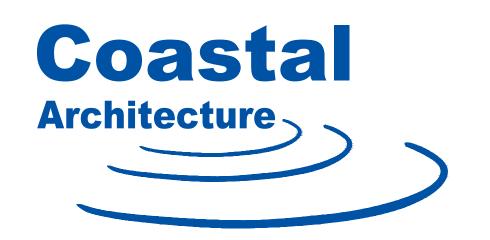
# NCSPA SHIPPING AND RECEIVING

MOREHEAD CITY, NORTH CAROLINA NCSPA PROJECT # 10665 STATE ID # 24-28316-01A

# DRAWING LIST

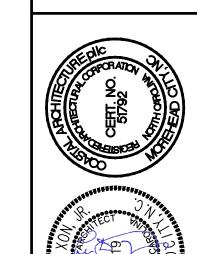
CS-1	COVER SHEET
G-1 G-2	GENERAL DATA LIFE SAFETY PLAN
SHEET 1 SHEET 2 SHEET 3	SITE PLAN
A-1 A-1.1 A-2 A-3 A-4 A-5 A-5.1 A-6 A-7	EXTERIOR ELEVATIONS BUILDING SECTIONS WALL SECTIONS
S1.1 S1.2 S2.1 S2.2 S3.1 S4.1	GENERAL NOTES SPECIAL INSTRUCTIONS FOUNDATION PLAN ROOF FRAMING PLAN FOUNDATION DETAILS WALL SECTIONS
P-1 P-2 P-3	PLUMBING SPECIFICATIONS DWY PLAN WATER PLAN
M-1 M-2 M-3	HVAC NOTES, SCHEDULES, LEGEND HVAC PLAN HVAC SPECS, DETAILS
E-1 E-2 E-3 E-4	ELECTRICAL SPECIFICATIONS LIGHTING PLAN POWER PLAN PANELS AND RISER



ne Drawings. Specifications and other documents prepared by Coastal Architectur spect to this project and, unless otherwise provided, the Designer shall be deemed the author of these documents and shall retain all common law, statu and other reserved rights, including copyright protection. The Owner shall be rmitted to retain copies of the Designer's drawings, Specifications, and other upancy of this project. No portions in part or in whole of the Drawings. ifications and other documents shall be duplicated or used by the Owner thers for additions to this Project, completion of this Project by others, or on ther Projects without written consent by the Designer.

4206 Bridges St. Ext Suite C Morehead City, NO

RECEIVING ORTH CAROLINA



OVER SHEET

KD BY: LDD

#### APPENDIX B

#### 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES)

-		PA SHIPPING AN				<del></del>	20557	
		D CITY, NORTH				Zip Co	de 28557	 I@NCPORTS.COM
	zed Agent: <sub>-</sub>	- TIM WILSON	Phone # ( <u>-</u>	_)		E-Mail	1.WILSUN	IGNUPUR IS.CUM
Owned By:		City/County	Private		State		May . N	JORTH CAROL
Code Enforcer	ment Jurisdi	ction: City		C	ounty		Kate _	NORTH CAROL
CONTACT:								
DESIGNER		FIRM	NAME	LICENSE #	TELEPH	ONE#	E-MAIL	
Architectural		l Architecture	Lee Dixon	6419	<u>(252)</u> 2	47-2127	lee@coasta	larchitecture.ne
Civil		ipher Group, PA		13343	<u>(252)</u> 7	173 <i>-00</i> 9(	Øron@tcgpa	.com
Electrical		Design Group	Ben Burke	22Ø38	/	171-1916	<u>benburke@r</u>	c.rr.com
Fire Alarm		Design Group	Ben Burke	22Ø38	<u> (ele)</u>	171-1916	benburkear	c.rr.com
Plumbing		Design Group	Ben Burke	22Ø38	<u> (919) T</u>	171-1916	benburkear	c.rr.com
Mechanical	Burke [	Design Group	Ben Burke	22Ø38	<u>(919) T</u>	171-1916	<u>benburke@r</u>	c.rr.com
Sprinkler-Stan					()			
Structural	FDR En	gineers, PLLC	Heath Hendrick	<i>Ø</i> 35655	<u>(919 ) 9</u>	57-5100	hhendrick@f	`dr-eng.com
Retaining Wall	ls > 5 feet H	igh			()			
Other					()			
("Other" sho	uld include t	firms and individuals s	uch as truss, precast, pre	e-engineered	, interior des	signers, etc.)		
2018 NC BUIL 2018 NC EXIS (check all that CONSTRUCT RENOVATE	STING BUIL apply) CTED: (date	Addition  DING CODE:	g Shell/Core Phased Cor Prescriptive Repair Chapter 14 CURRENT USE(S) (Ch. PROPOSED USE(S) (C	nstruction— Al Al Al		evell         evell	ons Historic Propert Change of Use	=
OCCUPANCY	CATEGOR	Y (Table 1604.5): Curi	rent: II	Propo	osed:II			
BASIC BUILD	ING DATA							
Construction	Type:	☐ I-A	☐ II-A	☐ III-A		□ IV	,	□ V-A
(check all that	apply)	☐ I-B	☐ II-B	☐ III-B	}			<b>▼</b> V-B
Sprinklers:	<b>⋈</b> No	Partial	NFPA 13	 □ NFF	PA 13R	☐ NFP.	A 13D	<del>_</del>
Standpipes:	: No	Class  I		∏We	t Dry			
Primary Fire		Mo ∏Yes	Floor	Hazard Are	a: $\square$ No	Yes		
•		ui <b>red: ⊠</b> No ∐Ye						
ороски поро		<b></b>	GROSS BUILDIN	G AREA TAI	BLE			
Floor		Existing (sq ft)	New (sq ft)	Subto	otal			
3rd Floor								
2nd Floor								
Mezzanine								
1st Floor			1,815	1,815	5			
Basement								
TOTAL			1,815	1,81	5			

		ALLOWABLE A	AREA	
Primary Occupancy Classifica	ition(s):			
Assembly A	-1 A-2	☐ A-3	☐ A-4	☐ A-5
Business				
Educational				
Factory F-	1 Moderate F-2 Lo	ow.		
Hazardous 🔲 H	-1 Detonate  H-2 Defla	agrate∭H-3 Combu	st H-4 Health	☐H-5 HPM
Institutional I-1	☐ I-2	☐ I-3		
I-3 Condition	1 2			
I-2 Condition	<b>1 2</b>			
I-3 Condition	123	]4 🗌 5		
Mercantile				
Residential F	R-1 R-2	☐ R-3	☐ R-4	
Storage	S-1 Moderate	S-2 Low	High-pile	ed
□F	arking Garage      Open	Enclosed	Repair G	Sarage
Utility and Miscellane	eous			
Accessory Occupancy Classi	fication(s):			
Incidental Uses (Table 509):	.,			
This separation is not ex	empt as a Nonseparated	Use (see exceptions	s).	
Special Uses (Chapter 4 - Lis	Code Sections):			
Special Provisions: (Chapter				
Mixed Occuupancy:	lo_Yes Separation:	H	Ir. Exception:	
Non-separated Use (508.3)				
Separated Use (508.4)—See of the ratios of the actual floor a				upancy shall be such that the sur e shall not exceed 1.
Select one				
Actual Area of Occi	ıpancy A Actual	Area of Occupancy	<i>, B</i> 1≤	
	cupancy A Allowab			

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA	(C) AREA FOR FRONTAGE INCREASE1, 5	(D) ALLOWABLE AREA PER STORY OR UNLIMITED2, 3
1	В	1,815	9,000	6,750	15,750

1. Frontage area increases from Section 506.2 are computed thus: a. Perimeter which fronts a public way or open space having 20 feet minimum width =  $\frac{116}{}$  (F)

b. Total Building Perimeter = 176 (P) c. Ratio (F/P) = 1.0 (F/P)

d. W = Minimum width of public way = 30 (W) 2. Unlimited area applicable under conditions of Section 507.

3. Maximum Building Area = total number of stories in the building × D (maximum 3 stories) (506.2). 4. The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table

5. Frontage increase is based on the unsprinklered area value in Table 506.2.

## **ENERGY SUMMARY**

**ENERGY REQUIREMENTS:** The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design versus the annual energy cost for the proposed design.

Existing building envelope complies with code: [ (If checked, the remainder of this section is not applicable.)

Climate Zone: ⊠3A □4A □5A Method of Compliance:

Exempt Building: Provide code or statutory reference: \_\_\_

Energy Code: ☐ Performance ☒ Prescriptive ASHSAE 90.1: Performance Prescriptive Other: Performance (specify source) \_

THERMAL ENVELOPE: (Prescriptive method only)

Exterior Walls (each assembly)

Roof/ceiling Assembly (each assembly) METAL ROOF ON ICE AND WATER SHIELD ON PLYWOOD/ROOF TRUSSES W/ FOAM INSULATION Description of assembly: U-Value of total assembly:

R-Value of insulation: Skylights in each assembly: U-Value of skylight: total square footage of skylights in each assembly:

2X6 WOOD STUDS W/ 5/" PLWOOD W/ HARDIE LAP SIDING ON ICE AND WATER SHIELD Description of assembly U-Value of total assembly: R-Value of insulation: Openings (windows or doors with glazing) U-Value of assembly: Solar heat gain coefficient: projection factor:

Walls below grade (each assembly) Description of assembly: U-Value of total assembly: R-Value of insulation:

Door R-Values:

Floors over unconditioned space (each assembly) Description of assembly:

U-Value of total assembly: R-Value of insulation: Floors slab on grade Description of assembly:

U-Value of total assembly: R-Value of insulation: Horizontal/vertical requirement: slab heated:

STRUCTURAL DESIGN

Importance Factors: Wind (IW) Snow (IS) Seismic (IE) Live Loads: Mezzanine

Basic Wind Speed \_\_\_\_144\_\_\_ mph (ASCE-7) Wind Load:

Exposure Category \_\_\_\_\_D SEISMIC DESIGN CATEGORY: □A⊠B□C□D

Provide the following Seismic Design Parameters: Occupancy Category (Table 1604.5) I III III IV Spectral Response Acceleration SS 1.9 %g S1 6 %g

Site Classification (ASCE 7)

Data Source:

A B C D E F

Presumptive Historical Data Basic structural system (check one) ☐ Dual w/Special Moment Frame ⊠ Bearing Wall Dual w/Intermediate R/C or Special Steel Building Frame Moment Frame Inverted Pendulum Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic

LATERAL DESIGN CONTROL: ☐ Earthquake ☒ Wind

**SOIL BEARING CAPACITIES:** Field Test (provide copy of test report) \_\_\_ Pile size, type, and capacity \_\_\_

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE				
Building Height in Feet (Table 504.3)	40	Ø	T5Ø4.3				
Building Height in Stories (Table 504.4) 2 1 T5@4.4							
1. Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.							

		FIRE PROT	ECTION REQUIR	REMENTS			
	FIRE	R/	ATING	DETAIL #	DESIGN#	SHEET #	SHEET#
BUILDING ELEMENT	SEPARATION DISTANCE (feet)	REQ'D	PROVIDED (W/* REDUCTION)	AND SHEET#	FOR RATED ASSEMBLY	FOR RATED PENETRATION	FOR RATED JOINTS
Structural Frame Including columns, girders, trusse	s —	Ø	0				
Bearing Walls							
Exterior							
North	> 30	Ø	0				
East	> 30	Ø	0				
West	> 30	Ø	0				
South	> 30	Ø	0				
Nonbearing walls and partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists		0	0				
Floor Ceiling Assembly		Ø	0				
Columns Supporting Floors		Ø	0				
Roof Construction, including supporting beams and joists		Ø	0				
Roof Ceiling Assembly		0	0				
Columns Supporting Roof			0				
Shaft Enclosures—Exit							
Shaft Enclosures—Other							
Corridor Separation							
Occupancy/Fire Barrier Separation		N/A	N/A				
Party/Fire Wall Separation							
Smoke Barrier Separation					<del> </del>		
Smoke Partition		_			1		
Tenant/Dwelling Unit/ Sleeping Unit Separation		N/A					
Incidental Use Separation		-					

MECHANICAL DESIGN

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

hermal Zone winter dry bulb:

summer dry bulb: Interior design conditions winter dry bulb: summer dry bulb:

Building cooling load:

**Mechanical Spacing Conditioning System** 

description of unit heating efficiency: \_\_\_\_ cooling efficiency:

size category of unit: \_\_ Size category. If oversized, state reason.: Size category. If oversized, state reason.:

List equipment efficiencies: \_\_\_\_\_

**ELECTRICAL DESIGN** 

**ELECTRICAL SUMMARY ELECTRICAL SYSTEM AND EQUIPMENT** 

**Method of Compliance:** Energy Code: Prescriptive Performance

ASHRAE 90.1: Prescriptive Performance

Lighting schedule (each fixture type) lamp type required in fixture number of lamps of fixure ELECTRICAL ballast type used in the fixture

number of ballasts in fixture total wattage per fixture

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total interior wattage specified versus allowed (whole building or space by space) total exterior wattage specified versus allowed

**Additional Prescriptive Compliance** 

506.2.1 More Efficient Mechanical Equipment 506.2.2 Reduced Lighting Power Density 506.2.3 Energy Recovery Ventilation Systems 506.2.4 Higher Efficiency Service Water Heating

506.2.5 On-Site Supply of Renewable Energy 506.2.6 Automatic Daylighting Control Systems

#### PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (feet) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
N.E.W.S.	N.E.W.S. UPNS		

#### LIFE SAFETY SYSTEM REQUIREMENTS

		LIFE SAFETT ST
Emergency Lighting:	<b>⊠</b> Yes □No	
Exit Signs:	<b>⊠</b> Yes □No	
Fire Alarm:	XYes □No	
Smoke Detection Systems:	☐Yes <b>⊠</b> No	
Carbon Monoxide Detection	ı:∐Yes <b>⊠</b> No	

#### LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G-2 ₩ Fire and/or smoke rated wall locations (Chapter 7)

Assumed and real property line locations (if not on the site plan) Exterior wall opening area with respect to distance to assumed property lines (705.8) Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)

☑ Occupant loads for each area **X** Exit access travel distances (1017)

Common path of travel distances [Tables 1006.2.1 & 1006.3.2(1)]

Dead end lengths (1020.4)

Clear exit widths for each exit door

Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3) Actual occupant load for each exit door 🖂 A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation

Location of doors with panic hardware (1010.1.10) Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)

Location of doors with electromagnetic egress locks (1010.1.9.9)

Location of doors equipped with hold-open devices Location of emergency escape windows (1030)

The square footage of each fire area (202) The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)

Note any code exceptions or table notes that may have been utilized regarding the items above

#### ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
		N/A					

#### ACCESSIBILE PARKING (SECTION 1106)

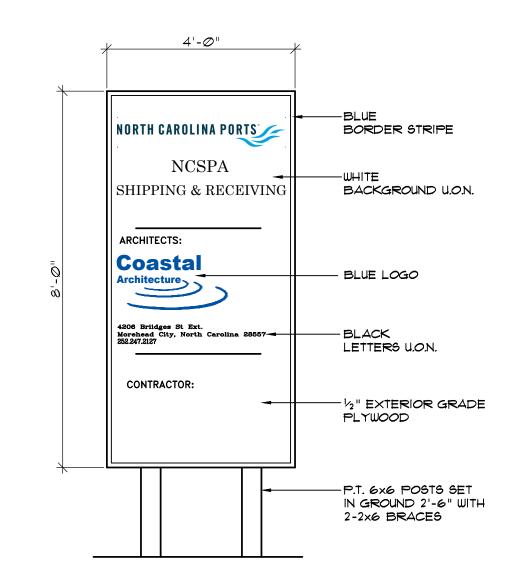
	TOTAL # OF PA	RKING SPACES	# OF AC	# OF ACCESSIBLE SPACES PROVIDED			
LOT OR PARKING				VAN SPA	TOTAL #		
AREA	EXISTING	PROVIDED	REGULAR WITH 5' ACCESS AISLE	132" ACCESS AISLE	8' ACCESS AISLE	ACCESSIBLE PROVIDED	
TOTAL	8	8			1	1	

# PLUMBING FIXTURE REQUIREMENTS

USE	v	VATERCLOSET	rs	URINALS	LAVATORIES			SHOWERS/	DRINKING FOUNTAINS	
USE	Male	Female	Unisex	UNINALS	Male	Female	Unisex	TUBS	Regular	Accessib
REQ'D			1	Ø			1			1
PROVIDE	ĒD		5	0			5			1

# SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)





NOTE: SUBMIT SHOP DRAWING FOR COORDINATION OF LETTER HEIGHTS SPECIFIC SIGN COLORS.



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 Planning Interiors



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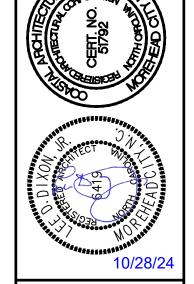
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> SHIPP] MOREHE

PROJECT # 10665 SCO ID# : 24-28316-0IA



SUED: 07/12/24

GENERAL DATA

DWG BY: MSG CKD BY: LDD REVISIONS

SHEET NO.

# LEGEND:

B = BUSINESS

FIRE DEPARTMENT KNOX BOX (VERIFY LOCATION W/ FIRE DEPT.) KB

BA BUILDING ADDRESS - CONFIRM LOCATION  $\mathbb{W}/$ 

FIRE EXTINGUISHER AND CABINET

CLEAR EXIT WIDTH

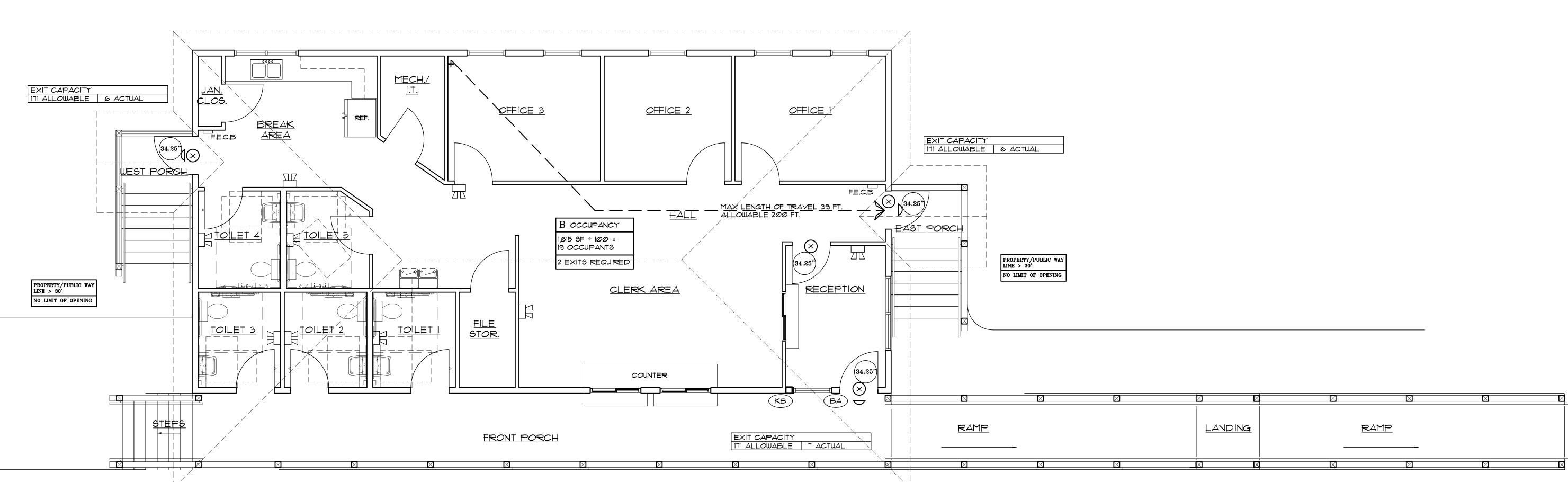
 $\otimes$ EXIT

EMERGENCY EXIT LIGHT

EGRESS LIGHT 

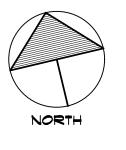
NEW DOOR

PROPERTY/PUBLIC WAY LINE > 30' NO LIMIT OF OPENING



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PROPERTY/PUBLIC WAY LINE > 30' NO LIMIT OF OPENING



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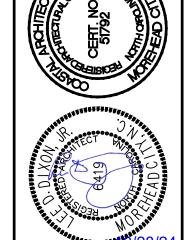
Suite C

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O RECEIVING NORTH CAROLINA SHIPPIN( MOREHEAD

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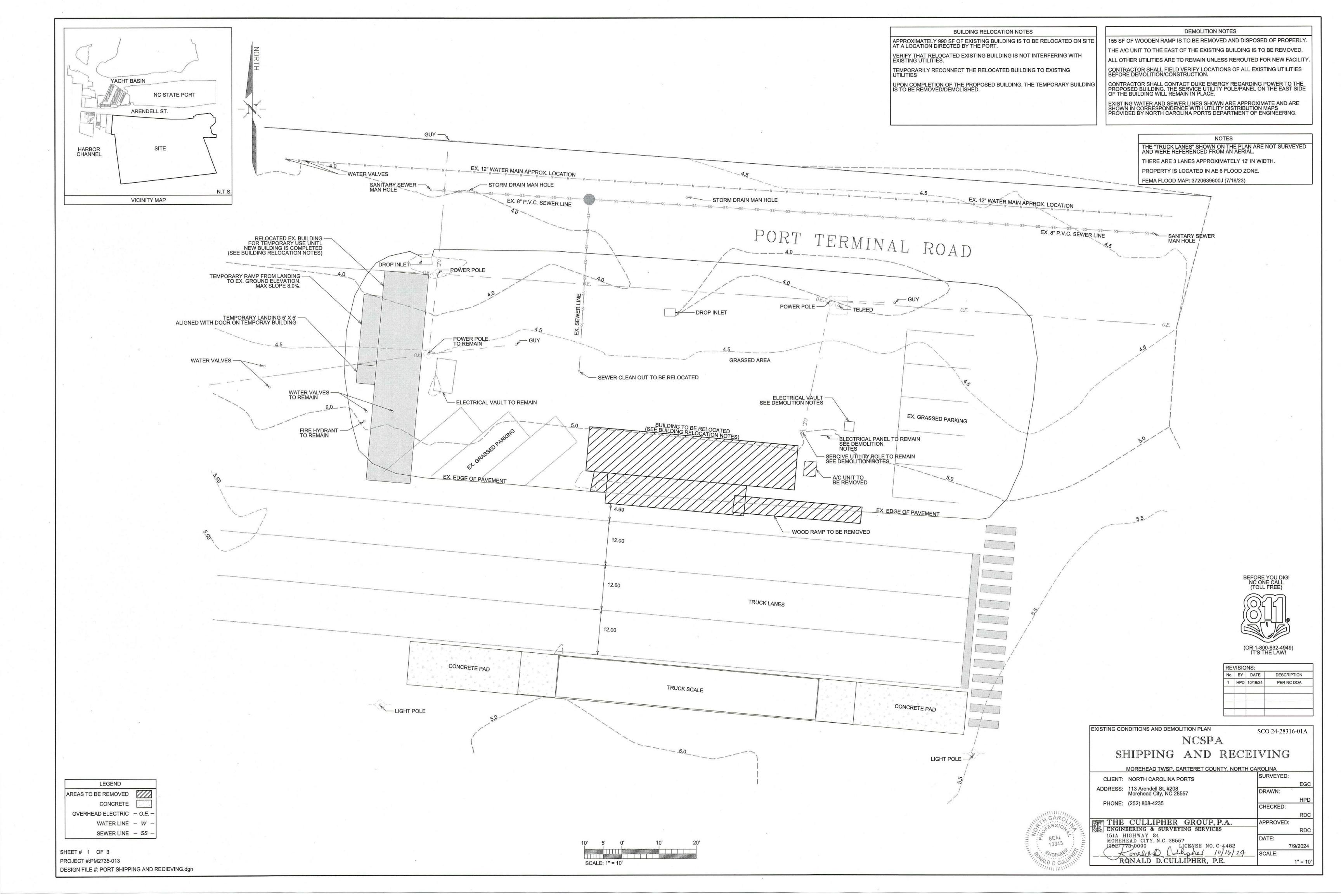


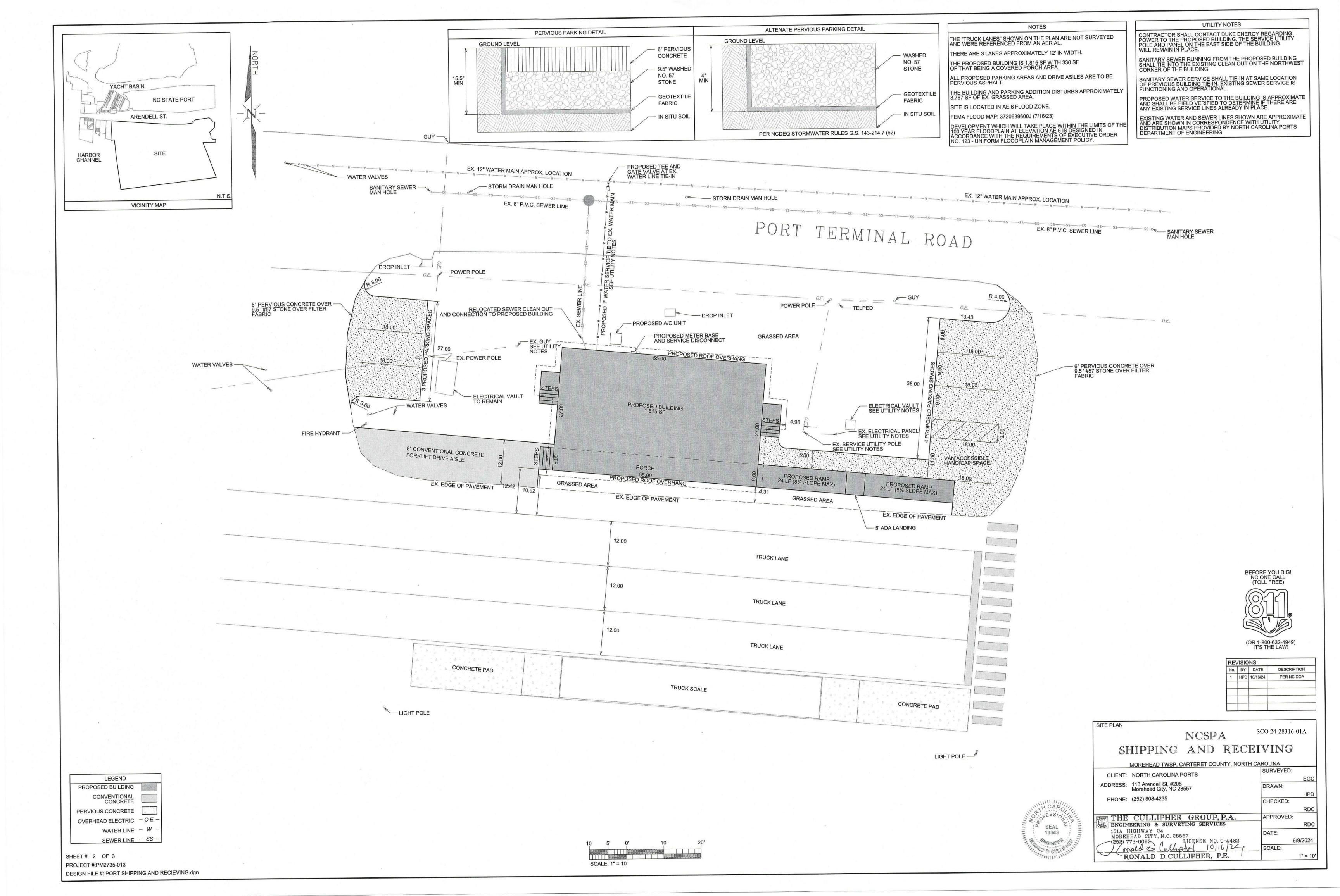
LIFE SAFETY PLAN

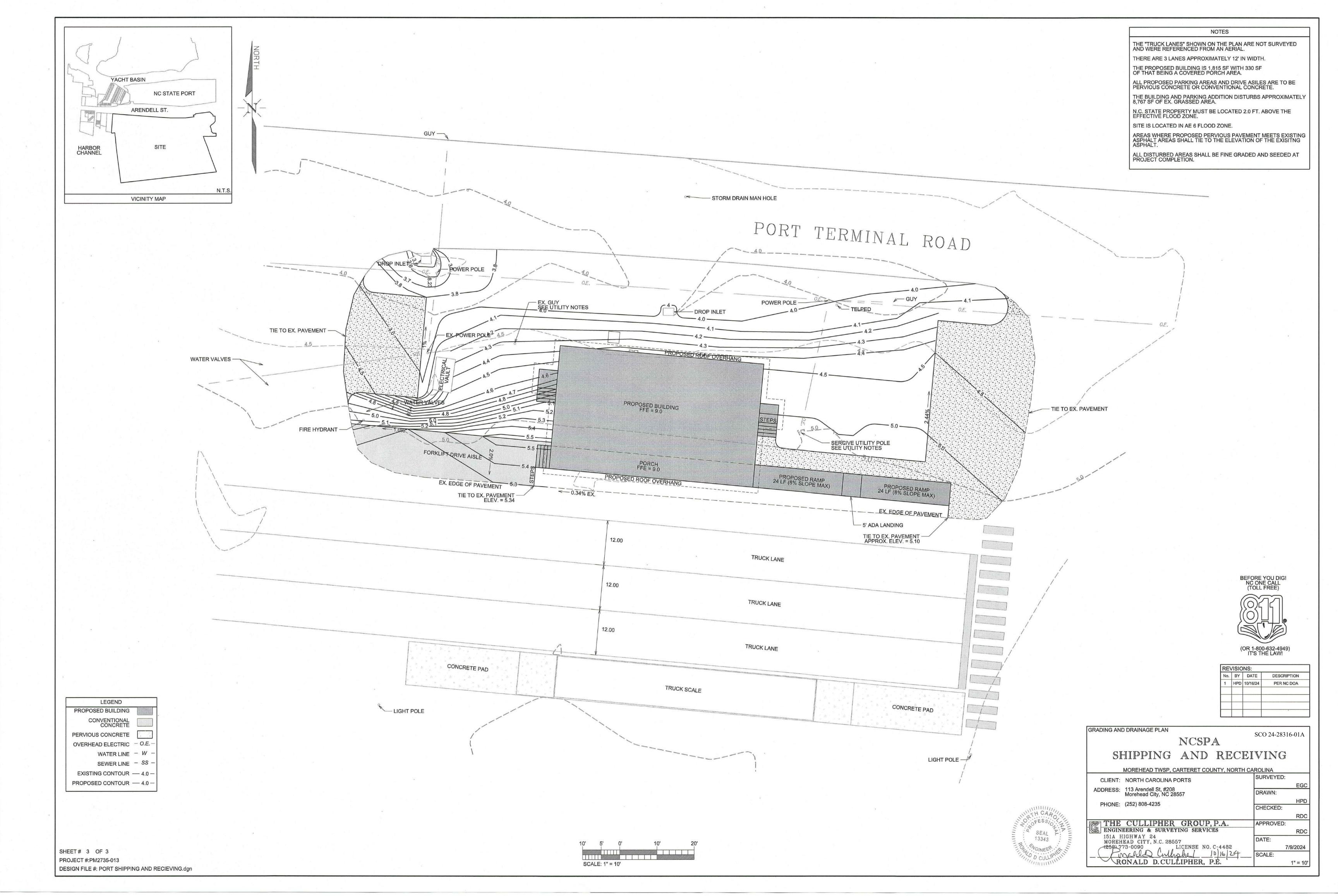
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DWG BY: SKC
CKD BY: LDD

