2018 APPENDIX B BUILDING CODE GIMMARY FOR ALL COMMERCIAL PROJECTS

GEORGE I	RON □ County <u>+</u>	HARNETT	□ State N	ORTH CAROLINA
GEORGE I	1. R <i>0</i> 5E, P.E.			
GEORGE 1	1. ROSE, P.E.			
	NAME	LICENSE #	TELEPHONE #	
M. ROSE, P.E.	GEORGE M. ROSE, P.E.	11315	910-977-5822	grose9295@gmail.com
			910-521-7213	coastalplainseng@gmail.co
	N/A			
			_	grose@nc.rr.com
L PLAINS ENGINEERING		20195	910-521-1215	coastalplainseng@gmail.co
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	NA			
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BASIC BUILDIN Construction Ty		□ I-A		¬ II−A	□ III−A	□ IV	□ V-A
(check all that		□ I-B	-	_ II−B	□ III−B	-	V−B
Sprinklers:	No	☐ Partial	☐ Yes	□ NFPA 13	□ NFPA 13R	□ NFPA 13D	
Standpipes:	No	☐ Yes C	lass:		□ III □ We		
Fire District:	No	☐ Yes (Prin		Flood Haza	ırd Area:	☐ Yes	
Special Inspecti	ons Required:	No [Yes				
				Gross Build	lina Area:		
51.005	EVICTING (CO	CT)	NEW (CC		-	CO ET)	SUB-TOTAL
FLOOR	EXISTING (SQ	FT)	NEW (SC	FT)	RENOVATED (SQ FT)	30B-TOTAL
6th Floor							
5th Floor							
4th Floor							
3rd Floor	P						
2nd Floor							
Mezzanine							
1st Floor			1,536				
Rosement							

ORIGINAL OCCUPANCY(S) (Ch. 3):

CURRENT OCCUPANCY(S) (Ch. 3): _____

□ Change of Use

Alteration:

Level | Level |

☐ Historic Property

CONSTRUCTED:

	ALLOWABLE AREA
Primary Occupancy Clas Assembly Business Educational	ssification: SELECT ONE A-1 A-2 A-3 A-4 A-5 B-1 B-2 A-3 A-4 A-5 B-1 B-2 B-3 B-4 B-5 B-1 B-5
Factory Hazardous Institutional	F-1 Moderate F-2 Low H-1 Detonate H-2 Deflagerate H-3 Combust H-4 Health H-5 HPM I-1 CONDITION I I 2 I-2 CONDITION I I I 2 I-3 CONDITION I I I I I I I I I I I I I I I I I I
Mercantile Residential Storage Utility and Miscellane	☐ I — 4 ☐ R — 1 ☐ R — 2 ☐ R — 3 ☐ R — 4 ☐ S — 1 Moderate ☐ S — 2 Low ☐ High—piled ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Incidental Uses (Table Special Uses (Chapter	Classification(s):
Special Provisions (Cha	
Mixed Occupancy: Non-Separated Use The required type the applicable occu Separated Use (50) See below for area	of construction for the building shall be determined by applying the height and area limitations for each of upancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire build

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 ⁴ AREA	(D) ALLOWABLE AREA PER STORY OR UNLIMITED ^{2,3}
1	BUSINESS	1,536	9,000	
TOTAL				
			a a	
11				

1	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 $=$ b. Total Building Perimeter $=$ c. Ratio $(F/P) =$ $=$ (F/P)	(F)
2	d. W = Minimum width of public way = (W) e. Percent of frontage increase $I_f = 100 [F/P - 0.25] \times W/30 =$ (%) Unlimited area applicable under conditions of Section 507.	
3	Maximum Building Area = total number of stories in the building x D (minimum 3 stories) (506.2), The maximum area of open parking garages must comply with Table 406.5.4. Frontage increase is based on the unsprinklered area value in Table 506.2.	

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	55'	16'-5"	
Building Height in Stories (Table 504.4)	3	1	

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

3 The maximum height of open parking garages must comply with Table 406.5.4

	FIRE	PRO	TECTION	REQUIRE	MENTS
			RATING		DETAIL
M		-1-	550105		AND

BUILDING ELEMENT	FIRE		RATING	DETAIL #	DESIGN #	DESIGN # FOR	DESIGN #
DOILDING ELLINETY	SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (w/* REDUCTION	AND SHEET #	FOR RATED ASSEMBLY	RATÉD PENETRATION	FOR RATED JOINTS
Structural Frame, including columns, girders, trusses	ч	0					
Bearing walls Exterior							
North		N/A					
East		N/A					
West		N/A	1				
South		N/A					
Interior							
Nonbearing walls and Partitions Exterior walls							
North							
East							
West							
South		41					
Interior walls and partitions							
Floor construction including supporting beams and j	oists						
Roof construction including supporting beams and j	oists						
Roof construction including supporting beams and j	oists						
Roof ceiling Assembly							
Column supporting roof							
Shafts Enclosures — Exit							
Shafts Enclosures — Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Tenant/Dwelling Unit/Sleeping Unit S	Separation						
Incidental Use Separation							

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENINGS CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY LINES	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Life Safety Plan Sheet #: 61

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 types for each area as it relates to occupant load calculation (Table 1004.1.2)

☑Occupant loads for each area

☑ Exit access travel distance (1017)

☑Common path of travel distances (1006.2.1 & 2006.3.2(1)

☑Dead end lengths (1020.4) ☑ Clear exit widths for each exit door

Maximum calculated occupant load capacity each exit door can accomodate 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 and supporting construction for a fire barrier/fire partition/smoke barrier.

✓ Location of doors with panic hardware (1010.1.10)

✓ Location of doors with electromagnetic egress locks (1010.1.9.9)

Location of emergency escape windows (1030)

☐ The square footage of each fire area (202)

 \Box 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

Section/Table/Note

ACCESSIBLE DWELLING UNITS

(SECTION 1107)

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

ACCESSIBLE PARKING

(SECTION 1106)

	TOTAL # OF PARKIN	IG SPACES	# OF ACCESSIBLE SP	TOTAL #		
LOT OR PARKING AREA	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACE 132" ACCESS AISLE	S WITH 8' ACCESS AISLE	ACCESSIBLE PROVIDED
SEE SITE PLAN						
TOTAL						

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WA	TER CLOSETS		URINALS LAVAT	LAVATORIE	S	SHOWERS/	DRINKING FOUNTAINS		
		MALE FEMALE UNISEX		UNISEX		MALE	MALE FEMALE	E UNISEX	TUBS	REGULAR	ACCESSIBLE
SPACE	EXISTING			0 0	0			0		0	0
	NEW				0			1		0	0
	REQUIRED			I	0			1		0	0

SPECIAL APPROVALS

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

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation 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 proposed design.

Existing building envelope complies with code:

No
Yes (the remainder of this section is not applicable)

Existing building:

No
Yes (Provide Code or Statury reference)

Climate Zone: □ 3A 🗹 4A □ 5A

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive ASHRAE 90.1 ☐ Performance ☐ Prescriptive (If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)

Description of assembly: ATTIC WITH WOOD TRUSSES U-Value of total assembly: 0.027

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: WOOD FRAME, 6-INCH STUDS 16" O.C. U-Value of total assembly: <u>0.089</u> R-Value of insulation: Openings (windows or doors with glazing)

U-Value of assembly: Solar heat gain coefficient: <u>0.30</u> U-Value of assembly: 0.089 Projection factor: Door R-Values:

Walls below grade (each assembly) Description of assembly: ___ U-Value of total assembly: WA

R-Value of insulation: Floors over unconditioned space (each assembly) Description of assembly: ____

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

U—Value of total assembly: R—Value of insulation:

Horizontal/Vertical requirement: R-Value of insulation: Slab Heated:

NOTICE TO CONTRACTOR 07/08/2021

If this building is secured at any point in the future, a code compliant egress door shall be installed in an

Harnett

COUNTY

NORTH CAROLINA

approved location.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS STRUCTURAL DESIGN

(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_S) _______ Snow (I_E) ______ Mezzanine Floor 100

Ground Snow Load: _____ psf Wind Load: Ultimate Wind Speed ______mph (ASCE-7) Exposure Category _____

SEISMIC DESIGN CATEGORY: Provide the following Seismic Design Parameters: Spectral Response Acceleration Site Classification (ASCE 7) Data Source:

Field Test

Presumptive

Historical Data Basic structural system

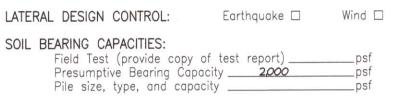
☐ Bearing Wall ☐ Dual w/Special Moment Frame □ Building Frame □ Dual w/Intermediate R/C or Special Steel ☐ Moment Frame ☐ Inverted Pendulum ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic

Architectural, Mechanical, Components anchored?

Yes

No

28326



Analysis Procedure:

□ Trunk line installed with without outlets □ Gas Line Install complete operational system п No work Install water service and sewer □ Install building drain □ and or water distribution main with without branches Install complete plumbing system Other - ROUGH-INS ARE INCOMPLETE, ADD'L IN-SLAB WORK IS REQUIRED. WATER SERVICE IS EXISTING (PRESENTLY INSTALLED). ☐ Install complete sprinkler system □ Install slab □ partical complete Install demising walls ☐ Install interior partitioning ☐ partial☐ complete □ Install Ceilings

□ White box (additional interior completion permits are required for Certificate of Occupancy and power)

Electrical House panel □ Service laterals to meter centers/panels located on buildings

SHELL VARIABLE FORM (for all spaces — see plan)

□ Equipment seto with without power

clear detail of installation.

□ No work

(THIS SECTION REQUIRED FOR ALL SHELL, ALTERATIONS TO SHELL AND INTERIOR COMPLETION PROJECTS)

Check each applicable line to match scope of work. Edit as necessary to provide

 Demise wall and ceilings only □ Conduit, duct, raceway in slab □ Power and lighting circuits to "J" Box

□ Install light fixtures □ Instalt Heat/Aca Elevator Generator Parking lot lighting ☐ Install complete system

Other - SUITE PANEL AND SERVICE ARE EXISTING (PRESENTLY INSTALLED). Please provide full information on any alternate methods and means incorporated into the design of this project. Provide specific details and incorporate into plan submittal any supporting documents or agreement

SPECIAL INSTRUCTIONS (CHAPTER 17) SPECIAL INSPECTIONS SHALL BE CONDUCTED ON ALL PROJECTS THAT FALL WITHIN BUILDING CATEGORIES AND/OR CONTAIN ELEMENTS SUBJECT TO SPECIAL INSPECTIONS AS PRESCRIBED BY REVISED

To schedule a required pre-construction meeting with the City of Fayetteville, please call Doug Maples at (910) 433-1703. The main line number for the Development Services Center is (910)

List whom will inspect the required special inspections:

Fabricator of load bearing components

Soil tests

Concrete, caissons, piles, piers, pre-cast

Post tension concrete

Modular construction

Steel and connections, welds, bolts, anchors

Fire spray tests

Seismic, wind designs, Quality Assurance Retaining walls

Masonry Wood

Alternate Methods

EIFS Other (describe)

Owner or agent ____

Other (describe)

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

COUNTY OF HARNETT 2018 APPENDIX B BUILDING CODE SUMMARY

for:

NEW BUILDING FOR SEAVIEW CRAB COMPANY

H.M. CAGLE DRIVE CAMERON, NORTH CAROLINA



20.1' TO PROP LINE OFFICE/ STORAGE 1 RETAIL SALES 4' CANTILEVER OFFICE/ STORAGE 1 DISCRETANCE STORAGE ACC PERSONS

OCCUPANCY INFORMATION SUMMARY

GROSS SQUARE FOOTAGE = 1,536

TYPE OF CONSTRUCTION: V-B

SPACE OCCUPANCY (INSIDE THE BUILDING) BY NE

SPACE OCCUPANCY (INSIDE THE BUILDING) BY NET SF USING TABLE 1004.1.1

MERCANTILE: 1536 SF/60 SF PER PERSON = 1536/60 = 26 PERSONS

= 13 MALES, 13 FEMALES

MAXIMUM TRAVEL DISTANCE SHOWN: 30 FEET (PER 1016)
MAXIMUM ALLOWABLE TRAVEL DISTANCE: 250 FEET (PER 1017.2)
THE COMMON PATH OF TRAVEL IS LESS THAN 75 FEET. (PER 1029.8)
THERE ARE NO DEAD END CORRIDORS OVER 20 FEET. (PER 1020.4)
MIN. NO. OF EXITS REQ'D: ONE (PER TABLE 1006.2.1)
NUMBER OF EXITS PROVIDED: ONE (OPEN AREA ACROSS FRONT OF BUILDING)
MAXIMUM DIAGONAL LENGTH = 57'-8"

EGRESS DOORS DO NOT REQUIRE PANIC HARDWARE. (PER 1008.1.10)
DOORS DO NOT HAVE DELAYED EGRESS LOCKS (PER 1008.1.9.7)
DOORS DO NOT HAVE ELECTROMAGNETIC EGRESS LOCKS (PER 1008.1.9.8)
DOORS DO NOT HAVE HOLD OPEN DEVICES.
THERE ARE NO EMERGENCY ESCAPE WINDOWS (PER 1029)
THERE ARE NO SLEEPING AREAS (SMOKE COMPARTMENTS) (PER 407.2)
EGRESS ILLUMINATION PROVIDED AT EACH EXIT (PER 1006)

THIS SPACE IS NOT PROTECTED BY FIRE SPRINKLERS.

NO. OF FIRE EXTINGUISHERS PROVIDED: ONE

- PROVIDE FIRE EXTINGUISHERS UNDER THE FOLLOWING CONDITIONS:
- 1. WITHIN 30' OF COMMERCIAL COOKING EQUIPMENT
- 2. IN AREAS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED, USED OR DISPENSED.
- 3. WHERE REQUIRED BY SECTIONS IN TABLE 906.1, N.C. BUILDING CODE
- 4. SPECIAL-HAZARD AREAS WHERE REQUIRED BY FIRE CODE OFFICIAL.

THERE ARE NO EXTERIOR BEARING WALLS.

LIFE SAFETY PLAN

LEGEND

F.E. O ABC FIRE EXTINGUISHER SUGGESTED LOCATION

© © EXIT ROUTE

36" EXIT WIDTH

EXIT SIGN

WALL TYPES

1 2X4 WOOD STUDS WITH
5/8" SHEETROCK TO UNDERSIDE
OF ROOF TRUSSES



GEORGE M. ROSE, P.E.
P.O. BOX 53441
FAYETTEVILLE NO. 28305

5-22-21 INTERIOR LAYOUT

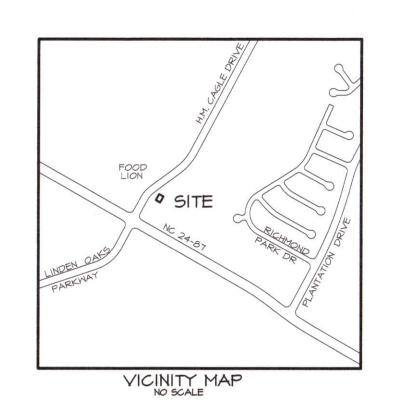
NEW BUILDING FOR VIEW CRAB COMPANY HARNETT COUNTY,

DATE: APR 2021

DRAWN BY: GMR

CHECKED: GMF

SCALE: NOTED



LEGEND

CP COMPUTED POINT (PROPERTY CORNER)

LP EXISTING LIGHT POLE

PP EXISTING POWER POLE

---OHE--- EXISTING OVERHEAD ELECTRICAL

---- 373 ---- EXISTING CONTOUR

NOTES

I. SITE IS LOCATED ON A 11.57 AC TRACT PER PB 2000 PG 747 ADJACENT TO THE HARNETT YMCA FACILITY.

2. PROPERTY OWNER: HM'S KIDS INC 3035 NC HIGHWAY 87 S CAMERON, NC 28326

3. REFERENCE: DB 3069 PG 698; PB 2000 PG 747

4. PIN NO: 9585-70-2010.000

5. NC 87 IS ON THE HARNETT COUNTY COMPREHENSIVE TRANSPORTATION PLAN.

6. THIS DEVELOPMENT IS WITHIN THE FIVE MILE MILITARY CORRIDOR OVERLAY ZONE, AND MAY BE SUBJECT TO MILITARY TRAINING ACTIVITIES.

7. PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE BUILDING AND PROJECT LANDSCAPING.

8. TRASH GENERATED BY THIS OPERATION IS HAULED OFF PREMISES BY THE

OWNER ON THURSDAYS AND SATURDAYS. NO DUMPSTER AREA IS PROPOSED.

9. SEWER SERVICE INSTALLATION BY OPEN CUT. SEE ASPHALT

REPAIR DETAIL THIS SHEET FOR ASPHALT PLACEMENT.

10. A LICENSED UTILITY CONTRACTOR WILL INSTALL THE PROPOSED WATER

AND SEWER SERVICES.

II. THE SEWER SERVICE FROM THE HRW EASEMENT LINE IS PRIVATE.

12. WATER USE CALCULATIONS:

3 EMPLOYEES X 25 GAL/EMPLOYEE/SHIFT = 75 GALLONS PER DAY. ESTIMATE ADDITIONA 25 GAL/DAY FOR HOSE BIBS, MISCELLANEOUS. TOTAL WATER USAGE = 75 + 25 = 100 GALLONS PER DAY.

13. HOURS OF OPERATION: THURSDAY II:00 - 6:00 FRIDAY II:00 - 6:00

SATURDAY 10:00 - 6:00 SUNDAY 10:00 - 4:00

14. PERMISSION TO CROSS CENTRAL ELECTRIC 100' POWER LINE EASEMENT WITH NEW WATER AND SEWER SERVICES GIVEN BY LETTER FROM DIRECTOR OF ENGINEERING SERVICES MICHAEL DOWDY. NO ADDITIONAL EASEMENTS REQUIRED.

15. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL HARNETT COUNTY STANDARDS AND SPECIFICATIONS.

16. THE CONTRACTOR MUST CONTACT THE NORTH CAROLINA CALL CENTER AT 800-632-4949 72 HOURS PRIOR TO DIGGING IN ORDER TO LOCATE ALL EXISTING UTILITIES.

AS THE OWNER OF RECORD, I HEREBY FORMALLY CONSENT TO THE PROPOSED DEVELOPMENT SHOWN ON THIS SITE PLAN AND ALL REGULATIONS AND REQUIREMENTS OF THE HARNETT COUNTY ORDINANCES.

DATE

NATHAN KING

LANDSCAPING REQUIREMENTS

TYPE C BUFFER REQUIRED FOR THIS DEVELOPMENT H.M. CAGLE DRIVE FRONTAGE = 178'

1. LARGE MATURING TREE REQUIRED FOR EVERY 30' OF FRONTAGE 178/30 = 6 TREES

2. 5 LOW-GROWING SHRUBS REQUIRED FOR EVERY TREE 6(5) = 30 TOTAL SHRUBS REQUIRED

LANDSCAPING NOTES

I. SHRUBBERY IS TO BE PLANTED MIN. 30" FROM CURBING AND PARKING SPACES TO PREVENT DAMAGE FROM CAR OVERHANG.

2. SHRUBS INSTALLED AS VEHICULAR USE SCREENING ARE TO BE

MAINTAINED AT MIN. HEIGHT 36". MIN. INSTALLATION HEIGHT 24".

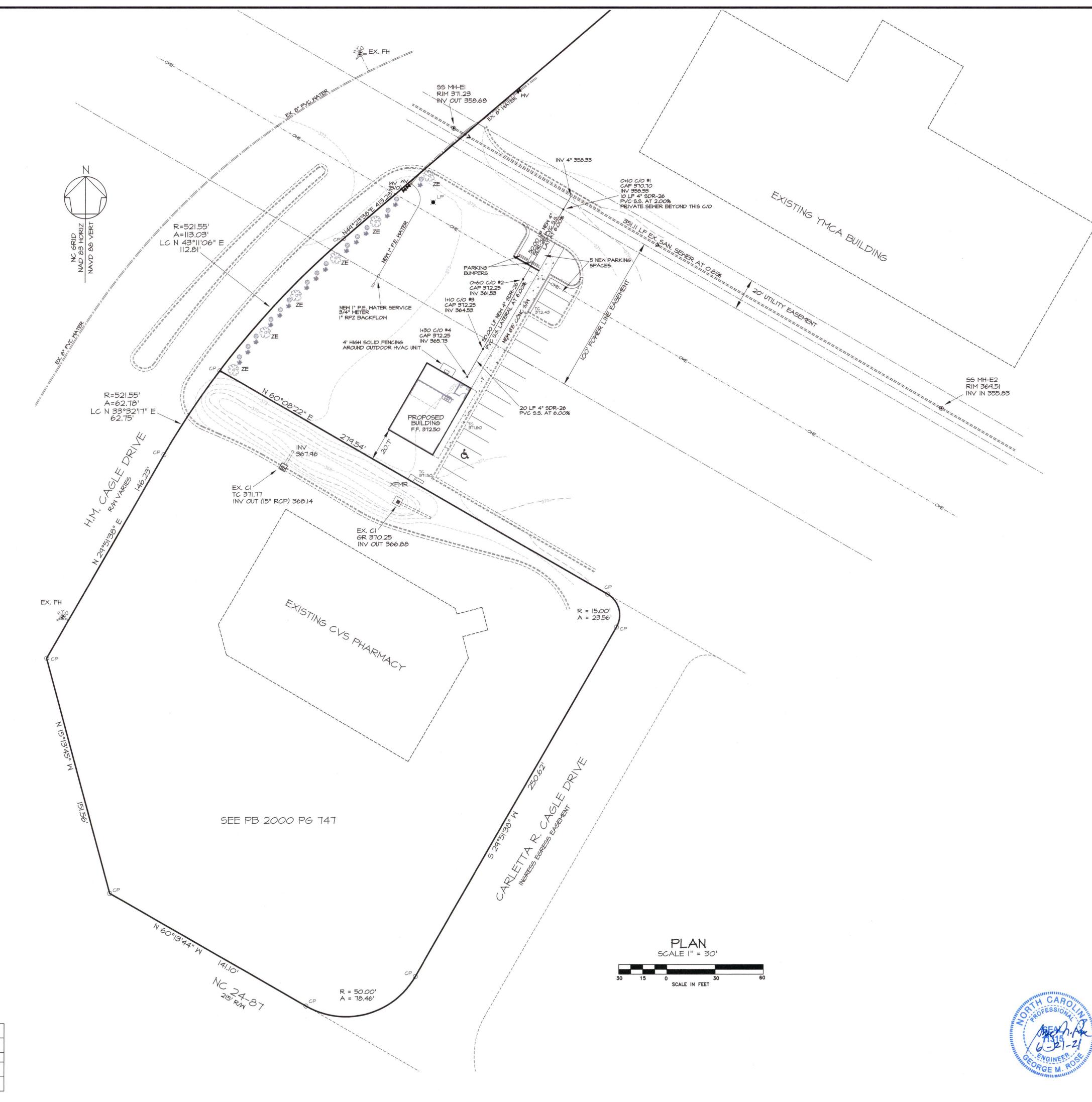
3. LIGHT POLES TO BE MIN. 15' FROM TREES. ANY FIELD ADJUSTMENTS MUST COMPLY WITH THIS STANDARD AND BE APPROVED BY CITY STAFF PRIOR TO INSTALLATION.

4. EACH TREE SHALL BE PLANTED SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE ROOT FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE ROOT FLARE WITH MULCH.

5. DO NOT PLACE MULCH IN CONTACT WITH THE TREE TRUNK, KEEP MULCH A MINIMUM OF 4 INCHES AWAY FROM THE TRUNK BASE.

PLANTING LEGEND

CANOPY TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
ESS ZE	6	ZELKOVA SERRATA	ZELKOVA GREEN VASE	2"	MIN. 8' HEIGHT
SHRUBS					
LO 🎇	15	CLEYERA JAPONICA	JAPANESE CLEYERA	MIN 18"	
FOR CH	15	ILEX CORNUTA	CARISSA HOLLY	MIN 18"	



REVISIONS:

6-21-21 NOTES

NEW EW

DATE: APR 2021

DRAWN BY: GMR

SCALE: NOTED

SHEET NO.

CHECKED:

5-26-21 NOTES, S/W WIDTH 6-11-21 PER DRB COMMENTS WATER
A. The Fire Marshal's Office shall approve all hydrant types and locations in new subdivisions. However, Harnett Regional Water (HRW) prefers the contractors to install one of the following fire

1. Mueller - Super Centurion 250 A-423 model with a 5½"
main valve opening three way (two hose nozzles and
one pumper nozzle);
2. American Darling - Mark B-84-B model with a 5½"
main valve opening three way (two hose nozzles and
one pumper nozzle);
3. Waterous - Pacer B-67-250 model with a 5½" main
valve opening three way (two hose nozzles and one
pumper nozzle) or approved equal for standardization. Fire hydrants are installed at certain elevations. Any grade change near any fire hydrant, which impedes its operation, shall become the responsibility of the Utility Contractor for correction. Corrections will be monitored by the HRW Utility Construction

The Professional Engineer (PE) shall obtain and provide the NCDEQ "Authorization to Construct" permit to the Utility The Utility Contractor must post a copy of the NCDEQ
"Authorization to Construct" permit issued by the North Carolina
Department of Environmental Quality (NCDEQ) on site prior to the start of construction. The permit must be maintained on site throughout the entire construction process of the proposed water lines that will serve this project. The Utility Contractor shall notify Harnett Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to

construction commencing. The Utility Contractor must schedul a pre-construction conference with Mr. Alan Moss, HRW Utility Construction inspector at least two (2) days before constru will begin and the Utility Contractor must coordinate with I for regular inspection visitations and acceptance of the water system(s). Construction work shall be performed only during the normal working hours of HRW which is 8:00 am - 5:00 pm

Monday through Friday. Holiday and weekend work is not permitted by HRW.

The Professional Engineer (PE) shall provide HRW and the Utility "Released for Construction" at least two days prior to construction commencing. The Registered Land Surveyor (RLS should stake out all lot corners and the grade stakes for the proposed finish grade for each street before the Utility centerline so as not to interfere with the street grading and

The Utility Contractor shall provide the HRW Utility Construction The materials to be used on the project must meet the established specifications of HRW and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when

The water main(s), fire hydrants, service lines, meter setters and all associated appurtenances shall be constructed in strict in accordance with the standard specifications of the Harnett Regional Water (HRW). The Utility Contractor shall be responsible to locate the newly installed water main(s), water ervice lines and all associated meter setters and meter boxes fo other utility companies and their contractors until the new water main(s) have been approved by the North Carolina Departme

Prior to acceptance, all services will be inspected to insure that they are installed at the proper depth. All meter boxes must be The Utility Contractor shall provide the Professional Engineer

(PE) and HRW Utility Construction Inspector with a set of red line drawings identifying the complete water system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the water lines as well as the gate valves, fire hydrants, meter setters, blow off assemblies and all associated appurtenances for all water line(s constructed in Harnett County. The red line drawings should learly identify any deviations from the NCDEC I change orders must be approved by HRW and the rofessional Engineer (PE) in writing and properly documented

in the red line field drawings. Potable water mains crossing other utilities and non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum vertical distance of twenty-four (24") inches between the potable water main and all other utilities. CDOT requires the new water mains to be installed under th storm water lines. The potable water main shall be install with twenty-four (24") inches of vertical separation and with ductile iron pipe when designed to be placed under a non-potable water line such as sanitary sewer or storm sewer lines. shall be installed with ductile iron pipe. Both the potable wate nain and the non-potable water line must be cast iron or ducti ron pipe (DIP) if the state minimum separations cannot be

ater main crosses the non-potable water line. Potable water mains installed parallel to non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide nain and any other utility or storm sewer shall not be less thar ive (5') feet. The potable water main must be ductile iron pipe i point where the minimum required horizontal separation of 10') feet can be re-established.

Meter setters shall be installed in pairs on every other lot line where possible to leave adequate space for other utilities to be installed at a later time. The meter setters shall be installed a x 17" long ABS plastic boxes at least 18" in height with cast iron long ABS plastic boxes at least 18" in height with plastic lids and

0" in height with plastic lids and cast iron flip covers in the Master meters must be installed in concrete vaults sized for the meter assembly and associated appurtenances so as to provide at master meter must be provided test ports if the meter is not equipped with test ports from the manufacturer in accordance with the HRW established standard specifications and details. Ductile iron pipe must be used for the master meter vault pipin

oncrete vaults. The Utility Contractor will install polyethylene SDR-9 water service lines that cross under the pavement inside a schedule 40 VC conduit to allow for removal and replacement in the future Two (2) independent %" water service lines may be installed inside one (1) - two (2") inch schedule 40 PVC conduit or two (2 independent 1" water service lines may be installed inside one service shall be tapped directly to the water main. Split service are not allowed by HRW. If sidewalks are proposed, the conduit

he water main(s), fire hydrants, gate valves, service lines, meter setters and associated appurtenances must be rated for 200 psi and hydrostatically pressure tested to 200 psi. The hydrostatic $\,$ pressure test(s) must be witnessed by the HRW Utility
Construction Inspector. The Utility Contractor must notify HRW
when they are ready to begin filling in lines and coordinate with Harnett Regional Water to witness all pressure testing. The Utility Contractor shall conduct a pneumatic pressu

using compressed air or other inert gas on the stainless steel tapping sleeve(s) prior to making the tap on the existing water nain. This pneumatic pressure test must be witnessed by the IRW Utility Construction Inspector. The Utility Contractor sha sized equal to the diameter of the new water line extension in Water's existing water mains and the new water line extension

All water mains will be constructed with SDR-21 PVC Pipe or Class 50 Ductile Iron Pipe rated for at least 200 psi or greater. A pipes must be protected during loading, transport, unloading, staging, and installation. PVC pipe must be protected from extended exposure to sunlight prior to installation.
All water mains will be flushed and disinfected in strict

accordance with the standard specifications of the Harnett Regional Water. All water samples collected for bacteria testing will be collected by the HRW Utility Construction Inspector and tested in the HRW Laboratory.

All fittings larger than two (2") inches diameter shall be ductile iron. HRW requires that mechanical joints be assembled wit grip rings as "Megalug" fittings are not approved by Harnett Regional Water for pipe sizes smaller than twelve inches (12 diameter. PVC pipe used for water mains shall be connected by slip joint or mechanical joint with grip rings. Glued pipe joints

are not allowed on PVC pipe used for water mains in Harnett HRW requires that the Utility Contractor install tracer wire in the trench with all water lines. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct

tape to the top of the pipe before backfilling.
The Utility Contractor will provide Professional Engineer (PE) and the HRW Utility Construction Inspector with a set of red line field drawings to identify the installed locations of the water line(s) and all associated services. All change orders must be pre-approved by HRW and the Professional Engineer (PE) in

writing and properly documented in the red line field drawings.
The Utility Contractor shall spot dig to expose each utility pipe of line which may conflict with construction of proposed water line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the water line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner requirements during wate line installation, grading and street construction.

