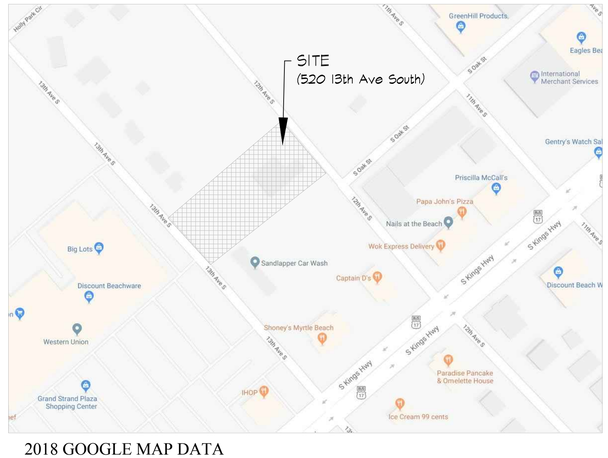
AN RENOVATION TO THE

13TH AVENUE SOUTH FOR FACILITIES MAINTENANCE

CITY OF MYRTLE BEACH, SOUTH CAROLINA

DRAWING INDEX

VICINITY MAP



2018 GOOGLE MAP DATA

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CODE COMPLIANCE REVIEW

CODES COMPLIANCE REVIEW AND RELATED INFORMATION

A. PROJECTED DESIGNED IN ACCORDANCE WITH:
1. International Building Code - 2015 Edition
2. International Plumbing Code - 2015 Edition
3. International Mechanical Code - 2015 Edition
4. International Fuel Gas Code - 2015 Edition
5. International Fire Code - 2015 Edition
6. National Electric Code - 2014 Edition
7. National Electrical Safety Code ANSI-C2 - Latest Edition
8. ICC/ANSI-A117.1 - American National Standard: Accessible and Usable Buildings and Facilities
9. Americans with Disabilities Act (ADA)
10. International Energy Conservation Code - 2009 Edition

B. BASIC REVIEW INFORMATION

1. Site Development: NA
   a. Area of Site Developed (in acres): NA
   b. Municipality and/or County Where Project is Located: City of Myrtle Beach
   c. Jurisdiction for:
      1) Site Work: City of Myrtle Beach
      2) Water: City of Myrtle Beach
      3) Sewer: City of Myrtle Beach
      4) Zoning: City of Myrtle Beach
   d. Is project in Flood Plain: No
   e. Is project in Wetlands Area: No

2. Primary Occupancy Classification: B, S-1; Non-separated Occupancy

3. Type of Construction (IBC Chapter 6): Type III B
   Sprinklered: No

4. Building Floor Area by Design: Building Floor Area allowed by IBC:

B	2932 sf	19,000 sf
S-1	1665 sf	26,000 sf
Unheated	294 sf	
TOTAL:	4891 sf	

(**Unheated square footage is used for determination of occupant load only in Section 6 below)

5. Building Height: +/- 17'-3" * Building Height Allowed (IBC Table 503):
   Number of Stories: 1 Allowable Height: S-1 = 55 ft, B = 55 ft Number of Stories Allowed: S-1 = 3, B = 3
   *Building height is measured from the average grade plane to the top of the highest roof surface.

6. Required Separation of Occupancies (Table 508.4):
   Fire Resistance Rating:

   B to S-1 Occupancies = No separation required

7. Building Occupant Load: (IBC Section 1004 and Table 1004.1.2)

Occupancy Classification:	Under Roof	S-1	B
Area per Occupancy	294 sf	1665 sf	2932 sf
Area per Occupant	200 sf gross	200 sf gross	100 sf gross
Total Occupant Load	2 occupants	9 occupants	30 occupants
Building Total Load	41 occupants		

8. Fire Resistance ratings required (IBC Table 601), A/E specified system and source of rated assembly/element selected (UL, FM, etc.)

	Required	Source UL
a. Party/Fire Walls:	Not Required	
b. Interior Bearing Walls:	Not Required	
c. Interior Nonbearing Partitions:	Not Required	
d. Columns:	Not Required	
e. Beams, Girders, Trusses & Arches:	Not Required	
f. Floor & Floor/Ceiling Construction:	Not Required	
g. Roof & Roof/Ceiling Construction:	Not Required	
h. Exterior Bearing Walls:	Not Required	
i. Corridors:	Not Required	

9. Other Fire Protection:
   a. Mechanical Room Separation: Not Required
   b. Shaft Enclosure (IBC 707.4): "...shaft enclosures shall have a fire resistance ratings of not less...than 1 hour where connecting less than four stories."
   c. Machine Rooms (IBC 3006.4): "...machine rooms shall be enclosed with construction having a fire resistance rating of not less than the required rating of the hoistway enclosure..."
   d. Fireblocking Required (IBC 718.2): Not Required
   e. Smoke Barrier Required (IBC 709): Not Required
   f. Sprinklers Required (IBC 903): Not Required
   g. Standpipes Required (IBC 905): Not Required
   h. Fire Alarms Required (IBC 907): Not Required
   i. Draftstopping (IBC 718.3): Not Required
   j. Draftstopping (IBC 718.4): Not Required

10. Project in Fire District: City of Myrtle Beach
11. Plumbing Facilities: (IPC Chapter 4; Table 403.1)

	Required	Provided
Water Closets:	Male: 1; Female:1	Male: 2 ; Female: 1
Lavatories:	Male: 1; Female:1	Male: 1; Female: 1
Drinking Fountains:	1	1
Other: Urinals	-	2
Other: Service Sinks	1	1
Unisex bathrooms (watercloset and lavatory)	-	1

A1 / G0.0 — CODE COMPLIANCE — NO SCALE

ROOM NAME / RM # — ROOM TAG

101 — DOOR TAG

W1 — WINDOW TAG

DETAIL # / SHEET # — A9 / A5.2 — DETAIL TAG

DETAIL # / SHEET # — A9 / A5.2 — WALL SECTION TAG

DETAIL # / SHEET # — E1 / A3.1 — BUILDING SECTION TAG

INTERIOR ELEVATION TAG

1 — REVISION TAG

FEC — FIRE EXTINGUISHER SEE SPECIFICATIONS

HANDICAP ACCESSIBLE

G10 / G0.0 — SYMBOLS — NO SCALE

THE FOLLOWING IS A LIST OF ABBREVIATIONS (BUT NOT LIMITED TO); FOR USE WITH ALL ARCHITECTURAL DRAWINGS.

ACMU = ARCHITECTURAL CONCRETE MASONRY UNIT
ACT = ACOUSTICAL CEILING TILE
ADA = AMERICAN DISABILITIES ACT
AFF = ABOVE FINISH FLOOR
ALUM. = ALUMINUM
AP = ACCESS PANEL
BM. = BEAM
BTM. = BOTTOM
CLG. = CEILING
CMU = CONCRETE MASONRY UNIT
COL. = COLUMN
COORD. = COORDINATE
CPT = CARPET
CT = CERAMIC TILE
CTB = CERAMIC BASE TILE
CTW = CERAMIC WALL TILE
DR = DOOR
DTL. = DETAIL
EA. = EACH
ELEV. = ELEVATION
EXT. = EXTERIOR
FD = FLOOR DRAIN
FEC = FIRE EXTINGUISHER CABINET
FFE = FINISH FLOOR ELEVATION
FOM = FACE OF MASONRY
FRP = FIBERGLASS REINFORCED PANEL
GALV. = GALVANIZED
GYP. BD. = GYPSUM WALL BOARD
GWB = GYPSUM WALL BOARD
HDW. = HARDWARE
HGT. = HEIGHT
HM = HOLLOW METAL
INFO. = INFORMATION
INT. = INTERIOR
LAV = LAVATORY
MATL. = MATERIAL
MTL. = METAL
NA = NOT APPLICABLE
NIC = NOT IN CONTRACT
NL = NARROW LITE
OC. = ON CENTER
OFCI = OWNER FURNISHED CONTRACTOR INSTALLED
OFOI = OWNER FURNISHED OWNER INSTALLED
ORD. = OVERFLOW ROOF DRAIN
PLY = PLYWOOD
PLYWD. = PLYWOOD
PT = PASS THRU
PTD. = PAINTED
PWD = PLYWOOD
RCP = REFLECTED CEILING PLAN
RD. = ROOF DRAIN
RE = REFER TO / REFERENCE SHEET
RMB = RUBBER WALL BASE
SAP = SECURITY ACCESS PANEL
SCHED. = SCHEDULE
SHLVS. = SHELVES
SHM = SECURITY HOLLOW METAL
SIM. = SIMILAR
SNL = SECURITY NARROW LITE
TYP. = TYPICAL
UNO = UNLESS NOTED OTHERWISE
VCT = VINYL COMPOSITION TILE
W/ = WITH
WGTS. = WEIGHTS

H12 / G0.0 — ABBREVIATIONS — NO SCALE

GENERAL NOTES

A. DIMENSIONS ARE TO FACE OF METAL STUDS, FACE OF MASONRY, CENTERLINE OF DOORS, OR CENTERLINE OF WINDOWS, UNLESS NOTED OTHERWISE.

B. PLAN CUT IS TAKEN AT 4'-6" ABOVE FINISHED FLOOR.

C. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED WITHIN THE DRAWINGS.

D. PROVIDE BLOCKING AT ALL WALL HUNG EQUIPMENT TO INCLUDE, BUT NOT LIMITED TO: GRAB BARS, CASEWORK AND TOILET ACCESSORIES.

E. ALL HEIGHTS FOR HANDICAP ELEMENTS ARE TO BE IN ACCORDANCE WITH THE ADA FOR MAKING FACILITIES ACCESSIBLE AND USABLE FOR PHYSICALLY HANDICAPPED PEOPLE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND PROPER INSTALLATION OF ALL RELATED ELEMENTS.

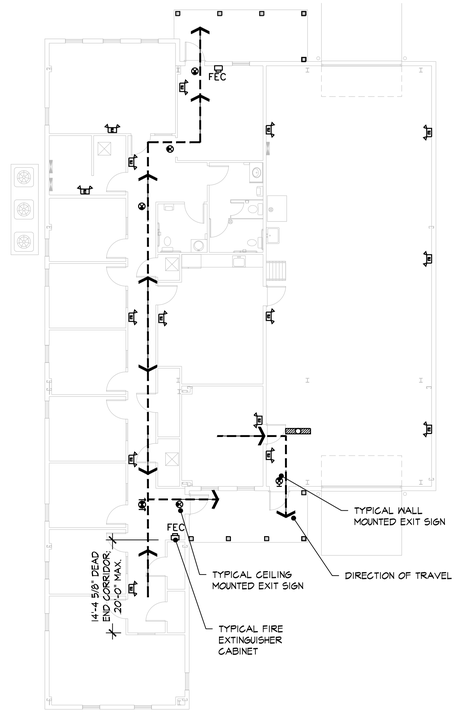
F. PROVIDE MINIMUM OF 18" CLEAR ON THE PULL SIDE AND 12" CLEAR ON THE PUSH SIDE OF ALL ACCESSIBLE DOORS.

G. COORDINATE AND ALIGN STUD FRAMING WITH THE THICKNESS OF FINISH WALL MATERIAL SO THAT THE FINISH WALL IS IN A CONTINUOUS SMOOTH PLANE.

H. FEC = FIRE EXTINGUISHER CABINET. FINAL LOCATION TO BE APPROVED BY BOTH ARCHITECT AND LOCAL FIRE INSPECTOR.

I. ALL NON-BEARING PARTITION WALLS SHALL EXTEND A MINIMUM OF 6" ABOVE THE CEILING HEIGHT. BRACE TO STRUCTURE ABOVE EVERY 48" O.C. WITH METAL STUDS.

J. ALL STUD WALLS TO RECEIVE SOUND BATT INSULATION.



A. Exits required: 2; Egress width required: 41 x 0.2" = 8.2" (minimum clear door width required: 32")

B. Exits provided: 3; Egress width provided: 108": (3) 3'-0" wide doors.

C. Dead End Corridor maximum length (IBC 1020.4): 20'-0"

A9 / G0.0 — LIFE SAFETY PLAN — NO SCALE

REVISION DATE

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AN RENOVATION TO THE
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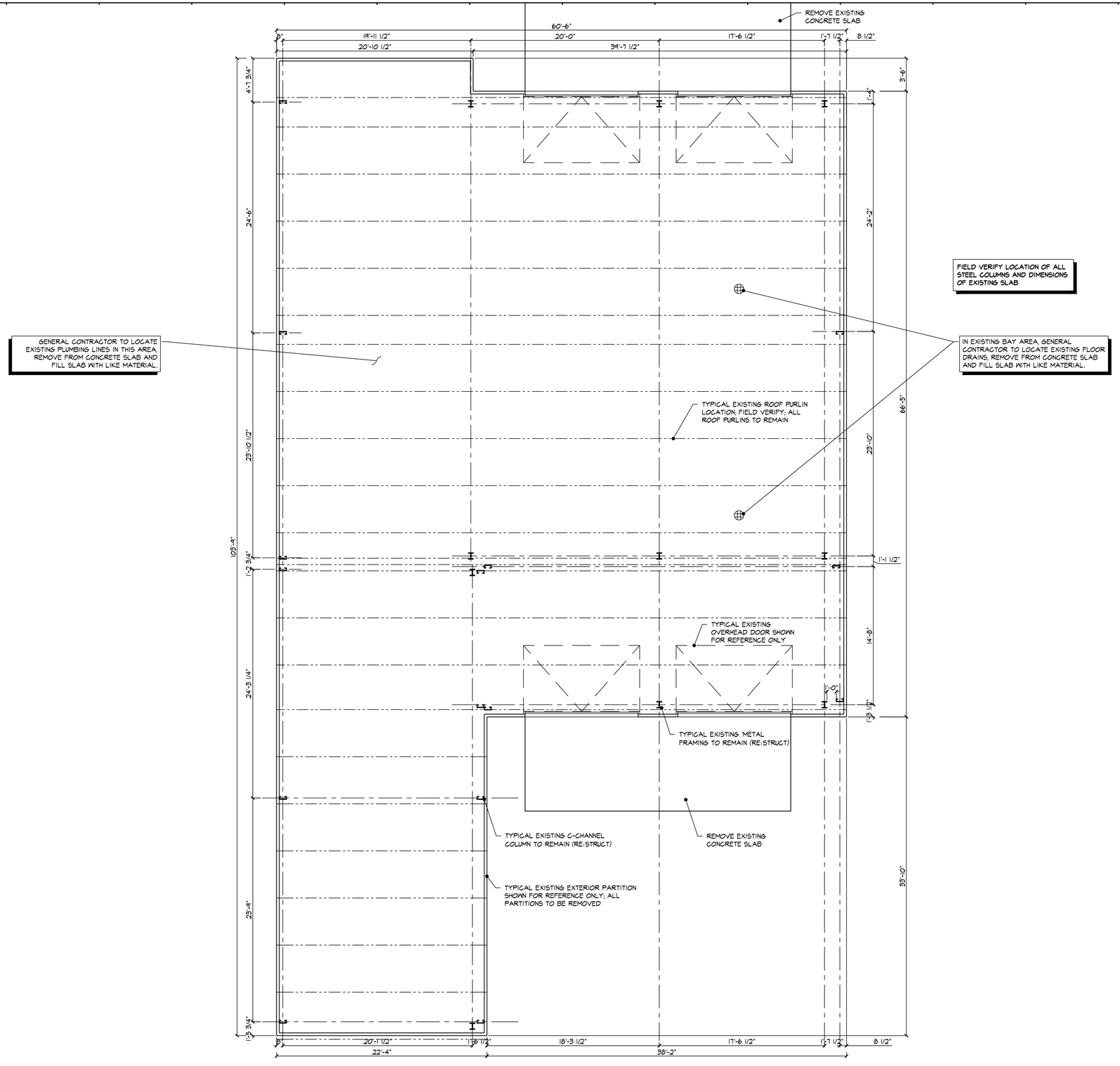
MYRTLE BEACH, SOUTH CAROLINA

2019
03/19/2019
CODE COMPLIANCE

G0.0



GENERAL NOTES

A. DIMENSIONS ARE TO FACE OF METAL STUDS, CENTERLINE OF DOORS, OR CENTERLINE OF WINDOWS, UNLESS NOTED OTHERWISE.

B. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED WITHIN THE DRAWINGS.

DEMO NOTES

A. GENERAL CONTRACTOR SHALL REMOVE ALL BUILDING ELEMENTS AND ASSOCIATED COMPONENTS OF THE BUILDING EXCEPT STRUCTURAL STEEL FRAMING AND COLUMNS, ROOF PURLINS, STEEL GIRTS, AND EXISTING BUILDING SLAB.

A1
AD1.0

EXISTING FLOOR PLAN/DEMO PLAN

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

REVISION DATE

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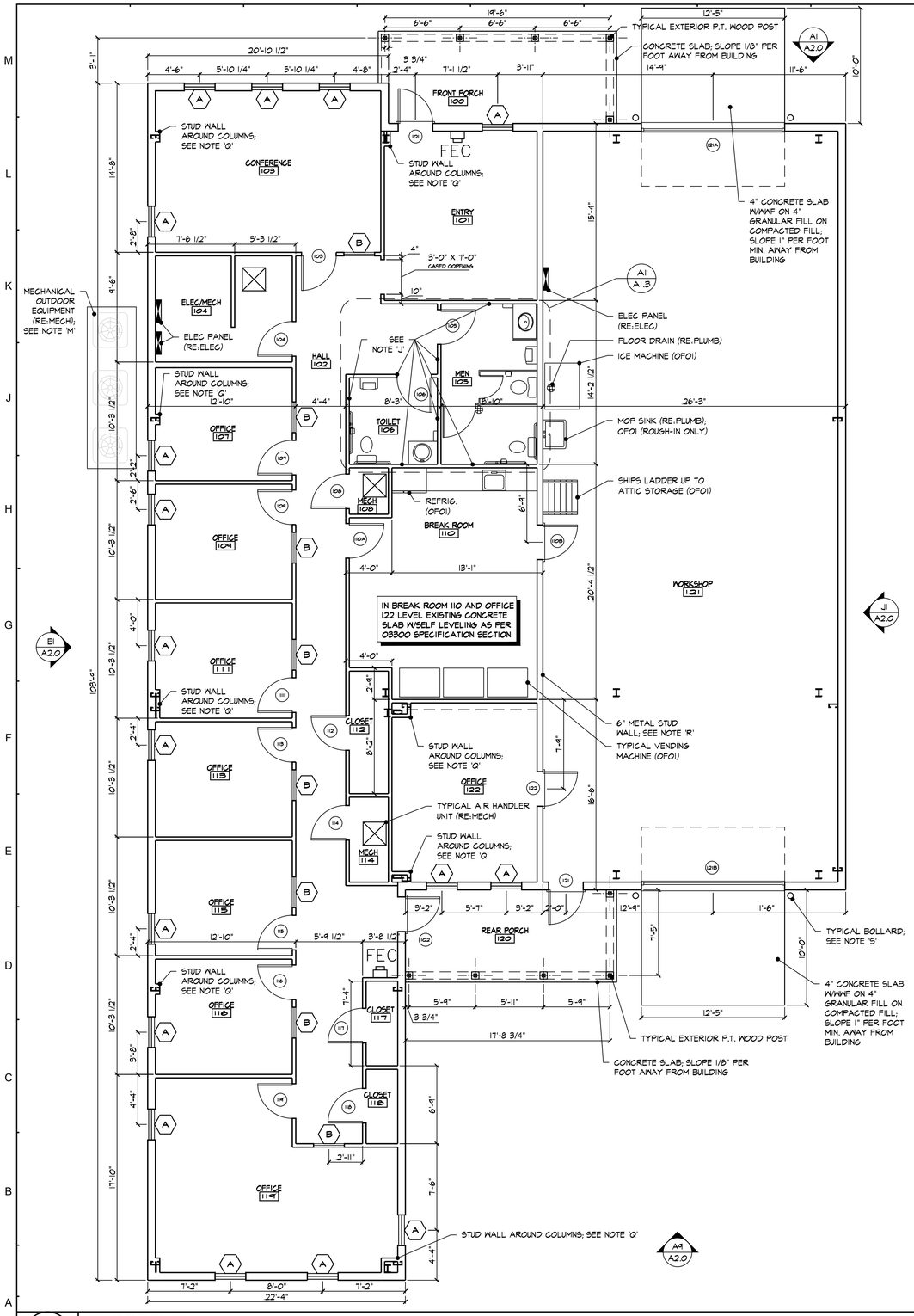
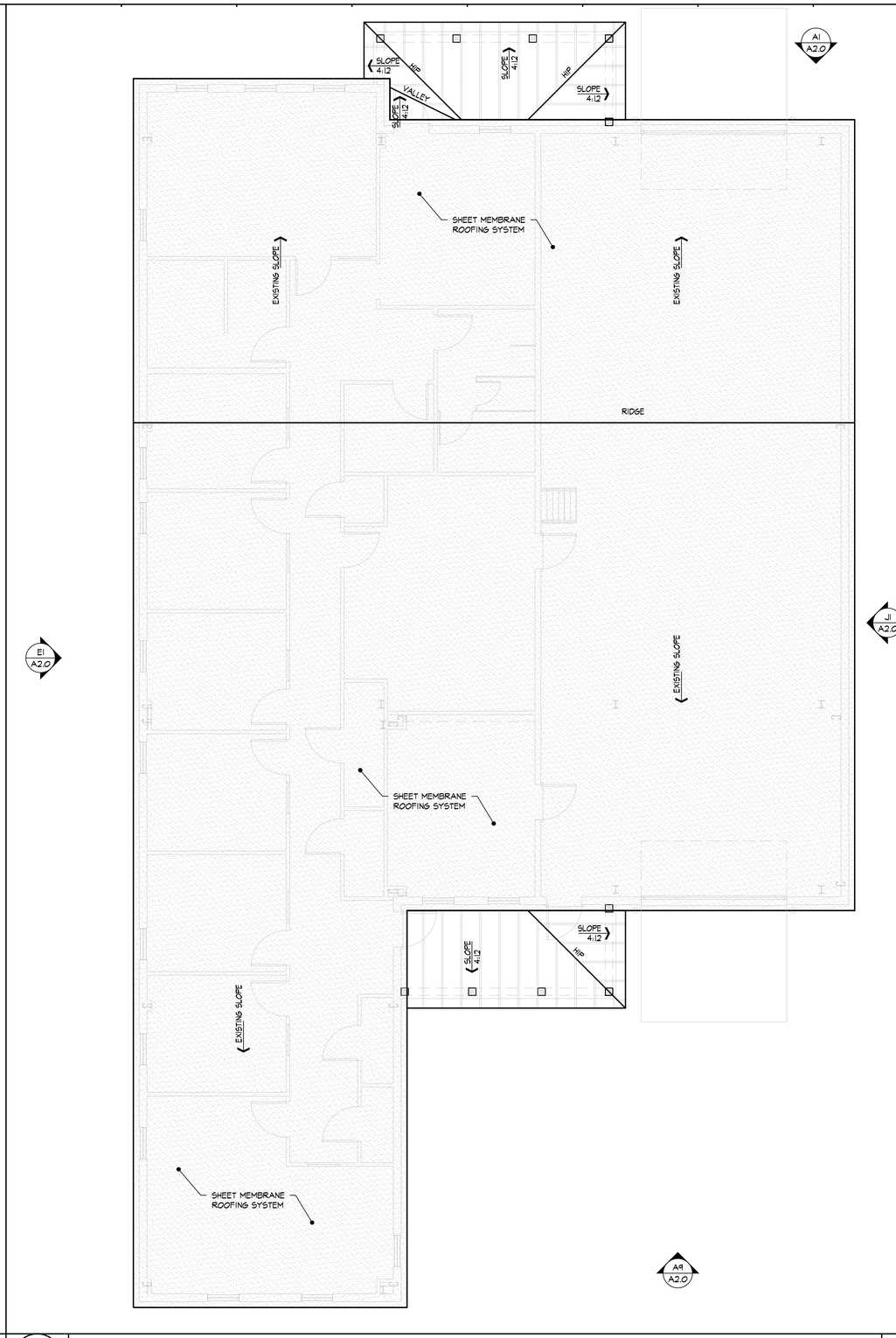
EXISTING FLOOR PLAN / DEMO PLAN

AD1.0



FLOOR PLAN

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



EXISTING FLOOR PLAN

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

GENERAL NOTES

A. DIMENSIONS ARE TO FACE OF METAL STUDS, CENTERLINE OF DOORS, OR CENTERLINE OF WINDOWS, UNLESS NOTED OTHERWISE.

B. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED WITHIN THE DRAWINGS.

C. PROVIDE BLOCKING AT ALL WALL HUNG EQUIPMENT TO INCLUDE, BUT NOT LIMITED TO, GRAB BARS, CASEWORK AND TOILET ACCESSORIES.

D. EXTERIOR WALLS SHALL BE 8 INCH METAL STUD. THE WALL BETWEEN THE WORKSHOP AND THE OFFICE SHALL BE A 6 INCH METAL STUD WALL. REFER TO STRUCTURAL DRAWINGS FOR ALL BEARING WALL LOCATIONS.

E. ALL HEIGHTS FOR HANDICAP ELEMENTS ARE TO BE IN ACCORDANCE WITH THE ADA FOR MAKING FACILITIES ACCESSIBLE AND USABLE FOR PHYSICALLY HANDICAPPED PEOPLE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND PROPER INSTALLATION OF ALL RELATED ELEMENTS.

F. THE PLAN CUT IS TAKEN AT 4'-6" AFF.

G. PROVIDE MINIMUM OF 18" CLEAR ON THE PULL SIDE AND 12" CLEAR ON THE PUSH SIDE OF ALL ACCESSIBLE DOORS.

H. COORDINATE AND ALIGN STUD FRAMING WITH THE THICKNESS OF FINISH WALL MATERIAL SO THAT THE FINISH WALL IS IN A CONTINUOUS SMOOTH PLANE.

I. THE TYPICAL LOCATION OF ALL INTERIOR DOORS SHALL BE 6" FROM THE ADJACENT WALL UNLESS OTHERWISE NOTED.

J. ALL WALLS AND GYPSUM WALL BOARD SURROUNDING MEN 105 AND TOILET 106 SHALL EXTEND FROM TOP OF SLAB TO UNDERSIDE OF ROOF DECK.

K. ALL INTERIOR WALLS SHALL BE 3-5/8 INCH METAL STUDS. INTERIOR WALLS SHALL EXTEND 6" ABOVE HEIGHT OF ACOUSTIC CEILING TILE (ACT). BRACE ALL NEW WALLS WITH METAL STUDS FROM TOP OF WALL TO UNDERSIDE OF ROOF TRUSSES OR STRUCTURE ABOVE @ 48" O.C.; SEE P9/A1.3.

L. FE = FIRE EXTINGUISHER; SEMI-RECESSED. FINAL LOCATION TO BE APPROVED BY BOTH ARCHITECT AND LOCAL FIRE INSPECTOR.

M. PROVIDE 4" CONCRETE PAD ON COMPACTED SOIL FOR ALL MECHANICAL UNITS. THE PAD SHOULD EXTEND 6" BEYOND EACH EDGE OF THE OVERALL CONFIGURATION. THE PAD SHOULD BE 12" MIN. OFF EDGE OF BUILDING.

N. INSULATE ALL PIPE IN UNCONDITIONED SPACES.

O. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.

P. FIELD VERIFY ALL EXISTING LOCATIONS OF WINDOWS, WALLS, AND DOORS.

Q. PROVIDE 3-5/8" STUD WALLS AROUND 'C' CHANNEL AND 'W' SHAPE COLUMNS IN LOCATIONS AS SHOWN. INSTALL WALLS AS CLOSE AS POSSIBLE TO COLUMNS TO MINIMIZE SIZE OF COLUMN ENCLOSURE.

R. 6" METAL STUD DIVIDING WALL SHALL EXTEND FROM TOP OF SLAB TO UNDERSIDE OF ROOF DECK WITH GYPSUM WALL BOARD ON EACH SIDE EXTENDING FROM TOP OF SLAB TO UNDERSIDE OF ROOF DECK. PROVIDE 3'-0" WIDE BY 7'-0" HIGH (FIELD VERIFY AVAILABLE HEIGHT) OPENING FOR ACCESS TO ATTIC STORAGE AREA. SHIPS LADDER, BY OWNER, TO BE INSTALLED AT OPENING LOCATION.

S. 6" STEEL TUBE BOLLARD FILLED WITH CONCRETE 48" OUT OF THE GROUND WITH ROUNDED TOP AND PAINTED SAFETY YELLOW. LOCATE ONE ON EACH SIDE OF DOOR; PROVIDE (2) FOR EACH OVERHEAD DOOR UNIT.

REVISION	DATE

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MYRTLE BEACH, SOUTH CAROLINA

2019

03/19/2019

FLOOR PLAN

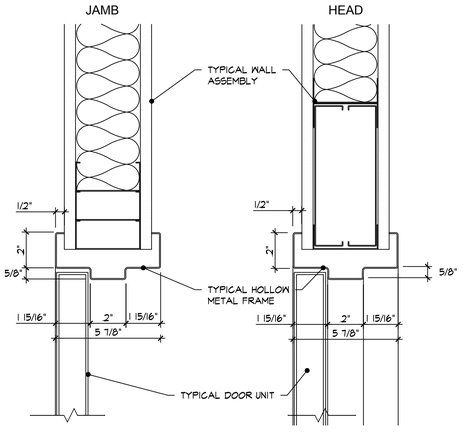
A1.0

DOOR AND FRAME SCHEDULE

DR NO	MATERIAL	ELEV.	DOOR			FRAME MATL	FRAME ELEV	DETAIL			REMARKS	DR NO
			WIDTH	HEIGHT	THK			HEAD	JAMB	SILL		
101	ASF	FG	3'-0"	7'-0"	1 3/4"	ASF	ASF	J13/A1.1	E13/A1.1	A13/A1.1	--	101
102	METAL	HG	3'-0"	7'-0"	1 3/4"	HM	HM	J9/A1.1	E9/A1.1	A9/A1.1	--	102
103	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	103
104	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	104
105	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	105
106	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	106
107	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	107
108	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	108
109	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	109
110A	WOOD	VG	3'-0"	7'-0"	1 3/4"	HM	--	A1/A1.1	A1/A1.1	--	--	110A
110B	METAL	VG	3'-0"	7'-0"	1 3/4"	HM	1	J9/A1.1 SIM.	E9/A1.1 SIM.	A1/A1.1 SIM.	PROVIDE WEATHERSTIPPING ALL AROUND; PROVIDE ACCESSIBLE THRESHOLD	110B
111	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	111
112	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	112
113	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	113
114	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	114
115	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	115
116	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	116
117	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	117
118	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	118
119	WOOD	F	3'-0"	7'-0"	1 3/4"	HM	1	A1/A1.1	A1/A1.1	--	--	119
121	METAL	F	3'-0"	7'-0"	1 3/4"	HM	1	J9/A1.1	E9/A1.1	A9/A1.1	PROVIDE WEATHERSTIPPING ALL AROUND; PROVIDE ACCESSIBLE THRESHOLD	121
121A	STEEL	--	12'-0"	12'-0"	2"	STEEL	--	--	--	--	OVERHEAD COILING DOOR	121A
121B	STEEL	--	12'-0"	12'-0"	2"	STEEL	--	--	--	--	OVERHEAD COILING DOOR	121B
122	METAL	F	3'-0"	7'-0"	1 3/4"	HM	1	J9/A1.1	E9/A1.1	A9/A1.1	PROVIDE WEATHERSTIPPING ALL AROUND; PROVIDE ACCESSIBLE THRESHOLD	122

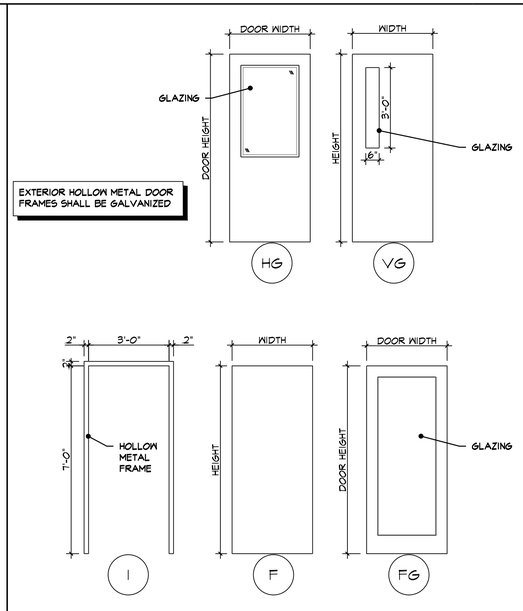
F1 / A1.1 — ROOM FINISH SCHEDULE

NO SCALE



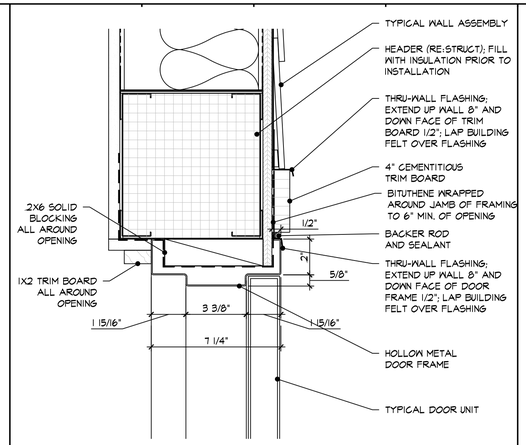
A1 / A1.1 — INTERIOR DOOR HEAD AND JAMB DETAILS

SCALE: 3"=1'-0"



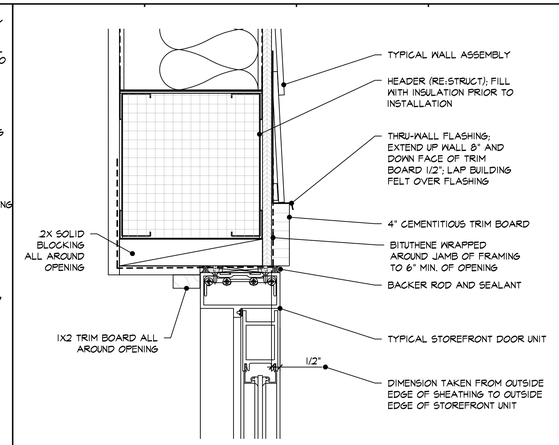
A5 / A1.1 — DOOR AND FRAME ELEVATIONS

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



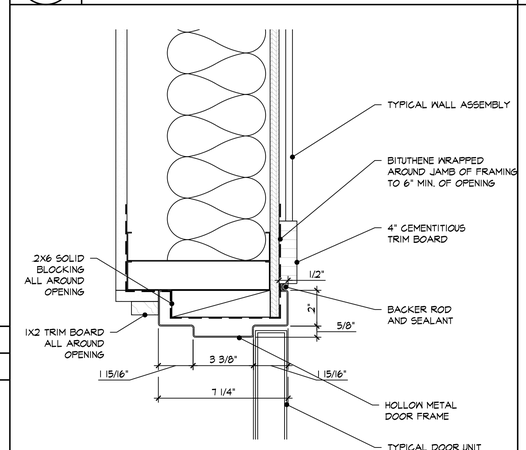
J9 / A1.1 — HOLLOW METAL DOOR HEAD

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



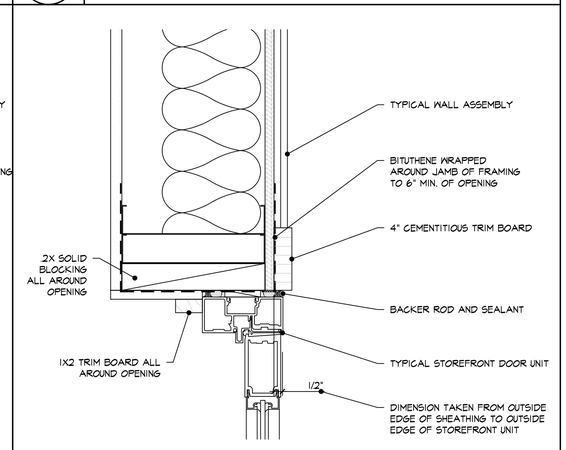
J13 / A1.1 — ENTRY DOOR HEAD DETAIL

SCALE: 3"=1'-0"



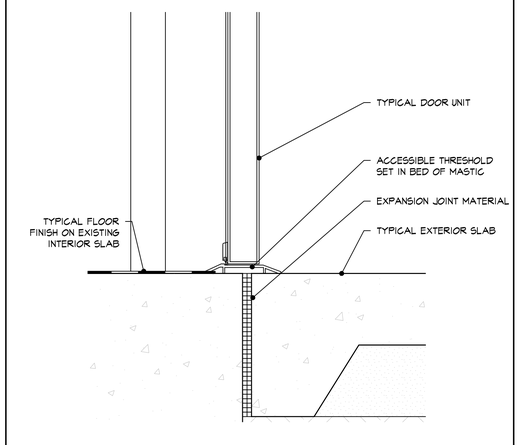
E9 / A1.1 — HOLLOW METAL DOOR JAMB

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



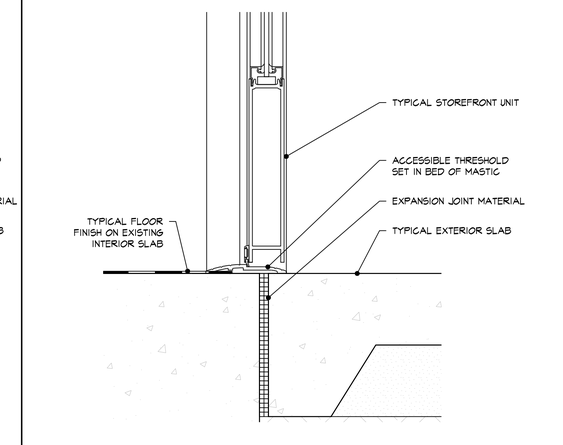
E13 / A1.1 — ENTRY DOOR JAMB DETAIL

SCALE: 3"=1'-0"



A9 / A1.1 — HOLLOW METAL DOOR SILL

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



A13 / A1.1 — ENTRY DOOR SILL DETAIL

SCALE: 3"=1'-0"

GENERAL NOTES

A. ALL EXTERIOR SIDING AND TRIM NAILS TO BE STAINLESS STEEL.

B. TRIM AND SIDING TO BE BACK PRIMED AT ALL FACES, EDGES AND CUT EDGES.

C. THE NOTATION OF THE SPECIES OF INTERIOR TRIM WOOD IS AS FOLLOWS: BIRCH.

D. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY ON CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED OR ANY CONDITIONS THAT ARE NEED OF REPAIR OR REPLACEMENT.

