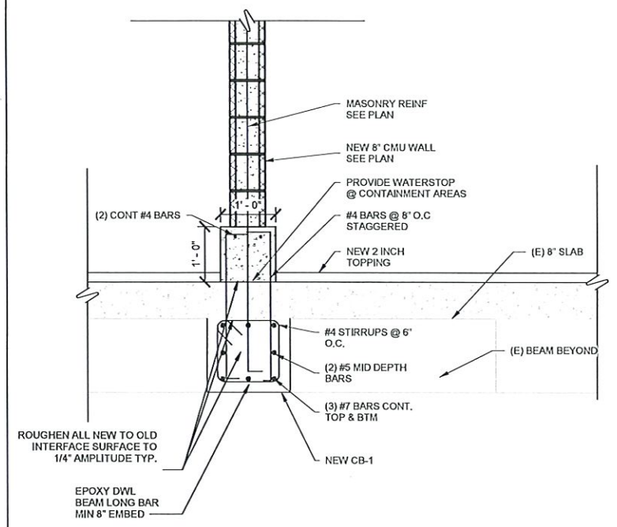
S-103

Bar measures 1 inch, otherwise drawing is not to scale

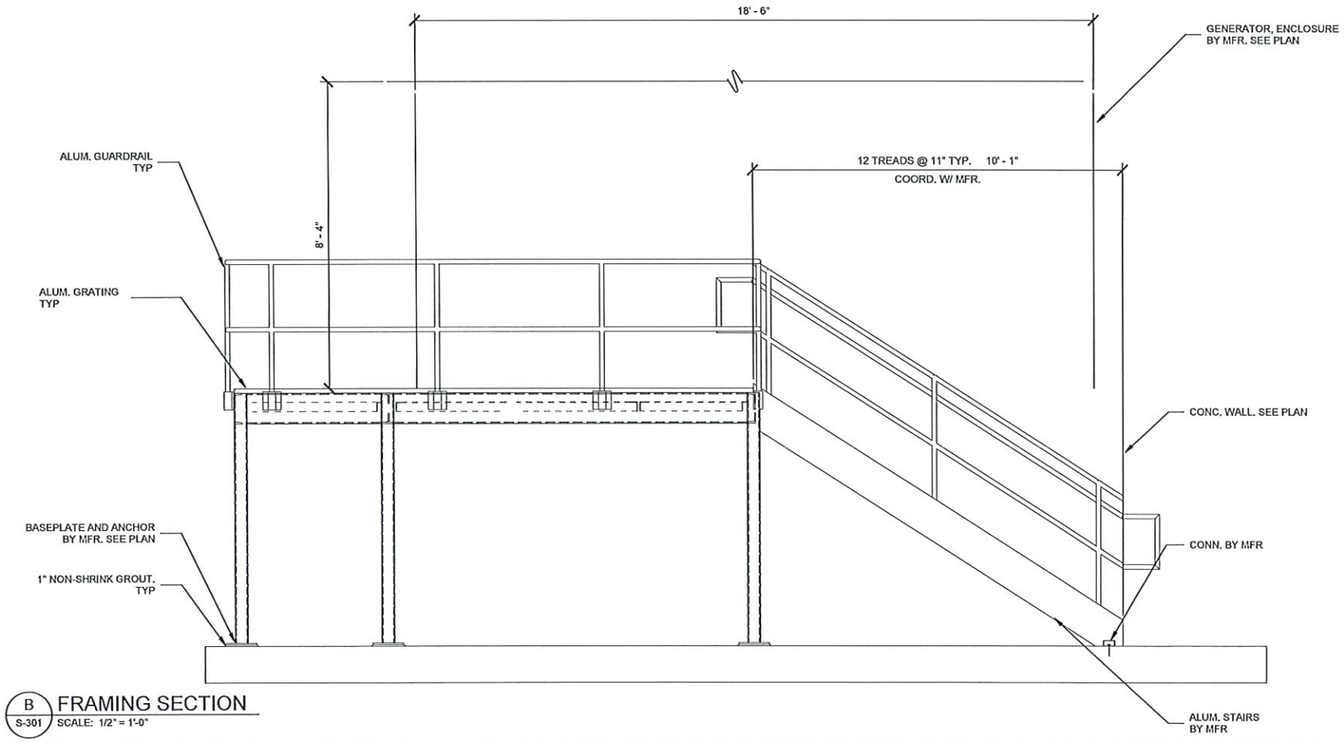
5/21/2025 4:57:32 PM BIM 360://200-08486-22002 GOODLAND PS UPGRADES/S-GOODLAND PS-200-08486-22002-V21.rvt



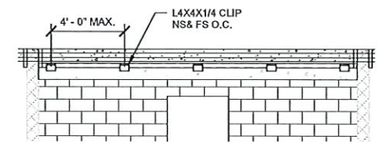
A S-301 FOUNDATION SECTION
SCALE: 1/2" = 1'-0"



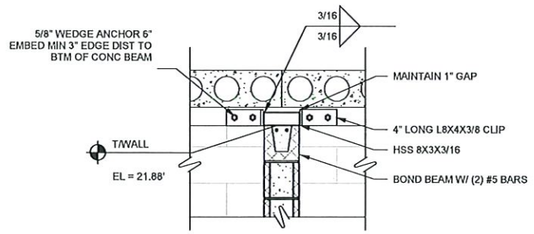
C S-301 BOTT. OF WALL SECTION
SCALE: 3/4" = 1'-0"



B S-301 FRAMING SECTION
SCALE: 1/2" = 1'-0"



ELEVATION



SECTION

D S-301 TOP OF WALL CONNECTION
SCALE: 3/4" = 1'-0"

2' 0' 2' 4'
SCALE: 1/2" = 1'-0"

1' 0' 1' 2' 3'
SCALE: 3/4" = 1'-0"

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S-301

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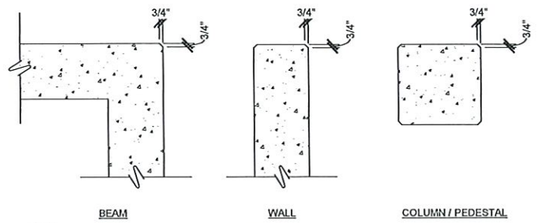
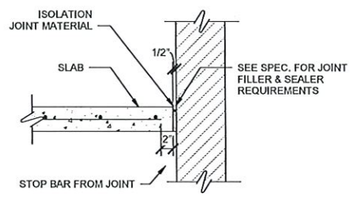
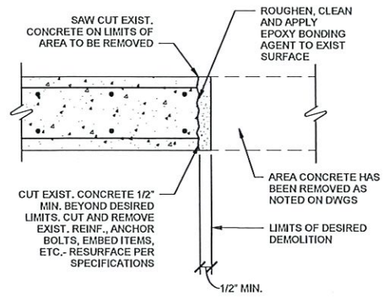


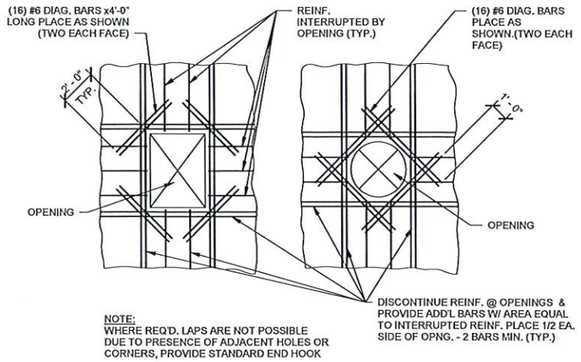
1 S-501 CHAMFER DETAILS
SCALE: NTS



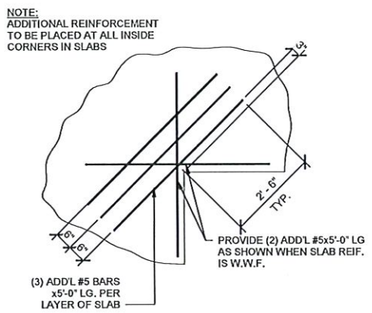
2 S-501 SLAB TO WALL ISO JOINT
SCALE: NTS



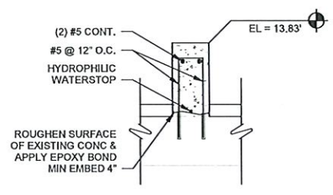
3 S-501 RESURFACING DEMO
SCALE: NTS



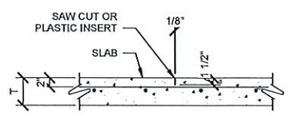
4 S-501 REINF. STEEL @ OPENING
SCALE: NTS