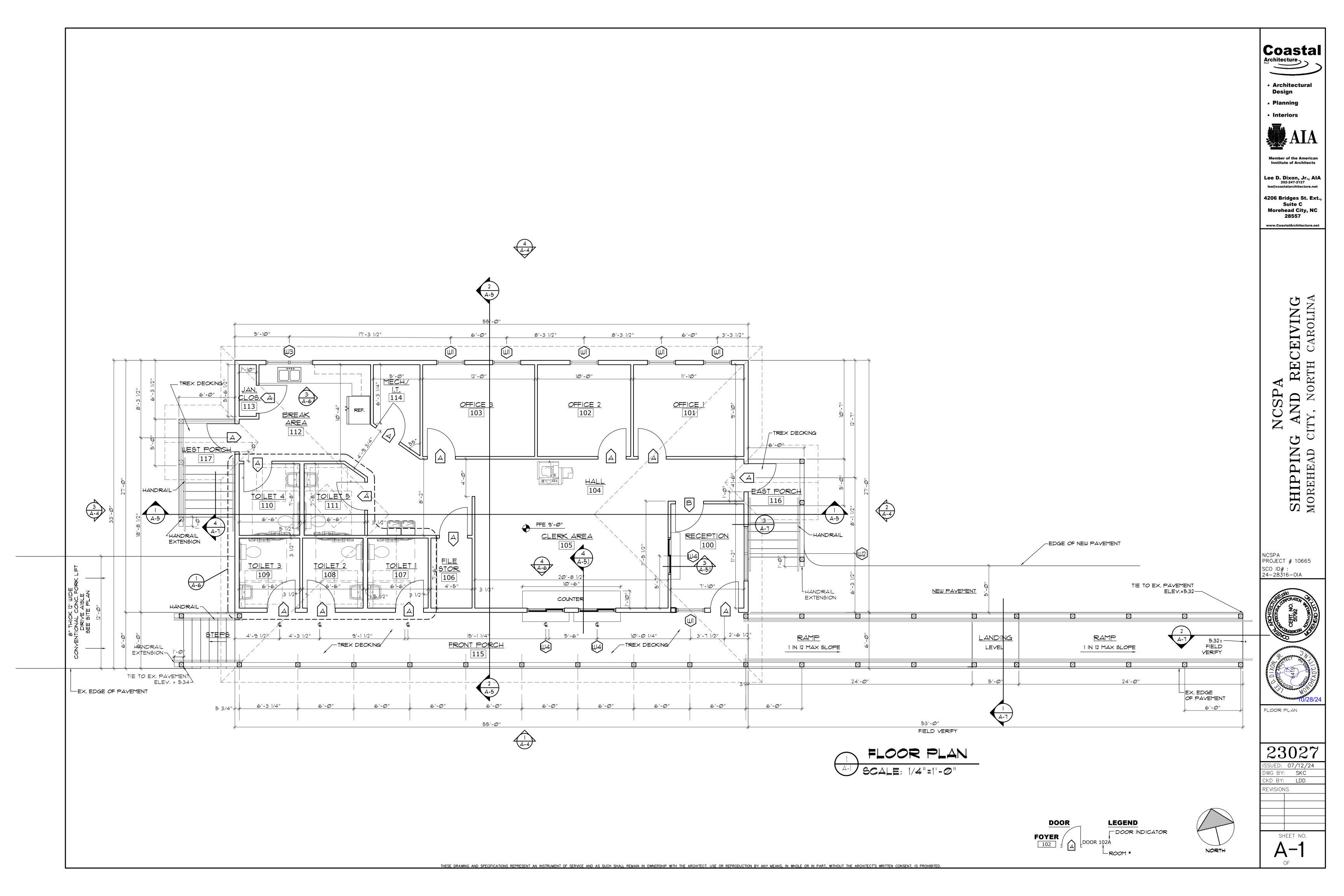
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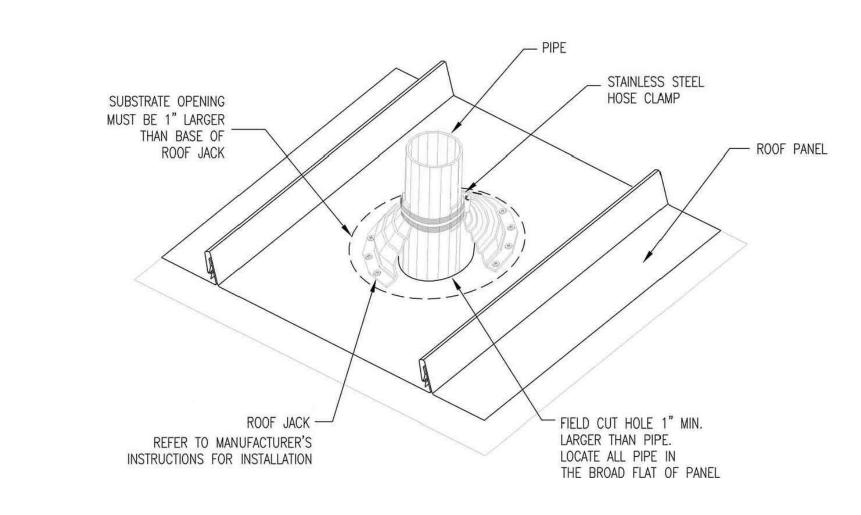
SHEET NO.





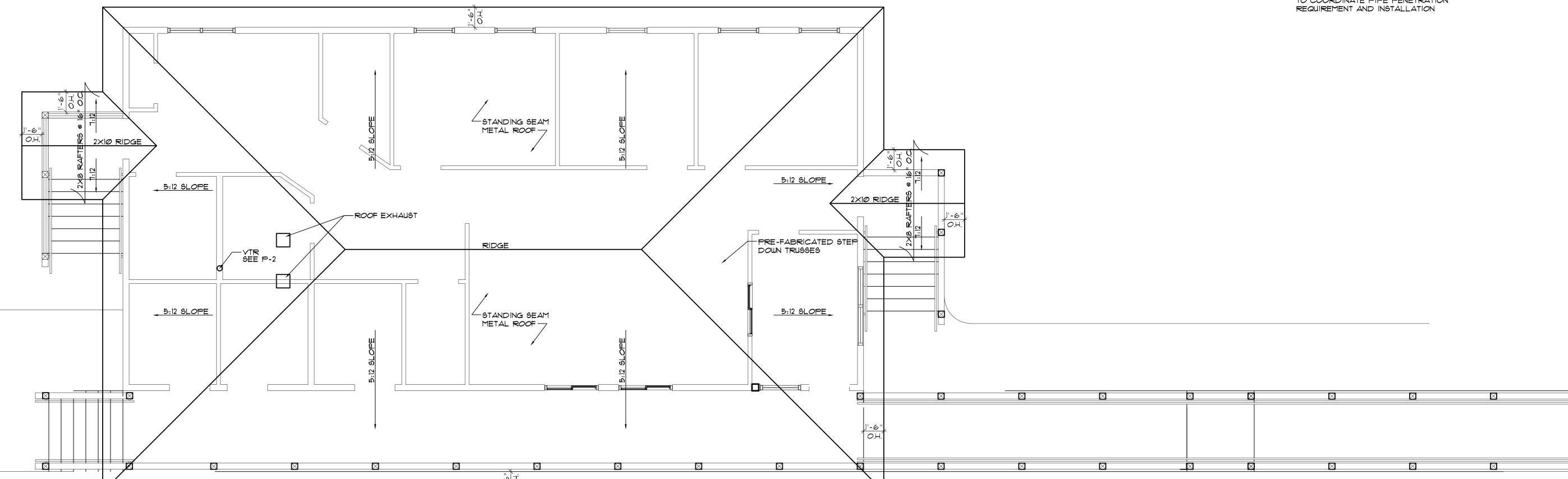


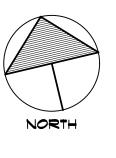




# PIPE PENETRATION DETAIL PIPE PENI SCALE: NTS

ROOFER AND PLUMBING CONTRACTOR TO COORDINATE PIPE PENETRATION REQUIREMENT AND INSTALLATION





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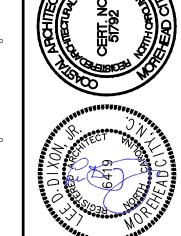
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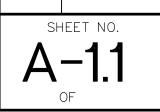
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ROOF PLAN

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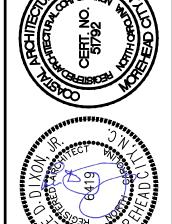
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REFLECTED CEILING PLAN

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DWG BY: SKC
CKD BY: LDD

REVISIONS

SHEET NO. A-2

WINDOW SCHEDULE											
MARK	<u>SIZE</u> (NOMINAL)	TYPE	MAT.	<u>GLASS</u>	<u>remarks</u>						
	3'-0"W × 5'-0"H	FIXED	ALUM.	IMPACT RESISTANT	IMPACT TEST MEET NCSBC 2 406.2 REQUIRED						
<b>(</b> U2 <b>)</b>	5'-10"W × 5'-0"H	FIXED	ALUM.	IMPACT RESISTANT							
(U3)	5'-Ø"W × 3'-8"H	FIXED	ALUM.	IMPACT RESISTANT							
<b>(</b> 1/4 <b>)</b>	4'-0"W × 4'-0"H	SLIDING WINDOW	ALUM.	IMPACT RESISTANT							

NOTE:		SHALL ME	EET APPLICABLE	F WIND 70NF	CODE DESIGN	PRESSURE	REQUIREMENTS
10 12	- wilde			L WIND ZONE		1 1/20041/2	

PROVIDE HEAD AND SILL FLASHING AT ALL WINDOWS

CAULK
PTD HM FRAME
58" GWB - PTD

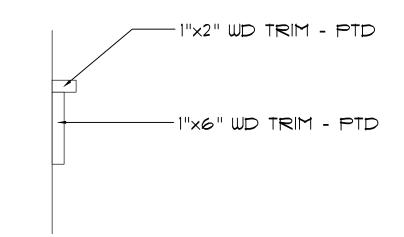
		DO	DOR	FRAME	
DOOR NO.	SIZE	МАТ.	TYPE		REMARKS
100A	3'-Ø" x 7'-Ø"	F.G.	1	Д	
100B	3'-Ø" × 7'-Ø"	WD.	3	W	
1014	3'-Ø" × 7'-Ø"	WD.	3	В	
1Ø2A	3'-Ø" x 7'-Ø"	WD.	3	В	
1034	3'-Ø" × 7'-Ø"	WD.	3	В	
1044	3'-Ø" x 7'-Ø"	F.G.	1	Д	
106A	3'-Ø" x 7'-Ø"	WD.	4	В	
1Ø7A	3'-Ø" x 7'-Ø"	F.G.	2	Д	
1084	3'-Ø" x 7'-Ø"	F.G.	2	Д	
1094	3'-Ø" x 7'-Ø"	F.G.	2	Д	
1104	3'-Ø" x 7'-Ø"	WD.	4	В	
1114	3'-Ø" x 7'-Ø"	WD.	4	В	
1124	3'-Ø" x 7'-Ø"	F.G.	1	Д	
1134	3'-Ø" x 7'-Ø"	WD.	4	В	
1144	3'-Ø" x T'-Ø"	WD.	4	В	

room finish schedule						
ROOM	FLOORS	BASE	WALLS	CEILINGS	HEIGHT (NOMINAL)	REMARKS
Ø RECEPTION	LVP	VINYL	GWB - PTD.	GWB - PTD.	9'-0"	
OFFICE I						
OFFICE 2						
FICE 3						
ALL						
LERK AREA						
ILE STORAGE						
OILET 1						0
OILET 2						(1)
DILET 3						(1)
PILET 4						
LET 5						
EAK AREA						
NITOR CLOSET						
ECH/IT						
ONT PORCH	<b>Y</b>	₩	<b>*</b>	HARDIE PNL PTE	<b>.</b> *	
IST PORCH				HARDIE PNL PTE		
ST PORCH				HARDIE PNL PTE		

ROOM FINISH SCHEDULE REMARKS

(1) EPOXY PAINTED WALLS

# TYP HOLLOW METAL FRAME 5 AT INTERIOR WALL A-3 SCALE: 11/2 "=1'-0"



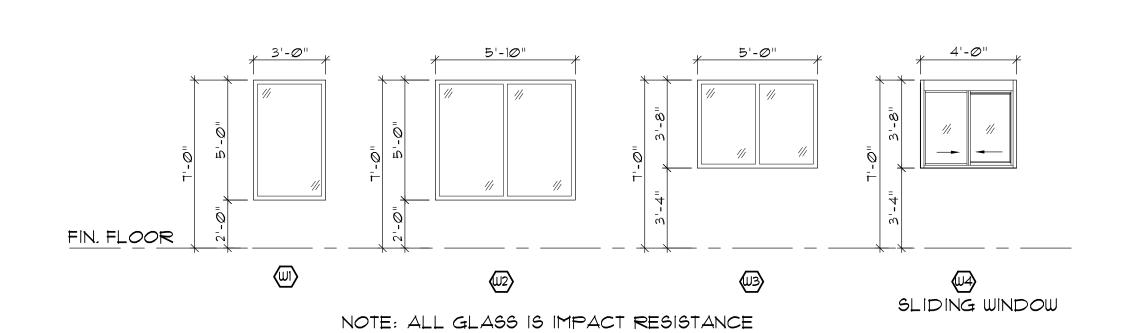
# TYP INTERIOR WINDOW CASING A-3 SCALE: 11/2 "=1'-0"

FIN. FLOOR

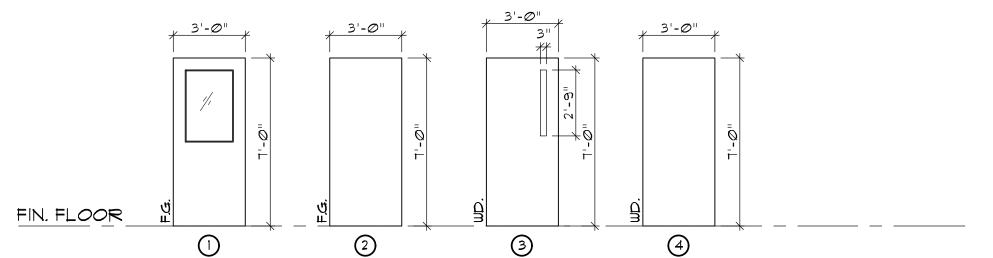
SIMILAR AT EXTERIOR DOORS

<u>REMARKS</u>

ALL GLASS TO BE TEMPERED





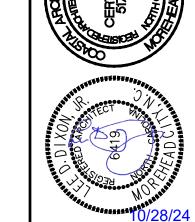


NOTE: ALL GLASS IS TEMPERED



NOTE: CONTRACTOR SHALL FIELD VERIFY ALL DOOR AND WINDOW ROUGH OPENING DIMENSIONS PRIOR TO ORDERING UNITS.

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DOOR, WINDOW, AND ROOM FINISH SCHEDULES

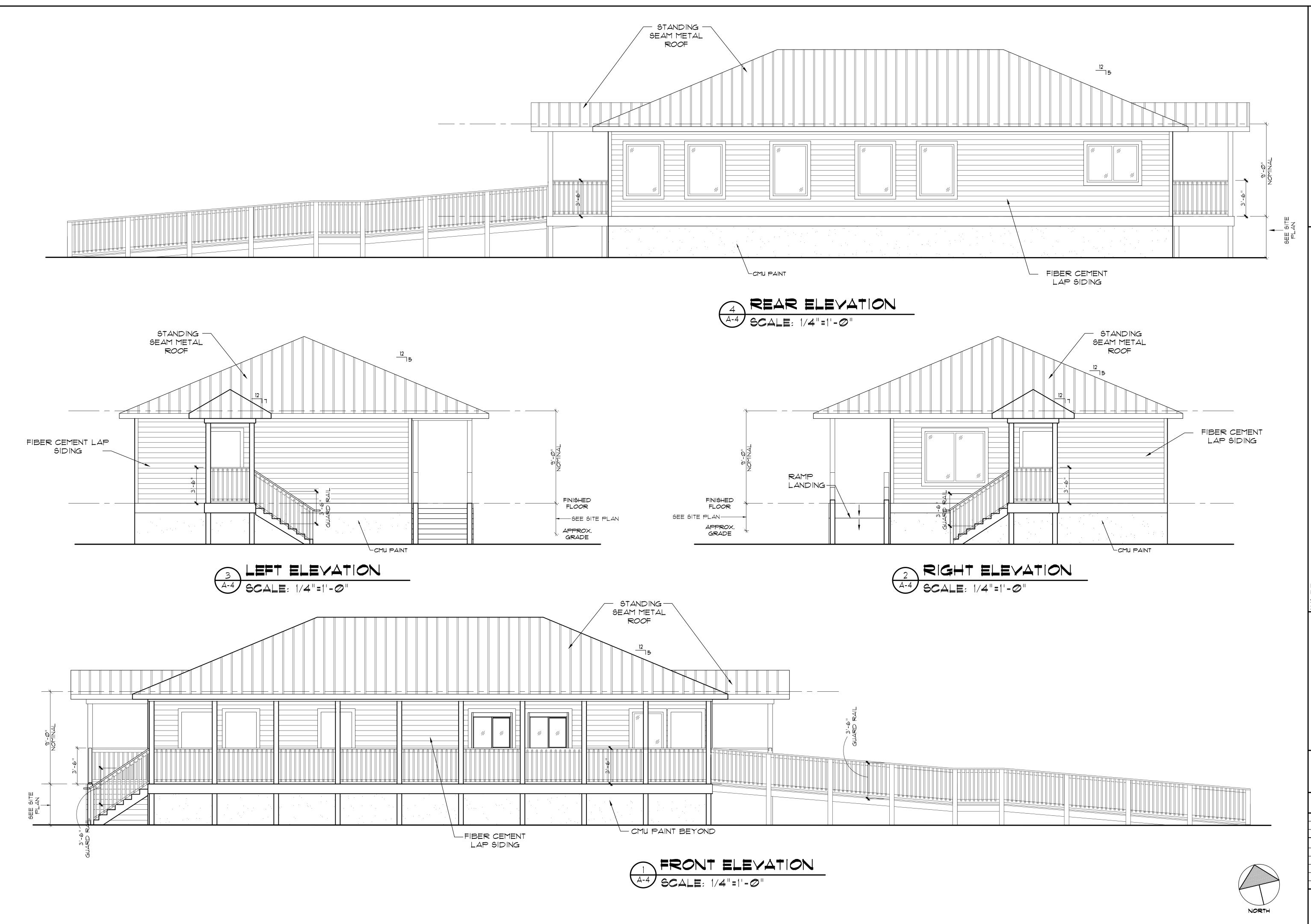
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> SHEET NO. A-3



DOOR FRAME ELEVATIONS

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



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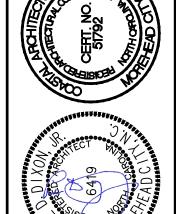
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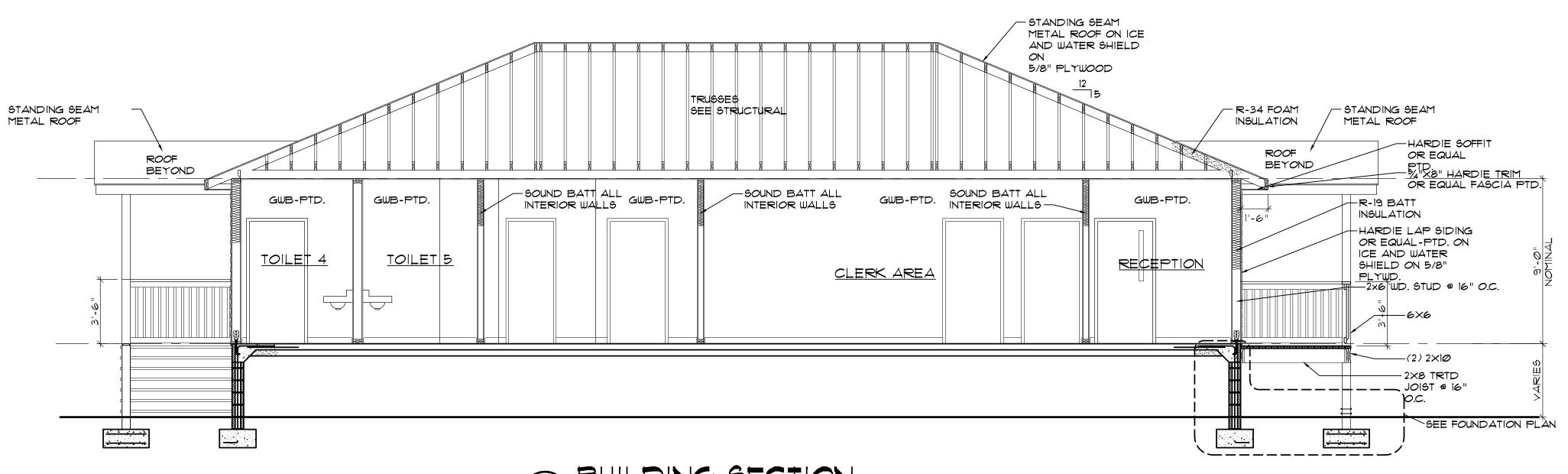


EXTERIOR ELEVATIONS

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BUILDING SECTION

A-5 SCALE: 1/4"=1'-0"

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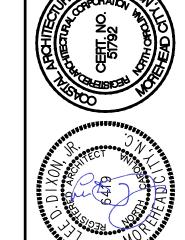
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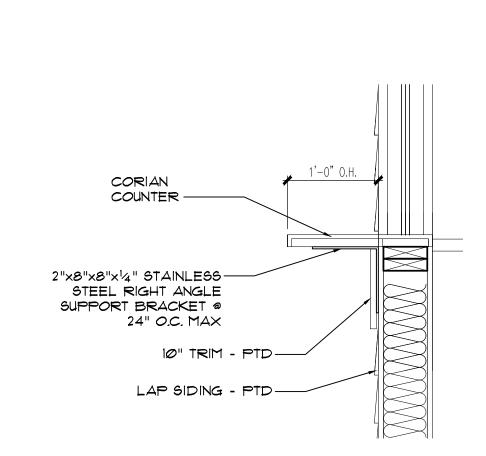


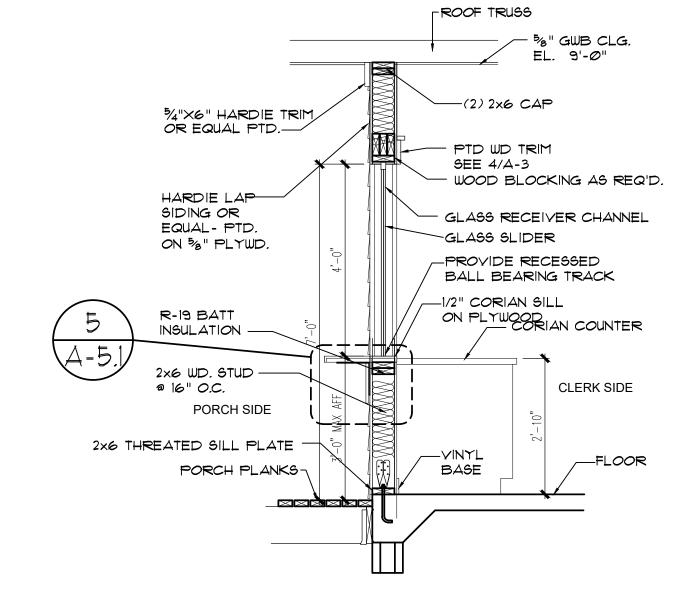
BUILDING SECTIONS

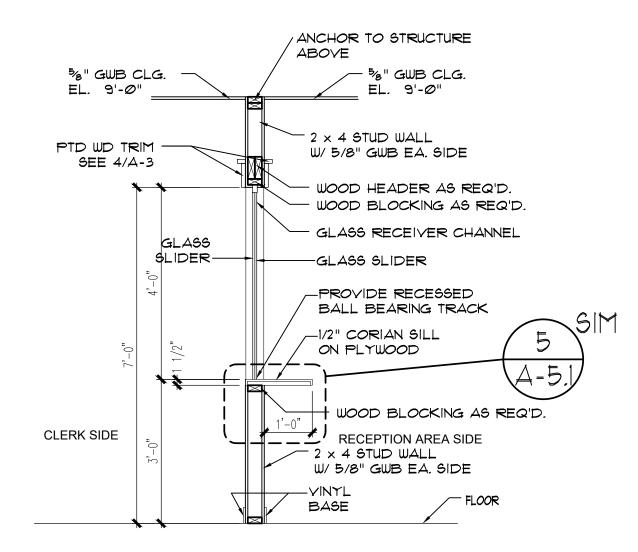
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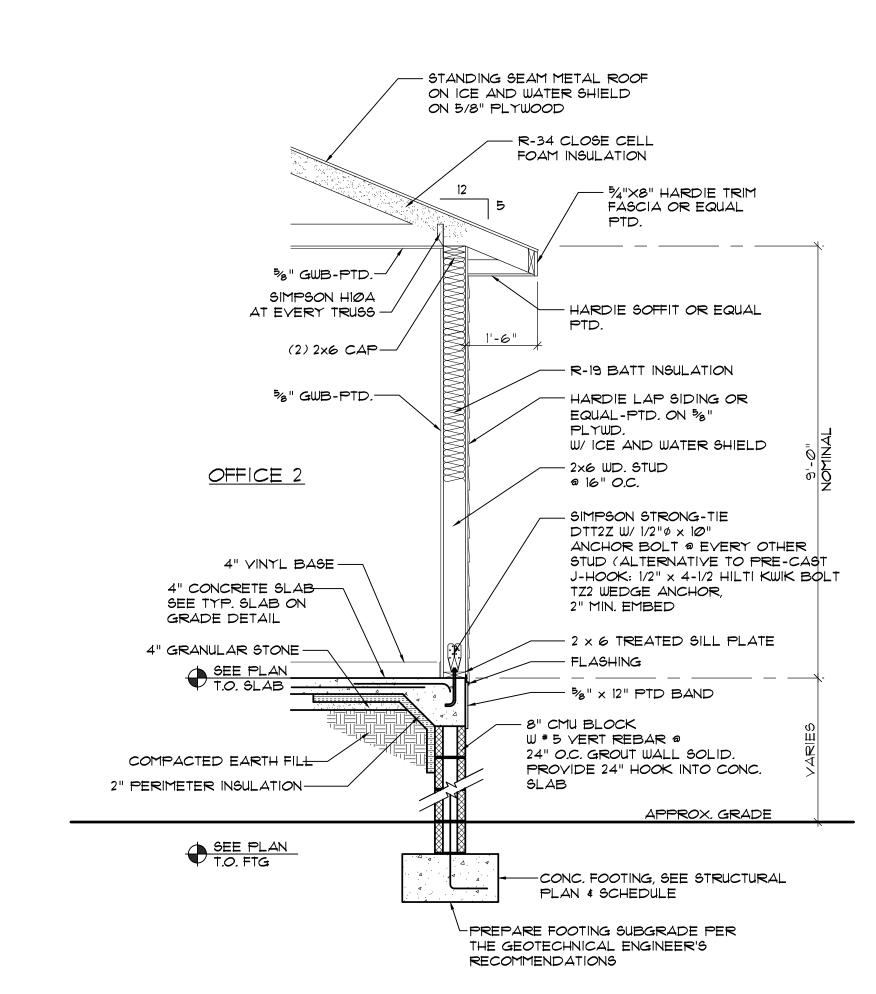