E. DISSIMILAR METALS ARE TO BE USED IN CONJUNCTION WITH STEEL SHELF ANGLES OR LINTELS TO NEGATE THE POTENTIAL FOR GALVANIC ACTION BETWEEN THE METALS. METAL DRIP EDGES SHALL BE SEALED AT ALL LAPS AND PENETRATIONS. EXPOSED END SHALL BE HEMMED.

REVISION	DATE

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AN RENOVATION TO THE

13TH AVENUE SOUTH FOR FACILITIES MAINTENANCE

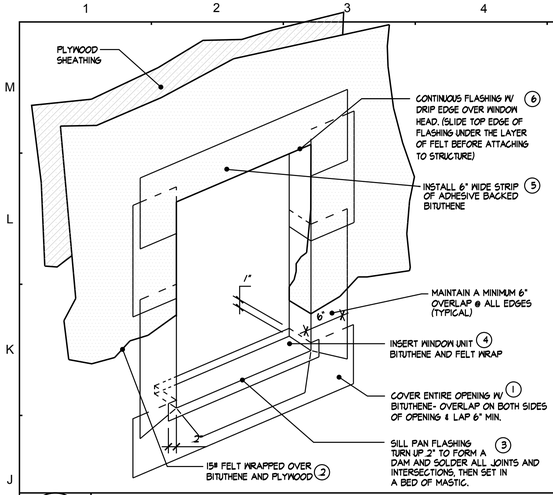
MYRTLE BEACH, SOUTH CAROLINA

2019

03/19/2019

SCHEDULES AND DETAILS

A1.1



J1 / A1.10 — TYPICAL OPENING/FLASHING

NO SCALE

ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	BASE	WALLS MATERIAL	WALLS FINISH	CEILING MATERIAL	CEILING HEIGHT	REMARKS
101	ENTRY	LVT	RWB	GWB	PTD	ACT	9'-0"	--
102	HALL	LVT	RWB	GWB	PTD	ACT	9'-0"	--
103	CONFERENCE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
104	ELEC/MECH	CONC	RWB	GWB	PTD	ACT	9'-0"	--
105	MEN	LVT	RWB	GWB	PTD	ACT	9'-0"	--
106	TOILET	LVT	RWB	GWB	PTD	ACT	9'-0"	--
107	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
108	MECH	CONC	RWB	GWB	PTD	ACT	9'-0"	--
109	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
110	BREAK ROOM	LVT	RWB	GWB	PTD	ACT	9'-0"	--
111	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
112	CLOSET	CONC	RWB	GWB	PTD	ACT	9'-0"	--
113	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
114	MECH	CONC	RWB	GWB	PTD	ACT	9'-0"	--
115	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
116	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
117	CLOSET	CONC	RWB	GWB	PTD	ACT	9'-0"	--
118	CLOSET	CONC	RWB	GWB	PTD	ACT	9'-0"	--
119	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--
121	WORKSHOP	CONC	NA	3/4" PLYWOOD	NA	NA	16'-2"	PROVIDE PLYWOOD ON ALL WALLS; EXTEND PLYWOOD TO UNDERSIDE OF ROOF DECK; CEILING SLOPES WITH ROOF;
122	OFFICE	LVT	RWB	GWB	PTD	ACT	9'-0"	--

ROOM FINISH SCHEDULE NOTES

FLOOR CODE	FLOOR FINISH MATERIAL	BASE CODE	BASE FINISH MATERIAL	WALL CODE	WALL FINISH MATERIAL	CEILING CODE	CEILING FINISH MATERIAL
CONC	CONCRETE	CTB	CERAMIC TILE BASE	CMT	CERAMIC WALL TILE	ACT	ACOUSTIC CEILING TILE
CT	CERAMIC TILE	LRM	LOCKABLE RUBBER MAT	FRP		CCB	CEMENTITIOUS CEILING BOARD
CPT	CARPET	RWB	RUBBER WALL BASE	GWB	GYPSUM WALL BOARD	GCB	GYPSUM CEILING BOARD
VWF	VINYL WOOD FLOOR	SVI	SHEET VINYL	PTD	PAINTED		
VCT	VINYL COMPOSITE TILE	WOOD	WOOD	VWC	VINYL WALL COVERING		
				WS	WOOD T&G SIDING		

C1 / A1.2 — ROOM FINISH SCHEDULE

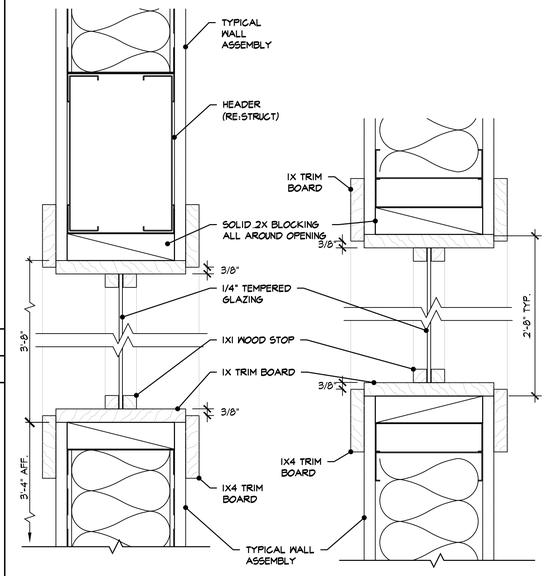
NO SCALE

FIRST FLOOR WINDOW SCHEDULE

QUANTITY	MARK	TYPE	MATERIAL	SIZE WIDTH	SIZE HEIGHT	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	NOTES
17	A	FIXED	STOREFRONT	2'-8"	4'-0"	J13/A1.2	E13/A1.2	A13/A1.2	--
8	B	FIXED	WOOD	2'-8"	3'-8"	F8/A1.2	F8/A1.2	F8/A1.2	INTERIOR WINDOWS; SEE A8/A1.2

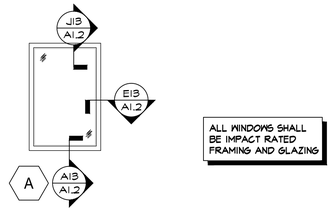
A1 / A1.2 — WINDOW SCHEDULE

NO SCALE



F8 / A1.2 — WINDOW HEAD/JAMB DETAIL

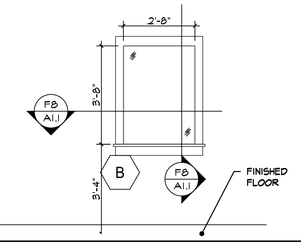
SCALE: 3"=1'-0"



ALL WINDOWS SHALL BE IMPACT RATED FRAMING AND GLAZING

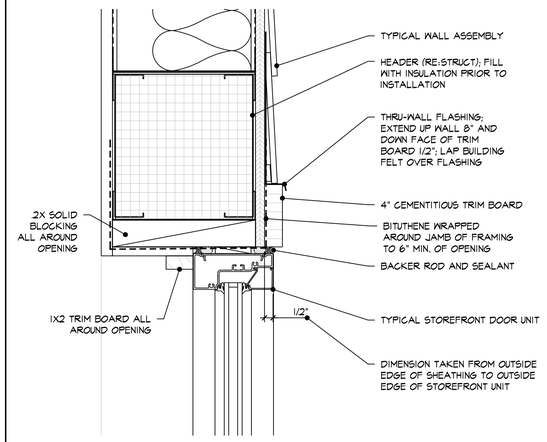
C8 / A1.2 — EXTERIOR WINDOW ELEVATIONS

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



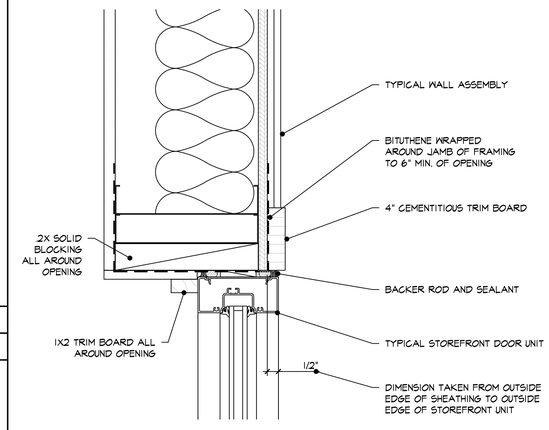
A8 / A1.2 — INTERIOR WINDOW ELEVATIONS

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



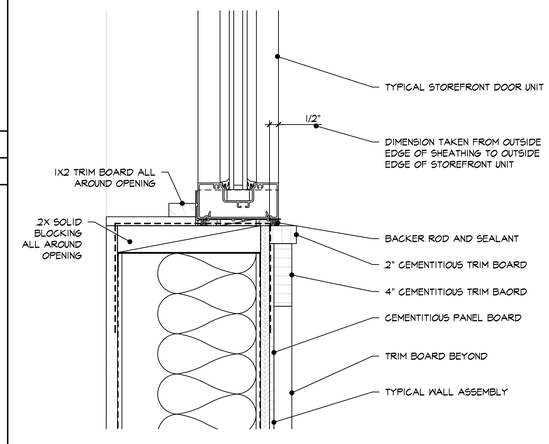
J13 / A1.2 — STOREFRONT WINDOW HEAD DETAIL

SCALE: 3"=1'-0"



E13 / A1.2 — STOREFRONT WINDOW JAMB DETAIL

SCALE: 3"=1'-0"



A13 / A1.2 — STOREFRONT WINDOW SILL DETAIL

SCALE: 3"=1'-0"

GENERAL NOTES

A. WOOD TRIM, DETAILS A9, E9, AND J9, TO BE PROVIDE AROUND WINDOWS FOR THE FOLLOWING ROOMS: TOWN CLERK 182, TOWN ADMINISTRATOR 178, CONFERENCE 113, ASSISTANT TOWN ADMINISTRATOR 172, POLICE CHIEF 143, CONFERENCE 142, ASSISTANT CHIEF 141.

B. ALL EXTERIOR SIDING AND TRIM NAILS TO BE STAINLESS STEEL.

C. TRIM AND SIDING TO BE BACK PRIMED AT ALL FACES, EDGES AND CUT EDGES.

D. THE NOTATION OF THE SPECIES OF INTERIOR TRIM WOOD IS AS FOLLOWS: BIRCH.

E. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY ON CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED OR ANY CONDITIONS THAT ARE NEED OF REPAIR OR REPLACEMENT.

F. DISSIMILAR METALS ARE TO BE USED IN CONJUNCTION WITH STEEL SHELF ANGLES OR LINTELS TO NEGATE THE POTENTIAL FOR GALVANIC ACTION BETWEEN THE METALS. METAL DRIP EDGE FLASHING SHALL BE STAINLESS STEEL AND SHALL EXTEND 1/2" BEYOND FACE OF BRICK. THRU-WALL FLASHING MATERIAL SHALL EXTEND 1/2" MIN BEYOND THE EXTERIOR EDGE OF BRICK AND BE FULLY BONDED TO THE TOP SURFACE OF THE DRIP EDGE WITH A MASTIC OR MANUFACTURER-APPROVED SEALANT. TRIM FLASHING AS DIRECTED BY ARCHITECT. METAL DRIP EDGES SHALL BE SEALED AT ALL LAPS AND PENETRATIONS. EXPOSED END SHALL BE HEMMED. SEE DETAIL L12/A4.0.

G. NUMBER ON WINDOW DETAIL J1/A1.2 REPRESENT SEQUENCE OF CONSTRUCTION FOR WINDOW AND DOOR FLASHING. PROVIDE A MOCK-UP UNIT FOR REVIEW WITH ARCHITECT.

H. PROVIDE BLOCKING AT ALL WALL HUNG PROVIDE BLOCKING AT ALL WALL HUNG EQUIPMENT TO INCLUDE, BUT NOT LIMITED TO, GRAB BARS, CASEWORK AND TOILET ACCESSORIES.

I. ALL HEIGHTS FOR HANDICAP ELEMENTS ARE TO BE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) FOR MAKING FACILITIES ACCESSIBLE AND USABLE FOR PHYSICALLY HANDICAPPED PEOPLE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND PROPER INSTALLATION OF ALL RELATED ELEMENTS. GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS SHALL COMPLY WITH ADA REGARDING ANY AND ALL ELEMENTS OF THE PROJECT. FAILURE TO COMPLY WITH THESE REGULATIONS WILL RESULT IN THE REMOVAL OF NON COMPLYING WORK AT THE COST OF THE GENERAL CONTRACTOR.

REVISION | DATE

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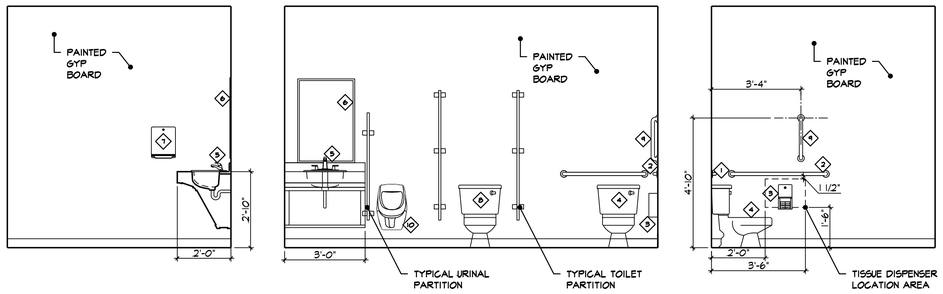
SCHEDULES AND DETAILS

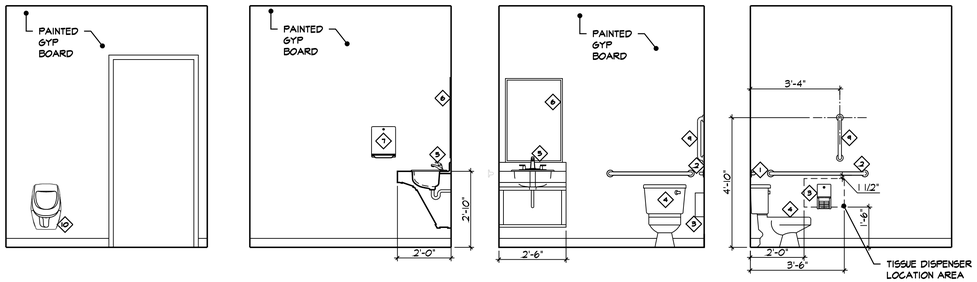
A1.2



ELEVATION "A" ELEVATION "B" ELEVATION "C"

J1 / A1.3 — MEN 105 ELEVATIONS

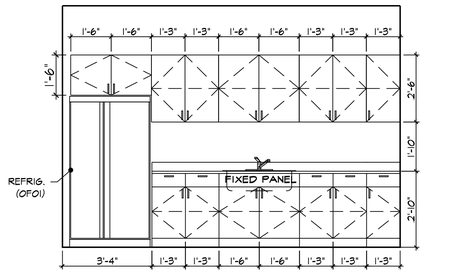
SCALE: 3/8"=1'-0"



ELEVATION "A" ELEVATION "B" ELEVATION "C" ELEVATION "D"

F1 / A1.3 — TOILET 106 ELEVATIONS

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

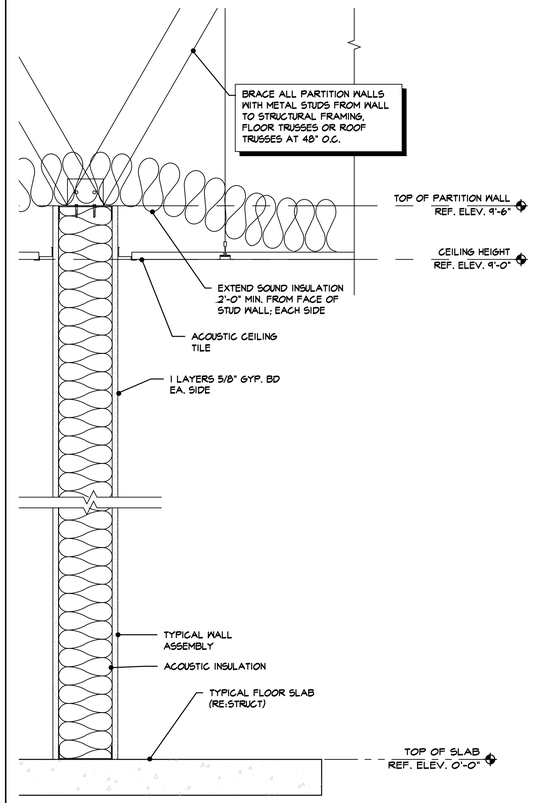


ELEVATION "A"

ALTERNATE #1

F9 / A1.3 — BREAKROOM 110 ELEVATIONS

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



F9 / A1.3 — TYPICAL INTERIOR PARTITION

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

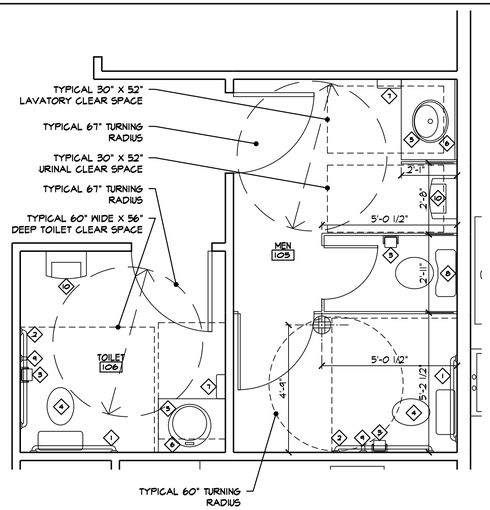
GENERAL NOTES

A. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED WITHIN THE DRAWINGS.

B. PROVIDE BLOCKING AT ALL WALL HUNG PROVIDE BLOCKING AT ALL WALL HUNG EQUIPMENT TO INCLUDE, BUT NOT LIMITED TO, GRAB BARS, CASEWORK AND TOILET ACCESSORIES.

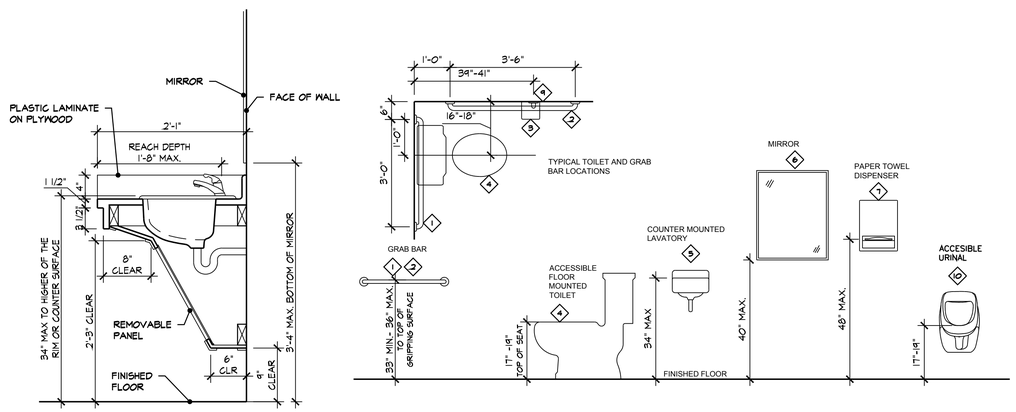
C. ALL HEIGHTS FOR HANDICAP ELEMENTS ARE TO BE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) FOR MAKING FACILITIES ACCESSIBLE AND USABLE FOR PHYSICALLY HANDICAPPED PEOPLE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND PROPER INSTALLATION OF ALL RELATED ELEMENTS. GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS SHALL COMPLY WITH ADA REGARDING ANY AND ALL ELEMENTS OF THE PROJECT. FAILURE TO COMPLY WITH THESE REGULATIONS WILL RESULT IN THE REMOVAL OF NON COMPLYING WORK AT THE COST OF THE GENERAL CONTRACTOR.

D. ALL CERAMIC TILE INSTALLATION SHALL CONFORM TO THE TILE COUNCIL OF NORTH AMERICA'S 2016 TCNA HANDBOOK FOR CERAMIC, GLASS, AND STONE TILE INSTALLATION.



A1 / A1.3 — ENLARGED BATHROOM FLOOR PLANS

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



A5 / A1.3 — ACCESSIBLE LAVATORY DETAIL/ MOUNTING DETAILS

NO SCALE

ACCESSORY LIST

MODEL NUMBER SHOWN BY "BOBRICK" UNLESS OTHERWISE NOTED, WHERE APPLICABLE, COLORS ARE SELECTED BY ARCHITECT.

SYM.	DESCRIPTION	MODEL NUMBER
1	36" GRAB BAR	# 6806 SERIES
2	42" GRAB BAR	# 6806 SERIES
3	TOILET TISSUE DISPENSER	# 2888
4	FLOOR MOUNTED TOILET (ACCESSIBLE)	SEE PLUMBING DWGS
5	COUNTER MOUNTED LAVATORY	SEE PLUMBING DWGS
6	MIRROR (24" X 36")	# 165 SERIES
7	RECESSED PAPER TOWEL DISPENSER	# B-359
8	FLOOR MOUTED TOILET	SEE PLUMBING DWGS
9	18" GRAB BAR	# 6806 SERIES
10	URINAL	SEE PLUMBING DWGS

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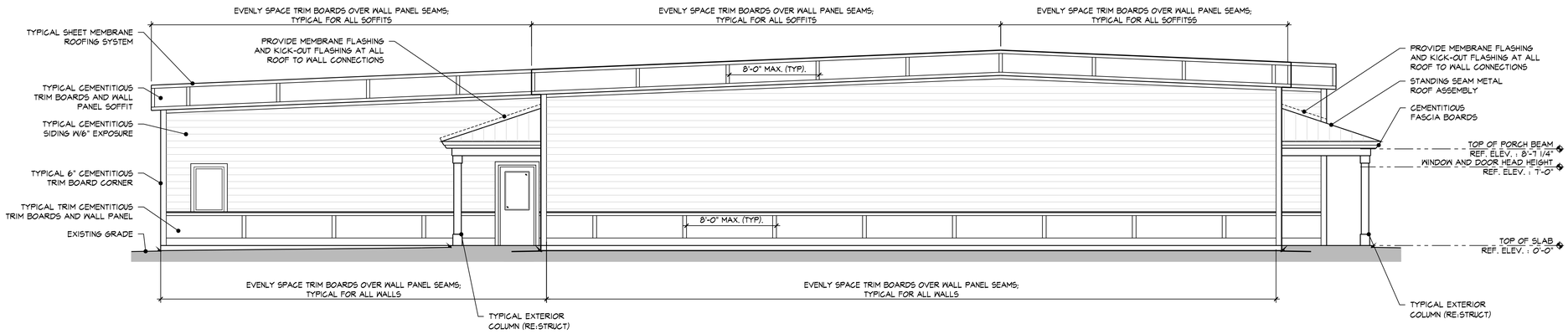
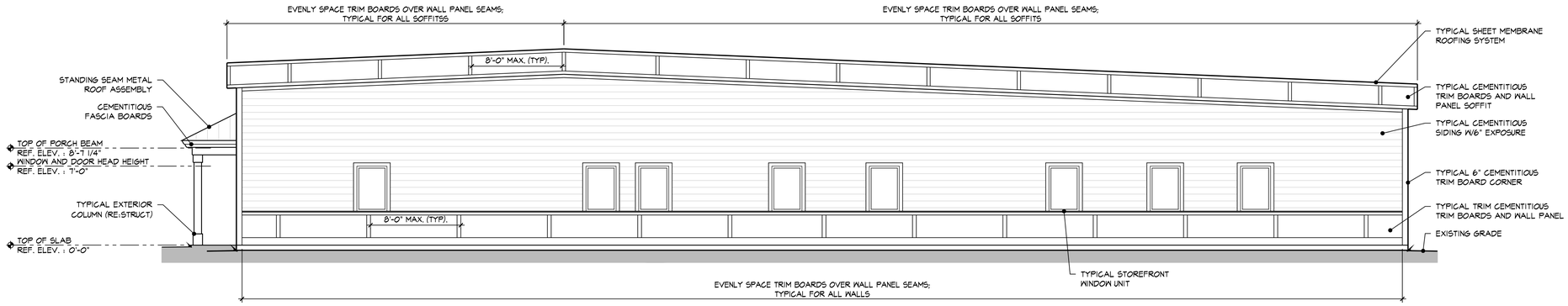
ENLARGED BATHROOM PLANS

A1.3



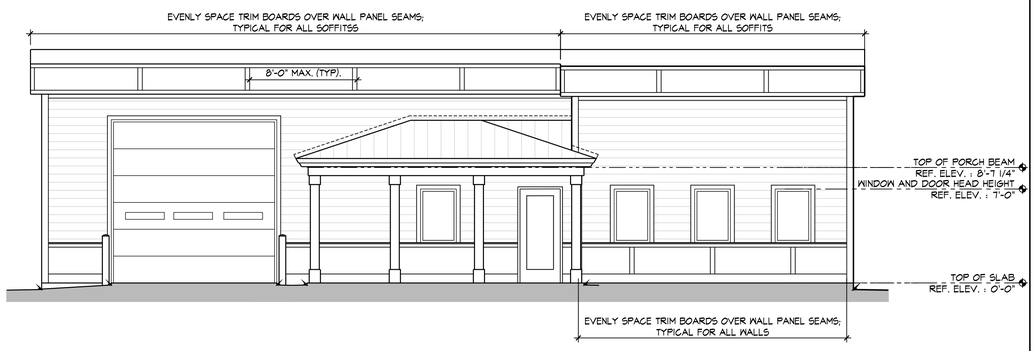
J1 / A2.0 — BUILDING ELEVATION

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



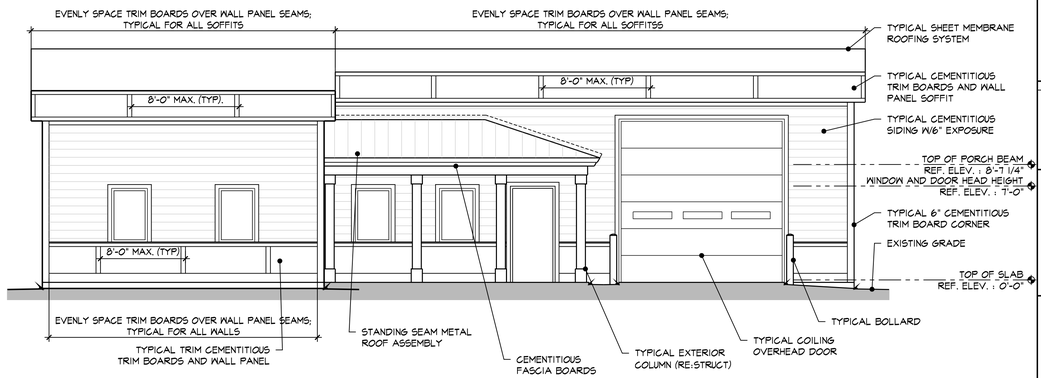
E1 / A2.0 — BUILDING ELEVATION

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



A1 / A2.0 — BUILDING ELEVATION

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



A9 / A2.0 — BUILDING ELEVATION

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

GENERAL NOTES

A. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED WITHIN THE DRAWINGS.

B. COORDINATE LOCATION OF HOSE BIBS, EXTERIOR LIGHT FIXTURES, VENTS SHOWN ON MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REVIEW ANY CONFLICTS WITH THE ARCHITECT PRIOR TO COMMENCEMENT OF ROUGH-IN.

REVISION | DATE

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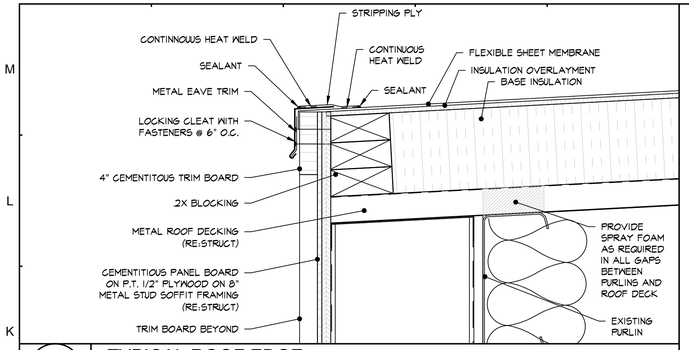
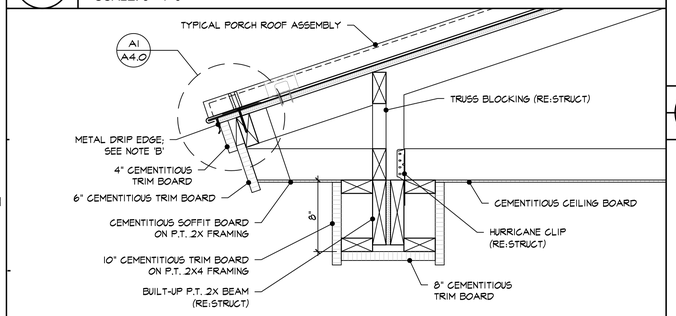
BUILDING SECTIONS

A2.0



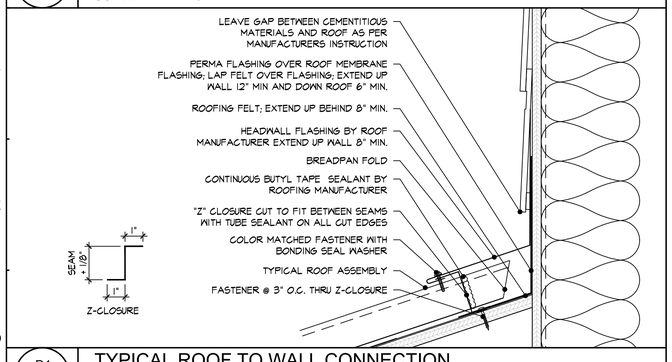
K1 / A4.0 — **TYPICAL ROOF EDGE**

SCALE: 3"=1'-0"



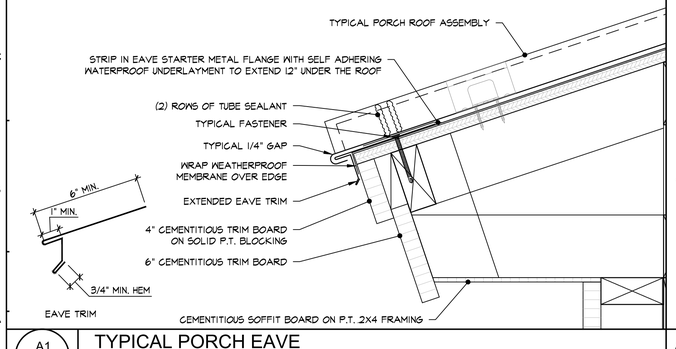
G1 / A4.0 — **TYPICAL PORCH EAVE BETWEEN POSTS**

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



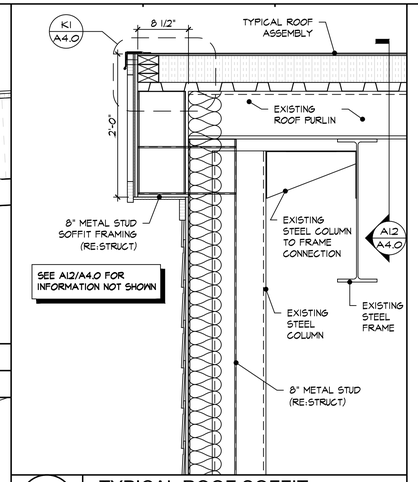
D1 / A4.0 — **TYPICAL ROOF TO WALL CONNECTION**

SCALE: 3"=1'-0"



A1 / A4.0 — **TYPICAL PORCH EAVE**

SCALE: 3"=1'-0"

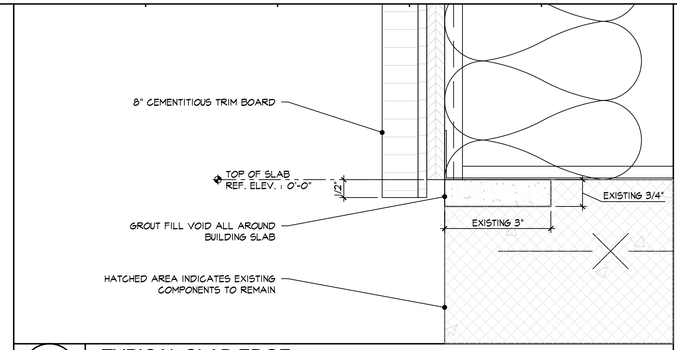


J5 / A4.0 — **TYPICAL ROOF SOFFIT**

SCALE: 3"=1'-0"

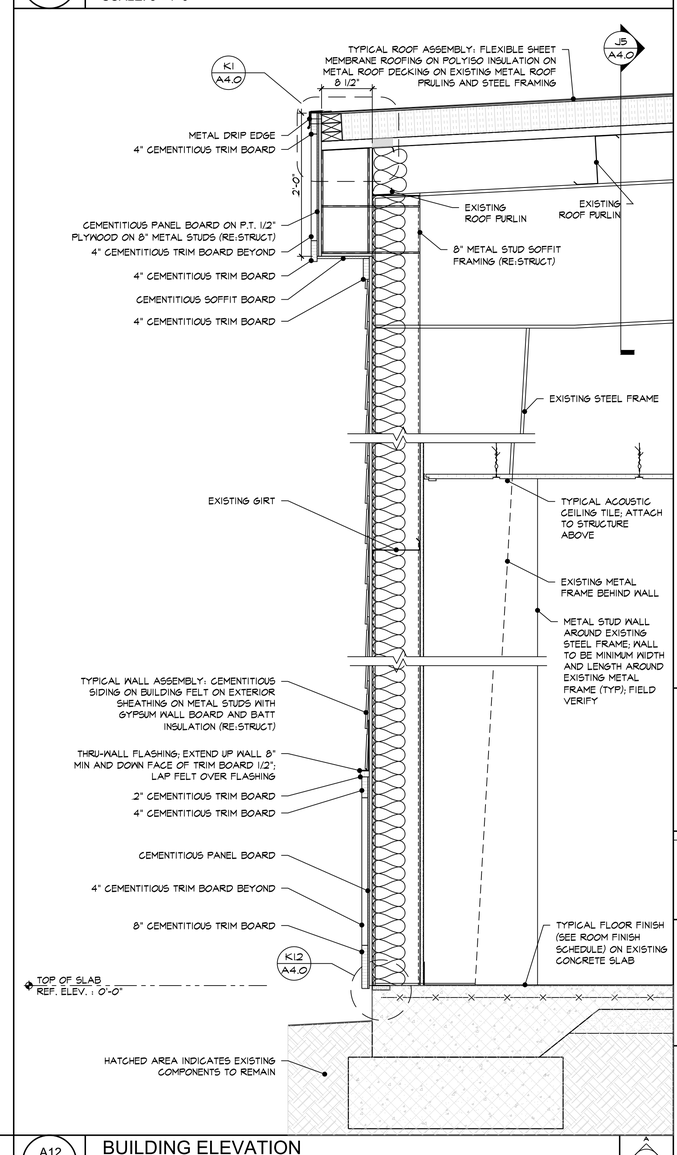
A5 / A4.0 — **BUILDING ELEVATION**

SCALE: 1"=1'-0"



K12 / A4.0 — **TYPICAL SLAB EDGE**

SCALE: 3"=1'-0"



A12 / A4.0 — **BUILDING ELEVATION**

SCALE: 1"=1'-0"

GENERAL NOTES

A. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE CONTRARY TO THOSE REPRESENTED WITHIN THE DRAWINGS.

