

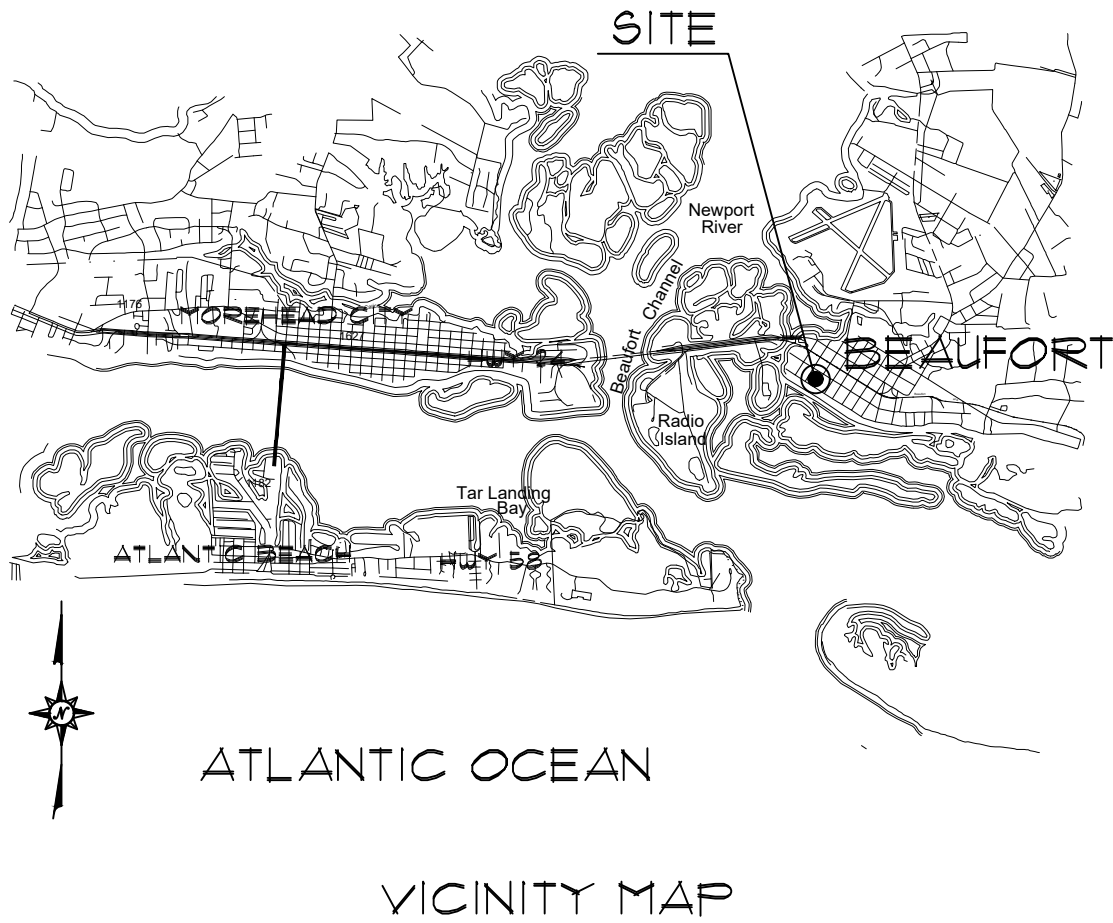
TOILET ROOM RENOVATIONS - PHASE III

NORTH CAROLINA

MARITIME MUSEUM

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SCO#05-07574-02C

315 FRONT STREET

BEAUFORT, NORTH CAROLINA 28516



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NORTH CAROLINA MARITIME MUSEUM
TOILET ROOM RENOVATIONS PHIII
SCO#05-07574-02C
BEAUFORT, NORTH CAROLINA



COVER SHEET

20017

ISSUED: 10/27/20
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SHEET NO.
CS-1
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APPENDIX B
2018 BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: **NORTH CAROLINA MARITIME MUSEUM TOILET ROOM RENOVATIONS PHIII**
Address: **BEAUFORT, NORTH CAROLINA** Zip Code: **28520**
Owner/Authorized Agent: **Joseph Schwarzer** Phone #: **(252) 128-7317** E-Mail: **j.schwarzer@ncdcr.gov**
Owned By: ☐ City/County ☐ Private ☒ State ☐ County ☒ State **NC**
Code Enforcement Jurisdiction: ☐ City ☐ County ☒ State **NC**
CONTACT: **JOSEPH SCHWARZER**
DESIGNER: **FIRM NAME LICENSE # TELEPHONE # E-MAIL**
Architectural: **Coastal Architecture Lee Dixon 6419 (252) 241-2121 leed@coastalarchitecture.net**
Civil: **NOT APPLICABLE - () -**
Electrical: **Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com**
Fire Alarm: **Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com**
Plumbing: **Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com**
Mechanical: **Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com**
Sprinkler-Standpipe: **NOT APPLICABLE ()**
Structural: **NOT APPLICABLE ()**
Retaining Walls > 5 feet High: **NOT APPLICABLE ()**
Other: **()**
(*Other should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ☐ New Building ☐ Shell/Core ☐ 1st Time Interior Completions
☒ Addition ☐ Phased Construction—Shell Core
2018 NC EXISTING BUILDING CODE: ☐ Prescriptive ☒ Alteration Level I ☐ Historic Property
(check all that apply) ☐ Repair ☐ Alteration Level II ☐ Change of Use
☐ Chapter 14 ☐ Alteration Level III
CONSTRUCTED: (date) _____ CURRENT USE(S) (Ch. 3): **MUSEUM**
RENOVATED: (date) _____ PROPOSED USE(S) (Ch. 3): **MUSEUM**
OCCUPANCY CATEGORY (Table 1604.5): Current: _____ Proposed: _____

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ I-B ☐ I-A ☒ IV ☐ V-A
(check all that apply) ☐ I-B ☐ II-B ☐ II-B ☐ V-B
Sprinklers: ☒ No ☐ Partial ☒ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☐ No ☐ Class I ☐ II ☐ III ☐ Wet ☐ Dry
Primary Fire District: ☐ No ☒ Yes ☐ Flood Hazard Area: ☒ No ☐ Yes
Special Inspections Required: ☒ No ☐ Yes
GROSS BUILDING AREA TABLE
Floor Existing (sq ft) New (sq ft) Subtotal
3rd Floor 5,333 - 5,333
2nd Floor 5,333 - 5,333
Mezzanine 13,048 33 13,081
1st Floor 13,048 33 13,081
Basement
TOTAL 18,381 - 18,414

ENERGY SUMMARY

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

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

Exempt Building: ☐ Provide code or statutory reference: _____

Climate Zone: ☐ 3A ☐ 4A ☐ 5A

Method of Compliance:

Energy Code: ☐ Performance ☐ Prescriptive
ASHRAE 90.1: ☐ Performance ☐ Prescriptive
Other: ☐ Performance (specify source) _____

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 total assembly: _____
U-Value of skylight: _____
total square foot of skylights in each assembly: _____

Exterior Wall (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: _____

ALLOWABLE AREA

Primary Occupancy Classification(s): ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Assembly ☐ A-1
Business ☐ A-2
Educational ☐ A-3
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Condition ☐ 1 ☐ 2
I-2 Condition ☐ 1 ☐ 2
I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Mercantile ☐ R-1 ☐ R-2 ☐ R-3
Residential ☐ S-1 Moderate ☐ S-2 Low ☐ S-3 Limited
Storage ☐ Parking Garage ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s):

Incidental Uses (Table 509):

This separation is not exempt from Separated Use (see exceptions).

Special Uses (Chapter 4 – List Code Sections):

Special Provisions: (Chapter 5 – List Code Sections):

Mixed Occupancy: ☐ No ☐ Yes Separation: No separation Hr: Exception: _____
Non-separated Use (508.3) required per T508.4

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.

Select one

Actual Area of Occupancy A + Actual Area of Occupancy B
Allowable Area of Occupancy A Allowable Area of Occupancy B 15

+ = ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2.4 AREA	(C) AREA FOR FRONTAGE INCREASES 1, 4	(D) ALLOWABLE AREA PER STORY OR UNLIMITED 3

1. Frontage area increases from Section 506.2 are computed thus:

a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)

b. Total Building Perimeter = _____ (P)

c. Ratio (F/P) = _____ (F/P)

d. W = Minimum width of public way = _____ (W)

2. Unlimited area applicable under conditions of Section 507.

3. Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).

4. The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.

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

STRUCTURAL DESIGN

DESIGN LOADS:

Importance Factors: Wind (IW) _____
Snow (IS) _____
Seismic (IE) _____

Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf

Ground Snow Load: _____ psf

Wind Load: Basic Wind Speed _____ mph (ASCE-7)
Exposure Category _____

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D

Provide the following Seismic Design Parameters:

Occupancy Category (Table 1604.5): ☐ I ☐ II ☐ III ☐ IV

Spectral Response Acceleration: ☐ Ss _____ %g ☐ S1 _____ %g

Site Classification: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data

Basic structural system (check one)

☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Moment Resisting Frame ☐ Dual w/intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☐ No

LATERAL DESIGN CONTROL: ☐ Earthquake ☐ Wind

SOIL BEARING CAPACITIES:

Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

MECHANICAL DESIGN

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

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: _____

Minimum Spacing Conditioning System

Unitary
description of unit: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____
Boiler
Size category. If oversized, state reason: _____
Chiller
Size category. If oversized, state reason: _____

List equipment efficiencies: _____

ELECTRICAL DESIGN

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (load fixture type)
lamp type used 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 versus allowed (whole building or space by space)
total exterior wattage specified versus allowed

Additional Prescriptive Compliance

☐ 506.2.1 More Efficient Mechanical Equipment
☐ 506.2.2 Reduced Lighting Power Density
☐ 506.2.3 Energy Recovery Ventilation Systems
☐ 506.2.4 Higher Efficiency Service Water Heating
☐ 506.2.5 On-Site Supply of Renewable Energy
☐ 506.2.6 Automatic Daylighting Control Systems

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (feet) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	PERCENTAGE OF OPENING AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ Yes ☐ No
Exit Signs: ☐ Yes ☐ No
Fire Alarm: ☐ Yes ☐ No
Smoke Detection Systems: ☐ Yes ☐ No
Carbon Monoxide Detection: ☐ Yes ☐ No

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____
☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1017)
☐ Common path of travel distances [Tables 1006.2.1 & 1006.3.2(1)]
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door
☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A separate schematic plan indicating where the floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with delayed egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107)

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

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE UNITS PROVIDED
		REGULAR WITH 5' ACCESS AISLE	132" ACCESS AISLE	8' ACCESS AISLE	
TOTAL					

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE	WATERCLOSETS			URINALS	LAVATORIES			SHOWERS/ TUBS	DRINKING FOUNTAINS	
	Male	Female	Unisex		Male	Female	Unisex		Regular	Accessible
SPACE	EXIST'G									
	NEW									
	REQ'D									

SPECIAL APPROVALS

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

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Architecture

• Architectural
Design
• Planning
• Interiors



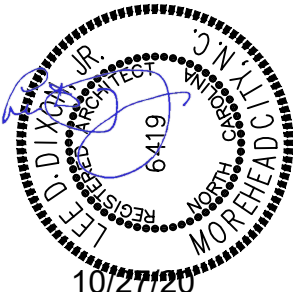
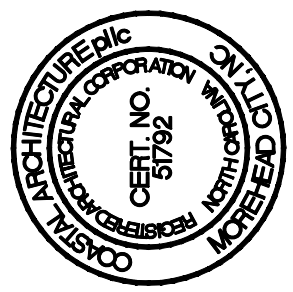
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NORTH CAROLINA MARITIME MUSEUM
TOILET ROOM RENOVATIONS PHIII
SCO#05-07574-02C
BEAUFORT, NORTH CAROLINA



GENERAL DATA

20017

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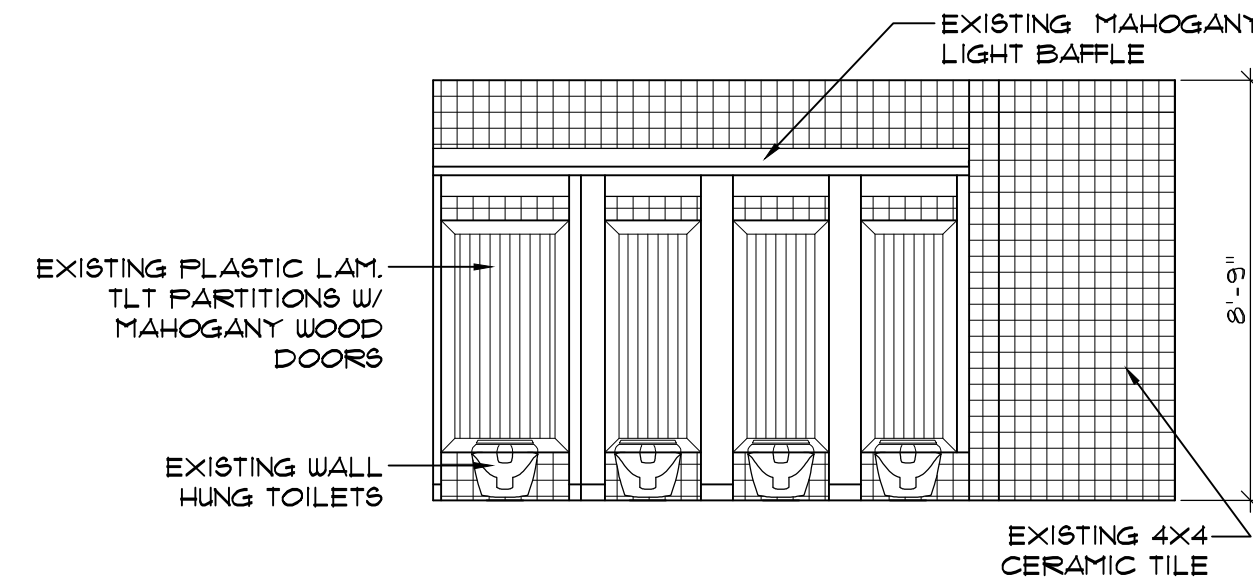
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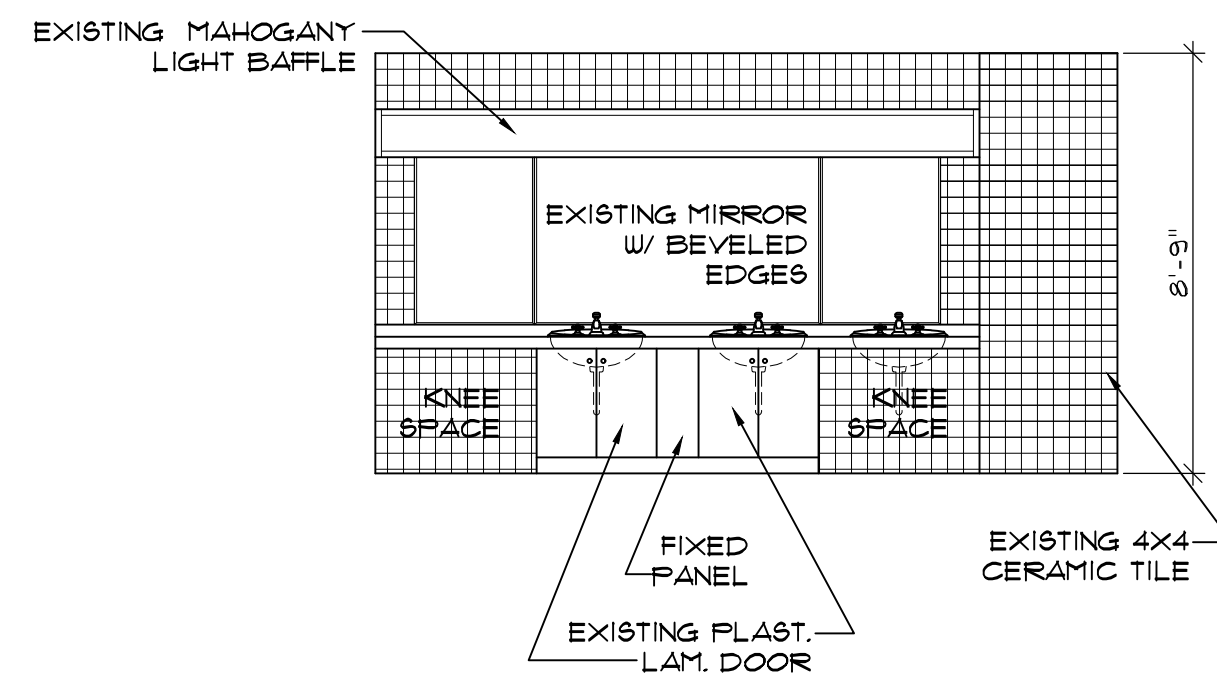
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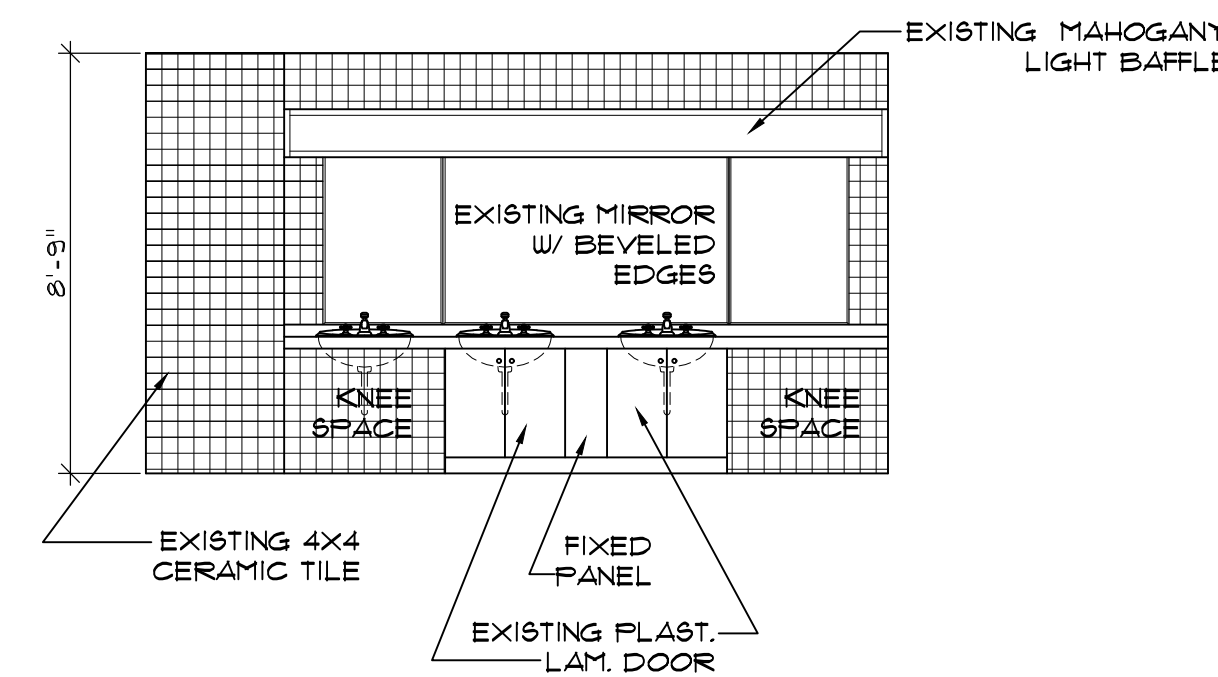
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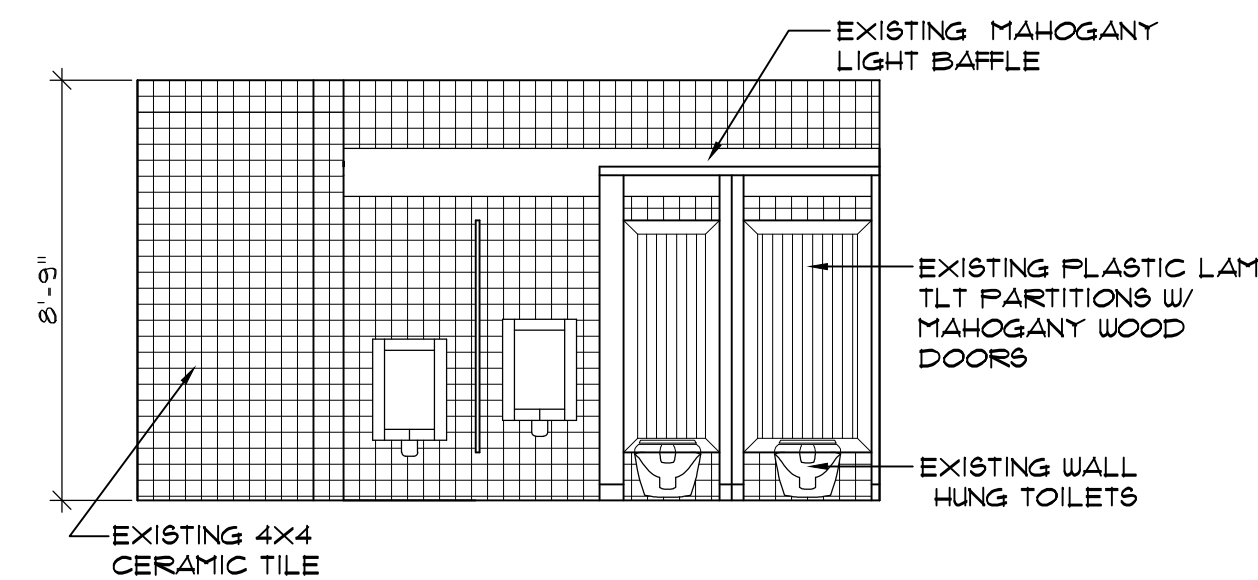
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INT. ELEVATION
SCALE: 1/4" = 1'-0"