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STANDING SEAM METAL ROOF ON ICE AND WATER SHIELD ON 5/8" PLYWOOD-R-34 CLOSE CELL FOAM INSULATION -5/8" HARDIE PANEL OR EQUAL-PTD W/ BATTEN STRIPS AT JOINTS -TRUSSES SEE STRUCTURAL ¾"X8" HARDIE TRIM FASCIA OR EQUAL -%"GWB-PTD. SIMPSON HIØA (2) 2x6 CAP HARDIE SOFFIT-AT EVERY TRUSS OR EQUAL PTD. -%"GWB-PTD. 1/4"X6" HARDIE TRIM OR EQUAL PTD. CLERK AREA  $(2) 2 \times 10^{-3}$ R-19 BATT INSULATION -- SIMPSON STRONG-TIE 6X6 TRTD. HARDIE LAP DTT2Z W/ 1/2"Ø x 100" SIDING OR ANCHOR BOLT @ EVERY OTHER EQUAL- PTD. 2X6 TOP RAIL-STUD (ALTERNATIVE TO PRE-CAST ON %" PLYWD. J-HOOK: 1/2" x 4-1/2 HILTI KWIK BOLT TZ2 WEDGE ANCHOR, 6×6 TRTD. 2" MIN. EMBED -2×6 THREATED SILL PLATE 2x6 WD. STUD 2×2 TRTD PICKETS-@ 16" O.C. a 5 1/2" O.C. /-- 4" VINYL BASE - 4" CONCRETE SLAB (2) 2×10 GIRDER— SEE TYP. SLAB ON W/ (1) SIMPSON GRADE DETAIL HUC21Ø-2 EACH END OF GIRDER --- 4" GRANULAR STONE TO COLUMN -SEE 2/S4.1 2×10 JOIST @ 16" O.C.— -COMPACTED EARTH FILL SIMPSON CBS66 -2" PERIMETER INSULATION W/ (2) 1/2" Ø THRU BOLTS- $2'-6" \times 2'-6" \times 12"$  FOOTING W/(4) # 3 E.W. TOP & BOT-CONC. FOOTING, SEE STRUCTURAL <u>A</u> • 4 • 4 PLAN & SCHEDULE





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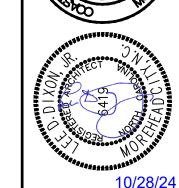
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WALL SECTIONS

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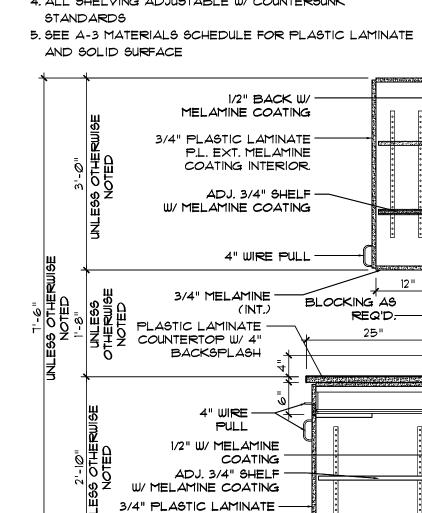
Mark	Item	MEG	MODEL #	Mtg. Ht.	Remarks
TA-1	FRAMELESS MIRROR 2'-@"W × 3'-@"H	BOBRICK	B-29Ø SERIES	3'-4" MAX.	HEIGHT TO BOTTOM OF MIRROR
TA-2	TOILET TISSUE DISPENSER	BOBRICK	B-4288	15"-48" MAX.	HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-3	PAPER TOWEL DISPENSER	BOBRICK	B-4262	4'-Ø" MAX.	HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-4	HANDICAP SOAP DISPENSER	BOBRICK	B-4112	4'-Ø" MAX.	HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-5	GRAB BAR 42" CONCEALED MOUNTING W/ SNAP FLANGE	BOBRICK	B-5806 SERIES	3'-Ø" MAX.	HEIGHT TO CENTER
TA-6	GRAB BAR 36" CONCEALED MOUNTING: W/ SNAP FLANGE	BOBRICK	B-5806 SERIES	3'-Ø" MAX.	HEIGHT TO CENTER
TA-7	GRAB BAR 18" CONCEALED MOUNTING (VERTICAL)	BOBRICK	B-5806 SERIES	3'-4"	HEIGHT TO BOTTOM
TA-8	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL	BOBRICK	B-27Ø	3'-3"	HEIGHT TO BOTTOM. CENTER OF BAR @ 40" FROM REAR WAL
TA-9	SURFACE MOUNTED SEAT COVER DISPENSER	BOBRICK	B-4221	2'-6"	HEIGHT TO TOP OF DISPENSER
TA-10	COAT HOOK	BOBRICK	B-9542	4'-Ø" MAX.	HEIGHT TO TOP OF DISPENSER

• EQUALS BY BRADLEY OR FRANKLIN OR APPROVED EQUAL ARE ACCEPTABLE

GENERAL NOTES: 1. PLASTIC LAMINATE P.L. EXTERIOR/WHITE MELAMINE COATING INTERIOR

2. CONCEALED HINGES THROUGHOUT 3. 4" SATIN CHROME PULL WIRES

4. ALL SHELVING ADJUSTABLE W/ COUNTERSUNK

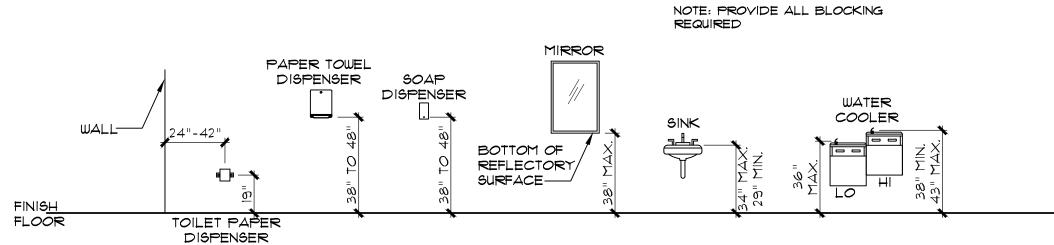


P.L. EXT. MELAMINE COATING INTERIOR

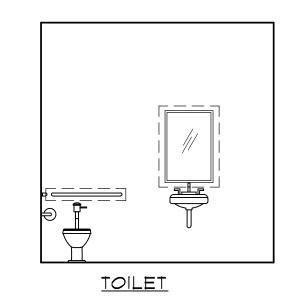
RIBS AT 24"— O.C. MAX

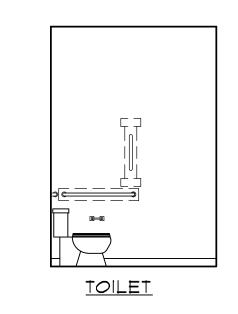
KITCHEN CABINET SECTION

3/4" /W MELAMINE ---COATING BASE SEE SCHEDULE



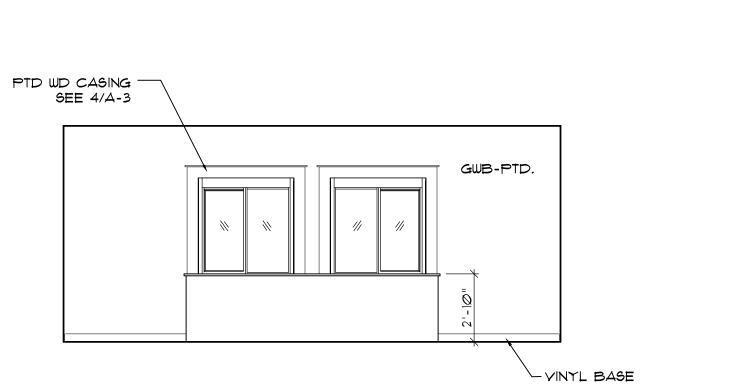
BARRIER-FREE FIXTURE MOUNTING HEIGHTS TYP A-6 SCALE: 1/4"=1'-0"



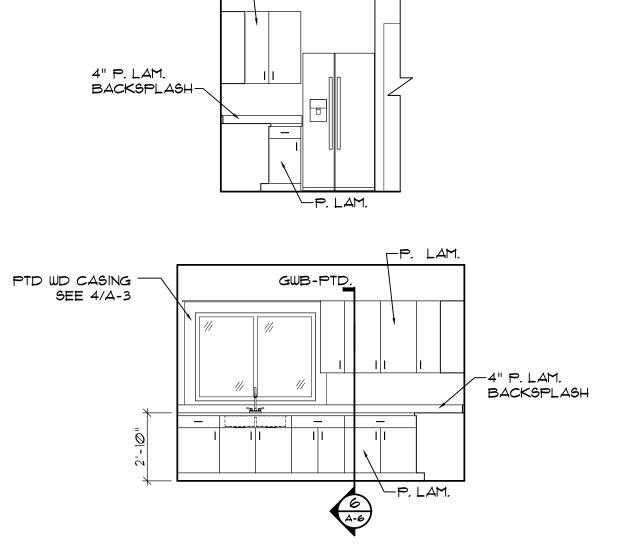




NOTE: PROVIDE ALL BLOCKING REQUIRED FOR TOILET ACCESSORIES

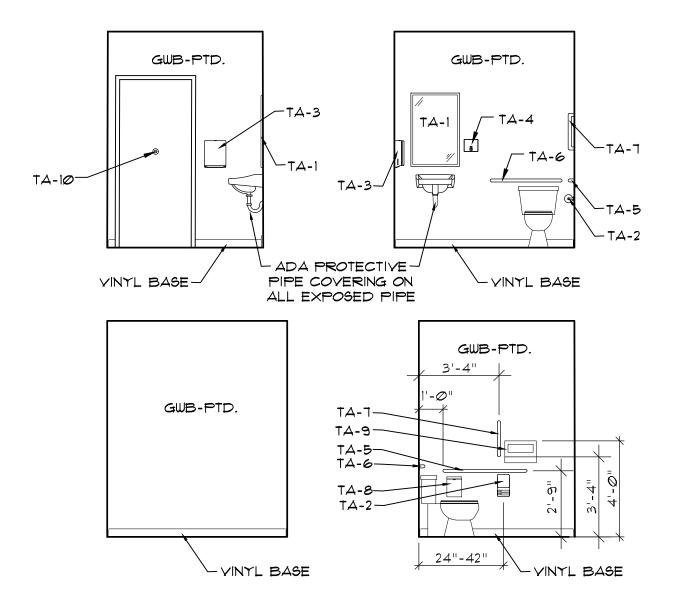






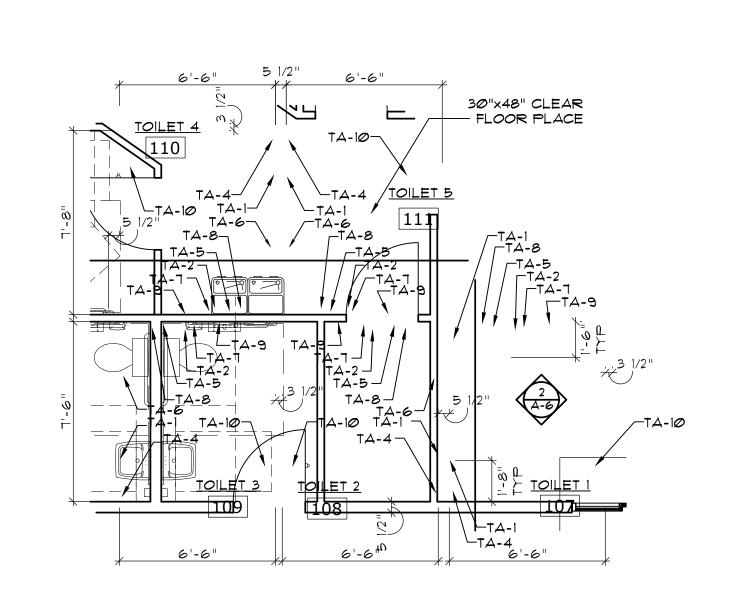
⊢P. LAM.







ALL TOILET WALLS TO BE EPOXY PAINTED





MAINTAIN 1'-6" CLEAR OF ALL DOORS

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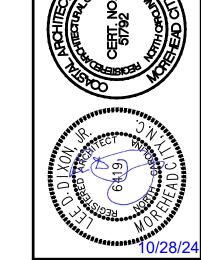
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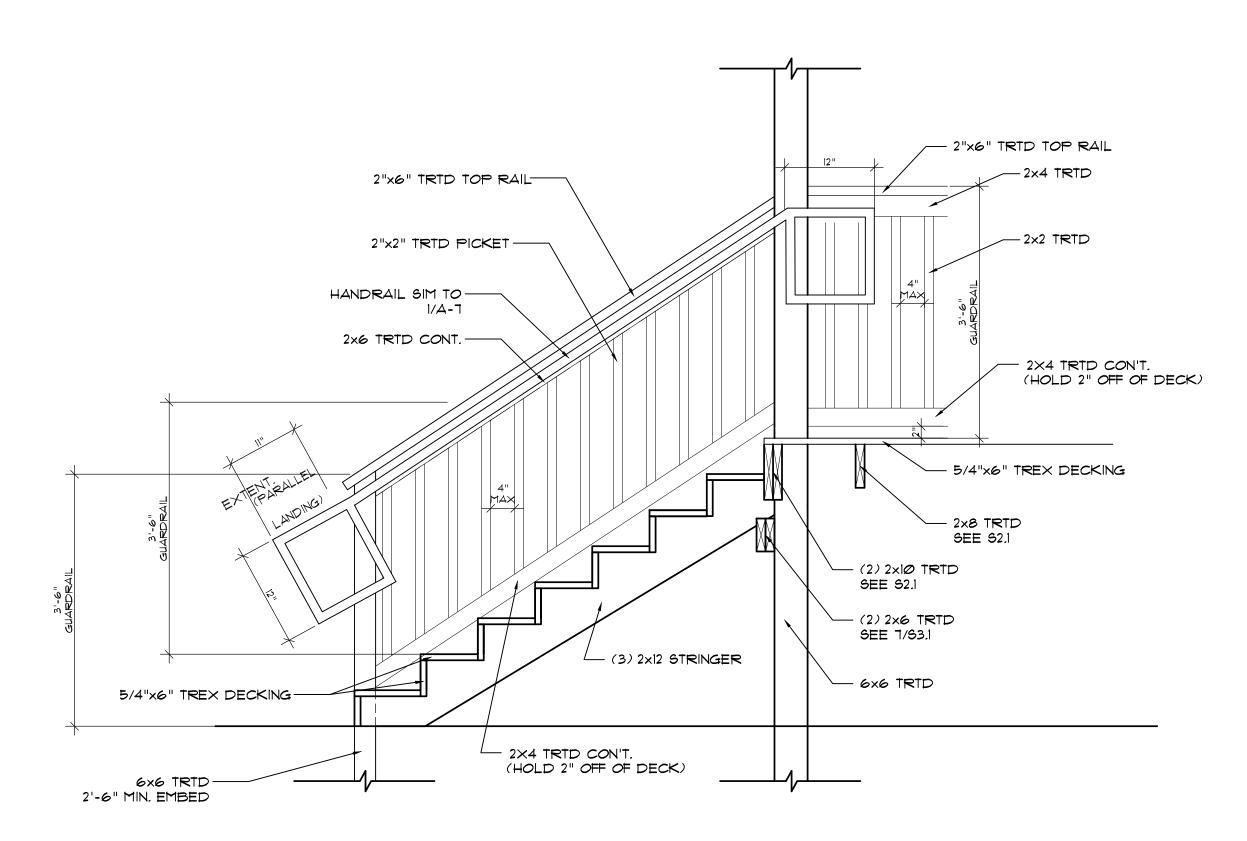
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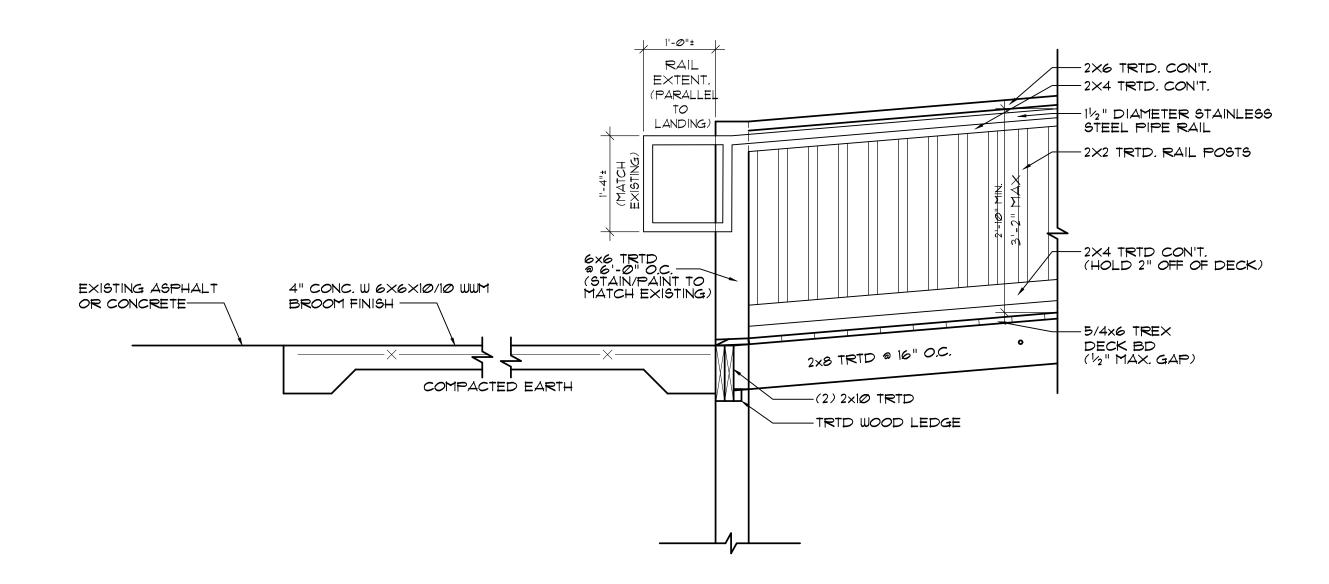
ENLARGED PLANS AND INTERIOR ELEVATIONS 23027

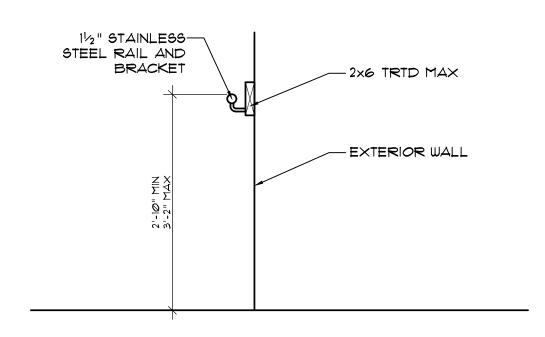
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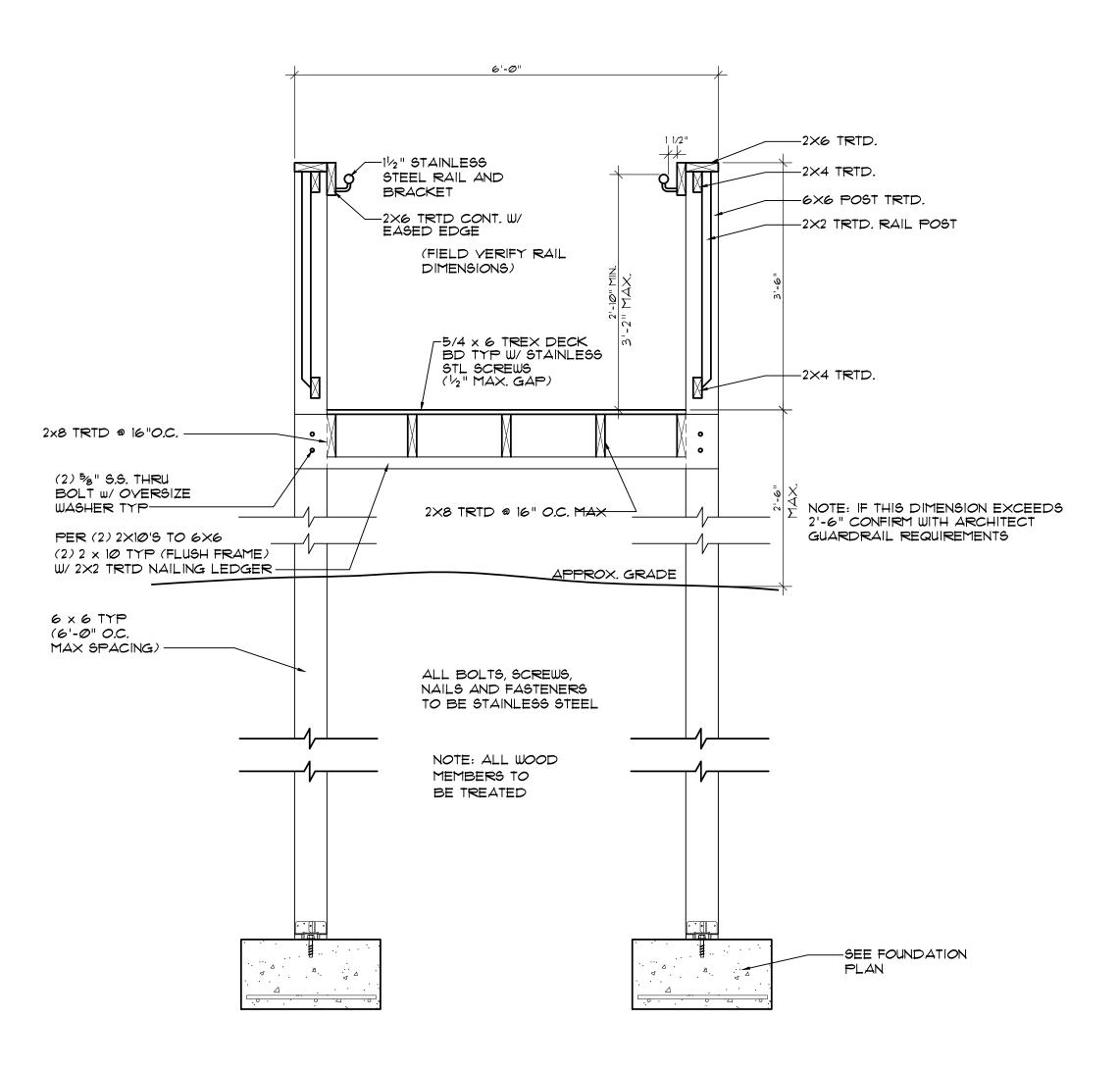








# DETAIL AT HANDRAIL AT WALL





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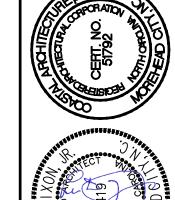
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#### STRUCTURAL NOTES

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

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

3. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING (AND ACCOMPANYING FOOTINGS), GUYS OR TIEDOWNS.

4. ADDITIONAL OBSERVATIONS AS A RESULT OF REJECTION OF WORK COMPLETED AND/OR ADDITIONAL OBSERVATIONS DUE TO THE DEFICIENCIES IN WORK OBSERVED WILL BE AT THE EXPENSE OF THE CONTRACTOR.

5. ALL STRUCTURAL SHOP DRAWINGS TO BE REVIEWED BY JOB SUPERINTENDENT IN ADDITION TO ALL PERSONNEL DEEMED NECESSARY BY CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER FOR

6. ALL SHOP DRAWING RESUBMITTALS SHALL INCLUDE A WRITTEN DETAILED LIST OF LOCATIONS AND DESCRIPTIONS OF ALL CHANGES MADE FROM PREVIOUS SUBMITTAL. LIST SHALL BE SPECIFIC AND GENERAL NOTES SUCH AS 'DIMENSIONS CORRECTED' ARE NOT ACCEPTABLE.

#### **DESIGN CODES:**

2018 NORTH CAROLINA STATE BUILDING CODE.

ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN.

2015 NATIONAL DESIGN SPECIFICATIONS (NDS) FOR WOOD CONSTRUCTION

#### **DESIGN LOADS:**

THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED WITH THE FOLLOWING SUPERIMPOSED LOADINGS:

ROOF: GROUND SNOW LOAD, DESIGN ROOF SNOW LOAD, SNOW EXPOSURE FACTOR, SNOW LOAD IMPORTANCE FACTOR, THERMAL FACTOR, ROOF LIVE LOAD	Pg = Pf = Ce = Is = Ct = 20 psf	10 psf 10 psf 0.9 1.0
DESIGN LIVE LOADS: FLOOR	100 psf	
WIND: BASIC WIND SPEED (3 SEC GUST) EXPOSURE CATEGORY RISK CATEGORY WIND BASE SHEARS,	144 mph D II Vx = Vy =	4.8k 6.9k

COMPONENT & CLADDING ALL BUILDING COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR WIND LOADS DETERMINED PER THE NORTH CAROLINA STATE BUILDING CODE FOR THE BASIC DESIGN WIND VELOCITY, IMPORTANCE FACTOR AND EXPOSURE LISTED ABOVE.

SEISMIC: IMPORTANCE FACTOR, USE GROUP MAPPED SPECTRAL RESPONSE ACCELERATIONS, SPECTRAL RESPONSE COEFF., SEISMIC RESISTING SYSTEM: ORDINARY WOOD SHEATHED SHEAR WALLS	le = Ss = S1 = Sds = Sd1 =	1.0 I 0.119 0.06 0.127 0.096
DESIGN BASE SHEARS,  SEISMIC RESPONSE COEFFICIENT RESPONSE MODIFICATION FACTOR ANALYSIS PROCEDURE USED: DESIGN CATEGORY SITE CLASSIFICATION	Vx = Vy = Cs = R = EQUIV. B D	2.0k 2.1k N/A 3 LAT. FORCE

FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 psf. ON EXISTING SOILS. BEFORE CONSTRUCTION COMMENCES, SOIL BEARING CAPACITY SHALL BE SHALL INCLUDE ANALYSIS AND RECOMMENDATIONS FOR SITE PREPARATION IN ORDER TO BEAR THE FOUNDATION LOADS. ABOVE REPORT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW BEFORE FOUNDATION CONSTRUCTION BEGINS.

# PLUMBING SLEEVES:

MINIMUM SLEEVE SPACING SHALL BE TWO DIAMETERS CENTER TO CENTER TO THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

# **CHEMICAL ANCHORS:**

SHALL BE A POLYMER INJECTION SYSTEM SUCH AS RAMSET "EPCON", MOLLY "PARAMOUNT HVC", SIKA "SIKADUR INJECTION SEL", "HILTI-HIGH STRENGTH EPOXY", OR APPROVED EQUAL, INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

# **ANCHOR BOLTS:**

SHALL BE A36 THREADED ROD. PROVIDE HOT DIP GALVANIZE FINISH ON ALL ANCHOR BOLTS

#### CONCRETE TESTING:

1 CONCRETE TESTING SHALL BE PAID FOR BY THE OWNER. TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST-IN-PLACE

A) ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT

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

# 2 AT 28 DAYS

PROVIDE ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

### PENETRATIONS:

NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE LOCATED ON THESE DRAWINGS WITHOUT PREVIOUS APPROVAL OF THE

#### CONCRETE MIX DESIGN:

WORKABLE MIX:

1. SHALL BE MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND

> FOUNDATION WALLS AND FOOTINGS INTERIOR SLABS-ON-GRADE 4,000 psi ALL OTHER CONCRETE

2. SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN STATED ABOVE. THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. ALL SLABS SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

3. CONCRETE SHALL UTILIZE TYPE I/II CEMENT UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER OR GEOTECHNICAL REPORT.

4. THE CONCRETE STRENGTHS SHOWN IN THE SECTION ABOVE AND IN THE SPECIFICATIONS ARE MINIMUM COMPRESSIVE STRENGTHS. THE ENGINEER SHALL DETERMINE IF THE CONCRETE IS ACCEPTABLE. OR TO BE REMOVED. OR TO RECEIVE SPECIAL CURING IF THE COMPRESSIVE STRENGTHS ARE LESS THAN SPECIFIED.