Prior to the commencement of any work within established

utility easements or NCDOT right-of-ways the Utility Contracts required to have a signed NCDOT encroachment agreement posted on site and notify all concerned utility companies in ccordance with G.S. 87-102. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are take from maps furnished by various utility companies and have no been physically located or verified by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC NATURAL GAS, ETC.). The Utility Contractor will be responsible

fire hydrant wrench and one (1) break-away flange kit for every subdivision with fire hydrants developed in Harnett County. These items must be provided to HRW before the final inspectio valve marker at the edge of the right-of-way to identify the location of each gate valve installed in the new water system with the exception of the fire hydrant isolation valves. The contractor et) shall be stamped on the brass plate located on the top of th

concrete valve marker. In lieu of installing the concrete valve markers, the Utility Contractor may provide at least two neasurements from two independent permanent above group measurements from two interpendent permanent above ground structures to the Professional Engineer (PE) in the red line drawings to identify the valve locations. The Professional Engineer (PE) must include these measurements in the As-Built Record Drawings submitted to HRW. Fhe Utility Contractor will be responsible for any and all repairs due to leakage damage from poor workmanship during the one (1) year warranty period once the water system improvements have been accepted by Harnett Regional Water. Harnett Regional Water will provide maintenance and repairs when requested and

bill the Developer and/or Utility Contractor if necessary due to lack of response within 48 hours of notification of warranty their contractors until the water lines have been approved by CDEQ and accepted by HRW. The final inspection of wate system improvements cannot be scheduled with HRW until the streets have been paved; the rights-of-way and utility ease The Engineer of Record is responsible to insure that construction

is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval by HRW. A copy of each engineer's field report is to be submitted to the control of the contr or testing is performed by the contractor. Water and sewer and those of all applicable regulatory agencies. These tests fire hydrant wrench and one (1) break-away flange kit for every subdivision with fire hydrants developed in Harnett County. These items must be provided to HRW before the final inspection will be scheduled by the HRW Utility Construction Inspector. In addition, the Utility Contractor shall install a 4" x 4" concrete valve marker at the edge of the right-of-way to identify the location of each gate valve installed in the new water system with he exception of the fire hydrant isolation valves. The contracto shall measure the distance from the center of the concrete marker to the center of the valve box. This distance (in linear

eet) shall be stamped on the brass plate located on the top of the concrete valve marker. In lieu of installing the concrete valve markers, the Utility Contractor may provide at least two structures to the Professional Engineer (PE) in the red line drawings to identify the valve locations. The Professional Engineer (PE) must include these measurements in the As-Built Professional Engineer (PE) must include these measurements in the As-Built Professional Engineer (PE) must include these Managements in the As-Built Professional Engineer (PE) must include the Management and the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the red line drawing the Personal Professional Engineer (PE) in the The Utility Contractor will be responsible for any and all repairs due to leakage damage from poor workmanship during the one (1) year warranty period once the water system in bill the Developer and/or Utility Contractor if necessary due to ack of response within 48 hours of notification of warranty

work. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new water lines and associated appurtenances for other utilities and their contractors until the water lines have been approved by NCDEQ and accepted by HRW. The final inspection of water system improvements cannot be scheduled with HRW until the treets have been paved; the rights-of-way and utility easemen e Engineer of Record is responsible to insure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field change to the approved plans are allowed without prior written approva by HRW. A copy of each engineer's field report is to be submitted

or testing is performed by the contractor. Water and sewer and those of all applicable regulatory agencies. These tests nclude, but are not limited to: air test, vacuum test, mandrel te visual test, pressure test, bacteriological test, etc. A HR Inspector must be present during testing and all test results sha be submitted to HRW. All tests must be satisfied before the fin nspection will be scheduled with the HRW Inspector. T Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HRW Utility Construction Inspector noted during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of nspections performed by the HRW exceeds two, additional fees

SANITARY SEWER The Professional Engineer (PE) shall obtain and supply a copy of the sewer permit for the construction and operation of the wastewater collection system to the Utility Contractor before the construction of the sanitary sewer line, sewer lift station and post a copy of the sewer permit issued by the North Carolina epartment of Environmental Quality (NCDEQ) on site prior to the start of construction. The permit must be maintained on site during the construction of the sewer system improvements.

The Utility Contractor shall notify Harnett Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedul a pre-construction conference with Mr. Alan Moss, HRW Utilit Construction Inspector at least two (2) days before construct

not permitted by HRW. The Professional Engineer (PE) shall provide HRW with a set of NCDEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. HRW will stamp the approved plans as "Released for Construction" and provide copies to the utility contractor. The Registered Land Surveyor (RLS) shall stake out all lot corners and establish grade stakes for the proposed finish grade for each street and sewer line before the Utility Contractor begins construction or installation of the manholes, sanitary sewer gravity line(s),

centerline so as not to interfere with the street grading or utility construction.

The Utility Contractor shall provide the HRW Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any gravity sewer line(s), manhole(s), sewer lift station(s) and associated force main(s) in Harnett County. The materials to be used on the project must meet the established specifications of HRW and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in standard materials or materials not approved for use in immediately when notified by the HRW Utility Construction

grade stakes should be set with a consistent offset from the street

The sanitary sewer lateral connections should be installed 90° The sanitary sewer lateral connections should be installed 90° (perpendicular) to the sanitary sewer gravity lines with schedule 40 PVC pipe. HRW requires the Utility Contractor to provide the Professional Engineer (PE) with accurate measurements for locating sanitary sewer service lateral and associated each sanitary sewer clean-out. These measurements should be taken from the nearest downstream manhole up along the sanitary sewer main to the in-line wye fitting (or tapping saddle) and then another measurement from the in-line wye fitting (or tapping saddle) to the 4" x 4" long sweep combination wye fitting at the bottom of the sewer clean-out stack. These field measurements must be proyided to the Professional Engineer (PE) in the red must be provided to the Professional Engineer (PE) in the red line drawings from the Utility Contractor for proper documentation in the As-Built Record Drawings submitted to

The Utility Contractor shall be responsible to locate the newly installed sanitary sewer gravity line(s), sanitary sewer force main(s), sanitary sewer service lateral(s) and all associated sewer clean-out(s) in the proposed sanitary sewer system for other utility companies and their contractors until the new sanitary sewer line(s) and associated appurtenances have been approved by the North Carolina Department of Environmental Outlity (NCEO) and accepted by HEW All new sanitary sewer Quality (NCDEQ) and accepted by HRW. All new sanitary sewer lines must have at least three (3 ft.) feet of cover and exten under all existing water main and storm water lines with a least 24" of vertical clearance below the bottom of the existing water main and storm water lines. ALL ductile iron sewer piping must

be 401 epoxy coated or approved equal.

The sanitary sewer gravity line(s), manhole(s), sanitary sewer service lateral(s) and associated clean-out(s) shall be constructed in strict accordance with the standard specifications of the Harnett Regional Water. The sanitary sewer gravity line(s must pneumatically pressure tested with compressed air at 5 psi and the sanitary sewer force main(s) must hydrostatically pressure tested with water or air at 200 psi. Sanitary sewer manholes must be vacuum tested to 10 inches of mercury and cannot drop below 9 inches in 60 seconds for 4 ft. diameter nanholes, 75 seconds for 5 ft. diameter manholes. The test must mannoles, 75 seconds for 5 n. diameter mannoles, The test mu be in accordance with the following standards: For ductile iron pipelines test in accordance with the applicable requirements ASTM C924. For PVC pipelines test in accordance with ASTM F1417-98 and UBPPA UNI-B-6. Vacuum testing shall be performed in accordance with ASTM C1244. The HRW Utility

mentioned above.

Prior to acceptance, all sewer service laterals will be inspected to insure that they are installed at the proper depth. All sewer clean-outs must be installed so the 4" x 4" long sweep combination wye is at least three (3') feet but no more than four (4') feet below the finish grade unless otherwise approved in writing by HRW. The sewer cleanouts shall have a four (4") schedule 40 PVC pipe stubbed up from both ends of the 4" x 4" long sweep combination wye to be at least two (2') feet above the finish grade and cover each end with a four (4") inch temporary cap to keep out dirt, sand, rocks, water and construction debri: The vertical stack on each clean-out must be provided with a concrete donut for protection.

Once the sanitary sewer gravity line(s) have been installed, pneumatically pressure tested and in place for at least 30 days, the Utility Contractor must contact the HRW Utility Construction Inspector to witness the mandrel test on each PVC sanitary sewer rayity line. The Utility Contractor will notify HRW to schedule the mandrel testing. The mandrel and proving ring must be supplied by the Utility Contractor. Closed circuit video camera inspections (at the Utility Contractor's expense) may be required by the HRW Utility Construction inspector if the mandrel and

mirror tamping testing cannot be completed with satisfactory results. The sanitary sewer lines should be flushed clean using a constructed sewer lines exercising care to keep the Harnett Regional Water's existing sanitary sewer systems clean. Sanitary sewer force main(s) shall be pressure tested to 200 psi for at The Utility Contractors shall be responsible to locate the newly installed sanitary sewer system(s) for other utility companies and their contractors until the new sanitary sewer system(s)

have been approved by the North Carolina Department o Environmental Quality (NCDEQ) and accepted by HRW.

HRW requires that the Utility Contractor install tracer
wire in the trench with all sanitary sewer force mains. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer

wire installed in Harnett County. The tracer wire may be secured The Utility Contractor shall provide the Professional Engineer (PE) and HRW Utility Construction inspector with a set of red line drawings identifying the complete sewer system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the sewer lines as well as the installed locations of the manhole(s), sanitary sawer gravity. Hone(s) explores years are reduced to the value along with sewer gravity line(s), sanitary sewer service laterals, clean-outs sewer lift station(s) and associated force main(s). The red line drawings should clearly identify any deviations from the NCDEO pproved plans. All change orders must be approved by HRY

Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to notify all concerned utility companies in ccordance with G.S. 87-102. The Utility Contractor must call the from maps furnished by various utility companies and have no been physically located by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL The Utility Contractor shall spot dig to expose each existing

I ne Utility Contractor shall spot dig to expose each existing utility pipe or line which may conflict with construction of proposed sanitary sewer line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the sanitary sewer line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation of existing utilities and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner's requireme When making a tap on an existing sewer force main, the Utility

Department of Environmental Quality (NCDEQ) prior to begin the tap work. The Utility Contractor shall conduct a pneumatic tap work. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve and gate valve prior to making the tap on an existing sanitary sewer force main. This pneumatic pressure test must be witnessed by the HRW Utility Construction inspector. The Utility Contractor shall use Romac brand stainless. steel tapping sleeve(s) or approved equal for all taps made on sanitary sewer force mains in Harnett County. The Utility saminary sewer incre mains in nament county. The obliny Contractor shall use Romag brand Style "GB" sewer saddles with stainless steel bands or approved equal for all taps made on existing sanitary sewer gravity lines in Harnett County.

The Utility Contractor shall provide a grease trap for each sanitary sewer service lateral that will be connected to a restaurant food investigate facilities and early these expressions.

estaurant, food processing facility and any other commercial or ndustrial facility as required by the Harnett County Fat, Oil & Grease Ordinance. The grease trap must be rated for a minimur capacity of at least 1,000 gailons unless otherwise approved in writing by the HRW Pre-Treatment Coordinator. Garbage disposals should not be installed in homes and businesses that sewer System as they are not approved by HRW. Each sewer lift station must be provided with three phase power (at least 480 volts) and constructed to meet the minimum

company other arrangements must be approved by HRW Engineering prior to the start of construction. Where a new sanitary sewer force main is connected to an where a new santary sewer force main is connected to an existing manhole in the Harnett Regional Water sewer collections system, the Utility Contractor must provide a protective coating (epoxy) for the interior surfaces of the manhole to protect it against corrosion, erosion and deterioration from the release of sewer gases such as methane and budges a will deand hydrogen sulfide.

The sewer lift station design and associated equipment must meet or exceed the MINIMUM REQUIREMENTS FOR HARNETT
COUNTY SEWER LIFT STATIONS. Each sanitary sewer lift station weed blocking material and at least six (6") inches of ABC stone Once a sewer lift station has been installed, the Utility Contractor

representatives [For both the Pumps and the Generator]. This draw down test must be completed with power supplied from the electrical utility company and with power supplied by the Once the Utility Contractor completes the installation of a sewer

Unce the Utility Contractor completes the installation of a sewer lift station, the Professional Engineer (PE) must submit the sewer permit certification and As-Built Record Drawings to the North Carolina Department of Environmental Quality (NCDEQ) and HRW for final approval. The Utility Contractor must supply HRW Engineering staff with three original Operation & Maintenance (O&M) Manuals along with the associated pump curves and electrical schematics for the associated sewer lift station complyment including all warranty information and quipment including all warranty information and Once the Utility Contractor completes the installation of a sewer lift station, the Developer must pay HRW the established System

Control and Data Acquisition (SCADA) fees before the SCADA system will be installed at the new sewer lift station. The SCADA system will be installed and operational before the utilities may be accepted by HRW and placed into operation. HRW requires the Utility Contractor to provide all necessary equipment and devices for the testing and inspection of the sanitary sewer system. The equipment and devices may include but not limited to lamping with mirrors, mandrels, sewer ball ection will be the responsibility of the Utility Contractor. closed circuit video camera inspections must be recorded on VHS tapes that will released to HRW for record keeping, review and

approval of the sewer system.

Any use of sewer plugs to temporarily block Harnett Regional Water's existing sanitary sewer lines must be coordinated with the HRW Collections Supervisor at least two (2) days in advance of installing the plugs. The sewer plugs must be removed as soon and accepted by HRW to allow the sewer to flow as designed in Harnett Regional Water's existing sanitary sewer lines or when so ordered by the HRW Collections Supervisor to limit interruptions to the normal flow of the sanitary sewer collection system(s). The Utility Contractor must provide the pumps hoses and necessary connectors for a temporary pump around setup if required by the HRW Collections Supervisor. Mr. Randolph 8:00 am and 5:00 pm Monday through Friday at (910) 893-7575

extension 3241.

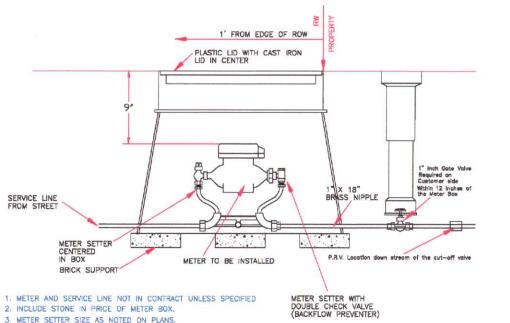
The Utility Contractor will be responsible for any and all repairs lue to leakage or damage resulting from poor workmanship during the one (1) year warranty period once the sewer system improvements have been approved by the North Carolina
Department of Environmental Quality (NCDEQ) and accepted by
HRW. The Utility Contractor will be responsible for any and all
repairs due to damages resulting from failure to locate the new sanitary sewer lines and associated appurtenances for other utilities and their contractors until the sanitary sewer lines have been approved by NCDEQ and accepted by HRW. HRW will provide maintenance and warranty repairs if necessary due to lack of response within 48 hours of notification of warranty work. HRW will invoice the Developer and/or Utility Contractor for materials and labor in such cases.

for materials and labor in such cases.

In developments and projects that require utility easements to be established for future HRW right-of-way, the Registered Land Surveyor (RLS) must provide the HRW Right-of-Way Agent with an official copy of the recorded plat and legal description of the said easement as recorded with the Harnett County Register of Deeds. The recorded documents must be provided to the HRW Right-of-Way Agent before the utility improvements within the said easement can be placed into operation. Any and all said easement can be placed into operation. Any and all easements that must be obtained from adjoining property owners must be provided to HRW by the Developer at no cost to Harnett County. The final inspection of all sanitary sewer system aprovements cannot be scheduled with HRW until the streets have been paved; the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in

place to prevent erosion issues on site.

The Engineer of Record is responsible to insure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes o the approved plans are allowed without prior written approv by HRW. A copy of each engineer's field report is to be submit to HRW as each such inspection is made on system improvements or testing is performed by the contractor. Water and sewer and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HRW Inspector must be present during testing and all test results sha be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HRW Utility Construction Inspector hall prepare a written punch list of any defects or deficiencie noted during the final inspection, should any exist. Upo ompletion of the punch list, the Developer's Engineer of Reco will schedule another inspection. In the event the number of inspections performed by the HRW exceeds two, additional fees may be accessed to the Developer.



1.5" SF 9.5A ASPHALT 8" ABC STONE

ASPHALT REPAIR DETAIL

NO SCALE

DESCRIPTION

FLAT BOTTOM UNDISTURBED

EARTH TRENCH, LOOSE BACKFILL

FLAT BOTTOMED UNDISTURBED EARTH

TRENCH. BACKFILL LIGHTLY CONSOLIDATED TO CENTERLINE

PIPE BEDDED IN 4" MININUM

BACKFILL LIGHTLY CONSOLIDATED

PIPE BEDDED IN SAND, GRANULAR

MATERIAL OR GRADED GRAVEL TO

THE DEPTH OF 1/8 PIPE DIAMETER

" MIN. JOB EXCAVATED MATERIAL

PIPE BEDDED TO ITS CENTERLINE

4" MIN. UNDER PIPE. COMPACTED

GRANULAR OR SAND MATERIAL TO

4"ABOVE TOP OF PIPE. (APPROX. 95% STANDARD PROCTOR,

TYPICAL LAYING CONDITIONS 14

IN COMPACTED GRANULAR MATERIAL

COMPACTED TO 4" ABOVE TOP OF PIPE.

(APPROX. 95% STANDARD PROCTOR,

JOB EXCAVATED MATERIAL

COMPACTED SOIL

TYPICAL 1" METER SETTER INSTALLATION DETAIL (W)

4. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE.

LAYING

CONDITIONS

TYPE 1

TYPE 2

TYPE 4

TYPE 5



PROJECT USE

NOT USED.