B. METAL DRIP EDGE BY ROOFING MANUFACTURER; ATTACH W/(2) FASTENERS INTO SOLID SURFACE EVERY 24" O.C. D. ALL ROOF T

C. DISSIMILAR METAL ARE TO BE USED IN CONJUNCTION WITH STEEL SHELF ANGLES OR LINTELS TO NEGATE THE POTENTIAL FOR GALVANIC ACTION BETWEEN THE METALS.

D. ALL METAL STUDS AND CHANNELS IN SOFFITS, EXTERIOR BEAMS, EXTERIOR COLUMNS, ETC. THAT ARE OUTSIDE OF THE BUILDING ENVELOPE SHALL BE GALVANIZED.

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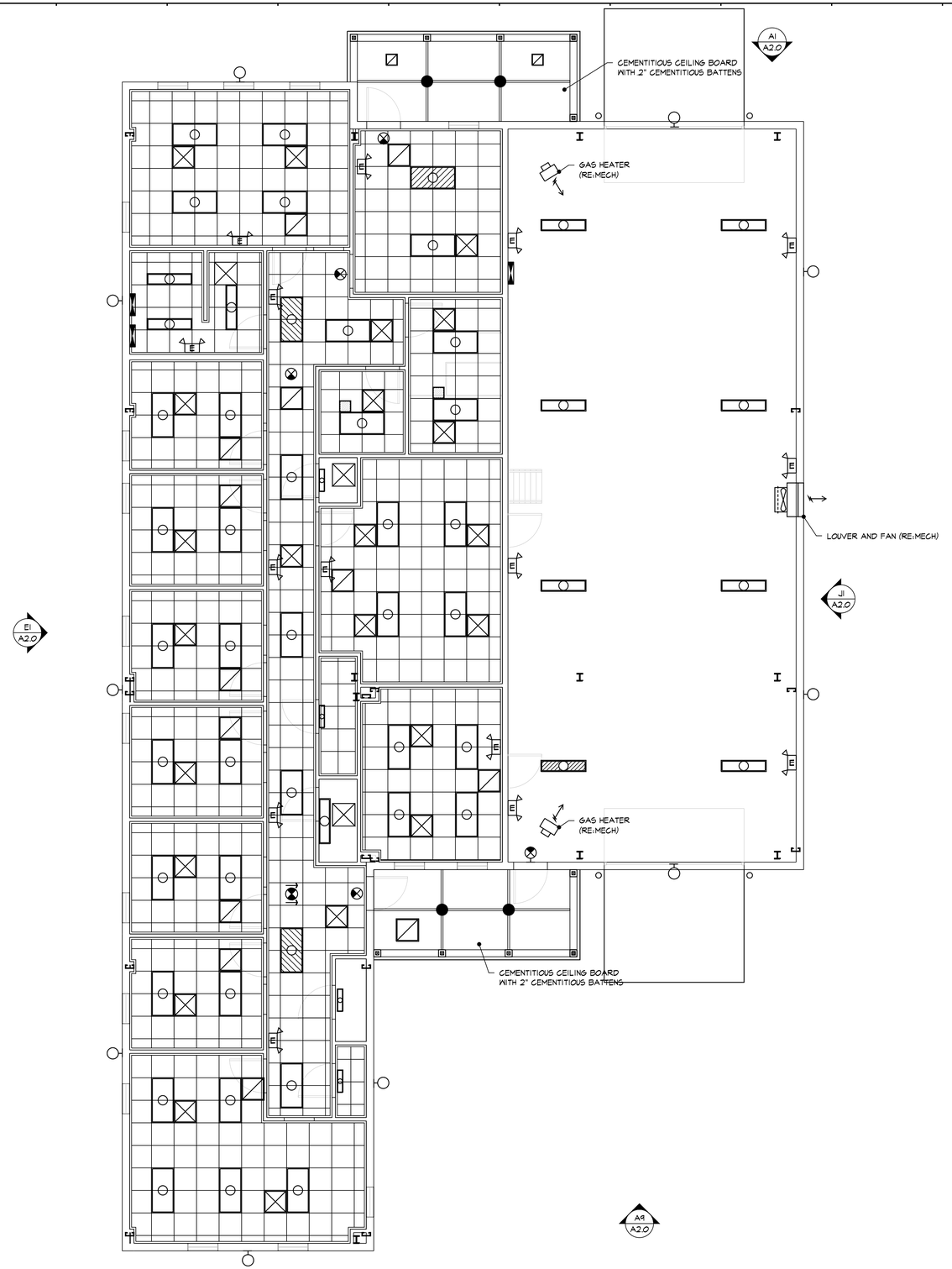
WALL SECTIONS

A4.0



GENERAL NOTES

A. DIMENSIONS ARE TO FACE OF FINISH MATERIALS UNLESS NOTED OTHERWISE.

B. SEE MECHANICAL DRAWINGS FOR ALL HVAC SYMBOL INFORMATION. COORDINATE LOCATION OF ALL FIXTURES WITH MECHANICAL DRAWINGS. VERIFY WITH OWNER/ARCHITECT.

C. SEE ELECTRICAL DRAWINGS FOR ALL ELECTRICAL SYMBOL INFORMATION. COORDINATE LOCATION OF ALL FIXTURES WITH ELECTRICAL DRAWINGS. VERIFY WITH OWNER/ARCHITECT.

D. COORDINATE HEIGHTS OF LIGHTING FIXTURES, MECHANICAL GRILLES, AND INTERIOR MECHANICAL UNITS WITH ARCHITECT.

E. COORDINATE LOCATION FOR CABLE TV JACKS AND POWER OUTLETS WITH OWNER. PROVIDE BLOCKING IN WALL FOR TV MOUNTING BRACKETS IN LOCATIONS AS PROVIDED BY OWNER.

SYMBOL LEGEND

- 2X4 LIGHT FIXTURE
- 2X4 LIGHT FIXTURE; USED AS NIGHT LIGHT
- 1X4 LIGHT FIXTURE
- CAN LIGHT FIXTURE
- CAN LIGHT FIXTURE; USED AS NIGHT LIGHT
- WALL MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE CONNECTED TO EMERGENCY CIRCUIT
- CEILING MOUNTED EXIT LIGHT
- WALL MOUNTED EXIT LIGHT
- EMERGENCY BATTERY LIGHT
- HVAC SUPPLY GRILLE; CEILING MOUNTED
- HVAC RETURN GRILLE; CEILING MOUNTED

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2019

03/19/2019

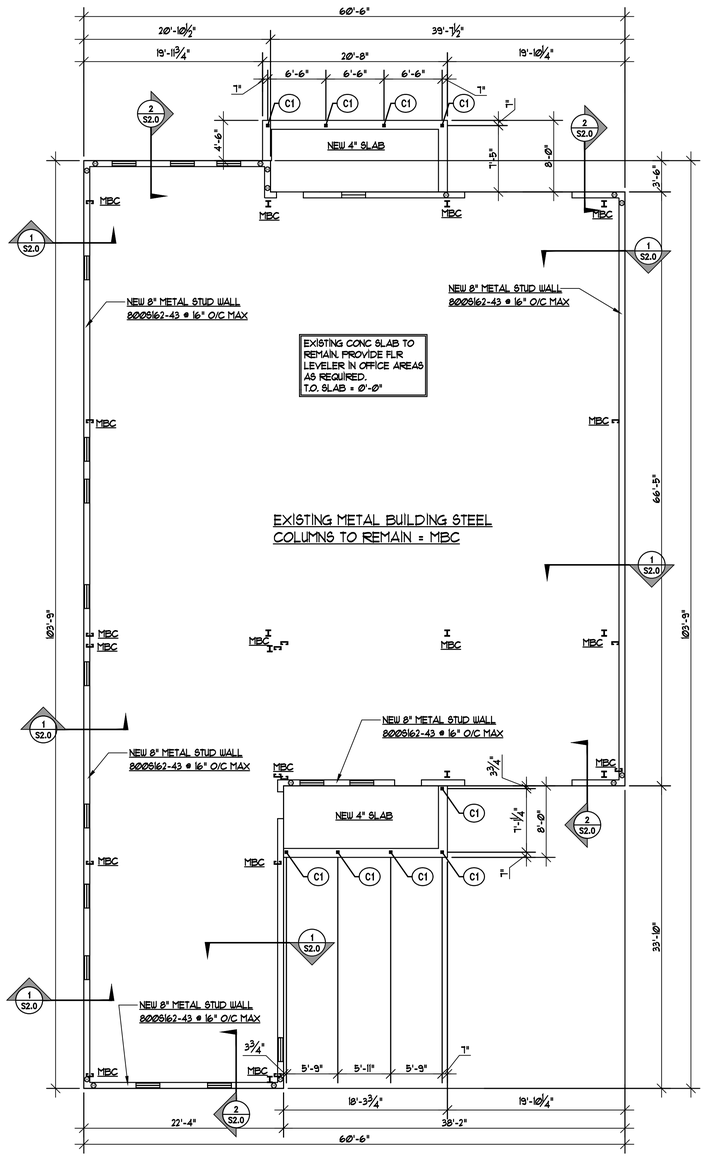
REFLECTED CEILING PLAN

A5.0

A1
A5.0

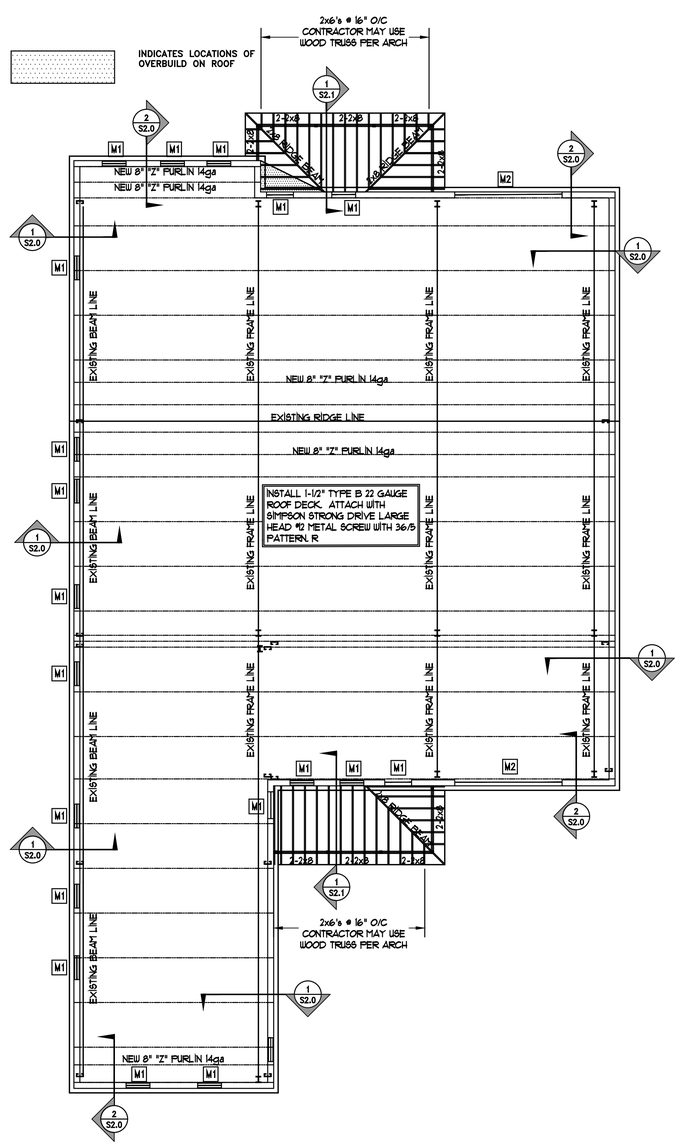
REFLECTED CEILING PLAN

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



Foundation Plan

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



ROOF FRAMING PLAN

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

NOTE: ALL DIM. ARE TO BE FIELD VERIFIED. EXTERIOR FACE OF NEW METAL STUD WALLS TO ALIGN W/ EDGE OF EXISTING SLAB.

Ⓗ - DENOTES HEAVY DUTY UPLIFT ANCHOR LOCATIONS (SEE DETAIL 5/HD8 ON SHEET S3.0)

COLUMN SCHEDULE

MARK	COLUMN	BEARING PLATE			ANCHOR BOLTS
		THICK	WIDTH	LENGTH	
C1	4x4 TREATED WOOD POST SIMPSON ABU44 COLUMN BASE				
(C?) DENOTES COLUMN DESIGNATION ON PLAN					

LOAD TABLE

2015 INTERNATIONAL BUILDING CODE AND ASCE 7-10

RISK CATEGORY II

LIVE LOADS:

1. FLOOR LOADS: (ASCE Table 4-1) — 100 p.s.f.
2. ROOF LOADS:
   A. Basic roof live load = — 20 p.s.f.
3. PARTITIONS: (ASCE Section 4.22)
   A. Partition load = — 10 p.s.f.

DEAD LOADS:

1. USE ACTUAL DEAD LOADS OF MATERIALS

SNOW LOADS:

GROUND SNOW LOAD - Pg = 10
SNOW LOAD IMPORTANCE FACTOR - Is = 1.0
SNOW EXPOSURE FACTOR - Ce = 1.0
THERMAL FACTOR - Ct = 1.0
FLAT-ROOF SNOW LOAD-Pf = 7.0 p.s.f.

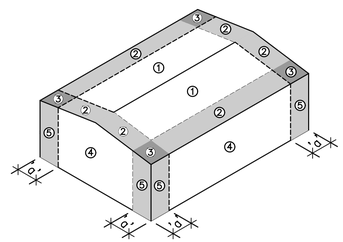
WIND LOADS:

BASIC WIND SPEED (ULT) = 150 (mph)
BASIC WIND SPEED (ASD) = 116 (mph)
WIND EXPOSURE = C
INTERNAL PRESSURE COEFICIENT
Enclosed Building +/- 0.18
WIND BORNE DEBRIS REGION - ALL GLAZING TO MEET LARGE MISSILE IMPACT ASTME 1996

1. DESIGN WIND PRESSURES:
   A. Main Windforce Resisting System = (qh) = 32.8
   B. Components and Cladding

ZONE	PRESSURE	SUCTION
ROOF ZONE ①	12.72 PSF	-31.26 PSF
ROOF ZONE ②	12.72 PSF	-52.46 PSF
ROOF ZONE ③	12.72 PSF	-78.95 PSF
WALL ZONE ④	28.61 PSF	-31.00 PSF
WALL ZONE ⑤	28.61 PSF	-38.15 PSF

a = width of pressure coeff. zone = 6'-0"
Roof Net Uplift = Zone Suction - 20 psf
DP RATING - WALL ZONE 4 & 5 = 40 psf



WALL AND ROOF ZONE DIAGRAM (7°< HIP ROOF SLOPE ≤ 27°)

Interior Zones: Roofs - Zone 1, Walls - Zone 4
End Zones: Roofs - Zone 2, Walls - Zone 5
Corner Zones: Roofs - Zone 3

SEISMIC LOADS:

SITE CLASS - D	(ASCE Chapter 20)
SPECTRAL RESPONSE ACCELERATIONS Ss = 0.484 S1 = 0.173	(ASCE Figure 22-1 & 22-2)
SPECTRAL RESPONSE COEFFICIENTS Sds = 0.456 Sd1 = 0.243	(ASCE Section 11.4.4)
SEISMIC IMPORTANCE FACTOR - Ie = 1.00	(ASCE Table 11.5-1)
SEISMIC DESIGN CATEGORY = D	(ASCE Table 11.6-1 & 11.6-2)
BASIC SEISMIC-FORCE RESISTING SYSTEM= Light framed walls w/ plywood shear panels	(ASCE Table 12.2-1)
SEISMIC RESPONSE COEFFICIENT - Cs = 0.070	(ASCE Section 12.8.1.1)
RESPONSE MODIFICATION FACTOR - R = 6.5	(ASCE Table 12.2-1)
DESIGN BASE SHEAR - 17 kips	(ASCE Section 12.8)
ANALYSIS PROCEDURE - EQUIVALENT FORCE METHOD	

GENERAL NOTES

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REVISION | DATE

A RENOVATION TO

13TH AVENUE SOUTH FOR FACILITIES MAINTENANCE

MYRTLE BEACH, SOUTH CAROLINA

19-111

03/08/2019

FOUNDATION/ROOF PLAN

S1.0

Weatherly
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S1.0

FOUNDATION/ROOF PLAN

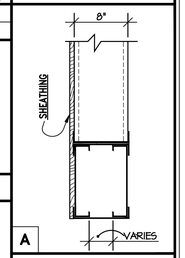
SCALE: 1/8"=1'-0"

6" METAL STUD LINTEL SCHEDULE

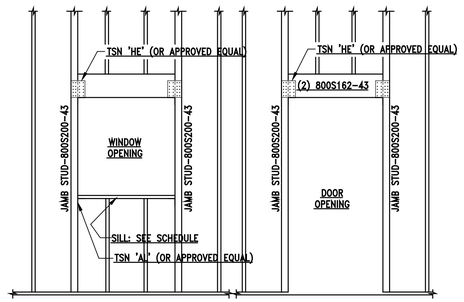
MARK	LINTEL DISCRIPTION		REFERENCE DIAGRAM	DIAGRAMS
M1	(2) 8" – 18 GAUGE METAL STUDS W/ TRACKS		DIAGRAM A	
M2	(2) 12" – 14 GAUGE METAL STUDS W/ TRACKS		DIAGRAM A	

CONTRACTOR'S NOTES:

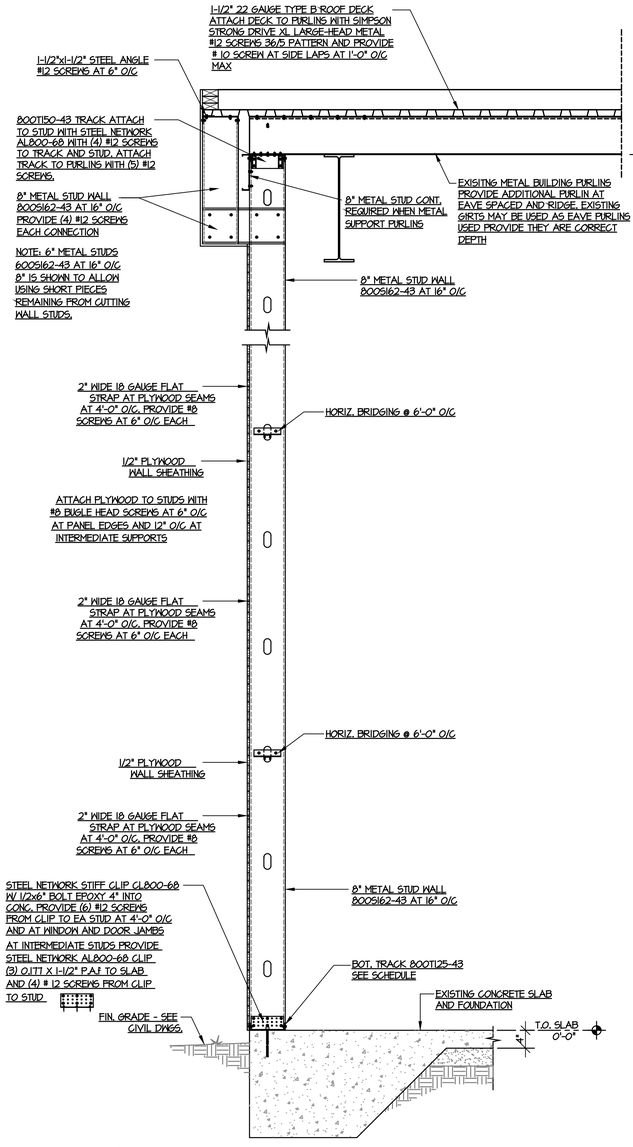
1. SEE ARCHITECTURAL DRAWINGS FOR WALL WIDTHS AND VENEER COURSING.



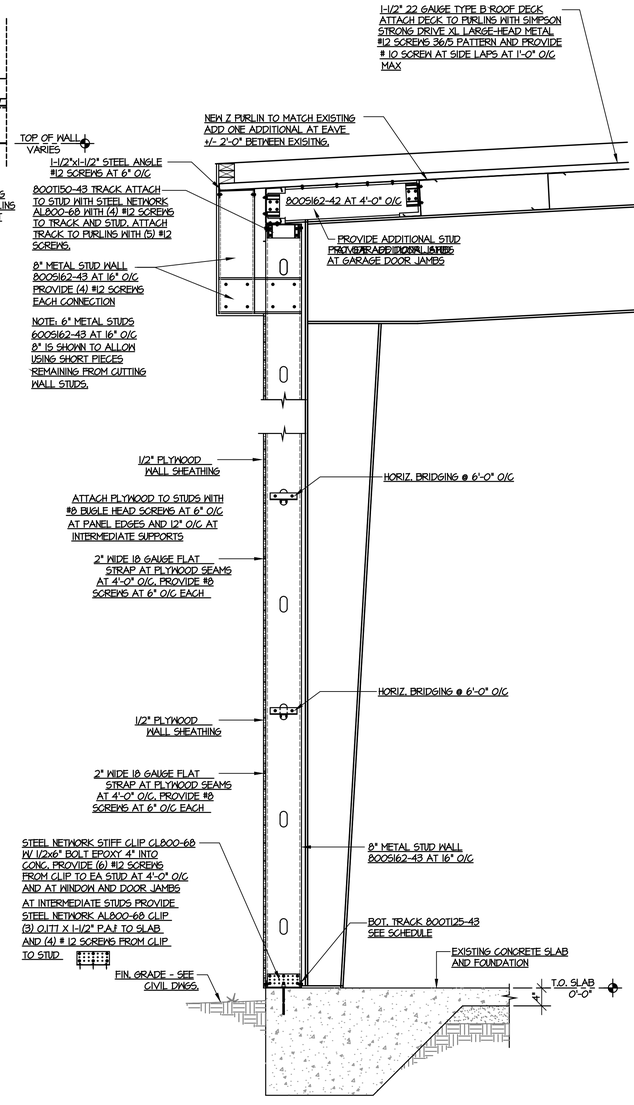
LINTEL BEARING DETAILS



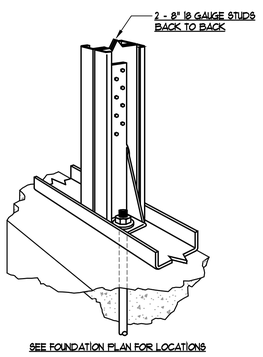
TYPICAL METAL STUD LINTEL BEARING DETAIL
NO SCALE



SECTION 1/S2.0
SCALE: 3/4" = 1'-0"

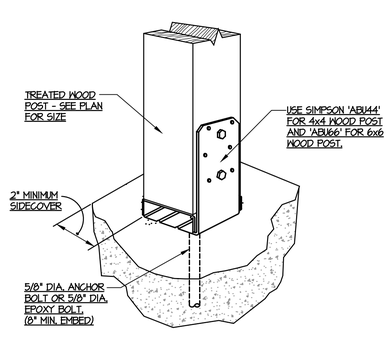


SECTION 2/S2.0
SCALE: 3/4" = 1'-0"

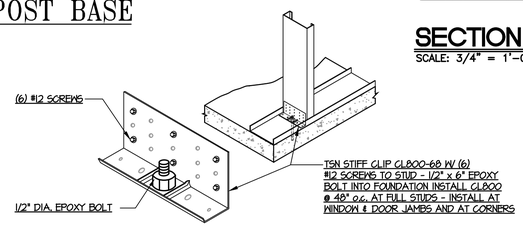


SEE FOUNDATION PLAN FOR LOCATIONS

S/HD8
SIMPSON UPLIFT ANCHOR



SIMPSON ABU POST BASE



METAL STUD-TO-SLAB CONNECTION
(8" METAL STUD WALL)
NO SCALE

MINIMUM CONCRETE COVER

(A) CONCRETE CAST AGAINST EARTH:	
1. ALL BARS	3" COVER
(B) CONCRETE EXPOSED TO EARTH OR WEATHER	
1. #6 THROUGH #18 BARS	2" COVER
2. #5 BAR AND SMALLER	1-1/2" COVER
(C) CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
1. SLABS & WALLS #14 AND #18 BARS	1-1/2" COVER
2. SLABS & WALLS #11 BAR AND SMALLER	3/4" COVER
3. BEAMS & COLUMNS (ALL REINFORCEMENT)	1-1/2" COVER

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S2.0

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S2.0
SECTIONS & DETAILS
SCALE: 3/4"=1'-0"

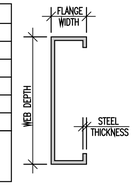
LIGHT STEEL FRAMING MATERIAL SIZING CHART

MEMBER SIZE	DESIGNATION
1 5/8"	162
2 1/2"	250
3 1/2"	350
3 5/8"	362
4"	400
5 1/2"	550
6"	600
7 1/4"	725
8"	800
9 1/4"	925
10"	1000
11 1/2"	1150
12"	1200

MEMBER DEPTH:
(EXAMPLE: 6" = 600 x 1/100 INCHES)
ALL MEMBER DEPTHS ARE TAKEN IN 1/100 INCH. FOR ALL "T" SECTIONS, MEMBER DEPTH IS INSIDE TO INSIDE DIMENSION.

FLANGE WIDTH	DESIGNATION
1 1/4"	125
1 3/8"	137
1 1/2"	150
1 5/8"	162
2"	200
2 1/2"	250

FLANGE WIDTH:
(EX: 1 5/8" = 1.625 = 162 x 1/100 INCHES)
ALL FLANGE WIDTHS ARE TAKEN IN 1/100 INCHES



STEEL THICKNESS REFERENCE CHART

GAGE NO.	MIL THICKNESS	DESIGN (IN.)	MINIMUM (IN.)
25	18	0.0188	0.0179
22	27	0.0283	0.0269
20	33	0.0346	0.0329
18	43	0.0451	0.0428
16	54	0.0566	0.0538
14	68	0.0713	0.0677
12	97	0.1017	0.0966

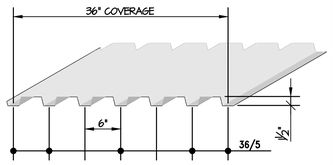
600S162-54

STYLE:
(EXAMPLE: STUD OR JOIST SECTION = S)
THE FOUR ALPHA CHARACTERS UTILIZED BY THE DESIGNATOR SYSTEM ARE:
S = STUD OR JOIST SECTIONS
T = TRACK SECTIONS
U = CHANNEL SECTIONS
F = FURRING CHANNEL SECTIONS

MATERIAL THICKNESS:
(EXAMPLE: 0.054" = 54 MILS; 1 MIL = 1/100 IN.)
MATERIAL THICKNESS IS THE MINIMUM BASE METAL THICKNESS IN MILS. MINIMUM BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN THICKNESS.

ROOF DECK

TYPE	GAUGE	FINISH		
B	22	GALVANIZED		
Sp	Sn	Ip	In	Fy min.
0.235 in.^{3}	0.247 in.^{3}	0.213 in.^{4}	n/a in.^{4}	33 ksi



SUPPORT ATTACHMENT

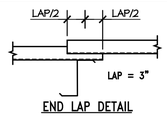
ATTACH DECK TO ALL SUPPORTS WITH SIMPSON STRONG DRIVE XL HEAD #12 x 1-1/4" SCREW

USING PATTERNS / SPACING INDICATED:
INTERMEDIATE: 36/5
ENDS / END LAPS: 36/5
PERIMETER: 6" o.c.

ATTACH PARTIAL SHEETS IN ALL FLUTES

SIDE LAP ATTACHMENT

SIDE LAPS TO BE ATTACHED BETWEEN SUPPORTS WITH #10 TEKS AT 12" O/C

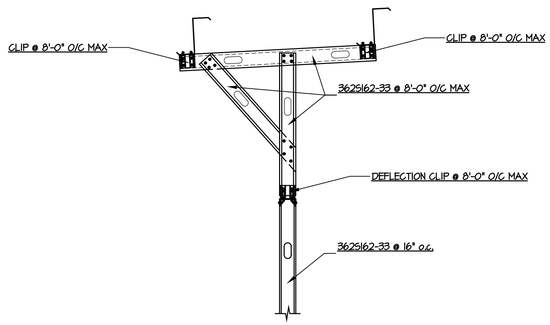


END LAP DETAIL

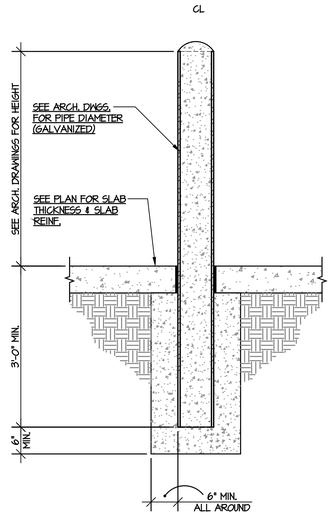
LAP END LAPS. END LAPS ARE TO OCCUR AT SUPPORTS ONLY.

CONTRACTOR'S NOTE:

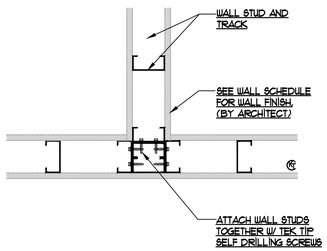
IN ORDER TO PREVENT FIELD FIT-UP AND PLACEMENT ISSUES THE STRUCTURAL STEEL SHOP DRAWINGS SHALL BE CAREFULLY COORDINATED WITH ANY OTHER COMPONENT DRAWINGS, INCLUDING BARJOIST AND DECKING SHOP DRAWINGS. THIS DETAILED COORDINATION IS TO BE PERFORMED BY THE STRUCTURAL STEEL SHOP DRAWING PROVIDER. THE PROVIDERS OF BARJOIST AND DECKING SHOP DRAWINGS (AND OTHER COMPONENTS) SHALL BACK CHECK THE STRUCTURAL STEEL SHOP DRAWINGS AS A SECONDARY VERIFICATION. THE GENERAL CONTRACTOR SHALL PROVIDE HIS OWN CHECK PRIOR TO COMPLETION OF THE SHOP DRAWING PROCESS.



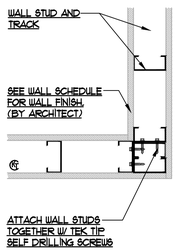
TYPICAL BRACING OF INTERIOR WALL



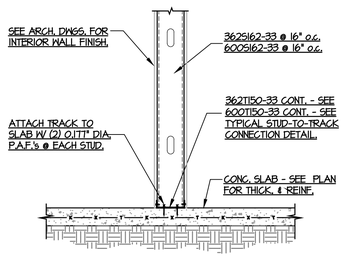
TYPICAL BOLLARD DETAIL



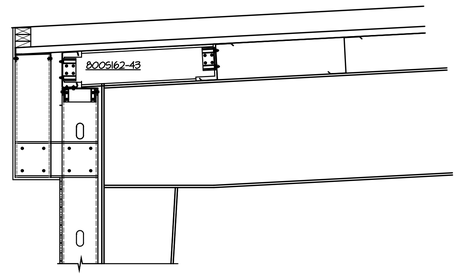
METAL STUD WALL INTERSECTION PERPENDICULAR TO WALL

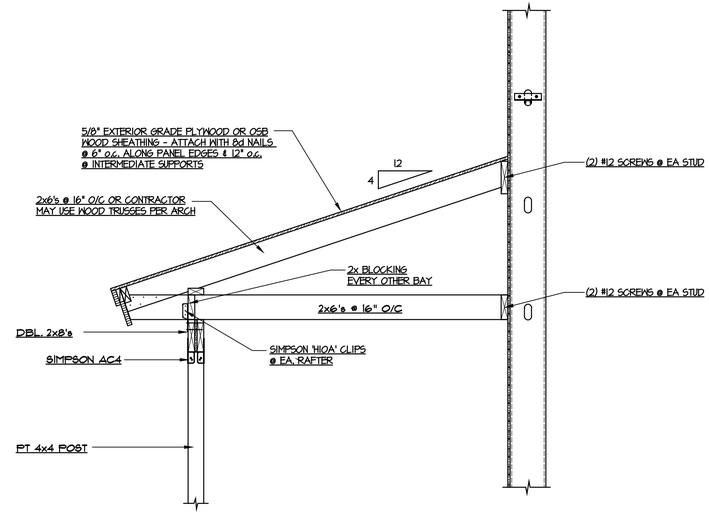


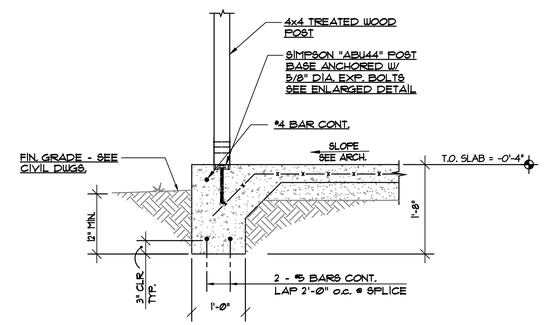
METAL STUD WALL INTERSECTION @ CORNER



ATTACHMENT DETAIL FOR ALL INTERIOR NON-LOAD BEARING WALLS
(6" & 3 5/8" METAL STUD WALL)







GENERAL NOTES

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REGISTERED PROFESSIONAL ENGINEER
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No. 15317
1/29/19
JOSHUA BRYAN WEATHERLY

SOUTH CAROLINA
WEATHERLY ENGINEERING LLC
MYRTLE BEACH, SC
No. 5538
CERTIFICATE OF AUTHORIZATION

REVISION	DATE

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S2.1
SECTIONS & DETAILS
SCALE: 3/4"=1'-0"

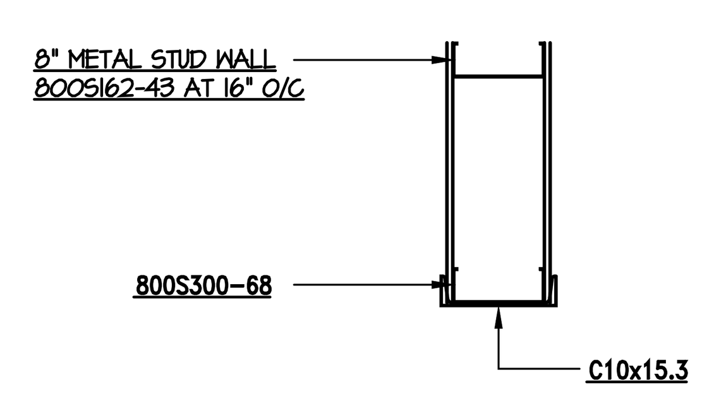
SPECIAL INSPECTION COORDINATOR – ASHLEIGH B. WEATHERLY P.E.
NOTE: ALL TESTING & INSPECTION REPORTS TO BE TO SENT SPECIAL INSPECTION COORDINATOR ON A WEEKLY BASIS – ALL REPORTS TO BE IN AN ELECTRONIC FORMAT BY EMAIL.
SPECIAL INSPECTION COORDINATOR WILL SUBMIT CONSOLIDATED REPORT TO BUILDING OFFICIAL ON A WEEKLY BASIS.

