3325 PLEASANT UNION CHURCH RD RALEIGH, NC 27614

CBPR-136884-2024 CONSTRUCTION DRAWINGS

SIGMA ES

5909 FALLS OF NEUSE RD, SUITE 101

EMAIL: RADAMS@SIGMAES.COM

CONTACT: REGGIE ADAMS

PHONE:919 840 9300

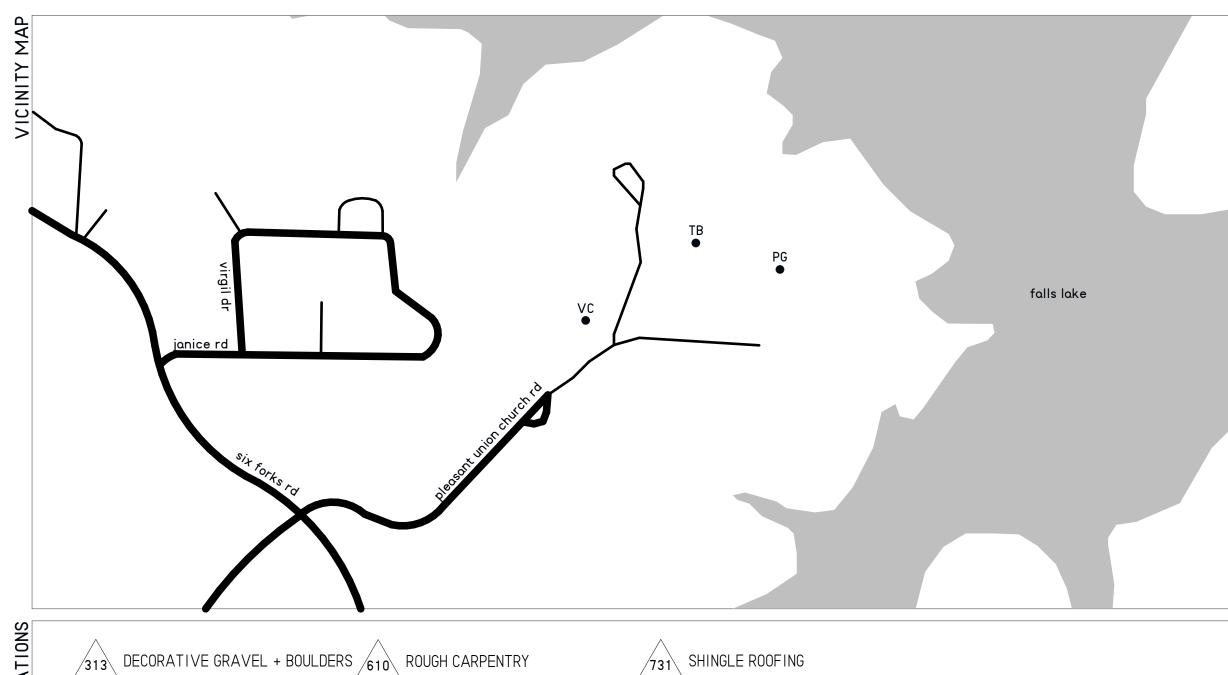
THE WOOTEN COMPANY 120 N. BOYLAN AVE

PHONE: 919 828 0531

CONTACT: ANA WADSWORTH

EMAIL: AWADSWORTH@THEWOOTENCOMPANY.COM

CIVIL ENGINEER:





tree protection fence silt fence

unless otherwise noted

typical

visitors center

verify in field

TYP

UON

VIF

A0.1.TB A1.2.TB A1.3.TB	COVERSHEET APPENDIX B (TB) APPENDIX B (TB)	\$1.0.TB \$1.1.TB \$2.1.TB	GENERAL STRUCTURAL NOTES TEE BALL SHELTER FRAMING PLAN TEE BALL SHELTER DETAILS
A2.0.TB A2.1.TB A2.2.TB A3.1.TB	SHELTER ARCHITECTURAL SITE PLAN TB SHELTER FLOOR PLAN TB SHELTER RCP + ROOF PLAN TB SHELTER ELEVATIONS	E0.01 E0.02 E1.00 E1.01 E1.02 E2.00	ELECTRICAL LEGEND ELECTRICAL GEN. NOTES & FIXTURE SCHEDULE OVERALL ELECTRICAL SITE PLAN ENLARGED ELECTRICAL SITE PLAN ELECTRICAL DETAILS ELECTRICAL POWER PLAN
A4.1.TB	TB SHELTER SECTIONS	E5.00 E5.01	ELECTRICAL DETAILS ELECTRICAL DETAILS

762 BRAKE METAL

618 GLU-LAM
620 FINISH CARPENTRY

330 CAST-IN-PLACE CONCRETE

512 STRUCTURAL STEEL

OWNER:	<b>ABBREVIATIONS</b>	@	at
WAKE COUNTY PARKS RECREATION AND OPEN SPACE	은	AFF	above finish floor
3200 PLEASANT UNION CHURCH RD	4	ALUM	aluminum
CONTACT: ERIC STAEHLE	$\leq$	B0	bottom of
PHONE: 919 856 6369	묎	CIP	cast-in-place
EMAIL: ERIC.STAEHLE@WAKE.GOV	BB	CL	centerline
21 17 (12 : 21(10.01) (21)222 (17) (1(2.00 )	⋖	CJ	control/construction joint
PRIME/LANDSCAPE ARCHITECT:		CPT	common path of travel
SURFACE 678		EQ	equal
215 MORRIS STREET, SUITE 150		FFE	finished floor elevation
CONTACT: ERIC DAVIS		FIN	finish
PHONE:919 282 9122		F0	face of
EMAIL: EDAVIS@SURFACE678.COM		GA	gauge
		GALV	galvanized
ARCHITECT:		LOD	limits of disturbance
IN SITU STUDIO		MAX	maximum
704 N PERSON STREET, RALEIGH NC 27604		MED	maximum egress distance
CONTACT: MATT GRIFFITH		MIN	minimum
PHONE:919 397 3949		NIC	not in contract
EMAIL: MATT@INSITUSTUDIO.US		NTS	not to scale
		OC	on center
STRUCTURAL ENGINEER:		PG	playground
LYSAGHT & ASSOCIATES		PTD	painted
120 ST MARY STREET		REF	reference
CONTACT: CHUCK LYSAGHT		REV	reverse
PHONE:919 833 0495		SIM	similar
EMAIL: CHUCK@LYSAGHTASSOCIATES.COM		SF	square feet
		SS	stainless steel
SYSTEMS ENGINEER:		TBF	tee-ball field
	1		_

NAT THEIR	HENNING PEFIT
	11446 THEIGH, WHITE
*111	LEIGH, WILL

 $\mathbf{\Omega}$ 

#### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

Code Enforcement Jurisdiction: X City\_Raleigh X County\_Wake X State

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Plus	Jay Point County Park Improvements (Playground Shelter)	
Name of Project. Blue	Jay Point County Park Improvements (Playground Shefter)	
Address: 3200 Pleasa	nt Union Church Road, Raleigh, NC	Zip Code 27614
Owner/Authorized Ag	ent: <u>in situ studio</u> Phone # ( <u>919</u> ) <u>397</u> - <u>3949</u>	E-Mail matt@insitustudio.us
Owned By:	X City/County ☐ Private	☐ State

CONTACT:					
DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE #	E-MAIL
Architectural	in situ studio	Matthew Griffith	11446	(919)397-3949	matt@insitustudio.us
Civil	The Wooten Company	Ana Wadsworth	042389	(919)818-0531	awadsworth@thewootencompany.
Electrical	Sigma Engineered Solutions	Reginald Adams	19658	(919)840-9300	radams@sigmaes.com
Fire Alarm	Sigma Engineered Solutions	Reginald Adams	19658	(919)840-9300	radams@sigmaes.com
Plumbing	Sigma Engineered Solutions	Paul Romiti	026581	(919)840-9300	promiti@sigmaes.com
Mechanical	Sigma Engineered Solutions	Paul Romiti	026581	(919)840-9300	promiti@sigmaes.com
Sprinkler-Stan	ndpipe NA	NA	NA	( NA )	NA
Structural	Lysaght & Associates	Chuck Lysaght	7929	(919)833-0495	chuck@lysaghtassociates.com
Retaining Wal	lls >5' High NA	NA	NA	( NA )	NA
Landscape Arch	h. Surface 678 (Prime)	Eric Davis	C-098	(919)419-1199	edavis@surface678.com
("Other" shou	ld include firms and individua	ls such as truss, p	recast, pre-eng	ineered, interior design	gners, etc.)

2018 NC BUILDING CODE:	X New Building	☐ Addition	☐ Renovation
	☐ 1 <sup>st</sup> Time Interior	Completion	
	Shell/Core - Con	tact the local insp	pection jurisdiction for possible additional
	procedures and re	equirements	
	Phased Construct	tion - Shell/Core-	Contact the local inspection jurisdiction for

possible additional pro	ocedures and requir	rements	
2018 NC EXISTING BUILDING CODE: EXISTING:	☐ Prescriptive	☐ Repair	Chapter 14
Alteration:	Level I	Level II	Level III
	☐ Historic Prope	erty	☐ Change of Use
CONSTRUCTED: (date) CURR	ENT OCCUPANO	CY(S) (Ch. 3):	
RENOVATED: (date) PROPO	OSED OCCUPAN	CY(S) (Ch. 3)	<b>:</b>
RISK CATEGORY (Table 1604.5): Current: [		III 🔲 IV	

			Prop	osed:	I 🔲 I	I 🗌 III 🔲 IV	r
BASIC BUILD							
Construction T (check all that a	• •	∐ I-A □ I-B	∐ II- <i>I</i> □ II-F		☐ III- <i>E</i>	_	∐ V-A
Sprinklers:	X No	Partial	Yes	☐ NFI	PA 13	☐ NFPA 13R	☐ NFPA 13D
<b>Standpipes:</b>	X No	Yes	Class 🗌 I			☐ Wet ☐ Dry	7
Fire District:	X No	Yes	Flood	Hazard A	Area:	☐ No ☐ Yes	3
Special Inspect	ions Requ	uired: 🛛 🗎				spection jurisdict uirements.)	tion for additional

2018 NC Administrative Code and Policies Revised 6/15/2020

## FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION	REQ'D	RATING PROVIDED	DETAIL # AND	DESIGN# FOR	SHEET # FOR RATED	SHEET # FOR
	DISTANCE (FEET)		(W/* REDUCTION)	SHEET #	RATED ASSEMBLY	PENETRATION	RATED JOINTS
Structural Frame, including columns, girders,							
trusses							
Bearing Walls	> 30'	0					
Exterior	> 30'	0					
North	> 30'	0					
East	> 30'	0					
West	> 30'	0					
South	> 30'	0					
Interior	> 30'	0					
Nonbearing Walls and Partitions Exterior walls	> 30'	0					
North	> 30'	0					
East	> 30,	0					
West	> 30'	0					
South	> 30'	0					
Interior walls and partitions	> 30'	0					
Floor Construction							
Including supporting beams		0					
and joists							
Floor Ceiling Assembly		0					
Columns Supporting Floors		0					
Roof Construction, including supporting beams and joists		0					
Roof Ceiling Assembly		0					
Columns Supporting Roof		0					
Shaft Enclosures - Exit		0					
Shaft Enclosures - Other		0					
Corridor Separation		0					
Occupancy/Fire Barrier Separat	ion	0					
Party/Fire Wall Separation		0					
Smoke Barrier Separation		0					
Smoke Partition		0					
Tenant/Dwelling Unit/ Sleeping Unit Separation		0					
Incidental Use Separation		0					

\* Indicate section number permitting reduction

2018 NC Administrative Code and Policies

Gross Building Area Table					
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL		
3 <sup>rd</sup> Floor					
2 <sup>nd</sup> Floor					
Mezzanine					
1st Floor	0	1,211 (open air)	1,211 (open air)		
Basement					
TOTAL	0	1,211 (open air)	1,211 (open air)		

#### ALLOWABLE AREA

ALLO WADLE AREA
Primary Occupancy Classification(s):
Assembly A-1 A-2 XA-3 A-4 A-5
Business
Educational
Factory F-1 Moderate F-2 Low
Hazardous H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
Institutional
$\square$ I-2 Condition $\square$ 1 $\square$ 2
$\square$ I-3 Condition $\square$ 1 $\square$ 2 $\square$ 3 $\square$ 4 $\square$ 5
☐ I-4
Mercantile
Residential R-1 R-2 R-3 R-4
Storage S-1 Moderate S-2 Low High-piled
Parking Garage Open Enclosed Repair Garage
Utility and Miscellaneous
Accessory Occupancy Classification(s): NA
ncidental Uses (Table 509): NA
Special Uses (Chapter 4 – List Code Sections): NA
Special Provisions: (Chapter 5 – List Code Sections): NA
Mixed Occupancy: X No Yes Separation: Hr. Exception:
X Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

2018 NC Administrative Code and Policies Revised 6/15/2020

## PERCENTAGE OF WALL OPENING CALCULATIONS

(FEET) FROM PROPERTY LINES	PROTECTION (TABLE 705.8)	(%)	(%)
30' or greater	UP, NS	unlimited	100%

FIRE SEPARATION DISTANCE DEGREE OF OPENINGS ALLOWABLE AREA ACTUAL SHOWN ON PLANS

	LIFE SAFETY SYSTEM REQUIREMENTS	
Emergency Lighting:	X No Yes	
Exit Signs:	X No Yes	

#### Fire Alarm: X No Yes Smoke Detection Systems: X No Yes Partial Carbon Monoxide Detection: X No Yes

Assumed and real property line locations (if not on the site plan)

## LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #:	NA (open air structure)
Fire and/or smoke	rated wall locations (Chapter 7)

	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
	Exit sign locations (1013)
	Exit access travel distances (1017)
	Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
Г	Dead end lengths (1020.4)

ш	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 provid	ed 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	f delay (1010.1.9.7)
Location of doors with electromagnetic egress locks (1010.1.9)	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 recording the items above

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

Revised 6/15/2020

STORY	DESCRIPTION AND	(A)	(B)	(C)	(D)
NO.	USE	BLDG AREA PER	TABLE $506.2^4$	AREA FOR FRONTAGE	ALLOWABLE AREA PER
		STORY (ACTUAL)	AREA	INCREASE <sup>1,5</sup>	STORY OR UNLIMITED <sup>2,3</sup>
1	Main Level	1,211 (open air)	6,000	75%	10,500

<sup>1</sup> Frontage area increases from Section 506.3 are computed thus:

a. Perimeter which fronts a public way or open space having 20 feet minimum width =  $\frac{141'-11"}{F}$  b. Total Building Perimeter =  $\frac{141'-11"}{F}$  (P) c. Ratio (F/P) =  $\frac{1}{1}$  (F/P) d. W = Minimum width of public way =  $\frac{30!}{F}$  (W) e. Percent of frontage increase  $I_f = 100[F/P - 0.25] \times W/30 = \frac{75}{100}$  (%)

<sup>3</sup> Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2). <sup>4</sup> The maximum area of open parking garages must comply with Table 406.5.4. <sup>5</sup> Frontage increase is based on the unsprinklered area value in Table 506.2.

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE 1
Building Height in Feet (Table 504.3) <sup>2</sup>	40'	21'	NA
Building Height in Stories (Table 504.4) <sup>3</sup>	1	1	NA

ALLOWABLE HEIGHT

<sup>1</sup> Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4. <sup>2</sup> The maximum height of air traffic control towers must comply with Table 412.3.1.

<sup>3</sup> The maximum height of open parking garages must comply with Table 406.5.4.