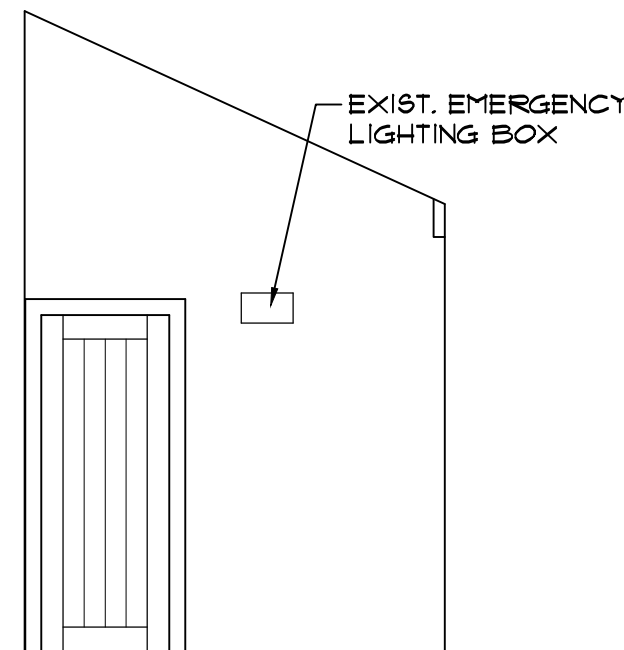
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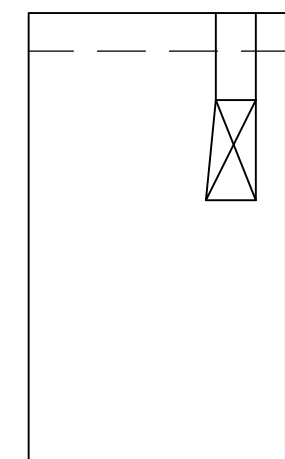
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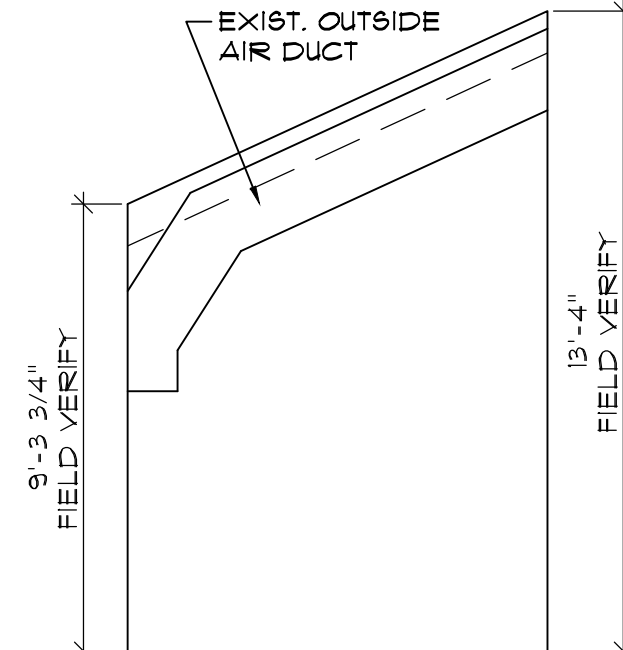
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INT. ELEVATION
SCALE: 1/4" = 1'-0"



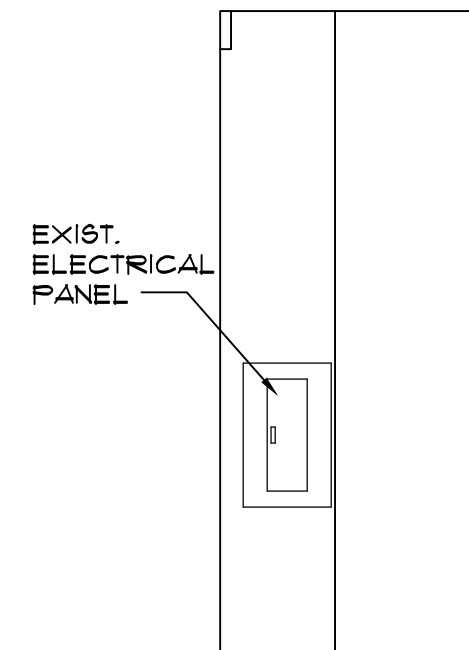
EXISTING STORAGE
INT. ELEVATION
SCALE: 1/4" = 1'-0"



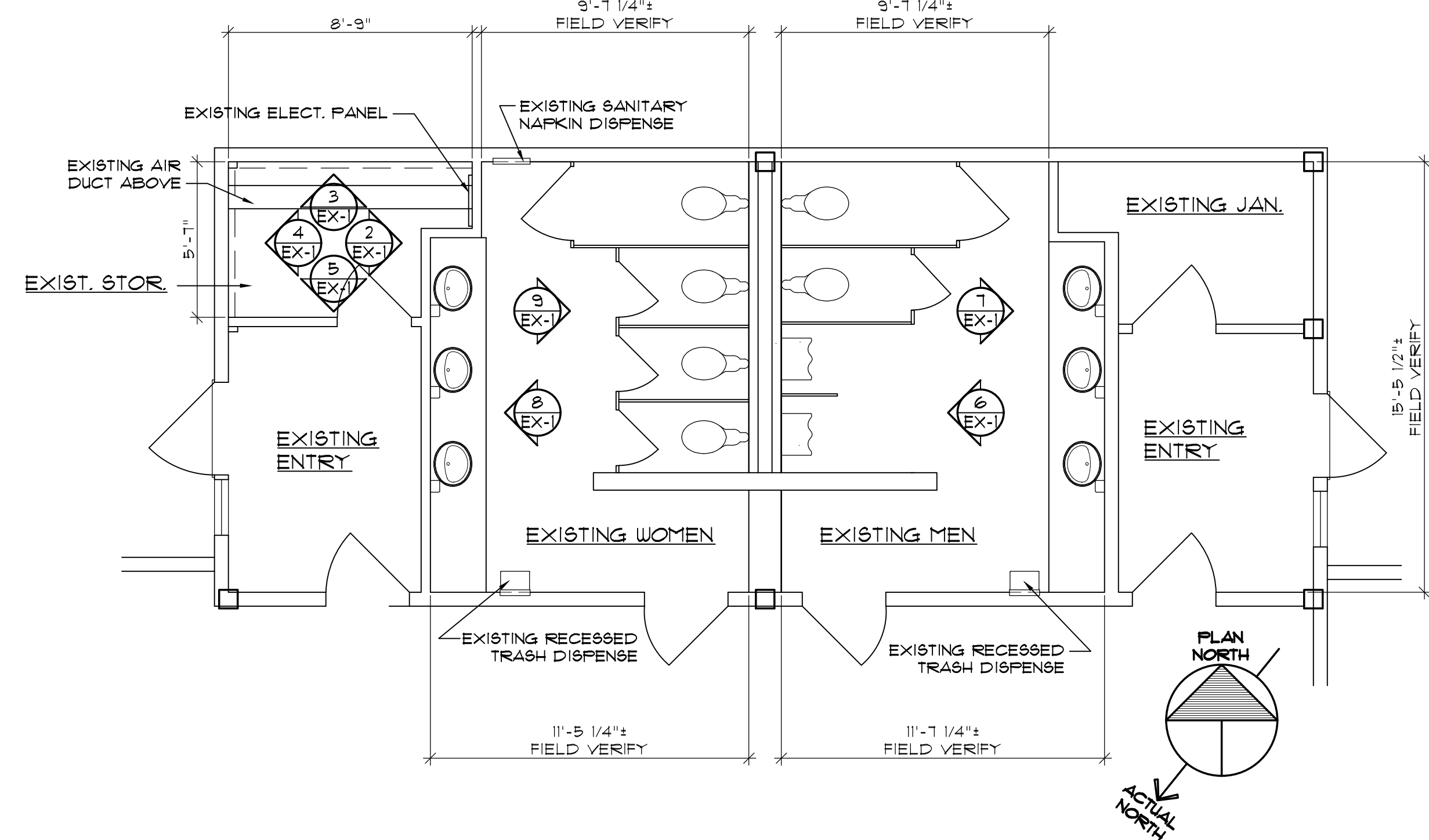
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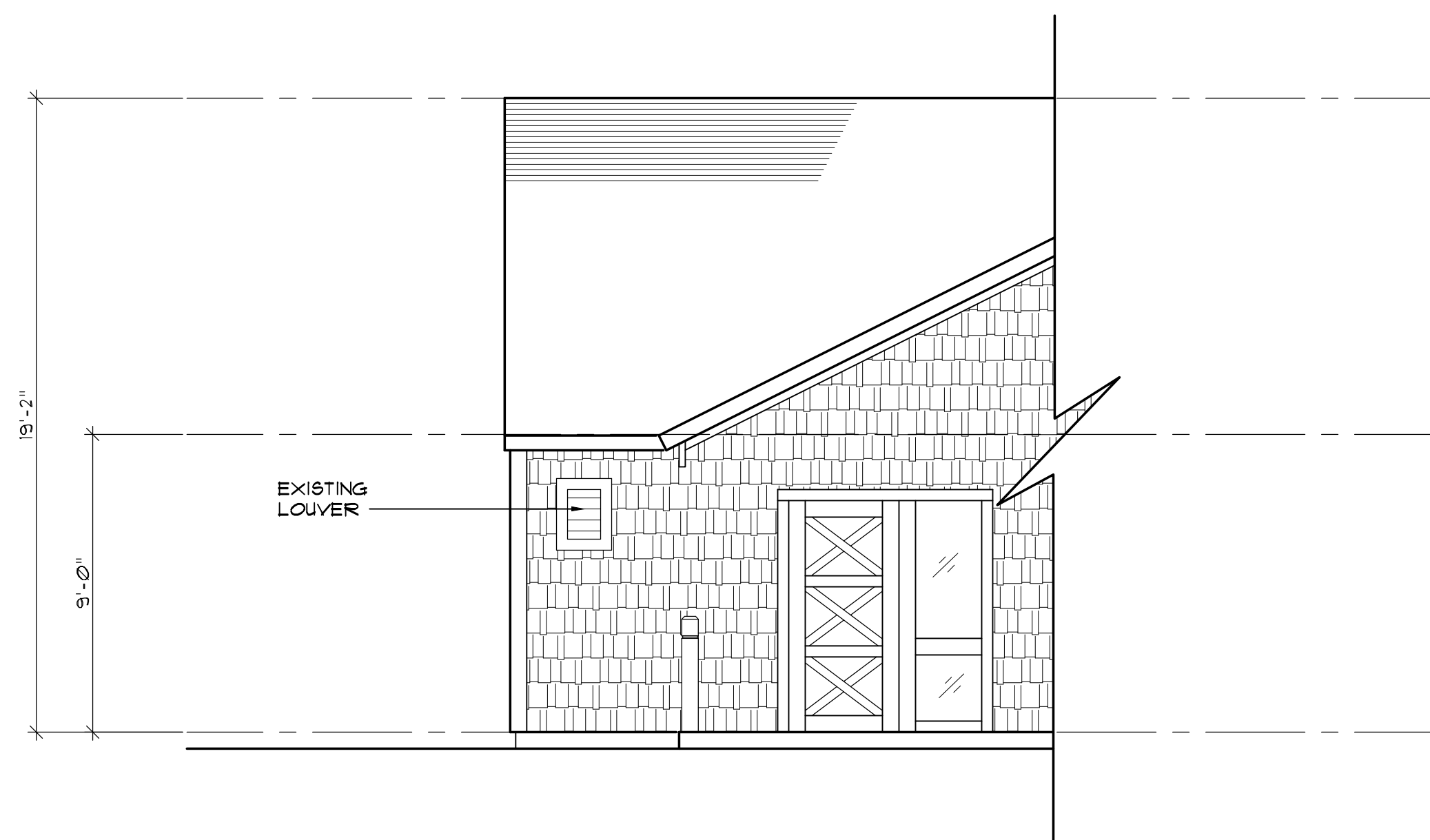
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SCALE: 1/4" = 1'-0"



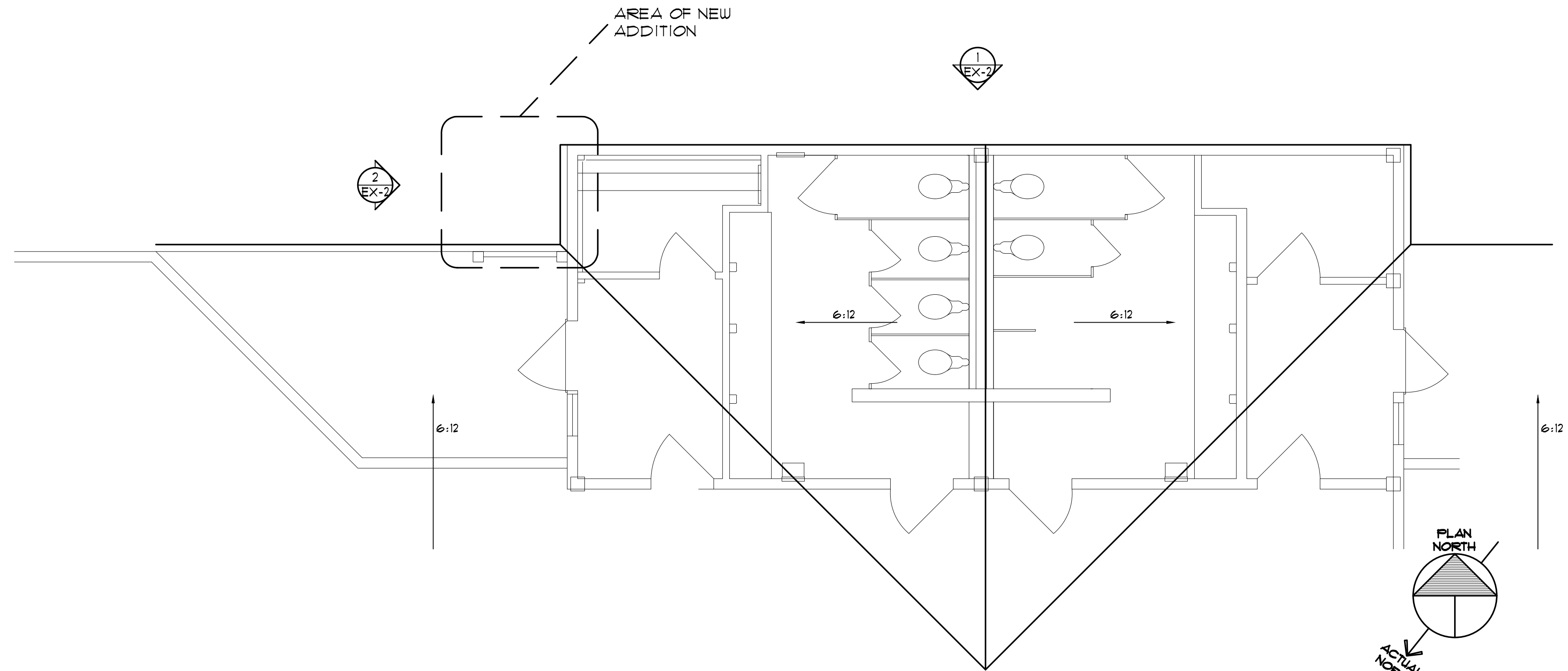
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INT. ELEVATION
SCALE: 1/4" = 1'-0"



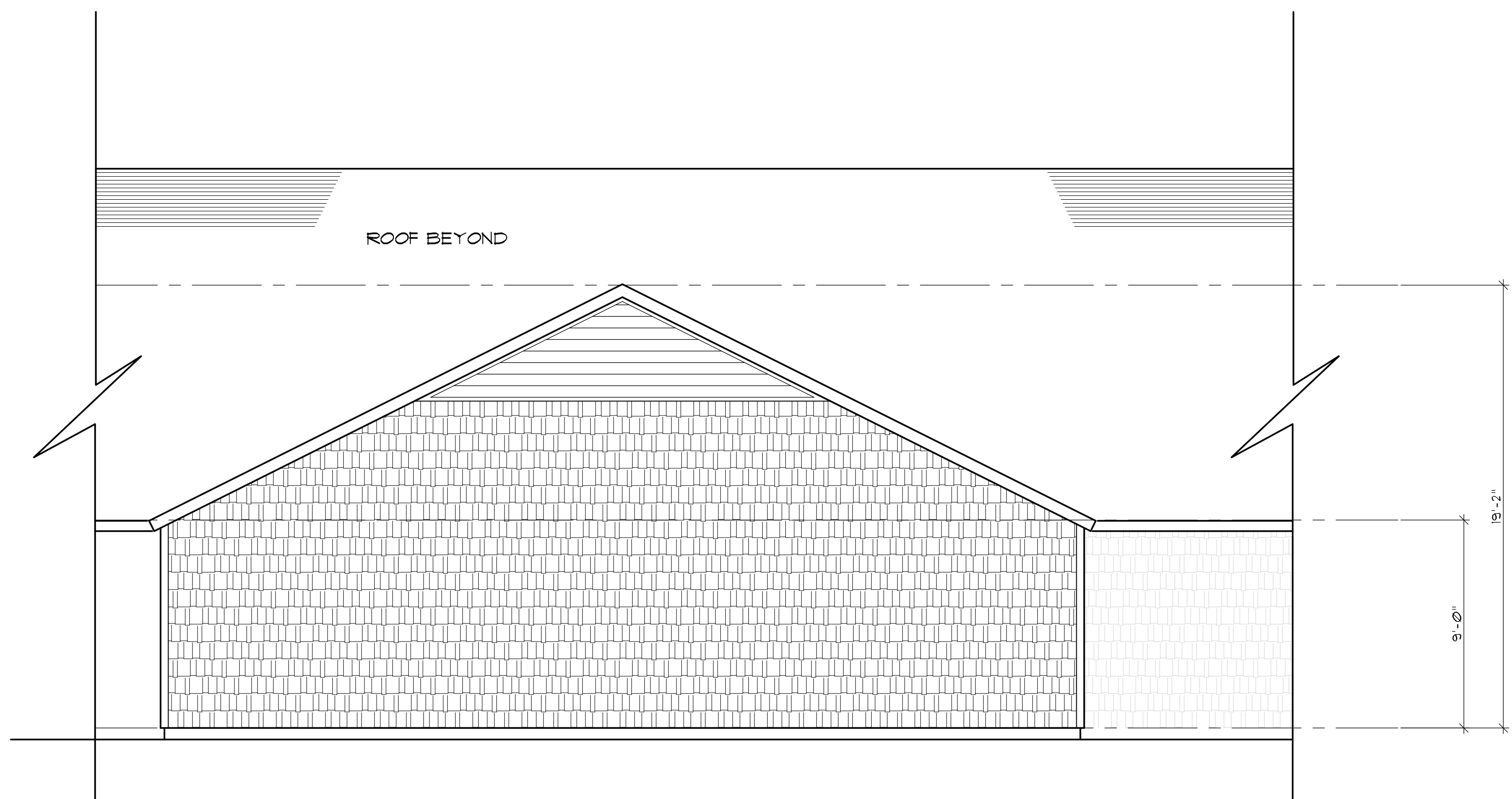
EXISTING ENLARGED TOILET PLAN
SCALE: 1/4" = 1'-0"



2 EXISTING NORTH SIDE ELEVATION
EX-2 SCALE: 1/4"=1'-0"



1 EXISTING ENLARGED ROOF PLAN
EX-1 SCALE: 1/4"=1'-0"



1 EXISTING EAST SIDE ELEVATION
EX-2 SCALE: 1/4"=1'-0"



- Architectural Design
- Planning
- Interiors



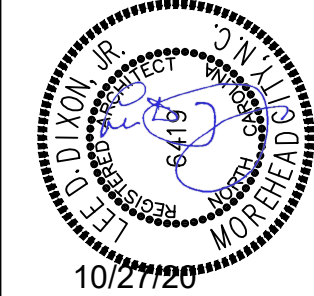
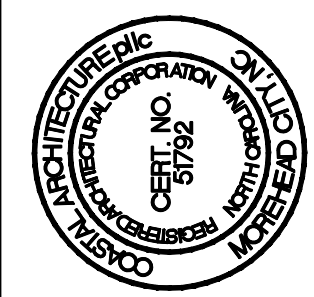
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EXISTING ENLARGED
ROOF PLAN AND
EXTERIOR ELEVATIONS

20017

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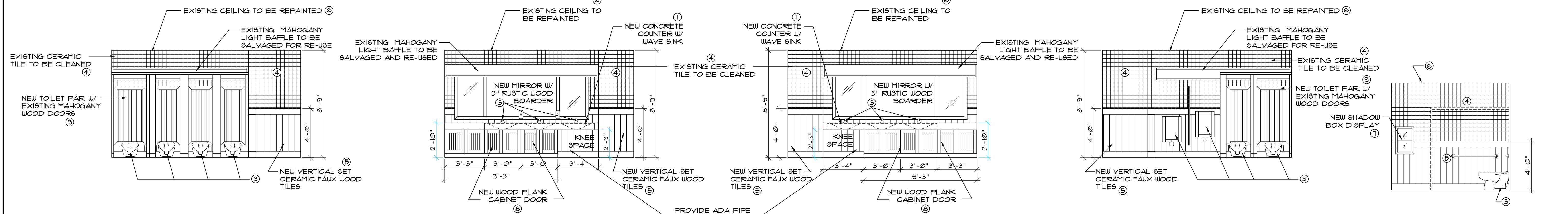
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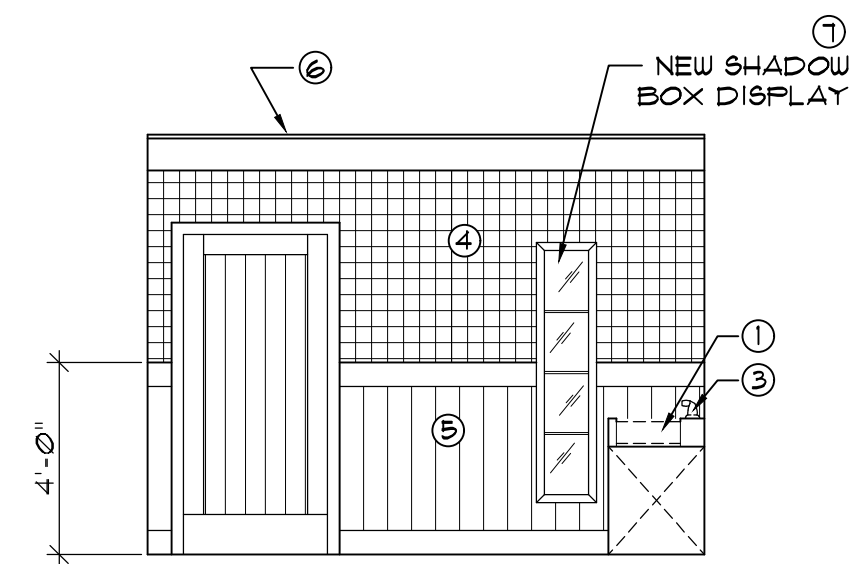
NEW WOMANS TLT INT. ELEVATION
 12
 A-1
 SCALE: 1/4"=1'-0"

NEW WOMANS TLT INT. ELEVATION
 11
 A-1
 SCALE: 1/4"=1'-0"

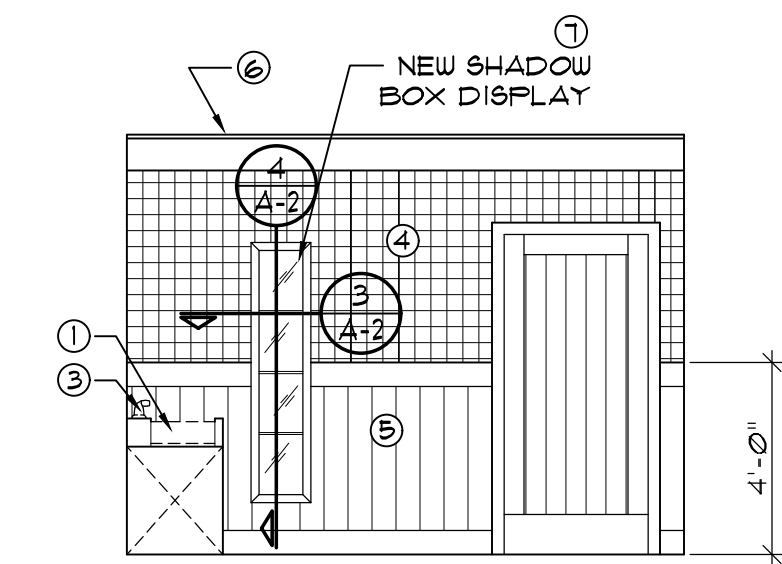
NEW MENS TLT INT. ELEVATION
 10
 A-1
 SCALE: 1/4"=1'-0"