5. ALL CONCRETE EXPOSED TO WEATHER OR EARTH SHALL BE AIR ENTRAINED

6 WATER REDUCING AGENTS MAY BE USED IN THE CONCRETE MIX. PLASTICIZERS AND SUPER-PLASTICIZERS MAY BE USED ONLY WHEN WRITTEN PERMISSION OF THE ENGINEER IS GIVEN.

7. NO SALTS OF ANY KIND MAY BE USED IN CONCRETE BEFORE OBTAINING THE ENGINEER'S WRITTEN PERMISSION FOR THEIR USE.

8. CONCRETE FOR TROWEL-FINISHED INTERIOR CONCRETE FLOORS SHALL NOT INCLUDE AN AIR-ENTRAINING ADMIXTURE; THE MAXIMUM AIR CONTENT IN THESE SLABS SHALL NOT EXCEED 3%.

CONCRETE AND REINFORCING PLACEMENT:

1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 301 AND ACI 117 EXCEPT AS MODIFIED BELOW:

ELEVATIONS OF SLABS-ON-GRADE TOP OF SLAB ELEVATION SHALL BE WITHIN A 3/8" ENVELOPE EITHER SIDE OF THE THEORETICAL DESIGN SURFACE.

FLOOR FINISH TOLERANCES AS MEASURED BY PLACING A FREESTANDING ALLOWING IT TO REST UPON TWO HIGH SPOTS WITHIN 28 DAYS AFTER SLAB CONCRETE PLACEMENT. THE GAP AT ANY POINT BETWEEN THE

2 ALL REINFORCING STEEL TO BE ASTM A615 GRADE 60 (#4 AND LARGER) EXCEPT WHERE NOTED OTHERWISE, REINFORCING SHALL NOT BE WELDED 3. WELDED WIRE FABRIC TO CONFORM TO ASTM A185 AND SHALL BE FREE FROM OIL, SCALE AND RUST. PLACE WWF IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND THE SPECIFICATIONS. MINIMUM LAPS SHALL BE ONE SPACE PLUS 2".

#### 4. ALL REINFORCING STEEL BARS TO BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ACI MANUALS

STRAIGHTEDGE AND THE FLOOR SHALL NOT EXCEED 1/4".

5. LAP ALL REINFORCING SPLICES IN CONCRETE A MINIMUM OF 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER, UNLESS NOTE OTHERWISE

6 PROVIDE CORNER BARS OF SAME BAR DIAMETER AS SPECIFIED FOR THE

WALL, BEAM OR FOOTING. PROVIDE MINIMUM OF 40 BAR DIAMETER LAP FOR ALL CORNER BARS. UNLESS NOTED OTHERWISE 7. PROVIDE FOUNDATION DOWELS AS SHOWN. MINIMUM SIZE DOWELS TO BE # 4, UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING STEEL IN COLUMNS

AND PIERS, OR VERTICAL REINFORCING IN WALLS, SHALL BE DOWELED INTO THE FOOTINGS WITH SAME SIZE AND QUANTITY DOWEL AS THE VERTICAL 8. WHERE SHOWN ON THE DRAWINGS, PROVIDE WELD PLATES, WELDMENTS. OR CONCRETE INSERTS FOR FASTENING AND SECURING OTHER COMPONENTS.

THEM AND INSTALLED BY THE CONTRACTOR CASTING THE CONCRETE AROUND THEM. CLIP ANGLES SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING

CONCRETE INSERTS SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING

9. REINFORCING STEEL SHALL RECEIVE CONCRETE COVER AS FOLLOWS: DESCRIPTION
CAST AGAINST AND PERMANENTLY MINIMUM COVER

EXPOSED TO EARTH EXPOSED TO EARTH OR WEATHER #6 THROUGH #18 BARS 1 1/2" #5 BARS OR SMALLER NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH THE GROUND, SLABS AND WALLS #11 BARS OR SMALLER #14 AND #18 1 1/2" BEAMS AND COLUMNS 1 1/2"

10. PROVIDE TWO (2) #5'S, ONE AT EACH FACE, UNLESS NOTED OTHERWISE, AROUND ALL OPENINGS GREATER THAN 12"x12" IN CAST-IN-PLACE CONCRETE. EXTEND REINFORCING 2'-0" REYOND OPENING IN BOTH DIRECTIONS. CONTACT ENGINEER FOR ALL OPENINGS GREATER THAN 12"x12" FOR DESIGN

11. COLD WEATHER AND HOT WEATHER PROVISIONS OF ACI 306 AND 305 (CURRENT EDITIONS), RESPECTIVELY, SHALL BE MAINTAINED 12. CONTRACTOR TO FURNISH AND INSTALL 500 LINEAR FT. EACH OF ADDITIONAL #4 & #5 REINFORCING STEEL TO BE USED AT ENGINEER'S

REQUIREMENTS SET FORTH IN ACI STANDARDS 301 AND 347.

# **FORMWORK AND SHORING:**

NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RESHORES SHALL MEET THE

#### **MASONRY PRISM TESTING:**

1 PRIOR TO BEGINNING WORK THE CONTRACTOR SHALL CONSTRUCT THREE (3) TEST PRISMS FOR TESTING. THEY SHALL BE CONSTRUCTED OF TWO (2) 8"x8"x16 PRISMS FOR TESTING, ONE (1) ON TOP OF THE OTHER, JOINED WITH TYPE "S" MORTAR, AND FILLED WITH 3,000 psi CONCRETE GROUT. PRISMS SHALL BE CURED FOR 28 DAYS. NO REINFORCING SHALL BE USED IN THE CONSTRUCTION OF THE

2. PRISMS SHALL BE MADE OF THE SAME MATERIALS, UNDER THE SAME CONDITION: AND INSOFAR AS POSSIBLE. WITH THE SAME BONDING ARRANGEMENTS AS FOR THE STRUCTURE. THE MOISTURE CONTENT OF THE UNITS AT THE TIME OF LAYING. CONSISTENCY OF MORTAR, AND WORKMANSHIP SHALL BE THE SAME AS WILL BE USED IN THE STRUCTURE. THE VALUE OF fm SHALL BE THE AVERAGE OF ALL SPECIMENS TESTED BUT SHALL BE NOT MORE THAN 125 PERCENT OF THE MINIMUM VALUE DETERMINED BY THE TEST, WHICHEVER IS LESS.

3. TESTING SHALL INCLUDE TESTS IN ADVANCE OF BEGINNING OPERATIONS AS DESCRIBED ABOVE, AND AT LEAST ONE (1) FIELD TEST DURING CONSTRUCTION FOR FACH 5 000 SOLIARE FEET OF WALL BUT NOT LESS THAN ONE (1) FIELD TEST MINIMUM IF TOTAL SQUARE FEET OF WALL FOR ENTIRE PROJECT IS LESS THAN 5.000 SF. ONLY WALLS INDICATED ON STRUCTURAL PLANS NEED BE TESTED.

4. THE COMPRESSIVE STRENGTH, f'm, SHALL BE COMPUTED BY DIVIDING THE ULTIMATE LOAD BY THE NET AREA OF THE MASONRY USED IN THE CONSTRUCTION

5. TEST PRISMS SHALL BE STORED FOR SEVEN DAYS IN AIR, AT A TEMPERATURE OF 70 DEGREES. PLUS OR MINUS 5 DEGREES. IN A RELATIVE HUMIDITY EXCEEDING 90% AND THEN IN AIR AT A TEMPERATURE OF 70 DEGREES. PLUS OR MINUM 5 DEGREES. UNTIL TESTED. THOSE CONSTRUCTED IN THE FIELD SHALL BE STORED UNDISTURBED FOR FROM 48 TO 96 HOURS UNDER WET MATERIAL TO SIMULATE 90% HUMIDITY, THEN TRANSPORTED TO LABORATORY FOR CONTINUED CURING AS DESCRIBED ABOVE.

6. NOT LESS THAN THREE (3) PRISM SPECIMENS SHALL BE MADE FOR EACH FIELD TEST TO CONFIRM THAT THE MATERIALS ARE AS ASSUMED IN THE DESIGN. THE STANDARD AGE OF TEST SPECIMENS SHALL BE 28-DAYS. BUT 7-DAY TESTS MAY BE USED, PROVIDED THE RELATION BETWEEN THE 7-DAY AND 28-DAY STRENGTHS OF THE MASONRY IS ESTABLISHED BY ADEQUATE TEST DATA FOR THE MATERIALS

#### MASONRY MATERIALS:

1. MASONRY UNITS SHALL MEET ASTM C90 TYPE I, GRADE N, FOR HOLLOW LOAD BEARING TYPE MASONRY WITH A UNIT STRENGTH OF 1,900 psi ON THE NET AREA (fm

2. MORTAR SHALL BE TYPE "M" (BELOW GRADE) OR "S" (ABOVE GRADE) AND SHALL MEET ASTM C270. GROUT SHALL BE 3,000 psi PÉA-GRAVEL CONCRETE AND SHALL MEET ASTM C476. MORTAR MIX DESIGN SHALL BE TESTED PRIOR TO CONSTRUCTION USING MORTAR TEST CUBES, WITH 7-DAY STRENGTH OF LABORATORY MIX EXCEEDING THE 28-DAY SPECIFIED DESIGN STRENGTH. GROUT SHALL BE TESTED PRIOR TO CONSTRUCTED USING PRISMS AS DESCRIBED ABOVE.

#### MASONRY AND REINFORCED MASONRY PLACEMENT:

1. ALL MASONRY SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE. MATERIALS TO BE LAID AND MATERIALS TO BE BUILT UPON SHALL BE FREE FROM

2 PROVIDE HOOKED DOWELS INTO FOOTINGS FOR ALL VERTICAL REINFORCING ABOVE AS SHOWN IN THE DRAWINGS. LAP SPLICES A MINIMUM OF 48 BAR DIAMETERS. AT THE OPTION OF THE CONTRACTOR, DOWELS MAY BE DRILLED AND EPOXIED INTO FOOTING IN LIEU OF HOOKS. EPOXY SHALL BE AS NOTED ON THIS SHEET UNDER 'CHEMICAL ANCHORS,' 6" MIN. EMBEDMENT FOR #5 OR SMALLER DOWELS, 8" MIN. EMBEDMENT FOR #6 DOWELS.

3. PROVIDE DUR-O-WALL (OR EQUAL PER SPECIFICATIONS) LADDER OR TRUSS HORIZONTAL JOINT REINFORCEMENT AT EACH SECOND COURSE IN RUNNING BOND. AND FACH COURSE IN STACKED BOND, UNLESS NOTED OTHERWISE, DISCONTINUE HORIZONTAL JOINT REINFORCEMENT AT CONTROL JOINTS

4. PROVIDE BOND BEAMS REINFORCED WITH (2) #5 BARS EVERY 6'-0" OF VERTICAL WALL, AT TOPS OF ALL MASONRY WALLS, AND WHERE SHOWN ON DRAWINGS. A BOND BEAM CORNERS AND TEE JOINTS, PROVIDE BENT BARS TO MATCH QUANTITY AND BAR SIZE IN THE BOND BEAM. LAPS IN BOND BEAMS SHALL BE 48 BAR DIAMETERS OR A MINIMUM OF 2'-0", WHICHEVER IS GREATER.

5. WHERE SHOWN ON THE DRAWINGS, CORES IN CONCRETE BLOCK UNITS SHALL BE FILLED WITH 3,000 psi CONCRETE GROUT FROM TOP OF FOOTING TO BOTTOM OF BEARING, OR TO THE TOP OF WALL, DEPENDING ON THE CONDITION. INSPECTION OF

6. WHERE REINFORCING STEEL IS CALLED FOR IN FILLED CORES, IT SHALL EXTEND FROM TOP OF FOOTING TO BOTTOM OF BEARING, OR TOP OF WALL, DEPENDING ON

7. WHERE REINFORCING STEEL IS INTERRUPTED BY AN OPENING IN THE WALL. THE QUANTITY OF BARS INTERRUPTED ARE TO BE MOVED TO EACH SIDE OF THE OPENING, HALF OF REINFORCING TO ONE SIDE AND REMAINING HALF TO THE OTHER SIDE. REINFORCING SHALL BE FROM TOP OF FOOTING TO TOP OF WALL. PROVIDE A MINIMUM OF (2) #5 VERTICAL REINFORCING BARS AT EACH JAMB. SEE PLAN NOTES AND/OR DETAILS FOR VERTICAL REINFORCING SPACING.

8. WHERE VERTICAL REINFORCING STEEL IS SPLICED IN MASONRY, PROVIDE A MINIMUM OF 48 BAR DIAMETERS, LAP SPLICE, UNLESS NOTED OTHERWISE 9. THE MINIMUM DISTANCE BETWEEN PARALLEL BARS, EXCEPT IN COLUMNS, SHALL BE NOT LESS THAN THE DIAMETER OF THE BAR EXCEPT THAT LAPPED SPLICES MAY

BE WIRED TOGETHER. THE CENTER TO CENTER SPACING OF BARS WITHIN A

COLUMN SHALL BE NOT LESS THAN 2 AND ONE-HALF TIMES THE BAR DIAMETER. 10 ALL BARS SHALL BE COMPLETELY EMBEDDED IN MORTAR OR CONCRETE REINFORCEMENT EMBEDDED IN HORIZONTAL MORTAR JOINTS SHALL HAVE NOT LESS THAN 5/8" MORTAR COVERAGE FROM THE EXPOSED FACE. ALL OTHER REINFORCING SHALL HAVE A MINIMUM COVERAGE OF ONE BAR DIAMETER OVER ALL BARS, BUT NOT LESS THAN 3/4", EXCEPT WHERE EXPOSED TO WEATHER OR SOIL IN

11. WHERE REINFORCING IS SHOWN TO BE LOCATED ALONG TWO FACES OF A CONCRETE BLOCK WALL, THE CONTRACTOR SHALL BREAK OUT THE SHELL OF THE LOWEST CONCRETE BLOCK TO GAIN ACCESS TO THE REINFORCING STEEL. THE REINFORCED STEEL SHALL THEN BE WIRED INTO ITS CORRECT POSITION, AND THE ACCESS HOLE COVERED. THE CONCRETE GROUT FILL SHALL BE PUDDLED OR VIBRATED TO ASSURE COMPLETE FILLING OF THE CORE

WHICH CASE THE MINIMUM COVERAGE SHALL BE 2".

12. REINFORCED MASONRY PIERS AND COLUMNS SHALL HAVE THE REINFORCING STEEL ACCURATELY LOCATED BY WIRING THE TOP AND BOTTOM OF ALL VERTICAL STEEL INTO ITS CORRECT POSITION. PROVIDE AN ACCESS HOLE AT THE BOTTOM OF ALL COLUMNS OR PIERS.

13. ALL REINFORCED HOLLOW UNIT MASONRY SHALL BE BUILT TO PRESERVE THE UNOBSTRUCTED VERTICAL CONTINUITY OF THE CELLS TO BE FILLED. WALLS AND CROSS WEBS FORMING SUCH CELLS TO BE FILLED SHALL BE FULLBEDDED IN MORTAR TO PREVENT LEAKAGE OF CONCRETE GROUT. ALL HEAD (OR END) JOINTS SHALL BE SOLIDLY FILLED WITH MORTAR FOR A DISTANCE IN FROM THE FACE OF THE WALL OR UNIT NOT LESS THAN THE THICKNESS OF THE LONGITUDINAL FACE SHELLS. BOND SHALL BE PROVIDED BY LAPPING UNITS IN SUCCESSIVE VERTICAL COURSES OR BY EQUIVALENT MECHNICAL ANCHORAGE.

A) VERTICAL CELLS TO BE FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED CONTINUOUS VERTICAL CELL MEASURING NOT

B) CLEANOUT OPENINGS SHALL BE PROVIDED AT THE BOTTOM OF ALL CELLS TO BE FİLLED AT EACH POUR OF CONCRETE WHERE SUCH CONCRETE POUR IS IN EXCESS OF 6' IN HEIGHT. ANY OVERHANGING MORTAR. OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED AND/OR CLEANED AT TIME OF INSPECTION AND PRIOR TO CORE FILLING. INSPECT AND SEAL ALL OPENINGS BEFORE CONCRETING.

C) VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 192 DIAMETERS OF THE REINFORCEMENT.

D) ALL CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLIDLY WITH CONCRETE. CONCRETE SHALL BE POURED IN LIFTS OF 8' MAXIMUM HEIGHT. AL CONCRETE SHALL BE CONSOLIDATED AT THE TIME OF POURING BY PUDDLING FOR LIFTS OF 4' OR LESS, OR BY VIBRATING FOR LIFTS GREATER THAN 4' CONCRETE SHOULD LATER BE CONSOLIDATED AGAIN BY PUDDLING, BEFORE PLASTICITY IS

E) WHEN TOTAL CONCRETE POUR EXCEEDS 8' IN HEIGHT, THE CONCRETE SHALL BE PLACED IN 4' MAXIMUM LIFTS. MINIMUM CELL DIMENSION SHALL BE 3".

F) WHEN CONCRETING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR OF CONCRETE 1 1/2" BELOW THE TOP OF THE UPPERMOST UNIT.

14. PROVIDE A MINIMUM OF 8" BEARING FOR ALL MASONRY LINTELS.

15. WHERE LINTEL BLOCKS ARE USED IN LIEU OF HOLLOW CONCRETE BLOCKS, THE REINFORCING STEEL SHALL BE ANCHORED TO THE LOWER STEEL OR DOWELS AND THE LINTEL BLOCKS LAID AROUND THE STEEL. THE CONCRETE FILL SHALL BE INSTALLED IN LIFTS NOT TO EXCEED 2' IN HEIGHT. THE REINFORCING STEEL SHALL BE MAINTAINED IN THE SAME POSITION AS THE DOWELS. STOP THE POUR OF THE CONCRETE 1 1/2" BELOW THE TOP OF THE UPPERMOST UNIT

16. SPECIFICATION REQUIREMENTS FOR COLD WEATHER AND HOT WEATHER MASONRY CONSTRUCTION SHALL BE MAINTAINED.

STRUCTURAL 2x WOOD COMPONENTS HAVE BEEN DESIGNED AS SOUTHERN YFI I OW PINE (SYP) OR HEM-FIR (HF) NO. 2 OR BETTER AND SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE FIBER STRESSES AND PROPERTIES:

MODULAS OF ELASTICITY (E) 1.300.000 PSI BENDING (Fb)

WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PROTECTED OR PRESSURE TREATED IN ACCORDANCE WITH AITC-109.

MEMBER SIZES SHOWN ARE NOMINAL UNLESS NOTED OTHERWISE.

BOLTS IN WOOD ARE MACHINE BOLTS, UNLESS OTHERWISE NOTED. MACHINE BOLTS SHALL HAVE A SHANK DIAMETER WITHIN 1/64" OF THAT SPECIFIED. BOLTS ARE ASTM 307 STEEL. BOLT HOLES IN WOOD SHALL BE 1/32" OVERSIZE. WHERE STEEL IS CONNECTED TO WOOD, HOLES IN STEEL SHALL BE 1/16" OVERSIZE. PROVIDE

STANDARD CUT WASHERS UNDER HEAD AND NUT WHERE BEARING IS AGAINST WOOD.

WHERE STEEL SIDE PLATES ARE USED FOR CONNECTION, THE PLATE SHALL BE USED

ALL WOOD ELEMENTS SHALL BE ATTACHED PER THE FASTENING SCHEDULE OF THE 2018 NCSBC (TABLE 2304.9.1) UNLESS OTHERWISE NOTED.

6. SEE ARCHITECTURAL DRAWINGS FOR WEATHER PROTECTION OF ALL EXPOSED WOOD MEMBERS.

# WOOD SHEATHING:

PLYWOOD ROOF, FLOOR AND WALL SHEATHING ARE DESIGNED AS APHRAGMS AND SHALL COMPLY WITH APPLICABLE PROVISIONS OF CHAPTER 23 OF

SHEATHING SHALL BE FASTENED IN ACCORDANCE WITH PLANS SHOWN SPECIAL NAILING REQUIREMENTS AND WITH THE APPROPRIATE SCHEDULE IN CHAPTER 23, UNLESS NOTED OTHERWISE

IN GENERAL, SHEETS SHALL BE 4'-0"x8'-0" AND SHALL BE LAID WITH FACE

PLIES ACROSS FRAMING MEMBERS AND WITH END JOINTS STAGGERED 4'-0". NO PANEL

SHALL BE USED WHICH IS LESS THAN 24" IN WIDTH ON FLOORS AND ROOFS. SHEATHING SHALL BE CONTINUOUS ACROSS 2 SPANS, MINIMUM. PRE-ENGINEERED WOOD ROOF TRUSSES:

1. ENGINEERED WOOD TRUSS SYSTEMS SHALL BE DESIGNED BY SUPPLIER TO THE CONFIGURATION AND LOAD-CARRYING CAPACITY SHOWN ON THE DRAWINGS AND SPECIFICATIONS. TRUSSES SHALL BE DESIGNED TO SUSTAIN SELF WEIGHT OF THE TRUSSES AND UNIFORM LOADS AS INDICATED ON THIS SHEET AND AS FOLLOWS:

> DEAD LOAD = 10 psf LIVE LOAD = 20 psf SNOW LOAD = 10 ps WIND LOAD = SEE DESIGN LOADS

DEAD LOAD = 5 psf BOTTOM CHORD:

2. WIND LOAD: WHEN CALCULATING NET UPLIFT REACTIONS, USE MAXIMUM RESISTING DEAD LOAD EQUAL TO 6 PSF ON THE TOP CHORD AND 0 PSF ON THE BOTTOM CHORD. 3. ROOF TRUSSES SHALL BE DESIGNED FOR A MAXIMUM VERTICAL DEFLECTION OF L/360 LIVE LOAD AND L/240 TOTAL LOAD.

LIVE LOAD = 10 psf

4. ALTERNATE TRUSS LAYOUTS ARE ACCEPTABLE ONLY AS A CHANGE ORDER WHICH WILL INCLUDE ENGINEERING CHARGES TO THE CONTRACTOR FOR REDESIGN FOR REVIEW PRIOR TO FABRICATION.

5. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL SHOW AND SPECIFY ALL CONNECTOR TYPES UTILIZED WITHIN TRUSSES, AS WELL AS CONNECTORS UTILIZED IN ALL OTHER CONNECTIONS AND ATTACHMENTS BETWEEN TRUSSES OR COMPONENTS SUPPLIED AS PART OF THE ENGINEERED TRUSS SYSTEM. AN ERECTION DRAWING SHALL BE INCLUDED. IDENTIFYING ALL TRUSS SYSTEM COMPONENTS. AS WELL AS ALL PERMANENT BRACING REQUIRED FOR TRUSS DESIGN. SHOP DRAWINGS SHALL BEAR THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEERED REGISTERED IN THE STATE OF THE PROJECT LOCATION

#### WOOD FRAMING CONNECTORS:

CONNECTOR MODEL NUMBERS SHOWN ARE "Strong-Tie" CONNECTORS AS MANUFACTURERED BY "SIMPSON Strong-Tie Co.", 1450 DOOLITTLE DR., PO BOX 1568, SAN LEANDRO, CA 94577. SUBSTITUTIONS ARE ACCEPTABLE ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER.

ALL CONNECTORS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-A653. CONNECTORS IN CONTACT WITH PRESSURE TREATED MATERIALS SHALL HAVE G-185 COATING. CONNECTORS NOT IN CONTACT WITH TREATED MATERIALS SHALL HAVE STANDARD G-60 COATING

# MANUFACTURED WOOD STRUCTURAL COMPONENTS:

1. MEMBERS DESIGNATED "LVL" SHALL BE LAMINATED VENEER LUMBER AS MANUFACTURED BY BOISE CASCADE CORPORATION (VERSA-LAM), TRUS JOIST CORPORATION (MICRO-LAM), ALPINE ENGINEERED PRODUCTS (AŚI-LVL), MITEK WOOD PRODUCTS (GANG-LAM LVL), OR APPROVED EQUAL, AND SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE FIBER STRESSES AND PROPERTIES:

MODULAS OF ELASTICITY (E) BENDING (Fb

1,900,000 PSI

2. MEMBERS DESIGNATED AS "GLU-LAM" SHALL BE STRUCTURAL GLUED LAMINATED TIMBER. MATERIAL, MANUFACTURE AND QUALITY CONTROL SHALL BE IN CONFORMANCE WITH ANSI/AITC-A190.1. "STRUCTURAL GLUFD LAMINATED TIMBER MEMBERS SHALL BE MARKED WITH A QUALITY CONTROL MARKING INDICATING CONFORMANCE WITH AITC-A190.1. ADHESIVE AND LAMINATIONS SHALL MEET THE REQUIREMENTS OF DRY CONDITION OF SERVICE, UNLESS OTHERWISE NOTED. A COAT OF END SEALER SHALL BE APPLIED TO ENDS OF MEMBERS IMMEDIATELY AFTER END MMING. LAMINATING COMBINATIONS SHALL PROVIDE THE FOLLOWING MINIMUM ALLOWABLE FIBER STRESSES AND PROPERTIES:

MODULAS OF ELASTICITY (E) BENDING (Fb) SHEAR (Fv) TENSION (Ft) COMP. PERP. (Fc I)

1.800.000 PSI 2.400 PSI 165 PSI 850 PSI 470 PSI

SPECIAL INSPECTION AND TESTING:

1 SPECIAL INSPECTION AND MINIMUM TESTING SHALL BE PERFORMED IN ACCORDANCE WITH 2018 NCSBC, TABLES 1704.3 (STEEL), 1704.4 (CONCRETE), AND 1704.5.1 (MASONRY).

2. INSPECTION & TESTING SHALL BE PROVIDED BY AN INDEPENDENT TESTING AGENCY HIRED AT THE OWNER'S EXPENSE. AGENCY INSPECTION PERSONEL SHALL MEET THE INSPECTOR QUALIFICATIONS FOR EACH MATERIAL ITEM AS INDICATED IN THE SPECIFICATIONS. ALL RE-TESTING DUE TO FAILURE OF ORIGINAL TEST SHALL BE PAID FOR BY THE GENERAL CONTRACTOR.