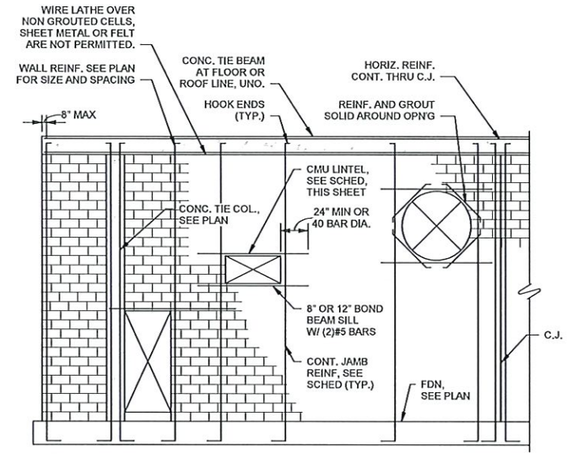
5 S-501 SLAB RE-ENTRANT CORNER
SCALE: NTS



6 S-501 TYP CURB DETAIL
SCALE: NTS

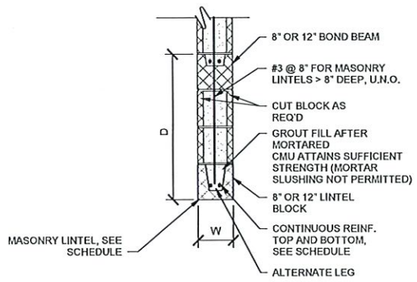


7 S-501 CRACK CONTROL JOINT
SCALE: NTS



8 S-501 TYP. CMU WALL REINF.
SCALE: NTS

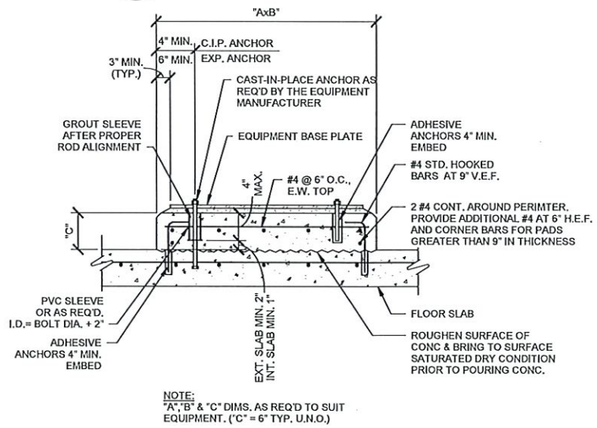
MASONRY LINTEL SCHEDULE				
MARK	SIZE (WxD)	CLEAR SPAN*	REINF.	NOTES
L1	8x8	UP TO 3'-4"	(2) #4 BOT.	
L2	8x16	3'-4" TO 4'-8"	(2) #5 T & B	
L3	8x24	4'-8" TO 6'-8"	(2) #6 T & B	
L4	8x32	10'-0" TO 12'-0"	(2) #6 T & B	OH DOORS



MASONRY LINTEL NOTES:

1. LINTEL MUST BE SHORED UNTIL MORTAR AND GROUT ATTAINS DESIGN STRENGTH.
2. SPECIAL INSPECTOR MUST VERIFY PROPER REINFORCEMENT PLACEMENT PRIOR TO GROUTING, AND VERIFY PROPER GROUT PLACEMENT.
3. MASONRY LINTELS SHALL HAVE A MINIMUM BEARING OF 8", U.N.O.
4. MASONRY LINTELS AT LOAD BEARING WALLS ARE LOCATED ON PLAN.
5. SHEAR TIES SHALL HOOK AROUND TOP AND BOTTOM REINF. ALTERNATE LEG.
6. LINTEL REINFORCING SHALL EXTEND OUTSIDE THE OPENING FORTY (40) BAR DIAMETERS, EACH DIRECTION OR PROVIDE STANDARD HOOK TO TERMINATE ENDS.
7. NON-LOAD BEARING PARTITION WALL OPENINGS OR OPENINGS NOT SHOWN ON PLAN SHALL FOLLOW THE MINIMUM REINFORCING AND SPAN REQUIREMENTS PER SCHEDULE.
8. PROVIDE 8" BEARING (MIN.), UNLESS NOTED OTHERWISE.

9 S-501 MASONRY LINTEL CHART
SCALE: NTS



10 S-501 TYP. EQUIPMENT PAD
SCALE: NTS

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S-501

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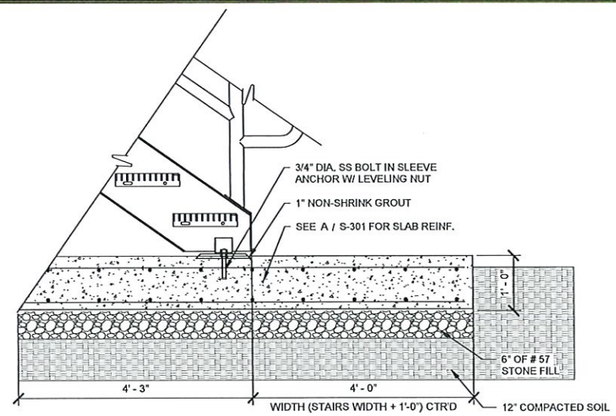
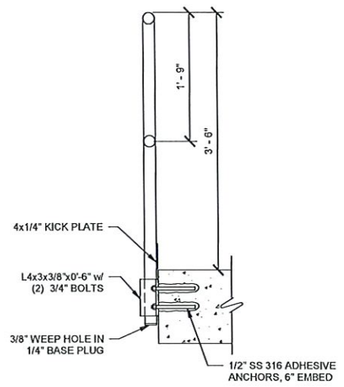