STATEMENT OF SPECIAL INSPECTIONS

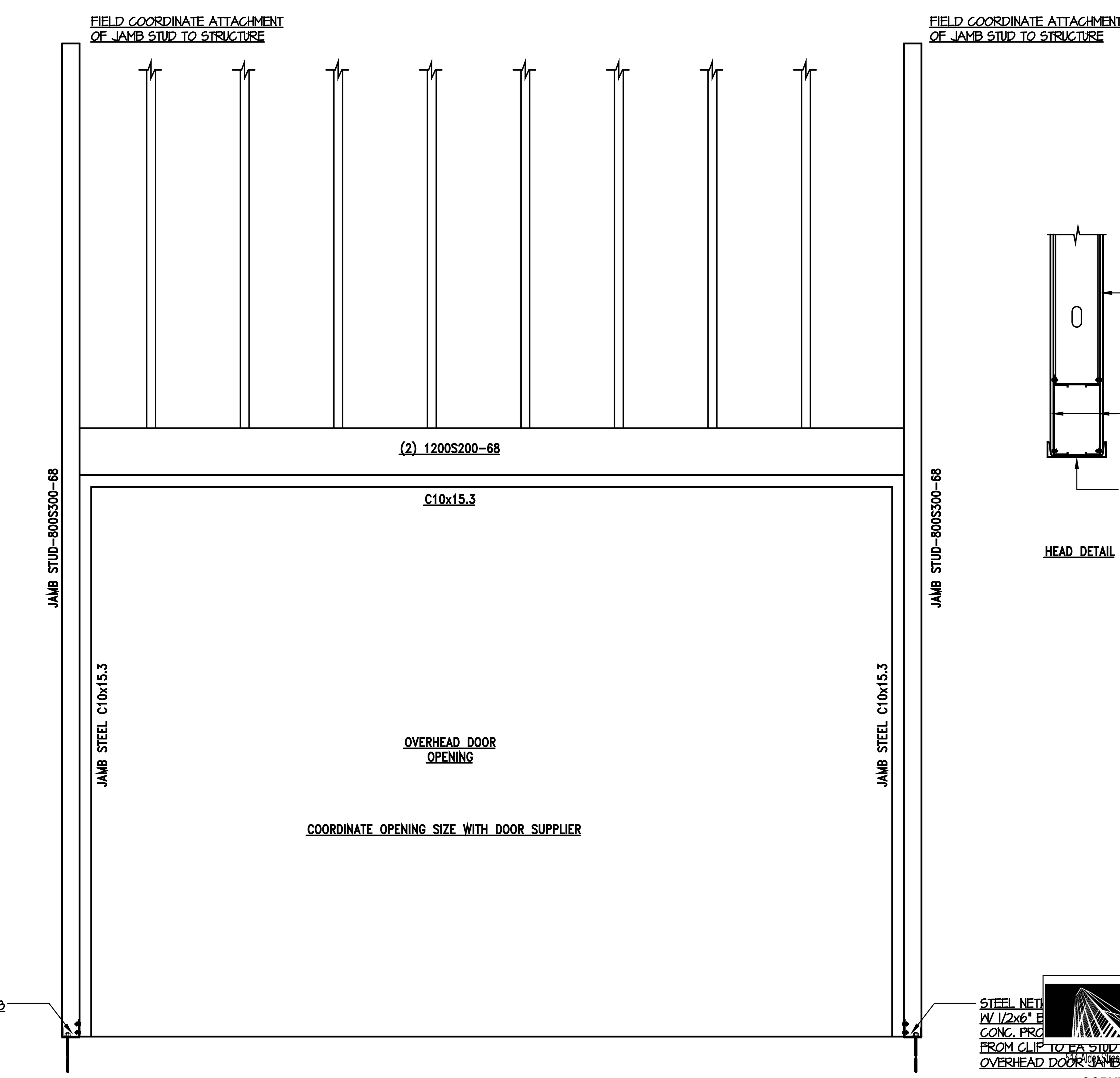
BUILDING COMPONENTS OR MATERIAL	MATERIAL SUBMITTAL	TESTING REQUIREMENTS	TESTING FREQUENCY	TESTING AGENCY	INSPECTION / MONITORING	INSPECTION FREQUENCY	INSPECTION AGENCY	PART OF WIND QUALITY ASSURANCE	PART OF SEISMIC QUALITY ASSURANCE
CONCRETE FOUNDATIONS	1. SUBMIT CONCRETE MIX DESIGN. 2. SUBMIT FOUNDATION REINFORCEMENT SHOP DRAWINGS. 3. VERIFY PROPER CONCRETE STRENGTH.	1. TEST CONCRETE STRENGTH	1. (1) SET OF CYLINDERS FOR EACH VERTICAL LIFT OR EACH 50 YARDS OF CONCRETE.	WEATHERLY ENGINEERING, LLC ASHLEIGH WEATHERLY PE 15317	1. VERIFY APPROPRIATE MIX (STRENGTH) PROVIDE: A. REBAR SIZE B. REBAR QUANTITY C. REBAR PLACEMENT	1. PERIODIC	WEATHERLY ENGINEERING, LLC ASHLEIGH WEATHERLY PE 15317	1. NO	1. NO
METAL STUD FRAMING	1. VERIFY FRAMING MEMBERS ARE SIZE & GAUGE AS SPECIFIED	1. NONE	1. NONE		1. VERIFY FRAMING PER PLAN		WEATHERLY ENGINEERING, LLC ASHLEIGH WEATHERLY PE 15317	1. YES	1. YES
PLYWOOD SHEARWALLS	1. VERIFY WOOD MEMBER GRADES.	1. NONE	1. NONE	1. NONE	1. EACH SHEARWALL WILL BE MONITORED FOR: A. MATERIAL DIMENSIONS AND SPACING B. ATTACHMENT VERIFICATION	1. PERIODIC	WEATHERLY ENGINEERING, LLC ASHLEIGH WEATHERLY PE 15317	1. YES	1. YES
METAL DECK ROOF DIAPHRAGM	1. VERIFY SCREW ATTACHMENT	1. NONE	1. NONE	1. NONE	1. EACH DIAPHRAGM WILL BE MONITORED FOR: A. MATERIAL DIMENSIONS B. ATTACHMENT VERIFICATION	1. PERIODIC	WEATHERLY ENGINEERING, LLC ASHLEIGH WEATHERLY PE 15317	1. YES	1. YES
CONNECTION HARDWARE	1. SUBMIT MANUF. DATA ON CONNECTION HARDWARE IF OTHER THAN SPECIFIED MATERIAL.	1. NONE	1. NONE	1. NONE	1. ALL HARDWARE TO BE MONITORED FOR: A. SPACING B. ATTACHMENT VERIFICATION	1. PERIODIC	WEATHERLY ENGINEERING, LLC ASHLEIGH WEATHERLY PE 15317	1. YES	1. YES

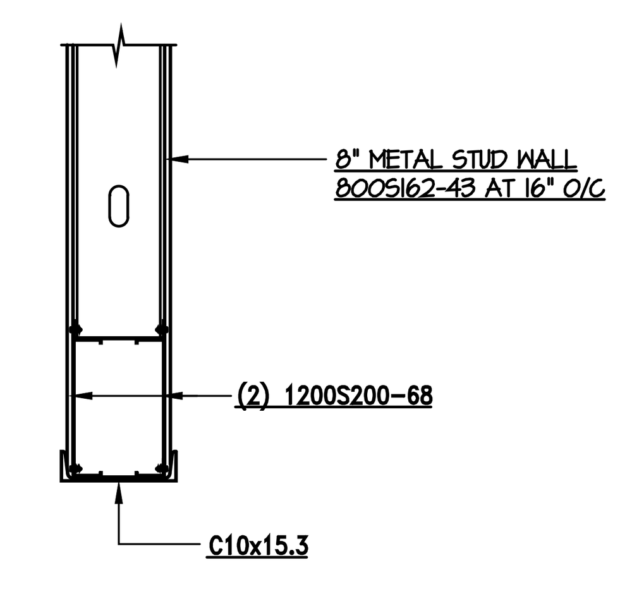
DEFINITIONS

1. PERIODIC – THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED, AND AT THE COMPLETION OF THE WORK
2. CONTINUOUS – THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
3. SET OF CYLINDERS – (5) SPECIMENS MOLDED IN ACCORDANCE WITH ASTM REQUIREMENTS TO PROVIDE COMPRESIVE STRENGTH TEST RESULTS. ***



JAMB DETAIL





HEAD DETAIL

Weatherly
STRUCTURAL ENGINEERS

GENERAL NOTES

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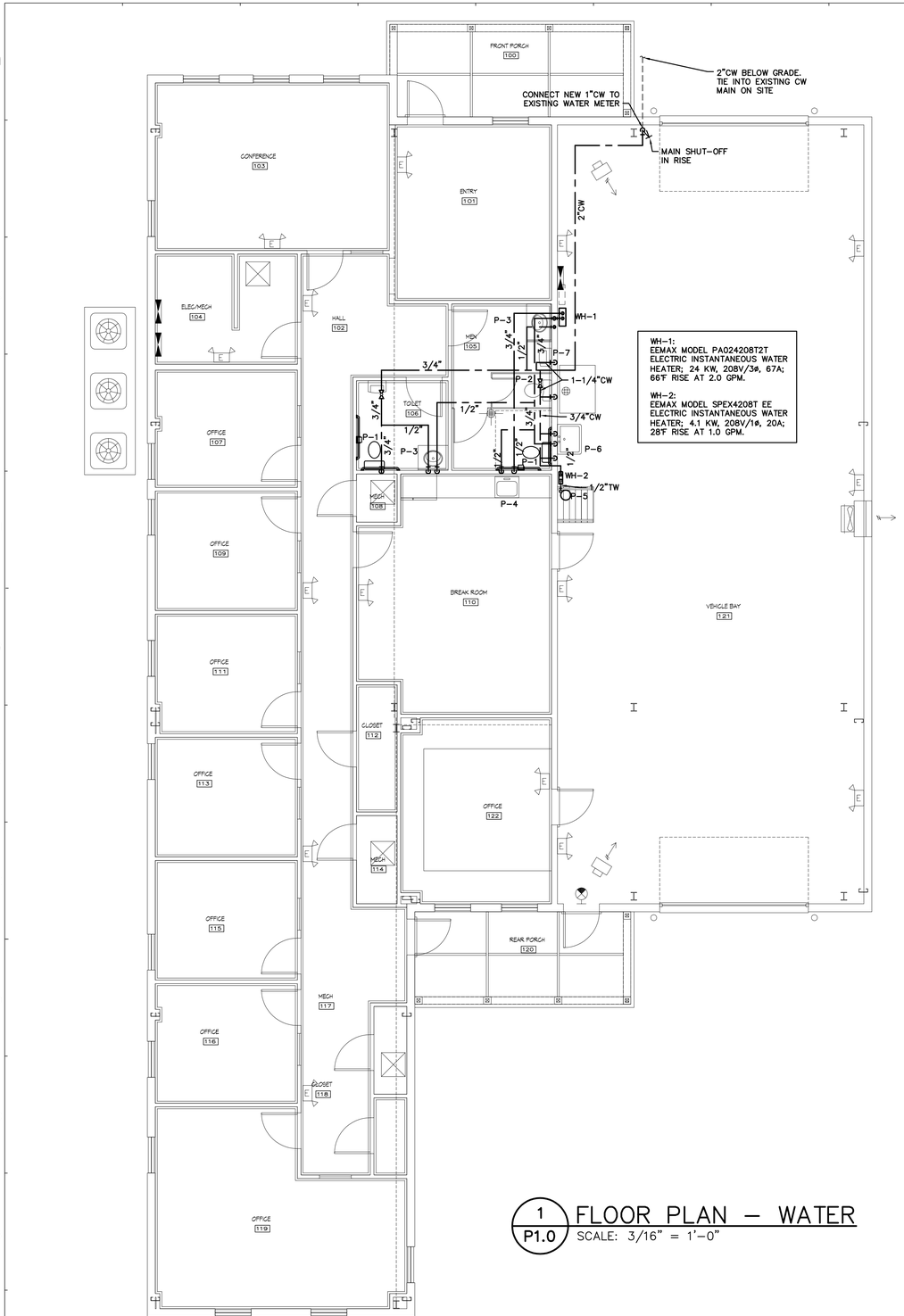
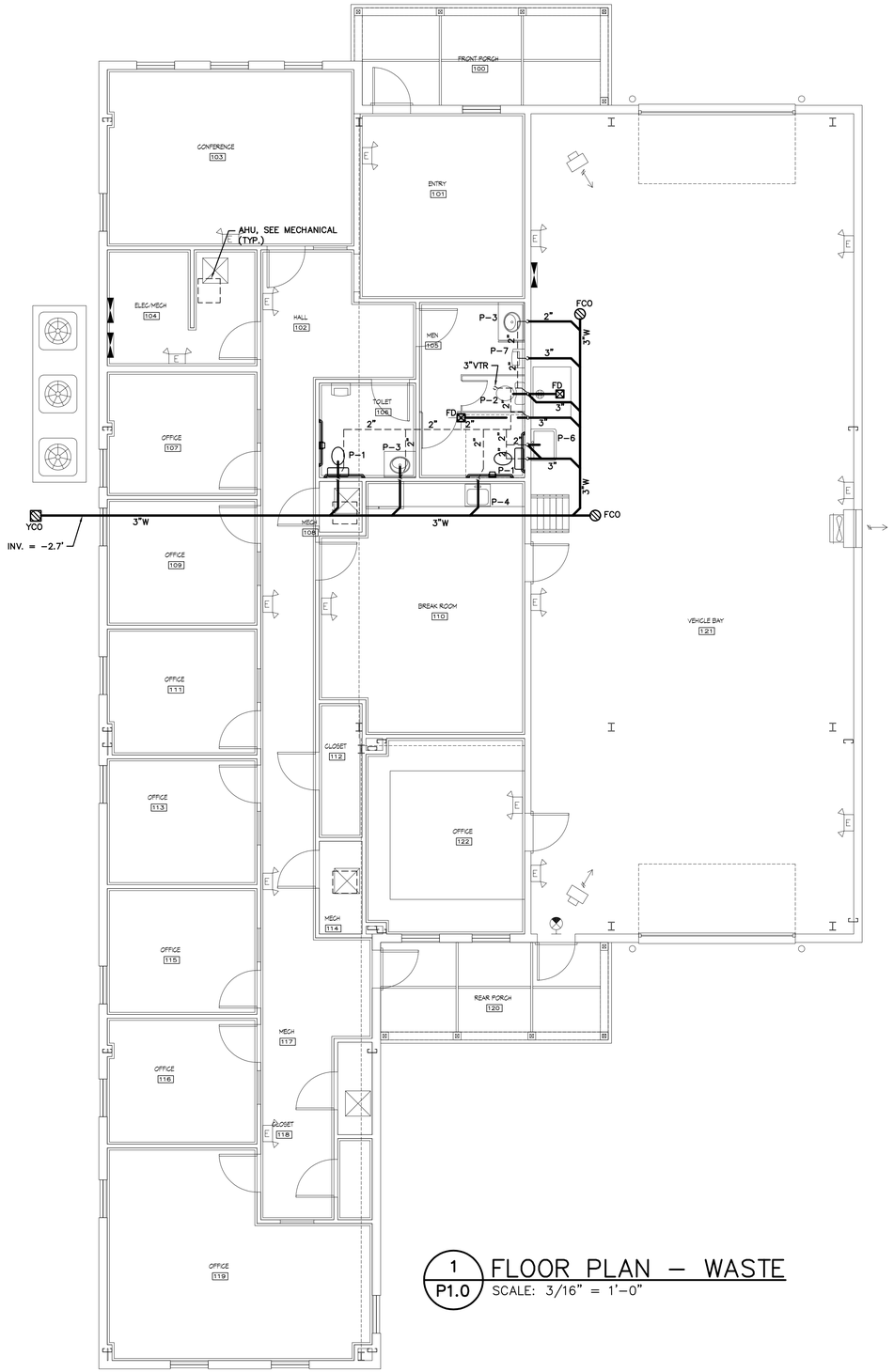
S2.2

S2.2 SECTIONS & DETAILS
SCALE: 3/4"=1'-0"



1 P1.0 FLOOR PLAN – WATER
SCALE: 3/16" = 1'-0"



1 P1.0 FLOOR PLAN – WASTE
SCALE: 3/16" = 1'-0"

A1 / P1.0 FLOOR PLAN - PLUMBING
SCALE: 3/16"=1'-0"

GENERAL NOTES

FIRE RATED WALL LEGEND

1-HOUR FIRE RATED METAL STUD WALL ASSEMBLY: UL DESIGN UL-U419

McKNIGHT · SMITH · WARD · GRIFFIN
ENGINEERS, INCORPORATED
PO Box 240826 · 4223 South Boulevard
Charlotte, NC · 704/527-2112
18-147

REGISTERED No. 27690 DAVID G. PEARCE 9-8-19

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REVISION	DATE

AN ALTERATION TO THE

CITY OF MYRTLE BEACH MAINTENANCE BUILDING

MYRTLE BEACH, SOUTH CAROLINA

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INC. No. C00926

2019	
03/08/2019	
FLOOR PLAN - PLUMBING	
P1.0	

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER
	HW (110°F)	HOT WATER
	W	WASTE
	V	VENT
	VTR	VENT THRU ROOF
	FPH	FROST PROOF HYDRANT
	HB	HOSE BIBB
	YCO	FLOOR OR YARD CLEANOUT
		GLOBE VALVE
		BALL VALVE
		SHOCK ABSORBER

PLUMBING SPECIALTIES SCHEDULE

SYM	DESCRIPTION	MODEL NUMBER
FCO	FLOOR CLEANOUT	ZURN Z-1400-T WITH NIKALOY TOP, CARPET MARKERS AS REQUIRED. SEE ARCHITECTURAL FINISH SCHEDULE FOR CARPETED AREAS
YCO	YARD CLEANOUT	ZURN Z-1406-HD WITH CAST IRON TOP
WCO	WALL CLEANOUT	ZURN Z-1446 W/STAINLESS STEEL COVER
FPH	FROST-PROOF HYDRANT	WOODFORD #65 WITH VACUUM BREAKER
HB	HOSE BIBB	WOODFORD #24 WITH LOOSE KEY ,CHROME PLATED, VACUUM BREAKER.
◯	SHOCK ABSORBER	SIOUX CHIEF, A=652-A, B=653-B, C=654-C, D=655-D

EQUALS BY JOSAM, JAY R.SMITH & WADE.
PROVIDE INTEGRAL CHECK STOPS AT ALL WALL FAUCETS

BLDG. LOAD SUMMARY

WATER FU	34
WATER GPM	44
WASTE FU	26
HW GPH (110°F)	35

PLUMBING FIXTURE SCHEDULE

SYM	DESCRIPTION	CW	HW	W	V	MODEL NUMBER	REMARKS
P-1	WATER CLOSET (ADA)	1/2"	–	3"	2"	KOHLER "HIGHLINE" K-3979; BENEKE 527SS SEAT; K-7637 ANGLE SUPPLY	1,4,5,8
P-2	WATER CLOSET	1/2"	–	3"	2"	KOHLER "WELLWORTH" K-3978; BENEKE 527SS SEAT; K-7637 ANGLE SUPPLY	1,4,5
P-3	LAVATORY	1/2"	1/2"	2"	2"	KOHLER "FARMINGTON" K-2905-4; DELTA 520 WFHGMHDF FAUCET; K-7607 SUPPLY; K-8998 TRAP	1,2,4,9,15
P-4	SINGLE CMPT. SINK (ADA)	1/2"	1/2"	2"	2"	ELKAY LRAD-2219-65 W/LK-335 STRAINER; CHICAGO 201A-GN8A-E28-1000 FAUCET; KOHLER K-7607 SUPPLY, K-9000 TRAP	1,2,10,15, 16
P-5	EMERGENCY EYEWASH	1/2" TW		–	–	BRADLEY S19-220SC STAINLESS STEEL EYEWASH; TWIN SOFT-FLOW EYEWASH HEADS, CERAMIC 1/2" NPT STAY-OPEN VALVE.	21
P-6	SERVICE SINK	1/2"	1/2"	2"	2"	OWNER FURNISHED, OWNER INSTALLED.	1
P-7	URINAL	3/4"	–	2"	2"	KOHLER "DEXTER" K-5016-ET W/SLOAN ROYAL 186-1 FLUSH VALVE	1,3,4,6

1. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL FIXTURES.
2. PROVIDE TRUEBRO MODEL 102 INSULATION KIT, PLUMBEREX MODEL PRO-2000 OR McGUIRE PWV8902 PREWRAPPED CAST P-TRAP ASSEMBLY KIT ON ALL HANDICAP ACCESSIBLE LAVATORIES AND/OR SINKS.
3. PROVIDE CARRIERS FOR ALL WALL MOUNTED FIXTURES. FOR LAVATORY CARRIERS, PROVIDE CONCEALED ARMS FOR GYPBOARD WALLS, SINGLE HANGER FOR BLOCK WALLS.
4. EQUALS BY AMERICAN STANDARD, CRANE & MANSFIELD.
5. EQUALS BY BEMIS, OLSONITE & BENEKE.
6. EQUAL FLUSH VALVES BY ZURN.
7. TOP OF FLUSH VALVE SHALL BE LOCATED MINIMUM 3" BELOW BOTTOM OF GRAB BAR. P.C. TO CUT OUTLET TUBE AS REQUIRED.
8. FLUSH VALVE MECHANISM SHALL BE LOCATED OPPOSITE OF HAND RAIL AS PER ADA REQUIREMENT.
9. EQUALS BY SYMMONS, CHICAGO FAUCETS, SPEAKMAN, DELTA & MOEN.
10. EQUALS BY FRANKE & JUST.
11. EQUALS BY AMERICAN STANDARD, CRANE, LASCO, MAAX, AQUA GLASS & AQUARIUS.
12. EQUALS BY LEONARD & SPEAKMAN.
13. EQUALS BY HALSEY TAYLOR, SUNROC, HAWS & ELKAY.
14. EQUALS BY SWANSTONE, E.L.MUSTEE.
15. WHEN ASTERISK ("*") PREFIX IS USED, PROVIDE TRAP PRIMER AND PIPE ½" LINE BELOW SLAB TO FLOOR DRAIN.
16. EQUAL FAUCETS BY CHICAGO FAUCETS, T&S, ELKAY, ZURN. SINGLE SINK = RIGID SPOUT; DOUBLE SINK = RESTRICTED SPOUT.
17. EQUAL CAST IRON WALL MOUNTED LAVATORIES BY AMERICAST & CECO.
18. ACCESSORY APRON MAY BE OMITTED IF WATER COOLER IS RECESSED.
19. PROVIDE INTEGRAL CHECK STOPS AT ALL WALL FAUCETS.
20. EQUALS BY OATEY, SIOUX CHIEF.
21. EQUAL EYEWASH BY HAWS & GUARDIAN.

PLUMBING SPECIFICATIONS

(1) TEST

(A) ALL PIPING SHALL BE TESTED BEFORE COVERING IS APPLIED OR WORK CONCEALED, AND ALL LEAKS CORRECTED BY REMOVAL OF DEFECTIVE MATERIAL AND/OR MAKING UP NEW JOINTS. EQUIPMENT SHALL BE PROTECTED FROM TEST PRESSURE BY CAPPING LINES OR WITH VALVES DURING TEST. CAULKING OF PIPING WILL NOT BE PERMITTED AND WHERE EVIDENT OF CAULKING IS NOTED, THE JOINTS SHALL BE REMOVED FORM THE PIPING SYSTEM REGARDLESS OF WHETHER OR NOT IT IS LEAKING.

(B) TEST ALL WATER PIPING AT 125 PSI.

(C) TEST ALL WASTE AND VENT PIPING WITH A 10 FOOT HEAD.

(2) PIPING

(A) SOIL, WASTE, VENT AND DRAIN PIPING SHALL BE SOLID WALL PVC PLASTIC PIPE AND FITTINGS CONFORMING TO ASTM D 2665.

(B) WATER PIPING SHALL BE HARD DRAWN COPPER TUBING ASTM B 88 TYPE "L". FITTINGS FOR COPPER TUBING SHALL BE ANSI B16.18 OR B16.22 SOLDER JOINT FITTINGS. ENDS OF PIPE SHALL BE REAMED, PIPE AND FITTINGS CLEANED. USE ONLY 95-5 (95% TIN AND 5% ANTIMONY) SOLDER WITH NON-CORROSIVE FLUX ON 1-1/4" AND SMALLER AND ON 1-1/2" AND LARGER USE SILVER SOLDER (MINIMUM 12% SILVER), WITH A MELTING POINT GREATER THAN 1000OF. SUBMIT SOLDER FOR APPROVAL.

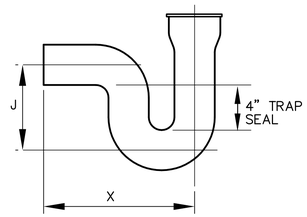
(3) HANGERS

(A) ALL PIPING SHALL BE SUPPORTED ON NOT LESS THAN 10' CENTERS AND WITHIN 30" OF EACH CHANGE OF DIRECTION EXCEPT THAT PIPING 1 1/4" SIZE AND SMALLER SHALL BE SUPPORTED ON 8' 0" CENTERS.

(B) PIPE HANGERS SHALL BE SUPPORTED BY MEANS OF IRON HANGER RODS FROM THE BUILDING CONSTRUCTION OR FROM STRUCTURAL STEEL MEMBERS, AND IN AN APPROVED MANNER. WHERE REQUIRE, PIPING SHALL BE HUNG FROM ANGLE IRON CLIPS OR SUITABLE BRACKETS ATTACHED TO SIDES OF MASONRY CONSTRUCTION.

(4) PIPE INSULATION

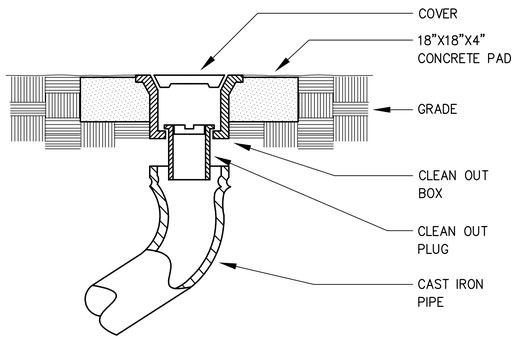
(A) ALL WATER PIPING SHALL BE INSULATED WITH HEAVY DENSITY FIBERGLASS WITH AN ALL-SERVICE JACKET COMPOSED OF AN OUTER LAYER OF VINYL, FIBERGLASS SCRIM CLOTH, ALUMINUM FOIL, AND KRAFT PAPER, IN THAT ORDER, FROM OUTSIDE TO INSIDE OF PIPE COVERING. INSULATION THICKNESS SHALL BE 1" FOR ALL PIPING.



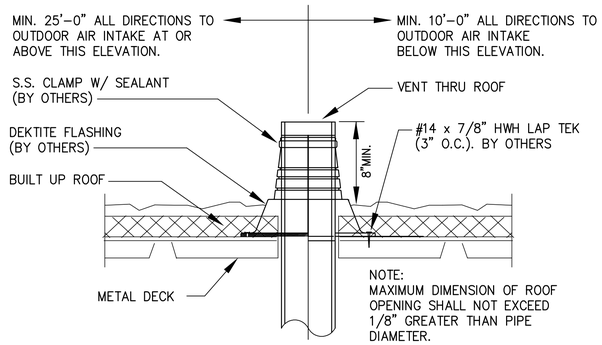
DEEP SEAL "P" TRAP

SIZE	X	J
2	9 1/2	6
3	12	7
4	14	8

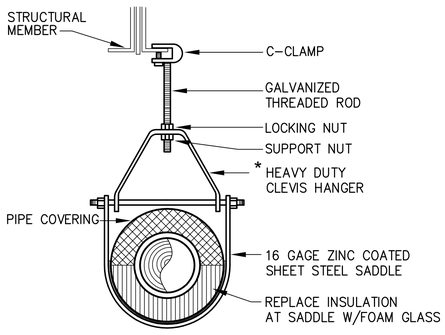
4 P2.0 MINIMUM TRAP DIMENSIONS
NTS



1 P2.0 YARD CLEANOUT DETAIL
NTS



2 P2.0 VENT THRU ROOF DETAIL
NTS



5 P2.0 PIPE HANGER DETAIL
NTS

*CONTRACTOR OPTION: MICHIGAN HANGER #403

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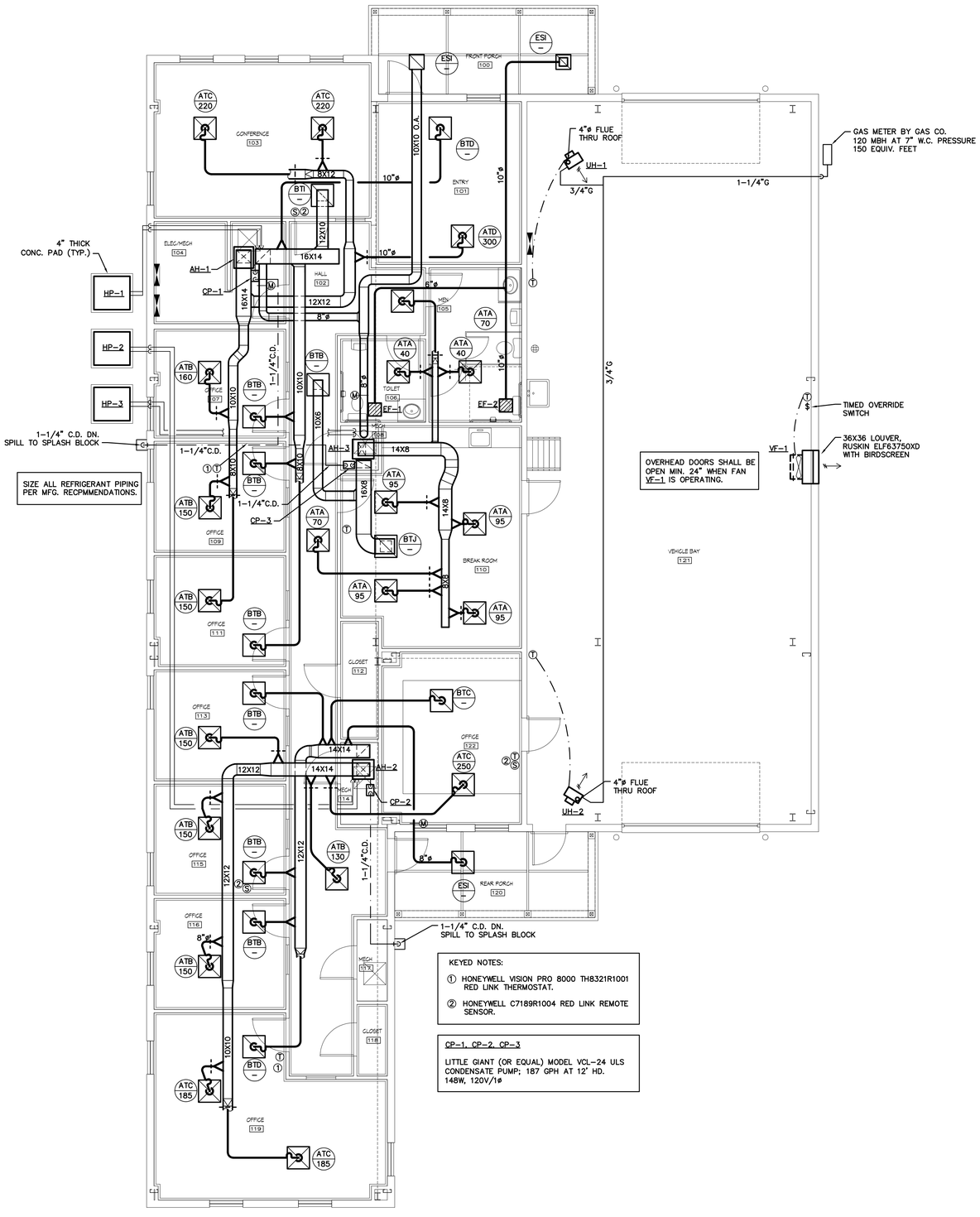
MYRTLE BEACH, SOUTH CAROLINA

SOUTH CAROLINA — McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INC. No. C00926 — CERTIFICATE OF AUTHORIZATION

2019	
03/08/2019	
SCHEDULES & DETAILS	

P2.0

A1 / P2.0 — SCSHEDULES & DETAILS
SCALE: NONE



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9-8-19

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SOUTH CAROLINA McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926 CERTIFICATE OF AUTHORIZATION

2019

03/08/2019

FLOOR PLAN - MECHANICAL

M1.0

A1
M1.0

FLOOR PLAN - MECHANICAL

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

SPLIT SYSTEM HEAT PUMP SCHEDULE

Unit Tag	Nom. Tons	SEER	CFM	O.A. Min.	ESP	Air Handling Unit – Fan Motor HP	Fan Motor Volts	Fan Motor Phase	Electric Heating Coil kW	Steps	Volts	Phase	EAT	LAT	MCA	MOCP	Model	DX Coil Performance EAT	MBH Total	MBH Sens.	Heating Performance EAT	LAT	Capacity MBH@47 F	Electrical Data (Outdoor Unit) Fan No.	Fan FLA	Compressor No.	LRA(ea)	RLA(ea)	Volts	Phase	MCA	MOCP	Model	Remarks
AH/HP-1	3	14	1200	150	0.6	1/2	208	1	7.20	1	208	3	70	89.0	30	30	GAM5B0B36	80/67	34.0	25.7	70	94.8	32.2	1	0.8	1	70	9.9	208	3	13.0	20	4TWA4036	1, 3, 4, 5, 6, 7, 8
AH/HP-2	3	14	1200	140	0.6	1/2	208	1	7.20	1	208	3	70	89.0	30	30	GAM5B0B36	80/67	34.0	25.7	70	94.8	32.2	1	0.8	1	70	9.9	208	3	13.0	20	4TWA4036	1, 3, 4, 5, 6, 7, 8
AH/HP-3	1.5	14	600	115	0.7	1/3	208	1	3.60	1	208	1	70	89.0	25	25	GAM5B0A18	80/67	18.4	13.3	70	95.2	16.3	1	0.5	2	65.0	9.0	208	1	12.0	20	4TWR4018	1 - 7

1. MODEL NUMBERS BASED ON TRANE. EQUALS BY CARRIER AND YORK.
2. WALL MOUNTED PROGRAMMABLE T'STAT BY UNIT MFG.
3. CONTRACTOR SHALL VERIFY SERVICE CLEARANCES FOR ALL SUBSTITUTIONS.
4. SINGLE POINT ELECTRICAL CONNECTION AT AIR HANDLING UNIT.
5. REFRIGERANT LINES AND ACCESSORIES PER UNIT MFG. RECOMMENDATIONS.
6. PROVIDE OVERFLOW DRAIN PAN BELOW UNIT WITH MICROSWITCH TO SHUT OFF UNIT PRIOR TO PAN OVERFLOW.
7. PROVIDE SEA COAST COATING FOR ALL OUTDOOR COILS.
8. PROVIDE PROGRAMMABLE THERMOSTAT AND REMOTE SENSOR AS NOTED ON FLOOR PLAN.