3. ANY MATERIAL OR PLACEMENT DEVIATIONS FROM MINIMUMS SHOWN ON THE DRAWINGS OR IN SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE

# STRUCTURAL ABBREVIATIONS: ABBREV. DEFINITION

BCX

B.O.xx

BOS

EXT

FTG

GALV

MECH

MFR

NTS

NWC

REINF

REQD

SCHD

SECT SHT

SOG

SPEC

STD

SYM

TCX

TOC

T.O.xx

UNO

VERT

WWM

SDS

REV

**ANCHOR BOLTS** ADJACENT ABOVE FINISHED FLOOR ARCHITECT BOTTOM CHORD EXTENSION BELOW FINISHED FLOOR BOTTOM OF xx **BOTTOM OF STEEL** 

BUILDING BEARING CANTILEVER CENTERLINE

CONTROL JOINT CLEAR CONCRETE MASONRY UNIT COL CONCRETE

CONSTRUCTION CONT CONTINUOUS CP COMPLETE PENETRATION NAIL PENNY WEIGHT DEFORMED BAR ANCHOR DBA

DOUBLE DEGREE DET,DTL DETAIL DIAMETER DIAG DIM DIAGONAI DIMENSION

DOWN DWGS DRAWINGS DWL DOWEL EACH EACH FACE **EXPANSION JOINT** 

DECK

EMBEDDED / EMBEDMENT FNGINFFR EOD EOS FDGF OF DECK EDGE OF STEEL **EQUIPMENT** 

**ELEVATION** 

EACH WAY **EXISTING EXPANSION EXTERIOR** FINISH FI OOR FLOOR DRAIN

**FOUNDATION** FACE OF MASONRY **FACE OF WALL FOOTING STEP FOOTING** 

FIELD VERIFY GAUGE GALVANIZED GRADE BEAM

HORIZONTAL HIGH STRENGTH EPOXY HOLLOW STRUCTURAL SECTION INSIDE FACE INTERIOR

KIPS = 1000 LBS KNEE BRACE KIPS PER SQUARE INCH KIPS PER LINEAR FOOT

LONG LEG HORIZONTAL LONG LEG VERTICAL LOCATIONS LAMINATED STRAND LUMBER

LAMINATED VENEER LUMBER LIGHT WEIGHT CONCRETE MAXIMUM MOMENT CONNECTION

MECHANICAL **MANUFACTURER** MIDDLE MINIMUM MISCELLANEOUS

ON CENTER

MASONRY PILASTER NUMBER NOMINAI NOT TO SCALE NORMAL WEIGHT CONCRETE

OUTSIDE FACE OPPOSITE HAND POWDER ACTUATED FASTENER

PRE-ENGINEERED POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH

PRESSURE TREATED REFERENCE REINFORCEMENT REQUIRED REVISION

SLIP CRITICAL **SCHEDULE** SELF DRILLING SCREW SIMILAR SLAB ON GRADE SPECIAL JOIST

**SPECIFICATION** SQUARE STANDARD STEEL SHORT WAY SYMMETRICAL TOP CHORD EXTENSION TOP AND BOTTOM TOP OF CONCRETE TOP OF STEEL

WELDED WIRE MESH

TOP OF WALL

TOP OF xx

**THICKNESS** 

TIE JOIST TYPICAL **UNLESS NOTED OTHERWISE** VERTICAL VERIFY IN FIELD WELDED WIRE FABRIC

13200 STRICKLAND ROAD SUITE 114, BOX 332 RALEIGH, NC 27613 p. 919.957.5100 - f. 919.957.5101 www.fdr-eng.com jfejfar@fdr-eng.com



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DESIGNED BY: DRAWN BY: APPROVED BY: PROJECT #: 23-436

06/18/2024 Date Revision SCO COMMENTS 09/30/2024

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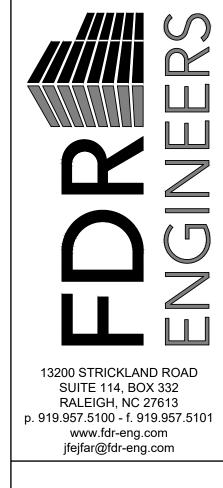
STATEMENT OF SPECIAL INSPECTIONS							
PROJECT INFORMATION DESIGN PROFESSIONAL INFORMATION CONSTRUCTION AND SITE							
PROJECT NAME	NCSPA SHIPPING AND RECEIVING	ARCHITECT/ENGINEER/CONSULTANT	Heath Hendrick, PE	INSPECTION CATEGORIES	Concrete, Soils		
PROJECT DESCRIPTION	COMMERCIAL	FIRM	FDR Engineers	SEISMIC DESIGN CATEGORY	В		
LOCATION	MOREHEAD CITY, NC	ADDRESS	121 KITTY HAWK DR., MORRISVILLE, NC 27560	WIND SPEED	144 MPH		
OWNER	-	PHONE	(919) 957-5100	EXPOSURE CATEGORY	D		

TYPE	CONTINUOUS SPECIAL	PERIODIC SPECIAL	ETE CONSTRUCTION  REFERENCED STANDARD	IBC REFERENCE
I. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS,	INSPECTION	INSPECTION	ACI 318 CH. 20, 25.2, 25.3,	
AND VERIFY PLACEMENT	-	Х	26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING:				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706;	-	Х	AWS D1.4	
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND			ACI 318: 26.6.4	-
c. INSPECT ALL OTHER WELDS	X			
3. INSPECT ANCHORS CAST IN CONCRETE	-	Χ	ACI 318: 17.8.2	-
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEM	BERS			
<ul> <li>a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS</li> </ul>	X		ACI 318: 17.8.2.4	-
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a		Х	ACI 318: 17.8.2	
5. VERIFY USE OF REQUIRED DESIGN MIX	-	Х	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF CONCRETE	Х	-	ASTM C172 ASTM C31 ASTM 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	1	X	ACI 318: 26.5.3-26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR:				
a. APPLICATION OF PRESTRESSING FORCES; AND	Х	-	ACI 318: 26.10	-
b. GROUTING OF BONDED PRESTRESSING TENDONS	х	-		
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	-	Х	ACI 318: CH. 26.8	-
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	-	Х	ACI 318: 26.11.2	-
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	Х	ACI 318: 26.11.1.2(b)	-

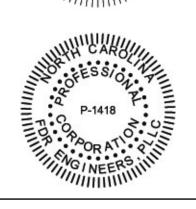
REQUIRED SPECIAL INSPECTIONS AND TEST OF SOILS		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	Х
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	-	Х
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	-	х
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	-	х

#### SPECIAL INSPECTION AND TESTING:

- 1. SPECIAL INSPECTION AND MINIMUM TESTING SHALL BE PERFORMED IN ACCORDANCE WITH 2018 NCSBC, TABLES 1704.3 (STEEL), 1705.3 (CONCRETE), AND 1705.2.3 (OPEN-WEB STEEL JOISTS AND JOIST GIRDERS).
- 2. INSPECTION & TESTING SHALL BE PROVIDED BY AN INDEPENDENT TESTING AGENCY HIRED AT THE OWNER'S EXPENSE. AGENCY INSPECTION PERSONEL SHALL MEET THE INSPECTOR QUALIFICATIONS FOR EACH MATERIAL ITEM AS INDICATED IN THE SPECIFICATIONS. ALL RE-TESTING DUE TO FAILURE OF ORIGINAL TEST SHALL BE PAID FOR BY THE GENERAL CONTRACTOR.
- 3. ANY MATERIAL OR PLACEMENT DEVIATIONS FROM MINIMUMS SHOWN ON THE DRAWINGS OR IN SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.







ACSPA SHIPPING AND RECEIVING

Sheet Title

Sheet Title

SPECIAL INSPECTIONS

DESIGNED BANN

DESI

 APPROVED BY:
 HMH

 PROJECT #:
 23-436

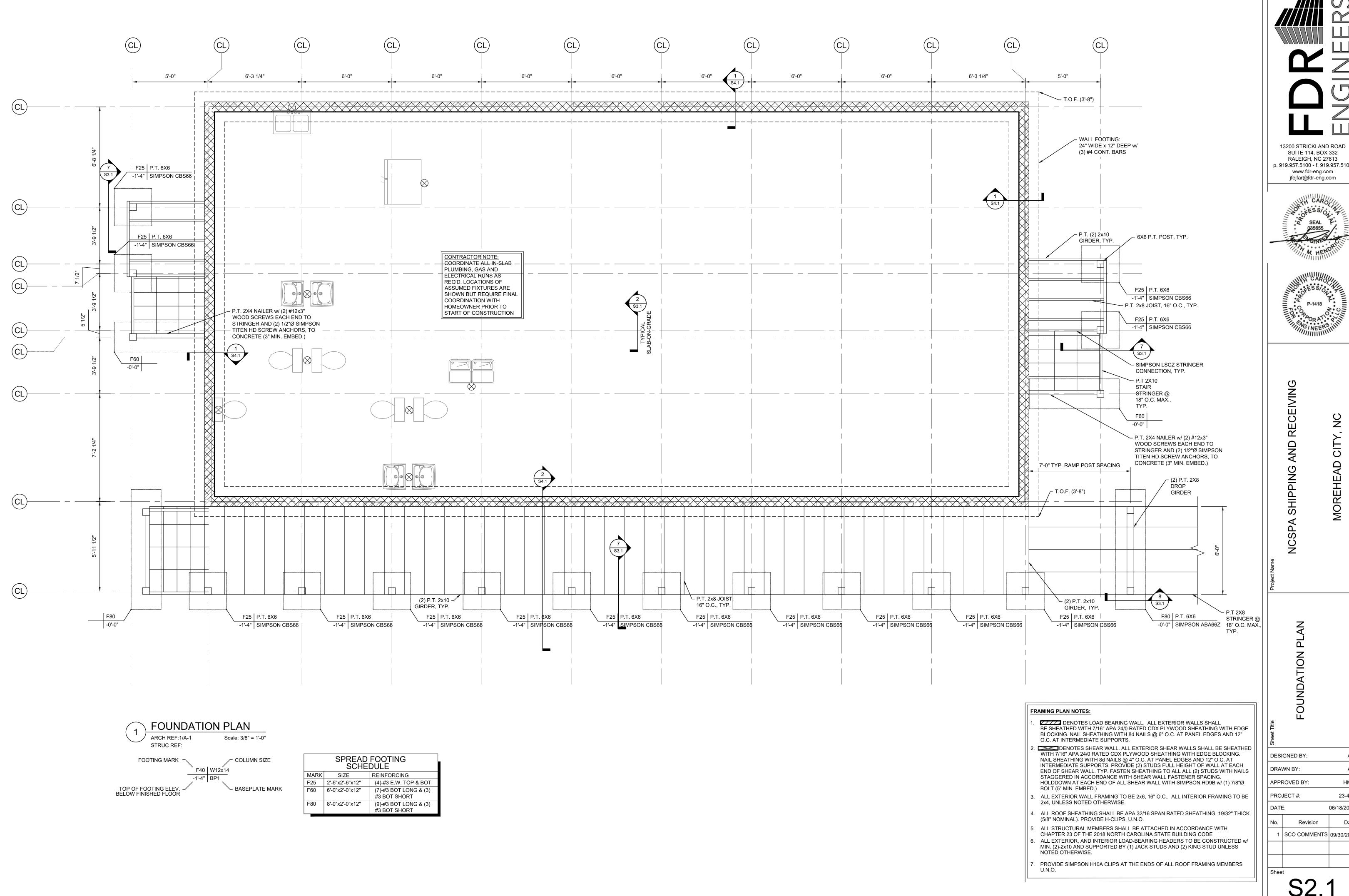
 DATE:
 06/18/2024

 No.
 Revision
 Date

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 SCO COMMENTS
 09/30/202

1 SCO COMMENTS 09/30/2024

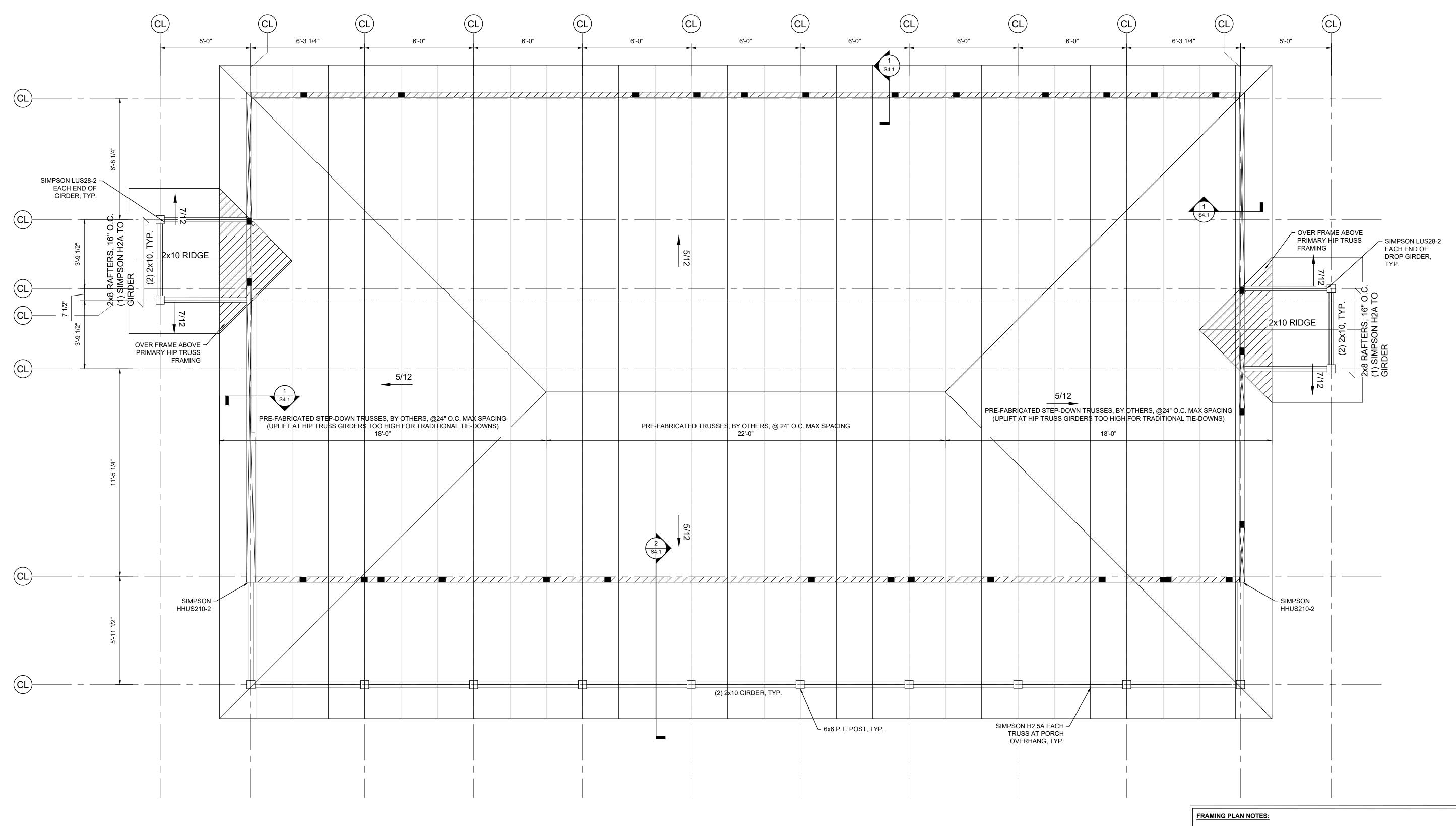
S1.2



p. 919.957.5100 - f. 919.957.5101

23-436 06/18/2024

1 SCO COMMENTS 09/30/2024



DENOTES LOAD BEARING WALL. ALL EXTERIOR WALLS SHALL BE SHEATHED WITH 7/16" APA 24/0 RATED CDX PLYWOOD SHEATHING WITH EDGE BLOCKING. NAIL SHEATHING WITH 8d NAILS @ 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.

DENOTES SHEAR WALL. ALL EXTERIOR SHEAR WALLS SHALL BE SHEATHED WITH 7/16" APA 24/0 RATED CDX PLYWOOD SHEATHING WITH EDGE BLOCKING. NAIL SHEATHING WITH 8d NAILS @ 4" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. PROVIDE (2) STUDS FULL HEIGHT OF WALL AT EACH END OF SHEAR WALL. TYP. FASTEN SHEATHING TO ALL ALL (2) STUDS WITH NAILS STAGGERED IN ACCORDANCE WITH SHEAR WALL FASTENER SPACING. HOLDDOWN AT EACH END OF ALL SHEAR WALL WITH SIMPSON HD9B w/ (1) 7/8"Ø BOLT (5" MIN. EMBED.)

3. ALL EXTERIOR WALL FRAMING TO BE 2x6, 16" O.C.. ALL INTERIOR FRAMING TO BE 2x4, UNLESS NOTED OTHERWISE.

4. ALL ROOF SHEATHING SHALL BE APA 32/16 SPAN RATED SHEATHING, 19/32" THICK

(5/8" NOMINAL). PROVIDE H-CLIPS, U.N.O.

ALL STRUCTURAL MEMBERS SHALL BE ATTACHED IN ACCORDANCE WITH CHAPTER 23 OF THE 2018 NORTH CAROLINA STATE BUILDING CODE . ALL EXTERIOR, AND INTERIOR LOAD-BEARING HEADERS TO BE CONSTRUCTED w/ MIN. (2)-2x10 AND SUPPORTED BY (1) JACK STUDS AND (2) KING STUD UNLESS NOTED OTHERWISE.

PROVIDE SIMPSON H10A CLIPS AT THE ENDS OF ALL ROOF FRAMING MEMBERS

DESIGNED BY: DRAWN BY: APPROVED BY: PROJECT #: 23-436 06/18/2024

CS

13200 STRICKLAND ROAD SUITE 114, BOX 332 RALEIGH, NC 27613 p. 919.957.5100 - f. 919.957.5101 www.fdr-eng.com jfejfar@fdr-eng.com

1 | SCO COMMENTS | 09/30/2024 |

SCO 24-28316-01A

TRUSS DESIGN NOTES: TRUSS MANUFACTURER SHALL BE RESPONSIBLE FOR FINAL TRUSS DESIGN, TO INCLUDE CALCULTIONS, LAYOUT, AND ALL NECESSARY BRACING AND BRIDGING DETAILS AS REQ'D. FOR PERMANENT STABILITY OF TRUSS SYSTEM.

ROOF FRAMING PLAN

STRUC REF:

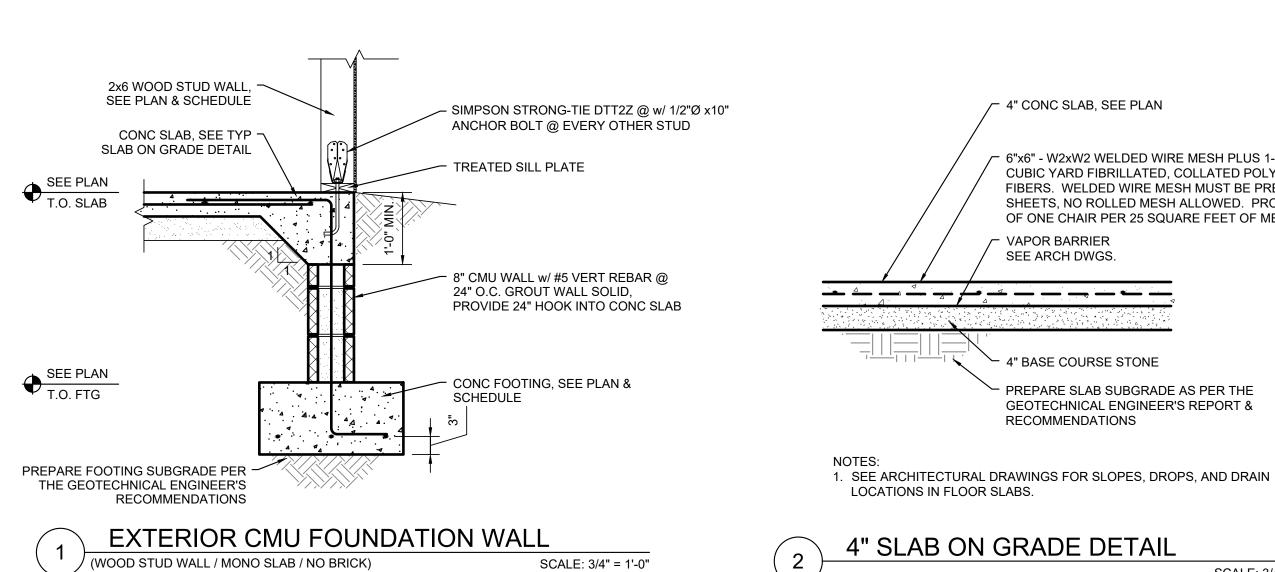
TRUSSES AND THEIR COMPONENTS ARE TO BE DESIGNED TO RESIST THE COMPONENT AND CLADDING WIND PRESSURES OUTLINED ON SHEET \$1.0.

4. TRUSSES ARE TO BE DESIGNED TO SUPPORT THE FOLLOWING SUPERIMPOSED LOADING UNLESS NOTED OTHERWISE:

TOP CHORD LL: 20 PSF 10 PSF\* TOP CHORD DL: BOTTOM CHORD DL: 5 PSF\*

NET UPLIFT (MAIN): 30.2 PSF NET UPLIFT (PORCH): 85 PSF

\*DEAD LOADS ARE CONSIDERED TO BE SUPERIMPOSED, AND DO NOT INCLUDE TRUSS SELF-WEIGHT



4" CONC SLAB, SEE PLAN 6"x6" - W2xW2 WELDED WIRE MESH PLUS 1-1/2 lbs. PER CUBIC YARD FIBRILLATED, COLLATED POLYPROPYLENE FIBERS. WELDED WIRE MESH MUST BE PREFABRICATED SHEETS, NO ROLLED MESH ALLOWED. PROVIDE A MINIMUM OF ONE CHAIR PER 25 SQUARE FEET OF MESH SUPPORTED. VAPOR BARRIER SEE ARCH DWGS. - 4" BASE COURSE STONE PREPARE SLAB SUBGRADE AS PER THE GEOTECHNICAL ENGINEER'S REPORT & RECOMMENDATIONS

- 3/16" SAWCUT CONTROL JOINT. HAND CUT ENDS TO 3/4" MAX. FROM VERTICAL SURFACES. CLEAN JOINT AND FILL w/ ELASTOMERIC JOINT SEALANT, CUT JOINT TO A DEPTH OF 1/4 OF THE SLAB THICKNESS SLAB REINFORCING, SEE TYP SLAB ON

GRADE DETAIL

1. CONTRACTORS OPTION - USE REMOVABLE CONTROL JOINT MATERIAL

2. SLAB ON GRADE CONTROL JOINTS SHALL BE TOOLED OR SAWCUT. THE JOINT PATTERN SHALL BE APPROXIMATELY SQUARE AND LIMITED TO

AN AREA NOT TO EXCEED 225 S.F. JOINTS SHALL BE CUT WITHIN 12

HOURS OF POURING SLAB. SEE PLAN FOR PROPOSED JOINT LAYOUT.

SUCH AS "ZIP STRIP", "STRESSLOCK", OR APPROVED EQUAL

FINAL JOINT LAYOUT TO BE DETERMINED BY THE GENERAL

 GROUT SOLID AT ALL REINFORCED CELLS U.N.O. (TYP.) **TYPICAL TYPICAL** 

12" CMU

CMU WALL REINFORCING SCHEDULE **VERT REINF** REMARKS APPLICATION THICKNESS EXTERIOR WALLS 8" CMU (1) #5 @ 32" O.C.

# NOTES: 1. ALL MASONRY SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE.

- 2. LAP SPLICES A MINIMUM OF 48 BAR DIAMETERS.
- 3. PROVIDE DUR-O-WALL (OR EQUAL) LADDER OR TRUSS HORIZONTAL JOINT REINFORCEMENT AT EACH SECOND COURSE IN RUNNING BOND, AND EACH COURSE IN STACKED BOND, UNLESS NOTED OTHERWISE. DISCONTINUE HORIZONTAL JOINT REINFORCEMENT AT CONTROL JOINTS.
- . PROVIDE BOND BEAMS REINFORCED WITH (2) #5 BARS EVERY 6'-0" OF VERTICAL WALL, AT TOPS OF ALL MASONRY WALLS, AND WHERE SHOWN ON DRAWINGS. FIRST BOND BEAM MAY BE PLACED AT TOP OF DOOR OPENINGS, 8'-0" MAX. AT BOND BEAM CORNERS AND TEE JOINTS, PROVIDE BENT BARS TO MATCH QUANTITY AND BAR SIZE IN THE BOND BEAM. LAPS IN BOND BEAMS SHALL BE 48 BAR DIAMETERS OR A MINIMUM OF 2'-0", WHICHEVER IS GREATER.

CONTRACTOR.

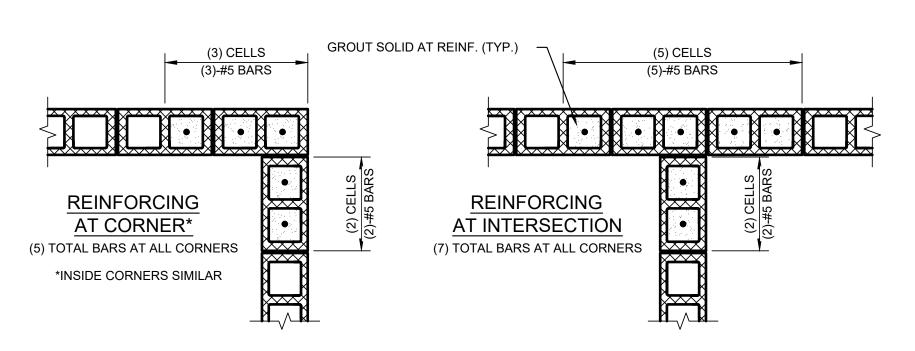
4" SLAB ON GRADE DETAIL SCALE: 3/4" = 1'-0"

4" SLAB ON GRADE CONTROL JOINT

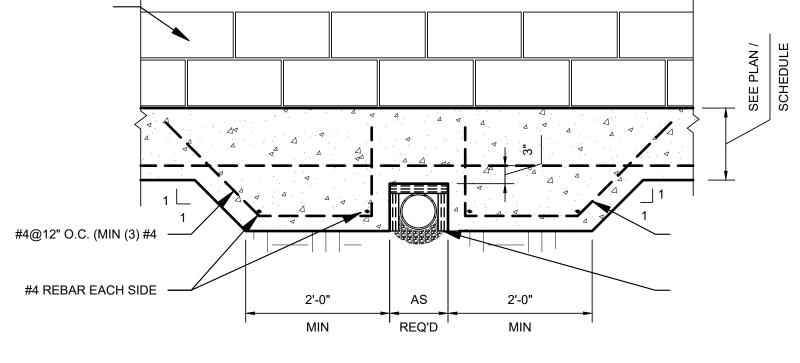
CMU WALL REINFORCING SCHEDULE

8" CMU

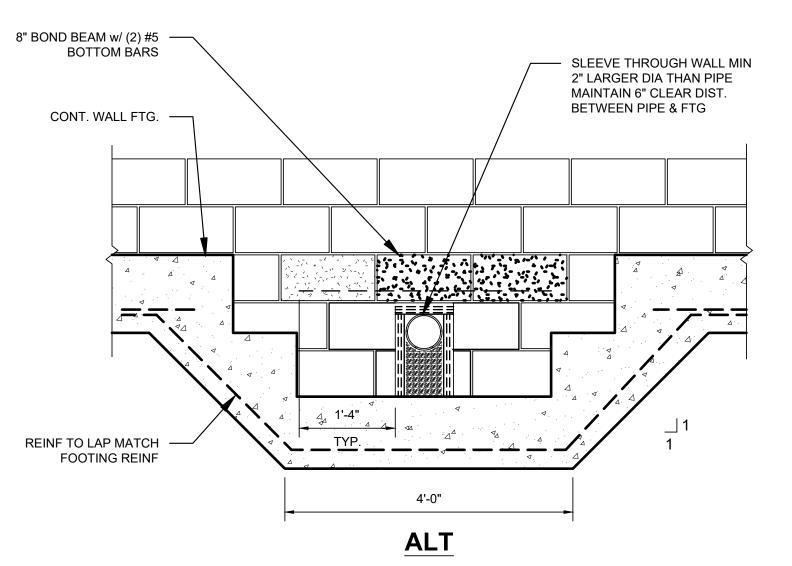
SCALE: 3/4" = 1'-0"



ADDITIONAL REINFORCING AT CORNERS AND INTERSECTIONS SCALE: 3/4" = 1'-0"