2018 NC Administrative Code and Policies

Revised 6/15/2020

ACCESSIBLE DWELLING UNITS (SECTION 1107)

#### ACCESSIBLE PARKING (SECTION 1106)

REFER TO LANDSCAPE DRAWINGS FOR PARKING REQUIREMENTS

#### PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATER CLOSETS URI		URINALS	LAVATORIES		SHOWERS	OWERS DRINKING FOUNTAIN			
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX	/TUBS	REGULAR	ACCESSIBLE
SPACE	EXIST'G										
	NEW		OPEN AIR STRUCTURE DOES NOT REQUIRE NEW FIXTURES								
•	REQ'D										

## SPECIAL APPROVALS

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

#### 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 vs annual energy cost for the Existing building envelope complies with code: No Yes (The remainder of this section is not applicable) Exempt Building: No Yes (Provide code or statutory reference): Climate Zone: $\square$ 3A $\square$ 4A $\square$ 5A Method of Compliance: Energy Code Performance ASHRAE 90.1 Performance ☐ Prescriptive (If "Other" specify source here)\_\_\_ THERMAL ENVELOPE (Prescriptive method only) Roof/ceiling Assembly (each assembly) 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: Exterior Walls (each assembly) 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: Door R-Values: Walls below grade (each assembly) Description of assembly: U-Value of total assembly: R-Value of insulation: 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:

2018 NC Administrative Code and Policies Revised 6/15/2020

# 2018 APPENDIX B IMMARY FOR ALL COMMERC

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN

(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

## MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

List equipment efficiencies:

Thermal Zone winter dry bulb: summer dry bulb:\_ Interior design conditions winter dry bulb: summer dry bulb: relative humidity: Building heating load: Building cooling load: **Mechanical Spacing Conditioning System** Unitary description of unit: heating efficiency: cooling efficiency: size category of unit: Size category. If oversized, state reason.: Chiller Size category. If oversized, state reason.:

## 2018 APPENDIX B

# BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS STRUCTURAL DESIGN

(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

 Importance Factors:
 Snow  $(I_S)$   $\frac{1.0}{1.0}$  

 Seismic  $(I_E)$   $\frac{1.0}{1.0}$  

 Live Loads:
 Roof Mezzanine NA psf Floor  $\frac{NA}{50}$  psf

 Ground Snow Load:
 15 psf

 Wind Load:
 Ultimate Wind Speed  $\frac{115}{50}$ 

**DESIGN LOADS:** 

Ultimate Wind Speed <u>115</u> mph (ASCE-7) Exposure Category 1.0 SEISMIC DESIGN CATEGORY: A XB C D Provide the following Seismic Design Parameters: Risk Category (Table 1604.5) I X II III IV Spectral Response Acceleration S<sub>S</sub> 14.7 %g  $S_1$  7.4 %g Site Classification (ASCE 7) A B C X D E F Data Source: Field Test X Presumptive Historical Data ☐ Dual w/Special Moment Frame ☐ Bearing Wall Basic structural system Building Frame ☐ Dual w/Intermediate R/C or Special Steel ☐ Inverted Pendulum X Moment Frame Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic Architectural, Mechanical, Components anchored? Yes X No LATERAL DESIGN CONTROL: Earthquake Wind X **SOIL BEARING CAPACITIES:** 

2018 NC Administrative Code and Policies

Field Test (provide copy of test report) \_

Pile size, type, and capacity

Presumptive Bearing capacity 2.000

Revised 6/15/2020

Revised 6/15/2020

## 2018 APPENDIX B

# 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: Energy Code Performance Prescriptive
ASHRAE 90.1 Performance Prescriptive

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

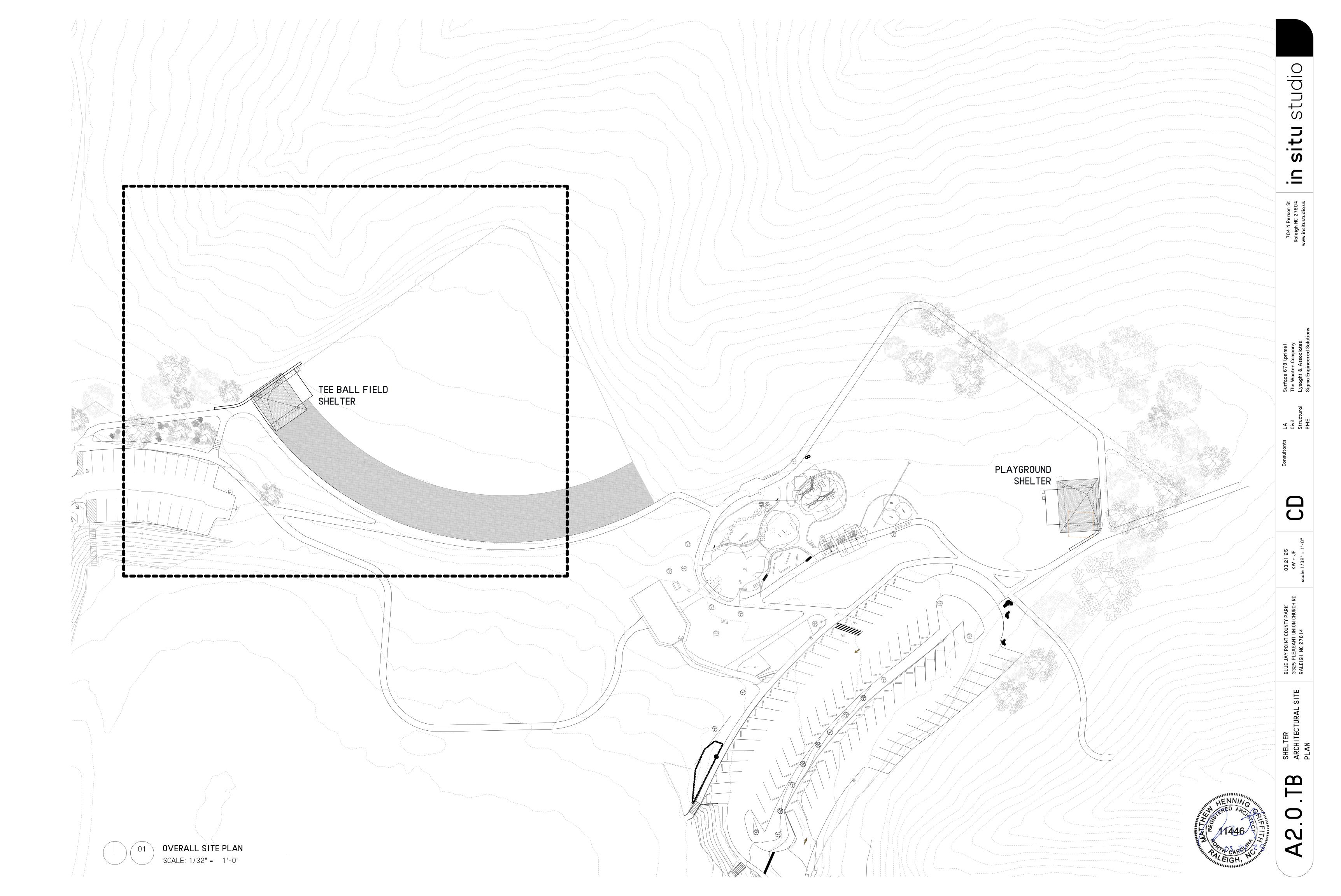
C406.2 More Efficient HVAC Equipment Performance
C406.3 Reduced Lighting Power Density
C406.4 Enhanced Digital Lighting Controls
C406.5 On-Site Renewable Energy

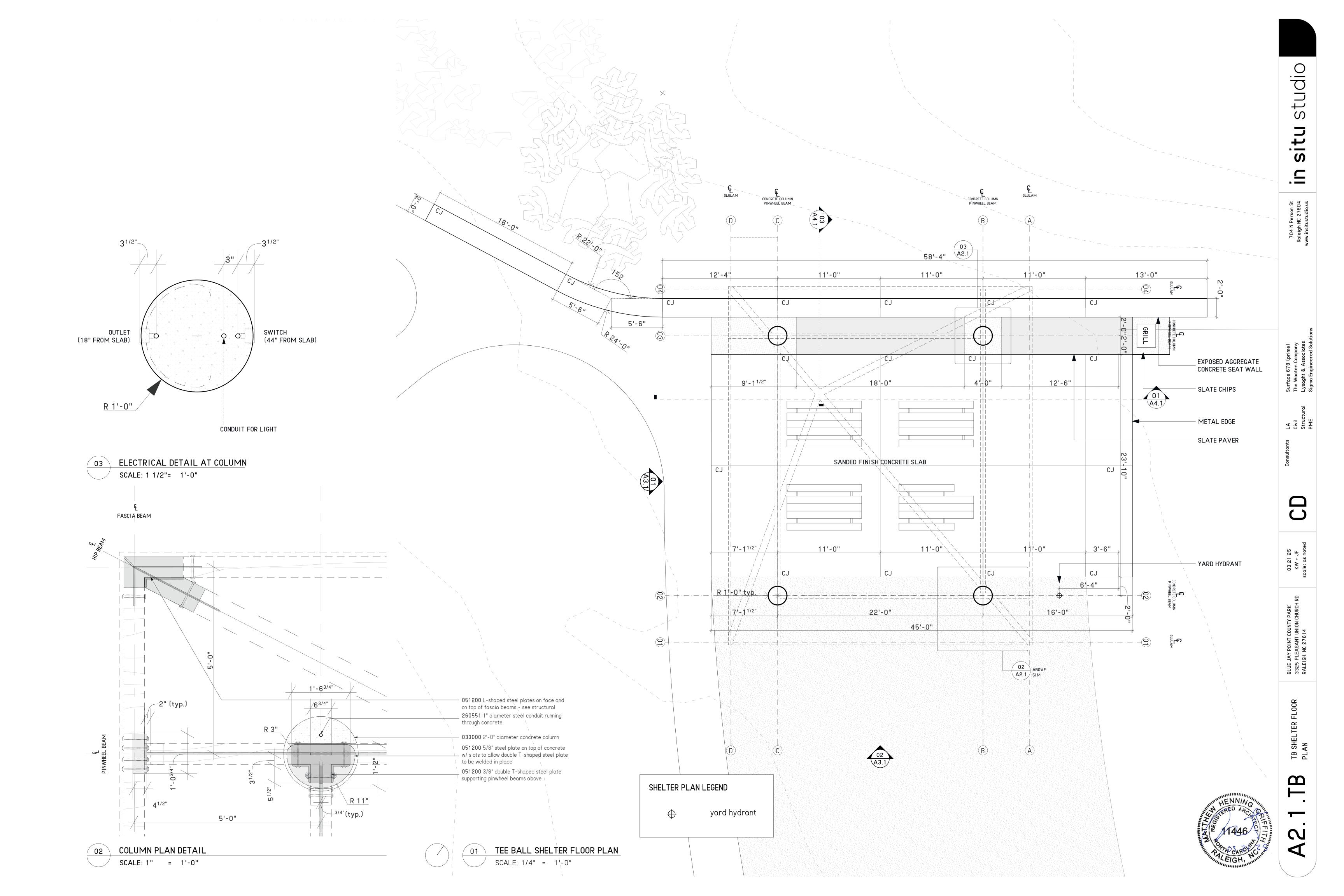
C406.6 Dedicated Outdoor Air System

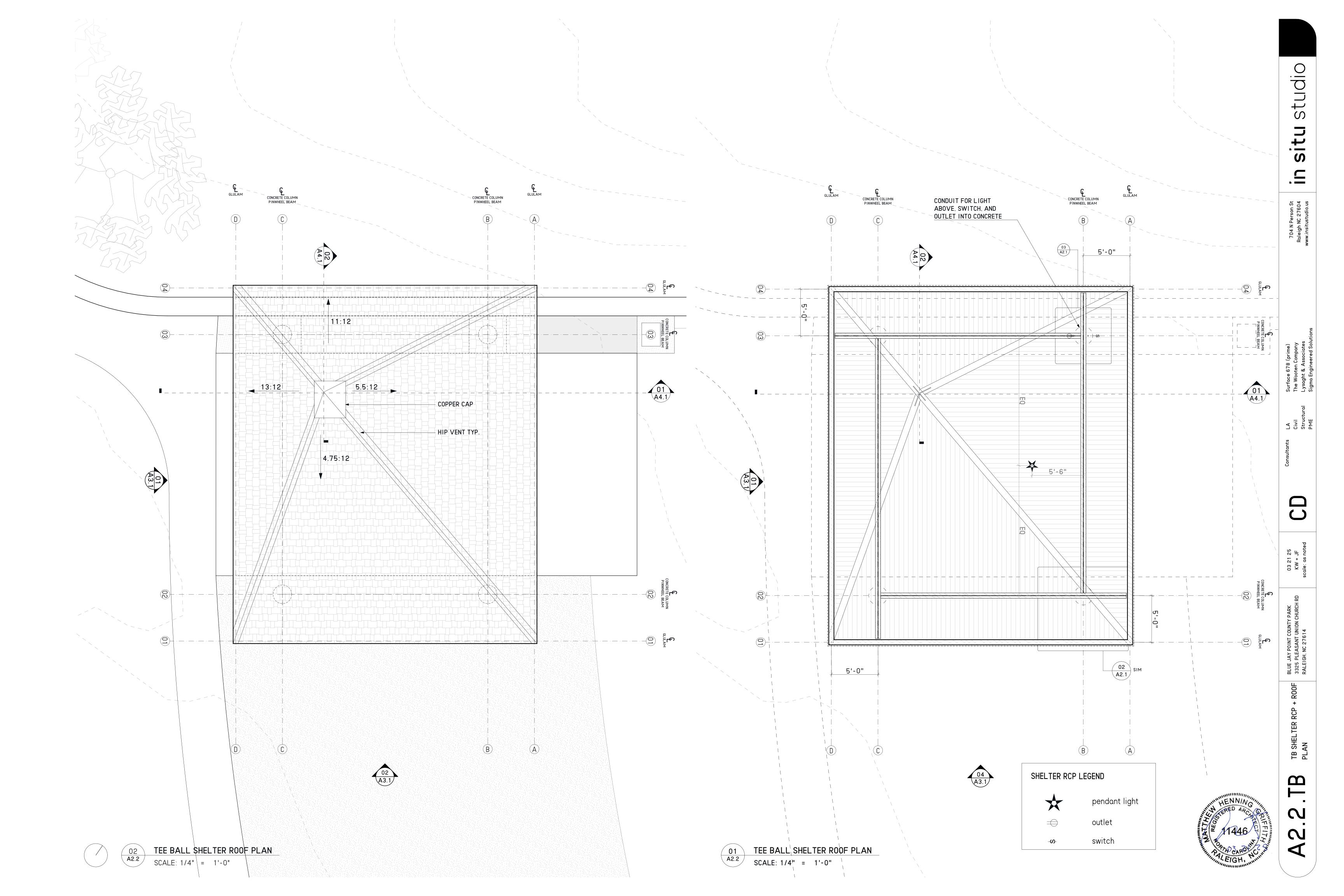
C406.7 Reduced Energy Use in Service Water Heating

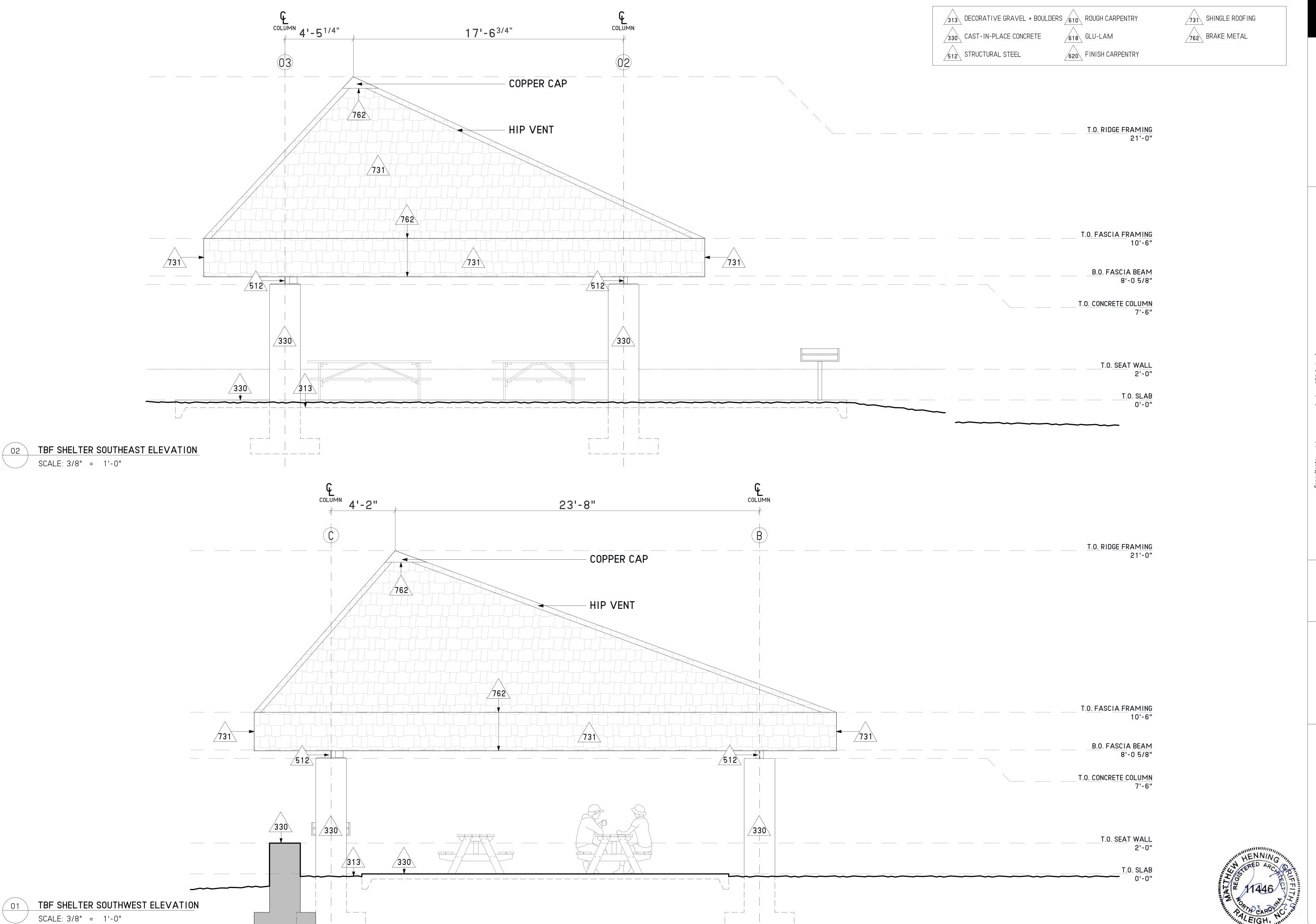
2018 NC Administrative Code and Policies Revised 6/15/2020 2018 NC Administrative Code and Policies











