

2012 APPENDIX B Building Code Summary FOR ALL COMMERCIAL PROJECTS

(Includes: New Construction, Upfits, Renovations & Additions)
(Except 1 & 2-Family Dwellings & Townhouses)
(Reproduce the following data on the building plans 1 or 2)

a. PROJECT INFORMATION

Name of Project: SHAWTOWN SCHOOL RENOVATION
 Address: 695 SHAWTOWN ROAD, LILLINGTON, NC ZIP CODE 28215
 Proposed Use: COMMUNITY RECREATION AND OFFICE BUILDING
 Owner/Authorized Agent: CHRIS JOHNSON, Phone # 901-984-4173, E-Mail cjohnson@hamett.org
 Owned By: City/County Private State
 Code Enforcement Jurisdiction: City County HARNETT State

b. PROJECT SUMMARY/ALTERNATE MEANS OF COMPLIANCE

Building description: THE PROJECT IS A RENOVATION OF AN EXISTING SCHOOL BUILDING FOR THE CHANGE OF USE FROM A SCHOOL TO A COMMUNITY RECREATION AND CLASSROOM BUILDING. THE RENOVATION INCLUDES INTERIOR IMPROVEMENTS AND THE ADDITION OF HANDICAP ACCESSIBLE PARKING AND ENTRANCE RAMPS.

Scope of work details:
 Does This Project have Air Rights, Easements, an Assumed or Deeded Property Line, No Build Easements of Other Circumstances Similar to the Aforementioned? Yes No
 If Yes, Provide a Copy of Official Documents.
 Renovation Projects only: If you are using the NC Existing Building Code or NFPA 101 as an alternative for Code Compliance please schedule a preliminary review before submitting your Project for review. Notes for Plans Examiner and Inspectors: Please reproduce the evaluation form on the plans
 If applicable to your project: Alternative Means of Compliance/ Engineering Judgment: (Approval needed from the Code Administrator is required before submitting: NA)

Check if applicable to your project:
 Industrial Equipment with declaration document attached see NA
 RTAP (Revisions To Approved Plans) RTAP (Revisions to approved plans.)

c. DESIGN PROFESSIONAL INFORMATION:

LEAD DESIGN PROFESSIONAL: BRIAN ELLINGTON

DESIGNER	FIRM	NAME	LICENSE#	PHONE#	E-MAIL
Arch	ELLINGTON DESIGN GROUP PLLC	BRIAN ELLINGTON	10071	(980) 425-4403	edg.btc@hotmail.com
Civil	NA	()	()	()	()
Elect	C2 ENGINEERING SOLUTIONS	RYAN CAYA	32770	(704) 266-0942	ryan@c2e.solutions
F/Alarm	NA	()	()	()	()
Plumb	C2 ENGINEERING SOLUTIONS	JEFFREY CHRISTIAN	28931	(704) 266-0942	jeffrey@c2e.solutions
Mech	C2 ENGINEERING SOLUTIONS	JEFFREY CHRISTIAN	28931	(704) 266-0942	jeffrey@c2e.solutions
Sprinkler- Standpipe	NA	()	()	()	()
Retaining Walls >5 High	BRITT, PETERS & ASSOCIATES	EUGENE BRIAN TURNER JR.	43956	(980) 999-6130	btuner@brittpeters.com
Other	NA	()	()	()	()

d. TYPE OF WORK BEING PERFORMED:

New Construction (A project from the site work through the completion of work required for tenancy occupancy) This Includes Shell Buildings
 Addition (An Existing Building that is Adding Heated or Unheated Space. This could be an addition to the footprint or a vertical expansion)
 Upfit: (First Time Interior Completion.)
 (Upfit- the First Time Interior Completion of a virgin (never occupied) shell space in a newly constructed building. The applicant must provide a copy of the approved shell.)
 Alteration (Previously Occupied Space. This Includes Change of Use)

e. CODE DATA - NCBC -- (see section f. for NC Rehab Code or NC Existing Building Code)

Building Code: 2012 North Carolina State Building Code (NCBC)
 Check all that apply: New building Shell Building
 First time interior completion (Upfit) Addition
 Existing Building: (for upfits or additions)
 Year of Construction 1956 Previous Use EDUCATIONAL

f. 2012 REHAB Code (valid until March 2018) or NC Existing Building Code

2012 NC REHAB Code Information: Scope of work/ work area must be listed and delineated on the plans.
 Check all that apply: Repair Renovation Alteration Reconstruction Change of use Addition
 Justifications for using the REHAB code: NA
 2015 NC EXISTING BUILDING CODE (NCBC):
 Check all that apply: Repair Alteration Level 1 Alteration Level 2 Alteration Level 3
 Change of Occupancy Addition

Alteration/Renovations projects: Please see Section 410.7 of the NC Existing Building Code for Accessibility for Existing Buildings. A letter from the designer will be required to be reproduced on the plans to verify how compliance will be achieved. This can be placed on the plans after the Appendix B.

Existing Building Data: (for NC Rehab or NC Existing Building Code)
 Last known legal occupancy use EDUCATIONAL Historic Property: Yes No
 Original Building Construction Date: 1956 Date of Preliminary Meeting NA
 Reviewers Notes for Field Inspector: NA

Per Section 410.7, Exception #1, costs of providing the accessible route are not required to exceed (20%) of the costs of alterations affecting the area of primary function.

a. ESTIMATED COST OF ALTERATIONS TO AREA OF PRIMARY FUNCTION: 200,000

a. MAXIMUM REQUIRED COST OF IMPROVEMENTS TO ACCESSIBLE ROUTE (20% OF LINE "A" ABOVE): 40,000

ACCESSIBLE ROUTE EXPENDITURE LOG (Example)		
DESCRIPTION OF IMPROVEMENTS TO ACCESSIBLE ROUTE TO THE PRIMARY FUNCTION AREA	DRAWING OR DETAIL REFERENCE	ESTIMATED COST (\$) PER IMPROVEMENT
IMPROVEMENTS TO ACCESSIBLE ROUTE: INSTALLATION OF AN ELEVATOR	NA	NA
TOTAL COST (\$) OF COMBINED IMPROVEMENTS TO ACCESSIBLE ROUTE	NA	NA
ADDITIONAL NOTES/EXPLANATION:		

g. BASIC BUILDING DATA

Construction Type: (Table 601) I-A II-A III-A IV-HT V-A
 I-B II-B III-B V-B
 Sprinklers: (Section 903) No PARTIAL Yes NFPA 13 NFPA 13R NFPA 13D
 Standpipes: (Section 905) No Yes Class: I II III Wet Dry FNPA 14-47
 Fire District: No Yes (Primary) (Appendix D)
 Flood Hazard Area: (Appendix G) No Yes
 Building Height: Feet 18± (Table 503) Stories: 1
 Gross Building Area:
 FLOOR EXISTING (SQ. FT.) NEW (SqFt) SUB-TOTAL
 5th Floor
 4th Floor
 3rd Floor
 2nd Floor
 Mezzanine
 1st Floor 21,860 N/A 21,860
 Basement
 TOTAL 21,860 N/A 21,860

h. ALLOWABLE AREA /OCCUPANCY CLASSIFICATION

Occupancy: (Chapter 3)
 Assembly(303) A-1 A-2 A-3 A-4 A-5
 Business(304) B
 Educational (305) E
 Factory (306) F-1 Moderate F-2 Low
 Hazardous(307) H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
 Institutional (308) I-1 I-2 I-3 I-4
 I-3 Condition 1 2 3 4 5
 Mercantile (309) M
 Residential (310) R-1 R-2 R-3 R-4
 Storage (311) S-1 Moderate S-2 Low High-piled
 Parking Garage Open Enclosed Repair Garage
 Utility & Misc U

Accessory Occupancies: (508) If Applicable
 Assembly A-1 A-2 A-3 A-4 A-5
 Business B
 Educational E
 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 3 4 5
 Mercantile M
 Residential R-1 R-2 R-3 R-4
 Storage S-1 Moderate S-2 Low High-piled
 Parking Garage Open Enclosed Repair Garage
 Utility & Misc U

INCIDENTAL USES: If applicable- areas with additional requirements (Table 508.2.5)
 Furnace Room Where ANY Piece of Equipment is over 400,000 BTU per Hour Input.
 Rooms w/ Boilers Where the Largest Piece of Equipment is over 15 psi and 10 HP.
 Refrigerant Machine Room.
 Hydrogen Cutoff Rooms, not Classified as Group H.
 Incinerator Rooms.
 Paint Shops, not Classified as Group H, Located in Occupancies Other than Group F.
 Laboratories & Vocational Shops, not Classified as Group H, Located in a Group E or I-2 Occupancy.
 Laundry Rooms over 100 Square Feet.
 Group I-3 Cells Equipped w/ Padded Surfaces.
 Group I-2 Waste & Linen Collection Rooms.
 Waste & Linen Collection Rooms over 100 Square Feet.
 Stationary Storage Battery Systems having a Liquid Electrolyte Capacity of more than 50 Gallons, or a Lithium Capacity of 1,000 LBS Used for Facility Standby Power, Emergency Power or Uninterrupted Power Supplies.
 Rooms Containing Fire Pumps Rooms Containing Life-Safety Generator Rooms Containing Primary Transformers
 Group I-2 Storage Rooms over 100 Square Feet.
 Group I-2 Commercial Kitchens.
 Group I-2 Laundries Equal to or Less Than 100 Square Feet.
 Group I-2 Rooms or Spaces that Contain Fuel-Fired Heating Equipment.

Special Uses: 402 403 404 405 406 407 408 409 410 411 412 413
 414 415 416 417 418 419 420 421 422 423 424 425
 426 427

Special Provisions: 509.2 509.3 509.4 509.5 509.6 509.7 509.8 509.9

Mixed Occupancy/Use: (506.5) No Yes Separation: 2 IHR and 1HR

Incidental Use Separation (508.2.5)
 This separation is not exempt as a Non-Separate Use (see exceptions).
 Non-Separate Use (508.3)
 The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
 Separated use (508.4) - See below for area calculations.
 For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

$$2,674 + \frac{1,634}{45,500} + \frac{17,552}{40,250} = 0.71 \leq 1.00$$

STORY NO	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.5 AREA	(C) AREA FOR FRONTAGE INCREASE ¹	(D) AREA FOR SPRINKLER INCREASE ²	(E) ALLOWABLE AREA OR UNLIMITED ³	(F) MAXIMUM BUILDING AREA ⁴
FIRST	A-3 - ASSEMBLY	2,674	9,500	7,125	N/A	13,625	13,625
FIRST	S-2 - STORAGE	1,634	26,000	19,500	N/A	45,500	45,500
FIRST	B - BUSINESS	17,552	23,000	17,250	N/A	40,250	40,250

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 = $784 \times (F)$
 b. Total Building Perimeter = $784 (P)$
 c. Ratio $(F/P) = 1.0$ (F/P)
 d. $W =$ Minimum width of public way = >30 (W)
 e. Percent of frontage increase $I_f = 100 (F/P - 0.25) \times W/30 = 0.75$ (%)

² The sprinkler increase per Section 506.3 is as follows:
 a. Multi-story building $I_s = 200$ percent
 b. Single-story building $I_s = 300$ percent

³ Unlimited area applicable under conditions of Section 507
⁴ Maximum Building Area=Total number of stories in the building x E (506.4).
⁵ The Maximum area of open parking garages must comply with 406.3.5.
 The Maximum area of air traffic control towers must comply with 412.1.2.

i. ALLOWABLE HEIGHT (Chapter 5) -- (Req'd for Additions, New Construction)

Type of Construction	ALLOWABLE HEIGHT (TABLE 503)		INCREASE FOR SPRINKLERS		SHOWN ON PLANS		CODE REFERENCE
	Type	II-B	Type	II-B	Type	II-B	
Building Height in Feet	Feet	55	Feet = H + 20' =	NA	Feet	18 ±	503
Building Height in Stories	Stories	2	Stories + 1 =	NA	Stories	1	503

j. Fire Protection Requirements (Chapter 7) -- (Req'd Information for All Projects)

Please check our Plan Submittal Guidelines if a Life Safety Plan is Required for your project.

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING**		DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
		REQUIRED	PROVIDED (W/REDUCTION)				
Structural frame, including columns, girders, trusses	0	0	0				
Bearing walls (See Section 601-602 if Rated)							
Exterior							
North	>30'	0	0				
East	>30'	0	0				
West	>30'	0	0				
South	>30'	0	0				
Interior	0	0	0				
Nonbearing Walls & Partitions (See Section 601-602 if Rated)							
Exterior							
North	>30'	0	0				
East	>30'	0	0				
West	>30'	0	0				
South	>30'	0	0				
Interior walls & partitions	0	0	0				
Floor Construction including Supporting Beams & Joists	0	0	0				
Roof Construction including Supporting Beams & Joists	0	0	0				
Exit Passageway	NA	NA	NA				
Shaft enclosures	NA	NA	NA				
Corridor Separation	1 IHR	1 IHR					
Occupancy Separation	1&2 IHR	1&2 IHR					
Party/Fire Wall Separation	NA	NA					
Smoke Barrier Separation	NA	NA					
Tenant Separation	NA	NA					
Incidental use Separation	NA	NA					

k. Percentage of Wall Openings - (New Construction, Addition & Change of Use)

FIRE SEPARATION DISTANCE (ft) FROM PROPERTY LINE	DEGREE OF OPENINGS PROTECTION (Table 705.6)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
30 FT OR GREATER	UP, NS	NO LIMIT	N/A

*THE OPENING IN THE EXTERIOR WALLS ARE EXISTING CONDITIONS.

l. WALL LEGENDS - (Required for All Projects)

CHECK IF THE FOLLOWING ARE PRESENT AND INDICATED BY A WALL LEGEND ON ALL PLANS
 Fire Walls 706 Fire Barriers 707 Shaft Enclosure 708 Fire Partitions 709
 Smoke Barriers 710 Smoke Partitions 711 No Rated Walls are Present

m. LIFE SAFETY SYSTEMS - (Exist or New Systems) - (Req'd for All Projects)

Emergency lighting: (S1006) No Yes (EXISTING FIRE ALARM AND SMOKE DETECTION ARE NOT REQ.)
 Exit Signs: (S1011) No Yes
 Fire Alarm: (S907, NFPA 72-07) No Yes
 Smoke Detection Systems: (S907) No Yes Partial
 Panic Hardware: (S1008.1.10) No Yes
 Life safety systems generator: (S2702.2) No Yes

n. Life Safety Plan Check List checklist - (Required for all Projects)

Check items that are applicable to your project.

Fire and/or Smoke Rated Wall Locations (Chapter 7)
 Assumed and Real Property Line Locations
 Exterior Wall Openings w/ Respect to Distance to Assumed Property Lines (705.8)
 Existing Structures Within 30' of the Proposed Building
 Occupancy Types for Each Area as it Relates to Occupant Load Calculation (Table 1004.1.1)
 Occupant Loads for Each Area
 Exit Access Travel Distance (1016)
 Common Path of Travel Distances (1014.3 & 1028.8)
 Dead End Lengths (1018.4)
 Clear Exit Widths for Each Exit Door
 Max Calculated Occupant Load Capacity Each Exit Door can Accommodate Based on Egress Width (1005.1)
 Actual Occupant Load for Each Exit Door
 A Separate Schematic Plan Indicating Where Fire Rated Floor/Ceiling and/or Roof Structure is Provided for Purposes of Occupancy Separation.
 Location of Doors w/ Panic Hardware (1008.1.10) - (SEE SHEET LS-1 FOR LOCATION)
 Location of Doors w/ Delayed Egress Locks & the Amount of Delay (1008.1.9.7)
 Location of Doors w/ Electromagnetic Egress Locks (1008.1.9.8)
 Location of Doors Equipped w/ Hold-Open Devices.
 Location of Emergency Escape Windows (1029)
 The Sq Footage of Each Fire Area (902)
 The Sq Footage of Each Smoke Compartment (407.4)
 Note ANY Code Exceptions or Table Notes That May Have Been Utilized Regarding the Items Above.

o. EXIT REQUIREMENTS - (Req'd for All Projects)

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM ² NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS, ^{3,3} (SECTION 1015.2)	
	REQUIRED (Single Exit 1012.1)	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1015.1.1, 1014.3)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
	SEE SHEET LS-1 FOR EXITS INFORMATION					

¹ Corridor dead ends (Section 1018.4)
² Bids w/ Single Exits (Table 1021.2) Spaces with One Means of Egress (Section 1015.1)
³ Common Path of Travel (Section 1014.3)

USE GROUP OR SPACE DESCRIPTION ⁷	(a)		(b)		(c)		EXIT WIDTH (in) 2.3, 4.5, 6	
	AREA 1 sq. ft.	AREA 1 PER OCCUPANT (Table 1004.1.1)	CALCULATED PER OCCUPANT LOAD (a/b)	EGRESS WIDTH PER OCCUPANT (SECTION 1005.1)	REQUIRED WIDTH (a/b) x c	ACTUAL WIDTH SHOWN ON PLANS	STAIR	LEVEL
SEE SHEET LS-1 FOR OCCUPANT LOADS AND EXIT WIDTHS								

¹ See Table 1004.1.1 to determine whether net or gross area is applicable.
 See definition "Area, Gross" and "Area, Net" (Section 1002)
² Minimum stairway width (Section 1009.1); min. corridor width (Section 1018.2); min. door width (Section 1008.1)
³ Minimum width of exit passageway (Section 1023.2)
⁴ See Section 1004.5 for converging exits.
⁵ The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1)
⁶ Assembly occupancies (Section 1028)
⁷ Spaces within occupancies or use groups shall be calculated independently (Ex. Lobbies, lounges, break rms, conference rms.)

p. Accessible Dwelling Units and Sleeping Units - (Only for R-1, R-2 Occupancy)

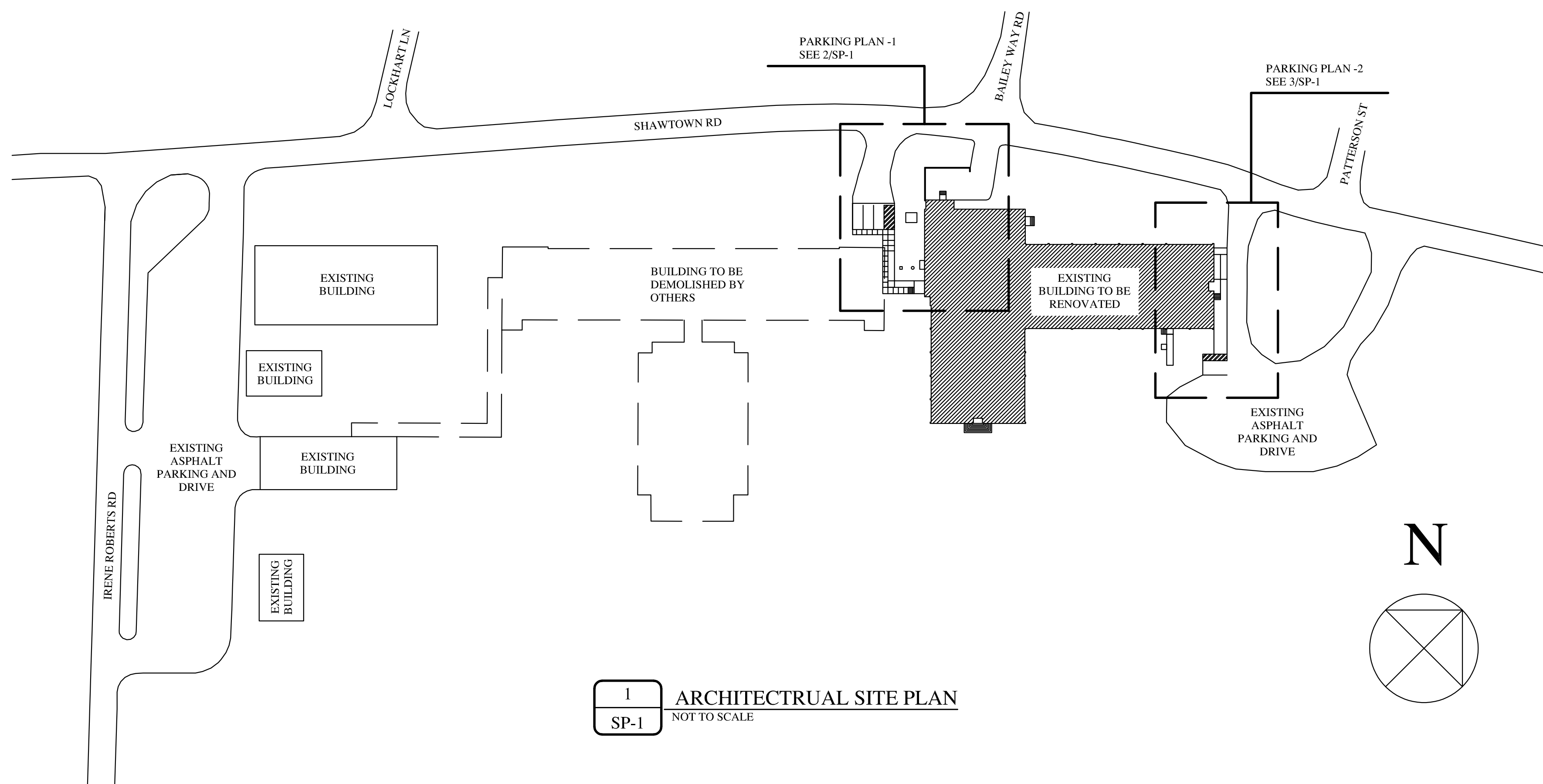
ACCESSIBLE DWELLING UNITS (1107)						
TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A						

q. Accessible Parking - (New Construction, Additions and Change of Use Projects)

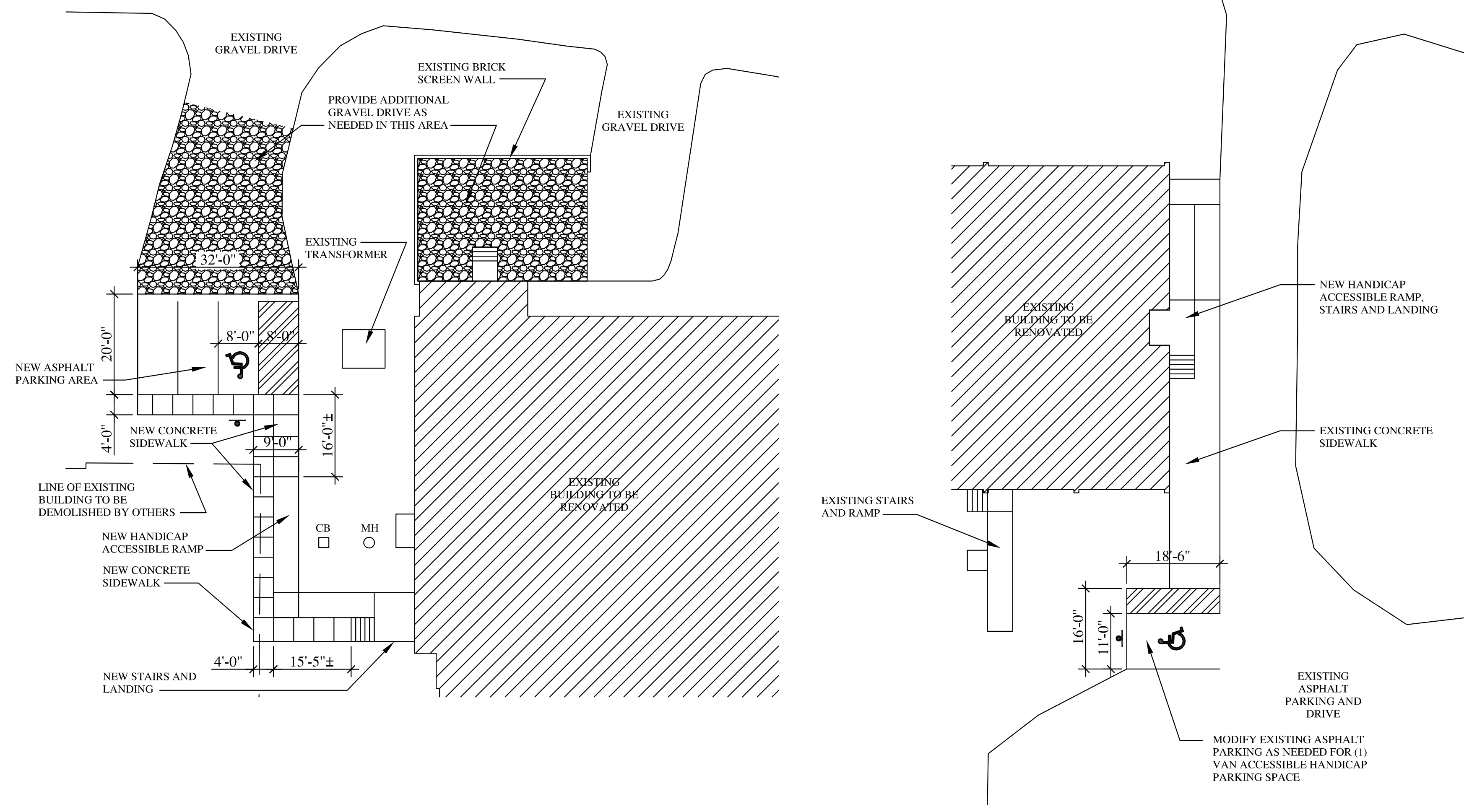
LOT OR PARKING AREA	TOTAL # PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE SPACES PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS ISLE	VAN SPACES WITH 5' ACCESS ISLE	8' ACCESS ISLE	
PARKING SEE SHEET SP-1	0	>25	NA	NA	2	2

r. Structural Design - (Primary for New Construction, Additions and Change of Use)

If Adding Dead Loads or Live Loads to the Building Structural System Information in any Project will be Required. This information may be located on the Structural Sheets. The Structural Sheet Must be in the Same Format as Noted in This Section. If it is on the Structural Sheets, please indicate here. (Located on Structural Sht # NA : Yes No)



1 ARCHITECTURAL SITE PLAN
SP-1 NOT TO SCALE



2 PARKING PLAN - 1
SP-1 1/16"=1'-0"

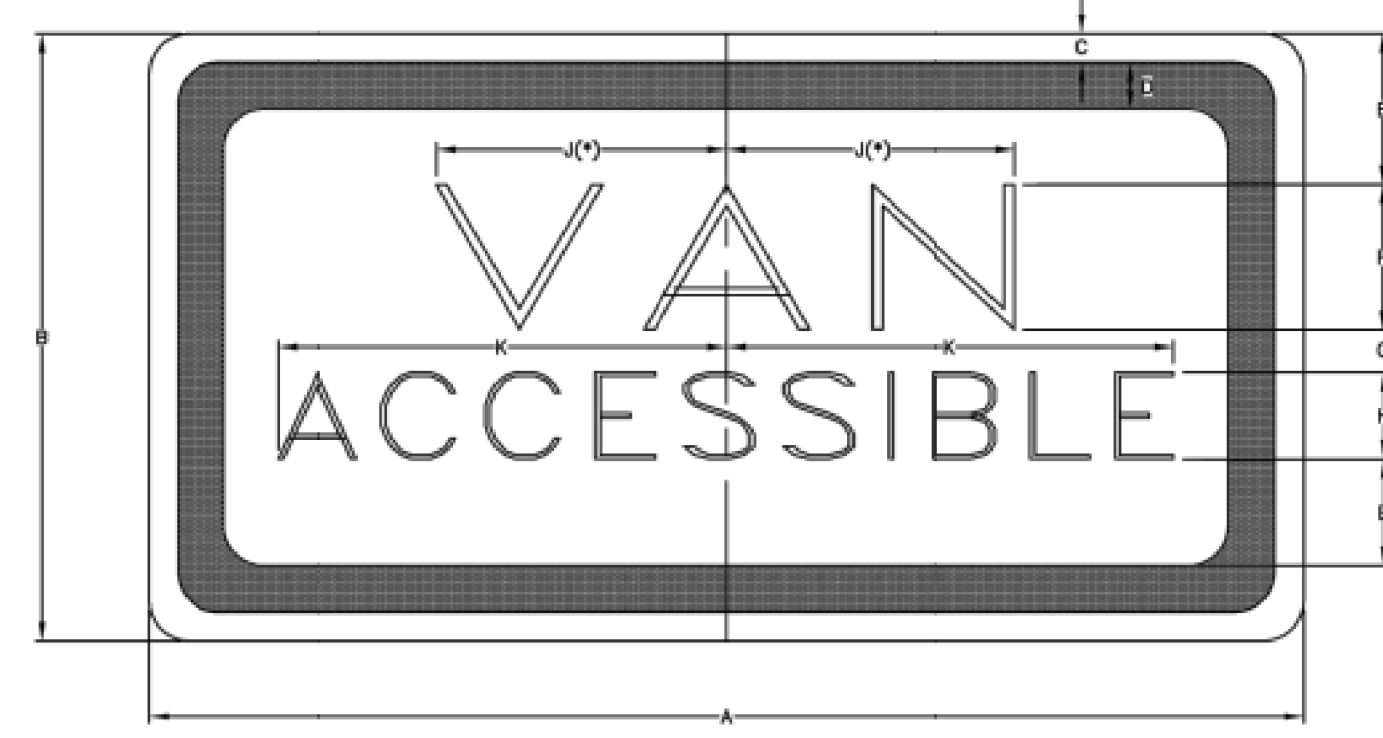
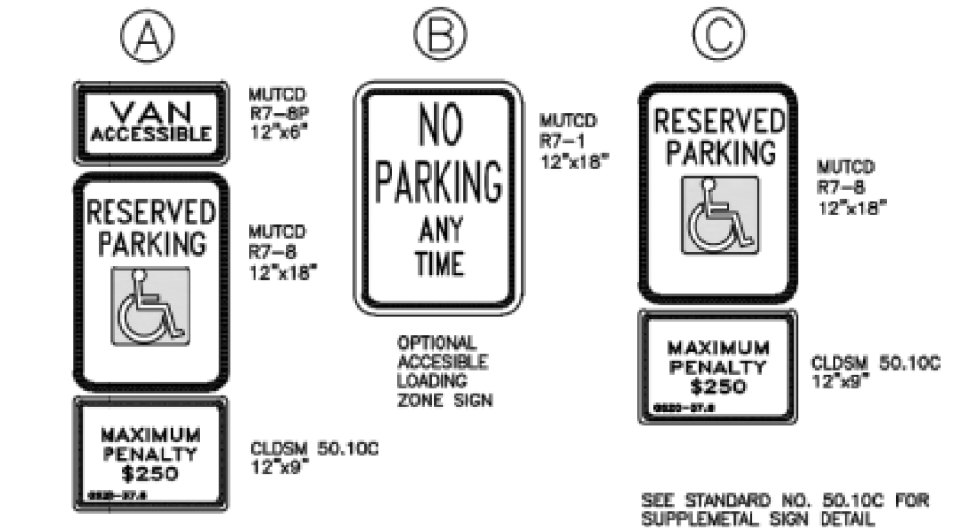
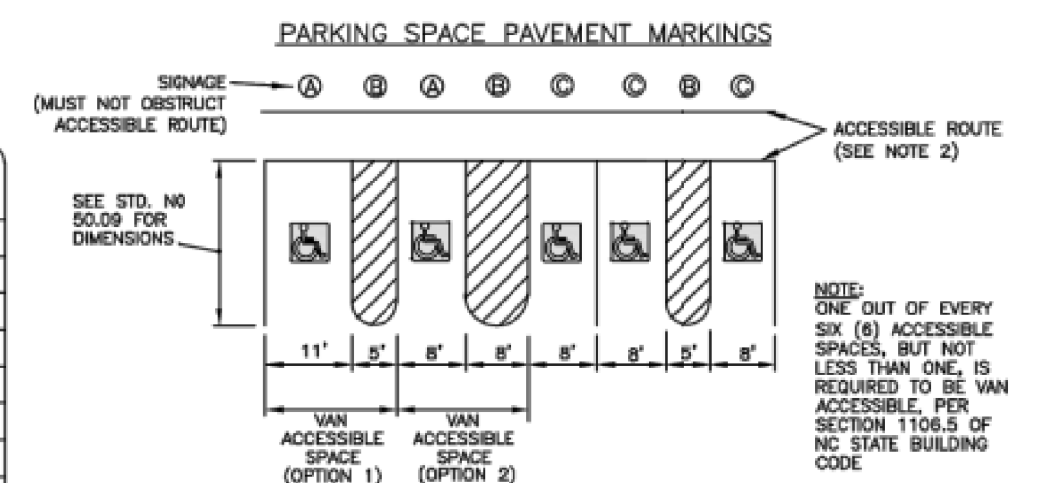
3 PARKING PLAN - 2
SP-1 1/16"=1'-0"

ACCESSIBLE PARKING REQUIREMENTS

TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	2
301 TO 400	8	2
401 TO 500	9	2
501 TO 1000	2% OF TOTAL	1 IN EVERY 8 ACCESSIBLE SPACES
1001 AND OVER	2% PLUS 1 FOR EACH 100 OVER 1000	1 IN EVERY 8 ACCESSIBLE SPACES

REFERENCE: SECTION 1106 OF NC BUILDING CODE

- NOTES:**
- ALL 12"x18" ACCESSIBLE SIGNS (R7-8 & R7-1) SHALL BE MOUNTED AT 7 FEET FROM CURB TO BOTTOM EDGE OF SIGN FACE (MINUS). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
 - IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN RAMPS ARE REQUIRED AT LOADING ZONE AREA. MINIMUM 4" WIDE CONTINUOUS PASSAGE.
 - VERTICAL CLEARANCE FOR VANS MUST BE GREATER THAN 98-INCHES.
 - THIS DETAIL IS TO PROVIDE GENERAL GUIDANCE FOR PARKING LAYOUT AND DESIGN. REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT AND NC BUILDING CODE FOR ADDITIONAL INFORMATION.

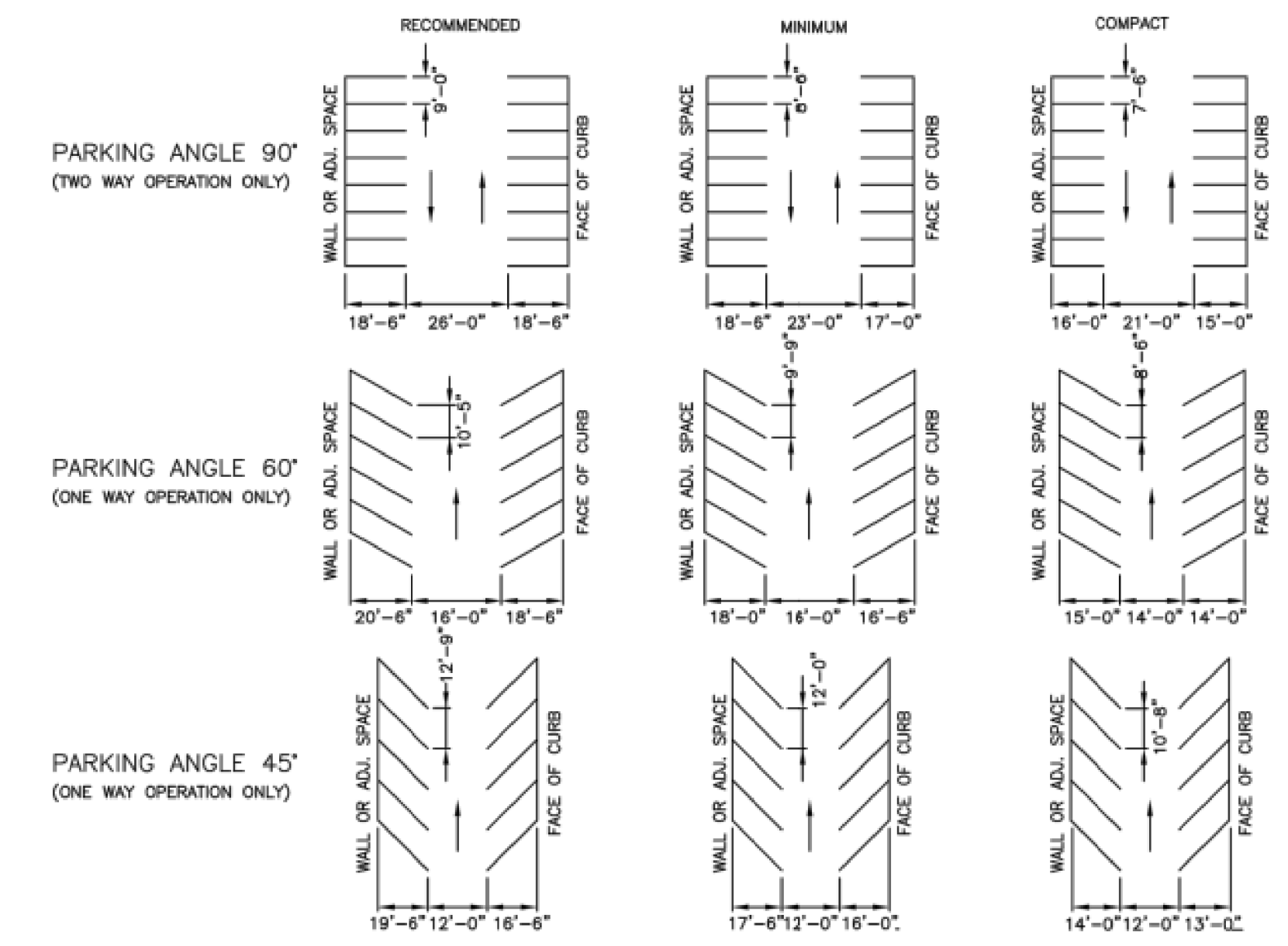


R7-8P

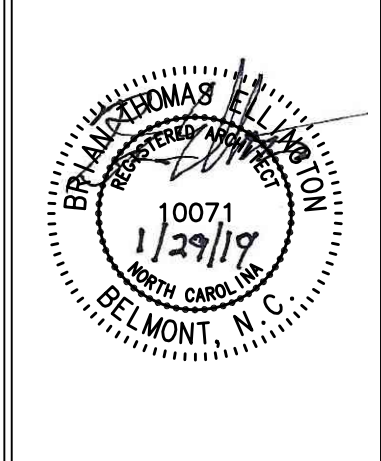
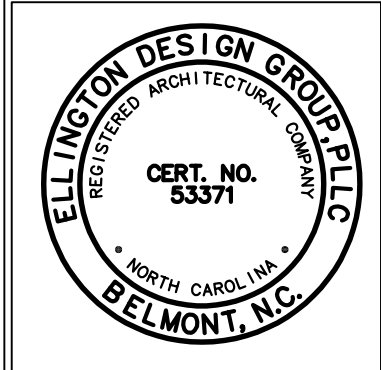
DIMENSIONS (INCHES)										
A	B	C	D	E	F	G	H	J	K	L
12	6	3/8	3/8	1-1/2	1-1/2	1/2	10	2-1/2	4	1-1/2

* INCREASE SPACING 50%
D-FHWA (FEDERAL HIGHWAY ADMINISTRATION/USDOT) SERIES D LETTERS

LEGEND AND BORDER - GREEN
BACKGROUND - WHITE



- NOTES:**
- FOR ACCESSIBLE PARKING STANDARDS/SIGNAGE SEE STDS. 50.10A, B, AND C.
 - PAVEMENT MARKINGS SHALL BE 4" WHITE PAINT.
 - ALTERNATIVE PARKING ANGLES, AISLE WIDTHS, AND OPERATION (TWO-WAY ANGLED PARKING OR REVERSE-ANGLE PARKING) WILL BE CONSIDERED BY CDOT ON A CASE-BY-CASE BASIS.



REVISIONS

NO.	DATE

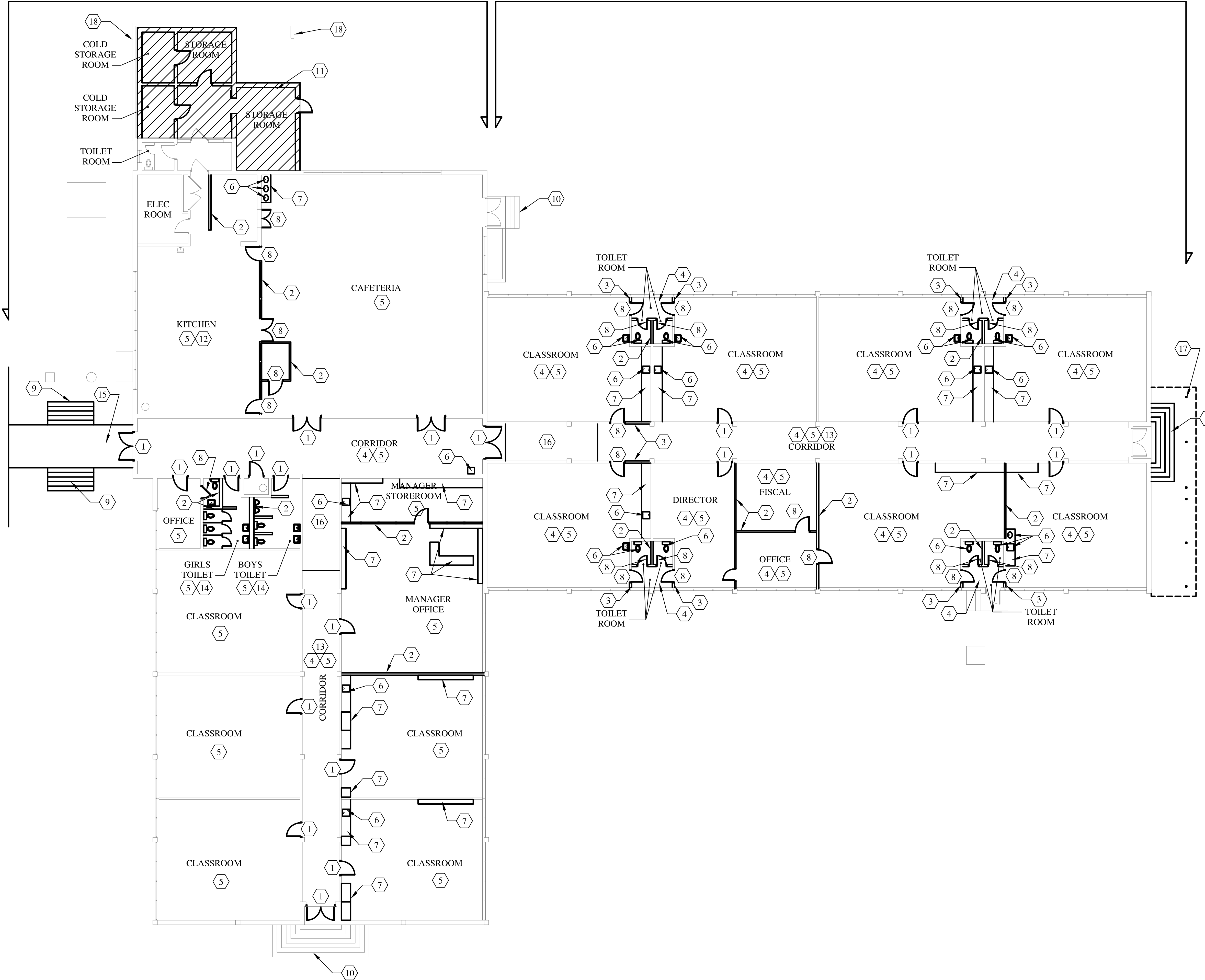
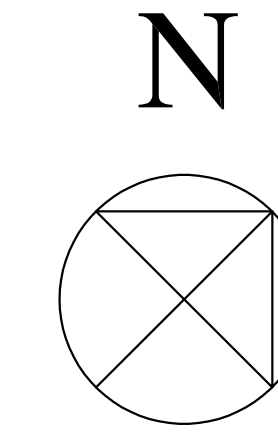
A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No: 2018-009
Scale:
Date Drawn: 7/18
Sheet Title

ARCHITECTURAL SITE PLAN

CONSTRUCTION PHASE I

CONSTRUCTION PHASE II



GENERAL NOTES:

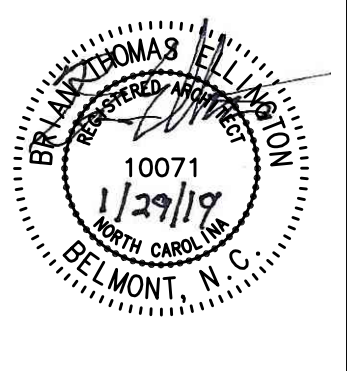
1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE REMOVAL OF ANY ITEMS REQUIRED FOR DEMOLITION.
2. NOTIFY ARCHITECT AND OWNER IF ANY STRUCTURAL ELEMENTS ARE DAMAGED DURING DEMOLITION. REPAIR TO DAMAGED STRUCTURAL ELEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE OR REPAIR.
3. CAP ALL PLUMBING DURING DEMOLISH BACK TO THE POINT AT WHICH NEW WORK IS TO BEGIN.
4. ELECTRICAL WIRING SHALL BE DEMOLISH BACK TO THE POINT AT WHICH NEW WORK IS TO BEGIN.
5. CONTRACTOR SHALL VERIFY IF ANY FIXTURES ARE TO BE SALVAGED AND RETURNED TO THE OWNER.
6. SEE SHEET P-4 FOR ADDITIONAL PLUMBING DEMOLITION INFORMATION.
7. SEE SHEET E-2 FOR ADDITIONAL ELECTRICAL DEMOLITION INFORMATION.

KEY NOTES:

1. REMOVE DOOR, DOOR FRAME, AND DOOR HARDWARE IN ITS ENTIRETY. PREPARE ROUGH OPENING TO ACCEPT NEW DOOR.
2. REMOVE EXISTING WALL FROM FINISHED FLOOR TO UNDERSIDE OF ROOF STRUCTURE ABOVE.
3. REMOVE PORTION OF EXISTING WALL TO PROVIDE ROUGH OPENING FOR NEW DOOR.
4. REMOVE EXISTING FLOOR FINISH IN ITS ENTIRETY. CLEAN AND PREPARE EXISTING CONCRETE FLOOR SUBSTRATE TO ACCEPT NEW FLOOR FINISH SPECIFIED.
5. REMOVE LOOSE PAINT FROM WALL AND CEILING. CLEAN AND PREPARE SURFACE TO RECEIVE NEW PAINT FINISH.
6. REMOVE PLUMBING FIXTURE IN ITS ENTIRETY. CAP WATER AND WASTE LINE IN PREPARATION FOR NEW PLUMBING FIXTURE WHERE SPECIFIED.
7. REMOVE EXISTING CASEWORK IN ITS ENTIRETY. CLEAN AND PREPARE EXISTING FLOOR AND WALL TO RECEIVE NEW FLOOR FINISH.
8. REMOVE DOOR, DOOR FRAME AND DOOR HARDWARE IN ITS ENTIRETY.
9. REMOVE CONCRETE STAIR IN ITS ENTIRETY.
10. REMOVE STAIR HANDRAILS AND GUARDRAILS.
11. REMOVE PORTION OF BUILDING IN ITS ENTIRETY INCLUDING CONCRETE FLOOR SLAB AND FOUNDATION WALLS A MINIMUM OF 12" BELOW GRADE. BRICK SCREEN WALL IS TO REMAIN.
12. REMOVE KITCHEN EQUIPMENT AND KITCHEN PLUMBING FIXTURES. REMOVE COOK-TOP HOOD TO THE UNDERSIDE OF CEILING ABOVE. SERVICE SINK IS TO REMAIN.
13. REMOVE ALL WINDOWS, WINDOW TRIM AND WOOD FRAMING FROM CORRIDOR WALLS.
14. REMOVE ALL PLUMBING FIXTURES, TOILET PARTITIONS AND PARTIAL HEIGHT WALLS FROM WITHIN TOILET ROOM.
15. REMOVE CONCRETE LANDING, MASONRY FOUNDATION WALLS AND FOOTING IN ITS ENTIRETY.
16. REMOVE TOP 2" OF CONCRETE SLAB AT THE EXISTING CONCRETE RAMP. PREPARE CONCRETE SURFACE TO ACCEPT CONCRETE TOPPING FOR NEW RAMP SLOPE. REMOVE WALL MOUNTED HANDRAILS.
17. REMOVE METAL ENTRANCE CANOPY COLUMNS AND ROOF IN ITS ENTIRETY.
18. EXISTING BRICK SCREEN WALL TO REMAIN. CONTRACTOR SHALL REPAIR ANY PORTION OF BRICK SCREEN WALL DAMAGED DURING DEMOLITION.

Ellington
Design
Group, PLLC

2201 BLUEBERRY STREET - BELMONT, NC 28012
PHONE: 980-425-4403 - EMAIL: EDG.BTE@HOTMAIL.COM



REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No:
2018-009
Scale:
Date Drawn: 7/18
Sheet Title

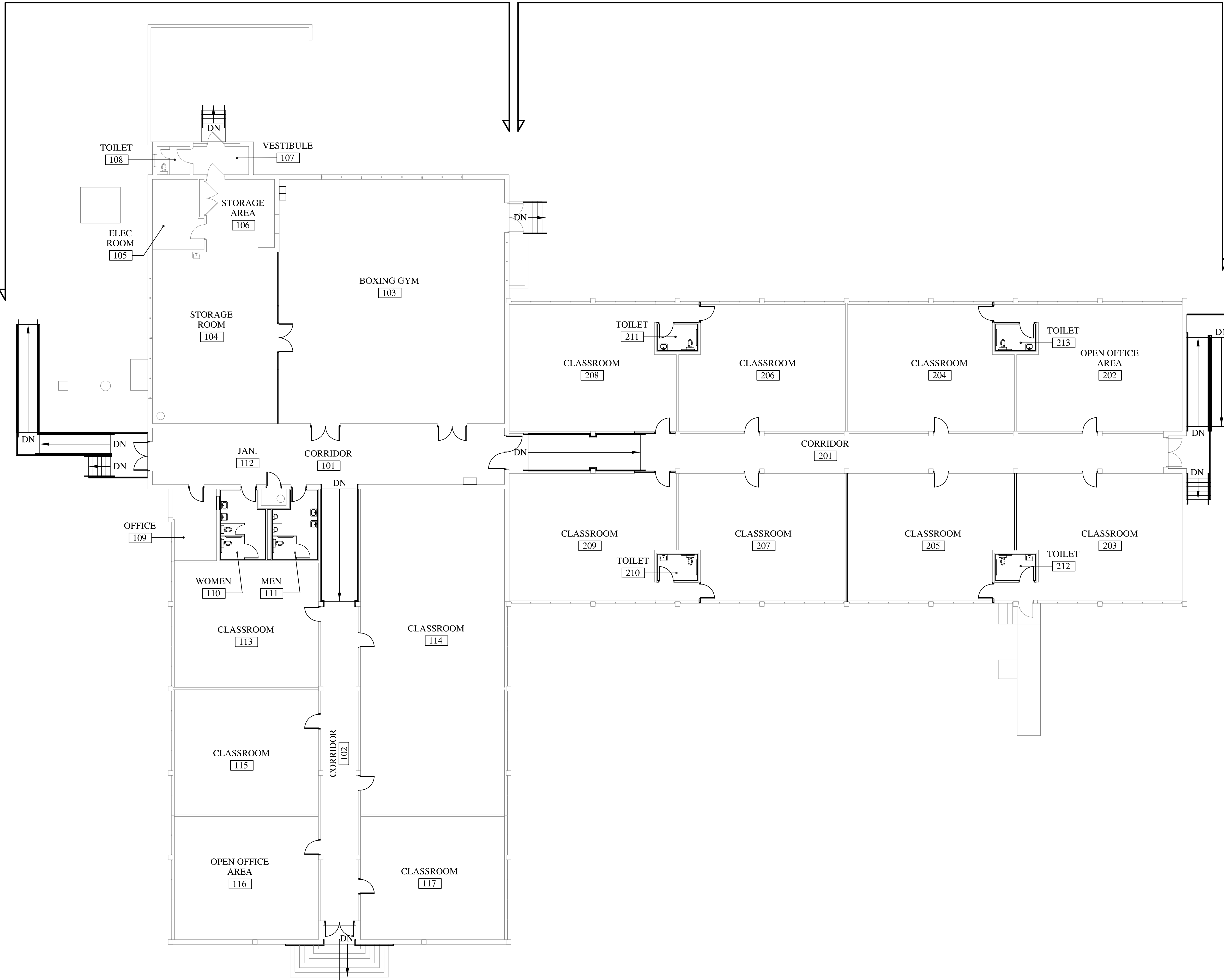
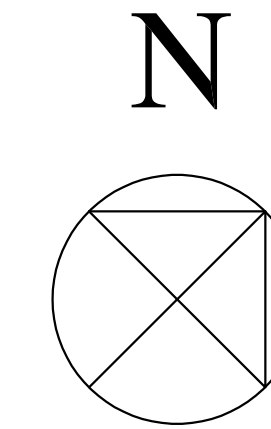
DEMOLITION PLAN

A-1

1 DEMOLITION PLAN
A-1 3/32" = 1'-0"

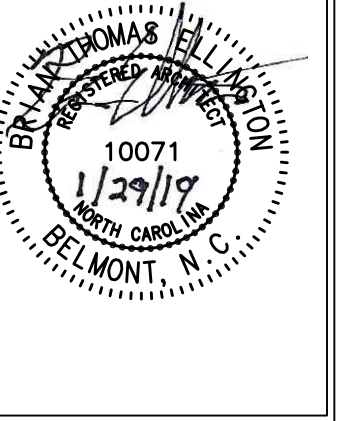
CONSTRUCTION PHASE I
SEE SHEET A-3

CONSTRUCTION PHASE II
SEE SHEET A-4



1 OVERALL FLOOR PLAN
A-2 3/32" = 1'-0"

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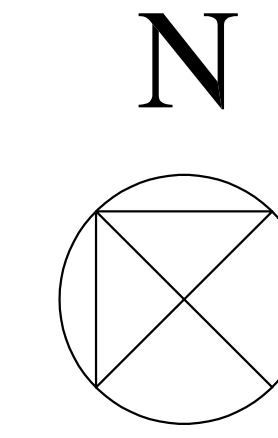
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A RENOVATION FOR:
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HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

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OVERALL
FLOOR
PLAN

A-2

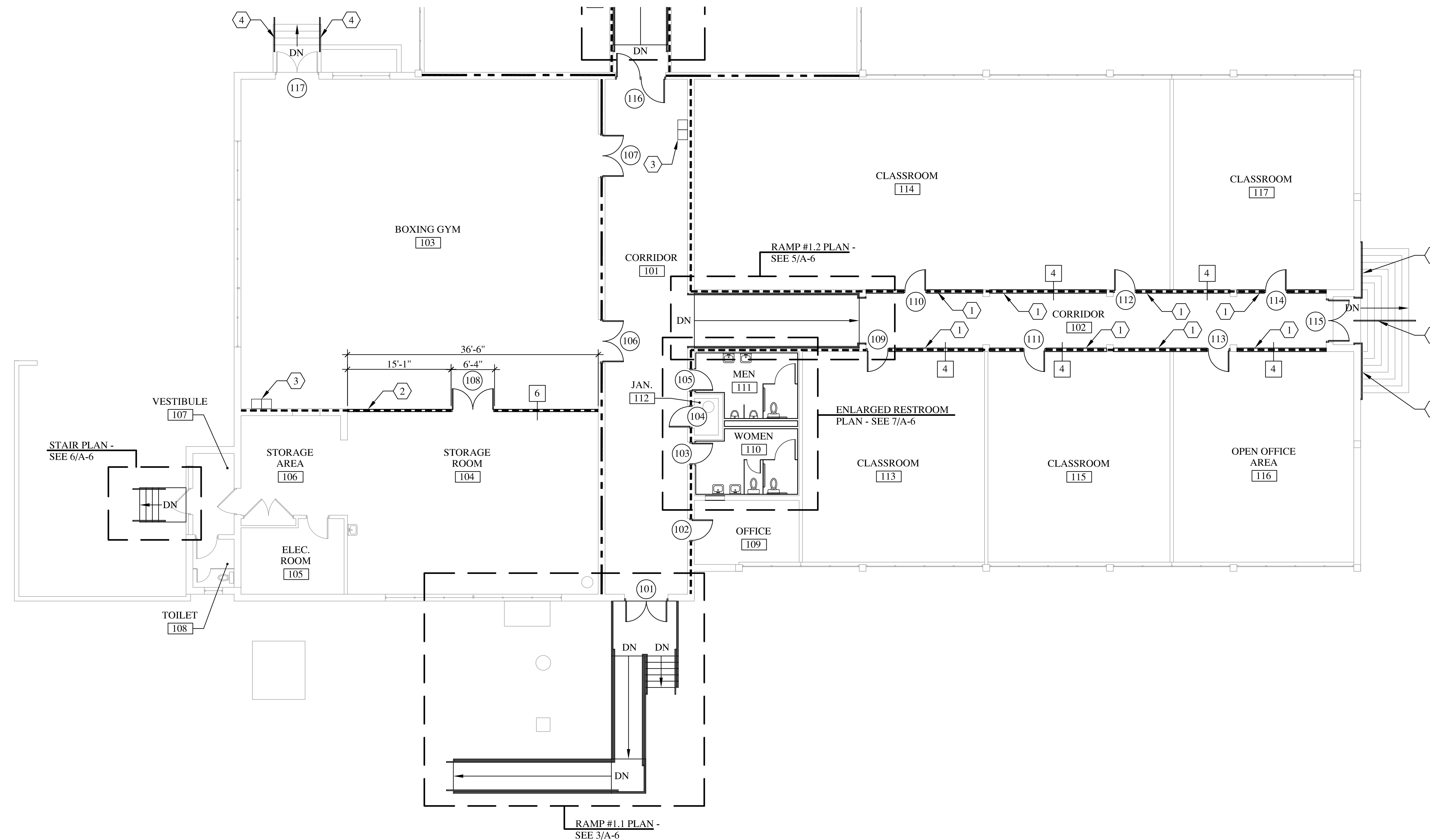


GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND ALL ROUGH OPENINGS BEFORE BEGINNING CONSTRUCTION.
2. SEE SHEET A-4 FOR PHASE II FLOOR PLAN.
3. SEE SHEET A-5 FOR ROOM FINISH AND DOOR SCHEDULES.
4. SEE SHEET A-7.1 FOR WALL PARTITION TYPES.

KEY NOTES:

1. INFILL ALL ROUGH OPENINGS AT THE TOP OF THE EXISTING WALL WITH NEW WALL PARTITION TYPE. SEE SHEET A-7.1 FOR PARTITION TYPES.
2. 3 5/8" METAL STUD WALL WITH 5/8" GYP. BD. ON BOTH SIDES. WALL SHALL EXTEND FROM FINISHED FLOOR TO UNDERSIDE OF ROOF DECK. SEE SHEET A-7.1 FOR PARTITION TYPES.
3. HIGH-LOW ADA COMPLIANT ELECTRIC WATER COLOR. SEE PLUMBING DWGS FOR FIXTURE TYPE.
4. PROVIDE NEW 1 1/2" DIA. HANDRAIL, 36" HT.