NEW MENS TLT INT. ELEVATION
 9
 A-1
 SCALE: 1/4"=1'-0"

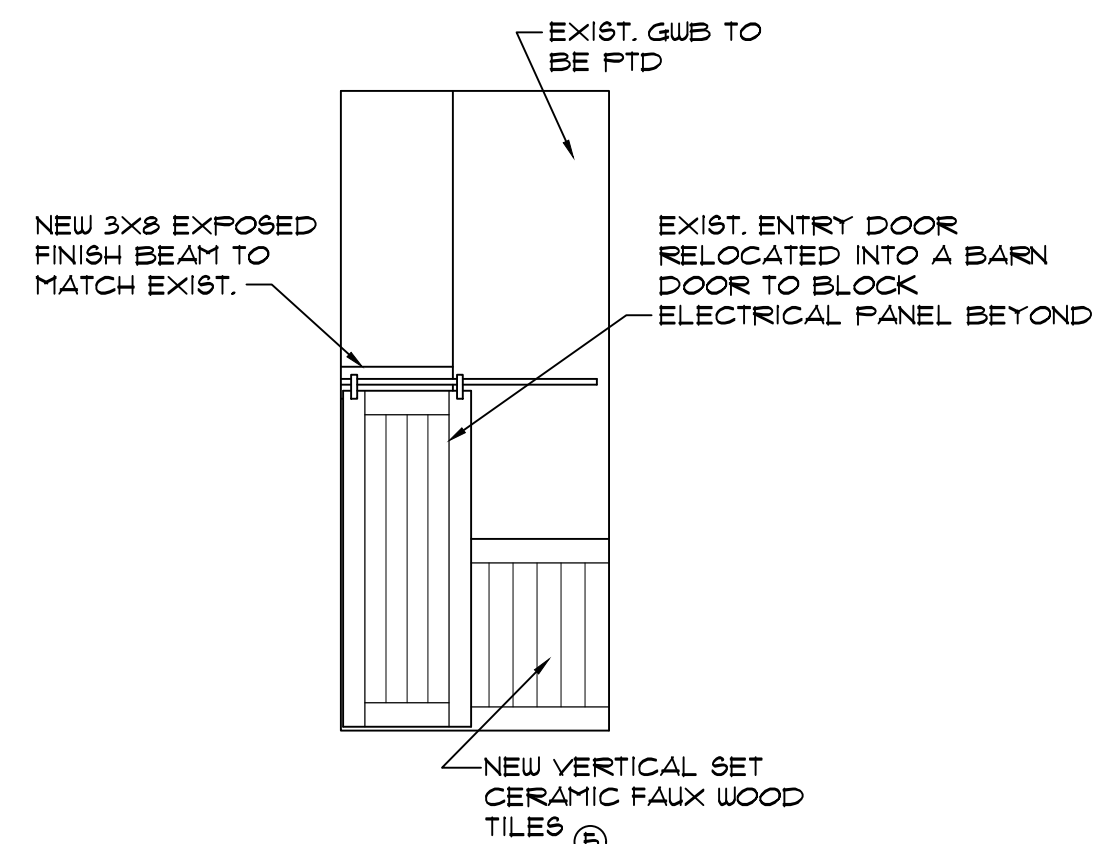
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 8
 A-1
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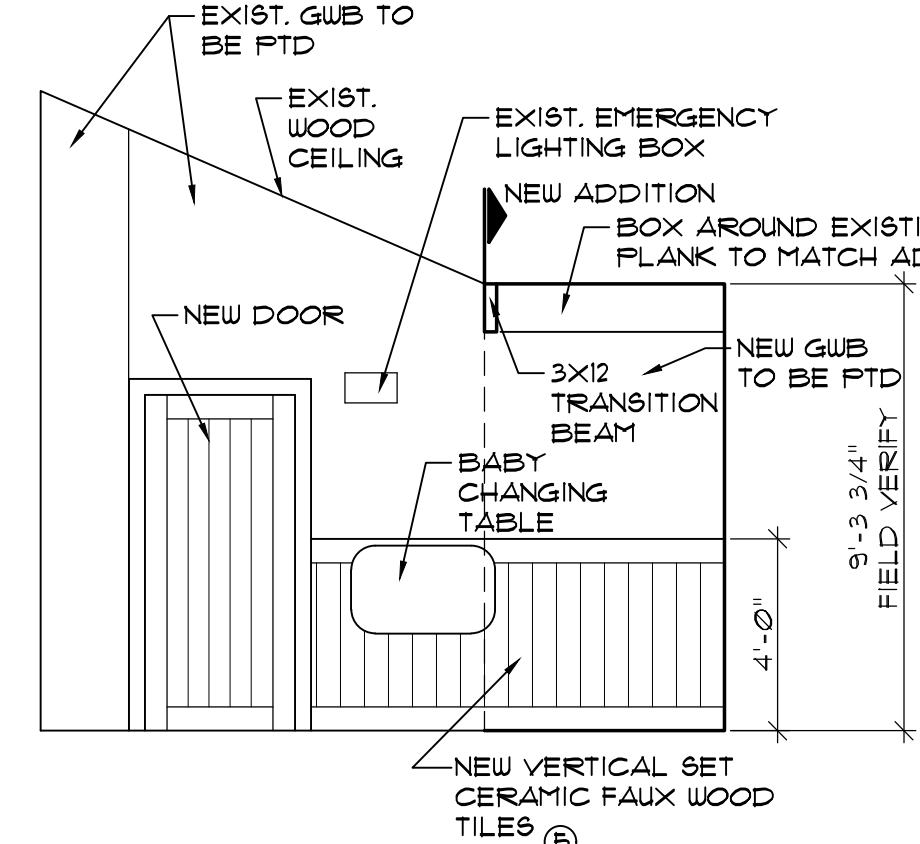
NEW WOMANS TLT INT. ELEVATION
 7
 A-1
 SCALE: 1/4"=1'-0"



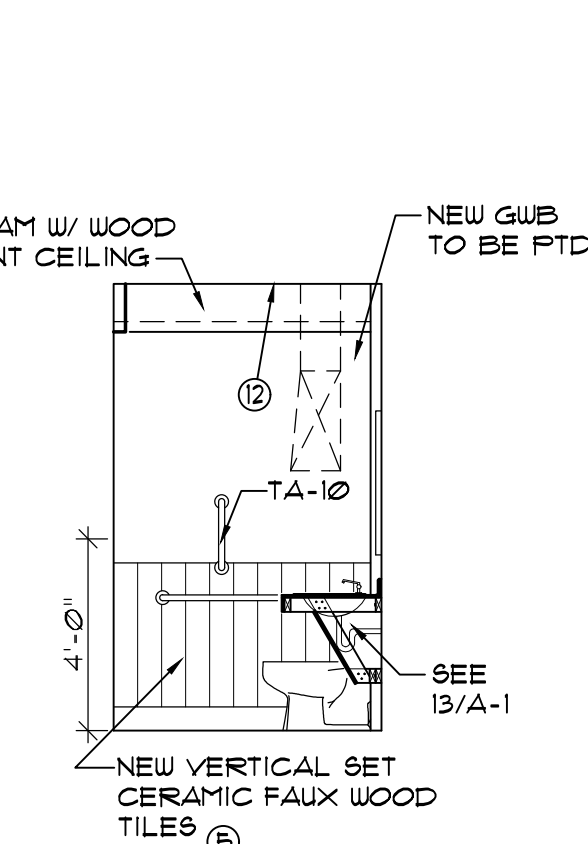
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 A-1
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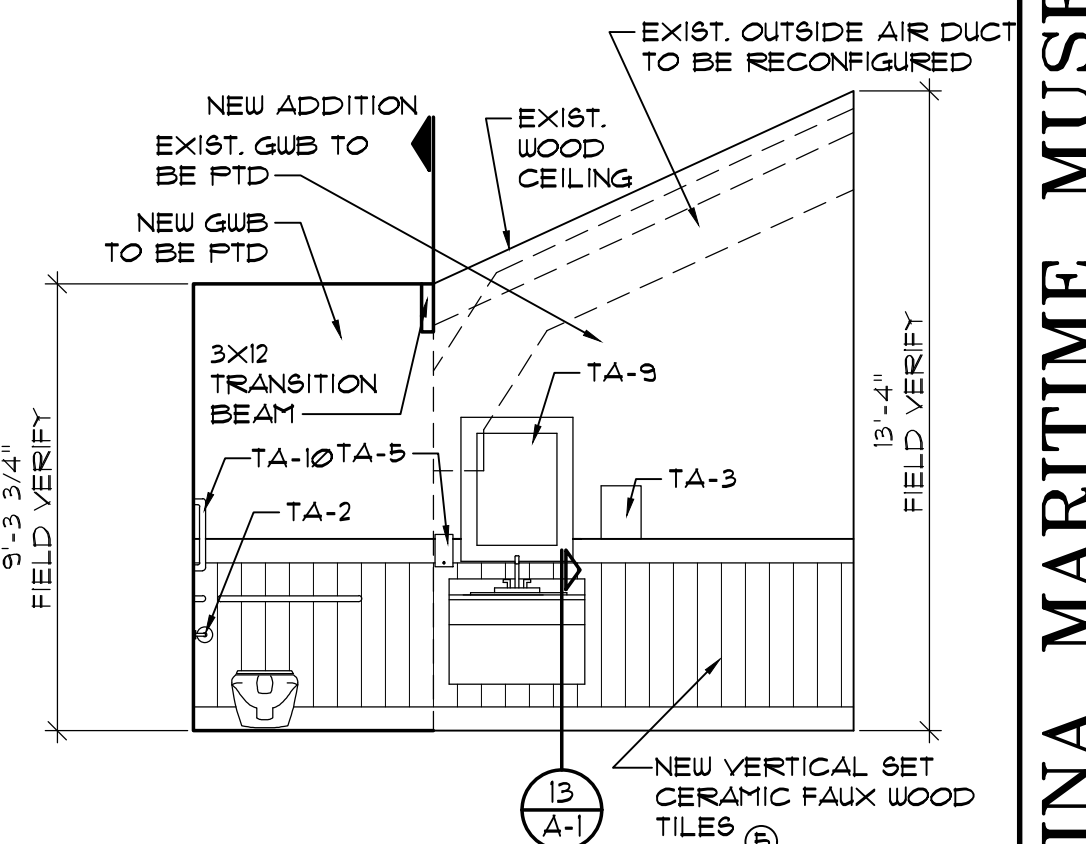
NEW FAMILY TOILET INT. ELEVATION
 5
 A-1
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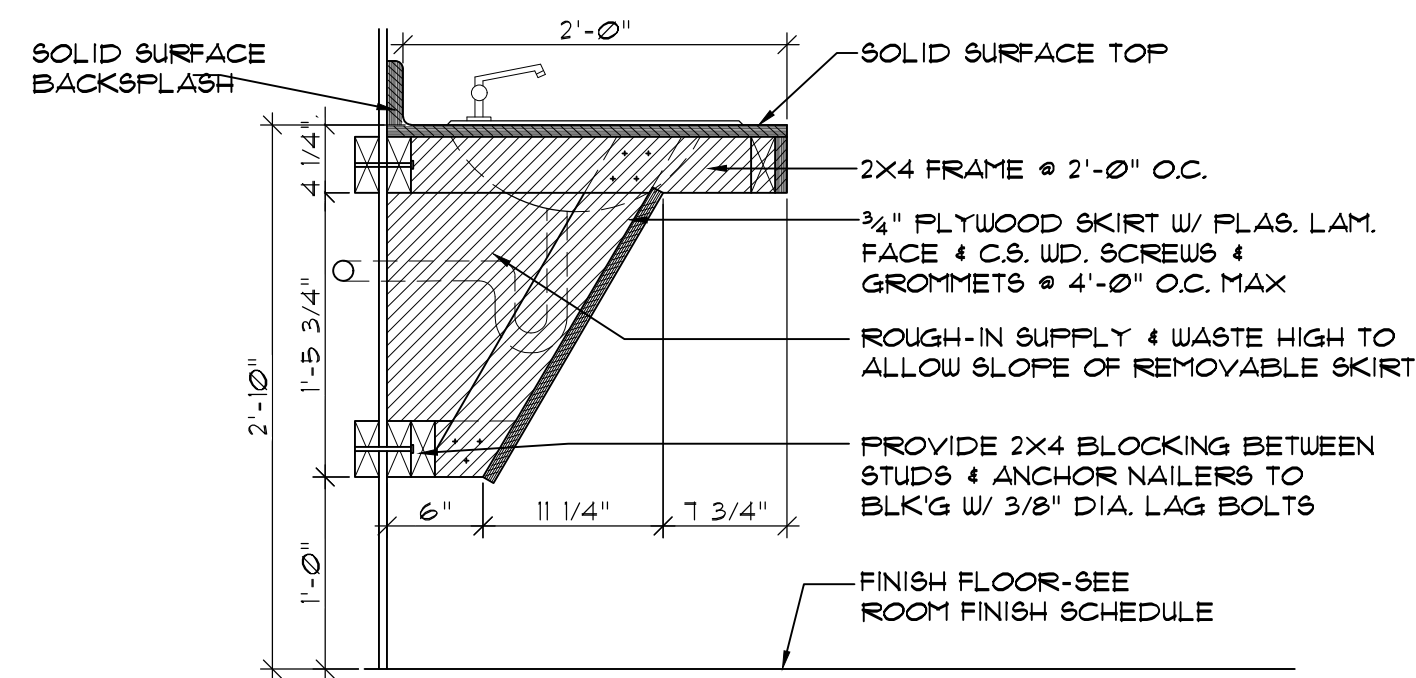
NEW FAMILY TOILET INT. ELEVATION
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 A-1
 SCALE: 1/4"=1'-0"



NEW FAMILY TOILET INT. ELEVATION
 3
 A-1
 SCALE: 1/4"=1'-0"

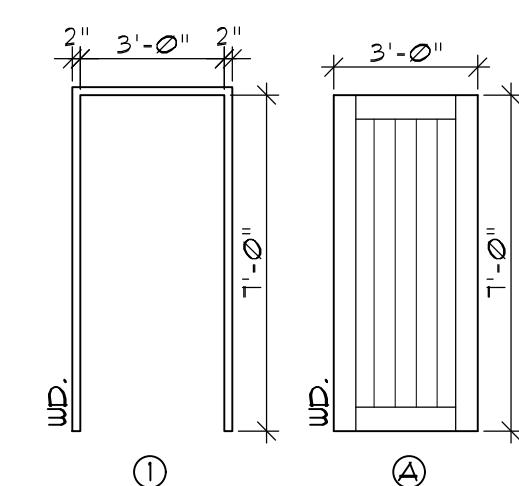


NEW FAMILY TOILET INT. ELEVATION
 2
 A-1
 SCALE: 1/4"=1'-0"



FAMILY TOILET VANITY DETAIL
 13
 A-1
 SCALE: 1"=1'-0"

DOOR SCHEDULE				
DOOR NO.	SIZE	DOOR TYPE	FRAME	REMARKS
101A	3'-0" X 7'-0"	A	I	MATCH EXISTING WOOD DOORS



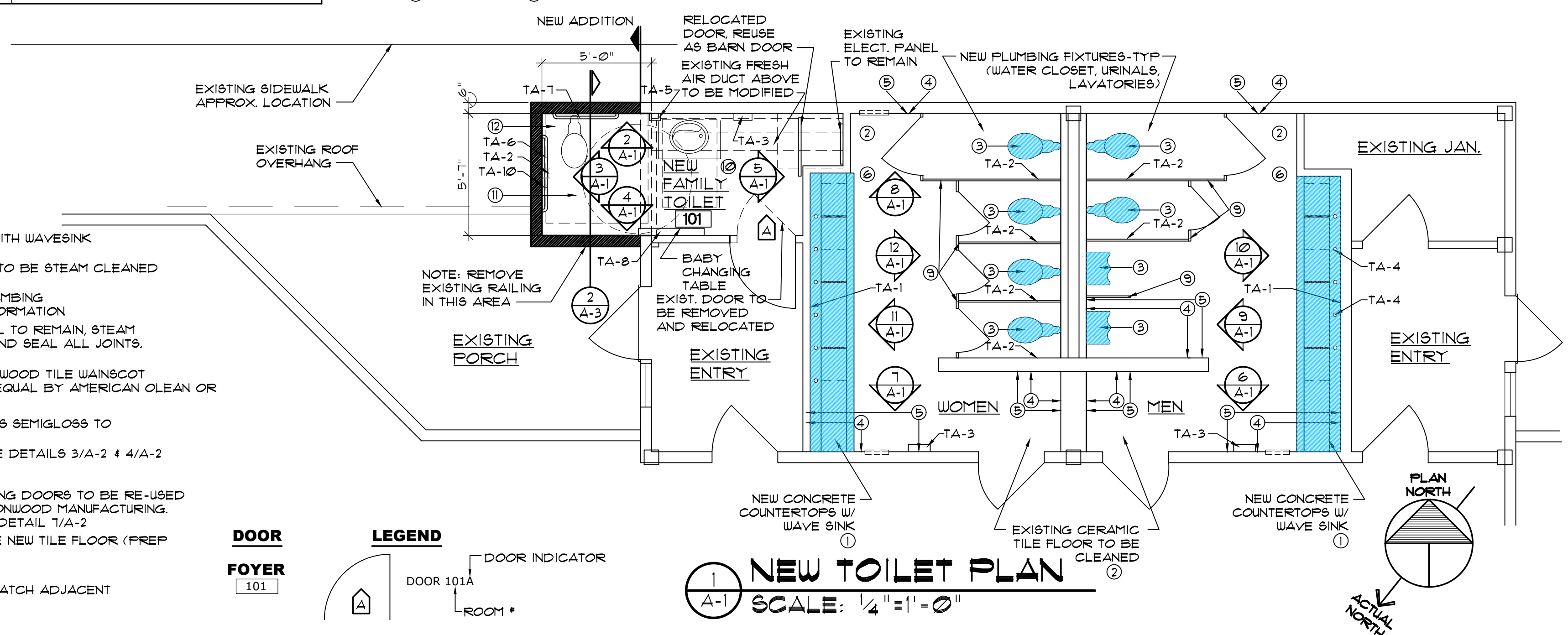
HARDWARE SCHEDULE			
H006	3 HINGES	BB1219 4 1/2" X 4 1/2"	FINISH TO MATCH EXISTING
L004	1 PRIVACY SET	2540UTN	"
O001	1 CLOSER	5300	"
F026	1 PROTECTION PLATE	1905 8" X 3 1/4" C&K	"
S001	1 WALL STOP	236W	"

TOILET ACCESSORY SCHEDULE				
Mark	Item	Mtg. Ht.	Remarks	
TA-1	FRAMELESS MIRROR 132"W x 36"H	3'-4"	NEW 3" RUSTIC WOOD TRIM TO ENCASE THE MIRROR	
TA-2	TOILET PAPER DISPENSER B-2888			
TA-3	PAPER TOWEL DISP. B-4262	4'-0" MAX.	HEIGHT TO DISP. OUTLET	
TA-4	SOAP DISPENSER B824 (BOBRICK)		MOUNTED IN COUNTER	
TA-5	SOAP DISPENSER B828 (BOBRICK)		WALL MOUNTED	
TA-6	GRAB BAR 42" B-5806X42 (BOBRICK)			
TA-7	GRAB BAR 36" B-5806X36 (BOBRICK)			
TA-8	BABY CHANGING KB300-00 (KOALA KARE)			
TA-9	FRAMELESS MIRROR 28"W x 36"H	3'-4"	NEW 3" RUSTIC WOOD TRIM TO ENCASE THE MIRROR	
TA-10	GRAB BAR 18" B-5806X18 (BOBRICK)		VERTICAL	

NOTES:
 * MODEL NUMBERS ARE PALMER UON, BOBRICK, BRADLEY & FRANKLIN ARE APPROVED EQUALS. SUBMIT CUT SHEETS FOR APPROVAL.
 * SUBMIT SHOP DRAWINGS FOR ALL TOILET PARTITION CONFIGURATIONS.
 * ALL HANDRAILS SHALL BE BLOCKED TO SUPPORT A 250 LB. LOAD MINIMUM.

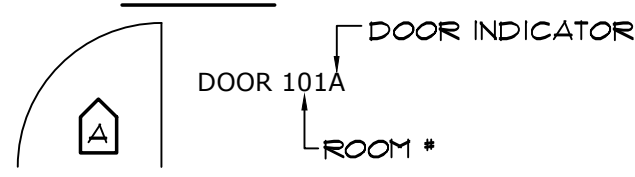
NEW WORK KEY NOTES

- NEW CONCRETE COUNTERTOPS WITH WAVE SINK SEE DETAIL 5/A-2
- EXISTING CERAMIC TILE FLOOR TO BE STEAM CLEANED
- NEW PLUMBING FIXTURE, SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION
- EXISTING CERAMIC TILE ON WALL TO REMAIN, STEAM CLEAN EXISTING TILE, REPAIR AND SEAL ALL JOINTS.
- NEW CERAMIC (VERTICAL) FAUX WOOD TILE WAINSCOT DALTILE 6" SEASON WOOD OR EQUAL BY AMERICAN OLEAN OR MANNINGTON COMMERCIAL
- PAINT EXISTING CEILING, 2 COATS SEMIGLOSS TO MATCH EXISTING
- NEW SHADOW BOX DISPLAY, SEE DETAILS 3/A-2 & 4/A-2
- NEW CABINETS, SEE DETAIL 1/A-2
- NEW TOILET PARTITION W/ EXISTING DOORS TO BE RE-USED TOILET PARTITION TO BE BY IRONWOOD MANUFACTURING, WOOD VENEER WITH INLAY, SEE DETAIL 7/A-2
- REMOVE EXISTING VCT PROVIDE NEW TILE FLOOR (PREP EXIST. SLAB AS REQ'D)
- NEW TILE FLOOR ON NEW SLAB
- NEW WOOD PLANK CEILING TO MATCH ADJACENT



DOOR
FOYER
 101

LEGEND



NEW TOILET PLAN
 1
 A-1
 SCALE: 1/4"=1'-0"

A. GENERAL

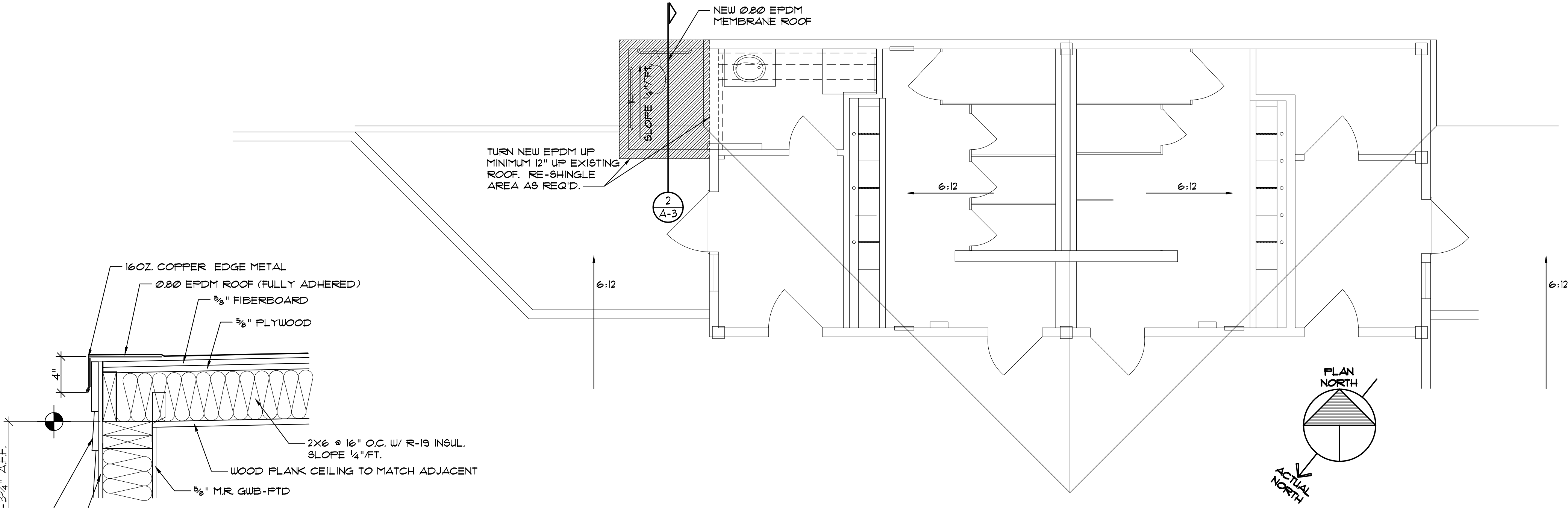
- Notes below are not intended to replace specifications. See specifications for requirements in addition to the general notes.
- Design Live Loads
Floor: 100 psf / 50 psf
Roof: 20 psf
- Design Dead Loads
Roofing, insulation & decking: 15 psf
Allowance for future roofing: 0 psf
- Wind loads
Basic Wind Velocity: 145 mph
Exposure Condition: C
Importance Factor: 1.00
- Snow Loads
Ground Snow Load, Pg: 20 psf
- Earthquake Loads
Seismic Risk Category: II
Spectral Response Acceleration, S_{ms}: 0.116%
Spectral Response Acceleration, S_{m1}: 0.069%
Site Classification: D
Seismic Design Category: B
- Structural Drawings shall be used in conjunction with the project specifications and Architectural and other Engineering Drawings.
- Contractor is responsible for dissemination of revisions to Contract documents and requirements to all subcontractors.
- Contractor shall verify all dimensions, elevations and existing field conditions before proceeding with construction.
- Structural frame shall be braced until erection is complete and permanent connections, bracing members and shear walls are installed.
- In case of conflict between specifications and drawings, contact Architect for resolution.
- All safety and OSHA regulations shall be followed strictly. Methods of construction and erection of structural material are the Contractor's responsibility.
- Depress slabs for tile, etc., as required by the Architectural Drawings. Maintain slab thickness below depressed areas as shown on Structural Drawings.
- For slopes or depressions in slab on grade, see Architectural Drawings.