situ studio .⊑

704 N Person St Raleigh NC 27604 www.insitustudio.us

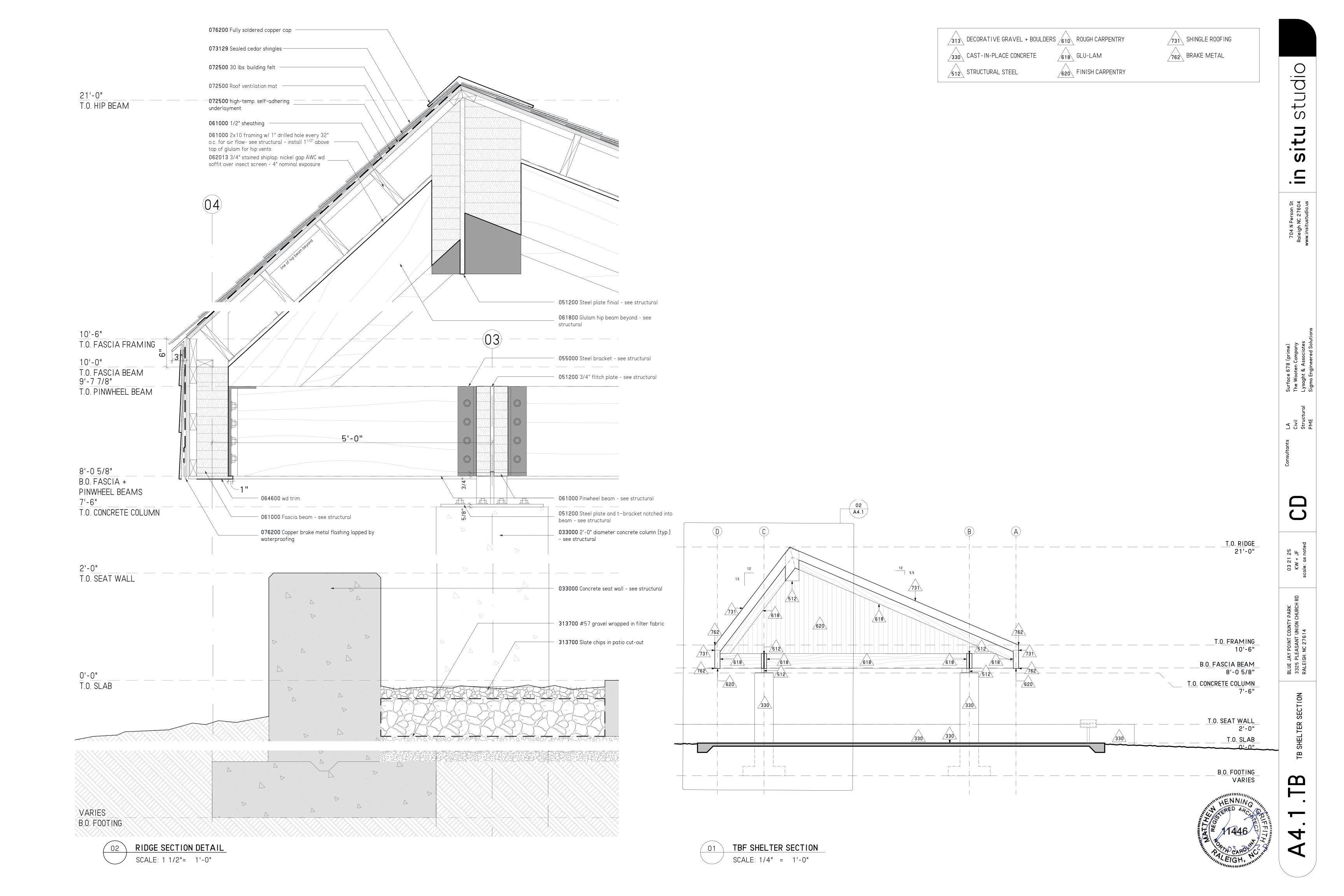
LA Civil Struc: PME

CD

03 21 25 KW + JF scale: as noted

BLUE JAY POINT COUNTY PARK 3325 PLEASANT UNION CHURCH RD RALEIGH, NC 27614

TB SHELTER ELEVATIONS HP. A3.



#### **GENERAL STRUCTURAL NOTES**

#### **GENERAL**

THESE DRAWINGS, AS INSTRUMENTS OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF LYSAGHT & ASSOCIATES, P.A., FOR USE SOLELY WITH THIS PROJECT AND SHALL NOT BE REPRODUCED FOR OTHER PURPOSES.

THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS THE PROJECT STRUCTURAL ENGINEER-OF-RECORD (SER) WHO BEARS LEGAL RESPONSIBILITY FOR THE PERFORMANCE OF THE STRUCTURAL FRAMING RELATING TO PUBLIC HEALTH, SAFETY AND WELFARE. NO OTHER PARTY, WHETHER OR NOT A PROFESSIONAL ENGINEER, MAY COMPLETE, CORRECT, REVISE, DELETE OR ADD TO THESE CONSTRUCTION DOCUMENTS OR PERFORM INSPECTIONS OF THE WORK WITHOUT THE WRITTEN PERMISSION OF THE SER.

USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH JOB SPECIFICATIONS, AND OTHER DRAWINGS.

SECTIONS AND DETAILS SHOWN SHALL BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.

ALL NON-STRUCTURAL ELEMENTS INDICATED ON THE DRAWINGS HAVE BEEN SHOWN IN GENERAL RELATIONSHIP TO THE STRUCTURAL ELEMENTS. THEY SHALL NOT BE ASSUMED TO BE ACCURATE AND REFERENCE MUST BE MADE TO THE APPROPRIATE CONSULTANT(S) PLANS AND SPECIFICATIONS.

CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND TAKE ALL NECESSARY FIELD MEASUREMENTS.

THE STRUCTURE SHOWN ON THESE DRAWINGS IS STRUCTURALLY SOUND ONLY IN ITS COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING TO STABILIZE THE BUILDING DURING CONSTRUCTION.

#### **LATERAL LOAD RESISTING SYSTEM**

LATERAL STABILITY FOR THE BUILDING WILL BE PROVIDED BY SHEAR WALLS AND MOMENT FRAMES AS SHOWN ON THE DRAWINGS.

#### **DIMENSIONS**

THE CONTRACTOR, BEFORE STARTING ANY WORK, SHALL CHECK ALL DIMENSIONS GIVEN ON THE STRUCTURAL DRAWINGS, RELATING TO GRID LINES, COLUMN AND WALL LOCATIONS, STRUCTURAL AND FINISHED FLOOR ELEVATIONS, MEMBER SIZES, ETC., WITH THE ARCHITECTURAL DRAWINGS. IF ANY DISCREPANCY IS NOTICED, IT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER AND WORK SHALL NOT COMMENCE UNTIL INSTRUCTIONS ARE RECEIVED FROM THE ENGINEER.

THE CONTRACTOR SHALL SEEK INSTRUCTION FROM THE ENGINEER FOR ANY DIMENSION NOT GIVEN OR OBTAINABLE FROM THE DRAWINGS. THE CONTRACTOR SHALL NOT USE SCALE TO OBTAIN OR VERIFY ANY DIMENSION SHOWN ON THESE DRAWINGS.

## **SCOPE OF STRUCTURAL ENGINEERING SERVICES**

THE STRUCTURAL ENGINEER HAS PERFORMED THE STRUCTURAL DESIGN AND REVIEWED THE ARCHITECTURAL PLANS FOR THIS PROJECT. SITE VISITS ARE ALSO INCLUDED IN THE FEE (IF THE ARCITECT, CONTRACTOR OR OWNER CONTACTS THE STRUCTURAL ENGINEER AT THE APPROPRIATE TIME). THE ARCHITECT, CONTRACTOR OR OWNER SHALL CONTACT THE STRUCTURAL ENGINEER AT THE FOLLOWING STAGES OF CONSTRUCTION FOR A FIELD REVIEW OF THE WORK:

- I. AFTERFOOTING EXCAVATION AND REBAR PLACEMENT, BEFORE CONCRETE IS POURED.
- 2. AFTER COMPLETION OF STEEL FRAMING SYSTEM, BEFORE INTERIOR FINISHES ARE INSTALLED.
- 3. AFTER COMPLETION OF THE WOOD FRAMING SYSTEM, BEFORE INTERIOR FINISHES ARE INSTALLED.
- 4. AT ANY STAGE OF CONSTRUCTION WHEN DESIGN OR CONSTRUCTION PROBLEMS ARE ENCOUNTERED.

ARCHITECT FOLLOWING EACH FIELD TRIP.

A "CONSTRUCTION REVIEW REPORT" WILL BE SENT TO THE CONTRACTOR AND THE

THE STRUCTURAL ENGINEER IS RESPONSIBLE FOR THE DESIGN OF THE PRIMARY STRUCTURAL SYSTEM, EXCEPT FOR THE COMPONENTS NOTED ABOVE. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR ANY SECONDARY STRUCTURAL AND NON-STRUCTURAL SYSTEMS NOT SHOWN ON THE STRUCTURAL PLANS

THE STRUCTURAL ENGINEER HAS NOT DONE A SUBSURFACE INVESTIGATION (HE IS NOT A SOILS SPECIALIST). THE FOUNDATION DESIGN IS BASED UPON AN ASSUMED ALLOWABLE BEARING PRESSURE AS SHOWN IN THE "FOUNDATION" STRUCTURAL NOTES.

THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK; NOR WILL HE BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

FIELD MEASUREMENTS AND THE VERIFICATION OF FIELD DIMENSIONS ARE NOT PART OF LYSAGHT & ASSOCIATES' RESPONSIBILITY. THE CONTRACTOR SHALL CHECK ALL (ASSUMED) EXISTING CONDITIONS SHOWN ON THESE DRAWINGS FOR ACCURACY AND NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

ANCHOR BOLT AFF ABOVE FINISH FLOOR ALLOWABLE STRESS DESIGN BUILT-UP B/U CENTER TO CENTER C/C CLNG CEILING COL COLUMN **DOUBLE JOIST** DOUBLE RAFTER **EXPANSION JOINT** EW **EACH WAY** FINISH FLOOR GLUED LAMINATED WOOD **HOLD DOWN** JOIST BEARING ELEVATION LBW LOAD BEARING WALL LLV LONG LEG VERTICAL LAMINATED VENEER LUMBER NTS NOT TO SCALE ON CENTER PARALLEL STRAND LUMBER (PARALLAM) PRESSURE TREATED STRUCTURAL ENGINEER-OF-RECORD S-P-F SPRUCE-PINE-FIR STD STANDARD STL STEEL

**ABBREVIATIONS** 

SHEAR WALL SYP SOUTHERN YELLOW PINE TOF TOP OF FOOTING TOS TOP OF STEEL TYP TYPICAL **UPSIDE DOWN** UNO **UNLESS NOTED OTHERWISE** VERIFY IN FIELD

## CODE

NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION

## **DESIGN DATA**

ALLOWABLE STRESS DESIGN	u	
OCCUPANCY CATEGORY	II	
FLOOR LIVE LOAD	50	PSF
ROOF DEAD LOAD	15	PSF
ROOF LIVE LOAD	20	PSF
ATTIC LIVE LOAD	10	PSF
GROUND SNOW LOAD	15	PSF
FLAT ROOF SNOW LOAD	15	PSF
SNOW EXPOSURE FACTOR	1.0	
SNOW LOAD IMPORTANCE FACTOR	1.0	
THERMAL FACTOR	1.1	
BASIC ULTIMATE WIND SPEED (3-SECOND GUST)	115	MPH
WIND IMPORTANCE FACTOR	1.0	
WIND EXPOSURE	В	
INTERNAL PRESSURE COEFFICIENT	+/- 0.18	
SEISMIC IMPORTANCE FACTOR		1.00
MAPPED SPECTRAL RESPONSE COEFFICIENT	Ss	0.147
MAPPED SPECTRAL RESPONSE COEFFICIENT	SI	0.074
SITE CLASS		D
SPECTRAL RESPONSE COEFFICIENT	Sds	0.157
SPECTRAL RESPONSE COEFFICIENT	SdI	0.119
SEISMIC DESIGN CATEGORY		В

BASIC SEISMIC-FORCE-RESISTING SYSTEM (VISITOR'S CENTER): LIGHT-FRAME (WOOD) WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE AND STEEL ORDINARY MOMENT FRAMES

BASIC SEISMIC-FORCE-RESISTING SYSTEM (SHELTERS): ORDINARY REINFORCED CONCRETE MOMENT FRAMES

## **FOUNDATIONS**

ALL FOOTINGS SHALL REST ON SOIL CAPABLE OF SAFELY SUPPORTING 2000 PSF. CONTACT STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED.

FOOTINGS SHALL BE CARRIED TO A LOWER ELEVATION THAN THOSE INDICATED ON THESE DRAWINGS IF NECESSARY TO REACH FIRM UNDISTURBED SOIL.

THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 1'-4" BELOW FINISHED

ALL FILL SHALL BE PLACED IN 8" MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D-698 (STANDARD PROCTOR METHOD). THIS REQUIREMENT SHALL BE INCREASED TO 98 PERCENT OF ASTM D-698 IN THE FINAL FOOT BENEATH FLOOR SLABS AND PAVEMENTS.

THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.

WHEN TOP OR SUBSOILS ARE EXPANSIVE, COMPRESSIBLE OR SHIFTING, SUCH SOILS SHALL BE REMOVED TO A DEPTH AND WIDTH SUFFICIENT TO ASSURE STABLE MOISTURE CONTENT IN EACH ACTIVE ZONE AND SHALL NOT BE USED AS FILL.

#### **CONCRETE**

CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," AND ACI 301, " SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS." ANY ADMIXTURES SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.

CONCRETE SHALL BE NORMAL WEIGHT.

MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3000 PSI.

#### REINFORCING STEEL

ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315.

REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. CLEAR CONCRETE COVER OVER BARS SHALL BE 3" FOR FOOTINGS.

PROVIDE CORNER BARS AT ALL FOOTING STEPS AND CORNERS. BARS SHALL BE A MINIMUM OF 2'-6" LONG AND SHALL HAVE THE SAME SIZE AND SPACING AS HORIZONTAL REINFORCING.

LAP ALL SPLICES IN CONCRETE AS SPECIFICALLY CALLED FOR, BUT AT LEAST 36 BAR DIAMETERS (24" MINIMUM) FOR TENSION OR COMPRESSION, UNLESS NOTED OTHERWISE. LAP SPLICES IN GROUTED MASONRY 48 BAR DIAMETERS U.N.O.

PROVIDE DOWELS IN WALL FOOTINGS EQUIVALENT IN SIZE AND NUMBER TO VERTICAL STEEL EXTENDING 24 BAR DIAMETERS INTO FOOTING AND 36 BAR DIAMETERS INTO WALL, UNLESS NOTED OTHERWISE.

#### **STRUCTURAL GLUED LAMINATED WOOD**

MATERIALS, MANUFACTURE AND QUALITY CONTROL SHALL BE IN CONFORMANCE WITH AMERICAN NATIONAL STANDARD ANSI/AITC A 190.1 "STRUCTURAL GLUED LAMINATED

LAMINATING COMBINATIONS SHALL MEET THE REQUIREMENTS OF ANSI/AITC A 190.1, AND SHALL PROVIDE ALLOWABLE DESIGN VALUES OF 2400 PSI IN BENDING, 1700 PSI IN COMPRESSION PARALLEL TO GRAIN, 1150 PSI IN TENSION PARALLEL TO GRAIN, 450 PSI IN COMPRESSION PERPENDICULAR TO GRAIN, 200 PSI IN HORIZONTAL SHEAR, AND 1700000 PSI IN MODULUS OF ELASTICITY FOR DRY CONDITIONS OF SERVICE.

ADHESIVES SHALL MEET THE REQUIREMENTS FOR WET CONDITION OF SERVICE.

MEMBERS SHALL BE MARKED WITH QUALITY MARK, AND, IN ADDITION, A CERTIFICATE OF CONFORMANCE SHALL BE PROVIDED TO INDICATE CONFORMANCE WITH ANSI/AITC A 190.1.

THE FABRICATOR SHALL FURNISH CONNECTION STEEL AND HARDWARE FOR JOINING GLUED LAMINATED TIMBER MEMBERS TO EACH OTHER AND TO THEIR SUPPORTS EXCLUSIVE OF ANCHORAGE EMBEDDED IN MASONRY OR CONCRETE, SETTING PLATES, AND ITEMS FIELD-WELDED TO STRUCTURAL STEEL. METAL SHAPES TO HAVE ONE COAT OF SHOP APPLIED PAINT CONTAINING A RUST INHIBITOR.

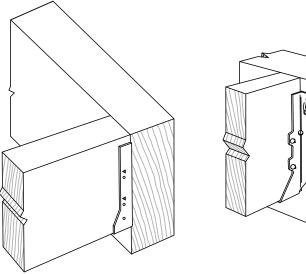
CAREFULLY UNLOAD AND HANDLE THE LAMINATED MEMBERS AT JOBSITE TO PREVENT SURFACE MARRING AND DAMAGE. IF LAMINATED WOOD IS TO BE STORED BEFORE ERECTION, PLACE IT ON BLOCKS WELL OFF THE GROUND WITH INDIVIDUAL MEMBERS SEPARATED BY STRIPS SO THAT AIR MAY CIRCULATE. COVER THE TOP AND SIDES OF STORAGE PILES WITH MOISTURE-RESISTANT COVERING. (DO NOT USE CLEAR POLYETHYLENE FILMS). WHEN HOISTING MEMBERS INTO PLACE USE PADDED OR NON-MARRING SLINGS, AND PROTECT CORNERS WITH WOOD BLOCKING. ADEQUATELY BRACE MEMBERS AS THEY ARE ERECTED TO HOLD THEM IN A SAFE POSITION UNTIL FULL STABILITY IS PROVIDED.

CONTRACTOR TO ENGAGE A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT FOR ALL GLULAM CONNECTIONS. CONTRACTOR TO SUBMIT SIGNED AND SEALED CALCULATIONS AND SHOP DRAWINGS FOR REVIEW PRIOR TO COMMENCING FABRICATION OF GLULAM AND RELATED STEEL COMPONENTS.

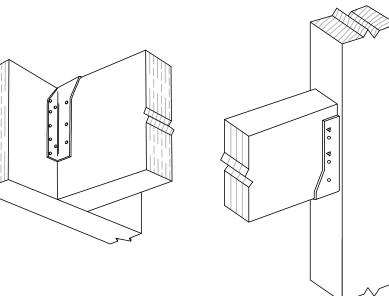
PRIOR TO FABRICATION, CONTRACTOR TO SUBMIT FOR REVIEW SHOP DRAWINGS INDICATING THE LAYOUT OF GLULAM MEMBERS, THE SPECIES AND LAMINATING COMBINATIONS, AND LARGE-SCALE DETAILS OF CONNECTIONS.