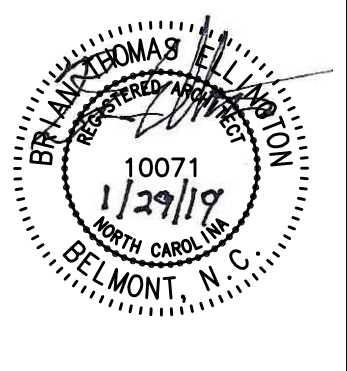


1 PHASE I - FLOOR PLAN
A-3 1/8" = 1'-0"

LEGEND:

(###)	DOOR NO.
#	KEYNOTE
#	PARTITION TYPE
---	2 HR RATED WALL
-.-.-	1 HR RATED WALL

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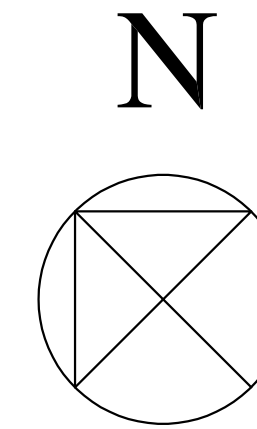
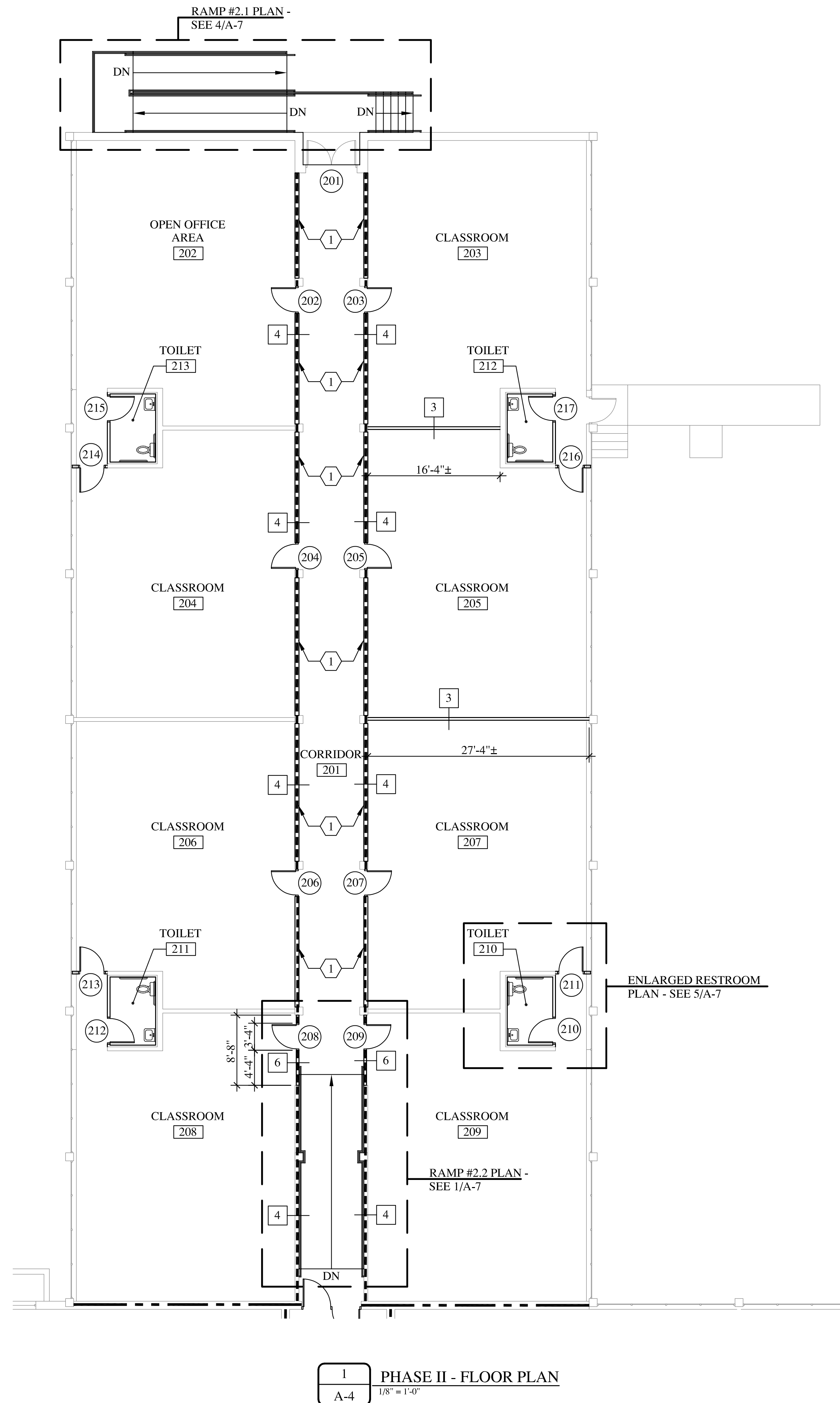
REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No:
2018-009
Scale:
Date Drawn: 7/18
Sheet Title

FLOOR PLAN - PHASE I

A-3



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND ALL ROUGH OPENINGS BEFORE BEGINNING CONSTRUCTION.
2. SEE SHEET A-3 FOR PHASE I FLOOR PLAN.
3. SEE SHEET A-5 FOR ROOM FINISH AND DOOR SCHEDULES.
4. SEE SHEET A-7.1 FOR WALL PARTITION TYPES.

KEY NOTES:

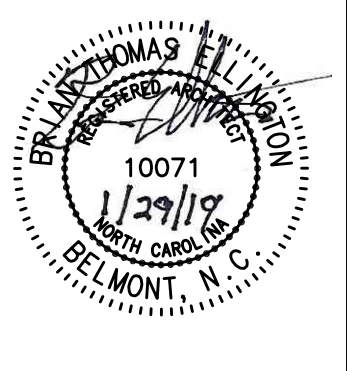
1. INFILL ALL ROUGH OPENINGS AT THE TOP OF THE EXISTING WALL WITH NEW WALL PARTITION TYPE. SEE SHEET A-7.1 FOR PARTITION TYPES.

1 PHASE II - FLOOR PLAN
A-4 1/8" = 1'-0"

LEGEND:

- ### DOOR NO.
- # KEYNOTE
- # PARTITION TYPE
- 2 HR RATED WALL
- 1 HR RATED WALL

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Scale:
Date Drawn: 7/18
Sheet Title

FLOOR PLAN -
PHASE II

A-4

ROOM FINISH SCHEDULE - PHASE I * G.C. TO VERIFY ALL INTERIOR FINISHES WITH OWNER.

NO.	ROOM NAME	FLOOR	FINISH	BASE	WALL	FINISH	CEILING	FINISH	CEILING HEIGHT	REMARKS	NO.
101	CORRIDOR	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU	PAINT	ACOUST. CEILING TILE	ACT	12'-0"	NOTE 1	101
102	CORRIDOR	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXPOSED STRUC.	PAINT	EXISTING	NOTE 1	102
103	BOXING GYM	CONC	EXISTING TO REMAIN	EXISTING TO REMAIN	CMU, GYP BD	PAINT	EXPOSED STRUC.	PAINT	EXISTING	NOTE 1, 2 & 3	103
104	STORAGE ROOM	CONC	EXISTING TO REMAIN	RUBBER BASE, GYP BD, ONLY	CMU, GYP BD	PAINT	ACOUST. CEILING TILE	ACT	10'-8"	NOTE 1 & 2	104
105	ELECTRICAL ROOM	EXISTING TO REMAIN - NO WORK IN THIS ROOM									105
106	STORAGE AREA	CONC	EXISTING TO REMAIN	EXISTING TO REMAIN	CMU, GYP BD	PAINT	ACOUST. CEILING TILE	ACT	10'-8"	NOTE 1 & 2	106
107	VESTIBULE	EXISTING TO REMAIN - NO WORK IN THIS ROOM									107
108	TOILET	EXISTING TO REMAIN - NO WORK IN THIS ROOM									108
109	OFFICE	CONC	CARPET TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXPOSED STRUC.	TOUCH UP, PAINT	EXISTING	NOTE 1	109
110	WOMEN	CONC	SHEET VINYL FLOORING	RUBBER BASE	GYP BD	PAINT	EXPOSED STRUC.	TOUCH UP, PAINT	EXISTING	NOTE 1 & 4	110
111	MEN	CONC	SHEET VINYL FLOORING	RUBBER BASE	GYP BD	PAINT	EXPOSED STRUC.	TOUCH UP, PAINT	EXISTING	NOTE 1 & 4	111
112	JANITOR CLOSET	EXISTING TO REMAIN - NO WORK IN THIS ROOM									112
113	CLASSROOM	CONC	EXISTING TO REMAIN	EXISTING TO REMAIN	CMU, GYP BD	PAINT	EXPOSED STRUC.	TOUCH UP, PAINT	EXISTING	NOTE 1 & 2	113
114	CLASSROOM	CONC	EXISTING TO REMAIN	EXISTING TO REMAIN	CMU, GYP BD	PAINT	EXPOSED STRUC.	PAINT	EXISTING	NOTE 1 & 2	114
115	CLASSROOM	CONC	EXISTING TO REMAIN	EXISTING TO REMAIN	CMU, GYP BD	PAINT	EXPOSED STRUC.	TOUCH UP, PAINT	EXISTING	NOTE 1 & 2	115
116	OPEN OFFICE AREA	CONC	CARPET TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXPOSED STRUC.	PAINT	EXISTING	NOTE 1	116
117	CLASSROOM	CONC	EXISTING TO REMAIN	EXISTING TO REMAIN	CMU, GYP BD	PAINT	EXPOSED STRUC.	PAINT	EXISTING	NOTE 1 & 2	117

ROOM FINISH SCHEDULE - PHASE II * G.C. TO VERIFY ALL INTERIOR FINISHES WITH OWNER.

NO.	ROOM NAME	FLOOR	FINISH	BASE	WALL	FINISH	CEILING	FINISH	CEILING HEIGHT	REMARKS	NO.
201	CORRIDOR	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	PAINT	EXISTING	NOTE 1	201
202	OPEN OFFICE AREA	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	TOUCH UP, PAINT	EXISTING	NOTE 1	202
203	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	TOUCH UP, PAINT	EXISTING	NOTE 1	203
204	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	TOUCH UP, PAINT	EXISTING	NOTE 1	204
205	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	PAINT	EXISTING	NOTE 1	205
206	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	TOUCH UP, PAINT	EXISTING	NOTE 1	206
207	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	PAINT	EXISTING	NOTE 1	207
208	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	TOUCH UP, PAINT	EXISTING	NOTE 1	208
209	CLASSROOM	CONC	VINYL COMPOSITE TILE	RUBBER BASE	CMU, GYP BD	PAINT	EXISTING GYP BD	TOUCH UP, PAINT	EXISTING	NOTE 1	209
210	TOILET	CONC	SHEET VINYL FLOORING	RUBBER BASE	GYP BD	PAINT	ACOUST. CEILING TILE	ACT	8'-0"	NOTE 1 & 4	210
211	TOILET	CONC	SHEET VINYL FLOORING	RUBBER BASE	GYP BD	PAINT	ACOUST. CEILING TILE	ACT	8'-0"	NOTE 1 & 4	211
212	TOILET	CONC	SHEET VINYL FLOORING	RUBBER BASE	GYP BD	PAINT	ACOUST. CEILING TILE	ACT	8'-0"	NOTE 1 & 4	212
213	TOILET	CONC	SHEET VINYL FLOORING	RUBBER BASE	GYP BD	PAINT	ACOUST. CEILING TILE	ACT	8'-0"	NOTE 1 & 4	213

FINISHES NOTES

- CONTRACTOR SHALL PROVIDE NEW PAINT FINISH TO ALL EXISTING WALLS AND CEILINGS IN THIS ROOM UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL PATCH AND REPAIR THE EXISTING FLOOR FINISH IN AREAS WITH MISSING, DAMAGED AND LOOSE TILES. THE EXISTING FLOOR FINISH SHALL BE CLEANED.
- AREAS IN THE NORTH CORNER OF THE ROOM THAT HAVE SETTLEMENT SHALL BE REPAIRED AND MADE LEVEL.
- CONTRACTOR SHALL PROVIDE EPOXY PAINT FINISH IN ALL TOILET ROOMS AND AREAS SUBJECT TO MOISTURE.

GENERAL NOTES:

- CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND ALL ROUGH OPENINGS BEFORE BEGINNING CONSTRUCTION.
- ALL FINISH COLOR SELECTIONS SHALL BE MADE BY THE OWNER. CONTRACTOR SHALL PROVIDE FULL LINE OF AVAILABLE SELECTIONS FOR EACH FINISH MATERIAL FOR SELECTION.

DOOR SCHEDULE - PHASE I

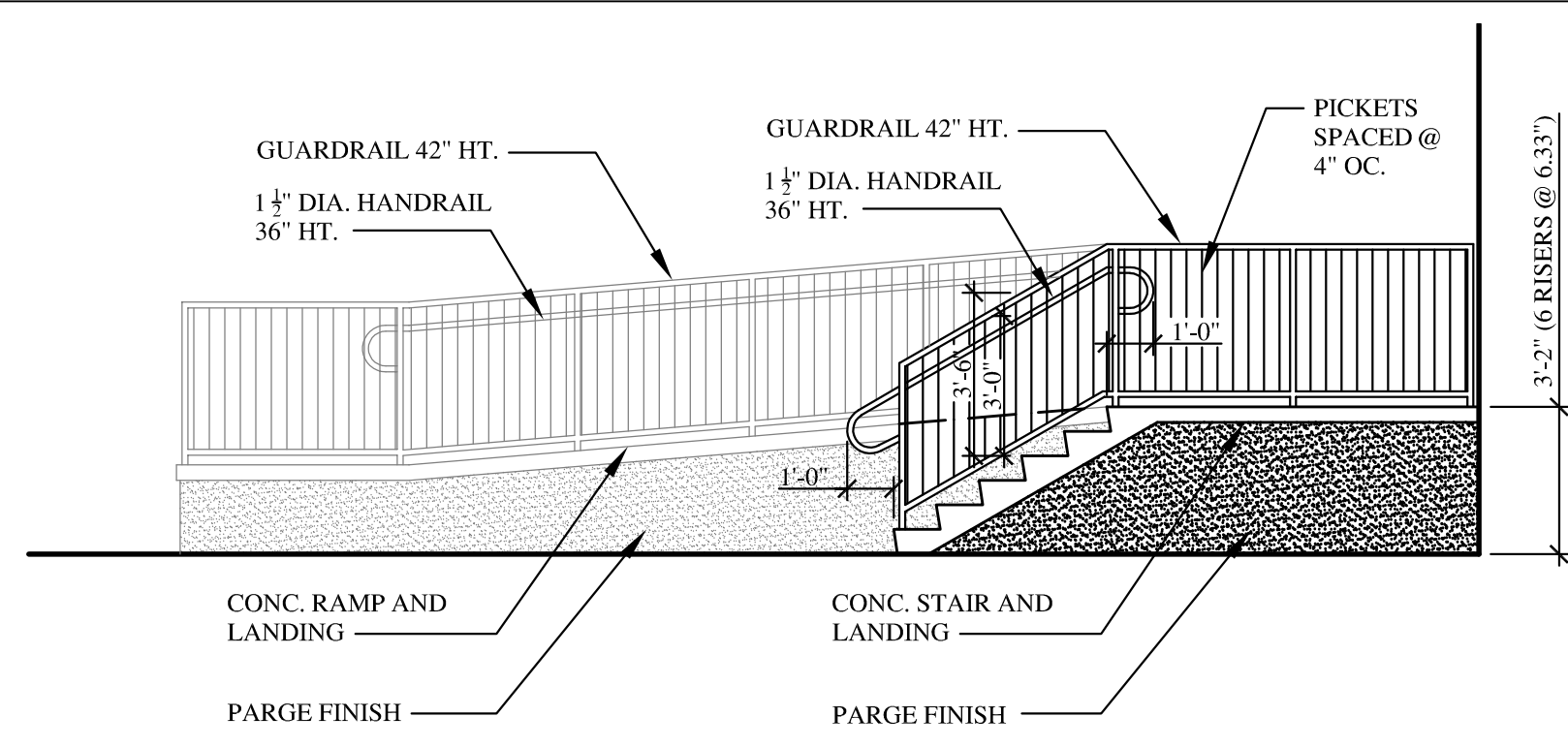
NO.	SIZE	TYPE	MATERIAL	FINISH	FRAME	FINISH	HINGES	LOCKSET	PANIC	CLOSER	WEATHERSTRIPPING	PUSH/PULL	PASSAGE	THRESHOLD	PRIVACY	ADA SIGN	TRANSITION STRIP	90 MIN. LABEL	45 MIN. LABEL	20 MIN. LABEL	REMARKS	NO.	
101	6'-0" X 7'-0"	B	ALUMINUM	KYNAR	ALUMINUM	KYNAR	6	●	●	●	●			●								SEE DOOR HARDWARE NOTES	101
102	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	102
103	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●		●									●	SEE DOOR HARDWARE NOTES	103
104	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	104
105	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●		●									●	SEE DOOR HARDWARE NOTES	105
106	6'-0" X 7'-0"	D	WOOD	STAINED	HOLLOW MTL	PAINTED	6	●	●	●			●								●	SEE DOOR HARDWARE NOTES	106
107	6'-0" X 7'-0"	D	WOOD	STAINED	HOLLOW MTL	PAINTED	6	●	●	●			●								●	SEE DOOR HARDWARE NOTES	107
108	6'-0" X 7'-0"	D	HOLLOW MTL	PAINT	HOLLOW MTL	PAINTED	6	●		●											●	SEE DOOR HARDWARE NOTES	108
109	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	109
110	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	110
111	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	111
112	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	112
113	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	113
114	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	114
115	6'-0" X 7'-0"	B	ALUMINUM	KYNAR	ALUMINUM	KYNAR	6	●	●	●		●		●								SEE DOOR HARDWARE NOTES	115
116	7'-0" X 7'-0"	D	HOLLOW MTL	PAINT	HOLLOW MTL	PAINTED	6	●	●	●											●	SEE DOOR HARDWARE NOTES	116
117	6'-0" X 7'-0"	EXISTING TO REMAIN																					117

HARDWARE SCHEDULE - PHASE I

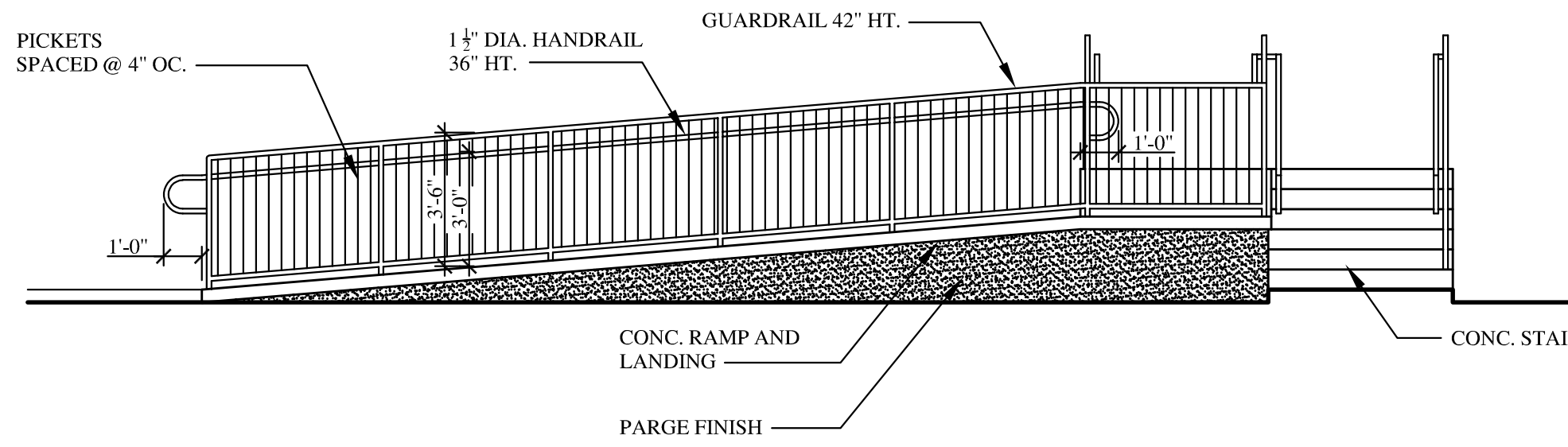
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201	6'-0" X 7'-0"	EXISTING TO REMAIN																					201
202	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	202
203	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	203
204	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	204
205	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	205
206	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	206
207	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	207
208	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	208
209	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	209
210	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	210
211	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	211
212	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	212
213	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	213
214	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	214
215	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	215
216	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	216
217	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	217

DOOR SCHEDULE - PHASE II

NO.	SIZE	TYPE	MATERIAL	FINISH	FRAME	FINISH	HINGES	LOCKSET	PANIC	CLOSER	WEATHERSTRIPPING	PUSH/PULL	PASSAGE	THRESHOLD	PRIVACY	ADA SIGN	TRANSITION STRIP	90 MIN. LABEL	45 MIN. LABEL	20 MIN. LABEL	REMARKS	NO.	
201	6'-0" X 7'-0"	EXISTING TO REMAIN																					201
202	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	202
203	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	203
204	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	204
205	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	205
206	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	206
207	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	207
208	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	208
209	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●											●	SEE DOOR HARDWARE NOTES	209
210	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	210
211	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	211
212	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	212
213	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	213
214	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	214
215	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	215
216	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	216
217	3'-0" X 7'-0"	C	WOOD	STAINED	HOLLOW MTL	PAINTED	3	●		●					●	●						SEE DOOR HARDWARE NOTES	



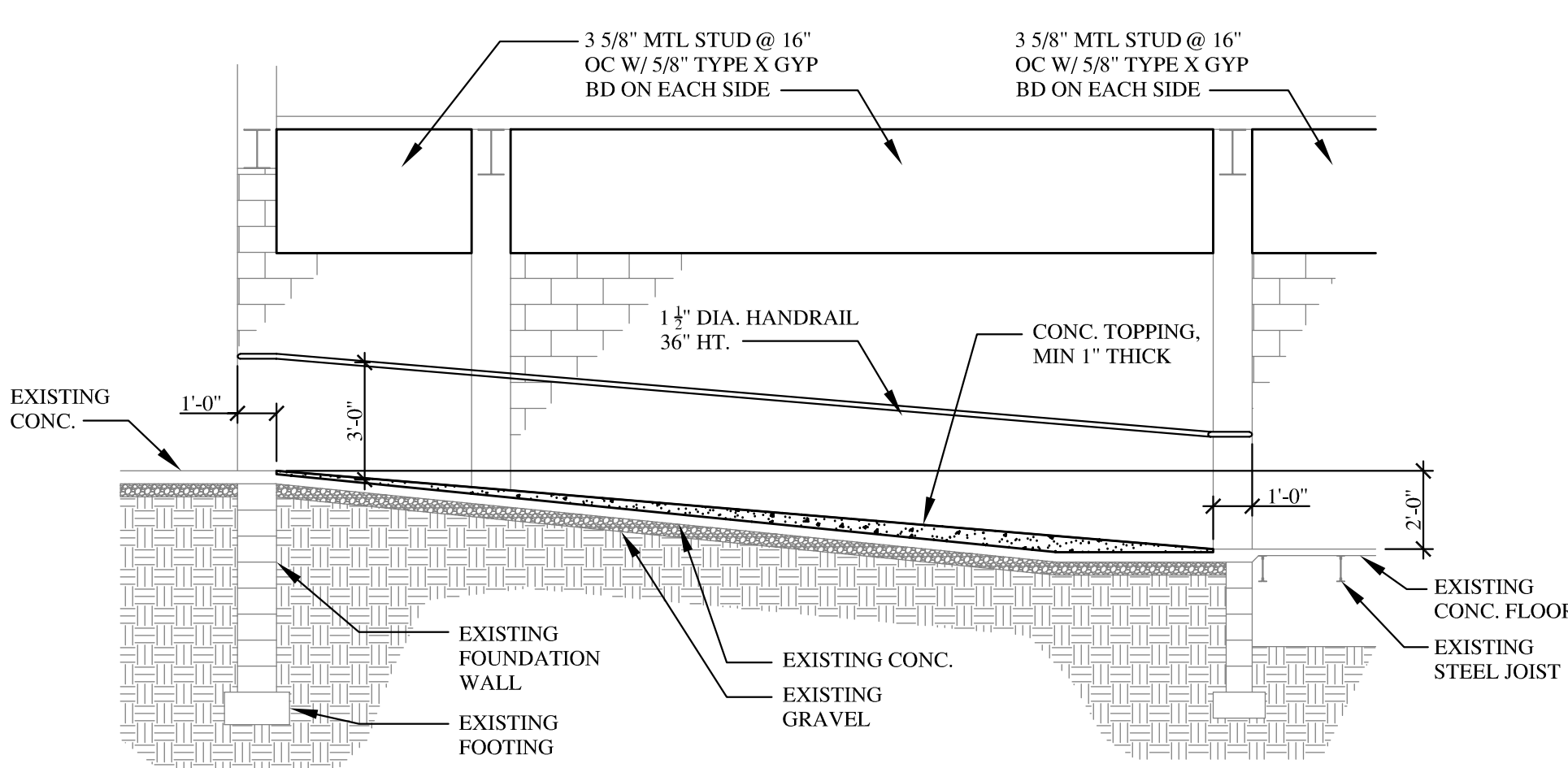
1 RAMP 1.1 - ELEVATION
A-6 1/4"=1'-0"



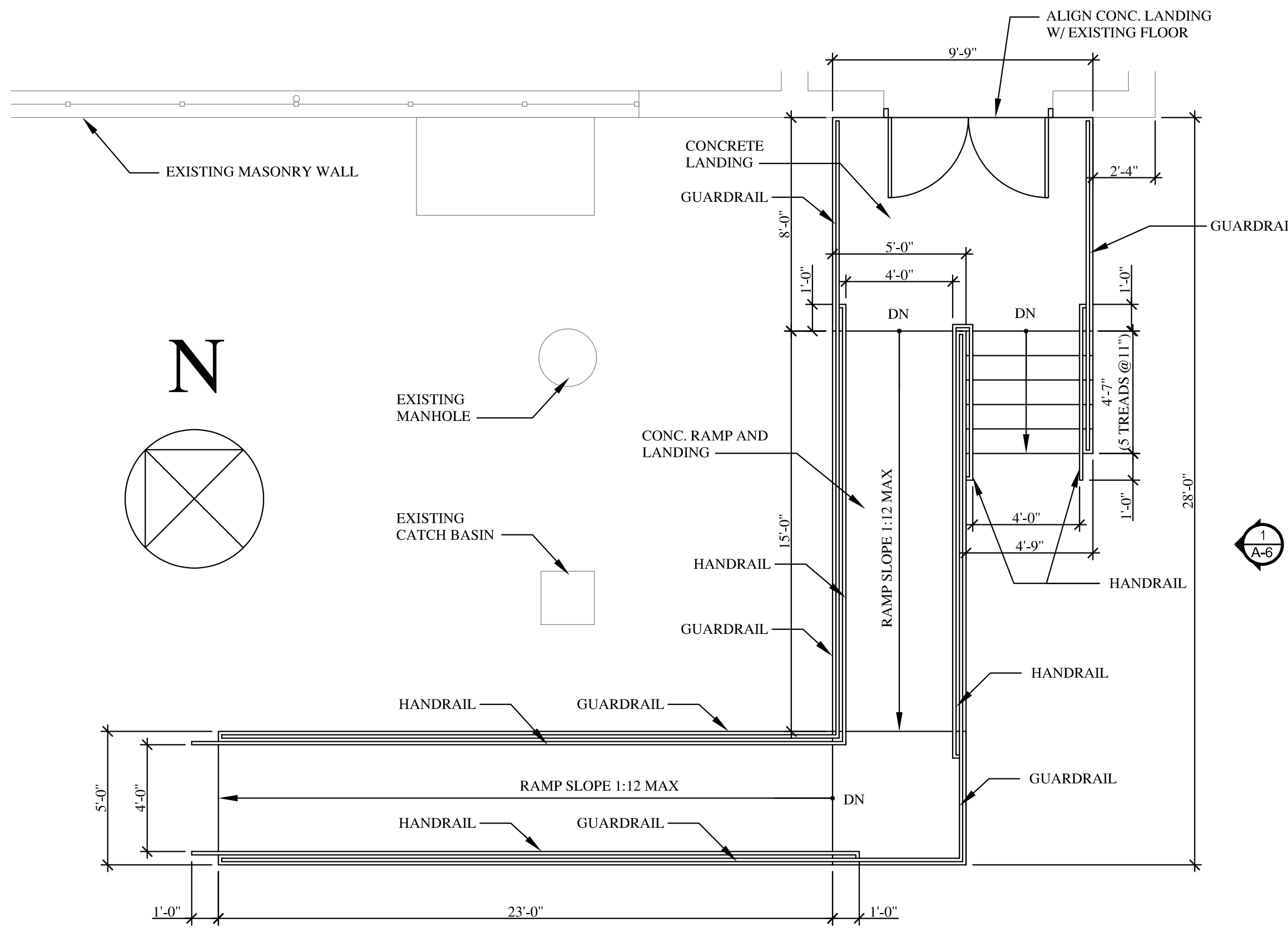
2 RAMP 1.1 - ELEVATION
A-6 1/4"=1'-0"

REFLECTED CEILING PLAN LEGEND:

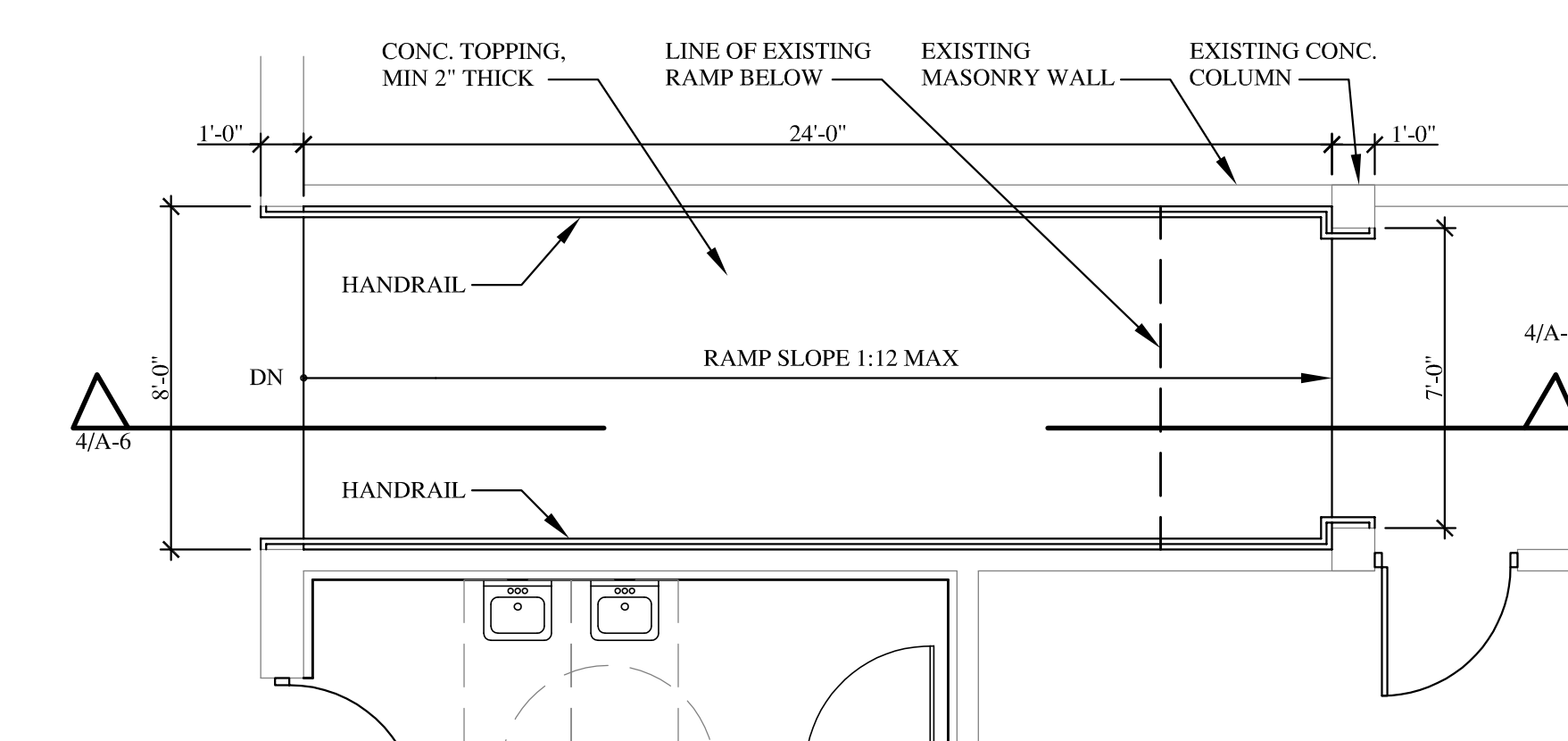
- + X'-X" CEILING HEIGHT ABOVE FINISH FLOOR
- 2X2 ACOUSTICAL CEILING SYSTEM
- 2X4 LIGHT FIXTURE
- 2X2 LIGHT FIXTURE
- HVAC SUPPLY FIXTURE
- HVAC RETURN FIXTURE
- 2 HR RATED WALL
- 1 HR RATED WALL



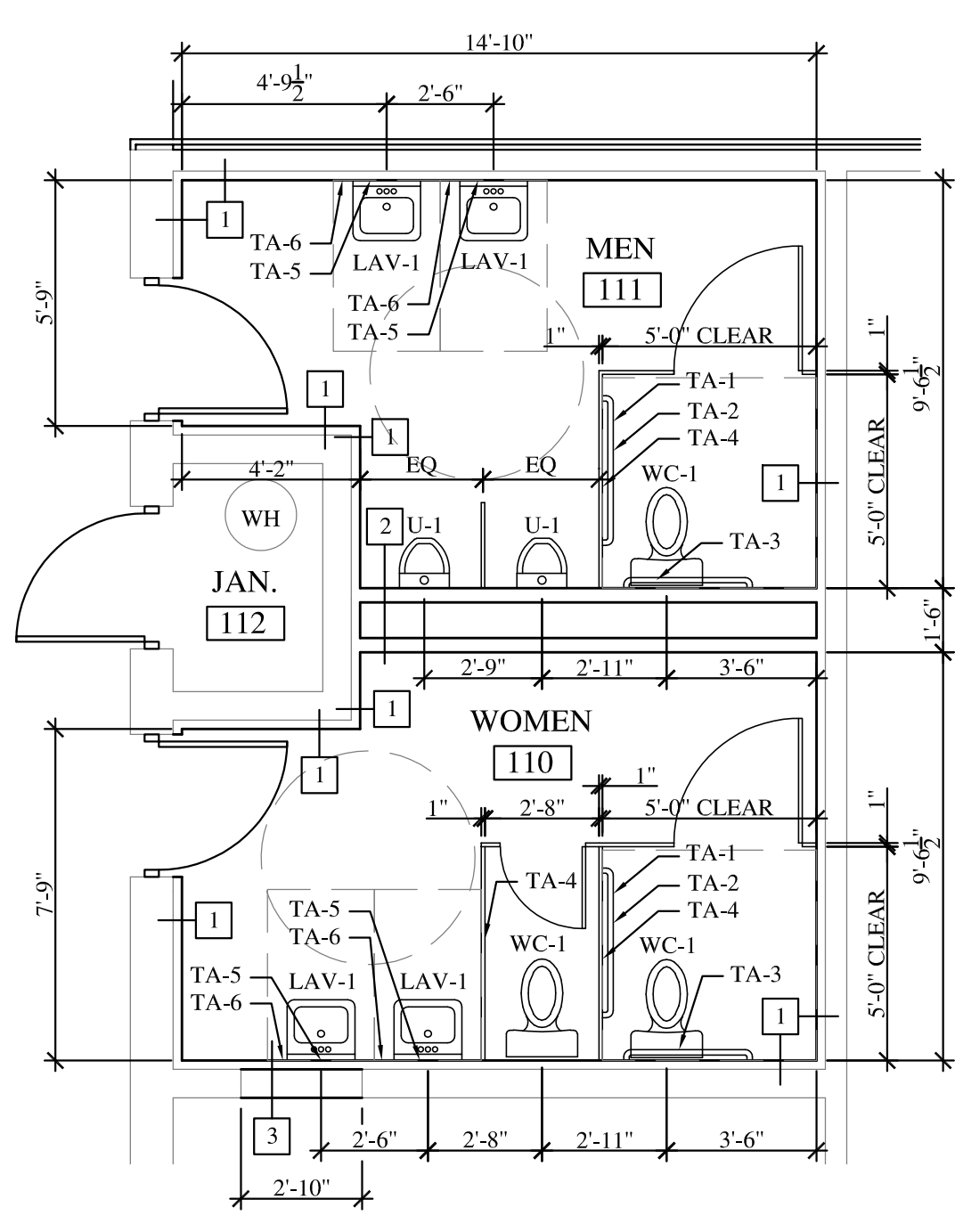
4 RAMP 1.2 - SECTION
A-6 1/4"=1'-0"



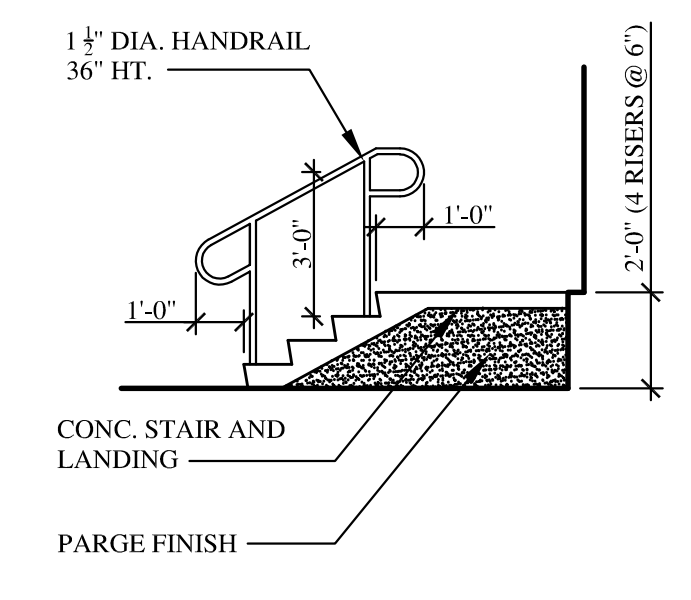
3 RAMP 1.1 - PLAN
A-6 1/4"=1'-0"



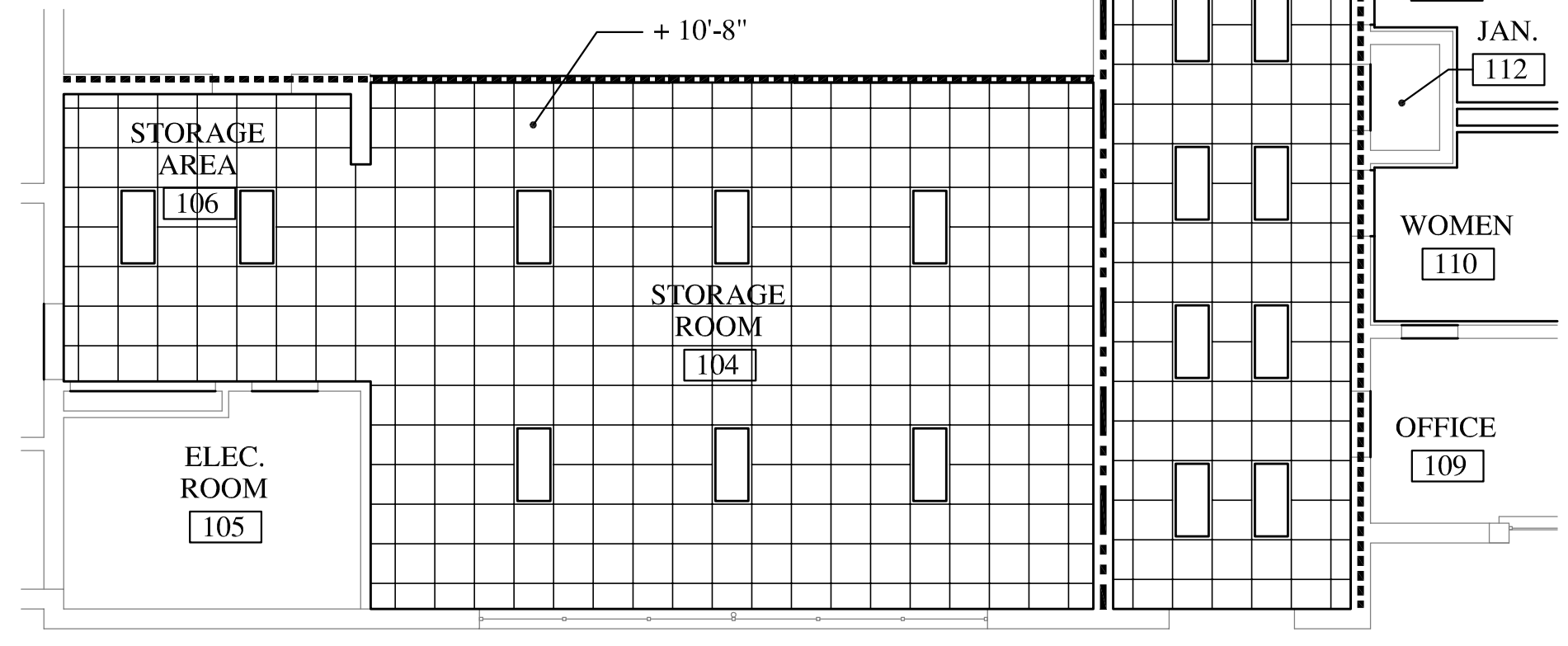
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7 ENLARGED RESTROOM PLAN
A-6 1/4"=1'-0"



6 STAIR PLAN AND ELEVATION
A-6 1/4"=1'-0"



8 REFLECTED CEILING PLAN
A-6 1/8"=1'-0"

TOILET ACCESSORIES:

- TA-1 48" HORIZONTAL GRAB BAR
- TA-2 18" VERTICAL GRAB BAR
- TA-3 36" HORIZONTAL GRAB BAR
- TA-4 TOILET TISSUE DISPENSER
- TA-5 18"W X 30"H MIRROR
- TA-6 WALL MOUNTED LIQUID SOAP DISPENSER

Ellington Design Group, PLLC
2201 BLUEBERRY STREET - BELMONT, NC 28012
PHONE: 980-225-4403 - EMAIL: EDG.BTE@HOTMAIL.COM

ELLINGTON DESIGN GROUP, PLLC
REGISTERED ARCHITECTURAL FIRM
CERT. NO. 53371
NORTH CAROLINA
BELMONT, N.C.

BRUNNEN & THOMAS
REGISTERED PROFESSIONAL ENGINEER
10071
1/29/19
NORTH CAROLINA
BELMONT, N.C.

REVISIONS

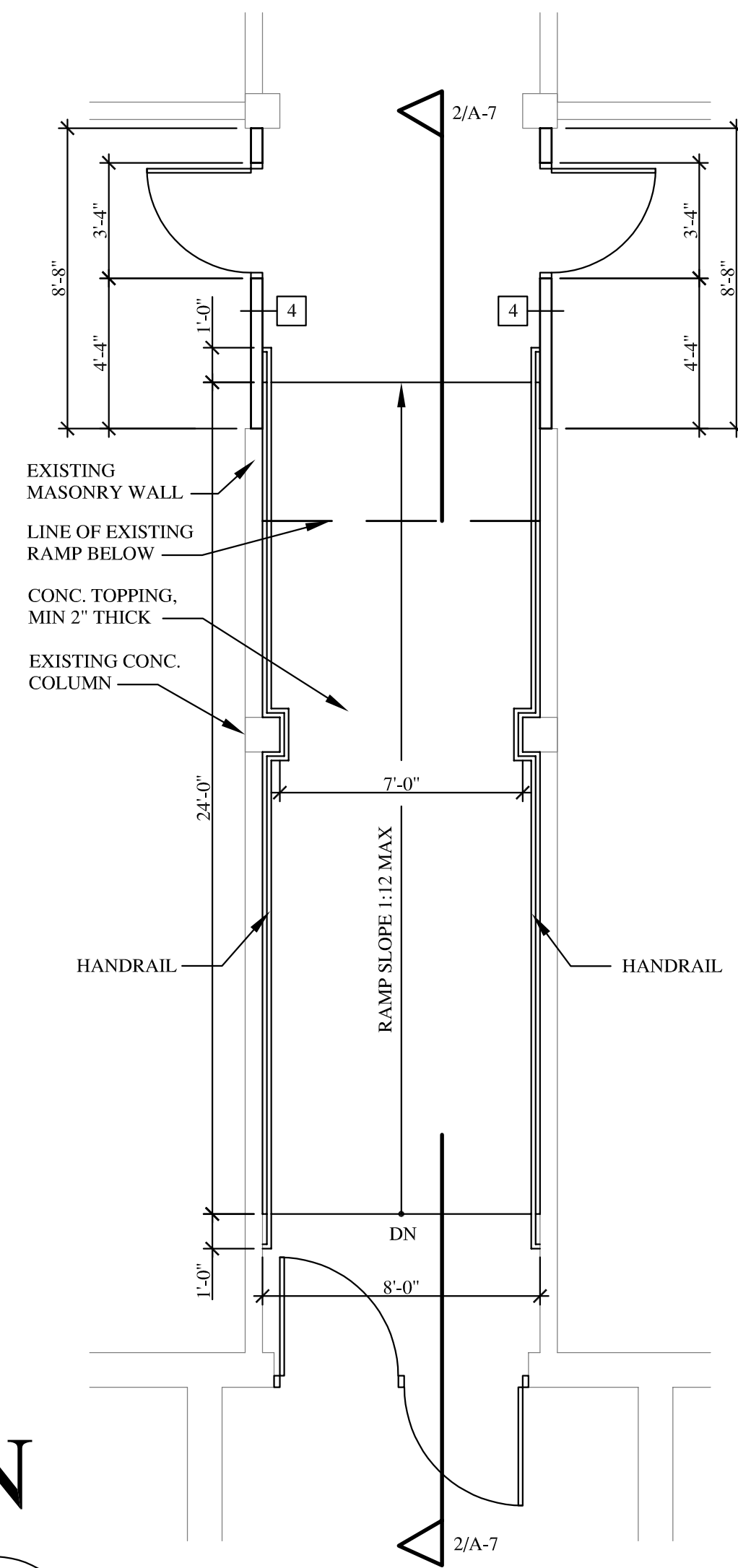
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A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

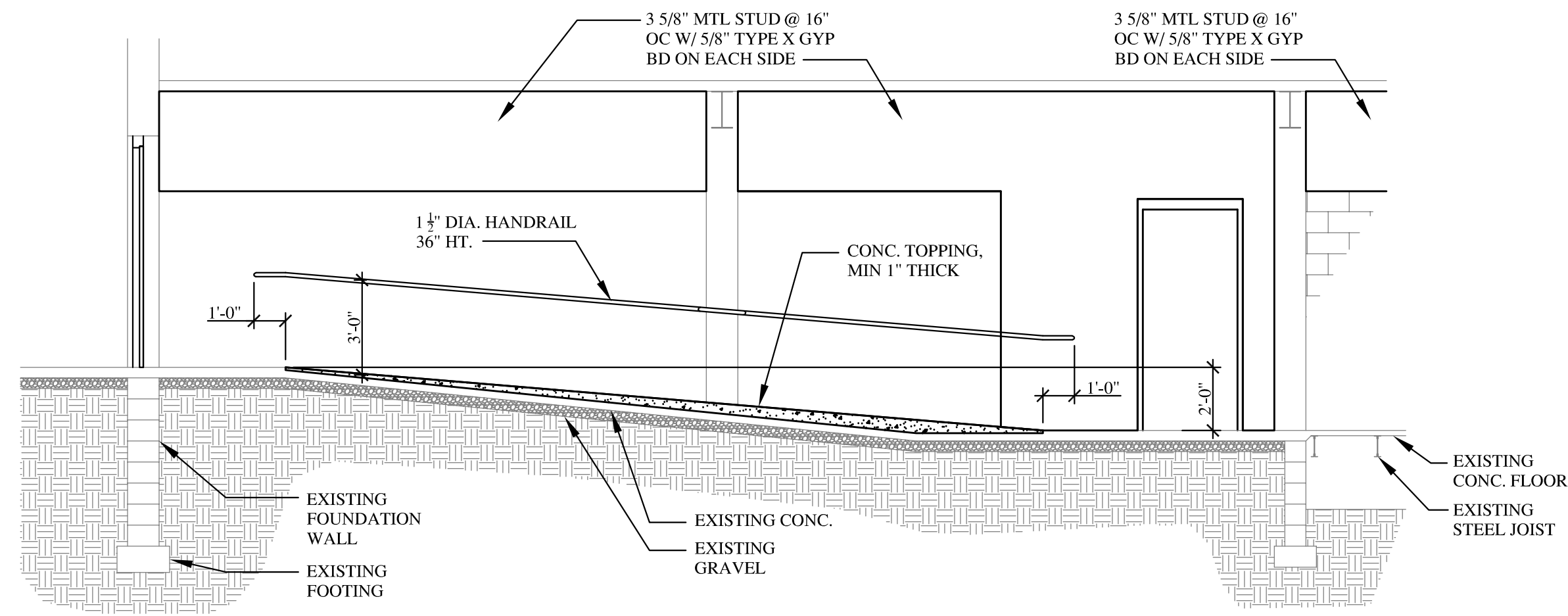
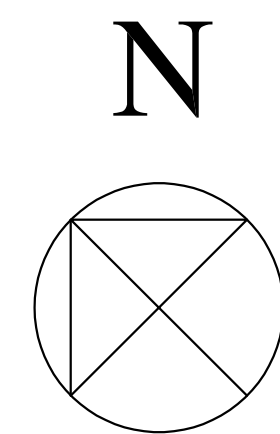
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Scale:
Date Drawn: 7/18
Sheet Title

ENLARGED PLANS AND DETAILS - PHASE I

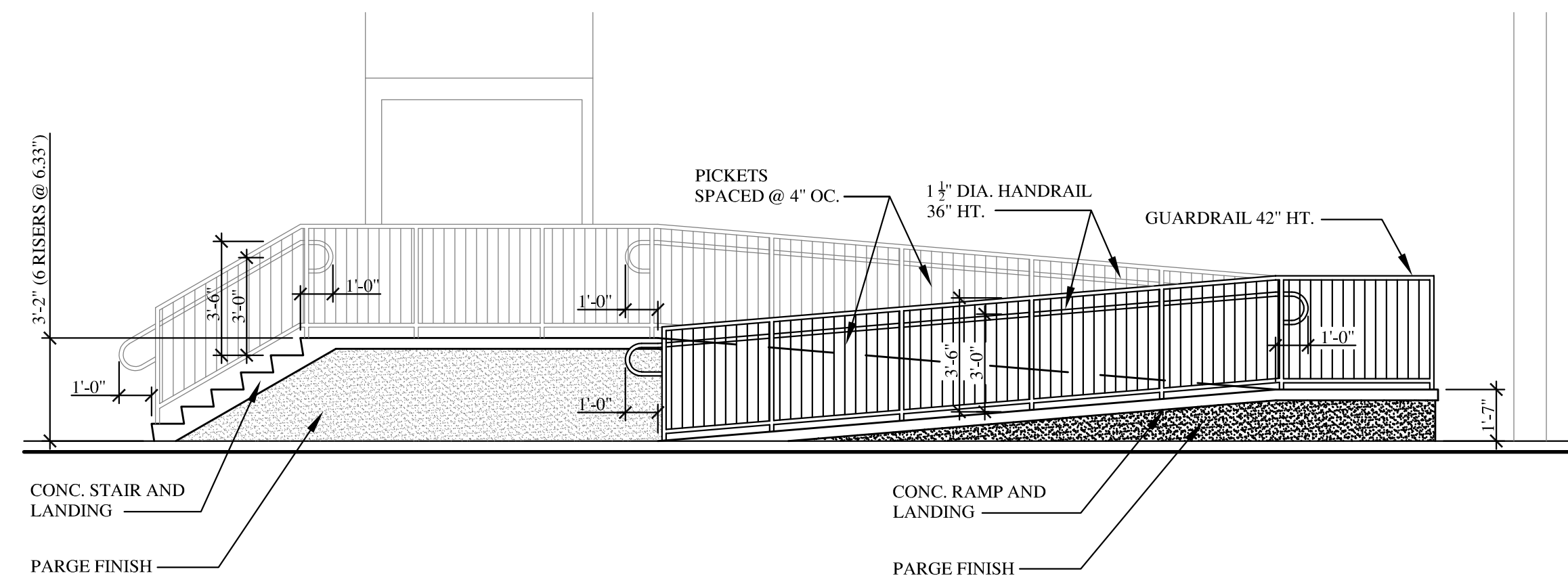
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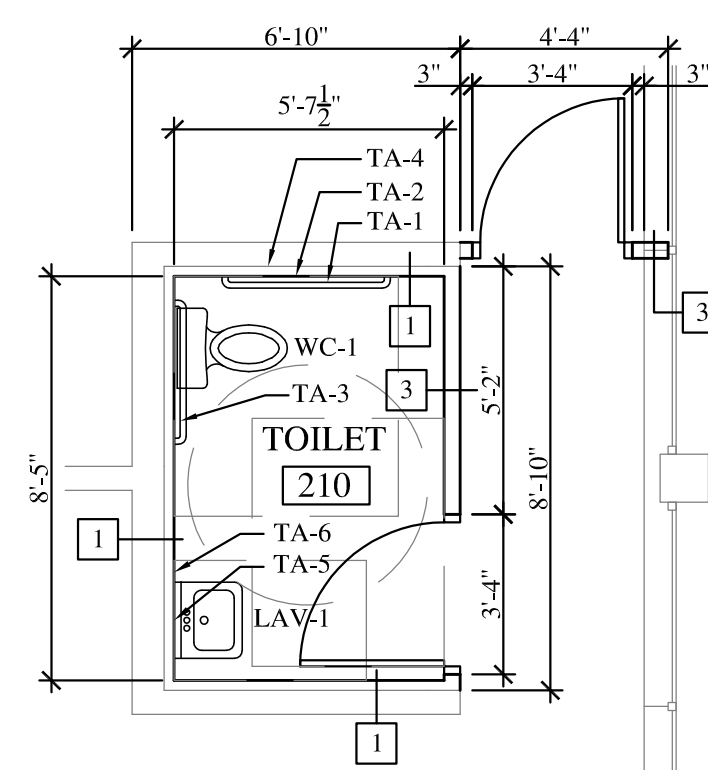


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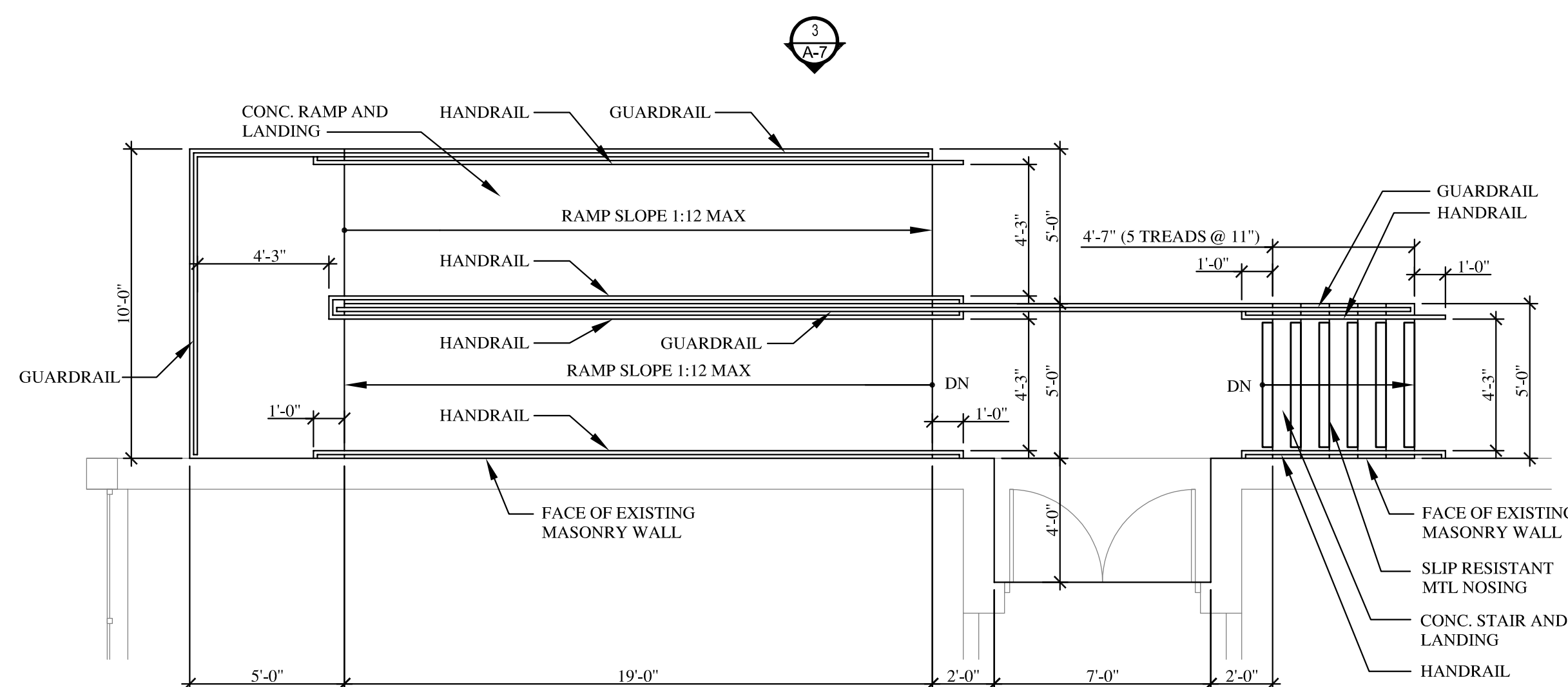
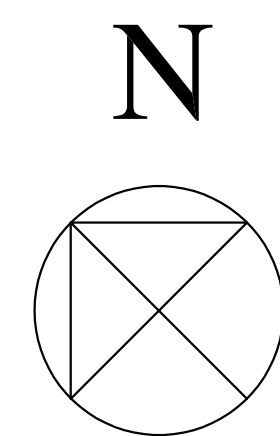


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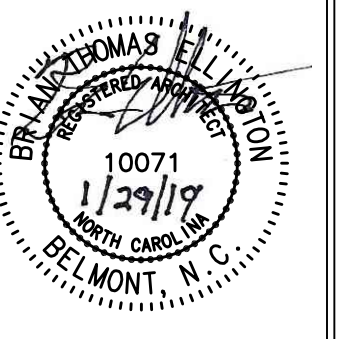
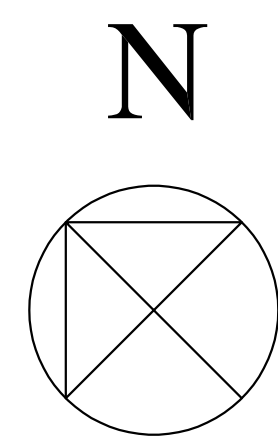
- TOILET ACCESSORIES:**
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 - TA-3 36" HORIZONTAL GRAB BAR
 - TA-4 TOILET TISSUE DISPENSER
 - TA-5 18" X 30" MIRROR
 - TA-6 WALL MOUNTED LIQUID SOAP DISPENSER