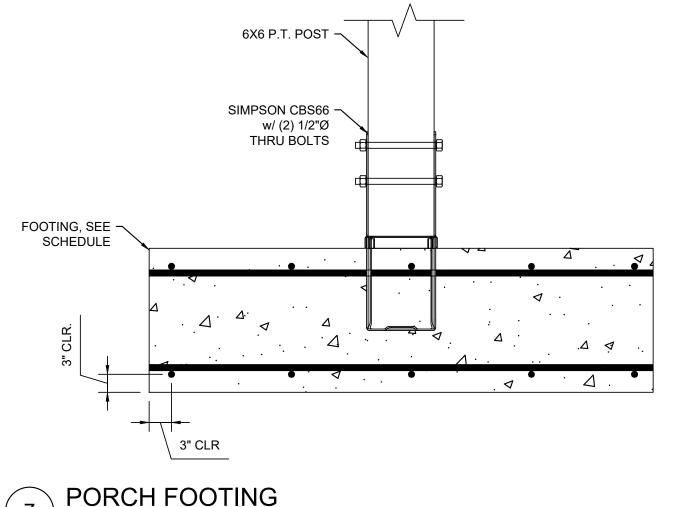


# PIPE THRU FTG.

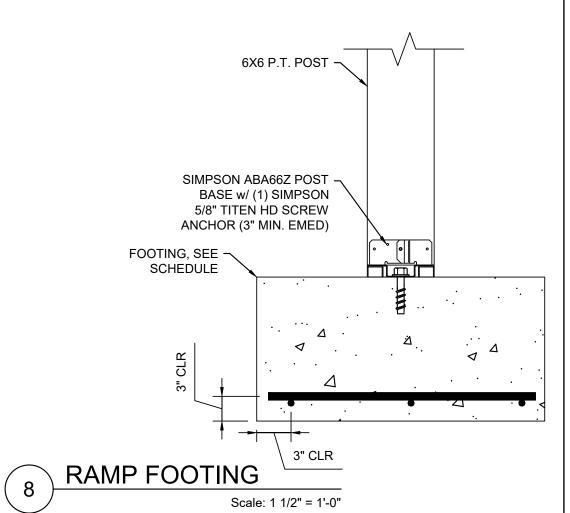


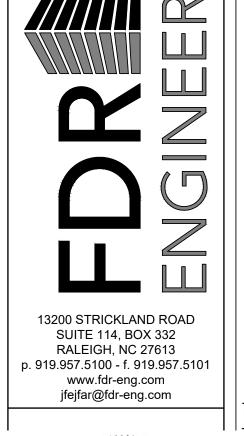
TYPICAL UTILITIES BELOW FOOTING

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

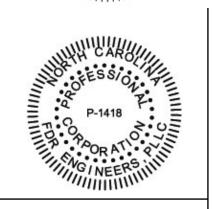










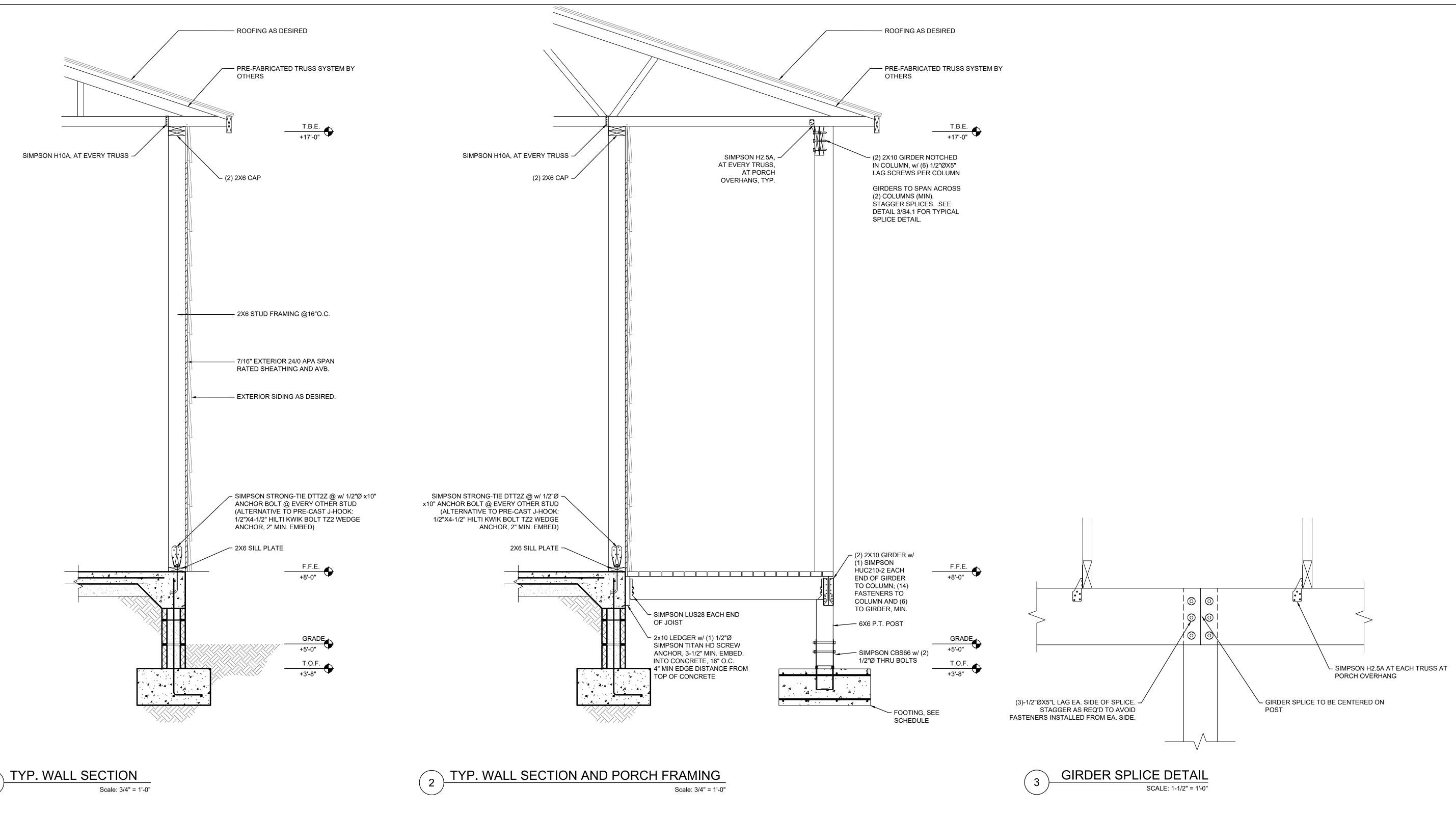


RECEIVING

DESIGNED BY: DRAWN BY: APPROVED BY: 23-436 PROJECT #:

1 SCO COMMENTS 09/30/2024

SCO 24-28316-01A



13200 STRICKLAND ROAD SUITE 114, BOX 332 RALEIGH, NC 27613 p. 919.957.5100 - f. 919.957.5101 www.fdr-eng.com jfejfar@fdr-eng.com RECEIVING SHIPPING NCSPA SECTIONS DESIGNED BY: DRAWN BY: APPROVED BY: 23-436 PROJECT #: 06/18/2024 Revision 1 | SCO COMMENTS | 09/30/2024 |

### DIVISION 15A - PLUMBING

- 1.1 DESCRIPTION OF THE WORK
- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following: 1. Plumbing fixtures, water heaters, and any other
- equipment necessary. 2. Cold and hot water piping and insulation.
- DWV piping.
- 4. Connection of all equipment; drain, vent,
- B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply.
- 1. The National Electrical Code. 2. 2018 N.C. Building Code: Plumbing, and all applicable category codes. 3. American Society of Sanitary Engineering Standard 1010.
- 4. All local codes and ordinances. C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications
- require, the codes shall govern. D. The Plumbing Contractor shall be licensed in the State of
- North Carolina and have all local licenses required for the work.
- E. Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same. 1.2 INTENT
- A. The intent of these specifications and accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Plumbing Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner. The PC shall determine and coordinate with existing conditions.
- 1.3 COORDINATION A. Coordinate work with other contractors. Notify Architect of
- apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations. B. Locations shown are approximate. The Plumbing Contractor shall refer
- to the architectural drawings for placement of equipment, fixtures, etc. Where locations are not clear, the Contractor shall obtain the exact locations from the Architect. C. Coordinate all exterior piping connections w/Architect, site contractor/plans.
- Verify manhole elevations and provide backwater valves as required if flood level rims are below next upstream manhole cover elevation. Fixtures with flood level rims above upstream manhole shall not discharge thru bw valve. Notify engineer of backwater valve requirement, any issue prior to bid. 1.4 SHOP DRAWINGS
- A. Shop drawings shall be submitted for plumbing fixtures and for pipe. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly

#### PART 2 - PRODUCTS

- 2.1 FIXTURES
- A. Each fixture shall be properly supported from the building structure as required to the end effect that all fixtures and accessories will be held rigidly in place. Water pipes supplying the fixtures must also be held rigidly in place.
- B. Provide loose key angle stops and chrome plated supply pipe water supplies to fixtures.
- C. All exposed piping traps and accessories for fixtures shall be chrome plated. Provide chrome plated escutcheon plates where pipes enter walls.
- D. Provide shutoff valves for all sinks, water heaters, toilets, washing machines,
- refrigerator icemaker, exterior hose bibbs and all other plumbing fixtures. E. Provide trap primers for all floor drains in areas not served by hose bibbs

#### 2.2 PIPING

- A. Drain-Waste-Vent: All DWV piping shall be Schedule 40 PVC-DWV u.o.n., with the following exceptions: Use cast iron piping in all return air plenums, penetrations of rated walls/floors/ceilings, and in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. ABS or cast iron piping shall be used for drainage/discharge with a
- temperature greater than 140 deg. F for a minimum distance of 10'-0". B. Hot and cold water piping above grade: Type "L" copper w/solder joints (ASTM-B88), hard drawn with wrought copper fittings (ANSI B16.22). PEX piping with copper fittings may be used with owner/tenant approval and as allowed per code. Copper piping shall be used in areas/walls adjacent to B. cooking equipment exhaust hoods. Review Arch. and Mech. drawings.
- C. Cold water piping below grade: Type "K" copper (ASTM-88A) soft drawn.
- Hangers: Use pipe hangers where required on 8-foot centers with saddles to avoid crushing insulation.
- E. Solder: 95/5. Lead free.
- F. Unions: Provide unions where indicated on drawings, in long runs of piping (except drainage) and at equipment to provide convenient disassembly. Provide dielectric unions when connecting copper tubing to equipment and piping made of ferrous materials.
- 2.3 CLEANOUTS
- A. Hex plugs in rough areas: Recessed plugs with cover plates in
- 2.4 SHOCK ARRESTERS
- Provide shock arresters as required by codes, manufacturer's recommendations and accepted industry standards for qualify construction. Provide for all quick closing valves.
- PART 3 EXECUTION
- 3.1 CONNECTIONS
- A. This contract includes complete connection of cold water, hot water, drainage, and vent piping as required. All fittings, valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.
- The connection to water closets shall be made watertight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on
- C. Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.

#### 3.2 SERVICE ACCESS

- A. All valves and accessories shall be insulated so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other components in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.
- 3.3 ROUTING OF PIPING
- A. Coordinate routing of piping with others, line up work true to or at right angle to adjacent surfaces and in a workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines, to prevent vibration, and to secure piping place.

ALL MOUNTING HEIGHTS SHALL MEET THE NCSBC AND ADA.

EWC DETAIL

SCALE: NOT TO SCALE

# B. Space pipe hangers per NCSBC- Plumbing Sect. 308.5.

- C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.
- All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R-6.5 min.) in unconditioned areas. See NCSBC—Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insul ation per Sect. C404.4 of the NCSBC 2018 Energy Conservation Code.
- Provide pre-fabricated insulation kits for all sink and lavatory exposed drain and supply piping.
- 3.5 INSPECTIONS AND TESTS
- A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water— and air—tight.
- B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.
- 3.6 STERILIZATION OF PIPING
- A. Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution, introduced into the system in an approved manner. The sterilizing solution shall remain in the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.

#### 3.7 SERVICE PRESSURE

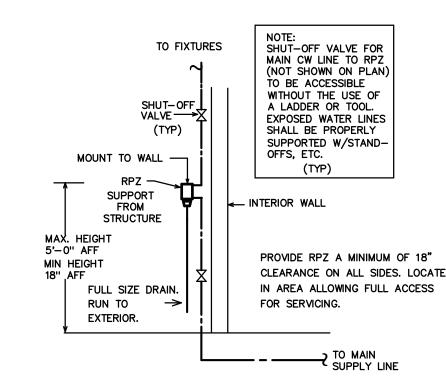
A. Provide approved water-pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSBC—Plumbing Sect. 604.8.

#### 3.8 DRAINDOWN

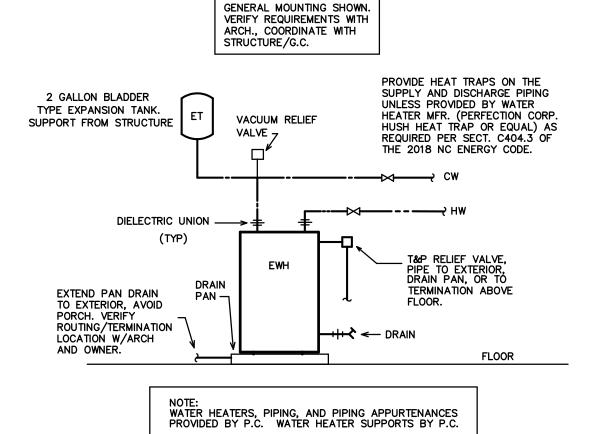
- A. Contractor to provide for complete plumbing system drain down.
- 3.9 CLEAN UP
- A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work. In addition, upon completion of construction, clean, wash, and/or polish all fixtures, equipment and exposed material and leave them bright and clean.

#### 3.10 GUARANTEES

- A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.
- B. Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.









# GENERAL NOTES - PLUMBING

- 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
- 2. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE PLUMBING CONTRACTOR (PC) SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC).
- 3. THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO
- PURCHASING MATERIALS AND INSTALLATION AND ALL DISCREPANCIES OR INTERFERENCES BROUGHT TO THE ENGINEERS ATTENTION.
- 4. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. THE PC SHALL PROVIDE ALL MISC. ITEMS NEEDED FOR A COMPLETE SYSTEM REGARDLESS IF NOTED ON THE DRAWINGS OR NOT. FOR DIMENSIONS REFER TO ARCHITECTURAL PLANS.
- 5. THE GC SHALL PROVIDE ALL WALL, FLOOR AND ROOF OPENINGS OF THE SIZE AND LOCATION REQUIRED BY THE PC AND SHALL BE RESPONSIBLE FOR PAINTING AND FLOOR FINISHES. THE PC SHALL PROPERLY SEAL ALL PENETRATIONS AND PROVIDE ESCUTCHEON PLATES AT ALL FINISHED
- 6. ALL NEW WATER PIPING SHALL BE INSTALLED TIGHT TO STRUCTURE, ADEQUATELY SUPPORTED AND PROTECTED AND PROPERLY PITCHED TO ALLOW TOTAL DRAINAGE.
- 7. ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED FOR A MINIMUM OF 15 MINUTES AT A MINIMUM OF 100 PSIG BEFORE COVERING AND ALL LEAKS CORRECTED. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
- 8. PROVIDE MIN. 18" SHOCK ABSORBERS WITH STOPS ON ALL HOT AND COLD WATER FIXTURE RUNS AS REQUIRED BY CODE.
- 9. VENT LINES SHALL SLOPE UP TO ALL STACKS AND TERMINATE A MIN. OF 12" ABOVE ROOF LINE.
- 10. PROVIDE CUT SHEETS ON ALL PLUMBING FIXTURES FOR ARCHITECT AND OWNER APPROVAL PRIOR TO ORDERING ANY FIXTURES.
- 11. PROVIDE/VERIFY HOT WATER TO FIXTURES AT 110 DEGREES (MAX) F. PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE (WATTS LFUSG-B 'LEAD FREE' GUARDIAN OR EQUAL) FOR ALL LAVATORIES AS REQUIRED. VERIFY VALVE LOCATION, INSTALL IN MAINTENANCE ACCESSIBLE AREA.

#### SYMBOL LEGEND - PLUMBING SYMBOL **DESCRIPTION** (U.O.N.)

WASTE PIPING (W) \_\_\_\_\_ VENT PIPING (V) COLD WATER PIPING (CW) HOT WATER PIPING (HW)

SHUT-OFF VALVE DIELECTRIC UNION

WALL/HORIZONTAL CLEANOUT wco/Hco

CLEANOUT FINISH FLOOR

UNLESS OTHERWISE NOTED

CLEANOUT FINISH GRADE CONCRETE COLLAR AND BRONZE COVER VENT THRU ROOF (VTR)

ABOVE FINISHED FLOOR A.F.F.

AIR ADMITTANCE VALVE

LOAD SUMMARY - PLUMBING

33.0 37.5

#### PLUMBING FIXTURE SCHEDULE ALTERNATE MANUFACTURER/MODEL ALTERNATE MANUFACTURER/MODEL DESCRIPTION ELECTRIC WATER COOLER (HI-LO ADA, FILTERED REFRIGERATED, ACCESSORY APRON FOR HIGH UNIT) HALSEY-TAYLOR MODEL #HTHBWF-OVLSER-I. OASIS MODEL #M8CRSBF ACCESSORY APRON HTOVLAPR. ELKAY LZWS-LRPBM28K WITH BOTTLE FILLER, ACCESSORY CANE APRON LKAPR1. COORDINATE WITH STNLS. STL. ACCESSORY APRON. ARCH FOR MOUNTING HEIGHTS, VERIFY MODEL FOR HI/LO LOCATIONS (1-LOW/ADA HEIGHT, 1-HIGH). ELECTRIC WATER HEATER RHEEM #PROE20-1-RH-POU BRADFORD WHITE #RE120U6 -2500W A.O. SMITH MODEL EJCS-20, 19 GALLON, 2500 WATTS, 120V, 3/4" INLET AND AMTROL"ST-5-C EXPANSION TANK. STATE ETC-2X EXPANSION TANK. OUTLET. AO SMITH MODEL #PMC-2 EXPANSION TANK. FREEZE PROOF RECESSED HOSE BIBB ENCASED IN FLUSH-TO-WALL BOX ZURN Z-1320-C, 3/4" NON FREEZE WALL HYDRANT W/INTEGRAL BACKFLOW PREVENTER, WATTS #HY-330. JAY R. SMITH #5509QT. ENCASED WITH KEY LOCK. VERIFY WALL THICKNESS. PROVIDE WALL BOX AS REQUIRED-COORDINATE W/BLDG. OWNER, TENANT, ARCH., G.C. VERIFY MOUNTING LOCATION. LAVATORY (ACCESSIBLE, WALL MOUNT) KOHLER GREENWICH #K-2032 WITH ELJER MURRAY II #051-0244 WITH AMERICAN STANDARD "LUCERNE" # 0356.421 WHITE WITH CONCEALED ARM CARRIER AND DRAIN HYDROTEK 7000SLE SOLAR SENSOR FAUCET. TOTO TEL3GS10 SOLAR SENSOR FAUCET. ASSEMBLY (7723.018). ADA COMPLIANT. FURNISH WITH SLOAN OPTIMA EAF-275 SOLAR POWERED FAUCET. SINK MODEL FOR SINGLE CENTER HOLE. 3/4" REDUCED PRESSURE BACKFLOW PREVENTER ZURN #34-975XL FEBCO #850-QT-FZ WATTS MODEL #LF009M3QT, 3/4" REDUCED PRESSURE BACKFLOW PREVENTER, 'LEAD FREE' CONSTRUCTION. VERIFY INSTALLATION LOCATION/CLEARANCES. BREAK ROOM SINK ELKAY LR2918 DOUBLE BASIN STAINLESS STEEL SINK (MODEL LRAD2918 IF ADA AMERICAN STANDARD "PEKOE" #18DB6291800.075 RUVATI #RVH7200 WITH DELTA #27C4944 FAUCET COMPLIANCE REQUIRED), 18 GA., SELF-RIMMING, FURNISHED WITH THREE FAUCET WITH AMERICAN STANDARD "MONTERREY" #7500.1 HOLES AND CENTER DRAIN. PROVIDE ELKAY COMMERCIAL FAUCET MODEL LK810AT08L2 FAUCET WITH TWO LEVER HANDLES, CHROME PLATED BRASS P-TRAP AND SHUT-OFF VALVES. COORDINATE EXACT UNIT WITH TENANT AND GENERAL CONTRACTOR. COORDINATE SIZE WITH CABINETRY PRIOR TO ORDERING. ICE MAKER VALVE BOX W/HAMMER ARRESTER SIOUX CHIEF OXBOX IPS CORP. IMOB OATEY ICE MAKER BOX 38570 WITH 1/4 TURN BALL VALVE AND HAMMER ARRESTER. WATER CLOSET (ADA FLUSH TANK) ZURN #Z5560 AMERICAN STANDARD "CADET" #2467100.020 KOHLER HIGHLINE WATER CLOSET, K-3979, ADA COMPLIANT 1.6 GPF. PROVIDE PROPER OPEN FRONT ADA SEAT, K-7637 SUPPLY AND STOP, WAX SEAL, CLOSET BOLT KIT. PROVIDE MODEL WITH FLUSH CONTROL ON SIDE OPPOSITE GRAB BAR.

\*OR APPROVED EQUAL, SUBMIT ALL ITEMS FOR APPROVAL BY TENANT AND ARCHITECT PRIOR TO ORDERING. ALL OTHER PLUMBING FIXTURES SHOWN ARE PROVIDED BY THE TENANT AND INSTALLED BY THE PLUMBING CONTRACTOR. SEE PLANS FOR NUMBER AND LOCATION. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SERVED. PROVIDE PRE-FABRICATED INSULATION KITS FOR ALL SINK AND LAVATORY EXPOSED DRAIN AND SUPPLY PIPING, PER SECTION 606.6 OF ICC A117.1.

**ENGINEER** 

BURKE DESIGN GROUP 3305–109 DURHAM DRIVE RALEIGH, NC 27603 PHONE: (919) 771-1916 FAX: (919) 779-0826

| Coastal

Institure of Architects

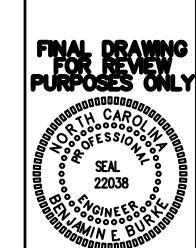
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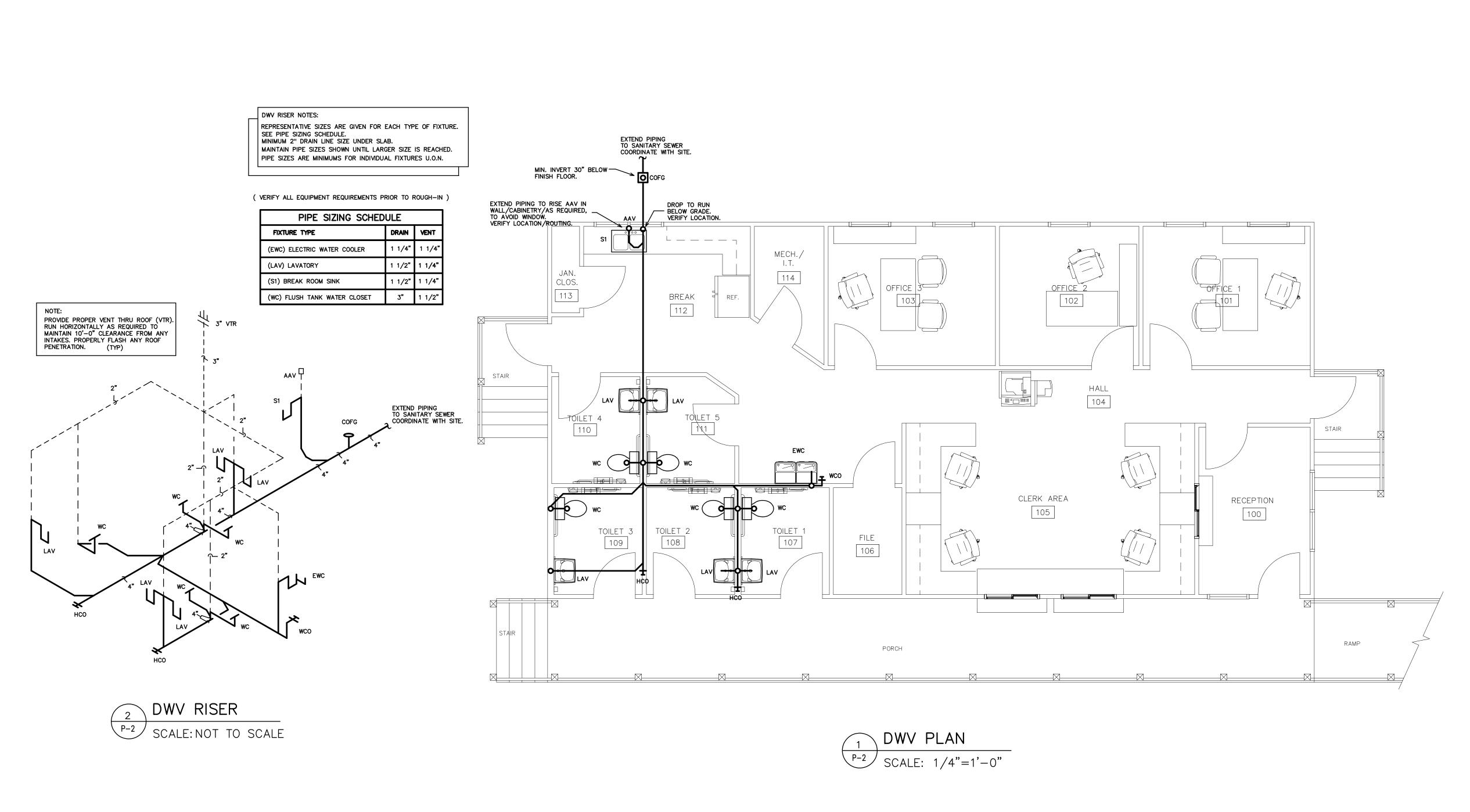


PLUMBING SPECIFICATIONS

SUED: **7-10-2024** NWG RY: BEB CKD BY: EVISIONS

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PURPOSES ONLY

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DWY PLAN

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ENGINEER

BURICE DESIGN GROUP

3305-109 DURHAM DRIVE

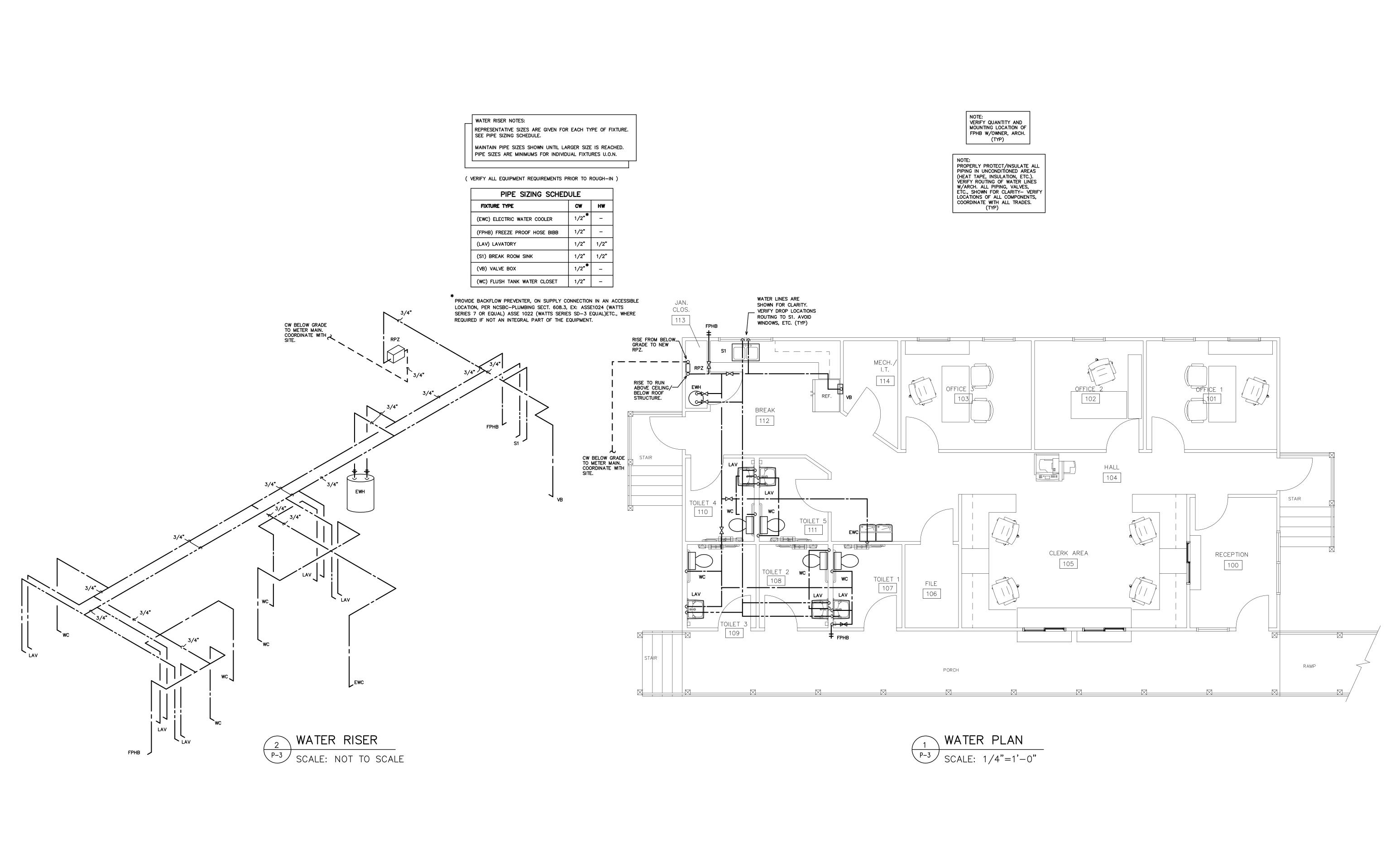
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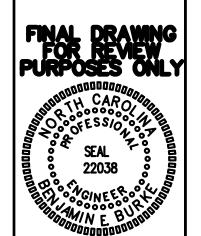
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SCO ID# : 24-28316-01A



WATER PLAN

23027
ISSUED: 7-10-202

ISSUED: 7-10-202DWG BY: .
CKD BY: BEB
REVISIONS

BURICE DESIGN GROUP

3305-109 DURHAM DRIVE

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**ENGINEER** 

RHAM DRIVE 27603
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	HVAC EQUIPMENT SCHEDULE							
HVAC SYSTEM #1								
AHU-1 DIRECT EXPANSION FAN COIL UNIT	**  CARRIER MODEL #FX4DNF043, 4 WAY, MULTIPOISE FAN COIL UNIT. 6 KW HEATER.  NOMINAL CAPACITY = 42,000 BTUH. 1400 CFM NOMINAL. PROVIDE HARD SHUT—OFF TXV VALVE.  3.5 TON NOMINAL. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR.  1/2HP, 4.1A MOTOR FLA, 28.9A HEAT FLA, 208V, 1 PH, 44.7A MCA, 45A MOCP AHU & HEAT.							
HP-1 OUTDOOR HEAT PUMP UNIT	* CARRIER MODEL #25HCC542A0030, 3.5 TON OUTDOOR HEAT PUMP UNIT, 15 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 208 VOLT, 1 PHASE.  COMP 21.1A RLA, FAN 1.2A FLA, OUTDOOR HEAT PUMP 28.5A MCA, 40A MOCP.							

<sup>\*</sup> OR APPROVED EQUAL BY TRANE OR LENNOX.

AIR DISTRIBUTION SCHEDULE								
MARK	* MANUFACTURER	MODEL NO.	NECK SIZE	FACE SIZE	MATERIAL	SERVICE	NOTES	
A	CARNES	RTDBH	4" X 12"	6" X 14"	STEEL	SUPPLY	DUCT, SIDE WALL, OR CEILING MOUNTED	
RA	CARNES	RSABH	8" X 12"	10" X 14"	STEEL	RETURN	WHITE, SIDEWALL OR CEILING MOUNTED	
RB	CARNES	RSABH	6" X 12"	8" X 14"	STEEL	RETURN	WHITE, SIDEWALL OR CEILING MOUNTED	

<sup>\*</sup> OR APPROVED EQUAL BY METALAIRE OR PRICE.