HVAC SPECIFICATIONS

(1) DUCTWORK

(A) DUCTWORK SHALL BE CONSTRUCTED OF ZINC COATED SHEET STEEL AND SHALL CONFORM TO THE 1ST EDITION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS –METAL AND FLEXIBLE, 1985 AS FOLLOWS:

RECTANGULAR DUCT: 1" W.G. PRESSURE CLASS – TABLE 1–4.

ROUND DUCT: 2" W.G. PRESSURE CLASS – TABLE 3–2.

(B) ALL DUCTWORK MUST BE SEALED IN ACCORDANCE WITH SEAL CLASS C AS DEFINED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS–METAL AND FLEXIBLE, 1985.

(C) DUCT HANGERS AND SUPPORTS SHALL CONFORM TO THOSE SHOWN IN TABLES 4–1 AND 4–2 OF SMACNA HVAC DUCTWORK 1985, 1ST EDITION.

(2) DUCT INSULATION

(A) INSULATION SHALL BE OWENS–CORNING, CERTAIN–TEED/ST. GOBAIN, MANVILLE OR APPROVED EQUIVALENT. ADHESIVES SHALL BE AS MANUFACTURED BY 3–M FOSTER OR INSULATION MANUFACTURER. INSULATION SHALL HAVE COMPOSITE (INSULATION, JACKET AND ADHESIVE) FIRE AND SMOKE HAZARD RATING AS TESTED BY ASTM E–84, NOT EXCEEDING FLAME SPREAD –25 AND SMOKE DEVELOPED –50.

(B) ALL VAPOR BARRIERS AND JOINTS SHALL BE SEALED TO PREVENT CONDENSATION. CLEAN AND DRY ALL DUCTWORK BEFORE INSTALLING INSULATION. ALL WELD JOINTS SHALL BE WIRE BRUSHED AND GIVE ONE (1) COAT OF RED LEAD BEFORE INSULATING. STAPLES WILL NOT BE PERMITTED IN INSULATION.

(C) ALL SUPPLY AND OUTSIDE AIR DUCTS UNLESS NOTED OTHERWISE ON PLANS SHALL BE INSULATED BY WRAPPING WITH 2" THICK, ¾LB. DENSITY FIBERGLASS WITH VAPOR BARRIER JACKET WITH JOINTS OVERLAPPED A MINIMUM OF TWO INCHES. INSULATION SHALL BE ADHERED TO DUCT WITH NON–COMBUSTIBLE INSULATION BONDING ADHESIVE APPLIED IN 4" STRIPS, 8" ON CENTER. ALL JOINTS SHALL BE SECURED WITH FLARE DOOR STAPLES ON 3" CENTERS THROUGH ALL LAPS OVER DUCT TAPE.

(3) REFRIGERANT PIPING

(A) CONNECT SPLIT SYSTEM AIR HANDLING UNITS TO HEAT PUMPS WITH REFRIGERANT PIPING, TYPE "K" HARD DRAWN COPPER "ACR" TUBING WITH WROUGHT COPPER SWEAT FITTINGS. ALL JOINTS ARE TO BE MADE WITH HARD SOLDER SUCH AS "SIL–FOS" OR "SILVER SOLDER."

(B) PIPE INSULATION – REFRIGERANT SUCTION PIPING – FLEXIBLE FOAMED ELASTOMERIC PLASTIC TUBING WITH A DENSITY OF 6 LBS./CF, K OF 0.27 @ 70 DEGREES F., SELF–EXTINGUISHING, AND A WATER VAPOR TRANSMISSION OF LESS THAN 0.05 PERM IN., FLAME SPREAD RATING 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS (ASTM E84–75).

(4) CONTROLS

(A) PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM.

(5) CONDENSATE DRAIN PIPING

(A) ALL DRAIN LINES SHALL BE SOLID WALL PVC DRAIN PIPE CONFORMING TO ASTM D 2665. DRAINS SHALL BE RUN IN A NEAT MANNER AND DISCHARGED TO FLOOR DRAINS (IF UNIT IN MECHANICAL ROOM) OR EXTENDED FIVE FEET FROM BUILDING FOR CONNECTION TO STORM DRAIN PIPING.

(6) TESTING AND BALANCING

(A) WORK SHALL BE PERFORMED BY TECHNICIANS COMPETENT IN THE TRADE OF TESTING AND BALANCING ENVIRONMENTAL SYSTEMS AND SHALL BE DONE IN AN ORGANIZED MANNER UTILIZING APPROPRIATE TEST AND BALANCE FORMS. ALL EQUIPMENT SHALL BE BALANCED TO WITHIN +/– 10% OF THE SCHEDULED VALUE.

(B) INSTRUMENTS FOR USE IN THE TEST AND BALANCING PROCEDURES SHALL BE OF FIRST QUALITY AND BE ACCURATELY CALIBRATED AT THE TIME OF USE. ALL FIELD INSTRUMENTS USED IN THE BALANCE SHOULD HAVE BEEN CALIBRATED AT LEAST WITHIN THE PREVIOUS THREE MONTHS.

(C) STARTING DATE FOR MECHANICAL SYSTEM SHALL BE SCHEDULED WELL IN ADVANCE OF EXPECTED COMPLETION DATE AND SHALL BE ESTABLISHED A MINIMUM OF TWO WEEKS PRIOR TO ACCEPTANCE DATE. THE SYSTEM SHALL BE IN FULL OPERATION WITH ALL EQUIPMENT FUNCTIONAL PRIOR TO ACCEPTANCE DATE.

(D) PERFORMANCE READINGS SHALL BE TAKEN AND RECORDED ON ALL AIR DISTRIBUTION DEVICES AND THE SYSTEM SHALL BE BALANCED OUT PRIOR TO ACCEPTANCE. BALANCING OF THE SYSTEM SHALL BE ACCOMPLISHED WITH DUCT DAMPERS AND ONLY MINOR ADJUSTMENTS MADE WITH GRILLE DAMPERS. RECORD AND SUBMIT RESULTS IN TABLE FORM ALONG SIDE OF SCHEDULED QUANTITIES.

(E) ALL CONTROLS SHALL BE CALIBRATED BY QUALIFIED PERSONNEL PRIOR TO ACCEPTANCE DATE. THERMOSTATS SHALL BE IN CLOSE CALIBRATION WITH ONE ANOTHER AND SHALL OPERATE THEIR RESPECTIVE UNITS WITHOUT INTERFERENCE FROM ADJACENT UNITS.

(F) ALL UNITS SHALL BE CHECKED OUT THOROUGHLY AND THE INFORMATION RECORDED ON EACH MACHINE. CHECK SHEETS SHALL BE INCLUDED IN OPERATING AND MAINTENANCE INSTRUCTIONAL MANUAL.

GAS PIPING

(A) ALL ABOVE GROUND PIPING AND FITTINGS SHALL BE STEEL OR COPPER AS FOLLOWS:

STEEL PIPE; ANSI/ASTM A53 "WELDED AND SEAMLESS STEEL PIPE".

COPPER PIPE; ANSI/ASTM B42 "SEAMLESS COPPER PIPE".

(B) ALL BELOW GRADE PIPING AND FITTINGS SHALL BE THERMOPLASTIC GAS PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH ASTM D2513–88B.

(C) FITTINGS SHALL BE STEEL, COPPER OR MALLEABLE IRON. PIPE JOINTS IN STEEL OR COPPER PIPE MAY BE SCREWED, WELDED OR BRAZED. FITTINGS SHALL BE SUITABLE FOR THE APPROPRIATE WORKING PRESSURE.

(D) ALL GAS PIPING SHALL BE TESTED WITH AIR AT 150 PSIG MINIMUM. ALL JOINTS SHALL BE CHECKED TO DETERMINE IF ANY LEAKS OCCUR, USING SOAP SOLUTION. ANY JOINT OR FITTING FOUND DEFECTIVE SHALL BE REMOVED AND REPLACED. NO CAULKING OR OTHER ARTIFICIAL MEANS WILL BE USED TO MAKE REPAIRS.

(E) GROUND PLUG SHUTOFF COCKS SHALL BE INSTALLED AT EACH EQUIPMENT SERVICE STUB. PIPING SHALL BE INSTALLED WITH VALVES, DRIP POCKETS, STOP COCKS, AND OTHER ACCESSORIES THAT MAY BE REQUIRED TO GIVE PROPER SERVICE.

(F) A MINIMUM NO. 18 AWG INSULATED COPPER TRACER WIRE CONDUCTOR SHALL BE INSTALLED ADJACENT TO UNDERGROUND NON–METALLIC GAS PIPING AND SHALL BE ACCESSIBLE OR TERMINATE ABOVE GRADE AT EACH END.

(G) PAINT ALL GAS PIPING LIGHT YELLOW.

(H) ALL PIPING SHALL BE SUPPORTED ON NOT LESS THAN 10' CENTERS AND WITHIN 30" OF EACH CHANGE OF DIRECTION EXCEPT THAT PIPING 1 1/4" SIZE AND SMALLER SHALL BE SUPPORTED ON 8' 0" CENTERS.

(I) PIPE HANGERS SHALL BE SUPPORTED BY MEANS OF IRON HANGER RODS FROM THE BUILDING CONSTRUCTION OR FROM STRUCTURAL STEEL MEMBERS, AND IN AN APPROVED MANNER. WHERE REQUIRE, PIPING SHALL BE HUNG FROM ANGLE IRON CLIPS OR SUITABLE BRACKETS ATTACHED TO SIDES OF MASONRY CONSTRUCTION.

FAN SCHEDULE

Unit Tag	CFM	ESP (in.)	Fan RPM	Sones (dBA)	Drive	HP (W)	Volts	Phs	Type	Model No.	Rmks.
EF-1	75	0.3	756	1.1	DIRECT	(80)	115	1	C	SP-B110	1-6
EF-2	225	0.35	984	4.0	DIRECT	(83)	115	1	C	SP-A250	1-6
VF-1	3000	0.15	950	16.1	BELT	1/2	115	1	P	SBE-2H20-5	1,2,5,7

1. MODELS BY GREENHECK. EQUALS BY PENN, ILG, LOREN COOK.
2. TYPES: C = CEILING, P = SIDEWALL PROPELLER
3. SOLID STATE SPEED CONTROL SW. ON FAN OR NEARBY.
4. VERIFY FAN INLET/OUTLET SIZE, TRANSITION TO FIRST DUCT SIZE IF NECESSARY.
5. DISCONNECT SWITCH (OR PLUG) BY MFGR. FOR ALL SINGLE PHASE MOTORS (U.N.O.).
6. INTERLOCK WITH LIGHT SWITCH.
7. INTERLOCK WITH TSTAT AND TIMED WALL SWITCH.

GAS FIRED UNIT HEATER SCHEDULE

Unit Tag	Area Served	CFM	Fan Motor HP	Fan Motor Volts	Fan Motor Phs	Heating Performance EAT (F)	LAT (F)	MBH Input	MBH Output	Model	Remarks
UH-1, UH-2	SEE PLANS	740	1/12	120	1	60	122	60	49.8	TRANE GTNE	1 - 3

1. MODEL NUMBERS BASED ON TRANE. EQUALS BY MODINE, REZNOR.
2. DISCONNECT BY E.C.
3. WALL MTD. TSTAT.

MECHANICAL EQUIPMENT LEGEND

SYMBOL – SINGLE LINE	SYMBOL – DOUBLE LINE	DESCRIPTION
LOW PRESSURE DUCTWORK		
10 X 12	10 X 12	DUCT SECTION–1ST FIGURE WIDTH, 2ND DEPTH
		SQUARE TO ROUND TRANS.
		FLEX DUCTWORK
		ELBOW W/TURNING VANES
		LONG RADIUS ELBOW
EXH		EXHAUST DUCT SECTION
SA		SUPPLY DUCT SECTION
OA		OUTSIDE AIR DUCT SECTION
RA		RETURN/RELIEF AIR DUCT SECTION
		CONICAL DUCT TAKE–OFF
		RECTANGULAR–TO–ROUND TAKE–OFF WITH DAMPER
		RECTANGULAR–TO–ROUND TAKE–OFF WITHOUT DAMPER
		RECTANGULAR TAKE–OFF
MISCELLANEOUS		
Ⓣ	Ⓣ	THERMOSTAT
Ⓢ	Ⓢ	REMOTE SENSOR
— CD —	— CD —	CONDENSATE DRAIN
		MOTOR OPERATED DAMPER
- - -	- - -	DAMPER
$	$	MANUAL SWITCH

GRILLE & DIFFUSER SCHEDULE

SYM	TYPE	USE	CFM RANGE	NECK SIZE	OVER-ALL SIZE	DMPR	FINISH	FRAME	PRICE MODEL NO	REMARKS
A--	LOUVER FACE	SUPPLY 4-WAY	SEE PLANS & RMK 5	RMK 5	RMK 4	OBD	OFF WHITE	RMK 3	AMDA	1-6
BT-	PERF.	RETURN/ EXHAUST	SEE PLANS & RMK 6	RMK 7	RMK 4	RMK 9	OFF WHITE	RMK 3	PDDR	1-4, 7-10
BS-	PERF.	RETURN/ EXHAUST	SEE PLANS & RMK 6	RMK 7	RMK 4	RMK 9	OFF WHITE	RMK 3	PDDR	1-4, 7-10
C-	SIDEWALL	SUPPLY	SEE PLANS	SEE PLANS	RMK 4	OBD	RMK 12	SEE PLANS	620D	1-4, 11-13
D-	SIDEWALL	RETURN/ EXHAUST	SEE PLANS	SEE PLANS	RMK 4	RMK 9	RMK 12	SEE PLANS	630	1-4, 9, 12, 13
E--	EGGCRATE	EXH, RA, OA	SEE PLANS	SEE PLANS	RMK 4	RMK 9	OFF WHITE	S	80	1-4, 7, 14
NS-	LINEAR	SUPPLY/ RETURN/	70/FT (MAX)	(2),3/4" SLOTS	(L+2) x 4"	NO	RMK 12	RMK 3	SDS	1-4,12, 15, 16

REMARKS

1. EQUALS: METALAIRE, TITUS, KRUEGER, TUTTLE & BAILEY, NAIL-OR, CARNES. DUCT RUNOUTS EQUAL TO GRILLE AND DIFFUSER SIZES UNLESS NOTED OTHERWISE.
2. SYMBOL EXPLANATION:
   XXX/CFM = SYMBOL, FRAME (RMK 3), NECK (RMK 5,7)/CFM
3. FRAME TYPES:
   S = FLUSH SURF. MTD.. PLASTER FRAME FOR CEILING MOUNTING.
   T = TEGULAR
   E = DUCT MOUNTED: V-BEVELED DROP SURF. (TYPE "A" DIFFUSER)
   D = DROPPED FRAME
   NOTE: VERIFY FRAME/CEILING COMPATIBILITY.
4. OVERALL SIZE: LAY-IN = 2'x2', OTHER GRILLES = NECK + 2"+/-.
5. LOUVER FACE SUPPLY NECK SIZES

NO.	ROUND NK SIZE	CFM	NO.	SQUARE NK SIZE	CFM
A	6"	100	H	6x6	125
B	8"	175	I	9x9	280
C	10"	275	J	12x12	500
D	12"	400	K	15x15	780
E	14"	535	L	18x18	1125
F	16"	700	M	21x21	1530
G	18"	885	N	24x24	2000

NOTE: VERIFY CFM / NECK SIZE.

6. ADJUSTABLE: HORIZONTAL/VERTICAL - "PIANO HINGE" DEVICE.
7. "B" & "E" EXH/RETURN NECK SIZES ("E" = SQ. NK. ONLY)

NO.	ROUND NK SIZE	CFM	NO.	SQUARE NK SIZE	CFM
A	6"	100	G	8x8	220
B	8"	175	H	10x10	345
C	10"	275	I	12x12	500
D	12"	400	J	14x14	680
E	14"	535	K	16x16	885
F	16"	700	L	18x18	1125
NOTE: VERIFY			M	22x22	1680
CFM / NECK SIZE.			N	22x46	2600

8. NO NECK SIZE INDICATES NON-DUCTED, LAY-IN PANEL.
9. OBD IF USED AS EXHAUST.
10. ALL ALUM. CONSTRUCTION (INCLUDING BACKPAN) IF SHOWN ON PLANS.
11. VOLUME EXTRACTOR WHERE SHOWN ON PLANS.
12. PAINT TO MATCH WALL.
13. VERTICAL FRONT BLADES.
14. IF LAY-IN CEILING: EXACT GRILLE SIZE BY MFGR., OMIT SCREW HOLES.
15. 1.125" BORDER.
16. LINEAR DIFFUSER CALLOUTS: LENGTH, XX/XX = OVERALL LENGTH/ACTIVE LENGTH

A1
M2.0
SCHEDULES & LEGEND
SCALE: NONE

GENERAL NOTES

FIRE RATED WALL LEGEND

1-HOUR FIRE RATED METAL STUD WALL ASSEMBLY: UL DESIGN UL-U419

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 27690 DAVID G. PEARCE
3-8-19

REVISION | DATE

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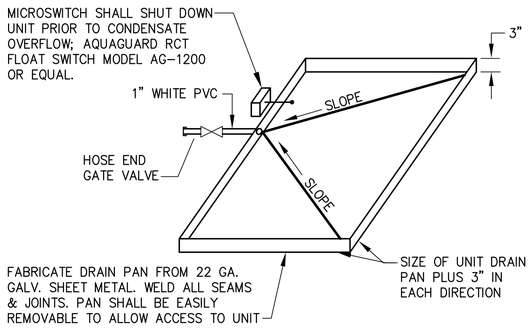
AN ALTERATION TO THE
CITY OF MYRTLE BEACH MAINTENANCE BUILDING
MYRTLE BEACH, SOUTH CAROLINA

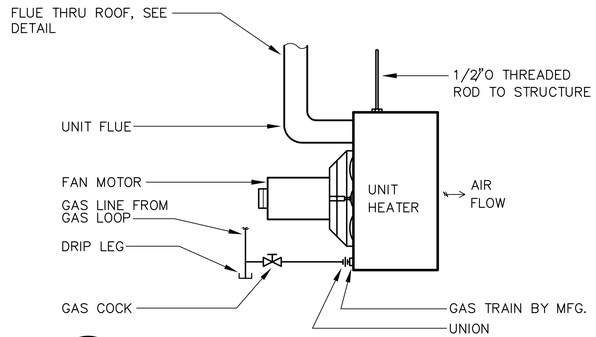
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
McKNIGHT • SMITH WARD • GRIFFIN ENGINEERS, INC. No. C00926

2019
03/08/2019
SCHEDULES & LEGEND

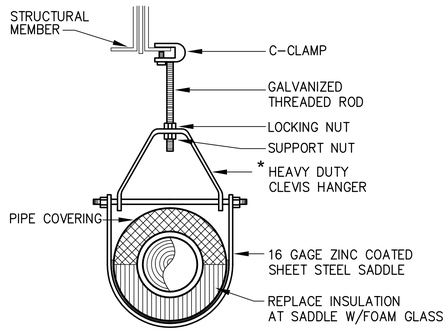
M2.0



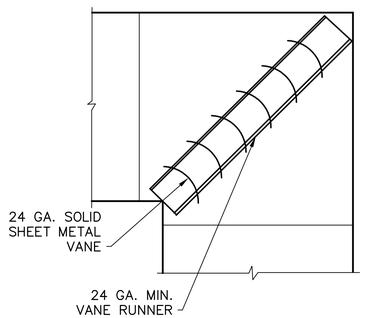
8 M3.0 AUXILIARY DRAIN PAN DETAIL
NTS



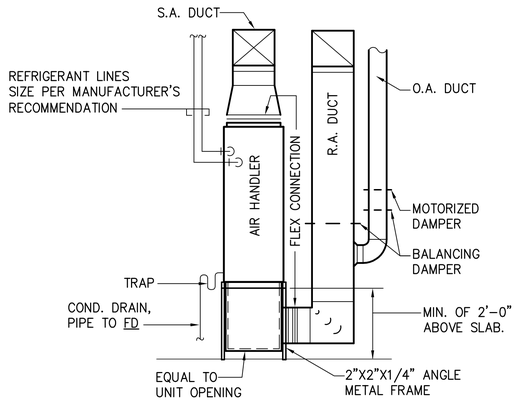
9 M3.0 GAS FIRED UNIT HEATER DETAIL
NTS



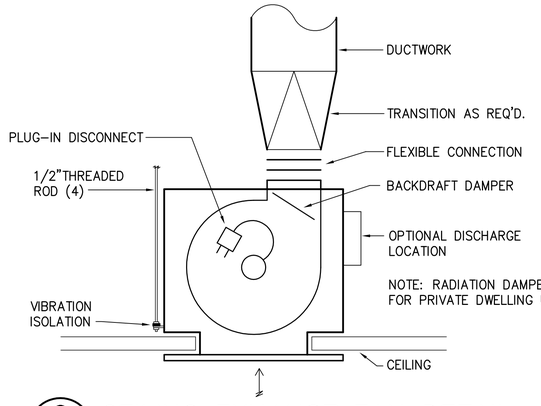
10 M3.0 PIPE HANGER DETAIL
NTS
* CONTRACTOR OPTION: MICHIGAN HANGER #403



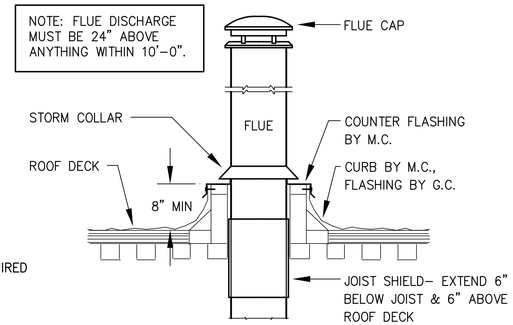
4 M3.0 TURNING VANE DETAIL
NTS
PERMITTED ONLY WHERE RADIUS ELL WILL NOT FIT.



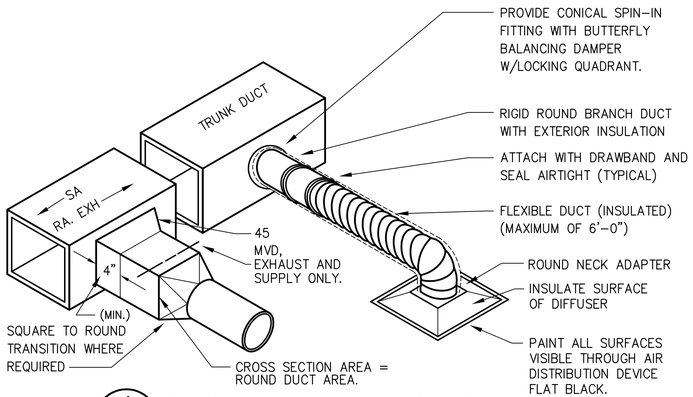
5 M3.0 SECTION @ TYPICAL AIR HANDLING UNIT
NTS



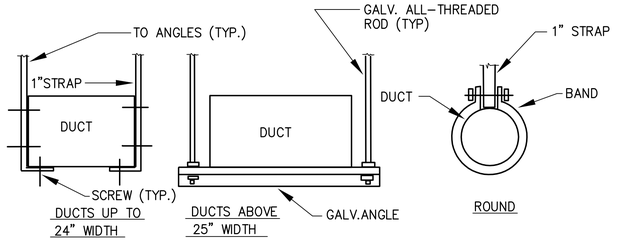
6 M3.0 CEILING EXHAUST FAN DETAIL
NTS



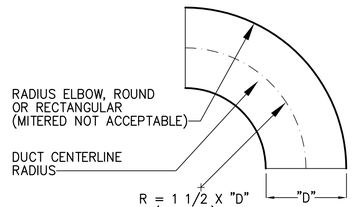
7 M3.0 FLUE THRU ROOF DETAIL
NTS



1 M3.0 DUCT TAKE-OFF DETAIL
NTS



2 M3.0 DUCTWORK HANGER DETAILS
NTS



NOTE:
WHEN R = 1 1/2 X "D" (MIN.) CANNOT BE OBTAINED, CONSTRUCT ELBOW ACCORDING TO APPROPRIATE DETAIL.

3 M3.0 RADIUS ELBOW DETAIL
NTS

GENERAL NOTES

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CERTIFICATE OF AUTHORIZATION

2019
03/08/2019
DETAILS

M3.0

A1 M3.0 DETAILS
SCALE: NONE

SYMBOL SCHEDULE

GENERAL SYMBOLS

SYMBOL	DESCRIPTION
	CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS.
	CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND.
	CONDUIT RUN EXPOSED.
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	SQUARE ON CONDUIT SYMBOL INDICATES THAT CIRCUIT CONTINUES BUT NOT SWITCHLEG.
	HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS.
J	JUNCTION BOX PER N.E.C.
1	SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE.
1	SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE.
M	MOTOR CONNECTION. RATING AS NOTED.

LIGHTING

SYMBOL	DESCRIPTION
	LED LIGHTING FIXTURE, DRAWN TO SCALE.
	LED LIGHTING FIXTURE, UTILIZED AS A NIGHT-LIGHT. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
	LED STRIP FIXTURE.
	LED LIGHTING FIXTURE, CEILING MOUNTED.
	LED LIGHTING FIXTURE, CONNECTED TO AN EMERGENCY CIRCUIT OR EMERGENCY BALLAST.
	LED LIGHTING FIXTURE. UTILIZED AS A NIGHT-LIGHT. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
	LED LIGHTING FIXTURE. CONNECTED TO AN EMERGENCY CIRCUIT OR EMERGENCY BALLAST. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
	LED LIGHTING FIXTURE, WALL MOUNTED.
	LED LIGHTING FIXTURE, WALL MOUNTED. CONNECTED TO AN EMERGENCY CIRCUIT OR EMERGENCY BALLAST.
	EXIT SIGN, CEILING MOUNTED. SHADING INDICATES FACE ORIENTATION. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT. } PROVIDE ARROWS AS SHOWN ON PLAN BESIDE SYMBOL
	EXIT SIGN, WALL MOUNTED. SHADING INDICATES FACE ORIENTATION. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT. } PROVIDE ARROWS AS SHOWN ON PLAN BESIDE SYMBOL
	EMERGENCY BATTERY PACK FIXTURE, WALL MOUNTED. CONNECT TO UNSWITCHED LEG OF THE CIRCUIT.
P	PHOTOCELL CONTROL DEVICE. MOUNT ON ROOF FACING NORTH.

DISTRIBUTION

SYMBOL	DESCRIPTION
	ELECTRICAL PANELBOARD, FLUSH MOUNTED.
	ELECTRICAL PANELBOARD, SURFACE MOUNTED.
	CONTROL CABINET, FLUSH OR SURFACE MOUNTED.
	ENCLOSED CIRCUIT BREAKER
	DISCONNECT SWITCH, NON-FUSIBLE.
	DISCONNECT SWITCH, FUSIBLE.
	DISCONNECT SWITCH PROVIDED WITH EQUIPMENT.
	GROUND CONNECTION.

WIRING DEVICES

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, 125V, 3-WIRE GROUNDING TYPE.
EWC	DUPLEX RECEPTACLE, 125V, GROUND FAULT CIRCUIT INTERRUPTING, 3-WIRE GROUNDING TYPE. LOCATE WITHIN OR BEHIND AN ELECTRIC WATER COOLER. COORDINATE WITH PLUMBER FOR EXACT LOCATION.
GFI	DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTING.
WP	DUPLEX GFCI RECEPTACLE. PROVIDE WITH OPERABLE, IN-USE WEATHERPROOF COVER.
C	DUPLEX RECEPTACLE, 125V, 3-WIRE GROUNDING TYPE. CEILING MOUNTED.
	TWO DUPLEX RECEPTACLES, 125V, 3-WIRE GROUNDING TYPE, IN A TWO-GANG BOX WITH TWO-GANG FACEPLATE.
	SPECIAL PURPOSE RECEPTACLE, WITH SPECIAL NEMA CONFIGURATION AS NOTED.
	HEAVY-WALL METAL CONDUIT STUB-UP FROM FLOOR, AT HEIGHT INDICATED, WITH CAST FS-TYPE BOX AND WIRING DEVICE AS INDICATED.
	WALL OUTLET FOR TELECOMMUNICATIONS. SEE SPECIFICATIONS AND/OR DRAWINGS FOR CONDUIT AND CABLING REQUIREMENTS. (CONTRACTOR TO RUN (2) CAT 5 CABLES)
	DOT ABOVE OUTLETS INDICATES THAT THE DEVICE IS TO BE INSTALLED ABOVE CASEWORK OR OTHER OBSTACLE. COORDINATE.
S	LIGHT SWITCH, SINGLE-POLE,
S3	LIGHT SWITCH, 3-WAY,
S4	LIGHT SWITCH, 4-WAY,
SP	LIGHT SWITCH WITH NEON TOGGLE (LIT WHEN LOAD IS ON).
ST	PROGRAMMABLE LIGHT SWITCH, WALL MOUNTED.
SD	DIMMER LIGHT SWITCH.
	EQUIPMENT CONTROL STATION. MOUNT 48" ABOVE FINISHED FLOOR.

TELEVISION SYSTEM

SYMBOL	DESCRIPTION
TV	TV SIGNAL JACK. REFER TO DETAIL FOR ADDITIONAL INFORMATION.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	VOLT.	LAMPS QTY	LAMPS TYPE	LAMPS BULB	LAMPS BASE	LAMPS TEMP	LAMPS CRI	LAMPS LUMENS	BALLASTS QTY	BALLASTS TYPE	WATTS	MOUNTING	MANUF. CATALOG NO.
A1	2'X4' LED TROFFER, SHALLOW 4.75" DEEP ALUMINUM HOUSING, HIGH OPTICAL GRADE ACRYLIC LENS, CURVED REFLECTOR, SKY TRIM ACCESSORY – LUMINOUS DECORATIVE ACCENT, 2900 LUMEN NOMINAL.	UNV	–	LED	–	–	3500 K	85	3074	1	0–10V DIMMING	22.7	CEILING, RECESSED	METALUX #24SR LED2–29–C–L835–CD1 OR APPROVED EQUAL
A2	2'X4' LED TROFFER, SHALLOW 4.75" DEEP ALUMINUM HOUSING, HIGH OPTICAL GRADE ACRYLIC LENS, CURVED REFLECTOR, SKY TRIM ACCESSORY – LUMINOUS DECORATIVE ACCENT, 3900 LUMEN NOMINAL.	UNV	–	LED	–	–	3500 K	85	4197	1	0–10V DIMMING	31.9	CEILING, RECESSED	METALUX #24SR LED2–39–C–L835–CD1 OR APPROVED EQUAL
A3	2'X4' LED TROFFER, SHALLOW 4.75" DEEP ALUMINUM HOUSING, HIGH OPTICAL GRADE ACRYLIC LENS, CURVED REFLECTOR, SKY TRIM ACCESSORY – LUMINOUS DECORATIVE ACCENT, 5300 LUMEN NOMINAL.	UNV	–	LED	–	–	3500 K	85	5584	1	0–10V DIMMING	43.1	CEILING, RECESSED	METALUX #24SR LED2–53–C–L835–CD1 OR APPROVED EQUAL
A4	2'X4' LED TROFFER, SHALLOW 4.75" DEEP ALUMINUM HOUSING, HIGH OPTICAL GRADE ACRYLIC LENS, CURVED REFLECTOR, SKY TRIM ACCESSORY – LUMINOUS DECORATIVE ACCENT, 6400 LUMEN NOMINAL.	UNV	–	LED	–	–	3500 K	85	6802	1	0–10V DIMMING	55.5	CEILING, RECESSED	METALUX #24SR LED2–64–C–L835–CD1 OR APPROVED EQUAL
BS	4 FOOT LED LENSED STRIPLIGHT, HEAVY GAUGE COLD ROLLED STEEL HOUSING, HIGH GLOSS BAKED WHITE ENAMEL FINISH, FROST ACRYLIC LENS, END CAPS, ELECTRONIC LED DRIVER.	120	–	LED	–	–	3500 K	83	2300	1	0–10V DIMMING DRIVER STANDARD	32	CEILING, SURFACE	LITHONIA #ZL2 SERIES DAY–BRITE #FSS FLUXSTREAM SERIES COLUMBIA #LCL4 OR APPROVED EQUAL
BS2	2 FOOT LED LENSED STRIPLIGHT, HEAVY GAUGE COLD ROLLED STEEL HOUSING, HIGH GLOSS BAKED WHITE ENAMEL FINISH, FROST ACRYLIC LENS, END CAPS, ELECTRONIC LED DRIVER.	120	–	LED	–	–	3500 K	83	1400	–	0–10V DIMMING DRIVER STANDARD	21	CEILING, SURFACE	LITHONIA #ZL2 SERIES DAY–BRITE #FSS FLUXSTREAM SERIES COLUMBIA #LCL4 OR APPROVED EQUAL
D1E	LED RECESSED DOWNLIGHT, OPEN REFLECTOR, 6 INCH DIAMETER HOUSING, SELF–FLANGED TRIM STYLE, CLEAR APERTURE/TRIM COLOR, SEMI–SPECULAR FINISH, DIMMING DRIVER, PROVIDE WITH EMERGENCY BATTERY PACK.	120	–	LED	–	–	3500 K	80	1069 1000	–	0–10V DIMMING DRIVER	11.8 9.6	CEILING, RECESSED	GOTHAM #EVO SERIES WILLIAMS #L60 PORTFOLIO #LD6B SPECTRUM #RDF06XT OR APPROVED EQUAL
V1	LED ENCLOSED AND GASKETED FIXTURE, 4 FOOT NOMINAL LENGTH, FIBERGLASS CONSTRUCTION, HIGH IMPACT ACRYLIC LINEAL RIBBED FROSTED LENS DIFFUSER, MEDIUM DISTRIBUTION, UL LISTED FOR WET LOCATIONS. 8000 LUMENS NOMINAL.	120	–	LED	–	–	3500 K	80	9024	1	0–10V DIMMING DRIVER STANDARD	69	CEILING, SURFACE	LITHONIA #FEM LED DAYBRITE #V2 SERIES SPECTRUM #VT SERIES OR APPROVED EQUAL
WL	EXTERIOR LED SLIM WALL PACK, DIE–CAST ALUMINUM HOUSING, MICROPRISMATIC DIFFUSION GLASS LENS, SPECULAR THERMPLASTIC REFLECTOR, TIGHT–LOCK GASKET, BRONZE FINISH.	120	–	LED	–	–	4000 K	73	6215	–	FIXED OUTPUT DRIVER	62	WALL, SURFACE, COORDINATE MOUNTING HEIGHT WITH ARCHITECT	RAB #SLIM62 SERIES LITHONIA OR APPROVED EQUAL
	EXIT SIGN, WHITE METAL HOUSING, UNIVERSAL MOUNTING, RED STENCIL FACE, QUANTITY OF FACES INDICATED BY SHADING ON SYMBOL, DIRECTIONAL ARROWS AS INDICATED, WITH SELF–CONTAINED BATTERY RESERVE, CONNECT FIXTURE AHEAD OF ALL LOCAL AREA SWITCHING, FIXTURE SHALL NOT BE SWITCHED.	120	–	LED DIFFUSE	–	–	–	–	–	–	–	5	WALL OR CEILING AS INDICATED BY SYMBOL	LITHONIA #LE SURE–LITES #CX7 HIGH–LITES #ZCLED EXITRONIX #400U LIGHTALARMS #XLD/XLED SERIES
	LED EMERGENCY LIGHTING UNIT, WITH SELF–CONTAINED NI–CAD BATTERY RESERVE, WHITE THERMOPLASTIC HOUSING, FOR WALL OR CEILING MOUNTING, CONNECT FIXTURE AHEAD OF ALL LOCAL AREA SWITCHING. FIXTURE SHALL NOT BE SWITCHED.	120	2	LED	LED	–	–	–	–	–	–	3	WALL, 1 FT. BELOW CEILING EXCEPT 8 FT. AFF. MAX.	LITHONIA #ELM2 LED SERIES EXITRONIX #LED–90 SERIES LSI #LTEM LED SERIES WILLIAMS #EMER/LED SERIES

ABBREVATIONS

A	AMPERES	KW	KILOWATTS
ACC	ARMORED CLAD CABLE	LFNC	LIQUIDTIGHT FLEXIBLE NON–METALLIC CONDUIT
AFF	ABOVE FINISHED FLOOR	LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
AFG	ABOVE FINISHED GRADE	LVC	LOW VOLTAGE CONTROL CABINET
ANN	FIRE ALARM ANNUNCIATOR CABINET	MCB	MAIN CIRCUIT BREAKER
C	CONDUIT	MCC	METAL CLAD CABLE
CB	CIRCUIT BREAKER	MLO	MAIN LUGS ONLY
CKT	CIRCUIT	MTD	MOUNTED
CLG	CEILING	NMC	NON–METALLIC CLAD CABLE
DN	DOWN	PB	PULLBOX
DW	DISHWASHER	PNL	PANELBOARD
EC	EMPTY CONDUIT	PRS	PROGRAM RAPID START
EMT	ELECTRICAL METALLIC TUBING	PS	PROGRAM START
ENT	ELECTRICAL NON–METALLIC TUBING	PWR	POWER
EWC	ELECTRIC WATER COOLER	REC	RECEPTACLE
FACP	FIRE ALARM CONTROL PANEL	RMC	RIGID METAL CONDUIT
FMC	FLEXIBLE METAL CONDUIT	RS	RAPID START
G	GROUND	SW	SWITCH
GFI	GROUND FAULT INTERRUPTER	SWBD	SWITCHBOARD
HOA	HAND OFF AUTOMATIC	TTB	TELEPHONE TERMINAL BOARD
HP	HORSEPOWER	TEL	TELEPHONE
HPF	HIGH POWER FACTOR	TV	TELEVISION
HX	HIGH REACTANCE	TYP	TYPICAL
IG	ISOLATED GROUND	V	VOLTS
IMC	INTERMEDIATE METAL CONDUIT	VP	VAPOR PROOF
IS	INSTANT START	W	WALL MOUNTED
JB	JUNCTION BOX	WG	WIRE GUARD
KVA	KILOVOLT–AMPERES	WP	WEATHER PROOF
FPN	FUSE PRE NAMEPLATE	XFMR	TRANSFORMER

MOUNTING HEIGHTS

(DISTANCE FROM FINISHED FLOOR TO CENTER OF DEVICE UNLESS OTHERWISE NOTED)

RECEPTACLE	
GENERAL	18" AFF. (UNLESS OTHERWISE NOTED)
ABOVE COUNTER TOP	46" AFF. (UNLESS OTHERWISE NOTED)
LIGHT SWITCH	46" AFF. (UNLESS OTHERWISE NOTED)
TELECOMMUNICATIONS	
GENERAL	18" AFF. (UNLESS OTHERWISE NOTED)
ABOVE COUNTER TOP	46" AFF. (UNLESS OTHERWISE NOTED)
WALL	46" AFF.
TELEVISION	18" AFF. (UNLESS OTHERWISE NOTED)
FIRE ALARM	
PULL STATION	46" AFF.
AUDIBLE/STROBE COMBINATION OR STROBE DEVICE ONLY	THE BOTTOM OF THE APPLIANCE SHALL BE: 80" ABOVE THE FINISHED FLOOR.