B. FOUNDATION

- Design soil bearing capacity: 1,500 PSF (ASSUMED)
- Footings shall be carried to a lower elevation than those indicated on the drawings if required by the Architect and/or Engineer to reach firm undisturbed soil bearing as herein specified.
- Elevation of foundation shown on the drawings is assumed for bidding purposes only. Foundation to bear on approved material as specified.
- All slabs on grade shall be placed over a 4" base of well compacted gravel or granular base. The gravel shall be placed on original soil or on earth fill as described in note #7 below. Cover gravel base with an approved vapor barrier before placing concrete. Structural fill to be placed below reinforced concrete slab and to achieve minimum of 98% of the material's standard proctor maximum dry density according to ASTM D698.
- Sand 4" thick may be substituted for crushed stone at the Contractor's option. Sand shall be compacted to 100% of its maximum density at optimum water content.
- Where footing or slab on grade is to be placed on fill, all topsoil, roots, trash and other extraneous materials shall be removed and replaced with select fill compacted to a minimum of 95% of its maximum density at its optimum moisture content as measured by the Standard Proctor Method (ASTM D 698). The top 12" shall be compacted to a minimum of 98%. Soil compaction shall be field controlled by a representative technician of a qualified laboratory as approved by the Architect and/or Engineer. Each layer/lift of fill shall be no greater than 12" thick and shall be compacted as specified prior to placement of the following layer.
- It shall be the Contractor's responsibility to provide well-braced shoring at excavations near existing buildings and construction to prevent settlement and to prevent cave-ins.
- Walls acting as retaining walls shall not be backfilled without bracing until all supporting soil and slabs are in place.
- Select and place porous backfill at retaining walls carefully where indicated on the drawings.
- Place concrete for wall footings monolithically with column footings. Construction joints in wall footings shall be made only midway between column footings.
- Footings shall be excavated to final depth and concrete placed in the same day.
- Footing excavations and forms shall be reviewed by the Architect, Engineer, or approved construction testing agency prior to placing concrete. All footings shall be formed with wood or metal forming materials to the dimensions shown on the drawings, unless otherwise noted. All formwork shall be removed prior to backfill.
- See Architectural Drawings for locations of partition footings and thickened slabs not dimensioned on Structural Drawings.
- Place concrete for slab on grade in continuous strips and provide control and construction joints at locations shown on drawings.

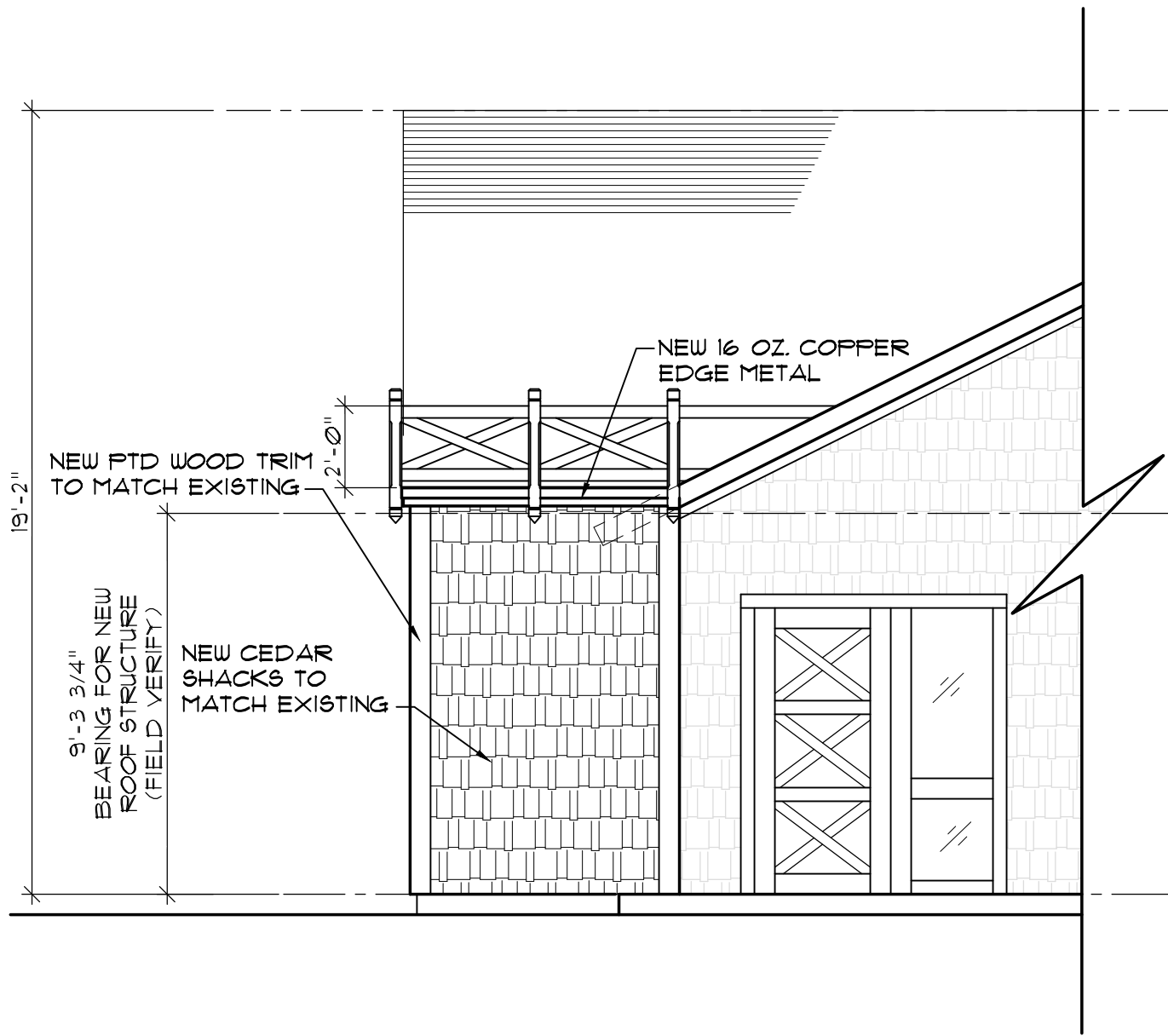
C. CONCRETE

- Minimum compressive strength at 28 days shall be: 3000 psi for footings, and 3000 psi for slab on grade.
- Exposed concrete shall be air entrained in accordance with Table 1904.2.1 of the NC State Building Code.
- All detailing, fabrication and erection of reinforcing bars shall conform to ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structure" (ACI-315, Latest Edition) and the "Building Code Requirements for Reinforced Concrete" (ACI-318, 2002 Edition).
- Reinforcing bars shall be rolled from new billet steel conforming to "Specification for Deformed Billet Steel Bars for Concrete Reinforcement", ASTM A 615, and shall be Grade 60 except for column and pilaster ties and beam stirrups which shall be Grade 40.
- Welded wire fabric shall conform to ASTM A 185 and A 82.
- All shop and field welding of reinforcing steel to structural shapes shall be performed by welders who have been qualified by test as prescribed in the AWS D1.1-88 and shall be performed in accordance with AWS D1.4-79.
- Grout under all column base plates and beam bearing plates with non-shrink, non-metallic grout which conforms to ASTM C1107.
- Details, workmanship and procedure of concrete placement shall conform to the latest editions of ACI-315, ACI-318 and ACI-301.
- Clear distance from face of concrete to main reinforcing:
Suspended slabs and joists: 1" UON
Grade beams, pedestals, columns, walls: 2" UON
Footings, walls cast against earth: 3" UON
- All isolation joint strips shall be 1/2" thick, unless otherwise noted.
- Provide corner bars at all footing steps and corners unless otherwise noted. Bars shall lap a minimum of 48 bar diameters and shall have the same size and spacing as the horizontal reinforcing.
- Provide #4 diagonal corner bars, minimum 48" long at center of slab around all openings in floor slabs.
- Lap all reinforcing splices at least 48 bar diameters (24" minimum) unless otherwise noted.
- Welded wire fabric shall have end laps of one full fabric plus 2" between cross wires and edge laps obtained by overlapping longitudinal spacing wires 2" and wiring all laps securely together. Welded wire fabric shall extend into supporting beams and walls for anchorage unless an expansion joint is called for.
- All reinforcing shall be securely wired together in forms as called for in "Placing Reinforcing Bars" by CRSI.
- Crack control joints shall be placed in slabs on grade at a maximum spacing of 16', unless otherwise noted.
- Reinforcing steel in place shall be reviewed by the Architect, Engineer, or approved construction testing agency prior to placing concrete.
- Chamfer exposed edges of concrete 3/4" or as shown in Structural and/or Architectural Drawings.
- Slab on grade shall be 4" thick with W1.4 x W1.4 welded wire fabric at 1/3 depth from top of slab unless otherwise noted.
- Provide all necessary cover and protection for masonry work when placing concrete.
- Provide at least two (2) #4 bars in top of wall footing under door and other openings, 4'-0" longer than the opening.
- Provide dowels in wall footings equivalent in size and number to vertical steel extending 24 bar diameters into footing and with projection as required to provide minimum lap splice as noted above.
- Do not sleeve structural members where not shown on the Structural Drawings without approval of the Architect and/or Engineer.
- See Architectural Finish Schedule for required floor finishes.

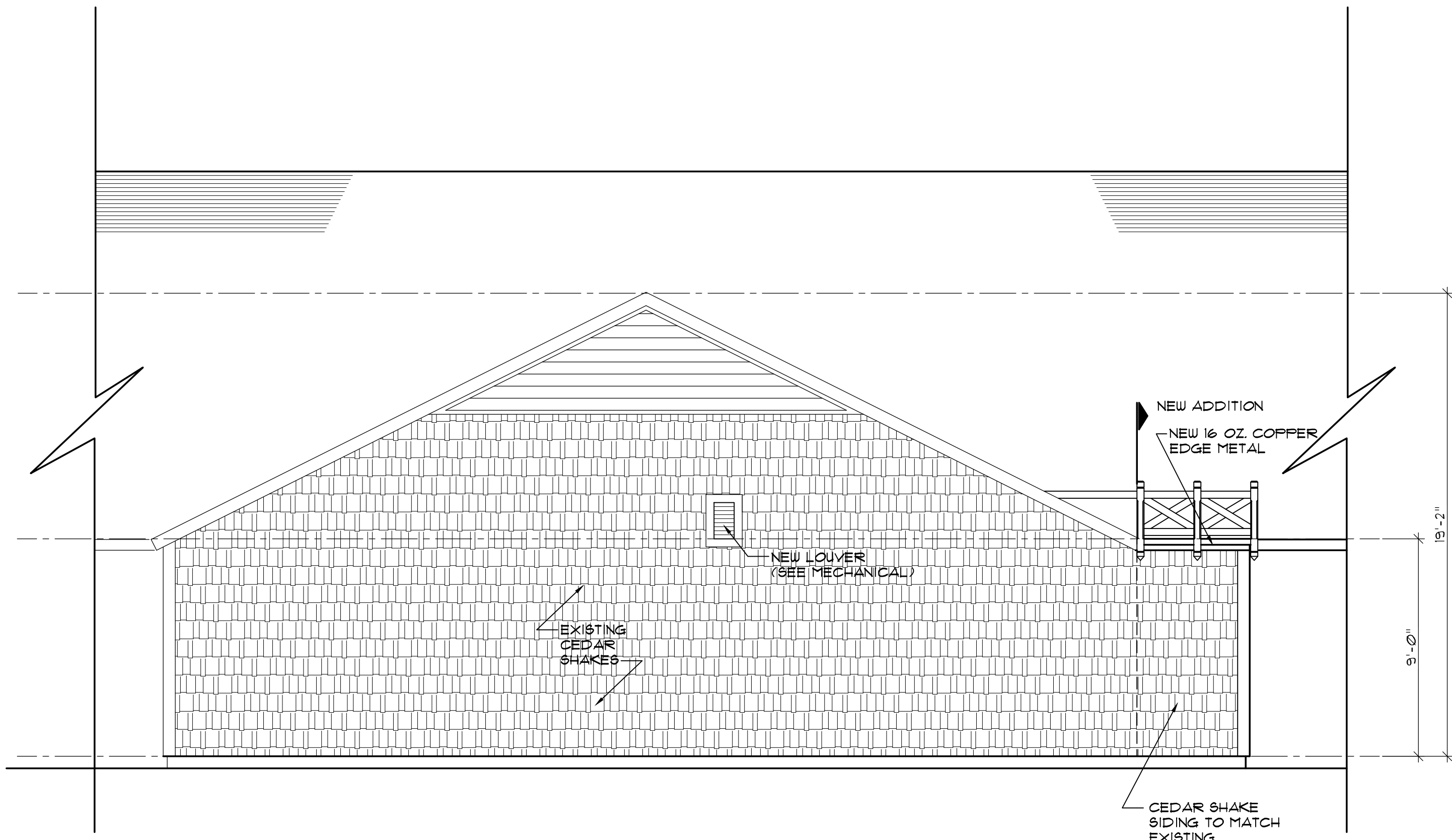


4 NEW ROOF EDGE DETAIL
SCALE: 1 1/2" = 1' - 0"

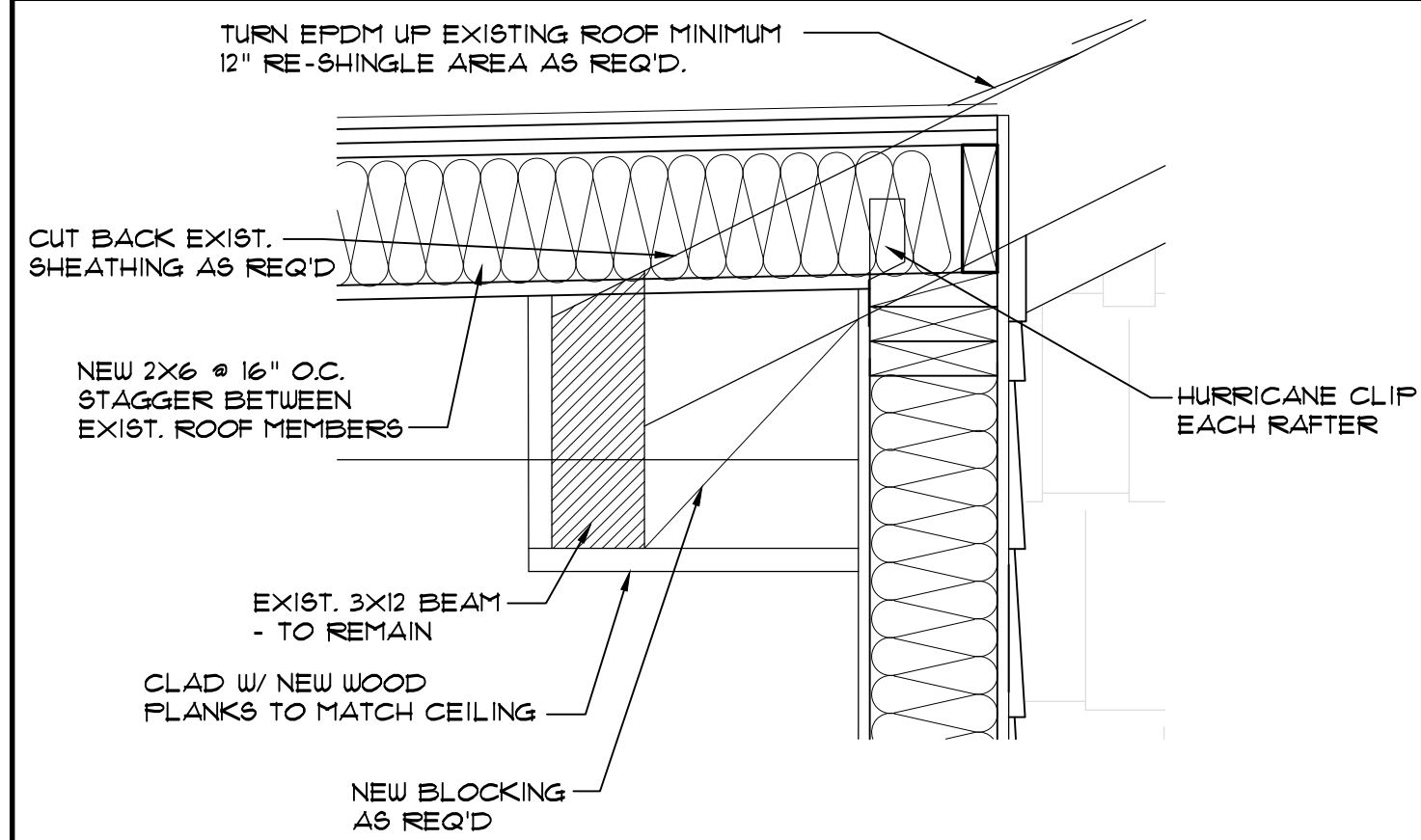
3 NEW ROOF PLAN
SCALE: 1/4" = 1' - 0"



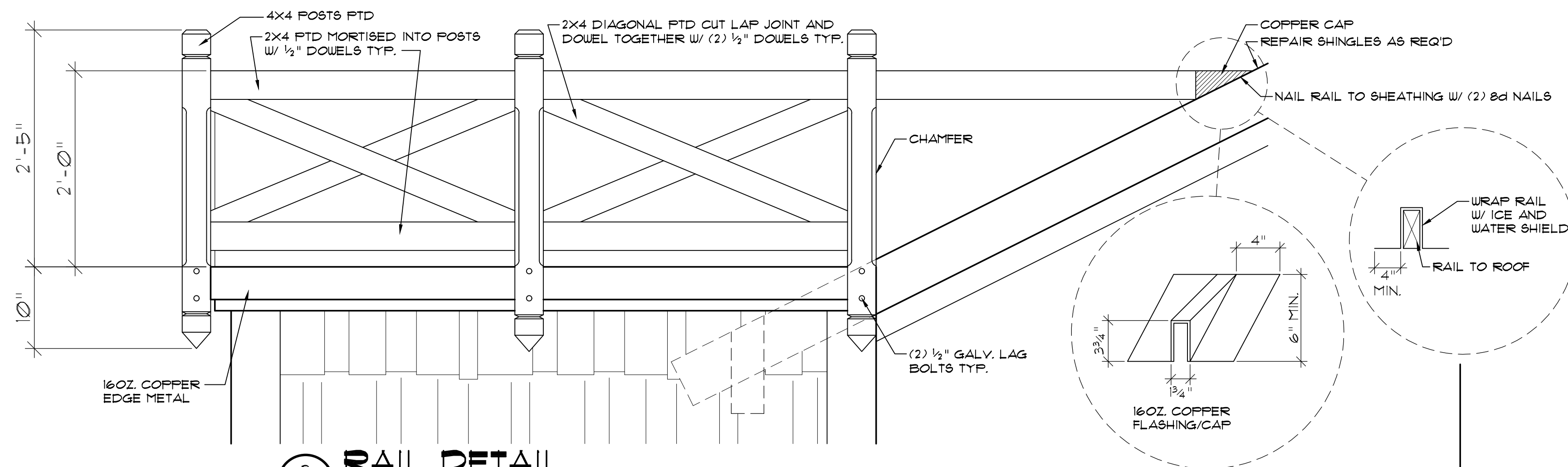
2 NEW NORTH SIDE ELEVATION
SCALE: 1/4" = 1' - 0"