ALL GLULAM APPEARANCE GRADES TO BE ARCHITECTURAL PER AITC 110.

DO NOT CUT, DRILL, OR NOTCH GLULAM BEAMS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.



TYPICAL FACE MOUNTED HANGER TYPICAL CONCEALED HANGER



TYPICAL CONCEALED HANGER TO POST TYPICAL UPSIDE DOWN HANGER

#### SOLID WOOD FRAMING, HEADERS AND PLYWOOD

ALL SOLID WOOD FRAMING SHALL COMPLY WITH THE NATIONAL FOREST PRODUCTS ASSOCIATION "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."

FLOOR AND ROOF JOISTS SHALL BE THE GRADE AND SPECIES SHOWN ON THE STRUCTURAL DRAWINGS.

PLYWOOD SHALL CONFORM TO THE AMERICAN PLYWOOD ASSOCIATION "PLYWOOD DESIGN SPECIFICATION". PLYWOOD SHALL BE CDX OR STRUCTURAL EQUIVALENT.

ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE NORTH CAROLINA STATE BUILDING CODE.

HEADERS OVER OPENINGS IN LOAD BEARING WALLS SHALL BE AS SHOWN AT THE "HEADER

USE LVL FOR ALL FLITCH BEAMS AND A36 STEEL FOR FLITCH PLATE. ATTACH THE MEMBERS TOGETHER WITH 5/8" DIAMETER BOLTS @ 16" O.C. STAGGERED, AND DOUBLE BOLTS AT BOTH ENDS. PROVIDE CONTINUOUS LATERAL SUPPORT FOR TOP OF BEAM. DO NOT SPLICE LVL BEAMS BETWEEN SUPPORT POINTS.

LVL HEADERS THAT ARE DOUBLED SHALL BE NAILED TOGETHER WITH 2 ROWS OF 16d NAILS @ 12" O.C. STAGGERED. PROVIDE CONTINUOUS LATERAL SUPPORT FOR TOP OF HEADER. STRENGTH OF LVL HEADERS SHALL BE EQUAL TO THAT PROVIDED BY MICROLAM HEADERS AS MANUFACTURED BY TRUS JOIST:  $F_V = 285$  PSI,  $F_D = 3100$  PSI, E = 2000 KSI.

PARALLAM, PARALLEL STRAND LUMBER (PSL), IS MADE FROM LONG, THIN STRANDS OF WOOD STRUCTURALLY BONDED TOGETHER IN A MICROWAVE PROCESS TO MAKE A LARGE CROSS-SECTION BEAMS AND COLUMNS. PARALLAM MEMBERS SHOWN ON THE DRAWINGS SHALL BE THE WIDTH SHOWN AND NOT BUILT UP FROM MULTIPLE PLIES. PARALLAM MEMBERS SHALL HAVE THE FOLLOWING MINIMUM STRUCTURAL PROPERTIES: Fv = 290 PSI, Fb = 2900 PSI, E = 2000 KSI. LVL CANNOT BE SUBSTITUTED FOR PARALLAM.

BUILT-UP STUD COLUMNS SHALL BE SECURELY NAILED TOGETHER TO ACT AS A COMPOSITE MEMBER. USE (2) 12d NAILS FOR EACH STUD AT 9" O.C. WITH NAILS INSTALLED ON ALTERNATE SIDES OF COLUMN.

THE HEIGHT OF STUD BEARING WALLS IS LIMITED TO 10' BETWEEN LATERAL BRACING UNLESS NOTED OTHERWISE ON THE DRAWINGS. CONTACT STRUCTURAL ENGINEER FOR STUD HEIGHTS GREATER THAN 10'-0". STUDS SHALL NOT BE SPLICED AT TALL WALLS, EXCEPT AT POINTS OF LATERAL SUPPORT.

AN EXTRA JOIST SHALL BE PLACED UNDER NON-LOAD BEARING PARTITIONS WHICH ARE ADDED DURING THE RENOVATION AND RUN PARALLEL TO THE FLOOR JOISTS. (THIS NOTE GOVERNS OVER INFORMATION SHOWN ON THE FRAMING PLANS.)

#### STRUCTURAL REQUIREMENTS IN 115 MPH WIND ZONE

FOUNDATIONS IN THE 115 MPH WIND ZONE SHALL BE AT LEAST 10" DEEP X 24" WIDE, REINFORCED WITH (3) #4'S OR (2) #5'S LOCATED 3" ABOVE THE BOTTOM OF FOOTING. THE REBARS SHALL BE CONTINUOUS WITH 18" MINIMUM LAPS AT SPLICES AND

PRESERVATIVE TREATED WOOD SILLS ON CONTINUOUS FOUNDATION WALLS SHALL BE ANCHORED WITH 1/2" BOLTS WITH 2 X 2 X 1/8 WASHERS SPACED NOT MORE THAN 4'-0" APART AND WHICH ARE EMBEDDED AT LEAST 8" IN CONCRETE OR 16" IN MASONRY UNITS. INSTALL TWO ANCHOR BOLTS WITHIN 6" OF THE CORNERS OF THE BUILDING, AT EACH DOOR AND WINDOW JAMB AND WITHIN 12" OF EACH END AT

INSTALL THREE STUDS (MIN) AT EVERY CORNER OF AN EXTERIOR WALL.

ALL EXTERIOR WALLS, AND INTERIOR SHEAR WALLS, SHALL BE FULLY SHEATHED WITH 7/16" STRUCTURAL SHEATHING TO PROVIDE LATERAL STRENGTH FOR WIND LOADS AND TO PROVIDE A CONTINUOUS TIE FROM ROOF DOWN TO THE FOUNDATION WALL. SHEATHING SHALL BE ATTACHED TO THE STUDS WITH 8d NAILS AT 4" O.C. ALONG THE PANEL EDGES AND 12" O.C. AT INTERMEDIATE LOCATIONS. BLOCK BETWEEN STUDS AT PLYWOOD JOINTS.

EACH RAFTER/ROOF JOIST, AND/OR ROOF TRUSS SHALL BE ATTACHED TO THE EXTERIOR WALL AND ANY BEARING WALL WITH A SIMPSON HURRICANE TIES.

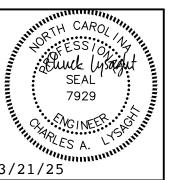
SIZE	HANGER	ALLOW. LOAD
2 X 6	LUS26, LUC26Z	710#
(2) 2 X 6	HU26-2, HUC26-2	1190#
(3) 2 X 6	HU26-3, HUC26-3	1190#
2 X 8	LUS26, LUC26Z	710#
(2) 2 X 8	HU26-2, HUC26-2	1190#
(3) 2 X 8	HU26-3, HUC28-2	1190#
2 X 10	LUS210, LUC210Z	1150#
(2) 2 X 10	HU210-2, HUC210-2	2085#
(3) 2 X 10	HU210-3, HUC210-3	2085#
2 X 12	LUS210, LUC210Z	1150#
(2) 2 X 12	HU212-2, HUC212-2	2385#
(3) 2 X 12	HU212-3, HUC212-3	2385#
1 3/4 X 9 1/4 (9 1/2) LVL	HU9, HUCQ1.81/9-SDS	2000#
3 1/2 X 9 1/4 (9 1/2) LVL OR PSL	HGUS410, HUCQ410-SDS	9100#, 4500#
5 1/4 X 9 1/4 (9 1/2) LVL OR PSL	HGUS5.5/10, HUCQ610-SDS	5635#, 4680#
1 3/4 X 11 1/4 (11 7/8) LVL	HU11, HUC Q1.81/11-SDS	2500#
3 1/2 X 11 1/4 (11 7/8) LVL OR PSL	HGUS412, HUCQ412-SDS	9400#, 5045#

1. LOAD VALUES SHOWN IN THE TABLE ABOVE DO NOT INCLUDE THE LOAD DURATION FACTOR.

2. USE HANGER PER SCHEDULE ABOVE UNLESS SPECIFIED DIFFERENTLY ON FRAMNG PLAN. ALL FLUSH WOOD/WOOD CONNECTIONS SHALL BE MADE WITH HANGERS. OTHER HANGERS MAY BE SUBSTITUTED FOR THOSE SHOWN IF DESIGN VALUES ARE EQUAL TO OR GREATER THAN THOSE IN THE TABLE.

3. IN STALL HANGERS PER MAN UFACTURER'S SPECIFICATIONS.

USE STAINLESS STEEL HANGERS IF EXPOSED TO THE ELEMENTS OR IN CONTACT WITH TREATED WOOD. (GALVANIZED HANGERS MAY BE USED IN LIEU OF STAINLESS STEEL IF SPECIFICALLY RECOMMENDED BY SIMPSON AND THE TREATING COMPANY.)



声画:

55 S **—** • • • Ш 뚭

O

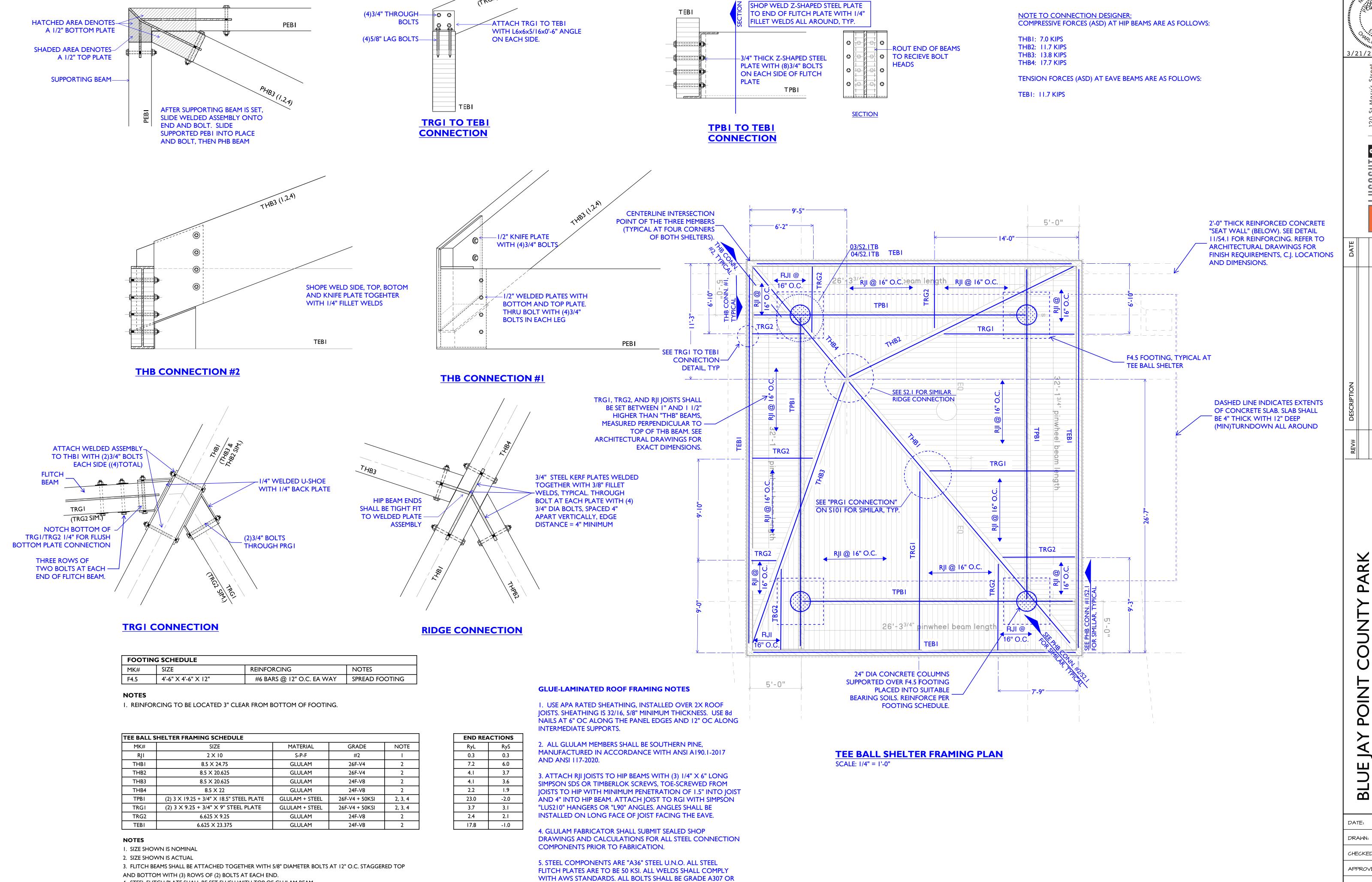
 $\Delta$ 

 $\mathbf{\Omega}$ DATE: 03/21/25

GTH DRAWN: CHECKED:

APPROVED: CAL

4. STEEL FLITCH PLATE SHALL BE SET FLUSH WITH TOP OF GLULAM BEAM.



BETTER U.N.O.

7929

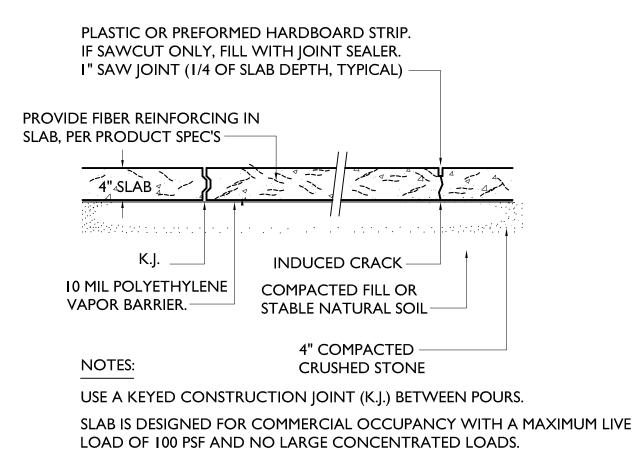
3/21/25

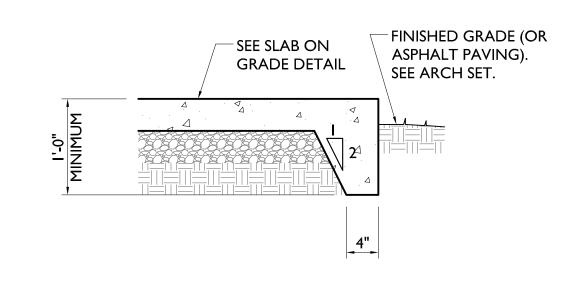
120 St. Mary's Street Raleigh, NC 27605 9 1 9 . 8 3 3 . 0 4 9 5 LysaghtAssociates.com Firm No. C-0621

LYSAGHT E RSSOCIATES 뛾

CHECKED: \_

APPROVED: CAL

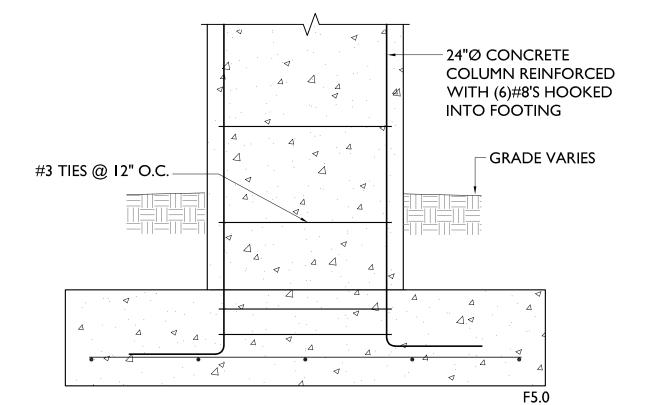




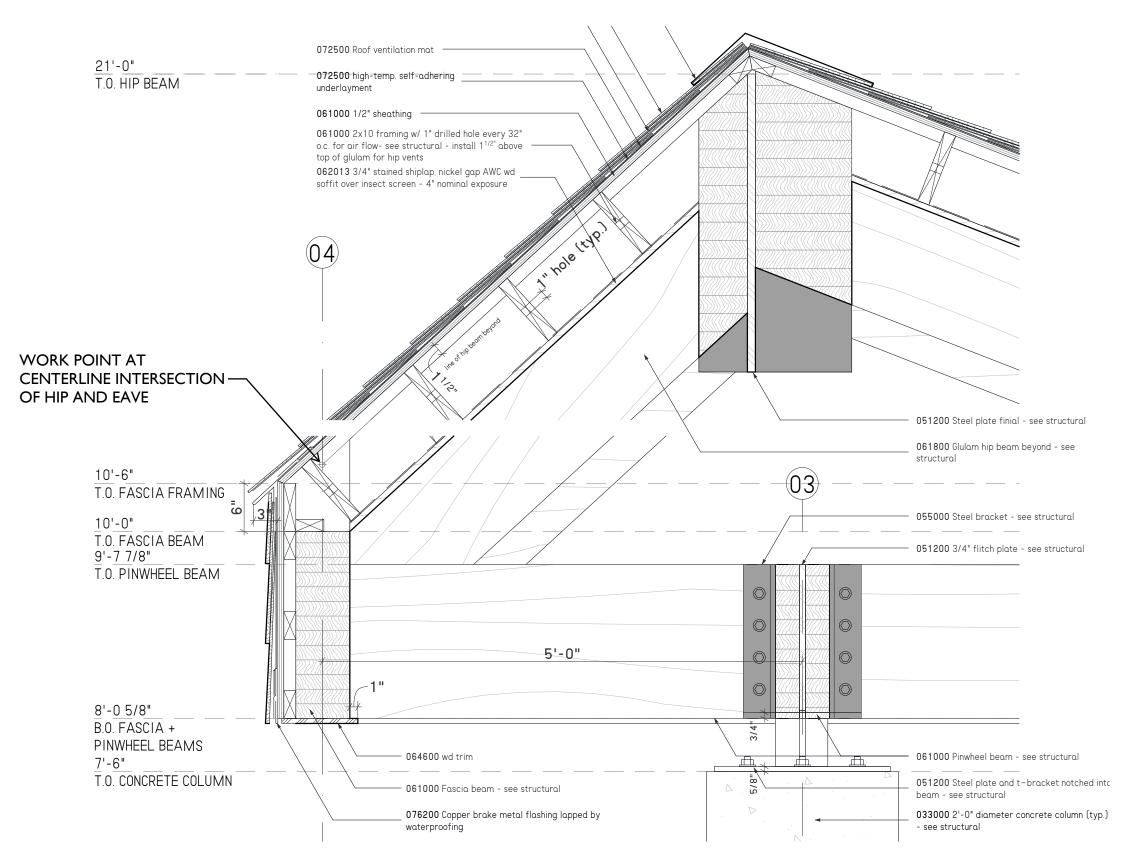
BOTTOM OF TURNDOWN MUST BE A MINIMUM OF I'-0" BELOW FINISHED GRADE. USE DEEPER TURN-DOWN IF NECESSARY.



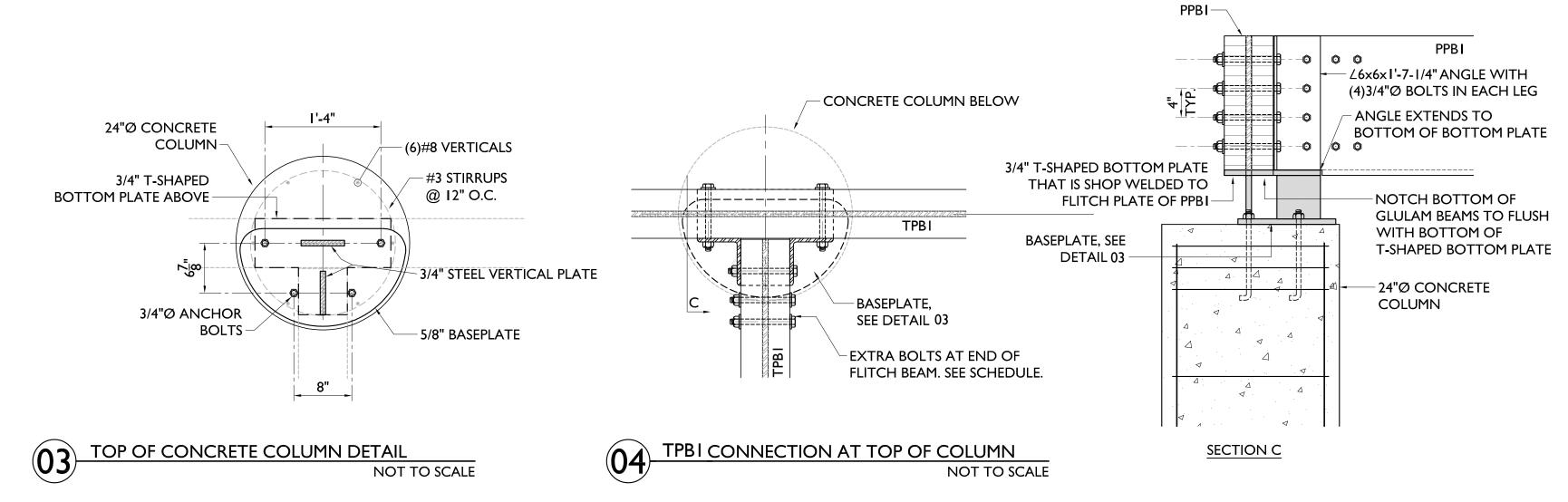


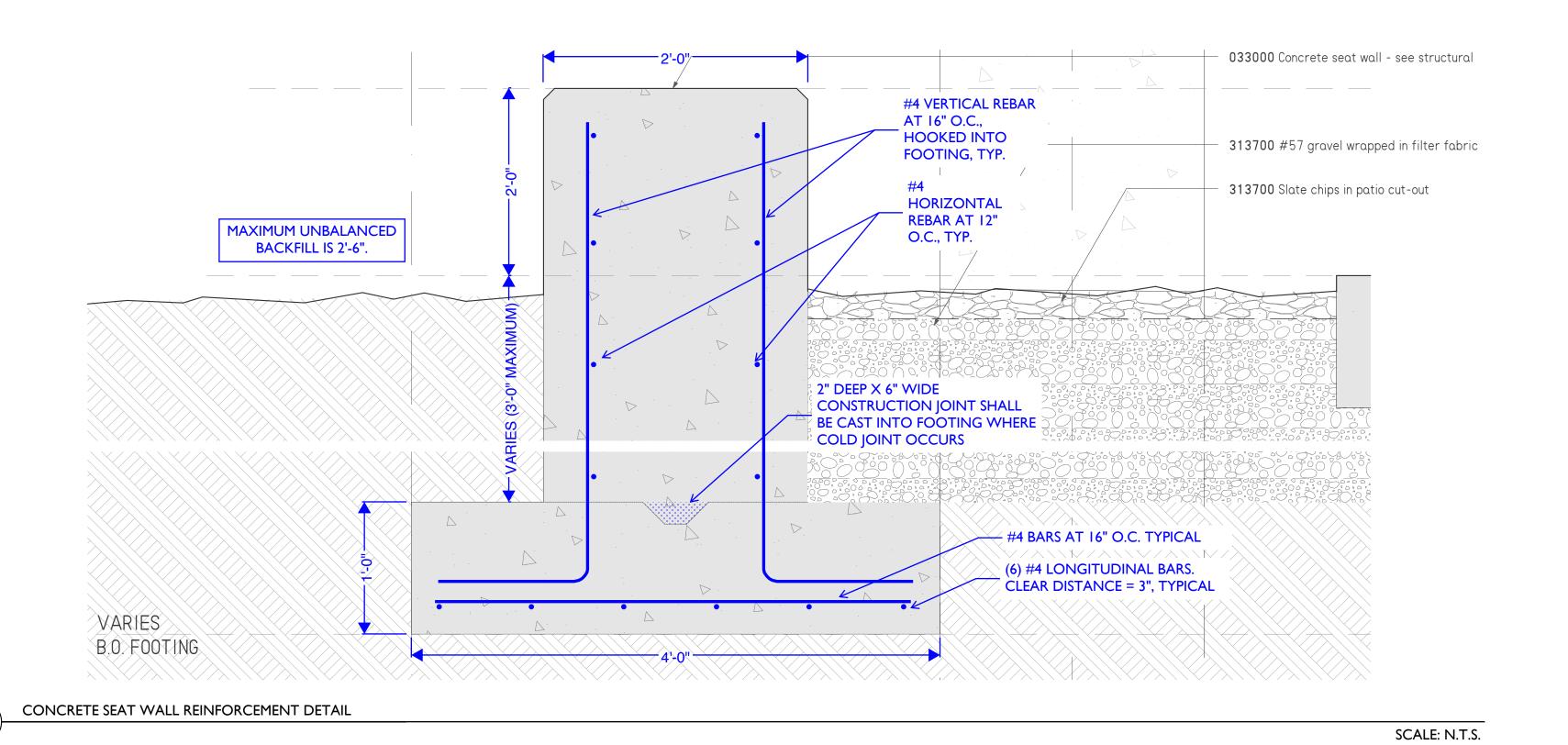


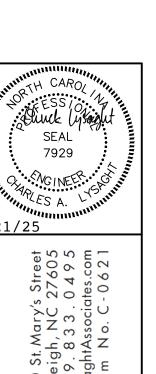












/21/25 120 St. Mary's Street Raleigh, NC 27605 9 1 9 . 8 3 3 . 0 4 9 5 LysaghtAssociates.com Firm No. C-0621

LYSAGHT E INSSOCIATES ural engineers 뛾

ARK

NOO POIN BLUE

DATE: DRAWN: CHECKED: \_\_ APPROVED: CAL

		LIGHTING SYMBOLS	
Ø	<b>n</b>	WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY	J
<u> </u>	_	BACK-UP, SINGLE FACE. ARROW WHEN USED INDICATES DIRECTION.  WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY	$\Rightarrow$
4	<u> </u>	BACK-UP, DOUBLE FACE. ARROW WHEN USED INDICATES DIRECTION.	<del>==</del>
		SUSPENDED OR SURFACE MTD LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT	<b>⊕</b> =
		SUSPENDED OR SURFACE MTD LED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT	<b>⊕</b>
	•	CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT	FB-1 0 △
		CEILING MTD OR LAY-IN LED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT	<b>РТ-1∥Ф</b>  △ <u>NОТЕ</u> 1. S
	•	CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT	2. S
		CEILING MTD OR LAY-IN LED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT	3. S 4. S \ 5. S
C	)	CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE AND OUTLET, LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT	6. S 7. S 8. S
•	•	CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH/ON EMERGENCY DRIVER ON NITE-LITE CIRCUIT	9. S F 9. S 10. S
4	D	SURFACE MOUNTED WALL LUMINAIRE OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT	1 <b>⊳</b>
	•	SURFACE MOUNTED WALL LUMINAIRE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT	<b>→</b> T
		INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT  EMERGENCY WALL BATTERY PACK UNIT WITH NUMBER OF LAMPS AS	() <u>NOT</u>
4_		INDICATED. LETTER NEXT TO FIXTURE ON PLANS INDICATES FIXTURE TYPE. CONNECT UNSWITCHED TO INDICATED BRANCH CIRCUIT.	1. S C 2. S
		NOTE TO ALL LIGHTING:  X/Y-SUBSCRIPTS @ LIGHTING FIXTURES:  1. X-REPRESENTS OCCUPANCY SENSOR THAT CONTROLS FIXTURE.  2. Y-REPRESENTS SWITCH THAT CONTROLS FIXTURE.  3. WHEN NO SUBSCRIPT IS SHOWN, LOCAL OCC SENSOR AND SWITCH	3. S 4. S 5. S 6. S 7. S L 8. S
	Sor	CONTROLS FIXTURE.  DIGITAL TIMER SWITCH-INTERMATIC EI235 OR EQUAL	9 S
	S <sub>DT</sub>	DIGITAL TIMER SWITCH-INTERMATIC ST01 OR EQUAL FLUSH MTD TOGGLE SWITCH, S.P.S.T., 20A, 120/277V	
	<b>S</b> <sub>3</sub>	FLUSH MTD 3-WAY TOGGLE SWITCH, 20A, 120/277V	NF 60
	S <sub>4</sub>	FLUSH MTD 4-WAY TOGGLE SWITCH, 20A, 120/277V  FLUSH MTD DIMMER SWITCH. PROVIDE 0-10V DIMMER UON.	<u>   20</u>
	<b>S</b> D(x)		NE
	Sos	SWITCH TYPE OCCUPANCY SENSOR WITH BUILT-IN OVERRIDE SWITCH	30
	<b>S</b> D/OS	S COMBINATION 0-10V DIMMER AND OCCUPANCY SENSOR	$4X \frac{NF}{30}$
	SL	SURFACE MTD TOGGLE SWITCH, S.P.S.T., 20A, 120/277V W/LOCKABLE COVER PLATE	$4X \frac{\text{ECB}}{200}$
	Sa S	b LOWER CASE SUBSCRIPT INDICATE WHICH LIGHTS THE SWITCH IS TO BE CONNECTED TO.	
	(OSC)	DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR; A/V DESIGNATES SENSOR PROVIDED AS PART OF DIMMING OR A/V PACKAGE U/H DESIGNATES ULTRA-SONIC DEVICE RATED FOR HALLWAY	Sm
	(OSW)	INSTALL WALL MOUNTED OCCUPANCY SENSOR	(1)
	•	NOTE ON OCC SENSORS: SENSORS SHALL PROVIDE COVERAGE TO 1000 SF AND SWITCH LOAD OFF AFTER 20 MIN.	5
	PC	120 VOLT PHOTOCELL	5
PC-x		24/7/365 ASTRONOMICAL TIME CLOCK	
TC-x	TCx	FIRE ALARM SYMBOLS	
	⊳∰ 75cd	CEILING MOUNTED FIRE ALARM AUDIO/VISUAL DEVICE	
	75cd ∇√√ 75cd	CEILING MOUNTED FIRE ALARM VISUAL-ONLY DEVICE	1
	F	WALL MTD FIRE ALARM PULL STATION	2
	FACP	WALL MTD FIRE ALARM CONTROL PANEL	
	$\langle s \rangle$	SMOKE DETECTOR, CEILING OR WALL MTD	3
	$\langle H \rangle$	HEAT DETECTOR, CEILING OR WALL MTD	
CON	NV.(H)	NON ADDRESSABLE HEAT DETECTOR, CEILING OR WALL MTD	
-		DUCT MOUNTED SMOKE DETECTOR	
	MD	MAGNETIC DOOR HOLD	
	MM	MONITOR MODULE	
	СМ	CONTROL MODULE	
	IM	SURGE PROTECTOR	
	SP V	FIRE ALARM VISUAL DEVICE	

FIRE ALARM AUDIO/VISUAL DEVICE

REMOTE INDICATOR LAMP WITH TEST SWITCH

### POWER SYMBOLS

<u>J</u>	OUTLET BOX WITH BLANK COVER - LOCATE AS REQUIRED TO FOR EQUIPMENT SERVED.
€	FLUSH MTD DUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W

FLUSH MTD QUADRUPLEX RECEPTACLE AND

FLUSH MOUNTED QUADRUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS.

FLUSH MOUNTED QUADRUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS.

20 AMPERE, 250 VOLT OUTLET

OUTLET, 20A, 125V, 3W

FLOOR BOX. BOX TO BE FLUSH MOUNTED IN CONCRETE FLOORS. (X)-X REPRESENTS NUMBER OF CABLES.

POKE-THRU. TO BE FLUSH MOUNTED IN FLOORS. (X)-X REPRESENTS NUMBER OF CABLES.

TE TO ALL RECEPTACLES/JUNCTION BOXES:

SUBSCRIPT EWC INDICATES GROUND FAULT TYPE RECEPTACLE FOR ELECTRIC WATER COOLER.

SUBSCRIPT WP INDICATES GROUND FAULT TYPE RECEPTACLE WITH STEEL LOCKABLE CLOSED WEATHERPROOF COVER. SUBSCRIPT GF INDICATES GROUND FAULT TYPE RECEPTACLE.

SUBSCRIPT VEN INDICATES GROUND FAULT TYPE RECEPTACLE FOR VENDING MACHINE. SUBSCRIPT TV INDICATES RECEPTACLE FOR TV MOUNTED IN

BRACKET. SUBSCRIPT SL INDICATES SHORELINE INSTALLATION PER DETAILS. SUBSCRIPT USB INDICATES COMBINATION 20A OUTLET AND USB PORT.

SUBSCRIPT HD INDICATES HAND DRYER CONNECTION. SUBSCRIPT MF INDICATES GFI RECEPTACLE MOUNTED BELOW SINK

FOR ELECTRIC METERED FAUCET CONNECTION. SUBSCRIPT MD INDICATES CONNECTION TO MOTORIZED DAMPER. SUBSCRIPT DW INDICATES DISHWASHER CONNECTION. PROVIDE WITH 120 VOLT 20 AMPERE SWITCH ABOVE COUNTER FOR DISCONNECT.

TELE/COMM OUTLET 4" SQ. BOX WITH 1"C PER RISER. CABLING BY DIVISION 27. (X)-X REPRESENTS NUMBER OF CABLES. TELE/COMM OUTLET 4" SQ. BOX WITH 1"C PER RISER. MOUNT 4" ABOVE BACKSPLASH OR AS NOTED. CABLING BY DIVISION 27. (X)-X REPRESENTS NUMBER OF CABLES.

#### OTE TO ALL TELECOM OUTLETS:

SUBSCRIPT WAP DESIGNATES WIRELESS ACCESS POINT MOUNTED IN CEILING

OR WALL. WALL MOUNTED DEVICES SHALL BE PROVIDED AT 84" AFF. SUBSCRIPT FA DESIGNATES CONNECTION FOR FIRE ALARM DIAL OUT.

SUBSCRIPT EL DESIGNATES CONNECTION FOR ELEVATOR PHONES. SUBSCRIPT W DESIGNATES WALL MOUNTED PHONE MOUNTED AT 48" AFF.

SUBSCRIPT DC DESIGNATES DOOR COUNTER CONNECTION. SUBSCRIPT SEC DESIGNATES CONNECTION FROM DROP 1. SUBSCRIPT ER DESIGNATES EMERGENCY RESPONSE PHONE WITH DEDICATE

SUBSCRIPT AV DESIGNATES 1"C TO ABOVE CEILING FOR AV CONNECTION. SUBSCRIPT BAS DESIGNATES 1"C TO MDF FOR BAS PANEL.

HANDICAPPED DOOR OPERATOR

DISCONNECT SWITCH-PROVIDE 30A, NON-FUSED U.O.N.

NON-FUSED DISCONNECT SWITCH. NUMBER OF

POLES AND VOLTAGE PER CIRCUIT FED. BOTTOM NUMBER REPRESENTS SIZE.

30 AMP FUSED DISCONNECT SWITCH, FUSED AT 20 AMP. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

30 AMP NON-FUSED, WEATHERPROOF NEMA 3R DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

30 AMP NON-FUSED, NEMA 4X SS DISCONNECT SWITCH.

NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED. NEMA 4X SS ENCLOSED CIRCUIT BREAKER.

NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

FVNR COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER OR VFD (IF MARKED VFD)

MANUAL MOTOR RATED SWITCH WITHOUT OVERLOAD HEATERS

A.C. MOTOR, NUMERAL INDICATES HP "F" INDICATES FRACTIONAL HP

PANEL BOARD, FLUSH MOUNTED

PANEL BOARD, SURFACE MOUNTED

CONCEALED RACEWAY. INDICATES HOMERUN TO PANEL IN MIN. 3/4" CONDUIT-WIRE PER PANEL SCHEDULES.

## ELECTRICAL SYMBOL NOTES

1. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.

2. SYMBOLS NOT LISTED IN THIS ELECTRICAL SYMBOL LEGEND ARE IDENTIFIED ON THE DRAWINGS WHERE THEY OCCUR.

3. MOUNTING HEIGHT GIVEN IN THE ELECTRICAL SPECIFICATIONS IS TO THE CENTERLINE OF THE DEVICE AND SHALL BE FOLLOWED UNLESS OTHERWISE

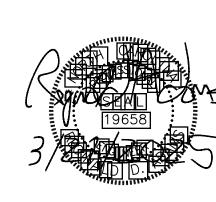
## AV SYSTEM SYMBOLS

WALL MOUNTED TV. PROVIDE T/C AND HDMI OUTLETS MOUNT AT 84" AFF PER DETAIL.

## **ABBREVIATIONS**

DROP X	REFER TO E701 FOR ROUGH-IN INFORMATION	Α	AMPERE, AMMETER	KW	KILOWATTS
			ABOVE FINISHED FLOOR	LC	LIGHTING CONTACTOR
CR	CARD READER.	AIC	AMPERES INTERRUPTING CAPACITY	LIV	LIGHTING INVERTER
_		AHU	AIR HANDLING UNIT	LTG	LIGHTING
(J) CAX	CARD READER DOOR ROUGH IN.	ATS	AUTOMATIC TRANSFER SWITCH	LV	LOW VOLTAGE
OAX		AV,A/V	AUDIO-VISUAL	MB	METER BASE
<u>()</u> ELX	ELECTRIC LOCK ROUGH IN AND POWER.	BFG	BELOW FINISHED GRADE	MC	MECHANICAL CONTRACTOR
ELA		C/CON.	CONDUIT	MCB	MAIN CIRCUIT BREAKER
		CATV	CABLE (COMMUNITY) ANTENNA TELEVISION	MCC	MOTOR CONTROL CENTER
DCX	DOOR CONTACT.	CTC	CT CABINET	MH	MANHOLE
		CU	COPPER	MLO	MAIN LUGS ONLY
(J) GB	GLASS BREAK.	DISC	DISCONNECT	NF	NON FUSED
GB		EC	ELECTRICAL CONTRACTOR	NIC	NOT IN CONTRACT
	INTERCOM	ECB	ENCLOSED CIRCUIT BREAKER	NL	NIGHT LIGHT
ب		EGC	EQUIPMENT GROUNDING CONDUCTOR	Р	POLE, PHASE
KB	SECURITY CONNECTION AT KNOX BOX.	EVCS	ELECTRIC VEHICLE CHARGING STATION	PB	PULL BOX
	SECURITY CONNECTION AT REFRIGERANT	EWC	ELECTRIC WATER COOLER	PC	PLUMBING CONTRACTOR
RM	MONITORING SYSTEM.	ANT EWC ELECTRIC VEHICLE CHARGING STATION PB PULL BOX  EWC ELECTRIC WATER COOLER PC PLUMBING CONTRACTOR  E EXISTING P/BD, PNL PANELBOARD  FA, F/A FIRE ALARM PR PAIR	PANELBOARD		
	SECURITY TELEPHONE.	FA, F/A	FIRE ALARM	PR	PAIR
(J) ST4	SESSIVIT TEEET HONE.	FAAP	FIRE ALARM ANNUNCIATOR PANEL	PV	PHOTO-VOLTAIC
514		FACP	FIRE ALARM CONTROL PANEL	PVD	PHOTO-VOLTAIC DISCONNECT
	MOTION DETECTOR.	GEC	GROUNDING ELECTRODE CONDUCTOR	SN	SOLID NEUTRAL
<del>J</del> M		G,GND	GROUND	SW	SWITCH
	DURESS BUTTON.	GC	GENERAL CONTRACTOR	SWBD	SWITCHBOARD
OX DX		GF,GFI	GROUND FAULT INTERRUPTER	T/C	TELECOM
		GFPE	GROUND FAULT EQUIP. PROTECTOR	UG	UNDERGROUND
	CAMERA. PROVIDE 1-1"C TO DROP .	НН	HANDHOLE	UON	UNLESS OTHERWISE NOTED
图		HP	HORSEPOWER	V	VOLT
×	CAMERA. PROVIDE 1-1"C TO DROP .	ID	INNERDUCT	WP	WEATHERPROOF
$\bigotimes$	CAMILITA. I NOTICE 1-1 O TO DINOF.	IG, ISG	ISOLATED GROUND	XFMR	TRANSFORMER
TO SERVICE SER		JB	JUNCTION BOX		
<b>V</b>		KVA	KILOVOLT-AMPERES		

SECURITY SYSTEM SYMBOLS



#### **GENERAL NOTES**

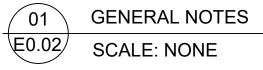
- 1. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE 2020 NEC, ALL LOCAL AND STATE CODES, STATE BUILDING CODE AND REQUIREMENTS BY THE AUTHORITY HAVING JURISDICTION.
- 2. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
- 3. UNLESS OTHERWISE INDICATED THE CONTRACTOR, IS RESPONSIBLE FOR ALL CUTTING, CORE- DRILLING AND PATCHING REQUIRED TO INSTALL ELECTRICAL RELATED WORK.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ELECTRICAL RELATED WORK WITH OTHER TRADES. THE CONTRACTOR IS CAUTIONED THAT IT IS TOTALLY HIS RESPONSIBILITY TO COORDINATE HANGERS AND SUPPORTS WITH OTHER TRADES. ADDITIONAL REQUIRED HANGERS & SUPPORTS MUST BE IN PLACE PRIOR TO APPLICATION OF FIRE PROOFING MATERIAL. ANY DAMAGE INCURRED ON FIRE PROOFING MATERIAL DUE TO INSTALLATION OF ELECTRICAL HANGERS WILL BE REPAIRED BY FIRE PROOFING SUB-CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 5. UTILITIES SERVING AREAS OF THIS PROJECT STILL OCCUPIED BY THE OWNER DURING DEMOLITION AND NEW CONSTRUCTION SHALL BE MAINTAINED UNTIL THE OWNER VACATES THE AREA. UNLESS OTHERWISE NOTED.
- 6. ALL SHUTDOWNS WILL BE COORDINATED AND APPROVED THROUGH THE OWNER'S PROJECT MANAGER AND THE BUILDING MANAGER AND WILL REQUIRE ADVANCE NOTICE OF 10 WORKING DAYS EXCLUDING WEEKEND. THIS TIME LENGTH MAY BE LONGER OR SHORTER FOR SOME SHUTDOWNS AT THE OWNER'S DISCRETION. THE SCHEDULING OF SUCH SHUTDOWNS MAY TAKE TWO WEEKS OR MORE AND THE CONTRACTOR MUST BE PREPARED TO WORK SECOND OR THIRD SHIFT, SATURDAY OR SUNDAY AS NECESSARY TO PERFORM THE WORK. FURTHERMORE, IN SOME CASES AN ALTERNATE POWER SOURCE MAY BE REQUIRED, THE CONTRACTOR MUST BE PREPARED TO MAKE TAPS, INSTALL CIRCUIT BREAKERS, ETC., WHILE EXISTING EQUIPMENT IS ENERGIZED. ALL SHUTDOWNS WILL BE INITIATED AND CONTROLLED BY OWNER.
- 7. VISIT THE SITE PRIOR TO BID DATE AND EXAMINE ALL AREAS TO BE DEMOLISHED AND RENOVATED. THOROUGHLY FAMILIARIZE YOURSELF WITH EXISTING CONDITIONS. NO EXTRA COMPENSATION WILL BE GIVEN FOR FAILURE TO THOROUGHLY EXAMINE EXISTING CONDITIONS TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK. "KEYED" NOTES ON THE DEMOLITION DRAWINGS ARE PROVIDED TO ASSIST BIDDERS TO DETERMINE THE SCOPE OF DEMOLITION WORK.
- 8. EXISTING AREAS WHETHER WITHIN OR WITHOUT THE "GENERAL LIMITS OF CONSTRUCTION", SHALL BE REPAIRED WHERE ANY DAMAGE HAS OCCURRED DUE TO CONSTRUCTION BY THE CONTRACTOR.
- 9. ALL AREAS OUTSIDE THE PROJECT LIMITS IN WHICH WORK MUST TAKE PLACE WILL BE CLEANED AND RETURNED TO NORMAL (INCLUSIVE OF CEILING TILE REPLACEMENT) AT THE END OF EACH DAY. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE EACH DAY BEFORE LEAVING THE CONTRACT PROJECT LIMITS REGARDING THE CLEANLINESS OF THE AREA IN WHICH WORK TOOK PLACE OUT SIDE OF THE PROJECT LIMITS.
- 10. WHERE WORK IS TAKING PLACE OUTSIDE THE PROJECT LIMITS CANNOT ALLOW A RETURN TO NORMAL APPEARANCE OF WALLS, CEILING, ETC., AT THE END OF EACH DAY DUE TO ITS EXTENSIVE NATURE; THE CONTRACTOR SHALL ERECT A BLACK PLASTIC CURTAIN AROUND HIS WORK. SUCH A CURTAIN SHALL REMAIN IN PLACE UNTIL THE WORK IS COMPLETE. SUCH CURTAINS WILL HAVE CAUTIONARY SIGNS AFFIXED INDICATING CONSTRUCTION ACTIVITY WITHIN.
- 11. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PADS WITH CHAMFERED EDGES UNDER ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.
- 12. DO NOT MOUNT ANY WALL RECEPTACLES OR TELEPHONE/COMPUTER OUTLETS BACK TO BACK.
- 13. USE 3/4" DEEP MUD RINGS ON BOXES IN 5/8" DRYWALL SO FACE OF RING IS FLUSH WITH FACE OF DRYWALL. PROVIDE CADDY #RLC ADAPTER ON ALL OUTLETS WHERE DRYWALL IS CUT IN EXCESS OF 1/8" LARGER THAN MUD RING OR WHERE THE DEVICE "EARS" ARE NOT SUPPORTED BY THE DRYWALL.
- 14. 20A BRANCH CIRCUIT WIRE SIZING SHALL BE IN ACCORD WITH THE FOLLOWING TABLE:

DISTANCE	(FIRST DEVICE)	REMAINDEF OF CIRCUIT
0' - 50'	#12	#12
50' - 100'	#10	#12
100' - 150'	# 8	#10
	0' - 50' 50' - 100'	0' - 50' #12 50' - 100' #10

- 15. THE ELECTRICAL CONTRACTOR SHALL VERIFY LOCATION OF LIGHTS, ETC. IN MECHANICAL ROOMS WITH MECHANICAL CONTRACTOR BEFORE ROUGH-IN TO AVOID CONFLICT WITH DUCT WORK.
- 16. ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE ALARM.

TO EXISTING ITEMS AS JUNCTION BOXES, VALVES, FILTERS OR SERVICE ACCESS TO EQUIPMENT.

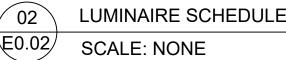
- 17. ALL BRANCH CIRCUIT BREAKERS SHALL BE 20A, 1P, WITH 2 #12 AWG 1#12 GND IN 3/4" MINIMUM CONDUIT, UNLESS OTHERWISE NOTED. EXTERIOR CONDUIT OR UNDERGROUND/SLAB CONDUIT SHALL BE 1"C MINIMUM.
- 18. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING BUT NOT LIMITED TO BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, AND TRANSFORMER LUGS, SHALL BE RATED FOR USE WITH 75 DEGREE CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 310-16.
- 19. ALL RACEWAYS SHALL BE METAL UNLESS SPECIFICALLY NOTED OR APPROVED OTHERWISE. ANY RACEWAY IN POURED CONCRETE SHALL BE RIGID METAL (HEAVY WALL). REFER TO SPECIFICATIONS FOR ALL OTHERS. ALL CONDUIT AND BOXES SHALL BE PROVIDED IN COLORS NOTED ON SHEET E001.
- 20. CONTRACTOR SHALL MINIMIZE NUMBER OF HOME RUN CONDUITS. CONTRACTOR MAY COMBINE UP TO THREE CIRCUITS PER HOME RUN IN A SINGLE CONDUIT; WHERE MORE THAN THREE (3) CONDUCTORS ARE PROVIDED PER RACEWAY MINIMUM CONDUIT SIZE SHALL BE 3/4".
- 21. IN GENERAL ALL ELECTRICAL CONDUIT WILL BE RUN AT THE ELEVATION JUST BELOW THE BOTTOM OF THE STRUCTURAL BEAMS. THE CONTRACTOR SHALL OFFSET THE ELECTRICAL CONDUIT TO AVOID INTERFERENCE WITH ANY DUCTWORK, SPRINKLER OR MECHANICAL PIPING. THE CONTRACTOR SHALL COORDINATE HIS CONDUIT AND RACEWAY LOCATIONS WITH ALL OTHER TRADES BEFORE INSTALLATION.
- 22. THE ROUTING FOR THE RACEWAY SHOWN ON THE DWGS. IS DIAGRAMMATIC ONLY, BASED ON CURSORY FIELD SURVEY BY DESIGNER. CONTRACTOR IS CAUTIONED THAT SPACE ABOVE CLG. IS VERY CONGESTED WITH EXISTING MECHANICAL, ELECTRICAL & PLUMBING ITEMS, AND WORK SPACE IS LIMITED. CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO BID DATE AND LOOK ABOVE THE CLG. OF THE PROPOSED ROUTING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. PROVIDE ANY AND ALL ADDITIONAL JB'S, OFFSETS, CONDUITS AND FITTINGS AS REQUIRED TO AVOID ANY EXIST. OBSTRUCTIONS ALONG THE PROPOSED ROUTING. ANY SHUTDOWNS CAUSED BY RELOCATING EXISTING EQUIPMENT SHALL BE COORDINATED WITH OWNER. FAILURE TO EXAMINE EXISTING CONDITIONS AND COORDINATE THE EXACT CONDUIT ROUTING WILL NOT EXCUSE CONTRACTOR FROM PERFORMING ALL DUTIES NECESSARY TO COMPLETE THE WORK. DO NOT ROUTE CONDUIT IN A MANNER THAT WILL BLOCK ACCESS
- 23. ELECTRICAL PLANS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL ALIGN FIXTURES, FIRE ALARM DETECTORS, CEILING DIFFUSERS, ETC. AS REQUIRED TO PROVIDE A PATTERN OF UNIFORMITY. AT NO TIME SHALL A SMOKE DETECTOR BE LOCATED WITHIN 3'-0" OF A SUPPLY OR RETURN GRILLE.
- 24. WIRE AND CIRCUIT BREAKERS ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE, BREAKERS AND CONDUIT FOR THIS PROJECT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND SHALL VERIFY THE ELECTRICAL DATA FOR EQUIPMENT WHICH WILL ACTUALLY BE INSTALLED BY THE OTHER CONTRACTORS AND RECOMPUTE WIRE AND BREAKER SIZES IF REQUIRED TO COMPLY WITH THE N.E.C.
- 25. REFER TO MECHANICAL DRAWINGS AND COORDINATE VERTICAL RUNS OF WIRE AND CONDUIT WITH MECHANICAL PIPING. COORDINATE WITH MECHANICAL CONTRACTORS. (NOTE: STACK RUNS OF CONDUIT AND PROVIDE OFFSETS AS NECESSARY.)
- 26. LABEL ALL CONDUITS TERMINATING IN THE CEILING CAVITIES.
- 27. LIGHTING & POWER PANELS ARE DESIGNED AROUND SQUARE "D" "NQOD" WITH A MAXIMUM DEPTH OF 5 3/4" AND WIDTH OF 20".
- 28. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS, JUNCTION BOXES AND DISCONNECT SWITCHES SHALL BE REVIEWED AND COORDINATED WITH CASEWORK DRAWINGS AND ACTUAL EQUIPMENT LOCATION, PRIOR TO INSTALLATION. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 29. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 30. EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- 31. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
- 32. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE. PROVIDE COORDINATION DRAWINGS TO THE ENGINEER FOR APPROVAL. ANY REWORK THAT NEEDS TO BE DONE DO TO CONFLICTS BETWEEN TRADES SHALL BE DONE AT THIS CONTRACTORS EXPENSE.
- 33. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM. REFER TO THE SPECIFICATIONS FOR MORE DETAILED INFORMATION.
- 34. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED WORK.
- 35. IN ALL AREAS WHERE THE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED OR ARE EXISTING, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIALS SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
- 36. ALL FUSES, DISCONNECT SWITCHES AND BREAKER SIZES, SHOWN FOR MECHANICAL EQUIPMENT, SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
- 37. UPON COMPLETION OF WORK ALL KEYS TO ELECTRICAL POWER PANELS SHALL BE TURNED OVER TO THE OWNER AND A SIGNED RECEIPT SHALL BE OBTAINED.
- 38. ALL MULTIWIRE BRANCH CIRCUITS NEED TO HAVE SEPARATE NEUTRAL CONDUCTORS TO COMPLY WITH NEC 2020 ARTICLE 210.4. NO SHARED NEUTRAL CONDUCTORS PERMITTED ON THIS PROJECT.
- 41. ANY RECEPTACLE WITH-IN 6'-0" OF A SINK SHALL BE A GROUND FAULT TYPE (GFI) RECEPTACLE.
- 42. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN COMPLIANCE WITH ANSI A117.1, ADA STANDARDS FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES.