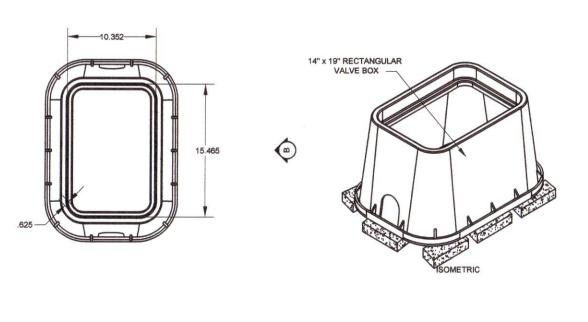
SEWER LINE.

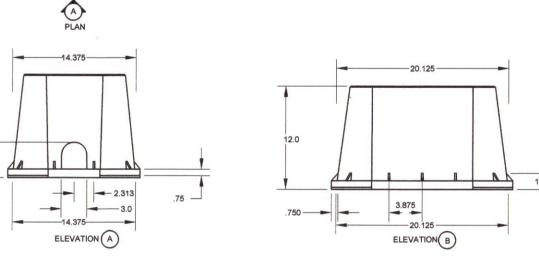
LINE AND PVC

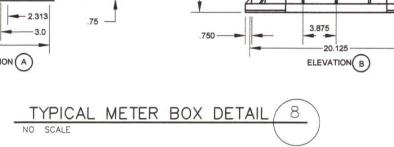
FORCE MAIN.

ALL PVC GRAVITY

SEWER LINE.





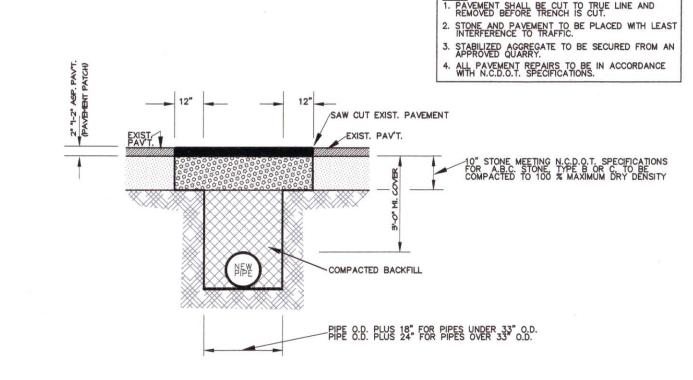


- ROAD SHOULDER

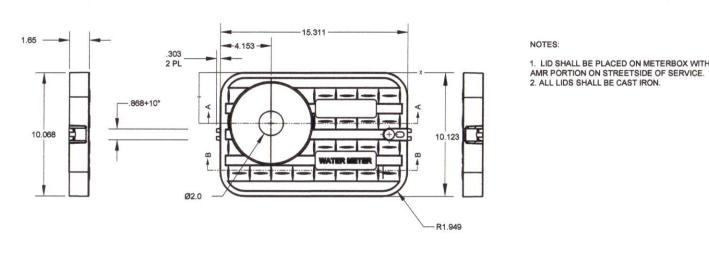
TRENCH WIDTH

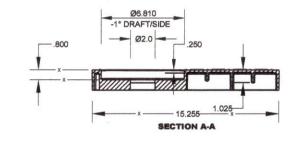
PIPE O.D. + 18" FOR PIPES UNDER 33" O.D. PIPE O.D. + 24" FOR PIPES OVER 33" O.D.

CORPORATION



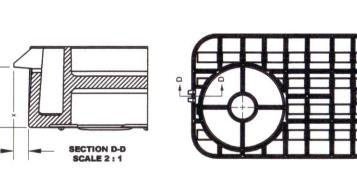
TRENCH IN BITUMINOUS SURFACE AREAS DETAIL (13) DET-009

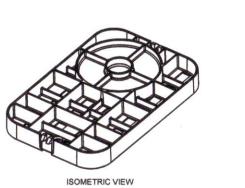




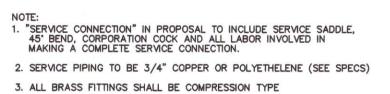


1. LID SHALL BE PLACED ON METERBOX WITH







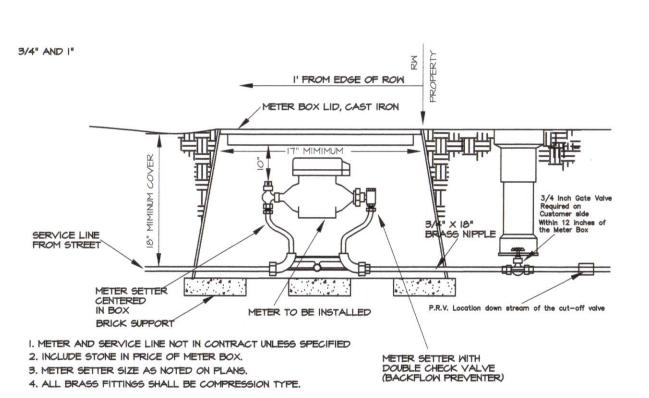


AS NOTED ON PLANS

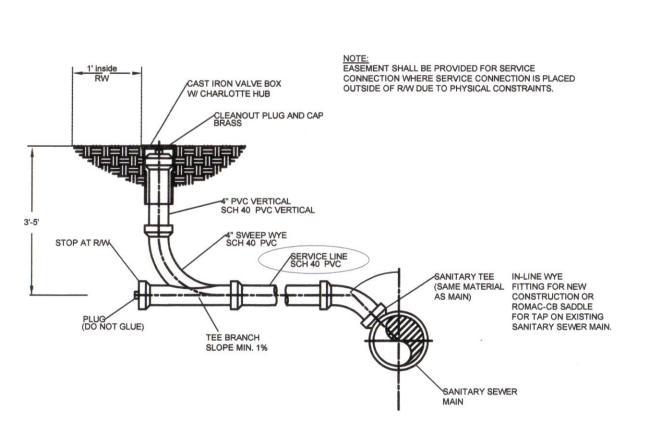
NEW WATER LINE -

SERVICE SADDLE - DRESSER STYLE 91 FOR DIP, STYLE 194 FOR PVC OR APPROVED EQUAL

TYPICAL WATER SERVICE CONNECTION USING TAPPING SADDLE DETAIL



TYPICAL METER SETTER INSTALLATION DETAIL (10)



TYPICAL SEWER SERVICE CONNECTION DETAIL /





A

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X

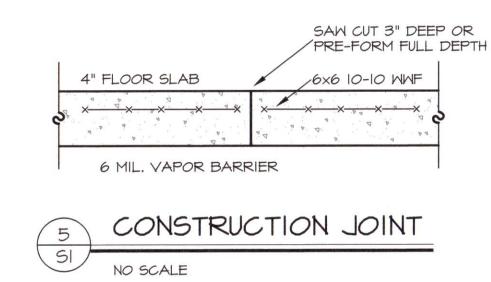
O

REVISIONS:

6-II-2I PER DRB COMMENTS

DRAWN BY: GMR

CHECKED: SCALE: NOTED



GENERAL CONDITIONS

THE GENERAL CONTRACTOR SHALL MAKE ADEQUATE SANITARY PROVISIONS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SAFETY AND COMPLIANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT AS IT MAY REGARD ANY PHASE OF THE WORK ON THIS PROJECT.

SOIL COMPACTION AND TESTING

THE GENERAL CONTRACTOR SHALL OBTAIN THE SERVICES OF A TESTING LABORATORY, SUCH AS SEME OR LAW ENGINEERING FOR THE PURPOSE OF DETERMINING THE SUITABILITY OF THE SUBSURFACE CONDITIONS AND THE BEARING CAPACITIES OF ALL AREAS BELOW CONCRETE. THE SOIL and BEARING REPORT SHALL BE SUBMITTED PRIOR TO EXCAVATING, WHERE POSSIBLE, BUT PRIOR TO PLACEMENT OF ANY REINFORCING AND CONCRETE. SOIL BEARING TO BE MIN. 2,000 PSF.

CONCRETE WORK

- I. ALL CONCRETE FOR THE PROJECT SHALL BE "READY MIX" AND SHALL COMPLY WITH ASTM C-94. ALL SECTIONS OF THE CONCRETE WORK SHALL COMPLY WITH ALL ASTM AND ACI REQUIREMENTS.
- FORM WORK ALL FORMS TO BE CAREFULLY BUILT AND SECURED IN PLACE IN SUCH A MANNER AS TO HAVE SUFFICIENT STRENGTH TO CARRY THE DEAD WEIGHT OF THE CONSTRUCTION AS A LIQUID, WITHOUT DEFLECTION OR VIBRATION. FORMS TO BE BUILT TIGHT, TRUE TO POSITION AND DIRECTION, THOROUGHLY BRACED, WIRED AND SPIKED OR OTHERWISE FASTENED TOGETHER.
- 3. CONCRETE MINIMUM OF 3,000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM OF FIVE
- SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, MAXIMUM OF 4" SLUMP. 4. FINISHING - IN ACCORDANCE WITH THE LATEST A.C.I. CODE, PLUMB, LEVEL, TRUE IN LINE, FREE OF HONEYCOMB. BUILDING SLAB SHALL HAVE A HARD STEEL TROWEL FINISH. WALKS SHALL HAVE BROOMED FINISH, AND EXPANSION JOINTS AT APPROXIMATELY 50' O.C. AND
- DUMMY JOINTS AS SHOWN ON THE SITE PLAN. 5. REMOVAL OF FORMS - FORMS SHALL BE CAREFULLY REMOVED SO AS NOT TO IMPAIR THE FACE OF THE CONCRETE. IMMEDIATELY AFTER THE FORMS ARE REMOVED ALL DAMAGE OF IMPERFECT WORK SHALL BE PATCHED IN A NEAT AND WORKMANLIKE MANNER, OR IF BADLY DAMAGED, IN THE OPINION OF THE OWNER, THE WORK SHALL BE REBUILT. THE MINIMUM TIME BEFORE ANY FORMS CAN BE REMOVED IS SEVEN (7) DAYS FOR SUCH MEMBERS AS ARE SUBJECT TO BENDING STRESSES, SUCH AS
- 6. CURING USE MEMBRANE CURING METHOD. USE MFG. RATE, SPRAY IMMEDIATELY FOLLOWING FINISHING. PROTECT FROM FREEZING WEATHER. CURE A TOTAL OF 28 DAYS USING A.C.I. METHODS.

REINFORCING STEEL

ALL REINFORCING STEEL SHALL BE DEFORMED STEEL BARS CONFORMING TO A.S.T.M. A615, GRADE 60.

ALL REINFORCING STEEL SHALL BE MANUFACTURED, DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH A.C.I. 315R, 318R AND A.C.I. SP 66. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A185, IN AS LONG A LENGTH AS IS PRACTICAL. WELDED WIRE FABRIC SHALL BE LAPPED AT LEAST ONE GRID WIDTH PLUS 2". REINFORCEMENT SHALL BE BENT COLD AND SHALL NOT BE WELDED.

REINFORCEMENT IN CONCRETE AND MASONRY SHALL HAVE LAP LENGTHS AS FOLLOWS,

UNLESS OTHERWISE SPECIFIED ON DRAWINGS: IN CONCRETE:

BAR SIZE: IN MASONRY: #3 1'-6" 2'-0" 2'-0" 2'-6" 2'-6" 3'-0"

PLACEMENT:

REINFORCEMENT SHALL BE ACCURATELY PLACED AND SUPPORTED BY CONCRETE, METAL, OR OTHER APPROVED CHAIRS, SPACERS OR TIES, AND SECURED AGAINST DISPLACEMENT DURING CONCRETE OR GROUT PLACEMENT.

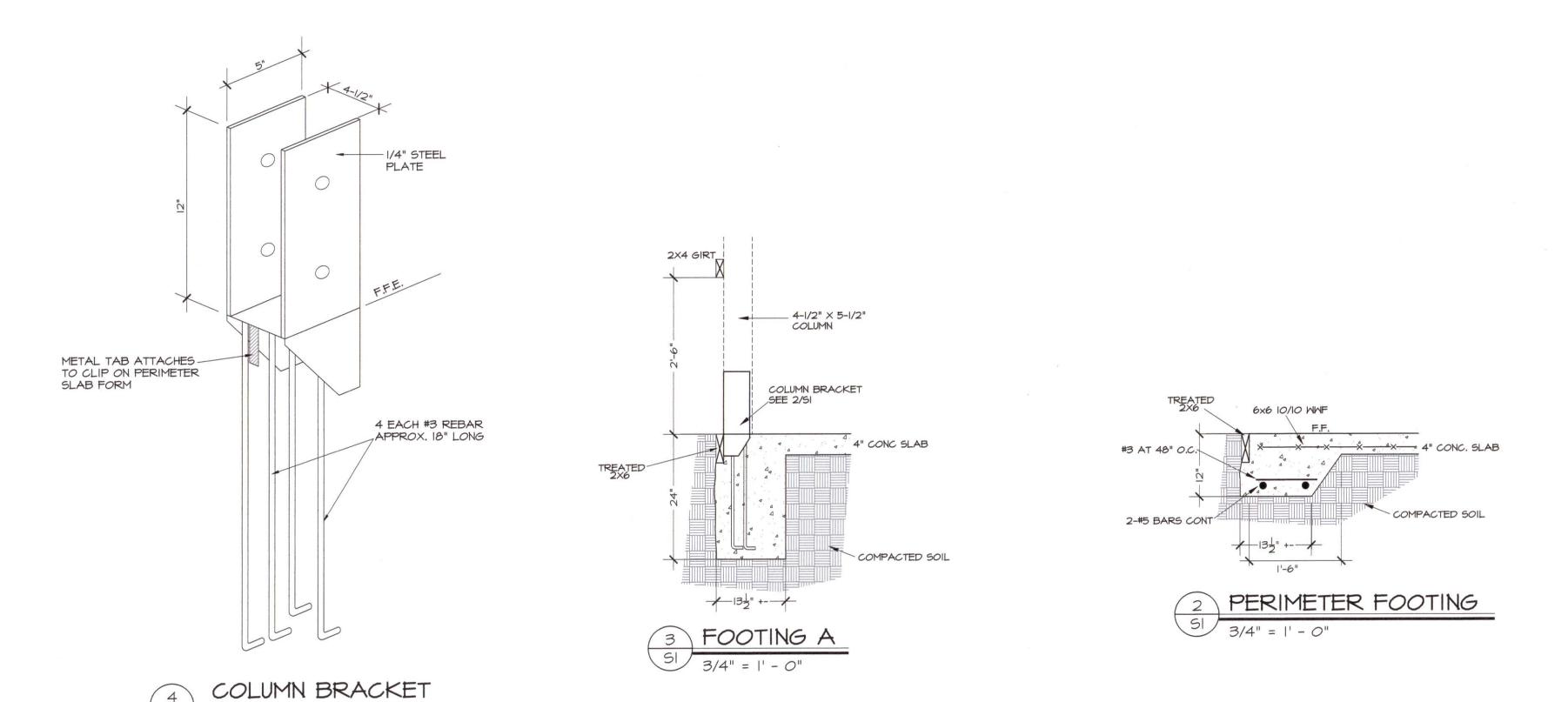
EXCEPT WHERE OTHERWISE NOTED, REINFORCEMENT SHALL HAVE CONCRETE COVER AS FOLLOWS:

CONCRETE DEPOSITED AGAINST EARTH FORMED CONCRETE AGAINST EARTH

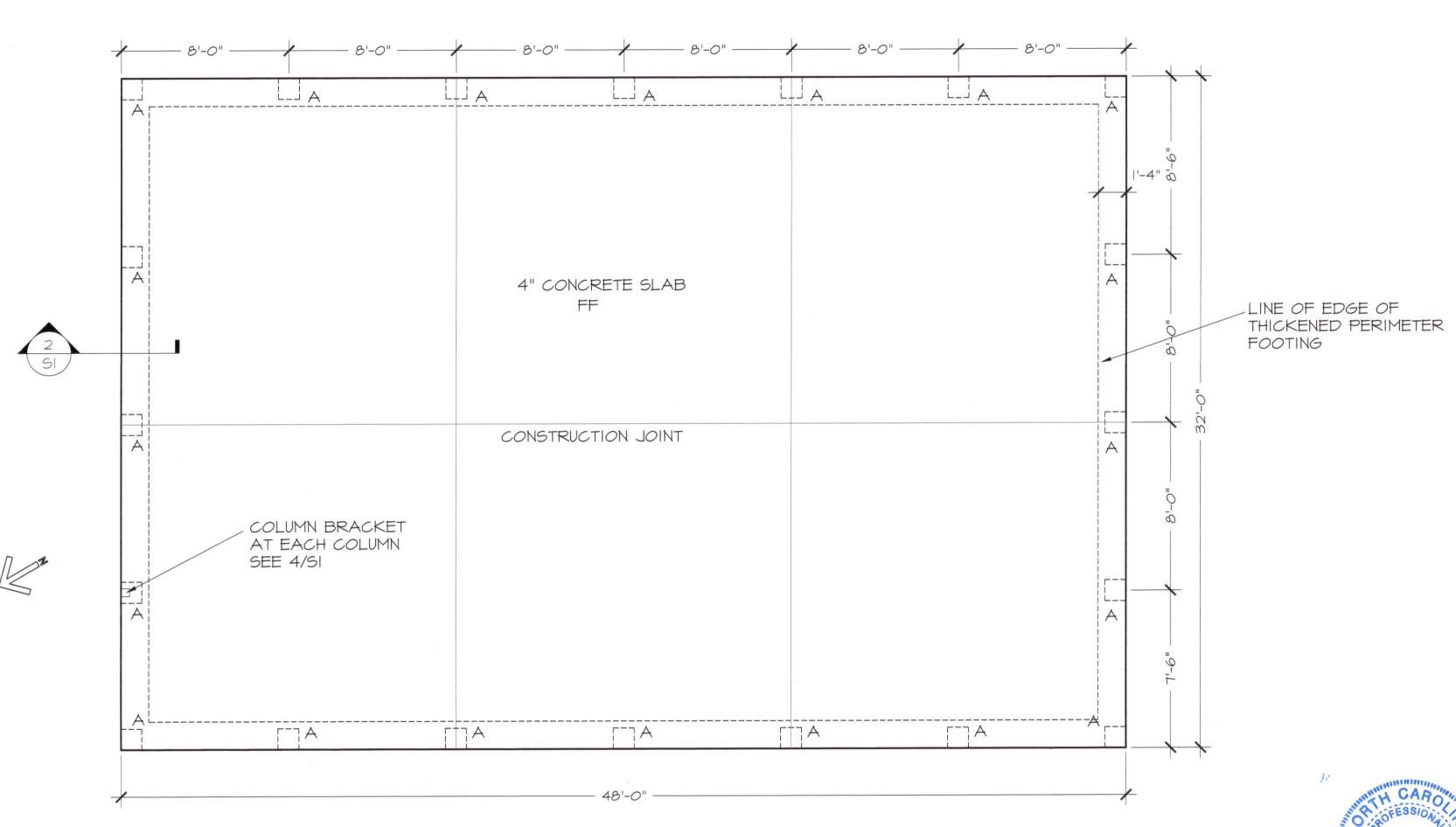
EXTERIOR FACES OF WALLS TO TOP OF SLABS-ON-GRADE

ALL SCALES, LOOSE RUST, GREASE OR DIRT SHALL BE REMOVED FROM THE REINFORCING BEFORE IT IS PLACED. PROVIDE #4 "HAIRPIN" AS SHOWN ON THE SLAB PLAN VIEW. ANCHOR BOLTS SHALL BE (A -3077) HIGH STRENGTH.

SOIL TREATMENT ADMINISTRATION AS ACCEPTABLE.



NO SCALE



SLAB PLAN

1/4" = 1' - 0"



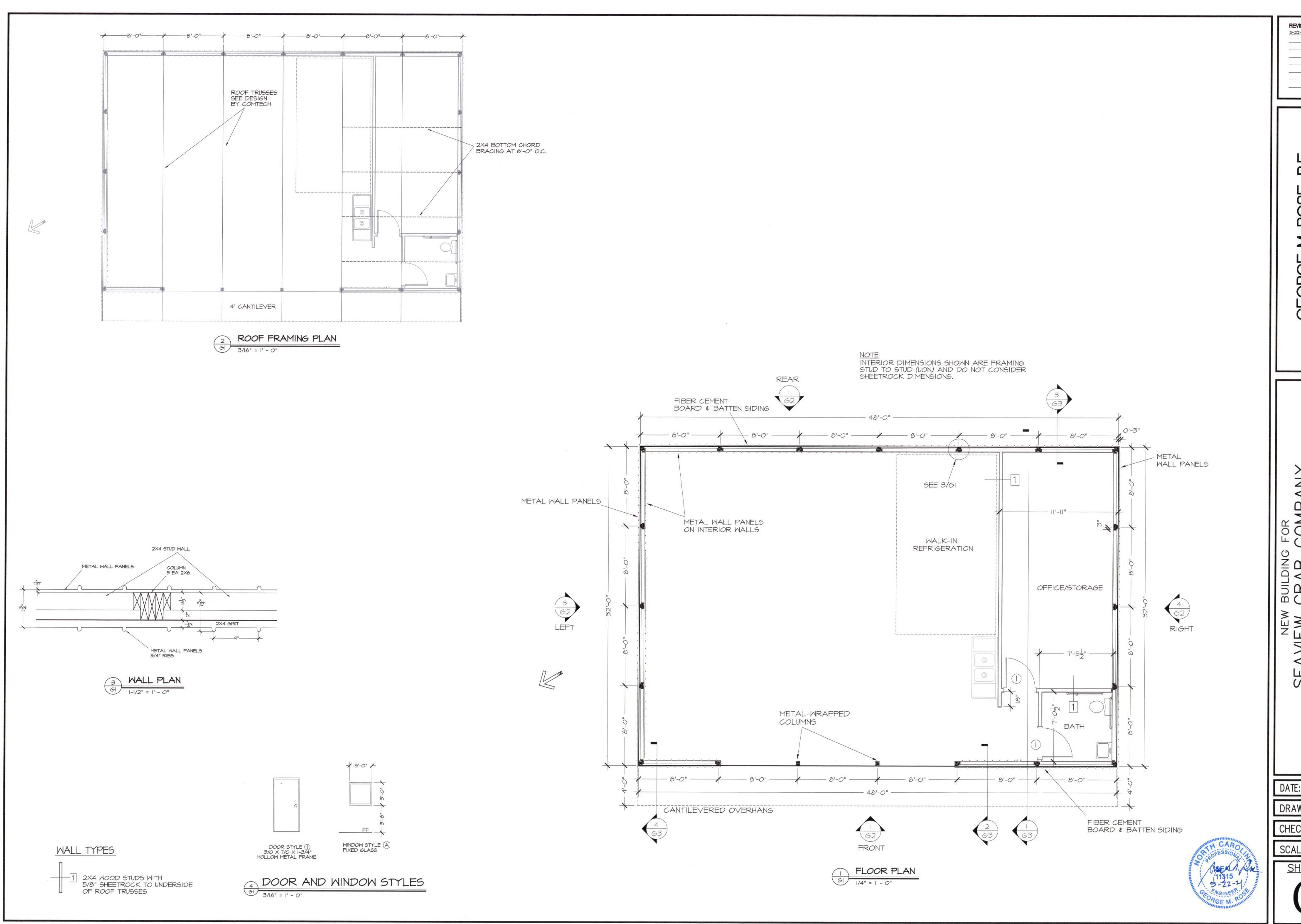
REVISIONS:

DATE: APR 2021

DRAWN BY: GMR

CHECKED:

SCALE: NOTED SHEET NO.



REVISIONS: 5-22-21 INTERIOR LAYOUT

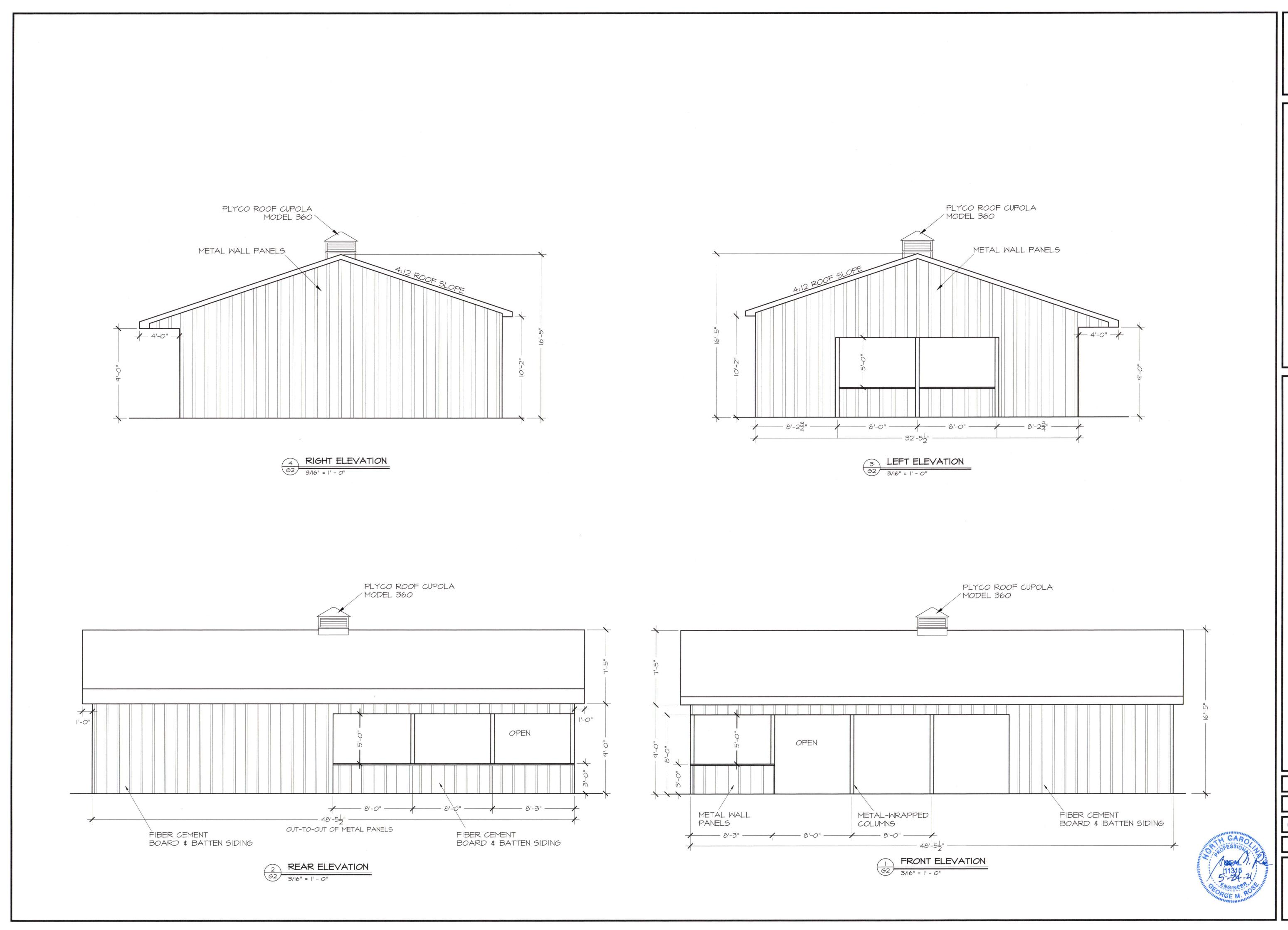
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DATE: APR 2021

DRAWN BY: GMR

CHECKED: GMR

SCALE: NOTED



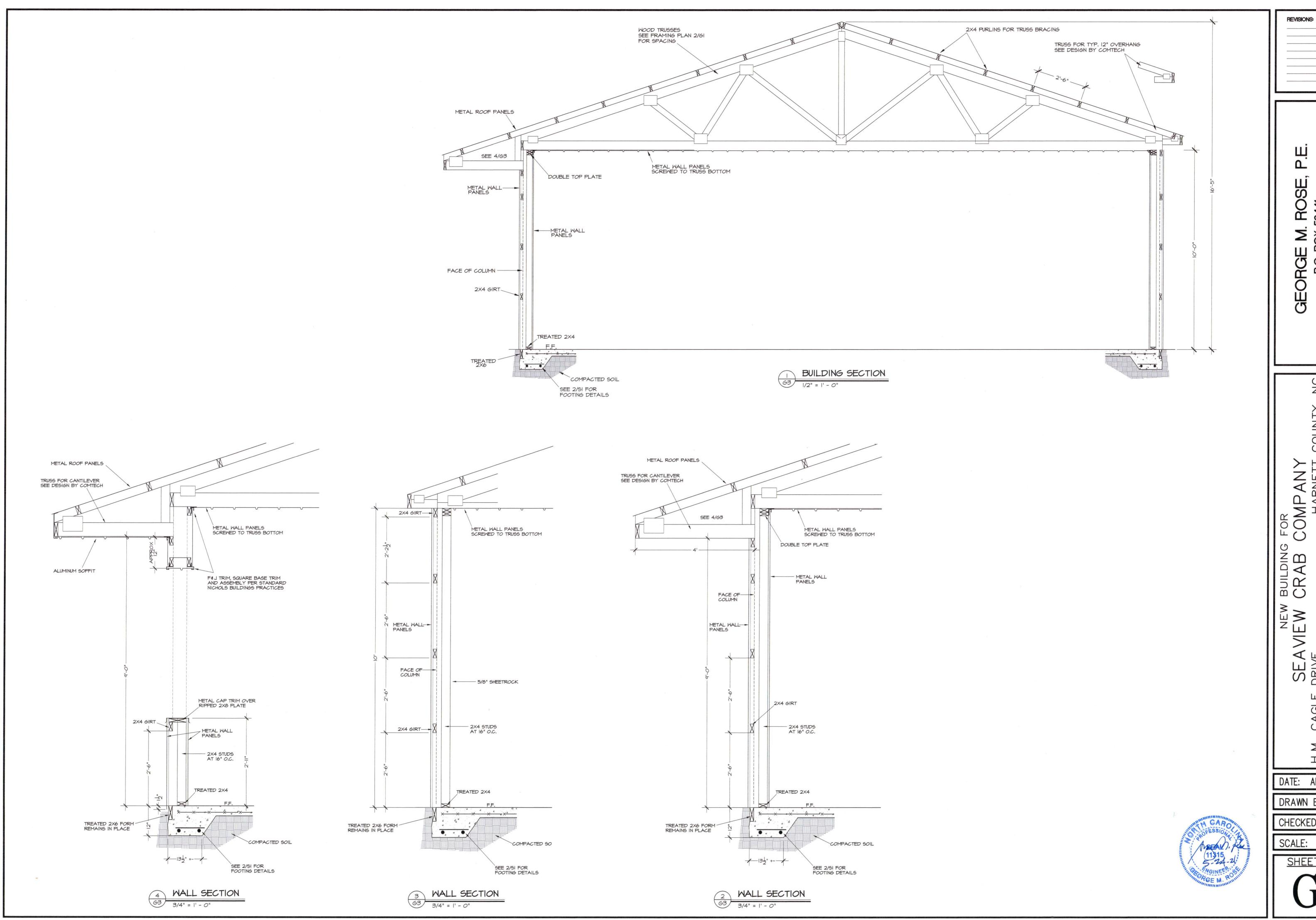
5-22-21 BOARD # BATTEN

DATE: APR 2021

DRAWN BY: GMR

CHECKED: GMR

SCALE: NOTED SHEET NO.



SE

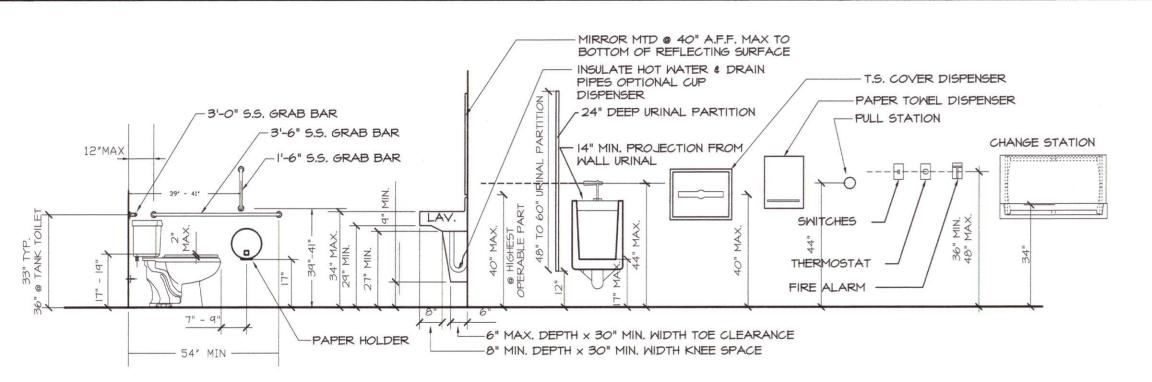
BUILDING \forall \forall

DATE: APR 2021

DRAWN BY: GMR

GMR CHECKED:

SCALE: NOTED



TYPICAL MOUNTING HTS & CLEARANCES FOR ACCESSIBILITY

PLUMBING NOTES:
PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE 2012 EDITION AND LOCAL CODES.