COAT ALL AL. SURFACES IN CONTACT W/ CONC, AND INSTALL ISOLATION SLEEVES AND WASHERS AT DISSIMILAR METALS

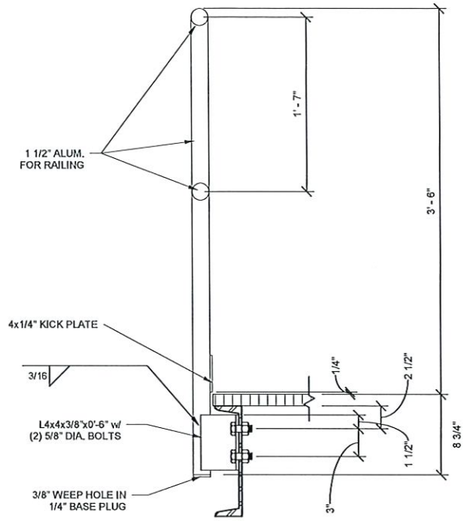
1 S-502 TYP. EXTERIOR CONC. STAIR PAD

SCALE: NTS



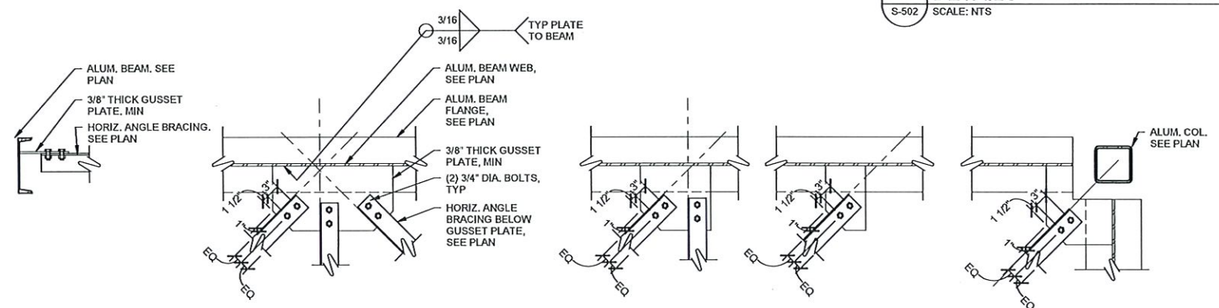
2 S-502 GUARDRAIL TYP. DETAIL

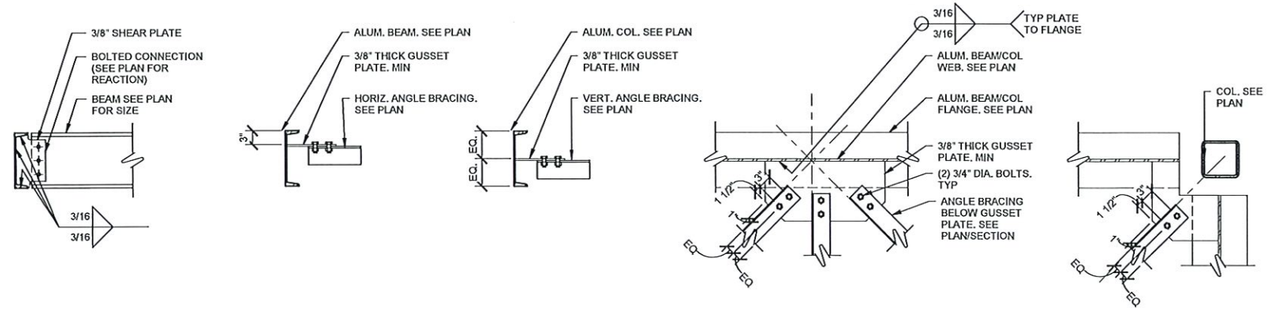
SCALE: NTS



3 S-502 TYP. ALUM. GUARDRAIL DETAILS

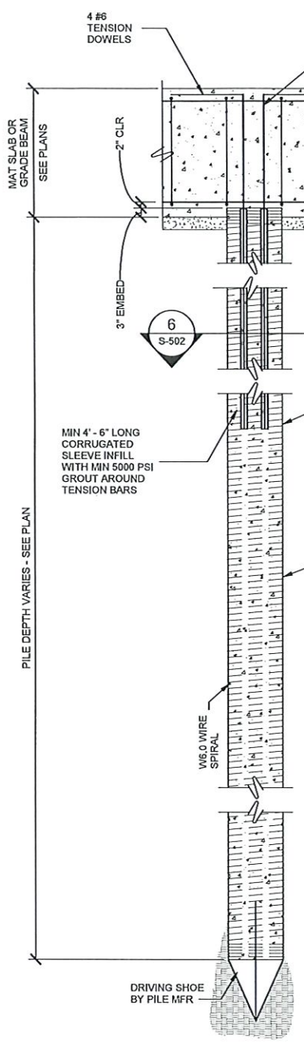
SCALE: NTS





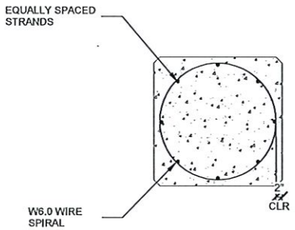
4 S-502 TYP HORIZONTAL BRACE CONNECTION

SCALE: NTS



5 S-502 TYP. PILE DETAIL

SCALE: NTS



6 S-502 TYP. PILE CROSS SECTION

SCALE: 1/2" = 1'-0"

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MECHANICAL LEGEND

- 20x12 SA — DUCT SIZE & SYSTEM ABBREVIATION; FIRST FIGURE IS DIMENSION SHOWN ON PLAN
- DUCT SECTION, POSITIVE PRESSURE
- DUCT SECTION, NEGATIVE PRESSURE
- NEW DUCTWORK
- FLEXIBLE DUCTWORK
- DUCT TRANSITION
- RECT. TO ROUND TRANSITION
- BRANCH DUCTWORK
- TURNING VANES
- CEILING DIFFUSER - SUPPLY
- CEILING DIFFUSER - RETURN
- CEILING DIFFUSER - EXHAUST
- CEILING DIFFUSER - ROUND
- LINEAR SLOT DIFFUSER (DOUBLE SLOT)
- LOUVER AND SCREEN
- FIRE DAMPER, PROVIDE ACCESS DOOR
- VOLUME DAMPER
- BACKDRAFT DAMPER
- SUPPLY/INTAKE AIRFLOW DIRECTION
- EXHAUST AIRFLOW DIRECTION
- GRILLE OR REGISTER, SIDEWALL
- PIPE CAP
- PIPE CONNECTION, BOTTOM
- PIPE CONNECTION, TOP
- PIPE ELBOW, TURNED UP
- PIPE ELBOW, TURNED DOWN
- PIPE TEE
- ANCHOR, INTERMEDIATE
- BUTTERFLY VALVE
- GATE VALVE
- BALL VALVE
- CHECK VALVE
- STRAINER VALVE
- THREE-WAY CONTROL VALVE
- TWO-WAY CONTROL VALVE
- PRESSURE GAUGE
- DOOR UNDERCUT
- MANUAL AIR VENT
- AUTOMATIC AIR VENT
- PUMP (SCHEMATIC)
- THERMOSTAT
- CO_2 — CARBON DIOXIDE SENSOR
- CO — CARBON MONOXIDE SENSOR
- M — MOTORIZED DAMPER
- A — PNEUMATIC DAMPER
- S — EMERGENCY SHUTDOWN SWITCH
- DP — DIFFERENTIAL PRESSURE SENSOR
- SD — DUCT SMOKE DETECTOR
- M — MASTER EMERGENCY SHUTDOWN SWITCH
- H — HUMIDISTAT

NOTES:

1. THIS LEGEND IS FOR REFERENCE ONLY
2. ALL SYMBOLS WHICH APPEAR WITHIN THE LEGEND MAY NOT APPLY TO THIS PROJECT.

MECHANICAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ABS	ABSOLUTE
AD	ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
BFF	BELOW FINISHED FLOOR
BHP	BREAK HORSEPOWER
CAP	CAPACITY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECTION
CONT	CONTINUATION
CP-1	CONTROL PANEL WITH DESIGNATION
CU	CONDENSING UNIT
CW	CHILLED WATER
DB	DRY BULB
DEG	DEGREES
DEMO	DEMOLITION
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EXHAUST AIR
EAG	EXHAUST AIR GRILLE
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EMCS	ENERGY MANAGEMENT AND CONTROL SYSTEM
ENT	ENTERING
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAHRENHEIT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FH	FIRE HYDRANT
FLEX	FLEXIBLE
FM	FLOW METER
FPM	FEET PER MINUTE
GAL	GALLONS
GH	GRAVITY HOOD
GM	GAS METER
GPM	GALLONS PER MINUTE
GUH	GAS UNIT HEATER
HP	HORSEPOWER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
ID	INSIDE DIAMETER/DIMENSION
IE	INVERT ELEVATION
IN	INCH
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LP	LOUVERED PENTHOUSE
LVL	LEVEL
LWT	LEAVING WATER TEMPERATURE
M	METER
MAX	MAXIMUM
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
N/A	NOT APPLICABLE
NG	NATURAL GAS
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH
R	RADIUS
RA	RETURN AIR
RAG	RETURN AIR GRILLE
REFRIG	REFRIGERANT
RH	RADIANT HEATER
RL	REFRIGERANT LIQUID LINE
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION LINE
SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
SB	SECURITY BARS
SF	SUPPLY FAN
SPEC	SPECIFICATION
STD	STANDARD
T	THERMOMETER
TA	TRANSFER AIR
TBD	TO BE DETERMINED
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VRF	VARIABLE REFRIGERANT FLOW
W	WATT
WB	WET BULB
WMS	WIRE MESH SCREEN
WS	WASTE STACK
Ø	DIAMETER

SYMBOLS AND TAGS

- HVAC - # — EQUIPMENT TAG
- BOD: 4' - 7" — BOTTOM OF DUCT ELEVATION TAG
- LIMIT OF DEMOLITION
- CONNECT TO EXISTING
- # — KEYNOTE
- SAD-# / ### CFM — AIR TERMINAL AND AIRFLOW TAG
- OR
- CD-A / ### — AIR QUANTITY DELIVERED BY DEVICE IN CFM; AIR TERMINAL MARK AS INDICATED IN SCHEDULE

AREA OUT OF SCOPE

AREA OF DEMOLITION

GENERAL MECHANICAL NOTES

1. THESE GENERAL NOTES APPLY TO ALL SHEETS. REFER TO INDIVIDUAL SHEETS FOR SHEET NOTES.
2. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED WITH. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT OCCURRING ANY ADDITIONAL COST TO THE OWNER. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
3. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK INCLUDING EQUIPMENT, PIPING, AND DUCTWORK WITH ALL OTHER DISCIPLINES AND AS SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS. MAKE ALL OFFSETS AND TRANSITIONS WITHOUT ANY ADDITIONAL EXPENSE TO OWNER.
4. COORDINATE ALL CUTTING AND PATCHING WITH ALL OTHER DISCIPLINES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO THEIR WORK. PROVIDE FLASHING AND COUNTERFLASHING FOR ALL PENETRATIONS THROUGH WALLS OR ROOF TO MAKE WATERPROOF INSTALLATION.
5. ALL ATTACHMENTS TO THE BUILDING STRUCTURE SHALL BE COORDINATED WITH THE STRUCTURAL DESIGN. ALL BRACING AND MOUNTING OF PIPES AND DUCTS SHALL MEET THE MINIMUM REQUIREMENTS OF THE MOST RECENT SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN THE DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
6. MAINTAIN PIPING A MINIMUM OF 8'-0" A.F.F IN ALL MECHANICAL ROOMS. ALL PIPING SHALL BE LOCATED AS HIGH AS POSSIBLE.
7. MOUNT THERMOSTATS WHERE INDICATED ON PLANS, 4'-0" A.F.F. UNLESS NOTED OTHERWISE.
8. REFER TO ELECTRICAL DRAWINGS TO VERIFY CONTROL VOLTAGES WITH EQUIPMENT AND PROVIDE ACCORDINGLY.
9. PROVIDE FLASHING AND COUNTERFLASHING FOR ALL PENETRATIONS THROUGH WALLS OR ROOF TO MAKE WATERPROOF INSTALLATION.
10. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
11. ALL EXPOSED PIPE, PIPE SUPPORTS, AND UNFINISHED EQUIPMENT SHALL MATCH ADJACENT FINISHES AS REQUIRED BY PAINTING SPECIFICATION AND ARCHITECTURAL DRAWINGS.