COORDINATE BORDER TYPE WITH THE CEILING TYPE. SEE ARCH SHEETS PROVIDE CUT SHEETS TO OWNER/ARCH. PRIOR TO ORDERING.

EXHAUST	FAN SCHEDULE
EXHAUST FAN #1 (EF-1)	* CARNES MODEL# VCDD010C EXHAUST FAN, 93 CFM @ 1/4" SP, 640 RPM, 1.1 AMPS, 120V. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 6" RIGID DUCT TO WALL CAP. LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES.

<sup>\*</sup> OR APPROVED EQUAL BY GREENHECK OR PENNBARRY NOTE: RUN EXHAUST DUCTS HORIZONTALLY AS REQUIRED TO MAINTAIN 10'-0" MINIMUM SEPARATION FROM ANY INTAKES.

FLEXIBLE DUCTWORK SIZES  MAXIMUM CFM'S					
SIZES	SUPPLY	RETURN			
6"	100	100			
8"	175	175			
10"	250	250			
12"	400	350			
14"	55 <i>O</i>	500			
16"	NA	900			

# (CHANGE OUT EXISTING FLEX DUCTS AND COLLARS AS REQUIRED TO GET NEW CFM'S SHOWN)

# FLEXIBLE DUCTWORK NOTES

- 1) MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-O". DUCT RUNOUTS TO INDIVUAL GRILLES AND DIFFUSERS SHALL BE ROUND GAVANIZED STEEL DUCT TO WITHIN 5'-O" OF AIR DISTRIBUTION DEVICE. FINAL CONNECTION TO GRILLE OR DIFFUSER SHALL BE WITH FLEXIBLE DUCT.
- 2) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE.
- 3) DO NOT ALLOW FLEXIBLE DUCT TO SAG BETWEEN SUPPORTS.
- 4) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEDES AIR FLOW.
- 5) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER. MAXIMUM ALLOWABLE DEFORMATION IS
- 6) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK
- 1) SIZE ALL FLEXIBLE DUCT SO AS NOT TO EXCEED MAXIMUM CFM'S GIVEN IN TABLE.

# GENERAL NOTES - MECHANICAL

- 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
- 2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
- 3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL
- COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
- 4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
- 5. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR
- 6. THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED
- 7. THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS.
- 8. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
- 9. INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
- 10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.

DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.

- 11. THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
- 12. PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
- 13. THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
- 14. PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

OA SCHEDUL	0011		TION AIR PRO	MUED PER IAE	، کار	100.0 K	ICOBC ME	CHANICAL	CODI
APPLICATION	SQUARE FOOTAGE (SF)	AREA OUTDOOR AIR FLOW RATE (CFM/SF)	PEOPLE OUTDOOR AIR FLOW RATE (CFM/PERSON)	OCCUPANCY DENSITY RATE (# PEOPLE/ 1000SF)		UPANCY PEOPLE)	AIR FLOW		
OFFICE	595	0.06	5	5	*	7	36	35	71
ENTRY	96	0.06	5	10	*	0	6	0	6
CORRIDOR	276	0.06	-	-		-	17	-	17
STORAGE	91	0.12	-	_		-	11	1	11
BREAK AREA	78	0.12	5	50	*	0	9	0	9
TOTAL REQUIRED									114
			#B5B 5B8W 548		-1				
111/		DOOR AIR PRO	VIDED FROM EAC			* (CE	.4)		
HVAC UNIT				OUTDOOR AIR (CFM)					
AHU-1 150 - 8" DIA. O.A. DUCT									
APPLICATION					CFN	<b>1</b>			
TOILETS			70 CFM/FLUSHING FIXTURE						
5 FLU	SHING FIXTU	RE X 70 CFM =	350 CFM						

\*ACTUAL OCCUPANCY PER BUILDING TENANT AS ALLOWED BY 2018 NCSBC: MECHANICAL CODE, SECTION 403.3.1.1, EXCEPTION.

\*\* SET OUTDOOR AIR DAMPER CONTROLS TO PROVIDE OUTDOOR AIR AS INDICATED IN THIS SCHEDULE.

# LEGEND - MECHANICAL

RECTANGULAR DUCTWORK. INSIDE CLEAR DIMENSION 12 X 8 INDICATED (WIDTH X HEIGHT)

FLEXIBLE DUCTWORK

12" DIA. ROUND GALVANIZED STEEL DUCT INSIDE CLEAR DIMENSION INDICATED.

> DOUBLE WALLED GALVANIZED STEEL SPIRAL DUCT INSIDE CLEAR DIMENSION INDICATED.

DUCT MOUNTED SUPPLY AIR DIFFUSER

SUPPLY DIFFUSER

RETURN GRILLE

WALL MOUNTED THERMOSTAT (UNIT SERVED IS INDICATED)

----- MIN. CFM

\\\ \12"\DIA.\\\\

CONDENSATE PIPING REFRIGERANT PIPING

| Coastal

Member of the American Institure of Architects

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Suite C

Morehead City, NC

28557

S ON

SCO ID# : 24-28316-01A

HVAC NOTES, SCHEDULES, LEGEND

DWG BY:

CKD BY:

APPENDIX B

# 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL SUMMARY

(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

# MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Thermal Zone winter dry bulb summer dry bulb

Interior Design Conditions winter dry bulb summer dry bulb relative humidity

20,100 BTU/hr Building Heating Load (Tenant space only) 30,400 BTU/hr

Building Cooling Load (Tenant space only) Mechanical Spacing Conditioning System

Unitary — The tenant space is served the following systems: (1) 3 Ton single package heat pump units

Not applicable to this project. Chiller - Not applicable to this project.

Equipment efficiencies Efficiencies and outputs are listed on equipment schedules — See drawings.

# **ENGINEER**

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REVISIONS SHEET NO.

CLS

BEB



- KEYNOTE FOR SHEET M2:
- 1) VERTICAL AIR HANDLING UNIT FASTENED TO FLOOR IN MECHANICAL ROOM. SEE 1/M3.
- (2) HEAT PUMP MOUNTED ON CONCRETE PAD.
- 3 RUN INSULATED REFRIGERANT LINES TO OUTDOOR UNIT THROUGH EXTERIOR WALL. ALL EXTERIOR SUCTION LINE REFRIGERANT PIPING SHALL HAVE CLOSED CELL INSULATION WITH A WATERPROOF VINYL JACKET.
- 4 RUN CONDENSATE PIPING CONCEALED IN EXTERIOR WALL TO 6" ABOVE FINISH GRADE. TERMINATE IN ELBOW TURNED DOWN.
- (5) SEAL AROUND DUCT PENETRATION THROUGH CEILING TO ATTIC. (6) RECTANGULAR RIGID INSULATED DUCTWORK IN ATTIC. FASTEN TO TRUSSES.
- (7) WALL MOUNTED OUTSIDE AIR INTAKE HOOD TO 8" DIA. RIGID DUCT SUPPLYING AHU-1. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE EXHAUST DISCHARGE.
- (8) CEILING MOUNTED SUPPLY AIR DIFFUSERS.(TYP)
- 9 DUCT MOUNTED SUPPLY AIR DIFFUSERS. (10) CEILING MOUNTED RETURN AIR GRILLES.(TYP)
- 1) BATHROOM EXHAUST FANS CONNECTED TO ROUND RIGID DUCTWORK SIZED AS SHOWN TO A ROOF MOUNTED EXHAUST CAP. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
- (12) THERMOSTAT, MOUNT AT 48" AFF.
- MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0". DUCT RUNOUTS TO INDIVIDUAL GRILLES AND DIFFUSERS SHALL BE ROUND RIGID GALVANIZED STEEL DUCT. FINAL CONNECTION TO GRILLE OR DIFFUSER SHALL BE WITH FLEXIBLE DUCT WITH A 5'-0" MAXIMUM LENGTH. (TYPICAL).

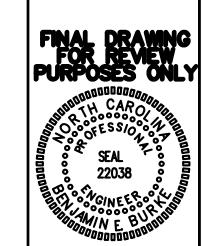
Coastal Architecture



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252-247-2127
lee@coastalarchitecture.net 4206 Bridges St. Ext., Suite C Morehead City, NC 28557

S Mo

SCO ID# : 24-28316-01A



HVAC PLAN

DWG BY: CLS CKD BY: **BEB** 

REVISIONS

BURICE DESIGN GROUP

3305-109 DURHAM DRIVE SHEET NO. RALEIGH, NC 27603 PHONE: (919) 771–1916 FAX: (919) 779-0826 email: ben@bdg-nc.com Corp. License # C-2652

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

Heating, ventilation, and air conditioning equipment.

Grilles and diffusers.

Controls and control wiring. Condensate piping.

B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards

ASHRAE Guide

National Electric Code. . 2018 NC State Building Code: Mech Code. I. The Electrical Specifications for this project.

SMACNA HVAC Duct Construction Standards. All local codes and ordinances.

8. 2018 NC State Building Code: Energy Conservation Code. C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

D. The HVAC Contractor shall be licensed in North Carolina and have all local licenses required for the work.

1.2 INTENT

A. The intent of these specification and the accompanying drawing is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The HVAC Contractor shall take this into consideration and include in his bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Owner of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Owner for a decision before resuming operations.

B. Locations shown are approximate. The HVAC Contractor shall verify with owner, the placement of equipment, fixtures, outlets, etc. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required.

C. Changes in duct or piping design caused by obstructions shall be submitted to Engineer in sketch form for study and comment prior to execution. Additional cost will not be allowed for this

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for all major items of equipment, These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified. Shop drawings shall include but are not limited to the following:

1. All equipment and accessories. Grilles and diffusers. Unit sizes and requirements.

PART 2 -PRODUCTS

2.1 EQUIPMENT

A. All air handling devices must have the manufacturer's recommended filter rack, for 1" thick filters.

2.2 PIPING

A. Condensate drain piping shall be PVC pipe. Provide tee and plug at changes in direction. Route pipe to proper termination point. All condensate piping shall be insulated with flexible elastomeric insulation. Provide copper piping in plenum areas.

2.3 DUCTWORK

A. Ductwork shall be built in accordance with SMACNA HVAC Duct construction standards. Furnish and install all supply, return, and ventilation ductwork shown, together with splitters, deflectors, dampers, etc. This work shall be constructed of new galvanized prime grade steel sheets. The gauges of metal to be used and the construction and bracing of joints shall be in accordance with the SMACNA recommendations.

B. Seal all sheet metal joints with fiber impregnated mastic. C. Support from building structure on strap hangers not over 8 feet apart.

D. Use manufactured turning vanes in each elbow where required or where indicated on drawings.

E. Flexible connectors shall be 3 inches wide, of fireproof material and used to isolate noise between equipment and ductwork on supply and return side of all units.

F. Round runouts, where used, shall be built in accordance with the above standards, and each runout shall also have manufactured side take off, adjustable quadrant damper at all accessible locations and shall be of Owens Corning INL-25 flexible duct with UL label. Flex duct lengths allowed up to 14 feet. Duct must be supported with sufficient hangers in order to prevent sags. Serpentine routing will not be permitted. Quadrant damper to be 22 gauge easily adjustable manually with exterior handle (similar to H&C Kwik—set) and is not to be mounted in side take—off.

2.4 DUCT INSULATION (LOW PRESSURE)

A. All insulation, linings, coverings and adhesives shall have a flame spread classification of 25 or less and a smoke developed rating of not more than 50, exposed exterior piping.

B. All duct insulation shall comply with Section 604, of the N. C. Building Code: Mechanical Code

C. All supply and return ductwork shall be completely insulated, either internally or externally.

D. Rectangular ductwork shall be lined with two-inch thick, 1.5 lb. per cubic foot density, duct liner, Armstrong, CSG Ultraliner, Johns Manville or approved equal.

E. As an alternative to duct liner rectangular duct may be wrapped with Class I - 2", 3/4 lb. density (R-6.5) thick reinforced foil back fiberglass insulation, Owens—corning Series ED or equal. Tape shall be Kraft reinforced foil tape or equal.

F. Exhaust air duct does not require insulation, unless otherwise noted on the plans.

G. Insulation shall be held inplace with adhesive and welding

pins 16" on center. H. Duct dimensions shown on the drawings are Net Inside Dimensions

2.5 THERMOSTATS A. Provide programmable electronic thermostats.

B. Submit proposed thermostats for approval.

A. Provide pre-manufactured roof flashings compatible with equipment served. B. Coordinate roof work with roof system used. Provide proper flashing as required. C. Provide 1 year warranty on all roof work performed.

2.7 DUCT SMOKE DETECTORS

A. Duct detectors are not required since units air flows are 2000 cfm or less per NCSBC: Mechanical Code, Section 606.2.

PART 3 - EXECUTION

3.1 PIPING

A. The HVAC Contractor shall coordinate such routing with others, to line his work true to adjacent spaces and in a workmanlike manner and to use only short radius 90 degree elbows. Where required, piping to be sturdily supported and separated in a manner satisfactory to

B. All exterior suction refrigerant piping shall have closed cell insulation with water proof factory vinyl jacket.

Insulate all condensate lines for their entire length with 1/2" closed cell insulation. Install insulation per the manufacturers recommendations

3.2 ELECTRICAL WORK

A. The electrical contractor shall provide all switches, starters, wire conduit for the air conditioning, heating and ventilation equipment. Control wiring shall be by the heating and air conditioning contractor.

B. HVAC Contractor is responsible for verifying that power terminals have been properly grounded prior to operating equipment and must find connections to all equipment

C. All materials and workmanship shall be in accordance with the electrical specifications for the project. All wiring shall be color coded, and as—built wiring diagram prepared showing all connections and colors of wiring and delivered to the Owner.

D. Furnish certification for acceptance of control wiring from local electrical inspector prior to acceptance.

3.3 CLEAN UP

A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

B. Furnish one box of clean filters, for each size required, at the time of final inspection to the owner.

3.4 OPERATOR'S MANUAL AND DIAGRAM

A. The HVAC Contractor shall prepare in one copy a manual describing the proper maintenance and operation of the systems. This manual shall not consist of standard factory instructions (although these may be included) but shall be prepared to describe this particular job.

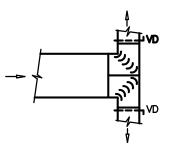
B. The manual shall be bound, indexed, dated and signed by the HVAC Contractor.

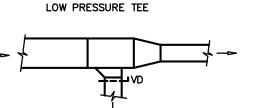
C. Qualified representative of the HVAC contractor shall meet with the designated representatives of the Owner and the Owner's representative shall be instructed in the proper operation and maintenance of the control system and other systems.

3.5 GUARANTEE

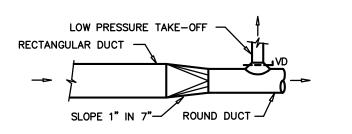
A. Guarantee all materials and labor included in the HVAC work for a period of one year from date of final acceptance by the owner. In addition, motor compressors shall be a nonprorated five year warranty. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the owner or tenant.

B. All air flows must be measured and balanced to within 10% of design airflows. All equipment used must have a current certification. Provide two copies of the balance report to the owner at closeout. The HVAC contractor shall return and re-balance to occupant comfort after 90 days from close-out Provide all balance dampers needed for satisfactory operation regardless if shown on the drawings or not, and shift location of thermostats themostats if required for occupancy comfort.

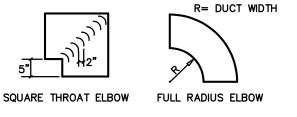




LOW PRESSURE BRANCH TAKE-OFF

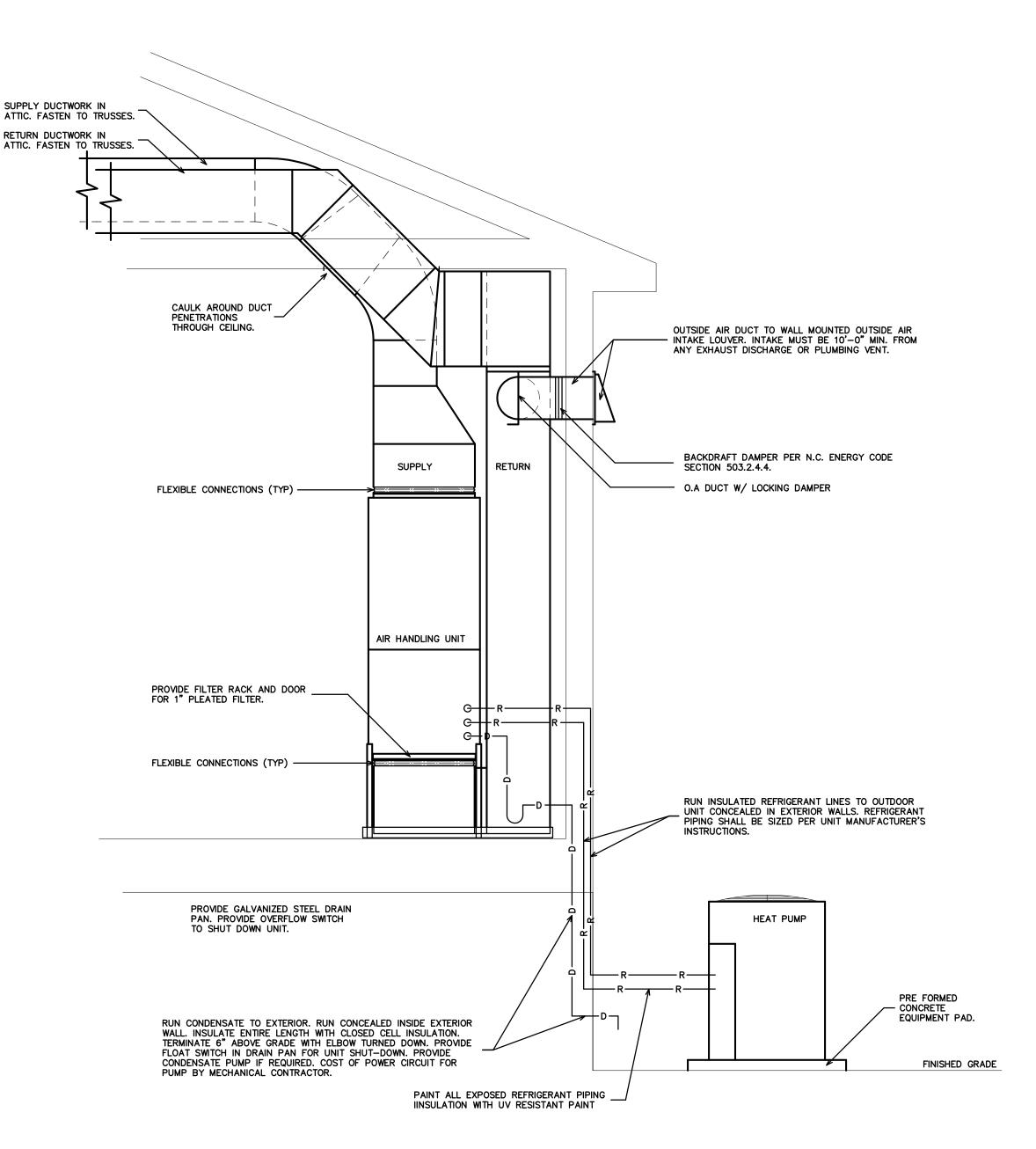


RECTANGULAR TO ROUND TRANSITION



LOW PRESSURE DUCT ELBOWS







**ENGINEER** 3305-109 DURHAM DRIVE 27603 BURKE DESIGN GROUP

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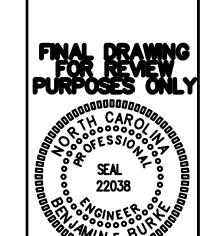
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4206 Bridges St. Ext. Suite C Morehead City, NC 28557

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S ON

SCO ID# : 24-28316-01A



HVAC SPECS, DETAILS

CLS DWG BY: BEB CKD BY:

REVISIONS SHEET NO. PART 1 - GENERAL

- 1.1 DESCRIPTION OF THE WORK A. Work under this section includes, but is not necessarily
- limited to, furnishing and installing the following: 1. Lighting and power distribution system.
- 2. Provide lighting fixtures per light fixture schedule with lamps to match.
- 3. Wiring devices, boxes, cover plates, etc.
- 4. Source of power for all items of equipment.
- Grounding. 6. Other requirements and/or systems where shown. B. All work shall be complete and items, equipment, etc.,

shall be electrically connected for proper and correct

- C. All work under this contract shall be installed in accordance with the latest edition of the following codes and
- standards insofar as they apply:
- 1. The 2020 National Electrical Code 2. The National Electrical Safety Code.
- 3. Underwriter's Laboratories, Inc., Standards and
- approved listings or other approved 3rd party listing agency. 4. Electrical Testing Labatories standards.
- 5. 2018 North Carolina State Building Code. 6. 2018 North Carolina State Energy Code.
- D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
- E. Local permits are not required. All work must be inspected by the Office of State Construction state electrical inspector and the Engineer of Record. Provide certificate of inspection and approval from the state electrical inspector prior to energizing panels. The electrical contractor is responsible for contacting the state electrical inspector for all required inspections. All scheduling shall be Monday through Friday unless otherwise exempted by SCO
- F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

#### 1.2 INTENT

A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Electrical Contractor shall take this into consideration and include in the base bid allowance for contingencies as will allow the contractor to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

#### 1.3 COORDINATION

- A. Coordinate work with other contractors. Notify Engineer of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Engineer for a decision before resuming operations.
- B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with Engineer before any rough-in.

#### PART 2 - PRODUCTS AND MATERIALS

# 2.1 GENERAL

- A. All material shall be new and shall bear the manufacturer's name, trade name, and be third party acceptable to NCDOI listed and labeled where such standard has been established for the particular material. Materials shall be the standard products of manufacturer regularly engaged in the manufacturer of the required type of equipment and the manufacturer's latest approved design.
- 1. Boxes installed in concealed locations shall be set flush with the finished surfaces

# 2.2 CONDUCTORS

A. Conductors shall be color coded, sizes #4 and larger may be color

#### taped on the job. Color coding shall comply with 2020 NEC. 208/120V, 3 phase

- Phase A- Black
- Chase C- Blue Neutral- White

Ground- Green

- B. Conductors shall be manufactured by Dodge, Southwire, Daycon Systems or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be third party acceptable to NCDOI approved.
- C. Conductors shall be spliced and taped as follows: 1. Size #10 and #12, use Ideal "Wing Nuts" or T&B
- "Piggy" connectors. Connectors shall be rated for 150 degrees C for use in recessed lighting fixtures. 2. Size #8 and larger shall be solderless screw and screw-clamping type, smoothly covered and shaped with rubber gum type with final cover vinyl plastic electrical type. In lieu of rubber gum and vinyl plastic type, factory fabricated approved preformed insulating covers may be used. All connectors shall
- No split—bolt type connectors may be used.
   All branch wire and connections shall be copper and sized per National Electric Code with a minimum size of #12.
- E. All conductors shall be continuous without splice between junction, outlet, device boxes, etc. No splicing will be permitted in panelboard cabinets, safety switches, etc.
- F. All wiring in mechanical spaces shall be plenum rated.
- G. Provide GFI protection within 6'-0" of any sink.
- H. Multi-wire branch circuits are not allowed

be UL approved.

- 2.3 SAFETY SWITCHES
- A. Motor rated switches will be utilized where allowed per code and as shown on the drawings. Provide stainless steel covers.
- Safety switches serving motor loads shall be horsepower rated for load served.

# 2.4 WIRING DEVICES

A. Wiring devices shall be federal specification by Bryant, Leviton, Cooper or approved equal. With matching cover. All exterior devices require "extra-duty" rated weatherproof while in use covers. Color by Architect.

A. PVC conduit will be allowed under slab. Provide rigid turn-ups.

- B. All exposed conduit shall be rigid steel where exposed to the elements, located less than 8'-0" above grade or where exposed to hazardous conditions.
- C. EMT conduit, above slab, concealed or exposed above 8'-0'' shall be used
- through out the project. Provide steel compression fittings/couplings. D. Metallic sheathed "MC" cable should not be used for this project, without designer authorization. MC cable is allowed for light whips 6'-0" or less and where concealed with-in existing construction to minimize demolition work. If used, MC cable shall be 1/2" with minimum #12 AWG copper wire and green insulated copper ground.

#### 2.8 SUPPORTING DEVICES

- A. Supports, support hardware and fasteners shall be protected with zinc coating or with treatment of equivalent corrosion resistance using approved alternative treatment, finish and inherent material characteristic. Products for use outdoors shall be hot-dip galvanized.
- B. Expansion Anchors must be Carbon Steel Wedge or Sleeve Type, Toggle Bolts must be all steel spring-head type.
- C. U-Channel Systems shall be 16-gage steel channels w/ 9/16-inch diameter holes, at a minumum of 8 inches on center, in top surface. Provide fittings and accessories that mate and match with U-channel and are of the same manufacturer.
- D. Provide Pipe Sleeves of one of the following: 1. Sheet Metal: Fabricate from galvanized sheet metal; round tube closed w/ snap-lock join, welded spiral seams, or welded longitudinal joint. Fabricated sleeves form the fallowing gage metal for sleeve diameter noted:
  - 3-inch or smaller: 20-gage 4-inch to 6-inch: 16-gage
- 2. Steel Pipe: Fabricate from Schedule 40 galvanized steel pipe 3. Plastic Pipe: Fabricate form Schedule 80 PVC plastic pipe E. Raceway supports shall be adequate to carry present and future load multiplied by a safety factor of at least four. Where this determination results in a safety allowance of less than 200 lbs, provide additional strength until there is a

minimum of 200 lbs safety allowance in the strength of each support.

- A. Acceptable Manufacturers for panelboards include Cutler Hammer, Square D, or Siemens.
- B. Provide over-current protective devices (OCPDs) of the type, rating, and features indicated on the panel schedules. Tandem breakers shall not be used. Multiple breakers shall have common trip. C. Circuit Breakers shall be bolt-on type.
- D. 100% rated copper Ground and Neutral Bus (unless noted otherwise).
- E. Equipment Ground Bus: Adequate for feeder and branch—circuit equipment ground conductors. F. The use of series breakers is not permitted.
- G. Panel Board Nameplates: Engraved laminated plastic or metal nameplate for each panel board mounted with self-tapping stainless steel screws.
- H. Mounting Heights: Top of trim 6'-2" above finished floor, except as indicated. I. Circuit Directory: Typed and reflective of final circuit changes required to balance panel loads. Obtain approval before installing. Pencil all spares.
- Spaces shall be left blank. J. Provision for Future Circuits at Flush Panel Boards: Stub four 1—inch empty conduits from panel into accessible ceiling space or space designated to
- be ceiling space in future. K. Make equipment grounding connections for panelboards as indicated. L. Upon completion of installation, inspect interior and exterior of panel boards. Remove paint splatters and other spots, dirt, and debris. Touch up scratches

A. Acceptable Manufacturers: Eaton, Siemens, Square D

and mars of finish to match original finish.

- B. Enclosed Non-Fusible Switch: NEMA KS 1, Type HD, handle lockable with 2 padlocks. C. Enclosed Fusible Switch, 800 Amperes and Smaller: NEMA KS 1, Type HD, clips
- to accommodate specified fuses, enclosure consistent with environment where located, handle lockable with 2 padlocks, and interlocked with cover in CLOSED D. All switches shall be "Heavy Duty" rated for the voltage required.
- E. Coordinate all fuse rated switches with the equipment to be furnished. Furnish
- F. Safety switches shall be third-party listed.
- G. Switches shall have defeatable door interlocks that prevent the door from opening when the operating handle is in the open position. H. Switches shall have handles whose positions are easily recognizable in the "on"
- or "off" position. For safety reasons, padlocks shall be provided for switches located in the public areas. I. Where fuses are required, the fuses shall be matched with the equipment
- supplier's requirements. Provide one additional set of fuses for each disconnect
- J. Testing: After installing enclosed switches and after electrical circuitry has
- been energized, demonstrate product capability and compliance with requirements. K. Correct malfunctioning units at site, where possible, and retest to demonstrate compliance. Otherwise, remove and replace with new units and re-test.
- L. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, construction debris and repair damaged finish including chips, scratches and abrasions.