ALL WORK SHALL BE COORDINATED AND PERFORMED WITH PRIOR APPROVAL FROM THE GENERAL CONTRACTOR AND OWNER TO SUIT THE OWNER'S OPERATING CONDITIONS.

PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE GENERAL CONTRACTOR OF ANY DEVIANCES FROM THE CONTRACT DRAWINGS PRIOR TO STARTING ANY WORK.

THE PLUMBING CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT SPACE. ALL CONTRACTORS TO FOLLOW THIS ORDER OF PRIORITY:

1. STORM AND SANITARY SEWER LINES

2. DUCTWORK AND HVAC SYSTEMS
3. HOT AND COLD WATER LINES

4. RIGID CONDUIT 5. CABLE

THE PLUMBING CONTRACTOR TO ORGANIZE HIS PIPING IN ATTIC SPACES, CRAWL SPACES, AND ABOVE CEILINGS. MAKE RUNS PARALLEL, PERPENDICULAR, AND GROUPED TOGETHER WHERE POSSIBLE. LOCATE MAJOR GROUPINGS OVER HALLWAYS AND AREAS OF PUBLIC ACCESS IF POSSIBLE. FREE RUNS OF PIPING IS NOT ACCEPTABLE.

THE PLUMBING CONTRACTOR SHALL LAY OUT AND INSTALL HIS WORK IN ADVANCE OF POURING CONCRETE FLOORS OR WALLS. HE SHALL FURNISH ALL SLEEVES TO THE GENERAL CONTRACTOR FOR OPENINGS THROUGH POURED MASONRY FLOORS, OR WALLS, ABOVE GRADE REQUIRED FOR PASSAGE OF ALL PIPES TO SUPPORT HIS EQUIRMENT

HORIZONTAL DRAINAGE AND WASTE PIPE SHALL HAVE A MINIMUM SLOPE OR FALL OF 1/8 INCH PER FOOT. ALL CHANGE OF HORIZONTAL DIRECTIONS IN SOIL WASTE PIPE SHALL BE MADE WITH LONG RADIUS FITTINGS WITH "Y" BRANCHES AND 1/8 OR 1/16 BENDS.

CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT EACH WALL PENETRATION.

ESCUTCHEONS SHALL BE CHROME PLATED, SPRING TYPE, ON ALL PIPES PASSING THROUGH WALLS AND CEILINGS IN FINISHED AREAS. FLOOR ESCUTCHEONS SHALL BE CAST BRASS, CHROME PLATED, WITH SET SCREW.

ESCUTCHEONS SHALL BE OF SUFFICIENT SIZE TO COVER OUTSIDE DIAMETER OF THE PIPE OR THE INSULATION OF THE PIPE.

FLASHING FOR VENTS THROUGH THE ROOF SHALL BE TWO-PIECE TYPE, IG OUNCE COPPER COUNTER FLASHING AND BASE FLASHING, OR A TWO-PIECE TYPE, 4 POUND LEAD COUNTER FLASHING AND BASE FLASHING. THE BASE FLASHING SHALL BE INSTALLED BY THE GENERAL CONTRACTOR WITH THE ROOF SYSTEM.

VENT FLASHING SHALL EXTEND DOWN AT LEAST 4 INCHES FROM THE TOP OF THE PIPE. FLASHING SHALL EXTEND AT LEAST 12 INCHES IN ALL DIRECTIONS FROM THE PIPE AND SHALL BE PARALLEL TO THE ROOF LINE.

ALL EQUIPMENT AND INSTALLED MATERIALS SHALL BE THOROUGHLY CLEAN AND FREE OF ALL DIRT, OIL, GRIT, GREASE, AND ETC.

ALL PLUMBING SYSTEMS AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE BUILDING FROM THE

3/4 DOWN WALL TO TOILET PROVIDE ISOLATION VALVE TYPICAL FOR ALL TOILETS.

COLD AND HOT WATER PIPING ABOVE GRADE SHALL BE TYPE "L" HARD DRAWN COPPER TUBING CONFORMING TO ASTM B-88 WITH SWEAT JOINTS AND WROUGHT OR CAST VALVES AND FITTINGS (UNIONS, STRAINERS, ETC.). JOINT SHALL BE MADE WITH LEAD FREE SOLDER.

ALL HOT WATER PIPING SHALL BE INSULATED WITH I INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE.

ALL COLD WATER PIPING SHALL BE INSULATED WITH 1/2 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE.

SANITARY HORIZONTAL WASTE, VENT PIPING, AND FITTINGS ABOVE GRADE SHALL BE SCHEDULE 40 PVC-DWV PIPE-CELLULAR CORE FROM CHARLOTTE PIPE AND FOUNDRY COMPANY OR APPROVED EQUAL, AND MUST MEET OR EXCEED THE REQUIREMENTS OF ASTM F-891, NSF STANDARD NO. 14, AND IAPMO UPC.

ALL WASTE STACK PIPING SHALL BE CAST IRON AND INSULATED FOR SOUND IN WALLS.

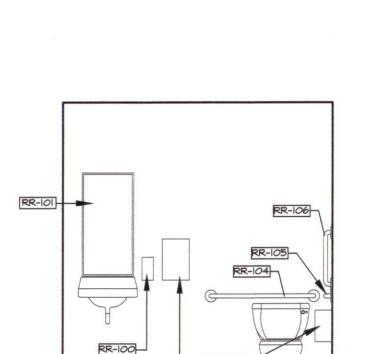
ALL WASTE AND STORM PIPING ABOVE CEILING, VERTICAL CHASES, WALLS SHALL BE INSULATED WITH I/2 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE. NO INSULATION REQUIRED IN CRAWL SPACE OR BELOW FLOOR SLAB OF ANY WASTE AND STORM PIPING.

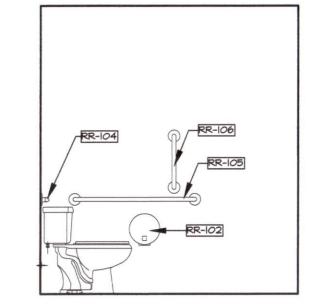
IN LIEU OF FIBERGLASS INSULATION, THE PLUMBING CONTRACTOR IS ALLOWED TO USE CLOSED CELL INSULATION, I/2 INCH THICK ARMSTRONG/ARMAFLEX II ON ALL COLD WATER PIPES. RIGID URETHANE FOAM INSULATION, I INCH THICK ARMSTRONG/ARMALOK II ON ALL HOT WATER PIPING.

ALL PLUMBING EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ALL FIXTURES, DRAINS, TRAPS, ETC. SHALL BE SET PLUMB AND LEVEL.

ALL HANDICAPPED FIXTURES AND TRIM SHALL BE INSTALLED IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE 2012 EDITION.





RR-103

RR-100

ENLARGED PLAN

3 INTERIOR ELEVATION



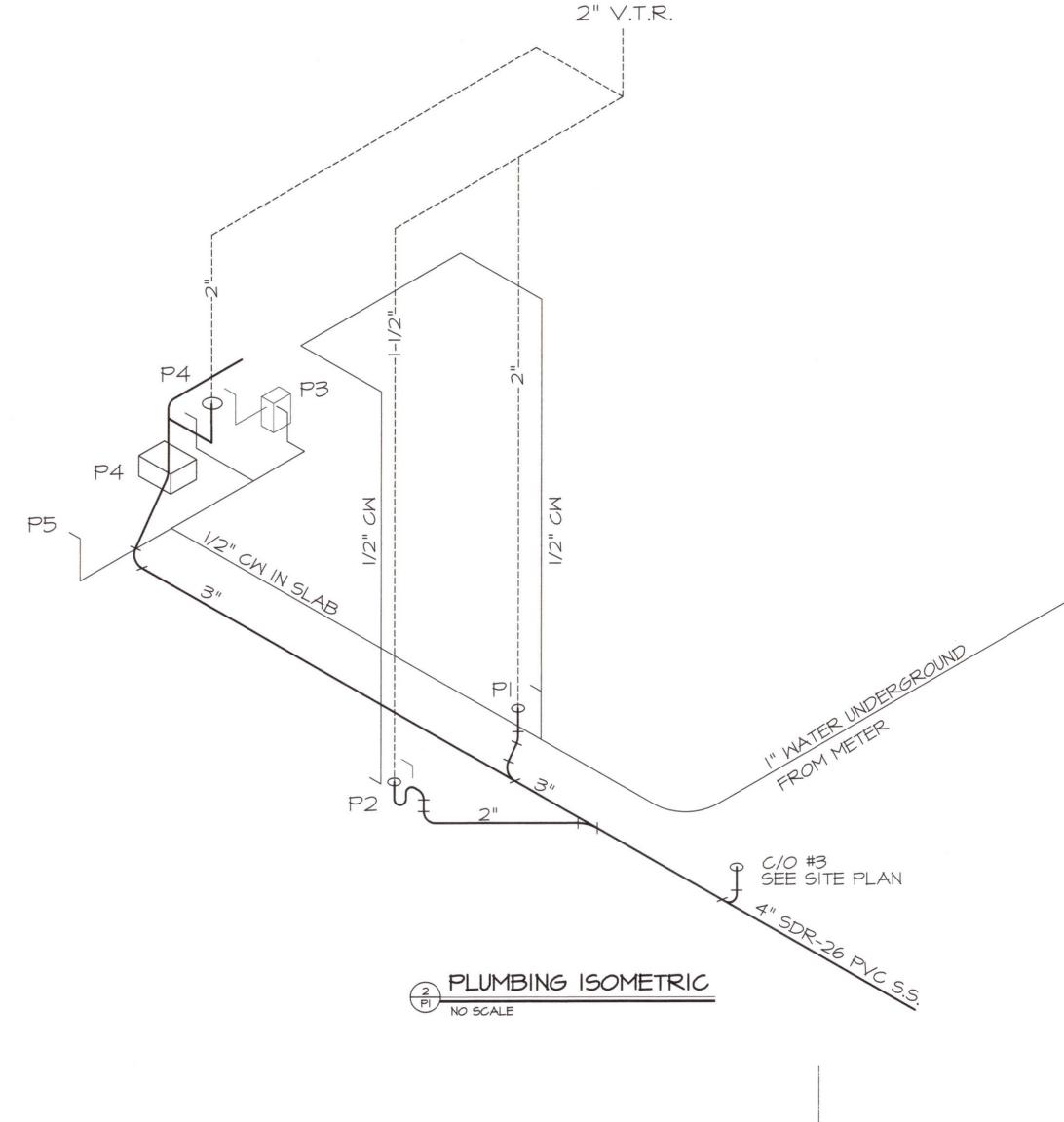
NO.	QTY	G.C.INST.	ITEM DESCRIPTION
RR-100	1	YES	SOAP DISPENSER (WALL MOUNT)
RR-IOI	1	YES	MIRROR, 18" X 36"
RR-102	1	YES	TOILET PAPER DISPENSER
RR-103	1	YES	PAPER TOWEL DISPENSER
RR-104	1	YES	GRAB BAR, I-I/2" DIA X 36" STAINLESS STEEL FIN.
RR-105	1	YES	GRAB BAR, I-I/2" DIA X 42" STAINLESS STEEL FIN.
RR-105	1	YES	GRAB BAR, I-I/2" DIA X 18" STAINLESS STEEL FIN.

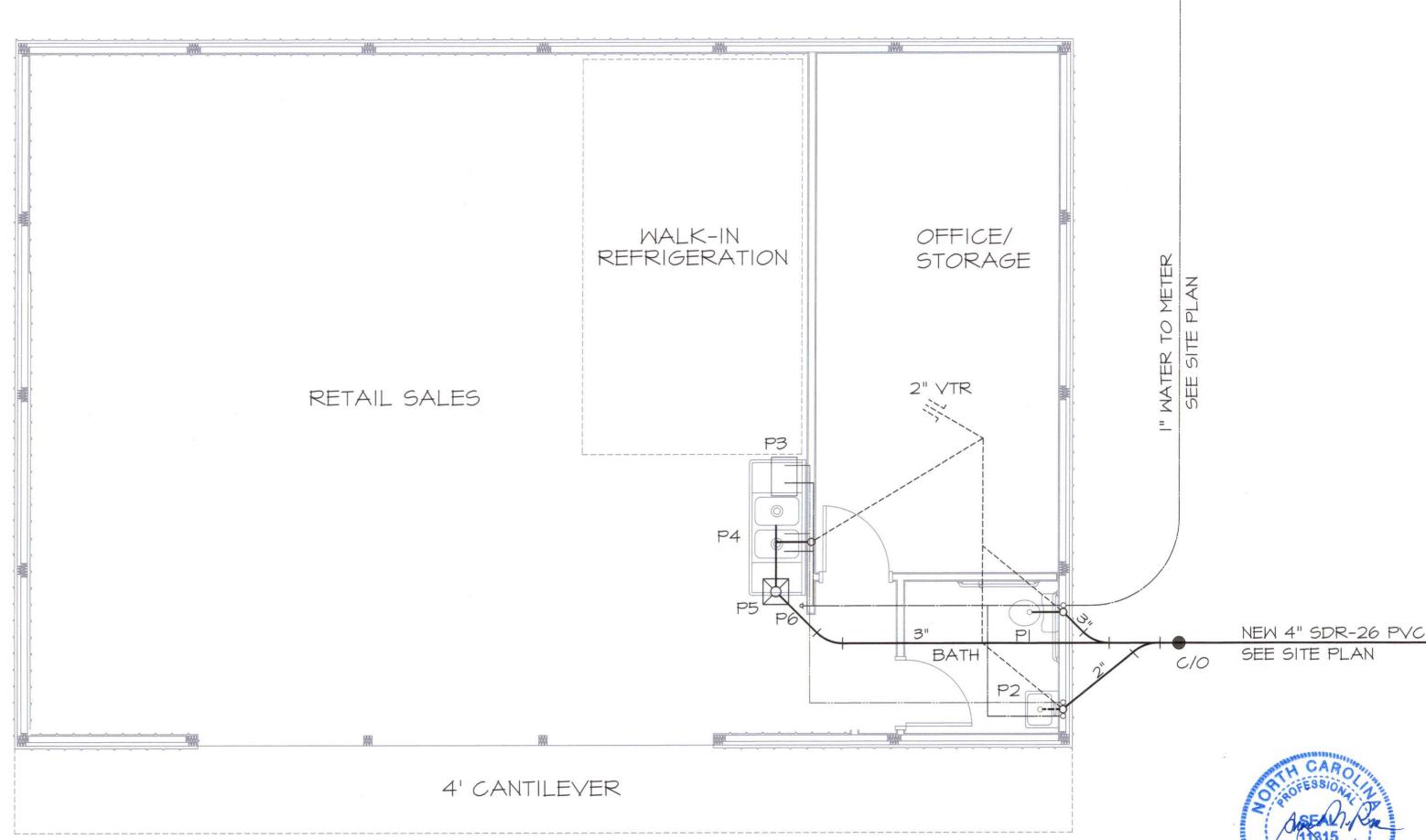
PROVIDE BLOCKING AT ALL WALL MOUNTED ACCESSORIES.