DUCTWORK NOTES

1. ALL DUCTWORK IS SHOWN AS FREE AREA INSIDE DIMENSIONS.
2. DO NOT CONSTRUCT OR INSTALL TAPS OUT OF REDUCERS, TEES, AND / OR ELBOWS.
3. ALLOW FOR FIELD MEASURED OFFSETS OR TRANSITIONS, ELBOWS, ETC.
4. RECTANGULAR EBLOWS SHALL BE RADIUS FITTINGS WITH CENTERLINE RADIUS EQUAL TO 1.5 TIMES THE DUCT WIDTH WHERE SPACE PERMITS. OTHERWISE, RECTANGULAR DUCTS SHALL BE 90 DEG. ELBOWS WITH DOUBLE THICKNESS TURNING VANES. NO OTHERS WILL BE ALLOWED.

APPLICABLE CODES AND STANDARDS

FLORIDA BUILDING CODE, 8TH EDITION	FBC 2023
FLORIDA BUILDING CODE, EXISTING BLDG, 8TH EDITION	FEBC 2023
FLORIDA BUILDING CODE, MECHANICAL, 8TH EDITION	FMC 2023
FLORIDA BUILDING CODE, PLUMBING, 8TH EDITION	FPC 2023
FLORIDA BUILDING CODE, FUEL GAS CODE, 8TH EDITION	FFGC 2023
FLORIDA BUILDING CODE, HURRICANE TESTING, 8TH EDITION	FL TEST PROT. 2023
CHAPTER 62-762 ABOVEGROUND STORAGE TANK SYSTEM	FAC 62-762
NATIONAL ELECTRIC CODE	NEC 2020
OCCUPATIONAL SAFETY AND HEALTH ACT	OSHA

*ALL APPLICABLE BUILDING CODES AND STANDARD NOT SPECIFIED HEREIN

DESIGN CONDITIONS FOR LOAD CALCULATIONS

			SPACE TYPE	
OUTDOOR DESIGN CONDITIONS			ELEC. RM	PUMP ROOM
	TEMPERATURE		INDOOR DESIGN CONDITIONS	
	DB (°F)	WB (°F)	LEAD / LAG (°F)	LEAD / LAG (°F)
HEATING (99.6%)	40.8	30.8*	60 / 55	NC
COOLING (0.4%)	94.1	78.3	80 / 85	80 / 85
DEHUMIDIFICATION (0.4%)	82.6	79.7	-	-
CLIMATE ZONE	1A	ALT. (FT)	4	

NOTES:
1. BASED ON 2021 ASHRAE HANDBOOK FUNDAMENTALS (IP), WMO: 752040
2. SPACES ARE PROVIDED WITH LEAD/LAG CONTROL TO AVOID SHORT CYCLING OF UNITS. REFER TO CONTROLS DRAWINGS FOR ADDITIONAL INFORMATION.
3. NC = NOT CONTROLLED

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DATE

Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

MECHANICAL LEGENDS, ABBREVIATIONS AND GENERAL NOTES

PROJ:	200-08486-22002
DESN:	F. ALTWAL
DRWN:	N. HILL
CHKD:	L. RAMIREZ

M-001

Bar measures 1 inch, otherwise drawing is not to scale

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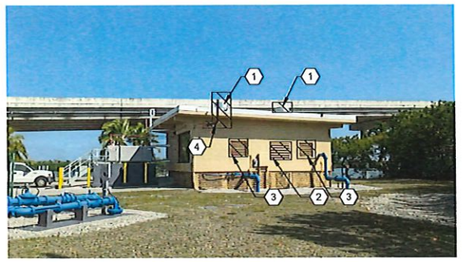


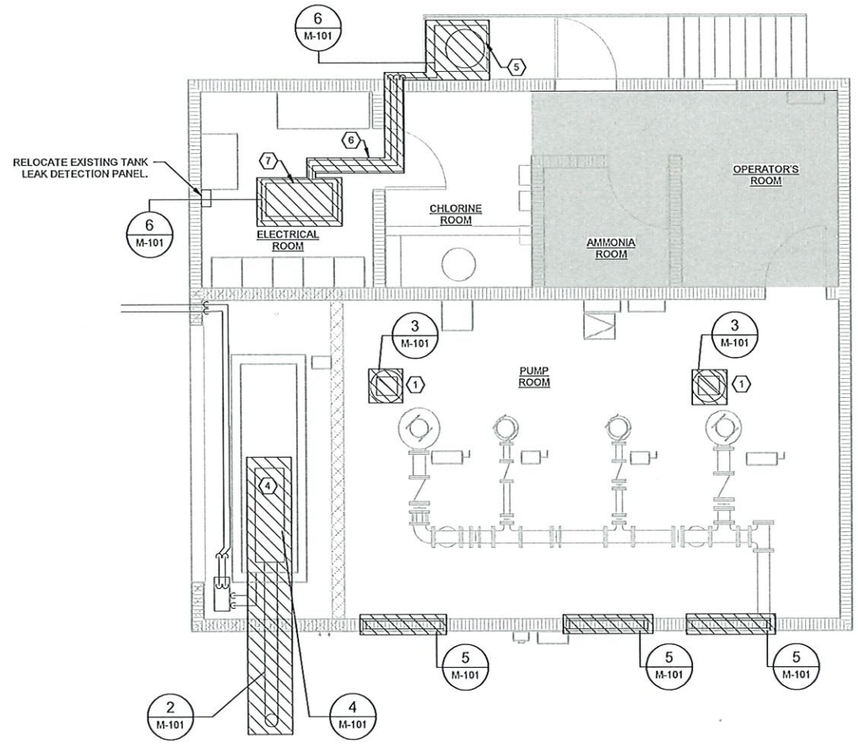
2 M-101 DEMO PHOTO
SCALE: NTS

5 M-101 DEMO PHOTO
SCALE: NTS

3 M-101 DEMO PHOTO
SCALE: NTS

4 M-101 DEMO PHOTO
SCALE: NTS

6 M-101 DEMO PHOTO
SCALE: NTS



1 M-101 DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

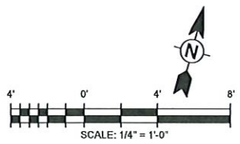
1. EXISTING MECHANICAL EQUIPMENT, ACCESSORIES, SUPPORTS, CONTROLS, AND OTHER COMPONENTS SHALL BE DEMOLISHED AND REMOVED FROM SITE AS SHOWN.
2. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, DIMENSIONS, AND CONFIGURATION OF ALL EXISTING EQUIPMENT, HANGERS, SUPPORTS, ANCHORS, CONTROLS, ETC. COORDINATE DEMOLITION AND DISPOSAL WITH THE REQUIREMENTS OF SECTION 02050 AND THE OWNER.
3. EXISTING ROOF OPENINGS SHALL BE FILLED, PATCHED AND SEALED STRUCTURAL DRAWINGS.

(#) KEYED NOTES

1. REMOVE AND DISPOSE OF EXISTING ROOF MOUNTED EXHAUST FANS WITH ALL ASSOCIATED SUPPORTS, HANGERS, CONTROL WIRING, CONDUITS AND THERMOSTAT. CONTRACTOR TO PROVIDE INSULATED CURB CAP OVER EXISTING OPENING.
2. REMOVE AND DISPOSE OF EXISTING LOUVER. REMAINING WALL OPENING SHALL BE TEMPORARILY SEALED FOR THE NEW WALL MOUNTED AIR CONDITIONING EQUIPMENT INSTALLATION. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. REMOVE AND DISPOSE OF EXISTING LOUVER, CONTRACTOR TO PATCH AND SEAL REMAINING WALL OPENING. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. REMOVE AND DISPOSE OF EXISTING GENERATOR EXHAUST PIPE WITH INSULATION, VENT SILENCER INCLUDING DRAIN PIPE, WALL THIMBLE, RAIN CAP WITH ALL ASSOCIATED HANGERS AND SUPPORTS. CONTRACTOR TO PATCH AND SEAL REMAINING WALL OPENING. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. REMOVE AND DISPOSE OF EXISTING CONDENSING UNIT WITH ALL ASSOCIATED SUPPORTS, AS SHOWN.
6. REMOVE AND DISPOSE OF EXISTING REFRIGERANT PIPING, INSULATION, CONDENSATE PIPING, VALVES, FILTER DRYERS, CONTROLS, CONDUITS AND WIRING.
7. REMOVE AND DISPOSE OF EXISTING AIR HANDLING UNIT WITH ALL ASSOCIATED SUPPORTS, HANGERS, DRAIN PAIN, AND THERMOSTAT.