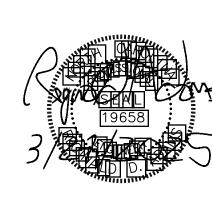


TYPE	DESCRIPTION	MANUF.	MANUFACTURER CAT #	LAMPS	DRIVER	INPUT	VOLT	REMARKS	
		CALI	LLED8000-CMC-CL-3,6-10V-35K-DRY-TBD-X						
LAx	STRIP MOUNTED LED LIGHTING. X-DESIGNATES LENGTH AS SHOWN ON DRAWINGS.	EQUAL MAN.		LED	LED DRIVER	3.6	24	PROVIDE REMOTE DRIVERS AS REQUIR	
	STOWN ON DIAWNIGS.	EQUAL MAN.							
177		ACUITY	LDN6-AL02-SWW1-L06-CTBD-CTBD-CTBD-UGZ		LED DRIVER	25			
RA	NEW RECESSED CEILING DOWNLIGHT	KIRLIN	EQUAL	LED			U		
		PHILIPS	EQUAL						
		ACUITY	LDN6-AL02-SWW1-LW6-CTBD-CTBD-CTBD-UGZ		LED DRIVER				
RA1	NEW RECESSED CEILING WALL WASHER	KIRLIN	EQUAL	LED		25	U		
		PHLIPS	EQUAL						
		ACUITY	N/06S-D-10LM-35K-80CRI-MD-MN10-120-ZT-RM-WL-P-CTBD- CTBD-F		LED DRIVER	15	U	PROVIDE WITH REMOTE EMERGENCY	
RBE	LENSED DAMP LOCTION 4" DOWNLIGHT	KIRLIN	EQUAL	LED				INVERTER	
		PHLIPS	EQUAL						
		STARTEK	BEAMDI-XX-775-475-SD-BW-35K-CTBD-TBD-U-DM		LED DRIVER	36	U		
PA	LED LINEAR PENDANT	ACUITY	EQUAL	LED					
		PHILIPS	EQUAL						
SA S	SURFACE MOUNTED LED	ACUITY	FMLWL48 835 ZT		LED DRIVER	40			
		EQUAL MAN.	EQUAL	LED			U		
		PHILIPS	EQUAL						
= 1	EMERGENCY EGRESS FIXTURE	DUALITE	EVHC-12-06L		LED DRIVER	12	U	WALL MOUNTED UNIT	
EM1 E		ACUITY	EQUAL	LED					
		PHLIPS	EQUAL						
		DUALITE	EVHC-12-06L		LED DRIVER	12	U		
EM2	EMERGENCY EGRESS FIXTURE	ACUITY	EQUAL	LED				CELING MOUNTED UNIT	
		PHLIPS	EQUAL						
	9	BARRON	S900U-WB-SR-TBD-TBD		7				
EX	EXIT SIGN	ACUITY	EQUAL	LED	LED DRIVER	5	U		
		PHLIPS	EQUAL						
			EXTERIOR LIGHTING FIXTURE SCHEDUL	E					
		SPI LIGHTING	EIP12300						
XA	PENDANT MOUNTED DAMP LOCATION FIXTURE	ACUITY	EQUAL	LED	LED DRIVER	184	U		
		PHLIPS	EQUAL						
XA1 P	PEDESTRIA N POLE MOUNTED LED	KIM	ALT1-28L-40-35K8-3-UNV-TBD-TBD		LED DRIVER	60	U		
		ACUITY	EQUAL	LED				PROVIDED ON 20'-0" POLE. BUG=102	
		PHLIPS	EQUAL						
		KIM	RTA-K-20-X-B-KX-CTBD						
KA1-	20'-0" TAPERED BLACK ALUM POLE	ACUITY	EQUAL						
		PHILIPS	EQUAL			1 1 1			

3. X-AS REQUIRED BY THE INSTALLATION

2. TBD-OPTION TO BE DECIDED BASED ON FIELD CONDITIONS.

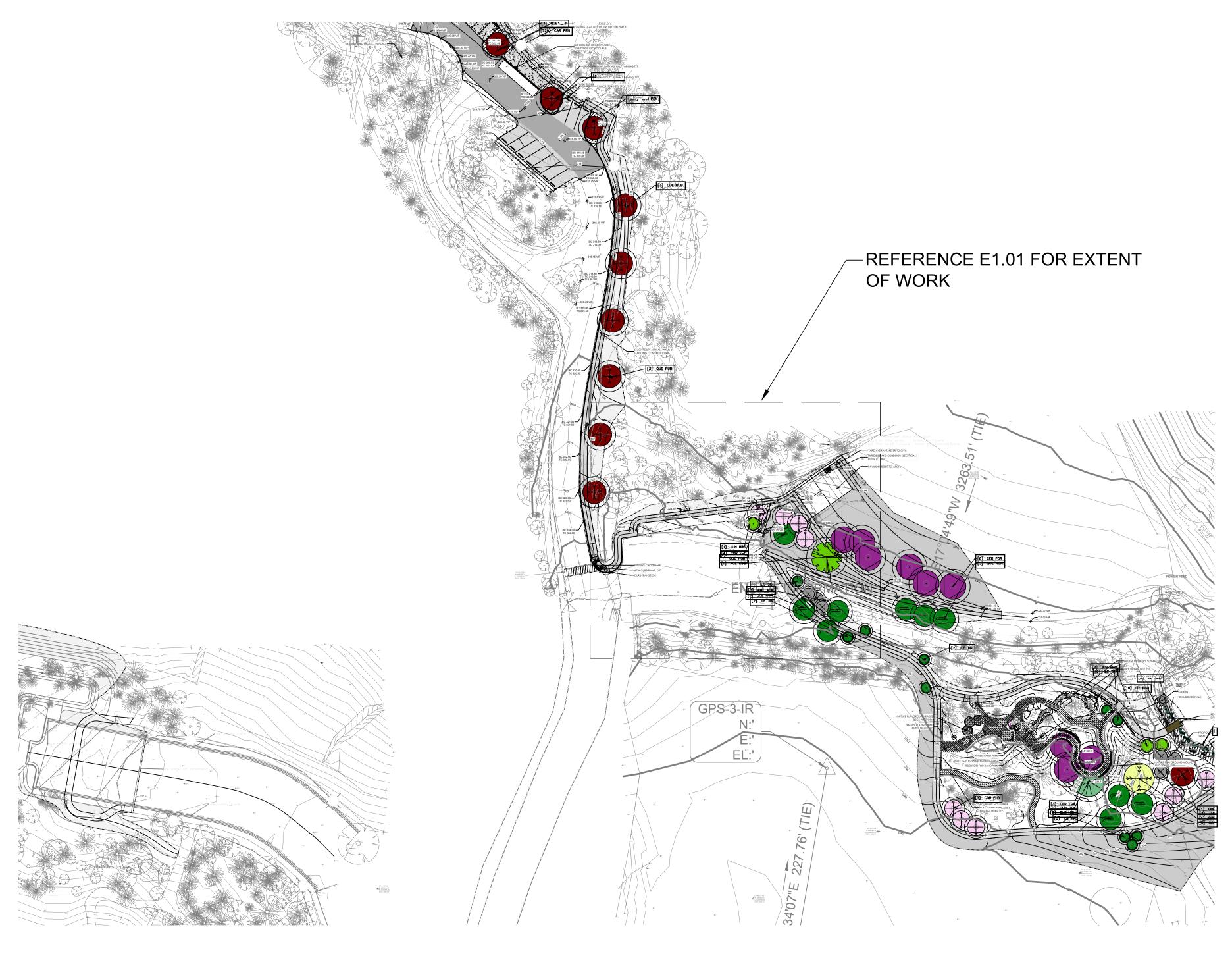


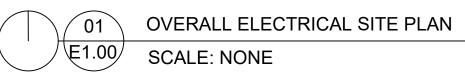


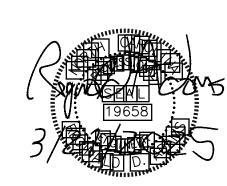
Raleigh NC 27604 Mw.insitustudio.us

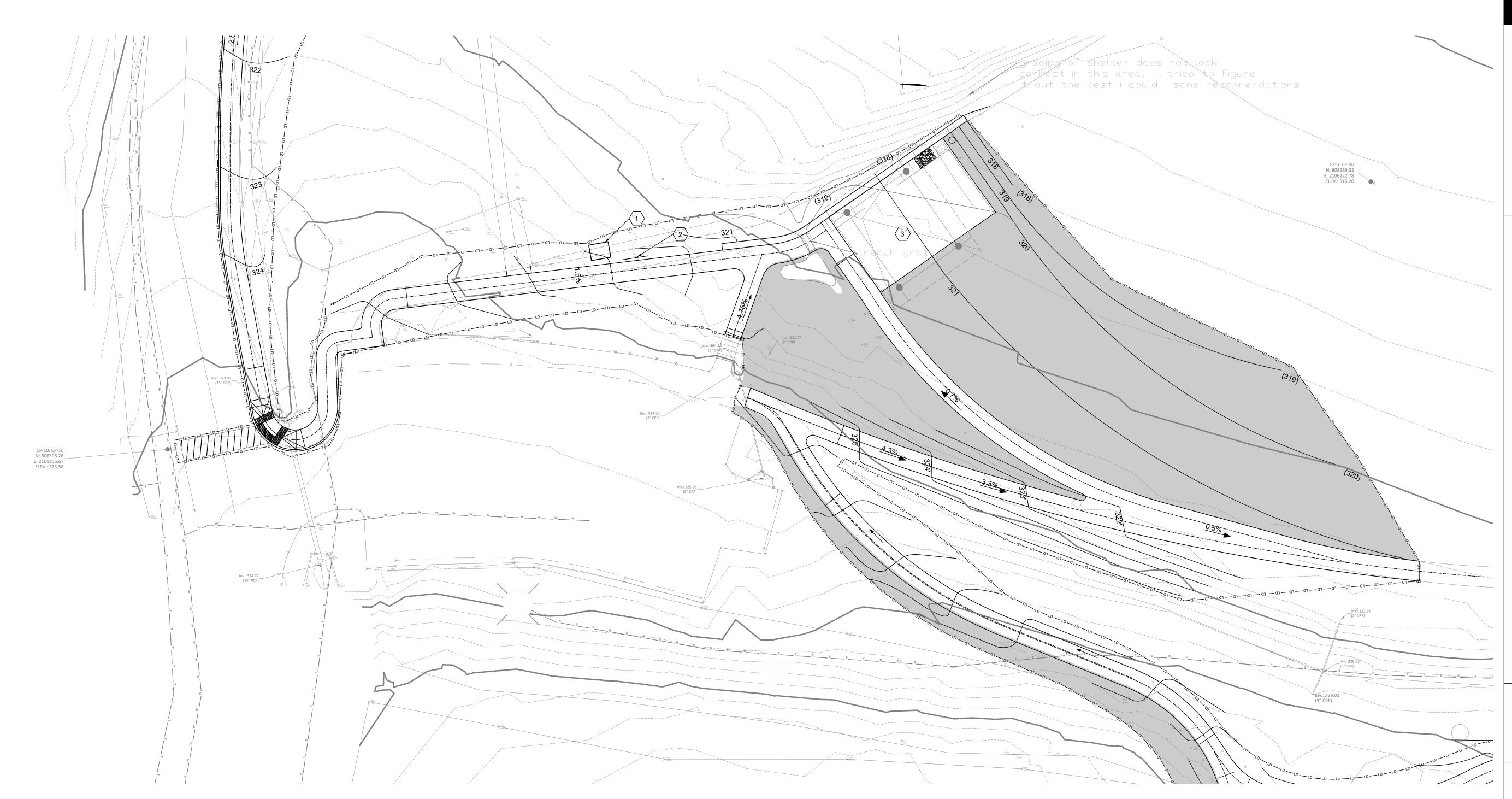
Raleigh N www.insitu

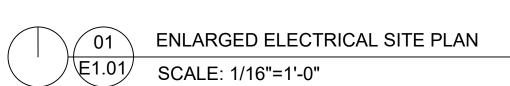
gma Engineered Solution, PC 309 Falls of Neuse Rd, Suite 101 Raleigh





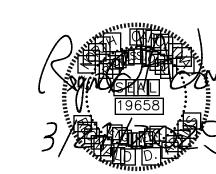




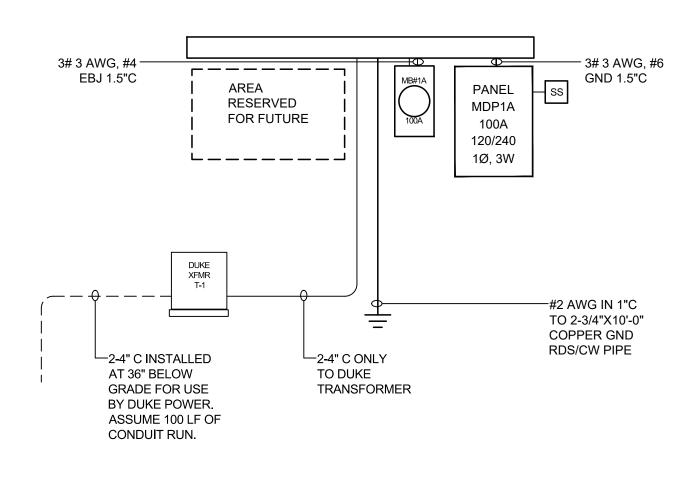


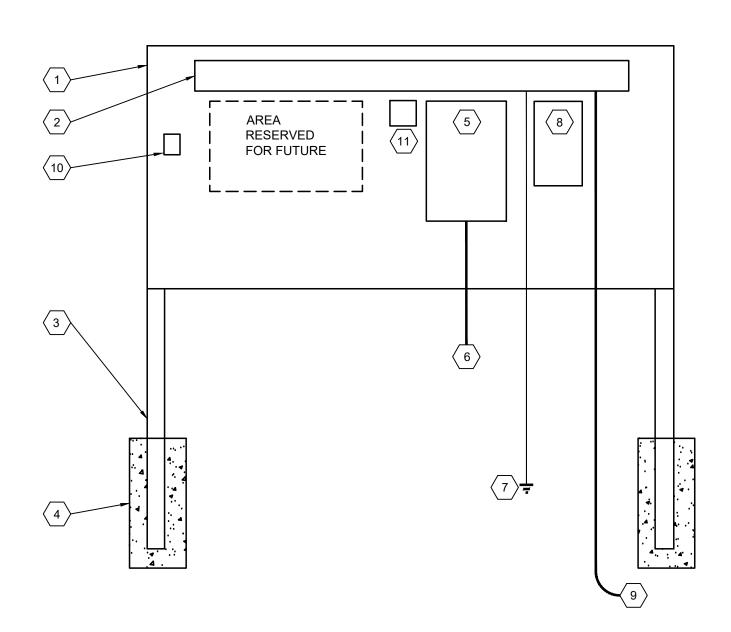
## NOTES KEYED TO 1/E1.01:

- 1 NEW SINGLE PHASE TRANSFORMER PROVIDED BY DUKE PROGRESS. TRANSFORMER DESIGNATED AS T-1. REFERENCE SHEET E1.02 FOR ADDITIONAL INFORMATION.
- 2 NEW PANELS AND METERS MOUNTED ON A NEW STRUCTURE. REFERENCE SHEET E1.02 FOR INSTALLATION DETAILS.
- PROVIDE 3# 10, IN 1"C TO RECEPTACLE AND LIGHT IN THIS SHELTER, PER 1/E2.00, TO PANEL MDP1A.