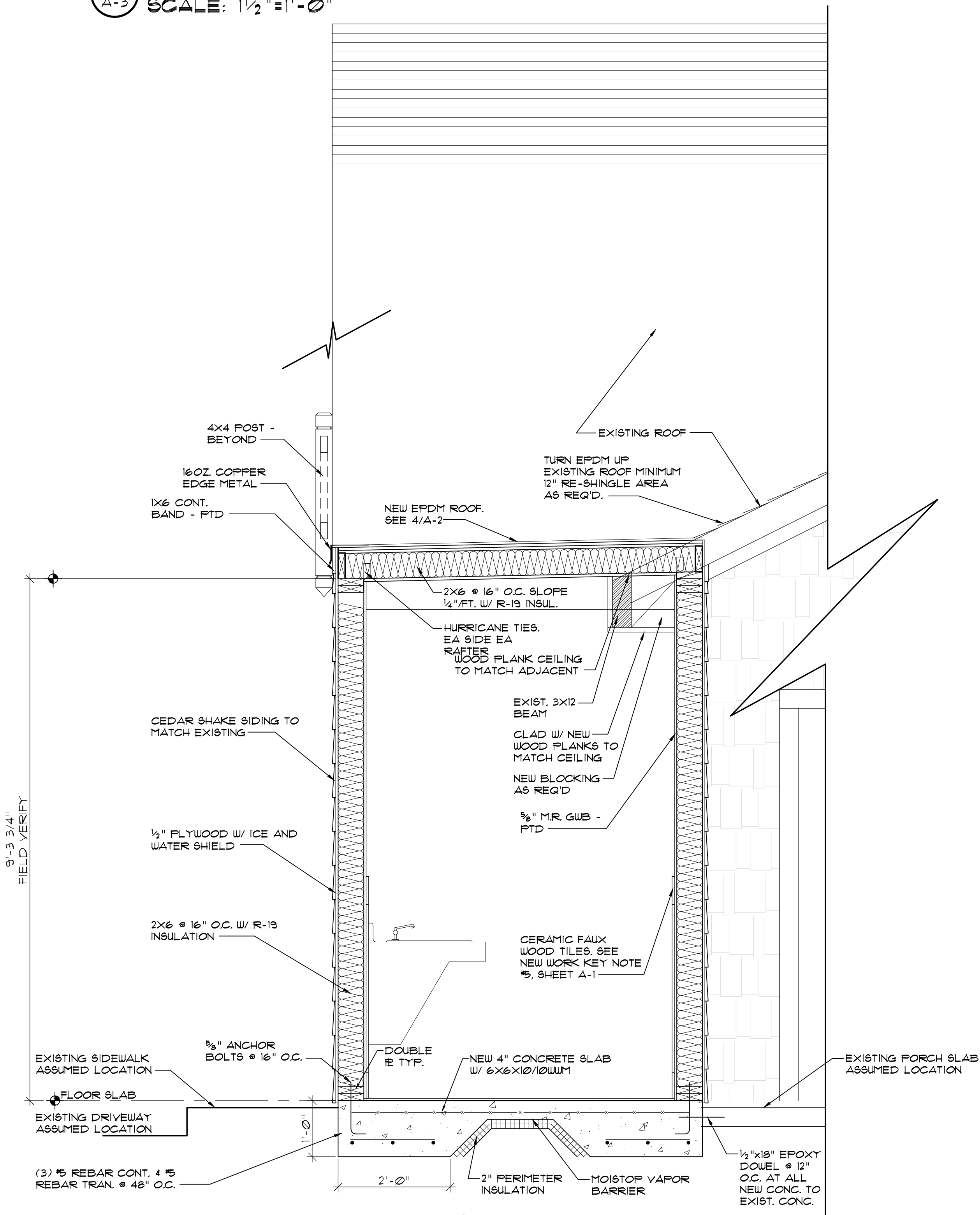
1 NEW EAST SIDE ELEVATION
SCALE: 1/4" = 1' - 0"



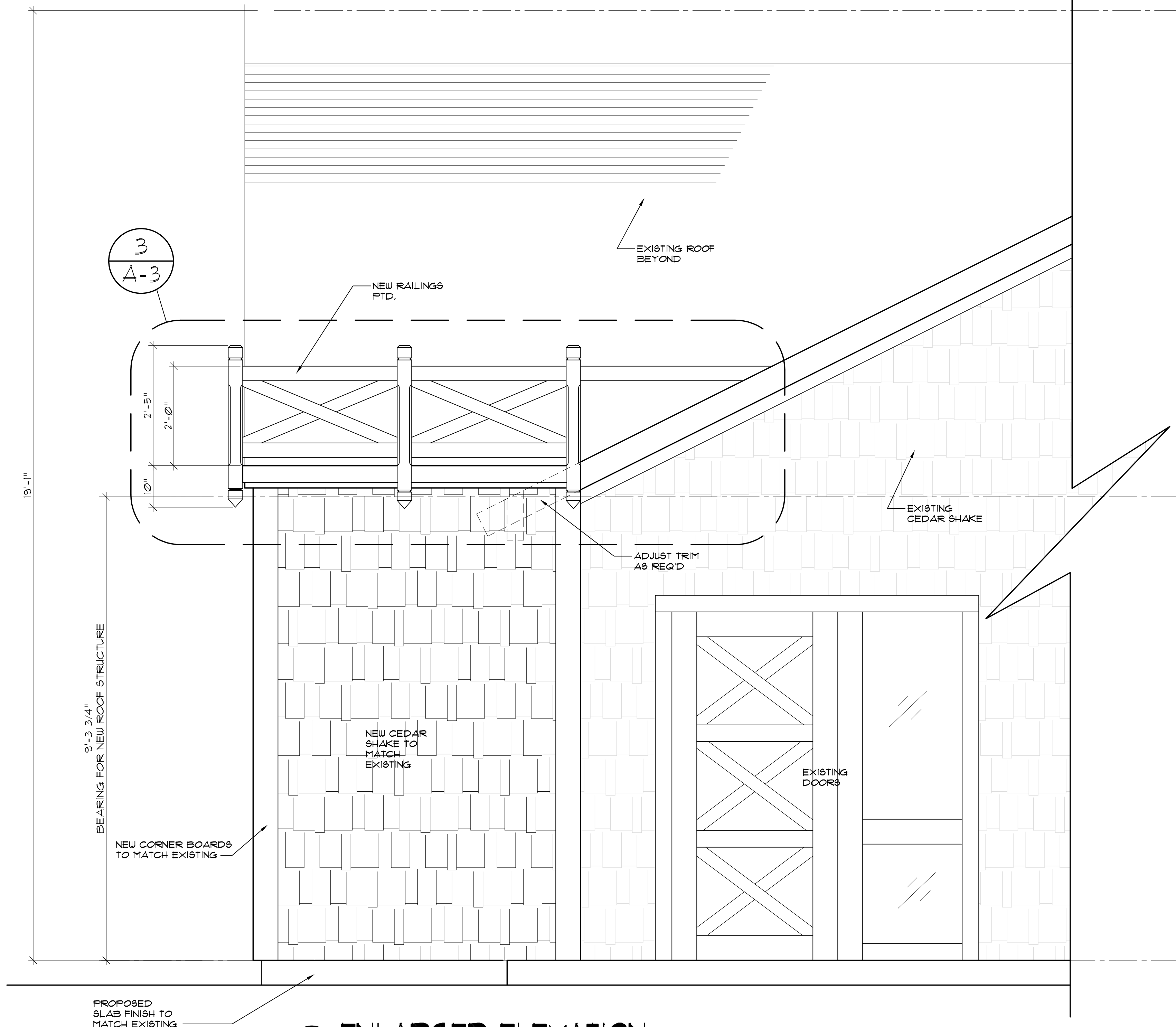
4 ROOF DETAIL
SCALE: 1/2" = 1'-0"



3 RAIL DETAIL
SCALE: 1" = 1'-0"



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



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

THIS DRAWING AND SPECIFICATIONS REPRESENT AN INSTRUMENT OF SERVICE AND AS SUCH SHALL REMAIN IN OWNERSHIP WITH THE ARCHITECT. USE OR REPRODUCTION BY ANY MEANS, IN WHOLE OR IN PART, WITHOUT THE ARCHITECT'S WRITTEN CONSENT, IS PROHIBITED.

DIVISION 15A – PLUMBING

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

- 2.2 PIPING
- A. Drain-Waste-Vent: All DWV piping shall be Schedule 40 PVC-DWV u.o.n., with the following exceptions: Use cast iron piping in all return air plenums, penetrations of rated walls/floors/ceilings, and in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. ABS or cast iron piping shall be used for drainage/discharge with a temperature greater than 140 deg. F for a minimum distance of 10'-0".
- B. Hot and cold water piping above grade: Type "L" copper w/solder joints (ASTM-B88), hard drawn with wrought copper fittings (ANSI B16.22). PEX piping with copper fittings may be used with owner/tenant approval and as allowed per code. Copper piping shall be used in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings.
- C. Cold water piping below grade: Type "K" copper (ASTM-B8A) soft drawn.
- D. Hangers: Use pipe hangers where required on 8-foot centers with saddles to avoid crushing insulation.
- E. Solder: 95/5. Lead free.
- F. Unions: Provide unions where indicated on drawings, in long runs of piping (except drains) and at equipment to provide convenient disassembly. Provide electric unions when connecting copper tubing to equipment and piping made of ferrous materials.
- 2.3 CLEANOUTS
- A. Hex plugs in rough areas: Recessed plugs with cover plates in exposed locations.
- 2.4 SHOCK ARRESTERS
- A. Provide shock arresters as required by codes, manufacturer's recommendations and accepted industry standards for quality construction. Provide for all quick closing valves.
- PART 3 – EXECUTION
- 3.1 CONNECTIONS
- A. This contract includes complete connection of cold water, hot water, drainage, and vent piping as required. All fittings, valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.
- B. The connection to water closets shall be made watertight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on threaded brass washers.
- C. Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.
- 3.2 SERVICE ACCESS
- A. All valves and accessories shall be insulated so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other components in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.
- 3.3 ROUTING OF PIPING
- A. Coordinate routing of piping with others, line up work true to or at right angle to adjacent surfaces and in a workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines, to prevent vibration, and to secure piping place.
- B. Space pipe hangers 8'-0" on center for one inch and smaller pipe, 4'-0" on center for 1-1/4 inch and larger pipe. Provide expansion loops as required.
- C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.
- 3.4 INSULATION
- A. All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R=8.5 min.) in unconditioned areas. See NCSBC-Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insulation per Sect. C404.4 of the NCSBC 2018 Energy Conservation Code.
- B. Provide pre-fabricated insulation kits for all sink and lavatory exposed drain and supply piping.
- 3.5 INSPECTIONS AND TESTS
- A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water- and air-tight.
- B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.
- 3.6 STERILIZATION OF PIPING
- A. Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hypochlorite solution, introduced into the system in an approved manner. The sterilizing solution shall remain in the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.
- 3.7 SERVICE PRESSURE
- A. Provide approved water-pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSBC-Plumbing Sect. 604.8.
- 3.8 DRAINDOWN
- A. Contractor to provide for complete plumbing system drain down.
- 3.9 CLEAN UP
- A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work. In addition, upon completion of construction, clean, wash, and/or polish all fixtures, equipment and exposed material and leave them bright and clean.
- 3.10 GUARANTEES
- A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.
- B. Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.

GENERAL NOTES – PLUMBING

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
2. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE PLUMBING CONTRACTOR (PC) SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC).
3. THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION AND ALL DISCREPANCIES OR INTERFERENCES BROUGHT TO THE ENGINEERS ATTENTION.
4. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. THE PC SHALL PROVIDE ALL MISC. ITEMS NEEDED FOR A COMPLETE SYSTEM REGARDLESS IF NOTED ON THE DRAWINGS OR NOT. FOR DIMENSIONS REFER TO ARCHITECTURAL PLANS.
5. THE GC SHALL PROVIDE ALL WALL, FLOOR AND ROOF OPENINGS OF THE SIZE AND LOCATION REQUIRED BY THE PC AND SHALL BE RESPONSIBLE FOR PAINTING AND FLOOR FINISHES. THE PC SHALL PROPERLY SEAL ALL PENETRATIONS AND PROVIDE ESCUTHEON PLATES AT ALL FINISHED LOCATIONS.
6. ALL NEW WATER PIPING SHALL BE INSTALLED TIGHT TO STRUCTURE, ADEQUATELY SUPPORTED AND PROTECTED AND PROPERLY PITCHED TO ALLOW TOTAL DRAINAGE.
7. ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED FOR A MINIMUM OF 15 MINUTES AT A MINIMUM OF 100 PSIG BEFORE COVERING AND ALL LEAKS CORRECTED. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
8. PROVIDE MIN. 16" SHOCK ABSORBERS WITH STOPS ON ALL HOT AND COLD WATER FIXTURE RUNS AS REQUIRED BY CODE.
9. VENT LINES SHALL SLOPE UP TO ALL STACKS AND TERMINATE A MIN. OF 12" ABOVE ROOF LINE.
10. PROVIDE CUT SHEETS ON ALL PLUMBING FIXTURES FOR ARCHITECT AND OWNER APPROVAL PRIOR TO ORDERING ANY FIXTURES.
11. PROVIDE/VERIFY HOT WATER TO FIXTURES AT 110 DEGREES (MAX) F U.O.N. PROVIDE THERMOSTATIC MIXING VALVE (TMV) WHERE REQUIRED.
12. PROVIDE CLEANOUTS AS REQUIRED BY CODE. NOT MORE THAN 100 FEET FOR 4" DRAIN.

SYMBOL LEGEND – PLUMBING

SYMBOL	DESCRIPTION (U.O.N.)
_____	WASTE PIPING (W)
-----	VENT PIPING (V)
_____	COLD WATER PIPING (CW)
-----	HOT WATER PIPING (HW)
○ COFF	CLEANOUT FINISH FLOOR
⊥ WCO/HCO	WALL/HORIZONTAL CLEANOUT
□ COFG	CLEANOUT FINISH GRADE-PROVIDE FLUSH CONCRETE COLLAR AND BRONZE COVER
⊥	DIELECTRIC UNION
⊗	SHUT-OFF VALVE
⊥	VENT THRU ROOF (VTR)
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED

FIXTURE SCHEDULE – PLUMBING *

- L1* LAVATORY (COUNTERTOP)
KOHLER PENNINGTON SELF RIMMING COUNTERTOP LAVATORY, K-2196, WHITE COLOR, ADA COMPLIANT, PROVIDE SLOAN OPTIMA #EBF-187 BATTERY OPERATED SENSOR FAUCET. PROVIDE DRAIN WITH GRID STRAINER, P-TRAP AND SHUT-OFF VALVES.
- LS* LAVATORY STATION
MULTI-STATION LAVATORY. PROVIDE BATTERY SENSOR FAUCET FOR EACH STATION (SINGLE HOLE). PROVIDE DRAIN W/GRID STRAINER, P-TRAP AND ALL SHUT-OFF VALVES. VERIFY DRAIN/SUPPLY REQUIREMENTS (QTY) AND PROVIDE PLUMBING AS REQUIRED REGARDLESS OF HOW SHOWN ON PLANS- COORDINATE WITH UNIT.
- TMV* THERMOSTATIC MIXING VALVE (ASSE 1070)
WATTS LFUSG-B "LEAD FREE" GUARDIAN. INSTALL IN MAINTENANCE ACCESSIBLE LOCATION BELOW LAV/SINK OR ABOVE CEILING. SET HW OUTFLOW TO SPECIFIED TEMPERATURE (110 DEG. F (MAX.) LTHW).
- UR* URINAL
KOHLER MODEL K-5016-ET, 3/4" TOP SPUD, ADA COMPLIANT W/PROPER INSTALL, 0.5 GPF, 2" OUTLET DRAIN. PROVIDE SLOAN G2 #8186-0.5 BATTERY SENSOR FLUSH VALVE, 0.5 GPF. PROVIDE/VERIFY VALVE WITH OVERRIDE BUTTON.
- WC* WATER CLOSET (FLOOR MOUNT FLUSH VALVE)
KOHLER HIGHLINE WATER CLOSET, K-4405, ADA COMPLIANT 1.6 GPF. PROVIDE WITH K-4731-C SEAT, WAX SEAL, CLOSET BOLT KIT. FOR UNITS NOT REQUIRING ADA COMPLIANCE (COORDINATE W/ARCHITECT), USE KOHLER WELLWORTH K-4406 IF REQUIRED. PROVIDE SLOAN G2 8111-1.6 BATTERY POWERED SENSOR FLUSH VALVE. VERIFY MODEL FLUSH VALVE WITH OVERRIDE BUTTON. FOR UNITS NOT REQUIRING ADA COMPLIANCE, USE KOHLER WELLWORTH K-4406 IF REQUIRED (VERIFY/COORDINATE W/ARCHITECT).

* OR APPROVED EQUAL. SUBMIT ALL ITEMS FOR APPROVAL BY TENANT AND ARCHITECT PRIOR TO ORDERING.
ALL OTHER PLUMBING FIXTURES SHOWN ARE PROVIDED BY THE TENANT AND INSTALLED BY THE PLUMBING CONTRACTOR. SEE PLANS FOR NUMBER AND LOCATION. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SERVED.

PLUMBING FIXTURE SCHEDULE *

MARK	DESCRIPTION	ALTERNATE MANUFACTURER/MODEL	ALTERNATE MANUFACTURER/MODEL
WC	WATER CLOSET (WALL MOUNT) KOHLER KINGSTON WATER CLOSET, K-4325, WHITE, 1.6 GPF, TOP SPUD, INSTALL TO BE ADA COMPLIANT WHERE REQUIRED. PROVIDE COMMERCIAL SEAT, SLOAN OPTIMA PLUS #8111 BATTERY POWERED FLUSHOMETER. VERIFY/PROVIDE PROPER FIXTURE CARRIER. COORDINATE SUPPORT REQUIREMENTS WITH EXISTING CONDITIONS.	AMERICAN STANDARD #3351.660 AFWALL MILLENNIUM W/VALVE.	ZURN #Z5615-BWL WITH #ZTR6200 VALVE.
UR	URINAL KOHLER DEXTER URINAL, K-5016-ET, 3/4" TOP SPUD, ADA COMPLIANT WITH PROPER INSTALL, 0.5 GPF, 2" OUTLET DRAIN, ANSI COMPLIANT. PROVIDE SLOAN ROYAL OPTIMA 186 BATTERY POWERED SENSOR FLUSH VALVE W/MANUAL OVERRIDE, 0.5 GPF, 3/4" IPS SUPPLY. VERIFY/PROVIDE PROPER FIXTURE CARRIER. COORDINATE SUPPORT REQUIREMENTS WITH EXISTING CONDITIONS.	AMERICAN STANDARD #6550.001 ALLBROOK FLOWSE WITH #6063.051.002 VALVE.	ZURN #Z5755-U WITH #ZTR6203 VALVE.
LAV	TRIPLE LAVATORY SONOMASTONE COMMERCIAL CONCRETE ADA TRIPLE LAVATORY WAVE SINK WITH LINEAR SLOT DRAIN. COORDINATE NUMBER OF HOLE REQUIREMENTS W/ARCH. OWNER. PROVIDE SLOAN EAF-250 BATTERY POWERED SENSOR FAUCET. COORDINATE WITH EXISTING CONDITIONS, OWNER, ARCH, AND PROVIDE PROPER MIXING VALVE OR FAUCET MODEL OPTION AS REQUIRED.	CONCRETE WAVE DESIGN SINK WITH AMERICAN STANDARD FAUCET #7055.105.	STOGS CONCRETE DESIGN SINK WITH ZURN FAUCET #Z6950-XL.

* OR APPROVED EQUAL

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BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
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email: ben@bdg-nc.com
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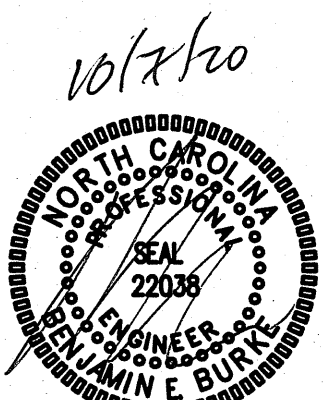
Coastal
Architecture
P.L.L.C.
Architectural
Design
Planning
Interiors



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MARITIME MUSEUM
BATHROOM ROOM REMODEL
BEAUFORT, NORTH CAROLINA



PLUMBING
SPECIFICATIONS

20017

ISSUED: 9/10/2020

DWG BY: DS

CKD BY: BEB

REVISIONS

SHEET NO.

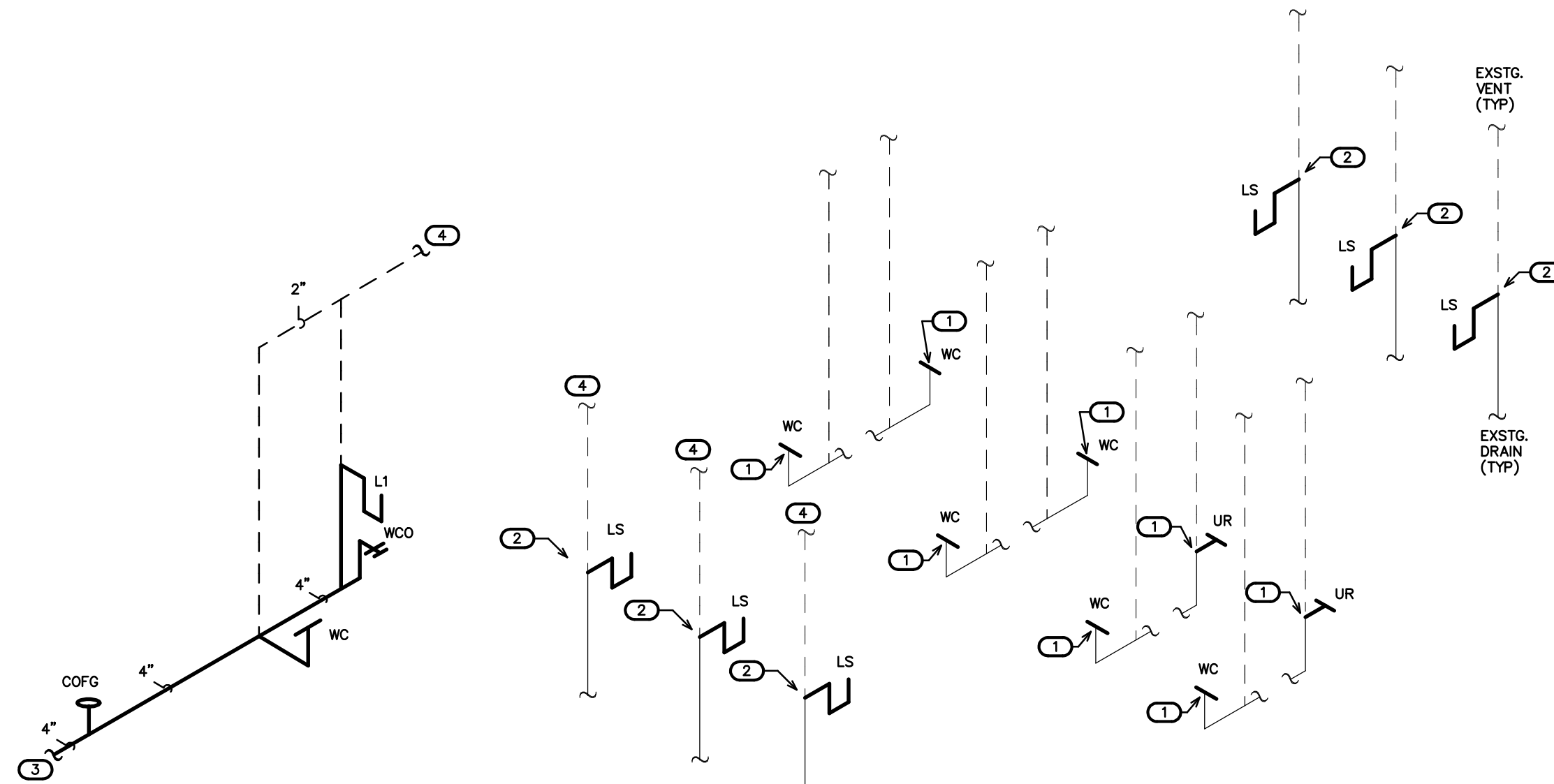
P-1

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

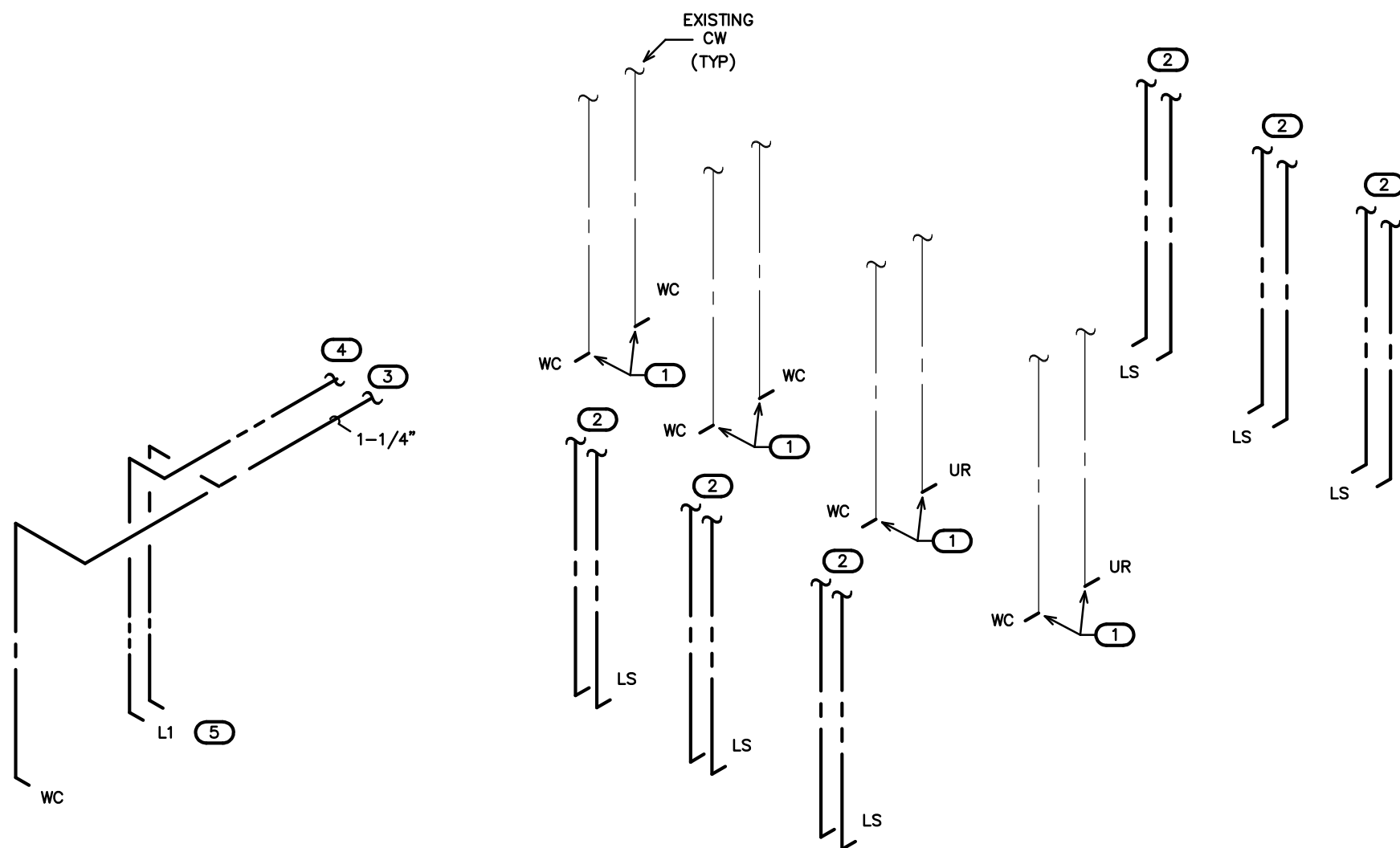
PIPE SIZING SCHEDULE			
FIXTURE TYPE	DRAIN	VENT	CW
(L) LAVATORY	1-1/2"	1-1/4"	1/2"
(LS) LAVATORY STATION	1-1/2"	1-1/4"	1/2"
(UR) URINAL	3"	1-1/4"	3/4"
(WC) FLUSH VALVE WATER CLOSET	3"	1-1/2"	1"

RISER NOTES:

REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.M.



3 DWV RISER
SCALE: NTS



4 WATER RISER
SCALE: NTS

NOTE:
ANY EXISTING INFORMATION SHOWN ON THIS SHEET IS FROM FIELD INVESTIGATION. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.

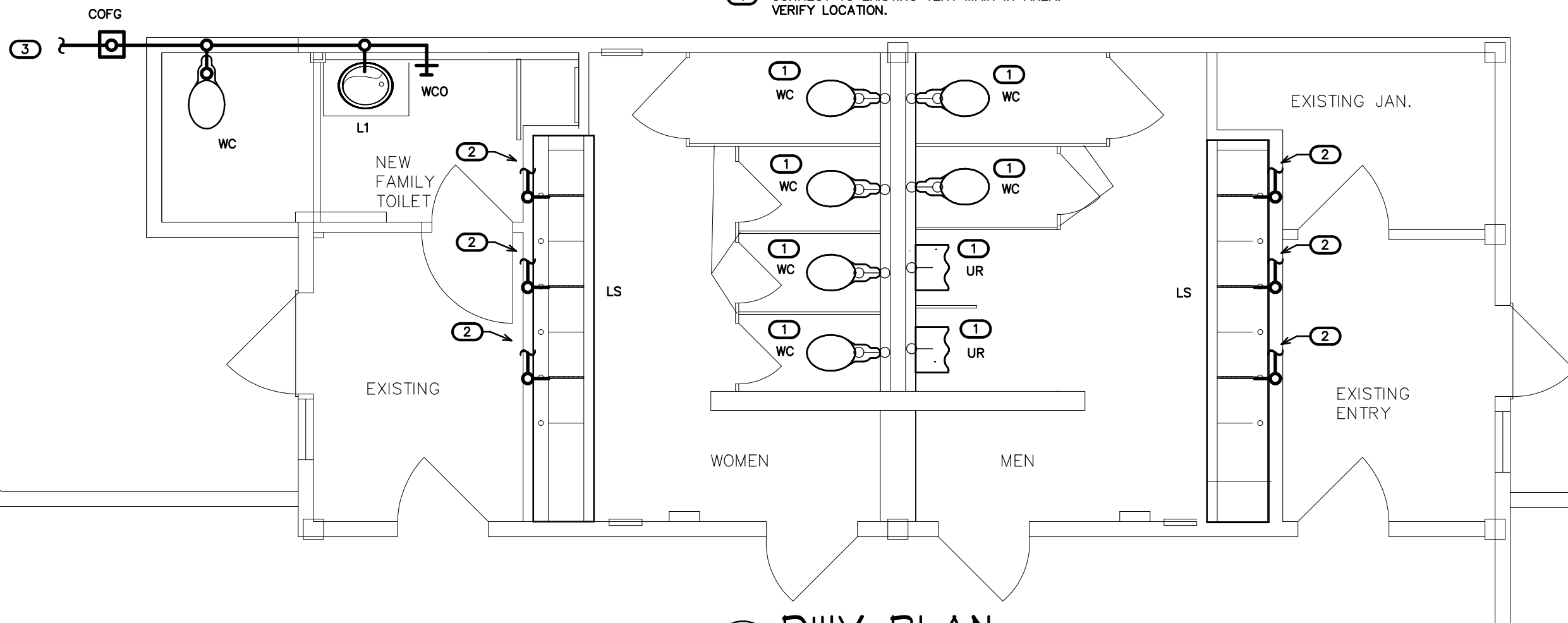
REMOVE AND REPLACE ALL CONCRETE, WALL BOARD, CEILINGS, ETC., AS REQUIRED TO LOCATE EXISTING LINES AND INSTALL NEW LINES. EXISTING DWV/WATER ITEMS AND LINES NOT SHOWN.

THE PLUMBING CONTRACTOR SHALL TRACE ALL EXISTING DRAIN LINES PRIOR TO THE START OF WORK UTILIZING DYE AND/OR CAMERAS IF NECESSARY. PROVIDE AS-BUILT DRAWINGS FOR ENGINEER REVIEW. VERIFY AVAILABLE DEPTH OF EXISTING DRAIN LINES PRIOR TO START OF WORK.

COORDINATE WORK WITH BUILDING OWNER SO AS NOT TO IMPACT OPERATION OF ANY ADJACENT SPACES/LEVELS. NIGHT AND WEEKEND WORK MAY BE REQUIRED.

KEY NOTES FOR DRAWINGS 1, 3/P-2

- 1 REPLACE EXISTING FIXTURE WITH NEW UNIT. CONNECT TO EXISTING DWV AS REQUIRED. SEE PIPE SIZING SCHEDULE FOR MINIMUM LINE SIZES. RE-PIPE TO EXISTING MAINS IF REQUIRED.
- 2 REPLACE EXISTING LAVATORIES (3) WITH NEW TRIPLE LAVATORY STATION (LS). CONNECT TO EXISTING DWV AS REQUIRED. SEE PIPE SIZING SCHEDULE FOR MINIMUM LINE SIZES. RE-PIPE IF REQUIRED TO EXISTING MAINS COORDINATE WITH THE LS UNIT REQUIREMENTS.
- 3 EXTEND TO SEWER MAIN. VERIFY LOCATION, COORDINATE WITH SITE.
- 4 CONNECT TO EXISTING VENT MAIN IN AREA. VERIFY LOCATION.

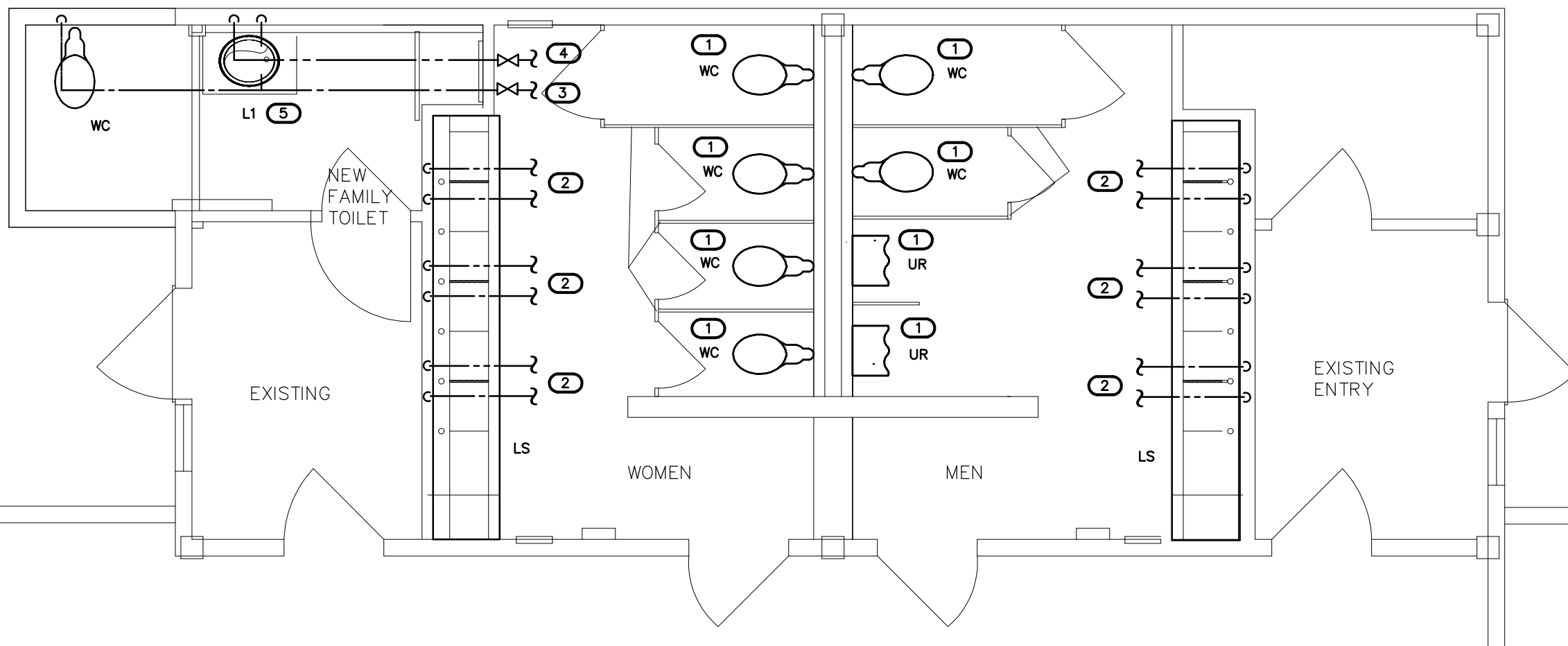


1 DWV PLAN
SCALE: 1/4"=1'-0"

KEY NOTES FOR DRAWINGS 2, 4/P-2

- 1 REPLACE EXISTING FIXTURE WITH NEW UNIT. CONNECT TO EXISTING CW AS REQUIRED. SEE PIPE SIZING SCHEDULE FOR MINIMUM LINE SIZES. RE-PIPE TO EXISTING MAINS IF REQUIRED.
- 2 REPLACE EXISTING LAVATORIES WITH NEW LS. CONNECT TO EXISTING CW/HW AS REQUIRED. SEE PIPE SIZING SCHEDULE FOR MINIMUM LINE SIZES. RE-PIPE TO EXISTING MAINS IF REQUIRED. PROVIDE A SEPARATE TMV (NOT SHOWN) FOR EACH FAUCET OF THE LAVATORY STATION (LS) FOR 110 DEG. F (MAX) HW TO EACH FAUCET. LOCATE THE TMV (NOT SHOWN) IN A PROPER MAINTENANCE ACCESSIBLE AREA BELOW THE FIXTURE, OR AS REQUIRED - VERIFY LOCATION, COORDINATE WITH THE LS UNIT REQUIREMENTS.
- 3 CONNECT TO EXISTING 2" (MIN.) CW MAIN IN AREA. VERIFY LOCATION.
- 4 CONNECT TO EXISTING HW MAIN IN AREA. VERIFY LOCATION.
- 5 PROVIDE TMV FOR L1 FOR 110 DEG. F (MAX) HW TO FAUCET AS NOTED IN KEY NOTE #2.

NOTE:
VERIFY SHUT-OFF VALVE LOCATIONS. COORDINATE LOCATION AND NUMBER W/AHJ. PROVIDE ACCESS DOORS IF REQUIRED.



2 WATER PLAN
SCALE: 1/4"=1'-0"

ENGINEER

BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

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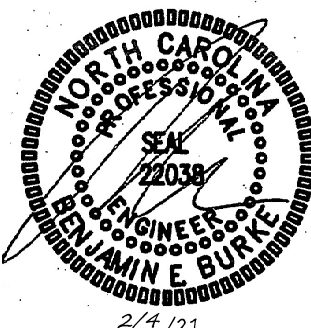


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PLUMBING
PLAN

20017

ISSUED: 9/10/2020

DWG BY: DS

CKD BY: BEB

REVISIONS

SHEET NO.

P-2

DIVISION 15 B - HEATING, VENTILATING AND AIR CONDITIONING

1.1 DESCRIPTION OF THE WORK

- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
- Ductwork.
 - Grilles and diffusers.
- B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply:
- ASHRAE Guide
 - National Electric Code.
 - 2018 NC State Building Code: Mech. Code.
 - The Electrical Specifications for this project.
 - SMACNA HVAC Duct Construction Standards.
 - All local codes and ordinances.
 - ARI rating.
 - 2018 NC State Building Code: Energy Conservation Code.
- C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.
- D. The HVAC Contractor shall be licensed in North Carolina and have all local licenses required for the work.

1.2 INTENT

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

1.3 COORDINATION

- A. Coordinate work with other contractors. Notify Owner of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Owner for a decision before resuming operations.
- B. Locations shown are approximate. The HVAC Contractor shall verify with owner, the placement of equipment, fixtures, outlets, etc. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required.
- C. Changes in duct or piping design caused by obstructions shall be submitted to Engineer in sketch form for study and comment prior to execution. Additional cost will not be allowed for this type of work.

1.4 SHOP DRAWINGS

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

PART 2 - PRODUCTS

2.3 DUCTWORK

- A. Ductwork shall be built in accordance with SMACNA HVAC Duct construction standards. Furnish and install all supply, return, and ventilation ductwork shown, together with splitters, deflectors, dampers, etc. This work shall be constructed of new galvanized prime grade steel sheets. The gauges of metal to be used and the construction and bracing of joints shall be in accordance with the SMACNA recommendations.
- B. Seal all sheet metal joints with fiber impregnated mastic.
- C. Support from building structure on strap hangers not over 8 feet apart.
- D. Use manufactured turning vanes in each elbow where required or where indicated on drawings.
- E. Flexible connectors shall be 3 inches wide, of fireproof material and used to isolate noise between equipment and ductwork on supply and return side of all units.
- F. Round runouts, where used, shall be built in accordance with the above standards, and each runout shall also have manufactured side take off, adjustable quadrant damper at all accessible locations and shall be of Owens Corning INL-25 flexible duct with UL label. Flex duct lengths allowed up to 14 feet. Duct must be supported with sufficient hangers in order to prevent sags. Serpentine routing will not be permitted. Quadrant damper to be 22 gauge easily adjustable manually with exterior handle (similar to H&C Kwik-set) and is not to be mounted in side take-off.

2.4 DUCT INSULATION (LOW PRESSURE)

- A. All insulation, linings, coverings and adhesives shall have a flame spread classification of 25 or less and a smoke developed rating of not more than 50, exposed exterior piping.
- B. All duct insulation shall comply with Section 604, of the N. C. Building Code: Mechanical Code
- C. All supply and return ductwork shall be completely insulated, either internally or externally.
- D. Rectangular ductwork shall be lined with two-inch thick, 1.5 lb. per cubic foot density, duct liner, Armstrong, CSG Ultraliner, Johns Manville or approved equal.
- E. As an alternative to duct liner rectangular duct may be wrapped with Class I - 2", 3/4 lb. density (R-6.5) thick reinforced foil back fiberglass insulation, Owens-Corning Series ED or equal. Tape shall be Kraft reinforced foil tape or equal.
- F. Exhaust air duct does not require insulation, unless otherwise noted on the plans.
- G. Insulation shall be held in place with adhesive and welding pins 16" on center.
- H. Duct dimensions shown on the drawings are Net Inside Dimensions

2.6 ROOF PENETRATIONS

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

PART 3 - EXECUTION

3.2 ELECTRICAL WORK

- A. The electrical contractor shall provide all switches, starters, wire conduit for the air conditioning, heating and ventilation equipment. Control wiring shall be by the heating and air conditioning contractor.
- B. HVAC Contractor is responsible for verifying that power terminals have been properly grounded prior to operating equipment and must find connections to all equipment including control wiring.
- C. All materials and workmanship shall be in accordance with the electrical specifications for the project. All wiring shall be color coded, and as-built wiring diagram prepared showing all connections and colors of wiring and delivered to the Owner.
- D. Furnish certification for acceptance of control wiring from local electrical inspector prior to acceptance.

3.3 CLEAN UP

- A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.
- B. Furnish one box of clean filters, for each size required, at the time of final inspection to the owner.

3.4 OPERATOR'S MANUAL AND DIAGRAM

- A. The HVAC Contractor shall prepare in one copy a manual describing the proper maintenance and operation of the systems. This manual shall not consist of standard factory instructions (although these may be included) but shall be prepared to describe this particular job.
- B. The manual shall be bound, indexed, dated and signed by the HVAC Contractor.
- C. Qualified representative of the HVAC contractor shall meet with the designated representatives of the Owner and the Owner's representative shall be instructed in the proper operation and maintenance of the control system and other systems.

3.5 GUARANTEE

- A. Guarantee all materials and labor included in the HVAC work for a period of one year from date of final acceptance by the owner. In addition, motor compressors shall be a nonprorated five year warranty. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the owner or tenant.
- B. All air flows must be measured and balanced to within 10% of design airflows. All equipment used must have a current certification. Provide two copies of the balance report to the owner at closeout. The HVAC contractor shall return and re-balance to occupant comfort after 90 days from close-out. Provide all balance dampers needed for satisfactory operation regardless if shown on the drawings or not, and shift location of thermostats thermostats if required for occupancy comfort.

GENERAL NOTES - MECHANICAL

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
- ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
- ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
- THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
- THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
- PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
- INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
- INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
- DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
- THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
- PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
- THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.

AIR DISTRIBUTION SCHEDULE

MARK	* MANUFACTURER	MODEL NO.	NECK SIZE	FACE SIZE	MATERIAL	SERVICE	NOTES
A	CARNES	RTDBH	6" X 6"	8" X 6"	STEEL	SUPPLY	DUCT MOUNTED, WHITE.

* OR APPROVED EQUAL

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

EXHAUST SCHEDULE

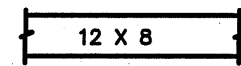
EXHAUST RATE PROVIDED PER TABLE 403.3 NCSBC MECHANICAL CODE.

APPLICATION	CFM
TOILETS	70 CFM/FLUSHING FIXTURE

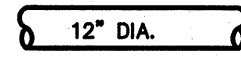
1 FLUSHING FIXTURE X 70 CFM = 70 CFM

EXHAUST PROVIDED BY ONE EXHAUST FANS, MAKE UP AIR BY TRANSFER AIR

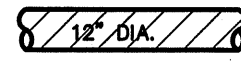
LEGEND - MECHANICAL



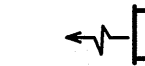
RECTANGULAR DUCTWORK, INSIDE CLEAR DIMENSION INDICATED (WIDTH X HEIGHT)



ROUND GALVANIZED STEEL DUCT
INSIDE CLEAR DIMENSION INDICATED.



DOUBLE WALLED GALVANIZED STEEL SPIRAL DUCT
INSIDE CLEAR DIMENSION INDICATED.