2. GRAB BARS, FASTENERS AND MOUNTING DEVICES SHALL BE INSTALLED PER ADA REQUIREMENTS.



SYMBOL	DESCRIPTION	MANUFACTR	MODEL #	ACCESSORIES	SUPPLY	WASTE	VENT	REMARKS
<u> </u>	GATE VALVE							
	NEW COLD WATER PIPE							
	NEW HOT WATER PIPE							
ĴĹ	VENT THROUGH ROOF							
	NEW VENT PIPE							
***************************************	SANITARY SEMER PIPE							
PI	TOILET WITH TANK (ADA)	MANSFIELD	137-180	BEMIS 1955 TOILET SEAT	1/2" C.W.	3"	2"	SEE PLAN FOR LOCATION
P2	HCP WALL HUNG LAVATORY	MANSFIELD	2018 HB-NS	DELTA 520-TPM-DST FAUCET	1/2" H.M., C.M.	2"	1-1/2"	SEE PLAN FOR LOCATION
P3	6-GALLON HOT WATER HEATER	ECOSMART	ECO MINI 6	-	1/2" C.W.	-		SEE PLAN FOR LOCATION
P4	TWO COMPARTMENT SINK	JOHN BOOS	E258-24-14R24-X	T#S I33X FAUCET		3"	2"	SEE PLANTING DEATION
P5	FLOOR SINK	JONES STEPHENS	549-094		-	3'	2"	SEE PLAN FOR LOCATION
P6	HOSE BIB	WOODFORD	27		1/2" C.W.	-	-	SEE PLAN FOR LOCATION





LUMBING PLAN

REVISIONS:

NEW BUILI SEAVIEW CRA

DATE: APR 20

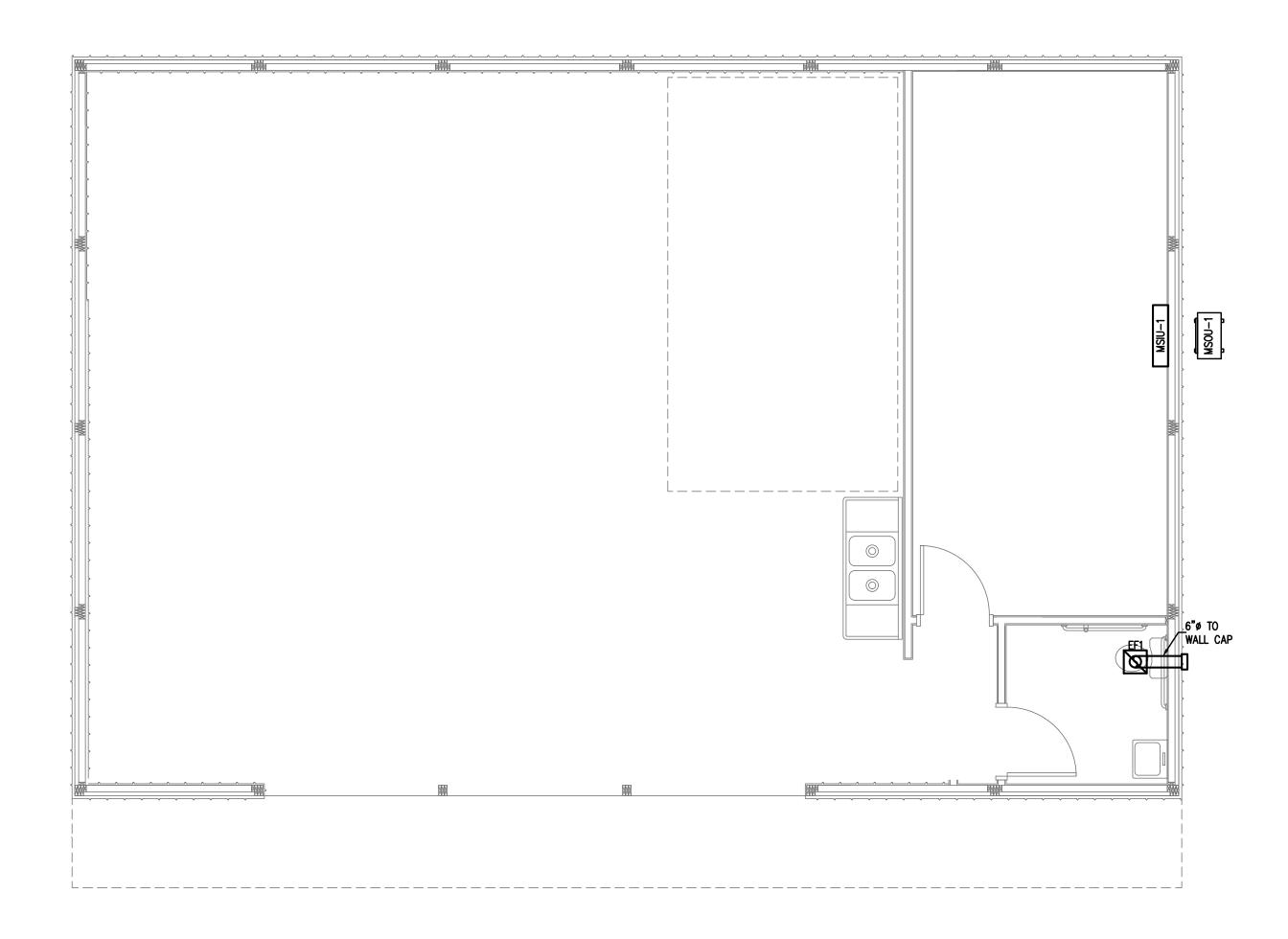
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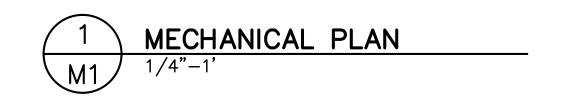
CHECKED: GM

SCALE: NOTED

SHEET NO.

P1





	MINI SPLIT SYSTEM SCHEDULE														
	CO	OLING	HE	ATING											
UNIT NO.		MINMAX. COOLING	NOMINAL HEATING		HSPF	SEER	UNIT VOLT	UNIT PHASE	МОСР	AMPS	REF.	MFG & MODEL	NET WEIGHT		
MSOU-1 (MINI SPLIT OUTDOOR UNIT)	9,000	1,700-10,700	10,000	1,700-12,000	9.0	16.0	120	1	15	13.5	R410A	FUJITSU MODEL AOU9RL2	64 LBS.		
MSIU-1 (MINI SPLIT INDOOR UNIT)	9,000	1,700-10,700	10,000	1,700-12,000			120	1			R410A	FUJITSU MODEL ASU9RL2	16 LBS.		

	FAN SCHEDULE														
MARK	LOCATION	SERVICE	СҒМ	S.P.	WATTS	RPM	VOLT	PHASE	DRIVE	REMARKS					
EF1	CEILING	TOILETS	70	0.1"	20.2	790	120	1	DIRECT	CEILING MOUNTED FAN. PROVIDE W/B.D.D. AND WALL CAP GREENHECK SPA70 OR EQ. 6"ø TO ROOF/WALL CAP					

OUTSIDE AIR CALCULATION -NC 2018 MECHANICAL CODE (TABLE 403.3.1.1) Vbz = RpPz + RaAz

	OCCUPANCY TYPE:	SF (Az)	# OF OCCUPANTS PER 1000 SF	# OF OCCUPANTS (Pz)	O.A. CFM PER PERSON (Rp)	O.A CFM PER SqFt (Ra)	O.A. CFM REQUIRED (Vbz)	EXAUST CFM REQUIRED
MSIU-1	OFFICE		5	1.31	5	0.06	22	
	RESTROOM	48	0	0	0	0	0	70
	TOTAL CFM REQUIRED						22	70
	TOTAL CFM FURNISHED						25	70

ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 NC MECHANICAL CODE.

ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL IN ACCORDANCE WITH ASHRAE & SMACNA. DUCT SIZES SHOWN ARE NET FREE AREA REQUIRED. ALL SUPPLY AND RETURN DUCTS AND FLEX SHALL BE INSULATED WITH MIN. R-8.0 INSULATION UNLESS OTHERWISE NOTED IN THE DRAWING.

ALL DUCTS SHALL BE AIR TIGHT, RIGID AND FREE FROM VIBRATION AND NOISE.
ALL LAP JOINTS SHALL BE IN THE DIRECTION OF FLOW. VOLUME OR SPLITTER DAMPERS
SHALL BE INSTALLED WHERE NECESSARY TO GUIDE AND CONTROL THE AIR FLOW.
PROVIDE SHEET METAL SLEEVES AND COLLARS WHERE DUCTS PASS THROUGH WALLS.

STRUCTURAL MEMBERS OF THE BUILDING SHALL NOT BE CUT IN ANY MANNER FOR THE INSTALLATION OF ANY EQUIPMENT UNLESS PRIOR APPROVAL IS OBTAINED FROM THE

MECHANICAL CONTRACTOR TO CONFIRM BREAKER/DISCONNECT SIZES OF HIS EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

FURNISH AND INSTALL A DUCT MOUNTED SMOKE DETECTOR IN THE RETURN DUCT OF THE A/C UNIT IN ACCORDANCE WITH 2018 NC MECHANICAL CODE. THE DETECTOR SHALL BE WIRED TO SHUT DOWN THE FAN IN THE EVENT THE DETECTOR IS ACTIVATED. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL THE DUCT DETECTOR AND RUN THE NECESSARY CONTROL WIRING FROM THE DETECTOR TO HIS EQUIPMENT. SMOKE DETECTORS ARE ONLY REQUIRED FOR UNITS SUPPLYING 2000 CFM OR MORE.

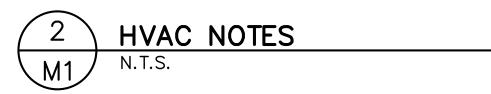
MECHANICAL CONTRACTOR SHALL PROVIDE A TEST AND BALANCE REPORT SYSTEM COMPLIANCE STATEMENT REQUIRES A WRITTEN T&B REPORT. FINAL PROJECT SIGNOFF WILL BE DENIED WITHOUT THIS REPORT

MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS AND ROUTING OF ALL DUCTWORK WITH OTHER TRADES TO AVOID CONFLICTS.

ALL EQUIPMENT MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK OR IN ACCORDANCE WITH THE PARTICULAR MANUFACTURER'S STANDARD GUARANTEE IF LONGER. ANY FAULTY MATERIAL OR WORKMANSHIP OR FAILURE OF ANY PART OF THE SYSTEM DURING NORMAL OPERATIONS UNDER THIS GUARANTEE SHALL BE CORRECTED WITHOUT COST TO THE OWNER.

ALL THERMOSTATS SHALL BE OF A PROGRAMMABLE TYPE.

BUILDING CONTRACTOR SHALL PROVIDE PERMANENT ACCESS TO ROOF STRUCTURE FOR ACCESS TO MECHANICAL EQUIPMENT WHEN ROOF STRUCTURE IS GREATER THAN 16'-0" HIGH.



APPENDIX B 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone

winter dry bulb:
summer dry bulb:
94'

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:
16.0 SEER

size category of unit: _____<65,000 BTU

Boiler

Size category. If oversized, state reason.: _____

Chiller

Size category. If oversized, state reason.: _____

List equipment efficiencies: 9.0 HSPF, 16.0 SEER

May 26, 2021

May 26, 2021

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SEAL 20193

SEAL 20193

SEAL 20193

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Coastal Plains Engineering, P. 295 LOCKLEAR RD License No: C-2059
P.O. Box 1117
Pembroke, NC 28372
Voice 2812-7213
Fear. 910-521-7213

3 COMPANY BUILDING

SEAVIEW CRAB

DRAWINGS AND THE DESIGN ARE THE PROPERTY OF THE ENGINEER WHETHER THE PROJECT FOR WHICH THEY ARE PREPARED IS EXECUTED OR NOT. THE DRAWINGS SHALL NOT BE USED BY THE PROJECT OWNER OR ANYONE ELSE FOR ANY OTHER PROJECT

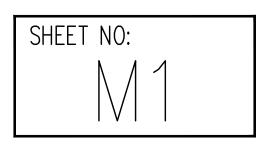
ADA AND LEGAL DISCLAIMER

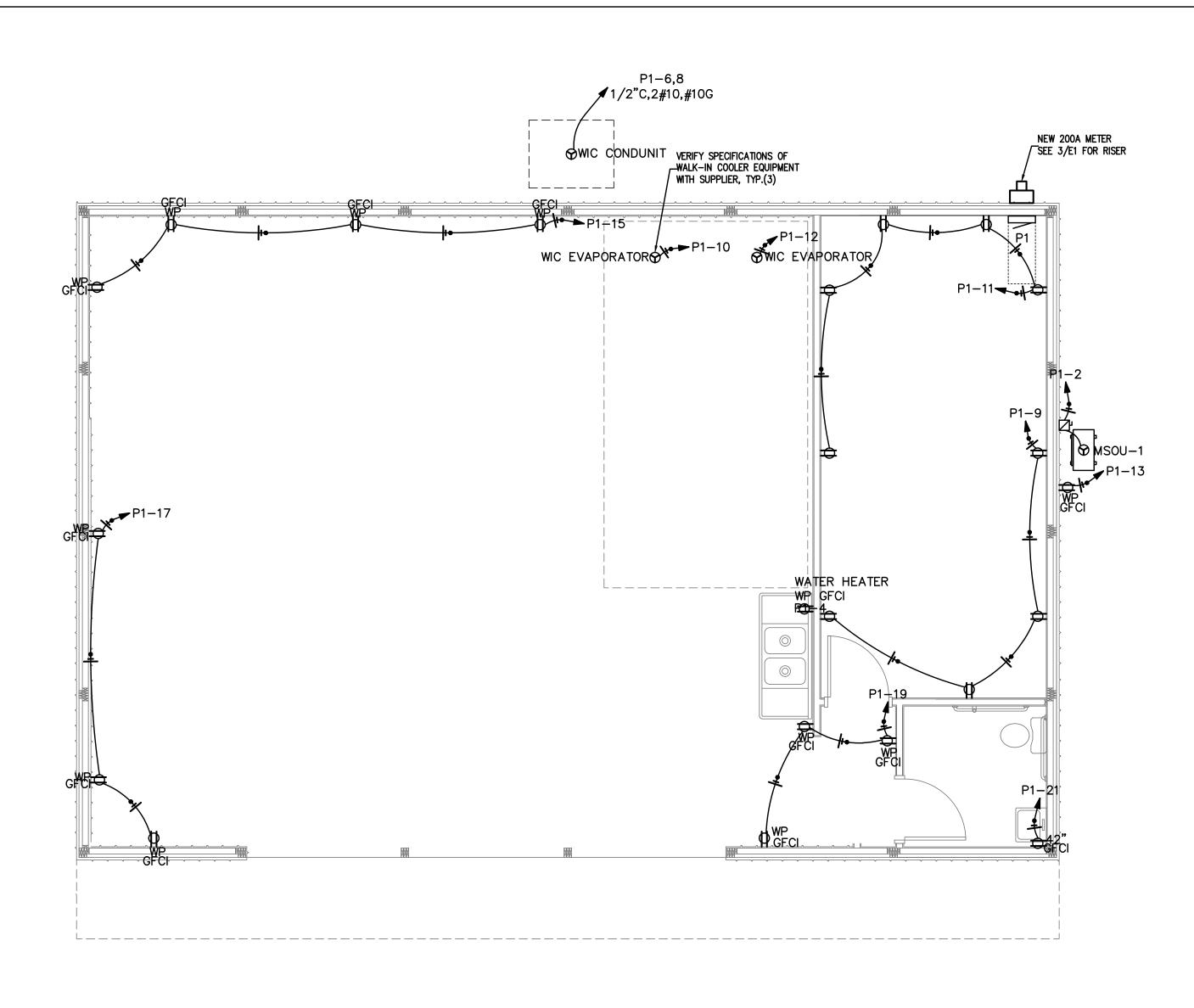
THIS DOCUMENT IS INTENDED TO COMPLY WITH THE
REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA).
ARCHITECTS AND ENGINEERS ARE NOT LICENSED TO INTERPRET
LAWS OR GIVE ADVICE CONCERNING LAWS OR LEGAL MATTERS.
THE OWNER SHOULD HAVE THIS DOCUMENT REVIEWED BY HIS
ATTORNEY TO DETERMINE IF IT COMPLIES ADA AND OTHER LAWS.

ROJECT NO: 2021–106

NAWN BY: SL

REVISIONS:





CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY FOR SERVICE. A COMPLETE AND WORKING SYSTEM IS REQUIRED FOR COMPLIANCE WITH THESE DOCUMENTS. DETERMINE THE POINT OF CONNECTION TO THE UTILITY WITH THE UTILITY REPRESENTATIVE AND PROVIDE ACCORDINGLY FOR A COMPLETE WORKING SYSTEM.