58 L



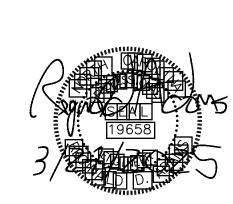


SITE ELECTRICAL RISERS SCALE: NONE

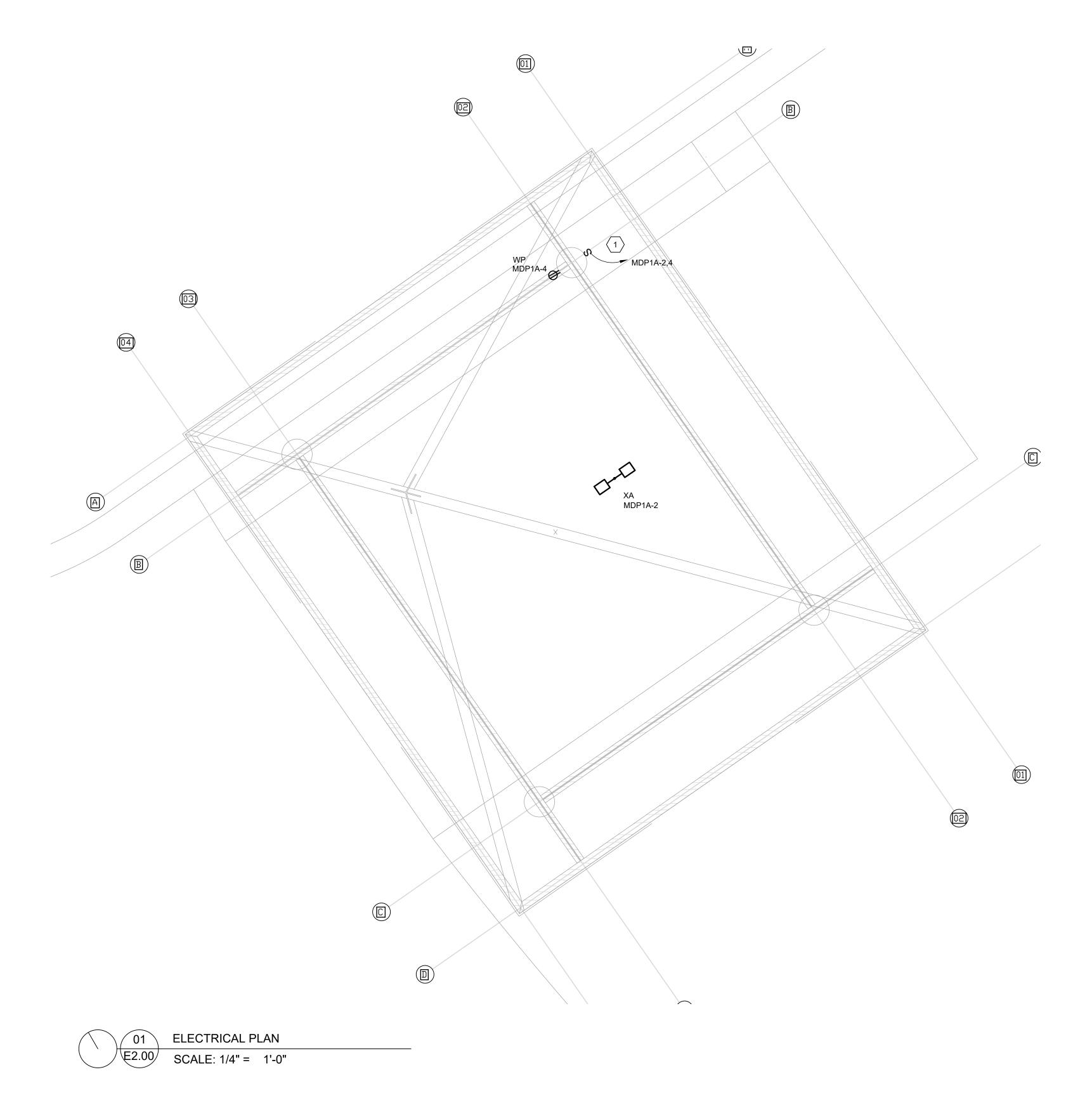
PANEL "MDP1A"						PANEL 1	TYPE:	QO			MCB:			100AMCB	
					BUS SIZ	BUS SIZE:		100		MOU	NTING	3:	SURFACE-NEMA 4XSS		
						VOLTAGE:		120/240			MINIMUM AIC:			10,000	
				1	WIRE	CONDUIT		RPHASE	CONDUIT	WIRE	1	T		,,	
СКТ	LOAD SERVED	TRIP	POLE	kVA	SIZE*	SIZE	Α	В	SIZE	SIZE*	kVA	POLE	TRIP	LOAD SERVED	СКТ
1	REC AT PANEL	20G	1	0.18	#12	1"	1.58		1"	#12	1.40	1	20G	SHELTER LTG	2
3	SPARE	20	1					1.40	1"	#12	1.40	1	20G	SHELTER REC	4
5	SPARE	20	1				0.00							SPACE	6
7	SPARE	20	1					0.00						SPACE	8
9	SPARE	20	1				0.00							SPACE	10
11	SPARE	20	1					0.00						SPACE	12
13	SPARE	20	1				0.00							SPACE	14
15	SPARE	20	1					0.00						SPACE	16
17	SPARE	20	1				0.00							SPACE	18
19	SPARE	20	1					0.00						SPACE	20
21	SPARE	20	1				0.00							SPACE	22
23	SPARE	20	1					0.00						SPACE	24
25	SPARE	20	1				0.00							SPACE	26
27	SPARE	20	1					0.00						SPACE	28
29	SPARE	20	1				0.00						11.	SPACE	30
							1.6	1.4	kVA	G=GFC	IBREA	KER			
CONNECTED LOAD		3.0	kVA				13	12	Amperes						

## KEYED NOTES:

- 1 PROVIDE ¼" GALVANIZED SHEET STEEL BACKBOARD SIZED TO ACCOMMODATE EQUIPMENT.
- PROVIDE CODE-SIZED WP "GUTTER" ABOVE METER & DISCONNECT.
- 3 PROVIDE 4" GALVANIZED STEEL TUBE FOR SUPPORT OF BACKBOARD.
- 4 PROVIDE 4" GALVANIZED STEEL TUBE 36" BELOW GRADE. PROVIDE 6" OF CONCRETE SURROUNDING TUBE BELOW GRADE.
- 5 NEMA 4X SE RATED PANEL PER RISER THIS SHEET.
- 6 PROVIDE WIRING TO SHELTERS PER PLAN SHEETS.
- PROVIDE SE GROUNDING PER RISER. PROTECT IN CONDUIT.
- 8 PROVIDE DUKE/PROGRESS METER BASE.
- 9 PROVIDE LATERAL TO TRANSFORMER RISER THIS SHEET.
- 10 PROVIDE WP/GFI 20 AMPERE RECEPTACLE CIRCUIT TO PANEL PER SCHEDULES.
- PROVIDE SPD PER PANEL SCHEDULES AND SECTION 264313 OF THE PROJECT MANUAL.







## **GENERAL NOTES:**

REFER TO SHEET E001 & E002 FOR GENERAL NOTES AND LEGEND.

2. REFER TO SHEET E100 FOR SITE CONDITIONS.

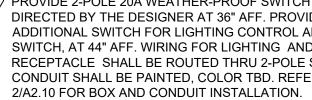
3. REFER TO SHEET E102 FOR POWER RISER DIAGRAM. 4. REFER TO SHEET E102 FOR PANEL SCHEDULES. 5. REFERENCE A2.2 TB AND A2.2 PG FOR DEVICE LOCATIONS AND REFLECTED CEILING PLAN. REFERENCE NOTE BELOW FOR COORDINATION WITH

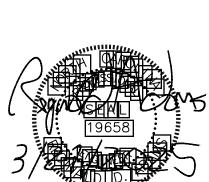
DESIGNER AND ARCHITECT. 6. COORDINATE LOCATIONS OF ALL EQUIPMENT,
DEVICES, ETC. WITH ARCHITECT PRIOR TO
BEGINNING WORK. REFERENCE SECTION 260500 FOR

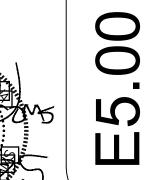
REQUIRE PRE-INSTALLATION MEETINGS. 7. CONTRACTOR SHALL CAREFULLY REVIEW BOTH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS TO COORDINATE INSTALLATION OF FIXTURES AND WIRING AND COORDINATE WITH BUILDING
STRUCTURE. CONTRACTOR SHALL PROVIDE A
DETAILED CONDUIT INSTALLATION PLAN TO THE **DESIGNER FOR REVIEW.** 

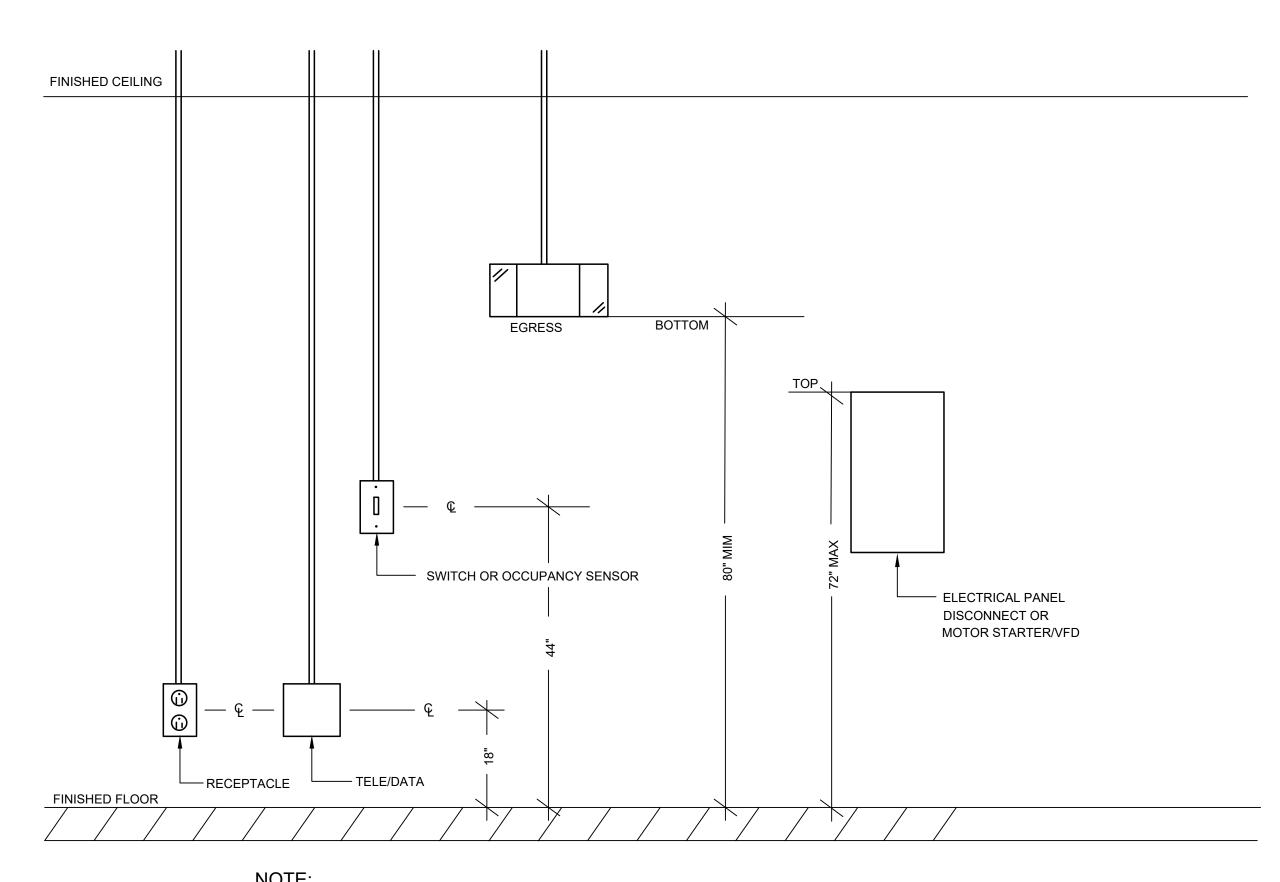
## NOTES KEYED TO SHEET:

(1) PROVIDE 2-POLE 20A WEATHER-PROOF SWITCH AS DIRECTED BY THE DESIGNER AT 36" AFF. PROVIDE ADDITIONAL SWITCH FOR LIGHTING CONTROL ABOVE THIS SWITCH, AT 44" AFF. WIRING FOR LIGHTING AND RECEPTACLE SHALL BE ROUTED THRU 2-POLE SWITCH. ALL CONDUIT SHALL BE PAINTED, COLOR TBD. REFERENCE

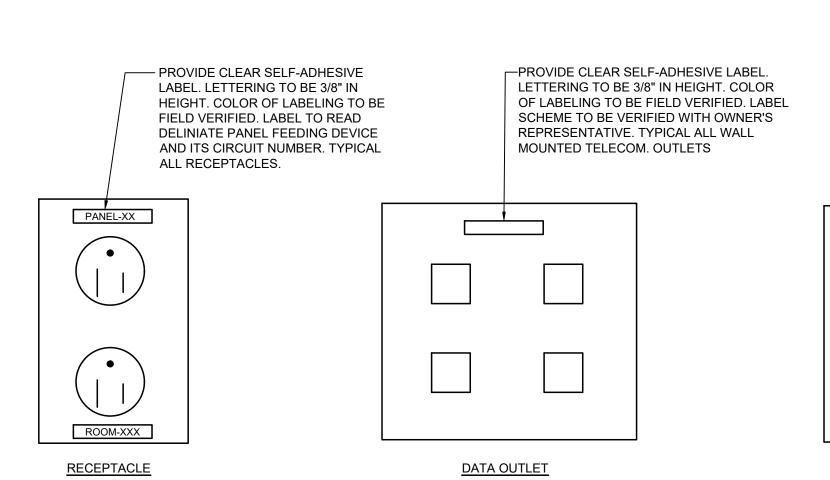


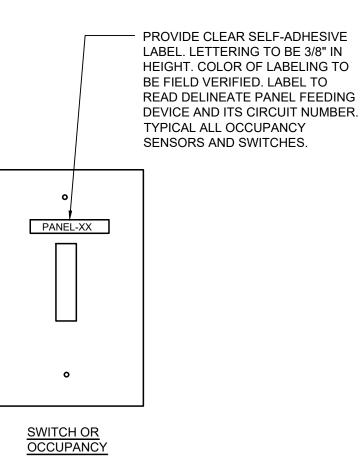


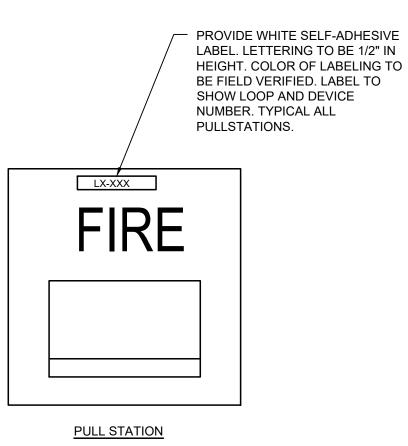


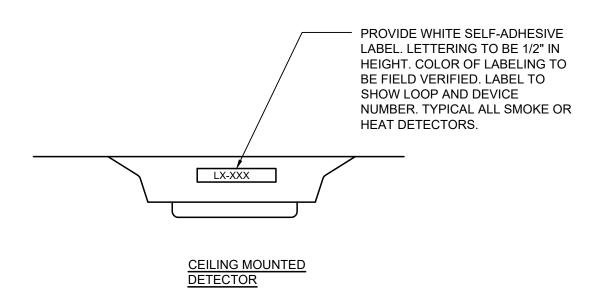


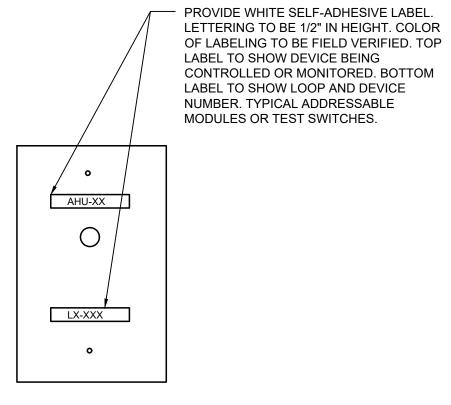
NOTE: NOT ALL DEVICES MAY BE USED IN CONSTRUCTION.

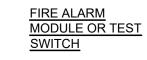


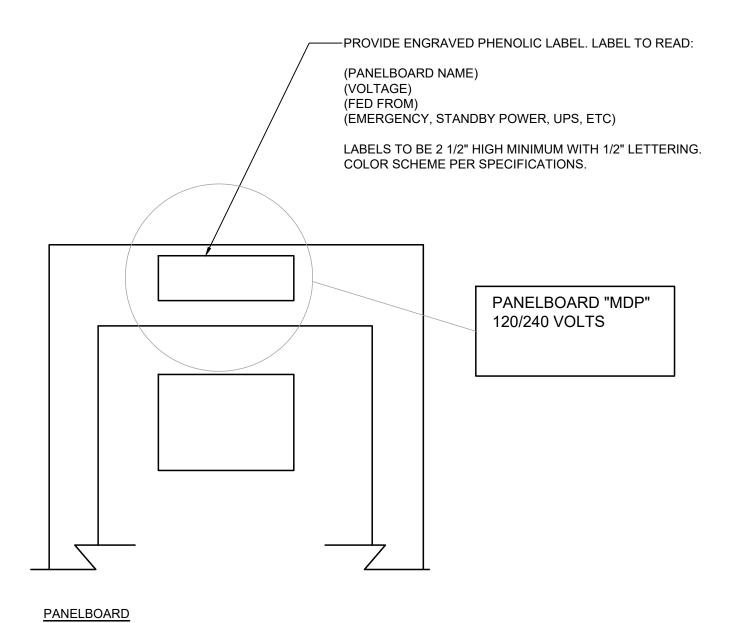


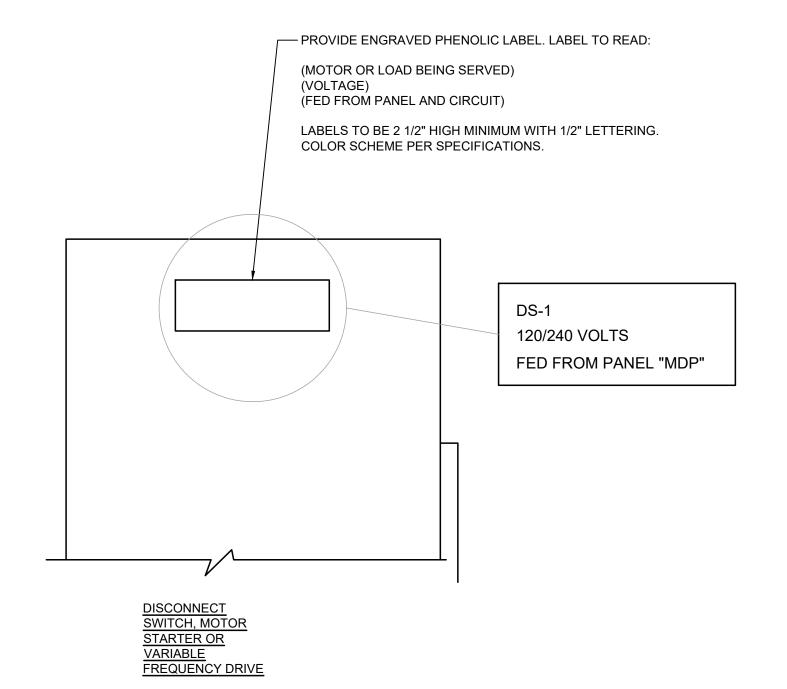












NOTE: DIVISION 26 SHALL LABEL ALL DISCONNECTS INCLUDING THOSE PROVIDED BY DIVISIONS 22 AND 23.