DEMO & NEW WORK LEGEND

- AREA OF DEMOLITION
- AREA OUT OF SCOPE
- POINT OF DISCONNECTION
- POINT OF CONNECTION



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MECHANICAL DEMOLITION PLAN

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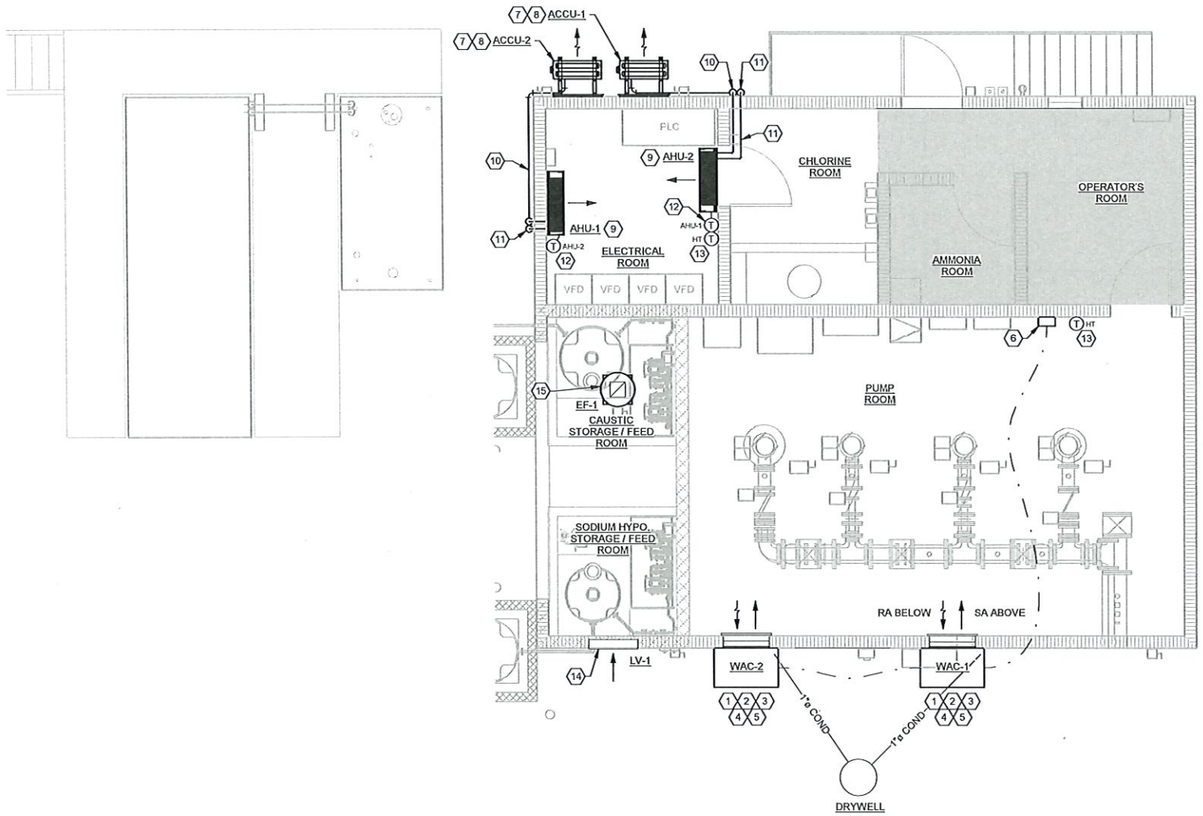

1 M-201 MODIFICATION PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. SEE ELECTRICAL DRAWINGS FOR ELECTRICAL EQUIPMENT IN THE ELECTRICAL ROOM. THE INSTALLATION OF HVAC EQUIPMENT SHOWN ON THIS SHEET MUST BE COORDINATED PRIOR TO INSTALLATION. NO EQUIPMENT SHALL BE INSTALLED OVER ANY ELECTRICAL EQUIPMENT OR PANELS.
2. ALL REFRIGERANT PIPING SHOWN ON PLAN SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATION.
3. THE ELECTRICAL BUILDING IS EXEMPT FROM THE FLORIDA ENERGY CONSERVATION CODE BY PARAGRAPH C101.4.2.4 EXEMPTION 4.

(#) KEYED NOTES

1. WALL MOUNTED PACKAGED UNIT SHALL BE MOUNTED TO THE EXTERIOR WALL PER MANUFACTURER'S RECOMMENDATIONS.
2. ROUTE 1" CONDENSATE LINE BELOW GROUND TO DRYWELL. SLOPE AT 2%
3. UNIT SHALL HAVE RIGHT HAND ACCESS AT A CLEARANCE OF 20" FOR MAINTENANCE AND REPAIRS.
4. CONDENSATE DRAIN PIPING SHALL BE TYPE DWV, SOLID-WASTE PVC PIPE: ASTM D 2665 DWV.
5. INSTALL SUPPLY AND RETURN DUCT AT LOCATIONS. INFILL AND PATCH REMAINDER OF OPENING. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
6. WALL MOUNTED PACKAGED UNIT WIRED CONTROL PANEL WITH SPACE TEMPERATURE SENSOR. REFER TO CONTROLS FOR SEQUENCE OF OPERATIONS.
7. POSITION CONDENSING UNIT AT MANUFACTURER'S RECOMMENDED CLEARANCE.
8. MOUNT OUTDOOR UNIT TO BUILDING STRUCTURE USING WALL SUPPORTS. WALL SUPPORTS MUST BE DESIGNED FOR USE IN A HIGH WIND VELOCITY HURRICANE ZONE INCLUDING MIAMI DADE.
9. MOUNT AIR HANDLING UNIT APPROXIMATELY 7'-2" ABOVE FINISHED FLOOR TO BOTTOM OF UNIT.
10. REFRIGERANT LINES SHALL BE ROUTED FROM CONDENSING UNIT THROUGH WALL AND TO AIR HANDLING UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
11. CONDENSATE TUBING DISCHARGE FROM AHU CONDENSATE PUMP. ROUTE TO EXISTING 1" VERTICAL PVC PIPING ON EXTERIOR OF WALL AND TERMINATE AT TOP OF 1" PVC RISER.
12. WALL MOUNTED WIRED THERMOSTAT. REFER TO CONRTOLS FOR SEQUANCE OF OPERATIONS.
13. PROVIDE JOHNSON CONTROLS A19 OR APPROVED EQUAL SPDT LINE VOLTAGE THERMOSTAT/HIGH TEMPERATURE SWITCH WITH CLEAR LOCKING COVER SET AT 95°F. THERMOSTAT SHALL SEND SIGNAL TO SCADA WHEN ROOM TEMPERATURE IS EQUAL TO SETPOINT.
14. FRP INTAKE LOUVER MOUNTED HIGH ON EXTERIOR WALL.
15. FRP UPBLAST EXHAUST FAN MOUNTED ON 12" HIGH ROOF CURB. FAN TO RUN CONTINUOUSLY TO PROVIDE 1 CFM / SQFT VENTILATION.

DEMO & NEW WORK LEGEND

- AREA OF DEMOLITION
- AREA OUT OF SCOPE
- POINT OF DISCONNECTION
- POINT OF CONNECTION

4' 0' 4' 8'
SCALE: 1/4" = 1'-0"

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1 THROUGH WALL AHU

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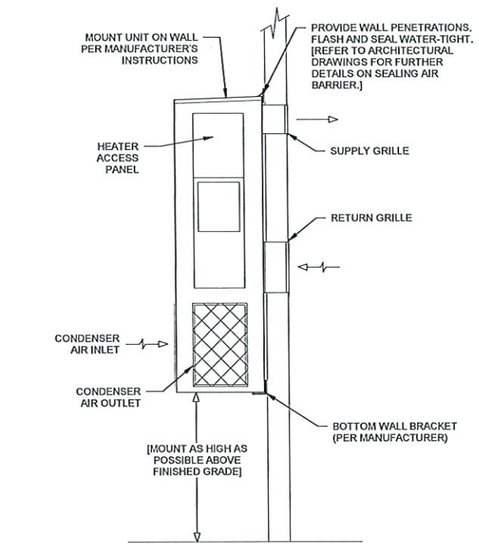
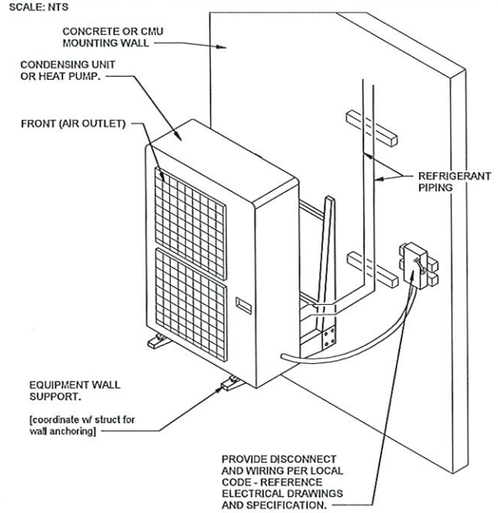


NOTES
1. ROUTE CONDENSATE TO DRYWELL. SEE DETAIL ON THIS SHEET.

2 WALL MOUNTED SPLIT-SYSTEM CONDENSING UNIT

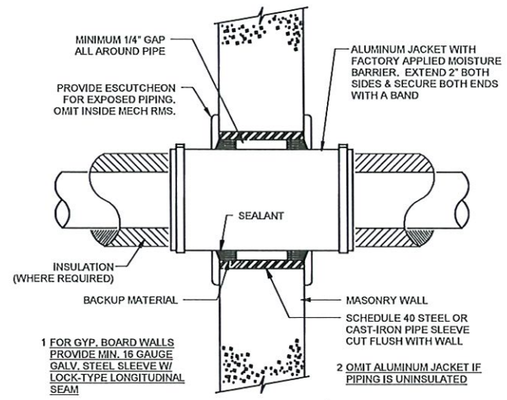
SCALE: NTS



NOTES:
1. ALL REFRIGERANT PIPING MUST BE INSULATED AND JACKETED PER SPECIFICATIONS AS WELL AS MANUFACTURERS RECOMMENDATIONS UNLESS INDICATED OTHERWISE. USE SEPARATE THERMAL INSULATION FOR GAS AND LIQUID LINES. ANY BURIED REFRIGERANT PIPING MUST ALSO BE INSULATED.
2. SUPPORT PIPING AND ELECTRICAL DISCONNECT USING HDG UNISTRUT CHANNEL.
3. DO NOT RUN PIPING OR CONDUIT UNDER CONDENSING UNIT.
4. MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES TO ADJACENT EQUIPMENT OR STRUCTURES.
5. EQUIPMENT STAND BY UNIT MANUFACTURER, QUICKSLING, BIGFOOT, OR APPROVED EQUAL.

3 WALL PENTRATION PIPE DETAIL

SCALE: N.T.S.

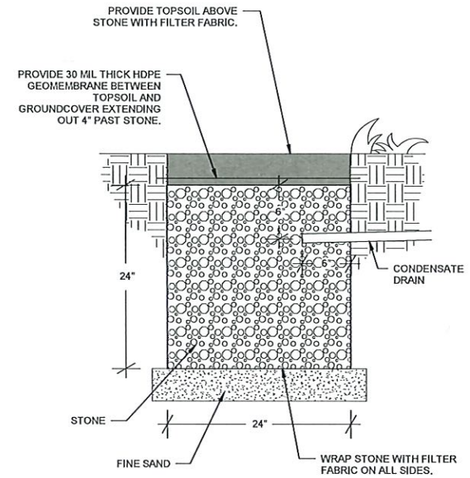


1 FOR GYP. BOARD WALLS PROVIDE MIN. 16 GAUGE GALV. STEEL SLEEVE W/ LOCK-TYPE LONGITUDINAL SEAM

2 OMIT ALUMINUM JACKET IF PIPING IS UNINSULATED

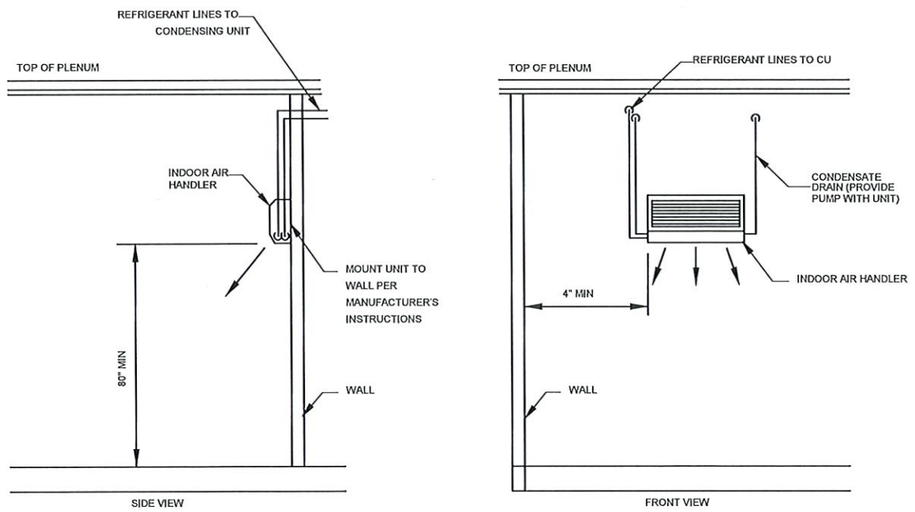
4 DRYWELL

SCALE: NTS



5 WALL HUNG DUCTLESS INDOOR UNIT DETAIL

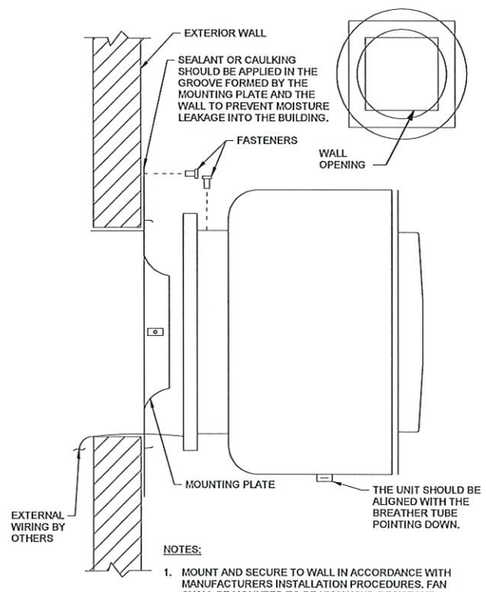
SCALE: NTS



NOTE : WALL MOUNTED THERMOSTAT SHALL BE PROVIDED.

6 WALL EXHAUST FAN DETAIL

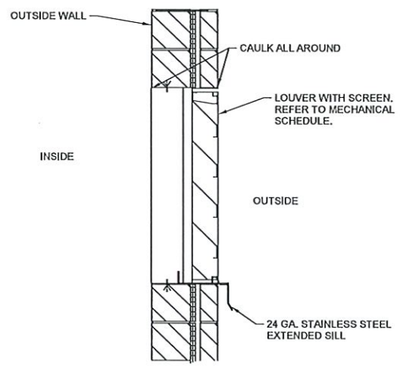
SCALE: NTS



NOTES:
1. MOUNT AND SECURE TO WALL IN ACCORDANCE WITH MANUFACTURERS INSTALLATION PROCEDURES. FAN SHALL BE MOUNTED TO BE HIGH WIND RESISTANT.
2. ALL MISC. METALS AND BOLTS PROVIDED SHALL BE 316 STAINLESS STEEL.

7 LOUVER DETAIL

SCALE: NTS



NOTES:
1. FOR LOCATION AND SIZE OF THE WALL OPENINGS, SEE PLANS.
2. EXTENDED SILL TO BE PROVIDED.
3. INSTALLATION OF LOUVER TO BE IN ACCORDANCE WITH LOUVER MANUFACTURER'S RECOMMENDATIONS.

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COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS
MECHANICAL DETAILS

PROJ:	200-08486-22002
DESN:	F. ALTWAL
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CHKD:	L. RAMIREZ

M-501

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WALL-MOUNTED PACKAGED AIR CONDITIONING UNIT SCHEDULE

TAG	NO	SERVICE	LOCATION	TONS	EER	AMBIENT TEMP. (°F)	SUPPLY FAN					COOLING						COMPRESSOR				FILTER			ELECTRICAL DATA							DIMENSIONS (IN)			WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
							AIRFLOW (CFM)	TSP (IN-WC)	ESP (IN-WC)	MOTOR		CAPACITY (MBH)		EAT (°F)		LAT (°F)		QTY	TYPE	DRIVE	REFRIG. TYPE	TYPE	MERV	THICK (IN)	V	Ph	Hz	MCA	MOCP	TYPE	L	W	H				
										HP	DRIVE	TOTAL	SENS.	DB	WB	DB	WB																			
WAC	1	PUMP ROOM	EXTERIOR	6	10	95.0	1,900	0.50	0.10	0.75	ECM	71.5	50.9	80.0	67.0	56.2	55.5	1	SCROLL	STARTER	R454A	PLEATED	8	2	460	3	60	18	25	EP	26	42	93	600	BARD	W72AFPC0ZBPXX5E	1,2,3,4,5
WAC	2	PUMP ROOM	EXTERIOR	6	10	95.0	1,900	0.50	0.10	0.75	ECM	71.5	50.9	80.0	67.0	56.2	55.5	1	SCROLL	STARTER	R454A	PLEATED	8	2	460	3	60	18	25	EP	26	42	93	600	BARD	W72AFPC0ZBPXX5E	1,2,3,4,5

NOTES:
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECTED AS REQUIRED.
2. PROVIDE WITH HI PRESSURE SWITCH, LOW PRESSURE SWITCH, COMPRESSOR CONTROL MODULE, LOW AMBIENT CONTROL, AND DIRTY FILTER PRESSURE SWITCH.
3. PROVIDE CONTROLLER SYSTEM LC-6000 OR APPROVED EQUAL FOR MULTIPLE UNITS INCLUDING PROGRAMMABLE CONTROLLER, DIAGNOSTIC TOOL, TEMPERATURE/HUMIDITY SENSOR AND COMMUNICATION FILTERS.
4. PROVIDE TECHNICOAT COATED COILS, INSIDE AND OUTSIDE OF UNIT.
5. PROVIDE WITH RETURN AIR GRILLE RFG-5W AND SUPPLY AIR GRILLE SG-5W.

MINI-SPLIT INDOOR UNIT SCHEDULE

TAG	NO	SERVICE	LOCATION	PAIRED UNIT	SUPPLY FAN					COOLING						HEATING			FILTER		ELECTRICAL DATA						DIMENSIONS (IN)			WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
					AIRFLOW (CFM)	TSP (IN-WC)	ESP (IN-WC)	MOTOR		CAPACITY (MBH)		EAT (°F)		LAT (°F)		CAP. (MBH)	EAT (°F)	LAT (°F)	TYPE	MERV	V	Ph	Hz	FLA	TYPE	L	W	H				
								W	DRIVE	TOTAL	SENS.	DB	WB	DB	WB																	
AHU	1	ELECTRICAL RM	ELECTRICAL RM	ACCU-1	900	0.10	0.10	64	ECM	31.4	21.0	80.0	67.0	56.2	55.5	34.8	60.0	80.0	WASH	8	208	1	60	0.37	EP	11	48	14	50	DAIKIN	FTX30WVJU9	1,2,3
AHU	2	ELECTRICAL RM	ELECTRICAL RM	ACCU-2	900	0.10	0.10	64	ECM	31.4	21.0	80.0	67.0	56.2	55.5	34.8	60.0	80.0	WASH	8	208	1	60	0.37	EP	11	48	14	50	DAIKIN	FTX30WVJU9	1,2,3

NOTES:
1. INDOOR UNIT IS POWERED BY PAIRED OUTDOOR UNIT.
2. PROVIDE CONDENSATE PUMP TO BE INSTALLED IN UNIT DRAIN PAN (REFCO MODEL GOBI II OR APPROVED EQUAL). PUMP TO BE POWERED BY INDOOR UNT.
3. PROVIDE WALL-MOUNTED, WIRED, 7-DAY PROGRAMABLE THERMOSTAT.

MINI-SPLIT OUTDOOR UNIT SCHEDULE

TAG	NO	SERVICE	LOCATION	PAIRED UNIT	TONS	SEER	COP	AMB. TEMP. (°F)		COMPRESSOR				CONDENSER FAN			ELECTRICAL DATA						DIMENSIONS (IN)			WEIGHT (LBS)	MANUFAC.	MODEL	NOTES
								COOL	HEAT	QTY	TYPE	DRIVE	REFRIG.	QTY	TYPE	DRIVE	V	Ph	Hz	MCA	MOCP	TYPE	L	W	H				
ACCU	1	ELEC. RM	EXTERIOR	AHU-1	2.5	17.5	2.92	95.0	47.0	1	SCROLL	INVERT	R-32	1	PROP	ECM	208	1	60	20	20	EP	13	35	29	150	DAIKIN	RX30WMVJU9	1,2,3,4
ACCU	2	ELEC. RM	EXTERIOR	AHU-2	2.5	17.5	2.92	95.0	47.0	1	SCROLL	INVERT	R-32	1	PROP	ECM	208	1	60	20	20	EP	13	35	29	150	DAIKIN	RX30WMVJU9	1,2,3,4

NOTES:
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECTED AS REQUIRED.
2. SINGLE POINT POWER CONNECTION. OUTDOOR UNIT PROVIDES POWER TO PAIRED INDOOR UNIT.
3. PROVIDE HURRICANE RATED WALL MOUNTING BRACKET (UNIT MANUFACTURER, QUICK-SLING, OR APPROVED EQUAL).
4. PROVIDE A LINE SET SIZED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. CONTRACTOR TO FIELD VERIFY LENGTHS.

EXHAUST FAN SCHEDULE

MARK	SERVICE	LOCATION	DESCRIPTION	MATERIAL	FAN DATA						MOTOR DATA				ELECTRICAL DATA						MOUNTING TYPE	WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
					AIR FLOW (CFM)	BHP	TSP (IN WG)	RPM	DRIVE	TYPE	HP	RPM	DRIVE	ENCLOSURE	V / Ph / Hz	FLA	MCA	MOCP	SCCR (kA)	TYPE					
EF-1	EXHAUST	OUTDOOR	UPBLAST (HORIZ.)	FRP	350	0.05	0.05	497	BELT	CENTRIFUGAL	0.1	1725	ECM	TENV	460 / 3 / 60	1.5	2	15	5	NP	ROOF	103	HARTZELL	SERIES 88	1

NOTES
1. [ALL ACCESSORIES TO BE FURNISHED BY FAN MANUFACTURER UNLESS NOTED OTHERWISE.]

LOUVER SCHEDULE

MARK	SERVICE	DESCRIPTION	AIR FLOW (CFM)	APD (IN WC)	FACE VEL. (FPM)	DIMENSIONS (W x H x D) (IN)	MATERIAL	MOUNTING	WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
LV-1	INTAKE	STAT. / DRAINABLE	175	0.05	500	32 x 32 x 4	FRP	WALL	100	POTTORFF	FFJ-445	1,2,3,4

NOTES:
1. LOUVER TO HAVE DRAINABLE BLADES / HEADER.
2. MAXIMUM ALLOWABLE WATER PENETRATION SHALL NOT EXCEED 0.01 OZ/SQ.FT.
3. COORDINATE COLOR AND FRAME WITH ARCHITECTURAL DRAWINGS.
4. PROVIDE INSECT SCREENS ON INTAKE.

GENERAL SCHEDULE NOTES

1. MANUFACTURER MAKE AND MODEL NUMBERS SHOWN ARE BASIS OF DESIGN UNITS. APPROVED EQUAL MANUFACTURERS AND MODELS MAY BE APPROVED AT THE EOR'S DISCRETION.
2. REFERENCE DRAWINGS, NOTES, DETAILS, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. POWER TYPE: NP = NORMAL POWER, SB = OPTIONAL STANDBY POWER, EP = EMERGENCY POWER, LRP = LEGAL REQUIRED POWER

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Tetra tech Inc.
10600 Chevrolet Way, Ste 102
Estero, Florida 33928
Engineering Business No. 2429

DATE

Collier County

MARK	DATE	DESCRIPTION	BY

COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

MECHANICAL SCHEDULES AND CONTROL DIAGRAM

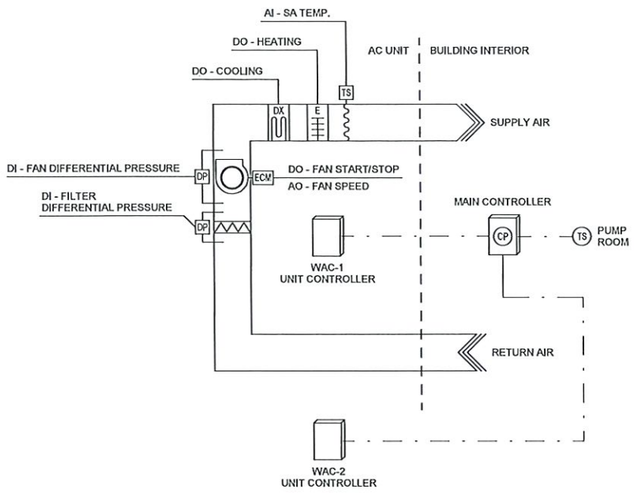
PROJ:	200-08486-22002
DESN:	F. ALTWAL
DRWN:	N. HILL
CHKD:	L. RAMIREZ

M-601

Bar measures 1 inch, otherwise drawing is not to scale

1 WALL-MOUNTED PACKAGED AC UNIT CONTROLS

SCALE: NONE



WAC-1 & 2 SEQUENCE OF OPERATIONS

BUILDING AUTOMATION SYSTEM INTERFACE:
THE MAIN CONTROL PANEL WILL REPORT SPACE TEMPERATURE AND ALARMS TO PLANT SCADA SYSTEM.