# 2.11 INTERIOR LIGHTING

- A. Submit the following: Product data describing fixtures, lamps, ballasts, and emergency lighting units. Arrange product data for fixtures in order of fixture designation. Include data on features and accessories and the following information:
- 1. Outline drawings of fixtures indicating dimensions and principal features. 2. Electrical ratings and photometric data with specified lamps and certified results of independent laboratory tests.
- 3. Data on batteries and chargers of emergency lighting units. 4. Shop Drawings from manufacturers detailing non-standard fixtures and indicating dimensions, weights, methods of field assembly, components, features and accessories.
- 5. Non-returnable samples, when requested by Engineer, for verification purposes of specific individual fixtures.
- B. Coordinate fixtures mounting hardware and trim with the ceiling system. Provide plaster or sheet-rock trims when required on the project whether indicated or not at no additional cost to the Owner. Coordinate with Architectural Plans before ordering fixtures. C. Minimum warranty period on emergency lights & exit signs shall be three (3)

years from date of acceptance. Warranty shall include all parts (less lamps). All

- other lighting products shall be warranted for a period of not less than 1 year from date of acceptance. This warranty does not include miscellaneous parts which are external to the product (i.e. lamps) which are considered maintenance item. D. Doors, Frames, and Other Internal Access: Smooth operating and free from light leakage under operating conditions. Arrange to permit re-lamping without
- use of tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent accidental falling during re-lamping and when secured in the operating position. Light seal strips inside the fixture will not be allowed
- E. Reflecting Surfaces: Minimum reflectances as follows, except as otherwise indicated:
  - 1. White Surfaces: 85 percent 2. Specular Surfaces: 83 percent 3. Diffusing Specular Surfaces: 75 percent 4. Laminated Silver Metalized Film: 90 percent
- F. Lenses, Diffusers, Covers, and Globes: 100 percent virgin acrylic. Plastic: Highly resistance to yellowing and other changes due to aging, exposure to heat and UV radiation. Lens Thickness: 0.125 inches minimum
- G. Suspended Fixture Support Components 1. Single—Stem Hangers: inch steel tubing with swivel ball fitting and ceiling canopy. Finish same as fixture. 2. Twin—Stem Hangers: Two, inch steel tubes with single canopy arranged
- to mount a single fixture. Finish same as fixture. 3. Rod Hangers: 3/16 inch diameter cadmium plated, threaded steel rod. H. All LED lamps to be 3500 K-rated unless noted otherwise.

#### Exit Signage: 1. Conform to UL 924, "Emergency Lighting and Power Equipment.

Arrows: Include as indicated 2. Emergency Exit Signs shall be of the "LED" style.

3. Units shall be completely self-contained, provided with maintenance-free battery, automatic charger, and other features. Luminaire must be third-party listed as emergency lighting equipment, and meet or exceed the following standards: NEC, NC Building Code, NC Energy code, NFPA-101, and NEMA Standards.

4. BATTERY—It shall be sealed, maintenance—free type, with minimum of 90

minutes operating endurance. Must have a normal life expectancy of 10 years. Batteries shall be a high temperature type with an operating range of 0 degree C to 60 degrees C and contain a resealable pressure vent. a sintered + positive and - negative terminal. 5. CHARGER- It shall be fully automatic solid state type, full wave rectifying, with current limiting. Charger shall restore the battery to its full charge within 24 hours after a discharge of 90 minutes under full rated load. The unit shall be activated when the voltage drops below 80%. A low voltage disconnect switch shall be included if LEAD battery is used to disconnect the battery from the load and prevent damage from a deep discharge during extended power outage.

6. ADDITIONAL FEATURES- Pilot light to indicate the unit is connected to AC power. The battery shall have rate discharge pilot light, unless self-diagnostic type. Test switch to simulate the operation of the unit upon loss of AC power by energizing the lamps from the battery. This simulation must also exercise the transfer relay.

#### J. Emergency Lighting Units:

1. Conform to UL 924, "Emergency Lighting and Power Equipment" requirements for "Unit Equipment. Provide self-contained units with the following features and additional characteristics as indicated. 2. Units shall be completely self-contained, provided with maintenance-free battery, automatic charger, and other features. Luminaire must be third-party listed as emergency lighting equipment, and meet or exceed the following standards: NEC, NC Building Code, NC Energy code, NFPA-101, and NEMA Standards.

3. BATTERY—It shall be sealed, maintenance—free type, with minimum of 90 minutes operating endurance. Must have a normal life expectancy of 10 years. Batteries shall be a high temperature type with an operating range of 0 degree C to 60 degrees C and contain a resealable pressure vent, a sintered + positive and - negative terminal.

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5. ADDITIONAL FEATURES- Pilot light to indicate the unit is connected to AC power. The battery shall have rate discharge pilot light, unless self-diagnostic type. Test switch to simulate the operation of the unit upon loss of AC power by energizing the lamps from the battery. This simulation must also exercise the transfer relay.

K. Support For Recessed and Semi-Recessed Fixtures: Units shall be supported

- independent from suspended ceiling. Install fixture with support wires at 2 diagonal corners to the structure or building steel. L. Support for Suspended Fixtures: Brace pendants and rods that are 4 feet long or longer to limit swinging. Support stem mounted single unit suspended fluorescent fixtures with twin stem hangers. For continuous rows, use tubing or
- M. Emergency Battery Units Test: Verify normal operation of each fixture after fixtures have been installed and circuits have been energized with normal power source. Interrupt electrical energy for a period of not less than 90 minutes to demonstrate proper operation of Emergency Lighting installation. Include the following in tests of emergency lighting equipment.

stem for wiring at one one point and tubing or rod for suspension for each

1. Duration of supply 2. Low battery voltage shut-down 3. Normal transfer to battery source and retransfer to normal 4. Low supply voltage transfer

unit length of chassis, including one at each end.

N. Replace or repair malfunctioning fixtures and components, then retest. Repeat procedure until all units operate properly.

#### PART 3 - EXECUTION 3.1 CIRCUIT GROUNDING

A. All circuits shall contain an insulated, green, copper grounding conductor, sized in accordance with Table 250-122 of the NEC. Grounding conductors shall be connected to equipment grounding bus in panelboard and securely attached and grounded to the device or enclosure at the other end.

# 3.2 EQUIPMENT LABELING

- A. Provide permanent penolic plastic name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from. Color Codina-Blue surface with white core- 120/240v equipment
- Blue surface with white core- 120/208v equipment B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.
- C. All empty conduit runs shall be identified and indicated where they terminate. D. Provide new typewritten directory in each panelboard, new and existing, to

# clearly identify each circuit, service, etc.

3.3 JUNCTION AND/OR PULL BOXES A. Boxes shall be installed where necessary to avoid excessive runs and/or too many bends between outlets.

- A. All grounding shall be in accordance with Article 250 of the NEC.
- In addition, the following requirements shall be met: 1. Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground All connections to grounding conductors shall be accessible.
- 2. Equipment ground continuity shall be maintained through flexible metal conduit. 3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
- 4. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.

5. All equipment enclosures, and non-current-carrying metallic

parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground. 6. The raceway system shall not be relied on for ground continuity A green grounding conductor, properly sized per NEC table 250-122,

# 3.5 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

shall be run in all power raceways.

- A. The mechanical contractor furnishing equipment will provide disconnect switches, motor starters, and make final equipment connections. The electrical contractor will make line side connections to disconnect switches or motor starters.
- B. The mechanical contractor will be the Prime Contractor for this project.

#### A. During construction, keep the site clean of debris. The owner will remain in place. The work area must be clean and secure at the

#### 3.7 INSPECTIONS

end of each day.

3.6 CLEAN UP

A. The authority having jurisdiction (AHJ) will be the Engineer and the State Electrical Inspector. Once the pre-final inspection occurs and all punch list items are corrected the Engineer will schedule a final inspection with the owner and State Electrical Inspector. Provide qualified staff and all inspections.

#### 3.8 GUARANTEE

3.9 AS-BUILT DRAWINGS

A. Guarantee all materials and labor included in the electrical work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.

A. The contractor shall have a complete set of drawings on site at all times

Turn over the as-built set at the final inspection for review by Engineer.

and mark up any changes or unforseen field conditions in red as a "as-built" set.

# APPENDIX B

# 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN (PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE) ELECTRICAL SUMMARY

# ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance

Prescriptive X Energy Cost Budget

Prescriptive Energy Cost Budget Lighting Schedule

lamp type required in fixture number of lamps in fixture ballast type used in fixture Fixture Schedule number of ballasts in fixture total interior wattage specified vs. allowed total exterior wattage specified vs. allowed

## Additional Prescriptive Compliance

506.2.1 More Efficient Mechanical Equipment 506.2.2 Reduced Lighting Power Density 506.2.3 Energy Recovery Ventlation Systems 506.2.4 Higher Efficiency Service Water Heater 506.2.5 On-Site Supply of Renewable Energy

506.2.6 automatic Daylighting Control System

# GENERAL NOTES

- 1 ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE STATE CONSTRUCTION OFFICE.
- 2 ALL SERVICE & BRANCH CIRCUIT CONDUCTORS TO BE COPPER
- 3 ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID CONDUIT IS REQUIRED WHERE EXPOSED BELOW 8'-0" A.F.F.
- 4 ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH A PULL WIRE OR FISH TAPE/CORD.
- 5 CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE INSTALLING LIGHT SWITCH OUTLETS.
- 6 ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS.
- 7 THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS, ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE FLECTICAL CONTRACTOR SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT.
- 8 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANELBOARDS.
- 9 THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR TO INSURE THAT ALL LIGHTING FIXTURES ARE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED. LIGHTING FIXTURES SHOULD NOT BE ORDERED UNTIL TYPE OF CEILING HAS BEEN VERIFIED.
- 10 ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.
- 11 IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED.
- LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER. 13 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING

12 PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP

14 THE EC SHALL MEET WITH THE ARCHITECT AND TENANT PRIOR TO INSTALLING OUTLET BOXES TO VERIFY LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND TELEPHONE

EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURES RECOMMENDATIONS AND FUSED

PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES.

# ELECTRICAL LEGEND

 $O_{\mathsf{x}}$ 

LIGHT FIXTURE: LETTER DENOTES FIXTURE TYPE

NL = NIGHT LIGHT (NOT SWITCHED/ALWAYS ON)

(REFER TO LIGHTING PLAN AND FIXTURE SCHEDULE).

Planning Interiors DUPLEX RECEPTACLE - 120V: MOUNT 18" TO CENTER AFF UNLESS NOTED OTHERWISE: 'WP' INDICATES WEATHER PROOF, 'GFI' INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED. 'U' INDICATES RECEPTACLE WITH (2) USB PORTS. QUADRAPLEX RECEPTACLE - 120V FLOOR OR CEILING OUTLET (AS NOTED) - 120V SPECIAL PURPOSE RECEPTACLE - REFER TO POWER PLAN AND PANEL SCHEDULE

SWITCH WITH INTEGRAL PIR/US MOTION SENSOR FOR AUTOMATIC 28557 SHUT-OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY.

DIMMABLE LIGHT SWITCH MOTOR RATED SWITCH

JUNCTION BOX

LIGHT SWITCH

THREE-WAY LIGHT SWITCH

TELE/DATA OUTLET - PROVIDE JUNCTION BOX WITH CONDUIT BACK TO MTP. PROVIDE (1) TELEPHONE JACK AND (1) CAT 5 DATA JACK

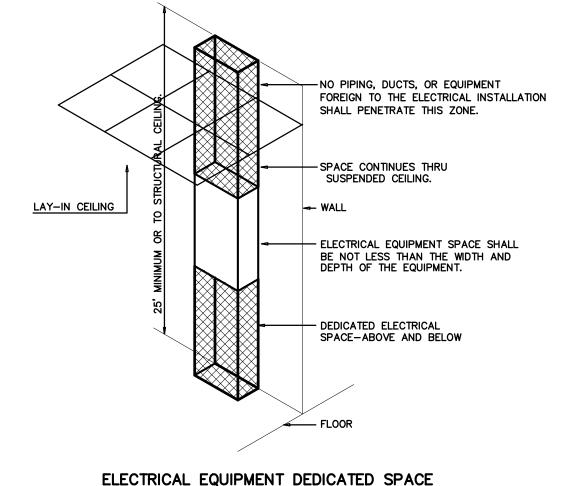
SINGLE-POLE HOMERUN TO PANELBOARD TWO-POLE OR 3-POLE HOMERUN TO PANELBOARD EXIT LIGHT EMERGENCY EGRESS FIXTURE PHOTOCELL (LED COMPLIANT)

BRANCH CIRCUIT WIRING ---- SWITCH LEG

GROUND CONNECTION

DISTRIBUTION PANELBOARD PANEL A

DISCONNECTING MEANS AS REQUIRED BY CODE



PER ARTICLE 110.26.F.1 OF N.E.C.

**ELECTRICAL CLEARANCES** 

- STRUCTURAL CEILING

SUSPENDED CEILING

- ELECTRICAL EQUIPMENT

- EVEN WITH FRONT EDGE

- DEDICATED ELECTRICAL

EQUIP. WORKING CLEARANCE

THIS FIGURE ILLUSTRATES THE WORKING

EQUIPMENT REQUIRED BY SECTION 110-16

SPACE IN FRONT OF THE FLECTRICAL

EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE

OR GROUNDED PARTS ON THE OTHER SIDE OF THE

WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH

SIDES FEFECTIVELY GUARDED BY SUITABLE WOOD OR

INSULATED BUSBARS OPERATING AT NOT OVER 300V

EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED

EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK

SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1)

WHERE THE CONDITIONS ARE AS FOLLOWS:

SHALL NOT BE CONSIDERED LIVE PARTS.

OF THE N.E.C.

PARTS ON THE OTHER SIDE.

OF EQUIPMENT

30" MINIMUM OF

WIDTH OF EQUIP

ELECTRICAL EQUIPMENT WORKING CLEARANCE

PER ARTICLE 110-26 OF N.E.C.

WORKING CLEARANCES

CONDITION: 1

VOLTAGE TO

GROUND NOMINAL

MIN. CLEAR DISTANCE IN FEET

3-1/2

ENGINEER

BURKE DESIGN GROUP 3305–109 DURHAM DRIVE RALEIGH, NC 27603 PHONE: (919) 771–1916 FAX: (919) 779-0826 email: ben@bdg-nc.com

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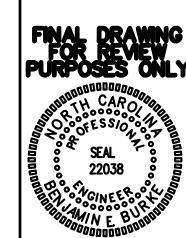
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4206 Bridges St. Ext., Suite C Morehead City, NC

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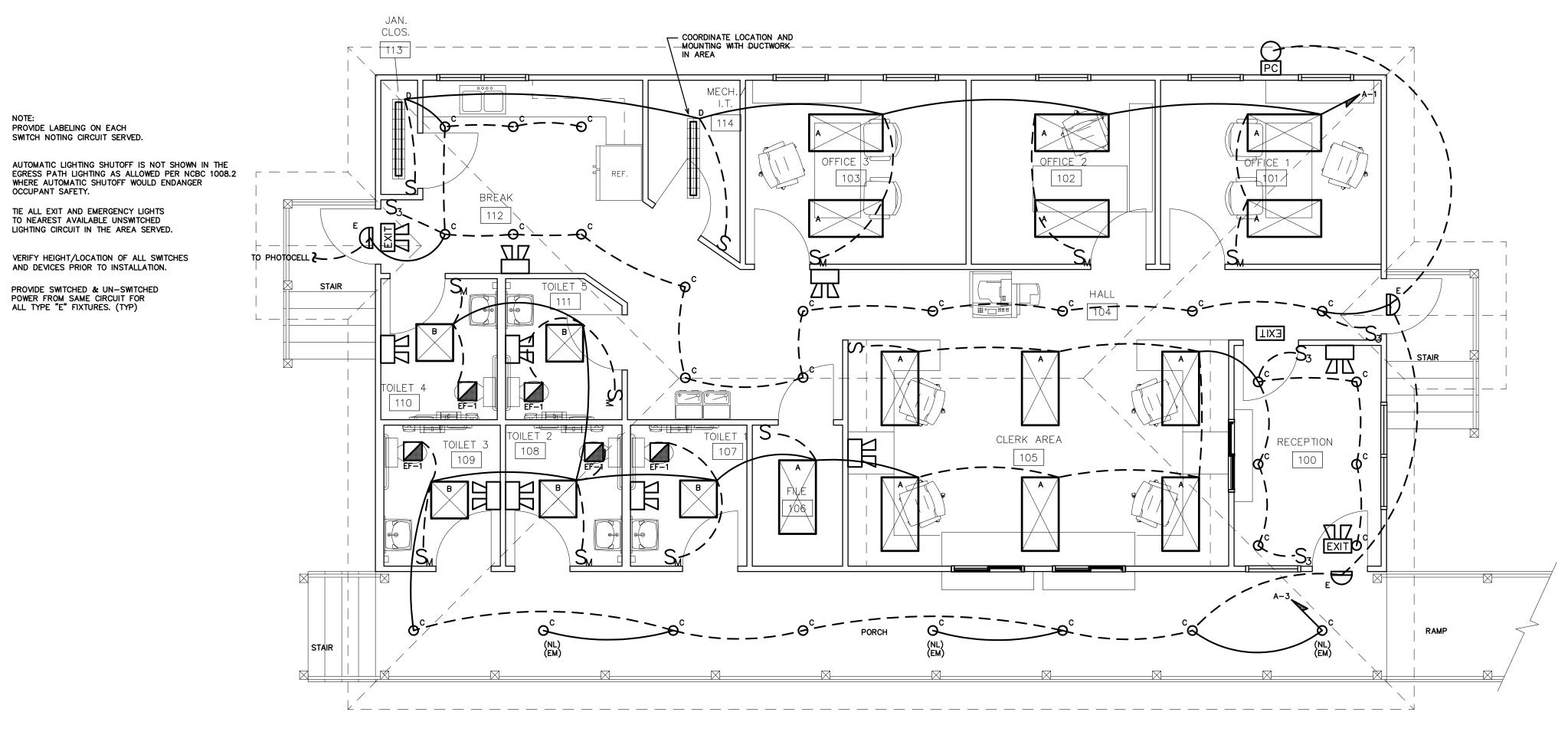


DWG BY: CKD BY: BEB REVISIONS

ELECTRICAL

SPECIFICATIONS

SHEET NO.



LIGHTING PLAN

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

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Architectu Design Planning Interiors



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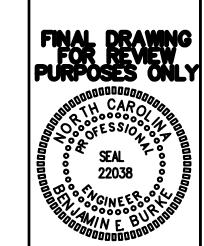
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4206 Bridges St. Ext., Suite C Morehead City, NC 28557

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HEAD CITY, NORTH CAROLINA

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SCO ID# : 24-28314-01A



LIGHTING PLAN

23	027
ISSUED:	7-10-2024
DWG BY:	JQ
CKD BY:	BEB
REVISION	S

CKD BY: BEB

SHEET NO.

ENGINEER

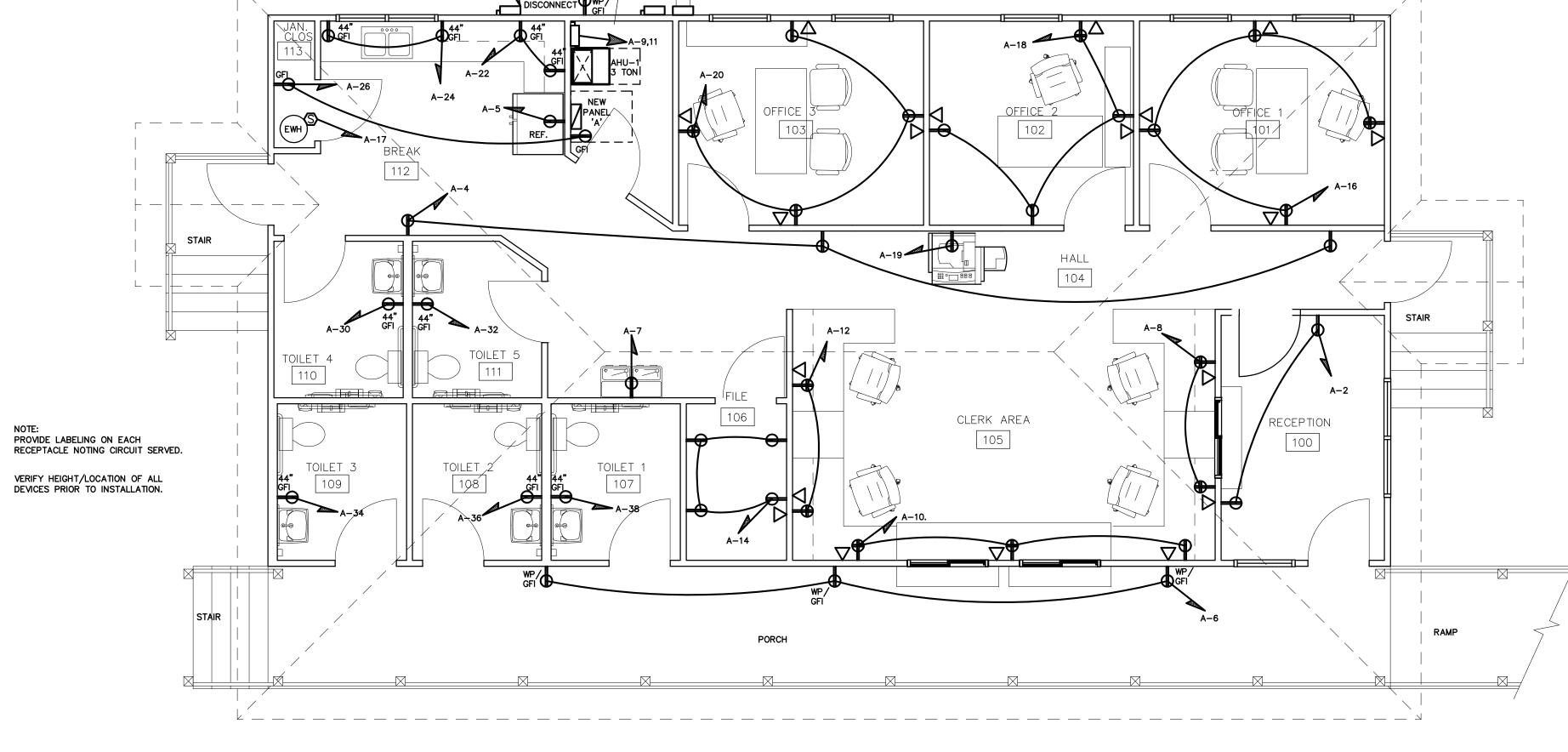
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OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES. FOR FLUORESCENT FIXTURES CONTROLLED BY MOTION SENSOR, PROVIDE "PROGRAMMED RAPID START" BALLASTS. CATALOG NUMBERS ARE FOR REFERENCE ONLY, ACTUAL NUMBERS MAY VARY. 'EB' DENOTES ELECTRONIC BALLAST. 'EDB' DENOTES ELECTRONIC DIMMING BALLAST.

Coastal Architecture

DWG BY: LS
CKD BY: BEB
REVISIONS

SHEET NO.



VERIFY SERVICE LOCATION W/ DUKE ENERGY PRIOR TO ROUGH-IN

NEW METER BASE AND SERVICE DISCONNECT



BURICE DESIGN GROUP

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RALEIGH, NC 27603

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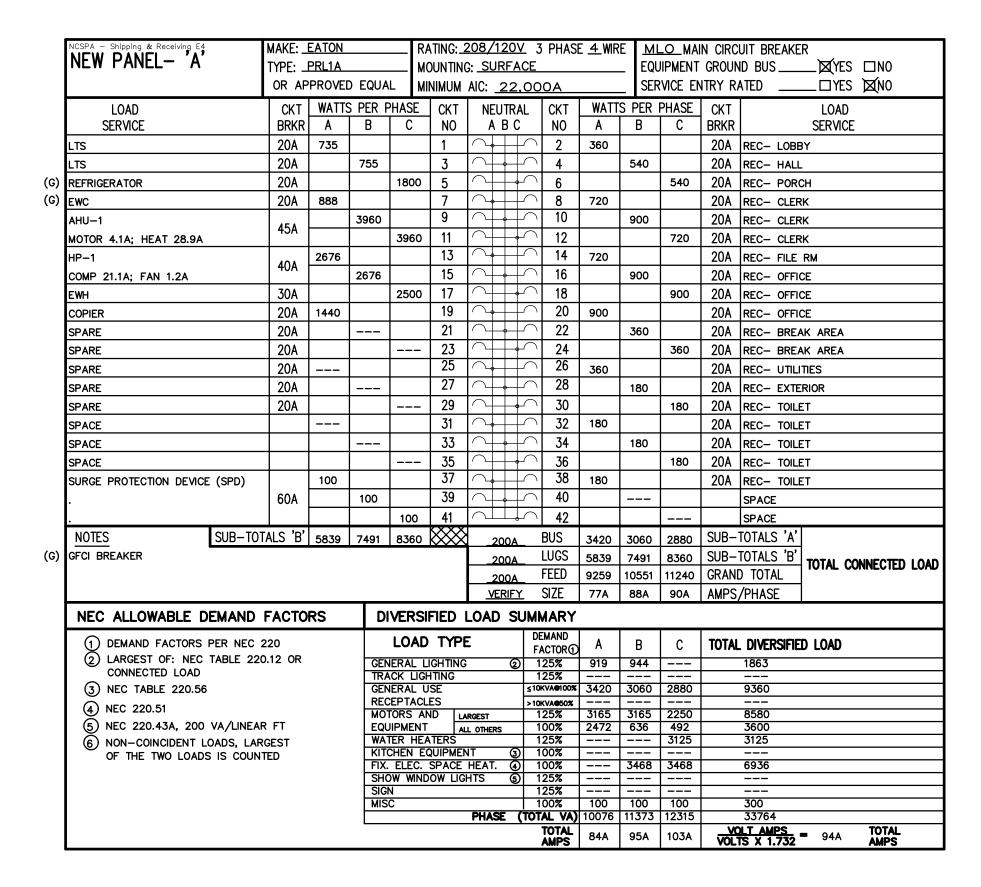
FAX: (919) 779-0826

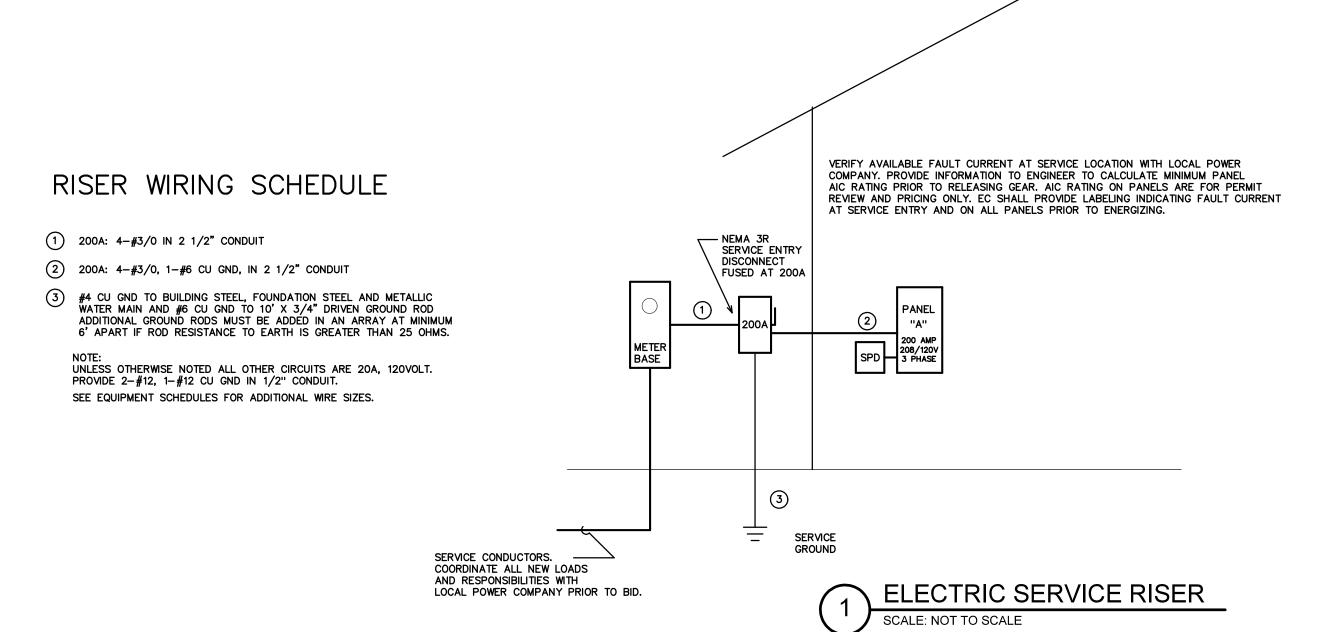
email: ben@bdg-nc.com

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NCSPA - Shipping & Receiving E4  EQUIPMENT WIRING SCHEDULE						
EQUIPMENT	MCA	МОСР	VOLTS	PH	WIRE SIZE	
AHU-1	44.7A	45A	208V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT	
HP-1	28.5A	40A	208V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT	
EWH	(2500W)	30A	120V	1	2-#10, 1-#10 GND IN 1/2" CONDUIT	
SPD	-	60A	208V	3	4-#6, 1-#10 GND IN 1 1/4" CONDUIT	

THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH-IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.





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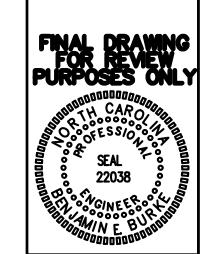
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SCO ID# : 24-28316-01A



PANELS AND

23	027
ISSUED:	7-10-2024
DWG BY:	JQ
CKD BY:	BEB
REVISION:	S

SHEET NO.

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