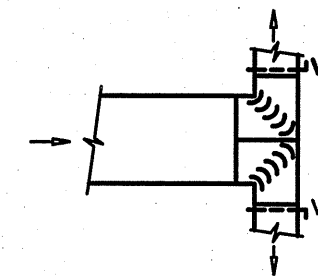
DUCT MOUNTED SUPPLY AIR DIFFUSER



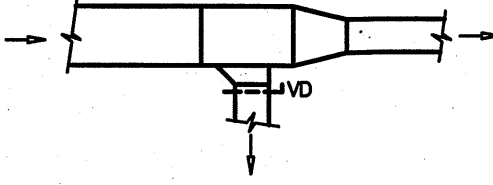
SUPPLY DIFFUSER



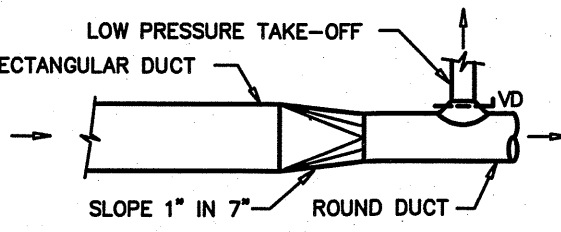
RETURN GRILLE



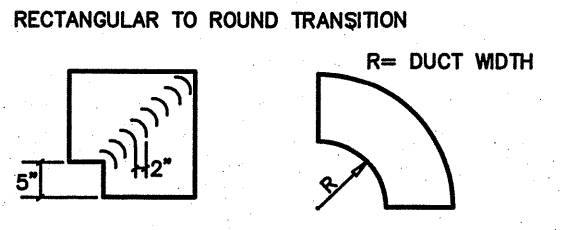
LOW PRESSURE TEE



LOW PRESSURE BRANCH TAKE-OFF



LOW PRESSURE TAKE-OFF
RECTANGULAR DUCT



RECTANGULAR TO ROUND TRANSITION
SLOPE 1" IN 7" ROUND DUCT
R= DUCT WIDTH



SQUARE THROAT ELBOW



FULL RADIUS ELBOW

LOW PRESSURE DUCT ELBOWS

DUCT CONSTRUCTION DETAILS
SCALE: NOT TO SCALE

ENGINEER

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email: ben@bdg-nc.com
Corp. License # C-2652

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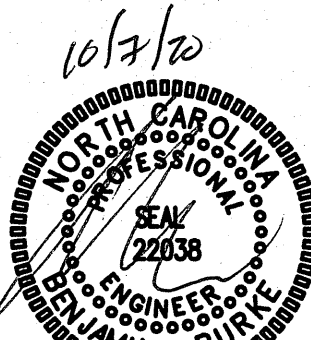
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BATHROOM ROOM REMODEL
BEAUFORT, NORTH CAROLINA**



HVAC SCHEDULES
& SPECIFICATIONS

20017

ISSUED: 10/2/2020

DWG BY: CLS

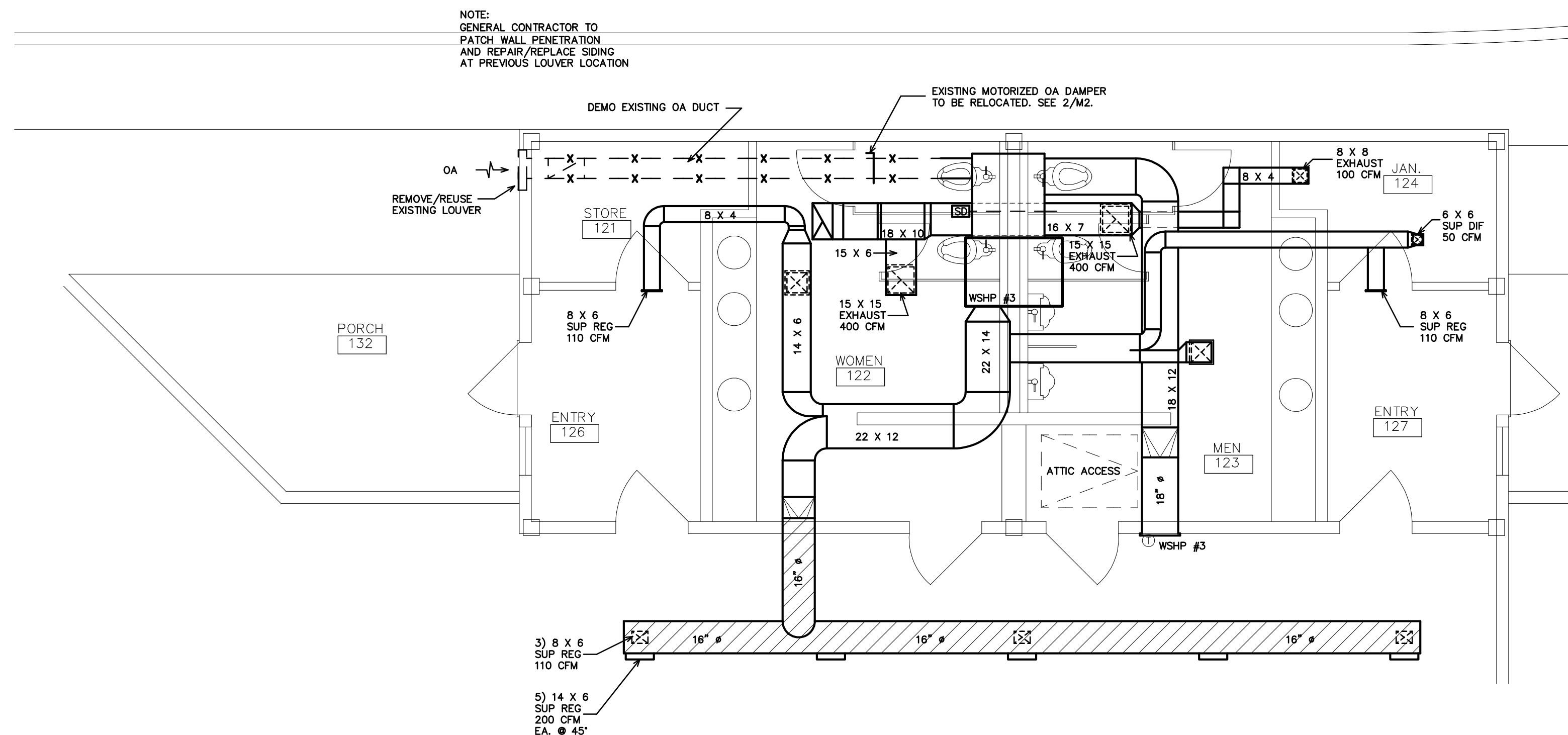
CKD BY: BEB

REVISIONS

SHEET NO.

M-1

MARITIME MUSEUM
BATHROOM ROOM REMODEL
BEAUFORT, NORTH CAROLINA

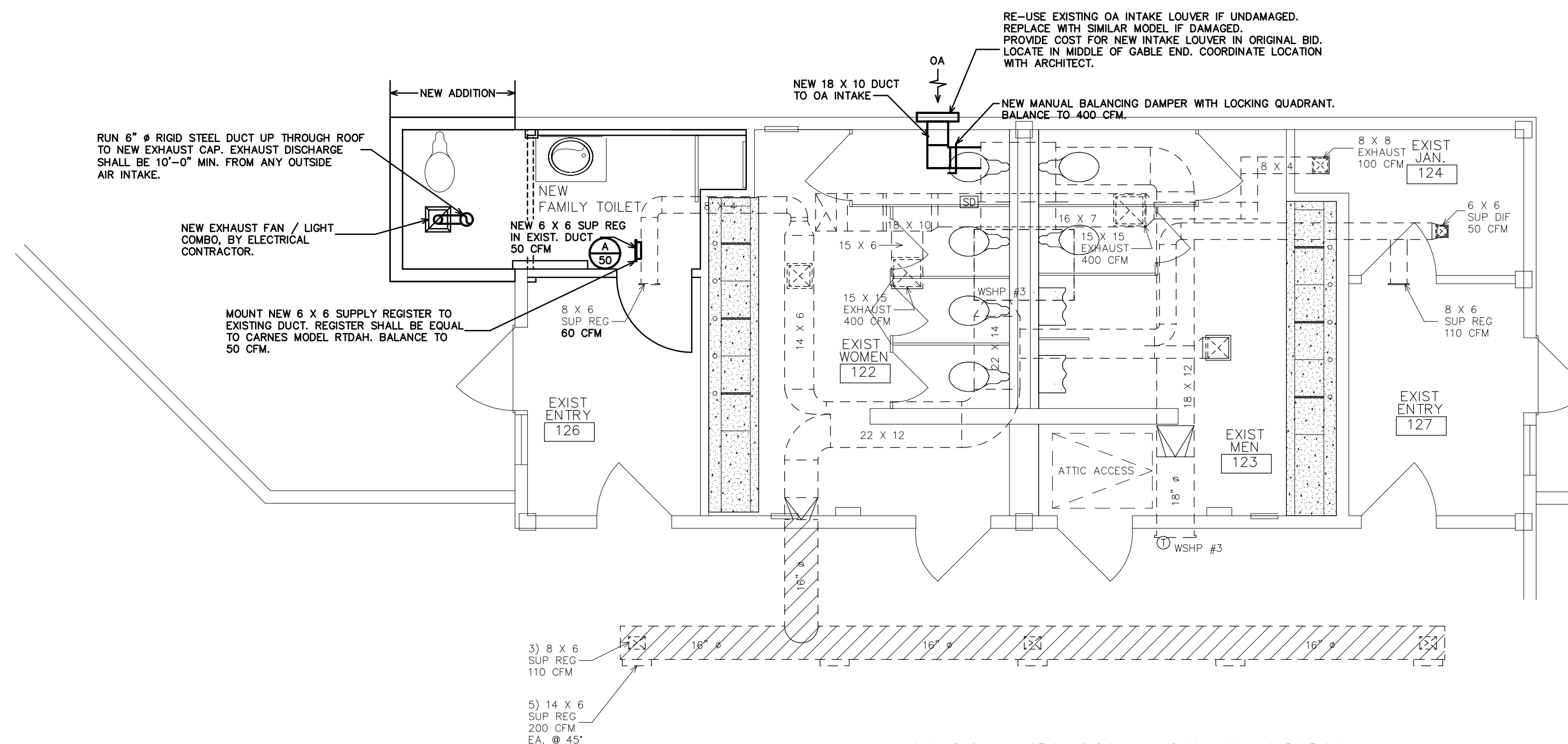


1 EXISTING HVAC PLAN
SCALE: 1/4"=1'-0"

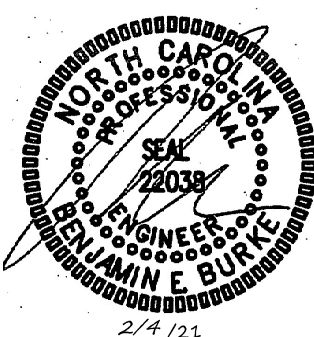
NEW WORK NOTES:

1. ALL EXISTING HVAC SYSTEMS SHALL REMAIN "AS-IS" UNLESS OTHERWISE NOTED.

NOTE:
THE INFORMATION SHOWN ON THIS DRAWING IS FROM PREVIOUS PERMIT DRAWINGS AND FIELD INVESTIGATION.
THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION.
THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER
OF ANY DISCREPANCIES NOTED.



2 HVAC PLAN - NEW WORK
SCALE: 1/4"=1'-0"



HVAC
PLAN

20017

ISSUED: 10/02/2020

DWG BY: CLS / DS

CKD BY: BEB

REVISIONS

SHEET NO.

M-2

DIVISION 16 – ELECTRICAL

PART 1 – GENERAL

1.1 DESCRIPTION OF THE WORK

- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
1. Lighting and power distribution system.
 2. Provide lighting fixtures per light fixture schedule with lamps to match.
 3. Wiring devices, boxes, cover plates, etc.
 4. Source of power for all items of equipment.
 5. Grounding.
 6. Other requirements and/or systems where shown.
- B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct operation.
- C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:
1. The 2017 National Electrical Code.
 2. The National Electrical Safety Code.
 3. Underwriter's Laboratories, Inc., Standards and approved listings or other approved 3rd party listing agency.
 4. Electrical Testing Laboratories standards.
 5. 2018 North Carolina State Building Code.
 6. 2018 North Carolina State Energy Code.
- D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
- E. Local permits are not required. All work must be inspected by the Office of State Construction state electrical inspector and the Engineer of Record. Provide certificate of inspection and approval from the state electrical inspector prior to the final inspection. The electrical contractor is responsible for contacting the state electrical inspector for all required inspections.
- F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

1.2 INTENT

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

1.3 COORDINATION

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

1.4 SHOP DRAWINGS

- A. Shop drawings shall be submitted for panels and service equipment, lighting, wiring devices, and cover plates. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 – PRODUCTS AND MATERIALS

2.1 GENERAL

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

2.2 CONDUCTORS

- A. Conductors shall be color coded, sizes #4 and larger may be color taped on the job. Color coding shall comply with 2017 NEC.
- 208/120V, 3 phase
Phase A= Black
Phase B= Red
Phase C= Blue
Neutral= White
Ground= Green
- 480/277V, 3 phase
Phase A= Brown
Phase B= Orange
Phase C= Yellow
Neutral= Natural Gray
Ground= Green
- B. Conductors shall be manufactured by Dodge, Southwire or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be third party acceptable to NCDOT approved.

C. Conductors shall be spliced and taped as follows:

1. Size #10 and #12, use Ideal "Wing Nuts" or T&B "Piggy" connectors. Connectors shall be rated for 150 degrees C for use in recessed lighting fixtures.
 2. Size #8 and larger shall be solderless screw and screw-clamping type, smoothly covered and shaped with rubber gum type with final cover vinyl plastic electrical type. In lieu of rubber gum and vinyl plastic type, factory fabricated approved preformed insulating covers may be used. All connectors shall be UL approved.
3. No split-bolt type connectors may be used.
- D. All branch wire and connections shall be copper and sized per National Electric Code with a minimum size of #12.
- E. All conductors shall be continuous without splice between junction, outlet, device boxes, etc. No splicing will be permitted in panelboard cabinets, safety switches, etc.

- F. All wiring in mechanical spaces shall be plenum rated.
- G. Provide GFI protection within 6'-0" of any sink.
- H. All multi-wire branch circuits shall comply with 2017 NEC.

2.3 PANELBOARDS, SAFETY SWITCHES

- A. Panelboards shall comply with NEMA Standard PB 1 – Latest Edition and as manufactured by Square D or ITE-Siemens. All panel boards must have copper buses and bolt-in breakers.
- B. Safety switches shall be heavy duty type, size and rating as required for lead service. Safety switches shall be fused or unfused as shown and/or as required. Safety switches serving motor loads shall be horsepower rated for load served.

2.4 WIRING DEVICES

- A. Wiring devices shall be commercial grade by Bryant, Leviton, Cooper or approved equal. With matching cover. Color by Architect.
- B. Wiring devices installed under a Kitchen Hood shall have stainless steel covers.
- C. Wiring devices installed over counters shall comply with ANSI A117.1.

2.7 CONDUIT

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

PART 3 – EXECUTION

3.1 CIRCUIT GROUNDING

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

3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES

- A. Outlets and switches shall be solidly grounded to equipment grounding system with a green colored insulated conductor. Electrical connections shall be continuous from equipment ground bus in panelboard to the hex nut on the convenience outlet or switch.

3.3 MOTORS

- A. All motors shall be connected to conduit system with short length (minimum length 24" and maximum length 36") of flexible liquidtight conduit.

3.4 EQUIPMENT LABELING

- A. Provide permanent penalic plastic name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from.
- Color Coding–
Blue surface with white core– 120/208v equipment
Black surface with white core– 277/480v equipment
Bright red surface with white core– fire alarm systems
Dark red surface with white core– security systems
Green surface with white core– "emergency" systems
Orange surface with white core– telephone systems
Brown surface with white core– data systems
White surface with black core– paging systems
Purple surface with white core– TV systems
- B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.
- C. All empty conduit runs shall be identified and indicated where they terminate.
- D. Provide typewritten directory in each panelboard to clearly identify each circuit, service, etc.

3.5 JUNCTION AND/OR PULL BOXES

- A. Boxes shall be installed where necessary to avoid excessive runs and/or too many bends between outlets.

3.6 PULL WIRE

- A. Leave pull wire in each empty conduit run.

3.7 GROUNDING

- A. All grounding shall be in accordance with Article 250 of the NEC. In addition, the following requirements shall be met:
1. Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
 2. Equipment ground continuity shall be maintained through flexible metal conduit.
 3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
 4. The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
 5. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
 6. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
 7. The raceway system shall not be relied on for ground continuity. A green grounding conductor, properly sized per NEC table 250-122, shall be run in all power raceways.

3.8 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

- A. The trades(s) furnishing equipment will provide disconnect switches, motor starters, and make final equipment connections. ELECTRICAL CONTRACTOR will make line side connections to disconnect switches or motor starters.

3.9 CLEAN UP

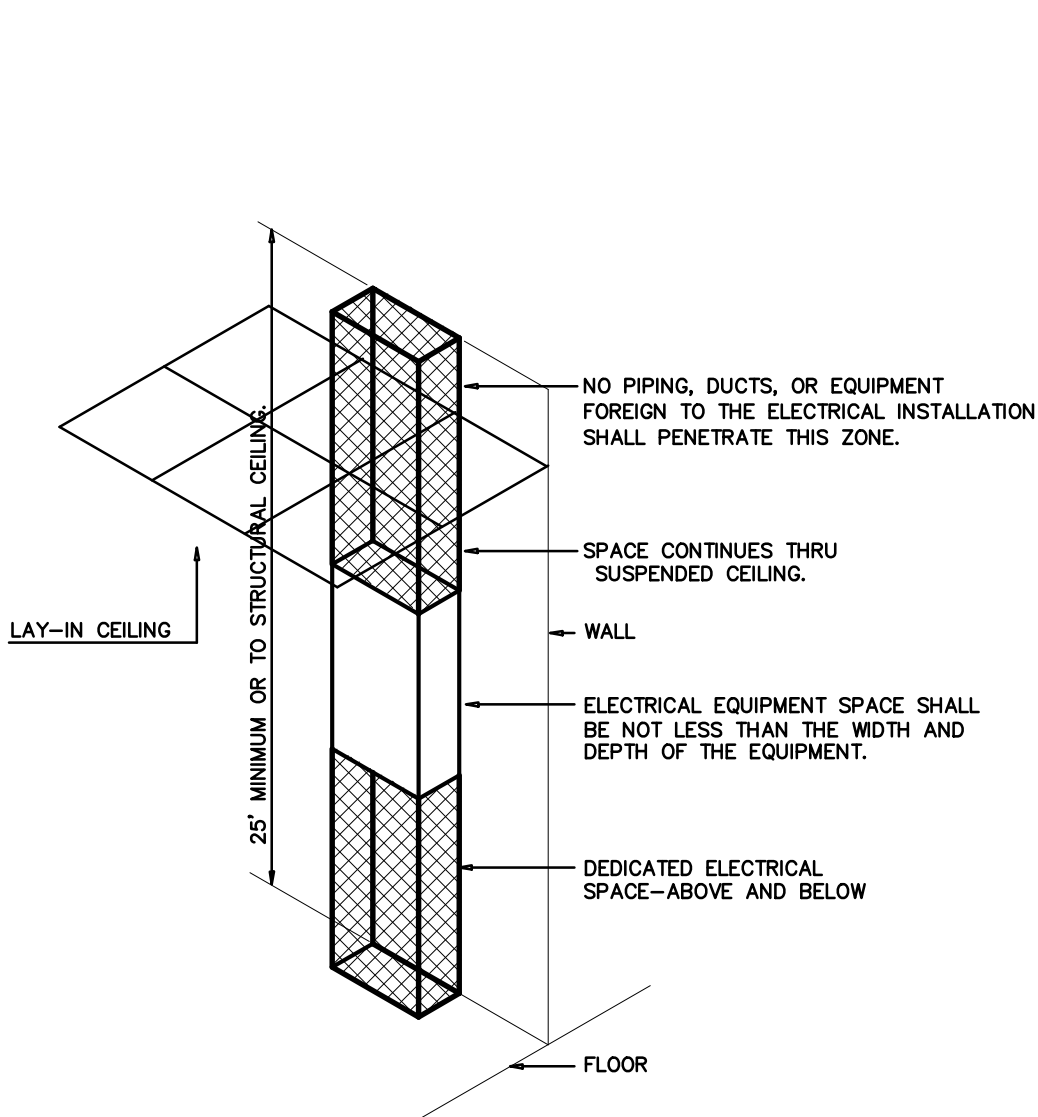
- A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

3.10 GUARANTEE

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

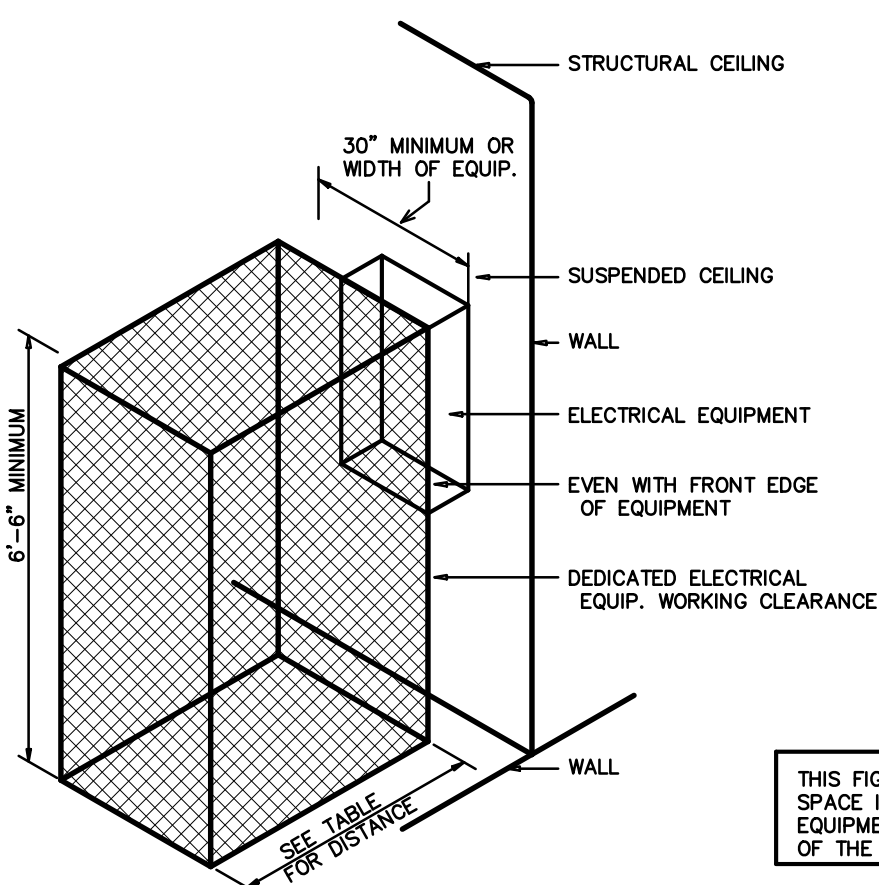
ELECTRICAL LEGEND

- ⊠ X LIGHT FIXTURE: LETTER DENOTES FIXTURE TYPE (REFER TO LIGHTING PLAN AND FIXTURE SCHEDULE).
○ X NL = NIGHT LIGHT (NOT SWITCHED/ALWAYS ON)
- ⊞ U WP/GFI DUPLEX RECEPTACLE – 120V; MOUNT 18" TO CENTER AFF UNLESS NOTED OTHERWISE; "WP" INDICATES WEATHER PROOF, "GFI" INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED.
"U" INDICATES RECEPTACLE WITH (2) USB PORTS.
- ⊞ QUADRAPLEX RECEPTACLE – 120V
- ⊞ FLOOR OR CEILING OUTLET (AS NOTED) – 120V
- ⊞ SPECIAL PURPOSE RECEPTACLE – REFER TO POWER PLAN AND PANEL SCHEDULE
- S LIGHT SWITCH
- S_M SWITCH WITH INTEGRAL PIR/LIS MOTION SENSOR FOR AUTOMATIC SHUT-OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY.
- S_D DIMMABLE LIGHT SWITCH
- ⊞ MOTOR RATED SWITCH
- ⊞ JUNCTION BOX
- ▽ TELE/DATA OUTLET – PROVIDE JUNCTION BOX WITH CONDUIT BACK TO MTP. PROVIDE (1) TELEPHONE JACK AND (1) CAT 5 DATA JACK
- ⚡ SINGLE-POLE HOMERUN TO PANELBOARD
- ⚡ TWO-POLE OR 3-POLE HOMERUN TO PANELBOARD
- EXIT EXIT LIGHT
- ⊞ EMERGENCY EGRESS FIXTURE
- ⊞ PC PHOTOCELL (LED COMPLIANT)
- BRANCH CIRCUIT WIRING
- SWITCH LEG
- ⊞ GROUND CONNECTION
- ⊞ PANEL A DISTRIBUTION PANELBOARD
- ⊞ DISCONNECTING MEANS AS REQUIRED BY CODE



ELECTRICAL EQUIPMENT DEDICATED SPACE
PER ARTICLE 110.26.F.1 OF N.E.C.

1 DEDICATED SPACE
SCALE: NTS



ELECTRICAL EQUIPMENT WORKING CLEARANCE
PER ARTICLE 110-26 OF N.E.C.

VOLTAGE TO GROUND NOMINAL	WORKING CLEARANCES		
	MIN. CLEAR DISTANCE IN FEET		
0-150	CONDITION: 1	2	3
	3	3	3
151-600	CONDITION: 1	2	3
	3	3-1/2	4

THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110-16 OF THE N.E.C.

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDING PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDING PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

2 ELECTRICAL CLEARANCES
SCALE: NTS

ENGINEER

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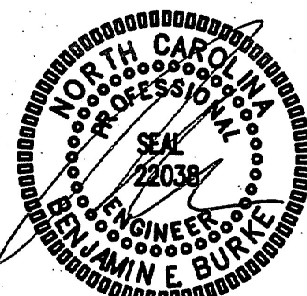
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MARITIME MUSEUM
BATHROOM ROOM REMODEL
BEAUFORT, NORTH CAROLINA



SCHEDULES AND
RISERS

20017

ISSUED: 9/10/2020

DWG BY: DS

CKD BY: BEB

REVISIONS

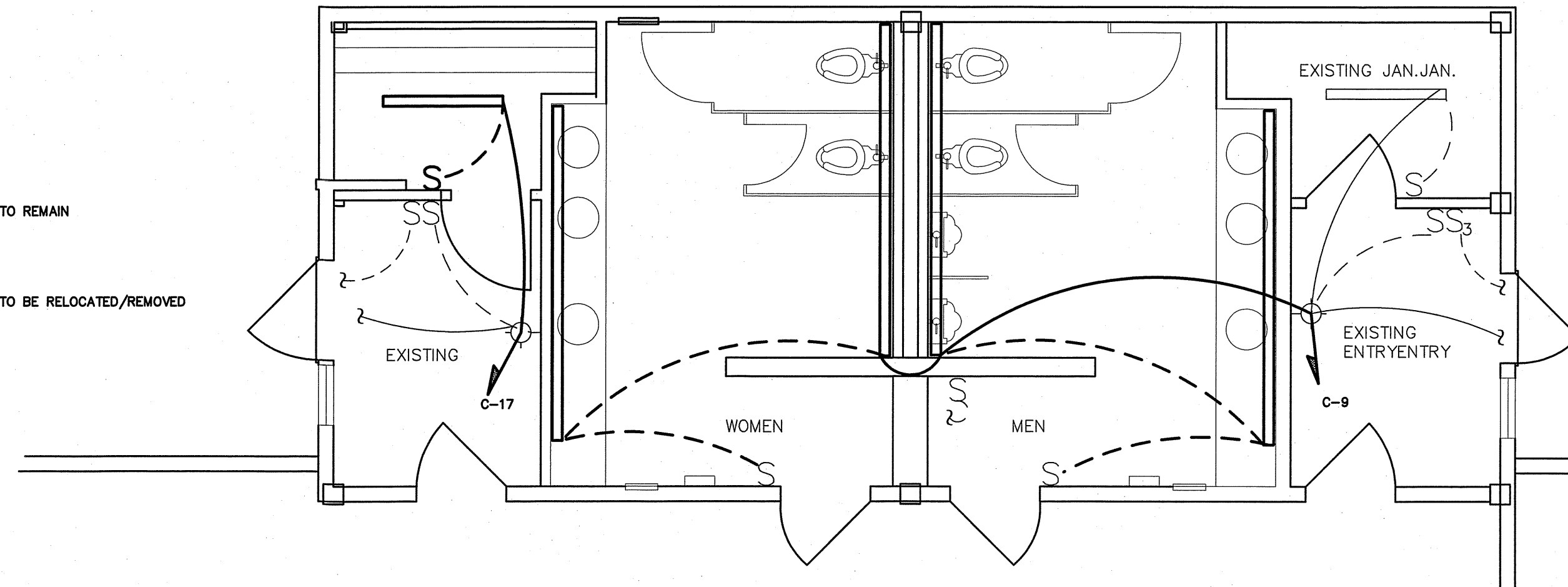
2/4/21 TOWN COMMENTS

SHEET NO.

E-1

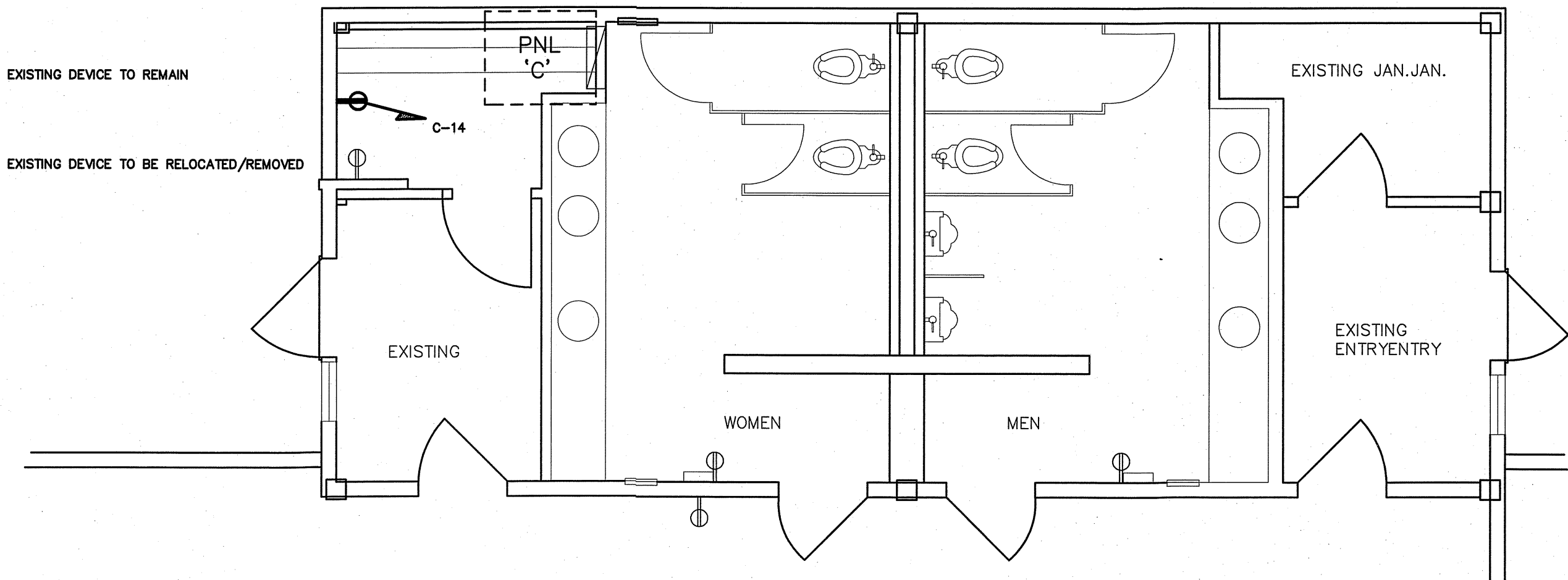
NOTE:
THE INFORMATION SHOWN ON THIS DRAWING IS FROM PREVIOUS PERMIT DRAWINGS.
THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION.
THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER
OF ANY DISCREPANCIES NOTED.

EXISTING FIXTURE TO REMAIN
EXISTING FIXTURE TO BE RELOCATED/REMOVED



1
E-2
EXISTING LIGHTING PLAN
SCALE: 1/4"=1'-0"

EXISTING DEVICE TO REMAIN
EXISTING DEVICE TO BE RELOCATED/REMOVED



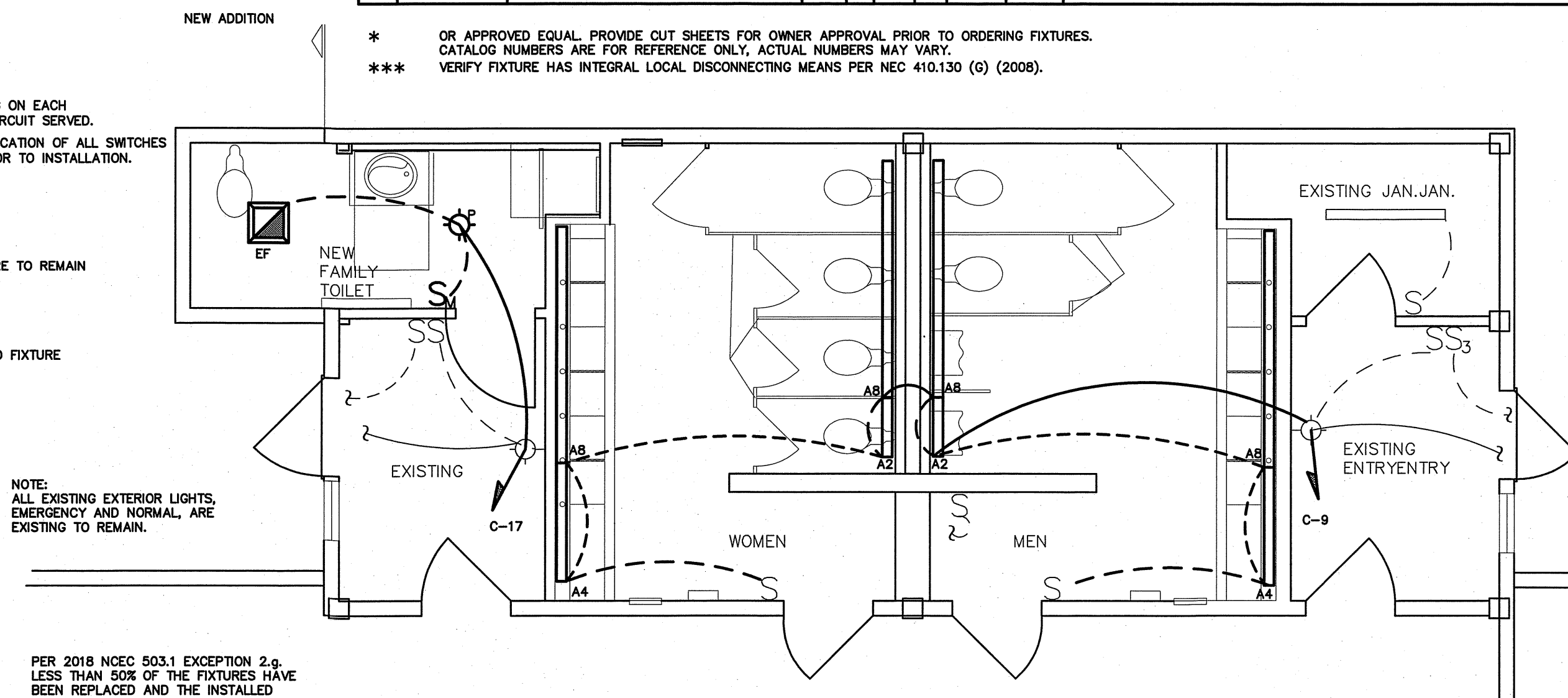
3
E-2
EXISTING POWER PLAN
SCALE: 1/4"=1'-0"

LIGHTING SCHEDULE *									
MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS NO. TYPE	BALLAST TYPE	W/ FIXTURE	REMARKS		
A2	COLUMBIA	LCL2-35ML-EU	120	- LED -	-	24	2' WALL MOUNT LED STRIP FIXTURE	***	*
A4	COLUMBIA	LCL4-35ML-EU	120	- LED -	-	42	4' WALL MOUNT LED STRIP FIXTURE	***	*
A8	COLUMBIA	LCL8-35ML-EU	120	- LED -	-	84	8' WALL MOUNT LED STRIP FIXTURE	***	*
P	CHOSEN BY OWNER/ARCH		120	- LED -	-	80	DECORATIVE LED PENDANT (\$350 ALLOWANCE EA.)	***	*
EF	UTILITECH	7115-03	120	- LED -	-	130	LED LIGHT/EXHAUST FAN COMBO FIXTURE	***	*

* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES.
CATALOG NUMBERS ARE FOR REFERENCE ONLY. ACTUAL NUMBERS MAY VARY.
*** VERIFY FIXTURE HAS INTEGRAL LOCAL DISCONNECTING MEANS PER NEC 410.130 (G) (2008).

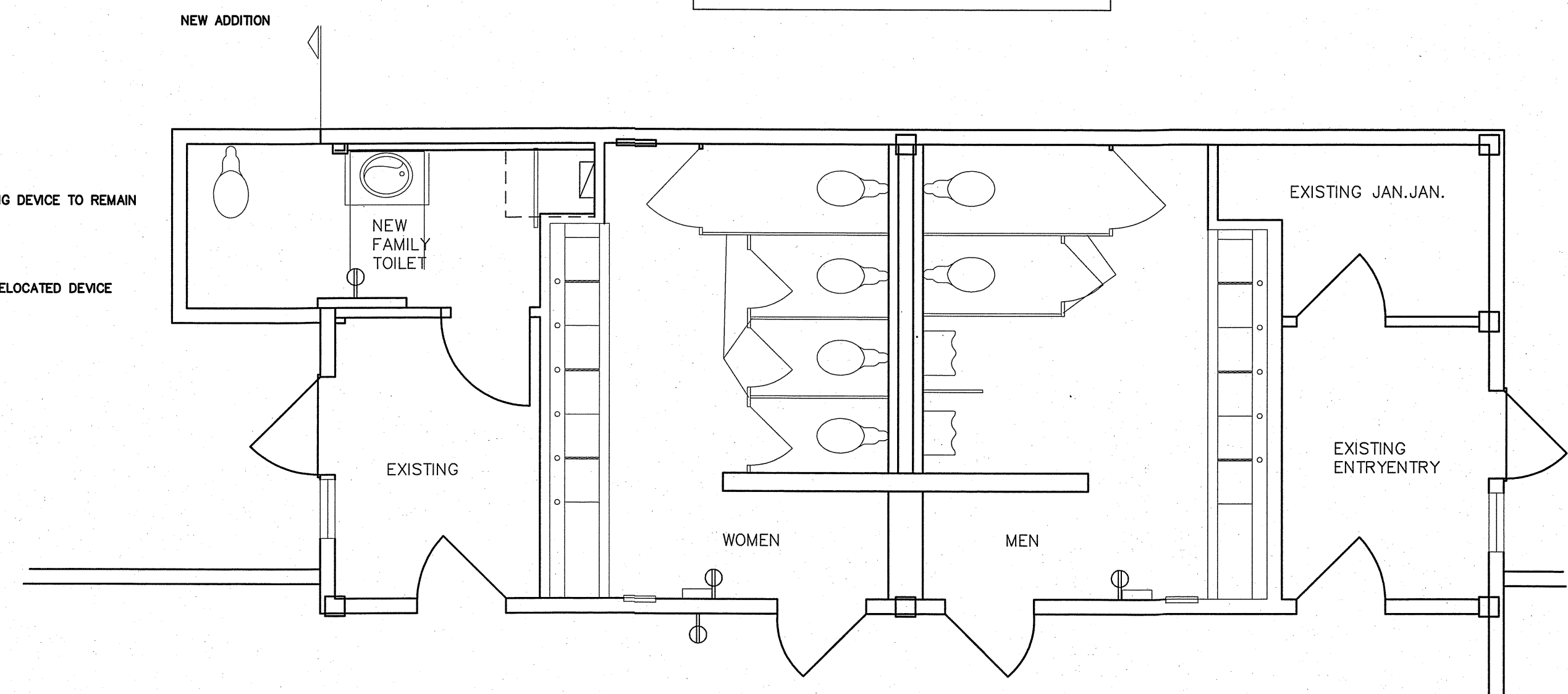
NOTE:
PROVIDE LABELING ON EACH
SWITCH NOTING CIRCUIT SERVED.
VERIFY HEIGHT/LOCATION OF ALL SWITCHES
AND DEVICES PRIOR TO INSTALLATION.

EXISTING FIXTURE TO REMAIN
NEW/RELOCATED FIXTURE



2
E-2
REVISED LIGHTING PLAN
SCALE: 1/4"=1'-0"

EXISTING DEVICE TO REMAIN
NEW/RELOCATED DEVICE

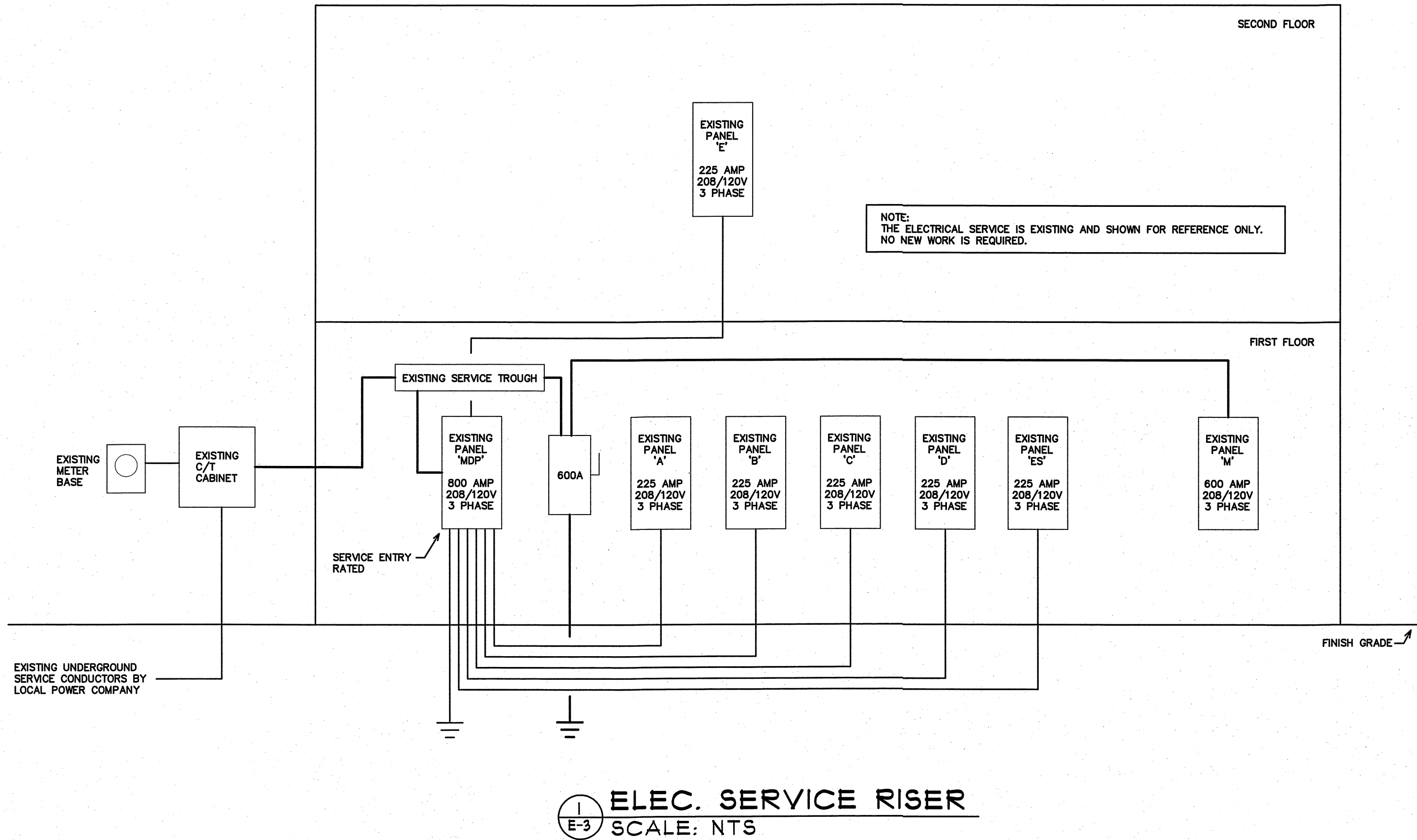


4
E-2
REVISED POWER PLAN
SCALE: 1/4"=1'-0"

CIRCUIT SUMMARY		
CIRCUIT	EXISTING WATTAGE	REVISED WATTAGE
C-9	960	468
C-14	180	-
C-17	70	210
TOTALS	1210	678

THE PANEL LOADS HAVE BEEN MAINTAINED OR REDUCED. PANEL SCHEDULES ARE NOT REQUIRED

Maritime Museum Toilet Reno. E-3		MAKE: WESTINGHOUSE		RATING: 208/120V 3 PHASE 4 WIRE				MLO MAIN CIRCUIT BREAKER			
EXISTING PANEL- 'C'		TYPE: VERIFY		MOUNTING: ELUSH				EQUIPMENT GROUND BUS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
				MINIMUM AIC: VERIFY				SERVICE ENTRY RATED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
LOAD SERVICE		CKT BRKR	WATTS PER PHASE			CKT NO	WATTS PER PHASE			CKT BRKR	LOAD SERVICE
			A	B	C		A	B	C		
LTS-120	20A	----	----	----	1	----	----	----	20A	REC-118,120	
LTS-120	20A	----	----	----	3	----	----	----	20A	REC-118,120	
LTS-125	20A	----	----	----	5	----	----	----	20A	REC-118, EWC	
LTS-125	20A	----	----	----	7	----	----	----	20A	REC-DOOR SECURITY	
LTS-122,123	20A	----	----	----	9	----	----	----	20A	REC-AMPLIFIER	
LTS-125	20A	----	----	----	11	----	----	----	20A	REC-122,123	
LTS-125	20A	----	----	----	13	----	----	----	20A	REC-121	
REC-MECH RM & DECK	20A	----	----	----	15	----	----	----	40A	WSHP #3	
LTS-EMERGENCY/EXT	20A	----	----	----	17	----	----	----	208V		
SPARE	20A	----	----	----	19	----	----	----	3PH		
WATER HEATER MECH 207	30A	----	----	----	21	----	----	----	20A	REC-MTP	
208V 1PH					23	----	----	----		SPACE	
SPARE	20A	----	----	----	25	----	----	----		SPACE	
SPACE					27	----	----	----		SPACE	
SPACE					29	----	----	----		SPACE	
SPACE					31	----	----	----		SPACE	
SPACE					33	----	----	----		SPACE	
SPACE					35	----	----	----		SPACE	
SPACE					37	----	----	----		SPACE	
SPACE					39	----	----	----		SPACE	
SPACE					41	----	----	----		SPACE	
SPACE					42	----	----	----		SPACE	
NOTES		SUB-TOTALS 'B'				225A BUS		SUB-TOTALS 'A'			
						225A LUGS		SUB-TOTALS 'B'			
						225A FEED		GRAND TOTAL			
						VERIFY SIZE		AMPS/PHASE		TOTAL CONNECTED LOAD	



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SCHEDULES AND
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20017

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CKD BY: BEB

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