COOLING MODE:
ON A RISE IN SPACE TEMPERATURE ABOVE 80°F (ADJ.) THE UNIT CONTROLLER SHALL ENERGIZE THE COMPRESSOR TO COOL THE SPACE BELOW 75°F (ADJ.).

SUPPLY FAN:
THE SUPPLY FAN WILL RUN CONTINUOUSLY AT MINIMUM SPEED WHEN UNIT IS ACTIVE. UNIT CONTROLS SHALL INCREASE THE FAN SPEED AS NEEDED FOR COOLING. A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR DIFFERENTIAL PRESSURE ACROSS THE FAN. IF THE SWITCH DOES NOT OPEN WITHIN AFTER REQUEST FOR FAN OPERATION, A FAN FAILURE ALARM SHALL BE ANNUNCIATED AT THE BAS, THE UNIT SHALL STOP, REQUIRING A MANUAL RESET.

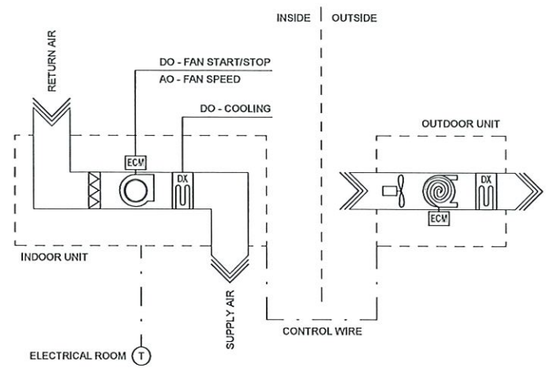
LEAD/LAG OPERATION:
THE MAIN CONTROL PANEL SHALL OPERATE UNITS 1 AND 2 IN A LEAD/SEQUENCE. UNITS SHALL BE ROTATED TO EQUALIZE RUNTIME. IN THE EVENT OF A UNIT FAILURE THE MAIN CONTROL PANEL SHALL ENERGIZE THE OTHER UNIT AND SEND AN ALARM TO THE SCADA SYSTEM.

SMOKE DETECTOR SHUTDOWN:
THE UNIT SHALL SHUT DOWN IN RESPONSE TO A SIGNAL FROM THE SMOKE DETECTOR INDICATING THE PRESENCE OF SMOKE. SMOKE DETECTORS SHALL BE INTERLOCKED TO THE UNIT THROUGH THE DRY CONTACTS OF THE SMOKE DETECTORS. MANUAL RESET OF THE SMOKE DETECTORS SHALL BE REQUIRED TO RESTART THE UNIT.

FILTER STATUS:
A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR DIFFERENTIAL PRESSURE ACROSS THE FILTER WHEN THE FAN IS RUNNING. IF THE SWITCH CLOSES FOR 2 MINUTES AFTER A REQUEST FOR FAN OPERATION, A DIRTY FILTER ALARM SHALL BE ANNUNCIATED AT THE BAS.

2 MINI-SPLIT - HEAT PUMP

SCALE: NONE



MINI-SPLIT HEAT PUMP SEQUENCE OF OPERATIONS

BUILDING AUTOMATION SYSTEM INTERFACE:
THE MAIN CONTROLLER SHALL SEND ALARMS TO THE BUILDING AUTOMATION SYSTEM (BAS).

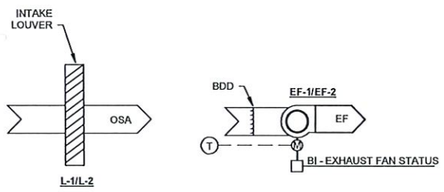
COOLING MODE:
1. WHEN THE SPACE TEMPERATURE RISES ABOVE THE SPACE TEMPERATURE SETPOINT OF 80°F (ADJ.) THE THERMOSTAT SHALL SEND A SIGNAL TO THE INDOOR UNIT TO START. THE INDOOR UNIT WILL VARY THE SPEED OF THE SUPPLY FAN TO PROVIDE COOLING TO THE SPACE.
2. AS THE SPACE TEMPERATURE APPROACHES THE SPACE TEMPERATURE SETPOINT THE INDOOR UNIT SUPPLY FAN SHALL REDUCE SPEED TO A MINIMUM.
3. THE OUTDOOR UNIT SHALL ACTIVE OR DE-ACTIVATE BASED ON SIGNAL FROM THE INDOOR UNIT. THE OUTDOOR UNIT SHALL VARY THE SPEED OF THE COMPRESSOR AND CONDENSER FAN TO PROVIDE SUFFICIENT COOLING TO THE INDOOR UNIT.

HEATING MODE:
1. WHEN THE SPACE TEMPERATURE FALL BELOW THE HEATING CHANGE OVER SETPOINT OF 60°F (ADJ.) THE THERMOSTAT SHALL SEND A SIGNAL TO THE INDOOR UNIT TO START. THE INDOOR UNIT WILL VARY THE SPEED OF THE SUPPLY FAN TO PROVIDE HEATING TO THE SPACE.
2. AS THE SPACE TEMPERATURE APPROACHES THE SPACE TEMPERATURE SETPOINT THE INDOOR UNIT SUPPLY FAN SHALL REDUCE SPEED TO A MINIMUM.
3. THE OUTDOOR UNIT WILL ACTIVATE AND ENGAGE THE REVERSING VALVE BASED ON CALL FOR HEATING FROM THE INDOOR UNIT. THE OUTDOOR UNIT SHALL VARY THE SPEED OF THE COMPRESSOR AND CONDENSER FAN TO PROVIDE SUFFICIENT HEATING TO THE INDOOR UNIT.

LEAD-LAG CONTROL:
1. EACH INDOOR UNIT SHALL HAVE AN INDEPENDENT, 7-DAY PROGRAMABLE, SPACE THERMOSTAT WITH AN ADJUSTABLE SETPOINT.
2. THE INITIAL COOLING SET POINT FOR PRIMARY (LEAD) UNIT SHALL BE 80°F. THE INITIAL COOLING SET POINT FOR SECONDARY (LAG) UNITS SHALL BE 85°F.
3. THE CONTRACTOR SHALL INSTRUCT THE OWNER TO PROGRAM THE LEAD/LAG UNITS TO EQUALIZE THE RUNTIME OF EACH UNIT OVER A WEEKLY BASIS (84 HOURS LEAD PER UNIT PER WEEK).

3 EXHAUST FAN AND LOUVER CONTROLS

SCALE: NONE



FLUORIDE BUILDING CONTROLS

SEQUENCE SUMMARY:

THE EXHAUST FAN SHALL RUN CONTINUOUSLY.

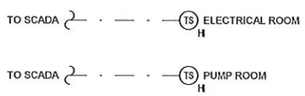
FANS SHALL SHUT DOWN UPON FIRE ALARM.

STAND ALONE EXHAUST FAN WITH HARDWIRED CONTROL: THE FAN AND ITS ASSOCIATED EQUIPMENT WILL OPERATE IN STAND-ALONE MODE. ALL CONTROL FUNCTIONS FOR THE FAN AND ITS ASSOCIATED EQUIPMENT WILL BE PERFORMED THROUGH INTERLOCK WIRING

CONTRACTOR SHALL PROVIDE ALL NECESSARY WIRING AND CONDUIT, DEVICES, CONTROLLERS, INTERLOCKS, AND SWITCHES AS NECESSARY TO MEET THE INTENT OF THESE SEQUENCES AND THE CONTROL DIAGRAMS SHOWN. CONTRACTOR SHALL COORDINATE FOR A FULLY FUNCTIONAL SYSTEM.

4 HIGH TEMP SENSOR

SCALE: NONE



HIGH TEMPERATURE SENSOR SEQUENCE OF OPERATIONS

INDICATED ROOMS SHALL INCLUDE A LOCAL SPACE TEMPERATURE SENSOR THAT COMMUNICATES WITH THE SCADA SYSTEM.

[TEMPERATURE SENSOR SHALL BE EQUIPED WITH A LOCAL ADJUSTABLE HIGH LIMIT SET POINT, INITIALLY SET AT 95°F. THE SENSOR SHALL COMMUNICATE A HIGH SPACE TEMPERATURE ALARM AS A DIGITAL OUTPUT.]

[THE TEMPERATURE SENSOR SHALL COMMUNITE SPACE TEMPERATURE AS AN ANALOG VALUE. ALL LIMITS AND ALARMS MUST BE CONFIGURED BY SCADA ADMINISTRATORS.]

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