FIRE RATED WALL LEGEND

1-HOUR FIRE RATED METAL STUD WALL ASSEMBLY: UL DESIGN UL-U419

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SOUTH CAROLINA No. 18963 MARK P. ARRINGTON
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MYRTLE BEACH, SOUTH CAROLINA

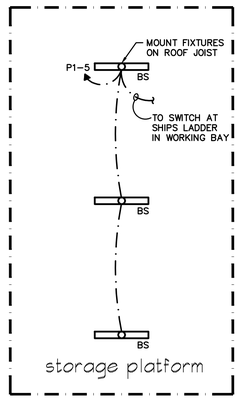
SOUTH CAROLINA McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INC. No. C00926 CERTIFICATE OF AUTHORIZATION

2019	
03/08/2019	
SYMBOLS AND SCHEDULES	
E1.0	

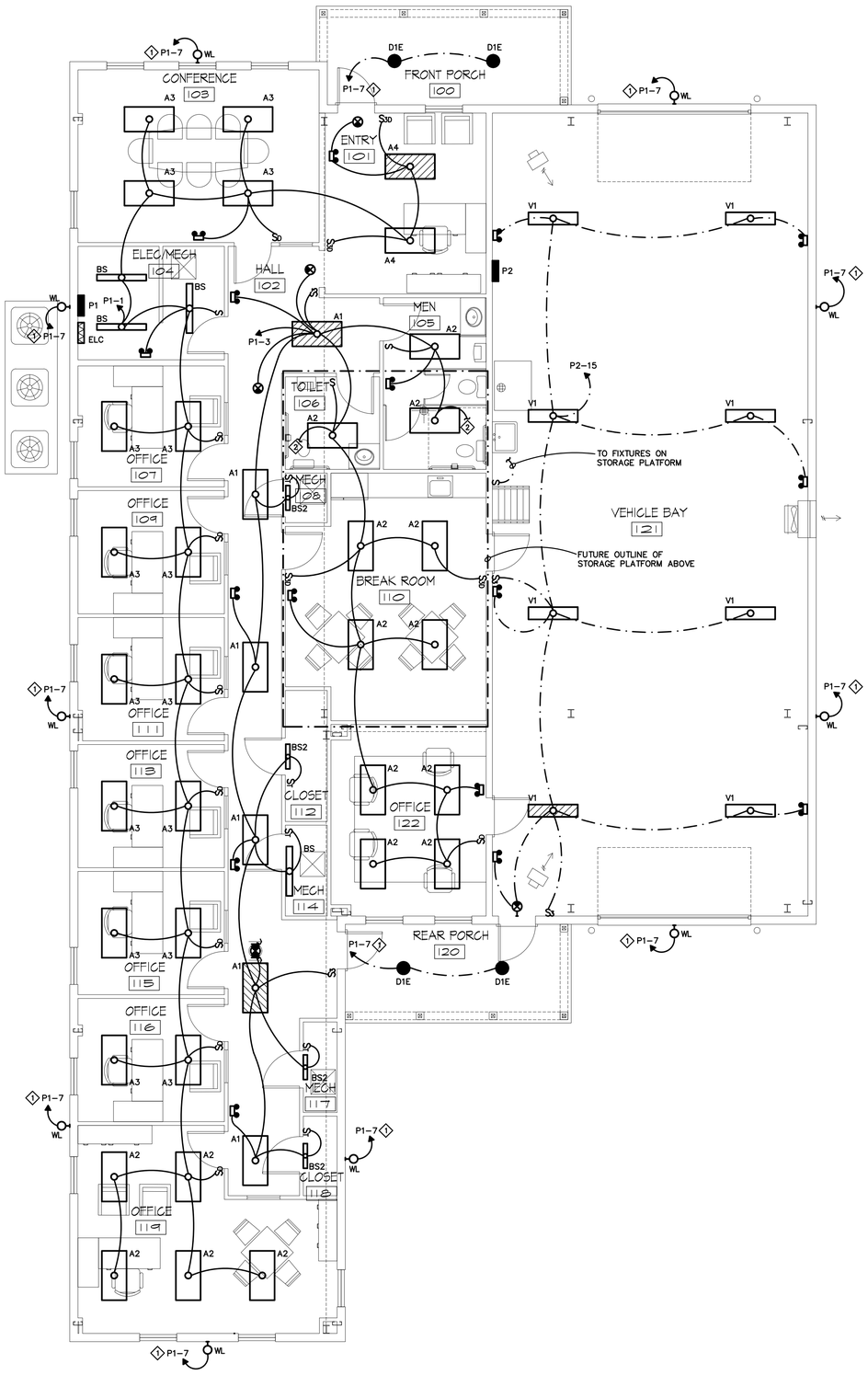
A1
E1.0

SYMBOLS AND SCHEDULES

NO SCALE



2 E2.0 STORAGE PLATFORM
SCALE: 1/8" = 1'-0"



A1 E2.0 FLOOR □LAN □LIGHTING
SCALE□3/16"□1□0"

GENERAL NOTES

NOTES:

1. ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTACTOR. REFER TO EXTERIOR LIGHTING CONTROL DIAGRAM FOR ADDITIONAL INFORMATION.
2. INTERLOCK EXHAUST FAN SERVING THIS AREA WITH LIGHT SWITCH.

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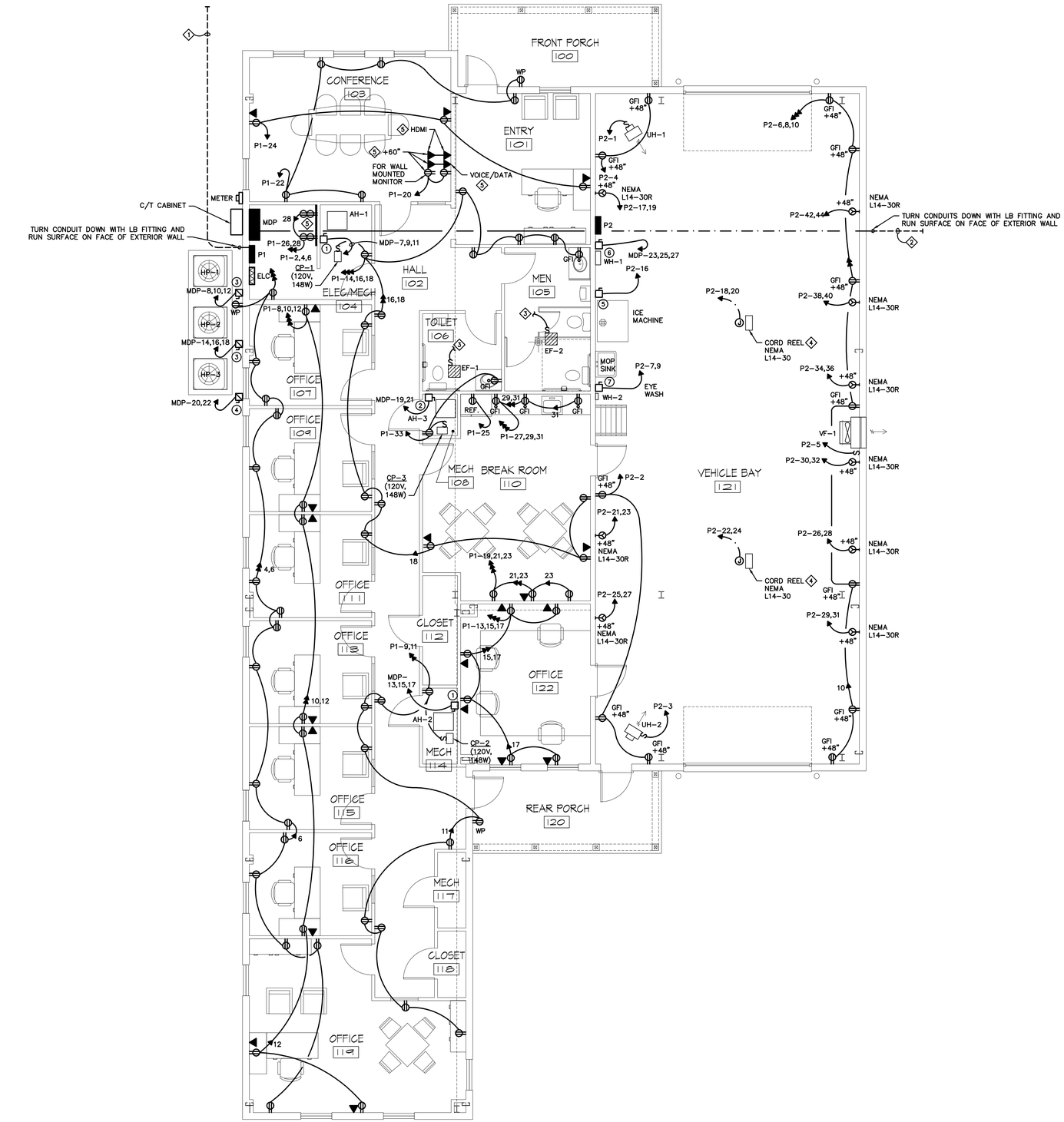
AN ALTERATION TO THE

CITY OF MYRTLE BEACH MAINTENANCE BUILDING

MYRTLE BEACH, SOUTH CAROLINA

SOUTH CAROLINA McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926 CERTIFICATE OF AUTHORIZATION

2019	
03/08/2019	
FLOOR □LAN □LIGHTING	
E2.0	



GENERAL NOTES

NOTES:

1. PROVIDE (1) 1" EMPTY CONDUIT FROM PANEL P1 TO 5 FEET BEYOND FACE OF BUILDING FOR FUTURE SERVICE TO GATE OPERATOR. COORDINATE EXACT TERMINATION POINT WITH OWNER. PROVIDE MARKER FOR CONDUIT TERMINATION POINT.
2. PROVIDE (4) 1-1/2" EMPTY CONDUITS FROM PANEL MDP TO 5 FEET BEYOND FACE OF BUILDING FOR FUTURE POWER TO OUT BUILDINGS. COORDINATE EXACT TERMINATION POINT WITH OWNER. PROVIDE MARKER FOR CONDUIT TERMINATION POINT.
3. INTERLOCK EXHAUST FAN WITH LIGHT SWITCH SERVING THIS AREA.
4. CORD REEL PROVIDED BY OWNER. INSTALLED BY EC. REFER TO CORD REEL DETAIL FOR ADDITIONAL INFORMATION.
5. REFER TO TELECOMMUNICATIONS RISER DIAGRAM FOR ADDITIONAL INFORMATION.

FIRE RATED WALL LEGEND

1-HOUR FIRE RATED METAL STUD WALL ASSEMBLY: UL DESIGN UL-U419

McKNIGHT · SMITH · WARD · GRIFFIN
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PO Box 240826 · 4223 South Boulevard
Charlotte, NC · 704/527-2112
18-147

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 18963
MARK P. ARRINGTON
03-08-19
REVISION DATE

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No. C00926

2019
03/08/2019
FLOOR PLAN - POWER

E3.0

A1
E3.0

FLOOR PLAN - POWER

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

EQUIPMENT CONNECTION SCHEDULE

SYMBOL	EQUIPMENT	LOAD	VOLTAGE/ PHASE	DISCONNECT TYPE	DISCONNECT RATING	DISCONNECT POLES	DISCONNECT TRIP/FUSE	DISCONNECT ENCLOSURE	CONDUCTORS	RACEWAY TYPE	RACEWAY SIZE	NOTES
①	AH-1, AH-2	4.1 FLA, 7.2 KW	208/3	NFDS	30	3	–	1	3#10,1#10G	FMC	3/4"	
②	AH-3	2.8 FLA, 3.6 KW	208/1	NFDS	30	2	–	1	2#10,1#10G	FMC	1/2"	
③	HP-1, HP-2	9.9 RLA, 0.8 FLA	208/3	FDS	30	3	20	3R	3#12,1#12G	LFMC	1/2"	
④	HP-3	9.0 RLA, 0.54 FLA	208/1	FDS	30	2	20	3R	2#12,1#12G	LFMC	1/2"	
⑤	ICE MACHINE	11.0 MCA (ASSUMED LOAD)	120/1	FDS	30	2	15	1	2#12,1#12G	FMC	1/2"	◇2
⑥	WH-1	24 KW	208/3	NFDS	100	3	–	1	3#4,1#8G	FMS	1-1/4"	
⑦	WH-2	4.1 KW	208/1	NFDS	30	2	–	1	2#10,1#10G	FMC	1/2"	
⑧	–	–	–	–	–	–	–	–	–	–	–	
⑨	–	–	–	–	–	–	–	–	–	–	–	
⑩	–	–	–	–	–	–	–	–	–	–	–	

LEGEND

DISCONNECT TYPES
- ETCB = ELECTRONIC-TRIP CIRCUIT BREAKER
- FDS = FUSIBLE DISCONNECT SWITCH
- MCP = MOTOR CIRCUIT PROTECTOR
- NFDS = NON-FUSIBLE DISCONNECT SWITCH
- ST/DS = COMBINATION STARTER/DISCONNECT SWITCH
- TMCB = THERMAL-MAGNETIC CIRCUIT BREAKER
- TOG = TOGGLE SWITCH
- C/DS = COMBINATION CONTACTOR/DISCONNECT SWITCH

DISCONNECT ENCLOSURE TYPES
- 1 = NEMA 1 ENCLOSURE
- 3R = NEMA 3R ENCLOSURE
- 4 = NEMA 4 ENCLOSURE
- 4X = NEMA 4X ENCLOSURE

RACEWAY TYPES
- EMT = ELECTRIC METALLIC TUBING
- FMC = FLEXIBLE METAL CONDUIT
- IMC = INTERMEDIATE METAL CONDUIT
- LFMC = LIQUID-TIGHT FLEXIBLE METAL CONDUIT
- PVC = NON-METALLIC PVC CONDUIT
- RMC = RIGID METAL CONDUIT

STARTER TYPES
- CFVNR = COMBINATION FULL VOLTAGE, NONREVERSING

CONTROL DEVICES
- HOA = HAND-OFF-AUTO
- RPL = RED PILOT LIGHT
- AUX = AUXILLARY CONTACTS (2 N.O., 1 N.C.)
- CT50 = 50 VA CONTROL TRANSFORMER

NOTES

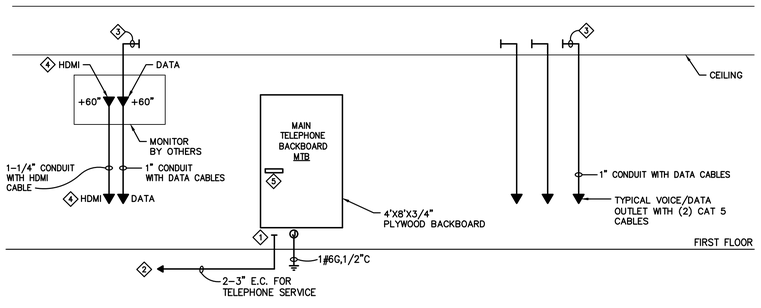
ALL ELECTRICAL CHARACTERISTICS SCHEDULED ABOVE ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT WITH EQUIPMENT SUPPLIER(S) PRIOR TO ROUGHING, AND SHALL VERIFY EXACT LOCATION AND EXACT TYPE OFCONNECTION. ALL EQUIPMENT SHALL BE PROPERLY AND SECURELY GROUNDED. ANY SIGNIFICANT CHANGES IN LOCATION, ELECTRICAL REQUIREMENTS, OR TYPE OF CONNECTION REQUIRED FOR ANY EQUIPMENT SCHEDULED ABOVE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING PRIOR TO PROCEEDING.

CONDUCTORS AND RACEWAY SPECIFIED IN THE ABOVE SCHEDULE ARE FOR FINAL CONNECTION TO UNIT AND SHALL BE EXTENDED FROM THE DISCONNECT SHOWN ON THE FLOOR PLANS TO THE EQUIPMENT TERMINATION BOX.

CONDUIT AND BOXES REQUIRED FOR EQUIPMENT CONNECTIONS SHALL BE INSTALLED IN SUCH A WAY AS TO NOT COVER UP EQUIPMENT NAMEPLATES, SERVICE AREAS, AIR FLOW AREAS, ETC.

◇1 UTILIZE ONLY ONE POLE OF TWO POLE DISCONNECT SWITCH FOR CIRCUIT DISCONNECTION. DO NOT SWITCH CIRCUIT NUETRAL.

◇2 PROVISIONS FOR ICE MACHINE. SCHEDULED INFORMATION IS ASSUMED AND FOR DESIGN PURPOSES ONLY. COORDINATE WITH OWNER FOR EXACT ELECTRICAL REQUIREMENTS FOR FUTURE ICE MACHINE.



2 E4.0 TELECOMMUNICATIONS RISER DIAGRAM

NO SCALE

NOTES:

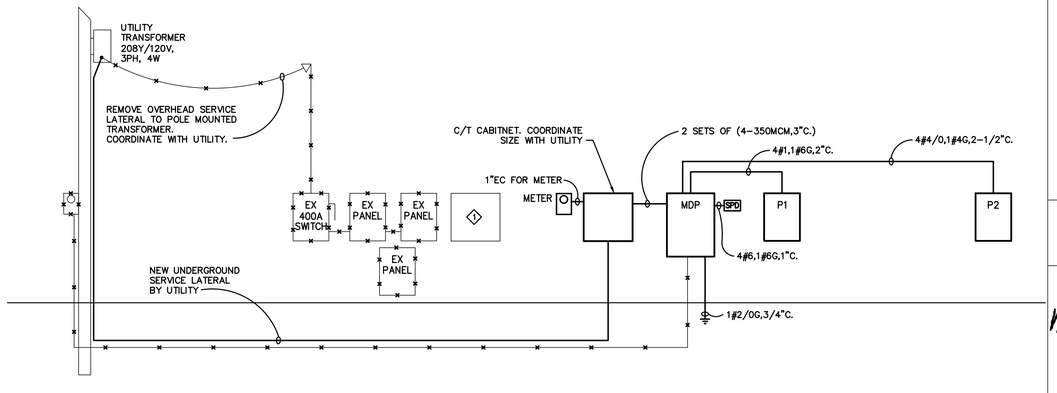
◇1 STUB UP 6"AFF BELOW BACKBOARD AND TERMINATE WITH PLASTIC BUSHING.

◇2 EXTEND TO PROPERTY LINE. COORDINATE TERMINATION WITH TELEPHONE UTILITY.

◇3 ROUTE 1" CONDUIT FROM VOICE/DATA OUTLET TO ABOVE CEILING LEVEL. TERMINATE CONDUIT WITH PLASTIC BUSHING. (TYPICAL) PROVIDE CABLES AS SPECIFIED.

◇4 FOR HDMI REMOTE INPUT. PROVIDE HDMI WALLPLATE WITH A SINGLE FEMALE PORT. PROVIDE HDMI CABLE IN CONDUIT FROM PORT TO PORT.

◇5 REFER TO DETAIL – GROUND BAR FOR ADDITIONAL INFORMATION.



1 E4.0 POWER RISER DIAGRAM

NO SCALE

NOTES:

◇1 REMOVE MANUAL TRANSFER SWITCH FOR FUTURE PORTABLE GENERATOR AND STORE AS DIRECTED BY OWNER.

GENERAL NOTES

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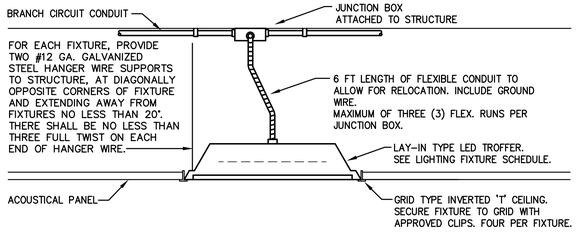
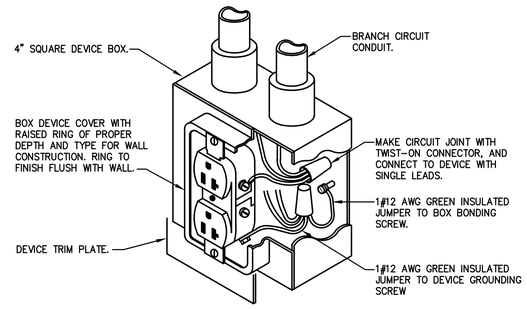
2019	
03/08/2019	
RISER DIAGRAMS	
E4.0	

A1 / E4.0 RISER DIAGRAMS AND SCHEDULES

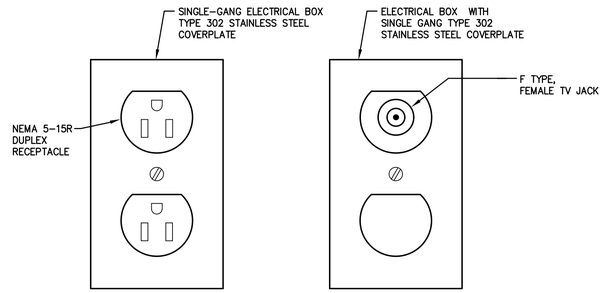
NO SCALE



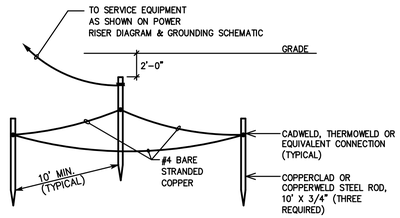
1 E4.1 **DETAIL – TYPICAL LAY-IN FIXTURE INSTALLATION**
Not To Scale



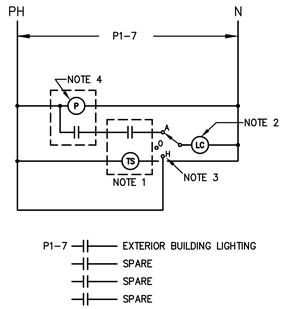
2 E4.1 **DETAIL – TYPICAL DUPLEX RECEPTACLE INSTALLATION**
NOT TO SCALE



3 E4.1 **DETAIL – TV SIGNAL OUTLET**
NOT TO SCALE



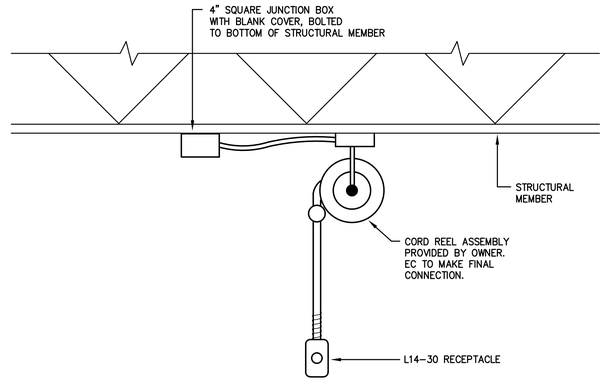
4 E4.1 **TYPICAL MADE GROUNDING ELECTRODE**
NOT TO SCALE



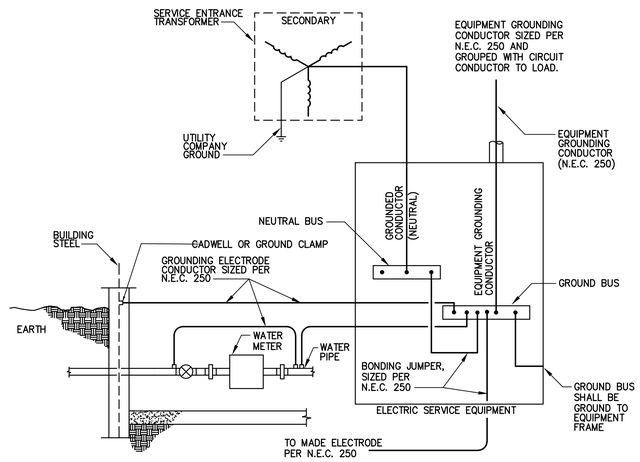
NOTES:

1. DIGITAL TIME SWITCH. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. ELECTRICALLY HELD LIGHTING CONTACTOR WITH 20A BALLAST RATED CONTACTS. CONTACTOR SHALL BE OPEN TYPE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. HAND-OFF-AUTOMATIC SELECTOR SWITCH. SWITCH SHALL BE HEAVY-DUTY, OIL TIGHT, MAINTAINED CONTACT TYPE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. PHOTOCELL CONTROL DEVICE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. MOUNT TIME SWITCH AND CONTACTOR IN 18"x 18"x 6" DEEP NEMA 1 ENCLOSURE WITH HINGED DOOR. MOUNT SELECTOR SWITCH ON DOOR. PROVIDE PERMANENT NAMEPLATE ON DOOR TO READ: "EXTERIOR LIGHTING CONTROL".

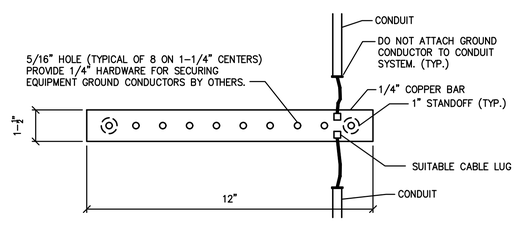
5 E4.1 **EXTERIOR LIGHTING CONTROL DIAGRAM–ELC**
NO SCALE



6 E4.1 **208V 30A CORD REEL DETAIL**
NOT TO SCALE



7 E4.1 **SERVICE GROUNDING CONNECTION DIAGRAM**
NOT TO SCALE



8 E4.1 **DETAIL – GROUND BAR**
NOT TO SCALE

A1 E4.1 **DETAILS**
NO SCALE

GENERAL NOTES

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2019	
03/08/2019	
DETAILS	
E4.1	

PANELBOARD:	MDP		GROUND BUS				SC RATING:	25 KAMPS RMS SYMM.
SERVICE:	208Y/120V 3PH 4W						MOUNTING:	SURFACE
MAINS:	600 AMP	MCB	TYPE: DISTRIBUTION				ENCLOSURE:	NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CONNECTED LOAD (KVA) CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
PANEL P1	1	125/3	1A	10.4	10.4						
				15.5	22.9			2A	225/3	4/0	PANEL P2
	1	/	3B	10.6		10.6					
				12.6		20.1		4B	/	4/0	
	1	/	5C	6.8			6.8				
				15.6			23.0	6C	/	4/0	
AH-1	10	30/3	7A		2.9						
					1.3			8A	20/3	12	HP-1
	10	/	9B			2.9					
						1.3		10B	/	12	
	10	/	11C				2.9				
							1.3	12C	/	12	
AH-2	10	30/3	13A		2.9						
					1.3			14A	20/3	12	HP-2
	10	/	15B			2.9					
						1.3		16B	/	12	
	10	/	17C				2.9				
							1.3	18C	/	12	
AH-3	10	25/2	19A		2.1						
					1.0			20A	20/2	12	HP-3
	10	/	21B			2.1					
						1.0		22B	/	12	
WH-1	4	90/3	23C				8.0				
							0.0	24C	/1		SPACE ONLY
	4	/	25A		8.0						
					0.0			26A	/3		100A SPACE ONLY
	4	/	27B			8.0					
						0.0		28B	/		
SPACE ONLY		/1	29C				0.0				
							0.0	30C	/		
100A SPACE ONLY		/3	31A		0.0						
					0.0			32A	/3		100A SPACE ONLY
		/	33B			0.0					
						0.0		34B	/		
		/	35C				0.0				
							0.0	36C	/		
SPD	6	60/3	37A		0.0						
					0.0			38A	/3		100A SPACE ONLY
	6	/	39B			0.0					
						0.0		40B	/		
	6	/	41C				0.0				
							0.0	42C	/		
				71.5	52.7	50.2	46.3				

NOTES:
PROVIDE WITH SERVICE ENTRANCE LABEL.

LIGHTS	4.2	KVA
RECEPTS	11.2	KVA
MOTORS	23.1	KVA
HEAT	28.2	KVA
KITCHEN	0.0	KVA
CMPTR	5.1	KVA
OTHER	77.4	KVA
TOTAL	149.2	KVA

PANCLBOARD:	P1		GROUND BUS				SC RATING:	22 KAMPS RMS SYMM.
SERVICE:	208Y/120V 3PH 4W						MOUNTING:	SURFACE
MAINS:	225 AMP	MLO	TYPE: BRANCH				ENCLOSURE:	NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CONNECTED LOAD (KVA) CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
LIGHTING	12	20/1	1A	1.5	1.5						
				1.1	1.1			2A	20/1	12	REC: OFFICE
LIGHTING	12	20/1	3B	1.4		1.4					
				1.1		1.1		4B	20/1	12	REC: OFFICE
LTG: STOR. PLATFORM	12	20/1	5C	0.2			0.2				
				0.9			0.9	6C	20/1	10	REC: OFFICE
EXT. LIGHTING	10	20/1	7A	0.5	0.5						
				0.9	0.9			8A	20/1	12	REC: OFFICE
REC: CORRIDOR	12	20/1	9B	0.9		0.9					
				0.9		0.9		10B	20/1	12	REC: OFFICE
REC: OFFICE	12	20/1	11C	0.9			0.9				
				0.6			0.6	12C	20/1	10	REC: OFFICE
REC: OFFICE	12	20/1	13A	0.6	0.6						
				0.9	0.9			14A	20/1	12	REC: LOBBY
REC: OFFICE	12	20/1	15B	0.6		0.6					
				0.9		0.9		16B	20/1	12	REC: OFFICE
REC: OFFICE	12	20/1	17C	0.6			0.6				
				0.5			0.5	18C	20/1	12	REC: BREAKROOM
REC: VENDING	12	20/1	19A	1.2	1.2						
				0.5	0.5			20A	20/1	12	REC: CONFERENCE
REC: VENDING	12	20/1	21B	1.2		1.2					
				1.1		1.1		22B	20/1	12	REC: CONFERENCE
REC: VENDING	12	20/1	23C	1.2			1.2				
				0.9			0.9	24C	20/1	12	REC: CONFERENCE
REC: REFRIGERATOR	12	20/1	25A	1.2	1.2						
				1.0	1.0			26A	20/1	12	REC: DATA
REC: BREAKROOM	12	20/1	27B	1.0		1.0					
				1.0		1.0		28B	20/1	12	REC: DATA
REC: BREAKROOM	12	20/1	29C	1.0			1.0				
							0.0	30C	20/1		SPARE
REC: BREAKROOM	12	20/1	31A	1.0	1.0						
					0.0			32A	20/1		SPARE
REC: RESTROOMS	12	20/1	33B	0.5		0.5					
						0.0		34B	20/1		SPARE
SPARE		20/1	35C				0.0				
							0.0	36C	20/1		SPARE
SPARE		20/1	37A		0.0						
					0.0			38A	/3		SPACE ONLY
SPARE		20/1	39B			0.0					
						0.0		40B	/		
SPARE		20/1	41C				0.0				
							0.0	42C	/		
SPACE ONLY		/3	43A		0.0						
					0.0			44A	/3		SPACE ONLY
		/	45B			0.0					
						0.0		46B	/		
		/	47C				0.0				
							0.0	48C	/		
SPACE ONLY		/3	49A		0.0						
					0.0			50A	/3		SPACE ONLY
		/	51B			0.0					
						0.0		52B	/		
		/	53C				0.0				
							0.0	54C	/		
				27.8	10.4	10.6	6.8				

NOTES:

LIGHTS	3.4	KVA
RECEPTS	9.0	KVA
MOTORS	5.0	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	5.1	KVA
OTHER	5.3	KVA
TOTAL	27.8	KVA

PANCLBOARD:	P2		GROUND BUS				SC RATING:	22 KAMPS RMS SYMM.
SERVICE:	208Y/120V 3PH 4W						MOUNTING:	SURFACE
MAINS:	225 AMP	MLO	TYPE: BRANCH				ENCLOSURE:	NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CONNECTED LOAD (KVA) CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
UH-1	12	20/1	1A	0.5	0.5						
				0.5	0.5			2A	20/1	12	REC: WORKING BAY
UH-2	12	20/1	3B	0.5		0.5					
				0.4		0.4		4B	20/1	12	REC: WORKING BAY
	12	15/1	5C	1.2			1.2				
				0.4			0.4	6C	20/1	12	REC: WORKING BAY
WH-2	10	25/2	7A		2.1						
				0.5	0.5			8A	20/1	12	REC: WORKING BAY
	10	/	9B			2.1					
				0.4		0.4		10B	20/1	12	REC: WORKING BAY
SPARE		20/1	11C				0.0				
				0.0			0.0	12C	20/1		SPARE
SPARE		20/1	13A		0.0						
				0.0	0.0			14A	20/1		SPARE
LTG: WORKING BAY	12	20/1	15B	0.8		0.8					
				1.1		1.1		16B	15/1	12	ICE MACHINE
REC: EQUIPMENT	10	30/2	17C	2.0			2.0				
				2.0			2.0	18C	30/2	10	CORD REEL
	10	/	19A		2.0						
				2.0	2.0			20A	/	10	
REC: EQUIPMENT	10	30/2	21B	2.0		2.0					
				2.0		2.0		22B	30/2	10	CORD REEL
	10	/	23C				2.0				
				2.0			2.0	24C	/	10	
REC: EQUIPMENT	10	30/2	25A	2.0	2.0						
				2.0	2.0			26A	30/2	10	REC: EQUIPMENT
	10	/	27B			2.0					
				2.0		2.0		28B	/	10	
REC: EQUIPMENT	10	30/2	29C	2.0			2.0				
				2.0			2.0	30C	30/2	10	REC: EQUIPMENT
	10	/	31A		2.0						
				2.0	2.0			32A	/	10	
		/	33B			0.0					
				2.0		2.0		34B	30/2	10	REC: EQUIPMENT
		/	35C				0.0				
				2.0			2.0	36C	/	10	
SPACE ONLY		/3	37A		0.0						
				2.0	2.0			38A	30/2	10	REC: EQUIPMENT
		/	39B			0.0					
				2.0		2.0		40B	/	10	
		/	41C				0.0				
				2.0			2.0	42C	30/2	10	REC: EQUIPMENT
SPACE ONLY		/3	43A		0.0						
				2.0	2.0			44A	/	10	
		/	45B			0.0					
						0.0		46B	/2		SPACE ONLY
		/	47C				0.0				
							0.0	48C	/		
SPACE ONLY		/3	49A		0.0						
					0.0			50A	/3		SPACE ONLY
		/	51B			0.0					
						0.0		52B	/		
		/	53C				0.0				
							0.0	54C	/		
				42.3	19.7	17.2	17.6				

NOTES:

LIGHTS	0.8	KVA
RECEPTS	2.2	KVA
MOTORS	3.3	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	48.2	KVA
TOTAL	54.5	KVA

GENERAL NOTES

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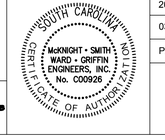
AN ALTERATION TO THE

CITY OF MYRTLE BEACH MAINTENANCE BUILDING

MYRTLE BEACH, SOUTH CAROLINA



2019

03/08/2019

PANEL SCHEDULES

E5.0

A1
E5.0

PANEL SCHEDULES

NO SCALE

ELECTRICAL GENERAL REQUIREMENTS

1.1 SCOPE:

a. Applicable requirements of the General Conditions of the Contract, Amendments, Supplementary General Conditions, and Special Conditions govern work under this Division.

b. Work covered by this Division consists of providing all labor, equipment, supplies, and materials; and performing all operations, including trenching, backfilling, cutting, patching, and chasing necessary for the installation of complete electrical systems in strict accordance with these specifications and the applicable drawings.

c. Minor details not usually shown or specified, but necessary for the proper installation and operation, shall be included in the work, the same as if herein specified or shown.

d. This Contractor is referred to the General and Special Conditions of the contract which shall form a part and be included in this section of the specification and shall be binding on this Contractor.

e. Some items of equipment are specified in the singular; however, the Contractor shall provide and install the number of items or equipment as indicated on the drawings, and as required for complete systems.

1.2 RECORD DRAWINGS:

a. During construction of this project, the Contractor shall maintain one complete set of electrical contract drawings, on which shall be recorded all significant changes. This set of drawings shall be used for no other purpose. Upon completion of the work, the Contractor shall submit these drawings to the Architect/Engineer for approval and presentation to the Owner.

1.3 REGULATIONS AND COMPLIANCE:

a. The requirements of the North Carolina State Building Code which includes the National Electrical Code, and of all other State and Local codes, ordinances, regulations and interpretations by authorities having jurisdiction are binding upon this Contractor, and nothing contained in, or inferred by, these specifications or the applicable drawings may be construed as waiving those requirements. The latest edition of the National Electrical Code, referred to herein and on the drawings as "N.E.C.", forms a part of these specifications; and under no circumstances may the installation fail to meet the minimum requirements therein.

b. This Contractor shall secure and pay for all permits, fees, inspections and licenses required. It is the responsibility of the Contractor to notify the Local Electrical Inspector to schedule the required inspections. Upon completion of the project and prior to his request for final payment he shall present to the Architect/Engineer a certificate of inspection and approval from the inspection authorities.

c. All materials and equipment shall bear the approval label, and shall be listed by the Underwriters' Laboratories, Inc.

2.1 GENERAL:

a. Except where reuse of existing items are specifically indicated or permitted, all materials and equipment shall be new and shall conform with the standards of the National Electrical Manufacturer's Association and Underwriter's Laboratories, Inc. in every instance where such a standard has been established for the item involved.

b. Materials shall be inspected by the Contractor upon their arrival at the site to be sure they are correct. Material and equipment stored on the site shall be protected against physical damage, dirt and damage caused by precipitation, wind, condensation, excessive humidity, and extremes of temperature. Materials shall be stored in their original cartons within substantial, clean and dry storage facilities provided under this Contract. Conduit, large galvanized boxes, and lighting poles may be stored outdoors on suitable blocks or racks clear of the earth and undergrowth, and pitched to drain. Large electrical equipment intended for ultimate installation outdoors may be stored in the weather on suitable blocks or platforms clear of the earth and undergrowth, and with interior lamps or space heaters continuously energized to prevent condensation. Alternate storage provisions may be submitted to the Architect/Engineer for approval prior to the arrival of the material. Under no circumstances shall equipment be stored in the weather under a cover of polyethylene or tarpaulin. The Architect/Engineer will be the sole judge as to the acceptability of storage facilities, and when directed by the Architect/Engineer, improperly stored or damaged material shall be removed from the site and replaced with new material.

c. The Contractor shall coordinate the work and equipment of this Division with the work and equipment specified elsewhere in order to assure a complete and satisfactory installation. Work such as excavation, backfill, concrete, flashing, wiring, etc., which is required by the work of this section shall be performed in accordance with the requirements of the applicable section of the specifications.

d. It is the intention of these specifications and drawings to call for finished work, tested and ready for operation. Whenever the work "provide" is used, it shall mean "furnish and install complete and ready for use".

3.1 COORDINATION:

a. This Contractor coordinate the work of all subs and shall furnish any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

b. Where the work will be installed in close proximity to, or may interfere with the work of other trades, the Contractor shall assist in working out space conditions to make a satisfactory adjustment. If so directed by the Engineer, the Contractor shall prepare composite working drawings and sections at a suitable scale not less than 3/8" = 1'-0", clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordination, or so as to cause any interference with work of any subs, he shall make the necessary changes in his work to correct the condition without extra charge.

c. The Contractor shall furnish to other trades, as required, all necessary templates, patterns, setting plans, and shop details for the proper installation of work and for the purpose of coordinating adjacent work.

3.2 EXCAVATION:

a. Required excavation for installation of all electrical work shall be provided by the Electrical Contractor. Particular care shall be taken not to disturb or damage work of other trades.

b. Trenching and shoring shall comply with requirements of North Carolina State Department of Labor's regulations entitled "Safeguards During Construction", and "Trenching and Shoring".

c. In backfilling pipe trenches, approved fill shall first be compacted firmly and evenly on both sides of pipe in 6" layers to a depth of 12" over the top of the pipe. Remainder of trench shall be backfilled to established grade in 6" layers. Compact between each layer with a high-frequency vibrator tamper such as Dart Soil Compactor (as manufactured by Dart Manufacturing Company, Denver, Colorado). Fill shall be compacted to density specified in Earthwork Section for the area through which trench is cut. Where compaction requirements are not established for an area, compact fill to 95% maximum density at optimum moisture content.

d. Excess earth shall be deposited on the site as directed by the Architect/Engineer.

e. Where ditches occur outside of building, the surface shall be finished to match existing surfaces. Any existing work, or work of other trades, which is damaged or disturbed shall be repaired or replaced, and left in good order.

3.3 SLEEVES, CUTTING, AND PATCHING:

a. Contractor shall place his own sleeves and advise other trades of required chases and openings so they can be properly built in. Where any raceway supports installed under this Contract pierce the roof, suitable pitch pockets shall be provided and coordinated with the roofing contractor as necessary to be acceptable to the Architect. Provide suitable fittings where any raceways or equipment cross expansion joints.

b. Permitted cutting or patching necessary shall be done by Contractor. Structural members shall not be cut except by written permission of Architect/Engineer.

3.4 PROTECTION AND CLEAN-UP:

a. Protect all material and work from damage during construction. Equipment installed in the building prior to its being closed in and dried out shall be protected from the elements in the same manner as previously specified for stored materials. Protect finished surfaces from splattering of mortar, paint, dirt, plaster, etc.. Do not install device plates, face plates, canopies, flush cabinet trims, or fixtures on walls or ceilings until after painting or cleaning of the surface has been completed, and arrange for such items that are required to be field painted to be painted before being mounted. Repair, clean and touch-up or replace, all damaged material. At the completion of the project, remove all dust from finished surfaces, including lighting fixtures, lenses and lamps.

b. The Contractor shall keep premises free of debris resulting from his work.

3.5 PAINTING AND FINISHING:

a. Suitable finishes shall be provided on all items of electrical equipment and materials which are exposed. This shall consist of either an acceptable finish as manufactured and supplied to the job or application of suitable finishes after installation.

b. Where installed in finished areas, exposed equipment and materials shall be supplied with prime coat, and shall be professionally painted or enameled as directed to match or blend with adjacent surfaces.

c. In unfinished areas such as equipment rooms, exposed equipment shall be furnished with suitable factory applied finishes (e.g. standard gray enamel finish for panelboards, etc.).

3.6 OBSERVATION:

a. The project will be observed periodically as construction progresses.The Contractor will be responsible for notifying the Architect at least 72 hours in advance when any work to be covered up is ready for inspection. No work will be covered up until after observation has been completed on such items as piping and insulation, etc.

EQUIPMENT CONNECTIONS AND COORDINATION

1.1 GENERAL:

a. Heating, Ventilating, Air Conditioning, Refrigeration and Plumbing Equipment: Unless otherwise indicated, provide all power wiring, including feeders and branch circuits, to the terminals of the equipment, including mounting of motor starters; feeder and branch circuit over-current protection; disconnecting means within sight of each motor and each starter, whether of not specifically indicated on drawings; and Motor Control Centers indicated, complete as scheduled and specified.

BASIC MATERIALS AND METHODS

1.1 WIRING METHOD:

a. Unless otherwise indicated or specified, the Wiring Method for this project shall consist of copper conductors with 600 volt insulation installed in metal raceways.

b. The word "Raceway" and the word "Conduit" (or abbreviation "C") used herein or on the drawings indicate Rigid Metal Conduit, and where permitted, Intermediate Metal Conduit, Electrical Metallic Tubing, Rigid Nonmetallic Conduit, Flexible Metal Conduit, or Liquidtight Flexible Metal Conduit.

c. Reference to "Rigid Conduit" or "RMC" indicates heavy-wall Rigid Metal Conduit only.

d. Reference to "IMC" indicates Intermediate Metal Conduit.

e. Reference to "PVC" indicates Rigid Nonmetallic Conduit.

f. Reference to "EMT" or "Tubing" indicates Electrical Metallic Tubing.

g. Reference to "Flex" or "Flexible Conduit" indicates Flexible Metal Conduit, or, where required, Liquidtight Flexible Metal Conduit.

1.2 FASTENINGS METHODS:

a. Acceptable fastening methods include wood screws and nails on wood construction, toggle bolts on hollow masonry, expansion bolts and lead anchors on brick and concrete, and machine screws on metal surfaces.

b. Explosive fasteners may be used in steel and concrete in accordance with the manufacturer's recommendations.

c. Wire, perforated metal strap, and wooden plugs are not acceptable as fastening material.

d. Materials used shall be good quality, made of zinc or cadmium coated steel or other non-corroding material.

e. Materials, whether exposed or concealed, shall be firmly and adequately held in place. Fastening and support shall afford safety factor of three or higher, and shall be in full compliance with the seismic protection requirements of the N.C. State Building Code.

f. Fixtures, raceways, and equipment shall be supported from the structure. Nothing may be supported on suspended ceiling unless definitely noted so on the Drawings or specifically permitted by the Architect/Engineer.

g. Equipment and raceways attached to outside walls, or interior walls subject to permanent moisture, shall be shimmed out with non-corrodible material so as to provide 1/4" air space between wall and equipment or raceway.

1.3 NAMEPLATES:

a. Suitable nameplates shall be provided for the identification of electrical equipment including Switchboards, Panelboards, Motor Control Centers, Motor Starters, Safety Switches, and Circuit Breakers.

b. Nameplates shall be of engraved white core plastic laminate, not less than 1/16" thick. For 120/208 volt systems, nameplates shall have white letters on black backgrounds.

c. Engraving shall be of professional quality, with block style letters, minimum 1/4" high.

d. Nameplates shall be attached with sheet metal screws. They shall be sized to allow for installation of screws without obscuring text.

RACEWAYS AND FITTINGS

1.1 MATERIALS AND APPLICATIONS:

a. Rigid Metal Conduit shall be zinc coated steel or alloy 6063-T42 aluminum with threaded couplings and fittings. Termination at sheet metal enclosures shall consist of double locknuts and insulating bushings. Rigid Steel conduit shall be used for all exposed and concealed work except where other raceways are indicated or permitted. Aluminum conduit complete with aluminum fittings may be used in lieu of steel conduit except in wet locations, underground, or in poured concrete. Steel and aluminum shall not be mixed in the same run of conduit.

b. Intermediate Metal Conduit (IMC) with threaded couplings and fittings may be used for exposed and concealed work in lieu of rigid metal conduit except underground outside the building foundation, or where supporting lighting fixtures, or in hazardous locations, or where exposed to severe impact or injury. Termination at sheet metal enclosures shall consist of double locknuts and insulating bushings.

c. Electrical Metallic Tubing (EMT) of 2" maximum size may be used for concealed work in lieu of Rigid Metal Conduit except underground or in poured concrete. EMT of 2" maximum size may be used for exposed work in lieu of Rigid Metal Conduit except outdoors, or above a roof, or where supporting lighting fixtures, or where exposed to severe impact or injury, or in hazardous locations, or less than 10 feet above a floor or platform in other than in electrical, mechanical, or communications closets or equipment rooms.

d. Rigid PVC Conduit shall be Schedule 40, UL listed for use with 90oC. Conduit run underground or run in or under a poured concrete slab shall be rigid PVC. Vertical elbows and vertical extensions from underground or concrete embedded PVC conduits smaller than 3" trade size may also be of PVC provided that they remain concealed or otherwise protected, but shall be of Rigid Steel Conduit (or IMC where permitted) where they stub up into exposed locations or trade size is 3" or larger. An insulating bushing or end bell shall be provided at each termination. Conduit run underground and not under a poured concrete slab shall have installed continuously above it a warning tape. Tape shall be 12 inches wide, centered on conduit and located 12 inches below finished grade.

e. Flexible Metal Conduit shall be of zinc coated steel of minimum length, and shall be used in lieu of Rigid Metal Conduit for connections to moving or vibrating apparatus, recessed lighting fixtures, dry-type transformers, and motors. Flexible Metal Conduit may be used where rigid connections are impractical due to obstructions or space limitations. Flexible Metal Conduit used in wet, damp, or corrosive location shall be PVC jacketed liquid-tight complete with liquid-tight connectors.

f. Fittings for steel conduit and tubing shall be of zinc coated steel or malleable iron. Insulating bushings of plastic provided for Rigid and Intermediate Metal Conduits shall be rated for 150oC. Bonding bushings shall be steel or malleable iron with non-removable plastic throats rated 150oC. EMT fittings shall be of the compression type. Set-screw, indentor, pressure cast, and die cast fittings are not acceptable. Connectors for EMT, Flexible Metal Conduit and Liquid-tight Flexible Metal Conduit shall be the insulated throat type. Connectors for Flexible Metal Conduits shall be of the "Tite-Bite" design.

g. Conduit expansion fittings shall be of zinc coated cast or malleable iron and steel conduit, complete with flexible bonding straps. Expansion fittings shall allow longitudinal conduit movement of 4 inches.

h. Minimum raceway size shall be 1/2". Other raceway sizes, unless indicated on the drawings, shall be determined by the Contractor in accordance with NEC requirements for type THW insulated conductors, or the actual insulation used if it is thicker than type THW.

2.1 INSTALLATION:

a. Rigid and Intermediate Metal Conduits shall be made up with full threads, to which a conductive pipe compound (T & B Kopr-Shield or equal) has been applied, and butted in coupling. Terminations at sheet metal enclosures in indoor dry locations shall be made with double locknuts and an insulating bushing. Terminations at sheet metal enclosures in outdoor, damp, and wet locations shall be made with threaded conduit hubs of zinc coated malleable iron.

b. Except where run under a concrete slab on grade, underground conduits shall be installed a minimum of 24" below grade.
c. Underground steel conduits, including conduits in gravel or earth under a concrete slab on grade, shall be protected from corrosion by one of the following means:

1. Concrete encasement with a minimum cover of 3" in all directions.

2. PVC coating of .015" minimum thickness, factory bonded to the steel conduit, Robroy Industries "Rob-Kote" or approved equal. Provide equal protection at joints and where the coating is damaged in accordance with the manufacturer's recommendations.

3. Conduits painted with two coats of heavy asphaltum or bitumastic. Apply coating to clean, dry, full length conduits, each with a coupling on one end, and allow to dry between coats and before installation. Support conduits on saw-horses or racks, clear of earth and moisture, during painting and drying. Touch-up joints and abrasions after assembling, and protect completed conduit runs by backfilling, or by covering conduits with suitable protective material approved by the Architect/Engineer.

d. Installation of PVC conduit shall be in accordance with the manufacturer's recommendations using solvent welded couplings and fittings. Field bends shall be made with approved heating equipment. Open flames are not permitted. An insulating bushing or end-bell shall be provided at each termination.

e. Conduits shall be rigidly supported not more than 8 feet on center and shall be concealed within walls, ceilings, and floors, except as indicated or specifically approved by the Architect/Engineer; kept at least 6" from flues and steam or hot water pipes; and protected against the entry of dirt, plaster, or trash. Raceways shall be supported independently of suspended ceiling members and suspension wires.

f. Suspended EMT shall be provided with additional hangers at elbows and bends, and where necessary to avoid strain at couplings and connectors.

g. Exposed conduits, where permitted, shall be run parallel or perpendicular to walls, structural members and ceilings; with right-angle turns consisting of symmetrical bends or cast metal fittings with threaded hubs. Offsets may be used where necessary provided that they are of minimum length.

h. Conduits crossing expansion and contraction joints shall cross perpendicular to the joint and shall be provided with expansion fittings. Conduits shall not be embedded in the concrete slabs at the expansion and contraction joints.
i.

CONDUCTORS

1.1 MATERIALS:

a. Unless otherwise indicated, all wire and cable conductors shall be copper.

b. Conductors shall be not smaller than #12 AWG except that #10 AWG minimum is required for the entire length of 120 volt branch circuits whose distance to the center of the load exceeds 75 feet. #14 AWG may be used for signal and remote control circuits. #16 AWG may be used for taps to individual recessed lighting fixtures on circuits protected by over-current devices rated at 20 amperes or less and contained within flexible metal conduits that do not exceed 6 feet in length. Other conductors smaller than #14 AWG may be used only where specifically indicated on the drawings or specified herein.

c. Conductors #10 AWG and smaller shall be solid, dual rated type THWN/THHN.

d. Conductors #8 AWG and larger shall be stranded, dual rated type THWN\THHN.

e. Each conductor shall bear easily readable markings along entire length, indicating size and insulation type.

f. Insulation on conductors #10 AWG and smaller shall be suitably colored in manufacture.

g. Conductors in any location subject to abnormal temperature shall be furnished with an insulation type suitable for temperature encountered.

h. Where no indication is made of wire size, the conductor shall be of N.E.C. size to match its overcurrent protective device, but in no case smaller than #12 AWG.

2.1 SPLICES, TAPS, AND CONNECTIONS:

a. Splices in conductors #10 AWG and smaller shall be made with twist-on spring steel devices UL listed as Pressure Cable Connectors, with integral insulating covers rated 75oC. at 600 volts.

b. Splices in copper conductors #8 AWG and larger shall be made with mechanical devices UL listed as Pressure Cable Connectors and insulated with thermoplastic tape UL listed for use as sole insulation. Tape may be omitted from connectors supplied with securely fastened insulating covers which completely enclose the connector and the conductors. Insulating covers shall be rated 75oC at 600 volts.

2.2 COLOR CODING:

a. All wiring shall be color coded.

b. On 120/208V, 3 phase, 4 wire power systems, conductors shall be color coded Black (Phase A), Red (Phase B), Blue (Phase C), and White (Neutral).

c. Insulation for grounding conductors on all systems shall be Green.

d. Conductors #8 AWG and larger may be identified with two or more bands of proper color plastic tape applied near each splice and termination. Painting of wire will not be acceptable.

e. Phase sequence shall be "A", "B" and "C" from left to right, top to bottom or front to back when facing equipment.

2.3 BRANCH CIRCUIT RACEWAY WIRING:

a. Three-phase circuits shall be limited to one such circuit per raceway. They shall consist of three different phase wires, and a neutral where required.

b. A neutral shall not serve more than one circuit. The neutral carrying all or any part of the current of any specific load shall be contained in the same raceway or enclosure with the phase wire or wires also carrying that current.

c. Circuits shall be connected to panels as shown in the panel schedules.

d. Under the above requirements and with required color coding system no raceway shall contain more than one wire of the same color, except for switch legs and control conduits.

e. Conductors supplying lighting outlets may be combined in the same raceways with conductors supplying receptacles; but lighting outlets and receptacle outlets shall not be connected to the same circuits unless specifically indicated on the drawings.

2.4 SERVICE & FEEDER CONDUCTORS:

a. Unless specifically shown otherwise, each feeder and each set of service conductors shall be installed in a separate raceway.

b. Where paralleling of conductors is shown for feeders or service entrance, it is absolutely required they be exactly the same length between terminations.

c. Where service or feeder conductors are so installed that the conductor markings cannot be read without moving or twisting conductors, they shall be provided with suitable tags indicating the conductor size and insulation.

GROUNDING AND BONDING

1.1 SCOPE:

a. The electric system neutral, the neutral of each separately derived system, and all non-current-carrying metal parts, raceways, and enclosures shall be permanently and effectively grounded.

b. Grounding and bonding shall be provided in strict accordance with the National Electrical Code, and as specified herein and on the drawings.

c. The Contractor shall note that required grounding conductors and connections are not all shown on the drawings. NEC requirements apply.

2.1 MATERIALS AND APPLICATIONS:

a. Grounding conductors shall be of THWN insulated copper, unless otherwise indicated.

b. Grounding bus bars in distribution equipment shall be bare copper.

c. Clamps for attaching conductors to water pipes and ground rods shall be of bronze. Ground rod clamps shall be U.L. listed for direct burial.

d. Clamps for attaching conductors to building steel shall be of steel, bronze, or malleable iron.

e. Threaded hubs for bonding metal raceways to the contained grounding electrode conductors and to the water pipe clamps shall be of bronze or malleable iron. Similar hubs shall be used to bond the same raceways to the conductors and to sheet metal equipment enclosures.

f. Driven grounding electrodes shall consist of copper clad steel rods. Rods shall be 8 feet long and 5/8" diameter unless otherwise indicated.

g. Bonding bushings shall be of steel or malleable iron with non-removable plastic throats rated 1500C.

h. Bonding locknuts and wedges for service conduits shall be of zinc coated steel.

3.1 EQUIPMENT GROUNDING:

a. All non-current-carrying metal parts, raceways, and enclosures of the electrical system and of equipment supplied through the electrical system shall be permanently and effectively grounded.

b. Equipment grounding conductors shall be provided for each feeder and for each branch circuit and shall be contained within the same raceways as the feeder and branch circuit conductors. The equipment grounding conductor shall be THWN insulated copper, not smaller than #12 AWG.

c. Copper bonding strips normally included in small sizes of liquid-tight flexible metal conduit and dependent upon the terminal connectors for bonding continuity will not be accepted in lieu of the equipment grounding conductors specified herein.

d. Where metal raceways enter sheet metal enclosures through knockouts provide bonding bushings and jumpers to the enclosure under any of the following conditions:

1. Voltage exceeds 250 volts to ground.

2. Branch circuit conduit exceeds 1" in size.

3. Feeder conduit regardless of voltage and size.

3.2 GROUNDING ELECTRODE SYSTEM:

a. The grounding electrode system for the service neutral and service equipment shall include connections to the following:

1. The water main at the nearest accessible point to where it enters the building and on the street side of the main valve.This connection shall remain accessible after construction is complete.

2. A ground rod using #4 AWG copper conductor. Provide additional ground rods not less than 6 feet apart where needed to comply with NEC ground resistance limitations, and resistance limitations specified herein.

3. Structural metal building frame, where applicable.

b. Grounding electrode conductors shall be without splice and shall be contained within steel raceways and bonded to the raceway at both ends. Raceway may be omitted only where specifically indicated on the drawings.

c. The Contractor shall test the ground resistance of the completed grounding electrode system. If test indicates a resistance to ground in excess of 15 ohms it shall be reduced to 15 ohms or less by providing additional ground rods.

d. Prior to making the final main bond jumper connection from the grounding electrode conductor to the system neutral, the contractor shall demonstrate by megger test adequate isolation from ground of the system neutral. This test will require that the system neutral be suitably isol

GENERAL NOTES

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 18963
MARK P. ARRINGTON
03-08-19

REVISION	DATE

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AN ALTERATION TO THE

CITY OF MYRTLE BEACH MAINTENANCE BUILDING

MYRTLE BEACH, SOUTH CAROLINA

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INC.
No. C00928

2019	
03/08/2019	
SPECIFICATIONS	

E6.0

A1
E6.0

SPECIFICATIONS

NO SCALE

BOXES

1.1 MATERIALS AND APPLICATIONS:

a. Unless specifically noted or approved otherwise, boxes shall be of zinc coated steel or cast ferrous alloy as manufactured by Steel City, Raco, Crouse–Hinds, Appleton, or approved equal.

b. For exposed work on the exterior of the building, and in damp or wet interior locations, boxes shall be of cast metal with threaded conduit hubs and gasketed covers; or of zinc coated sheet steel of NEC gauge and size with screw fastened gasketed covers and threaded conduits hubs of zinc coated malleable iron and no knockouts or extraneous openings. Cover screws shall be stainless steel.

c. For exposed work Equipment Rooms; or, in other dry areas, 8 feet or more above a floor or platform, boxes 5" square and larger shall be NEC gauge and size of zinc coated sheet steel. 4" octagonal, 4" square and 4–11/16" square "knockout" boxes shall be of zinc coated steel, NEC gauge and size. Box extensions are not permitted on exposed "knockout" boxes, and covers shall be of the raised surface type. "Handy" boxes are not permitted.

WIRING DEVICES

1.1 MANUFACTURERS:

a. Wiring devices and device plates shall be manufactured by General Electric, Hubbell, Bryant, Arrow Hart, Pass and Seymour, Leviton, or Eagle.

1.2 DEVICES AND PLATES – GENERAL:

a. Unless otherwise indicated or directed, devices shall be gray in color.

b. Unless otherwise indicated, plates for flush outlets shall be of #302 stainless steel. Those for surface cast boxes shall be of steel, of shape and finish to match the box. Screws shall be steel to match the plate.

c. Each device (including each switch) shall be equipped with a Hex–Head green grounding screw for grounding the device and plate to the outlet box and to the equipment grounding conductor run with the circuit conductors. "Self–Grounding" type mounting screws will not be accepted as the device grounding method.

1.3 SWITCHES:

a. Switches used for lighting control shall be rated 20 amps, 120–277 VAC, side wired, Pass and Seymour 521–G series.

b. Switches used for disconnecting small single–phase motors and appliances shall be rated 20 or 30 amps to match the branch circuit rating and comply with their horsepower ratings, 120–277 VAC, side wired, Pass and Seymour 521–G series and 30 ACI series.

c. Pilot lights shall be neon.

d. Weatherproof switches shall be equipped with stainless steel covers UL listed for wet locations with cover closed, Pass and Seymour WP–1.

1.4 RECEPTACLES:

a. Unless otherwise indicated or required, receptacles shall be the duplex type, side and back wired, with nylon face. On circuits supplying two or more such receptacles, they shall be rated 15 amps, 125 volts, NEMA 5–15R. Duplex receptacles on individual circuits shall be rated 20 amps, 125 volts, NEMA 5–20R.

b. Where no other features are indicated on the drawings provide Hubbell 5262 and 5362 series for 5–15R and 5–20R respectively.

c. Where indicated on the drawings provide Ground Fault Circuit Interrupter receptacles, Hubbell GF5262 and GF5362 series for 5–15R and 5–20R respectively.

d. Where indicated on the drawings provide Weatherproof receptacles consisting of Ground Fault Circuit Interrupter receptacles as specified above with stainless steel covers UL listed for wet locations with cover closed, Pass and Seymour WP–26.

MISCELLANEOUS MATERIALS

1.1 CONTROL RELAYS:

a. The relay coil shall operate satisfactorily with coil voltages within 85% to 110% of its voltage rating. Unless otherwise noted, contact rating shall be 10 amps, continuous for the applied voltage level.

b. Control relays shall be GE CR120 Series, or approved equal.

c. Time delay relays shall be electropneumatic Agastat Series 7000, or approved equal with on–delay or off–delay as required, potted coil for protection against moisture, and repetitive accuracy of plus or minus 5% on range of 5 to 200 seconds and 10% on range above 200 seconds.

d. Relays shall be installed in a suitable enclosure to fit the environment of their location.

1.2 CONTACTORS:

a. Contactors shall be "electrically held" or "mechanically held" type, as indicated on drawings.

b. Electrically held contactors shall include auxiliary contacts as indicated and line and load terminal connectors.

c. Mechanically held contactors shall be industrial type, single or dual solenoid operator, with mechanism capable of withstanding reduction or loss of control voltage without change of position. Contactor shall incorporate control power cut–out contacts so that the magnetic solenoid operator is only momentarily energized during the instant the switch changes position.

d. Contactor core and coil assembly, or operators, shall operate satisfactorily with coil voltage within 85% or 110% of its voltage rating.

e. All contacts shall be of non–welding, non–corroding silver alloy.

f. Rating of contactors shall be as indicated on drawings. Auxiliary relays shall be provided as applicable. Contactors shall be contained in a suitable enclosure for the environment of their location. Contactors shall be suitable for a continuous load not less than 100% of their electrical rating.

g. Contactors shall be Square D Type L or LX Series, or approved equal.

1.3 INDIVIDUAL PUSHBUTTONS, SELECTOR SWITCHES AND INDICATING LIGHTS:

a. Pushbuttons shall be heavy–duty, oil–tight, momentary or maintained contact, as applicable, devices rated 600 volts with the number of buttons and the marking of nameplates in accordance with NEMA Publication No. ICS.

b. Pushbuttons shall be designed with the indicated number of normally open circuit closing contacts, normally closed circuit opening contacts, or combination thereof. Pushbuttons shall have positive make and break non–welding, non–corroding silver alloy contacts.

c. Selector switches for control circuits shall be heavy–duty, oil–tight maintained contact devices with the number of positions and the marking of nameplates as indicated on drawings or otherwise specified.

d. Indicating lights for control circuits shall be oil–tight, instrument type devices with threaded base and collar for flush mounting and translucent convex lens. Indicating lights shall be long life type, rated 7500 hours, minimum. Provide Owner with two spare indicating lights of each size and type used.

e. Pushbuttons, selector switches and indicating lights shall be contained in an enclosure suitable for the environment of their location, and shall be Square D Class 9001, Type T Series, or equivalent as accepted by the A–E, and shall be Square D Class 9001, Type T Series, or approved equal.

1.4 CONTROL CIRCUIT TRANSFORMERS:

a. Control circuit transformers shall be provided within the enclosure of magnetic contactors when indicated on drawings or specified otherwise and the line voltage is in excess of 120 volts. The transformer shall be dry type single phase, 60 hertz alternating current with a 120 volt isolated secondary winding in accordance with NEMA Publication No. STL "Specialty Transformers".

b. The rated primary voltage of the transformer shall be not less than the rated voltage of the controller. The rated secondary current of the transformer shall be not less than continuous duty current of the control circuit.

c. The voltage regulation of the transformer shall be such that with rated primary voltage and frequency the secondary voltage will not be less than 95% or more than 105% of rated secondary voltage.

d. The source of supply for control circuit transformers shall be taken from the load side of the main disconnecting device. The primary and secondary windings of the transformer and control circuit wiring shall be protected against overloads and short circuits with properly selected fuses. The secondary winding of the control circuit transformer shall be grounded.

1.5 TIME SWITCHES:

a. Time switches for the control of tungsten–lamps loads, fluorescent –lamp loads, resistive heating loads, motors and magnetically operated devices shall consist of a digital programmable timer and switch assembly in a suitable enclosure, as indicated and herein specified.

b. Timer shall operate from either 120, 208, 240 or 277.

c. Battery reserve power shall be provided which will automatically operate the timer in case of electric power failure for a period of not less than 30 days.

d. The switch mechanism shall include a heavy–duty, general purpose, precision snap–action switch. Provision shall be made for manual "OFF" and "ON" operation of the switch.

e. Time switches shall be manufactured by Tork, Sangamo, General Electric, or approved equal.

1.6 PHOTOCELL CONTROL DEVICES:

a. Photocell control devices for control of outdoor fixtures and natural daylight utilization for indoor spaces shall be fixture mounted or individually mounted as indicated on drawings, or otherwise specified.

b. Fixture mounted photocell control devices shall include a snap–action switch with a rating of not less than 1000 watts incandescent load and 1200 volt–amp reactive or HID load at rated voltage and frequency. Device also shall have an inherent time delay in excess of 5 seconds, built–in surge protection, and the appropriate lock type receptacle base. The device shall be enclosed in a weatherproof enclosure. Device rating shall be 120 or 277 volts, as applicable, 60 hertz. The device shall be factory preset to turn "ON" lights at approximately 3 foot–candles with a ratio of "ON" to "OFF" of about 1 to 2.

c. Individually mounted photo control devices shall have the same characteristics as fixture mounted devices, except that they shall be field adjustable for "ON" "OFF" operation from 2 to 50 foot–candles, have a capacity of up to 2000 watts of incandescent load, be outlet box mounted, and not require surge protection.

d. Photo control devices shall be as manufactured by Tork, Sangamo, General Electric, or approved equal.

1.7 WALL BOX DIMMERS:

a. Wall box dimmers shall be flush mounted, with built–in push–push switch and rotary dimming control, or sliding knob, as applicable. Dimmers shall be continuously rated for AC (60 hz) loads of wattage as shown on drawing, except that no single dimmer rating shall be less than 1000 watts. Dimmers required at the same location shall be ganged. The Contractor shall provide dimmers that once ganged shall be capable of handling the rating in watts indicated on drawings.

b. Incandescent dimmers shall be suitable for dimming 120 volt incandescent and resistive loads and shall be single pole or 3–way type as indicated on drawing. Dimmers shall be Lutron N series or equivalent.

c. Fluorescent dimmers shall be suitable for dimming 120 volt or 277 volt magnetic or electronic ballasted fluorescent lighting loads as indicated on the drawings. Provide single pole or 3–way type as indicated. When a fluorescent dimmer is required, suitable dimming ballasts, compatible with dimmer unit, shall be provided even if not specifically called for in the fixture schedule. Dimmers shall be Lutron NF series or equivalent.

1.8 PROGRAMMABLE LIGHT SWITCHES:

a. The digital time switch shall be programmable to turn lights off after a preset time.

b. Time switch shall be a completely self–contained control system. It shall have a ground wire and ground strap for safety. Switching mechanism shall be a latching air gap relay.

c. Time switch shall be compatible with all electronic ballasts, motor loads, compact fluorescent and inductive loads.

d. Time switch shall operate at universal voltages of 100–300 VAC; 50/60 Hz.

e. Time switch shall have no minimum load requirement and shall be capable of controlling 0 to 800 watt incandescent, fluorescent @ 100/120 VAC, 50/60 Hz; 0 to 1200 watts fluorescent @ 230/277 VAC, 50/60 Hz; 1/6 hp @ 125 VAC.

f. Time scroll feature shall allow manual overriding of the preset time–out period.

g. Time switch shall have the option for a one second light flash warning at five minutes before the timer runs out and twice when the countdown reaches one minute (when used to control lighting loads).

h. Time switch shall have the option for a beep warning that shall sound every five seconds once the time switch countdown reaches one minute.

i. Time switch shall have manual feature for timer reset where pressing the ON/OFF switch for more than 2 seconds resets the timer to the programmed time–out period.

j. Time switch shall have an electroluminescent backlit Liquid Crystal Display that shows the timer's countdown.

k. Time–out period shall be adjustable increments of 5 minutes from 5 minutes to 1 hour, and in increments of 15 minutes from 1 hour to 12 hours.

l. Time switch shall be capable of operating as an ON/OFF switch.

m. The time switch shall have a 100% OFF override switch with no leakage current to the load.

n. In the event there is an open circuit in the AC line such as a ballast or lamp failure, the time switch shall automatically switch to OFF mode.

o. Time switch shall have 5 year warranty and shall be UL and CUL listed.

1.9 SPECIAL ENCLOSURES:

a. Special enclosures designed in accordance with UL and NEMA Standards shall be provided as required to protect devices and equipment from wet, dusty, corrosive, hazardous or flammable atmospheres. Enclosures shall be NEMA Type 3R, 3S, 4X, 7, 9, 12, or 13 in accordance with the environment present in the specific location.

b. Enclosures shall be made of metal unless otherwise specifically noted.

c. NEMA Type 4X enclosure shall be made of corrosion–resistant, chromium nickel stainless steel conforming with UL Standard No. 50 "Cabinet and Boxes".

d. NEMA Type 7 and 9 enclosures shall be made of cast iron, bolted–type UL listed for the use intended. Cast metal enclosures shall be not less than 1/8" thick at every point, except that it shall be not less than 1/4" thick at tapped holes for conduits.

SECONDARY DISTRIBUTION EQUIPMENT

1.1 OVERCURRENT PROTECTION DEVICES:

a. Unless otherwise indicated, circuit breakers shall be provided as the overcurrent protection devices for services, separately derived systems, feeders, and branch circuits. Fuses may be used only where indicated on the drawings, or required by the nameplate for equipment connected, or specified herein.

b. Molded–case and insulated–case circuit breakers shall be the static or thermal–magnetic type, quick–make and quick–break for manual and automatic operation. Multipole breakers shall be common trip. Circuit breakers shall be bolted in place where possible. Thermal–magnetic breakers shall be calibrated at 40oC. or ambient compensated. Ampere ratings, frame sizes, and short circuit ratings shall be as indicated on the drawings. Series ratings may be applied only where specifically indicated on the drawings. Individual enclosures shall be NEMA 1 indoors, 3R outdoors, unless otherwise indicated. Other circuit breakers shall be suitable for installation in Switchboards, Panelboards, and Motor Control Centers as hereinafter specified.

c. Single–pole 15 and 20 amp circuit breakers shall be SWD rated.

d. Fuses shall be the non–renewable, time delay, cartridge type, UL Class RK5 unless otherwise indicated; for installation in Safety Switches, Panelboards, Switchboards, and/or Motor Control Centers as hereinafter specified.

1.2 SWITCHING EQUIPMENT:

a. Fusible switches shall be incorporated into Safety Switches, as hereinafter specified. Manual operation shall be quick–make and quick–break. Fuse holders shall be the Class R rejection type unless otherwise indicated.

b. Safety Switches shall be the NEMA heavy duty type, horsepower rated, with interlocked covers, non–fusible except where fused switches are indicated or fuses are required. Switch mechanisms shall be quick–make and quick–break. Enclosures shall be NEMA 1 indoors, NEMA 3R outdoors unless otherwise indicated. Fuse holders, where required, shall be as specified above for fusible switches.

c. Switches for disconnecting small single–phase motors and appliances shall comply with SECTION 16150 WIRING DEVICES.

2.1 INSTALLATION:

a. Distribution Equipment shall be installed in strict accordance with the manufacturer's instructions for handling, support, connections, assembly, protection, energization, adjustment, and similar procedures.

b. Fastening methods shall comply with SECTION 16100 BASIC MATERIALS AND METHODS.

c. Floor mounted equipment such as Switchboards, Motor Control Centers, and Dry–Type Transformers shall be provided with 4" high concrete pads and shall be secured to the concrete pad. Pads shall have a 3/4 inch chamber on each accessible side.

d. Equipment interiors shall be thoroughly cleaned of dust, dirt, trash, and other foreign material prior to energization of the equipment.

e. Exterior Safety Switches that are readily accessible to unauthorized persons shall have their covers padlocked closed by the Contractor. Keys shall be identified and delivered to the Owner.

f. Upon completion or the project, furnish to the Owner one complete set of replacement fuses, consisting of three fuses of each type and rating used.

g. Directory cards for Panelboards and for group mounted Switchboard sections shall be neatly filled–in with a typewriter to indicate the type and location of the load on each circuit or feeder.

SURGE PROTECTION DEVICE SYSTEM

1.1 SCOPE:

a. These specifications describe the electrical and mechanical requirements for a high energy Surge Protection Device System (SPD). The specified system shall provide effective high energy surge current diversion, sine wave tracking as required for electrical line noise filtering and be suitable for application in ANSI/IEEE C62.41 Category A, B, and C environments, as tested by ANSI/IEEE C62.11, C62.45 and MIL_STD_220A. The system shall be connected in parallel with the protected system; no series connected elements shall be used which limit load current or kVA capability.

1.2 SYSTEM DESCRIPTION:

a. Operating Temperature range shall be _40 to +50 C (_40 to +122 F)

b. Operation shall be reliable in an environment with 0% to 95% non_condensing relative humidity.

c. The SPD maximum continuous operating voltage shall be greater than 115% of the nominal system operating voltage to ensure the ability of the system to withstand temporary RMS overvoltage (swell) conditions.

d. Protection Modes

1. All Modes. L_N, L_L, L_G, (N_G where applicable)

Note: L = Line, N = Neutral, G = Ground

e. The SPD shall have a minimum UL 1449 3rd Edition Nominal Discharge
Current Rating (In) of 10,000 Amps. When used in conjunction with a UL 96A certified Lightning Protection System the (In) rating shall be 20,000 Amps.

f. UL 1449 3rd Edition Listed, bearing the official UL 3rd Edition gold hologram label.

g. UL 1283 5th Edition Listed.

h. The Surge Protective Device (SPD) shall be a stand alone configuration. Systems that must be integral to the switchgear will not be considered.

i. All SPD systems shall be permanently connected, parallel designs. Series suppression elements shall not be acceptable.

j. The SPD shall be marked with a Short Circuit Current Rating (SCCR) and shall not be installed at a point on the system where the available fault current is in excess of that rating per the National Electric Code, Article 285, Section 6.

k. SPD designs that limit the 100% rated surge protection shall not be acceptable.

l. Hybrid design utilizing:

1. Thermally Protected Metal Oxide Varistors

2. Filter capacitors to suppress EMI/RFI electrical noise.

1.3 DOCUMENTATION:

a. Electrical and mechanical drawings shall be provided by the manufacturer which show unit dimensions, weights, component and connection locations, mounting provisions, connection details and wiring diagram.

b. Documentation of specified system's UL 1449 3rd Edition Listing and voltage protection ratings of all protection modes shall be included as required product data submittal information.

c. The manufacturer shall provide a full five year warranty from date of shipment against any part failure when installed in compliance with manufacturer's written instructions, UL listing requirements, and any applicable national or local electrical codes. Manufacturer shall make available local field engineering service support. Where direct factory employed service engineers are not locally available, travel time from the factory or nearest dispatch center shall be stated.

2.1 MODULAR SURGE PROTECTION FOR SERVICE ENTRANCE/MAIN DISTRIBUTION AND CRITICAL EQUIPMENT APPLICATIONS:

a. The SPD surge current ratings shall be based on the electrical system ampacity listed in the table below.

Electrical System Ampacity @ SPD Install Point	Surge Protection (kA) Per Mode	Per Phase
2500 – 6000A	300	600
1200 – 2000A	250	500
600 – 1000A	200	400
225 – 400A	150	300
125 – 225A	100	200

b. The SPD shall be rated for 208/120Vac 3 Phase, 4 Wire + Ground, Wye as required.

c. Modes of Protection: The SPD system shall provide surge protection in all possible modes (L–N, L–G, L–L, and N–G). Each replaceable module shall provide the uncompromising ability to deliver full surge current rating per mode.

d. SPD modules shall be configured to isolate individual suppression component failures without causing total loss of surge protection in that mode.

e. Opening of supplementary protective devices, internal or external, shall not be permissible during UL 1449 3rd Edition Nominal Discharge testing.

f. Connection Method: Terminal Block, 60A #6AWG.

g. Each individual module shall feature a green LED indicating the individual module has all surge protection devices active. If any module is taken off–line, the green LED will turn off and a red LED will illuminate, providing individual module as well as total system status indication.

h. Monitoring: Solid State Status Indication Lights.

i. The modular SPD shall be provided in a NEMA 12 or 4X enclosure.

j. Voltage Protection Ratings: The UL 1449 3rd Edition Voltage Protection Ratings "VPR" (6kV, 3000 Amps, 8/20μs waveform) shall not exceed the UL assigned values listed below.

Voltage Protection Ratings (VPR) 6kV, 3000A, 8/20μs Waveform	Voltage Rating 208/120V	480/277V
Line to Neutral	900V	1200V
Line to Ground	800V	1200V
Neutral to Ground	700V	1200V
Line to Line	1200V	2000V

k. Approved Manufacturers: The following SPD manufacturers and respective models shall be deemed acceptable, subject to conformance with indicated requirements:

Surge Suppression, Inc.	STMD Series
Current Technologies	SL2 Product Series
Liebert	Intercepter II Series

PANELBOARDS

1.1 SUBMITTALS:

a. Submit for approval panelboard shop drawings which include as a minimum the following information:

1. Cabinet dimensions.
2. Mounting requirements.
3. Bussing arrangement.
4. Circuit breaker arrangement.
5. Accessories.

2.1 BRANCH CIRCUIT PANELBOARDS:

a. Equipment shall be built to NEMA Standard PB–1, UL Standards UL50 and UL67, and NEC requirements.

b. Panelboard backboxes shall be constructed of galvanized sheet steel and shall be securely fabricated with screws, bolts, rivets, or by welding. Backboxes shall be a minimum 20" wide and 5–3/4" deep, unless noted otherwise, and heights shall not exceed 72" overall. Top or bottom gutter space shall be increased 6" where feeder loops through panel. End plates shall be supplied without knockouts.

c. Covers shall be constructed of high grade flat sheet steel with:

1. Door–in–door construction shall be provided. The inside hinge door shall allow access to device handles only. Door shall close flush with cover and against a full inside trim stop. Hinges shall be inside type. The outer hinged door shall allow access to wiring gutter.

2. A flush latch and tumbler type lock, so panel door may be held closed without being locked. All such locks shall be keyed alike. Furnish to the Owner two keys with each lock, or a total of 10 keys for the project.

3. Four or more cover fasteners of a type which will permit mounting plumb on box. Cover shall also have inside support studs to rest on lower edge of backbox while being fastened. For flush mounted panelboards, cover fastening hardware shall be concealed behind the hinged door.

d. Panelboard phase and neutral bus buswork shall be of copper. A copper ground bus shall be provided in each panel.

e. Minimum short circuit rating of any panelboard assembly shall be 10,000A. Furnish panelboards with higher rating where so noted or where evidently intended by specification of circuit breakers with higher interrupting capacity.

f. Ampacity of mains shall be equal to, or greater than, the ampacity of the feeder unless otherwise indicated.

g. Where drawings schedules indicate spaces for addition of future circuit breakers, furnish all necessary buswork, strap, brackets, hardware, and removable blank covers.

h. Breakers in panelboards shall be physically arranged in locations shown in panel schedules on the drawings where possible. They shall be connected to the phases as shown.

i. Unless otherwise indicated and where available for the panelboard type specified, circuit breakers shall be of the bolt–on type.

2.2 DISTRIBUTION PANELBOARDS

a. Panelboards required to have two or more subfeed breakers rated 100 amperes or greater shall be Distribution Type.

b. Description: NEMA PB 1, circuit breaker type.

c. Panelboard Bus: Copper. One continuous fully rated bus bar per phase with ratings as indicated. Provide copper ground bus and aluminum neutral in each panelboard equipped with lugs to accommodate all conductors to be connected. Unless otherwise noted, neutral bus shall be sized 100% of phase bus rating and the ground bus shall be sized a minimum of 25% of the phase bus rating. Where more than one ground bar is furnished, each ground bar will be interconnected with a conductor sized not less than the panelboard feeder ground conductor. Ground bar shall be bonded to enclosure.

d. Interior trim shall be dead front construction. Main lugs shall be mounted in the mains compartment.

e. Main circuit breaker and main lug interiors shall be field convertible for top or bottom incoming feed.

f. Enclosure: NEMA PB 1, Type 1 unless otherwise indicated on drawings. In compliance with UL 50.

1. Panelboard backbox shall be constructed without pre–punched knockouts.

2. Cabinet front shall be a four piece surface trim for surface mount standard. Where specifically indicated on the drawings, either a single hinged door or door–in–door construction shall be provided. For door–in–door construction, the inner hinged door shall allow access to the device handles only and the outer hinged door shall allow access to wiring gutter.

3. Enclosure and front shall be either galvanized steel or stainless steel and shall be finished in manufacturer's standard gray enamel.

4. The enclosure shall be minimum 26 inches wide.

g. Minimum fully rated short circuit rating: RMS symmetrical amperage shall be minimum 22,000 amperes unless otherwise indicated on drawings.

h. Molded Case Circuit Breakers: NEMA AB 1, UL 489 listed circuit breakers.

A1 / E6.1 SPECIFICATIONS
NO SCALE

GENERAL NOTES

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AN ALTERATION TO THE
CITY OF MYRTLE BEACH
MAINTENANCE BUILDING
MYRTLE BEACH, SOUTH CAROLINA

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT • SMITH WARD • GRIFFIN ENGINEERS, INC. No. C00926

2019
03/08/2019
SPECIFICATIONS
E6.1

LIGHTING FIXTURES AND ACCESSORIES

1.1 SCOPE:

a. The Contractor shall furnish and completely install Lighting Fixtures and Accessories as indicated on the drawings and as herein ~~specified~~.

b. All fixtures shall be equipped with lamps.

c. A lighting fixture shall be provided for each lighting outlet indicated. Outlets lacking fixture designations shall be brought to the attention of the Architect/Engineer before submitting proposal; otherwise units selected by the Architect/Engineer shall be furnished and installed at no additional charge.

1.2 SUBMITTALS:

a. Submit for approval complete manufacturer's data sheets for all fixtures. Indicate all components, characteristics, and options.

b. Submit for approval manufacturer's data sheets for all lamps to be furnished.

c. Submit for approval Lighting Fixture samples as requested by the Architect/Engineer. Samples shall be equipped with lamps, cords, plugs, and ballasts for 120 volt operation.

2.1 LIGHTING FIXTURES:

a. All fixtures shall be labeled by Underwriters' Laboratories, Inc.

b. It is the Contractor's responsibility to properly determine and provide correct components, accessories, and hardware required for the installation.

c. Plastic materials indicated to be "acrylic" shall be of 100% virgin methyl methacrylate producted by Rohm and Haas, DuPont, or Cyanimid.

d. Recessed Fixtures (Troffers) shall conform to the following minimum requirements unless modified by notes and schedules on the Drawings:

1. Housings shall be of 4-3/8" minimum, 5" maximum depth, and of 22 gauge minimum steel, with deeply formed transverse ribs for rigidity, primed, and finished in baked white enamel. The use of pre-painted steel is acceptable.

2. Lenses shall be of flat clear K-12 type acrylic of .125" nominal (.115" minimum) thickness in rigid hinged steel or extruded aluminum door frames finished in baked white enamel and secured with inconspicuous spring-loaded or rotary cam type steel latches. Lenses shall be maintained in a flat position with invisible clips, and shall be removable from the door frames using a screwdriver without damaging the lens or the frame.

3. Joints between housings and door frames shall be totally free of light leaks. Gaskets, if used, shall be invisible and in compression when the door is closed. Gasketing material subjected to rubbing when the door is opened or closed will not be accepted. Flexible and/or removable black baffles will not be accepted.

4. Top access plates to facilitate wiring are optional with the Contractor. Each fixture shall be individually connected to a concealed junction box with #16 TFN conductors in 6 feet of 3/8" flexible metal conduit.

5. Troffers for inverted tee exposed grid ceilings shall be designed to be raised through the ceiling opening, and be supported and framed by the ceiling tees. They shall be secured to the ceiling grid with four "earthquake clips" furnished by the fixture manufacturer.

6. Troffers for plaster and gypsum board ceilings shall be furnished with plaster frames.

7. Troffers for ceilings with concealed suspension systems including plaster, gypsum board, and acoustical tile shall be equipped with suitable adjustable yokes or brackets designed to hook onto the plaster frame or ceiling channels, prevent the channels from spreading, and support the fixture.

8. Fixtures shall be a regularly cataloged and commonly manufactured product of an established, recognized lighting fixture manufacturer, with published photometric data and Zonal Cavity Coefficients of Utilization based on tests conducted by an independent photometric testing laboratory. Tests and calculations shall be in accordance with current IES standards.

2.2 LED DRIVERS:

a. General
1. Ten-year operational life while operating at maximum case temperature and 90 percent non-condensing relative humidity.
2. Designed and tested to withstand electrostatic discharges up to 15,000 V without impairment per IEC801-2.
3. Electrolytic capacitors to operate at least 20 degrees C below the capacitor's maximum temperature rating when the driver is under fully-loaded conditions and under maximum case temperature.
4. Maximum inrush current of 2 amperes for 120V and 277V drives.
5. Withstand up to a 4,000 volt surge without impairment of performance as defined by ANSI C62.41 Category A.
6. Manufactured in a facility that employ ESD reduction practices in compliance with ANSI/ESD S20.20.
7. Class A Sound Rating - Inaudible in a 27 dBA ambient.
8. No visible change in light output with a variation of plus/minus 10 percent line voltage input.
9. Total Harmonic Distortion less than 20 percent and meet ANSI C82.11 maximum allowable THD requirements.
10. Drives to track evenly across:
a. Multiple fixtures.
b. All light levels.
11. Constant current drives must provide models to:
a. Support from 200mA to 2.1 Amps (in 10mA steps) to ensure a compatible driver exists.
b. Support LED arrays up to 40W or 50W (710mA to 1.05A in 10mA steps).
12. Constant voltage drives must provide models to:
a. Support from 10V to 40V (in 0.5V steps) to ensure a compatible driver exists.
b. Support LED arrays up to 40W.
13. Configuration tool must be available to optimize the following for LED fixtures:
a. Light level.
b. Efficacy.
c. Thermal performance.
14. Driver must be capable of operating from a supply voltage of 120 through 277VAC at 60Hz for digitally addressable and 3-wire models.

b. 3-Wire Control
1. Continuous dimming from 100 percent to 1 percent relative light output.
2. Provide integral fault protection to prevent driver failure in the event of an input mis-wire.

c. Digitally Addressable Control
1. Continuous dimming from 100 percent to 1 percent relative light output.
2. Ability to operate with installed or specified building control system.
3. Lights automatically return to the setting prior to power interruption.
4. Each driver responds independently to:
a. Up to 32 occupant sensors.
b. Up to 16 daylight sensors.
5. Responds to digital load shed command.
a. Sets high end trim.
b. Automatically scales light output proportional to load shed command.

d. Forward Phase Control (Neutral Wire Required)
1. Continuous dimming from 100 percent to 1 percent relative light output.

3.1 COORDINATION:

a. Contractor shall verify ceiling or wall type in or on which each fixture is to be mounted, and shall furnish unit with appropriate trim type, mounting hardware, and accessories to fit the construction; and feed through junction boxes as required to maintain proper access to system wiring.

3.2 INSTALLATION:

a. Lighting fixtures shall be installed in accordance with the manufacturer's instructions.

b. Lighting fixtures shall be supported from the building structure using corrosion resistant steel hardware. 10 gauge minimum steel wire may be used for support from the structure where concealed above suspended ceilings.

c. In addition to the supports from the structure, fixtures shall also be secured to suspended ceilings on which they are mounted, or in which they are recessed. Where fixtures are secured to suspended ceilings, the primary supports from the building structure shall be slack.

d. A minimum of two supports from the structure shall be provided for each lighting fixture unless otherwise indicated or approved by the Architect/Engineer. The supports shall be located at diagonal corners of rectangular fixtures.

e. Where installed recessed in grid type ceilings, attach each fluorescent fixture to the grid with a minimum of four "earthquake clips" furnished by the Lighting Fixture manufacturer.

f. Conductors in fixture taps shall be #16 AWG minimum, type TFN, in 3/8" flexible metal conduit of 72" maximum length. A green insulated equipment grounding conductor shall be included.

g. Mount fixtures plumb and square. Keep rows in perfect line.

h. At time of project completion, fixtures and lamps shall be clean and fully operational.

TELECOMMUNICATIONS CABLING SYSTEM

1.1 SCOPE:

a. Provide communications wiring systems to provide voice and data communications for the building. Cable will be installed within conduit, wire-way, box, cable tray, cabinet or rack unless otherwise indicated. All required cables will be provided, placed, terminated and tested as noted on the drawings and as specified herein. All termination equipment, support hardware, lubricants, tools, fittings, plywood backboard and labor required to install a complete and working telecommunications cabling system are to be included within this work.

1.2 WORK NOT INCLUDED AS PART OF THIS SECTION:

a. Voice Related:

1. Incoming voice service cables.

2. Cross connect cables between MDF end blocks of voice riser and horizontal voice connection blocks.

3. Service entrance blocks.

4. Cables and connecting hardware between entrance protection blocks and MDF connecting blocks.

5. Cross connect cables between Utility blocks and MDF blocks.

b. Data Related:

1. Hub Electronics.

2. Patch cables.

1.3 CONTRACTOR QUALIFICATIONS:

a. For the purposes of this specification section, the term "Communications Wiring Contractor" shall be interpreted to be any prime contractor or subcontractor that is responsible for the products and services described within this section or illustrated on the drawings associated with this section.

b. An acceptable contractor for the work within this specification section must have personnel with experience, training, and skill to install a complete and working system. The contractor will be required to furnish acceptable evidence of having installed not less than three cable systems of similar size, type and complexity of this project. The systems referenced must currently be in service. The proposed field superintendent must have had experience in at least three such systems.

c. The project references shall include a written summary of the nature and extent of the projects, the name, address and telephone number of a contact person at each project and the name of the field superintendent. The field superintendent's qualifications shall include a resume of the training and experience possessed by the proposed superintendent and at least two of the proposed foremen. Qualifications shall be submitted with the Contractors proposal.

1.4 SUBMITTALS:

a. Submit the following for review prior to placing equipment or materials on order:

1. Brochures: Provide complete brochure information on all products purchased for installation on this project. Brochures shall be highlighted to reflect the particular part number or product used if more than one part number or product is displayed on the cut sheet.

2. Shop drawings shall be submitted showing riser diagrams, panels, plates, labeling strips detailing all nomenclature, engraving, finish and color.

3. Submit test procedures and list of Test Equipment to be used for cable testing within 30 days after start of contract work. Test procedures shall include a description of the method used for testing and a sample of all forms used to record the test results.

1.5 SYSTEM DESCRIPTION:

a. Voice service will enter building at MDF through utility provided cables. The utility will terminate a multi-pair cable in telephone entrance protectors provided by the utility on contractor furnished board. From the protectors, Owner furnished cables will run to MDF entrance backboard and terminate on Owner furnished cable entrance disconnect blocks. From the MDF, voice service will be distributed to station locations as part of this contract.

b. Backbone data fiber optics cable will be brought into the building at MDF by Owner. Contractor shall provide the required conduit from the building de-marc to the MDF.

c. Typical telecom station bundle shall include the following cables:

Two 4-pair, UTP, #23 AWG, Category 6 cables (one per jack).

d. Typical telecom station communications faceplate will include the following jacks:

Two RJ45 type, 8-position, 8-conductor, RJ45, EIA T568B.

1.6 CONTRACT DRAWINGS:

a. The intent of the drawings is to establish the type of system and functions, but not to set forth each item essential to the functioning of the system. The drawings are generally diagrammatic and show approximate location and extent of the work. In case of doubt of work intended, it is the responsibility of the Communications Wiring Contractor to request instructions for the A/E. The Communications Wiring Contractor shall be responsible for installing a complete functioning system, including furnishing and installing all required brackets, supports, frames, bonding, grounding frames, and hardware required to accomplish an operational system, except as otherwise noted on drawings.

2.1 PRODUCT REQUIREMENTS:

a. Conditions:

1. Materials and equipment provided must be new products of manufacturers regularly engaged in the production of such products.

b. UL Listing:

1. Products must be UL listed where a UL test procedure is applicable.

c. Telephone system materials and equipment shall be FCC type-accepted and certified as such by supplier.

2.2 EQUIPMENT RACKS

a. Free Standing 19" Rack, 7 ft. tall, aluminum, double sided screw holes.

2.3 PATCH PANELS:

a. All data related UTP station cables shall be terminated sequentially onto four-pair positions within separate data-related patch panels contained in the MDF. All connecting hardware used within these fields will be of the modular RJ-45 jack panel type (patch panels) configured with insulation displacement contact (IDC) type connectors for UTP wiring terminations. The construction and make-up of these devices will include an internally hard-wired connection from each IDC-type connector (used for station wiring) to a corresponding RJ-45 type jack on the front of the panel to be used for cross connection purposes.

b. Patch panels will be UL listed for "Category 6".

c. RJ-45 Construction: All RJ-45 type jacks contained within modular jack panels will consist of WECO-style eight wire connectors with a minimum of 50 micro-inch of hard gold on each contact surface, a minimum contact force of 100g and with all conductors separated and aligned internally by a jack comb.

d. RJ-45 Polarization: Each RJ-45 jack contained with modular jack panels shall be wired in accordance with the EIA/TIA T 568 B four-pair polarization sequence as specified for RJ-45 at communication outlets.

e. Performance: Data-related UTP connecting hardware shall be UL listed verified/certified based on the EIA/TIA 568 B Standard for "Category 6".

f. Mounting: Mount on equipment racks.

g. Quantity: Sufficient to terminate all data UTP wiring at the equipment rack plus 20% spare for future additions.

2.4 CONDUIT SYSTEM FOR OUTLETS:

a. Conduit shall be used to route cables from the individual communication outlets to above a nearby accessible ceiling.

b. Provide minimum 1" conduit from outlet box to the accessible ceiling space.

2.5 EQUIPMENT BACKBOARDS:

a. Equipment boards shall be of size noted or shown on the drawings, and shall be constructed of 3/4" plywood, with finish grade on front. Paint board with gray fire-retardant paint.

2.6 OUTLET BOXES:

a. Outlet Boxes. Provide 4"x4"x2-1/2" steel, square cornered, in dry wall. Provide 2-gang, 2-1/2" deep box in masonry wall. Surface boxes shall be 4"x4"x3" deep cast metal type.

b. Masonry Ring

1. Surface Mount Boxes: Provide single device masonry ring with no raise.

2. Boxes Mounted in Dry Construction Walls: Provide single device masonry ring with raise appropriate for finish wall thickness.

2.7 VOICE AND DATA STATION CABLES:

a. Provide for each voice and data jack a 4-pair, UTP, 23-gauge (AWG), Category 6, UL listed cable meeting the following specifications:

1. Construction. Eight 23-gauge (AWG) thermoplastic insulated solid copper conductors formed into four individually twisted pairs and enclosed by an overall jacket (unshielded). Cable must comply with all relevant applicable local standards for building and electrical materials and construction.

2. Twisted Pairs. Individual pairs to be variable twisted relative to one another within four-pair cable, with a minimum of two twists per foot per each cable.

2.8 COMMUNICATIONS CABLE TERMINATION HARDWARE AT MDF:

a. Data UTP Station:

1. All data cables shall be terminated in Category 6 patch panels mounted on a free standing rack at the MDF.

b. Voice UTP Station:

1. Connecting hardware used for voice-related UTP station field shall be 110 style and of the insulation displacement contact (IDC) type. The construction and make-up of these devices will include an internally hard-wired connection from each IDC connector used for horizontal wiring to a second, corresponding connector to be used for cross-connection purposes.

2. All voice-related UTP station cables shall be terminated sequentially in four pair positions within separate voice-related station fields on IDC-type connecting hardware mounted on backboard.

3. Voice-related Performance. Connecting hardware shall be UL listed verified/certified based on the EIA/TIA 568 B Standard for "Category 5".

4. Mounting. Mount on brackets fastened to the wall-mounted frames.

5. Quantity. Sufficient to terminate all voice UTP wiring at MDF plus 20% spare for future additions.

2.9 UTP COMMUNICATION STATION OUTLET ASSEMBLIES:

a. The following physical specifications for UTP communications station outlets shall be met:

1. Voice and Data jacks shall be RJ-45 style, 8-position, 8-conductors, Category 6, color coded jacks.

b. Voice and Data Jacks:

1. RJ-45 Construction: All RJ-45 type jacks contained within module jack panels will consist of WECO-style eight wire connectors with a minimum of 50 uin of hard gold on each contact surface, a minimum contact force of 100 g and with all conductors separated and aligned internally by a jack comb.

2. RJ-45 Polarization: Each RJ-45 jack contained with modular jack panels shall be wired in accordance with the EIA/TIA T568B four-pair polarization sequence.

3. The UTP outlet requirements contained in this section are based on the EIA/TIA standard for "Category 6" communication outlets and connection hardware.

2.10 GROUND BARS:

a. Construction. Ground bars shall be constructed of copper. Ground bars shall be provided with wall mounting brackets for mounting directly to plywood backboards unless otherwise shown on the drawings. Ground bars shall be provided with hardware and all required lugs. Bond all racks.

3.1 INSTALLATION REQUIREMENTS:

a. Communications wiring contractor shall provide and pay for all labor, materials, equipment, tools, utilities and services necessary for the proper execution and completion of the communications wiring system.

b. Install communication system as detailed by the contract drawings, details and specification. Where specific cable layout and location are detailed, it is the communications wiring contractor's responsibility to install as specified or provide complete information justifying alternatives before installation.

c. Use the maximum bending radius on all cables during installation. The minimum bending radius of the cable as specified shall always be maintained. If no minimum radius is specified, the minimum bending radius shall be per manufacturer's specification.

d. All cables routed through conduits shall be continuously lubricated during the pulling process. The maximum pulling tensions specified by the cable manufacturers shall not be exceeded. Monitor cable pulling tensions with a mechanical tension meter. Maximum cable tension measurements shall be included with the test results for each cable installed.

e. Cables shall be installed and connected to jacks and connectors in strict accordance with manufacturer's instructions.

f. Wire twist for data and telephone shall be maintained to the termination point.

g. Cables shall be checked prior to and after installation for damage to insulation of shielding and conductor shorts.

h. Where possible all cables shall be pulled at the same time. No splices are permitted between accepted connection points.

i. Cable run exposed above accessible ceiling shall be supported (minimum of 3") above ceiling by the use of hangers at five foot intervals on horizontal spacing. These hangers shall be of an EIT/TIA 568 B approved type such as Erico CAT5 caddy fasteners attached to dedicated grid support wire. Data, telephone, and television cabling bundles would be supported separately (one bundle per outlet) with a minimum of 3" spacing between cable bundles.

j. Cables shall be protected from construction related physical damage.

k. All cable must be located at least two feet from any low level sources of EMI, and at least 40 inches from any motors of high level EMI sources. Contractor must install external shielding in areas where this is violated.

l. Grounding. Provide in accordance with EIT/TIA-607.

1. Grounding shall be accomplished by common single-point termination of all ground conductors.

3.2 EQUIPMENT RACK INSTALLATION:

a. Installation. Racks shall be lag bolted to floor and braced to the wall for stability, as well as securely bolted together.

b. Wire Minders. All racks shall have front and back vertical wire minders and horizontal wire minders between patch panels and be equipped with one rack mounted multiple electrical outlet strip.

3.3 STATION WIRING INSTALLATION:

a. Continuous Cable Runs. No cable shall be spliced at any point along its length. Only continuous, unspliced cables may be used in the distribution system.

b. Cable Identification. Cables shall be identified at each termination point, when the cable enters or leaves the cable tray, by its function (i.e. telephone, data) and room numbers. When there is more than one station in a room, add a numeral suffix to the room number. Use T&B E-Z coder, or equivalent, wire making system. Place markings on the cable in a permanent location where they will not be removed or made unusable. Reference EIA/TIA Standard 606.

3.4 LABELING:

a. Cable shall be identified at each termination point, when the cable enters or leaves the cable tray, by its function (i.e. telephone, data) and room numbers. When there is more than one station in a room add a numeral suffix to the room number. Use T&B E-Z Coder, or equivalent, wire making system. Place markings on the cable in a permanent location where they will not be removed or made unusable. Reference EIA/TIA Standard 606.

b. Each outlet shall also be identified as required for cables.

c. Room numbers shall be as directed by the Owner, not necessarily as shown on A/E drawings. Verify with Owner prior to marking cables.

3.5 COMMUNICATIONS SYSTEM TESTING:

a. The communications system shall be tested by contractor. Contractor shall demonstrate accuracy of test equipment to be used as well as knowledge of use of equipment prior to testing the cabling system. A communications outlet shall be considered functional if the criteria listed below are met.

1. UTP Cables:
(a) Polarity
(b) Reversal of pairs
(c) Wire transpositions
(d) Continuity
(e) Opens
(f) Shorts
(g) AC & DC foreign voltages
(h) Level 5 NEXT End-to-End from Faceplate Through 110 connecting block and/or patch panel and jumper
(i) TIA/EIA-568-B wiring discrepancies

3.6 TEST REPORT

a. A written test shall be submitted to the Engineer. This report shall list results of each test of each cable and any remedial actions taken in the case of failures. The report shall be signed by the system tester.

3.7 COMMUNICATIONS SYSTEM REPAIRS:

a. Those cables which do not pass the required tests shall be replaced by the contractor; no cable may be spliced. Those terminations or connectors found to be faulty shall be repaired by the contractor.

GENERAL NOTES

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AN ALTERATION TO THE
CITY OF MYRTLE BEACH MAINTENANCE BUILDING
MYRTLE BEACH, SOUTH CAROLINA

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION No. C00926 McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC.

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