WIRE AND CABLE SHALL BE INSULATED, TYPE THWN OR THHN, 600 VOLTS, WITH COPPER CONDUCTORS. CONDUCTOR SIZES NO. 8 AWG AND LARGER MAY BE STRANDED. CONDUCTORS SIZES NO. 10 AWG AND SMALLER MAY BE SOLID OR STRANDED. NO ROMEX PERMITTED.

EMT SHALL BE GALVANIZED STEEL TUBING, 1/2-INCH MINIMUM SIZE, EQUAL TO ELECTRUNITE BRAND OR APPROVED AND USED ONLY WITH HEXAGONAL ALL STEEL COMPRESSION FITTINGS.

PLASTIC CONDUIT SHALL BE RIGID, 3/4-INCH MINIMUM NON-METALLIC, HEAVY DUTY, HIGH IMPACT, POLYVINYLCHLORIDE (PVC), TYPE I WILL BE USED FOR CONCRETE ENCASEMENT. FITTINGS SHALL BE THE SAME MATERIALS AND MANUFACTURER AS THE PLASTIC CONDUIT.

FLEXIBLE METAL CONDUIT SHALL BE 1/2— INCH MINIMUM SINGLE STRIP, STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, MAXIMUM LENGTH 72 INCHES FOR LIGHTING AND 36" FOR MOTORS. FLEXIBLE METAL CONDUIT SHALL BE LIQUIDTIGHT OR WATERTIGHT WITH PVC JACKET WHERE USED IN DAMP, WET OR OUTSIDE AREAS, AND LIQUIDTIGHT OR WATERTIGHT CONNECTORS SHALL BE USED.

NO RECEPTACLES OR TEL. OUTLETS TO BE MOUNTED BACK TO BACK, KEEP AT LEAST 2 INCHES BETWEEN RECEPTACLES AND TEL. OUTLETS.

ALL CONDUCTOR SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE ALARM. THESE CONDUCTORS SHOULD COMPLY WITH NFPA.

CONTRACTOR SHALL ALIGN FIXTURES, SMOKE DETECTORS, CEILING DIFFUSERS ETC. AS REQUIRED TO PROVIDE A UNIFORM PRESENTATION. AT NO TIME WILL AN IONIZATION DETECTOR BE LOCATED WITHIN 3'-0" OF A SUPPLY OR RETURN AIR

CIRCUIT BREAKERS AND WIRE ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE, BREAKERS AND CONDUIT FOR THIS PROJECT THE CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND VERIFY THE ELECTRICAL DATA FOR THE EQUIPMENT WHICH WILL ACTUALLY BE INSTALLED, RECOMPUTING WIRE AND BREAKER SIZES IF

ALL CONDUIT TERMINATING IN THE CEILING CAVITIES IS TO BE LABELED.

ALL CONDUIT SHALL BE COLOR CODED WITH 1/2" WIDE TAPE, 10'-0" ON CENTER IN ACCORDANCE WITH STANDARD INDUSTRY PRACTICE.

THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ARCHITECT AND OWNER, PRIOR TO INSTALLATION, FOR USE WITH ACTUAL EQUIPMENT.

EACH CONTRACTOR WILL 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/ARCHITECT. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL REPLACED AT THE REQUEST OF THE ENGINEER/ARCHITECT AT THE CONTRACTORS EXPENSE.

THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS.

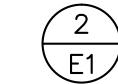
THE CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO THE INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE.

ALL FUSES DISCONNECT SWITCHES AND BREAKER SIZES SHOWN FOR MECHANICAL EQUIPMENT
SHALL BE VERIFIED BEFORE PURCHASE AND INSTALLATION OF SAID EQUIPMENT WITH THE EQUIPMENT SUPPLIER AND

WHERE EQUIPMENT PENETRATES EXTERIOR WALL OR ROOF THEY SHALL BE PROPERLY SEALED. WITH METHODS APPROVED BY

ALL WORK IS TO BE DONE IN STRICT COMPLIANCE WITH THE LATEST VERSION OF THE NEC AND APPLICABLE STATE CODES

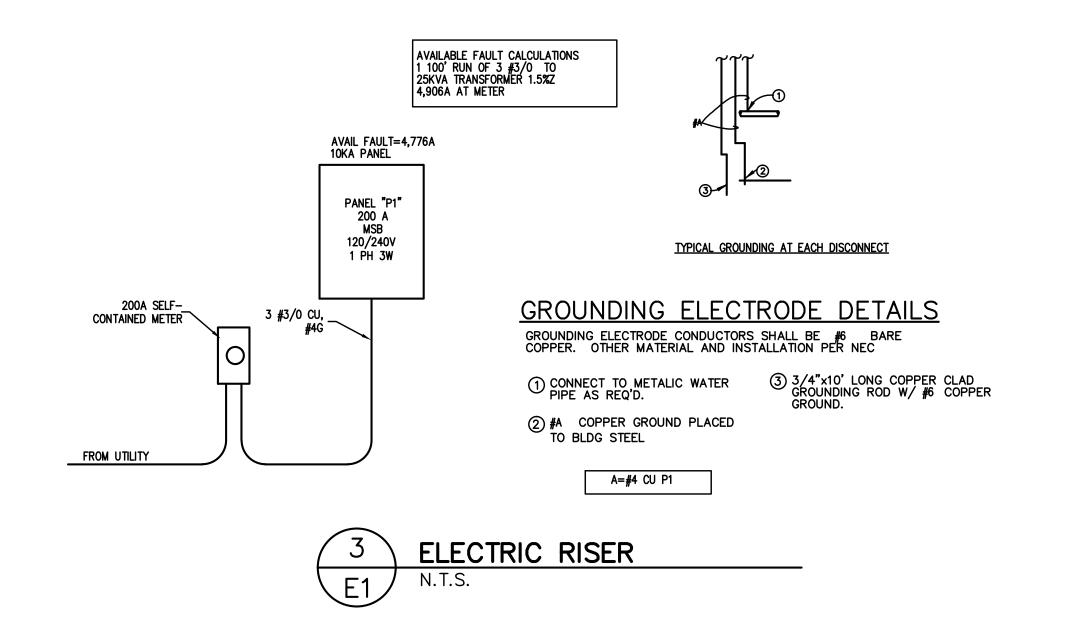
RECESSED FIXTURES INSTALLED IN RATED ASSEMBLIES SHALL BE INSTALLED WITH AN ENCLOSURE SO AS TO MAINTAIN THE RATING OF



\ ELECTRICAL NOTES

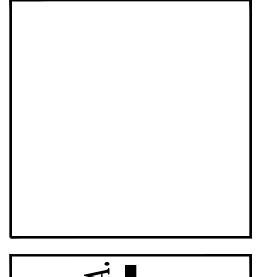
/ N.T.

(1)	ELECTRICAL	PLAN
E1	1/4"-1'	



ROOM MOUNTING FLUSH FED FROM UTILITY NOTE			BUS	TS 240/120 AMPS 200 TRAL 100%		W	AIC 10,000 MAIN BKR 200 LUGS STANDARD						
CKT #	CKT BKR	CIRCUIT	DESCRIPTION			KVA	CKT #	CKT BKR	CIRCUIT	DESCRIPTION			KVA
					A	В						A	В
1	20/1	LIGHTING			0.284	0.00	2	15/1	MSOU-1			1.61	1 4 4 4
3 5	20/1	LIGHTING			0.129	0.08	4 6	20/1 30/2	WATER WIC CON			2.4	1.44
7	20/1 20/1	EF1, LIG			0.129	0.048	8	JU/ Z	WIC COI	ADOMI		2.4	2.4
9	20/1	RECEPT.			0.72	0.040	10	20/1	WIC EVA	APORATOR		1.2	2.7
11	20/1	RECEPT			0.72	0.9	12	20/1		APORATOR		1.2	1.2
13	20/1	RECEPT			0.18		14	20/1	SPACE			0	
15	20/1	RECEPT				0.72	16	20/1	SPACE				0
17	20/1	RECEPT			0.54		18	20/1	SPACE			0	
19	20/1	RECEPT	ACLE			0.54	20	20/1	SPACE				0
21	20/1	RECEPT	ACLE		0.18	Ī	22	20/1	SPACE			0	
23	20/1	SPACE				0	24	20/1	SPACE				0
25	20/1	SPACE			0		26	20/1	SPACE			0	
27	20/1	SPACE				0	28	20/1	SPACE				0
29	20/1	SPACE			0		30	20/1	SPACE			0	
31	20/1	SPACE				0	32	20/1	SPACE				0
33	20/1	SPACE			0	_	34	20/1	SPACE			0	_
35	20/1	SPACE				0	36	20/1	SPACE				0
37	20/1	SPACE			0		38	20/1	SPACE			0	
39	20/1	SPACE				0	40	20/1	SPACE				0
41	20/1	SPACE			0		42	20/1	SPACE	41 00\INTEGT		0	7.77
			001111 14144						101.		D KVA BY PHAS	E 7.24	7.33
			CONN KVA	CALC KVA						CONN KVA	CALC KVA		
	ITING		0.521	0.651	(125%)			PTACLES		3.78	•	60%>10)	
	GEST MO	OTOR	4.8	1.2	(25%)			CONTINUC)US	1.44	•	00%)	
МОТ	ORS		2.42	2.42	(100%)		HEAT			1.61	•)%)	
							COOL	.ING		6.41	6.41 (1	00%)	
							TOTA	L LOAD			15.9		
								NCED LO)AD		66.2 A		



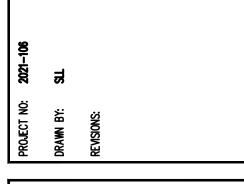


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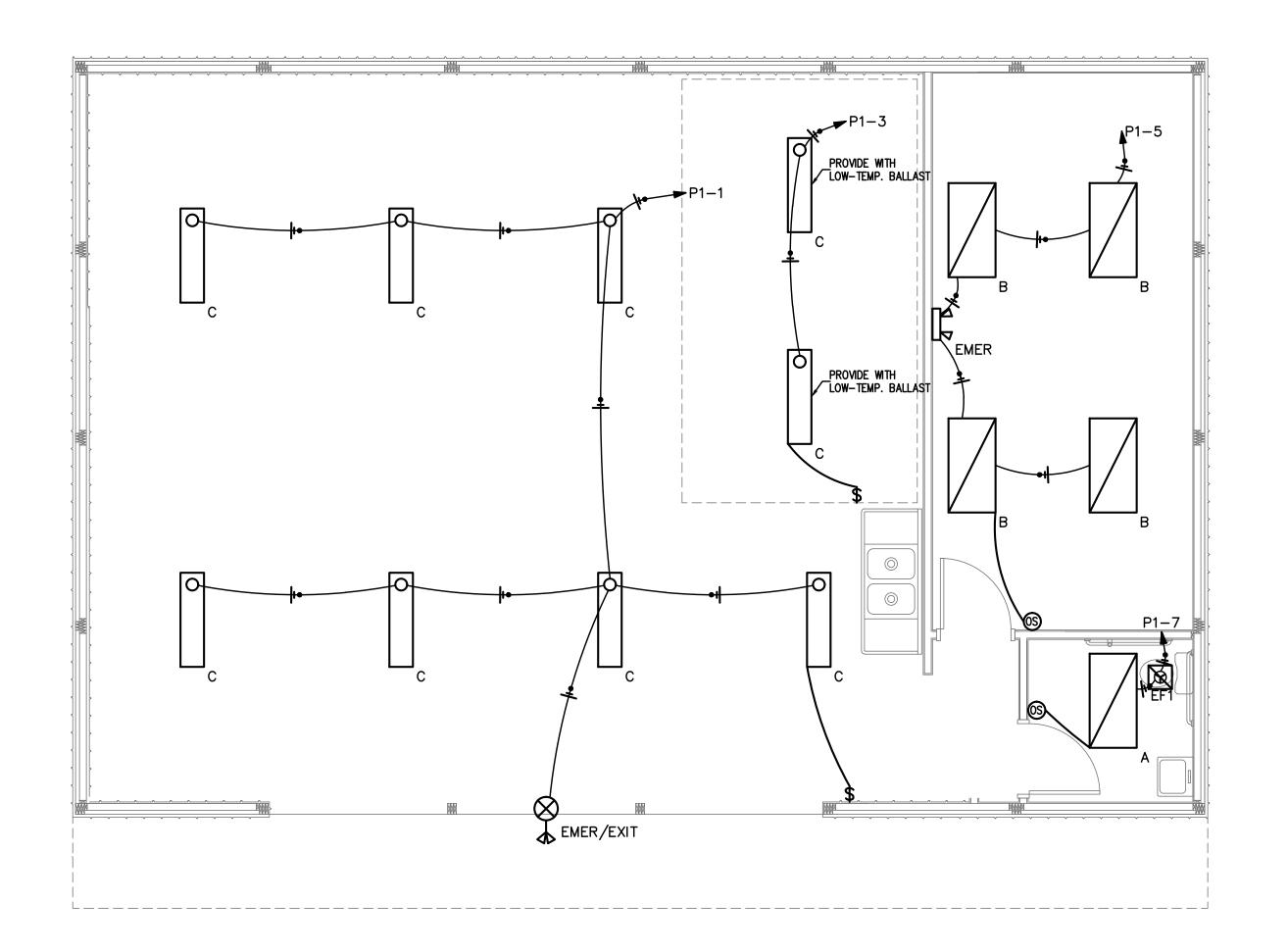
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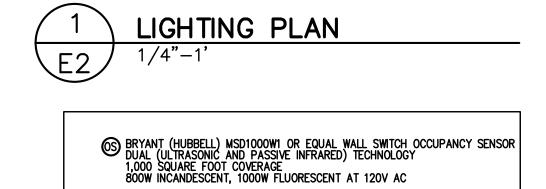
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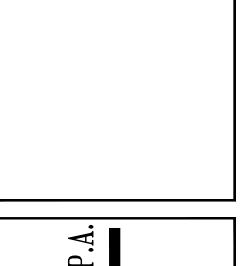


APPENDIX B 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS ELECTRICAL DESIGN ELECTRICAL SYSTEM AND EQUIPMENT Method of Compliance: Performance
Performance Energy Code: ASHRAE 90.1: Lighting schedule (each fixture type) lamp type required in fixture number of lamps in fixture ballast type used in the fixture SEE LUMINAIRE SCHEDULE number of ballasts in fixture total wattage per fixture 506/1648 total interior wattage specified vs. allowed (whole building or space by space) total exterior wattage specified vs. allowed Additional Prescriptive Compliance ☐ 506.2.1 More Efficient HVAC 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



LUMI.	NAIRE S	CHEDULE							
CALLOUT	SYMB0L	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT WATTS	VOLTS	NOTE 1
A		(112) 17W (112) 4000K CCT, 85 CRI LEDs	2' X 4' LED RECESSED TROFFER	ELECTRONIC	RECESSED	COOPER LIGHTING SOLUTIONS — METALUX (FORMERLY EATON), 24GR-LD5-30-F1-UNV-	23.434 -L840-CD1-L	120V 1P 2W	
В		(112) (112) 4000K CCT, 85 CRI LEDs	2' X 4' LED RECESSED TROFFER	ELECTRONIC	RECESSED	COOPER LIGHTING SOLUTIONS — METALUX (FORMERLY EATON), 24GR-LD5-38-F1-UNV-	30.624 -L840-CD1-L	120V 1P 2W	
С	0	(1) (1) 4000 CCT, 80 CRI LEDS	1 X 4 LED STRIP LIGHT	ELECTRONIC	PENDANT/SURFACE	COOPER LIGHTING SOLUTIONS — METALUX (FORMERLY EATON), 4SNLED-LD5-55HL-LC-	40 UNV-L840-0	120V 1P 2W D1-U	DAMP LOCATION LISTED
EMER	₽	(2) 1.5W LED	EMER. LIGHT W/1.5 HR NI-CAD BATTERY	ELECTRONIC	WALL/CEILING	LITHONIA ELM2-LED	3	120V 1P 2W	
EMER/EXIT	\otimes	(2) 1.5W LED	COMBINATION EXIT/EMERGENCY UNIT WITH 90 MINUTE BATTERY AND MATCHING LED OUTDOOR REMOTE HEADS	ELECTRONIC	WALL/CEILING	HUBBELL CCRRC CORD	4	120V 1P 2W	





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PROJECT NO: 2021–106
DRAWN BY: SLL
REVISIONS:

SHEET NO: