Highlands County Board of County Commissioners

New Traffic Operations Building

4490 Kenilworth Blvd.

Sebring, FL 33870

N

VICINITY MAP
NO SCALE

APPENDIX "C"

SYMBOL LEGEND

XXX	DRAWING NOTE
A / A101	WALL SECTION DRAWING REFERENCE
AA / A501	BUILDING SECTION DRAWING REFERENCE
1 / A101	DETAIL DRAWING REFERENCE
℄	CENTERLINE
101	DOOR NUMBER
A	WINDOW NUMBER
M1	MILLWORK SYMBOL
Room name 101	ROOM NAME / NUMBER
FX	FRAME NUMBER
UNO	UNLESS NOTED OTHERWISE

DO NOT SCALE THESE DRAWINGS

LIST OF DRAWINGS

COVR COVER SHEET

STRUCTURAL

S101 FOUNDATION / SLAB PLAN
S201 FOUNDATION DETAILS AND NOTES
S202 MASONRY DETAILS

ARCHITECTURAL

A101 OVERALL FLOOR PLAN
A102 LIFE SAFETY PLAN
A201 REFLECTED CEILING PLAN
A401 EXTERIOR ELEVATIONS
A501 1/4" BUILDING SECTIONS
A502 WALL SECTIONS AND DETAILS
A601 MILLWORK ELEVATIONS AND DETAILS

MECHANICAL

M100 MECHANICAL PLAN
M200 MECHANICAL DETAILS AND SCHEDULES

PLUMBING

P100 WASTE AND VENT PLAN
P200 WATER PLAN
P300 PLUMBING SCHEDULE AND DETAILS

ELECTRICAL

E101 ELECTRICAL GENERAL NOTES AND SYMBOL LEGEND
E201 ELECTRICAL SITE PLAN AND POWER RISER DIAGRAM
E301 LIGHTING PLAN
E401 POWER AND SYSTEMS PLAN
E501 GENERATOR SPECIFICATIONS
E502 AUTOMATIC TRANSFER SWITCH SPECIFICATIONS

BUILDING DESIGN CRITERIA

CODE CONFORMANCE

FLORIDA BUILDING CODE - EXISTING	SEVENTH EDITION (2020)
ASCE	7-16
FBC-MECHANICAL	SEVENTH EDITION (2020)
FBC-PLUMBING	SEVENTH EDITION (2020)
FBC-FUEL GAS	SEVENTH EDITION (2020)
FBC-ACCESSIBILITY	SEVENTH EDITION (2020)
FBC-ENERGY CONSERVATION	SEVENTH EDITION (2020)
NATIONAL ELECTRIC CODE (NEC)	2017 NFPA 70
FLORIDA FIRE PREVENTION CODE (FFPC)	SEVENTH EDITION (2020)
NFPA 1	2018
NFPA 101	2018

DESIGN WIND SPEED: 160 MPH
THIS PROJECT IS DESIGNED AS RISK CATEGORY IV AND COMPLIES WITH FLORIDA BUILDING CODE REQUIREMENTS FOR AN ESSENTIAL FACILITY AND IS CLASSIFIED AS A WIND BORNE DEBRIS REGION (>140 mph). EXTERIOR COMPONENTS AND CLADDING SHALL BE TESTED TO COMPLY WITH FBC SECTION 1626 TO WITHSTAND LARGE MISSLE IMPACTS.

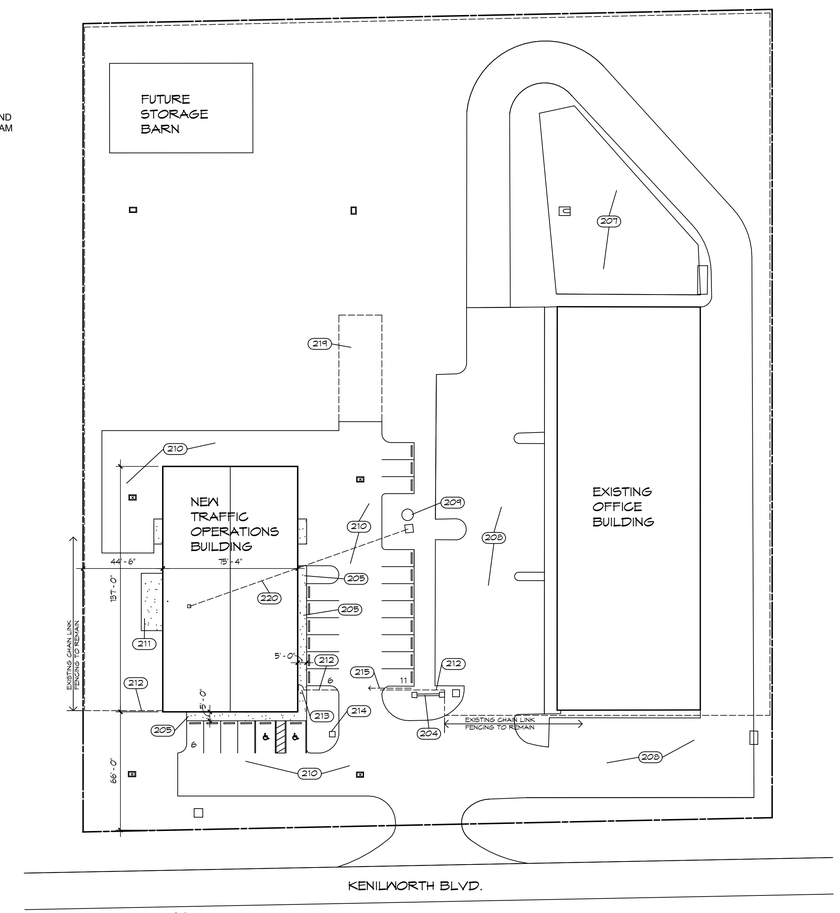
DESIGN LOAD FOR COMPONENTS & CLADDING: SEE STRUCTURAL DRAWINGS.

DESIGN DATA

	FBC	FFPC
OCCUPANCY GROUP	B - BUSINESS	BUSINESS
CONSTRUCTION TYPE	TYPE II-B, UNPROTECTED	

COMPLIANCE STATEMENT

TO THE BEST OF THE ARCHITECT'S KNOWLEDGE, THESE DRAWINGS AND THE PROJECT SPECIFICATIONS ARE COMPLETE AND COMPLY WITH THE REFERENCED CODES.



N

ARCHITECTURAL SITE PLAN
1" = 40'-0"

ACOVR Sheet Notes / Numbers May Not Be Consecutive

204 Existing signage to remain.
205 4 inch thick poured concrete sidewalk with 6x6xW1.4xW1.4 WWF. Broom finish. Provide 8 inch x 8 inch thickened edge reinforced with 1-#5 dia. continuous at all edges.
207 Existing stormwater retention pond. Refer to Civil Drawings.
208 Existing asphalt driveway and parking. Protect from damage.
209 Existing lift station.
210 New asphalt paving. Refer to Civil Drawings.
211 New concrete pad to accommodate mechanical equipment.
212 8 ft. high chainlink fencing.
213 3 ft. wide pedestrial gate with security access control.
214 Access control pedestal. Contractor shall provide 12 in. x 12 in. x 2 ft. deep poured concrete footing at each pedestal. Verify location.
215 New 24 ft. wide motorized rolling gate with security access control.
219 Stabilized area for truck manuvering. Refer to Civil Drawings for details and location.
220 Owner shall provide and install underground conduit from existing vault to new IT cabinet. Contractor shall coordinate work.

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NEIL G. MELBY, AIA, LEED AP
FAIR 0011121
C. KEITH HUNNICUTT, A.I.A.

BID DOCUMENTS
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Sebring, FL 33870
COVER SHEET

REVISIONS

CONSTRUCTION 03/29/2023
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REVIEW
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COVR

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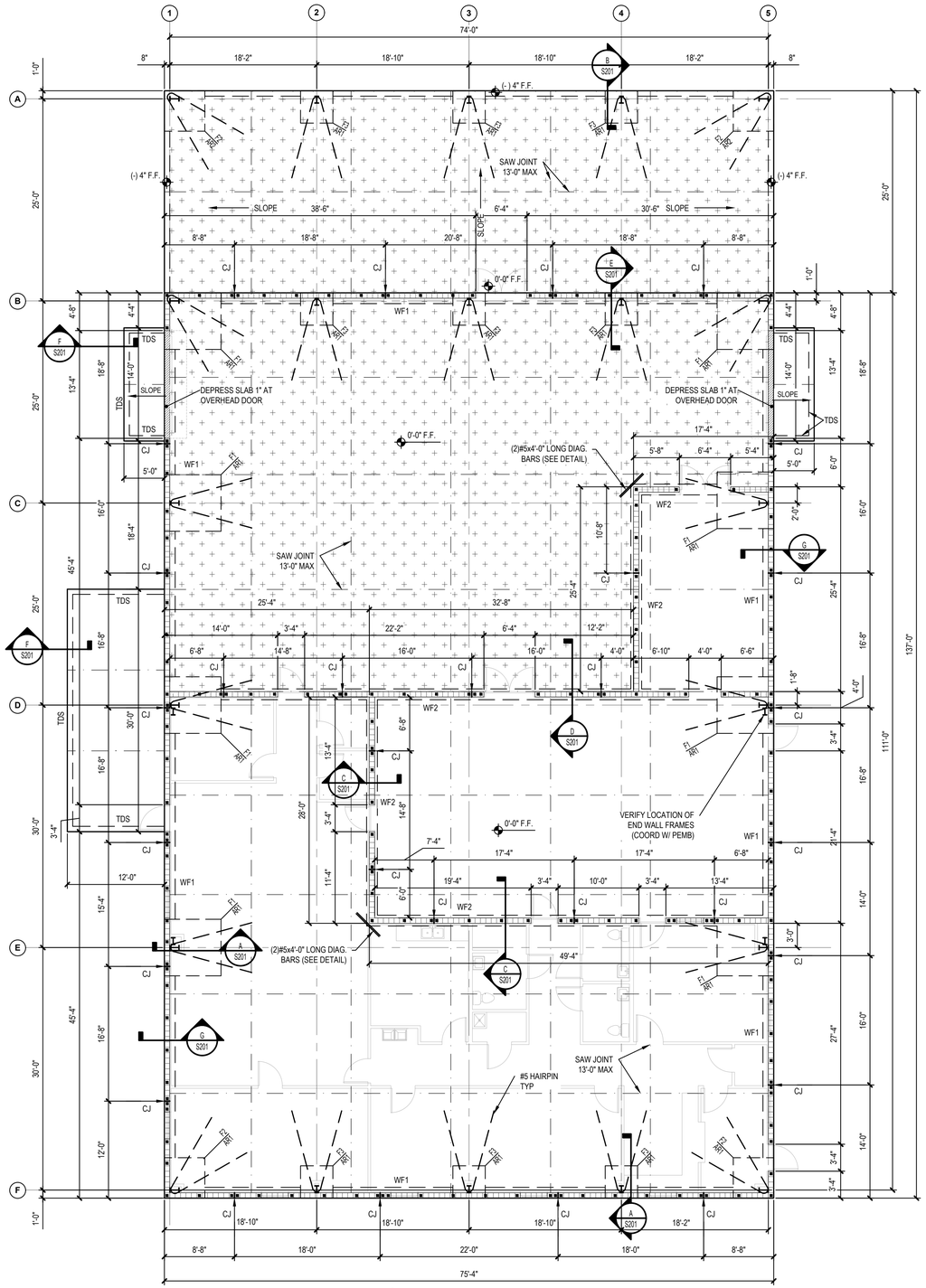


NORTH

FOUNDATION PLAN

Scale: 1/8"=1'-0"

FOOTING SCHEDULE

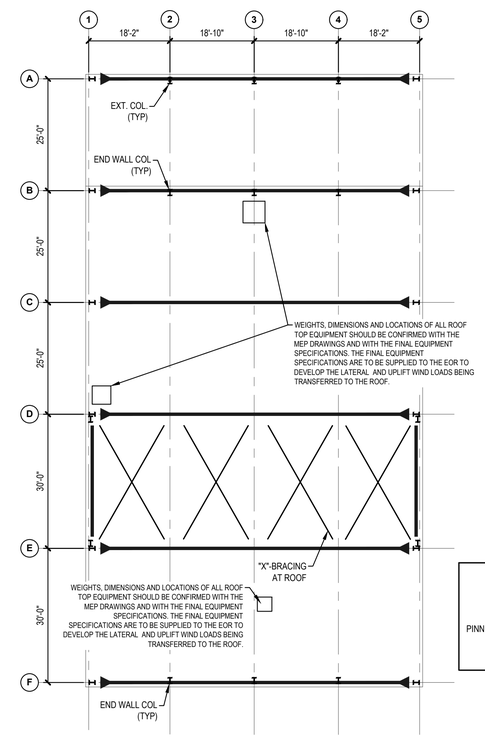
MK NO.	FOOTING SIZE	REINFORCEMENT
F1	7'-0 x 7'-0 x 2'-0"	(11) #5 E.W. CENTERED
F2	5'-0" x 5'-0" x 2'-0"	(8) #5 E.W. CENTERED
F3	4'-0 x 4'-0 x 2'-0"	(6) #5 E.W. CENTERED
WF1	1'-4"W x 1'-8"D	(2) #5 CONT
WF2	1'-4"W x 1'-0"D	(2) #5 CONT

NOTE:

1. FOUNDATION DESIGN BASED ASSUMED LOADS. GWE SHOULD BE CONTRACTED TO REVIEW AND REVISE THIS FOUNDATION DESIGN ONCE PEMB REACTIONS ARE PROVIDED.
2. REFERENCE ARCHITECTURAL DIMENSION FLOOR PLAN DRAWINGS FOR ADDITIONAL DIMENSIONS.

LEGEND

- TYPICAL SLAB EDGE
- #5x10'-0"x10'-0" HAIR PIN CENTERED IN SLAB
- 12ft HIGH 8" CMU SCREEN WALL W/#5 IN GROUT FILLED CELLS AT 48" O.C. IN 3,000 psi GROUT FILLED CELLS.
- SAW CUT JOINT
- 6" THICK CONC. SLAB W/WWF6x6-W2.9xW2.9 ON 6 MIL VAPOR BARRIER ON COMPACTED, TERMITE TREATED FILL FURNISH W.W.F. IN FLAT SHEETS PLACE 2" BELOW TOP OF SLAB
- 4" THICK CONC. SLAB W/WWF6x6-W1.4xW1.4 ON 10 MIL VAPOR BARRIER ON COMPACTED, TERMITE TREATED FILL FURNISH W.W.F. IN FLAT SHEETS PLACE 2" BELOW TOP OF SLAB
- CJ CONTROL JOINT



NORTH

FRAMING SCHEMATIC

Scale: 1/16"=1'-0"

LEGEND

RIGID FRAME:

PINNED CONNECTION:

1/8"=1'-0" 8' 0 8 16

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FOUNDATION / SLAB PLAN

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APPROVAL

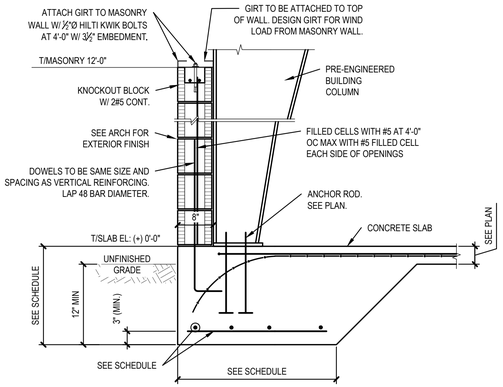
REVIEW

CHECKED BY AP

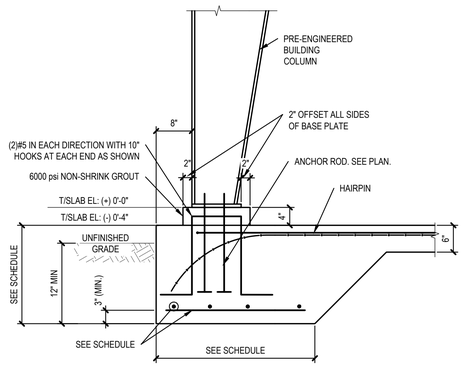
S101

19058

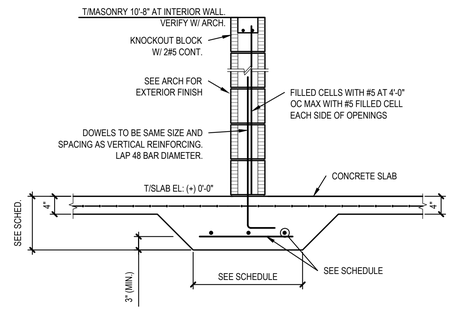
20-18058



SECTION A S201
3/4"=1'-0"



SECTION B S201
3/4"=1'-0"



SECTION C S201
3/4"=1'-0"

GENERAL STRUCTURAL NOTES

1. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 7TH EDITION (2020).
2. ULTIMATE DESIGN WIND VELOCITY IS A LINEAR INTERPOLATION FROM FIGURE 1609 OF THE FLORIDA BUILDING CODE
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO START OF FABRICATION AND CONSTRUCTION
4. CONTRACTOR SHALL VERIFY ALL EQUIPMENT SUPPORTS AND OPENINGS WITH MANUFACTURERS DATA FOR EQUIPMENT PURCHASED.
5. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AND DETAILS BEFORE PROCEEDING WITH WORK.
6. CONTRACTOR SHALL FULLY BRACE AND PROTECT ALL WORK IN PROGRESS UNTIL THE BUILDING IS COMPLETED.

CONCRETE

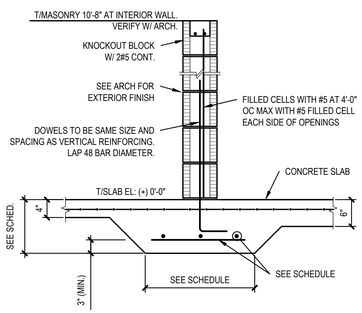
1. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI-301,"SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
2. WELDED WIRE FABRIC SHALL BE PLACED (2) TWO INCHES BELOW THE TOP OF ALL SLABS ON GRADE. LAP FOR FABRIC SHALL BE (2) TWO FULL SPACES OF THE CROSS WIRES.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM-A185 (SMOOTH WIRE).
4. REINFORCING BARS IN WALLS, FOUNDATIONS & BEAMS SHALL BE CONTINUOUS AROUND CORNERS.
5. REINFORCING BAR SPLICES SHALL BE 36 BAR DIAMETERS (MIN.) HOOKS TO BE ACI STANDARD.
6. SPLICE CONTINUOUS TOP BARS AT CENTER BETWEEN SUPPORTS AND SPLICE CONTINUOUS BOTTOM BARS AT SUPPORTS. TOP BARS SHALL BE HOOKED WHERE BARS ARE NOT CONTINUOUS.

FOUNDATIONS

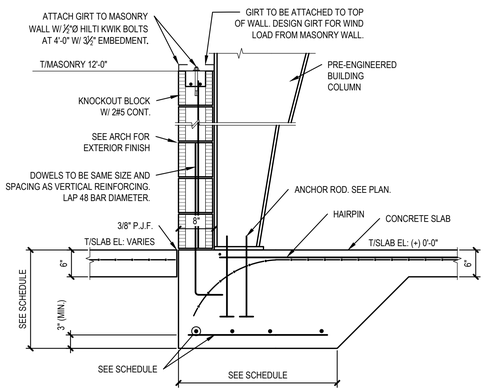
1. ASSUMED DESIGN SOIL BEARING PRESSURE = 2000 PSF.

MASONRY

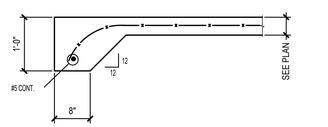
1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM-C90 GRADE N, TYPE II, NORMAL WEIGHT.
2. MORTAR SHALL BE TYPE S CONFORMING TO ASTM-C270.
3. REINFORCING BAR SPLICES IN MASONRY SHALL BE 48 BAR DIAMETERS.
4. JOINT REINFORCEMENT TO BE STANDARD WEIGHT LADUR TYPE, 9 GA. GALVANIZED STEEL. INSTALL HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. (U.O.N.) FACTORY FABRICATED SECTIONS SHALL BE INSTALLED AT CORNERS AND WALL INTERSECTIONS.
5. GROUT SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS. SLUMP = 8 - 10 INCHES.
6. MASONRY ANCHORS AND TIES SHALL BE ZINC COATED IN ACCORDANCE WITH ASTM - A153.
7. VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT INTERVALS OF 192 DIAMETERS.
8. PROVIDE HOOKS IN CONCRETE BEAMS FOR VERTICAL REINFORCEMENT FOR CONCRETE COLUMNS AND FILL CELLS WHERE VERTICAL REINFORCEMENT IS NOT CONTINUOUS.



SECTION D S201
3/4"=1'-0"



SECTION E S201
TDS



SECTION F S201
3/4"=1'-0"

THE PRESSURES INDICATED IN THIS CHART ARE ULTIMATE VALUES (LB/FT²) BASED ON ASCE 7-16		
2020 FLORIDA BUILDING CODE, 7TH EDITION		
ULTIMATE DESIGN WIND SPEED =	160 mph	
NOMINAL DESIGN WIND SPEED =	124 mph	
BUILDING RISK CATEGORY =	IV	
EXPOSURE CATEGORY =	D	
ENCLOSURE CLASSIFICATION =	Enclosed	
ASCE 7-16 COMPONENTS & CLADDING PRESSURES		

ROOF

Zone 1'			Zone 1		
10 SF	32.0	-72.0	10 SF	32.0	-125.3
20 SF	30.0	-72.0	20 SF	30.0	-117.0
50 SF	27.3	-72.0	50 SF	27.3	-106.1
100 SF	25.3	-72.0	100 SF	25.3	-97.8
200 SF	25.3	-61.9	200 SF	25.3	-89.5
500 SF	25.3	-48.7	500 SF	25.3	-78.6
1000 SF	25.3	-38.6	1000 SF	25.3	-78.6

Zone 2			Zone 3		
10 SF	32.0	-165.2	10 SF	32.0	-225.2
20 SF	30.0	-154.6	20 SF	30.0	-203.9
50 SF	27.3	-140.6	50 SF	27.3	-175.8
100 SF	25.3	-129.9	100 SF	25.3	-154.6
200 SF	25.3	-119.3	200 SF	25.3	-133.4
500 SF	25.3	-105.3	500 SF	25.3	-105.3
1000 SF	25.3	-105.3	1000 SF	25.3	-105.3

O.H.	Zone 1	Zone 1'	Zone 2	Zone 3
10 SF	-125.3	-125.3	-165.2	-225.2
20 SF	-123.2	-123.2	-151.1	-200.4
50 SF	-120.6	-120.6	-132.3	-167.6
100 SF	-118.6	-118.6	-118.2	-142.8
200 SF	-101.4	-101.4	-104.0	-118.0
500 SF	-78.6	-78.6	-85.3	-85.3

WALLS

Zone 4			Zone 5		
10 SF	72.0	-77.9	10 SF	72.0	-95.9
20 SF	68.8	-74.8	20 SF	68.8	-89.6
50 SF	64.6	-70.5	50 SF	64.6	-81.1
100 SF	61.4	-67.4	100 SF	61.4	-74.8
200 SF	58.2	-64.2	200 SF	58.2	-68.4
500 SF	54.0	-60.0	500 SF	54.0	-60.0

PARAPETS

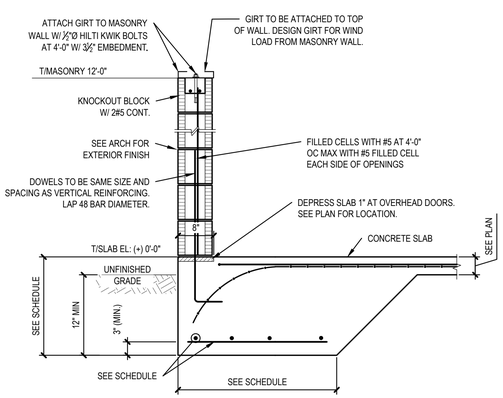
CASE A - WINDWARD			CASE B - LEEWARD		
	Zone 4	Zone 5		Zone 4	Zone 5
10 SF	237.2	297.1	10 SF	-149.9	-167.9
20 SF	223.4	272.7	20 SF	-143.5	-158.3
50 SF	205.1	240.4	50 SF	-135.1	-145.7
100 SF	191.3	216.0	100 SF	-128.7	-136.1

CONCRETE MIX DESIGN SHALL BE SUBMITTED FOR REVIEW AND SHALL PROVIDE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

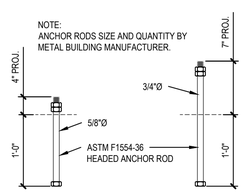
CLASS OF CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS	MAXIMUM SIZE OF AGGREGATE	MINIMUM CEMENT CONTENT	MAXIMUM WATER/CEMENT RATIO	MAXIMUM SLUMP*
FOOTING/SLAB 3000 PSI	3/4"	490#	.53	4"
CELL FILL 3000 PSI	3/8"	650#	.58	9"
*MEASURED AT POINT OF PLACEMENT AFTER ALL WATER HAS BEEN ADDED.				

DESIGN LOADS:

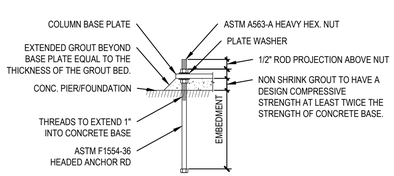
DEAD LOAD = SELF WEIGHT OF STRUCTURE
LIVE LOADS = SLAB ON GRADE = 40PSF OR 3000 LBS (PER ASCE 7-10 LIVE LOAD REQUIREMENTS FOR PASSENGER VEHICLES AND GARAGES)
ROOF = 20PSF W/ MODIFICATIONS FOR SLOPE AND AREA
WIND LOADS = SEE C&C WIND PRESSURE TABLE



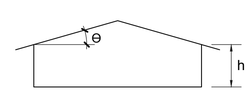
SECTION G S201
3/4"=1'-0"



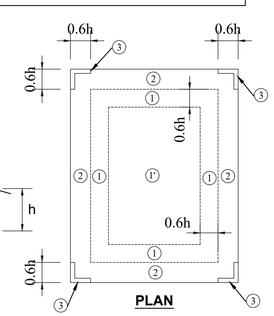
AR 1 **AR 2**



TYP. ANCHOR ROD DETAIL
Scale: 1"



ELEVATION



PLAN

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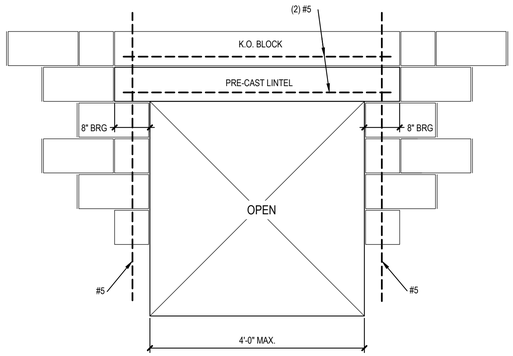
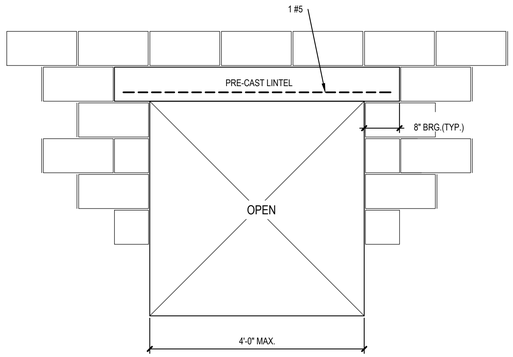
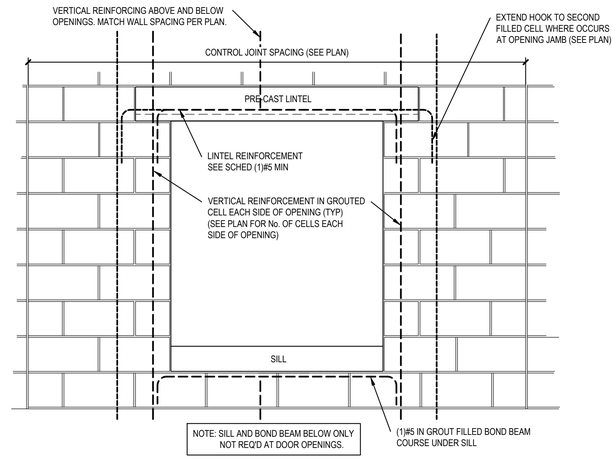


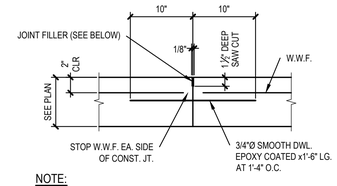
TYP. DOOR OPENING IN 8" MASONRY WALL (UNO)



TYP. OPENING IN 8" NON-BEARING INTERIOR MASONRY WALL (U.N.O.)



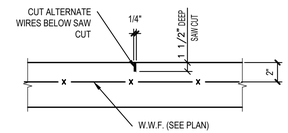
TYP. WINDOW OPENING REINFORCEMENT BETWEEN MASONRY CONTROL JOINTS IN EXTERIOR WALLS



NOTE:
1. GREASE PROJECTING END PRIOR TO PLACEMENT OF ADJACENT SLAB.
2. SAW CUT TO BE MADE AS SOON AS POSSIBLE USING AN EARLY ENTRY SAW, BUT NOT EXCEED 8 HRS. AFTER SLAB IS PLACED.

TYPICAL CONSTRUCTION JOINT (C.J.)

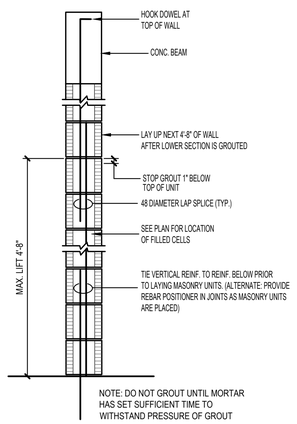
JOINT FILLER TO BE SILA SIKADUR CJR LPL



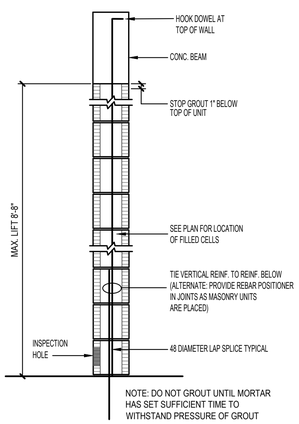
NOTE:
SAW CUT TO BE MADE AS SOON AS POSSIBLE, BUT NOT EXCEED 8 HRS. AFTER SLAB IS PLACED.

TYPICAL SAWED CONTROL JOINT

JOINT FILLER TO BE SILA SIKADUR CJR LPL

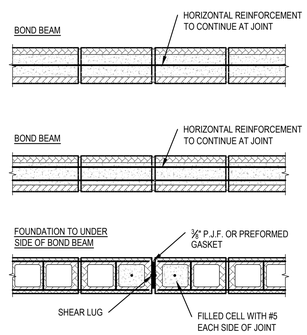


TYPICAL LOW LIFT GROUTING



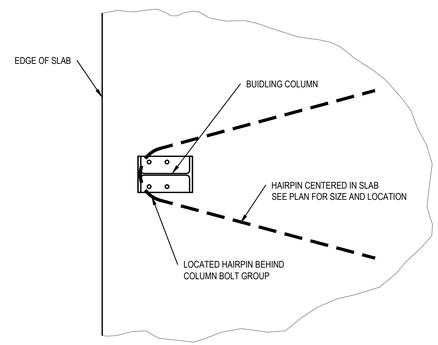
TYPICAL HIGH LIFT GROUTING

NOTE: ALLOWED ON 12" CMU ONLY.

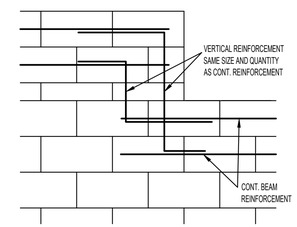


NOTE:
1. DISCONTINUE HORIZONTAL JOINT REINF. AT CONTROL JOINT
2. CONTROL JOINTS TO BE LOCATED AT 25'-0" MAX OR 1 1/2" TIMES WALL HEIGHT AND AT WALL HEIGHT CHANGES U.N.O.
3. FORM A GROOVE 3/8" WIDE x 3/4" DEEP JOINT IN BOND BEAM DIRECTLY ABOVE WALL JOINT

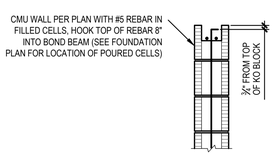
TYP. CONTROL JOINT IN MASONRY



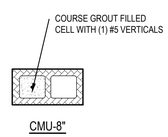
TYPICAL HAIRPIN PLACEMENT DETAIL



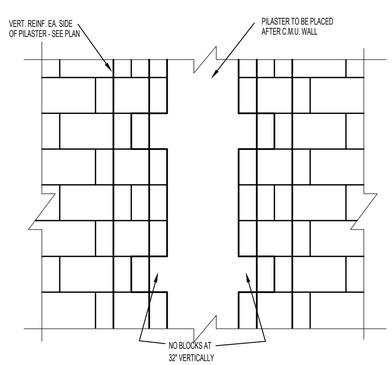
TYP. STEPPED BOND BEAM



TYP. REINFORCEMENT HOOK INTO KO BLOCK

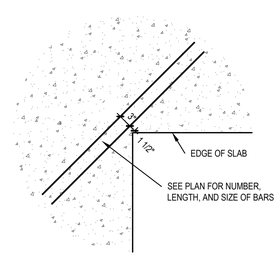


FILLED CELL WITH DOWELS



TYP. PILASTER TO MASONRY WALL DETAIL

(OMIT AT C.J.M.)



TYP SLAB REINFORCEMENT AT INSIDE CORNER

GRINDLEY WILLIAMS ENGINEERING
4175 SOUTH PIPKIN RD, SUITE 210
LAKELAND, FLORIDA
863.676.2600
grindleywilliams.com
FL C.O.A. NO. 31483

ALAN C. PLANTS, P.E. FL 63913

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TELEPHONE 863-688-8882
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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

MASONRY DETAILS

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

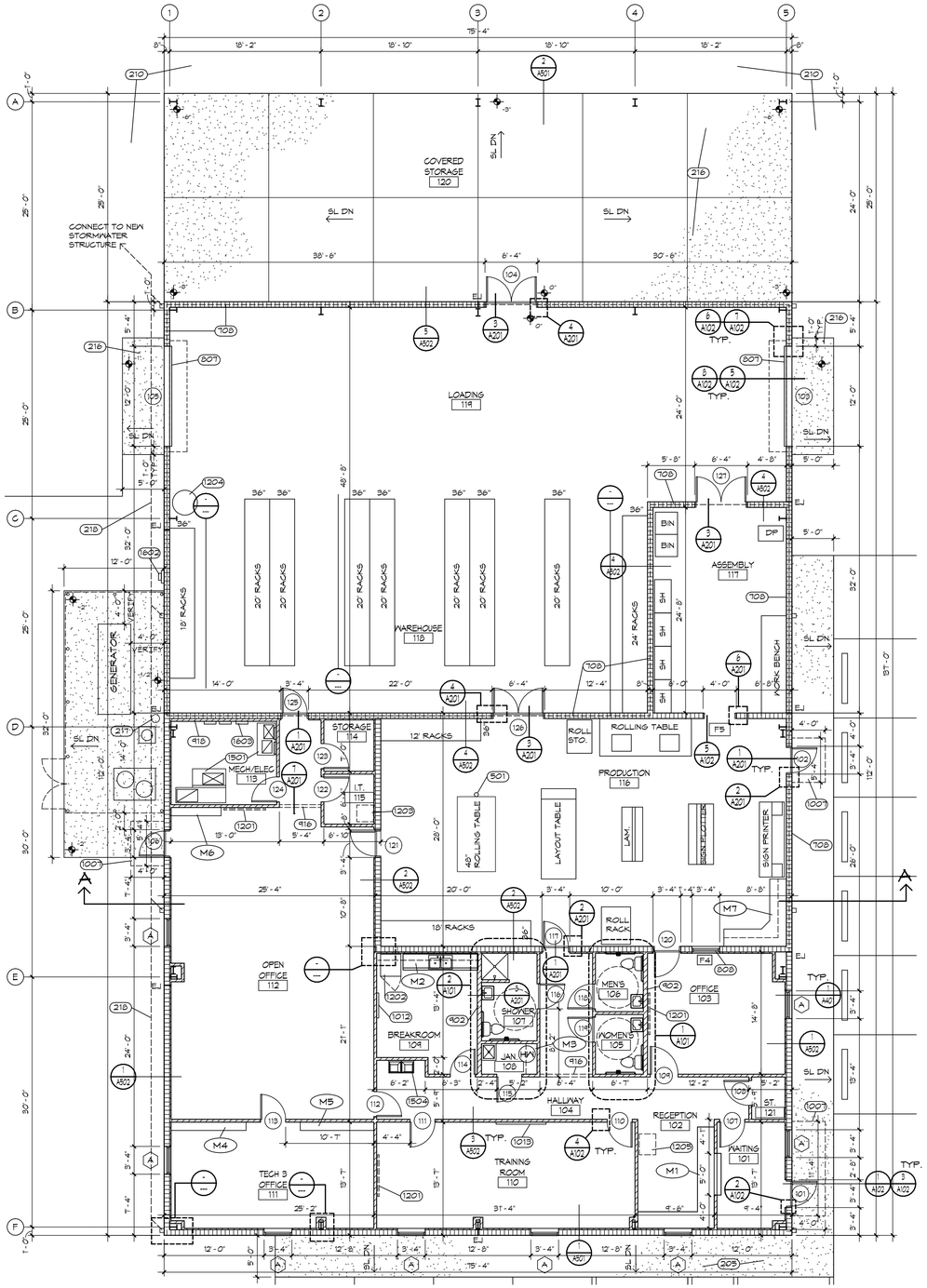
REVIEW

CHECKED BY AP

S202

19058

20-18058



WALL TYPE LEGEND

- 8" CMU WITH RIGID INSULATION, FURRING AND DRYWALL FINISH. REFER TO DETAILS.
- 8" CMU. STRIKE ALL EXPOSED JOINTS CONCAVE. REFER TO DETAILS.
- 8" CMU. STRIKE ALL EXPOSED JOINTS CONCAVE. FILL ALL CELLS WITH FOAM IN PLACE INSULATION
- 3 5/8" GALV. METAL STUDS, 16" O.C. WITH ACOUSTICAL BATT INSULATION FULL HEIGHT AND 5/8" THICK DRYWALL BOTH SIDES. BRACE TOP OF WALL TO STRUCTURE ABOVE.

FLOOR PLAN

1/8" = 1'-0"

5135 GSF - CONDITIONED SPACE
3328 GSF- NON-CONDITIONED ENCLOSED SPACE
1883 GSF - OPEN SPACE

10,346 GSF TOTAL

Room Finish Schedule

Rm. No.	Room Name	Floor	Base	Wall	Ceiling	Remarks
101	WAITING	LVT	V	PDN	SAG1	
102	RECEPTION	LVT	V	PDN	SAG1	
103	OFFICE	LVT	V	PDN	SAG1	
104	HALLWAY	LVT	V	PDN	SAG1	
105	WOMEN'S	CT	CT	PDN (1)(3)	SAG2	
106	MEN'S	CT	CT	PDN (1)(3)	SAG2	
107	SHOWER	CT	CT	PDN (1)(3)	PDN (3)	
108	JAN.	LVT	V	PDN (1)	SAG2	
109	BREAKROOM	LVT	V	PDN	SAG1	
110	TRAINING ROOM	LVT	V	PDN	SAG1	
111	TECH 3 OFFICE	LVT	V	PDN	SAG1	
112	OPEN OFFICE	LVT	V	PDN	SAG1	
113	MECH/ELEC	CONC	V	PDN	SAG2	(4)
114	STORAGE	LVT	V	PDN	SAG1	
115	I.T.	LVT	V	PDN	SAG1	
116	PRODUCTION	CONC-S	V	CMU (2)	SAG2	
117	ASSEMBLY	CONC-S	V	CMU (2)	SAG2	
118	WAREHOUSE	CONC	NONE	CMU (2) (5)	EX	
119	LOADING	CONC	NONE	CMU (2) (5)	EX	
120	COVERED STORAGE	CONC	NONE	CMU (2)	EX	
121	ST.	LVT	V	PDN (1)	SAG1	

Door Schedule

Door No.	Ext.	Int.	Frame Material	Frame Type	Hdw. Group	U.L. Rating	No. in Frame	Door Type	Mat.	Height	Width	Thickness	Comments
101	X		HM	F1	1		1	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
102	X		HM	F1	1		1	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
103	X		STL				1	OH	STL	168"	144"	1"	IMPACT RESISTANT
104	X		HM	F1	2		2	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
105	X		STL				1	OH	STL	168"	144"	1"	IMPACT RESISTANT
106	X		HM	F1	1		1	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
107		X	HM	F2	5		1	F	WD	84"	36"	1 3/4"	
108		X	HM	F2	3		1	F	WD	84"	36"	1 3/4"	
109		X	HM	F2	5		1	F	WD	84"	36"	1 3/4"	
110		X	HM	F2	5		1	F	WD	84"	36"	1 3/4"	
111		X	HM	F2	5		1	F	WD	84"	36"	1 3/4"	
112		X	HM	F2	5		1	F	WD	84"	36"	1 3/4"	
113		X	HM	F2	5		1	F	WD	84"	36"	1 3/4"	
114		X	HM	F2	4		1	F	WD	84"	36"	1 3/4"	
115		X	HM	F2	3		1	F	WD	84"	36"	1 3/4"	
116		X	HM	F2	6		1	F	WD	84"	36"	1 3/4"	
117		X	HM	F2	4		1	F	HM	84"	36"	1 3/4"	
118		X	HM	F2	6		1	F	WD	84"	36"	1 3/4"	
119		X	HM	F2	6		1	F	WD	84"	36"	1 3/4"	
120		X	HM	F2	5		1	F	HM	84"	36"	1 3/4"	
121		X	HM	F2	4		1	F	HM	84"	36"	1 3/4"	
122		X	HM	F2	3		1	F	WD	84"	36"	1 3/4"	
123		X	HM	F2	3		1	F	WD	84"	36"	1 3/4"	
124		X	HM	F2	3		1	F	WD	84"	36"	1 3/4"	
125		X	HM	F2	4		1	F	HM	84"	36"	1 3/4"	
126		X	HM	F3	7		2	FG	HM	84"	36"	1 3/4"	
127		X	HM	F3	7		2	FG	HM	84"	36"	1 3/4"	

DOOR SCHEDULE ABBREVIATIONS

HM = HOLLOW METAL
STL = STEEL
WD = WOOD

ROOM FINISH NOTES

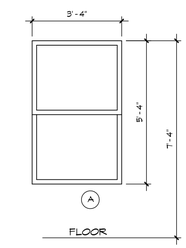
(1) EPOXY PAINT FINISH
(2) TOOL CMU JOINTS CONCAVE
(3) MOISTURE RESISTANT DRYWALL
(4) FIT CEILING GRID AND TILES TIGHT TO HVAC DUCTWORK PENETRATIONS
(5) PROVIDE MOISTURE RESISTANT TYPE AT ALL DRYWALL LOCATIONS

FINISH SCHEDULE ABBREVIATIONS

CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONC-S	CONCRETE WITH SEALER
CT	CERAMIC TILE
EX	EXPOSED
LVT	LUXURY VINYL TILE
PDN	PAINTED DRYWALL
SAG1	SUSPENDED CEILING TILE AND GRID
SAG2	SUSPENDED CEILING TILE AND GRID - MOISTURE RESISTANT
V	VINYL

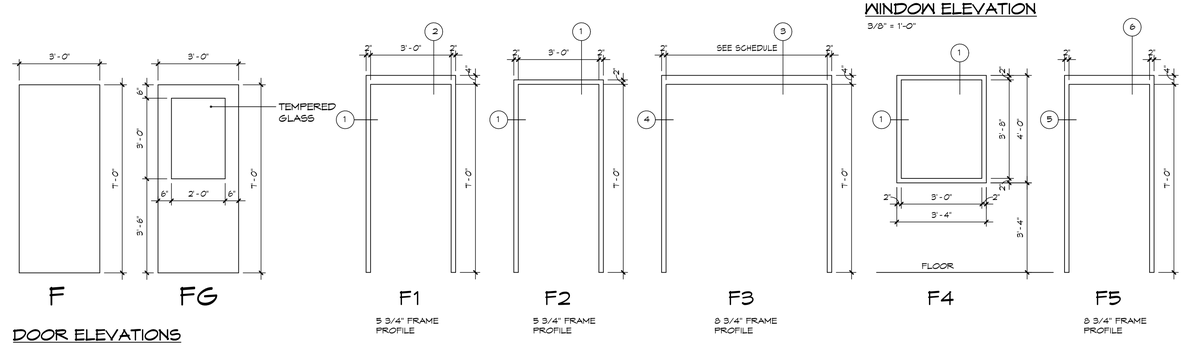
A101 Sheet Notes / Numbers May Not Be Consecutive.

205	4 inch thick poured concrete sidewalk with 6x6xW1.4xW1.4 WWF. Broom finish. Provide 8 inch x 8 inch thickened edge reinforced with 1-#5 dia. continuous at all edges.
210	New asphalt paving. Refer to Civil Drawings.
216	6 inch thick poured concrete slab apron. Refer to Structural Drawings.
217	Hub drain to accommodate HVAC condensate drain. Refer to Plumbing Drawings. Connect to stormwater drain line.
218	8 inch dia. PVC underground stormwater drain piping. Connect to all downspouts and slope to catch basin. Refer to Civil Drawings.
501	2 in. x 2 in. x 36 in. high metal support post. Bolt to floor.
708	Dashed line indicates wall is to receive foam insulation in all cells full height of wall.
801	Marble door sill.
807	Overhead coil-up door. Refer to Door Schedule and specifications.
808	Hollow metal frame borrowed light. Refer to details.
902	Same as -901- with 6 in. metal studs.
916	Drywall finished header at opening. Construct same as typical interior partition. Locate bottom at 2 inches below lowest ceiling.
918	3 5/8 in. x 20 ga. (min.) galvanized metal studs at 16 in. o.c. with 5/8 in. thick drywall on side. Wall to accommodate horizontal drain pipe from HVAC unit.
1001	42 in. long handicap grab bar.
1002	36 in. long handicap grab bar.
1003	Toilet tissue dispenser.
1004	Soap dispenser.
1005	Paper towel dispenser.
1007	Aluminum canopy awning.
1008	Shower grab bar per Fla. Accessibility Code requirements.
1009	Shower seat per Fla. Accessibility Code requirements.
1010	Robe hook.
1011	Mirror - mount above lavatory.
1012	Tackboard.
1013	Markerboard.
1201	Wall mounted TV - by owner.
1202	Refrigerator - by owner.
1203	Data rack - by owner.
1204	Compressed air system - by owner.
1205	Copy machine - by owner.
1501	HVAC air handler. Refer to Mechanical drawings.
1503	Electric water heater.
1504	Electric drinking fountain. Refer to plumbing drawings.
1509	Janitor sink with 36 inch high stainless steel splash panels on two sides and wall mounted mop rack above.
1510	Floor drain. Refer to Plumbing Drwgs.
1602	Electric meter. Refer to Electrical Drawings.
1603	Electric panel. Refer to Electrical Drawings.



WINDOW ELEVATION

3/8" = 1'-0"

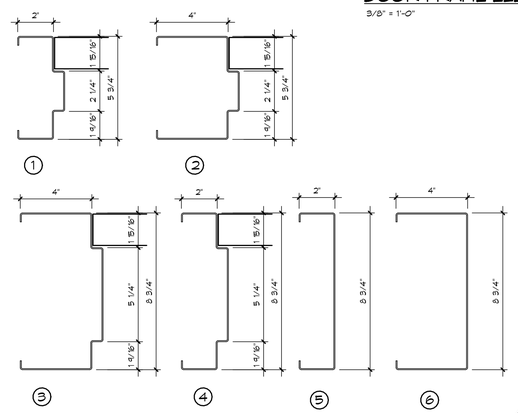


DOOR ELEVATIONS

3/8" = 1'-0"

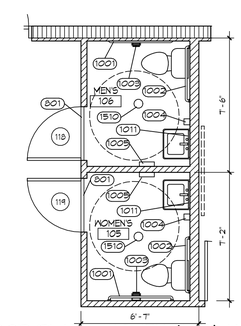
DOOR FRAME ELEVATIONS

3/8" = 1'-0"



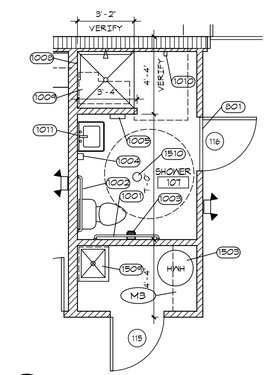
DOOR FRAME PROFILES

3" = 1'-0"



1 A101 FLOOR PLAN - WOMEN (105) AND MEN (106)

1/4" = 1'-0"



2 A101 FLOOR PLAN - SHOWER (107)

1/4" = 1'-0"

CMHM ARCHITECTS INC.
1036 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA | 33803-1118
TELEPHONE 863.688.8882 | hkdarch.com
JOHN R. CURTIS, AIA
BENJAMIN F. MUNOZ JR., AIA, LEED AP
C. KEITH HUNNICUTT, AIA
NEIL G. MELBY, AIA, LEED AP
cmhm architects
FAR 0011121
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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

OVERALL FLOOR PLAN

REVISIONS

CONSTRUCTION 03/29/2023
APPROVAL
REVIEW
CHECKED BY

A101

19058

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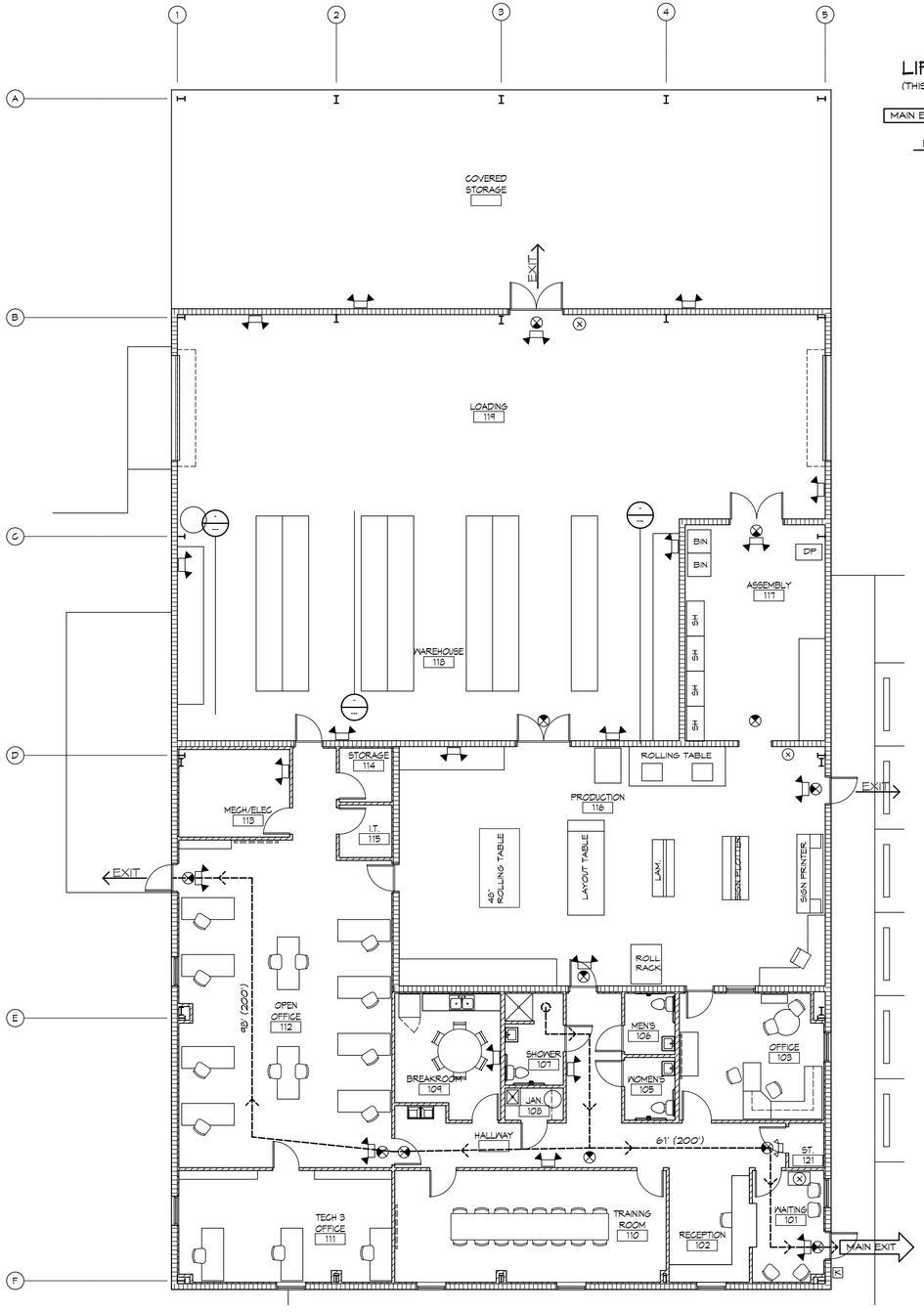


N

LIFE SAFETY PLAN
1/8" = 1'-0"

LIFE SAFETY LEGEND

(THIS LEGEND APPLIES TO ALL LIFE SAFETY PLANS)

- MAIN EXIT — MAIN BUILDING EXIT
- EXIT — ROOM OR AREA EXIT
- FIRE EXTINGUISHER (Wall bracket mounted)
- FIRE EXTINGUISHER IN SEMI-RECESSED CABINET
- SMOKE DETECTOR
- HEAT DETECTOR
- KNOX-BOX (RECESSED)
- SURFACE MTD. EMERGENCY LIGHT
- EXIT LIGHT
- TD = XX (XXX) — TRAVEL DISTANCE; TD ALLOWABLE

OCCUPANCY CALCULATION

		SPACE	AREA	CALCULATION	OCCUPANTS
BUSINESS	101	WAITING	104 SF		
	102	RECEPTION	120 SF		
	103	OFFICE	234 SF		
	104	HALLWAY	N/A		
	105	WOMEN'S	N/A		
	106	MEN'S	N/A		
	107	SHOWER	N/A		
	108	JANITOR	N/A		
	109	BREAKROOM	163 SF		
	110	TRAINING	393 SF		
	111	TECH 3 OFFICE	307 SF		
	112	OPEN OFFICE	948 SF		
	113	MECH./ELEC.	129 SF		
	114	STORAGE	37 SF		
	115	I.T.	36 SF		
	121	STO.	20 SF		
		BUSINESS TOTALS	2491 SF	2491 / 150 = 17	17
FACTORY LOW HAZARD (F-2)	116	PRODUCTION	1330 SF		
	117	ASSEMBLY	395 SF		
		FACTORY TOTALS	1725 SF	1725/ 100 = 18	18
STORAGE LOW HAZARD (S-2)	118	WAREHOUSE	1444 SF		
	119	GARAGE	1734 SF		
	120	COV. STO.	1883 SF		
		STORAGE TOTALS	5061 SF	5061 / 500 = 11	11
TOTAL OCCUPANTS					46

DESIGN IS BASED ON MOST RESTRICTIVE = BUSINESS (B) WITH MIXED, NON-SEPERATED OCCUPANCIES. (BUSINESS, FACTORY - LOW HAZARD AND STORAGE - LOW HAZARD)

BUILDING AREA = 10,321 GSF - 23,000 SF ALLOWABLE.
BUILDING CONSTRUCTION IS TYPE II-B (UNPROTECTED).
BUILDING DOES NOT CONTAIN A FIRE SPRINKLER SYSTEM.
EXIT ACCESS TRAVEL DISTANCE = 200 FT. MAXIMUM.
EXIT CORRIDORS IN BUSINESS AREA DO NOT REQUIRE ONE HOUR RATING. < 30 OCCUPANTS UTILIZING THE CORRIDOR AND OCCUPIED BY A SINGLE TENANT.
CORRIDOR WIDTH = 44 INCHES, MINIMUM.
DEAD END CORRIDOR = 20 FEET, MAXIMUM.

EMERGENCY LIGHTING IS REQUIRED - 40.2.9.1 (NFPA 101)
FIRE ALARM SYSTEM IS NOT REQUIRED - 40.3.4.1 (NFPA 101)
FIRE SPRINKLER SYSTEM IS NOT REQUIRED - 40.3.5 (NFPA 101)

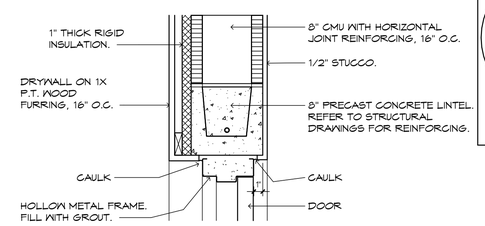
PLUMBING FIXTURE CALCULATION

BUSINESS CLASSIFICATION

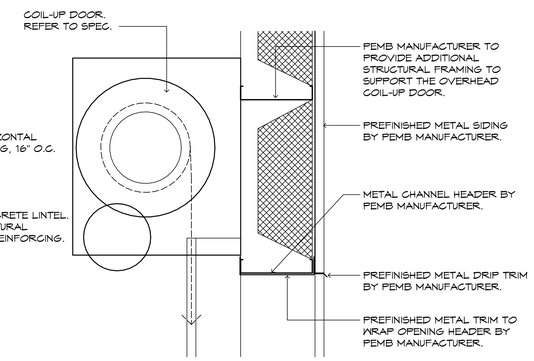
TOTAL NUMBER OF OCCUPANTS = 46 (23 MEN, 23 WOMEN)

FIXTURE TYPE		REQUIRED	PROVIDED
WATER CLOSET	MEN	1	1
	WOMEN	1	1
LAVATORIES	MEN	1	1
	WOMEN	1	1
DRINKING FOUNTAIN		1	1
SERVICE SINK		1	1

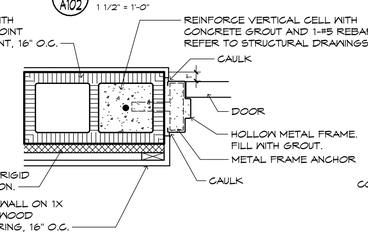
ONE ADDITIONAL UNISEX TOILET ROOM WITH SHOWER IS PROVIDED IN ADDITION TO THE REQUIRED FIXTURES LISTED ABOVE.



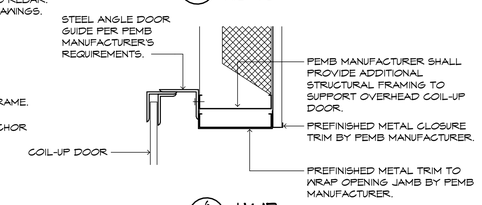
1 A102 HEAD 1 1/2" = 1'-0"



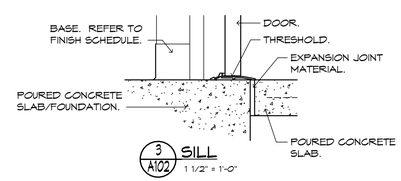
5 A102 HEAD 1 1/2" = 1'-0"



2 A102 JAMB 1 1/2" = 1'-0"

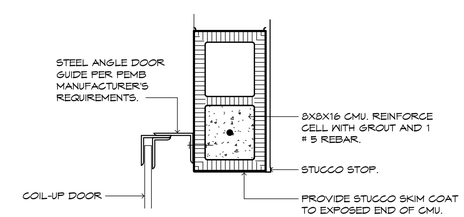


6 A102 JAMB 1 1/2" = 1'-0"

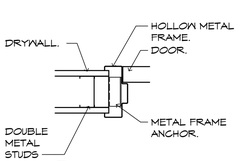


3 A102 SILL 1 1/2" = 1'-0"

SECTION THRU EXTERIOR DOOR

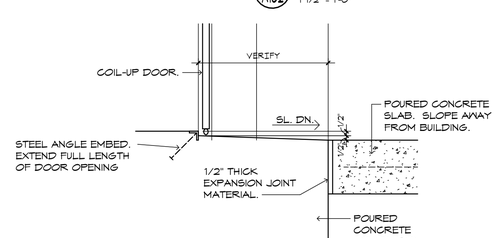


7 A102 JAMB 1 1/2" = 1'-0"



4 A102 JAMB 1 1/2" = 1'-0"

TYPICAL INTERIOR DOOR JAMB AT FRAME WALL



8 A102 SILL 1 1/2" = 1'-0"

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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
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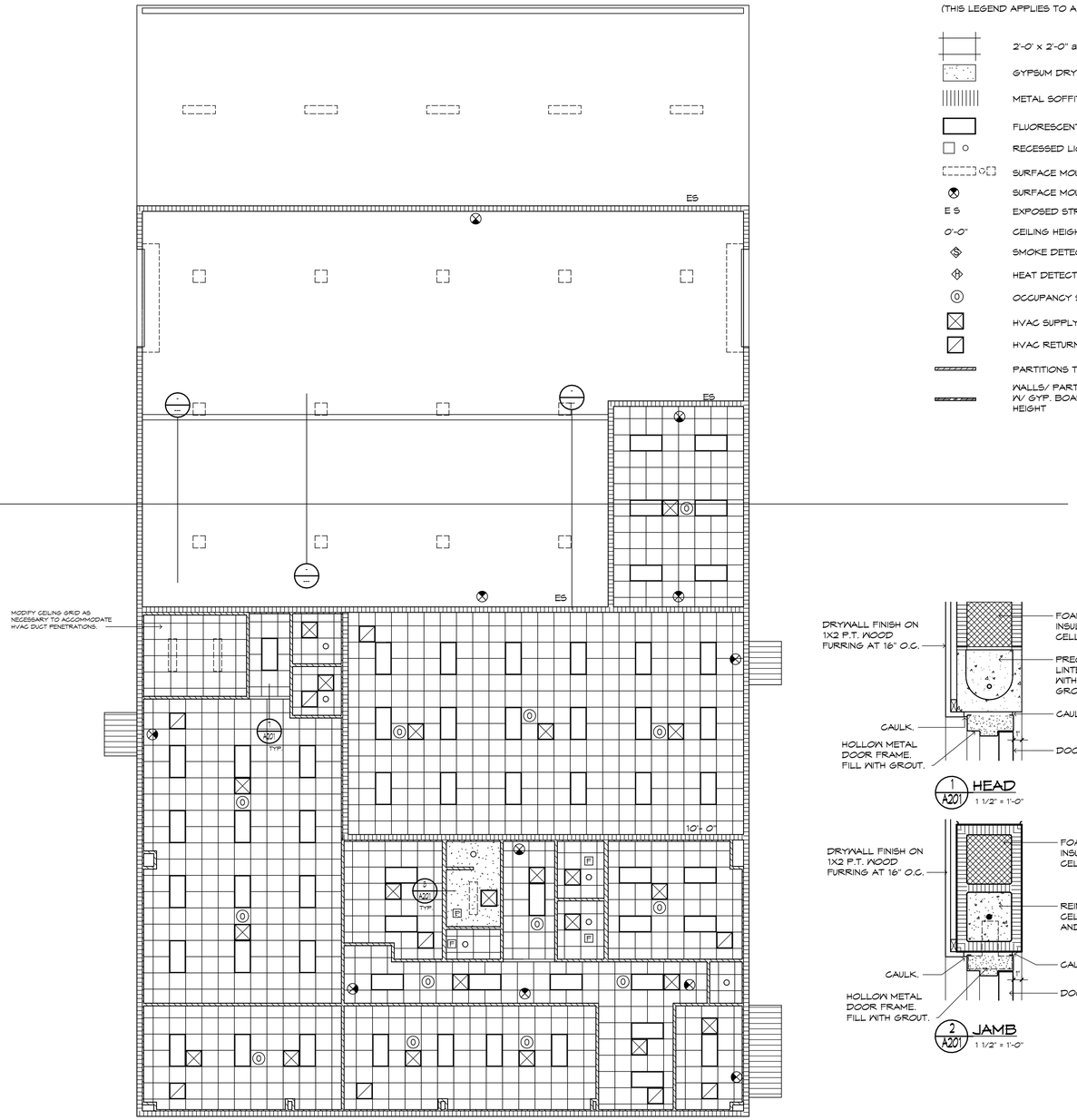
LIFE SAFETY PLAN

REVISIONS

CONSTRUCTION 03/29/2023
APPROVAL
REVIEW
CHECKED BY

A102

19058



REFLECTED CEILING PLAN LEGEND

(THIS LEGEND APPLIES TO ALL CEILING PLANS)

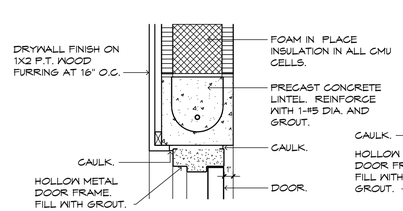
- 2'-0" x 2'-0" and/ or 2'-0" x 4'-0" SUSPENDED GRID WITH CEILING TILES
- GYPSUM DRYWALL CEILING
- METAL SOFFIT OR METAL CANOPY
- FLUORESCENT LIGHT FIXTURE SET IN GRID
- RECESSED LIGHT FIXTURE
- SURFACE MOUNTED CEILING LIGHT FIXTURE
- SURFACE MOUNTED EXIT LIGHT
- E S — EXPOSED STRUCTURE AND/OR INSULATION
- 0'-0" — CEILING HEIGHT AS NOTED
- SMOKE DETECTOR
- HEAT DETECTOR
- OCCUPANCY SENSOR
- HVAC SUPPLY DIFFUSER
- HVAC RETURN EXHAUST/ GRILLE
- PARTITIONS TERMINATING NOM. 12" ABOVE CLG.
- WALLS/ PARTITIONS FULL HT. TO FLOOR/ ROOF DECK ABOVE W/ GYP. BOARD EA. FACE AND SOUND BATT INSULATION FULL HEIGHT

N

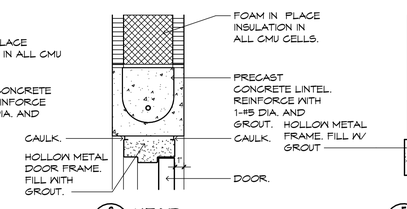
REFLECTED CEILING PLAN

1/8" = 1'-0"

ALL CEILING HEIGHTS SHALL BE 9'-0" AFF UNLESS NOTED OTHERWISE



1 A201 HEAD 1 1/2" = 1'-0"



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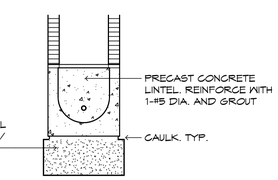

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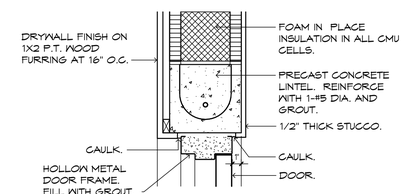
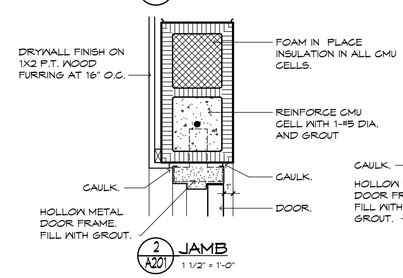
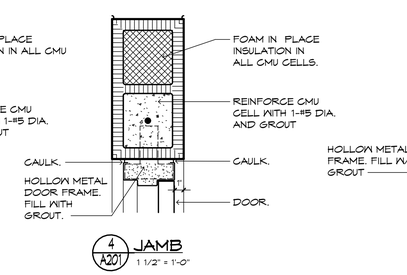


9 A201 HEAD 1 1/2" = 1'-0"



2 A201 JAMB 1 1/2" = 1'-0"



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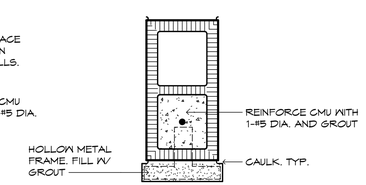

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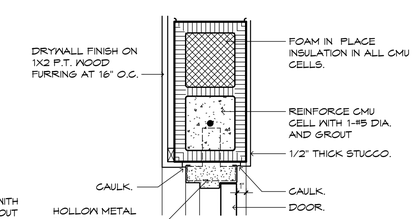
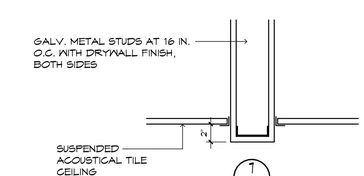
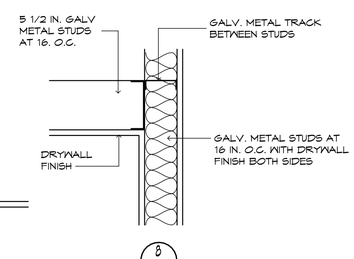


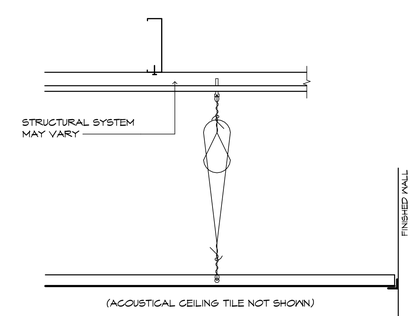
10 A201 JAMB 1 1/2" = 1'-0"



7 A201 1 1/2" = 1'-0"



8 A201 1 1/2" = 1'-0"



PROVIDE TWO (2) HANGER WIRES AT DIAGONAL CORNERS OF TYPICAL LIGHT FIXTURES, HVAC DIFFUSERS/ GRILLES, SPEAKERS, AUDIO ENHANCMENT UNITS AND THE LIKE INSTALLED IN SUSPENDED CEILING SYSTEM

TYPICAL SUSPENDED CEILING DETAIL

1 1/2" = 1'-0"

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New Traffic Operations Building
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REFLECTED CEILING PLAN

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

REVIEW

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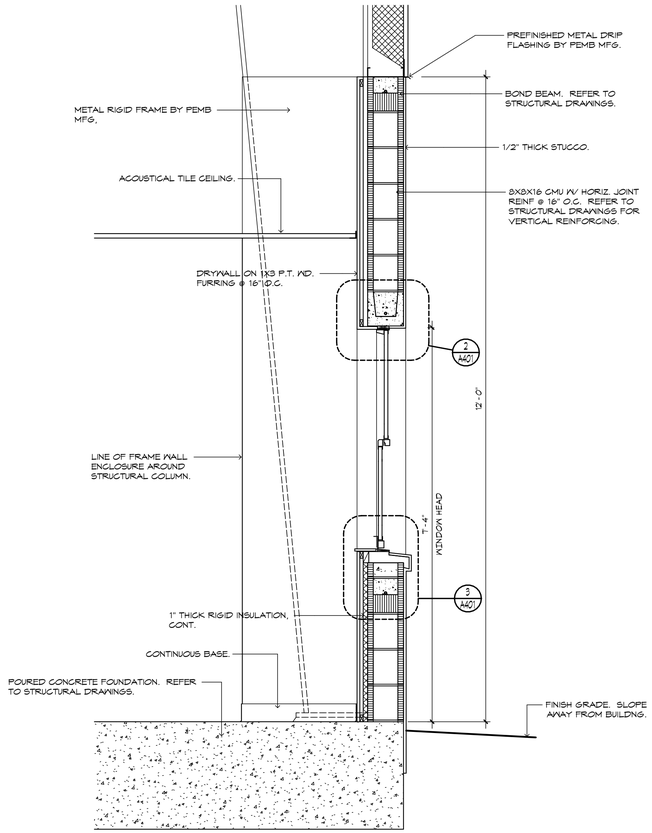
A201

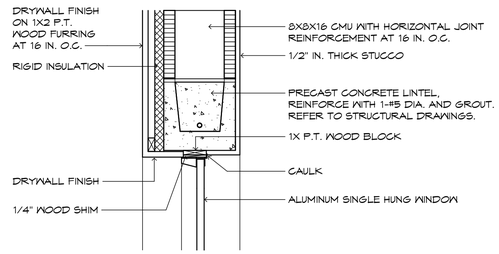
19058

A401 Sheet Notes/ Numbers May Not Be Consecutive.

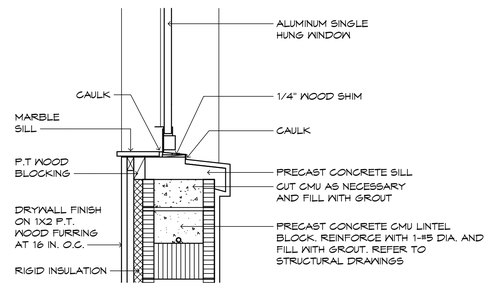
201	Finish grade. Slope down from interior floor slab.
307	Line of finish floor.
802	Hollow metal door and frame.
803	Aluminum single hung window.
807	Overhead coil-up door. Refer to Door Schedule and specifications.
915	1/2 inch thick stucco with sand finish and paint.
917	Stucco control joint.
1007	Aluminum canopy awning.
1014	6 inch high address numbers.
1301	Pre-engineered metal building frame.
1302	Pre-finished metal siding by PEMB manufacturer.
1305	Continuous eave trim by PEMB manufacturer.
1306	Pre-finished metal roof panels by PEMB manufacturer.
1309	Continuous pre-finished steel gutter and downspout system by PEMB manufacturer.
1315	Line of metal siding - beyond.
1508	Pre-finished louver/wall cap/hood. Refer to Mechanical Drawings.
1604	Exterior light fixture. Refer to Electrical Drawings.



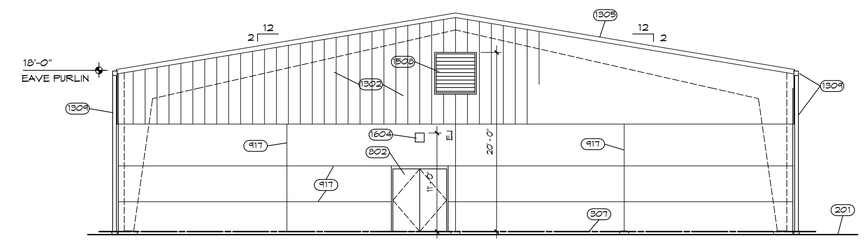
1 A401
3/4" = 1'-0"



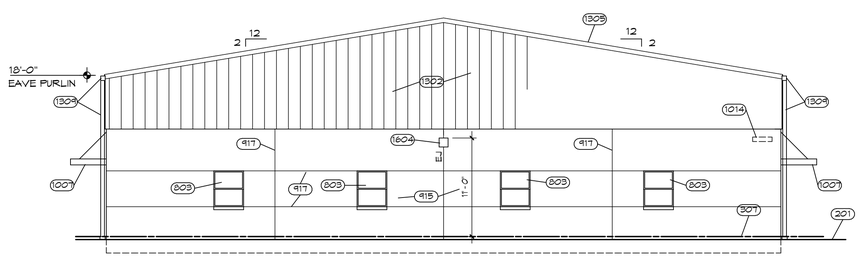
2 A401 HEAD
1 1/2" = 1'-0"



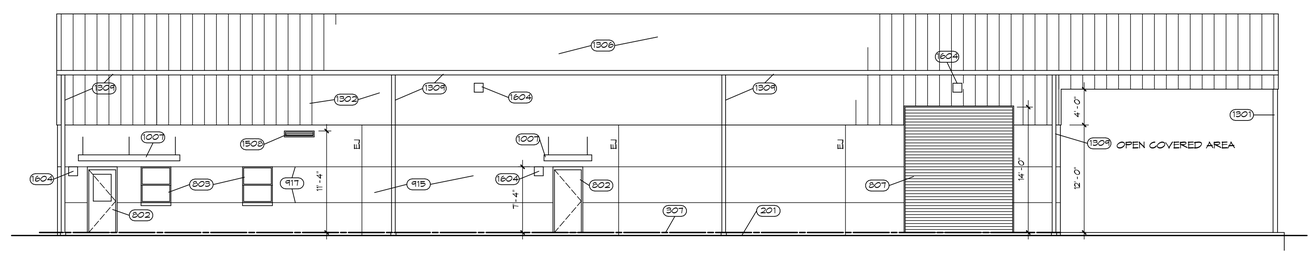
3 A401 SILL
1 1/2" = 1'-0"



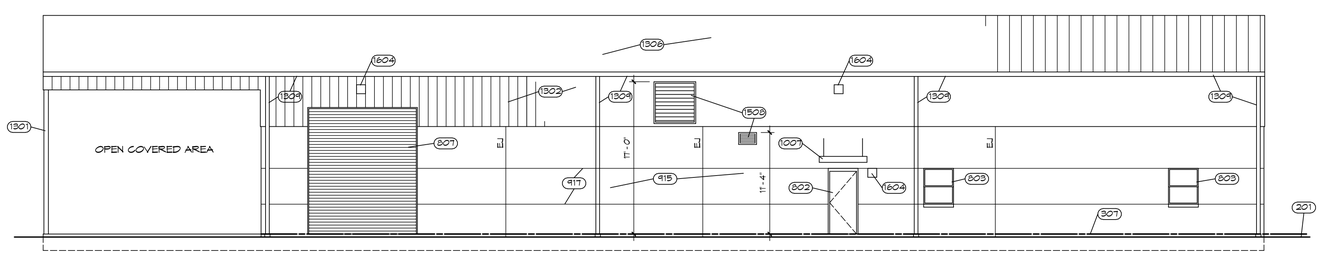
NORTH ELEVATION - MASONRY WALL
1/8" = 1'-0"



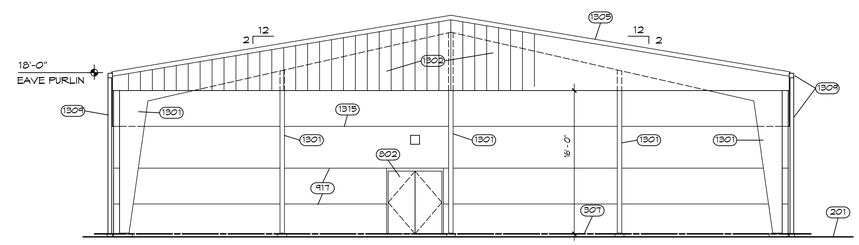
SOUTH ELEVATION
1/8" = 1'-0"



EAST ELEVATION
1/8" = 1'-0"



WEST ELEVATION
1/8" = 1'-0"



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

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EXTERIOR ELEVATIONS

REVISIONS

CONSTRUCTION 03/29/2023
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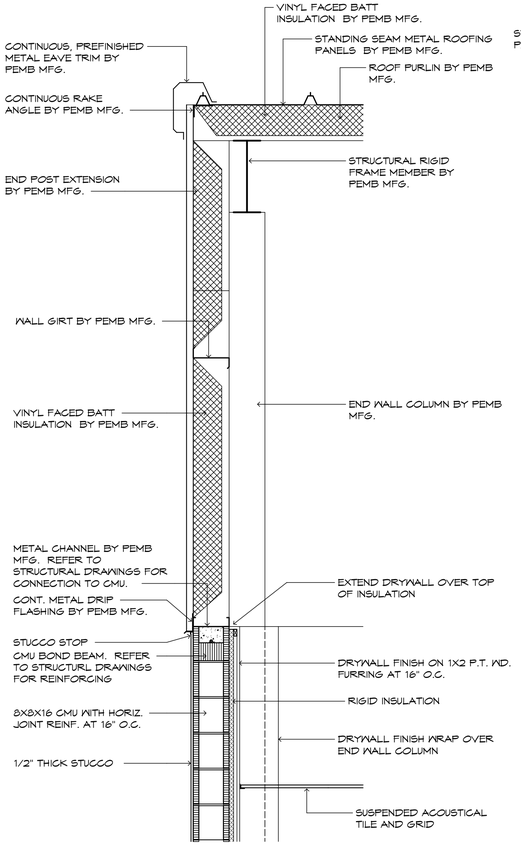
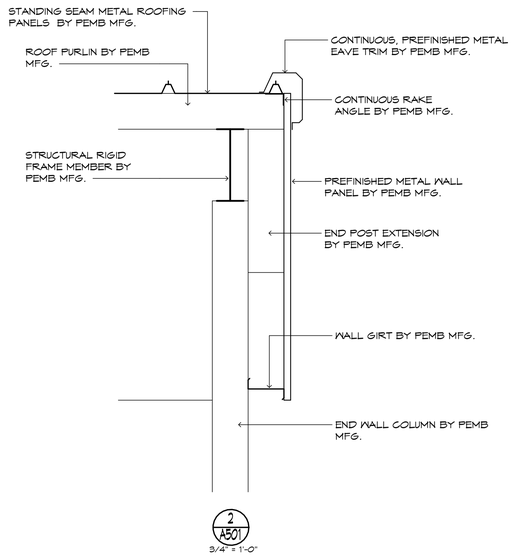
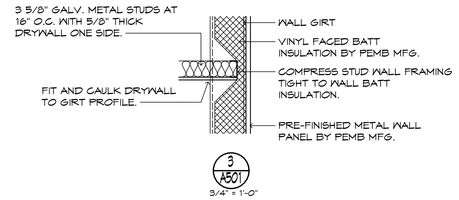
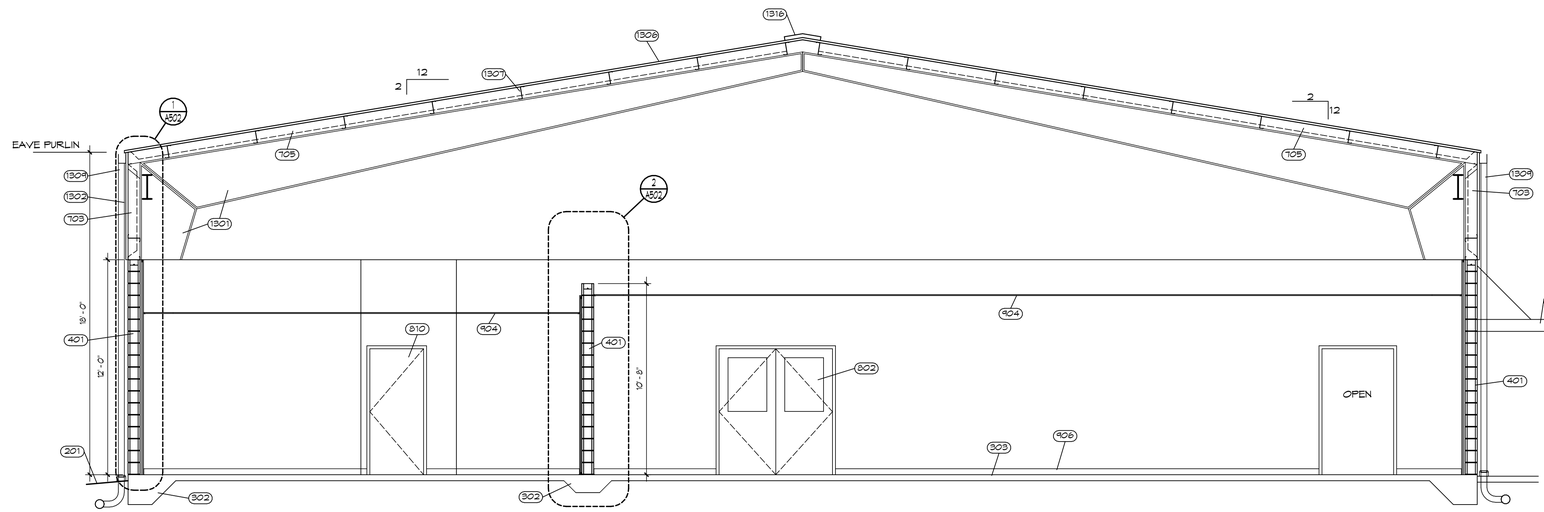




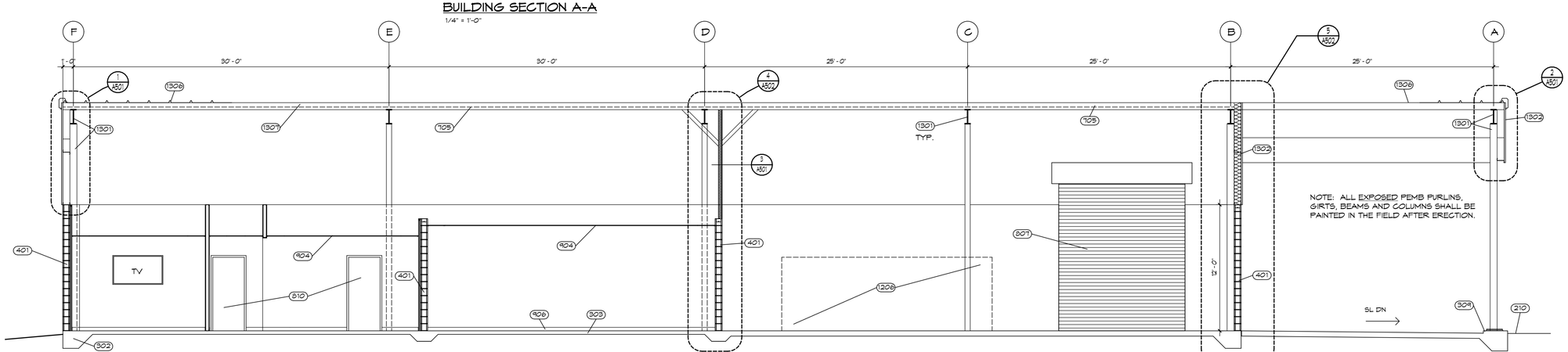


A501 Sheet Notes/ Numbers May Not Be Consecutive.

201	Finish grade. Slope down from interior floor slab.
210	New asphalt paving. Refer to Civil Drawings.
302	Poured concrete foundation. Refer to Structural drawings.
303	4 in. thick poured concrete slab. Reinforce with 6 x 6 x W1.4 x W1.4 WWF. Refer to Structural Drawings.
309	Raised concrete foundation pedistal. Size to fully accommodate column base plate. Top elevation to match finish floor slab height. Refer to Structural Drugs.
401	8x8x16 concrete masonry unit with horizontal joint reinforcement at 16 in. o.c.
703	Continuous batt insulation by PEMB manufacturer. R-13.
705	Continuous batt insulation by PEMB manufacturer. R-38.
802	Hollow metal door and frame.
807	Overhead coil-up door. Refer to Door Schedule and specifications.
810	Wood door and hollow metal frame.
904	Lay-in acoustical ceiling tile and grid.
906	Continuous vinyl base.
1007	Aluminum canopy awning.
1208	Storage rack system - by owner.
1301	Pre-engineered metal building frame.
1302	Pre-finished metal siding by PEMB manufacturer.
1306	Pre-finished metal roof panels by PEMB manufacturer.
1307	Steel purlin by PEMB manufacturer.
1309	Continuous pre-finished steel gutter and downspout system by PEMB manufacturer.
1316	Continuous roof vent by PEMB manufacturer.



BUILDING SECTION A-A
1/4" = 1'-0"



BUILDING SECTION B-B
3/16" = 1'-0"

CMHM ARCHITECTS INC.
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BID DOCUMENTS

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New Traffic Operations Building
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BUILDING SECTION AND DETAILS

REVISIONS

CONSTRUCTION 03/29/2023
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A501

19058

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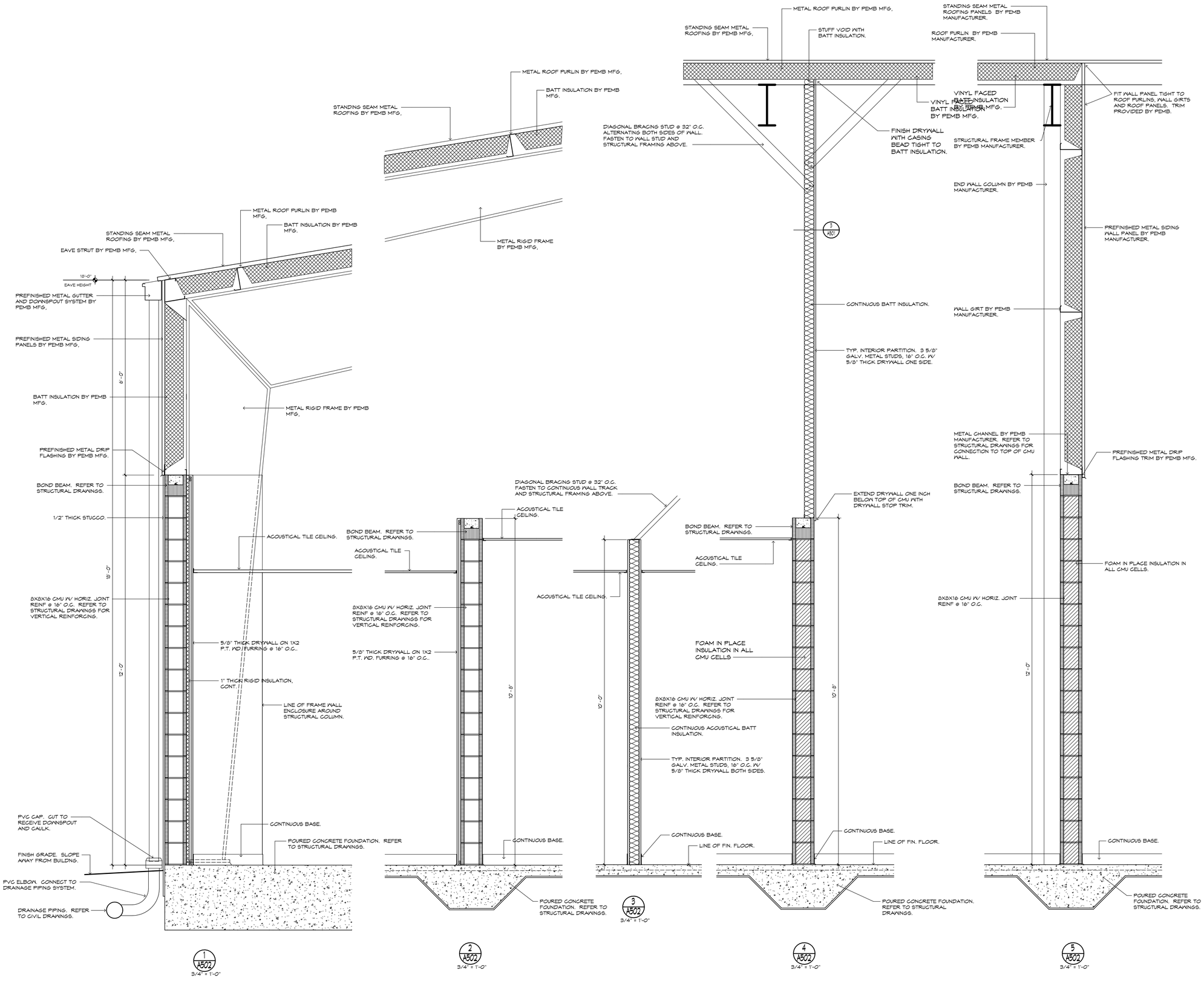

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NAR 0011121
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BID DOCUMENTS

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New Traffic Operations Building
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Sebring, FL 33870

WALL SECTIONS AND DETAILS

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

REVIEW

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A502

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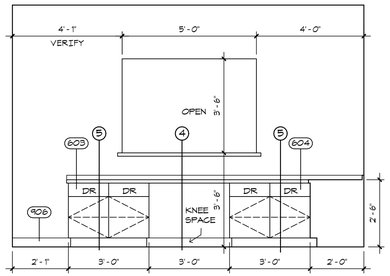
A601 Sheet Notes/ Numbers May Not Be Consecutive.

603 24 in. deep base cabinet. Construct of 3/4 in. thick plywood with one adjustable shelf and one 6 in. deep drawer. Cover all exposed surfaces with L.P.
604 3/4 in. thick plywood countertop with 4 in. high side and backsplash. Cover all exposed surfaces with L.P.
605 Same as -603- without drawer.
606 12 in. deep upper wall cabinet. Construct of 3/4 in. thick plywood with doors and two adjustable shelves. Cover all exposed surfaces with L.P.
607 12 in. deep open shelf unit. Construct of 3/4 in. thick plywood with adjustable shelves as shown. Cover all exposed surfaces with L.P.
608 Same as -607- but with fixed shelves and 16 in. deep.
803 Aluminum single hung window.
810 Wood door and hollow metal frame.
906 Continuous vinyl base.



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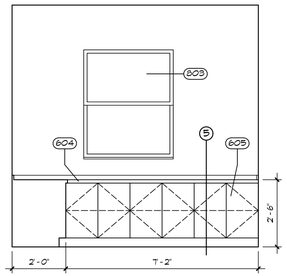
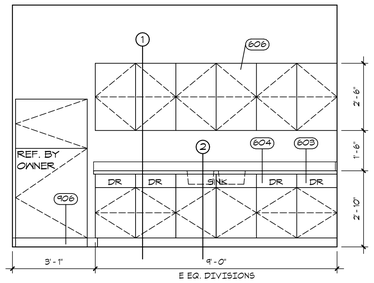
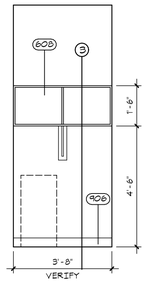


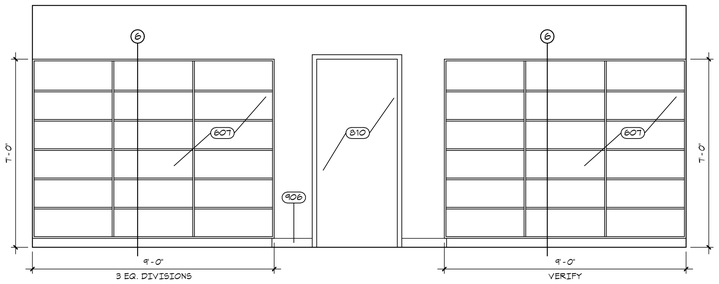
SOUTH



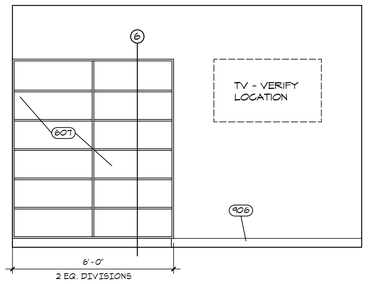
M2 NORTH



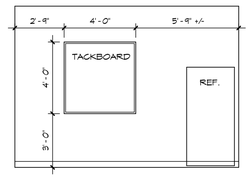
M3 NORTH



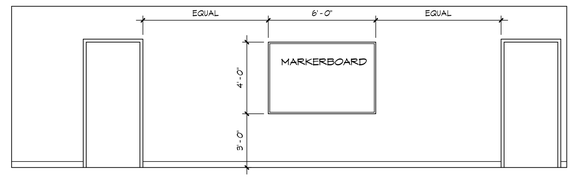
M4 M5 NORTH



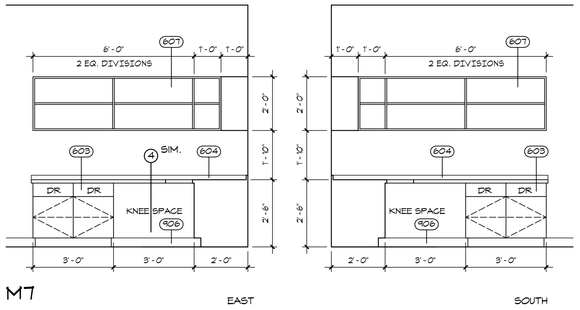
M6 NORTH



BREAKROOM (109) WEST
1/4" = 1'-0"

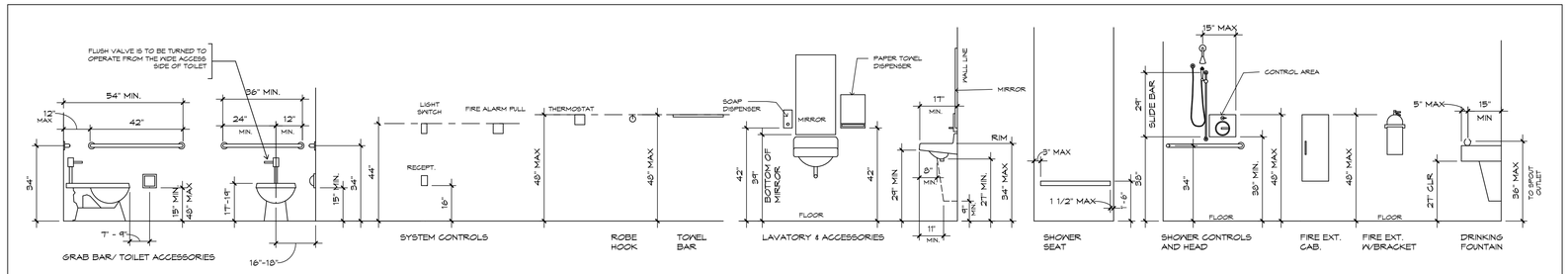


TRAINING ROOM (110) NORTH
1/4" = 1'-0"



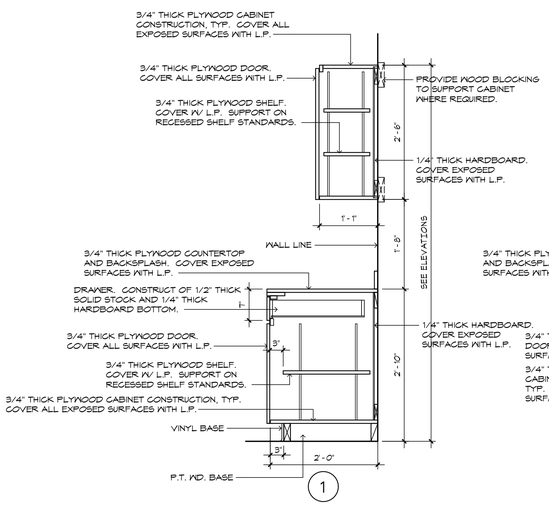
M7 EAST SOUTH

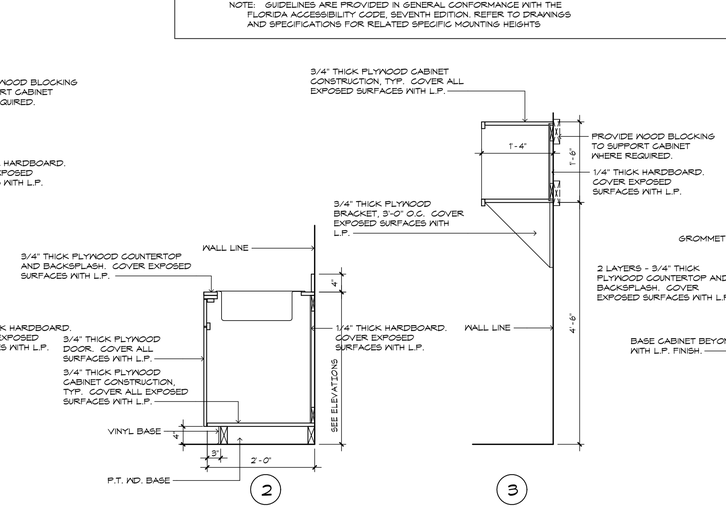
MILLWORK ELEVATIONS
3/8" = 1'-0"

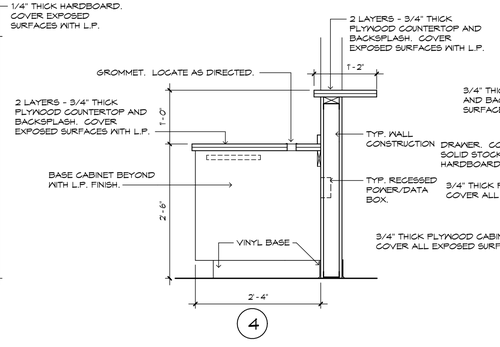


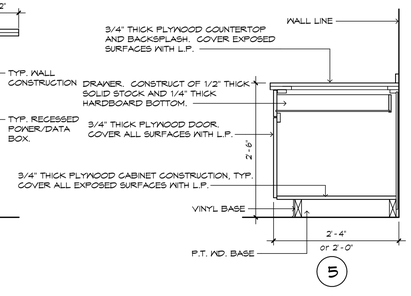
ACCESSIBLE MOUNTING HEIGHTS GUIDELINES

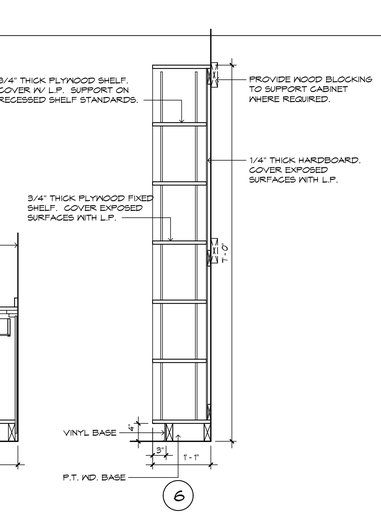
NOTE: GUIDELINES ARE PROVIDED IN GENERAL CONFORMANCE WITH THE FLORIDA ACCESSIBILITY CODE, SEVENTH EDITION. REFER TO DRAWINGS AND SPECIFICATIONS FOR RELATED SPECIFIC MOUNTING HEIGHTS











MILLWORK SECTIONS
3/4" = 1'-0"

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BID DOCUMENTS
Highlands County Board of County Commissioners
New Traffic Operations Building
4430 Kenilworth Blvd.
Sebring, FL 33870
MILLWORK ELEVATIONS AND DETAILS

REVISIONS

CONSTRUCTION 03/29/2023
APPROVAL
REVIEW
CHECKED BY

A601
19058

HVAC GENERAL NOTES

1. WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, AND LOCAL CODES INCLUDING:
   * 2020 FLORIDA BUILDING CODE (2018 IBC WITH AMENDMENTS)
   * 2020 FLORIDA MECHANICAL CODE (2018 IMC WITH AMENDMENTS)
   * 2020 FLORIDA ENERGY CONSERVATION CODE (2018 IECC WITH AMENDMENTS)
   * ALL APPLICABLE NFPA CODES
2. DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM, AND TO CONNECT ALL REQUIRED SERVICES TO MAKE THAT ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL AN ITEM.
3. TEST AND BALANCE (T&B) SHALL BE PERFORMED BY A TEST AND BALANCE AGENCY WHICH IS A MEMBER OF AABC OR NEBB, AND APPROVED BY THE ENGINEER. THE MECHANICAL CONTRACTOR SHALL HAVE ALL SYSTEMS FULLY INSTALLED AND OPERATIONAL, WITH CLEAN FILTERS PRIOR TO TEST AND BALANCE. TEST AND BALANCE SHALL BE PERFORMED WITH ALL EQUIPMENT RUNNING SIMULTANEOUSLY. THE TEST AND BALANCE COMPANY SHALL VERIFY THAT ALL DAMPERS ARE FULLY OPEN BEFORE ANY BALANCING. A T&B REPORT SHALL BE SUBMITTED TO THE ENGINEER, WHICH SHALL INCLUDE THE FOLLOWING:
   * ALL AIR FLOW RESULTS FOR ALL AIR DISTRIBUTION DEVICES
   * AIR FLOWS FOR TOTAL SUPPLY AIR, OUTSIDE AIR AND EXHAUST.
   * ANY DIFFERENCES BETWEEN AS-BUILT CONDITIONS AND THE MECHANICAL PLANS THAT MAY AFFECT SYSTEM PERFORMANCE OR BALANCING
   * MEASUREMENT OF UNIT COOLING AND HEATING CAPACITY INCLUDING COIL ENTERING AIR AND LEAVING AIR DRY BULB AND WET BULB, AND OUTSIDE AIR DRY BULB AT THE CONDENSERS.
   * VERIFICATION OF ALL CONTROLS TO FUNCTION IN COMPLIANCE WITH THE MECHANICAL PLANS INCLUDING INTERLOCK OF FANS AND OUTSIDE AIR DAMPERS.

HVAC EQUIPMENT

1. CARRIER IS THE BASE-BID MANUFACTURER FOR THE AIR CONDITIONING EQUIPMENT. TRANE IS AN APPROVED ALTERNATE MANUFACTURER. IF TRANE IS USED, IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE ALL ELECTRICAL AND SERVICE CLEARANCE DIFFERENCES FROM THE BASIS OF DESIGN.
2. ALL AIR CONDITIONING UNITS SHALL INCLUDE A ONE YEAR UNIT WARRANTY AND AN EXTENDED 4-YEAR COMPRESSOR WARRANTY.
3. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED.
4. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. THE AIR CONDITIONING EQUIPMENT SHALL BE OPERATED DURING CONSTRUCTION WITH THROWAWAY FILTERS. FILTERS SHALL BE CHANGED DURING CONSTRUCTION IF THEY BECOME RESTRICTIVE OF AIRFLOW FOR NORMAL OPERATION. PROVIDE 30% PLEATED MEDIA FILTERS, JUST PRIOR TO TEST AND BALANCE.
6. THE MECHANICAL SUBCONTRACTOR SHALL PREPARE PLANS SHOWING THE LOCATIONS AND SIZES OF ALL WALL PENETRATIONS AND ROOF OPENINGS, FOR USE BY THE GENERAL CONTRACTOR.
7. SUBMITTALS SHALL BE REVIEWED BY THE ELECTRICAL SUBCONTRACTOR, FOR IMPACT ON THE ELECTRICAL, PRIOR TO ORDERING EQUIPMENT. ANY SUBSTITUTED EQUIPMENT SHALL BE PROTECTED BY EITHER FUSES OR AN HACR BREAKER.
8. UNITS SHALL BE CLEANED, ALL SCRATCHES SHALL BE PAINTED OVER WITH FACTORY PAINT TO MATCH UNIT, ALL CONDENSER COILS SHALL BE COMBED OUT, AND ALL PANELS AND SCREWS SHALL BE RE-INSTALLED AT COMPLETION OF THE PROJECT.

HVAC CONTROLS

1. THERMOSTATS SHALL BE DIGITAL, 7-DAY PROGRAMMABLE WITH 4 MODES PER DAY.
2. THERMOSTATS SERVING ELECTRIC HEATERS SHALL HAVE THE STAGES OF CAPACITY NOTED ON THE SCHEDULE.
3. ALL THERMOSTATS SHALL BE MOUNTED 48" AFF.
4. LOW VOLTAGE (24V) CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL SUBCONTRACTOR, WHO SHALL SUBCONTRACT WITH THE ELECTRICAL SUBCONTRACTOR TO PROVIDE CONDUIT FOR ALL CONTROL WIRING, AS COORDINATED WITH THE MECHANICAL SUBCONTRACTOR. ALL CONDUIT SHALL BE RUN SQUARE WITH BUILDING LINES.
5. LINE VOLTAGE (120V AND HIGHER) CONTROL AND POWER WIRING AND CONDUIT SHALL BE PROVIDED BY THE ELECTRICAL SUBCONTRACTOR.
6. THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE ALL DISCONNECT SWITCHES.
7. PROVIDE SMOKE DETECTORS, APC MODEL#SL-2000 IN THE SUPPLY DUCTS OF EACH AHU (ABOVE 5-TONS), APC MODEL# SL-2000. PROVIDE A REMOTE TEST STATION FOR EACH DETECTOR, APC MODEL# MS-RH/KA/P/A/T WITH TEST/RESET, ALARM SIREN, ALARM LED, FAULT LED AND PILOT LED. MOUNT ON WALL JUST OUTSIDE OF MECHANICAL ROOM DOOR. SMOKE DETECTORS SHALL SHUT OFF POWER TO THE ROOFTOP UNIT UPON THE DETECTION OF SMOKE.

OUTSIDE AIR CONTROLS

1. THE CONTRACTOR SHALL PROVIDE A TIME CLOCK FOR EACH AIR HANDLER. THE TIME CLOCK SHALL BE PROGRAMMED, PER COORDINATION WITH THE OWNER, TO CLOSE THE OUTSIDE AIR DAMPERS DURING ALL UNOCCUPIED HOURS.

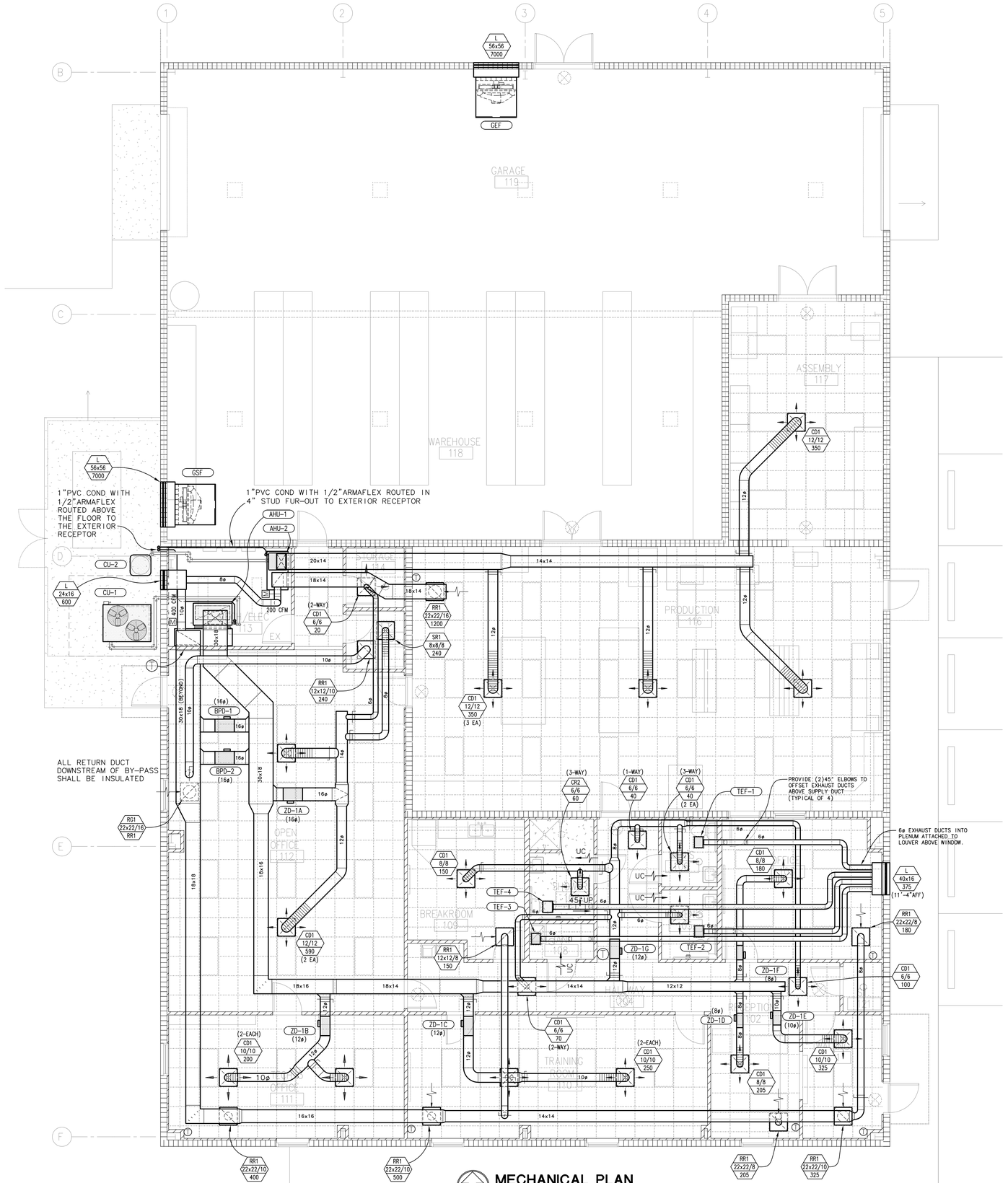
AIR DISTRIBUTION SCHEDULE

TAG	DEVICE	METALAIRE MODEL #	MOUNTING FRAME	DESCRIPTION
CD1	CEILING REGISTER	5750	LAY-IN	PANEL DIFFUSER. FLUSH MOUNT STYLE BUTTERFLY DAMPER.
CR2	CEILING REGISTER	5750	SURFACE	PANEL DIFFUSER. FLUSH MOUNT STYLE BUTTERFLY DAMPER.
RR1	RETURN REGISTER	RH	LAY-IN	FIXED LOUVER. 45° DEFLECTION. OPPOSED BLADE BALANCING DAMPER
L	WALL LOUVER	–	WALL	GREENHECK EVH-501D FLORIDA PRODUCT APPROVED DRAINABLE STATIONARY VERTICAL BLADE LOUVERS COMPLIANT WITH FLORIDA & MIAMI-DADE REQUIREMENTS: * AIR PERFORMANCE, WATER PENETRATION & WIND DRIVEN RAIN (AMCA 500-L & TAS 100A) * WIND BORNE DEBRIS & MISSILE IMPACT (AMCA 540 & TAS 201) * UNIFORM STATIC AIR PRESSURE (TAS 202) * CYCLIC WIND LOADING (TAS 203) FIELD FABRICATE PLENUM TO DRAIN OVER FACTORY EXTENDED SILL. COLOR SHALL BE ANODIZED ALUMINUM. IF LOUVER IS INSTALLED IN SIDING, THEN THE COLOR OF THE LOUVER SHALL MATCH THE COLOR OF THE SIDING IT IS INTALLED IN.

NOTES:
* ALL AIR DISTRIBUTION SHALL INCLUDE: ALUMINUM CONSTRUCTION AND OFF-WHITE COLOR.
* APPROVED MANUFACTURERS: METALAIRE & TITUS
* MATCH RUN-OUT SIZE TO NECK SIZE IF NOT NOTED.

LEGEND

TYPE OF AIR DISTRIBUTION — CD1
NECK SIZE/ RUNOUT SIZE — 9x9/8
CFM AIRFLOW — 200



MECHANICAL PLAN
SCALE: 3/16"=1'-0"

GRAMLICH & ASSOCIATES, P.A.
FLORIDA REGISTERED ARCHITECTS No. 0007715
GREGORY S. GRAMLICH P.E. No. 54709
CERTIFICATE OF AUTHORIZATION No. 4726
13191 STARKEY ROAD, SUITE 17
LARGO, FLORIDA 33773
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BID DOCUMENTS
Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL
MECHANICAL PLAN

REVISIONS

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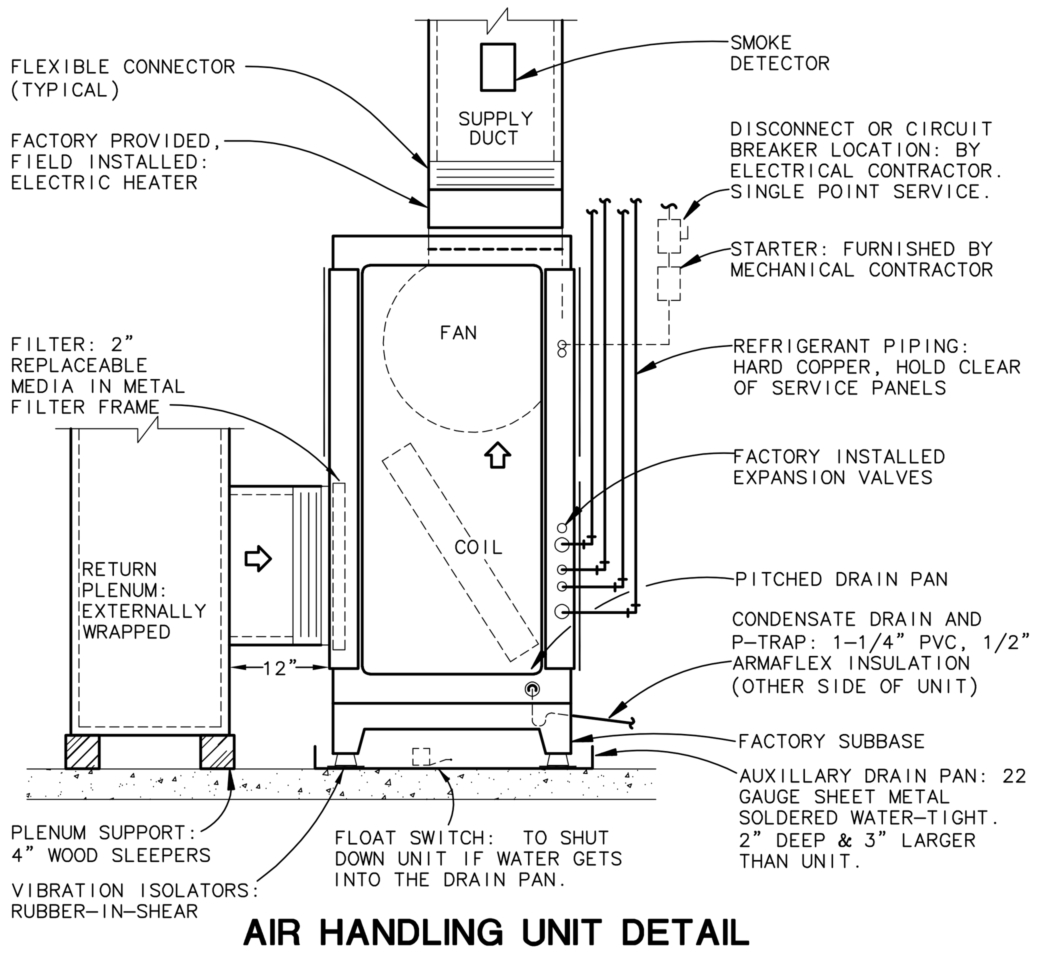
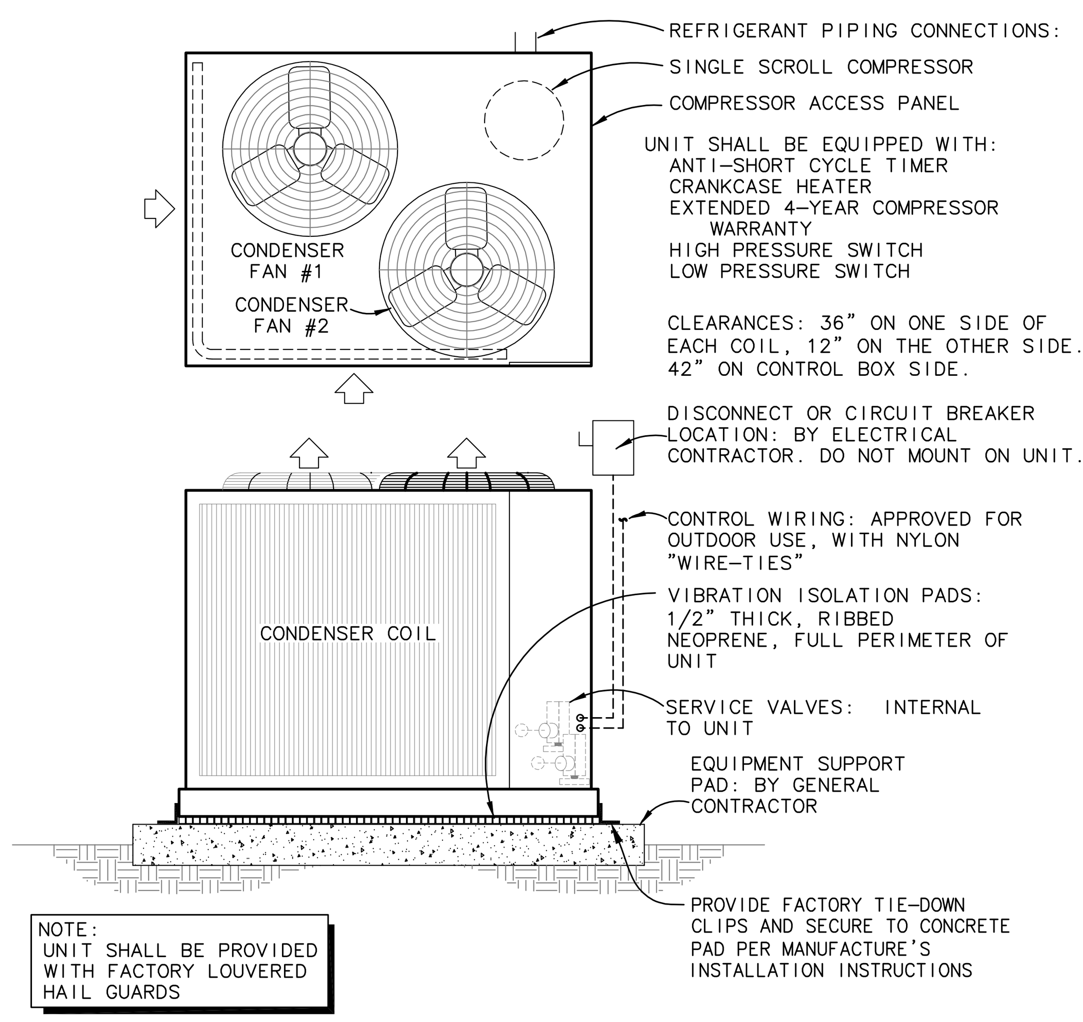
19058



AIR HANDLING UNIT DETAIL

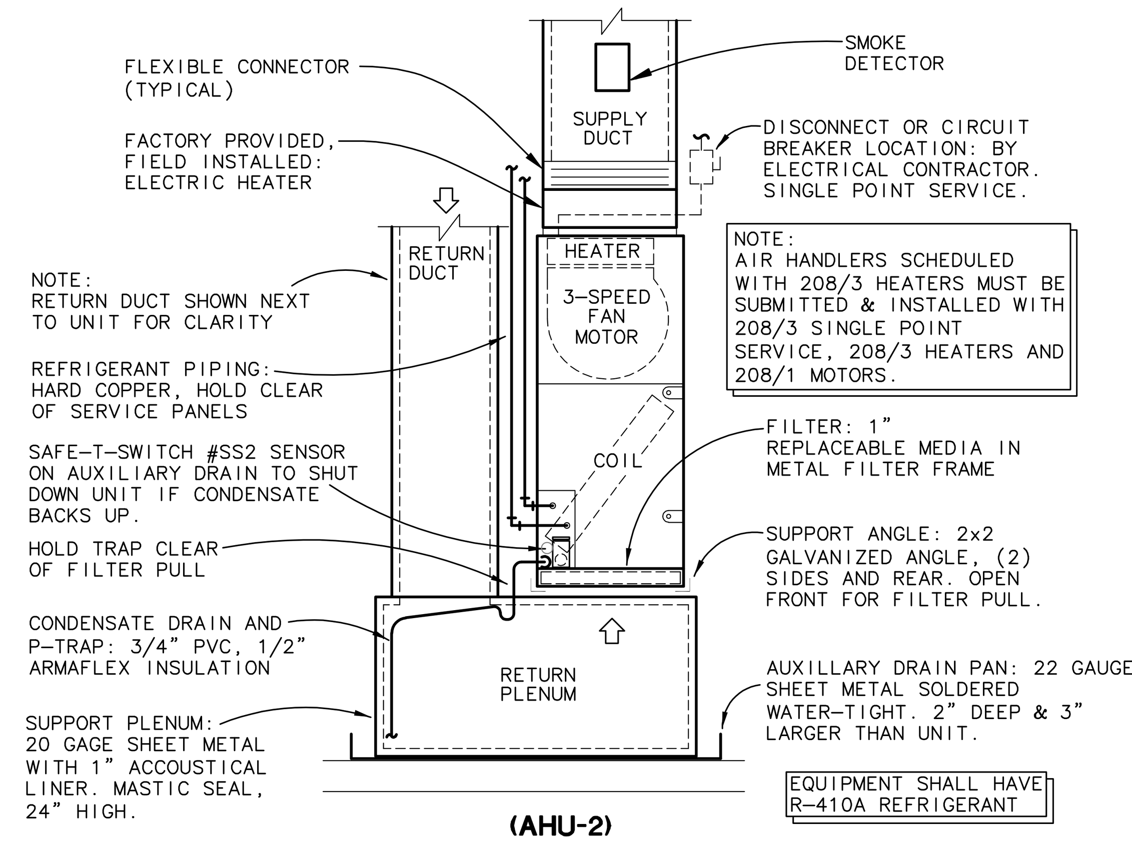
DESIGNATION	AHU-1
AREA SERVED	PERIMETER OFFICES
CARRIER MODEL NUMBER	40RUAA12
WEIGHT - LBS	425
TOTAL CAPACITY - MBH	116.6
SENSIBLE CAPACITY - MBH	92.9
(GROSS AT ARI CONDITIONS)	
ELECTRIC HEAT - KW @ 240	10.0
ELECTRIC HEATER VOLTAGE	208/3
HEATER AMPS	20.8
FAN BRAKE HORSEPOWER	2.4
SUPPLY AIR CFM	3500
OUTSIDE AIR CFM	400
EXTERNAL STATIC PRESSURE	0.8
FAN MOTOR VOLTAGE	208/3
FAN MOTOR FLA	7.1
SPEED - RPM	879
MINIMUM CIRCUIT AMPS	34.9
FUSE/CIRCUIT BREAKER AMPS	35
REFRIGERANT PIPING SIZES:	
LIQUID	1-1/8"
SUCTION	5/8"



NOTE:
UNIT SHALL BE PROVIDED WITH FACTORY LOUVERED HAIL GUARDS

CONDENSING UNIT DETAIL

DESIGNATION	CU-1
AIR HANDLER SERVED	PERIMETER OFFICES
CARRIER MODEL NUMBER	38AUZ012
WEIGHT - LBS	353
NOMINAL TONS	10
CAPACITY - TOTAL MBH (ARI)	116.6
AMBIENT TEMPERATURE - °F	92
ELECTRICAL VOLTAGE	208/3
COMPRESSOR- (QTY)RLA	(1)28.2
CONDENSER FAN FLA (#1/#2)	1.5/1.5
MINIMUM CIRCUIT AMPS	39.0
FUSE/CIRCUIT BREAKER AMPS	60
CONDENSING UNIT EER:	10.3
CONDENSING UNIT IEER:	12.9
REFRIGERANT PIPING SIZES:	
LIQUID	1-1/8"
SUCTION (0-75 FT)	5/8"



NOTE:
AIR HANDLERS SCHEDULED WITH 208/3 HEATERS MUST BE SUBMITTED & INSTALLED WITH 208/3 SINGLE POINT SERVICE, 208/3 HEATERS AND 208/1 MOTORS.

EQUIPMENT SHALL HAVE R-410A REFRIGERANT

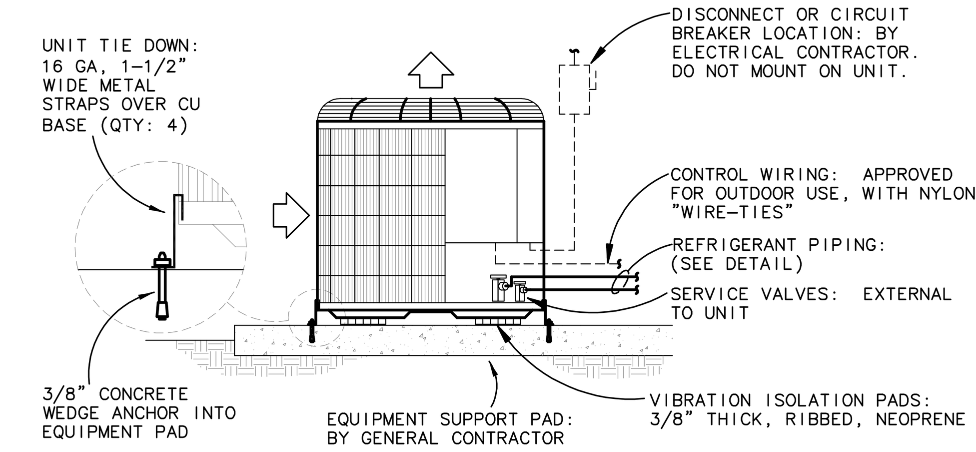
(AHU-2)

AIR HANDLING UNIT DETAIL

UNIT DESIGNATION	AHU-2
AREA SERVED	INTERIOR OFFICES
CARRIER MODEL NUMBER	FV4CNB005L00
WEIGHT - LBS	100
NOMINAL TONS	4
CAPACITY - TOTAL MBH	41.77
CAPACITY - SENS MBH	36.09
ELECTRIC HEAT - KW @ 240	9.0
ELECTRIC HEATER VOLTAGE	208/3
HEATER AMPS	18.8
CFM - SUPPLY	1400
CFM - OUTSIDE AIR	200
EXTERNAL STATIC PRESSURE	3/4"
FAN HORSEPOWER	1/2
FAN MOTOR VOLTAGE	208/1
FAN MOTOR FLA	4.3
SINGLE POINT VOLTAGE	208/3
MINIMUM CIRCUIT AMPS	32.0
MAXIMUM FUSE AMPS	35

UNIT SHALL BE EQUIPPED WITH:
ANTI-SHORT CYCLE TIMER
CRANKCASE HEATER
EXTENDED 4-YEAR COMPRESSOR WARRANTY
HIGH PRESSURE SWITCH
LOW PRESSURE SWITCH

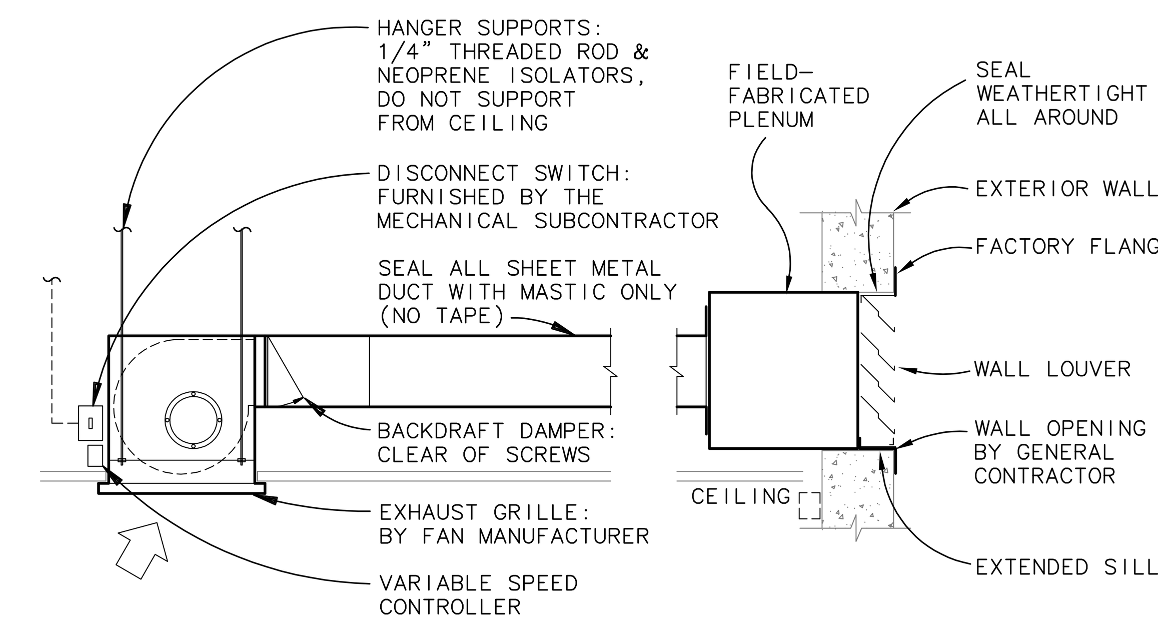
EQUIPMENT SHALL HAVE R-410A REFRIGERANT



CONDENSING UNIT DETAIL

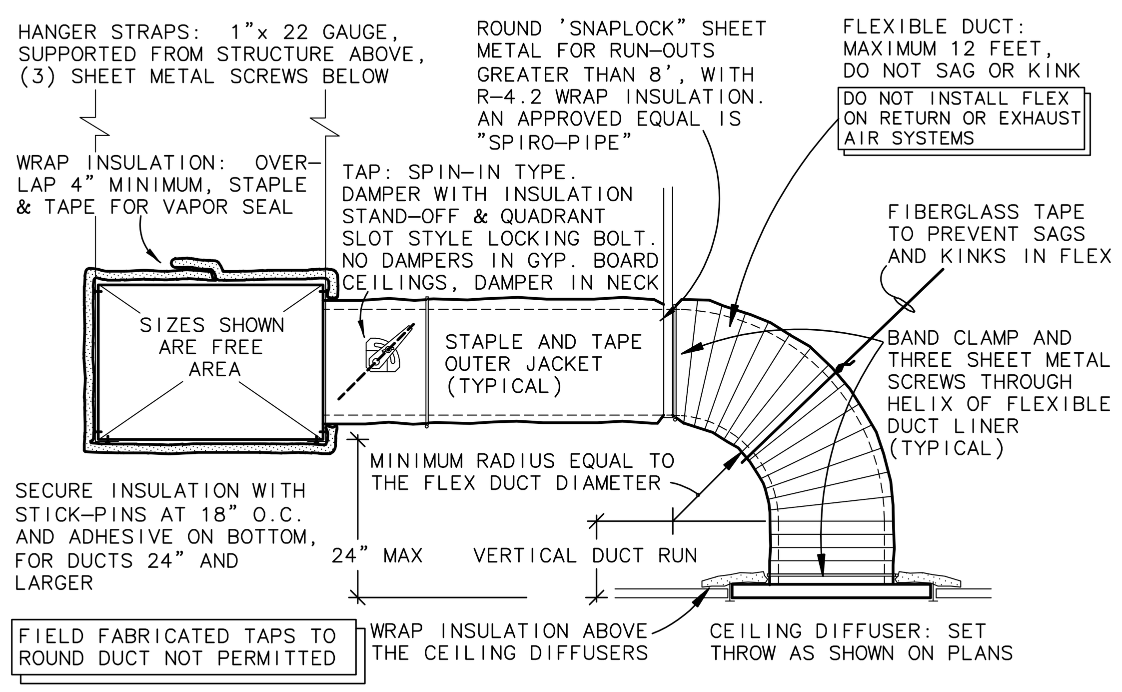
NOTE:
UNIT SHALL BE PROVIDED WITH FACTORY LOUVERED HAIL GUARDS

DESIGNATION	CU-2
AREA SERVED	INTERIOR OFFICES
CARRIER MODEL NUMBER	CA16PW048
WEIGHT - LBS	275
NOMINAL TONS	4
CAPACITY - TOTAL MBH	41.77
AMBIENT TEMPERATURE - °F	92
ELECTRICAL VOLTAGE	208/3
COMPRESSOR RLA (1) EA	13.8
CONDENSER FAN FLA (1) EA	2.8
MINIMUM CIRCUIT AMPS	20.1
FUSE/CIRCUIT BREAKER AMPS	30
EER:	13.0
SYSTEM SEER:	16.1
REFRIGERANT PIPING SIZES:	
LIQUID	3/8"
SUCTION (0-80 FT)	7/8"



CEILING FAN DETAIL

DESIGNATION	TEF-1	TEF-2	TEF-3	TEF-4
AREA SERVED	TOILET 105	TOILET 106	JANITOR 108	SHOWER 107
GREENHECK MODEL NUMBER	SP-110-VG	SP-110-VG	SP-110-VG	SP-A200
WEIGHT - LBS	12	12	12	26
FAN CAPACITY - CFM	75	75	75	150
STATIC PRESSURE "WG	0.375	0.375	0.375	0.375
RPM	866	866	866	802
SONES	2.5	2.5	2.5	2.0
MOTOR HORSEPOWER	8 W	8 W	8 W	36 W
MOTOR VOLTAGE/PHASE	115/1	115/1	115/1	115/1
CONTROL VOLTAGE/PHASE	120/1	120/1	120/1	120/1
INTERLOCK WITH:	LIGHTS	LIGHTS	LIGHTS	LIGHTS

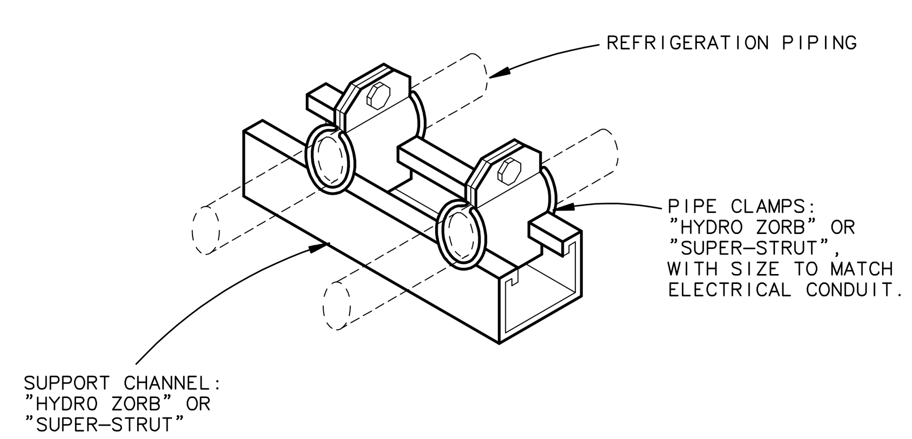


SHEET METAL DUCT DETAIL

1. SHEET METAL DUCTS SHALL BE FABRICATED & INSTALLED PER THE LATEST EDITION OF SMACNA, AND THE FLORIDA ENERGY CODE (SECTIONS 503.8 AND 503.9)
2. ALTERNATE INTERPRETATIONS OF SMACNA DUCT MATERIAL, HANGERS AND REINFORCEMENTS ARE SUBJECT TO ENGINEER APPROVAL, AND REQUIRE SEPARATE SUBMITTAL OF THE ALTERNATES.
3. FLEXIBLE DUCT CONNECTORS SHALL BE PROVIDED AT CONNECTIONS TO ALL EQUIPMENT.
4. RECTANGULAR ELBOWS SHALL BE SQUARE NECK (SAME IN & OUT DIMENSIONS) WITH 2" DOUBLE THICKNESS TURNING VANES.
5. OFFSETS SHALL NOT REDUCE THE FREE AREA, AND SHALL NOT EXCEED 30° UNLESS OTHERWISE SPECIFIED.
6. TRANSITIONS SHALL NOT EXCEED 1:3 RATIO (4" TRANSITION PER FOOT SINGLE SIDED TRANSITION, AND 8" PER FOOT DOUBLE SIDED TRANSITION).
7. INSULATION SHALL BE NFPA 90 APPROVED, WITH ALUMINUM FOIL FACING AND A MINIMUM INSTALLED R-VALUE OF 4.2. RETURN AIR, OUTSIDE AIR, AND EXHAUST DUCTWORK SHALL NOT BE INSULATED.
8. ROUND DUCT CONNECTIONS SHALL BE SPIN-IN TYPE, WITH DAMPER AND HANDLE. SPRAY PAINT LOCATIONS OF HANDLES.
9. FLEXIBLE DUCT SHALL INCLUDE AN INNER POLYETHYLENE LINER, A SPRING HELIX, BLANKET INSULATION WITH A MINIMUM INSTALLED R-VALUE OF 4.2, A FOIL OUTER VAPOR BARRIER, AND BE UL-181 APPROVED.
10. ALL TAPE SHALL BE FASSON 0810 (NO SUBSTITUTIONS), SMACNA APPROVED.
11. COMPLETELY SEAL ALL SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTS WITH RCD #6 MASTIC OR "HARDCAST" MASTIC TAPE. (NO SUBSTITUTIONS)

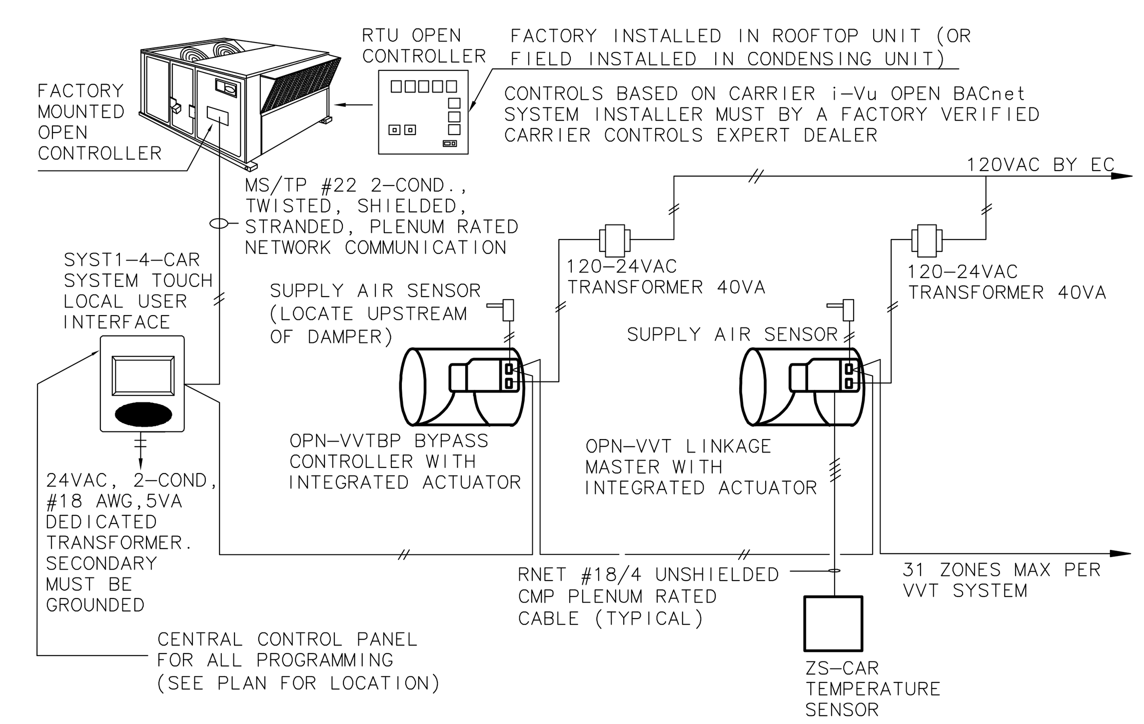
RETURN, OUTSIDE AIR, AND EXHAUST DUCTS DO NOT NEED TO BE INSULATED. INSULATION IS ONLY REQUIRED FOR SUPPLY DUCTWORK.

FIELD FABRICATED TAPS TO ROUND DUCT NOT PERMITTED



REFRIGERANT PIPING DETAIL

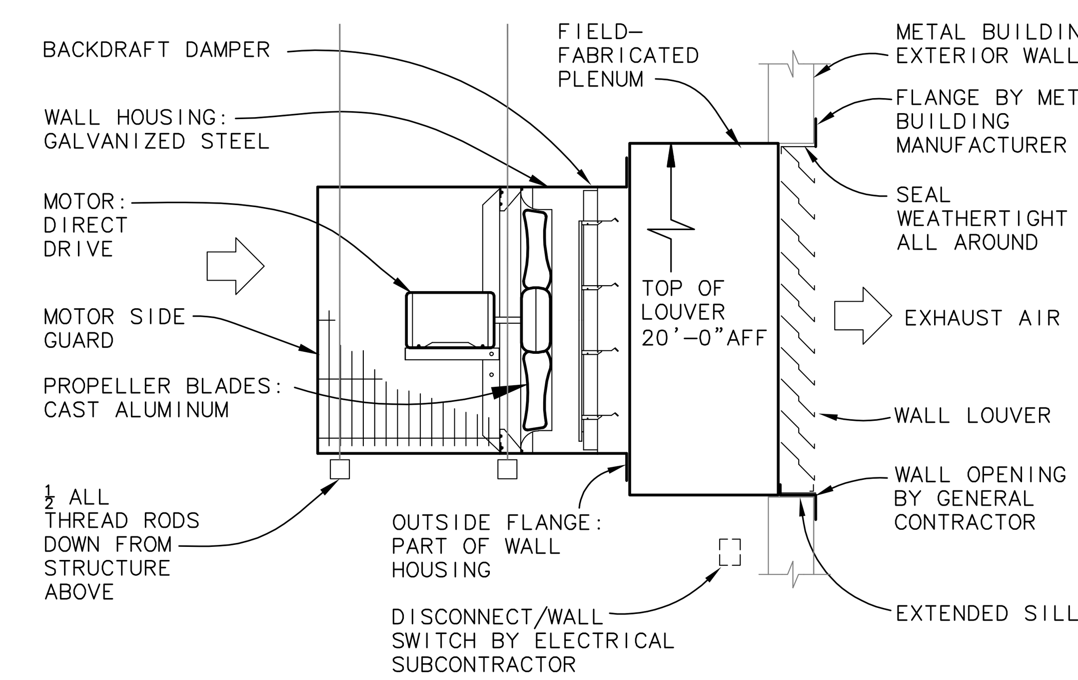
1. ALL REFRIGERANT PIPING ABOVE THE FLOOR SHALL BE HARD COPPER, ACR TYPE "L", WITH LONG RADIUS ELBOWS AND WROUGHT FITTINGS. PIPING BELOW THE FLOOR SHALL BE SOFT COPPER.
2. TRAPS SHALL BE SINGLE PIECE, WROUGHT COPPER.
3. INSULATE SUCTION LINES FULL LENGTH WITH ARMAFLEX INSULATION. THICKNESS SHALL BE 1/2" UP THROUGH 7/8" SUCTION LINE SIZE, WITH 3/4" THICKNESS FOR 1-1/8" SUCTION LINES & ABOVE. ALL INSULATION SHALL BE ASTM E84 APPROVED (FLAME SPREAD OF 25, SMOKE DENSITY OF 50).
4. INSULATION SHALL NOT BE SPLIT DURING INSTALLATION.
5. ALL INSULATION THAT IS EXPOSED TO THE OUTDOORS, SHALL BE WRAPPED WITH A PROTECTIVE ALUMINUM JACKET.
6. ROUTING OF ALL REFRIGERANT PIPING SHALL BE "SQUARE WITH" BUILDING LINES. HORIZONTAL PIPING SHALL BE SLOPED AT THE RATE OF (1) INCH FOR EACH (10) FEET, TOWARD THE COMPRESSOR.
7. SUPPORT OF THE REFRIGERANT PIPING AT THE COMPRESSORS, CONDENSERS, AND AIR HANDLING UNITS SHALL BE AS SHOWN ABOVE.
8. SUPPORT OF THE REFRIGERANT PIPING, IN CEILING PLENUMS, SHALL BE WITH STRAP HANGERS, SHEET METAL "SADDLES", WITH 3/4" INSULATION TO ELIMINATE ANY METAL-TO-METAL CONTACT.
9. BRAZE ALL REFRIGERANT PIPING WITH A FLOW OF DRY NITROGEN DURING THE BRAZING OPERATIONS.
10. SOLDER SHALL BE 15% SILVER "SIL-FOS" OR EQUAL.
11. CHANGE FILTER-DRIER CORES AFTER 30 DAYS OF OPERATION. SAVE CORES FOR INSPECTION BY TEST & BALNCE, OR BY OWNERS REPRESENTATIVE INSPECTION.
12. REFRIGERANT PIPING, AND EXPANSION VALVES, FOR 6 TON AND SMALLER, TO BE SIZED BY EQUIPMENT MANUFACTURER.



VARIABLE VOLUME/TEMPERATURE (VVT) DETAIL

NOTES:
1. SYSTEM COMPONENTS ARE BASED ON CARRIER.
2. ALL LOW VOLTAGE WIRING AND COMMUNICATIONS WIRING SHALL BE BY THE MECHANICAL CONTRACTOR. ALL 120 VOLT WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
3. ALL DAMPERS SHALL BE PROVIDED WITH A FACTORY CONTROL TRANSFORMER. SYSTEM ZONE DAMPERS SHALL OPERATE UNDER PRESSURE DEPENDENT CONTROL WHICH SHALL BE MOUNTED AND WIRED BY THE ELECTRICAL CONTRACTOR. TRANSFORMERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO THE DAMPERS SERVED
4. THE "SYSTEM TOUCH" SHALL BE MOUNTED 4'-0" AFF AND LOCATED AS SHOWN ON PLANS. ALL SENSORS SHALL BE LOCATED AT 5'6" AFF AND LOCATED AS SHOWN ON PLANS.
5. THE OPEN CONTROLLER PACKAGE SHALL BE COMPATIBLE WITH THE PARTICULAR STAGES OF HEATING AND COOLING AS SHOWN ON THE EQUIPMENT SCHEDULE.
6. BYPASS DAMPER(S) SHALL BE SIZED AT MAXIMUM 1200 FPM FOR RELIEF OF 300 CFM/TON FOR PROPER AIR FLOW OVER THE COOLING COIL.IF MULTIPLE DAMPERS ARE REQUIRED, THEY SHALL BE WIRED TOGETHER TO ACT AS A SINGLE DAMPER.
7. COMMUNICATED BUS AND SENSOR WIRING MUST BE SEPARATE FROM AC POWER WIRING.
8. LOCATED SAT IN DUCT DOWNSTREAM OF CCT ZONE TERMINAL AND UPSTREAM OF CCT BYPASS TERMINAL
9. ALL DAMPERS SHALL BE SIZED ACCORDING TO THE FOLLOWING SCHEDULE:

CARRIER MODEL NO.	SIZE (IN)	CFM (@800 FPM)	CFM (@1200 FPM)
ZD-06	6	160	240
ZD-08	8	280	420
ZD-10	10	440	660
ZD-12	12	630	950
ZD-14	14	850	1275
ZD-16	16	1125	1675
RD0810	8x10	410	610
RD0814	8x14	560	825
RD0818	8x18	725	1075
RD0824	8x24	925	1375



WALL FAN DETAIL

DESIGNATION	GEF	GSF
AREA SERVED	GARAGE EXHAUST	GARAGE SUPPLY
GREENHECK MODEL NUMBER	AER-E42C-605-VG1H20	AER-S42C-605-VG
WEIGHT - LBS	498	498
CFM	7000	7000
STATIC PRESSURE "WG	0.375	0.375
RPM	711	709
SONES	22	22
WALL OPENING (SQUARE)	51-1/4"	51-1/4"
MOTOR HORSEPOWER	2	2
MOTOR VOLTAGE/PHASE	208/3	208/3
MOTOR AMPS	9.7	9.7
CONTROL VOLTAGE/PHASE	120/1	120/1
INTERLOCK WITH:	WALL SWITCH	WALL SWITCH

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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL

MECHANICAL DETAILS & SCHEDULES

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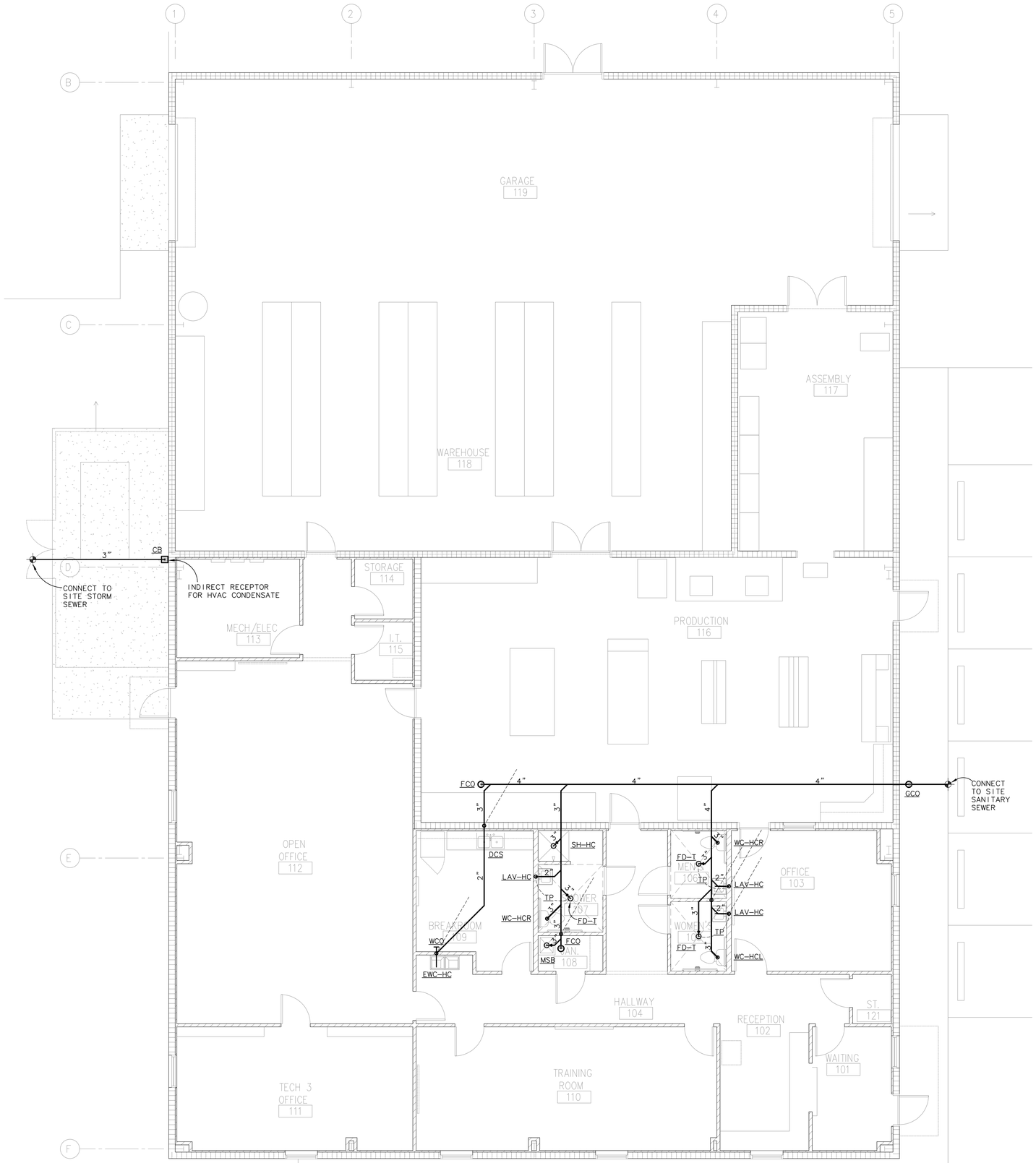


WASTE & VENT PLAN

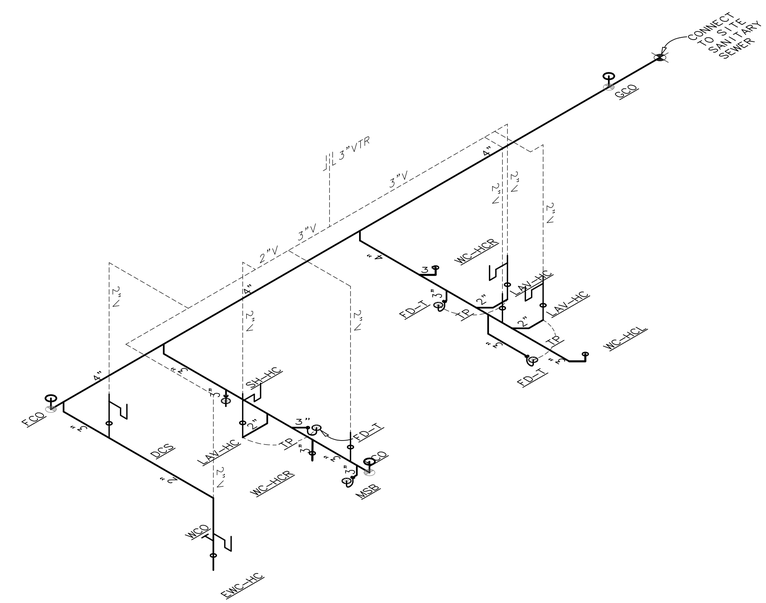
SCALE: 3/16"=1'-0"

PLUMBING GENERAL NOTES

1. WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, AND LOCAL CODES INCLUDING:
   * 2020 FLORIDA BUILDING CODE
   * 2020 FLORIDA PLUMBING CODE
   * 2020 FLORIDA GAS CODE
   * STATE ENERGY CODE
2. DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM, AND TO CONNECT ALL REQUIRED SERVICES TO MAKE THAT ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL AN ITEM.
3. VERIFY ALL POINTS OF CONNECTION WITH OTHER DISCIPLINES (LOCATION AND INVERT) PRIOR TO INSTALLATION. THIS SHALL INCLUDE EXISTING UTILITIES AS WELL AS NEW UTILITIES INSTALLED UNDER THE SCOPE OF WORK FOR THIS PROJECT.
4. COORDINATE WITH OTHER TRADES TO PREVENT INTERFERENCE WITH HVAC DUCTS, ELECTRICAL LIGHTING, AND STRUCTURE, IN THE CEILING PLENUMS. PRIORITY SHALL BE GIVEN TO HVAC DUCTWORK.
5. ALL WORK, BOTH MATERIAL AND INSTALLATION, SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF OWNER ACCEPTANCE (CERTIFICATE OF OCCUPANCY).

SANITARY, WASTE AND VENT PIPING

1. SANITARY, WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC PER ASTM D2665 (NO SUBSTITUTIONS) WITH SOLVENT WELDED CEMENT IN ACCORDANCE WITH ASTM 2564, AND BE INSTALLED PER ASTM D2321
2. COORDINATE SANITARY AND WASTE PIPING BELOW THE SLAB WITH THE BUILDING FOUNDATIONS PRIOR TO INSTALLATION.
3. SET FLOOR DRAINS BELOW FINISHED FLOOR LEVEL TO ALLOW FULL DRAINAGE OF AREA.
4. EXPOSED DRAINS IN TOILETS SHALL BE CHROME-PLATED BRASS WITH ESCUTCHEONS.
5. PROVIDE CLEANOUTS AS SHOWN ON THE PLAN AND SHALL NOT BE DELETED. PROVIDE ADDITIONAL CLEANOUTS WHERE REQUIRED BY THE PLUMBING OFFICIAL AT NO ADDITIONAL COST.
6. METAL ROOFING CONTRACTOR SHALL FURNISH AND INSTALL ALL VTR CAPS.
7. ALL INDIRECT PIPING SHALL TERMINATE AT THE RECEPTOR WITH A MINIMUM AIR GAP OF TWO PIPE DIAMETERS AND SHALL BE BEVELED AT 45 DEGREES.
8. TEST PIPING WITH A 10" WATER COLUMN FOR TWO HOURS.



WASTE & VENT RISER

SCALE: NTS

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WASTE & VENT PLAN

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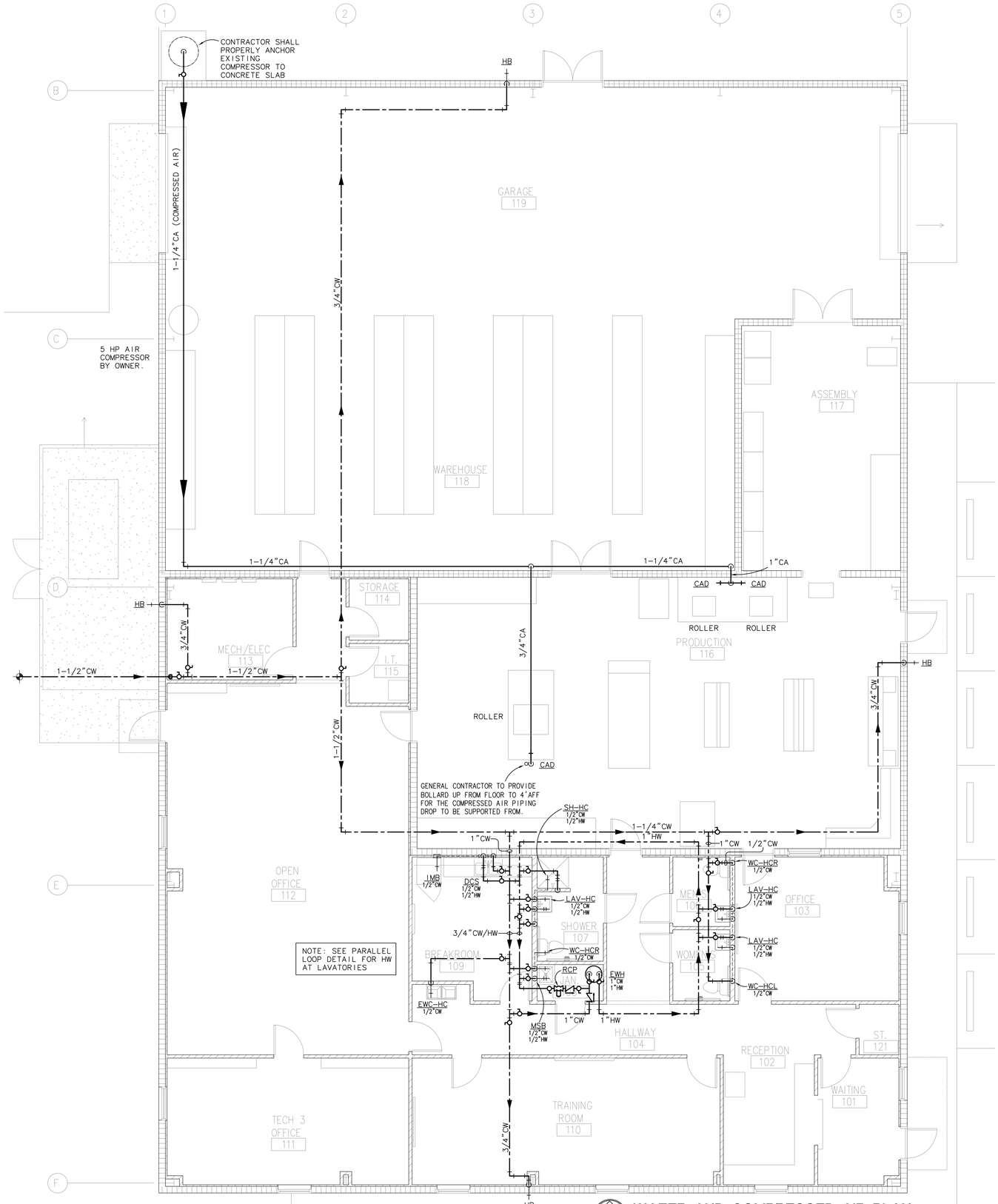


WATER AND COMPRESSED AIR PLAN

SCALE: 3/16"=1'-0"

WATER PIPING

1. THE BASE BID FOR WATER PIPING ABOVEGROUND SHALL BE TYPE "L" COPPER (ASTM B88-89), WITH WROUGHT COPPER FITTINGS (ASTM B16.22-89) AND 95-5 SILVER SOLDERED JOINTS. PRICING FOR USE OF CPVC, AS AN ALERNATE, SHALL BE PROVIDED.
2. SUPPORT ALL PIPING WITH PIPE HANGERS BY GRINELL OR APPROVED EQUAL. HANGERS SHALL BE SPECIFICALLY SELECTED FOR USE WITH THE PIPE MATERIAL AND INSULATION THICKNESS (IF INSULATED) SPECIFIED.
3. PROVIDE ZONE SERVICE VALVES AT ALL BRANCH SUPPLY LINES. ALL VALVES SHALL BE 125 LB SERVICE RATED. SHUTOFF VALVES SHALL BE 2 PIECE, BRASS, BALL VALVES AND SHALL BE INSTALLED CLOSE TO CEILINGS FOR ACCESS. PROVIDE AN ACCESS PANEL WHERE VALVES ARE LOCATED ABOVE GYPSUM BOARD CEILINGS.
4. PROVIDE EACH FIXTURE WITH SHUTOFF SUPPLY STOPS. EXPOSED STOPS AND SUPPLY PIPING SHALL BE CHROME PLATED WITH A CHROME PLATED ESCUTCHEON AND SET SCREW.
5. PROVIDE UNIONS FOR ALL CONNECTIONS TO SERVICEABLE EQUIPMENT. UNIONS SHALL BE DIELECTRIC TYPE WHERE DISSIMILAR METALS ARE CONNECTED.
6. HOT WATER PIPING INSULATION SHALL BE EITHER FIBERGLASS "MANVILLE MICRO-LOK AP-T" OR CLOSED CELL "ARMAFLEX".
7. INSULATE HOT WATER PIPING AS FOLLOWS: RECIRCULATING PORTIONS (IF PRESENT) SHALL PROVIDE 1" INSULATION FOR PIPING UP TO AND INCLUDING 1-1/4", 1-1/2" INSULATION FOR PIPING LARGER THAN 1-1/4" AND 1/2" INSULATION ON ALL RUNOUTS TO INDIVIDUAL FIXTURES.
8. ALL WATER PIPING INSTALLED INSIDE CMU WALLS SHALL BE PROTECTED FROM CORROSION WITH EITHER INSULATION OR A CONTINUOUS VINYL SLEEVE.
9. PROVIDE VACUUM BREAKERS, OR BACKFLOW PREVENTERS, AS REQUIRED BY CODE.
10. PROVIDE TRAP PRIMERS AS REQUIRED BY CODE.
11. TEST ALL WATER PIPING AT 100 PSIG FOR SIX HOURS OR AS REQUIRED BY THE BUILDING DEPARTMENT.
12. STERILIZE WATER PIPING IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS.

COMPRESSED AIR PIPING

1. COMPRESSED AIR PIPING SHALL BE TYPE GALVENIZED IROM PIPE (ASTM A53), WITH GALVANIZED MALLEABLE IRON FITTINGS FITTINGS (ASTM B16.3)
2. ALL BALL VALVES SHALL BE FULL PORT
3. ROUTING OF ALL COMPRESSED AIR PIPING SHALL BE "SQUARE WITH" BUILDING LINES.
4. HORIZONTAL PIPING SHALL BE SLOPED AT THE RATE OF (1) INCH FOR EACH (10) FEET, TOWARD THE MOISTURE TRAP.
5. SUPPORT OF THE COMPRESSED AIR PIPING SHALL BE AS SHOWN IN DETAIL.
6. PROVIDE A "LOW POINT" DRAIN & BALL VALVE AT MOISTURE TRAP
7. ALL COMPRESSED AIR DROPS (CAD) SHALL BE 3/4" UNLESS NOTED OTHERWISE
8. ALL TAPS NTO MAINS SHALL BE MADE OFF THE TOP OF THE MAIN WITH AN INVERTED TRAP.

COMPRESSED AIR PIPING TESTING

TEST ALL COMPRESSED AIR PIPING FOR LEAKS BY PRESSURISING TO 100 PSI AND HOLDING FOR A MINIMUM OF 15 MINUTES

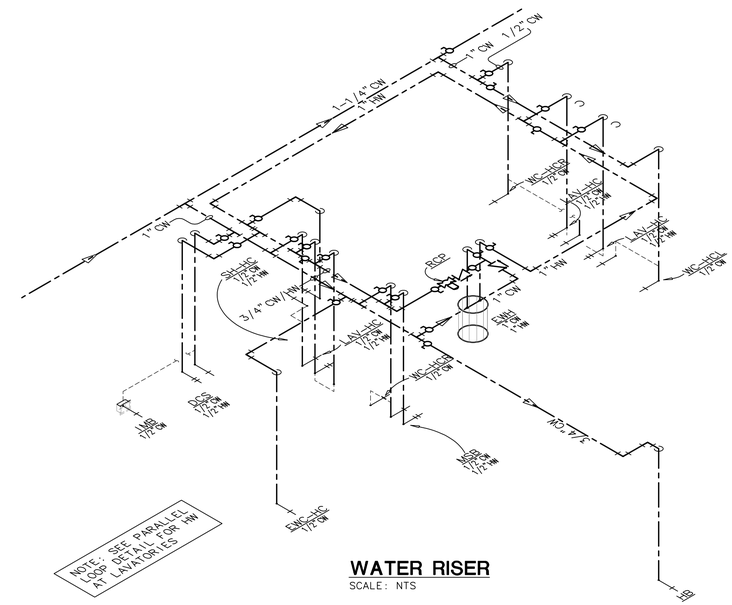
PLUMBING CONTRACTOR SHALL PERFORM THIS TEST, AND REPEAT AS NEEDED TO ENSURE THAT THE COMPRESSED AIR PIPING IS FREE OF OILS AND DEBRIS. THE FINAL "WHITE CLOTH" TEST IS TO BE PERFORMED IN PRESENCE OF OWNER'S REPRESENTATIVE FOR ACCEPTANCE.

1. WITH THE COMPRESSOR CONNECTED AND THE SYSTEM AT WORKING PRESSURE, FIRST, DIRECT AIRFLOW FROM TEST PORT INTO SAFE DIRECTION, AND PLACE INTO BUCKET OR TRAP TO CATCH ANY LARGER DEBRIS WHICH MIGHT BE IN SYSTEM. OPEN VALVE FULLY, UNTIL SYSTEM IS FULLY FLUSHED WITH COMPRESSED AIR. REPEAT UNTIL NO VISIBLE DEBRIS IS EXPELLED WHEN VALVE IS OPENED.
2. THEN, PLACE A WHITE CLOTH OVER THE TEST PORT AND OPEN FULLY FOR ANOTHER FULL SYSTEM FLUSH. EXAMINE THE CLOTH AND REPEAT UNTIL CLOTH IS CLEAN AND FREE OF ANY OILS AND DEBRIS, OR AS ACCEPTED BY OWNER'S REPRESENTATIVE. PLUG TEST PORT AFTER TESTING IS COMPLETED.

WATER DEMAND

FIXTURE	QTY	CW EACH	HW EACH	TOTAL EACH	TOTAL ALL
DRINKING FOUNTAIN	1	0.25	0.00	0.25	0.25
KITCHEN SINK	1	3.00	3.00	4.00	4.00
LAVATORY	3	1.50	1.50	2.00	6.00
SERVICE SINK	1	2.25	2.25	3.00	3.00
WATER CLOSET – FLUSH TANK	3	5.00	0.00	5.00	15.00
SHOWER	1	3.00	0.00	3.00	3.00
MISCELLANEOUS	4	1.00	0.00	1.00	4.00
TOTAL WATER SUPPLY FIXTURE UNITS (WSFU)					35.25
TOTAL GPM					26
SERVICE PIPE SIZE					1-1/2"
AVAILABLE WATER PRESSURE (PSI) (ASSUMED)					50.00
1-1/2" SERVICE (426-FT)					9.22
1" WATER METER (PSI)					3.00
1-1/2" BACKFLOW PREVENTER (PSI)					12.00
PRESSURE LOSS AT CRITICAL FIXTURE (PSI)					20.00
PRESSURE AVAILABLE FOR PIPING (PSI)					5.78
EQUIVALENT LENGTH OF PIPING IN BUILDING (FT)					100.00
PRESSURE LOSS/100 FEET AVAILABLE					5.78

DATA TAKEN FROM THE FLORIDA PLUMBING CODE – TABLE E103.3(2)



WATER RISER

SCALE: NTS

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PLUMBING FIXTURE SCHEDULE

TOILET FIXTURES

MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/ WASTE	VENT
WC-HCL	WATER CLOSET: ADA, LEFT HAND TRIP LEVER AMERICAN STANDARD "CADET 3" 215AA.004 FLOOR MOUNTED, 1.6 GPF, GRAVITY FLUSH, VITREOUS CHINA, 3" FLAPPER VALVE, 2-1/8" GLAZED TRAPWAY, 12" ROUGH ELONGATED, 16-1/2" HIGH BOWL, SIPHON JET, WATER SAVER. SEAT: OLSONITE #10 HEAVY DUTY, OPEN FRONT, LESS COVER	1/2"	–	3"	2"
WC-HCR	WATER CLOSET: ADA, RIGHT HAND TRIP LEVER AMERICAN STANDARD "CADET 3" 4188A.005 FLOOR MOUNTED, 1.6 GPF, GRAVITY FLUSH, VITREOUS CHINA, 3" FLAPPER VALVE, 2-1/8" GLAZED TRAPWAY, 12" ROUGH ELONGATED, 16-1/2" HIGH BOWL, SIPHON JET, WATER SAVER. SEAT: OLSONITE #10 HEAVY DUTY, OPEN FRONT, LESS COVER	1/2"	–	3"	2"
LAV-HC	LAVATORY HANDICAP: AMERICAN STANDARD "LUCERNE" 0355.012 WALL HUNG TYPE, 20-1/2"x18-1/4" VITREOUS CHINA, FOR CONCEALED ARM SUPPORT, 0.5 GPM FLOW RESTRICTOR, AERATOR AND CP SUPPLIES WITH STOPS, CP ESCUTCHEONS, CP GRID DRAIN, CP TRAP WITH INTEGRAL CLEANOUT, HANDI-CAP OFFSET TAILPIECE. LAV GUARD: TRUEBRO 103E-Z INSULATION KIT. TRIM: SINGLE LEVER, SINGLE HOLE FAUCET, ZURN Z82200-XL-3M WITH GRID STRAINER DRAIN AND 0.5 GPM VANDAL RESISTANT PRESSURE COMPENSATING AERATOR, LESS POP-UP DRAIN AND HOLE. PROVIDE WITH WATTS LFUSG-B-SC-M2, ASSE 1070, MIXING VALVE WITH 3/8" COMPRESSION FITTINGS. SET FOR 110F, MIN 0.25 GPM. CARRIER: ZURN Z-1231, MOUNT RIM AT HANDICAP HEIGHT.	1/2"	1/2"	1-1/4"	2"
FD-T	FLOOR DRAIN – TOILETS ZURN ZN-415-P 6" ADJUSTABLE DURA-COATED CAST IRON BODY, TYPE "N" DURA-COAT CAST IRON STRAINER, PLOISHED NICKLE BRONZE COVER WITH FLASHING MEMBRANE CLAMPING DEVICE AND TRAP PRIMER CONNECTION.	–	–	3"	2"
TP-1	TRAP PRIMER: JR SMITH 2698 OR 2698-ADA WATER SAVER TYPE, CP BRONZE, 1/2" PIPING AND ESCUTCHEON PLATES. ROUTE PRIMER PIPING IN WALL TO FLOOR DRAIN. OFFSET DRAIN TO LEFT PER MANUFACTUERS INSTRUCTION FOR USE ON HANDICAP FIXTURES AND USE #2698-ADA	–	–	–	–

SINKS

MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/ WASTE	VENT
DCS	DOUBLE COMPARTMENT SINK: ELKAY "LUSTERTONE" LR-3322 COUNTER-TOP TYPE. DOUBLE COMPARTMENT, 33 X 22 X 8", 18 GAGE, 304 STAINLESS STEEL, WITH DROPPED LEDGE & RAISED FAUCET DECK. TRIM: T&S B-2731 SINGLE LEVER SWIVEL SPOUT FAUCET AND AERATOR, MCGUIRE 2165 CP SUPPLIES WITH STOPS, CP ESCUTCHEONS, MCGUIRE 8912 1-1/2" CP TRAP AND BASKET & STRAINER.	1/2"	1/2"	1-1/2"	2"
MSB	MOP SERVICE BASIN: AMERICAN STANDARD 7741.00 ENAMEL CAST IRON 28"x 28"x 13" CORNER MODEL, TRIM: T & S FAUCET B-0665-BSTR, HOSE BRACKET B-0654 AND MOP HANGER. HEAVY GAGE 304 STAINLESS STEEL SPLASH GUARDS BOTH SIDES 24" TALL (MIN).	1/2"	1/2"	3"	2"

WATER COOLERS

MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/ WASTE	VENT
EWC-HC	ELECTRIC WATER COOLER-SPLIT LEVEL. ELKAY LZSTL8WSSP 8.0 GPH @ 50°F, 5 AMPS, 120/1V ADA AND UL APPROVED. WALL MOUNT, SPLIT LEVEL DOUBLE BASIN MODEL WITH TOUCH PADS ON FRONT / SIDES, FACTORY INSTALLED WATER FILTER, & ENHANCED "EZ H20" BOTTLE FILLING STATION. CP SUPPLIES WITH STOPS, CP ESCUTCHEONS, CP GRID DRAIN, 1-1/4" PLASTIC TRAP CARRIER: ZURN Z-1225-BL, BI-LEVEL.	1/2"	–	1-1/4"	2"

WATER HEATERS

MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/ WASTE	VENT
EWH-20	ELECTRIC WATER HEATER: A.O. SMITH EJCT-20 FOAM INSULATED, SIDE CONNECTED, 20 GALLON, 2500 WATT, VOLTAGE: 120, 20.8A, SINGLE PHASE,	3/4"	3/4"	–	–
MXV	THERMOSTATIC MIXING VALVE WATTS LFMMV-US-M1 3/4" SWEAT CONNECTION, WITH UNIONS LEAD FREE, WITH BUILT IN CHECKS AND INTEGRAL FILTER WASHERS. SET AT 120 DEGREES F	3/4"	3/4"	–	–
RCP	RECIRCULATING PUMP GRUNDFOS UPS26-150SF STAINLESS STEEL, 10 GPM AT 34 THD, 1/3 HP, FLANGE CONNECTION. PROVIDE WITH GRISWOLD MODEL #3521, 5.0 GPM AUTOMATIC FLOW CONTROL WITH A JOHNSON CONTROL ADJUSTABLE THERMOSTATIC CONTROL MODEL A19DAC-1C TO MAINTAIN 140 DEGREE HOT WATER RETURN. PROVIDE WITH IN-LINE FLOW SWITCH PER DETAIL P201.	–	–	–	–
E-TK	EXPANSION TANK AMTROL ST SERIES THERMAL-X-TROL MODEL ST-5, 3/4" CONNECTION, MAX. WORKING PRESSURE 150 PSI, TOTAL VOLUME GALLON 2.0	–	3/4"	–	–

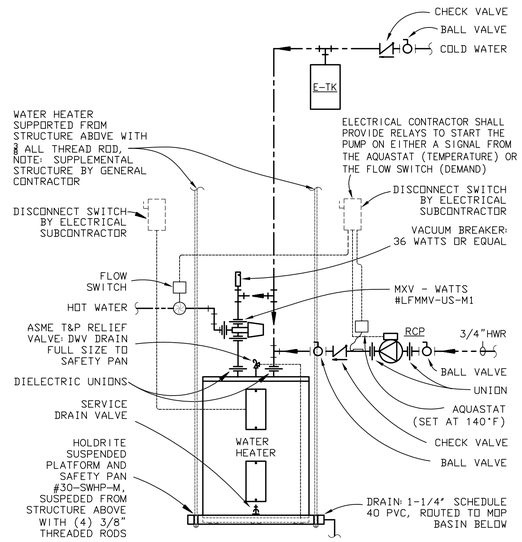
SANITARY AND WASTE DRAINAGE

MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/ WASTE	VENT
WCO	WALL CLEANOUT ZURN ZS-1469 STAINLESS STEEL ACCESS COVER WITH 1/4-20 SCREW TO CLEANOUT PLUG INSTALL 18" AFF. PROVIDE PVC PLUG.	–	–	MATCH PIPE	–
GCO	GRADE CLEANOUT ZURN ZB-1400-HD EXTERIOR, ADJUSTABLE CLEANOUT, DUCO COATED, CI BODY, ABS TAPERED PLUG WITH GASKET. HEAVY DUTY TOP.	–	–	MATCH PIPE	–
FCO	FLOOR CLEANOUT ZURN ZN-1400-VP INTERIOR, FLOOR TYPE. ABS TAPERED PLUG WITH GASKET SEAL & NICKEL BRONZE TOP. "C.O." CAST IN THE TOP. SPANNER WRENCH REMOVAL	–	–	MATCH PIPE	–

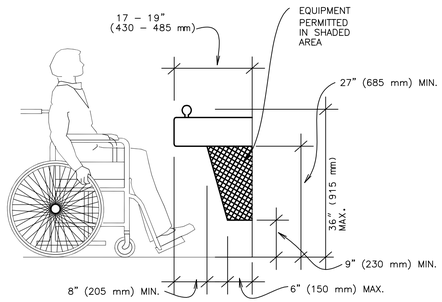
MISCELLANEOUS

MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/ WASTE	VENT
CAD	COMPRESSED AIR DROP SITE BUILT PER DETAIL SHEET P300	–	–	–	–
HB	HOSE BIBB. WOODFORD #24C-3/4 VACUUM BREAKER-BACKFLOW PROTECTED, WITH EXPOSED SWEAT COPPER CONNECTION, MILD CLIMATE.	3/4"	–	–	–
IMB	ICE MAKER BOX WATER-TITE PRODUCT #88080 FLUSH MOUNTED WITH SINGLE VALVE AND HAMMER ARRESTOR	1/2"	–	–	–
CB	CATCH BASIN HANCOR 09095D2 BASIN/0902SDDI GRATE TWO-HOLE CATCH BASIN FOR 3" PVC PIPE. DUCTILE IRON BAR GRATE. PLUG UNUSED OPENING.	–	–	NOTED	–
AAV	AIR ADMITTANCE VALVE STUDOR #20395 OR #20396 1-1/4" OR 1-1/2" TRAP VENT AS REQUIRED, INSTALLED ACCORDING TO MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS.	–	–	–	–

NOTES:
1. APPROVED MANUFACTURERS OF FIXTURES ARE AMERICAN STANDARD, KOHLER AND TOTO.
2. APPROVED MANUFACTURERS OF FAUCETS ARE AMERICAN STANDARD, SLOAN, DELTA, T & S AND CHICAGO.
3. APPROVED MANUFACTURERS OF FLOOR DRAINS AND CLEANOUTS ARE J.R.SMITH, JOASM, ZURN AND WATTS.
4. APPROVED MANUFACTURERS OF WATER COOLER IS ELKAY, OASIS AND HAWS.
4. APPROVED MANUFACTURERS OF THE WATER HEATERS ARE A.O.SMITH, STATE, RHEEM AND RUUD.
5. ALL SUPPLIES SHALL BE PROVIDED WITH CHROME PLATED ANGLE STOPS AND TUBING EQUAL TO EASTMAN, BRASS-CRAFT OR EQUAL.



WATER HEATER DETAIL



HANDICAPPED ELECTRIC WATER COOLER MOUNTING

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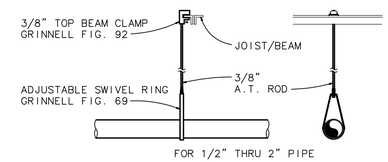
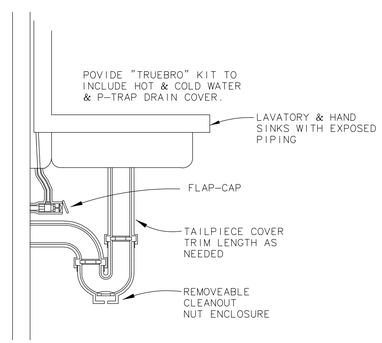


TYPICAL PIPE HANGER DETAIL



WASTE ARM AND WATER SUPPLY PROTECTION

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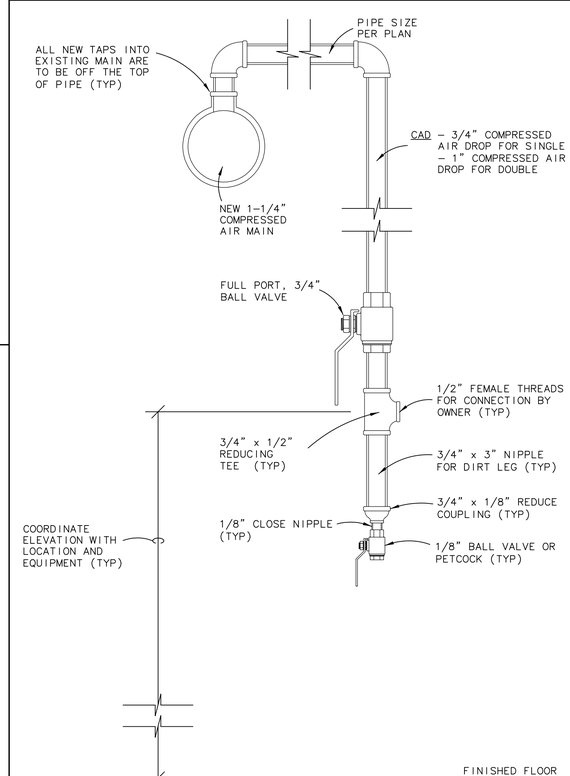
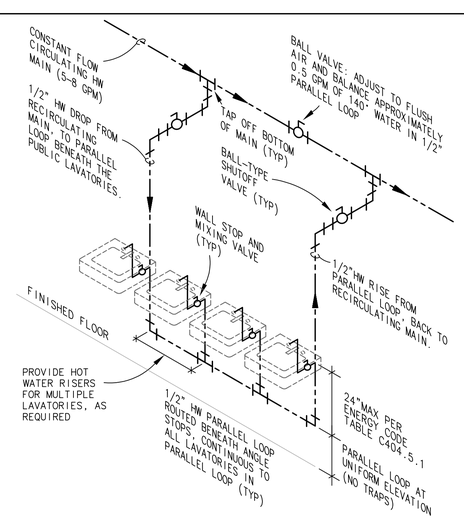
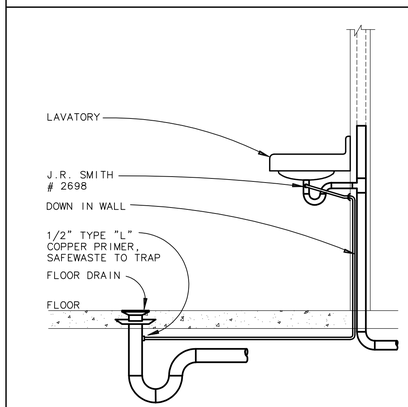


TYPICAL COMPRESSED AIR DROP (CAD)



PARALLEL HOT WATER LOOP DETAIL



FLOOR DRAIN TRAP PRIMER DETAIL (SINGLE PRIMER)

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CERTIFICATE OF AUTHORIZATION No. 4726
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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL

PLUMBING SCHEDULE AND DETAILS

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

REVIEW

CHECKED BY

P300

19058

GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE AND THE 2017 NATIONAL ELECTRICAL CODE. WORK SHALL ALSO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS OF LOCAL LAWS AND ORDINANCES.

2. CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THE SITE AND THE CONTRACT DOCUMENTS. NO CLAIM FOR EXTRA COMPENSATION WILL BE RECOGNIZED IF DIFFICULTIES ARE ENCOUNTERED WHICH AN EXAMINATION OF SITE CONDITIONS AND CONTRACT DOCUMENTS PRIOR TO EXECUTING CONTRACT WOULD HAVE REVEALED.

3. ELECTRICAL CONTRACTOR SHALL ARRANGE FOR ALL NECESSARY PERMITS, LICENSES, UTILITY COORDINATION, AND INSPECTIONS AS REQUIRED BY THE CITY OR UTILITY COMPANY. CONTRACTOR IS RESPONSIBLE FOR ALL EQUIPMENT REQUIRED BY UTILITY COMPANY AND SHOULD INCLUDE NECESSARY COSTS IN BID.

4. CONTRACTOR SHALL LEGIBLY MARK-UP A SET OF 24"x36" DRAWINGS TO REFLECT AS-BUILT CONDITIONS, AND TURN OVER TO ARCHITECT. WITHIN 30 DAYS AFTER THE DATE OF PROJECT ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER PER FBC ENERGY CODE C405.5.4.1.

5. AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER PER FBC ENERGY CODE C405.5.4.2. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   - SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
   - OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
   - NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

6. ALL EQUIPMENT INSTALLED SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) AND/OR LISTED AND LABELED AS AN ASSEMBLY BY AN NRTL PER NEC ARTICLE 90.7.

WIRE/RACEWAY:

1. ALL CONDUCTORS SHALL BE COPPER, CONDUCTOR INSULATION SHALL BE DUAL TYPE THHN/THWN 75°C. (167°F) FOR DRY, DAMP, AND WET LOCATIONS. CONDUCTOR INSULATION WITH SINGLE TYPE MARKING THHN 90°C (194°F) MAY BE USED FOR DRY LOCATIONS ONLY. ALL CONDUCTORS SHALL BE COLOR CODED AS REQUIRED BY NEC AND FURTHER IDENTIFIED AND CODED AS SPECIFIED HEREINAFTER. COLOR CODING SHALL BE BY MEANS OF COLORED INSULATING MATERIAL, COLORED BRAID OR JACKET OVER THE INSULATION OR BY MEANS OF SUITABLE COLORED, PERMANENT, NON-AGING, INSULATING TAPE APPLIED TO CONDUCTORS AT EACH CABINET OR JUNCTION POINT. THE COLOR CODING SHALL BE ACCOMPLISHED AS THE CONDUCTORS ARE INSTALLED. THE FOLLOWING SYSTEMS OF COLOR CODING SHALL BE STRICTLY ADHERED TO:

   A) GROUND LEADS: GREEN
   B) 120/208 VOLT UNGROUNDED PHASE WIRES:
      PHASE A: BLACK
      PHASE B: RED
      PHASE C: BLUE
      NEUTRAL: WHITE

   THE COLOR CODE ASSIGNED TO EACH PHASE WIRE SHALL BE CONSISTENTLY CONSISTENTLY FOLLOWED THROUGHOUT.

2. THE CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS COMBINED SHALL BE SIZED FOR A MAXIMUM OF 5 PERCENT VOLTAGE DROP TOTAL PER FBC C405.6.3.

3. ALL INTERIOR BUILDING CONDUCTORS SHALL BE RUN IN THIN WALL CONDUIT AND THIN WALL CONDUIT SHALL BE UNDERWRITERS' APPROVED GALVANIZED ELECTRICAL METALLIC TUBING. COUPLINGS AND CONNECTORS SHALL BE STEEL COMPRESSION TYPE, ZINC OR CADMIUM PLATED. BELOW GRADE CONDUITS SHALL BE SCHEDULE 40 PVC WITH RIGID METAL ELBOWS AND RISERS. RIGID METAL CONDUIT BELOW GRADE OR IN CONCRETE SHALL BE COATED WITH BITUMASTIC OR OR SLEEVED WITH 10 MIL POLYETHYLENE. SITE CONDUITS SHALL BE ROUTED AT 24" BELOW GRADE AND CONDUITS ROUTED BELOW BUILDINGS SHALL BE AT 36". EXTERIOR CONDUITS SHALL BE RIGID GALVANIZED STEEL.

   PENDING OWNER APPROVAL METAL CLAD CABLE (TYPE MC) IS ACCEPTABLE PROVIDED CABLE IS SUPPLIED WITH AN INSULATED GREEN EQUIPMENT GROUND CONDUCTOR AND MAY ONLY BE USED UNDER THE FOLLOWING CONDITIONS:

   A) SHORT RUNS IN WALLS.
   B) BETWEEN OUTLET BOXES IN HUNG OR FURRED CEILINGS, AND FLUSH TYPE LIGHTING FIXTURES AND TROUGH UNITS.
   C) CONNECTION TO EQUIPMENT IN SHELVING AND SHALL NOT BE USED FOR ANY CIRCUIT WITH OVER A 20 AMP CIRCUIT BREAKER.
   D) HOME-RUNS OF MULTI-CONDUCTOR CABLE WILL BE ALLOWED. CABLING MUST BE PROPERLY SUPPORTED AND COMPLY WITH ALL NEC CODES. MAXIMUM OF 9 CIRCUITS OR 13 CONDUCTORS IN A HOME-RUN.
   E) SHALL BE APPROVED FOR BRANCH CIRCUIT WIRING (20 AMPS & UNDER ONLY) IN CEILING SPACES AND WITHIN WALLS.

   METAL CLAD CABLE IS NOT ACCEPTABLE UNDER THE FOLLOWING CONDITIONS:

   A) BRANCH CIRCUITS OVER 20 AMPS.
   B) WHERE CABLING WILL BE EMBEDED IN CONCRETE.
   C) WHERE CABLING WILL BE EXPOSED TO MOISTURE.
   D) WHERE PROHIBITED BY LOCAL CODE.

4. COMBINING OF CIRCUITS IN SAME RACEWAY, OTHER THAN THOSE INDICATED ON DRAWINGS, WILL NOT BE PERMITTED.

5. ALL RACEWAYS SHALL BE PROPERLY ALIGNED, GROUPED, AND SUPPORTED BY MECHANICAL TYPE "CADDY" CLIPS AT INTERVALS NOT EXCEEDING 8 FEET.

6. ALL RACEWAYS WITH NO. 10 OR 12 AWG PHASE CONDUCTORS FOR RECEPTACLES, LIGHTING FIXTURES AND SIMILAR CIRCUITS SHALL BE PROVIDED WITH A PARITY SIZED GREEN EQUIPMENT GROUND CONDUCTOR. GROUND CONDUCTOR SHALL BE INSTALLED IN ENTIRE RACEWAY SYSTEM INCLUDING WALL SWITCHES AND FLEXIBLE CONDUIT TO LIGHT FIXTURES. EQUIPMENT GROUND CONDUCTOR SIZES FOR CIRCUITS WITH PHASE CONDUCTORS LARGER THAN NO. 12 AWG ARE INDICATED ON DRAWINGS. GROUND CONDUCTORS SHALL BE CONNECTED TO GROUND BUSS IN PANELBOARDS.

7. RACEWAY PENETRATIONS OF FIRE RATED WALLS AND/OR FLOORS SHALL BE SEALED TO MAINTAIN INTEGRITY OF CONSTRUCTION. ALL PRODUCTS, MATERIALS AND METHODS OF INSTALLATION SHALL BE UL APPROVED AND MEET NFPA.

GROUNDING:

1. THE ENTIRE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY NATIONAL ELECTRICAL CODE. ALL METALLIC RACEWAYS SHALL BE MECHANICALLY AND ELECTRICALLY SECURE AT ALL JOINTS AND AT ALL BOXES, CABINETS, FITTINGS AND EQUIPMENT.

2. THE GROUNDING SYSTEM SHALL BE TESTED BY THE CONTRACTOR. THE RESISTANCE TO GROUND SHALL BE NO MORE THAN (5) OHMS. SUBMIT TEST RESULTS TO ENGINEER. CONTRACTOR SHALL MAKE UPGRADES AND ADDITIONS TO GROUNDING SYSTEM AS REQUIRED TO ACHIEVE THE (5) OHM REQUIREMENT.

3. PROVIDE NO. 6 AWG GROUND CONDUCTOR AT TELEPHONE BOARD AND CONNECTION TO THE MAIN SERVICE ENTRANCE GROUND. PROVIDE 10FT. OF SLACK AT BOARD.

OUTLET BOXES/DEVICES:

1. COORDINATE DEVICE AND COVER PLATE COLORS WITH ARCHITECT.

2. ALL OUTLET BOXES SHALL BE RIGIDLY MOUNTED AND SHALL BE EQUIPPED WITH SUITABLE SCREW FASTENED COVERS. OPEN KNOCKOUTS OR HOLES IN BOXES SHALL BE PLUGGED WITH SUITABLE BLANKING DEVICE.

3. OUTLET BOXES SHALL BE 4 INCH SQUARE x 2-1/8" DEEP. OUTLET BOXES LOCATED ABOVE THE CEILING SHALL BE LEGIBLY IDENTIFIED WITH BRANCH CIRCUIT NUMBER OF CIRCUIT TERMINATED WITHIN BY MEANS OF BLACK PERMANENT MARKER.

4. RECEPTACLES WITHIN (6) FEET OF A SINK SHALL HAVE GFCI PROTECTION.

SWITCHGEAR:

1. PANELBOARDS SHALL BE MANUFACTURED BY SQUARE "D" COMPANY, TYPE AS SHOWN ON DRAWINGS OR APPROVED EQUALS: EATON & SIEMENS. FURNISH WITH COPPER BUS BARS, COPPER EQUIPMENT GROUND BUS AND BOLT-ON CIRCUIT BREAKERS.

2. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE AND MANUFACTURED MANUFACTURED BY SQUARE "D" COMPANY OR APPROVED EQUAL: EATON OR SIEMENS. FUSES SHALL BE DUAL ELEMENT, CARTRIDGE TYPE. FUSES SHALL BE BY ONE MANUFACTURER: BUSSMAN "FUSETRON" OR CHASE-SHAWMUT "TRIONIC.

3. INSTALL ENGRAVED PLASTIC-LAMINATE LABELS ON EACH MAJOR UNIT OF ELECTRICAL EQUIPMENT IDENTIFYING PANELBOARD NAME OR EQUIPMENT SERVING. EXAMPLES ARE, PANELBOARDS, DISCONNECT SWITCHES, AND MOTOR STARTERS, I.E. LABELS SHALL BE 1/16" THICK BLACK PLASTIC LAMINATE WITH 3/8" WHITE CORE PLIE LETTERS.

4. PANELBOARD DIRECTORY CARDS SHALL BE TYPEWRITTEN WITH ACCURATE AND CURRENT INFORMATION BY THE CONTRACTOR AT THE END OF CONSTRUCTION.

5. MAGNETIC FULL VOLTAGE STARTERS SHALL BE SQUARE D CLASS 8536, MAGNETICALLY OPERATED WITH THREE THERMAL OVERLOAD UNITS AND FOUR AUXILARY CONTACTS. CONTROL VOLTAGE SHALL BE 24 VOLTS SUPPLIED FROM AN INTERNAL CONTROL POWER TRANSFORMER WHERE NO OTHER SUPPLY OF CONTROL POWER IS INDICATED. HOA SWITCH SHOULD BE MOUNTED IN FRONT COVER. COMBINATION UNITS SHALL BE SQUARE D CLASS 8538 WITH THREE POLE HORSEPOWER RATED, NON-FUSIBLE DISCONNECT SWITCH INCLUDED IN THE ENCLOSURE OR APPROVED EQUAL: EATON OR SIEMENS.

6. ALL MULTI-WIRE BRANCH CIRCUIT BREAKERS ARE TO BE TIED TOGETHER BY AN IDENTIFIED HANDLE-TIE OR BY A COMMON TRIP CIRCUIT BREAKER PER NEC SECTION 210.4(B).

7. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES PER NEC ARTICLE 210.4(B).

8. PROVIDE ARC FLASH WARNING LABELS ON ALL SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS THAT REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED PER NEC ARTICLE 110.16(A). SERVICES SIZED 1200 AMPS AND LARGER SHALL REQUIRE A PERMANENT LABEL AND SHALL CONTAIN THE INFORMATION REQUIRED BY NEC ARTICLE 110.16(B).

9. PROVIDE A PERMANENT LABEL TO BE AFFIXED TO THE FRONT OF SERVICE EQUIPMENT ENCLOSURE STATING THE MAXIMUM AVAILABLE FAULT CURRENT IN AMPS, DATE CALCULATED, NOMINAL VOLTAGE AND FREQUENCY IN HERTZ, SERVICE EQUIPMENT BUS RATING IN AMPS, AND SCCR OF SERVICE EQUIPMENT IN AMPS PER NEC ARTICLE 110.24. SIGNAGE SHALL BE ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL, PUNCHED OR DRILLED FOR MECHANICAL FASTENERS WITH WHITE LETTERS ON A BLACK BACKGROUND MINIMUM 1/16 INCH THICK. MINIMUM LETTER HEIGHT SHALL BE ½ INCH.

LIGHTING FIXTURES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN ALL RESPECTS ALL LIGHTING FIXTURES LISTED IN THE FIXTURE SCHEDULE.

2. THE CONTRACTOR SHALL SUBMIT CATALOG CUTS OF ALL THE FIXTURES TO THE ARCHITECT. THESE CUTS SHALL BE SUBMITTED IMMEDIATELY AFTER THE CONTRACTOR HAS RECEIVED AN APPROVED MATERIAL LIST FROM THE ARCHITECT.

3. LED FIXTURES SHALL HAVE 3500K COLOR TEMP.

4. LED DRIVERS SHALL COMPLY WITH UL STANDARD UL1012 AND SHALL HAVE CLASS A SOUND RATING.

5. ALL FIXTURES SHALL BE PROPERLY AND CAREFULLY SUPPORTED AND ALIGNED, AND THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY STEEL SHAPES, ETC., FOR SUPPORT OF FIXTURES AS REQUIRED AND DETAILED ON THE DRAWINGS. PROVIDE JUNCTION BOX STEM MOUNTED FROM DECK TO SUPPORT ALL CEILING MOUNTED EXIT LIGHTS.

6. COORDINATE ALL LOCATIONS OF LIGHTING FIXTURES WITH ARCHITECTURAL DRAWINGS.

LIGHTING CONTROL:

1. FUNCTIONAL TESTING SHALL BE EXECUTED BY MANUFACTURER ON ALL CONTROL HARDWARE AND SOFTWARE, PER FBC ENERGY CODE C408.3.1. PRIOR TO PASSING THE FINAL INSPECTION, A FUNCTIONAL TEST OF THE LIGHTING CONTROL SYSTEM IS REQUIRED TO SHOW THAT THE LIGHTING CONTROL SYSTEMS HAVE BEEN TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS PER FBC ENERGY CONSERVATION CHAPTER 4 SECTION C408.3.1. ALL REPORTS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.

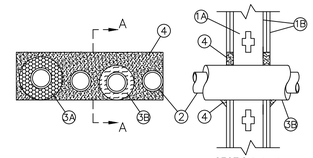
2. DOCUMENTS CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA OF SECTION C405 ARE TO BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS FROM THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY PER FBC ENERGY CODE C408.3.2.

3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING LOCATIONS OF ALL UNITS AND CUT SHEETS FOR ALL DEVICES.

RATED THRU WALL PIPE PENETRATION

NTS

System No.W-L-8010
May 19, 2005
F Ratings - 1 & 2 Hr (See Item 1)
T Ratings - 1/4, 3/4, 1, 1-1/2 and 1-3/4 Hr (See Items 2 & 3)



1. Wall Assembly – The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 in. by 4 in. (51 mm to max 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* – Nom 5/8 in. (16 mm) thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max area of opening is 65-1/4 sq in. (421 cm2) with max dimension of 14-1/2 in. (368 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly.

2. Through Penetrants – A max of four pipes, conduits or tubing to be installed within the opening. The space between pipes, conduits or tubing shall be min 1/2 in to max 1-5/16 in. (13 mm to max 33 mm). The space between pipes, conduits or tubing and periphery of opening shall be min 1-3/16 in. (30 mm) for uninsulated copper tubes and copper pipes (Items 2C and 2D) and 0 in. (point contact) for insulated copper tubes and copper pipes and uninsulated steel pipes and conduit (Item 2B). The space between pipes, conduits or tubing and periphery of opening shall be max 1-5/16 in. (33 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe – Nom 2 in. (51 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
B. Conduit – Nom 2 in. (51 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.
C. Copper Tubing – Nom 2 in. (51 mm) diam (or smaller) Type L (or heavier) copper tubing.
D. Copper Pipe – Nom 2 in. (51 mm) diam (or smaller) Regular (or heavier) copper pipe.

When uninsulated steel pipe or conduit is used,T Rating is 3/4 hr and 1-1/2 hr for 1 and 2 hr rated assemblies, respectively.
When uninsulated copper tubing or pipe is used,T Rating is 1/4 hr for both 1 and 2 hr rated assemblies.

3A. Pipe Covering# (Optional) – Nom 1 in. (25 mm) hollow cylindrical heavy density glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product.

See Pipe and Equipment Covering - Materials* (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

When pipe covering is used on all through penetrants,T Rating is 1 hr and 1-3/4 hr for 1 and 2 hr rated assemblies, respectively.

3B. Tube Insulation - Plastics# (Optional) – Nom 3/4 in. (19 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing.

See Plastics (QMFZ2) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.

When tube insulation is used on all through penetrants, T Rating is 3/4 hr and 1-1/2 hr for 1 and 2 hr rated assemblies, respectively.

4. Fill,Void or Cavity Material* - Caulk or Sealant – Min 5/8 in. or 1-1/4 in. (16 mm or 32 mm) thickness of fill material, for 1 or 2 hr walls, respectively, applied within the annulus, flush with both surfaces of wall. At point contact locations, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the wall/pipe and wall/pipe insulation interface on both surfaces of wall.

3M COMPANY– CP 25WB+, IC 15WB+ caulk or FB-3000 WT sealant

5. Fill,Void or Cavity Materials* - Wrap Strip (Not Shown) – Min one layer of 2 in. (51 mm) wide, nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, required only when tube insulation (Item 3B) is used in 2 hr rated assemblies. Wrap strip tightly wrapped around tube insulation (foil side exposed) within the opening on both sides of the wall, flush with both surfaces of the wall assembly.

3M COMPANY – FS-195+

#Bearing the UL Recognized Component Mark
*Bearing the UL Classification Marking

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
	LED STRIP FIXTURE	SEE FIXTURE SCHEDULE
	2X4 LED FIXTURE	SEE FIXTURE SCHEDULE
	6" LED DOWNLIGHT	SEE FIXTURE SCHEDULE
	BATTERY POWERED EMERGENCY LIGHTING UNIT	SEE FIXTURE SCHEDULE
	EXIT LIGHT / 2 HEAD EMERGENCY LIGHT WITH BATTERY PACK, WALL MTD./CEILING MTD.	SEE FIXTURE SCHEDULE
	QUAD RECEPTACLE (20A., 125V.)	M.H. 18" TO CENTERLINE
	DUPLEX RECEPTACLE (20A., 125V.)	M.H. 18" TO CENTERLINE
	DUPLEX RECEPTACLE (20A., 125V.)	M.H. 48" TO CENTERLINE UNLESS OTHERWISE NOTED
	DUPLEX RECEPTACLE (20A., 125V.) RECESSED IN WALL FOR TV	VERIFY M.H. WITH OWNER
TV	DENOTES HDMI 4" SQ. RECESSED OUTLET BOX WITH (2) 1 1/4" CONDUITS STUBBED UP ABOVE CEILING AND TERMINATED WITH INSULATING BUSHING.	VERIFY M.H. WITH OWNER
▽	OWNER SUPPLIED/INSTALLED TELEPHONE/DATA 4" SQ. RECESSED OUTLET BOX WITH (1) 3/4" CONDUIT STUBBED UP ABOVE CEILING AND TERMINATED WITH INSULATING BUSHING.	M.H. 18" TO CENTERLINE UNLESS OTHERWISE NOTED
GFI	DENOTES GROUND FAULT INTERRUPTER TYPE RECEPTACLE	
WR	DENOTES WEATHER-RESISTANT RECEPTACLE	
WP	DENOTES RECEPTACLE WITH DIECAST ALUMINUM 'IN-USE' COVER.	
N.L.	DENOTES NIGHT LIGHT.	
EX	DENOTES DEVICE EXISTING TO REMAIN.	
J / J	JUNCTION BOX OR OUTLET BOX, 4" SQUARE BOX UNLESS OTHERWISE NOTED	ABOVE CEILING / WALL
	120/208V. 3ø, 4W. POWER PANELBOARD	M.H. 6'-6" MAX. TO TOP
	LOW VOLTAGE CABLE	SUPPORT EVERY 4FT ABOVE CEILING
	RACEWAY CONCEALED IN WALL OR CEILINGS	SEE GENERAL NOTES
	RACEWAY CONCEALED UNDER FLOOR OR BENEATH GRADE	SEE GENERAL NOTES
	RACEWAY SURFACE MOUNTED ON WALL OR CEILING	SEE GENERAL NOTES
L1-1,3	HOMERUN TO PANEL, LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT. NOTE: ANY CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A TWO WIRE & EQUIP. GROUND CIRCUIT. A GREATER NUMBER OF WIRES IS INDICATED AS SHOWN: (3 WIRES & EQUIPMENT GROUND), (4 WIRES & EQUIPMENT GROUND), ETC.	AS NOTED

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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

ELECTRICAL GENERAL NOTES & SYMBOL LEGEND

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

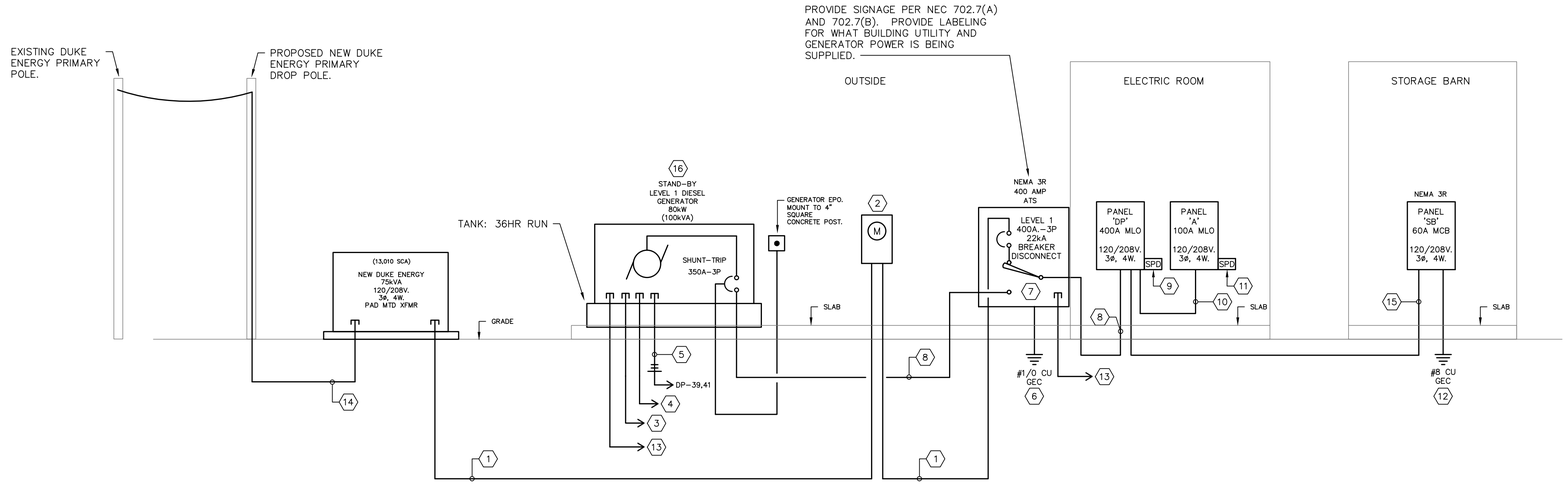
REVIEW

CHECKED BY DJN

E101

19058

NEWPOWER CONSULTING, INC
15520 HIGH BELL PL. BRADENTON FL 34212
PH: 813.489.9850, COA#32011
ENGINEERING

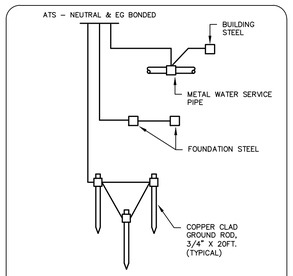


POWER RISER DIAGRAM

NTS

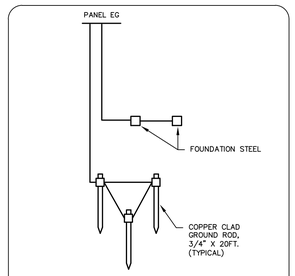
RISER DIAGRAM NOTES:

1. (2) PARALLEL RUNS OF 4 NO. 3/0 – 2"C.
2. 400 AMP FEED THRU METER PER DUKE ENERGY SPECIFICATIONS. INSTALL GROUNDING PER DUKE ENERGY SPECIFICATIONS.
3. 1" CONDUIT WITH WATER–PROOF CAT 6 TO REMOTE MONITORING PANEL IN MECH/ELEC 113.
4. WATER–PROOF CAT 6 & CONTROL CONDUCTORS ROUTED IN 1" CONDUIT TO ATS.
5. 2 NO. 10 AND 1 NO. 10 E.G. – 3/4" CONDUIT FOR BATTERY CHARGER AND BLOCK HEATER CIRCUITS.
6. SEE BUILDING GROUNDING DETAIL THIS SHEET.
7. NEMA–3R, 400 AMP SERVICE RATED AUTOMATIC TRANSFER SWITCH. SEE SPECIFICATIONS ON SHEET E502.
8. (2) PARALLEL RUNS OF 4 NO. 3/0 AND 1 NO. 3 E.G. 2 1/2"C.
9. SURGE PROTECTION DEVICE, 80kA TYPE.
10. 4 NO. 3 AND 1 NO. 8 E.G. – 1 1/4"C.
11. SURGE PROTECTION DEVICE, 40kA TYPE.
12. SEE POLE BARN GROUNDING DETAIL THIS SHEET.
13. WATER–PROOF CAT 6 ROUTED IN 1" CONDUIT TO DATA BACKBOARD IN MECH/ELEC 113.
14. PRIMARY CONDUIT INSTALLATION BY CONTRACTOR. COORDINATE EXACT QUANTITY, TYPE, AND DEPTH WITH DUKE ENERGY.
15. 4 NO. 4 AND AND 1 NO. 8 E.G. 1 1/4"C.
16. SEE SPECIFICATIONS ON SHEET E501.



BUILDING GROUNDING DETAIL

N.T.S.



POLE BARN GROUNDING DETAIL

N.T.S.

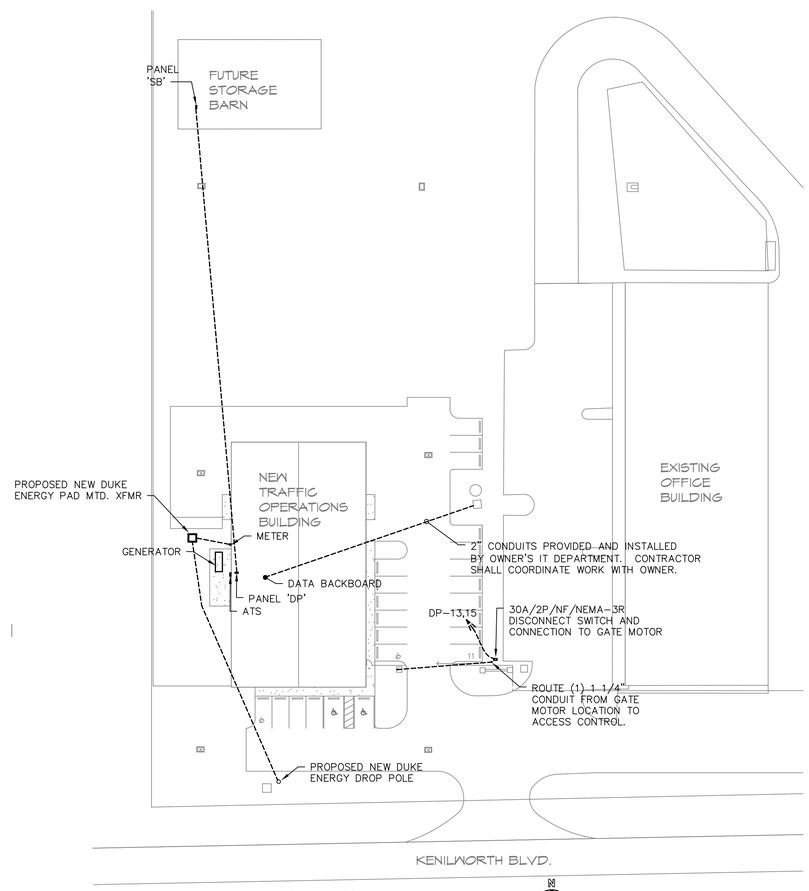
FAULT STUDY

XFMR AFC	13010			
VOLTAGE	208			
	ATS	DP	A	SB
I_{SCA}	13010	10893	10387	10387
length	50	15	5	275
wire size	3/0	3/0	3	4
C VALUE	13923	13923	4811	3826
sets	2	2	1	1
f	0.1943	0.0488	0.0898	6.2093
M	0.8373	0.9535	0.9176	0.1387
FAULT	**10893**	**10387**	**9531**	**1441**

PANEL "SB" VOLTAGE 120 / 208 V SIZE 60A. MCB CABINET SURFACE NEMA-3R
PHASE 3 PH 60A. BUS RATING 10,000 AIC RATED
4 W

NOTES	REMARKS	CKT.BKR. AMPS	P	VA PHASE LOAD A	B	C	CKT #	BUS A	B	C	CKT #	VA PHASE LOAD A	B	C	CKT.BKR. AMPS	P	REMARKS	NOTES
	(FUTURE) RECS.	20	1	900			1	X			2	1200			20	1	(FUTURE) LIGHTING	
	(FUTURE) RECS.	20	1		900		3		X		4					1	SPACE	
	(FUTURE) RECS.	20	1			900	5			X	6					1	SPACE	
	SPARE	20	1				7	X			8					1	SPACE	
	SPARE	20	1				9		X		10					1	SPACE	
	SPARE	20	1				11			X	12					1	SPACE	
	SPARE	20	1				13	X			14					1	SPACE	
	SPACE		1				15		X		16					1	SPACE	
	SPACE		1				17			X	18					1	SPACE	
	SPACE		1				19	X			20					1	SPACE	
	SPACE		1				21		X		22					1	SPACE	
	SPACE		1				23			X	24					1	SPACE	
	TOTAL			900	900	900						1200			TOTAL			

TABULATION	TOTAL LOAD	DEMAND FACTOR	DEMAND LOAD
MEASURED			
LIGHTING	1200	1.25	1500
COOLING			
HEATING			
RECEPTACLE	2700	1.00	2700
MISCELLANEOUS			
KITCHEN EQUIP			
LARGEST MOTOR			
TOTAL DEMAND LOAD		4200 VA	
TOTAL DEMAND AMPS		11.7 A	



ELECTRICAL SITE PLAN

SCALE: 1" = 40'

GENERAL SITE NOTES:

1. ROUTE ALL CONDUITS 36" BELOW GRADE UNLESS OTHERWISE NOTED.

SERVICE
ENTRANCE
TRANSFER
SWITCH

MAXIMUM
AVAILABLE FAULT
##,### AMPS
(DATE)

120/208V.
3ø, 4W.

SERVICE PLACARD DETAIL

NTS

NOTES:

1. ENGRAVED PLASTIC LAMINATE SIGNS: PROVIDE WEATHER–RESISTANT 1/8" THICKNESS ENGRAVING STOCK MELAMINE PLASTIC LAMINATE, SIZE AS REQUIRED WITH 1/8" THICKNESS, ENGRAVED WITH 3/16" LETTER STYLE AND WORDING INDICATED, BLACK FACE AND WHITE CORE PLIES (LETTER COLOR) INDICATED, PUNCHED FOR MECHANICAL FASTENING. SECURE WITH SELF TAPPING STAINLESS STEEL SCREWS.

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cmhm architects

BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

ELECTRICAL SITE PLAN AND POWER RISER DIAGRAM

REVISIONS

CONSTRUCTION 03/29/2023
APPROVAL
REVIEW
CHECKED BY DJN

E201

19058

NEWPOWER CONSULTING, INC ENGINEERING
15520 HIGH BELL PL. BRADENTON FL 34212
PH: 813.489.9850. COA#32011

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	MOUNTING	VOLT	LAMP	REMARKS
A	METALUX	24FP4735C	LAY IN GRID	UNV	41W LED	DIMMABLE 2X4 FLAT PANEL LED FIXTURE
B	METALUX	PR6FS24D010	RECESSED	UNV	21W LED	6" DIA DIMMABLE DOWNLIGHT
C	METALUX	14FP4235C DF-14W-U	RECESSED	UNV	38W LED	1X4 FLAT PANEL LED FIXTURE WITH DRYWALL FRAME KIT
D	EATON	4ST2L4040R	SUSPENDED	UNV	40W LED	4' SUSPENDED LINEAR LED FIXTURE
EM	SURELITES	SEL25	WALL MOUNT 7'-6" AFF TO CENTERLINE	UNV	LED	EMERGENCY LIGHTING WALL PACK
F	METALUX	OHB-15SE-W-UNV-L740-CD-U	SUSPENDED 18' AFF	UNV	98W LED	SUSPENDED HIGHBAY LED FIXTURE
G	METALUX	VT4LED-LD5-12-PC-120-L840	SUSPENDED 18' AFF	UNV	93W LED	EXTERIOR RATED SUSPENDED HIGHBAY LED FIXTURE
HE	NEWSTAR	GWSC MD EL (COLOR PER ARCHITECT)	SURFACE WALL AT 7'-6" AFG	UNV	17W LED	EXTERIOR RATED WALL PACK WITH EMERGENCY DRIVER
J	COOPER	GWC-AF-1-LED-E1-T4FT-(FINISH PER ARCHITECTU)	SURFACE WALL ABOVE ROLL UP DOOR	UNV	67W LED	EXTERIOR RATED 7000 LUMEN LED WALL PACK
XEM	SURELITES	APC-7-R	CEILING/WALL MOUNTED AS SHOWN	UNV	LED	POLYCARBONATE SELF POWERED EXIT LIGHT/EMERGENCY LIGHT COMBO

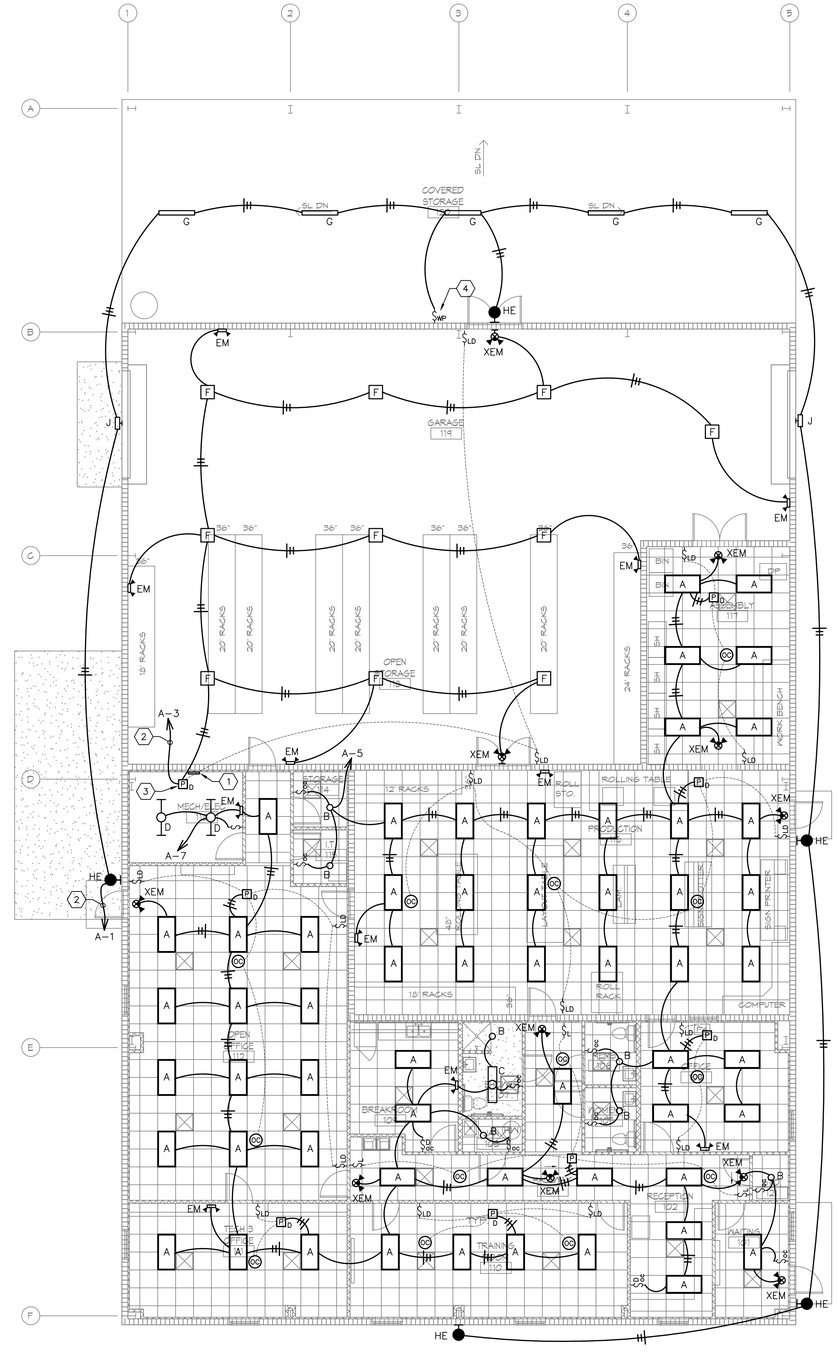
TOTAL SQUARE FOOTAGE OF CEILING SPACE:	8,437 sf
TOTAL LIGHT FIXTURE WATTAGE:	3,419 W
WATTS/SF:	0.41 W/sf
FBC ALLOWANCE FOR BUILDING AREA – OFFICE:	0.79 W/sf

LIGHTING CONTROL SYMBOL LEGEND

S	SINGLE POLE SWITCH (20 AMP)	FLUSH IN WALL M.H. 40" TO BOTTOM
S3	3-WAY SWITCH (20 AMP)	FLUSH IN WALL M.H. 40" TO BOTTOM
S OC	WALL MOUNTED LINE VOLTAGE DUAL-TECH OCCUPANCY SENSOR	FLUSH IN WALL M.H. 40" TO BOTTOM
S D OC	WALL MOUNTED LINE VOLTAGE DIMMER AND DUAL-TECH OCCUPANCY SENSOR	FLUSH IN WALL M.H. 40" TO BOTTOM
S L	LOW VOLTAGE SWITCH.	FLUSH IN WALL M.H. 40" TO BOTTOM
S # LD	LOW VOLTAGE, LED DIMMER CONTROL. # DENOTES AMOUNT OF CONTROL ZONES.	FLUSH IN WALL M.H. 40" TO BOTTOM
OC	LOW VOLTAGE CEILING MOUNTED DIRECTIONAL OCCUPANCY SENSOR	CEILING SURFACE
OC LV	LINE VOLTAGE CEILING MOUNTED DIRECTIONAL OCCUPANCY SENSOR	CEILING SURFACE
P	DIGITAL OCCUPANCY SENSOR POWER PACK RELAY	SEE DETAIL THIS SHEET
P #D	DIGITAL OCCUPANCY SENSOR DIMMER POWER PACK RELAY # DENOTES AMOUNT OF CONTROL ZONES.	SEE DETAIL THIS SHEET

LIGHTING CONTROL NOTES:

1. WALL MOUNTED OCCUPANCY SENSOR/CONTROL BUTTON UNITS SHALL BE PROGRAMMED FOR MANUAL "ON" BY BUTTON ONLY, AUTOMATIC OFF BY OCCUPANCY SENSOR WITHIN 30 MINUTES OF OCCUPANT LEAVING SPACE. BUTTON SHALL ALSO OVERRIDE LIGHTS "OFF".
2. SUPPLY/INSTALL NETWORK TIMECLOCK TO CONNECT TO ALL DIMMER RELAYS SHOWN. TIMECLOCK FUNCTIONS SHALL COMPLY WITH FBC ENERGY CONSERVATION SECTION C405.2.2.1. PROVIDE/INSTALL ALL NECESSARY NETWORK WIRING, POWER, LOW VOLTAGE CABLING, ETC. TO SUPPORT SYSTEM.



LIGHTING PLAN

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

GENERAL NOTES:

A. CONNECT EMERGENCY LIGHTING BATTERY PACKS, NIGHT LIGHTS AND EXIT LIGHTS TO UNSWITCHED LEG OF LIGHTING CIRCUIT.

B. ALL WALL MOUNTED OCCUPANCY SENSORS REQUIRE NEUTRAL WIRE CONNECTION.

C. SWITCHES AND DIMMERS SHOWN SHALL OVERRIDE "OFF" OCCUPANCY SENSOR CONTROL.

D. FUNCTIONAL TESTING SHALL BE EXECUTED BY THIRD PARTY ON ALL CONTROL HARDWARE AND SOFTWARE, PER FBC ENERGY CODE C408.3.1.

DRAWING NOTES:

1. 8 RELAY LIGHTING CONTROL PANEL.
2. ROUTE CIRCUIT VIA LIGHTING CONTROL PANEL.
3. ROUTE LOW VOLTAGE CAT 6 CABLE TO LIGHTING CONTROL PANEL TO OVERRIDE ON RELAY FOR 2 HOURS. RELAY SHALL HAVE TIMECLOCK/CONTROL PANEL OUTPUT CONTROL.
4. SWITCH SHALL OVERRIDE OFF (5) TYPE 'G' LIGHT FIXTURES.

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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

LIGHTING PLAN

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

REVIEW

CHECKED BY DJN

E301

19058

NEWPOWER CONSULTING, INC
15520 HIGH BELL PL, BRADENTON FL 34212
PH: 813.489.9850, COA#32011
ENGINEERING

PANEL DP VOLTAGE 120 / 208 V SIZE 400A. MLO CABINET SURFACE NEMA-1
PHASE 3 PH 400A. BUS RATING 22,000 AIC RATED
4 W

NOTES	REMARKS	CKT.BKR. AMPS	P	VA PHASE LOAD A	B	C	CKT #	BUS A	B	C	CKT #	VA PHASE LOAD A	B	C	CKT.BKR. AMPS	P	REMARKS	NOTES
				9789			1	X			2	1900			30	2	AIR	
	PANEL 'A'	100	3		10260		3		X		4		1900				COMPRESSOR	
						9680	5			X	6			3350				
	PANEL 'SB'	60	3	2100			7	X			8	3350			35	3	AHU-1	
					900		9		X		10		3350					
						900	11			X	12			3072				
	GATE MOTOR	20	2	920			13	X			14	3072			35	3	AHU-2	
					920		15		X		16		3072					
	SPACE		1				17			X	18			3744				
	SPACE		1				19	X			20	3744			60	3	CU-1	
	SPACE		1				21		X		22		3744					
	SPACE		1				23			X	24			1930				
	SPACE		1				25	X			26	1930			35	3	CU-2	
	SPACE		1				27		X		28		1930					
	SPACE		1				29			X	30			2500	30	1	EWH	
	SPACE		1				31	X			32	2619						
	SPACE		1				33		X		34		2619		30	3	GEF + GSF	
	SPACE		1				35			X	36			2619				
	SPACE		1				37	X			38							
	GEN BLK HEATER	20	2		1300		39		X		40				30	3	SPD	
	& BATT CHARGER					1300	41			X	42							
	TOTAL			12809	13380	11880						16615	16615	17215	TOTAL			

GFI = GROUND FAULT INTERRUPTER TYPE

TABULATION	TOTAL LOAD	DEMAND FACTOR	DEMAND LOAD
MEASURED			
LIGHTING	5269	1.25	6586
COOLING	17022		
HEATING	19266	1.00	19266
RECEPTACLE	26240	0.69	18120
MISCELLANEOUS	20717	1.00	20717
KITCHEN EQUIP			
LARGEST MOTOR			
TOTAL DEMAND LOAD	64689 VA		
TOTAL DEMAND AMPS	179.6 A		

PANEL A VOLTAGE 120 / 208 V SIZE 100A. MLO CABINET SURFACE NEMA-1
PHASE 3 PH 100A. BUS RATING 22,000 AIC RATED
4 W

NOTES	REMARKS	CKT.BKR. AMPS	P	VA PHASE LOAD A	B	C	CKT #	BUS A	B	C	CKT #	VA PHASE LOAD A	B	C	CKT.BKR. AMPS	P	REMARKS	NOTES
	EXTERIOR LTG.	20	1	650			1	X			2	540			20	1	OFFICE RECEPTS.	
	GARAGE LTG.	20	1		980		3		X		4		720		20	1	OFFICE RECEPTS.	
	ROOM LTG.	20	1			1340	5			X	6			540	20	1	OFFICE RECEPTS.	
	ROOM LTG.	20	1	1419			7	X			8	540			20	1	OFFICE RECEPTS.	
	GENERAL RECS.	20	1		720		9		X		10		540		20	1	OFFICE RECEPTS.	
	RECEPTION RECS.	20	1			900	11			X	12			800	20	1	IT RECEPTACLE	
	RECEPTION RECS.	20	1	900			13	X			14	800			20	1	IT RECEPTACLE	
	OFFICE RECEPTS.	20	1		540		15		X		16		720		20	1	GENERAL RECS.	
	OFFICE RECEPTS.	20	1			900	17			X	18			720	20	1	GARAGE RECS.	
	PRODUCTION RECS.	20	1	900			19	X			20	720			20	1	GARAGE RECS.	
	PRODUCTION RECS.	20	1		900		21		X		22		720		20	1	EXTERIOR RECS.	
	PRODUCTION RECS.	20	1			900	23			X	24			720	20	1	EXTERIOR RECS.	
	PRODUCTION RECS.	20	1	360			25	X			26	900			20	1	BREAK RECEPTS.	
	PRINTER	20	1		1000		27		X		28		1000		20	1	REFRIGERATOR	GFI
	ASSEMBLY RECS.	20	1			720	29			X	30			800	20	1	BREAK RECEPT.	
	ASSEMBLY RECS.	20	1	720			31	X			32	800			20	1	BREAK RECEPT.	
GFI	EWC RECEPTS.	20	1		800		33		X		34		900		20	1	GENERAL RECS.	
	TRAINING RECEPTS.	20	1			800	35			X	36				20	1	SPARE	
	TRAINING RECEPTS.	20	1	540			37	X			38				20	1	SPARE	
	TRAINING RECEPTS.	20	1		720		39		X		40				20	1	SPARE	
	OFFICE RECEPTS.	20	1			540	41			X	42				20	1	SPARE	
	SPARE	20	1				43	X			44				20	1	SPARE	
	SPARE	20	1				45		X		46				20	1	SPARE	
	SPARE	20	1				47			X	48				20	1	SPARE	
	SPARE	20	1				49	X			50							
	SPARE	20	1				51		X		52				30	3	SPD	
	SPARE	20	1				53			X	54							
	TOTAL			5489	5660	6100						4300	4600	3580	TOTAL			

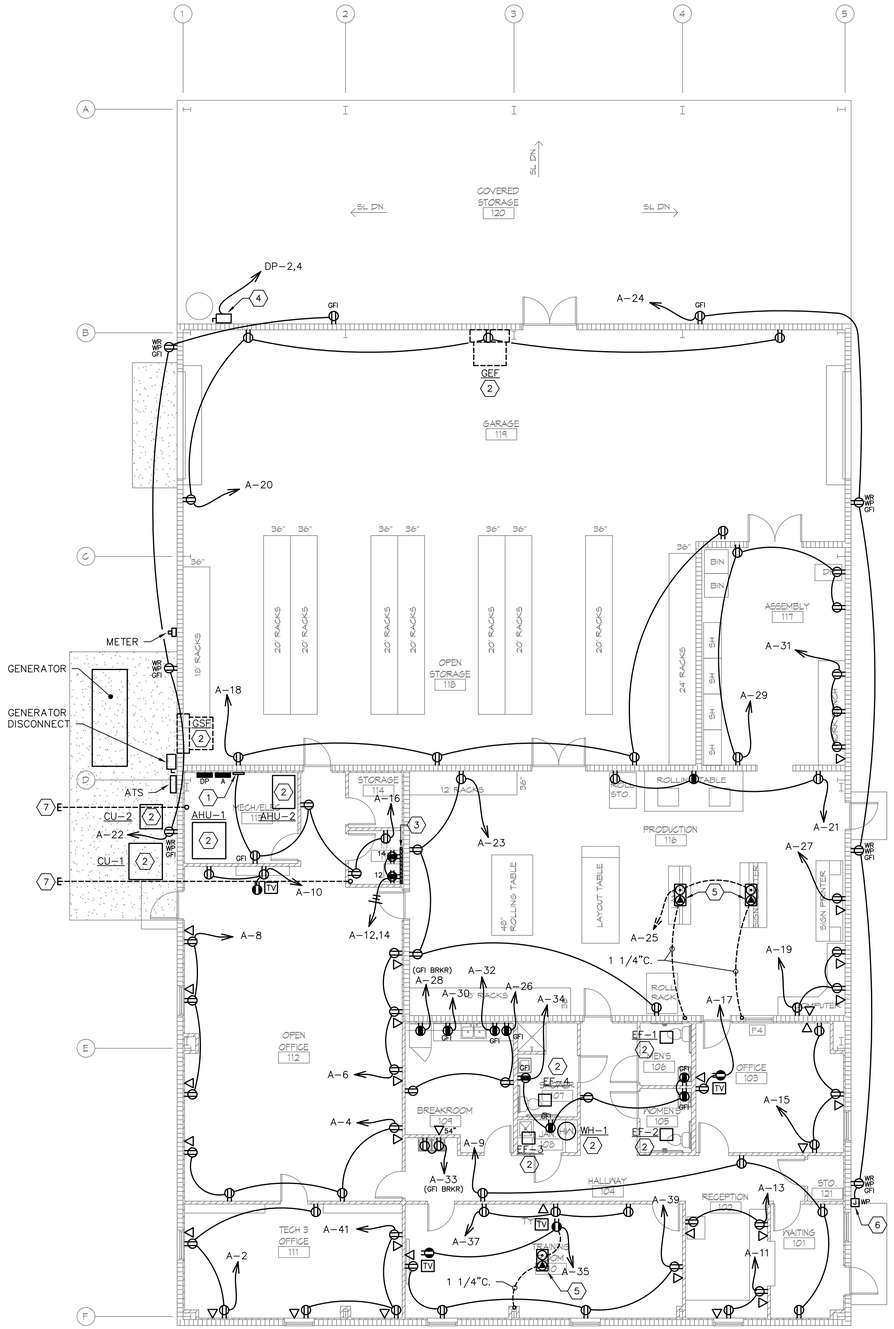
GFI = GROUND FAULT INTERRUPTER TYPE

TABULATION	TOTAL LOAD	DEMAND FACTOR	DEMAND LOAD
MEASURED			
LIGHTING	4069	1.25	5086
COOLING			
HEATING			
RECEPTACLE	23540	0.71	16770
MISCELLANEOUS	2120	1.00	2120
KITCHEN EQUIP			
LARGEST MOTOR			
TOTAL DEMAND LOAD	23976 VA		
TOTAL DEMAND AMPS	66.6 A		

MECHANICAL EQUIPMENT

	DESCRIPTION	ELECTRICAL CHARACTERISTICS VOLTS	PHASE	KW	HP	MCA	CIRCUIT DESIGNATION	BREAKER AMPS	POLES	FEEDER	EQUIP. GROUND	CONDUIT	DISCONNECT SWITCH	REMARKS
	AHU-1	208	3			34.9	DP-6,8,10	35	3	(3) #8	#10	3/4"	60A/3P/NF/NEMA-1	
	AHU-2	208	3			32.0	DP-12,14,16	35	3	(3) #8	#10	3/4"	60A/3P/NF/NEMA-1	
	CU-1	208	3			39.0	DP-18,20,22	60	3	(3) #6	#10	1"	60A/3P/F/NEMA-3R	NOTE #1
	CU-2	208	3			20.1	DP-24,26,28	35	3	(3) #8	#10	3/4"	60A/3P/F/NEMA-3R	NOTE #1
	EWH	120	1	2.5		20.8	DP-30	30	1	(2) #10	#10	1/2"	30A/2P/NF/NEMA-1	
	GEF	208	3		2		DP-32,34,36	30	3	(3) #10	#10	3/4"	30A/3P/F/NEMA-1	NOTE #3
	GSF	208	3		2		DP-32,34,36	30	3	(3) #10	#10	3/4"	30A/3P/F/NEMA-1	NOTE #3
	EF-1	120	1				NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	
	EF-2	120	1				NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	
	EF-3	120	1				NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	
	EF-4	120	1				NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	

NOTES:
1. FUSE DISCONNECT PER UNIT NAMEPLATE MFS OR MOCP.
2. CONNECT TO SWITCHED LEG OF ROOM LIGHTING CIRCUIT.
3. DISCONNECT SWITCH TO HAVE DUAL PRIMARY SIDE LUGS. FUSE PER FAN NAMEPLATE MFS.



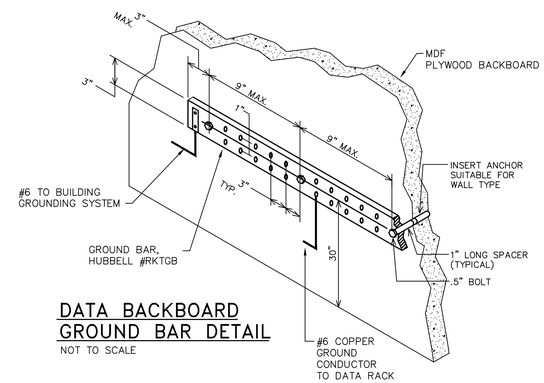
POWER & SYSTEMS PLAN
SCALE: 1/8" = 1'-0"

SPECIAL NOTE:

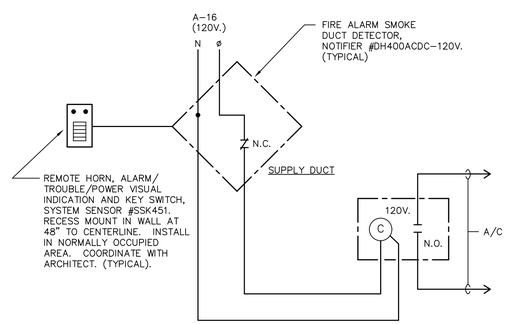
CONTRACTOR SHALL COORDINATE WITH THE OWNER'S IT DEPARTMENT BEFORE POURING THE SLAB AND BEFORE INSTALLING ANY DRYWALL TO ALLOW AND CONFIRM ANY NECESSARY CONDUITS REQUIRED. THE OWNER'S IT DEPARTMENT SHALL SUPPLY/INSTALL ANY ADDITIONAL CONDUITS REQUIRED BEYOND WHAT IS SHOWN ON DRAWINGS.

DRAWING NOTES:

1. 8 RELAY LIGHTING CONTROL PANEL.
2. SEE MECHANICAL SCHEDULE THIS SHEET FOR POWER REQUIREMENTS.
3. TELEPHONE/DATA BACKBOARD. SEE DETAIL THIS SHEET.
4. NEMA 3R, 30A.-2P. DISCONNECT SWITCH AND CONNECTION TO COMPRESSOR. CIRCUIT: 2 NO. 10 AND 1 NO. 10 E.G. - 3/4"C.
5. LEGRAND EVOLUTION RECESSED FLOOR BOX. ROUTE (1) 1 1/4" CONDUIT FOR DATA AND (1) 3/4" CONDUIT FOR POWER ABOVE NEARBY ACCESSIBLE CEILING. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.
6. RECESSED OUTLET BOX AND CONNECTION TO POWERED GATE. ROUTE CONDUIT DOWN INSIDE WALL, UNDERGROUND, AND CONNECT TO GATE.
7. STUB-OUT 2" CONDUIT FOR FUTURE. CAP BOTH ENDS.



DATA BACKBOARD GROUND BAR DETAIL
NOT TO SCALE



SMOKE DUCT DETECTOR ALARM/ AHU-1 SHUT-DOWN WIRING DIAGRAM
NO SCALE

NOTE: REQUIRED FOR AIR HANDLING UNITS WHERE SUPPLY AIR IS GREATER THAN 2,000 CFM.

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POWER & SYSTEMS PLAN

REVISIONS

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NEWPOWER CONSULTING, INC
15520 HIGH BELL PL. BRADENTON FL 34212
PH: 813.489.9850. COA#32011
ENGINEERING

E401
19058

SD080 | 4.5L | 80 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDBY POWER RATING

80 kW, 100 kVA, 60 Hz

PRIME POWER RATING*

72 kW, 90 kVA, 60 Hz

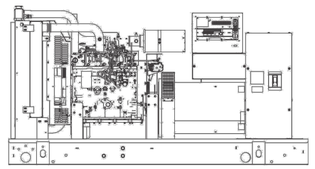

Image used for illustration purposes only

*Built in the USA using domestic and foreign parts

*EPA Certified Prime ratings are not available in the U.S. or its Territories.

**Certain options or customization may not hold certification valid.

CODES AND STANDARDS

Generac products are designed to the following standards:

- UL2200, UL508, UL142, UL498
- NFPA70, 99, 110, 37
- NEC700, 701, 702, 708
- ISO9001, 8528, 3046, 7637, Pluses #2b, 4
- NEMA ICS10, MG1, 250, ICS6, AB1
- ANSI C62.41

POWERING AHEAD

For over 50 years, Generac has led the industry with innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SD080 | 4.5L | 80 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

General

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel flexible exhaust connection
- Critical Exhaust Silencer (enclosed only)
- Factory Filled Oil
- Radiator Duct Adapter (open set only)

Fuel System

- Fuel lockoff solenoid
- Primary fuel filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone resistant hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene glycol antifreeze
- 120 VAC Coolant Heater

Engine Electrical System

- Battery charging alternator
- Battery cables
- Battery tray
- Solenoid activated starter motor
- Rubber-booted engine electrical connections

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- 12 leads (3-phase, non 600 V)
- Class H insulation material
- Vented rotor
- 2/3 pitch
- Skewed stator
- Auxiliary voltage regulator power winding
- Amortisseur winding
- Brushless Excitation
- Sealed Bearings
- Automated manufacturing (winding, insertion, lacing, varnishing)
- Rotor dynamically spin balanced
- Full load capacity alternator
- Protective thermal switch

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of circuits - high/low voltage
- Separation of circuits - multiple breakers
- Silencer Heat Shield
- Wrapped Exhaust Piping
- Silencer housed in discharge hood (enclosed only)
- Standard Factory Testing
- 2 Year Limited Warranty (Standby rated Units)
- 1 Year Limited Warranty (Prime rated Units)
- Silencer mounted in the discharge hood (enclosed only)

ENCLOSURE (IF SELECTED)

- Rust-proof fasteners with nylon washers to protect finish
- High performance sound-absorbing material
- Gasketed doors
- Stamped air-intake louvers
- Air discharge hoods for radiator-upward pointing
- Stainless steel lift off door hinges
- Stainless steel lockable handles
- Rhino Coat™- Textured polyester powder coat

TANKS (IF SELECTED)

- UL 142
- Double wall
- Vents
- Sloped top
- Sloped bottom
- Factory pressure tested (2 psi)
- Rupture basin alarm
- Fuel level
- Check valve in supply and return lines
- Rhino Coat™- Textured polyester powder coat
- Stainless hardware

CONTROL SYSTEM

Control Panel

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485
- All-Phase Sensing DVR
- Full System Status
- Utility Monitoring
- Low Fuel Pressure Indication
- 2-Wire Start Compatible
- Power Output (kW)
- Power Factor
- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance algorithm
- Sealed Boards
- Password parameter adjustment protection
- Single point ground
- 15 channel data logging
- 0.2 msec high speed data logging
- Alarm information automatically comes up on the display

Alarms

- Oil Pressure (Pre-programmable Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Low Fuel Pressure Alarm
- Engine Speed (Pre-programmed Over speed Shutdown)
- Battery Voltage Warning
- Alarms & warnings time and date stamped
- Alarms & warnings for transient and steady state conditions
- Snap shots of key operation parameters during alarms & warnings
- Alarms and warnings spelled out (no alarm codes)

SD080 | 4.5L | 80 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

CONFIGURABLE OPTIONS

ENGINE SYSTEM

General

- O Oil Heater
- O Industrial Exhaust Silencer

Fuel System

- O Flexible fuel lines
- O Primary fuel filter

Engine Electrical System

- O 10A UL battery charger
- O 2.5A UL battery charger
- O Battery Warmer

ALTERNATOR SYSTEM

- O Alternator Upsizing
- O Anti-Condensation Heater
- O Tropical coating
- O Permanent Magnet Excitation

CIRCUIT BREAKER OPTIONS

- O Main Line Circuit Breaker
- O 2nd Main Line Circuit Breaker
- O Shunt Trip and Auxiliary Contact
- O Electronic Trip Breaker

GENERATOR SET

- O Gen-Link Communications Software (English Only)
- O IBC Seismic Certification
- O 8 Position Load Center
- O 2 Year Extended Warranty
- O 5 Year Warranty
- O 5 Year Extended Warranty

ENCLOSURE

- O Weather Protected
- O Level 1 Sound Attenuation
- O Level 2 Sound Attenuation
- O Steel Enclosure
- O Aluminum Enclosure
- O 150 MPH Wind Kit
- O 12 VDC Enclosure Lighting Kit
- O 120 VAC Enclosure Lighting Kit
- O AC/DC Enclosure Lighting Kit
- O Door Alarm Switch

TANKS (Size on last page)

- O Electrical Fuel Level
- O Mechanical Fuel Level
- O 8" Fill Extension
- O 13" Fill Extension
- O 19" Fill Extension

CONTROL SYSTEM

- O 21-Light Remote Annunciator
- O Remote Relay Panel (8 or 16)
- O Oil Temperature Sender with Indication Alarm
- O Remote E-Stop (Break Glass-Type, Surface Mount)
- O Remote E-Stop (Red Mushroom-Type, Surface Mount)
- O Remote E-Stop (Red Mushroom-Type, Flush Mount)
- O Remote Communication - Modem
- O Remote Communication - Ethernet
- O 10A Run Relay
- O Ground Fault Indication and Protection Functions

ENGINEERED OPTIONS

ENGINE SYSTEM

- O Coolant heater ball valves
- O Block Heaters
- O Fluid containment pans

ALTERNATOR SYSTEM

- O 3rd Breaker Systems

CONTROL SYSTEM

- O Spare inputs (x4) / outputs (x4) - H Panel Only
- O Battery Disconnect Switch

GENERATOR SET

- O Special Testing

ENCLOSURE

- O Motorized Dampers
- O Door switched for intrusion alert
- O Enclosure ambient heaters

TANKS

- O Overfill Protection Valve
- O UL2085 Tank
- O ULC S-601 Tank
- O Stainless Steel Tank
- O Special Fuel Tanks (MIDEQ and FL DEP/DERM, etc.)
- O Vent Extensions

RATING DEFINITIONS

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications. Power ratings in accordance with ISO 8528-1, Second Edition

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OPERATING DATA

POWER RATINGS

		Standby
Single-Phase 120/240 VAC @1.0pf	80 kW	Amps: 333
Three-Phase 120/208 VAC @0.8pf	80 kW	Amps: 278
Three-Phase 120/240 VAC @0.8pf	80 kW	Amps: 241
Three-Phase 277/480 VAC @0.8pf	80 kW	Amps: 120
Three-Phase 346/600 VAC @0.8pf	80 kW	Amps: 96

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480 VAC						208/240 VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	80	59	88	117	147	176	205	44	66	88	110	132	154
Upsize 1	100	79	118	157	197	236	275	59	89	118	148	177	206
Upsize 2	130	116	174	232	290	348	406	87	131	174	218	261	305

FUEL CONSUMPTION RATES*

Diesel - gal/hr (l/hr)

Fuel Pump Lift - ft (m)
3 (1)

Total Fuel Pump Flow (Combustion + Return)
13.6 gal/hr

Percent Load	Standby
25%	2.1 (7.9)
50%	3.7 (14.0)
75%	5.2 (19.7)
100%	6.3 (23.8)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Coolant Flow per Minute	gal/min (l/min)	32.7 (123.8)
Coolant System Capacity	gal (L)	4.5 (17.44)
Heat Rejection to Coolant	BTU/hr	232,270
Inlet Air	cfm (m^3/hr)	6360 (180)
Max. Operating Radiator Air Temp	ºF (ºC)	122 (50)
Max. Ambient Temperature (before derate)	ºF (ºC)	104 (40)
Maximum Radiator Backpressure	in H_2O	0.5

COMBUSTION AIR REQUIREMENTS

		Standby
Flow at Rated Power	cfm (m^3/min)	306 (8.67)

ENGINE

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	131
Piston Speed	ft/min (m/min)	1559 (475)
BMEP	psi	210

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m^3/min)	782 (22.14)
Max. Backpressure (Post Silencer)	inHg (Kpa)	1.5 (5.1)
Exhaust Temp (Rated Output)	ºF (ºC)	887 (475)
Exhaust Outlet Size (Open Set)	mm (in)	76.2 (3.0)

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

SD080 | 4.5L | 80 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Iveco/FPT
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emissions Data Sheet
Cylinder #	4
Type	In-Line
Displacement - L (cu In)	4.5 (274.6)
Bore - mm (in)	105 (4.1)
Stroke - mm (in)	132 (5.2)
Compression Ratio	17.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	2 Valve
Piston Type	Aluminium
Crankshaft Type	Forged Steel

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	+/- 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow
Crankcase Capacity - L (qts)	13.6 (14.4)

Cooling System

Cooling System Type	Closed
Water Pump	Belt Driven Centrifugal
Fan Type	Pusher
Fan Speed (rpm)	2538
Fan Diameter mm (in)	660.4 (26)
Coolant Heater Wattage	1500
Coolant Heater Standard Voltage	120 V /240 V

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (microns)	5
Fuel Injection	Stanadyne
Fuel Pump Type	Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line mm (in)	12.7 (0.5) NPT
Fuel Return Line mm (in)	12.7 (0.5) NPT

Engine Electrical System

System Voltage	12 VDC
Battery Charging Alternator	20 A
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<3%
Telephone Interference Factor (TIF)	<50
Standard Excitation	Synchronous Brushless
Bearings	One-Pre Lubed & Sealed
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	3
Regulation Accuracy (Steady State)	±0.25%

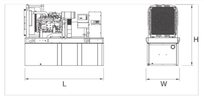
SD080 | 4.5L | 80 kW

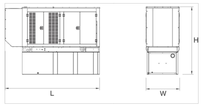
INDUSTRIAL DIESEL GENERATOR SET

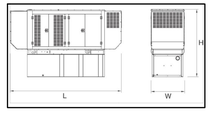
EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*







OPEN SET

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Tank & Open Set
NO TANK	-	93 (2362.2) x 40 (1016) x 49 (1244.6)	2425 (1100)
13	79 (299)	93 (2362.2) x 40 (1016) x 62 (1574.8)	2947 (1201)
30	189 (715.4)	93 (2362.2) x 40 (1016) x 74 (1879.6)	3183 (1444)
48	300 (1135.6)	93 (2362.2) x 40 (1016) x 86 (2184.4)	3407 (1545)
56	350 (1325)	110 (2794) x 40 (1016) x 86 (2184.4)	NA
81	510 (1930.5)	117 (2971.8) x 47 (1193.8) x 86 (2184.4)	3790 (1719)
93	589 (2229.6)	128 (3251.2) x 49 (1244.6) x 86 (2184.4)	4269 (1936)

STANDARD ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only Steel	Aluminum
NO TANK	-	112 (2844.8) x 41 (1041.4) x 56 (1422.4)		
13	79 (299)	112 (2844.8) x 41 (1041.4) x 69 (1752.6)		
30	189 (715.4)	112 (2844.8) x 41 (1041.4)x 81 (2057.4)		
48	300 (1135.6)	112 (2844.8) x 41 (1041.4) x 93 (2362.2)	425 (193)	155 (70)
56	350 (1325)	112 (2844.8) x 41 (1041.4) x 93 (2362.2)		
81	510 (1930.5)	117 (2971.8) x 47 (1193.8) x 93 (2362.2)		
93	589 (2229.6)	128 (3251.2) x 49 (1244.6) x 93 (2362.2)		

LEVEL 1 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only Steel	Aluminum
NO TANK	-	130 (3302) x 41 (1041.4) x 56 (1422.4)		
13	79 (299)	130 (3302) x 41 (1041.4) x 69 (1752.6)		
30	189 (715.4)	130 (3302) x 41 (1041.4) x 81 (2057.4)		
48	300 (1135.6)	130 (3302) x 41 (1041.4) x 93 (2362.2)	450 (204)	285 (129)
56	350 (1325)	130 (3302) x 41 (1041.4) x 93 (2362.2)		
81	510 (1930.5)	130 (3302) x 47 (1193.8) x 93 (2362.2)		
93	589 (2229.6)	130 (3302) x 49 (1244.6) x 93 (2362.2)		

LEVEL 2 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only Steel	Aluminum
NO TANK	-	112 (2844.8) x 41 (1041.4) x 69 (1752.6)		
13	79 (299)	112 (2844.8) x 41 (1041.4) x 82 (2082.8)		
30	189 (715.4)	112 (2844.8) x 41 (1041.4) x 94 (2387.6)		
48	300 (1135.6)	112 (2844.8) x 41 (1041.4) x 106 (2692.4)	625 (284)	395 (180)
56	350 (1325)	112 (2844.8) x 41 (1041.4) x 106 (2692.4)		
81	510 (1930.5)	117 (2971.8) x 47 (1193.8) x 106 (2692.4)		
93	589 (2229.6)	128 (3251.2) x 49 (1244.6) x 106 (2692.4)		

*All measurements are approximate and for estimation purposes only. Sound dBA can be found on the sound data sheet. Enclosure Only weight is added to Tank & Open Set weight to determine total weight.

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Generac Power Systems, Inc. | P.O. Box 8 | Waukesha, WI 53187
P: (262) 544-4811 © 2017 Generac Power Systems, Inc. All rights reserved. All specifications are subject to change without notice.

Part No 0K5092
Rev. F 01/26/17

GENERATOR PAD NOTES:

1. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED STRUCTURAL ENGINEERING DRAWINGS FOR PAD DESIGN.
2. USE 1/2" X 6" RED HEAD TYPE ANCHOR BOLTS FOR GENERATOR MOUNTING.
3. PAD SHALL BE 8" LARGER THAN ACTUALLY EXTERIOR DIMENSIONS OF GENERATOR.

CMHM ARCHITECTS INC.
1036 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA | 33803-1118
TELEPHONE 863-688-8882 | lkdarch.com
JOHN R. CURTIS, AIA
BENJAMIN F. MUNDY, JR. AIA, LEED AP
C. KEITH HUNNICUTT, AIA
NEIL G. MSLBY, AIA, LEED AP

BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

GENERATOR SPECIFICATIONS

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

REVIEW

CHECKED BY DJN

E501

19058

NEWPOWER CONSULTING, INC
15520 HIGH BELL PL. BRADENTON FL 34212
PH: 813.489.9850, COA#32011
ENGINEERING

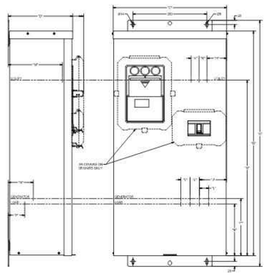
TX301 Series Transfer Switch

100 – 400 Amps

Contactor Type · Open and Delayed Transition · Service Entrance Rated

GENERAC | INDUSTRIAL POWER

UNIT DIMENSIONS*



Service Entrance Rated, Contactor Type, Open and Delayed Transition, 100 – 400 A

Description	A (Height)	B (Height)	C (Width)	D (Depth)	E (Dim)	F (Dim)	G (Dim)	H (Dim)	J (Dim)	K (Dim)	L (Dim)	M (Dim)	N (Dim)	P (Dim)	Dimensions (in mm) Normal 75 °C Wire	Standby Source 75 °C Wire	Cu(Al) Load 75 °C Wire	Neutral Connection	Ground Connection	lbs (kg) Weight
100A SER NEMA 1	51.4 (1,305)	47.5 (1,206)	21.4 (544)	12.0 (305)	9.5 (242)	10.6 (268)	38.3 (973)	3.7 (93)	5.1 (129)	1.5 (38)	1.7 (44)	10.1 (257)	5.8 (148)	4.8 (122)	(1) 3/0 - 6	(1) 2/0 - 14	(1) 2/0 - 14	(5) 2/0 - 14	(6) 2/0 - 14	154.3 (70)
100A SER NEMA 3R	51.4 (1,305)	47.5 (1,206)	21.4 (544)	14.1 (358)	9.5 (242)	10.6 (268)	38.3 (973)	3.7 (93)	5.1 (129)	1.5 (38)	1.7 (44)	10.1 (257)	5.8 (148)	4.8 (122)	(1) 3/0 - 6	(1) 2/0 - 14	(1) 2/0 - 14	(5) 2/0 - 14	(6) 2/0 - 14	158.7 (72)
150A SER NEMA 1	51.4 (1,305)	47.5 (1,206)	21.4 (544)	12.0 (305)	9.5 (242)	10.6 (268)	38.3 (973)	3.7 (93)	5.1 (129)	1.5 (38)	1.7 (44)	10.1 (257)	5.8 (148)	4.8 (122)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(5) 350 - 6	(5) 350 - 6	165.3 (75)
150A SER NEMA 3R	51.4 (1,305)	47.5 (1,206)	21.4 (544)	14.1 (358)	9.5 (242)	10.6 (268)	38.3 (973)	3.7 (93)	5.1 (129)	1.5 (38)	1.7 (44)	10.1 (257)	5.8 (148)	4.8 (122)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(5) 350 - 6	(5) 350 - 6	169.8 (77)
200A SER NEMA 1	51.4 (1,305)	47.5 (1,206)	21.4 (544)	12.0 (305)	9.5 (242)	10.6 (268)	38.3 (973)	3.7 (93)	5.1 (129)	1.5 (38)	1.7 (44)	10.1 (257)	5.8 (148)	4.8 (122)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(5) 350 - 6	(5) 350 - 6	165.3 (75)
200A SER NEMA 3R	51.4 (1,305)	47.5 (1,206)	21.4 (544)	14.1 (358)	9.5 (242)	10.6 (268)	38.3 (973)	3.7 (93)	5.1 (129)	1.5 (38)	1.7 (44)	10.1 (257)	5.8 (148)	4.8 (122)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(5) 350 - 6	(5) 350 - 6	169.8 (77)
300A SER NEMA 1	51.4 (1,305)	47.5 (1,206)	34.4 (874)	12.0 (305)	10.0 (255)	11.8 (300)	9.1 (231)	22.8 (579)	7.2 (183)	1.8 (46)	2.3 (59)	8.7 (222)	6.5 (166)	3.3 (84)	(2) 600 - 2/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(5) 350 - 6	260.1 (118)
300A SER NEMA 3R	51.4 (1,305)	47.5 (1,206)	34.4 (874)	14.1 (358)	10.0 (255)	11.8 (300)	9.1 (231)	22.8 (579)	7.2 (183)	1.8 (46)	2.3 (59)	8.7 (222)	6.5 (166)	3.3 (84)	(2) 600 - 2/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(5) 350 - 6	264.6 (120)
400A SER NEMA 1	51.4 (1,305)	47.5 (1,206)	34.4 (874)	12.0 (305)	10.0 (255)	11.8 (300)	9.1 (231)	22.8 (579)	7.2 (183)	1.8 (46)	2.3 (59)	8.7 (222)	6.5 (166)	3.3 (84)	(2) 600 - 2/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(5) 350 - 6	260.1 (118)
400A SER NEMA 3R	51.4 (1,305)	47.5 (1,206)	34.4 (874)	14.1 (358)	10.0 (255)	11.8 (300)	9.1 (231)	22.8 (579)	7.2 (183)	1.8 (46)	2.3 (59)	8.7 (222)	6.5 (166)	3.3 (84)	(2) 600 - 2/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(5) 350 - 6	264.6 (120)

UL 1008 Withstand and Closing Ratings

Amperes Rating	Specific Breaker (kA)**	Service Entrance (kA)	Fuse Rating (Class J)
100	35	35	200 kA
150	42	42	200 kA
200	42	42	200 kA
300	65	65	200 kA
400	65	65	200 kA

* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.
** See Specific Breaker List available on GENconnect.

TX301 Series Transfer Switch

100 – 400 Amps

Contactor Type · Open and Delayed Transition · Service Entrance Rated

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

GENERAL

- Small Footprint, Results in Easy Mounting and Installation for Reduced Time and Costs
- Cable Entry Is Top or Bottom (400A Units are Bottom Only)
- Double-Throw, Stored Energy Transfer Mechanism
- Can be Electrically Isolated while Energized
- Graphical LCD-Based Display for Programming, System Diagnostics and Help Menu Display Mimic
- Diagram with Source Available and Connected LED Indicator
- Method of Transfer: Open with Inphase Transition
- Mechanically Interlocked to Prevent Connection of Both Sources
- Modbus® RTU Communications
- TXC 100 Controller
- Operating Temperature -4 ° to 158 °F (-20 ° to 70 °C)
- Removable Top and Bottom Plates for Ease of Entry
- Voltage Agnostic*
- High Withstand and Closing Ratings
- Heater Kit Standard on All 3R Enclosures
- Auxiliary Output Includes: Two Wire Start, Signal Before Transfer, Fault, and a Programmable Relay Output
- Auxiliary Input Includes: Permissive Inputs (24 VDC)
- General Alarm Indication
- 2 Year Standard Warranty
- IBC 2018, 2015, 2012, 2009

* 480 V 3-Wire Systems Must be Specified at Time of Ordering for Transformer Kit to be Included

VOLTAGE AND FREQUENCY SENSING

- Three Phase Under and Over Voltage Sensing on Normal and Emergency Sources
- Under and Over Frequency Sensing on Normal and Emergency
- Selectable Settings: Single or Three Phase Voltage
- Sensing on Normal, Emergency and Load 50 or 60 Hz
- Phase Sequence Sensing for Phase Sensitive Loads

Start Circuit

- 2-Wire Start
- 3-Wire Start From C Contact for Circuit Monitoring

Digital Outputs

- Signal Before Transfer (Elevator)
- General Alarm

Digital Inputs

- Emergency Inhibit (Permissive & Load Shed)
- Go to Emergency
- Manual Generator Retransfer

CONTROLS

- Front Programmable Control Reduces PPE Needs and Arc Flash Hazard
- Built in Battery Backup - Increases Switch Reliability and Reduces Switch Transition Time to Alternate Source
- Battery Backup Able to Power the Controller for up to 60 Minutes in the Event of No Source Availability
- Accessible USB Port for Easy Data Downloads, Firmware Updates without Requiring PPE, Reducing the Risk of Arc Flash
- All Amp Nodes Offered with Delayed Transition
- Heater Programmable through Control for Desired Temperature and Humidity Settings
- Front Accessible Customer Connections
- Time-Stamped Event History Log
- Programmable Exerciser - Daily, Weekly, Bi-Weekly, Monthly

CONFIGURABLE OPTIONS

- Chicago Code Kit
- 3R Padlockable Cover for Controller (Standard on 3R Enclosure)
- 3R Padlockable Cover for Service Entrance Breaker (Standard on 3R Enclosures)
- CTs for Integrated Metering
- Generator Battery Backup for Controller
- Heater Option for Temperature and Humidity Control (Standard on 3R Enclosure)
- Time Delay in Neutral Transition (TDN), or Inphase with a Default to Time Delay in Neutral Transfer
- Expandable Input/Output Board Module Includes: 4 Relay Outputs and 4 Optically Isolated Inputs
- IBC Seismic Certified/Seismic Rated

- 2 Year Extended Limited Warranty
- 5 Year Basic Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

Engineered Options

- Transient Voltage Surge Suppressor (TVSS)
- Manual Generator Retransfer Switch
- Go to Emergency Switch

Conversion Kits

- 480 V Transformer Kit for 3-Wire Systems
- NEMA Type 1 to 3R Kit

TX301 Series Transfer Switch

100 – 400 Amps

Contactor Type · Open and Delayed Transition · Service Entrance Rated

GENERAC | INDUSTRIAL POWER

- Automatic Transfer Switch
- 100 – 400 A, up to 480 VAC, 50/60 Hz, 100% Current Rated
- Single or Three Phase
- 2, 3 or 4 Poles
- NEMA 1 or 3R
- Open and Inphase or Open with Delayed Transition
- ETL Listed to UL 1008
- High Withstand and Closing Ratings

Image used for illustration purposes only.

Codes and Standards

ETL Listed

NFPA 70, 99, 110

NEC 700, 701, 702, 708

OSHPD and Seismic Certified CBC 2019, CBC 2016, IBC 2018, IBC 2015, IBC 2012, IBC 2009, ASCE 7-10, ASCE 7-16, ICC-ES AC-156

Description

Generac's contactor type transfer switches are double-break robust switch construction with inherent interlocks to ensure safe positive transfer between power sources. The contacts are silver composite for long life, resisting pitting or burning. The switches are rated for full load transfers in mission critical, emergency, legally required, and optional power systems.

The microprocessor based controller provides the customers with the flexibility to program a comprehensive group of set points to match the application needs. The controller has two programmable inputs and one programmable output as standard and is available with optional expansion boards for up to four programmable inputs and outputs. The LCD displays real time and historical information with time-stamped events. The integrated plant exerciser can be configured in off, daily, day of week, biweekly, and monthly intervals with user selectable run time. Standard features of the controller include three phase sensing on both sources, phase unbalance, phase reversal, load shed, emergency inhibit, and communications.

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BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

AUTOMATIC TRANSFER SWITCH SPECIFICATIONS

REVISIONS

CONSTRUCTION 03/29/2023

APPROVAL

REVIEW

CHECKED BY DJN

E502

19058

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