5 ENLARGED RESTROOM PLAN
1/4"=1'-0"



4 RAMP 2.1 - PLAN
1/4"=1'-0"



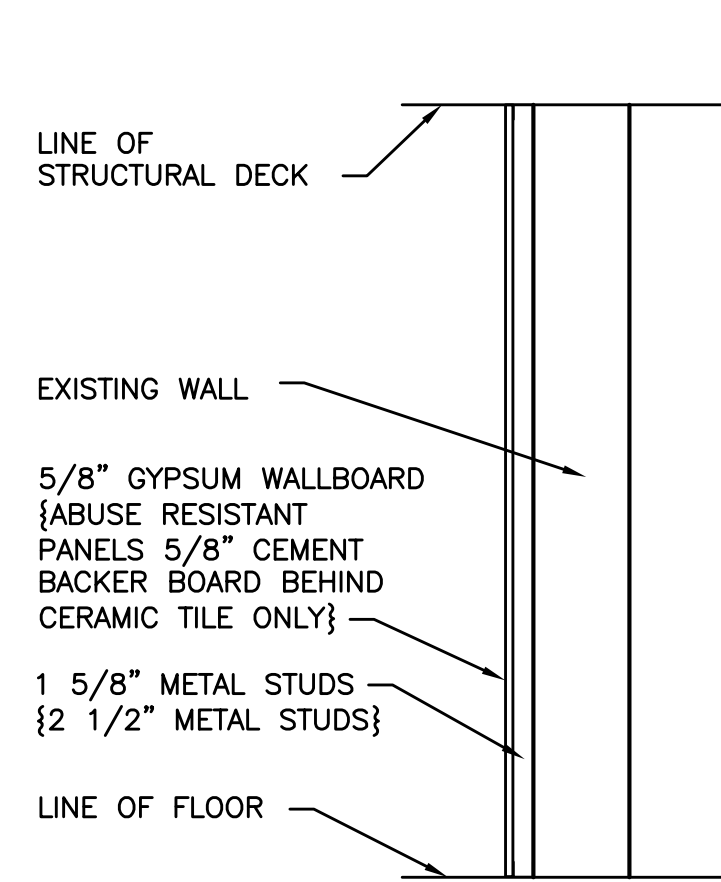
REVISIONS	
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A RENOVATION FOR:
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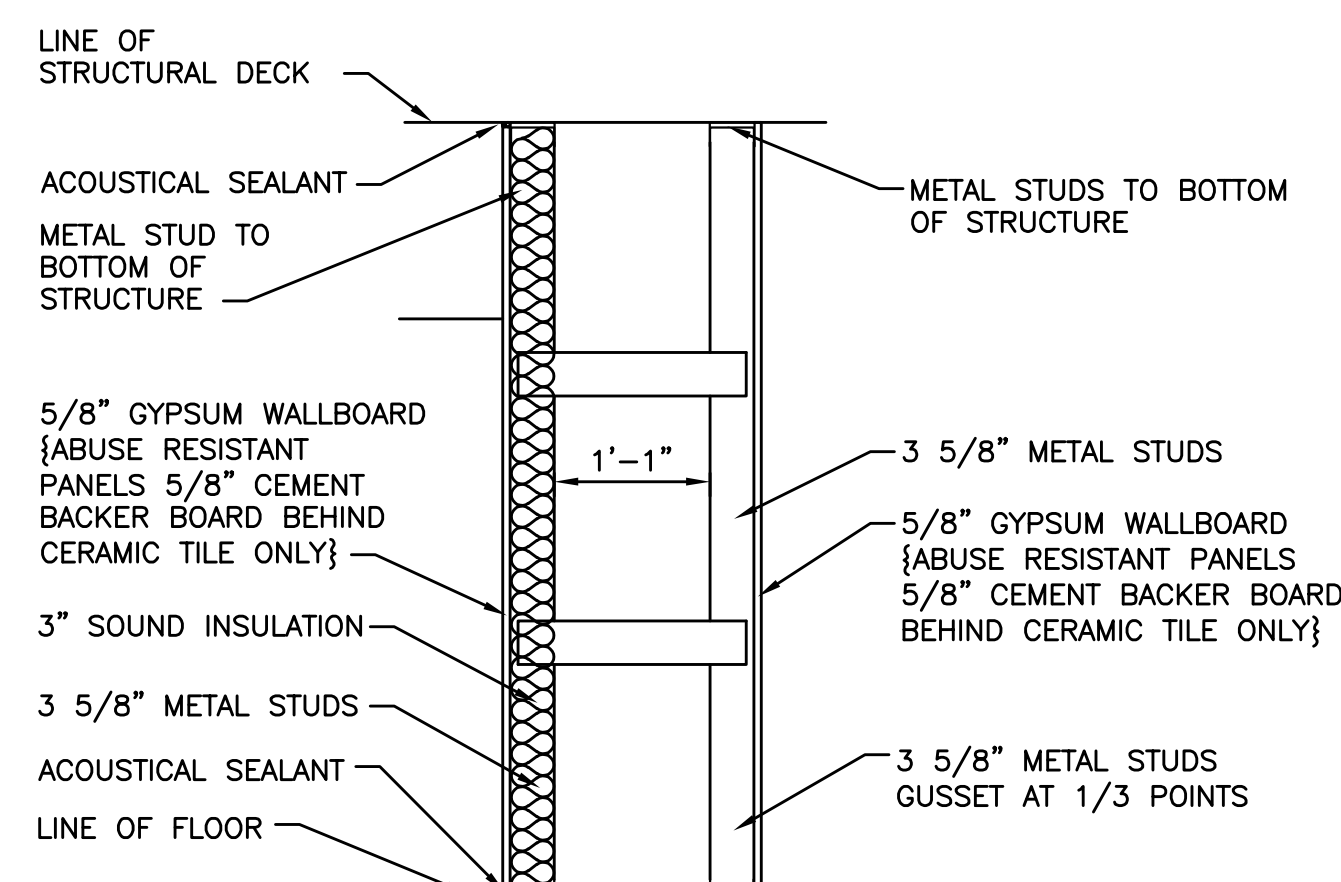
ENLARGED
PLANS AND
DETAILS -
PHASE II

A-7



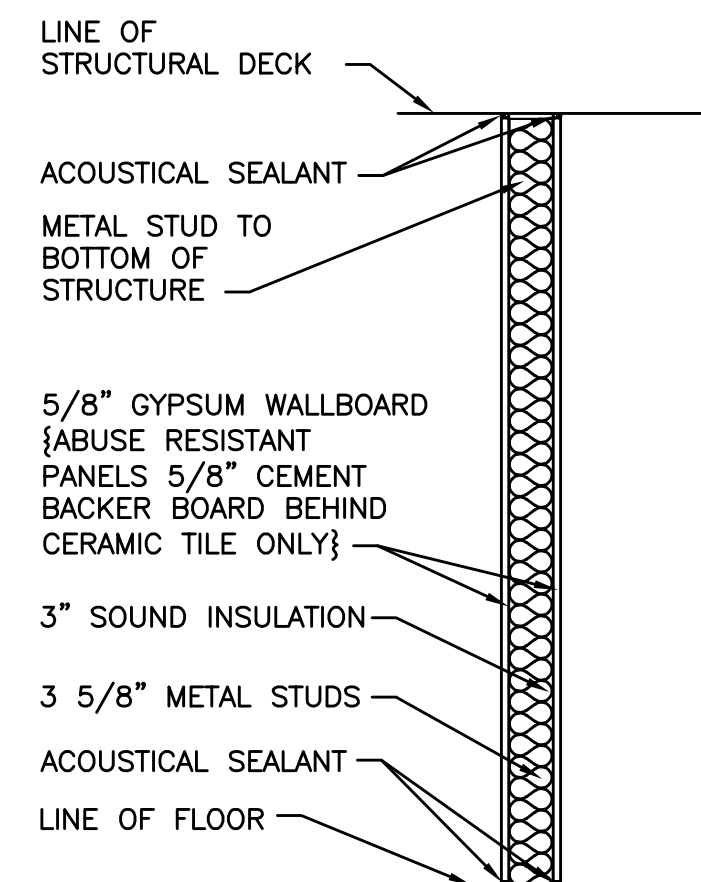
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SCALE: NTS



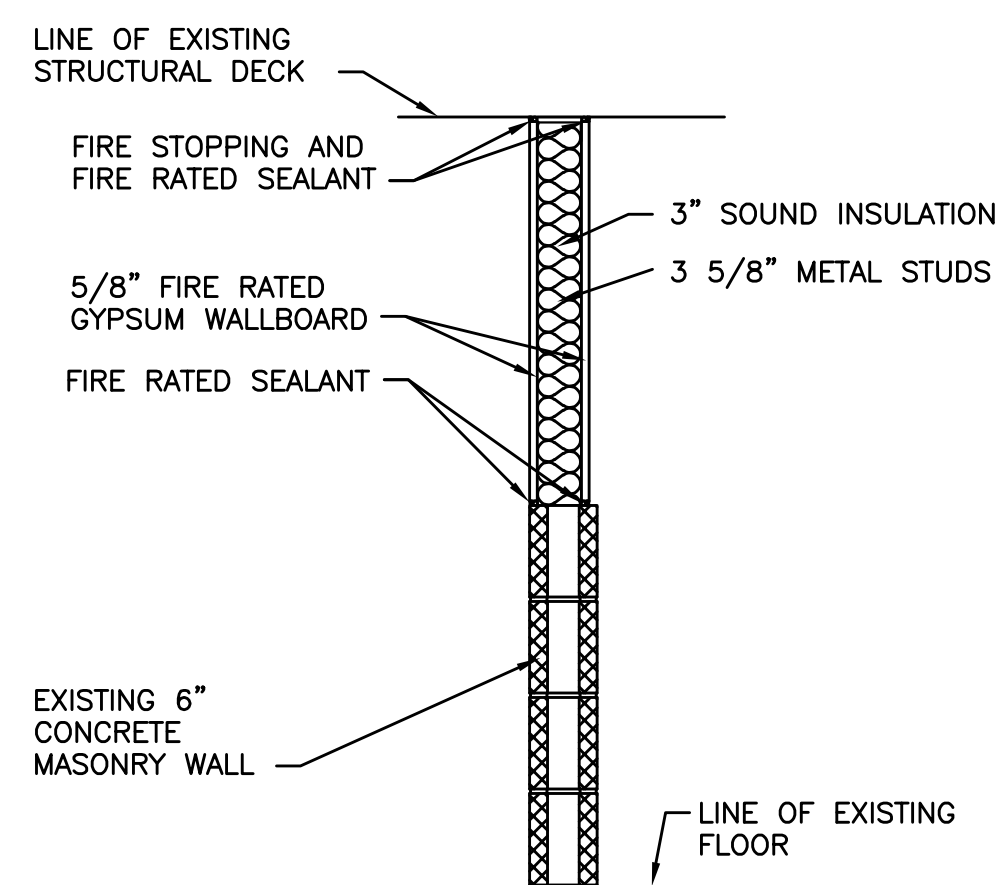
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WALL TYPE 2
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FIRE RATING: NOT RATED

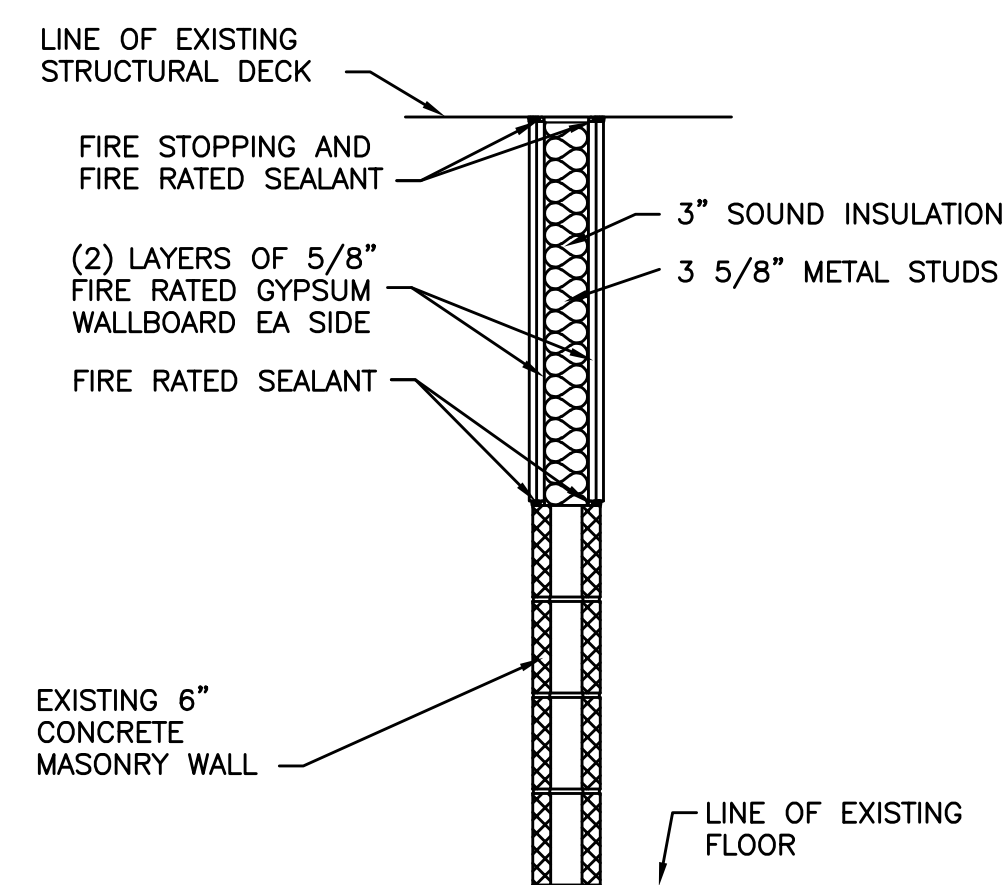
WALL TYPE 3
SCALE: NTS



FIRE RATING: 1 HR
TEST: UL U419

FIRE RATING: 1 HR

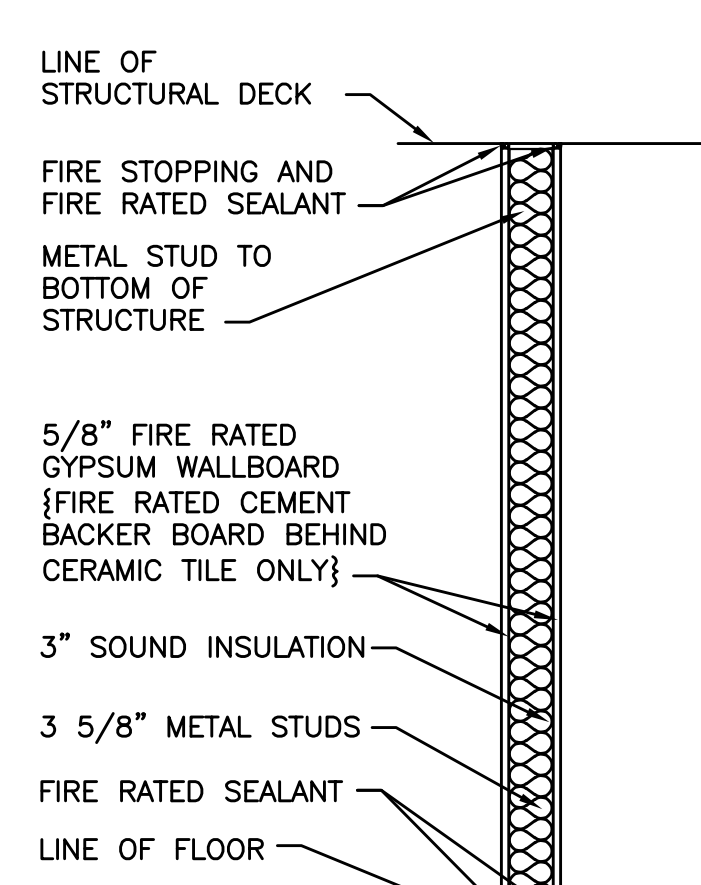
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FIRE RATING: 2 HR
TEST: UL U419

FIRE RATING: 2 HR

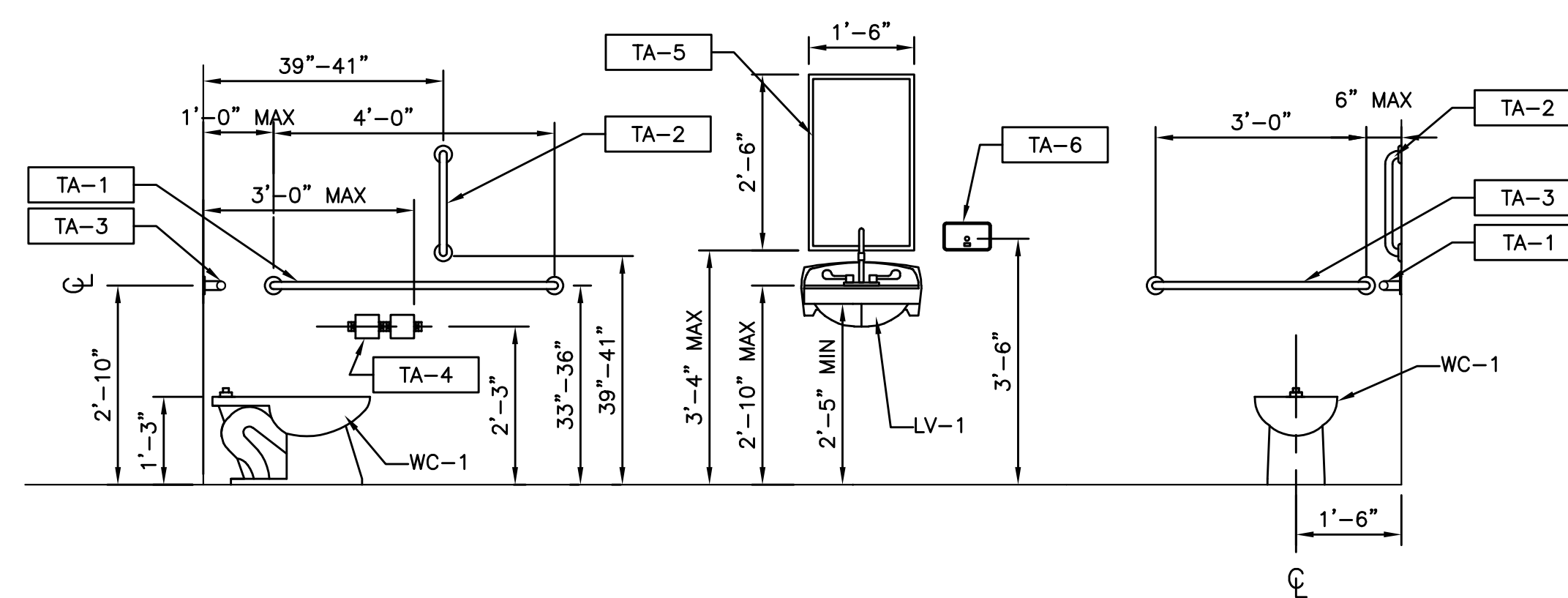
WALL TYPE 5
SCALE: NTS



FIRE RATING: MAXIMUM 1 HR
TEST: UL U465 OR U419

WALL TYPE 6
SCALE: NTS

1 WALL PARTITION TYPES
A-7.1 NOT TO SCALE



TOILET ACCESSORY LEGEND:

- TA-1: 48" GRAB BAR
- TA-2: 18" GRAB BAR
- TA-3: 36" GRAB BAR
- TA-4: TOILET TISSUE DISPENSER (DOUBLE NON-CONTROLLED)
- TA-5: MIRROR SIZE INDICATED ON DRAWINGS
- TA-6: WALL MOUNTED LIQUID SOAP DISPENSER

NOTE:
1. REFER TO PLUMBING DRAWINGS FOR ALL FIXTURE SYMBOLS.
2. ALL ACCESSORIES AND FIXTURES SHALL MEET THE REQUIREMENTS OF ICC A117.1-2009.

2 FIXTURE & ACCESSORY MOUNTING
A-7.1 1/2" = 1'-0"

REVISIONS	
NO.	DATE

ARCHITECTURAL SPECIFICATIONS:

SECTION 03300 CAST-IN-PLACE CONCRETE

QUALITY ASSURANCE
A. ALL CONCRETE SHALL BE DESIGNED, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING REFERENCES WHICH ARE HEREBY INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS:
1. BUILDING CODE OF THE CITY AND STATE IN WHICH THIS DEVELOPMENT IS LOCATED.
2. AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318.
3. AMERICAN CONCRETE INSTITUTE (ACI) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
4. AMERICAN CONCRETE INSTITUTE (ACI) "RECOMMENDED PRACTICE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION" ACI 302.
5. AMERICAN CONCRETE INSTITUTE (ACI) "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING", ACI 306R.
6. AMERICAN CONCRETE INSTITUTE (ACI) "RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING", ACI 305R.
7. AMERICAN CONCRETE INSTITUTE (ACI) "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE", ACI 304.
8. AMERICAN CONCRETE INSTITUTE (ACI) "STANDARD PRACTICE FOR CURING CONCRETE", ACI 308.
9. AMERICAN CONCRETE INSTITUTE (ACI) "RECOMMENDED PRACTICE FOR SELECTING PROPORTIONS FOR NORMAL, HEAVYWEIGHT AND MASS CONCRETE", ACI 211.1.
10. USE THESE SPECIFICATIONS IN CONNECTION WITH STRUCTURAL DRAWINGS SPECIFICATIONS.

PRODUCTS

- MATERIALS**
- A. CEMENT SHALL BE GRAY PORTLAND CEMENT, TYPE 1, OR 1A, CONFORMING TO ASTM C-150, OR OTHER TYPES IF REQUIRED BY THE SOILS ENGINEER. USE SAME BRAND FOR ALL EXPOSED WORK.
- B. WATER SHALL BE POTABLE, CLEAN AND FREE FROM IMPURITIES AFFECTING THE STRENGTH OF THE CONCRETE, IN ACCORDANCE WITH ACI AND ASTM REQUIREMENTS.
- C. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33.
1. FINE AND COARSE AGGREGATES SHALL BE SEPARATE INGREDIENTS AND EACH SHALL CONFORM TO THE APPROPRIATE GRADING REQUIREMENTS OF ASTM C-33.

ADMIXTURES

- A. AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C-260.
- B. CHEMICAL ADMIXTURES CONFORMING TO ASTM C-494 USED TO RETARD OR ACCELERATE SETTING, REDUCE WATER RATIO OR PREVENT FREEZING SHALL NOT BE USED WITHOUT PRIOR APPROVAL. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE MAY BE USED.
- C. FLY ASH SHALL BE A CALCINATED POZZOLAN AND SHALL CONFORM TO ASTM C-618, CLASS C OR-F.
1. FLY ASH MAY BE USED TO REPLACE 25% PORTLAND CEMENT BY WEIGHT MAXIMUM.

ACCESSORIES

- A. NON-SHRINK GROUT SHALL BE PREMIXED, NON-METALLIC, NON-STAINING TYPE.
- B. PREFORMED EXPANSION JOINTS SHALL BE 1/2" THICK ASPHALT IMPREGATED CANE FIBER EXPANSION JOINTS, CONFORMING TO ASTM D-1751.
- C. BOND BREAKER SHALL BE NO. 15 ASPHALT SATURATED PLAIN ORGANIC JOINT CONFORMING TO ASTM D-226.
- D. EXPANSION JOINT SEALANT SHALL BE TRAFFIC GRADE, SELF LEVELING, COLOR SHALL BE BLACK.
1. PRODUCT/MANUFACTURER, ONE OF THE FOLLOWING:
2. PRIMER SHALL BE AS RECOMMENDED BY SEALANT MANUFACTURER.
- E. WATER BASED, ACRYLIC MEMBRANE, CURING COMPOUND SHALL BE CLEAR, CONFORMING TO ASTM C-309, MINIMUM SOLIDS - 18% AND SHALL BE COMPATIBLE WITH ADHESIVES, MASTICS, ETC. SCHEDULED FOR APPLICATION TO CONCRETE SURFACE.
- F. CONCRETE SEALER SHALL BE COLORLESS, ODORLESS, DEEP PENETRATING, DUST PROOF, VOC COMPLIANT MATERIAL.
- G. CONSTRUCTION AND CONTROL JOINT FILLER SHALL BE A SEMI-RIGID EPOXY WITH A SHORE 'A' HARDNESS OF 80+.

CONCRETE MIX

- A. MIX CONCRETE IN ACCORDANCE WITH ACI 304. DELIVER CONCRETE IN ACCORDANCE WITH ADTM C-94.
- B. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE CONSISTING OF A PROPORTIONED MIXTURE OF PORTLAND CEMENT, FINE AND COARSE AGGREGATE AND WATER.
1. CONCRETE PROPORTIONS SHALL BE SELECTED ON THE BASIS OF TRIAL MIXES CONFORMING TO ACI 211.1.
2. CONCRETE SHALL BE SO PROPORTIONED TO PROVIDE A WATER/CEMENT RATIO BETWEEN 0.45 AND 0.50. IN NO CASE SHALL THE WATER/CEMENT RATIO EXCEED 0.50.
- C. ALL CONCRETE UNLESS OTHERWISE NOTED, SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. MIX DESIGN SHALL BE SO PROPORTIONED TO CONTAIN A MINIMUM OF 517 POUNDS OF CEMENT PER CUBIC YARD.
1. 1500 PSI CONCRETE MAY BE USED FOR FILL. MIX DESIGN SHALL BE SO PROPORTIONED TO CONTAIN A MINIMUM OF 376 POUNDS OF CEMENT PER CUBIC YARD.
2. FLY ASH CONFORMING TO ASTM C-618 MAY BE SUBSTITUTED FOR UP TO 25% BY WEIGHT OF PORTLAND CEMENT.
- D. ALL CONCRETE UNLESS OTHERWISE NOTED, SHALL BE PROPORTIONED TO HAVE A SLUMP OF 2-1/2" TO 4" MAXIMUM. TOLERANCE IN SLUMP SHALL NOT EXCEED ACI RECOMMENDATIONS.
1. SLUMP FOR CONCRETE FILL MAY BE 6" MAXIMUM.
- E. ALL EXTERIOR CONCRETE, BUILDING FOUNDATIONS, PIERS AND FOUNDATION WALLS SHALL BE AIR-ENTRAINED, AIR CONTENT SHALL BE 6%+1%.
- F. CHEMICAL ADMIXTURES USED TO RETARD OR ACCELERATE SETTING, REDUCE WATER/CEMENT RATIO OR PREVENT FREEZING SHALL NOT BE USED WITHOUT PRIOR APPROVAL.
- G. NO ADMIXTURE CONTAINING CALCIUM CHLORIDE MAY BE USED.
- H. MAXIMUM AGGREGATE SIZE SHALL CONFORM TO THE FOLLOWING AND SHALL NOT EXCEED TOLERANCES ON OVERSIZE AS PER ASTM C-33.
1. SLABS ON GROUND 3/4" - 1"

EXECUTION

EXAMINATION

- A. VERIFY ALL SITE CONDITIONS, FORMWORK LINES AND LEVELS, POROUS FILL, SUBGRADE LEVELS, ETC., PRIOR TO POURING CONCRETE.

PREPARATION

- A. PROTECT BOTTOM OF EXCAVATION FROM FROST. DO NOT PLACE FOUNDATIONS, FOOTINGS OR SLABS ON FROZEN GROUND. KEEP EXCAVATIONS FREE OF WATER.
1. PRIOR TO PLACING CONCRETE, WATER, ICE, SNOW, LOOSE EARTH AND DEBRIS SHALL BE REMOVED FROM THE EXCAVATION.
- B. FILL ALL OVER EXCAVATION WITH CONCRETE FILL, IF DIRECTED BY THE GENERAL CONTRACTOR, TO ESTABLISHED ELEVATIONS.
- C. MIXING AND CONVEYING EQUIPMENT SHALL HAVE HARDENED CONCRETE AND OTHER FOREIGN MATERIALS REMOVED FROM INNER SURFACES BEFORE BEGINNING A RUN OF CONCRETE.
- D. SET AND ACCURATELY PLACE ALL FRAMES, SLEEVES, ROUGH HARDWARE, THRESHOLD ANCHORS, ANCHOR BOLTS, ETC., FURNISHED BY OTHER TRADES TO BE EMBEDDED OR ENCASED IN CONCRETE.
1. ANCHOR BOLTS AND LEVELING PLATES FOR STEEL COLUMNS SHALL BE SET IN ACCORDANCE WITH 'APPROVED' ANCHOR BOLT SETTING SHOP DRAWINGS AND SETTING TEMPLATES. LEVELING PLATES ARE TO BE SET TO ELEVATIONS INDICATED. PROVIDE SOLID NON-SHRINKING GROUT BED.

INSTALLATION

- A. PLACEMENT - GENERAL
1. DELIVER AND PLACE CONCRETE IN ACCORDANCE WITH ACI-304 AND ASTM C-94.
2. CONCRETE SHALL BE HANDLED FROM THE MIXER TO THE PLACE OF FINAL DEPOSIT AS RAPIDLY AS PRACTICABLE, BY METHODS WHICH WILL PREVENT THE SEPARATION OR LOSS OF THE INGREDIENTS. IT SHALL BE DEPOSITED AS NEARLY AS POSSIBLE IN ITS FINAL POSITION TO AVOID REHANDLING.
3. CONCRETE DURING AND IMMEDIATELY AFTER DEPOSITING SHALL BE THOROUGHLY VIBRATED BY MEANS OF SUITABLE TOOLS. THE CONCRETE SHALL BE THOROUGHLY WORKED AROUND THE REINFORCEMENT AND INTO THE CORNERS OF THE FORMS.
4. UNLESS ADEQUATE PROTECTION IS PROVIDED CONCRETE SHALL NOT BE PLACED DURING RAIN, SLEET OR SNOW. PROTECT CONCRETE FROM RAIN WATER, MAINTAIN CONCRETE WATER RATIO AND PROTECT CONCRETE SURFACE.
5. ALL CONCRETE SHALL BE ADEQUATELY PROTECTED AFTER POURING TO PREVENT DAMAGE FROM FREEZING, BY THE USE OF SUITABLE COVERS AND ADEQUATE HEATING EQUIPMENT. FROZEN AND DAMAGED CONCRETE MUST BE REMOVED AND REPLACED AT THIS CONTRACTOR'S EXPENSE. DO NOT PLACE CONCRETE ON FROZEN EARTH.
6. UTILIZE COLD WEATHER AND/OR HOT WEATHER INSTALLATION PROCEDURES AND PROTECTION AS RECOMMENDED IN ACI 306R AND ACI 305R.

PLACEMENT - FLOOR SLABS

1. CONCRETE FLOOR SLABS ON GRADE SHALL NOT BE POURED UNTIL ALL UNDER FLOOR CONSTRUCTION, INCLUDING MECHANICAL AND ELECTRICAL LINES ARE INSTALLED COMPLETE, BACKFILLED, INSPECTED AND APPROVED.
2. CONSTRUCTION JOINTS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS, SHALL BE FORMED AT THE END OF EACH DAY'S POUR.
3. CONTROL JOINTS SHALL BE PLACED THROUGHOUT THE ENTIRE CONCRETE FLOOR SLAB.
4. ALIGNMENT OF CONTROL JOINTS MUST BE STRAIGHT.
5. SAW CUTTING MUST BE DONE AS SOON AS THE CONCRETE IS SET ENOUGH THAT THE CUTTING OPERATION DOES NOT DISTURB THE SURFACE MATRIX OF THE CONCRETE.
6. ALL SAW CUT JOINTS WITHIN THE SALES FLOOR SLAB TO BE COVERED WITH VINYL TILE SHALL NOT BE FILLED.
7. SAW CUTS SHALL BE 1/8" WIDE X 1" DEEP.
8. FURNISH AND INSTALL NO. 15 FELT BOND BREAKER FULL DEPTH OF SLAB WHERE SLABS ABUT VERTICAL SURFACE AND ELSEWHERE AS INDICATED ON THE DRAWINGS.
9. SHAPE SLABS TO THE SLOPES AND ELEVATIONS INDICATED, AND ACCURATELY PITCH OR GRADE TO THE DRAINAGE FITTINGS, EQUIPMENT AND FIXTURES OCCURRING THEREIN.

PLACEMENT EXTERIOR CONCRETE

1. EXTERIOR SIDEWALKS, SLABS, APRONS, CURBS, COMBINATION CURB AND GUTTER, PADS, RAMPS, APPROACHES, ETC., CONNECTED TO OR ABUTTING BUILDINGS SHALL BE POURED TO SLOPES, ELEVATIONS AND PROFILES INDICATED ON DRAWINGS AND ACCURATELY PITCHED TO DRAINAGE FITTINGS OCCURRING THEREIN.
2. FURNISH AND INSTALL EXPANSION JOINTS WHERE EXTERIOR SLABS, PAVEMENTS, SIDEWALKS, ETC., ABUT VERTICAL SURFACES AND FIFTY FEET (50') MAXIMUM ON CENTER UNLESS OTHERWISE INDICATED. JOINTS SHALL BE EQUALLY SPACED IN A REGULAR PATTERN ALONG SIDEWALK OR WITHIN ANY GIVEN SLAB AREA. JOINTS IN CURB SHALL ALIGN WITH SIDEWALK AND SLAB JOINTS.

- A. EXPANSION JOINTS SHALL BE 1/2" THICK, FULL DEPTH OF SLAB. SET FILLER APPROXIMATELY 1" BELOW FINISHED SURFACE AND FILL WITH NON-TRACKING RUBBER OR ELASTOMERIC SEALANT.
3. CONTROL JOINTS SHALL BE 1/8" - 1/4" TOOLED OR FORMED. SAW CUT JOINTS WILL BE PERMITTED. DEPTH OF JOINTS SHALL BE 1/5 TO 1/4 OF SLAB THICKNESS.
A. CONTROL JOINTS IN SIDEWALKS SHALL BE SPACED AS INDICATED ON DRAWINGS. UNBROKEN CONCRETE AREA SHALL NOT BE LESS THAN 16 SQUARE FEET AND NO MORE THAN 36 SQUARE FEET.
B. SAW CUT JOINTS SHALL BE FILLED WITH A SELF-LEVELING SILICONE POLYMER SEALANT.
4. ALL EXPOSED EDGES OF EXPANSION AND CONTROL JOINTS, ETC., SHALL BE ROUNDED WITH A 1/4" RADIUS-EDGING TOOL.

CONCRETE FINISHES

- A. "DEFINITION" OF FINISH TYPES SHALL BE AS DEFINED IN SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS ACI 301.
B. ALL FLOORS SLABS SHALL BE FINISHED AS FOLLOWS:
1. EXTERIOR SLABS, SIDEWALKS, CURBS, RAMPS, AND PADS SHALL HAVE A "BROOM OR BELT FINISH".

SECTION 05400 COLD FORMED METAL FRAMING

PRODUCTS

METAL FRAMING

- A. SYSTEM COMPONENTS
1. FURNISH MANUFACTURER'S STANDARD STEEL RUNNERS (TRACKS), BLOCKING, LINTELS, CLIP ANGLES, SHOES, REINFORCEMENTS, FASTENERS, AND ACCESSORIES AS RECOMMENDED BY MANUFACTURER FOR APPLICATIONS INDICATED, AS NEEDED TO FURNISH A COMPLETE METAL FRAMING SYSTEM.
- B. MATERIALS AND FINISHES
1. FABRICATE METAL FRAMING COMPONENTS OF CORROSION RESISTANT STRUCTURAL QUALITY STEEL SHEET. STEEL STUDS SHALL CONFORM TO ASTM A446, GRADE A, WITH A MINIMUM YIELD POINT OF 33KS1 FOR 18 AND 20 GAUGE; GRADE D WITH A MINIMUM YIELD POINT OF 50 KS1 FOR 12, 14 AND 16 GAUGE. UNLESS SHOWN SPECIFICALLY ON DRAWINGS, ALL 20 AND 18 GAUGE STUDS TO HAVE A MINIMUM OF 1-3/8" FLANGE, ALL 16 AND 14 GAUGE STUDS TO HAVE A MINIMUM OF 1-5/8" FLANGE, AND 12 GAUGE STUDS TO HAVE A MINIMUM OF 2" FLANGE.
- C. FURNISH GALVANIZED FINISH TO METAL FRAMING COMPONENTS COMPLYING WITH ASTM A 525 AND C-955 FOR MINIMUM G60 COATING.

- D. "C" - SHAPE STUDS SHALL BE MANUFACTURER'S STANDARD LOAD-BEARING STUDS DESIGNED TO CARRY APPROPRIATE LOADS AND BE OF SIZE, AND SHAPE, INDICATED, WITH FLANGE RETURN LIP.
1. STUDS SHALL BE THE DEPTH AND SPACING AS INDICATED ON THE DRAWINGS.
2. STUDS AT EXTERIOR CANOPY FRAMING SHALL BE DESIGNED TO MEET LOCAL CODE LOAD REQUIREMENTS.
3. BRACE FRAMING DIAGONALLY IN ACCORDANCE WITH APPLICABLE STANDARDS WITHOUT REGARD FOR FACING MATERIALS, INCLUDING TENSION STRAPS BOTH DIRECTIONS. ANCHOR TO PREVENT UPLIFT AND BRACE BACK TO STRUCTURE.
4. FURNISH BRIDGING TO COMPLY WITH APPLICABLE STANDARDS AND MANUFACTURER'S PRODUCT DATA.

MANUFACTURERS

- A. "C" SHAPED STUDS
1. DALE INDUSTRIES
2. DIETRICH
3. MARINOWARE
4. UNIMAST INCORPORATED

EXECUTION

- A. INSTALL METAL FRAMING SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S PRINTED OR WRITTEN INSTRUCTIONS AND RECOMMENDATIONS, UNLESS OTHERWISE INDICATED.

SECTION 06100 ROUGH CARPENTRY

PRODUCTS

MATERIALS

- A. DIMENSION AND BOARD LUMBER SHALL BE SOUTHERN YELLOW PINE. ALL LUMBER SHALL BE "SEASONED DRY" (S-DRY), 19% OR LESS MOISTURE CONTENT.
1. SPECIES OF LUMBER OTHER THAN THAT SPECIFIED MAY BE SUBSTITUTED PROVIDING ALTERNATE SPECIES CONFORMS IN ALL RESPECTS WITH MINIMUM DESIGN VALUES SPECIFIED.
A. EXTREME FIBER STRESS IN BENDING SHALL BE 1250 P.S.I. (FB) REPETITIVE (MINIMUM).
2. LUMBER GRADES SHALL BE AS FOLLOWS:
A. BEAMS AND STRINGERS (5" AND THICKER, WIDTH MORE THAN 2" GREATER THAN THICKNESS) SHALL BE SOUTHERN YELLOW PINE, S4S, NO. 1 OR BETTER.
B. STRUCTURAL JOIST AND PLANKS (2" TO 4" THICK, 6" AND WIDER) SHALL BE SOUTHERN YELLOW PINE, S4S, NO. 2 OR BETTER.
C. STRUCTURAL LIGHT FRAMING (2" TO 4" THICK, 2" TO 4" WIDE) SHALL BE SOUTHERN YELLOW PINE, S4S, NO. 2 OR BETTER.
D. LIGHT FRAMING AND STUDS (2" TO 4" THICK, 2" TO 4" WIDE) SHALL BE SOUTHERN YELLOW PINE, S4S, CONSTRUCTION OR BETTER.
E. BOARDS SHALL BE SOUTHERN YELLOW PINE, S4S, STANDARD OR BETTER.
3. LUMBER USED IN CONSTRUCTION UNDER ROOFING, AT EAVES, ROOF CURBS, ETC. SHALL BE TREATED WITH WOOD PRESERVATIVE.
A. PLYWOOD GRADES SHALL BE AS FOLLOWS:
1. PLYWOOD WAINSCOT OR WALLS AND BACKUP SHALL BE INT-APA B-D.
2. PLYWOOD WALLS (UNFINISHED EXPOSURE 2) SHALL BE B-D INT-APA OR
APA RATED SHEATHING, EXPOSURE 2.
3. PLYWOOD FLOORING SHALL BE 3/4", APA RATED STURD-1-FLOOR 24" O.C., EXPOSURE 2, T&G
4. PLYWOOD WALL SHEATHING SHALL BE C-D INT-APA WITH EXTERIOR GLUE.
5. SEE DRAWINGS FOR THE ABOVE PLYWOOD LOCATIONS AND THICKNESS.

B. JOIST HANGERS SHALL BE GALVANIZED

- C. ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A-307.
1. EXPANSION BOLTS, SLEEVE ANCHORS, OR EPOXY ANCHORS (WITH OR WITHOUT SCREEN TUBES DEPENDING ON APPLICATION) MAY BE UTILIZED FOR ATTACHING WOOD LEDGERS TO MASONRY PROVIDED THEY ARE CODE APPROVED WITH A CAPACITY IN EXCESS OF THAT REQUIRED.

MANUFACTURERS

- A. JOIST HANGERS
1. SIMPSON COMPANY, SAN LEANDRO, CA. "STRONG-TIE GALVANIZED"
B. ANCHOR BOLTS
1. HILTI CORP., TULSA, OK
2. RAMSET/REDHEAD, WOOD DALE, IL.

SECTION 06200 FINISH CARPENTRY

PRODUCTS

MATERIALS

- A. DIMENSION AND BOARD LUMBER SHALL BE DOUGLAS FIR OR POPLAR. MAXIMUM ALLOWABLE MOISTURE CONTENT SHALL BE 12%.
1. APPEARANCE FRAMING (2" TO 4" THICK, 2" AND WIDER) SHALL BE DOUGLAS FIR, S4S, NO. 1/APPEARANCE.
2. BOARDS (1" THICK, 2" AND WIDER) SHALL BE DOUGLAS FIR OR POPLAR, S4S, SUPERIOR OR BETTER.
- B. PLYWOOD SHELVING, COUNTER TOPS, ETC., SHALL BE 1/2" AND 3/4" GROUP 1 APA A-B, INTERIOR.
- C. HARDWOOD NOSING AND TRIM SHALL BE NATURAL BIRCH OR POPLAR.
- D. PREFINISHED PANELING SHALL BE 4'-0" X 8'-0" AND 9'-0" X 3/32" THICK, FIBERGLASS REINFORCED PLASTIC (FRP) PANELS.
1. PANELS SHALL BE TEXTURED ON ONE (1) SIDE.
2. ADHESIVES SHALL BE AS RECOMMENDED BY PANEL MANUFACTURER.
- E. MISCELLANEOUS HARDWARE ANGLES BRACKETS, FASTENERS SHALL BE COMMERCIAL QUALITY, TYPE, SIZE SUITED FOR INTENDED USE AND PURPOSE.
- F. PLASTIC LAMINATE FOR COUNTERTOPS AND BACKSLASH SHALL BE STANDARD GRADE, 1/16" THICK. FACING SHALL BE LAMINATED TO PLYWOOD BACKING.
1. ADHESIVE TO BE NEOPRENE BASED CONTACT BOND.

MANUFACTURER

- A. FIBERGLASS REINFORCED PLASTIC PANELS (FRP)
1. MARLITE
2. KEMLITE (SEQUENTIA STRUCTOGLAS)

FABRICATION

- A. ASSEMBLE AND FINISH MATERIAL AT THE MILL AS FAR AS FEASIBLE. MAKE ACCURATE AND TIGHT JOINTS, MITER CORNERS. USE SCREWS AND BOLTS AS REQUIRED FOR STRENGTH AND RIGIDITY AND AS INDICATED ON DRAWINGS.

- B. EDGES OF PLYWOOD AND HARDWOOD TRIM (I.E. DIVIDERS, FRONTS, ETC.) SHALL BE EASED.

FINISHES

- A. FIBERGLASS REINFORCED PLASTIC (FRP) PANELS.
1. COLOR: SEE FINISH SCHEDULES

SECTION 07213 BATT INSULATION

PRODUCTS

MATERIALS

- A. WALL INSULATION
1. BATT INSULATION SHALL BE 3-1/2" MINIMUM THICKNESS, "R" VALUE = 13, COMPOSED OF SPUN MINERAL FIBERS OR GLASS FIBER WRAPPED ONE SIDE WITH A FLAME RESISTANT KRAFT FACED VAPOR BARRIER. BATT INSULATION SHALL CONFORM TO ASTM C665 AND ASTM E84. WIDTH OF BATT INSULATION SHALL BE SIZED TO FIT STUD SPACING.
2. SOUND ATTENUATION INSULATION SHALL BE BATT TYPE, UNFACED, GLASS FIBER OR MINERAL FIBER, 3-1/2" THICK AND SHALL CONFORM TO ASTM C665 AND ASTM E84.

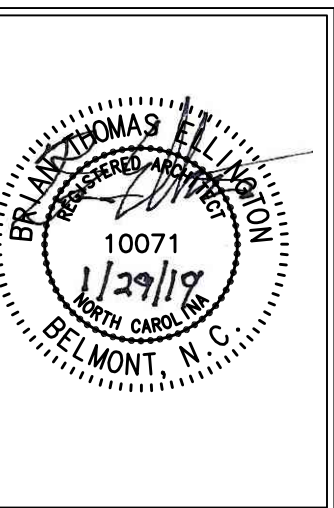
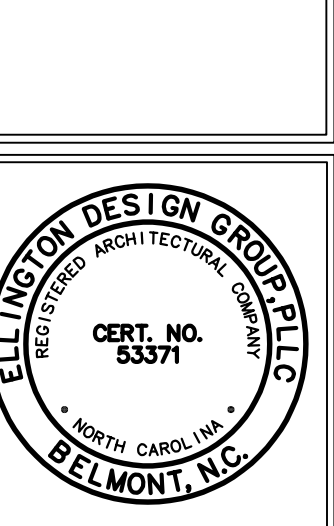
MANUFACTURERS

- A. WALL INSULATION
1. OWENS CORNING
2. JOHNS MANVILLE

INSTALLATION

- A. WALL INSULATION
1. SECURE WALL INSULATION TO WOOD AND STEEL FRAMING. EXERCISE CAUTION TO PREVENT TEARS OR GAPS IN THE VAPOR BARRIER. INSTALL WITH VAPOR BARRIER TO THE INSIDE. LAP FLANGES FOR EFFECTIVE SEAL.
2. PACK LOOSE INSULATION IN NARROW SPACES WHERE FASTENERS CANNOT BE INSTALLED, TO INSURE COMPLETE INSULATION FROM THE EXTERIOR.
- B. SOUND ATTENUATION BATTS
1. INSTALL IN PARTITIONS AND OVER CEILING, AS INDICATED ON THE DRAWINGS.
2. FRICTION FIT BATTS INTO STUD SPACES AND SECURE AS REQUIRED.
CUT AND FIT AROUND ALL OUTLETS, JUNCTION BOXES, ETC.

Ellington
Design
Group, PLLC



REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No:
2018-009
Scale:
Date Drawn: 7/18
Sheet Title
GENERAL SPECIFICATIONS

A-8

NOTE:
SPECIFICATIONS ARE NOT APPLICABLE TO ALL PROJECTS. USE SPECIFICATIONS AS REQUIRED AND IN CONJUNCTION WITH OTHER DISCIPLINE SPECIFICATIONS.

ARCHITECTURAL SPECIFICATIONS:

SECTION 08111 STANDARD STEEL DOORS

QUALITY ASSURANCE

A. FURNISH DOORS COMPLYING WITH STEEL DOOR INSTITUTE WITH THE "RECOMMENDED SPECIFICATIONS: STANDARD STEEL DOORS AND FRAMES" (ANSI/D1 A250.8-2003 (R2008)).
B. WHERE FIRE-RATED DOOR ASSEMBLIES ARE INDICATED OR REQUIRED, PROVIDE FIRE-RATED DOORS THAT BEAR "UL" LABELS FOR THE REQUIRED HOUR RATING OR LABEL OF A NATIONALLY RECOGNIZED INDEPENDENT TESTING AND INSPECTION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

PRODUCTS

A. FULL FLUSH TYPE 1-3/4" THICK HOLLOW METAL DOORS, WITHOUT FACE JOINTS OR FACE SEAMS, FABRICATED FROM MINIMUM 18 GAUGE STEEL
1. CLOSE TOP AND BOTTOM EDGES FLUSH TO THE DOOR FACE SHEETS
2. PREPARE DOORS TO RECEIVE 1-1/2" PAIR OF HINGES, SIZE 4-1/2" X4-1/2".
3. PROVIDE ASTRAGALS ON ACTIVE LEAF OF PAIRS OF EXTERIOR DOORS AND AS REQUIRED FOR LABELED DOORS.
4. FACTORY PREPARES DOORS FOR GLAZING AND LOUVERS.
5. PREPARE TO RECEIVE FEDERAL SPECIFICATIONS SERIES 160 OR 161
LOCKS WITH 2-3/4" BACK SET, OR SERIES 86 MORTISE LOOKS WHERE SCHEDULED IN HARDWARE SETS.
6. PROVIDE MANUFACTURER'S STANDARD FOAM OR BATT TYPE SOUND DEADENING INSULATION INSIDE DOORS.
7. CHECK FLOOR FINISHES AND DOOR SCHEDULE FOR UNDERCUTTING AND OTHER SPECIAL REQUIREMENTS. IF UNDERCUTTING IS REQUIRED, UNDERCUT DOORS DURING FABRICATION.
8. EXTERIOR DOORS SHALL BE GALVANIZED STEEL.

B. LOUVERS SHALL BE, SIZES AS SCHEDULED, INVERTED "V" OR "Y" TYPE WITH 50% FREE AREA. LOUVERS SHALL BE FACTORY INSTALLED WITH TAMPER PROOF FASTENERS.

MANUFACTURERS

A. DOORS:
1. AMWELD, 17L SERIES
2. STEELCRAFT, "L20" SERIES
3. CURRIES, "707" SERIES
4. CECO, "RECENT" SERIES
5. WINDSOR REPUBLIC, "DE" SERIES
6. MESKER, "N" SERIES

HARDWARE

A. TEMPLATES FOR HARDWARE WILL BE SHIPPED TO THE FACTORY FOR FABRICATION BY THE DOOR AND FRAME MANUFACTURER.
1. REINFORCE, DRILL AND TAP DOORS TO RECEIVE MORTISED HARDWARE. SURFACE APPLIED HARDWARE SHALL HAVE REINFORCING AS REQUIRED FOR DRILLING AND TAPPING BY INSTALLER.

EXECUTION

DOOR INSTALLATION
A. PLACE FIRE-RATED DOORS WITH CLEARANCES AS SPECIFIED IN NFPA STANDARD NO. 80.

LOUVER INSTALLATION
A. INSTALL LOUVERS WITH MANUFACTURERS STANDARD STOPS. SECURE STOPS WITH TAMPER PROOF OVAL HEAD, COUNTERSUNK MACHINE SCREWS, APPROXIMATELY 9" O.C.

SECTION 08112 STANDARD STEEL FRAMES

PRODUCTS

A. HOLLOW METAL DOOR FRAMES
1. HOLLOW METAL DOOR FRAMES SHALL BE FORMED FROM 16 GAUGE STEEL. FRAMES SHALL BE FLUSH DOUBLE RABBIT TYPE WITH 5/8" DEEP STOPS AND 2" FACE. PROVIDE CASED OPENING (WITHOUT RABBIT STOP) WHERE SCHEDULED.
A. FRAMES, IN MASONRY PARTITIONS, SHALL BE 16 GAUGE, SET UP UNIT TYPE WITH CORNERS MITERED, ARC WELDED AND GROUND SMOOTH. PROVIDE SILL ANCHORS, SPREADERS, JAMB ANCHORS AT 2'-0" O.C.
B. FRAMES IN STUD PARTITIONS SHALL BE "DRYWALL TYPE" FRAMES DESIGNED TO BE INSTALLED AFTER WALL IS UP. FRAMES SHALL HAVE MITERED INTERLOCKING CORNERS, COMPRESSION TYPE JAMB ANCHORS, SILL ANCHORS AND DOUBLE RETURN ON THE BACK BEND TO GRIP AND CAP WALL.
C. FRAMES FOR DOUBLE ACTING SERVICE DOORS SHALL BE UNIT TYPE WITH 12 GAUGE STEEL REINFORCEMENT (HEAD AND JAMBS).
2. ALL FRAMES SHALL BE SUPPLIED WITH FACTORY INSTALLED RUBBER BUMPERS, THREE (3) PER STRIKE JAMB AND TWO (2) PER HEAD FOR PAIR OF DOORS.
3. EXTERIOR DOOR FRAMES SHALL BE GALVANIZED STEEL.

MANUFACTURERS

A. STEEL FRAMES
1. AMWELD
2. STEELCRAFT
3. CURRIES
4. CECO
5. WINDSOR REPUBLIC
6. MESKER

FINISH

A. AFTER THOROUGHLY CLEANING AND CHEMICALLY TREATING SURFACES, APPLY ONE COAT OF MANUFACTURER'S STANDARD PRIMER, BAKED ON.

SECTION 08141 FLUSH WOOD DOORS

QUALITY ASSURANCE

A. FURNISH DOORS COMPLYING WITH WDMA I.S.1-A. LATEST EDITION, "INDUSTRY STANDARD FOR ARCHITECTURAL WOOD FLUSH DOOR".
B. WHERE FIRE-RATED DOOR ASSEMBLIES ARE INDICATED OR REQUIRED, PROVIDE FIRE-RATED DOORS THAT BEAR "UL" LABELS FOR THE REQUIRED HOUR RATING OR LABEL OF A NATIONALLY RECOGNIZED INDEPENDENT TESTING AND INSPECTION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

PRODUCTS

A. FULL FLUSH TYPE WDMA I.S.1-A PERFORMANCE GRADE: EXTRA HEAVY DUTY; AESTHETIC GRADE: PREMIUM CUSTOM.
B. FIRE RATED DOORS: PROVIDE CONSTRUCTION AND CORE AS NEEDED TO PROVIDE FIRE RATINGS INDICATED.
C. FIRE RESISTANT COMPOSITE CORE DOORS:
1. CORE: NON-COMBUSTIBLE MINERAL PRODUCT.
2. BLOCKING: AS REQUIRED BY MANUFACTURER FOR FIRE RATED AND TESTED DOOR.
3. EDGE CONSTRUCTION: AT HINGE STILES, PROVIDE LAMINATED EDGE CONSTRUCTION WITH IMPROVED SCREW HOLD CAPACITY AND SPLIT RESISTANCE.
4. CHECK FLOOR FINISHES AND DOOR SCHEDULE FOR UNDERCUTTING AND OTHER SPECIAL REQUIREMENTS. IF UNDERCUTTING IS REQUIRED, UNDERCUT DOORS DURING FABRICATION.
D. VENEER DOORS FOR TRANSPARENT FINISH.
1. GRADE: PREMIUM.
2. MINIMUM THICKNESS: 0.5MM
3. SPECIES: MAPLE
4. DOOR FACE: CENTER BALANCE MATCH
B. STAIN FINISHES AND COLORS TO BE SELECTED BY THE OWNER.

MANUFACTURERS

A. DOORS:
1. ALGOMA HARDWOODS, ARCHITECTURAL SERIES
2. EGGERS INDUSTRIES, PREMIUM SERIES
3. GRAHAM, GPD SERIES
4. MARSHFIELD, SIGNATURE SERIES
5. OR APPROVED EQUAL

HARDWARE

A. TEMPLATES FOR HARDWARE WILL BE SHIPPED TO THE FACTORY FOR FABRICATION BY THE DOOR AND FRAME MANUFACTURER.
1. REINFORCE, DRILL AND TAP DOORS TO RECEIVE MORTISED HARDWARE. SURFACE APPLIED HARDWARE SHALL HAVE REINFORCING AS REQUIRED FOR DRILLING AND TAPPING BY INSTALLER.

EXECUTION

DOOR INSTALLATION
A. PLACE FIRE-RATED DOORS WITH CLEARANCES AS SPECIFIED IN NFPA STANDARD NO. 80.

SECTION 08710 FINISH HARDWARE

GENERAL REQUIREMENTS

A. ALL APPLICABLE PORTIONS OF DIVISION 1 - GENERAL REQUIREMENTS ARE TO BE CONSIDERED AS INCLUDED WITH THIS SECTION.

DESCRIPTION

A. FURNISH ALL MATERIALS, LABOR, EQUIPMENT, SERVICE, ETC., NECESSARY AND INCIDENTAL FOR THE COMPLETION OF ALL FINISH HARDWARE WORK AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

QUALITY ASSURANCE

A. REQUIREMENTS OF REGULATORY AGENCIES:
1. FURNISH FINISH HARDWARE TO COMPLY WITH THE REQUIREMENTS OF LAWS, CODES, ORDINANCES, AND REGULATIONS OF THE GOVERNMENTAL AUTHORITIES HAVING JURISDICTION WHERE SUCH REQUIREMENTS EXCEED THE REQUIREMENTS OF THE SPECIFICATIONS.
2. HARDWARE TO HAZARDOUS AREAS SHALL COMPLY WITH THE REQUIREMENTS OF THE REGULATIONS FOR PUBLIC BUILDING ACCOMMODATIONS FOR PHYSICALLY HANDICAPPED PERSONS OF THE GOVERNMENTAL AUTHORITY HAVING JURISDICTION.

TEMPLATES AND HARDWARE LOCATION

A. FURNISH HARDWARE MADE TO TEMPLATE. SUPPLY REQUIRED TEMPLATES AND HARDWARE LOCATIONS TO THE DOOR AND FRAME MANUFACTURERS.

CYLINDERS AND KEYING

A. ALL HARDWARE COMPONENTS CAPABLE OF BEING LOCKED SHALL BE PROVIDED WITH A CYLINDER AS LISTED BELOW.
1. FURNISH CYLINDERS FACTORY MASTER KEYED TO A BEST SEVEN PIN SYSTEM AS DESCRIBED BELOW.
2. THE CYLINDERS SCHEDULED FOR THE EXTERIOR ENTRANCE DOOR ARE TO RECEIVE A BEST PEAKS PATENT CORE. ALL OTHER DOORS ARE TO RECEIVE A STANDARD BEST CORE.

PRODUCTS

A. ALL HARDWARE COMPONENTS CAPABLE OF BEING LOCKED SHALL BE PROVIDED WITH A CYLINDER AS LISTED BELOW.
1. FURNISH CYLINDERS FACTORY MASTER KEYED TO A BEST SEVEN PIN SYSTEM AS DESCRIBED BELOW.
2. THE CYLINDERS SCHEDULED FOR THE EXTERIOR ENTRANCE DOOR ARE TO RECEIVE A BEST PEAKS PATENT CORE. ALL OTHER DOORS ARE TO RECEIVE A STANDARD BEST CORE.

C. HINGES: FURNISH CLASS AS SPECIFIED IN HARDWARE SETS IN SIZE 4-1/2 X 4-1/2 INCHES FOR 1-3/4" DOORS. FURNISH NON-REMOVABLE PINS (NRP) FOR HINGES ON EXTERIOR OUT SWINGING DOORS.

HAGER	LAWRENCE	MCKINNEY	STANLEY
H-1 1279	LH604PB	T2714	F179
H-2 BB1279	LH603BB	TA2714	FB8179

FLUSH BOLTS:

1. MANUAL:
a. ANY MEMBER OF B.H.M.A.
2. DUST PROOF STRIKES:
a. INCLUDE FLAT, RECTANGULAR MOUNTING PLATES AND FURNISH WITH ALL FLUSH BOLTS, EXCEPT AT OPENINGS HAVING THRESHOLDS.
b. ANY MEMBER OF B.H.M.A.

D. LOCK SETS AND LATCH SETS:
1. MORTISE: SERIES AND FUNCTION DESIGNATIONS ARE BEST (NO SUBSTITUTION).

MANUFACTURER	SERIES	DESIGN
BEST	40H	15H

2. BEST HEAVY DUTY CYLINDRICAL: SERIES AND FUNCTION DESIGNATIONS ARE BEST (NO SUBSTITUTION).

MANUFACTURER	SERIES	DESIGN
BEST	9K	15D

E. DOOR VIEWER: IVES U696

F. EXIT DEVICES
1. BUILDING - FURNISH LEVER OUTSIDE TRIM.

MANUFACTURER	SERIES	DESIGN
CORBIN-RUSSWIN	ED5000	SERIES
MONARCH	25	SERIES
SARGENT	2828	
VON DUPRIN	96	SERIES
YALE	7100	

I. PUSH AND PULL HARDWARE
1. PUSH PLATES: PLAIN DESIGN, WROUGHT, 6 x 16 x 0.050 INCHES, SQUARE CORNERS, AND BEVELED EDGES. IF STILE WIDTHS WILL NOT ACCEPT 6 INCHES, FURNISH STILE WIDTH LESS TWO INCHES.
2. PULL PLATES: PLAIN DESIGN, WITH WROUGHT PLATE 4 x 16 x 0.050 INCHES, SQUARE CORNERS, BEVELED EDGES, 3/4 INCH ROUND ROD, STRAIGHT GRIP WITH 6 INCH CENTERS.
3. FURNISH PUSH AND PULL HARDWARE FROM ANY MEMBER OF B.H.M.A.
J. COORDINATORS
1. STOP MOUNTED: FURNISH FILLERS FOR FULL JAMB OPENINGS AND MOUNTING BRACKETS FOR STOP APPLIED HARDWARE.
DOOR CONTROLS INTERNATIONAL 600 GLVNN-JOHNSON COR IVES COR
2. CARRY BARS: FURNISH AT PAIRS OF DOORS EQUIPPED WITH EXIT DEVICES.
DOOR CONTROLS INTERNATIONAL CB IVES CB 1
K. CLOSER
1. FURNISH WITH BACKCHECK AND SIZE PER MANUFACTURERS SELECTOR CHART. NUMBERS SPECIFIED ARE LCN.
2. OPERATING PRESSURE SHALL BE A MAXIMUM OF 5 POUNDS PRESSURE FOR INTERIOR DOORS AND 8.5 POUNDS PRESSURE FOR EXTERIOR DOORS.

LCN	C-1	C-2
NORTON	1261	1461 X HEAVY DUTY ARM
CORBIN-RUSSWIN	8500	7500 X HEAVY DUTY ARM
SARGENT	DC3200	DC6200 X HEAVY DUTY ARM
YALE	1431	351 X HEAVY DUTY ARM
	3000	4400 X HEAVY DUTY ARM

L. KICK PLATES: FURNISH 10" X 0.050 INCHES X DOOR WIDTH LESS 1-1/2" AT SINGLE DOORS, AND LESS ONE INCH AT PAIRS. WHERE GLASS OR LOUVERS PREVENT THIS HEIGHT, SUPPLY WITH HEIGHT EQUAL TO HEIGHT OF BOTTOM RAIL LESS ONE INCH.

M. FLOOR STOPS: B.H.M.A. L02141, QUARTER-ROUND DOME TYPE, FURNISH HEIGHT TO SUIT UNDERCUT.

N. FLOOR STOPS, SPECIAL:
FINISH: BROOKLINE 1328E IVES FS444 (SPECIFY FINISH)
ROCKWOOD 471 IVES FS442 (SPECIFY FINISH)

O. WALL STOPS: B.H.M.A. L12101, WROUGHT, FORGED, OR CAST, APPROXIMATELY 2-1/2" DIAMETER, CONVEX OR CONCAVE RUBBER CENTER, CONCEALED FASTENERS.

P. WEATHER-STRIPPING AND SOUND SELLS: APPLY TO HEAD AND JAMB STOPS WITH NO CUTOUTS FOR STOP APPLIED HARDWARE.
NATIONAL GUARD 700N
PEMKO 290AV
RESEE 755

Q. BOTTOM SWEEP AT BOTTOM OF EXTERIOR DOORS: SHALL BE NYLON BRUSH, DEPTH TO SUIT CONDITIONS.
NATIONAL GUARD C607A
PEMKO 18062CNB
RESEE 964C

R. THRESHOLDS: COPE AT JAMBS.
NATIONAL GUARD 424
RESEE S204A

1. FURNISH FULL WALL OPENING WIDTH WHEN FRAMES ARE RECESSED.

S. THRESHOLD HOLDERS: FURNISH WITH EACH THRESHOLD.
NATIONAL GUARD 720
RESEE 270

T. FASTENERS: FURNISH FASTENERS OF THE PROPER TYPE, SIZE, QUANTITY, AND FINISH. USE MACHINE SCREWS AND EXPANSION SHIELDS FOR ATTACHING HARDWARE TO CONCRETE OR MASONRY, AND WALL GRIP INSERTS AT HOLLOW WALL CONSTRUCTION. ATTACH CLOSER WITH WOOD OR MACHINE SCREWS.

U. FINISHES: EXTERIOR HINGES, PRIME COAT, USP, OVER MANUFACTURER'S RUST RESISTING BASE; HAGER CP, LAWRENCE POWDER COAT PRIME, MCKINNEY P, STANLEY K, INTERIOR HINGES, ALUMINUM LACQUER: HAGER L.S, LAWRENCE US26D, MCKINNEY AP, STANLEY LA, DOOR SPRINGS, MANUFACTURER'S STANDARD. FLUSH BOLTS, LOCK SET, EXIT DEVICES, ELECTRIC STRIKES, CARRY BARS, DULL CHROME, US26D, PUSH AND PULL HARDWARE, KICK PLATES, FLOOR STOPS, WALL STOPS AND HOLDERS, WEATHER-STRIPPING, ANODIZED ALUMINUM, US28, EXIT CONTROL LOCKS, MANUFACTURER'S STANDARD ENAMEL, COORDINATORS, PRIME COAT, USP, THRESHOLDS, EXTRUDED ALUMINUM, MILL FINISH, CLOSER, SPRAYED ALUMINUM. AT EXTERIOR DOORS, PROTECT ALL CLOSER CYLINDERS (IF FERROUS), ARMS AND PLATES WITH SPECIAL RUST INHIBITING (SRJ) FINISH PRIOR TO FINAL SPRAYED ALUMINUM. SEE ALSO DOOR HARDWARE NOTES.

KEY PAD ENTRY DEVICE: ALARM LOCK TRILOGY DL2700IC WITH KEY BY-PASS BY BEST.

1. ASSURE PROPER ALIGNMENT OF STRIKE PLATE AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

X. SURFACE BOLTS: STANLEY #804040 6" WITH MORTISE STRIKE

Y. DRIP STRIP: EXTERIOR DOOR FRAMES SHALL BE SUPPLIED WITH A CLEAR ANODIZED DRIP STRIP, 2-1/2" EXTENSION OF LIP AND 4" GREATER THAN DOOR WIDTH.
NATIONAL GUARD PRODUCT, #16A
PEMKO, #346
RESEE, #R201

EXECUTION

GENERAL
A. INSTALL HARDWARE ACCORDING TO MANUFACTURER'S PRINTED INSTRUCTIONS AND TO TEMPLATE DIMENSIONS.

LOCATIONS

A. DIMENSIONS ARE FROM FINISH FLOOR TO CENTER LINE OF ITEMS.

INCLUDE THIS LIST:

CATEGORY	DIMENSION
HINGES	DOOR MANUFACTURER'S STANDARD 72" AND 12"
BOLT LEVERS	DOOR MANUFACTURER'S STANDARD
EXIT DEVICE PUSH PADDLES	MANUFACTURER'S TEMPLATE
PUSH PLATES	52"
PULL PLATES	42"
WALL STOPS AND HOLDERS	AT HEAD

QUANTITIES

A. PROVIDE ONE HINGE FOR EACH 30 INCHES OF DOOR HEIGHT OR FRACTION THEREOF.

B. PROVIDE EXIT DEVICES, WEATHER-STRIPPING, BOTTOM SWEEP, DRIP STRIP, PUSH AND PULL HARDWARE, CLOSER, KICK PLATES, STOPS AND WALL STOPS AND HOLDERS FOR BOTH LEAVES OF PAIRS UNLESS SPECIFIED OTHERWISE.

FINAL ADJUSTMENT

A. PROVIDE THE SERVICES OF A REPRESENTATIVE TO INSPECT MATERIAL FURNISHED AND ITS INSTALLATION AND ADJUSTMENT, TO MAKE FINAL HARDWARE ADJUSTMENT, AND TO INSTRUCT THE OWNER'S PERSONNEL IN ADJUSTMENT, CARE, AND MAINTENANCE OF THE HARDWARE.

SECTION 09260 GYPSUM WALLBOARD ASSEMBLIES

QUALITY ASSURANCE

A. APPLICATION AND FINISHING OF ALL GYPSUM WALLBOARD MATERIALS AND ACCESSORIES SHALL BE IN CONFORMANCE WITH THE "APPLICATION AND FINISHING OF GYPSUM PANEL PRODUCTS", DOCUMENT GA-216-2010, BY THE GYPSUM ASSOCIATION.
B. FIRE-RESISTANCE RATINGS: WHERE INDICATED, FURNISH MATERIALS AND CONSTRUCTION WHICH ARE IDENTICAL TO THOSE OF ASSEMBLIES WHOSE FIRE RESISTANCE RATING COMPLIES WITH REQUIREMENTS OF UNDERWRITERS LABORATORIES (UL).

PRODUCTS

MATERIALS
METAL GYPSUM WALLBOARD STUDS:
A. DRYWALL SCREW TYPE STUDS:
1. LIGHT GAUGE STEEL STUDS COMPLYING WITH ASTM C 645, MINIMUM GAUGE: 25 UNLESS OTHERWISE NOTED.
2. SHAPE: ROLL-FORMED "CS" STUD, WITH RETURNED FLANGE EDGES, UNLESS NOTED OTHERWISE ON DRAWINGS. FACES OF FLANGES SHALL BE SCREW TYPE, KNURLED TO FACILITATE THE USE OF SELF-DRILLING TAPPING FASTENERS.
3. STEEL: ASTM A 591, CLASS B (50,000 PSI YIELD STRENGTH).
4. FINISH: INTERIOR STUDS SHALL HAVE EITHER AN ELECTROLYTIC ZINC COATING COMPLYING WITH ASTM A 591, CLASS B.
5. WHERE STUDS EXTEND FULL HEIGHT TO THE UNDERSTRUCTURE ABOVE, PROVIDE TO A SELF-ADJUSTING TOP TRACK FABRICATED FROM THE SAME GAUGE STEEL AS THE STUDDING, HAVING VERTICAL SLOTS FOR FASTENERS AND ALLOWING A MINIMUM OF 3/4 INCH MOVEMENT BETWEEN THE TOPS OF STUDS AND THE UNDERSTRUCTURE ABOVE.

GYPSUM MATERIALS AND ACCESSORIES:
A. GYPSUM WALLBOARD: ASTM C 36, BOARDS SHALL BE PAPER COVERED, WITH TAPERED EDGES.
1. PROVIDE FIRE RATED BOARD TYPE "C" OR "X" AS REQUIRED FOR ASSEMBLY RATING WHERE FIRE RESISTIVE RATED WORK IS INDICATED.
2. GYPSUM BOARD FOR WALLS SHALL BE 5/8" THICK GYPSUM PANELS.
3. GYPSUM BOARD FOR CEILINGS SHALL BE 5/8" THICK GYPSUM PANELS.
4. MOISTURE AND MOLD RESISTANT GYPSUM BOARD: TO BE USED IN ALL HUMID AREAS; GYPSUM CORE PANEL WITH ENHANCED CORE FORMULATED FOR RESISTANCE TO MOISTURE AND MOLD; SURFACED WITH MOISTURE/MOLD RESISTANT PAPER FRONT, BACK, AND LONG EDGES. COMPLYING WITH ASTM C1368.
5. EXTERIOR TYPE GYPSUM BOARD SHALL BE 5/8" THICK AND SHALL BE DESIGNATED FOR EXTERIOR APPLICATIONS.
B. JOINT TAPE AND COMPOUND: CONFORMING TO ASTM C 475.
C. SCREWS:
1. METAL STUDS: SCREWS FOR ATTACHMENT OF GYPSUM WALLBOARD TO LIGHT GAUGE METAL FRAMING SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C 646, TYPE S; TYPE S-12 FOR ATTACHMENT TO HEAVY GAUGE STUDS OR JOISTS.
2. WHERE WALLBOARD WILL BE ATTACHED TO WOOD FRAMING, USE TYPE W SCREWS, COMPLYING WITH ASTM C 894.
D. NAILS: ASTM C 514.
E. ADHESIVES: ASTM C 557, AS RECOMMENDED BY THE GYPSUM WALLBOARD MANUFACTURER FOR THE INSTALLATION CONDITIONS INVOLVED.
F. CORNER BEADS, CONTROL JOINTS AND EDGE TRIM: ITEMS TO BE MANUFACTURED FROM CORROSIVE PROTECTED COATED STEEL.

GYPSUM BOARD SUBSTRATE FOR APPLICATION OF CERAMIC TILE:
A. GLASS MAT GYPSUM TILE BACKER SHALL BE 5/8" THICK, FULLY EMBEDDED GLASS MAT GYPSUM TILE BACKER MEETING THE REQUIREMENTS OF ASTM C 1178.
B. FASTENERS: STEEL DRILL SCREWS COMPLYING WITH ASTM C 954 OR ASTM 1002 AS RECOMMENDED BY TILE BAKER MANUFACTURER, WITH ORGANIC-POLYMER OR OTHER CORROSION-PROTECTIVE COATING.

CEILING SUSPENSION SYSTEM:
A. FINISH COMPONENTS WHICH COMPLY WITH ASTM C754 FOR MATERIALS AND SIZES UNLESS OTHERWISE INDICATED.
B. FURNISH CEILING SUSPENSION SYSTEM CONSISTING OF 1-1/2 INCH, COLD ROLLED, RUNNER CHANNELS, DRYWALL FURRING CHANNELS, 1/2 GAUGE GALVANIZED HANGER WIRE, 16 GAUGE GALVANIZED WIRE, ANCHORS, CLIPS, TRIM, SCREWS, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.

EXECUTION
INSTALLATION OF METAL STUD SYSTEM:
A. SET STUDS PLUMB, EXCEPT AS NEEDED FOR DIAGONAL BRACING OR REQUIRED FOR NON-PLUMB WALLS OR WARPED SURFACES AND SIMILAR REQUIREMENTS.
B. INSTALL SUPPLEMENTARY FRAMING, BLOCKING, AND BRACING IN THE METAL STUD SYSTEM, WHEREVER WALLS OR PARTITIONS ARE INDICATED TO SUPPORT FIXTURE, EQUIPMENT, SERVICES, CASEWORK, HEAVY TRIM AND FURNISHINGS, AND ALL SIMILAR WORK REQUIRING ATTACHMENT TO THE WALL OR PARTITION.

INSTALLATION OF GYPSUM WALLBOARD MATERIALS:
A. FASTENING: FASTEN WALLBOARD TO SUBSTRATES IN COMPLIANCE WITH THE REQUIREMENTS OF DOCUMENT GA-216.
B. EDGE TRIM SHALL BE INSTALLED AT ALL LOCATIONS WHERE WALLBOARD TERMINATES AGAINST ANOTHER MATERIAL.
C. CORNER BEADS SHALL BE INSTALLED AT ALL EXTERIOR ANGLE CORNERS OF WALLBOARD.
D. SEALING AT WATER RESISTANT GYPSUM BOARD: SEAL ALL CUT OR EXPOSED PANEL EDGES AT UTILITY HOLES AND JOINTS, INCLUDING THOSE AT WALL INTERSECTIONS.
E. FIRE STOPPING: PROVIDE AT ALL PENETRATIONS AS REQUIRED BY THE APPLICABLE BUILDING CODES.

INSTALLATION OF GLASS MAT GYPSUM TILE BACKER:
A. COMPLY WITH GA-216, ASTM C 840, TCMN HANDBOOK FOR CERAMIC TILE INSTALLATION AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

INSTALLATION OF CEILING SUSPENSION SYSTEM:
A. SPACE RUNNER AND FURRING CHANNELS, HANGERS, AND OTHER COMPONENTS OF SUPPORTING SYSTEM TO FORM RIGID, LEVEL SURFACES. PROVIDE ADDITIONAL SUPPORTS AT CUTOUTS, LIGHT FRAMES, TROFFERS, AND SIMILAR ITEMS.
B. DO NOT ATTACH HANGERS TO METAL DECK TABS OR METAL ROOF DECK.
C. DO NOT ATTACH HANGERS TO UNDERSIDE OF CONCRETE SLABS WITH POWDER ACTUATED FASTENERS.
D. DO NOT CONNECT OR SUSPEND STEEL FRAMING FROM DUCTS, PIPES, CONDUIT OR METAL ROOF DECK. KEEP HANGERS AND BRACES TWO INCHES CLEAR OF DUCTS, PIPES AND CONDUITS.
E. INSTALL SUSPENDED STEEL FRAMING COMPONENTS IN SIZES AND AT SPACINGS INDICATED BUT NOT LESS THAN THAT REQUIRED BY REFERENCED STEEL FRAMING INSTALLATION STANDARD.
F. INSTALLATION TOLERANCES: INSTALL STEEL FRAMING COMPONENTS OR SUSPENDED CEILINGS SO THAT CROSS FURRING MEMBERS OR GRID SUSPENSION MEMBERS ARE LEVEL TO WITHIN 1/8" IN 12 FT. AS MEASURED BOTH LENGTHWISE ON EACH MEMBER AND TRANSVERSELY BETWEEN PARALLEL MEMBERS.
G. WIRE-TIE OR CLIP FURRING MEMBERS TO MAIN RUNNERS.

SECTION 09300 CERAMIC TILE

QUALITY ASSURANCE

A. TILE SHALL BE QUALITY CERTIFIED BY THE TILE COUNCIL OF AMERICA, INC. (TCA) TO EQUAL OR EXCEED STANDARD GRADE REQUIREMENTS. CERTIFICATION MARK SHALL APPEAR ON EACH LABEL OR TILE CARTON.
B. UNLESS OTHERWISE SPECIFIED, MATERIALS, METHODS OF INSTALLATION, WORKMANSHIP, CLEANING, AND PROTECTION OF CERAMIC TILE SHALL CONFORM TO APPLICABLE PORTIONS OF THE FOLLOWING PUBLICATIONS:
B.1. AMERICAN NATIONAL STANDARD SPECIFICATION FOR CERAMIC TILE, A137-1
B.2. "HANDBOOK FOR CERAMIC TILE INSTALLATION" CURRENT EDITION, PUBLISHED BY TCA.
C. DRY SET MORTARS AND GROUTS SHALL CONFORM TO ANSI A118.4 AND ANSI A118.10.
D. EPOXY GROUTS 100% SOLIDS SHALL CONFORM TO ANSI A118.3.
E. COMPLY WITH ANSI A108.5 AND A108.6 - CERAMIC TILE INSTALLED WITH DRY-SET PORTLAND CEMENT MORTAR.
F. COMPLY WITH TILE COUNCIL OF AMERICA SETTING TYPE F113 FOR FLOOR TILE INSTALLATION AND W223 FOR WALL TILE INSTALLATION.

JOB CONDITIONS

A. SCHEDULE INSTALLATION OF TILE WORK WITH PROJECT MANAGER TO ASSURE COMPLETION OF ALL TILE WORK, INCLUDING ALL PROTECTIVE MEASURES, PRIOR TO RECEIPT AND INSTALLATION OF FIXTURES, EQUIPMENT, ETC.

WARRANTY

A. THIS CONTRACTOR SHALL PROVIDE A LIFETIME WARRANTY ON ALL MATERIALS AND WORKMANSHIP.

PRODUCTS

A. MATERIALS
A.1. CERAMIC FLOOR TILE, WALL TILE AND GROUT: SEE DETAIL SHEETS FOR MATERIAL LIST AND COLOR.
A.2. THRESHOLD SHALL BE GRADE A, FIRST QUALITY MARBLE, FREE OF CRACKS, CHIPS, STAINS OR DISCOLORATION, UNIFORM IN TONE AND COLORING WITH DOUBLE BEVEL EDGES.
A.3. SETTING MORTAR FOR CERAMIC TILE FLOORS SHALL BE MORTAR PORTLAND CEMENT MORTAR IN COMPLIANCE WITH ANSI A118.4 AND TCA DETAIL F113.
A.4. SETTING MORTAR FOR WALL TILE AND BASE SHALL BE ORGANIC ADHESIVE TYPE 1 TO CONFORM WITH ANSI A136.1 AND TCA DETAIL W242.
A.5. MORTAR AND GROUT SHALL BE MIXED PROPORTIONALLY IN ACCORDANCE WITH ANSI STANDARD SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
A.6. GROUT SHALL BE COMMERCIAL PER-MIXED WATER RESISTANT PORTLAND CEMENT TYPE, WET OR DRY-CURE FORMULATION AS APPROPRIATE.
A.7. WATER SHALL BE CLEAN, FREE FROM INJURIOUS AMOUNTS OF OIL, ACIDS, SOLUBLE SALTS OR ORGANIC IMPURITIES.
A.8. CLEANER SHALL BE A NEUTRAL GENERAL ALL PURPOSE CLEANER FREE OF ACIDS, ALKALIES AND ABRASIVES.
A.9. PROTECTIVE PAPER SHALL BE HEAVY-DUTY, NON-STAINING CONSTRUCTION PAPER WITH COMPATIBLE MASKING TAPE.
B. MANUFACTURERS
B.1. SEE DETAIL SHEETS FOR MANUFACTURERS AND COLORS

EXECUTION

A. INSTALLATION
A.1. PERFORM WORK REQUIRED TO PREPARE AREAS TO RECEIVE TILE PER MANUFACTURER'S RECOMMENDATIONS.
A.2. LAY OUT WORK SO AS TO MINIMIZE CUTS LESS THAN ONE-HALF TILE SIZE. PLACE CUT EDGE OF TILE AGAINST ADJACENT FULL SIZE TILE.
A.3. ALIGN ALL FLOOR JOINTS TO HAVE STRAIGHT UNIFORM GROUT LINES PARALLEL WITH ADJACENT WALLS AND SURFACES.
A.4. INSTALL ROLL-EDGE TILES REQUIRED AT PERIMETERS, COVES AT BASES AND BULLNOSE AT EXTERNAL CORNERS.
A.5. SET TILE LEVEL, PLUMB AND TRUE TO LINE, WITH JOINTS FORMING STRAIGHT LINES. FOUR JOINING CORNERS OF TILE SHALL FORM A PERFECT CROSS.
A.6. LAY TILE IN TRUE PLANES, FIRMLY EMBEDDED WITH UNIFORM JOINTS, PARALLEL WITH ADJACENT WALLS AND SURFACES.
A.7. AFTER SETTING TILE, SLUSH JOINTS WITH GROUT AND WIPE OFF.
A.8. INSTALL TILE A MINIMUM OF 24 HOURS BEFORE ADJACENT CARPET.
A.9. WHERE HEAVY TRAFFIC IS PRESENT, INSTALL PROTECTIVE COVERING OVER TILE.
A.10. WIDTH OF GROUT JOINT BETWEEN TILES: AS SPECIFIED BY MANUFACTURER FOR SPECIFIC TILE.
A.11. MAINTAIN WIDTH OF GROUT JOINTS BETWEEN FIELD TILES AS UNIFORM AS POSSIBLE.
A.12. FURNISH MARBLE THRESHOLDS AT TOILET ROOM DOORS.

CLEANING

B.1. CLEAN AND REMOVE GROUT HAZE IN ACCORDANCE WITH TILE MANUFACTURER'S RECOMMENDATIONS.
B.2. RINSE TILE WITH CLEAR WATER BEFORE AND AFTER USE OF CHEMICAL CLEANERS.
B.3. DO NOT USE ACID TO CLEAN TILE. OBSERVE TILE MANUFACTURER'S RECOMMENDATIONS AS TO USE OF CHEMICAL CLEANERS.
B.4. POLISH SURFACE WITH SOFT CLOTH BEFORE FOOT TRAFFIC IS PERMITTED OVER FINISHED TILE FLOOR; COVER FLOORS WITH PROTECTIVE PAPER, REMOVE AND REPLACE CRACKED, BROKEN OR DAMAGED TILE

ARCHITECTURAL SPECIFICATIONS:

SECTION 09510 SUSPENDED ACOUSTIC CEILINGS

QUALITY ASSURANCE

A. ACOUSTIC CEILING PANELS AND TILE SHALL MEET THE REQUIREMENTS OF FEDERAL SPECIFICATIONS SS-S-118A, CLASS 25 NONCOMBUSTIBLE AND SHALL BE CLASSIFIED BY UNDERWRITERS' LABORATORIES, INC., UNDER HAZARD CLASSIFICATION FOR A FLAME SPREAD OF 0-25.

MATERIAL

A. ACOUSTIC CEILING PANELS SHALL BE MINERAL FIBER 24" x 48" x 5/8" OR 24" x 24" x 5/8". SEE FINISH SCHEDULES FOR SPECIFIC SPECIFICATION.

B. LAY-IN CEILING SYSTEM SHALL CONSIST OF FORMED DOUBLE WEB STEEL MAIN BEAMS AND CROSS TEES, CONFORMING TO ASTM C-635 "HEAVY DUTY" STRUCTURAL CLASSIFICATION, MID-SPAN DEFLECTION OF ANY COMPONENT SHALL NOT EXCEED 1/360 OF THE SPAN.
1. MAIN BEAM SHALL BE CAPABLE OF SUPPORTING A MINIMUM OF 16 POUNDS PER LINEAL FOOT OVER A 48" SIMPLE SPAN.
2. STRUCTURAL CROSS TEES WHICH INTERSECT THE MAIN BEAM AND WHICH SUPPORT OTHER CROSS TEES SHALL BE CAPABLE OF SUPPORTING A MINIMUM OF 12 POUNDS PER LINEAL FOOT OVER A 4 FOOT SIMPLE SPAN.
3. PROVIDE A 7/8" x 7/8" STEEL HEMMED EDGE WALL MOLDING TO MATCH SUSPENSION SYSTEM IN DESIGN.

C. HANGER WIRE SHALL BE #12 GAUGE MINIMUM GALVANIZED STEEL WIRE.

D. EDGE MOLDINGS AND TRIM
1. PROVIDE METAL OR EXTRUDED ALUMINUM OF TYPES AND PROFILES INDICATED OR, IF NOT INDICATED, MANUFACTURER'S STANDARD MOLDINGS FOR EDGES AND PENETRATIONS THAT FIT TYPE OF EDGE DETAIL AND SUSPENSION SYSTEM INDICATED AND THAT MATCH THE GRID SYSTEM.

E. REPLACEMENT PANELS
1. PROVIDE ONE UNOPENED CARTON OF EACH TYPE OF CEILING PANELS FOR STORAGE ON PREMISES.

MANUFACTURERS

A. ACOUSTIC CEILING PANELS
1. ARMSTRONG
2. USG 3. SAINT-GOBAIN CERTAINTEEED

B. CEILING SUSPENSION SYSTEMS - ACOUSTIC CEILING PANELS
1. ARMSTRONG WORLD INDUSTRIES, INC. (PRELUDE)
2. CHICAGO METALLIC CORPORATION
3. USG INTERIORS

C. HEMMED EDGE WALL MOLDINGS
1. ARMSTRONG WORLD INDUSTRIES, INC. (PRELUDE)
2. CHICAGO METALLIC CORPORATION
3. USG INTERIORS

EXECUTION

INSTALLATION
A. LAY-IN CEILING SYSTEM SHALL BE SUSPENDED FROM STRUCTURAL SYSTEM OR SUPPLEMENTAL STEEL FRAMING SUPPLIED BY THIS CONTRACTOR. SUSPENSION FROM METAL ROOF DECK, DUCTWORK, PIPING, ETC., WILL NOT BE PERMITTED.

B. HANGERS FOR SUSPENDED GRID SYSTEM SHALL BE NOT LESS THAN # 12 GAUGE AND SPACED NO GREATER THAN 4'-0" ON CENTER, WHERE JOIST SPACING IS GREATER THAN FOUR FEET, OR WHERE JOISTS ARE PARALLEL TO CEILING SYSTEM MAIN BEAMS, COUNTER PLAYED HANGERS MUST BE PROVIDED OR INTERMEDIATE HANGERS FROM SUPPLEMENTAL STEEL MUST BE SUPPLIED.

C. LAY-IN CEILING SYSTEM SHALL CONSIST OF MAIN BEAMS AT RIGHT ANGLES TO THE STRUCTURAL FRAMING, WITH CROSS TEES INTERSECTING THE MAIN BEAMS PARALLEL TO STRUCTURAL FRAMING.

D. CEILING CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ORIENTATION OF BUILDING STRUCTURAL FRAMING SYSTEM FOR COORDINATION OF SUSPENSION POINTS FOR LAY-IN CEILING SYSTEM.
1. WHERE LIGHT FIXTURES ARE RECESSED INTO THE CEILING, PROVIDE ADDITIONAL MAIN TEES TO SUPPORT RECESSED LIGHT FIXTURES, ALL AS INDICATED ON DRAWING.
A. PROVIDE #12 HANGERS AT 48" O.C. ON BOTH SIDES OF RECESSED LIGHT FIXTURES.
2. PROVIDE ADDITIONAL MAIN BEAMS TO SUPPORT ALL SURFACE MOUNTED LIGHT FIXTURES.
A. MAIN BEAM MUST OCCUR ABOVE ALL ROWS OF SURFACE MOUNTED LIGHT FIXTURES.
B. PROVIDE ADDITIONAL #12 HANGERS DIRECTLY OVER LIGHT FIXTURES.

E. SECURE WIRE HANGERS BY LOOPING AND WIRE-TYING, EITHER DIRECTLY TO STRUCTURES OR TO INSERTS, EYE SCREWS, OR OTHER DEVICES THAT ARE SECURE AND APPROPRIATE FOR SUBSTRATE.

F. SECURE FLAT, ANGLE, CHANNEL, AND ROD HANGERS TO STRUCTURE, INCLUDING INTERMEDIATE FRAMING MEMBERS, BY ATTACHING TO INSERTS, EYE SCREWS, OR OTHER DEVICES THAT ARE SECURE AND APPROPRIATE FOR STRUCTURE TO WHICH HANGERS ARE ATTACHED AS WELL AS FOR TYPE OF HANGER USED.

G. INSTALL EDGE MOLDINGS OF TYPE INDICATED AT PERIMETER OF ACOUSTICAL CEILING AREA AND WHERE NECESSARY TO CONCEAL EDGES OF ACOUSTICAL UNITS.
1. SCREW-ATTACH MOLDINGS TO SUBSTRATE AT INTERVALS NOT OVER 16 INCHES O.C. AND NOT MORE THAN 3 INCHES FROM ENDS, LEVELING WITH CEILING SUSPENSION SYSTEM TO TOLERANCE OF 1/8" IN 12'-0".
2. MITER CORNERS ACCURATELY AND CONNECT SECURELY WHERE MOLDINGS INTERSECT.

SECTION 09650 RESILIENT TILE FLOORING

A. DO NOT INSTALL RESILIENT FLOORING OVER CONCRETE FLOORS THAT HAVE BEEN TREATED WITH CHEMICAL COMPOUNDS, SUCH AS SEALERS AND HARDENERS, WITHOUT A GUARANTY FROM THE GENERAL CONTRACTOR THAT THE NEW FLOOR FINISH MATERIAL (S) SHALL PERFORM AS PRESCRIBED WITHING MANUFACTURER'S SPECIFICATIONS. FAILURE TO DO SO OR FAILURE OF FLOORING MATERIAL (S) SHALL RESULT THE DEMOLITION & REMOVAL AND REPLACEMENT OF FLOOR MATERIAL (S) BY GENERAL CONTRACTOR AT THEIR COST.

B. ALL SURFACES TO RECEIVE RESILIENT FLOORING FINISHES SHALL BE DRY, CLEAN AND SMOOTH, & PREPARED PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATION.

PRODUCTS

A. RESILIENT FLOOR TILE SHALL BE VINYL COMPOSITION TILE 1/8" GAUGE 12"x 12" PATTERN SHALL BE FULL THICKNESS OF TILE. TILE SHALL BE RESISTANT TO ALKALI, GREASE AND OILS.

B. RESILIENT BASE SHALL BE 1/8" THICK RUBBER, BASE SHALL BE COVERED, EXCEPT IN CARPETED AREAS PROVIDE STRAIGHT RUBBER BASE. PROVIDE MOLDED INSIDE AND OUTSIDE CORNERS.

C. ADHESIVES AND OTHER APPLICATION MATERIAL SHALL BE THOSE AS MANUFACTURED OR RECOMMENDED SPECIFICALLY BY THE TILE MANUFACTURER OF THE MATERIAL SPECIFIED AND SUB-STRATA TO WHICH IT IS APPLIED.
1. SPRAY-ON ADHESIVES SHALL NOT BE ALLOWED.
2. ADHESIVES SHALL BE NON-PETROLEUM BASED.

D. FLOOR WAX - ECOLAB STRATUS WAX, (4 COATS)

MANUFACTURERS

A. RESILIENT FLOOR TILE
1. ARMSTRONG

B. RESILIENT BASE
3. JOHNSONITE

C. FLOOR WAX
1. ECOLAB STRATUS

D. ADHESIVES
1. ARMSTRONG

FINISHES

A. SEE ROOM FINISH SPECIFICATIONS.
B. BASE
1. COLOR: SEE ROOM FINISH SPECIFICATIONS.

EXECUTION

EXAMINATION
A. INSPECT SUBFLOOR SURFACES TO DETERMINE THAT THEY ARE SATISFACTORY. A SATISFACTORY SUBFLOOR SURFACE IS DEFINED AS ONE THAT IS CLEAN, SMOOTH, AND FREE FROM CRACKS, HOLES, RIDGES, COATINGS PREVENTING ADHESIVE BOND, AND OTHER DEFECTS IMPAIRING PERFORMANCE OR APPEARANCE.

B. PERFORM BOND AND MOISTURE TESTS ON CONCRETE SUBFLOOR TO DETERMINE IF SURFACES ARE SUFFICIENTLY CURED AND DRY.

C. DO NOT PROCEED WITH RESILIENT FLOORING WORK UNTIL SUBFLOOR SURFACES ARE SATISFACTORY.

PREPARATION
A. USE LEVELING AND PATCHING COMPOUNDS AS RECOMMENDED BY RESILIENT FLOORING MANUFACTURER FOR FILLING SMALL CRACKS, HOLES AND DEPRESSIONS IN SUBFLOOR.

B. REMOVE COATINGS FROM SUBFLOOR SURFACES THAT WOULD PREVENT ADHESIVE BOND, INCLUDING CURING COMPOUNDS INCOMPATIBLE WITH RESILIENT FLOORING ADHESIVES, PAINT, OILS, WAXES AND SEALERS.

C. BROOM CLEAN OR VACUUM SURFACES TO BE COVERED, AND INSPECT SUBFLOOR.

D. APPLY CONCRETE SLAB PRIMER, IF RECOMMENDED BY FLOORING MANUFACTURER, PRIOR TO APPLICATION OF ADHESIVE. APPLY IN COMPLIANCE WITH MANUFACTURER'S DIRECTIONS.

INSTALLATION

A. INSTALL RESILIENT FLOORING IN STRICT COMPLIANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND RECOMMENDATIONS.

B. SCRIBE, CUT, AND FIT RESILIENT FLOORING TO PERMANENT FIXTURES, BUILT-IN FURNITURE AND CABINETS, PIPES, OUTLETS AND PERMANENT COLUMNS, WALLS AND PARTITIONS.

C. TIGHTLY CEMENT RESILIENT FLOORING TO FLOOR WITHOUT OPEN CRACKS, VOIDS, RAISING AND PUCKERING AT JOINTS, TELEGRAPHING OF ADHESIVE SPREADER MARKS, OR OTHER SURFACE IMPERFECTIONS.

D. HAND ROLL RESILIENT FLOORING TO ASSURE ADHESION.

E. CAREFULLY ALIGN TILE JOINTS IN BOTH DIRECTIONS WITH TIGHT SEAMS AND WITHOUT BUCKLING.

F. ADJUST WIDTH OF BORDER AS REQUIRED BY RUN OF TILE. BORDER LESS THAN HALF TILE WIDTHS NOT ACCEPTABLE.

H. INSTALL COVERED BASE ON TOP OF RESILIENT FLOORING. SCRIBE ACCURATELY TO TRIM ITEMS.

I. FURNISH VINYL REDUCER EDGE STRIPS AT EXPOSED EDGES OF TILE SUCH AS DOORWAYS, CASED OPENINGS, AND OTHER ITEMS WHERE FLOOR TILE IS NOT CONTINUOUS.

J. MATCH TILES FOR COLOR AND PATTERN BY USING TILE FROM CARTONS IN SAME SEQUENCE AS MANUFACTURED AND PACKAGED IF SO NUMBERED.

K. DO NOT USE BROKEN, CRACKED, CHIPPED OR DEFORMED TILE.

L. ADHERE TILE FLOORING TO SUBSTRATES USING FULL SPREAD OF ADHESIVE APPLIED IN COMPLIANCE WITH FLOORING MANUFACTURER'S DIRECTIONS.

M. APPLY BASE TO WALLS, CASEWORK, AND OTHER PERMANENT FIXTURES IN ROOMS OR AREAS WHERE BASE IS REQUIRED. INSTALL BASE IN LENGTHS AS LONG AS PRACTICABLE.

N. ON MASONRY SURFACES, OR OTHER SIMILAR IRREGULAR SUBSTRATES, FILL VOIDS ALONG TOP EDGE OF RESILIENT WALL BASE WITH MANUFACTURER'S RECOMMENDED ADHESIVE FILLER MATERIAL.

O. REMOVE EXCESS ADHESIVE AS RECOMMENDED BY THE TILE MANUFACTURER. DAMP MOP AND PROVIDE PROTECTIVE COAT OF FLOOR WAX IMMEDIATELY AFTER INSTALLATION OF THE RESILIENT FLOOR. PROTECT ALL TRAFFIC AREAS WITH UNDYED UNTREATED BUILDING PAPER.

P. CONTRACTOR TO APPLY , ACCORDING TO MANUFACTURE'S SPECIFICATIONS 4 COATS OF WAX TO THE VCT TILE PRIOR TO MERCHANDISING.

Q. CLEAN, BUFF AND WAX VCT FLOORING PRIOR TO SOFT OPEN.

PATTERNS

A. FLOOR TILE SHALL BE INSTALLED WITH GRAIN IN A CHECKERBOARD PATTERN.

SECTION 09690 CARPET TILE

MANUFACTURER:
1. AS SPECIFIED IN ROOM FINISH SCHEDULE.

PRODUCTS:
1. AS SPECIFIED IN ROOM FINISH SCHEDULE.

INSTALLATION:
1. AS PER MANUFACTURER STANDARDS.

CONCRETE:

ALL EXPOSED CONCRETE FLOORING SHALL BE SEALED WITH TWO (2) APPLICATIONS OF HIGH-GLOSS CLEAR CONCRETE FLOORING SEALER.

SECTION 09900 PAINTING

GENERAL

PAINTING OF PHYSICAL HAZARDS AND PROTECTIVE, FIREFIGHTING AND SAFETY EQUIPMENT SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA). COLORS SHALL COMPLY WITH AMERICAN NATIONAL STANDARDS INSTITUTE PAMPHLET ANSI Z53-1.

JOB CONDITIONS

WHEN SURFACE TEMPERATURE IS BELOW 50°F. DO NOT APPLY ANY PAINT OR FINISHING MATERIAL UNLESS OTHERWISE SPECIFIED. DO NOT PAINT EXTERIOR SURFACES IMMEDIATELY FOLLOWING RAIN OR UNTIL FROST, DEW OR CONDENSATION HAS EVAPORATED. SURFACES SHALL BE TESTED WITH MOISTURE METER BEFORE PROCEEDING.

PRODUCT

MATERIALS
THINNERS: USE ONLY MATERIALS RECOMMENDED BY PAINT MANUFACTURER.

MANUFACTURERS

A. PAINT
1. SHERWIN-WILLIAMS
2. BENJAMIN MOORE

FINISHES

A. COLORS - REFER TO DRAWINGS.

EXECUTION

PREPARATION
A. CONCRETE FLOORS SHALL BE BROOM CLEAN, DRY AND FREE OF ALL DUST, DIRT, OIL AND GREASE BEFORE PAINTING. NEW CONCRETE MUST BE ALLOWED TO CURE AT 75° FOR 30 DAYS. ANY SEALERS MUST BE COMPATIBLE WITH THE PAINT OR BE REMOVED.

B. SAND SMOOTH WOODWORK AND LIGHTLY SAND OR WIRE BRUSH PLYWOOD TO BE FINISHED. CLEAN SURFACE BEFORE PROCEEDING WITH THE APPLICATION OF THE FIRST COAT.

C. SOLVENT CLEAN METAL SURFACES WITH MINERAL SPIRITS, REMOVE DIRT, OIL AND GREASE. HAND TOOL CLEAN ALL RUST AND SCALE BY WIRE BRUSHING AND SANDING. PRIME COAT ALL UN-PRIMED ITEMS, CLEAN AND TOUCH UP SHOP COATS OR PAINT THAT HAVE BECOME BADLY WEATHERED, WORN OR MARRED WITH THE PRIMER SPECIFIED.

D. SOLVENT CLEAN GALVANIZED SURFACES THOROUGHLY WITH MINERAL SPIRITS, REMOVE DIRT, OIL AND GREASE. HAND TOOL CLEAN ALL RUST AND SCALE BY WIRE BRUSHING OR SANDING. PRIME COAT WITH THE GALVANIZED PRIMER AS SPECIFIED.

E. MASONRY BLOCK UNITS AND CONCRETE SURFACES SHALL BE DRY AND CLEAN FROM ALL DUST, DIRT, OIL AND EFFLORESCENCE BEFORE PAINTING.

NEW SURFACES

A. ALL SURFACES TO RECEIVE PAINT SHALL BE CLEAN, DULL, DRY, SMOOTH AND DUST FREE BEFORE APPLICATION OF ANY MATERIALS. PREPARE SURFACES AS FOLLOWS: FOR SUBSTRATES NOT LISTED CONSULT THE RESPECTIVE PAINT MANUFACTURER FOR THE APPROPRIATE PREPARATION FOR THE SUBSTRATE.

B. ALL SURFACES MUST BE THOROUGHLY BRUSHED WITH A TUFF FIBER BRUSH (NON-METALLIC) TO REMOVE LOOSE PARTICLES, WITH PARTICULAR EMPHASIS ON STUCCO SURFACES AND MORTAR COURSE.

C. SURFACES ARE TO BE DRY, FREE OF GREASY RESIDUE, MORTAR AND ASPHALT SPATTERS.

D. CRACKS, JOINTS AND LARGE VOIDS ARE TO BE FILLED BY REPAINTING, CAULKING OR ACCORDING TO MANUFACTURER'S WRITTEN SPECIFICATIONS.

EXISTING SURFACES

A. REMOVE ALL PEELING AND SCALING PAINT TO A SOUND SUBSTRATE BY HAND SCRAPING, USE OF MECHANICAL GRINDERS OR WITH HIGH PRESSURE SPRAY EQUIPMENT.

B. IF MILDEW IS PRESENT REMOVE WITH A COMMERCIAL MILDEWICIDE SOLUTION. CAUTION: USE RUBBER GLOVES, WORK GOGGLES AND PROTECTIVE CLOTHING.

C. MULTIPLE COATS OF PAINT THAT ARE IN AN ADVANCED STATE OF DETERIORATION AND PRIOR APPLICATIONS OF CEMENT BASED PAINTS MUST BE REMOVED BY SANDBLASTING OR BY USE OF MECHANICAL GRINDER.

D. ALL STRUCTURAL CRACKS AND CREVICES ARE TO BE FILLED WITH APPROPRIATE PATCHING MATERIAL.

E. WEATHERED, UNPAINTED MASONRY SURFACES MUST BE FREE OF DIRT, GREASE AND OIL. BADLY WEATHERED CONCRETE, BRICK OR OTHER MASONRY SHOULD BE POWER WASHED.

F. IF THIS CONTRACTOR CONSIDERS ANY SURFACE UNSUITABLE FOR PROPER FINISHING, HE IS TO NOTIFY THE GENERAL CONTRACTOR. HE IS NOT TO APPLY ANY MATERIAL UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN. DOING SO WILL ACCEPT FULL LIABILITY.

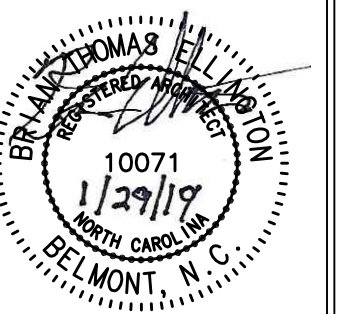
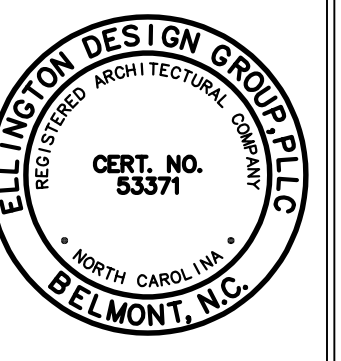
G. PREVIOUSLY COATED SURFACES: - MAINTENANCE PAINTING WILL FREQUENTLY NOT REQUIRE THE COMPLETE REMOVAL OF ALL COATINGS PRIOR TO REPAINTING. HOWEVER, ALL SURFACE CONTAMINATION SUCH AS OIL, GREASE, LOOSE PAINT, MILL SCALE, DIRT, FOREIGN MATTER, RUST, MOLD, MILDEW, MORTAR, EFFLORESCENCE AND SEALERS MUST BE REMOVED TO ASSURE SOUND BONDING TO TIGHTLY ADHERING EXISTING PAINT. GLOSSY SURFACES OF EXISTING PAINT FILMS MUST BE CLEAN AND DULL BEFORE REPAINTING. WASH THOROUGHLY AND DULL BY SANDING. SPOT PRIME ANY BARE AREAS WITH AN APPROPRIATE PRIMER. CHECK FOR COMPATIBILITY BY APPLYING A TEST PATCH OF THE RECOMMENDED COATING, COVERING AT LEAST 2 SQUARE FEET. ALLOW TO DRY ONE WEEK BEFORE TESTING ADHESION PER WITH TAPE PULL. IF THE COATING IS INCOMPATIBLE, COMPLETE REMOVAL IS REQUIRED.

APPLICATION

A. FINISH COLORS SHALL BE AS INDICATED ON THE DRAWINGS. TINT PRIMER AND UNDERCOAT TO THE APPROXIMATE SHADE OF THE FINISH COAT.

B. SURFACES SHALL BE CURED A MINIMUM OF 28 DAYS AND DRY BEFORE APPLICATION.

Ellington
Design
Group, PLLC



REVISIONS

NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No:
2018-009

Scale:
Date Drawn: **7/18**

Sheet Title
GENERAL SPECIFICATIONS

NOTE:
SPECIFICATIONS ARE NOT APPLICABLE TO ALL PROJECTS. USE SPECIFICATIONS AS REQUIRED AND IN CONJUNCTION WITH OTHER DISCIPLINE SPECIFICATIONS.

A-8.2

I. GENERAL

- A. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, SHOP DRAWINGS AND SPECIFICATIONS.
- B. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT TO ALL SUBCONTRACTORS AND SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.
- C. THE GENERAL CONTRACTOR SHALL COMPARE ALL CONTRACT DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN DISCIPLINES AND WITHIN A GIVEN DISCIPLINE TO THE ARCHITECT AND ENGINEER PRIOR TO FABRICATION AND ERECTION.
- D. IF A CONFLICT EXISTS AMONG THE STRUCTURAL DRAWINGS, GENERAL NOTES, OR THE SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
- E. THE CONTRACTOR SHALL COORDINATE ALL ELEVATIONS AND DIMENSIONS, INCLUDING BUT NOT LIMITED TO THOSE FOR OPENINGS IN WALLS AND IN ROOF AND FLOOR SYSTEMS, WITH THE ARCHITECTURAL, PLUMBING, ELECTRICAL, AND MECHANICAL PLANS.
- F. ALL DIMENSIONS, ELEVATIONS, AND ANY OTHER CONDITIONS OF ANY EXISTING STRUCTURES OR OTHER FEATURES SHALL BE VERIFIED BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES WITH THE CONTRACTOR DRAWINGS REPORTED TO THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.
- G. UNLESS NOTED OTHERWISE, DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.
- H. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS AND FOR SAFETY PRECAUTIONS AND PROGRAMS.
- I. BRITT, PETERS & ASSOCIATES, INC. SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSION OF THE CONTRACTOR OR FOR THEIR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- J. PERIODIC SITE OBSERVATION BY BRITT, PETERS & ASSOCIATES, INC. IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS AND IS NOT EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK.
- K. THE BUILDING OWNER SHALL PROVIDE PERIODIC MAINTENANCE TO INSURE STRUCTURAL INTEGRITY. SUCH MAINTENANCE SHALL INCLUDE BUT IS NOT LIMITED TO PAINTING OF STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS.

II. DESIGN CRITERIA

- A. THE CONTRACT DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE
 - 1. 2012 NORTH CAROLINA STATE BUILDING CODE AND INTERNATIONAL EXISTING BUILDING CODE, 2009 EDITION
- B. DEAD LOADS
 - 1. TYPICAL FLOOR SYSTEMS: (42 PSF TOTAL)
 - a. COLLATERAL: 15 PSF**
 - b. CONC. TOPPING AND DECK: 27 PSF
 - 2. TYPICAL ROOF SYSTEMS: (20 PSF TOTAL)
 - a. MEP: 10 PSF
 - b. INSULATION & ROOFING: 10 PSF
 - * MISCELLANEOUS CEILING AND HANGING MECHANICAL LOADS SUCH AS DUCT WORK AND SPRINKLER PIPES.
 - ** PARTITION LOAD INCLUDING WITH LIVE LOAD FOR OFFICE SPACES.
- C. LIVE LOADS*
 - 1. SEE LIVE LOADS TABLE.
 - 2. LIVE LOADS ARE BASED ON THE MORE RESTRICTIVE OF THE UNIFORM LOAD LISTED BELOW OR THE CONCENTRATED LOAD LISTED ACTING OVER A 6.25 SQUARE FOOT AREA. LIVE LOADS HAVE BEEN REDUCED AS PRESCRIBED IN THE AFOREMENTIONED BUILDING CODE.
- D. DESIGN SNOW LOAD:

GROUND SNOW LOAD:	P _g	15 PSF
FLAT ROOF SNOW LOAD:	P _f	10.5 PSF
EXPOSURE FACTOR:	C _e	1.0
SNOW THERMAL FACTOR:	C _t	1.0
SNOW IMPORTANCE FACTOR:	I	1.0
- E. DESIGN WIND LOADS:

BASIC WIND SPEED	V	95 MPH (3-SEC GUST)
OCCUPANCY CATEGORY	II	
EXPOSURE CATEGORY	B	
INTERNAL PRESSURE COEFF.	GC _{pi}	+/-0.18 (ENCLOSED BUILDING)

SEE LOAD TABLES THIS SHEET FOR COMPONENTS AND CLADDING WIND PRESSURES.
- F. SEISMIC LOADS (NO SEISMIC SCOPE PER IBC 2009):

SHORT PERIOD SPECTRAL RESPONSE ACCELERATION,	S _s	0.246g
1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION,	S ₁	0.090g
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION,	S _{DS}	0.262g
1-SEC PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION,	S _{D1}	0.144g
OCCUPANCY CATEGORY,	C	II
SEISMIC DESIGN CATEGORY,	D	(ASSUMED)

SITE CLASS,
BASIC SEISMIC-FORCE RESISTING SYSTEM:
BEARING WALL SYSTEM- ORDINARY REINFORCED MASONRY SHEAR WALLS (ASSUMED)
RESPONSE MODIFICATION FACTOR, R: 2.0
DEFLECTION AMPLIFICATION FACTOR, C_d: 1.75
SEISMIC IMPORTANCE FACTOR, I_e: 1.00
SEISMIC RESPONSE COEFFICIENT, C_s: 0.131

THE CONTRACTOR SHALL VERIFY ALL MECHANICAL EQUIPMENT WEIGHTS, LOCATIONS AND ASSOCIATED OPENINGS WITH THE MECHANICAL CONTRACTOR AND SUBMIT SUCH INFORMATION PRIOR TO FABRICATION OF THE SUPPORTING STRUCTURE. PROMPTLY NOTIFY THE ENGINEER IF THE ACTUAL WEIGHT EXCEEDS THE WEIGHT SHOWN ON THE STRUCTURAL DRAWINGS.

LIVE LOADS

CATEGORY	UNIFORM LOAD (PSF)	CONCENTRATED LOAD (LBS)
CORRIDORS	100	
OFFICE BUILDINGS: OFFICES [PARTITIONS]	50 [15]	2,000
RECREATIONAL USES: GYMNASIUMS	100	

COMPONENTS & CLADDING WIND PRESSURES (SERVICE):
WIDTH OF ZONE, a = 6.0 FT

		Design Wind Pressure (psf):						
		Walls:		Effective Wind Area (sqft)				
		10	20	50	100	200	500	
Interior	Area 4	+	13.3	12.7	11.9	11.3	10.7	10.0
		-	-14.4	-13.8	-13.1	-12.5	-11.9	-11.1
Edge	Area 5	+	13.3	12.7	11.9	11.3	10.7	10.0
		-	-17.3	-16.6	-15.8	-15.8	-15.6	-11.1
Roof:		10	20	50	100	200	500	
Interior	Area 1	+	10.0	10.0	10.0	10.0	10.0	10.0
		-	-12.2	-11.9	-11.4	-11.1	-11.1	-11.1
Edge	Area 2	+	10.0	10.0	10.0	10.0	10.0	10.0
		-	-21.2	-19.5	-17.3	-15.6	-15.6	-15.6
Corner	Area 3	+	10.0	10.0	10.0	10.0	10.0	10.0
		-	-21.2	-19.5	-17.3	-15.6	-15.6	-15.6
Overhang:		10	20	50	100	200	500	
Interior	Area 1	+	N/A	N/A	N/A	N/A	N/A	N/A
		-	N/A	N/A	N/A	N/A	N/A	N/A
Edge	Area 2	+	10.0	10.0	10.0	10.0	10.0	10.0
		-	-24.8	-24.8	-24.8	-24.8	-24.8	-24.8
Corner	Area 3	+	10.0	10.0	10.0	10.0	10.0	10.0
		-	-41.2	-37.7	-32.3	-28.2	-28.2	-28.2
Parapet Design Pressure (psf):		Effective Wind Area (sqft)						
		10	20	50	100	200	500	
Edge	Area 2	+	N/A	N/A	N/A	N/A	N/A	N/A
		-	N/A	N/A	N/A	N/A	N/A	N/A
Corner	Area 3	+	N/A	N/A	N/A	N/A	N/A	N/A
		-	N/A	N/A	N/A	N/A	N/A	N/A

III. FOUNDATIONS

- A. AN ALLOWABLE BEARING CAPACITY OF 1,500 PSF HAS BEEN ASSUMED AND SHALL BE CONFIRMED BY A QUALIFIED SOILS ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
- B. ALL FOOTINGS SHALL BEAR ON UNDISTURBED EARTH OR ENGINEERED FILL AT ELEVATIONS SHOWN ON PLANS AND DETAILS. GO TO COORDINATE FINAL TOP OF FOOTING ELEVATIONS WITH THE ARCHITECTURAL ELEVATIONS, MEP DRAWINGS AND CIVIL GRADING PLANS PRIOR TO PLACEMENT. FOOTING STEPS DENOTED ON PLAN ARE APPROXIMATE, UNLESS NOTED OTHERWISE, AND SHALL BE FIELD COORDINATED.
- C. FLOOR SLABS SHALL BEAR ON 4 INCHES OF COMPACTED STONE MINIMUM UNLESS OTHERWISE NOTED IN THE GEOTECHNICAL REPORT. THE MOISTURE RETARDER SHALL BE PLACED BETWEEN THE STONE AND THE SLAB.
- D. NO FOUNDATION CONCRETE SHALL BE INSTALLED UNTIL ALL FOUNDATION WORK HAS BEEN COORDINATED WITH UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD OF ALL CONFLICTS THAT EXIST BETWEEN FOOTINGS AND UTILITIES.
- E. ALL FOUNDATIONS OR PORTIONS THEREOF BELOW GRADE MAY BE EARTH FORMED BY NEAT EXCAVATIONS.
- F. UNLESS NOTED OTHERWISE, ALL FOOTINGS SHALL BE CENTERED ON WALLS AND/OR COLUMNS.
- G. FOOTINGS SHALL NOT BE PLACED ON FROZEN SUBGRADE OR IN STANDING WATER.
- H. HEAVY EQUIPMENT SHOULD NOT BE ALLOWED WITHIN 8 FEET OF ANY EARTH RETAINING WALL. USE ONLY HAND-OPERATED VIBRATORY COMPACTORS FOR COMPACTING BEHIND RETAINING WALLS.
- I. FOUNDATION TYPE
 - 1. SPREAD FOOTING:
 - a. TOTAL LOAD: 1,500 PSF NET PRESSURE (ASSUMED).

IV. CONCRETE

- A. CONCRETE SHALL CONFORM TO THE CONCRETE PROPERTIES SPECIFIED IN THE CONCRETE PROPERTIES TABLE.
- B. ALL CONCRETE SHALL HAVE ALLOWABLE UNIT SHRINKAGE OF 0.045% AT 28 DAYS. (SEE ASTM C157)
- C. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE CURRENT "ACI MANUAL OF CONCRETE PRACTICE".
- D. PORTLAND CEMENT SHALL BE ASTM C-150, TYPE I OR II.
- E. ALL AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL MEET ASTM C 33.
- F. ALL REINFORCEMENT SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
 - 1. ALL REINFORCING, UNO: ASTM A615 GRADE 60
 - 2. WELDED WIRE REINFORCEMENT (WWR):
 - a. SMOOTH WIRE: ASTM A 185 (65 KSI)
 - b. EXPOSED WIRE: ASTM A 497 (70 KSI)
 - c. POLYPROPYLENE FIBRILLATED FIBER MAY BE USED TO SUBSTITUTE WWR IN SLABS ON GRADE, WHEN ADDED TO CONCRETE MIX ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDED DOSAGES.
- G. REINFORCEMENT DETAILING:
 - 1. REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 315.
 - 2. DEVELOPMENT AND SPICE LENGTHS ARE IN TENSION UNLESS OTHERWISE INDICATED AND SHALL BE AS TABULATED IN THE SPICE LENGTH TABLE, UNLESS OTHERWISE INDICATED.
 - 3. LAP WWR ONE CROSSWIRE SPACING PLUS 2".
 - 4. PROVIDE CORNER BARS AT ALL FOOTINGS AND WALL INTERSECTIONS TO MATCH HORIZONTAL REINFORCING SIZE AND SPACING. AT INTERSECTIONS OF CONTINUOUS SPREAD FOOTINGS EXTEND ALL BARS TO FAR SIDE OF INTERSECTING FOOTING.
 - 5. REINFORCEMENT SHALL BE SECURELY PLACED TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. PROVIDE THE FOLLOWING CONCRETE COVER FOR REINFORCING [ACI 318 SECTION 7.7 AND IBC TABLE 720.1], UNLESS SPECIFICALLY NOTED OTHERWISE:
 - a. CAST AGAINST EARTH: #6 THRU #18 3"
 - b. EXPOSED TO EARTH/WEATHER: #5 & SMALLER 2"
 - c. EXPOSED TO EARTH/WEATHER: #5 & SMALLER 1 1/2"
 - d. SLABS: #11 & SMALLER 3/4"
 - 6. PROVIDE DOWELS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS NOTED OTHERWISE.
- H. FOUNDATION WALLS, GRADE BEAMS AND FOOTINGS SHALL BE CAST IN ALTERNATE PANELS NOT TO EXCEED 6'-0" IN LENGTH. SHEAR KEYS SHALL BE PROVIDED AT EACH CONSTRUCTION JOINT AND SHALL BE LOCATED AT 1/3 PORTIONS OF SPANS.
- I. PROVIDE CONTROL JOINTS IN CONCRETE CANTILEVERED RETAINING WALLS AT EQUAL INTERVALS NOT TO EXCEED 25'-0". PROVIDE EXPANSION JOINTS AT EVERY FOURTH CONTROL JOINT.
- J. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS SHALL NOT BE USED UNLESS SHOWN ON THE DRAWINGS. THE ARCHITECT/ENGINEER SHALL APPROVE ALL DEVIATIONS OR ADDITIONAL JOINTS IN WRITING.
- K. SLABS AND BEAMS OR JOISTS SHALL BE CAST MONOLITHICALLY UNLESS NOTED OTHERWISE.
- L. CHAMFER ALL PERMANENTLY EXPOSED CONCRETE EDGES 3/4 INCH, UNLESS NOTED OTHERWISE.
- M. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS OF OPENINGS AND SLEEVES IN CONCRETE WALLS AND SUPPORTED FLOORS. SPREAD REINFORCEMENT AT OPENINGS AND SLEEVES UNLESS OTHERWISE SHOWN. DO NOT CUT REINFORCEMENT. SEE TYPICAL REINFORCEMENT DETAILS FOR OPENINGS IN SLABS AND WALLS FOR ADDITIONAL REQUIREMENTS.
- N. NO HOLES OR OPENINGS THROUGH FOUNDATION WALLS AND/OR FOOTINGS WITHOUT ENGINEER'S APPROVAL.
- O. ALUMINUM SHALL NOT BE EMBEDDED IN ANY CONCRETE.

CONCRETE PROPERTIES TABLE NOTES:

- 1. STRENGTH (PSI) DENOTES 28 DAY COMPRESSIVE STRENGTH AND DENSITY REQUIREMENTS
- 2. NWT = NORMAL WEIGHT CONCRETE
- 3. DURABILITY CLASSIFICATION DENOTES CONCRETE REQUIREMENTS BY EXPOSURE CLASS, REFER TO TABLE 4.3.1 OF ACI 318-08

CONCRETE PROPERTIES				
USAGE	STRENGTH (PSI)	TYPE	COMMENTS	DURABILITY CLASSIFICATION
ALL CONCRETE NOT OTHERWISE SPECIFIED	4000	NWT		F0, S0, P0, C1
FOOTINGS	3000	NWT		F0, S0, P0, C1
SLAB-ON-GRADE EXTERIOR	4000	NWT		F0, S0, P0, C0
SLAB-ON-GRADE INTERIOR	3000	NWT		F0, S0, P0, C0

V. POST-INSTALLED ANCHORS:

- A. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.
- B. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
- C. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE. CONTACT MANUFACTURER PRIOR TO ANCHOR INSTALLATION, IF TRAINING IS REQUIRED.
- D. UNLESS NOTED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD.
- E. ADHESIVE ANCHOR DESIGN BOND STRENGTH HAS BEEN BASED ON CRACKED CONCRETE. ACI 355.4 TEMPERATURE CATEGORY B, AND INSTALLATIONS INTO DRY HOLES DRILLED USING A HAMMER DRILL INTO CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-08, D.9.2.2. WHERE INDICATED ON THE CONTRACT DOCUMENTS. INSTALLATION REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11, D.9.2.4.
- F. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE LISTED BELOW, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE. ALL PROPOSED SUBSTITUTION REQUESTS FOR POST-INSTALLED ANCHORS SHALL BE SUBMITTED WITH A CURRENT ICC-ES REPORT INDICATING USE WITH CRACKED CONCRETE.
- G. ACCEPTABLE PRODUCTS ARE:
 - 1. CONCRETE MECHANICAL ANCHORS:
 - a. HILTI KB-TZ
 - b. HILTI KWIK HUS-EZ
 - c. SIMPSON STRONG-TIE TITEN-HD
 - d. SIMPSON STRONG-TIE "STRONG-BOLT 2"
 - 2. CONCRETE ADHESIVE ANCHORS:
 - a. HILTI RE 500-V3
 - b. HILTI HY 200
 - c. SIMPSON STRONG-TIE "SET-XP"
 - d. SIMPSON STRONG-TIE "AT-XP"
 - 3. MASONRY MECHANICAL ANCHORS:
 - a. SOLID GROUTED CMU
 - HILTI KWIK HUS-EZ
 - SIMPSON STRONG-TIE "TITEN-HD"
 - SIMPSON STRONG-TIE "STRONG-BOLT 2"
 - b. HOLLOW CMU
 - SIMPSON STRONG-TIE "TITEN-HD"
 - 4. MASONRY ADHESIVE ANCHORS:
 - a. SOLID-GROUTED CMU
 - SIMPSON STRONG-TIE "SET-XP"
 - SIMPSON STRONG-TIE "AT-XP"
 - HILTI HY 70
 - b. HOLLOW CMU:
 - SIMPSON STRONG-TIE "SET"
 - HILTI HY 70

VI. STRUCTURAL STEEL

- A. ALL HOT ROLLED STEEL PLATES, SHAPES, SHEET PILING, AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A6-98A.
- B. STRUCTURAL STEEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - 1. ALL OTHER STRUCTURAL STEEL ASTM A36 F_y = 36 KSI
- C. STRUCTURAL STEEL SHALL MEET THE LATEST AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- D. THE CENTERLINES OF ALL COLUMNS AND BEAMS SHALL BE LOCATED ON COLUMN LINES UNLESS OTHERWISE SHOWN.
- E. CONNECTIONS:
 - 1. BOLTS SHALL BE A325N TYPE 1, UNLESS NOTED OTHERWISE.
 - 2. ALL BOLTS SHALL BE SNUG TIGHT, UNLESS NOTED OTHERWISE. BOLTS SHALL BE TIGHTENED UNTIL ALL PLIES OF THE JOINT ARE IN FIRM CONTACT.
 - 3. THREADED RODS SHALL CONFORM TO ASTM A36 [ASTM A588 (CORROSION RESISTANT)]
 - 4. WELDING SHALL CONFORM TO THE STANDARDS SET FORTH IN AWS PUBLICATION, "WELDING IN BUILDING CONSTRUCTION".
 - 5. UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW), F7XX-EXXX (SAW), ER70S-X (GMAW), OR EXXX-X (CAW). WEATHERING STEEL ELECTRODES SHALL CONFORM TO THE ANSIIAWS D11 MANUAL. ELECTRODES FOR GRADE 60 OR GRADE 65 MATERIAL SHALL CONFORM TO E80XX (SMAW), F8XX-EXX-XX (SAW), ER80S-X (GMAW), OR E8X-X (CAW).
 - 6. ALL ERECTION DRAWINGS SHALL SHOW ALL FIELD WELDS REQUIRED.
- F. ALL STRUCTURAL STEEL SHALL BE SHIPPED WITH ONE COAT OF SHOP PRIMER EXCEPT THOSE MEMBERS THAT ARE GALVANIZED OR IN AREAS SCHEDULED TO RECEIVE FIRE PROOFING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AREAS TO BE FIRE PROOFED.

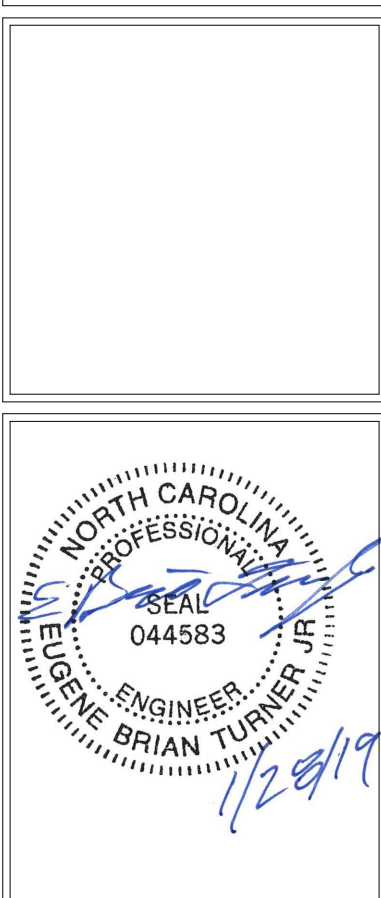
VII. MASONRY:

- A. HOLLOW CONCRETE BLOCK (MASONRY) UNITS SHALL BE LIGHTWEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET AREA AND 1000 PSI ON THE GROSS AREA (F_u = 1500PSI) AND SHALL CONFORM TO ASTM C-90.
- B. ALL MORTAR FOR USE IN MASONRY SHALL CONFORM TO ASTM C-270, TYPE M OR S. ALL GROUT FOR USE IN MASONRY SHALL CONFORM TO ASTM C-476, MIN. 3000 PSI.
- C. REINFORCING BARS TO MEET ASTM A-615, GRADE 60.
- D. VERTICAL AND HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 72 BAR DIAMETERS, UNO.
- E. HOLD VERTICAL BARS STRAIGHT AND TRUE AND ACCURATELY LOCATED IN WALL AS DETAILED. INSTALL REBAR POSITIONERS @ 4'-0"OC MAXIMUM THAT ARE DESIGNED TO HOLD REBAR IN PROPER LOCATION WITHIN THE GROUTED CELL.
- F. PROVIDE #9 LADDER OR TRUSS TYPE JOINT REINFORCEMENT @ 16" OC FOR TYPICAL HORIZONTAL REINFORCING.
- G. ALL REINFORCED MASONRY COLUMN AND WALL SECTIONS REQUIRE DOWELS FROM FOOTING, SAME SIZE AND QUANTITY AS GROUT FILL ALL CELLS AND ALL WALLS BELOW GRADE. SLUSH JOINT BETWEEN WYTHES.
- H. VERTICAL REINFORCEMENT IN COLUMN OR WALL.
- I. LOW-LIFT GROUTING PROCEDURES SHALL BE USED FOR ALL FILLED-CELL MASONRY CONSTRUCTION.
- J. IF HIGH-LIFT GROUTING PROCEDURES ARE FOLLOWED, PROVIDE CLEANOUTS AT EACH LOCATION.
 - 1. GROUT POURS SHALL NOT EXCEED 5 FEET PER LIFT, UNLESS CLEANOUTS ARE PROVIDED IN THE BOTTOM COURSE OF EACH 5 FOOT LIFT.
 - 2. MECHANICALLY VIBRATE ALL LIFTS IN EXCESS OF 1 FOOT.
 - 3. SHALL NOT BE STOPPED WITHIN 1-1/2' OF BED JOINT.
 - 4. TOTAL GROUT POUR SHALL NOT EXCEED 24 FEET WHEN GROUTING THE CELLS OF HOLLOW MASONRY.
- K. ALL CMU TO BE LAID IN RUNNING BOND PATTERN.
- L. SHORE ALL MASONRY UNTIL MASONRY AND GROUT HAVE BEEN ALLOWED TO SET FOR A MINIMUM OF 7 DAYS.
- M. ALL MASONRY WALLS HAVE BEEN DESIGNED IN THE FINAL CONSTRUCTED CONFIGURATION ONLY ASSUMING FULL BRACING TOP, BOTTOM, AND/OR SIDE OF WALL. DURING CONSTRUCTION, THE CONTRACTOR SHALL BRACE ALL CMU WALLS TO RESIST ERECTION AND LATERAL LOADS THAT MAY BE APPLIED PRIOR TO COMPLETION OF CONSTRUCTION.

VIII. SUBMITTALS

- A. THE GENERAL CONTRACTORS SHALL REVIEW AND STAMP ALL SHOP DRAWINGS BEFORE SUBMITTING FOR REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND/OR ENGINEER AND HAVE THE ENGINEER'S SHOP DRAWING STAMP AFFIXED PRIOR TO FABRICATION. FABRICATION AND ERECTION SHALL BE FROM REVIEWED SHOP DRAWINGS. PLEASE ALLOW 10 BUSINESS DAYS FOR REVIEW.
 - B. A RECORD SET OF APPROVED SHOP DRAWINGS SHALL BE KEPT IN THE FIELD BY THE GENERAL CONTRACTOR.
 - C. ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
 - D. THE CONTRACTOR SHALL PREPARE A LIST AND SCHEDULE OF ALL STRUCTURAL SUBMITTALS PRIOR TO CONSTRUCTION.
 - E. THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S REVIEW:
 - 1. MISCELLANEOUS STEEL
 - 2. CONCRETE MIX DESIGNS
 - 3. REINFORCING STEEL
 - F. ITEMS MARKED (1) SHALL HAVE SHOP DRAWINGS SEALED BY A REGISTERED ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. ITEMS MARKED (2) SHALL BE SUBMITTED TO ENGINEER FOR OWNER'S RECORD ONLY AND WILL NOT HAVE THE ENGINEER'S SHOP DRAWING STAMP AFFIXED. ITEMS MARKED (3) SHALL HAVE DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED.
 - 1. CONTRACTOR SHALL SUBMIT ONE SET OF REPRODUCIBLES AND TWO SETS OF PRINTS FOR ALL SHOP DRAWINGS SPECIFIED TO BE RETURNED BY THE ENGINEER.
 - 2. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
 - G. THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.
- IX. SPECIAL INSPECTION AND TESTING (CHAPTER 17)
- A. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AND INSPECTION AGENCY. THE SPECIAL INSPECTOR FROM THIS TESTING AGENCY SHALL OBSERVE THE WORK FOR CONFORMANCE TO THE DESIGN DRAWINGS AND SPECIFICATIONS.
 - B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND ALL OTHER DESIGNATED INDIVIDUALS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF NOT CORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
 - C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS, SPECIFICATIONS, SOILS REPORT AND APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE.
 - D. MASONRY WORK SHALL HAVE SPECIAL INSPECTION AS DEFINED BY THE AFOREMENTIONED BUILDING CODE.
 - E. A STATEMENT OF SPECIAL INSPECTIONS SHALL BE INCLUDED AS PART OF THE CONTRACT DOCUMENTS.

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A RENOVATION FOR:
SHAWTOWN SCHOOL
 HARNETT COUNTY
 695 SHAWTOWN ROAD
 LILLINGTON, NORTH CAROLINA

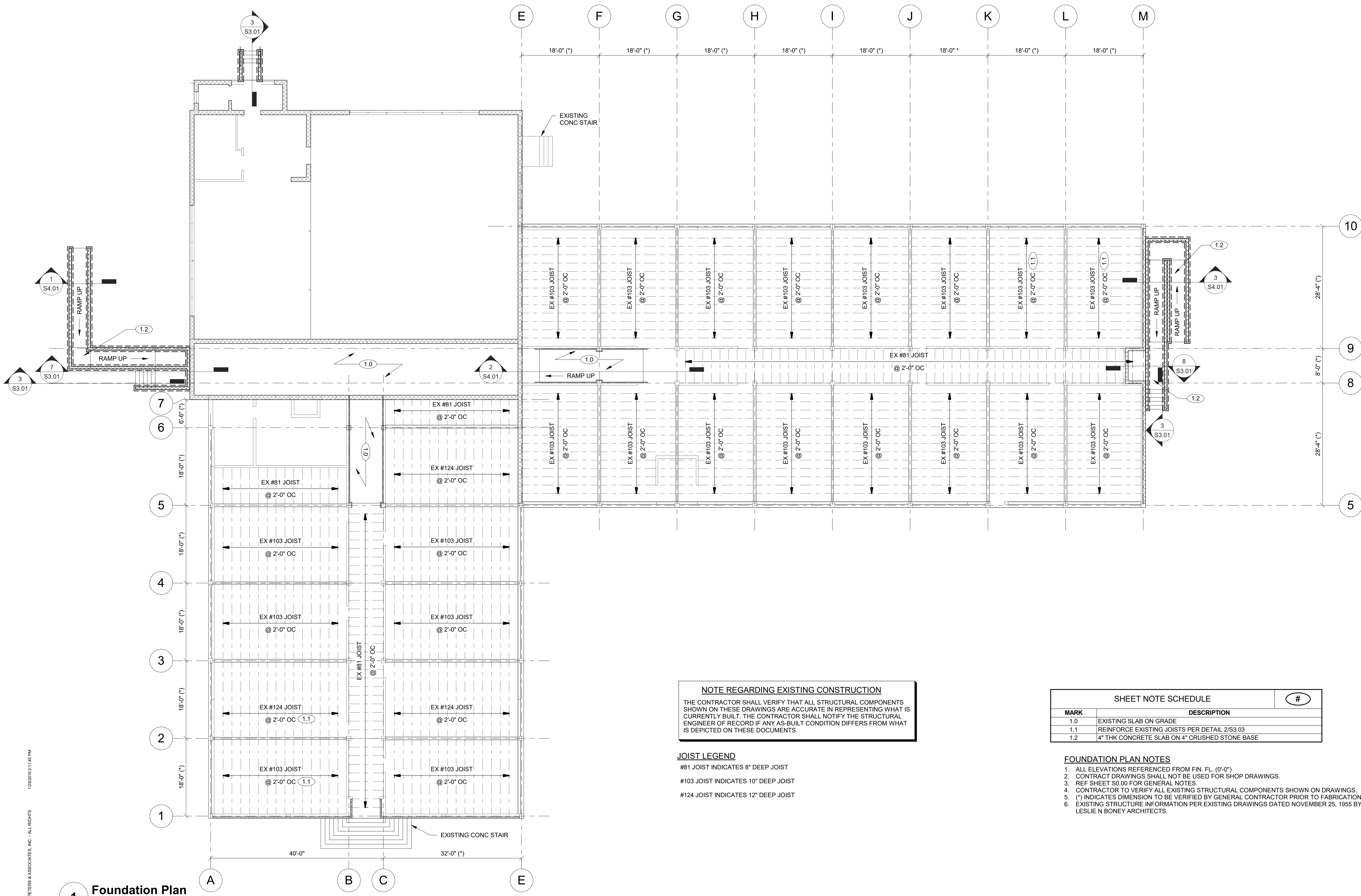


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Greenville, SC 29601
(864) 271-8869
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Date Drawn:	7/18
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GENERAL NOTES

\$0.00



NOTE REGARDING EXISTING CONSTRUCTION
 THE CONTRACTOR SHALL VERIFY THAT ALL STRUCTURAL COMPONENTS SHOWN ON THESE DRAWINGS ARE ACCURATE IN REPRESENTING WHAT IS CURRENTLY BUILT. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD IF ANY AS-BUILT CONDITION DIFFERS FROM WHAT IS DEPICTED ON THESE DOCUMENTS.

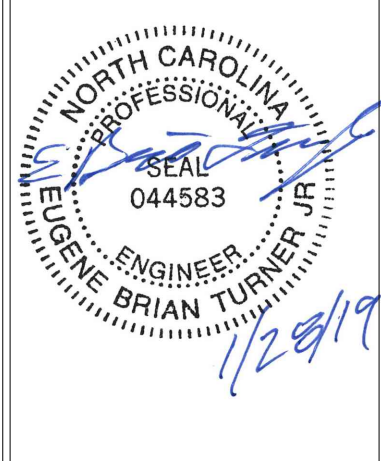
JOIST LEGEND
 #81 JOIST INDICATES 8" DEEP JOIST
 #103 JOIST INDICATES 10" DEEP JOIST
 #124 JOIST INDICATES 12" DEEP JOIST

SHEET NOTE SCHEDULE		#
MARK	DESCRIPTION	
1.0	EXISTING SLAB ON GRADE	
1.1	REINFORCE EXISTING JOISTS PER DETAIL 2/S3.03	
1.2	4" THK CONCRETE SLAB ON 4" CRUSHED STONE BASE	

- FOUNDATION PLAN NOTES**
- ALL ELEVATIONS REFERENCED FROM FIN. FL. (0'-0")
 - CONTRACT DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS.
 - REF SHEET S0.00 FOR GENERAL NOTES.
 - CONTRACTOR TO VERIFY ALL EXISTING STRUCTURAL COMPONENTS SHOWN ON DRAWINGS.
 - (*) INDICATES DIMENSION TO BE VERIFIED BY GENERAL CONTRACTOR PRIOR TO FABRICATION.
 - EXISTING STRUCTURE INFORMATION PER EXISTING DRAWINGS DATED NOVEMBER 25, 1955 BY LESLIE N BONEY ARCHITECTS.

1 Foundation Plan
 3/32" = 1'-0"

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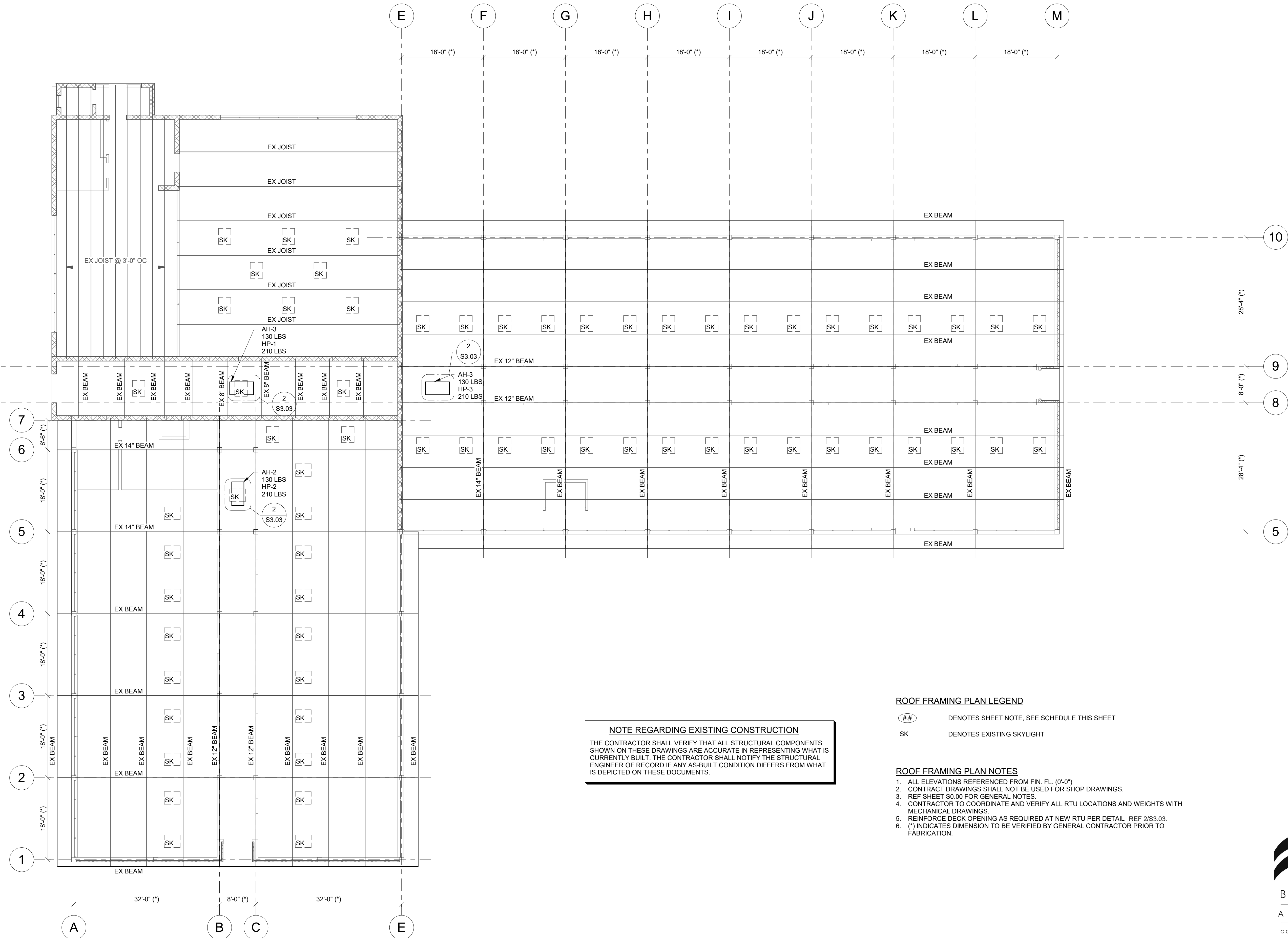


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 INC.
 consulting engineers
 101 Falls Park Drive
 Suite 601
 Greenville, SC 29601
 (864) 271-8869
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 Sheet Title
FOUNDATION PLAN

S1.01

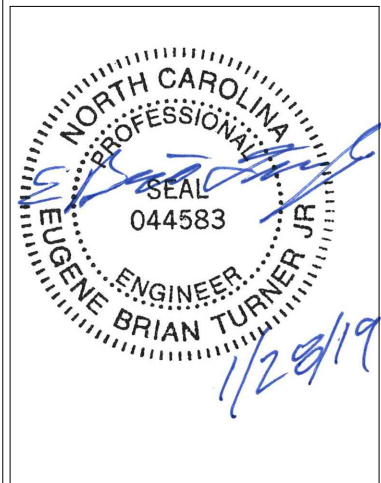
1 Roof Plan
3/32" = 1'-0"



NOTE REGARDING EXISTING CONSTRUCTION
THE CONTRACTOR SHALL VERIFY THAT ALL STRUCTURAL COMPONENTS SHOWN ON THESE DRAWINGS ARE ACCURATE IN REPRESENTING WHAT IS CURRENTLY BUILT. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD IF ANY AS-BUILT CONDITION DIFFERS FROM WHAT IS DEPICTED ON THESE DOCUMENTS.

ROOF FRAMING PLAN LEGEND
DENOTES SHEET NOTE, SEE SCHEDULE THIS SHEET
SK DENOTES EXISTING SKYLIGHT

ROOF FRAMING PLAN NOTES
1. ALL ELEVATIONS REFERENCED FROM FIN. FL. (0'-0")
2. CONTRACT DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS.
3. REF SHEET S0.00 FOR GENERAL NOTES.
4. CONTRACTOR TO COORDINATE AND VERIFY ALL RTU LOCATIONS AND WEIGHTS WITH MECHANICAL DRAWINGS.
5. REINFORCE DECK OPENING AS REQUIRED AT NEW RTU PER DETAIL REF 2/S3.03.
6. (*) INDICATES DIMENSION TO BE VERIFIED BY GENERAL CONTRACTOR PRIOR TO FABRICATION.



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ROOF PLAN

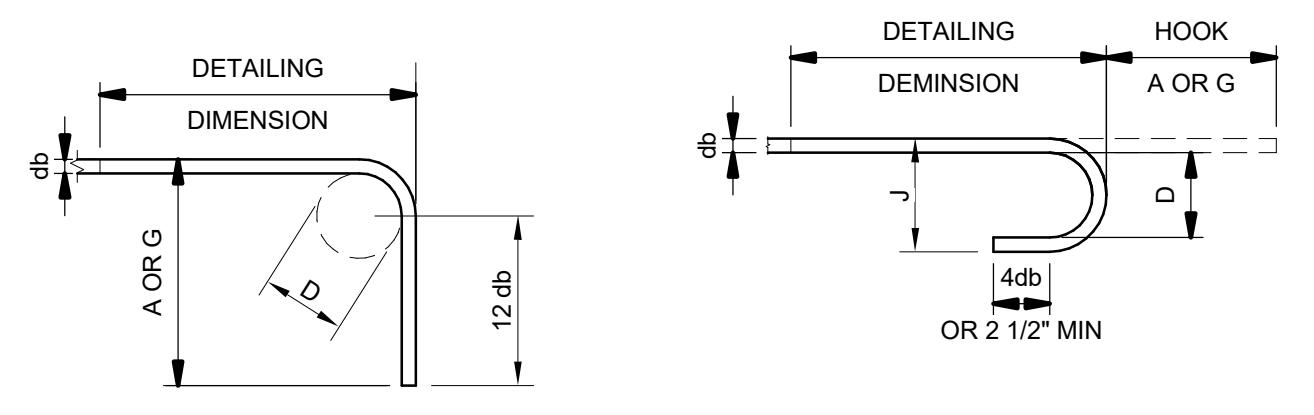
S2.01

RECOMMENDED END HOOKS				HOOK MIN. DEVELOPMENT LENGTHS (IN)			
BAR SIZE	FINISHED BEND DIAMETER D (IN)	180 DEG HOOKS		90 DEG HOOKS	NORMAL WT CONCRETE		
		A OR G (IN)	J (IN)	A OR G (IN)	3000	4000	5000
#3	2 1/4	5	4	6	9	8	7
#4	3	6	4	8	11	10	9
#5	3 3/4	7	6	10	14	12	11
#6	4 1/2	8	4	12	17	15	13
#7	5 1/4	10	4	14	20	17	15
#8	6	11	6	16	22	19	17
#9	9 1/2	15	11 3/4	19	25	22	20
#10	10 3/4	17	13 1/4	22	28	25	22
#11	12	19	14 3/4	24	31	27	24

D = INSIDE BEND OF DIAMETER
 1. HOOK EMBEDMENT LENGTHS IN TABLE SHALL BE FACTORED FOR THE FOLLOWING CONDITIONS:
 • LIGHTWEIGHT CONCRETE: 1.3 x TABLE LENGTH
 • EPOXY COATED BARS: 1.2 x TABLE LENGTH

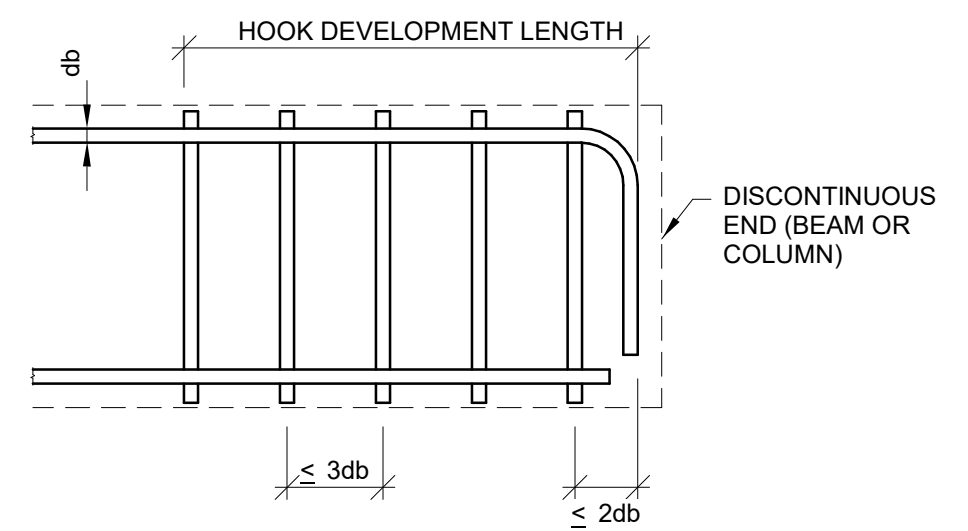
STIRRUP & TIE HOOK SCHEDULE			
BAR SIZE	D (IN)	90° HOOK A OR G (IN)	135° HOOK A OR G (IN)
#3	1 1/2	4	4
#4	2	4 1/2	4 1/2
#5	2 1/2	6	5 1/2

D = INSIDE BEND OF DIAMETER

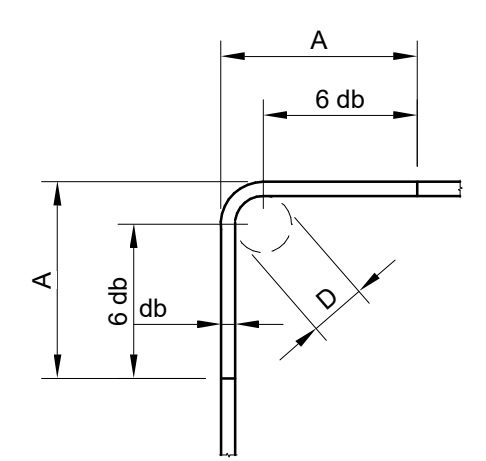


90 DEG. HOOK 180 DEG. HOOK

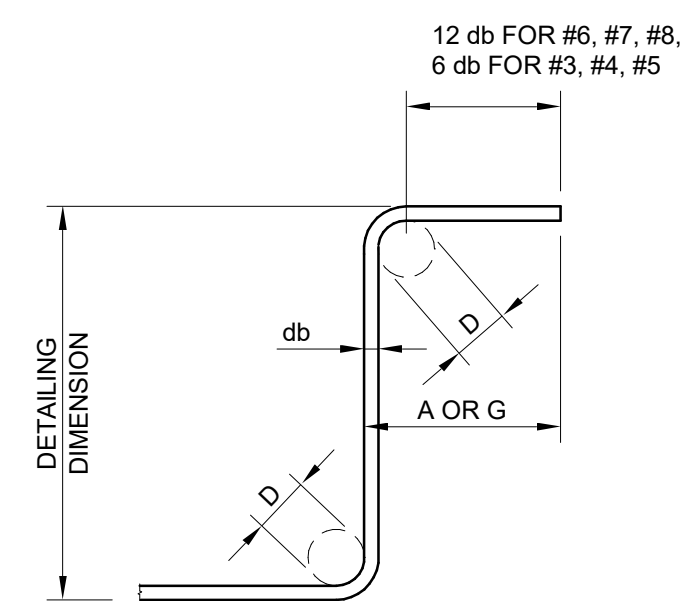
END HOOK TYPES



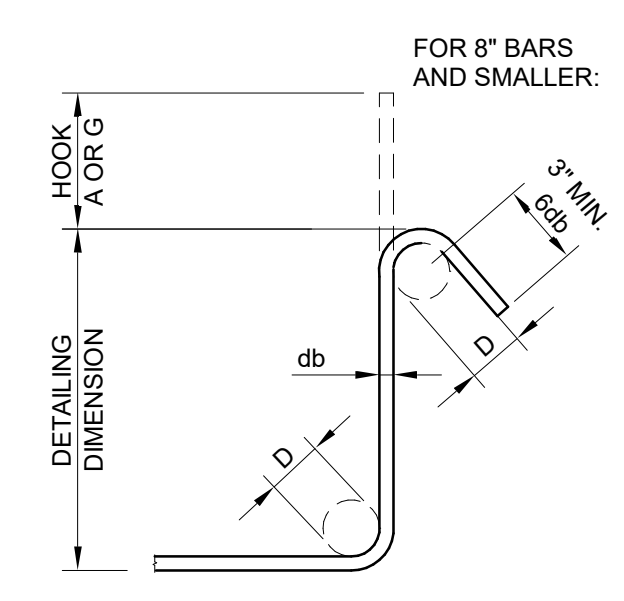
TIES OR STIRRUPS REQUIREMENTS AT DISCONTINUOUS END



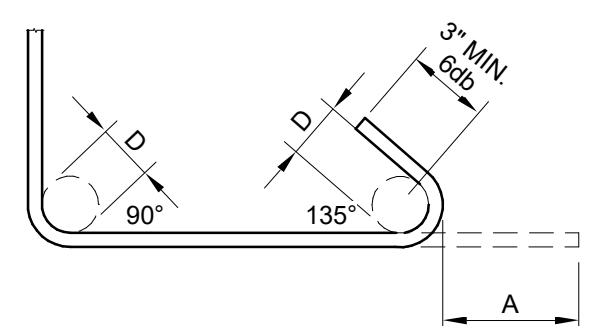
CORNER TIE HOOK



90° HOOK



135° HOOK

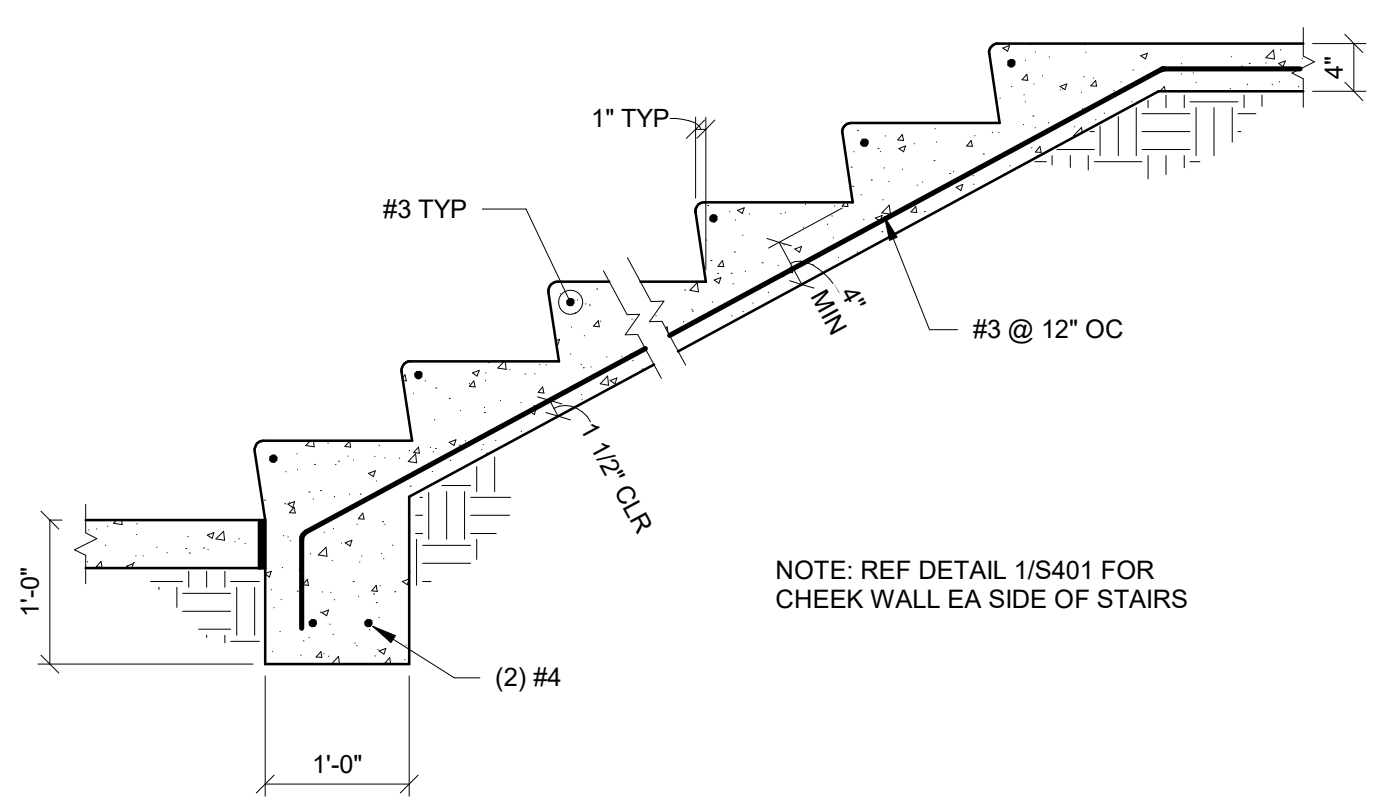


CROSS TIE

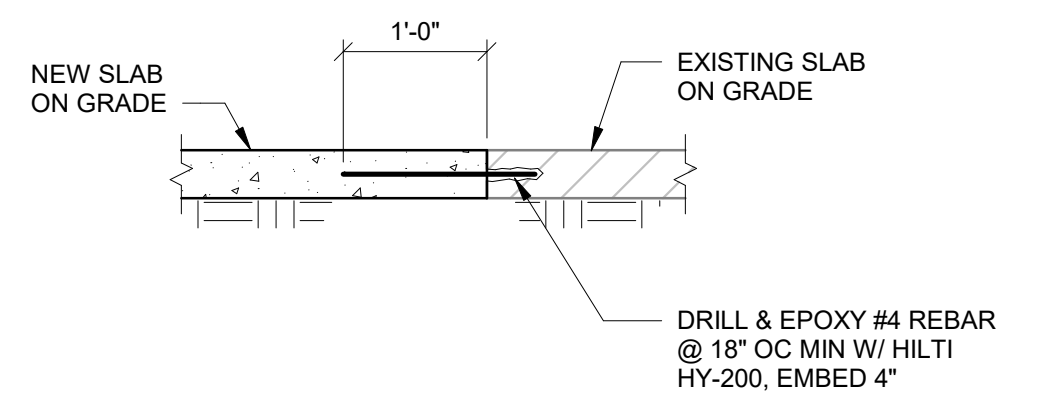
REINFORCING BAR LAP LENGTH SCHEDULE (CLASS B)				
GRADE 60 STEEL				
NORMAL WEIGHT CONCRETE STRENGTH				
BAR	3000 PSI	4000 PSI	5000 PSI	7000 PSI
#3	21"	18"	17"	14"
#4	28"	25"	22"	19"
#5	36"	31"	28"	23"
#6	43"	37"	33"	28"
#7	62"	54"	48"	41"
#8	71"	62"	55"	47"
#9	80"	70"	62"	53"
#10	90"	78"	70"	59"
#11	100"	87"	78"	66"

- LAP SCHEDULE NOTES
- LENGTH SHOWN CONFORM TO NON-SEISMIC PROVISIONS OF ACI 318 FOR UNCOATED BARS ENCLOSED BY PROPERLY SPACED TIES OR STIRRUPS
 - LENGTH IN TABLE SHALL BE FACTORED FOR THE FOLLOWING CONDITIONS:
 - HORIZONTAL BARS MORE THAN 12" ABOVE BOTTOM OF CAST MEMBER: 1.3xTABLE LENGTH
 - LIGHT WEIGHT CONCRETE: 1.3xTABLE LENGTH
 - BAR CLEAR SPACING SHALL BE NO LESS THAN ONE BAR DIAMETER AND/OR BAR CLEAR COVER LESS THAN ONE BAR DIAMETER: 1.5xTABLE LENGTH
 - WHERE MORE THAN ONE CONDITION APPLIES, ALL APPLICABLE FACTORS SHALL BE APPLIED TO LENGTH INDICATED IN TABLE
 - THIS TABLE SHALL APPLY UNLESS SPECIFICALLY NOTED, DETAILED OR SCHEDULED OTHERWISE
 - UNLESS NOTED OTHERWISE ALL REINFORCING BARS SHALL LAP AROUND CORNERS

1 REINF BAR LAP LENGTH SCHEDULE
 3/4" = 1'-0"

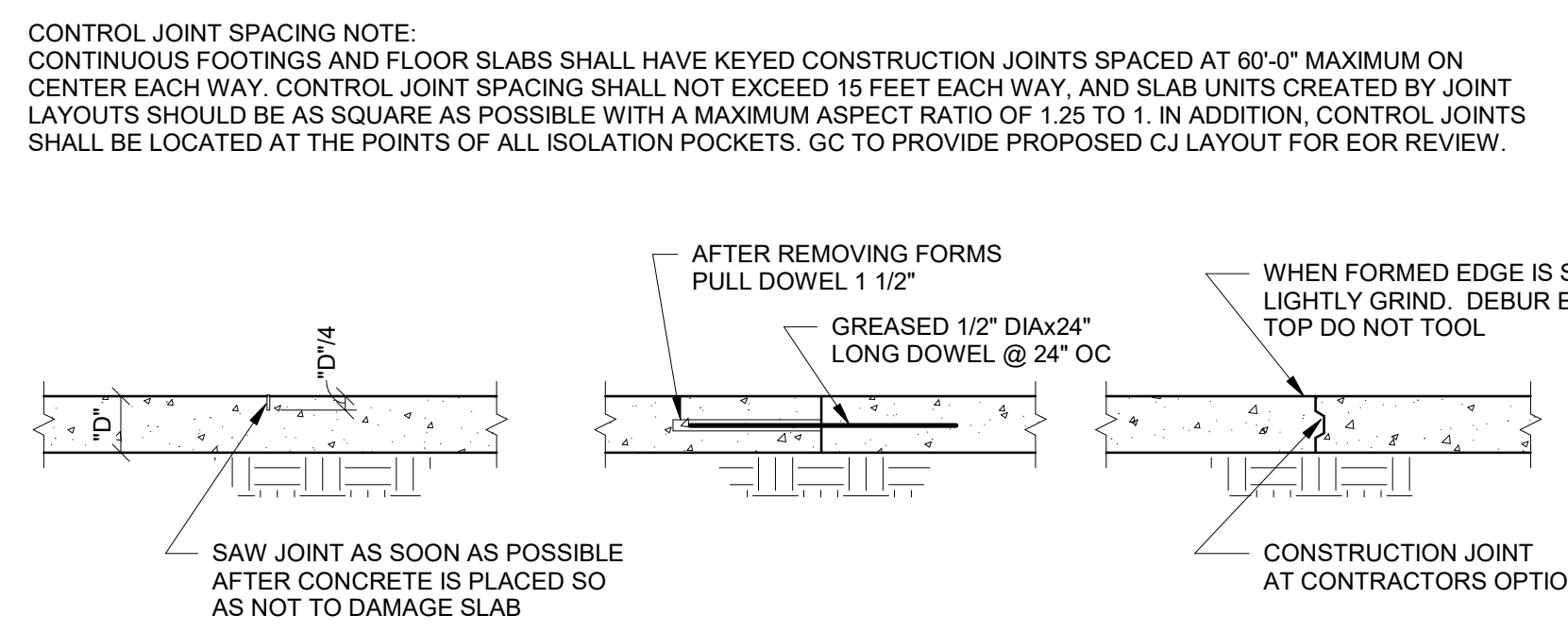


3 STAIR ON GRADE
 3/4" = 1'-0"

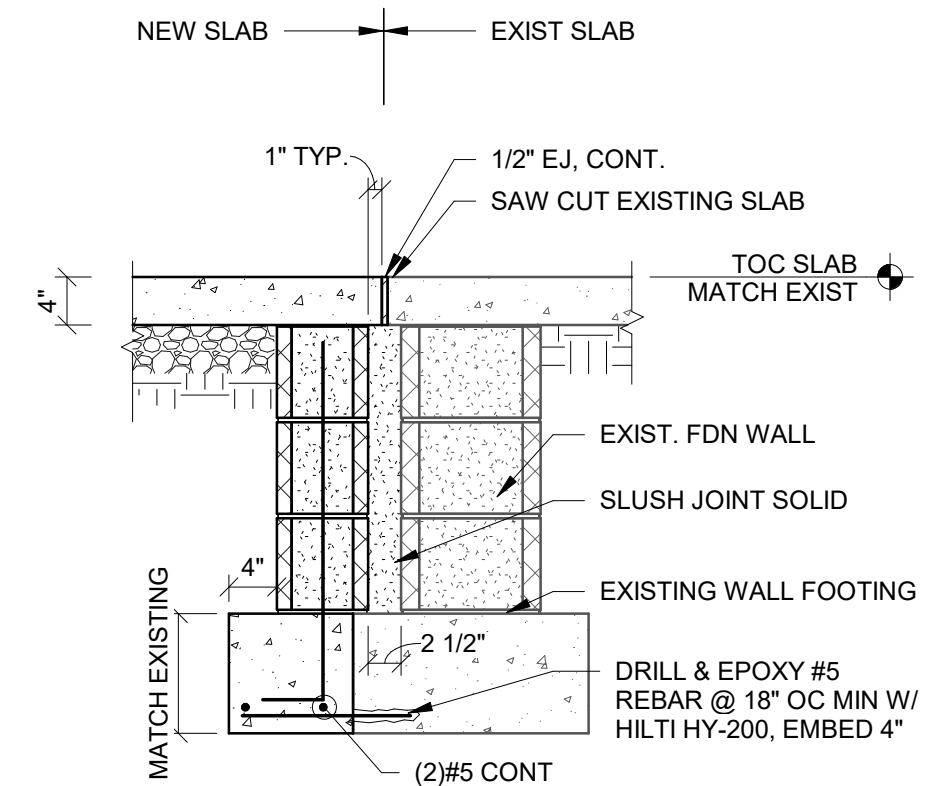


6 NEW SLAB ON GRADE TO EXISTING
 3/4" = 1'-0"

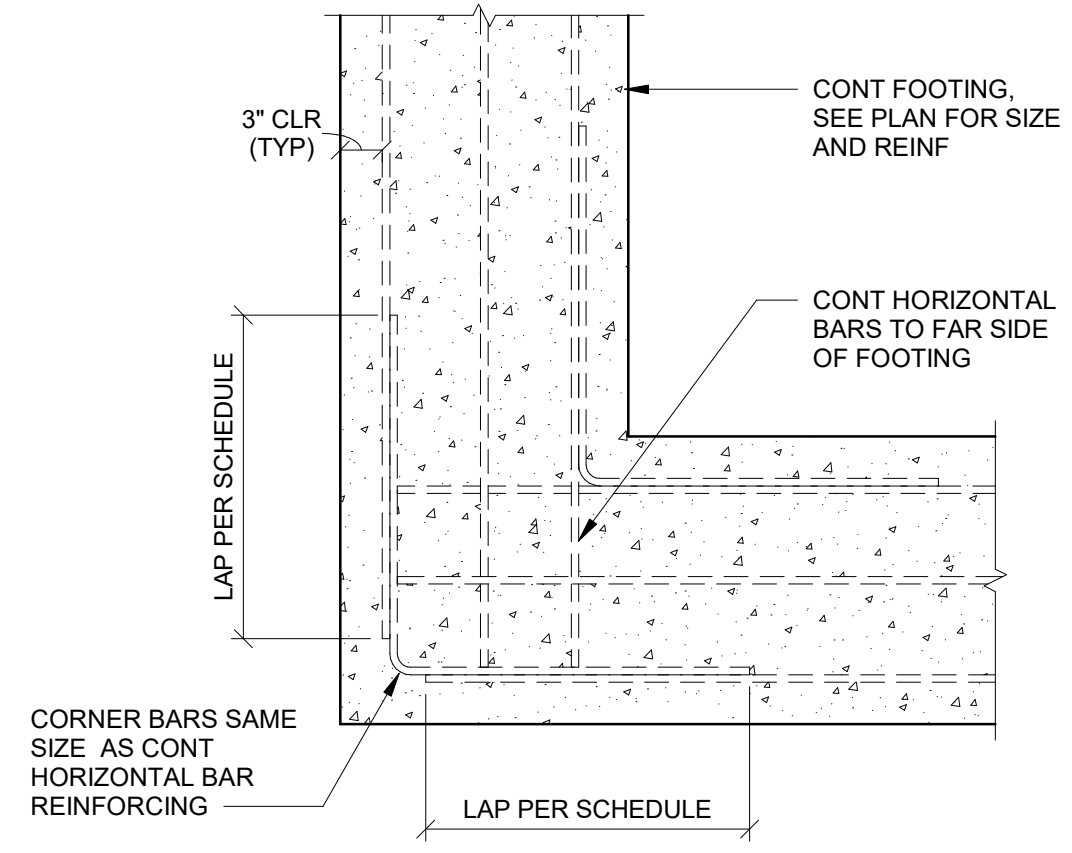
2 REINFORCED CONCRETE STIRRUP AND TIE HOOK TYPES DETAIL
 3/4" = 1'-0"



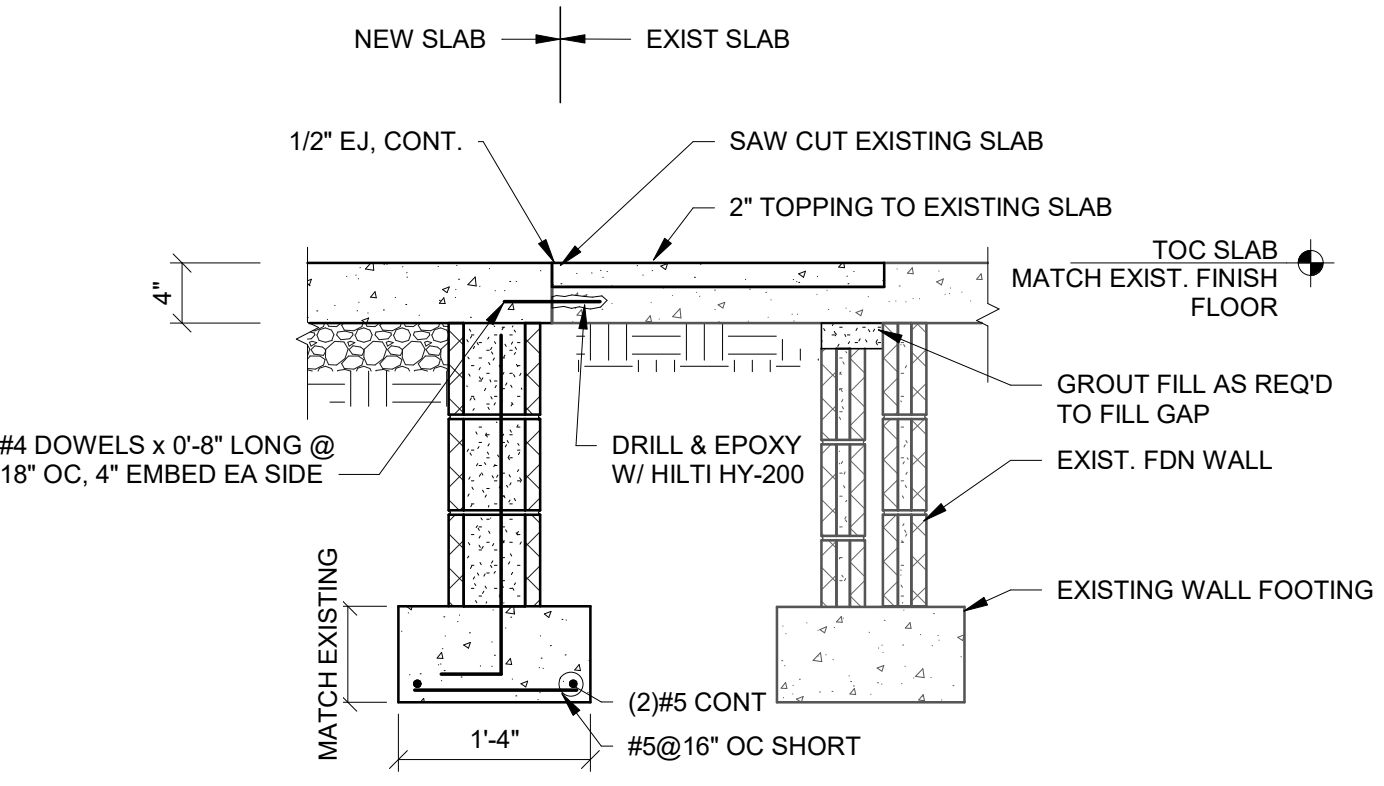
4 CONTROL/ CONSTRUCTION JOINT DETAIL
 3/4" = 1'-0"



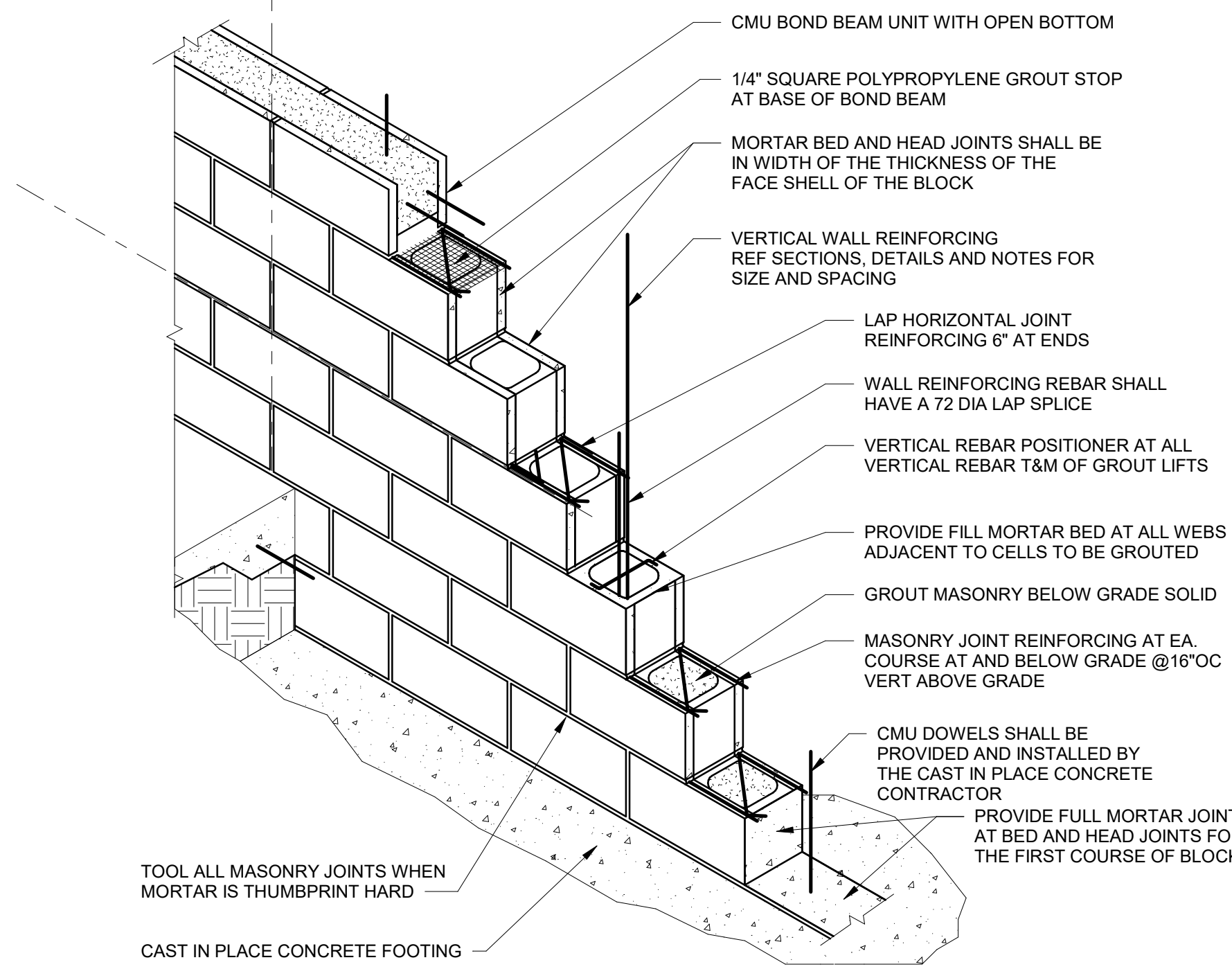
7 SECTION
 3/4" = 1'-0"



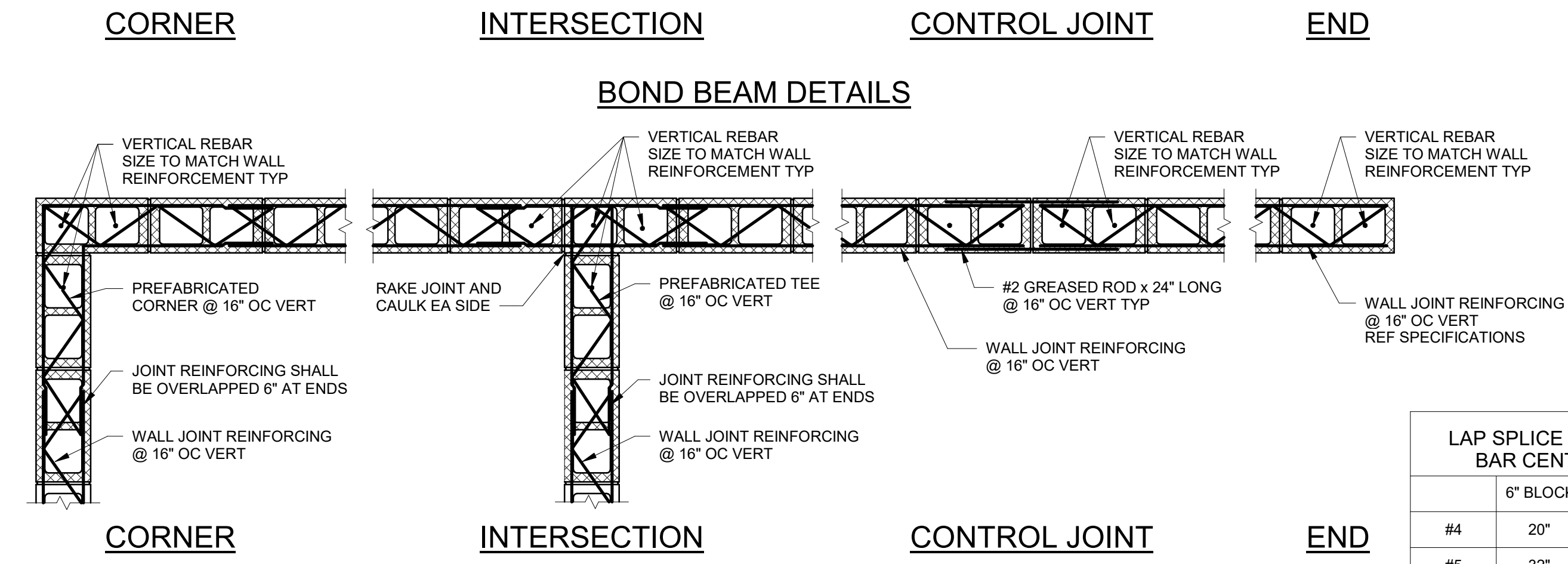
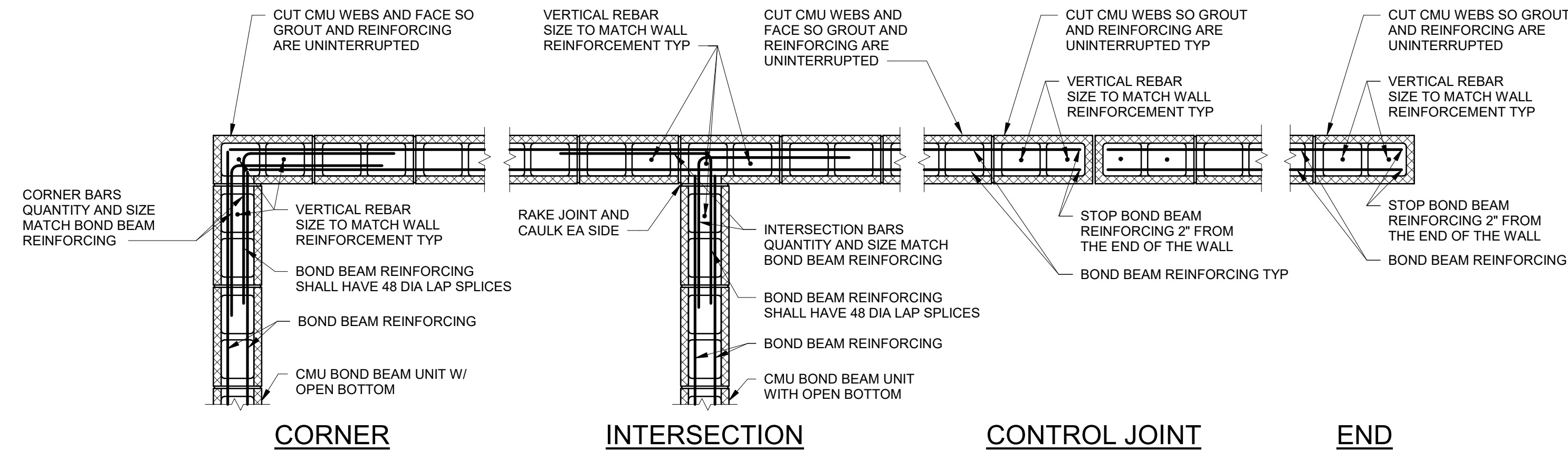
5 TYPICAL FOOTING CORNER REINFORCING DETAIL
 3/4" = 1'-0"



8 SECTION
 3/4" = 1'-0"



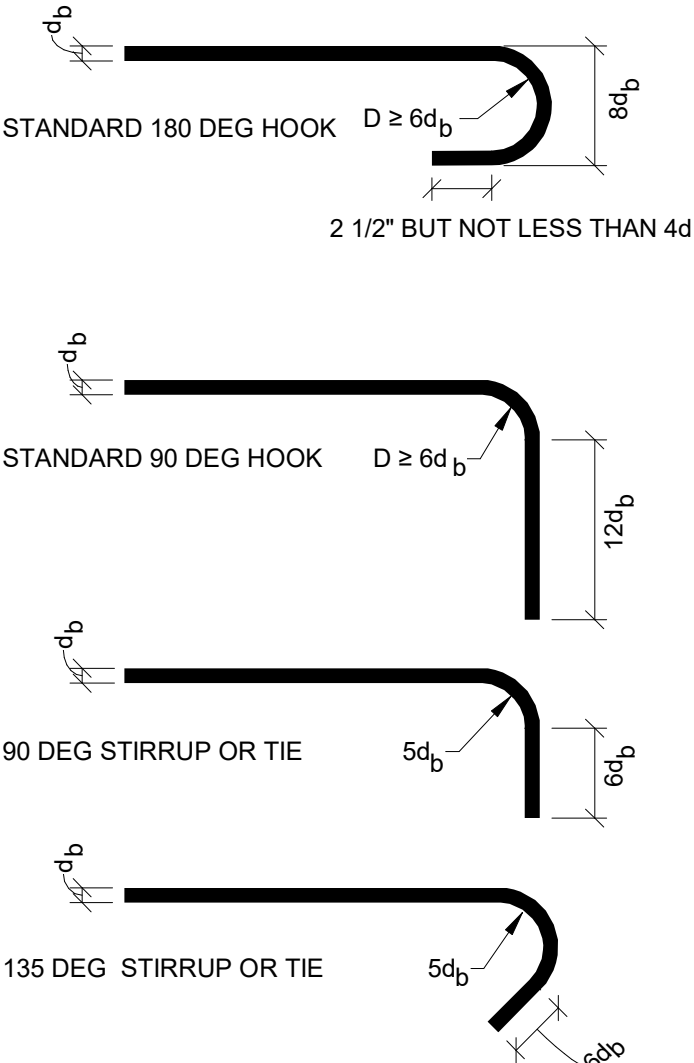
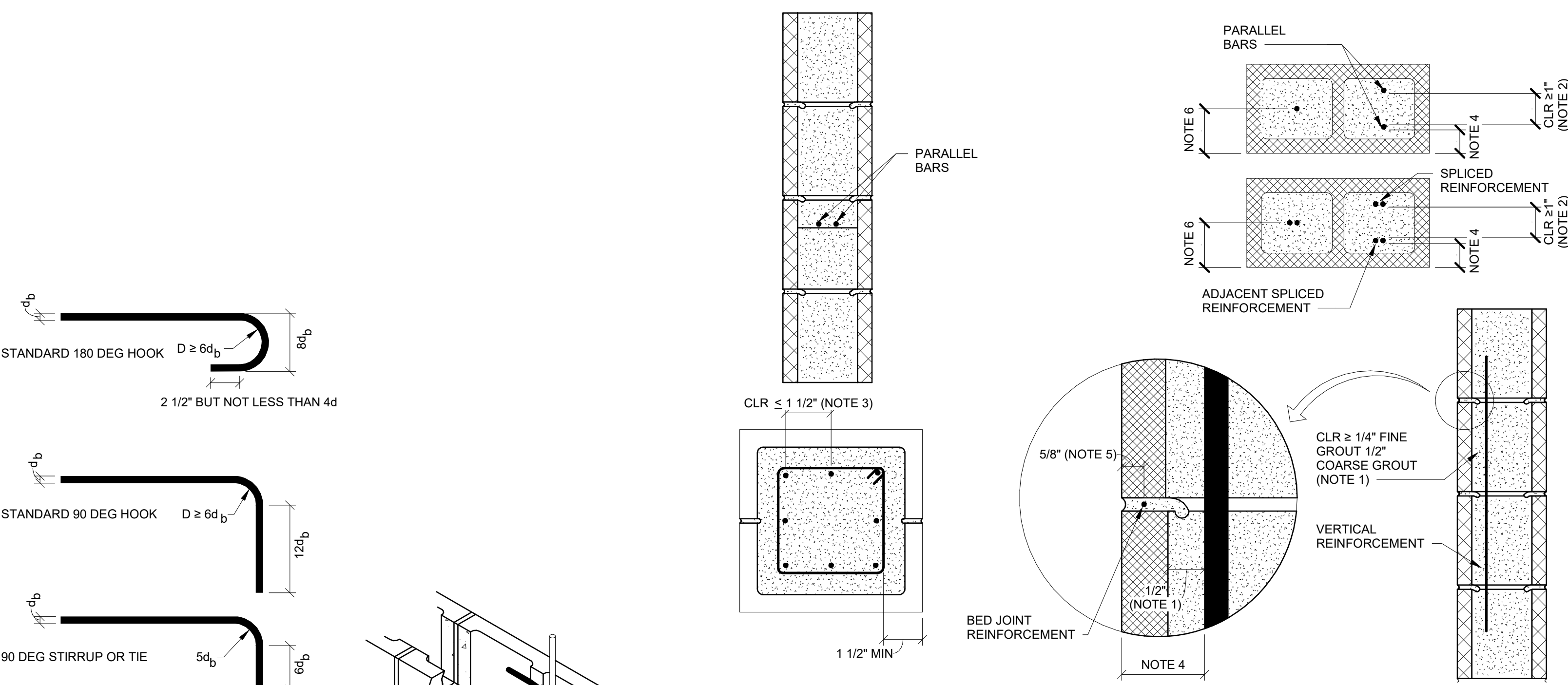
NOTE
MASONRY SHALL BE CONSTRUCTED IN LIFTS OF 48" OR LESS. AT LOCATIONS MID HEIGHT IN MASONRY THE GROUT SHALL BE HELD DOWN 1" FROM THE TOP OF THE MASONRY



LAP SPLICE LENGTH FOR VERTICAL BAR CENTERED IN WALL CELL				
	6" BLOCK	8" BLOCK	10" BLOCK	12" BLOCK
#4	20"	15"	12"	12"
#5	32"	23"	18"	15"
#6	54"	43"	34"	28"
#7	N/A	60"	46"	38"

1 WALL CONSTRUCTION
3/4" = 1'-0"

2 STRUCTURAL MASONRY WALL DETAILS
3/4" = 1'-0"



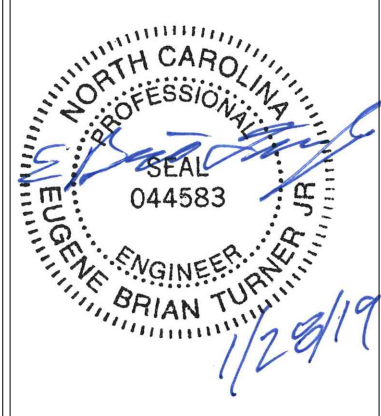
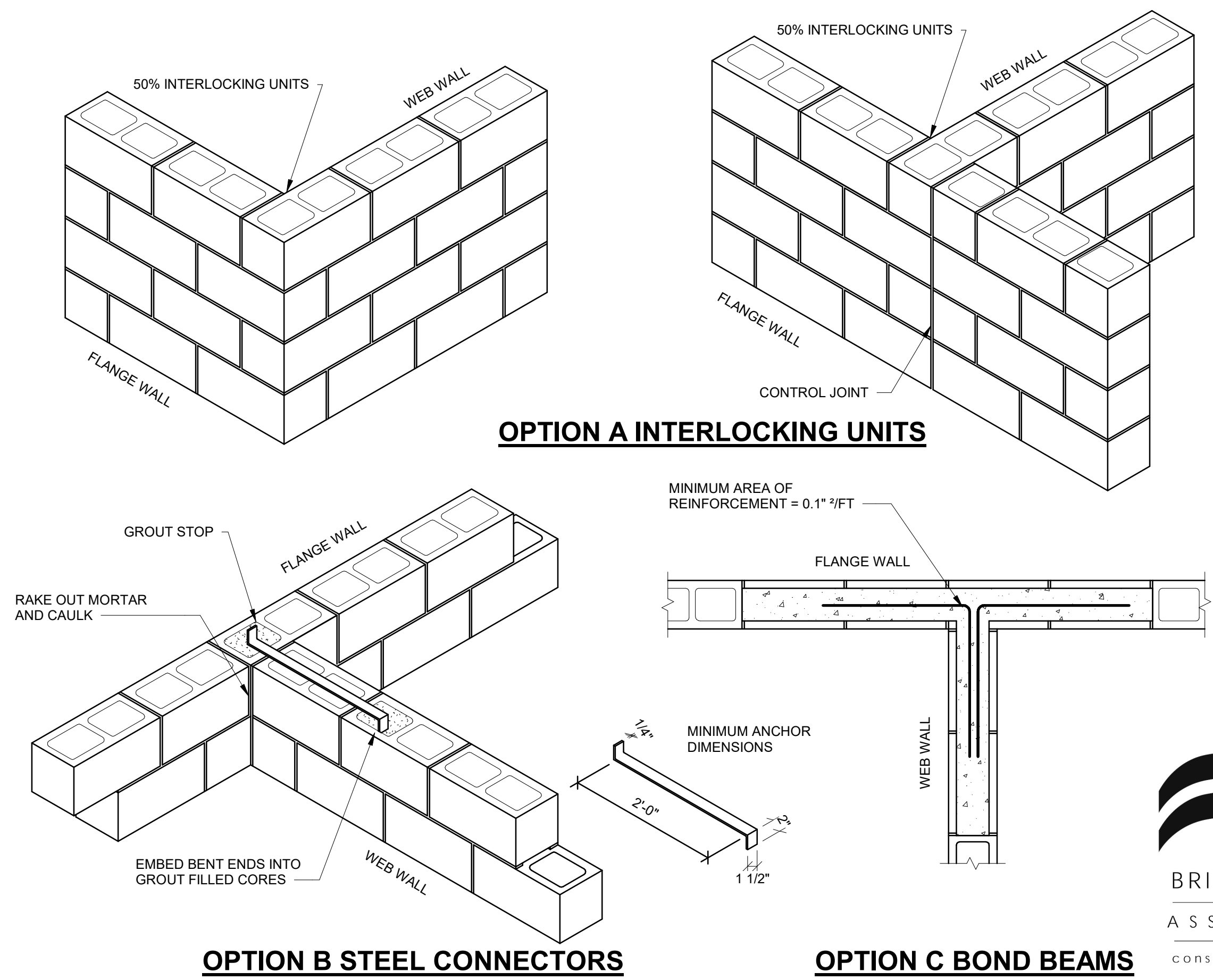
NOTE
THE TERMINATION OF HORIZONTAL SHEAR REINFORCEMENT SHALL BE ANCHORED AROUND VERTICAL REINFORCEMENT WITH A STANDARD 180 DEG HOOK. SPACE TO ACCOMMODATE THE HOOK IS LIMITED. THE HOOK MAY NEED TO BE PLACED ON AN ANGLE WITHIN THE BOND BEAM AS SHOWN

- NOTES**
1. THE THICKNESS OF GROUT BETWEEN THE REINFORCEMENT AND MASONRY UNITS SHALL NOT BE LESS THAN 1/4" FOR FINE GROUT OR 1/2" FOR COARSE GROUT. (NOTE: THIS REQUIREMENT DOES NOT APPLY TO THE PRESENCE OF MORTAR PROTRUSIONS)
 2. TO CLEAR DISTANCE BTWN PARALLEL BARS SHALL NOT BE LESS THAN THE NOMINAL DIAMETER OF THE BARS (d) NOR LESS THAN 1"
 3. IN COLUMNS AND PILASTERS, THE CLEAR DISTANCE BTWN VERTICAL BARS SHALL NOT BE LESS THAN 1-1/2 TIMES THE NOMINAL BAR DIA (d) NOT LESS THAN 1 1/2"
 4. REINFORCING BARS SHALL HAVE A MASONRY COVER DISTANCE (WHICH INCLUDES THE UNIT, GROUT, AND MORTAR) OR NOT LESS THAN:
 - A. FOR MASONRY EXPOSED TO EARTH OR WEATHER: 2" FOR BARS LARGER THAN #5 AND 1 1/2" FOR #5 BARS OR SMALLER
 - B. FOR MASONRY NOT EXPOSED TO EARTH OR WEATHER: 1 1/2"
 5. JOINT REINFORCEMENT SHALL BE FULLY EMBEDDED IN MORTAR OR GROUT WITH A MINIMUM COVER OR 5/8" WHEN EXPOSED TO EARTH OR WEATHER OR WHEN THE AVERAGE AMBIENT RELATIVE HUMIDITY EXCEEDS 75% FOR ALL OTHER CASES THE MINIMUM COVER DISTANCE IS REQD TO BE 1/2"
 6. FOR CELLS WITH SINGLE BAR, CENTER BAR IN CELL

3 REINFORCED MASONRY STD HOOKS AND BENDS
1 1/2" = 1'-0"

4 FOR CELLS OF REINFORCEMENT
1 1/2" = 1'-0"

5 INTERSECTING WALLS
3/4" = 1'-0"



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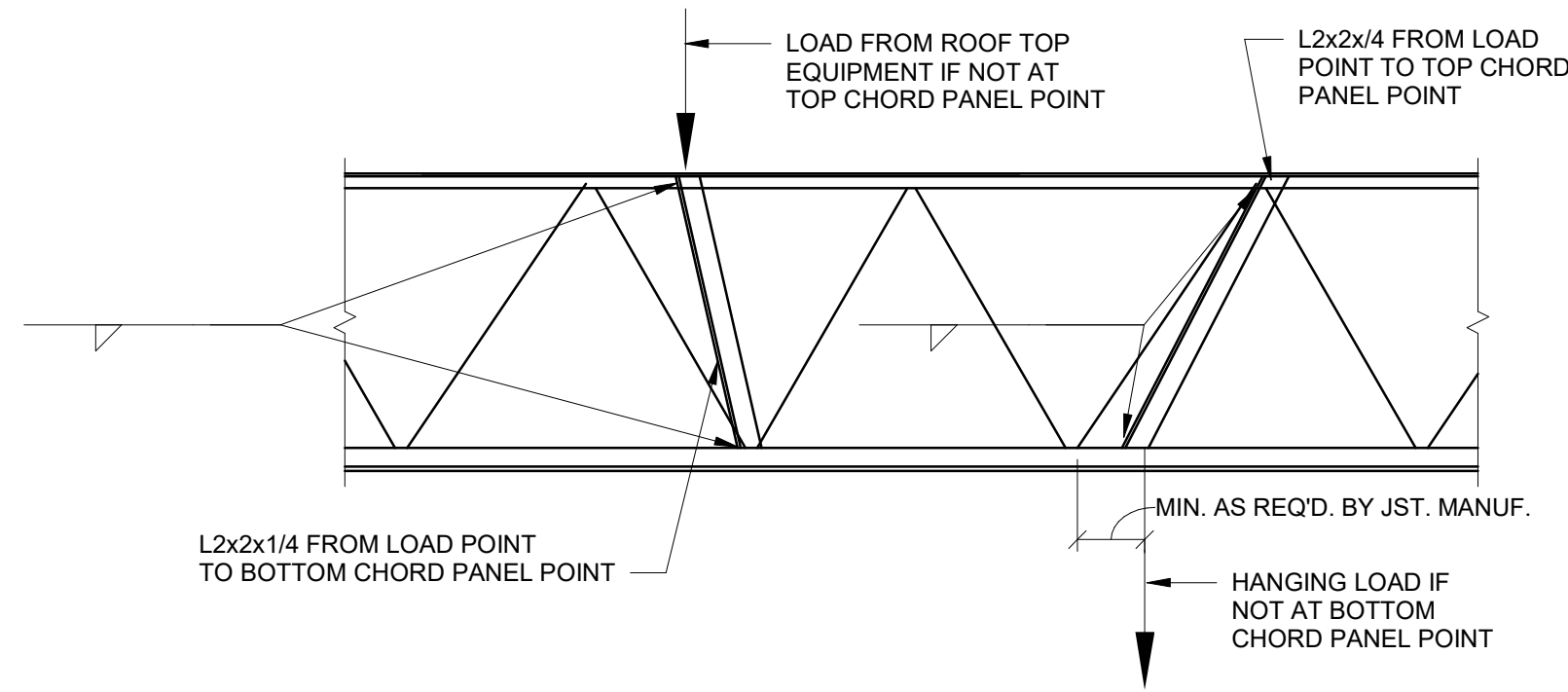
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STANDARD DETAILS

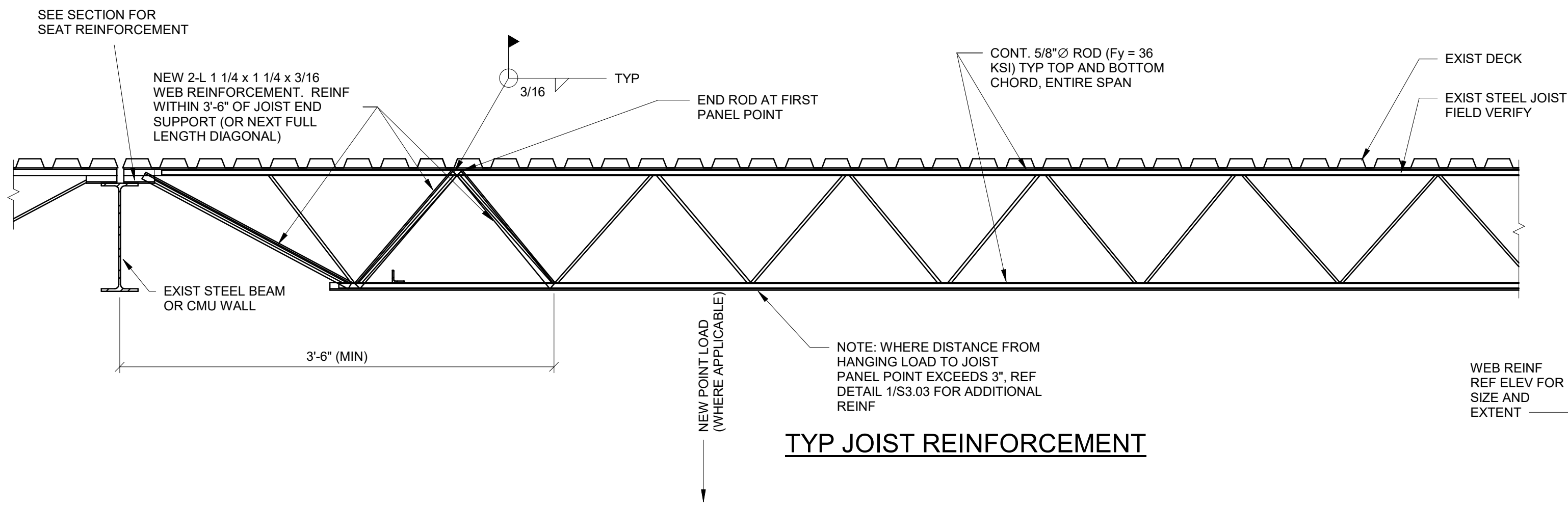
S3.02

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consulting engineers
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Suite 601
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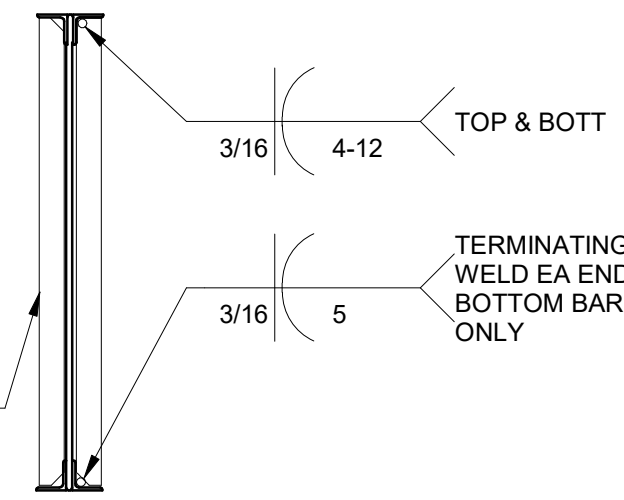
1 JOIST REINFORCEMENT AT POINT LOAD

3/4" = 1'-0"



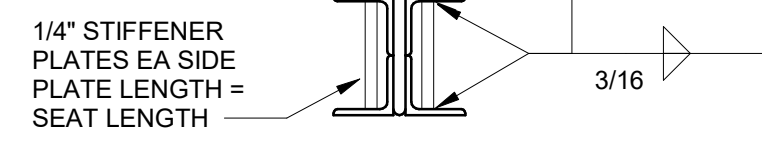
TYP JOIST REINFORCEMENT

NOTE
GC TO VERIFY EXISTING JOIST CONFIGURATION PRIOR TO FABRICATION. GC TO NOTIFY EOR IF EXISTING JOISTS RUSTING EXCEEDS SURFACE SCALING.



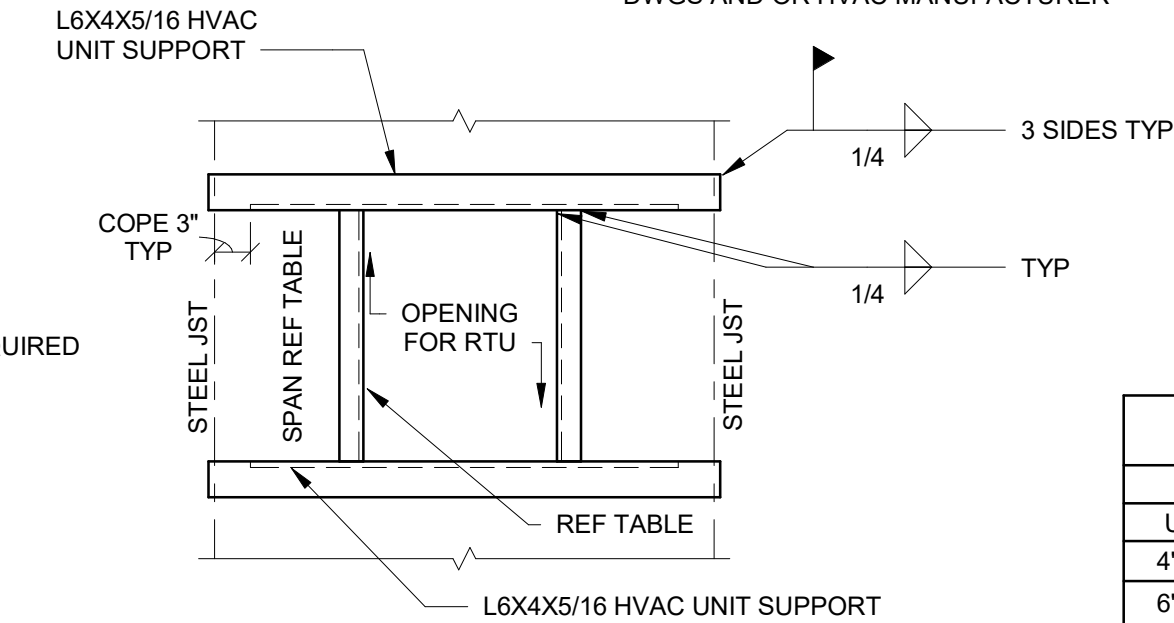
SECTION

NOTE
DECK REINFORCING ONLY REQUIRED AT NEW OPENING IN DECK



SECTION

NOTE
FOR SIZE AND LOCATION OF REQUIRED ROOF OPENING VERIFY W/ MECHANICAL DWGS AND OR HVAC MANUFACTURER



TYPICAL DECK OPENING

TABLE	
SPAN	L SIZE
UP TO 4'-0"	L3x3x3/16
4'-1" TO 6'-0"	L4x3x1/4 (LLV)
6'-1" TO 8'-0"	L5x3x1/4 (LLV)
8'-1" TO 10'-0"	L6x4x5/16 (LLV)
HVAC UNIT SUPPORT	L6x4x5/16 (LLV)

2 JOIST REINFORCEMENT

3/4" = 1'-0"

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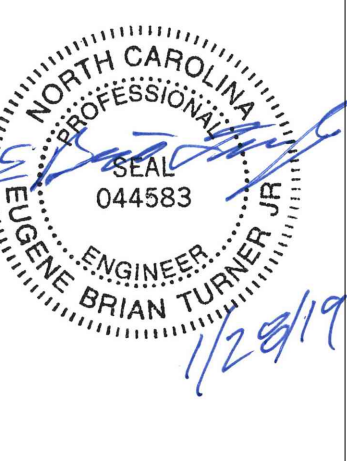
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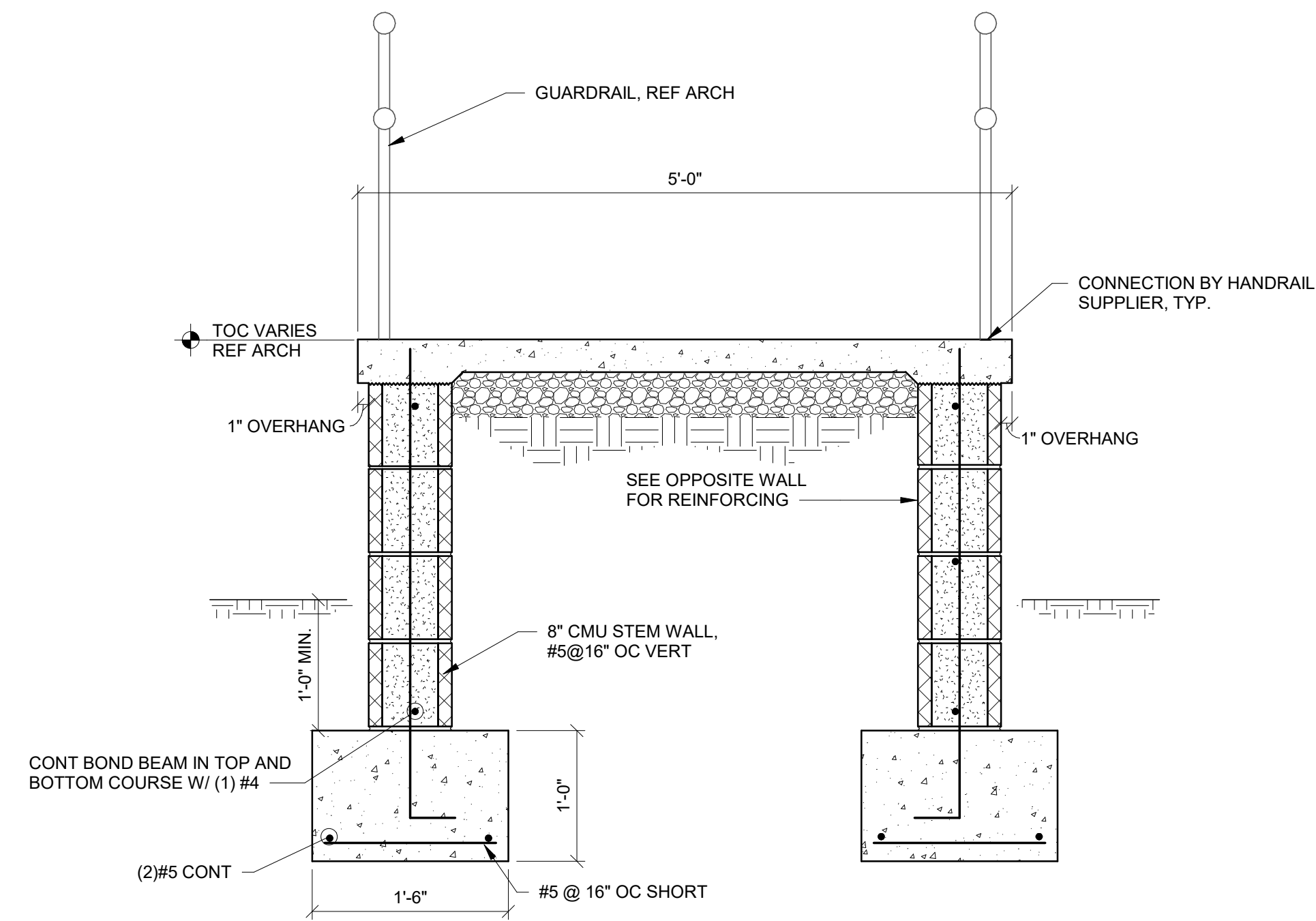
STANDARD DETAILS

S3.03

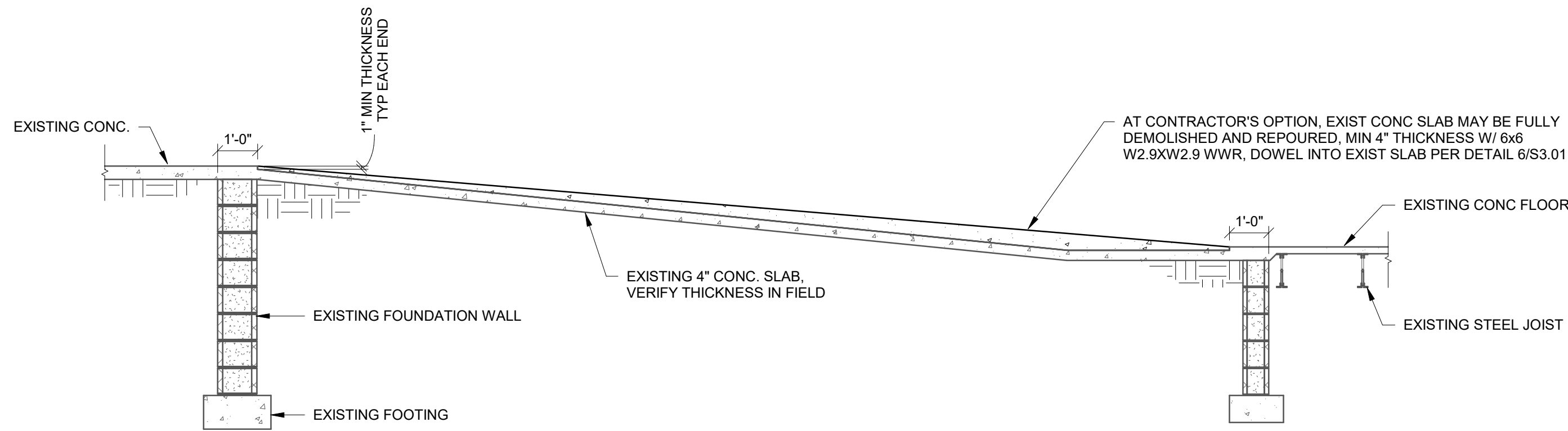


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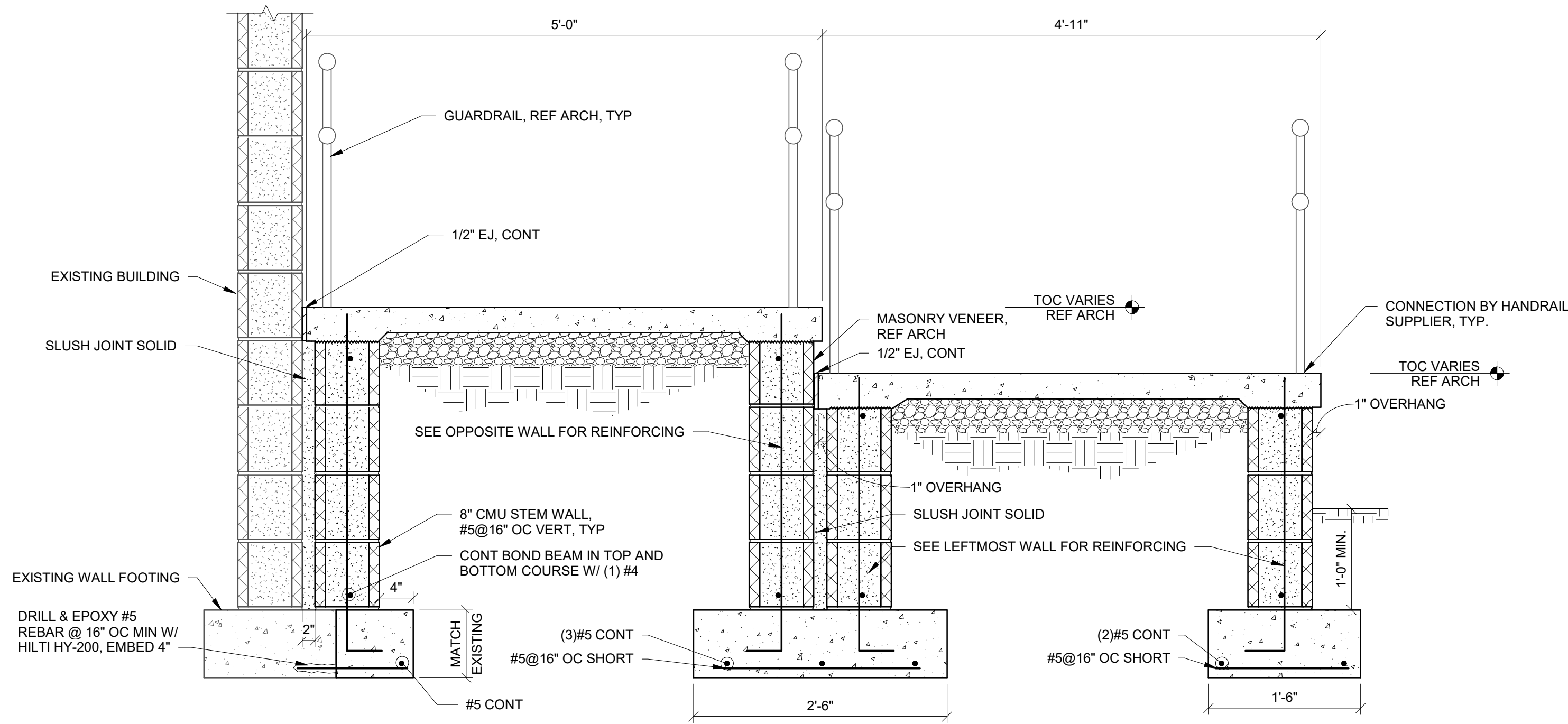
Ellington Design Group, PLLC
 220 BLUEBERRY STREET BELMONT, NC 28012
 PHONE: 980-425-4403 EMAIL: EDG.BTG@HOTMAIL.COM



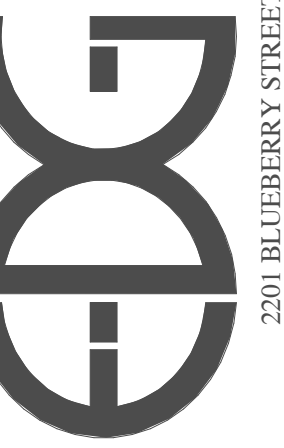
1 SECTION
1" = 1'-0"



2 SECTION
3/8" = 1'-0"



3 SECTION
1" = 1'-0"



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**SECTIONS
AND
DETAILS**

S4.01



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101 Falls Park Drive
Suite 601
Greenville, SC 29601
(864) 271-8869
www.brittpeters.com
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PLUMBING GENERAL NOTES

- GENERAL REQUIREMENTS:**
- GENERAL AND SPECIAL CONDITIONS: GENERAL AND SPECIAL CONDITIONS ARE HEREBY MADE AN INTEGRAL PART OF THIS DIVISION OF THE SPECIFICATIONS INSOFAR AS SAME ARE APPLICABLE TO THE WORK UNDER THIS DIVISION AND UNLESS OTHERWISE SPECIFIED.
 - SCOPE: PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK.
 - CODE COMPLIANCE: ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION, BUILDING DEPARTMENTS, AND DEPARTMENT OF HEALTH. APPLICABLE NATIONAL, STATE, AND LOCAL CODES, LAWS, AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE CONTRACT DOCUMENTS AND SPECIFICATIONS. THE CONTRACTOR IS TO NOTIFY THE ARCHITECT/ENGINEER OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE CODES, LAWS, OR REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH A VIOLATION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE AND AT NO EXPENSE TO THE OWNER.
 - PERMITS: APPLY FOR AND PAY FOR ALL NECESSARY PERMITS, FEES, AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION.
 - WARRANTY: PROVIDE ALL MATERIALS AND EQUIPMENT UNDER THIS SECTION OF THE SPECIFICATIONS WITH A ONE YEAR WARRANTY FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER.
 - COORDINATION: VERIFY ALL ROUGH-IN LOCATIONS AND COORDINATE PIPING AND EQUIPMENT LOCATIONS WITH WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID CONFLICTS. CONTRACTOR MUST COORDINATE WITH OTHER TRADES FOR ALL STRUCTURES, PIPING, CONDUIT, DUCTWORK, LIGHTING, ETC TO PROPERLY BE INSTALLED. ANY CONFLICTS SHALL BE RESOLVED AT NO EXPENSE TO THE OWNER. COORDINATE INSTALLATION OF ALL PLUMBING PIPING AT CMU WALLS SO THAT THE PIPING IS PLACED IN WALL DURING CMU WALL CONSTRUCTION. CUTTING AND PATCHING OF CMU WALLS IN PLACE WILL NOT BE PERMITTED.
 - FIELD VERIFICATION: FIELD VERIFY EXISTING CONDITIONS BEFORE STARTING CONSTRUCTION AND NOTIFY THE ARCHITECT/ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS, AND/OR ANY POTENTIAL PROBLEMS OBSERVED, BEFORE CONTINUING WORK IN THE AFFECTED AREAS.
 - PLUMBING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO:
 - PLUMBING FIXTURES AND EQUIPMENT
 - FIRE STOPPING
 - DOMESTIC WATER SYSTEM
 - SANITARY WASTE AND VENT SYSTEM

- FIXTURES:**
- PROVIDE COMPLETE FIXTURES AND INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC. EXPOSED COPPER OR BRASS MATERIALS SHALL BE CHROME PLATED.
 - PROVIDE PERMANENTLY ATTACHED VACUUM BREAKERS FOR ALL FIXTURES TO WHICH HOSES MAY BE CONNECTED.
 - REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF PLUMBING FIXTURES.

- FIRE STOPPING:**
- FIRE STOP ALL PENETRATIONS, BY PIPING OR CONDUITS, OF FIRE RATED WALLS, FLOORS, AND PARTITIONS. PROVIDE DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE DEVICE(S) OR SYSTEM(S) WITH AN "F" RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED.

- DOMESTIC WATER PIPING:**
- FURNISH AND INSTALL A COMPLETE SYSTEM OF DOMESTIC HOT AND COLD WATER FROM EXISTING SUPPLIES TO ALL FIXTURES AND/OR EQUIPMENT REQUIRING DOMESTIC WATER SUPPLIES. VERIFY LOCATION OF BEGINNING POINTS.
 - DOMESTIC WATER PIPING: ASTM B 88 TYPE 'L' HARD COPPER TUBE WITH WROT COPPER FITTINGS, AND SOLDERED OR PRESSURE-SEALED JOINTS.
 - STERILIZE DOMESTIC WATER PIPING IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
 - INSULATE DOMESTIC WATER PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH ENGINEERED POLYMER FOAM INSULATION, OR FIBERGLASS WITH FITTING INSERTS AND PVC COVERS. FOLLOW THIS SCHEDULE:
- | SERVICE | PIPE SIZE | INS. THICKNESS |
|--------------------------------|-----------|----------------|
| DOMESTIC HOT WATER | ALL | 1/2" |
| DOMESTIC HOT WATER CIRCULATION | ALL | 1" |
| DOMESTIC COLD WATER | ALL | 1/2" |
- DOMESTIC WATER PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS, AND ADHESIVES SHALL NOT EXCEED A FLAME SPREAD RATING OF 25 AND A SMOKE DEVELOPED RATING OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
 - ALL PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH FLOORS, WALLS, AND PARTITIONS.
 - SHUT-OFF VALVES SHALL BE FULL PORT, BALL TYPE. PROVIDE SHUT-OFF VALVES ON ALL BRANCH PIPING SERVING TWO OR MORE FIXTURES, AND WHERE INDICATED ON THE DRAWINGS. INSTALL VALVES IN A LOCATION THAT PERMITS ACCESS FOR SERVICE AND OPERATION WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. PROVIDE ACCESS DOORS IF REQUIRED.
 - PROVIDE DRAIN VALVES IN THE DOMESTIC HOT AND COLD WATER PIPING AT ALL LOW POINTS TO ALLOW FOR COMPLETE DRAINAGE OF THE SYSTEMS.
 - PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER-PLATED. WHERE COPPER PIPING IS CARRIED ON IRON TRAPEZE HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS.
 - PROTECT COPPER PIPING AGAINST CONTACT WITH ALL MASONRY. WHERE COPPER PIPING IS SLEAVED THROUGH MASONRY, PROVIDE COPPER OR RED BRASS SLEAVES. WHERE COPPER PIPING IS CONCEALED IN OR AGAINST MASONRY PARTITIONS, PROVIDE A HEAVY COATING OF ASPHALTIC ENAMEL ON THE COPPER PIPING AND 15# ASPHALT-SATURATED FELT BETWEEN THE PIPING AND THE MASONRY PARTITION.

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR AS HIGH AS POSSIBLE
AHAP	BUILDING
BLDG	BELOW
BLW	CEILING
CLC	CONNECT OR CONNECTION
CONN	CONTINUATION
CONT	DOWN
DN	ELECTRICAL CONTRACTOR
E.C.	EXISTING TO REMAIN
ETR	EXISTING
EX, EXIST, (E)	FINISHED FLOOR ELEVATION
FLR	FLOOR
G.C.	GENERAL CONTRACTOR
HD	HUB DRAIN
GW	GREASE WASTE
M.C.	MECHANICAL CONTRACTOR
MTD	MOUNTED
P.C.	PLUMBING CONTRACTOR
SF, SQ FT	SQUARE FOOT
T&P	TEMPERATURE AND PRESSURE
TP	TRAP PRIMER
TYP	TYPICAL
VTR	VENT THROUGH ROOF
W	WASTE

PLUMBING LEGEND

	DOMESTIC COLD WATER PIPING (CW)
	DOMESTIC HOT WATER PIPING (110°)
	DOMESTIC HOT WATER PIPING (140°)
	STORM PIPING
	SANITARY PIPING (SAN)
	VENT PIPING (V)
	FILTERED WATER PIPING
	OXYGEN PIPING
	BALL VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	FLOOR CLEAN OUT (FCO)
	FLOOR DRAIN (FD)
	FLOOR SINK
	GRADE CLEAN OUT (GCO)
	PIPE DOWN
	PIPE DOWN
	WALL CLEAN OUT (WCO)

PLUMBING GENERAL NOTES CONT.

- SANITARY SOIL, WASTE, AND VENT PIPING:**
- FURNISH AND INSTALL COMPLETE SYSTEMS OF SOIL, WASTE, AND VENT PIPING FROM ALL PLUMBING FIXTURES AND/OR EQUIPMENT REQUIRING WASTE AND VENT CONNECTIONS. ALL SOIL, WASTE, AND VENT PIPING SHALL BE CONCEALED IN THE BUILDING CONSTRUCTION WHERE POSSIBLE.
 - SOIL, WASTE, AND VENT PIPING: CISPI 301, HUBLESS, CAST IRON SOIL PIPE AND FITTINGS; AND SHELDED, STAINLESS STEEL COUPLINGS.
 - INVERT ELEVATIONS SHALL BE ESTABLISHED AND VERIFIED BEFORE SANITARY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. SLOPE SANITARY PIPING 2-1/2" AND SMALLER AT 1/4" PER FOOT MINIMUM, AND SLOPE SANITARY PIPING 3" AND LARGER AT 1/8" PER FOOT MINIMUM.
 - WHERE SANITARY PIPING IS EXPOSED IN TOILET ROOMS, PROVIDE CHROME-PLATED BRASS PIPING WITH MATCHING STOPS AND ESCUTCHEONS. PROVIDE REMOVABLE TRAPS WITH INTEGRAL CLEANOUT PLUG FOR ALL LAVATORIES.
 - INSTALL CLEANOUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. CLEANOUT PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING CODE REQUIREMENTS. PROVIDE CLEANOUTS IN HORIZONTAL PIPING NOT MORE THAN 100 FEET APART, AT THE BASE OF ALL SOIL AND WASTE STACKS, AND FOR EVERY FOUR 45° CHANGES LOCATED IN SERIES (A LONG SWEEP IS EQUIVALENT TO TWO 45° BENDS).
- WATER HAMMER ARRESTER REQUIREMENTS:**
- PROVIDE WATER HAMMER ARRESTERS CONFORMING TO PDI-WH201 OR ASSE 1010, INSTALLED PER MANUFACTURER'S SPECIFICATIONS, WHERE QUICK CLOSING VALVES ARE UTILIZED. A QUICK CLOSING VALVE IS A VALVE OR FAUCET THAT CLOSSES AUTOMATICALLY WHEN RELEASED, OR THAT IS CONTROLLED BY MECHANICAL MEANS FOR FAST-ACTION CLOSING. REFER TO WATER HAMMER ARRESTER SCHEDULE.
 - AS A MINIMUM, PROVIDE ONE WATER HAMMER ARRESTER FOR EACH BRANCH LINE TO EACH TOILET ROOM.
- SEISMIC REQUIREMENTS:**
- PROPERLY SUPPORT AND BRACE VERTICALLY AND HORIZONTALLY ALL PIPING, APPARATUS, EQUIPMENT, ETC IN ACCORDANCE WITH APPLICABLE CODES TO PREVENT EXCESSIVE MOVEMENT DURING SEISMIC CONDITIONS.

DRAINAGE PRODUCTS/SPECIALTIES

- UNLESS OTHERWISE INDICATED NUMBERS ARE JAY R. SMITH. APPROVED EQUAL PRODUCTS: ZURN, JOSAM, WADE, WATTS AND PRECISION PLUMBING PRODUCTS
- WCO-WALL CLEANOUT - FINISHED AREAS**
JAY R. SMITH FIG. 4436 C.I. FERRULE FOR NO HUB OR SERVICE WEIGHT PIPE, NICKEL BRONZE ROUND FRAME AND COVER WITH SECURING SCREWS.
- FCO-CONCRETE FLOORS**
JAY R. SMITH FIG. 4220 C.I. CLEANOUT WITH GASKET SEAL THREADED PLUG FOR EASY REMOVAL. ADJUSTABLE ROUND CAST IRON TOP WITH SECURING SCREW, SPEED-SET OUTLET CONNECTION.
- FCO-TILE FLOORS**
JAY R. SMITH FIG. 4151 C.I. CLEANOUT WITH GASKET SEAL THREADED PLUG FOR EASY REMOVAL. ADJUSTABLE ROUND NICKEL BRONZE TOP RECESSED FOR TILE WITH SECURING SCREW, SPEED-SET OUTLET CONNECTION.
- YCO-EXTERIOR PAVED/CONCRETE AREAS**
JAY R. SMITH FIG. 4261 C.I. FLANGED HOUSING WITH HEAVY DUTY C.I. COVER, LIFTING DEVICE, GASKET SEAL THREADED PLUG, V.P. SCREWS IN COVER.
- YCO-EXTERIOR UNSURFACED AREAS**
JAY R. SMITH FIG. 4261 C.I. FLANGED HOUSING WITH HEAVY DUTY C.I. COVER, LIFTING DEVICE, GASKET SEAL THREADED PLUG, V.P. SCREWS IN COVER. PROVIDE 24" x 12" CONCRETE PAD FLUSH WITH SURFACE.
- FD - FLOOR DRAINS-GENERAL/RESTROOMS** JAY R. SMITH FIG. 2005-B6 SERIES C.I. FLOOR DRAIN WITH 6" DIAMETER SQUARE NICKEL BRONZE STRAINER, SPEED-SET OUTLET CONNECTION AND TRAP PRIMER CONNECTION.
- FS - FLOOR SINK** CAST IRON 12X12 SIOUX CHIEF 861 SERIES WITH HALF GRATE AND MESH DEBRIS SCREEN.
- LAVATORY-WALL HUNG SUPPORT**
JAY R. SMITH #700 FOR MASONRY WALLS AND #700-M31 FOR METAL STUD WALLS.
- TP - "A"-AUTOMATIC TRAP PRIMER**
PPP PRIME-RITE SERIES AUTOMATIC TRAP PRIMER WITH MULTIPLE OUTLET DISTRIBUTION UNITS AS REQUIRED.
- WATER HAMMER ARRESTORS**
P.P.P. SYSTEM RATED PLUS SERIES COPPER WATER HAMMER ARRESTORS. INSTALL IN AN UPRIGHT POSITION AT ALL FLUSH VALVES, WASHING MACHINE SUPPLIES, DISHWASHERS, PRV STATIONS, AND OTHER QUICK CLOSING VALVES, SOLENOIDS AND PLUMBING FIXTURES. LOCATE AND SIZE AS INDICATED ON DRAWINGS. WHERE NOT SHOWN ON DRAWINGS, LOCATE AND SIZE IN ACCORDANCE WITH PDI STANDARD WH-201.

PLUMBING FIXTURE SPECIFICATIONS AND CONNECTION SCHEDULE

MARK	FIXTURE	TYPE	MATERIAL	PIPE SIZES				SPECIFICATION	REMARKS
				SAN	VENT	CW	HW		
WC1	WATER CLOSET	FLOOR MOUNTED FLUSH TANK	VITREOUS CHINA	3"	2"	1/2"	-	FLOOR MOUNTED VITREOUS CHINA FLUSH TANK TYPE ELONGATED BOWL. SHALL BE EQUAL TO AMERICAN STANDARD CADET PRO TOILET MODEL 215CA-004, 1.6GPF WITH AMERICAN STANDARD 5324.019 OPEN FRONT SEAT.	
WC2	ADA WATER CLOSET	FLOOR MOUNTED FLUSH TANK	VITREOUS CHINA	3"	2"	1/2"	-	FLOOR MOUNTED VITREOUS CHINA FLUSH TANK TYPE ELONGATED BOWL. SHALL BE EQUAL TO AMERICAN STANDARD CADET PRO RIGHT HEIGHT TOILET MODEL 215AA-004, 1.6GPF WITH AMERICAN STANDARD 5324.019 OPEN FRONT SEAT.	
LAV1	ADA LAVATORY	WALL HUNG	VITREOUS CHINA	1-1/2"	1-1/2"	1/2"	1/2"	HANDICAP LAVATORY. AMERICAN STANDARD DECLYN WALL HUNG #0321.075 WHITE FAUCET - SLOAN SENSOR OPERATED BATTERY POWERED METERED FAUCET MODEL EBF-650. CONTRACTOR TO SUPPLY CONCEALED ARM SUPPORT CARRIER FOR MOUNTING OF LAVATORY. WADE MODEL # 520-M36. SUPPLY PLUMBEREX MODEL #4333 INSULATION KIT. PROVIDE TMV MIXING VALVE OPTION, SET TO 110°F.	
UR	URINAL		VITREOUS CHINA	2"	2"	3/4"	-	FIXTURE: AMERICAN STANDARD WASHBROOK FLOWISE NO. 6590.125, 0.125 GALLONS PER FLUSH, WASHOUT FLUSHING ACTION, 3/4" TOP SPUD. FLUSH VALVE: SLOAN ROYAL MODEL 186-0.13, EXPOSED DIAPHRAGM TYPE, 0.13 GALLONS PER FLUSH. CARRIER: ZURN Z1222 SERIES WALL URINAL SUPPORT SYSTEM WITH TOP AND BOTTOM SUPPORT PLATES. REFER TO ARCHITECTURAL DRAWINGS FOR ADA LOCATIONS AND MOUNT ACCORDINGLY.	
ENC	ELECTRIC WATER COOLER	WALL MOUNTED DUAL HEIGHT	STAINLESS STEEL	1 1/4"	1 1/4"	1/2"	-	FIXTURE: ELKAY MODEL EMABFTLBC, TWO STATION BARRIER-FREE, STAINLESS STEEL CABINETS AND TOPS, FLEXIBLE BUBBLERS.	

- GENERAL NOTES**
- FIXTURES SHALL BE AS INDICATED OR APPROVED EQUAL.
 - ALL FIXTURES SHALL COMPLY WITH NCBC 2012 TABLE 604.4.
 - ALL FIXTURE TRIM PACKAGES INCLUDING BUT NOT LIMITED TO TRAP, ANGLE STOP, FLUSH VALVE, SUPPLY TUBES, AND CLEANOUT COVER PLATES SHALL BE SAME FINISH AS THE ABOVE SPECIFIED FAUCET AND PER ARCHITECTURAL FINISH SCHEDULE.
 - ALL FIXTURES SHALL BE ROUGHED IN PER MANUFACTURER INSTRUCTIONS.
 - HOT WATER IS REQUIRED AT ALL SINKS.
 - VERIFY WATER SERVICE SIZE AND LOCATION.
 - VERIFY SANITARY SEWER SIZE AND LOCATION.

SHOCK ARRESTOR SCHEDULE

P.D.I. SIZE	FIXTURE UNITS	MANUFACTURER OR EQUAL
SA'A	1 - 11	ZURN, SMITH, PPI, SIOUX-CHIEF
SA'B	12 - 32	*
SA'C	33 - 60	*
SAD'	61 - 113	*
SA'E	114 - 154	*
SA'F	155 - 330	*

- LOCATE SHOCK ARRESTORS IN AN ACCESSIBLE LOCATION, OR PROVIDE SIOUX-CHIEF SHOCK ARRESTORS ONLY. PROVIDE SHOCK ARRESTORS AS INDICATED PER SCHEDULE. SHOCK ARRESTORS SHALL BE SAME SIZE AS PIPE INSTALLED ON, MINIMUM.
- WATER HAMMER ARRESTER REQUIREMENTS:**
- PROVIDE WATER HAMMER ARRESTERS CONFORMING TO PDI-WH201 OR ASSE 1010, INSTALLED PER MANUFACTURER'S SPECIFICATIONS, WHERE QUICK CLOSING VALVES ARE UTILIZED. A QUICK CLOSING VALVE IS A VALVE OR FAUCET THAT CLOSSES AUTOMATICALLY WHEN RELEASED, OR THAT IS CONTROLLED BY MECHANICAL MEANS FOR FAST-ACTION CLOSING. REFER TO WATER HAMMER ARRESTER SCHEDULE.
 - AS A MINIMUM, PROVIDE ONE WATER HAMMER ARRESTER FOR EACH BRANCH LINE TO EACH TOILET ROOM LESS THAN 20' IN LENGTH, LOCATED BETWEEN THE LAST TWO FIXTURES SERVED. FOR BRANCH LINES GREATER THAN 20' IN LENGTH, A SECOND WATER HAMMER ARRESTER IS REQUIRED.

WATER HEATER SCHEDULE

MARK	EQUIPMENT	MANUFACTURER & MODEL NO.	SPECIFICATION
WH1	INSTANTANEOUS WATER HEATER	EEMAX SP3208	GLASS LINED, TANKLESS, 208 VOLT 3 KW, 1/2" CW AND 1/2" HW.
WH2	INSTANTANEOUS WATER HEATER	EEMAX SP4208	GLASS LINED, TANKLESS, 208 VOLT 4 KW, 1/2" CW AND 1/2" HW.

Ellington Design Group, PLLC
220 BLUEBERRY STREET • BELMONT, NC 28012
PHONE: 980-425-4403 • EMAIL: EDG.BTE@HOTMAIL.COM

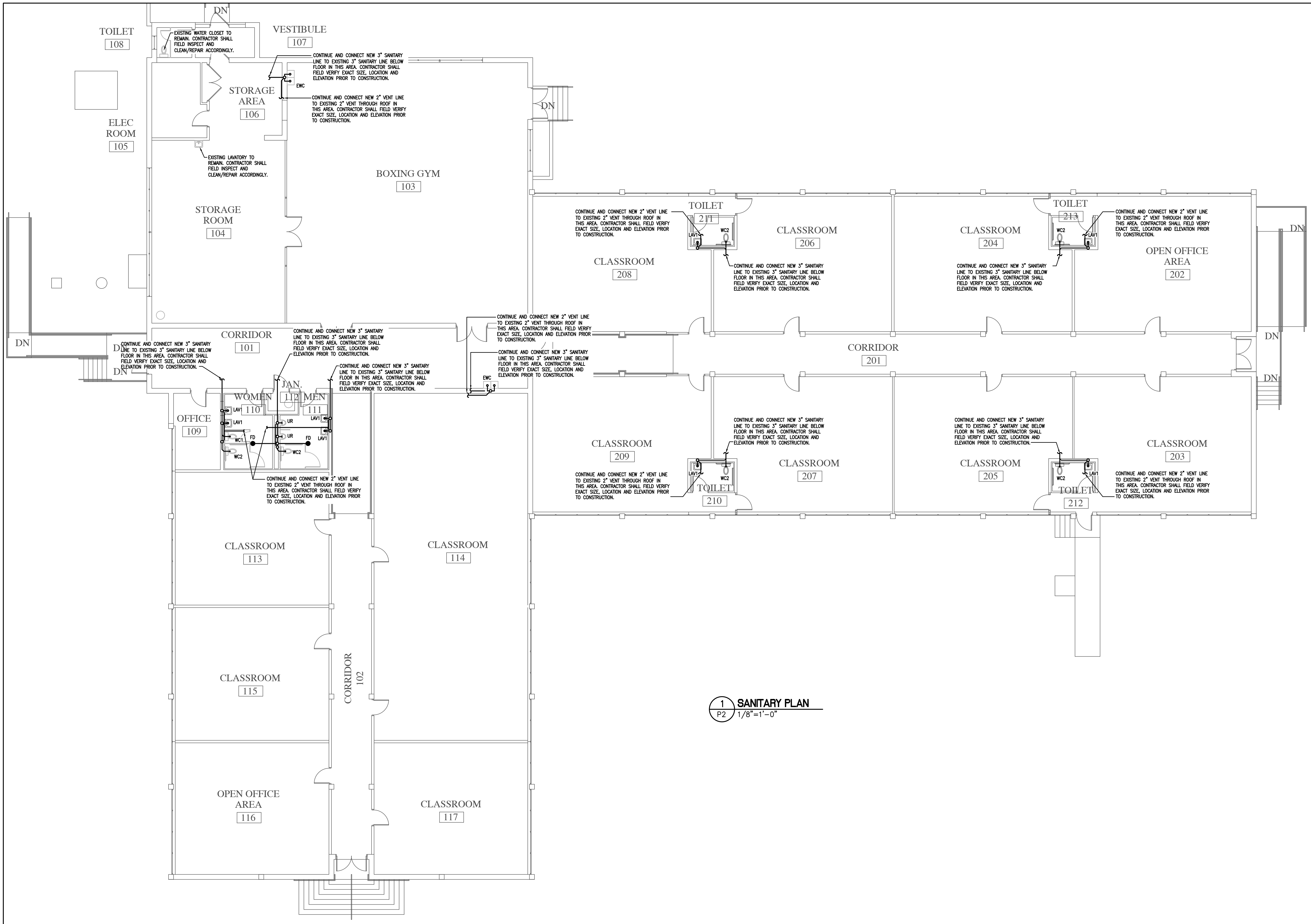
ENGINEERING SOLUTIONS
1401 CENTRAL AVE., SUITE 200-J
CHARLOTTE, NC 28205
704.266.0942
CERTIFICATE P-1340

NORTH CAROLINA PROFESSIONAL SEAL 28937
REGISTERED PROFESSIONAL ENGINEER
WALTER B. CHRISTIAN
1/29/19

REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No: 2018-009
Scale:
Date Drawn: 1/29/19
Sheet Title
PLUMBING COVER SHEET



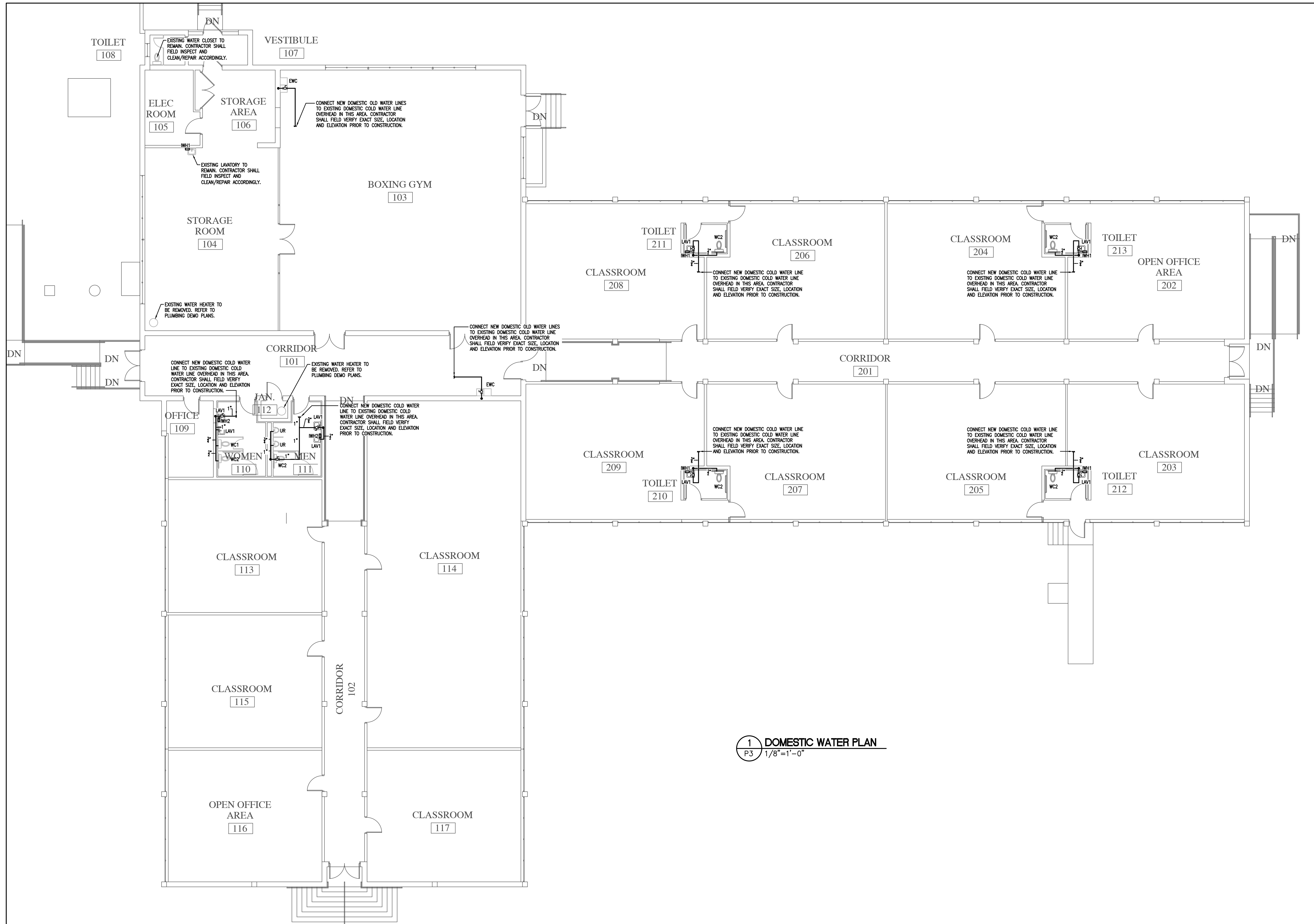
1 SANITARY PLAN
 P2 1/8"=1'-0"

REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
 HARNETT COUNTY
 695 SHAWTOWN ROAD
 LILLINGTON, NORTH CAROLINA

Project No:
 2018-009
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 Date Drawn: 1/29/19
 Sheet Title

SANITARY
 PLAN

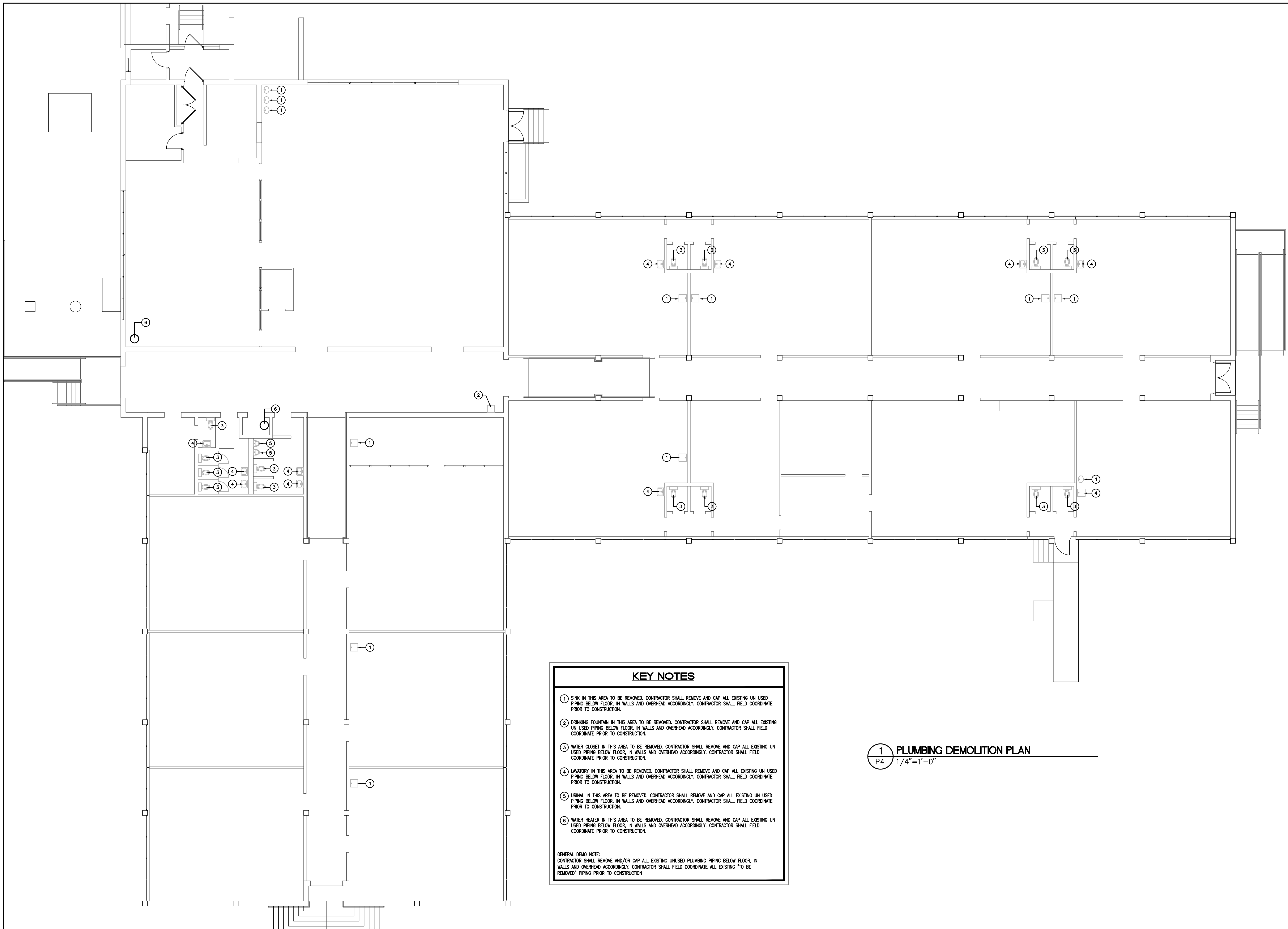


1 DOMESTIC WATER PLAN
 P3 1/8"=1'-0"

REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
 HARNETT COUNTY
 695 SHAWTOWN ROAD
 LILLINGTON, NORTH CAROLINA

Project No: 2018-009
 Scale:
 Date Drawn: 1/29/19
 Sheet Title
 DOMESTIC WATER PLAN



KEY NOTES

- ① SINK IN THIS AREA TO BE REMOVED. CONTRACTOR SHALL REMOVE AND CAP ALL EXISTING UN USED PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE PRIOR TO CONSTRUCTION.
- ② DRINKING FOUNTAIN IN THIS AREA TO BE REMOVED. CONTRACTOR SHALL REMOVE AND CAP ALL EXISTING UN USED PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE PRIOR TO CONSTRUCTION.
- ③ WATER CLOSET IN THIS AREA TO BE REMOVED. CONTRACTOR SHALL REMOVE AND CAP ALL EXISTING UN USED PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE PRIOR TO CONSTRUCTION.
- ④ LAVATORY IN THIS AREA TO BE REMOVED. CONTRACTOR SHALL REMOVE AND CAP ALL EXISTING UN USED PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE PRIOR TO CONSTRUCTION.
- ⑤ URINAL IN THIS AREA TO BE REMOVED. CONTRACTOR SHALL REMOVE AND CAP ALL EXISTING UN USED PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE PRIOR TO CONSTRUCTION.
- ⑥ WATER HEATER IN THIS AREA TO BE REMOVED. CONTRACTOR SHALL REMOVE AND CAP ALL EXISTING UN USED PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE PRIOR TO CONSTRUCTION.

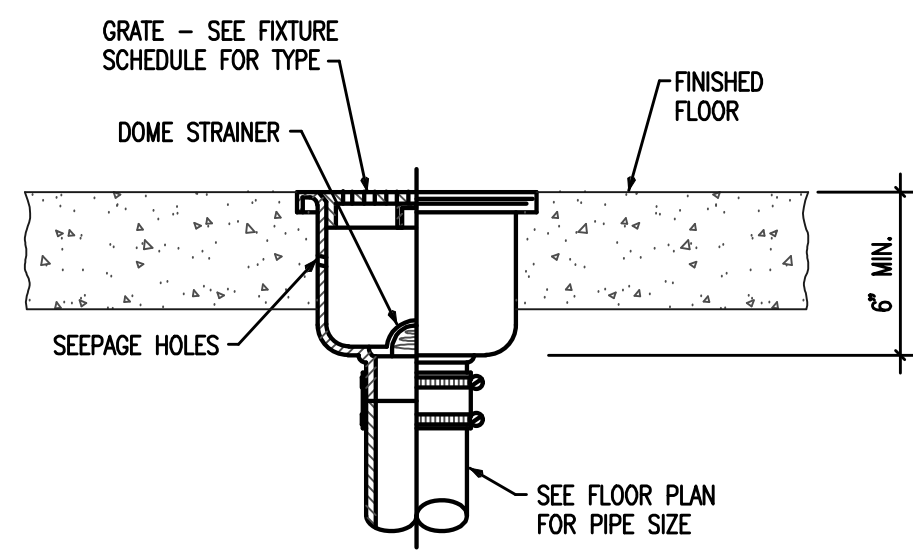
GENERAL DEMO NOTE:
CONTRACTOR SHALL REMOVE AND/OR CAP ALL EXISTING UNUSED PLUMBING PIPING BELOW FLOOR, IN WALLS AND OVERHEAD ACCORDINGLY. CONTRACTOR SHALL FIELD COORDINATE ALL EXISTING "TO BE REMOVED" PIPING PRIOR TO CONSTRUCTION.

① **PLUMBING DEMOLITION PLAN**
P4 1/4" = 1'-0"

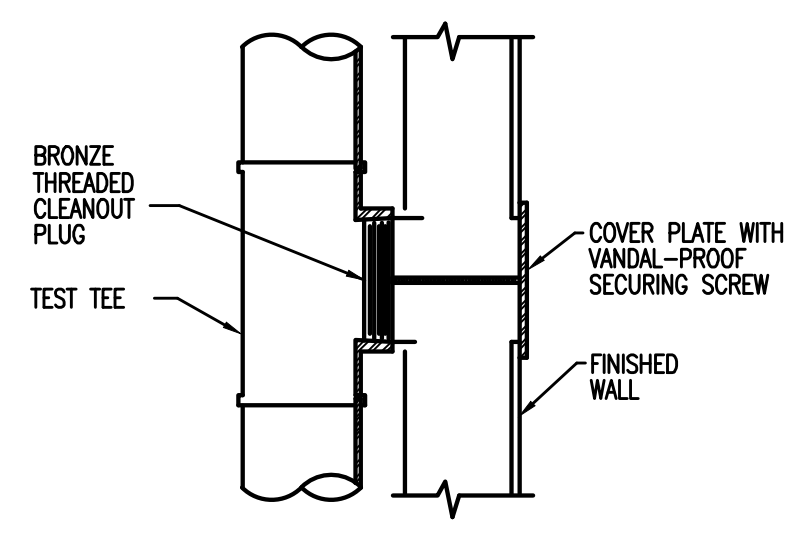
REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

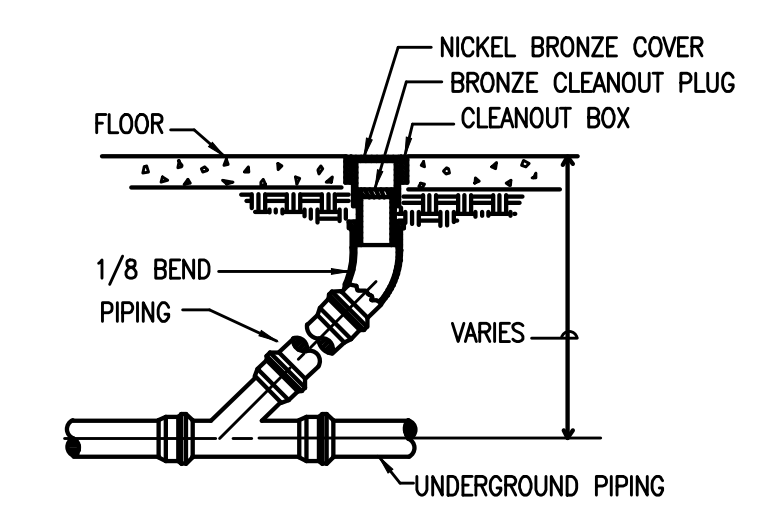
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Sheet Title
PLUMBING DEMO PLAN



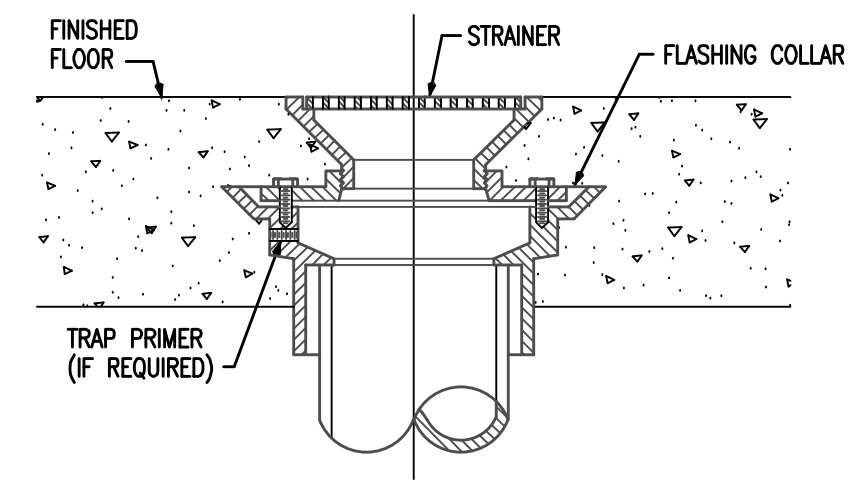
1 FLOOR SINK DETAIL
P5 NOT TO SCALE



2 WALL CLEAN OUT DETAIL
P5 NOT TO SCALE

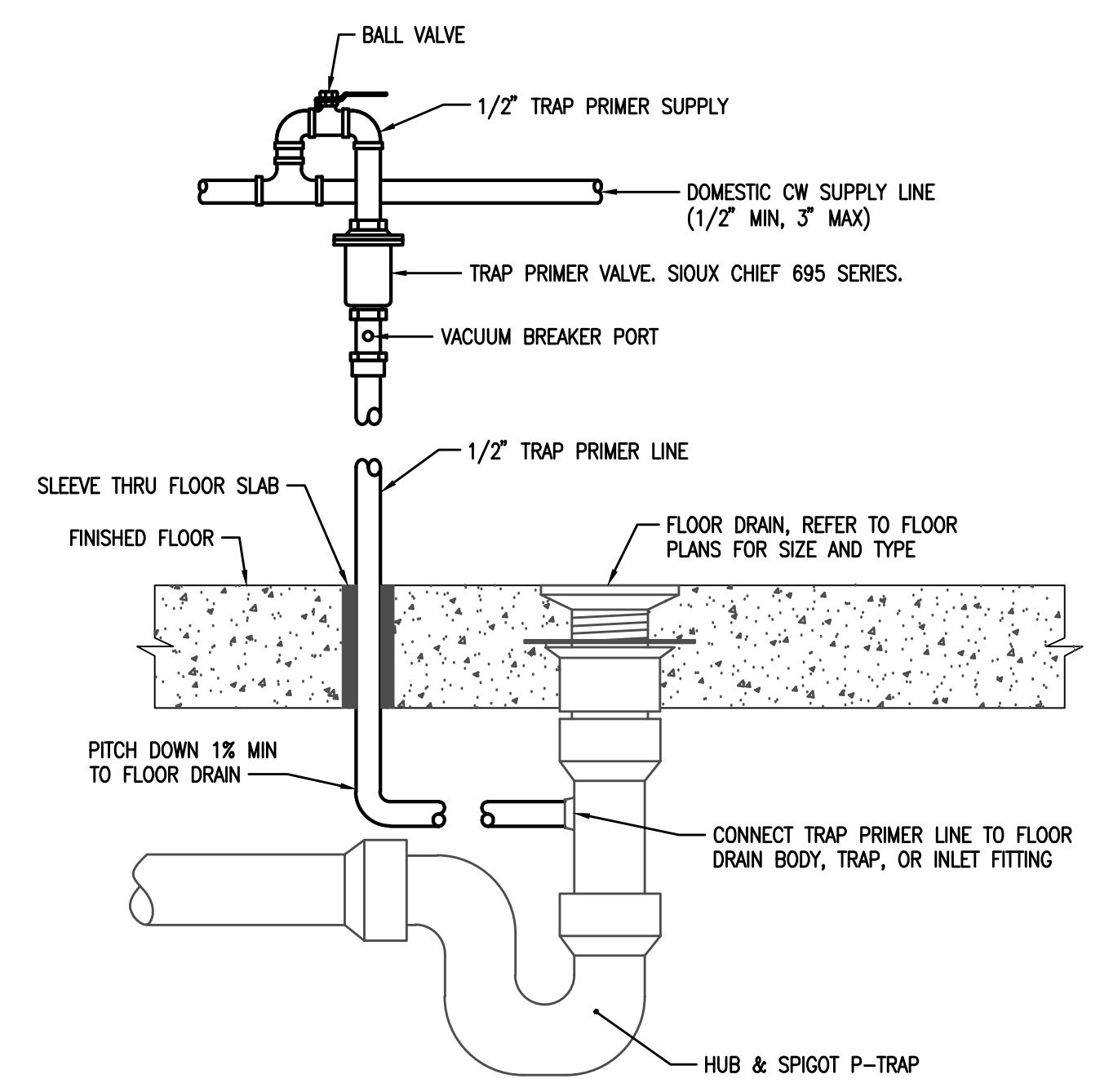


3 FLOOR CLEAN OUT DETAIL
P5 NOT TO SCALE



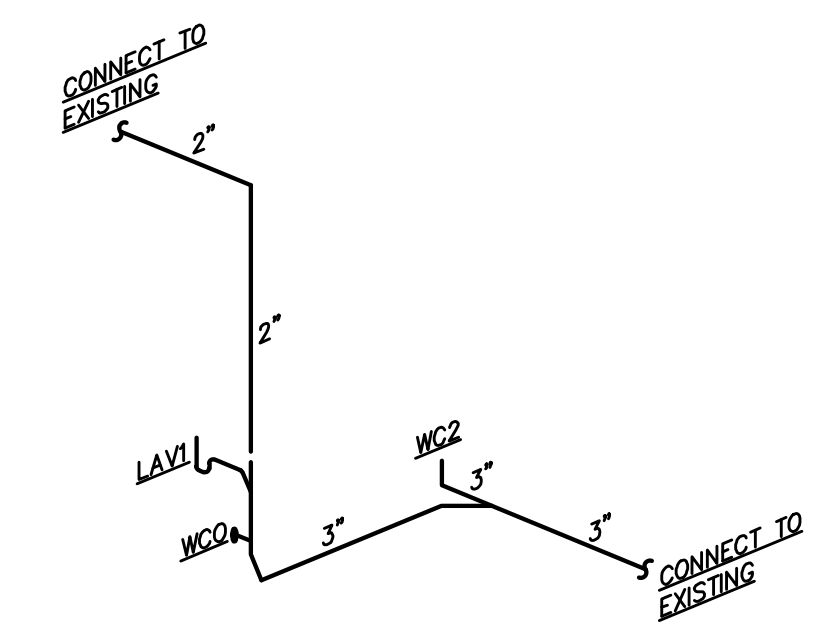
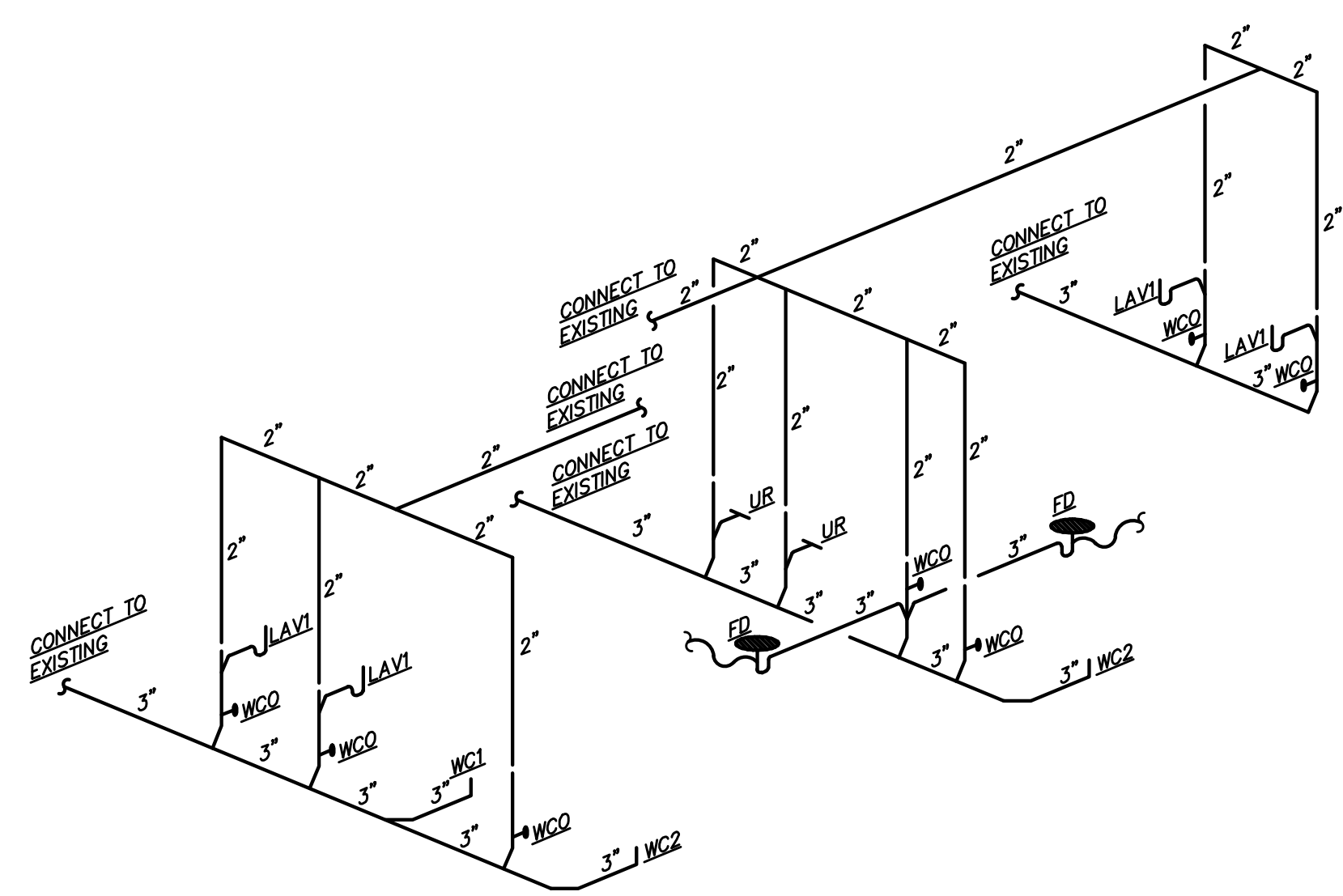
NOTE: PROVIDE FLOOR DRAIN WITH TRAP PRIMER CONNECTION OR PROVIDE TRAP PRIMER CONNECTION ON P-TRAP.

4 FLOOR DRAIN DETAIL
P5 NOT TO SCALE



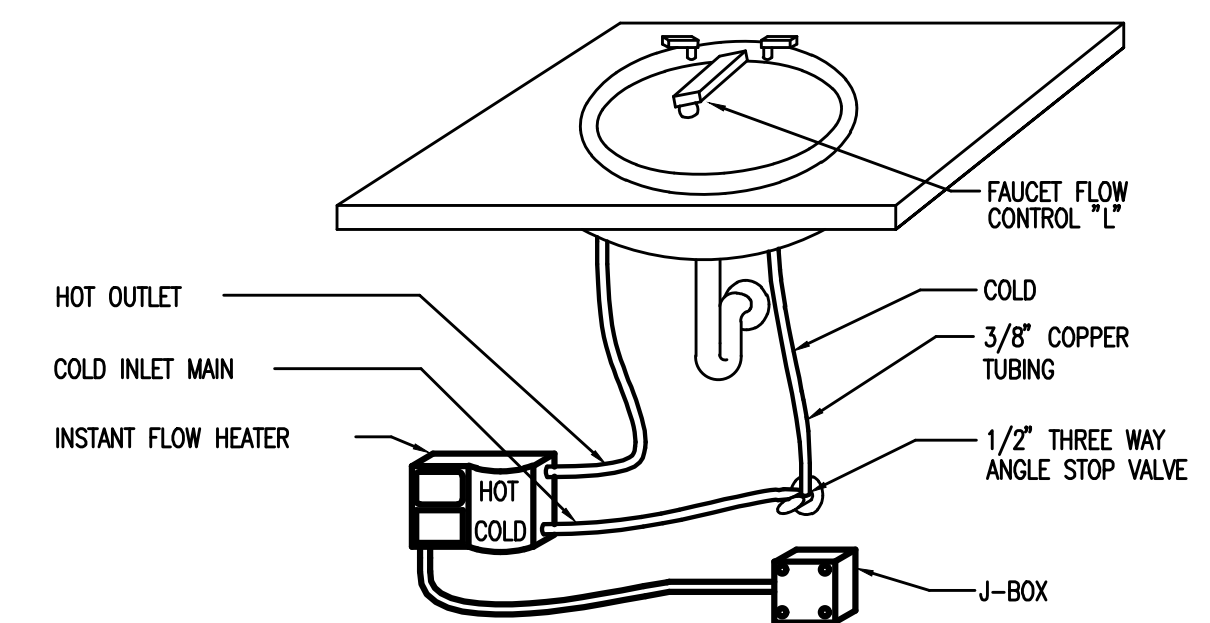
5 TRAP PRIMER DETAIL
P5 NOT TO SCALE

- TRAP PRIMER NOTES:**
1. PROVIDE TRAP PRIMER VALVES FOR ALL FLOOR DRAINS.
 2. TRAP PRIMER VALVES SHALL BE SIOUX CHIEF PRIME PERFECT SERIES 695.
 3. CONNECT TRAP PRIMER VALVE TO CW LINE: 1/2" MIN. - 3" MAX.
 4. PROVIDE SIOUX CHIEF WYE SPLITTER AND/OR DISTRIBUTOR FOR TRAP PRIMER VALVES SERVING MORE THAN ONE FLOOR DRAIN. MAXIMUM OF EIGHT FLOOR DRAINS MAY BE SERVED BY ONE TRAP PRIMER VALVE.



TYPICAL CLASSROOM SANITARY ISOMETRIC

7 SANITARY ISOMETRIC
P5 NOT TO SCALE



6 TANKLESS WATER HEATER DIAGRAM
P5 NOT TO SCALE

- NOTES:**
1. INSTALL WATER HEATER PER MANUFACTURER REQUIREMENTS.

REVISIONS	
NO.	DATE

PLUMBING SPECIFICATIONS:

1.0 GENERAL

- 1.1 PROVIDE (FURNISH AND INSTALL) ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETELY OPERATIONAL PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED. INSTALL IN ACCORDANCE WITH THE FLORIDA BUILDING CODE AND LOCAL ORDINANCES.
- 1.2 SCOPE OF WORK :
PROVIDE THE FOLLOWING COMPLETE SYSTEMS :
A. SANITARY COLLECTION.
B. DOMESTIC COLD AND HOT WATER
C. AIR CONDITIONING CONDENSATE.
D. HOT WATER PIPING INSULATION
E. ELECTRICAL GROUND
- 1.3 PAY FOR ALL FEES, INSPECTIONS AND CONNECTION CHARGES REQUIRED.
- 1.4 VERIFY AT JOB SITE ALL SPACE CONDITIONS, DIMENSIONS WITH PIPE, FIXTURES, AND EQUIPMENT SIZES PRIOR TO FABRICATION OR INSTALLATION. COORDINATE REQUIREMENTS TO AVOID INTERFERENCE WITH OTHER TRADES.
- 1.5 NATURE OF DESIGN DRAWINGS:
DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT INTEND TO SHOW EVERY FITTING, ELBOW, TRANSITION, ETC. THAT WILL BE NECESSARY FOR A COMPLETE OPERATIONAL SYSTEM AS REQUIRED BY THESE SPECIFICATIONS.
- 1.6 COORDINATION DRAWINGS:
PREPARE 1/4" SCALE COORDINATION DRAWINGS SHOWING MAJOR SYSTEM COMPONENTS FOR A/E APPROVAL.
- 1.7 SUBMIT SHOP DRAWINGS FOR ARCHITECT / ENGINEER APPROVAL BEFORE PROCEEDING WITH THE PURCHASE OR INSTALLATION OF EQUIPMENT AND MATERIALS.
- 1.8 GUARANTEE ALL WORK FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.

2.0 MATERIALS

- 2.1 PROVIDE SHUT-OFF VALVES FOR EACH FIXTURE AND AIR CHAMBERS WHERE SHOWN AND WHERE REQUIRED FOR PROPER PERFORMANCE OF THE SYSTEM.
- 2.2 PROVIDE DIELECTRIC FITTINGS TO CONNECT PIPING TO EQUIPMENT OR OTHER PIPING OF DISSIMILAR METALS. USE CLAMPS AND FASTENERS OF SIMILAR METALS OR ISOLATE FROM PIPING. ISOLATE PIPING FROM CONCRETE SLABS AND WALLS TO PREVENT CORROSION.
- 2.3 PIPING
- 2.3.1 DOMESTIC COLD AND HOT WATER:
UNDER GROUND BELOW BUILDING:
SOFT COPPER TYPE "K" WITHOUT JOINTS.
ABOVE GRADE:
HARD DRAWN COPPER TYPE "L" WITH SOLDERED JOINTS.
VALVES:
125 PSIG MIN. WOG BRONZE VALVES
NIBCO/SCOTT T-122 OR S122 OR EQUAL
CONDENSATE PIPE INSULATION:
1" PRE-FORMED ARMAFLEX INSULATION FIRE RATED FOR PLENUM USE.
HOT WATER INSULATION:
1" PRE-FORMED GLASS FIBER W/FIRE RATED A.S.JACKET.
SOLDER:
PROVIDE IN ACCORDANCE WITH ASTM B 828. FLUX CONFORMING WITH ASTM B 813. USE LEAD FREE SOLDER CONFORMING WITH ASTM B 32.
- 2.3.2 SANITARY WASTE AND VENT:
UNDER GROUND BELOW BUILDING:
CENTRIFUGALLY SPUN CAST IRON PIPE NO-HUB FITTINGS SCH. 40 P.V.C. D.W.V. PIPE & FITTINGS MAY BE USED WHERE ALLOWED BY THE LOCAL JURISDICTION.
ABOVE GRADE:
CENTRIFUGALLY SPUN CAST IRON PIPE NO-HUB FITTINGS SCH. 40 P.V.C. DWV PIPE AND FITTINGS MAY BE USED WHERE ALLOWED BY THE LOCAL JURISDICTION.
CAST IRON PIPING WHEN CEILING SPACE IS USED AS RETURN AIR.
- 2.3.3 NOT USED

2.3.4 A/C CONDENSATE: PVC SCHEDULE 40 PIPE AND FITTINGS. IN AIR PLENUMS (INCLUDING MECHANICAL ROOMS & CLOSETS) INSULATE WITH 3M FIRE MASTER PLENUM WRAP OR APPROVED EQUAL FOR USE ON PVC PIPE.
CONDENSATE PIPE INSULATION OUTSIDE OF PLENUMS:
1" PRE-FORMED ARMAFLEX INSULATION TO PREVENT.

2.4 IF CEILING SPACES ARE USED AS "RETURN AIR CEILING PLENUMS", ALL MATERIALS INSIDE THE R/A PLENUM SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAX SMOKE DEVELOPED INDEX OF 50 PER NFPA 90A. "NO PVC PIPING IS ALLOWED INSIDE THE R/A PLENUM."

2.4.1 IN AIR PLENUMS (INCLUDING MECHANICAL ROOMS & CLOSETS) INSULATE ALL PVC PIPING WITH 3M FIRE MASTER PLENUM WRAP OR APPROVED EQUAL FOR USE ON PVC PIPE. WHEN SUCH PROTECTION IS ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION.

2.5 VALVES
GATE VALVES:
125 P.S.I. WORKING PRESSURE.
NIBCO/SCOTT T-122 OR S122 OR EQUAL

2.6 PIPE SUPPORTS:
PROVIDE HOT DIPPED GALVANIZED WITH ELECTRO-GALVANIZED HARDWARE CLEVIS HANGERS, THREADED RODS, FLOOR CLAMPS, ETC.

3.0 EXECUTION

- 3.1 SEPARATE ALL PIPING FROM CONCRETE BY USING SLEEVES THRU WALLS AND FLOORS. CAULK ANNULAR SPACE WITH APPROVED FIRE RATED CAULKING.
- 3.2 PROVIDE FIRE SAFING AT ALL PIPING PENETRATIONS AS PER DETAILS PROVIDED.
- 3.3 DO NOT INSTALL PVC PIPING IN CEILING SPACES INTENDED FOR RETURN AIR PLENUMS.
- 3.4 DO NOT INSTALL ANY PIPING (WATER, SANITARY, VENT, STORM, ETC.) INSIDE ELEVATOR EQUIPMENT ROOMS.
- 3.5 PROVIDE PVC PIPE ROOF SUPPORTS APPROVED BY THE ROOFER.
- 3.6 PROVIDE DIELECTRIC COUPLINGS AND FITTINGS WHEN JOINING DIFFERENT METALS.

3.7 TESTING:
HYDROSTATIC ALLY TEST DOMESTIC WATER SYSTEM FOR LEAKAGE. CAP ALL SYSTEM OPENINGS AND PUMP TO A TEST PRESSURE OF 1.5 TIMES THE OPERATING PRESSURE OR 100 PSIG MINIMUM FOR A PERIOD OF OF NOT LESS THAN TWO HOURS.

3.8 CLEANING & DISINFECTING:
CLEAN AND DISINFECT ALL DOMESTIC HOT AND COLD WATER PIPING BEFORE USE.
USING CHLORINE AS DISINFECTING AGENT FLOW AGENT INTO THE DOMESTING WATER PIPING SYSTEM TO A CHLORINE RESIDUAL OF 50 PPM AT ALL OUTLETS AND MAINTAIN FOR 24 HOURS.
AFTER RETENTION RESIDUAL SHOULD BE NO LESS THAN 5 PPM. IF LESS PROCEDURE MUST BE REPEATED.
WHEN SATISFACTORY, FLUSH ALL FIXTURES WITH CLEAN POTABLE WATER UNTIL RESIDUAL CHLORINE BY ORTHOTOLIDIN TEST IS NOT GREATER THAN THAT OF THE INCOMING WATER SUPPLY.

END

REVISIONS	
No.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
 695 SHAWTOWN ROAD
 LILLINGTON, NORTH CAROLINA

Project No:
 2018-009
 Scale:
 Date Drawn: 1/29/19
 Sheet Title

PLUMBING SPECIFICATIONS

HVAC GENERAL NOTES

- FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH RECOMMENDED PRACTICE AND ALL APPLICABLE CODES.
- DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS & REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
- ALL MECHANICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
- MECHANICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR, EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER. REFRIGERANT COMPRESSORS SHALL BE GUARANTEED FOR FIVE YEARS.
- DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL REQUIRED FITTINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE TYPE, SIZE AND LOCATION OF ALL AIR DEVICES, DUCTWORK, PIPING AND EQUIPMENT WITH THE CEILING PLAN, LIGHTS, STRUCTURAL ELEMENTS AND OTHER TRADES. CONTRACTOR TO FURNISH AND INSTALL ALL BENDS, OFFSETS, ELBOWS, ETC. AS REQUIRED. VERIFY ALL CLEARANCES PRIOR TO FABRICATING DUCTWORK OR ORDERING EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING MATERIALS AND INSTALLING THE WORK IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
- DUCTWORK
 - ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS WITH A MINIMUM PRESSURE CLASSIFICATION OF 2", SEAL CLASS C, WITH A MAXIMUM LEAKAGE RATE OF 5%.
 - ALL SQUARE ELBOWS SHALL HAVE TURNING VANES.
 - ALL DUCT DIMENSIONS SHOWN ARE INTERIOR CLEAR DIMENSIONS.
 - PROVIDE A MANUAL BALANCING DAMPER AT ALL SUPPLY AND RETURN BRANCH TAKEOFFS.
 - FLEXIBLE DUCT, IF SHOWN ON DRAWINGS, SHALL BE INSULATED ROUND DUCT WITH AN OUTER GLASS REINFORCED SILVER MYLAR JACKET ENCLOSING MIN. 1 1/2" THICK GLASS FIBER INSULATION AROUND A CONTINUOUS INNER LINER, AND SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 6 FEET. "R" VALUE SHALL MEET/EXCEED ENERGY CODE (R=5)
 - ALL SHEET METAL DUCTWORK WITHIN 10' OF THE AIR HANDLING UNIT SHALL BE LINED WITH DUCT LINER. ALL REMAINING SUPPLY, OUTSIDE AIR AND EXTERIOR DUCTS SHALL BE EITHER INTERNALLY LINED OR EXTERNALLY INSULATED WITH DUCT WRAP. PROVIDE AN ADDITIONAL 1" OF DUCT WRAP AND AN ALUMINUM JACKET FOR ALL EXTERIOR DUCT.
 - ALL DUCT INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS AND PARTITIONS.
- PIPING
 - CONDENSATE DRAINS SHALL BE SCHEDULE 40 PVC OR TYPE L COPPER WITH SOLDERED JOINTS.
 - REFRIGERANT PIPING SHALL BE TYPE ACR WROUGHT COPPER WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS.
- INSULATION
 - DUCT LINER - FIBROUS GLASS DUCT LINER, MINIMUM 1" THICK WITH R-VALUE TO MEET LOCAL ENERGY CODE, WITH COATED SURFACE EXPOSED TO AIR STREAM. APPLY WITH MECHANICAL FASTENERS AND 100% COVERAGE OF ADHESIVE.
 - DUCT WRAP - MINERAL FIBER BLANKET, MINIMUM 1 1/2" THICK WITH R-VALUE TO MEET LOCAL ENERGY CODE, WITH REINFORCED FOIL AND PAPER VAPOR RETARDANT JACKET. APPLY WITH MECHANICAL FASTENERS AND ADHESIVE.
 - INTERIOR CONDENSATE DRAINS - INSULATE WITH 1/2" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION.
 - REFRIGERANT SUCTION LINES - INSULATE WITH 1" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION. PROVIDE ALUMINUM JACKET FOR EXTERIOR INSULATION.
 - AIR DISTRIBUTION - INSULATE TOP SIDE AS REQUIRED BY ENERGY CODE.
- ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS & ROOF SHALL BE FLASHED & COUNTER-FLASHED IN A WATERPROOF MANNER.
- EXTEND ALL CONDENSATE DRAINS TO JANITORS SINK, FLOOR DRAIN, SPLASH BLOCK OR AS REQUIRED PER CODE. DRAINS FROM AHU'S SHALL BE TRAPPED. SLOPE 1/8" PER FOOT.
- LOCATE ALL THERMOSTATS AND SWITCHES 4'-0" ABOVE FINISHED FLOOR. FURNISH A THERMOSTAT FOR EVERY DEVICE REQUIRING ONE WHETHER SHOWN ON DRAWINGS OR NOT.
- ALL EQUIPMENT SHALL BE INSTALLED PER CODE & MANUFACTURER'S REQUIREMENTS FOR SERVICE AND ACCESS CLEARANCES.
- ALL EQUIPMENT SHALL BE U.L. LISTED.
- MECHANICAL CONTRACTOR SHALL BALANCE SYSTEM TO AIR QUANTITIES INDICATED ON PLANS AND PROVIDE A COMPLETE BALANCING REPORT IN ACCORDANCE WITH NEBB OR AABC STANDARDS.
- ALL CONTROL WIRING SHALL BE BY MECHANICAL CONTRACTOR.
- DUCT SMOKE DETECTORS SHALL BE INSTALLED IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS OR DECONTAMINATION EQUIPMENT UPON ACTIVATION THE SMOKE DETECTOR SHALL SHUT DOWN THE AIR HANDLING UNIT. DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR.
- EACH AIR DISTRIBUTION SYSTEM SHALL BE PROVIDED WITH A MANUAL CONTROL TO STOP THE SUPPLY AND RETURN FANS IN CASE OF AN EMERGENCY. THE CONTROL DEVICE SHALL BE MOUNTED IN A READILY ACCESSIBLE LOCATION AND CLEARLY IDENTIFIED.
- PROVIDE A CLEAN SET OF FILTERS FOR ALL AIR HANDLING EQUIPMENT AT SUBSTANTIAL COMPLETION.
- MAINTAIN A MINIMUM 10"-0" BETWEEN OUTDOOR AIR INTAKES AND EXHAUST FAN DISCHARGE AND PLUMBING VENTS, ETC. FIELD COORDINATE.
- RUN DUCT UP WITHIN STRUCTURE OR THROUGH JOIST WEBS WHERE POSSIBLE & WHERE REQUIRED TO MAINTAIN CEILING HEIGHTS. PROVIDE OFFSETS IN DUCT WHERE REQ'D WITH MAX. 45° ELBOWS. MAKE BRANCH TAPS OFF TOP, SIDES OR BOTTOM AS REQ'D. NO BACK TO BACK 90° ELBOWS ALLOWED.
- REFRIGERANT PIPING SHALL BE SIZED & INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
- ALL EQUIPMENT SHALL BE LABELED ACCORDING TO NUMBERING / IDENTIFICATION SYSTEM ON PLANS.

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

UNIT DESIG.	NOMINAL TONS COOLING	AREA SERVED	AIR HANDLING UNIT DATA							HEAT PUMP DATA				COOLING CAPACITY			HEATING CAPACITY		AUX. HEATER		FILTER DATA		NOTES
			MANUFACTURER & MODEL #	TOTAL CFM	MIN. CFM	MAX. E.S.P. (IN.WG)	FAN RPM	ELECTRICAL DATA		MANUFACTURER & MODEL #	ELECTRICAL DATA			TOTAL MBH	SENS. MBH	SEER	47°F MBH	COP	KW	VOLTAGE	TYPE	THICK IN.	
								FAN HP	FAN VOLT/PH		VOLT/PH	MCA	MAX FUSE										
AH/HP-1-2-3	1.5	CORRIDOR	TRANE GAMSBOA18	600	100	0.40	BY MFG	1/3	208/1Ø	4TWR5018G1	208/1Ø	9.0	15	18.9	14.2	15.0	17.2	3.6	6.0	208/1Ø	T.A.	1"	1 - 8

NOTES:

- COOLING CAP. RATED IN ACCORDANCE WITH ARI STD. 210/290 AT 95°F AMBIENT OUTDOOR AIR TEMP., 80°F DRY BULB, 67° WET BULB ENTERING AIR TEMP. & NOM. AIR QTY. LISTED.
- PROVIDE 7-DAY, AUTO. CHANGEOVER HEAT/COOL PROGRAMMABLE T'STAT & MATCHING SUBBASE FOR EACH UNIT. THERMOSTAT TO BE HONEYWELL T-7300 OR AS APPROVED BY ENGINEER
- REFRIG. PIPING TO BE SIZED PER TOTAL INSTALL. EQUIV. LENGTH. LONG-LINE APP. TO BE PROVIDED WHENEVER MFG. RECOMM. LENGTHS ARE EXCEEDED, INCL. LIQ. LINE SOLENOID VALVES, ACCUMULATOR, ETC. MAX T.E.L. IS 100'
- PROVIDE NEW THROW-AWAY FILTERS FOR EACH UNIT.
- SINGLE POINT ELECTRICAL CONNECTION
- OUTDOOR UNITS SHALL HAVE A MINIMUM 15.0 SEER RATING
- PROVIDE HEAT PUMP KIT WITH AIR HANDLER.
- PROVIDE WATER LEVEL MONITORING DEVICES TO COMPLY WITH THE NC MECHANICAL CODE - SECTION 307.2.3.1.

VTAC UNIT SCHEDULE

UNIT NO.	NOMINAL TONS COOLING	AREA SERVED	SUPPLY - FAN DATA					COOLING CAPACITY			MANUFACTURER & MODEL NO.	AUXILIARY HEAT		HP CAPACITY	ELECTRICAL DATA		WEIGHT LBS	REMARKS	
			TOTAL CFM	MIN. O.A. CFM	MIN. EXT. S.P. (IN.WG)	FAN RPM	MOTOR H.P.	TOTAL MBH	SENSIBLE MBH	EER		INPUT KW	VOLT/PH		45° F MBH	COP			VOLT/PH
VTAC-1	2.0	STORAGE ROOM 104	800	150	0.1	BY MFG	3/4	22.4	18.4	11.2	T24H1-C06XXXXXE	6.0	460V/3Ø	23.6	3.35	460V/3Ø	18/20	590	1 - 4
VTAC-2	4.0	OPEN OFFICE AREA 207	1,550	200	0.2	BY MFG	3/4	46.5	36.5	11.0	T48H1-C09XXXXXE	9.0	460V/3Ø	41.2	3.45	460V/3Ø	28/30	795	1 - 4
VTAC-3-4	5.0	BOXING GYM 103	1,650	410	0.2	BY MFG	3/4	57.5	41.4	10.7	T60H1-C15XXXXXE	15.0	460V/3Ø	52.0	3.28	460V/3Ø	29/30	800	1 - 5

NOTES

- PROVIDE NEW FILTER FOR EACH UNIT, WALL SLEEVE AND SUB-BASE
- SINGLE POINT ELEC. CONNECTION (HARDWIRED SUB-BASE DISCONNECT)
- PROGRAMMABLE THERMOSTAT
- O.A. DAMPER
- ECONOMIZER

FAN SCHEDULE

UNIT NO.	SERVICE	AREA SERVED	CFM	S.P.	RPM	TYPE & ARRANGEMENT	MIN. MOTOR HP & VOLTAGE	MANUFACTURER & MODEL NO.	DRIVE	CONTROL SCHEME	REMARKS
EF-1-2-3-4	EXHAUST	RESTROOM	75	0.25	700	CEILING	20 WATTS 120/1Ø	GREENHECK MODEL SP-B90	DIRECT	A	1 2 3 4
EF-5	EXHAUST	RESTROOM	150	0.25	1,050	CEILING	128 WATTS 120/1Ø	GREENHECK MODEL SP-B150	DIRECT	A	1 2 3 4

NOTES:

- SCREEN
- BACKDRAFT DAMPER
- SPEED CONTROLLER
- INTEGRAL DISCONNECT SWITCH

CONTROL OPTIONS:

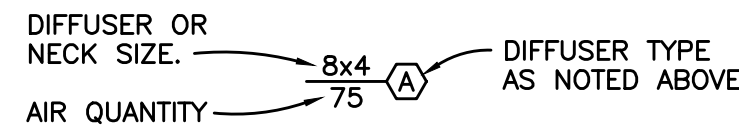
A. CONTROL W/ ROOM LIGHTS

DIFFUSER SCHEDULE

SYMBOL	CFM	NECK SIZE	MODULE SIZE	FRAME TYPE	PATTERN	DAMPER	MATERIAL	SERVICE	FINISH	MANUFACTURER & MODEL NO.	NOTES
(A)	AS NOTED	AS NOTED	24x24	LAY-IN	4-WAY	YES	STEEL	SUPPLY	NOTE 2	TITUS TMS	1
(B)	AS NOTED	AS NOTED	24x24	SURFACE	4-WAY	YES	STEEL	SUPPLY	NOTE 2	TITUS TMS	1
(C)	AS NOTED	AS NOTED	24x24	LAY-IN	PERF.	NO	STEEL	RETURN	NOTE 2	TITUS PAS	1
(D)	AS NOTED	AS NOTED	24x24	SURFACE	PERF.	NO	STEEL	RETURN	NOTE 2	TITUS PAS	1

NOTES:

- DIFFUSER DESIGNATIONS ON PLANS AS FOLLOWS:



VENTILATION REQUIREMENTS

SYSTEM	SPACE	AREA (SQ. FT)	ESTIMATED MAX. OCCUPANT LOAD (PERSONS PER 1,000 SQ. FT)	OCC. (PEOPLE)	REQUIRED OUTDOOR AIR (CFM/PERSON)	REQUIRED OUTDOOR AIR (CFM/SQ.FT.)	REQUIRED VENTILATION CFM	MIN. OUTSIDE AIR REQUIREMENT(CFM) (REQUIRED/0.8)	PROVIDED MIN. O.A. (CFM)
NEW VTAC-1	STORAGE ROOM 104	970	0	0	0	0.12	116	146	150
NEW VTAC-2	CLASSROOM 207	913	35	32	10	0.12	429	536	550
NEW VTAC-3-4	BOXING GYM 103	2,496	10	25	20	0.06	649	811	820
EXIST. VTAC-3 T	CLASSROOM 113	812	35	28	10	0.12	382	477	480
EXIST. VTAC-3 T	OFFICE 109	140	5	1	20	0.06	22	28	50
EXIST. VTAC-3 T	CLASSROOM 114	2,124	35	74	10	0.12	998	1,248	1,300
EXIST. VTAC-3 T	CLASSROOM 115	812	35	28	10	0.12	382	477	480
EXIST. VTAC-3 T	CLASSROOM 116	805	35	28	10	0.12	378	473	480
EXIST. VTAC-3 T	CLASSROOM 117	805	35	28	10	0.12	378	473	480
EXIST. VTAC-4T	OPEN OFFICE AREA 202	930	5	5	20	0.06	149	186	200
EXIST. VTAC-4T	CLASROOM 203	840	35	29	10	0.12	395	494	500
EXIST. VTAC-4T	CLASROOM 204	910	35	32	10	0.12	428	535	550
EXIST. VTAC-4T	CLASSROOM 205	910	35	32	10	0.12	428	535	550
EXIST. VTAC-4T	CLASSROOM 206	910	35	32	10	0.12	428	535	550
EXIST. VTAC-4T	CLASSROOM 208	911	35	32	10	0.12	428	535	550
EXIST. VTAC-4T	CLASSROOM 209	930	35	33	10	0.12	437	546	550
AH-1	CORRIDOR 101	900	0	0	0	0.06	54	68	100
AH-2	CORRIDOR 102	1,091	0	0	0	0.06	65	82	100
AH-3	CORRIDOR 103	744	0	0	0	0.06	45	56	100

ENERGY REQUIREMENTS:

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT (AREAS WITH NEW EQUIPMENTS)

METHOD OF COMPLIANCE

PRESCRIPTIVE ENERGY COST BUDGET

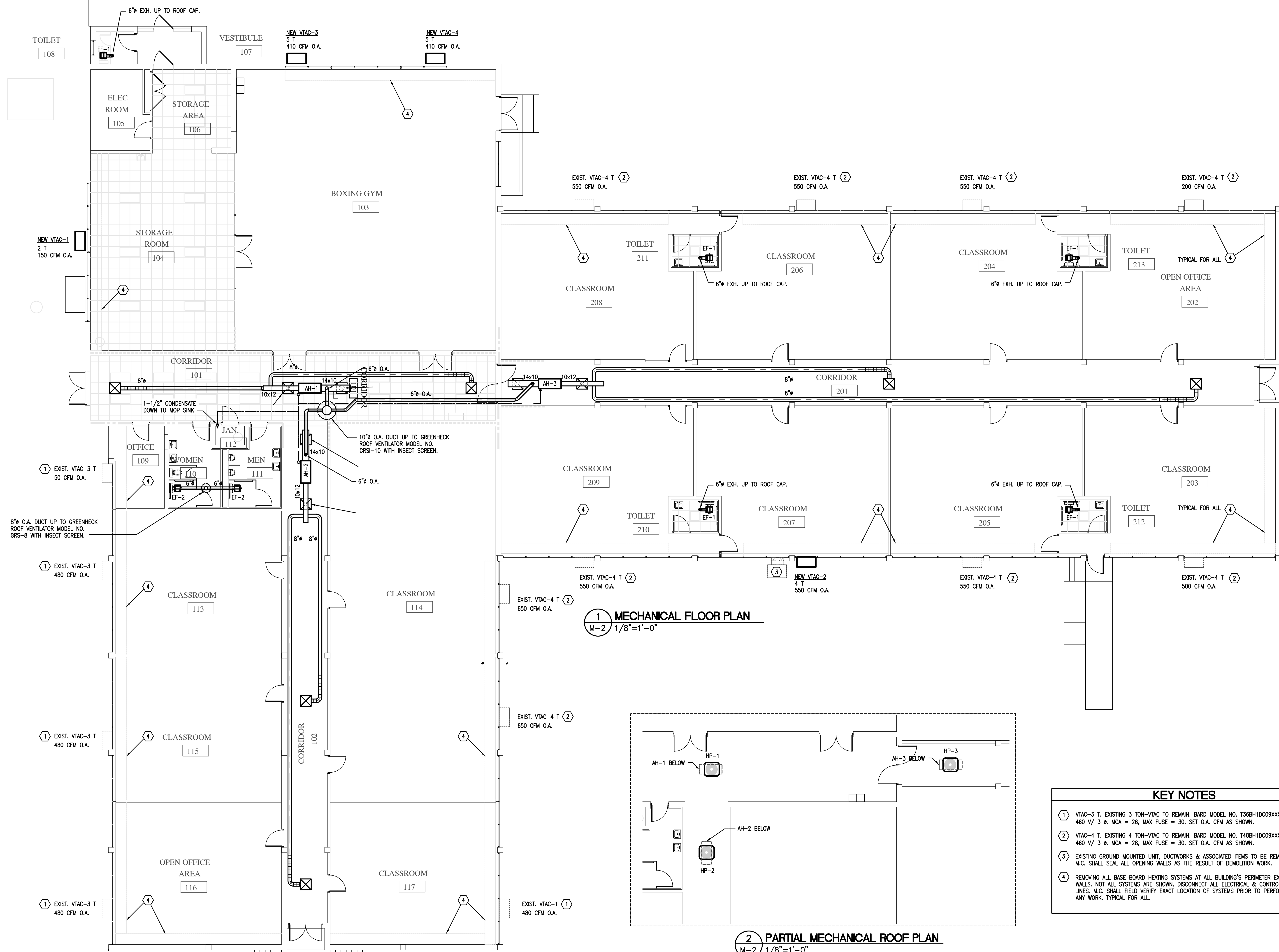
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DESIGNER'S STATEMENT:

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE.

MECHANICAL LEGEND

	SUPPLY DIFFUSER		DOOR UNDERCUT
	RETURN DIFFUSER		DOOR LOUVER
	SIDEWALL DIFFUSER		THERMOSTAT/CONTROL
	CEILING EXHAUST FAN		SMOKE DETECTOR
	RECTANGULAR DUCT		DIFFUSER SYMBOL
	FLEXIBLE DUCT		
	ROUND RIGID DUCT		
	TURNING VANES		
	EXISTING DUCT		



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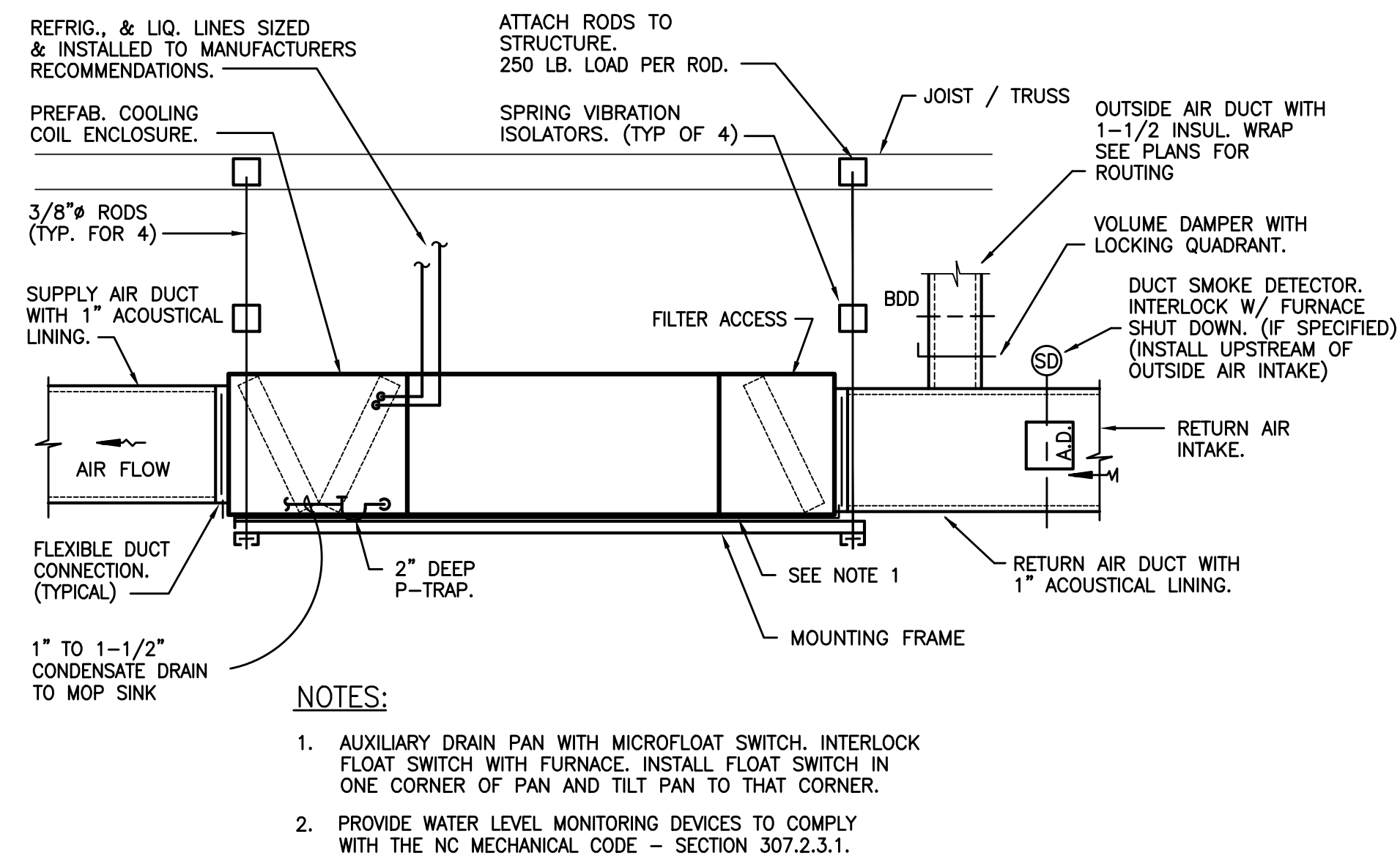
A RENOVATION FOR:
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LILLINGTON, NORTH CAROLINA

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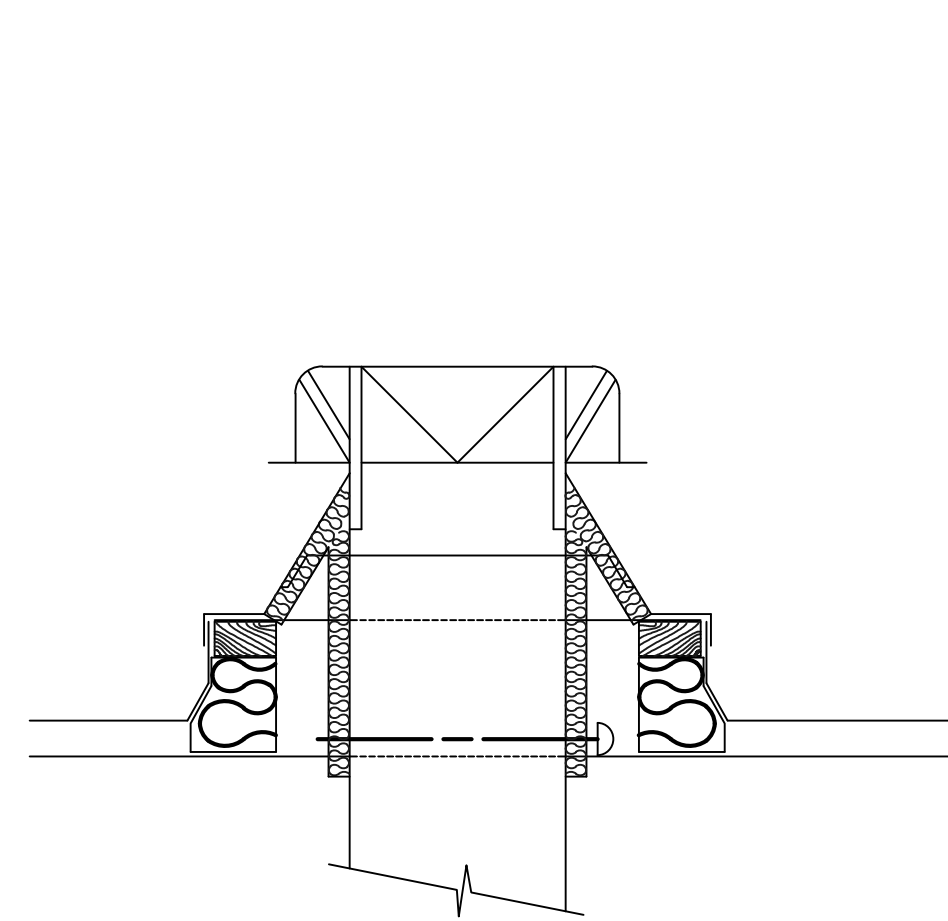
MECHANICAL FLOOR PLANS

M-2

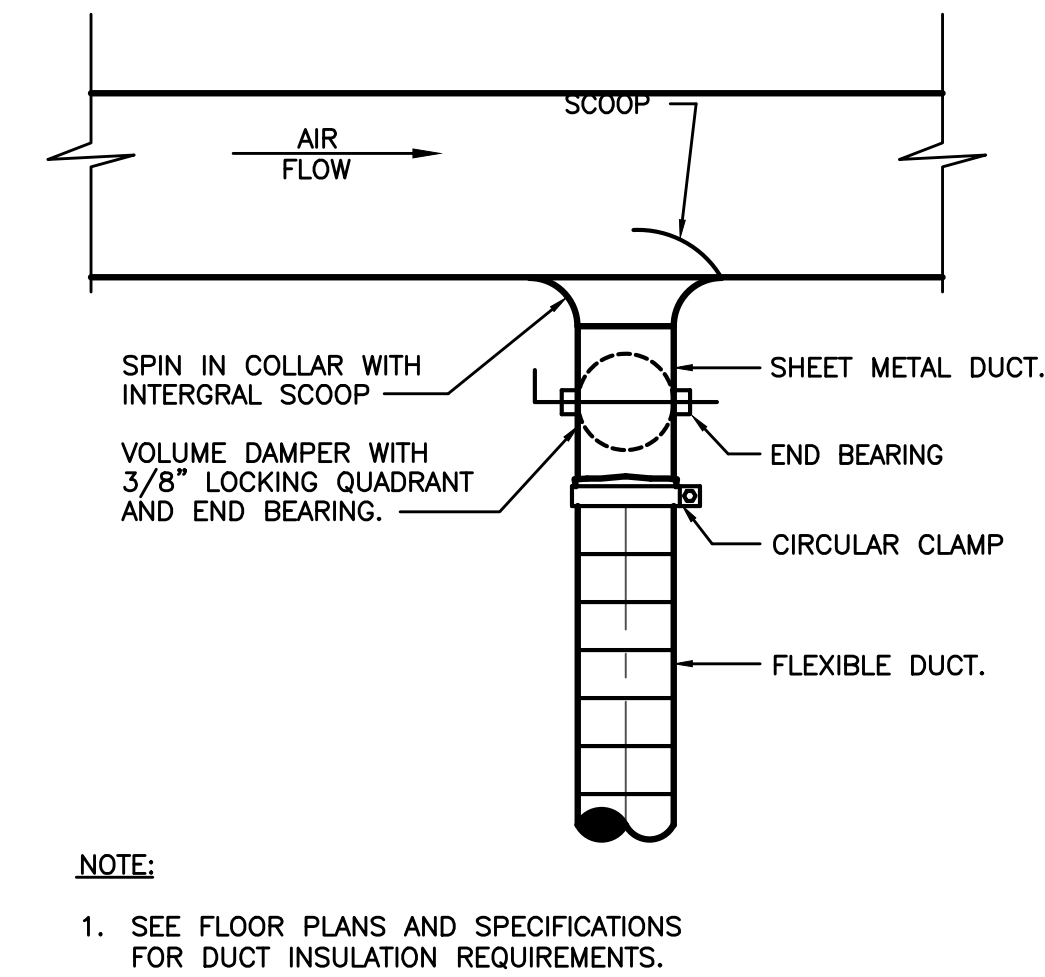
- KEY NOTES**
- ① VTAC-3 T. EXISTING 3 TON-VTAC TO REMAIN. BARD MODEL NO. T36BH1DC09XXXXE. 460 V/ 3 #. MCA = 26, MAX FUSE = 30. SET O.A. CFM AS SHOWN.
 - ② VTAC-4 T. EXISTING 4 TON-VTAC TO REMAIN. BARD MODEL NO. T48BH1DC09XXXXE. 460 V/ 3 #. MCA = 28, MAX FUSE = 30. SET O.A. CFM AS SHOWN.
 - ③ EXISTING GROUND MOUNTED UNIT, DUCTWORKS & ASSOCIATED ITEMS TO BE REMOVED. M.C. SHALL SEAL ALL OPENING WALLS AS THE RESULT OF DEMOLITION WORK.
 - ④ REMOVING ALL BASE BOARD HEATING SYSTEMS AT ALL BUILDING'S PERIMETER EXTERIOR WALLS. NOT ALL SYSTEMS ARE SHOWN. DISCONNECT ALL ELECTRICAL & CONTROL LINES. M.C. SHALL FIELD VERIFY EXACT LOCATION OF SYSTEMS PRIOR TO PERFORMING ANY WORK. TYPICAL FOR ALL.



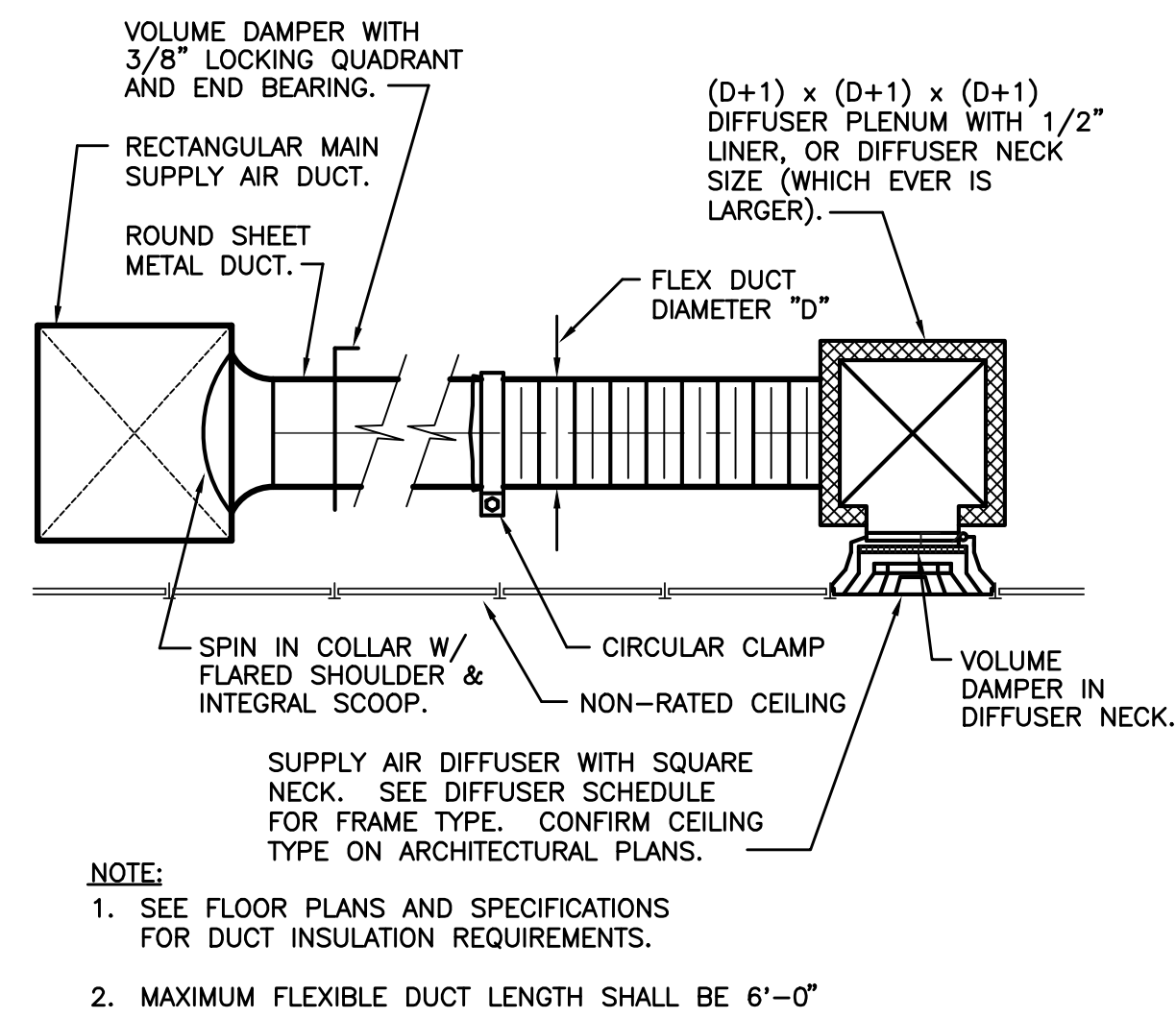
1 HORIZONTAL AIR HANDLING UNIT DETAIL
M-3 NTS



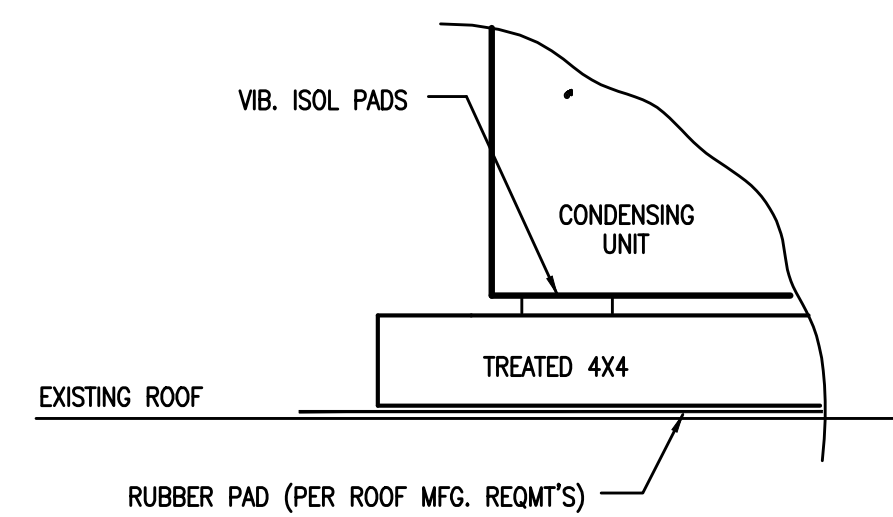
2 ROOF DISCHARGE/INTAKE DETAIL
M-3 NOT TO SCALE



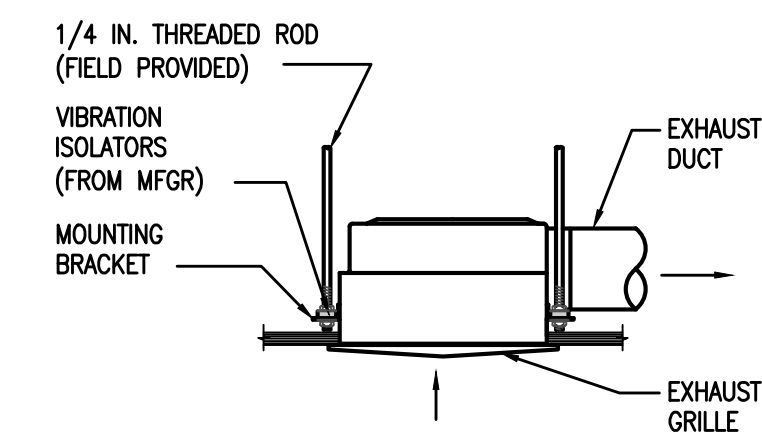
3 ROUND SUPPLY TAP TO SINGLE AIR OUTLET
M-3 NOT TO SCALE



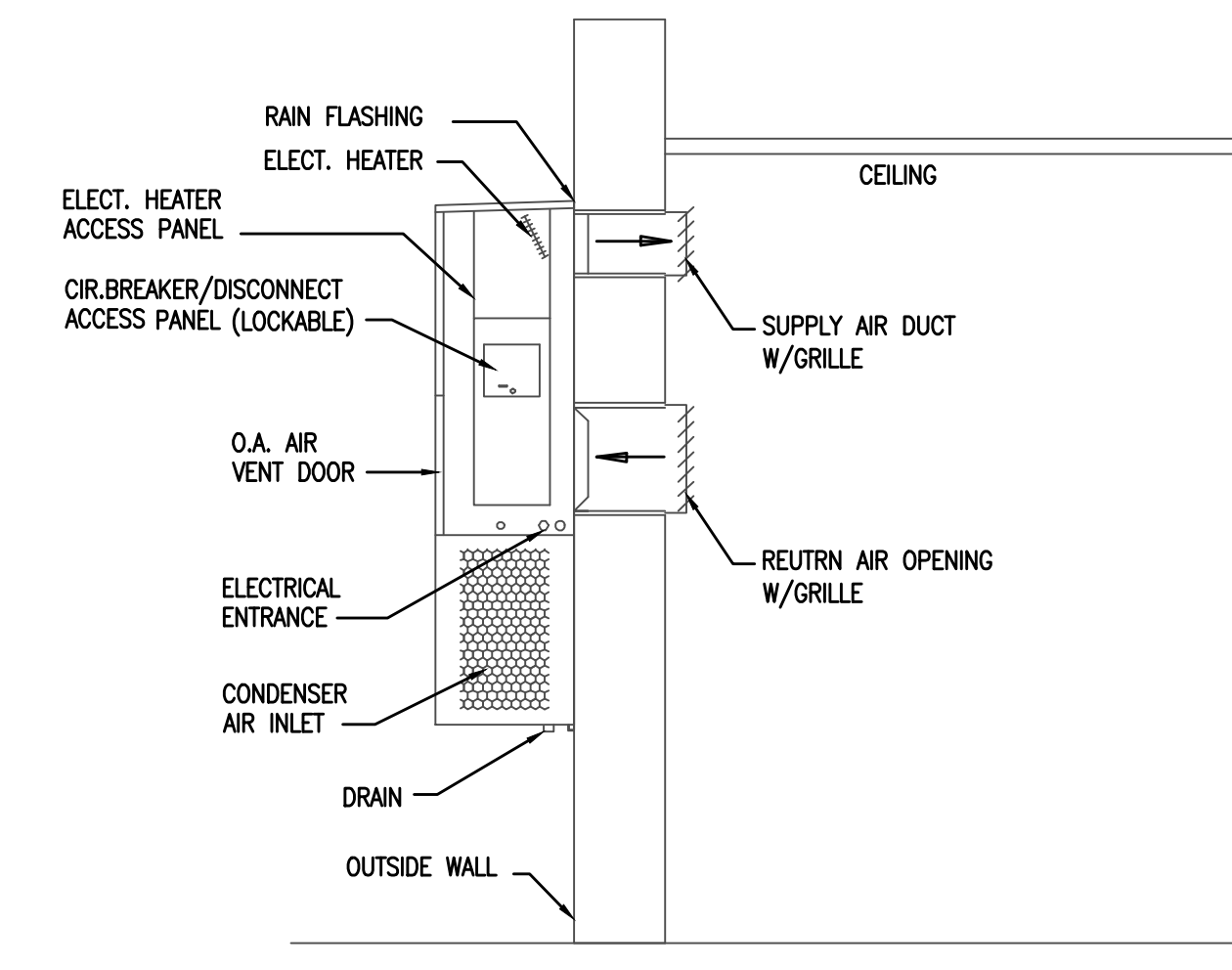
4 SUPPLY AIR DIFFUSER DETAIL
M-3 NOT TO SCALE



5 ROOF MT. HEAT PUMP PAD DETAIL
M-3 NTS



6 CEILING EXHAUST FAN DETAIL
M-3 N.T.S.



7 VTAC DETAIL
M-3 N.T.S.

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HVAC SPECIFICATIONS:

1.0 GENERAL

- 1.1 PROVIDE (FURNISH AND INSTALL) ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETELY OPERATIONAL AIR CONDITIONING, HEATING AND VENTILATING SYSTEM AS SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED
- 1.2 INSTALL IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, ASHRAE, SMACNA, NFPA AND LOCAL ORDINANCES.
- 1.3 SCOPE OF WORK :
PROVIDE THE FOLLOWING COMPLETE SYSTEMS :
A. SUPPLY AND RETURN DUCT SYSTEM.
B. AIR CONDITIONING UNITS WITH REFRIGERANT PIPING AND CONTROLS FOR EQUIPMENT ROOM.
C. DIRECT DIGITAL CONTROL SYSTEM AND COMPUTER STATION.
D. INDEPENDENT TEST AND BALANCE.
- 1.4 CONTRACTOR MUST BE FAMILIAR WITH THIS TYPE OF INSTALLATION AND THOROUGHLY UNDERSTAND ALL THE REQUIREMENTS FOR THE INSTALLATION OF EACH PIECE OF EQUIPMENT HEREIN SHOWN. ITS PROPER OPERATION REQUIREMENTS AND TESTING PROCEDURES FOR CITY APPROVALS.
- 1.5 PAY FOR ALL FEES, INSPECTIONS AND CONNECTION CHARGES REQUIRED
- 1.6 VERIFY AT JOB SITE ALL SPACE CONDITIONS, DIMENSIONS AND EQUIPMENT SIZES PRIOR TO DUCT FABRICATION OR INSTALLATION. COORDINATE REQUIREMENTS TO AVOID INTERFERENCE WITH OTHER TRADES.
- 1.7 NATURE OF DESIGN DRAWINGS:
DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT INTEND TO SHOW EVERY FITTING, ELBOW, TRANSITION, ETC. THAT WILL BE NECESSARY FOR A COMPLETE OPERATIONAL SYSTEM AS REQUIRED BY THESE SPECIFICATIONS.
- 1.8 COORDINATION DRAWINGS:
PREPARE 1/4" SCALE COORDINATION DRAWINGS SHOWING MAJOR SYSTEM COMPONENTS FOR A/E APPROVAL.
- 1.9 SUBMIT SHOP DRAWINGS FOR ARCHITECT / ENGINEER APPROVAL BEFORE PROCEEDING WITH THE PURCHASE OR INSTALLATION OF EQUIPMENT AND MATERIALS.
SUBMIT ALL AT ONCE IN A BINDER WITH AN INDEX AND DIVIDERS AS REQUIRED TO SEPARATE ALL DIFFERENT MATERIALS AND EQUIPMENT.
- 1.10 GUARANTEE ALL WORK FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.

2.0 MATERIALS

- 2.1 DUCTWORK: ALL JOINTS SEALED WITH HIGH PRESSURE MASTIC.
 - 2.1.1 GENERAL. ALL DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
 - 2.1.2 DUCTWORK MATERIALS:
A: MAIN SUPPLY AIR DUCTS
CONSTRUCT OF GALVANIZED SHEET METAL IN ACCORDANCE WITH SMACNA PRESSURE RATING OF 1" W.G. INSULATE WITH 1 1/2" GLASSFIBER THERMAL BLANKET WITH APPROVED FRJ REINFORCE ALUMINUM JACKED. SEAL AIR TIGHT ALL JOINT WITH APPROVED HIGH VELOCITY MASTIC.

- B: ROUND INSULATED FLEXIBLE DUCT PROVIDE AS SHOWN ON PLANS, WIREMOLD WCK W/ 1-1/2" INSULATION & REINFORCED ALUM. VAPOR OR APPROVED EQUAL MAXIMUM LENGTH PERMITTED PER RUNOUT = 5'-0"
- C: ROUND INSULATED SHEET METAL DUCT WHEN IS CROSSING THROUGH 1HR FIRE RATED WALL PROVIDE AS SHOWN ON PLANS (MIN. THICK 0.0217 IN.) PLANS, WIREMOLD WCK W/ 1-1/2" INSULATION & REINFORCED

- 2.1.3 DUCT INSULATION: (ALL A/C SUPPLY & RETURN) 1-1/2" THICK, 1-1/2 LB. DENSITY GLASS FIBER BLANKET WITH REINFORCED ALUMINUM FOIL VAPOR BARRIER. SEAL ALL JOINTS WITH APPROVED FIRE RATED MASTIC.
- 2.1.4 ACOUSTICAL LINING: (ALL A/C SUPPLY & RETURN) LINE FIRST 10 FT FROM UNITS WITH 1" THICK GLASS FIBER MATT FACED. PAINT WITH ANTIBACTERIAL COATING. ATTACH TO DUCT WITH APPROVED SMACNA PROCEDURE.
- 2.1.5 DUCTWORK ACCESSORIES:
A. PROVIDE DOUBLE THICKNESS TURNING VANES AT ALL SQUARE ELBOWS, WHERE THE ELBOWS ARE RECTANGULAR INSTALL SINGLE THICKNESS INSTEAD.
.1 ALTERNATE A: PROVIDE 3-PIECE ELBOWS IN LIEU OF TURNING VANES FOR GLASS FIBER DUCTS ONLY.
.2 ALTERNATE A: PROVIDE FULL RADIUS ELBOWS IN LIEU OF TURNING VANES.
B. PROVIDE VOLUME EXTRACTORS BEHIND EACH SUPPLY OUTLET AND AT EACH DUCT BRANCH.

AIR DISTRIBUTION PRODUCTS :

- 2.2.1 PROVIDE SUPPLY AND RETURN GRILLES AND DIFFUSERS AS INDICATED ON THE DRAWINGS.
- 2.2.2 PROVIDE EXTRUDED ALL ALUMINUM AIR DISTRIBUTION PRODUCTS.
- 2.2.3 PROVIDE FINISHES AND TYPES OF MOUNT IN COORDINATION WITH THE CEILING TYPES AS SHOWN ON ARCHITECTURAL DRAWINGS.
- 2.2.4 PROVIDE OPPOSED BLADE, KEY OPERATED DAMPERS BEHIND ALL AIR SUPPLY OUTLETS.
- 2.2.5 BALANCING DAMPERS AT THE DUCT TAKE-OFF TO EACH REGISTER.

2.3 PIPING:

- 2.3.1 REFRIGERANT PIPING, SEAMLESS COPPER TYPE "L" AND HARD OR SOFT DRAWN ON ACR COPPER TUBING WITH WROUGHT COPPER BRAZED JOINT FITTINGS, WITH SILVER BRAZING CONTAINING NOT LESS THAN 49% SILVER.

2.4 NOT USED

2.5 INSULATION:

- 2.5.1 INSULATE ALL REFRIGERANT SUCTION PIPING WITH 3/4" CLOSED CELL POLYETHYLENE PRE MOLDED INSULATION, WITH AN APPROVED PIPE AND SMOKE JACKET. PAINT ALL EXPOSED INSULATION WITH TWO COATS OF WHITE LATEX PAINT.

- 2.6 ALL AIR CONDITIONING COMPRESSORS SHALL BE FACTORY WARRANTED FOR A MINIMUM OF FIVE YEARS AFTER DATE OF ACCEPTANCE OF THE PROJECT.

2.7 CONTROLS:

- 2.7.1 GENERAL: PROVIDE THE NECESSARY AUTOMATIC CONTROLS FOR PROPER OPERATION OF ALL EQUIPMENT SPECIFIED HEREIN. FURNISH MAGNETIC STARTERS AND INTERLOCK WIRING INDICATED FOR EACH PIECE OF EQUIPMENT.
- 2.7.2 PUBLIC AREA DX EQUIPMENT:
PROVIDE AIR CONDITIONING UNITS WITH PROGRAMMABLE MATCHING LOW VOLTAGE HEAT-COOL THERMOSTATS WITH ON-OFF AUTO SUB-BASE SWITCH, FURNISHED BY THE EQUIPMENT MANUFACTURER WITH HEAT-COOL STEPS AS REQUIRED.
- 2.7.3 NOT USED
- 2.7.4 CONTROL WIRING:
PROVIDE (FURNISH & INSTALL) POWER SUPPLY WIRING SOURCE TO POWER CONNECTION, INCLUDE STARTERS, DISCONNECTS AND REQUIRED ELECTRICAL DEVICES, INTERLOCK WIRING, RACEWAY, CONDUITS, PULL WIRES AND EXPOSED CONDUITS FOR TEMPERATURE CONTROL SYSTEM. ALL WIRING SHALL RUN IN CONDUITS, NO EXCEPTION

2.8 STARTERS:

- PROVIDE MAGNETIC STARTER FOR ALL MECHANICAL EQUIPMENT IN THIS SECTION, OF TYPE DESCRIBED ON THE SCHEDULES WITH HAND-OFF-AUTO BUTTON POSITIONS ON THE COVER AND RED-GREEN PILOT LIGHTS.
PROVIDE THE NECESSARY AUXILIARY OPEN AND CLOSED CONTACTS FOR THE INTENDED OPERATION AND INTERLOCKS.

2.9 IDENTIFICATION:

- 2.9.1 LABEL ALL EQUIPMENT WITH ENGRAVED BLACK PLASTIC PLAQUES 12" x 4" HIGH WITH 15" LETTERS.

2.10 RETURN AIR CEILING PLENUMS:

- 2.10.1 WHEN CEILING SPACES ARE USED AS "RETURN AIR CEILING PLENUMS" ALL MATERIALS INSIDE THE R/A CEILING PLENUM SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAXIMUM SMOKE DEVELOPED INDEX OF 50 PER NFPA 90A. "NO PVC PIPING IS ALLOWED INSIDE THE R/A PLENUM."
- 2.10.2 PROVIDE FREE PATH FOR R/A INSIDE CEILING SPACE. SEE ARCHITECTURAL PLAN FOR COORDINATION

3.0 EXECUTION

- 3.1 INSTALL ALL EQUIPMENT AND MATERIALS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S MANUALS AND RECOMMENDATIONS, PAYING SPECIAL ATTENTION TO REQUIRED CLEARANCES FOR INSTALLATION, OPERATION AND SERVICE.
- 3.2 SEAL ALL DUCT JOINTS WITH APPROVED FIRE AND SMOKE RATED HIGH PRESSURE MASTIC.
- 3.3 NOT USED
- 3.4 NOT USED
- 3.5 THERMOSTAT LOCATION:
THERMOSTAT LOCATION IS CRITICAL TO PROPER EQUIPMENT OPERATION. INSTALL THERMOSTAT AT LOCATIONS SHOWN ON PLANS. INSTALL 5'-0" AFF IF NOT INDICATED ELSEWARE. RELOCATE ONLY WHEN APPROVED BY THE A/E IN WRITING.
- 3.6 WHERE R/A IS PROPOSED BY WAY OF DOOR UNDERCUTS, PROVIDE A MINIMUM 1" CLEAR SPACE BETWEEN THE BOTTOM OF THE DOOR AND THE FLOOR FINISH CARPET OR TILE.
- 3.7 EQUIPMENT MUST OPERATE FREE OF OBJECTIONABLE NOISE AND VIBRATION REPAIR AND/OR REPLACE ALL SOURCES OF NOISE AND VIBRATION FOUND TO BE OBJECTIONABLE, TO THE SATISFACTION OF THE A/E.
- 3.8 PROVIDE TEST AND BALANCE BY AN INDEPENDENT AABC OR NEBB CERTIFIED AGENCY AND SUBMIT FOR A/E APPROVAL.
ALL DEVICES ARE TO BE INITIALLY BALANCED TO MAINTAIN 72 F. BALANCE ALL SYSTEMS TO PROVIDE AIR AND WATER QUANTITIES AND CAPACITIES TO MATCH SPECIFIED FLOWS & CAPACITIES. NOTIFY A/E OF ANY DEFICIENCIES NOTED DURING TESTING & BALANCING CALIBRATE FLOWS TO NEW EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. BEFORE COMPLETING TEST & BALANCE PROCEDURES.
ALLOW NECESSARY TIME FOR IMPLEMENTING PROPOSED SOLUTIONS BEFORE CONTINUING WITH TEST & BALANCE. AT END OF TEST AND BALANCE ISSUE A COMPLETE REPORT FOR A/E APPROVAL AND ALLOW TIME AND PROVIDE NECESSARY INSTRUMENTS FOR SPOT CHECKING WITH A/E. SUBMIT FINAL TEST AND BALANCE REPORT TO A/E FOR ACCEPTANCE. AIR AND WATER QUANTITIES SHOWN ARE TO BE ADJUSTED AS REQUIRED TO MEET SPECIFIC JOB CONDITIONS.
- 3.9 STRICTLY FOLLOW ALL MANUFACTURER'S INSTALLATION MANUALS AND INSTRUCTIONS IN THE INSTALLATION OF ALL EQUIPMENT.
OBTAIN, FROM EACH MANUFACTURER, PROPER CERTIFICATION FOR THE ADEQUACY OF THE INSTALLATION OF ALL PIECES OF EQUIPMENT BEFORE PLACING SYSTEM IN OPERATION.
- 3.10 PROVIDE MAINTENANCE AND OPERATION MANUAL
- 3.11 PROVIDE AS-BUILT REPRODUCIBLE DRAWINGS.
- 3.12 PROVIDE INSTRUCTION TO OWNER'S DESIGNATED PERSONNEL.

REVISIONS	
NO.	DATE

GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.
- ALL MATERIAL, EQUIPMENT & APPLIANCES SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC., AND THE NATIONAL MANUFACTURERS ASSOCIATION.
- ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR.
- DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE ONLY THE GENERAL ARRANGEMENT. SEE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS (EXCEPT AS NOTED).
- ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A MINIMUM OF ONE YEAR. THE ONE YEAR WARRANTY IS TO CORRESPOND WITH THE GENERAL CONTRACTOR'S ONE YEAR WARRANTY WITH THE OWNER & BUYERS.
- ELECTRICAL CONTRACTOR SHALL MAKE ALL ELECTRICAL POWER CONNECTIONS TO HVAC, PLUMBING AND OTHER EQUIPMENT AS REQUIRED.
- A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
- ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- ALL WIRING REQUIRED BY CODE TO BE IN CONDUIT SHALL BE INSTALLED IN RC, IMC, EMT OR PVC CONDUIT (AS ALLOWED BY CODE).
- CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID, UNLESS OTHERWISE NOTED.
- BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE THHN OR THWN AS REQUIRED.
- PROVIDE A PULL WIRE IN ALL EMPTY CONDUITS.
- PROVIDE A TYPED DIRECTORY IN ALL PANEL BOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS.
- PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANEL BOARDS AND DISCONNECT SWITCHES, WHITE LETTERS ON BLACK BACKGROUND.
- FUSES 0 - 600 AMPS SHALL BE UL CLASS "RK-1" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSS. UNLESS NOTED OTHERWISE.
- VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START UP. NOTIFY ENGINEER OF ANY CHANGES.
- PROVIDE SCHEDULE 40 PVC CONDUIT UNDERGROUND FROM TELEPHONE EQUIPMENT ROOM TO CONNECTION POINT AS DIRECTED BY LOCAL TELEPHONE COMPANY.
- ALL TERMINALS, SPLICING CONNECTORS, LUGS, ETC. SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED. ALL TERMINALS, SPLICING CONNECTORS, LUGS, ETC. SHALL BE IDENTIFIED FOR USE WITH 75°C RATED CONDUCTORS.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ELECTRICAL EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.).
- PENETRATIONS OF REQUIRED SMOKE PARTITIONS SHALL BE SEALED USING METHODS APPROVED UNDER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS SMOKE STOPPING IS ACCOMPLISHED.
- WHERE PENETRATIONS ARE MADE THROUGH A REQUIRED FIRE-RESISTIVE WALL, FLOOR, OR PARTITION FOR THE PURPOSE OF RUNNING RACEWAY CARRYING ELECTRICAL, TELEPHONE, TELEVISION, OR LOCAL COMMUNICATION AND/OR SIGNALING CIRCUITS, THE OPENING AROUND THE RACEWAY SHALL BE FIRE STOPPED PER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS FIRE STOPPING IS ACCOMPLISHED. USE U.L. APPROVED ASSEMBLIES OF APPROPRIATE TYPE AND RATING ONLY (SEE A2.0 FOR ASSEMBLIES).
- IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQUIRED BY U.L. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO INSURE THE INTEGRITY OF THE U.L. RATING IS MAINTAINED.
- WHERE A HOME RUN IS SHOWN THE CIRCUIT SHALL BE INSTALLED IN A DEDICATED CONDUIT. DO NOT COMBINE WITH OTHER CIRCUITS. WHERE A CIRCUIT HOMERUN IS NOT SHOWN THE CONTRACTOR SHALL COMBINE CIRCUITS AS FOLLOWS:

A MAXIMUM OF THREE 20A BRANCH CIRCUITS OF DIFFERENT PHASES MAY BE COMBINED IN A COMMON HOMERUN SHARING A COMMON NEUTRAL OR WITH SEPARATE NEUTRALS, A TOTAL OF SIX CURRENT CARRYING CONDUCTORS MAXIMUM.

ALL BRANCH CIRCUITS LARGER THAN 20A SHALL BE SEPARATELY HOMERUN TO THE PANEL. ALL HOME RUNS IN EXCESS OF 100' SHALL BE INCREASED ONE WIRE SIZE FROM THAT SHOWN FOR THE CIRCUIT, #10 AWG MINIMUM.
- ALL EXIT SIGNS SHALL BE CIRCUITED TO AN UNSWITCHED LEG OF THE LOCAL LIGHTING CIRCUIT.
- LOWER CASE LETTER(S) INDICATES SWITCHING DESIGNATION. UPPER CASE LETTER(S) INDICATES FIXTURE TYPE. NUMBER INDICATES CIRCUIT. WHERE DUAL SWITCHING IS DESIGNATED CONTROL ONE LAMP OF TWO LAMP FIXTURES AND THE CENTER LAMP(S) OF THREE AND FOUR LAMP FIXTURES TO ONE SWITCH, AND THE REMAINING LAMPS TO THE SECOND SWITCH. CIRCUIT NUMBERS, FIXTURE DESIGNATION AND SWITCHING ARE DESIGNATED AS FOLLOWS, FIXTURE SWITCHING AND CIRCUITING ARE TYPICAL FOR ALL LIGHT FIXTURES.
- PROVIDE FLASH HAZARD SIGNAGE ON ALL NON-DWELLING ELECTRICAL PANELS.
- SPACING AND LOCATION OF RECEPTACLES, SHALL AT A MINIMUM, BE IN ACCORDANCE WITH IBC AND NEC REQUIREMENTS FOR DWELLING UNITS. PLANS ARE FOR GENERAL ARRANGEMENT ONLY.

ELECTRICAL SYMBOL SCHEDULE

	ELECTRICAL CONNECTION TO APPLIANCE OR EQUIPMENT.
	ELECTRICAL CONDUIT HOMERUN TO BRANCH PANELBOARD.
	ELECTRICAL CONDUIT RUN IN OR BELOW FLOOR SLAB.
	JUNCTION BOX CEILING OR FLOOR MOUNTED
	JUNCTION BOX WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS.
	DUAL LEVEL CEILING MOUNTED OCCUPANCY SENSOR.
	SINGLE POLE SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	3-WAY SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	4-WAY SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	SINGLE POLE KEY SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	125V, 20A SINGLE PHASE MANUAL MOTOR STARTER WITH OVERLOADS
	WALL SWITCH OCCUPANCY SENSOR, +48" AFF.
	DUAL TECHNOLOGY OCCUPANCY SENSOR, +48 AFF.
	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, +18" A.F.F. TO CENTER. "G" INDICATES GROUND FAULT CIRCUIT INTERRUPTING. "WP" INDICATES WEATHERPROOF. "C" INDICATES MOUNTED 6" ABOVE COUNTERTOP BACKSPLASH.
	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, FLUSH FLOOR MOUNTED WITH CHROME COVERPLATE.
	208V-1φ, 30A DRYER OUTLET OR 208V-1φ, 50A RANGE/OVEN OUTLET.
	DUPLEX GFI RECEPTACLE MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT INDICATED.
	POWER POLE FROM FLOOR TO CEILING. PROVIDE (2) DUPLEX AND (4) DATA OUTLETS AT 18" AFF FOR EACH POWER POLE.
	CONDUIT TURNED UP, AS VIEWED FROM LOAD.
	CONDUIT TURNED DOWN, AS VIEWED FROM LOAD.
	INDICATES KITCHEN EQUIPMENT CONNECTION. SEE EQUIPMENT CONNECTION SCHEDULE SHEET FOR ELECTRICAL CONNECTION INFORMATION. TEXT INDICATES EQUIPMENT BEING SERVED BY CONNECTION AS IDENTIFIED ON KITCHEN DRAWINGS AND SPECIFICATIONS.
	CABLE TELEVISION OUTLET, COORDINATE HEIGHT WITH OWNER. PROVIDE RG-58 CABLE TO CATV CABINET. PROVIDE DUPLEX RECEPTACLE ADJACENT TO TELEVISION. COORDINATE HEIGHT WITH OWNER.
	DUPLEX RECEPTACLE CONTROLLED BY SWITCH INDICATED. UPPER HALF OF RECEPTACLE IS SWITCHED. LOWER HALF OF RECEPTACLE IS UNSWITCHED.
	TELEPHONE/DATA OUTLET, +18" AFF TO CENTER "W" INDICATES WALL MOUNTED AT 4'-8"
	HEAVY DUTY FUSIBLE/NON-FUSIBLE DISCONNECT SWITCH, NUMBERS INDICATE AMP RATING. PROVIDE NEMA 1 ENCLOSURE INSIDE. PROVIDE NEMA 3 ENCLOSURE FOR ALL SWITCHES LOCATED OUTSIDE. FPN = FUSE PER NAMEPLATE, NF = NON FUSED.
	MOTOR STARTER.
	PANELBOARD, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.
	MOTOR OUTLET. SEE PLANS FOR SIZE.
	2' X 4' LED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	2' X 4' LED EMERGENCY LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	SURFACE MOUNTED LED STRIP. SEE FIXTURE SCHEDULE FOR DETAILS.
	1' X 4' LED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	1' X 4' LED EMERGENCY LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	CEILING MOUNTED TRACK LIGHTING FIXTURE, SEE SCHEDULE FOR DETAILS.
	WALL MOUNTED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	CEILING MOUNTED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	DUCT SMOKE DETECTOR. PROVIDED DIV 16, INSTALLED BY DIV 15, WIRED BY DIVISION 16.
	MOTORIZED DAMPER.
	FIRE ALARM CONTROL PANEL, SEMI-FLUSH MOUNTED.
	FIRE ALARM SYSTEM ANNUNCIATOR PANEL, MH = +4'-0".
	FIRE ALARM SYSTEM MANUAL PULL STATION, MH = +4'-0".
	FIRE ALARM SYSTEM ALARM INDICATING DEVICE, HORN/STROBE, MH = +84". HORN SHALL BE 85dBA AT 10'-0" MINIMUM. STROBE SHALL BE 15cd U.O.N.
	FIRE ALARM SYSTEM ALARM INDICATING DEVICE, STROBE, MH = +84". STROBE SHALL BE 15cd U.O.N.
	FIRE ALARM SYSTEM SMOKE DETECTOR, CEILING MOUNTED, UNLESS OTHERWISE NOTED. SUBSCRIPT "R" INDICATES DEVICE SHALL BE USED FOR ELEVATOR RECALL FUNCTIONS. SUBSCRIPT "R" INDICATES DEVICE SHALL BE USED FOR ELEVATOR RECALL FUNCTIONS.
	FIRE ALARM SYSTEM DUCT MOUNTED SMOKE DETECTOR. PROVIDED BY E.C., INSTALLED BY M.C. AND WIRED BY E.C.
	FIRE ALARM SYSTEM HEAT DETECTOR, 135° RATE-OF-RISE, UNLESS OTHERWISE NOTED.
	FIRE ALARM SYSTEM CARBON MONOXIDE DETECTOR.
	TAMPER SWITCH, CONNECTED INTO FIRE ALARM SYSTEM. SEE FIRE ALARM RISER.
	FLOW SWITCH, CONNECTED INTO FIRE ALARM SYSTEM. SEE FIRE ALARM RISER.

NOTE:
ALL DEVICES MAY NOT APPEAR ON THE DRAWINGS AS INDICATED.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	LAMP		VOLTAGE	MOUNTING	BALLAST		FIXTURE WATTS	NOTES
			NO.	TYPE			NO.	TYPE		
A	H.E. WILLIAMS	17-4-L55/835-AF-DIM-UNV	1	LED	120	PENDANT			53	
AE	H.E. WILLIAMS	17-4-L55/835-AF-EM/10W-DIM-UNV	1	LED	120	PENDANT			53	W/EM. BATTERY
B	H.E. WILLIAMS	LP-24-L50/835-DIM-UNV	1	LED	120	RECESSED			48	2X4
B2	H.E. WILLIAMS	LP-22-L40/835-DIM-UNV	1	LED	120	RECESSED			40	2X2
C	H.E. WILLIAMS	WPZ-L38/750-PVS-UNV	1	LED	120	SURFACE			42	
	H.E. WILLIAMS	EXIT-R-EM-WHT-SDT		LED	120	SURFACE			4	LED EXIT SIGN
	H.E. WILLIAMS	EMER/DECO-DBR-LT		LED	120	SURFACE			3	EMERGENCY LIGHT
	HE WILLIAMS	EMER-WHT	2	LED	120	SURFACE				EM WALLPACK

FIXTURE SCHEDULE NOTES:
1. CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF FIXTURE DESIRED. SUBMIT CUTSHEETS OF ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY FIXTURES.
2. COORDINATE FIXTURE TRIM WITH CEILING TYPE (ACOUSTIC OR GYPSUM).
3. 'EM' DESIGNATION DENOTES EMERGENCY BATTERY WITH 90 MINUTE BACKUP.

ELECTRICAL ABBREVIATIONS

18"	DIMENSION INDICATES HEIGHT ABOVE FINISHED FLOOR AT WHICH CENTER OF DEVICE IS TO BE MOUNTED.
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE.
EC	ELECTRICAL CONTRACTOR
FPN	FUSE PER EQUIPMENT NAMEPLATE REQUIREMENTS.
GC	GENERAL CONTRACTOR
GFI	INDICATES RECEPTACLE TO HAVE GROUND FAULT PROTECTION.
MC	MECHANICAL CONTRACTOR
PC	PLUMBING CONTRACTOR
WP	INDICATES DEVICE TO HAVE WEATHERPROOF COVER.
U.N.O.	UNLESS NOTED OTHERWISE
FACP	FIRE ALARM CONTROL PANEL
FAAN	FIRE ALARM ANNUNCIATOR PANEL
CH	COUNTER HEIGHT
NL	NIGHT LIGHT

**2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN**

ELECTRICAL SUMMARY

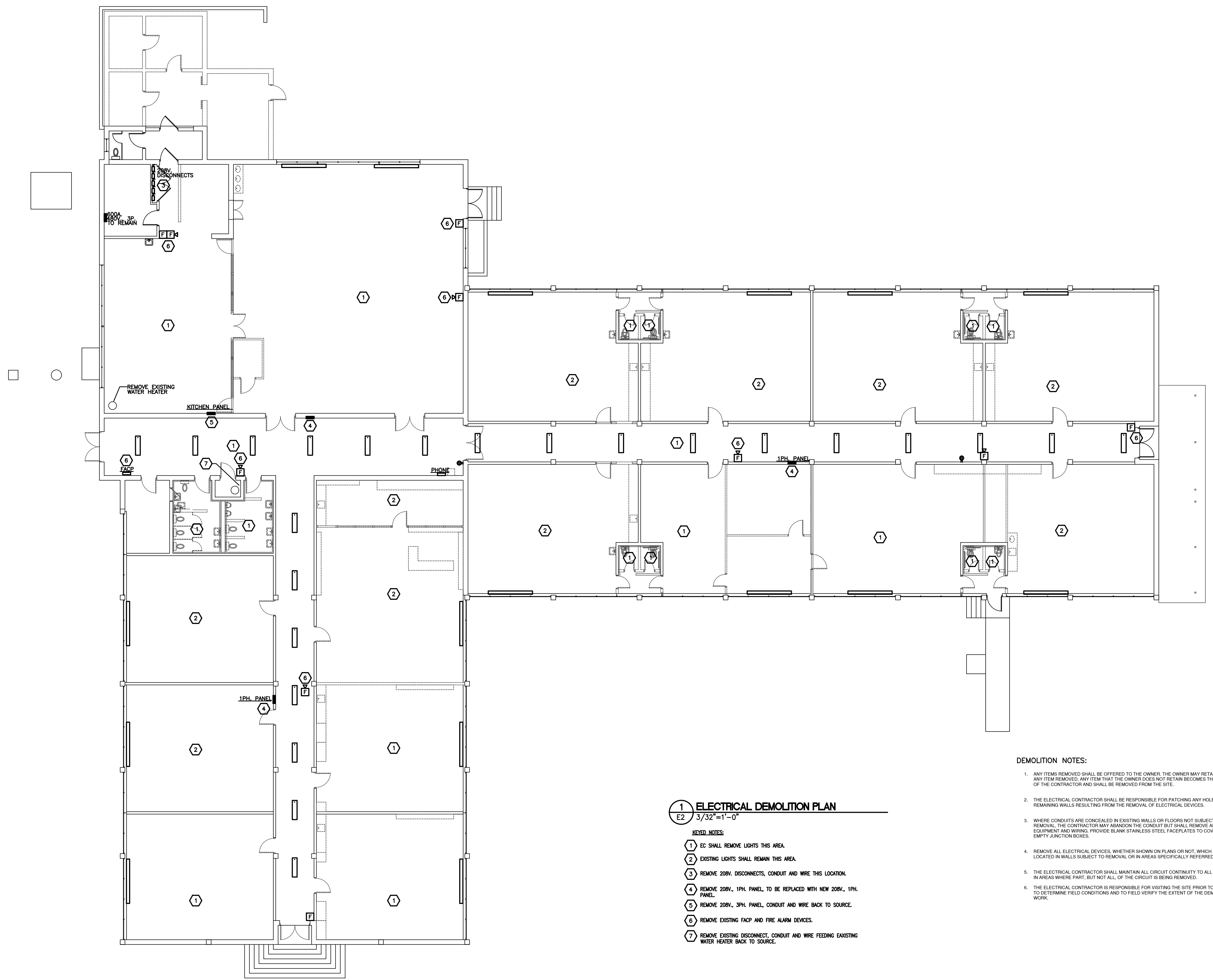
ELECTRICAL SYSTEM AND EQUIPMENT
METHOD OF COMPLIANCE: 2018 NCECC

LIGHTING SCHEDULE (each fixture type)
SEE FIXTURE SCHEDULE LAMP TYPE REQUIRED IN FIXTURE
SEE FIXTURE SCHEDULE NUMBER OF LAMPS IN FIXTURE
SEE FIXTURE SCHEDULE BALLAST TYPE USED IN THE FIXTURE
SEE FIXTURE SCHEDULE TOTAL WATTAGE PER FIXTURE
0.4 VS 1.26 W/SF TOTAL INTERIOR WATT SPECIFIED VS. ALLOWED
EXISTING TOTAL EXTERIOR WATT SPECIFIED VS. ALLOWED

ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- C406.2 MORE EFFICIENT MECHANICAL EQUIPMENT
- C406.3 REDUCED LIGHTING POWER DENSITY
- C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
- C406.5 ON-SITE RENEWABLE ENERGY
- C406.6 DEDICATED OUTDOOR AIR SYSTEM
- C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

DESIGNER STATEMENT:
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE ENERGY CODE.



1 ELECTRICAL DEMOLITION PLAN
 E2 3/32"=1'-0"

- KEYED NOTES:**
- 1 EC SHALL REMOVE LIGHTS THIS AREA.
 - 2 EXISTING LIGHTS SHALL REMAIN THIS AREA.
 - 3 REMOVE 208V. DISCONNECTS, CONDUIT AND WIRE THIS LOCATION.
 - 4 REMOVE 208V., 1PH. PANEL, TO BE REPLACED WITH NEW 208V., 1PH. PANEL.
 - 5 REMOVE 208V., 3PH. PANEL, CONDUIT AND WIRE BACK TO SOURCE.
 - 6 REMOVE EXISTING FACP AND FIRE ALARM DEVICES.
 - 7 REMOVE EXISTING DISCONNECT, CONDUIT AND WIRE FEEDING EXISTING WATER HEATER BACK TO SOURCE.

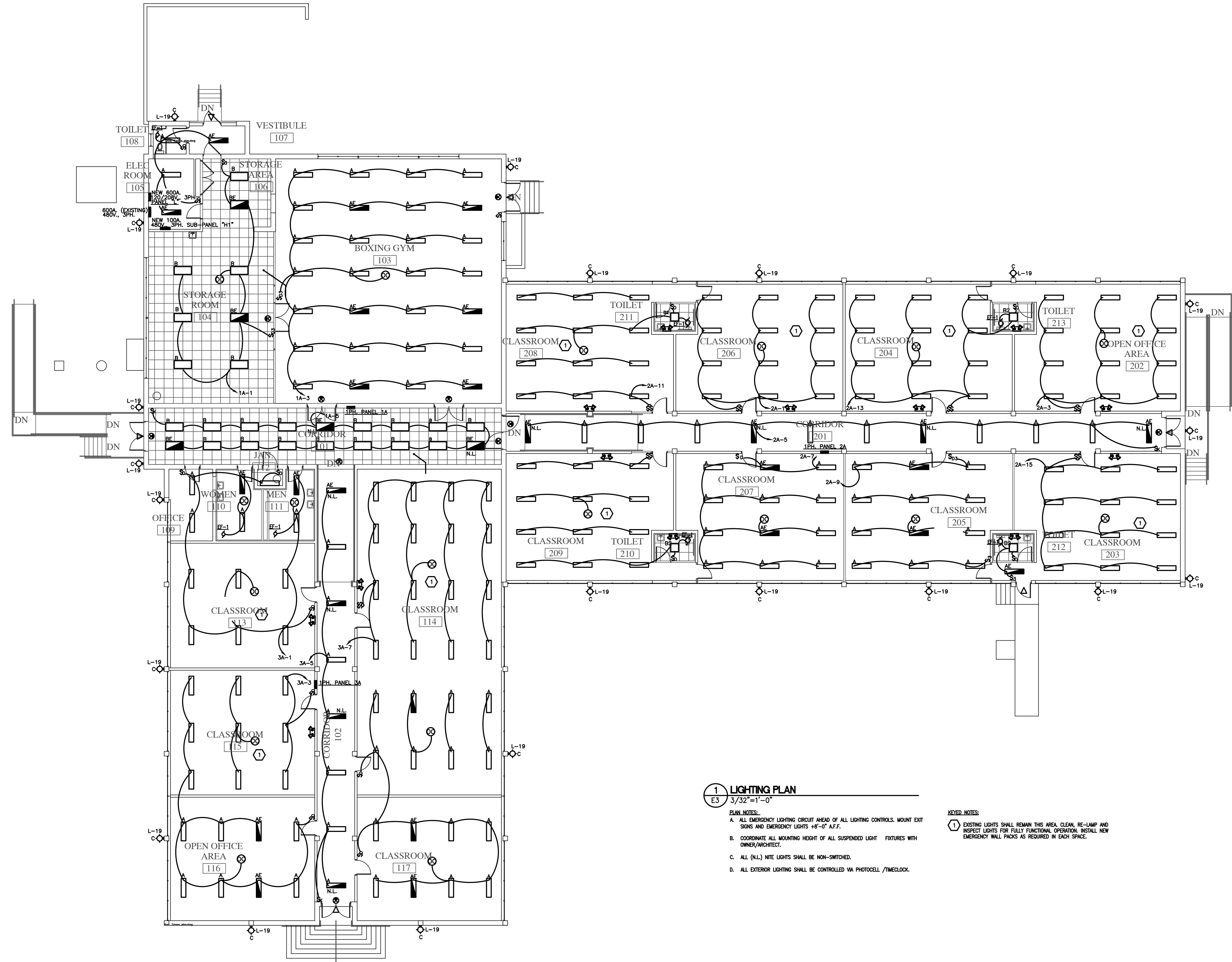
- DEMOLITION NOTES:**
1. ANY ITEMS REMOVED SHALL BE OFFERED TO THE OWNER. THE OWNER MAY RETAIN ANY ITEM REMOVED. ANY ITEM THAT THE OWNER DOES NOT RETAIN BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
 2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY HOLES IN REMAINING WALLS RESULTING FROM THE REMOVAL OF ELECTRICAL DEVICES.
 3. WHERE CONDUITS ARE CONCEALED IN EXISTING WALLS OR FLOORS NOT SUBJECT TO REMOVAL, THE CONTRACTOR MAY ABANDON THE CONDUIT BUT SHALL REMOVE ALL EQUIPMENT AND WIRING. PROVIDE BLANK STAINLESS STEEL FACEPLATES TO COVER EMPTY JUNCTION BOXES.
 4. REMOVE ALL ELECTRICAL DEVICES, WHETHER SHOWN ON PLANS OR NOT, WHICH ARE LOCATED IN WALLS SUBJECT TO REMOVAL OR IN AREAS SPECIFICALLY REFERRED TO IN NOTES.
 5. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ALL CIRCUIT CONTINUITY TO ALL REMAINING CIRCUITS IN AREAS WHERE PART, BUT NOT ALL, OF THE CIRCUIT IS BEING REMOVED.
 6. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO THE BID TO DETERMINE FIELD CONDITIONS AND TO FIELD VERIFY THE EXTENT OF THE DEMOLITION WORK.

REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
 HARNETT COUNTY
 695 SHAWTOWN ROAD
 LILLINGTON, NORTH CAROLINA

Project No:
 2018-009
 Scale:
 Date Drawn: 1/29/19
 Sheet Title

ELECTRICAL
 DEMOLITION
 PLAN



1 LIGHTING PLAN
E3 3/32"=1'-0"

- PLAN NOTES:**
- A. ALL EMERGENCY LIGHTING CIRCUIT AHEAD OF ALL LIGHTING CONTROLS. MOUNT EXIT SIGNS AND EMERGENCY LIGHTS +8'-0" A.F.F.
 - B. COORDINATE ALL MOUNTING HEIGHT OF ALL SUSPENDED LIGHT FIXTURES WITH OWNER/ARCHITECT.
 - C. ALL (N.L.) NITE LIGHTS SHALL BE NON-SWITCHED.
 - D. ALL EXTERIOR LIGHTING SHALL BE CONTROLLED VIA PHOTOCELL /TIMERLOCK.

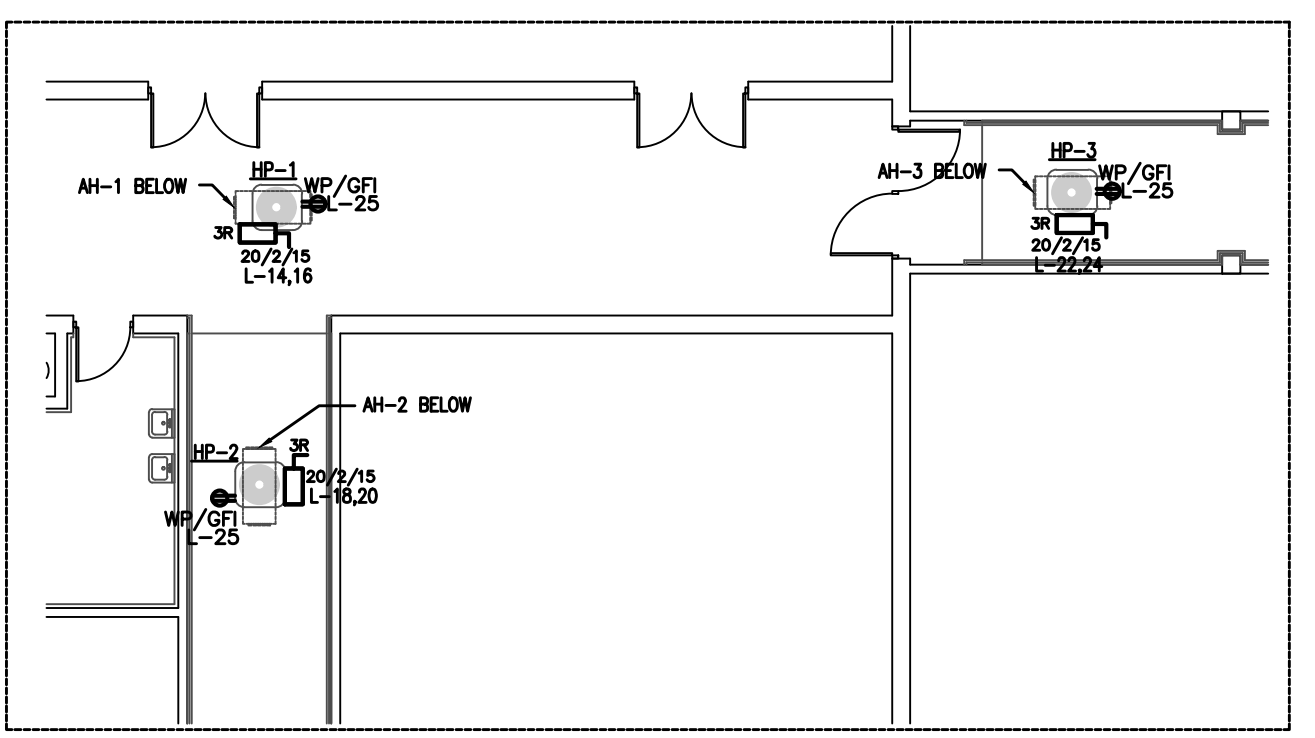
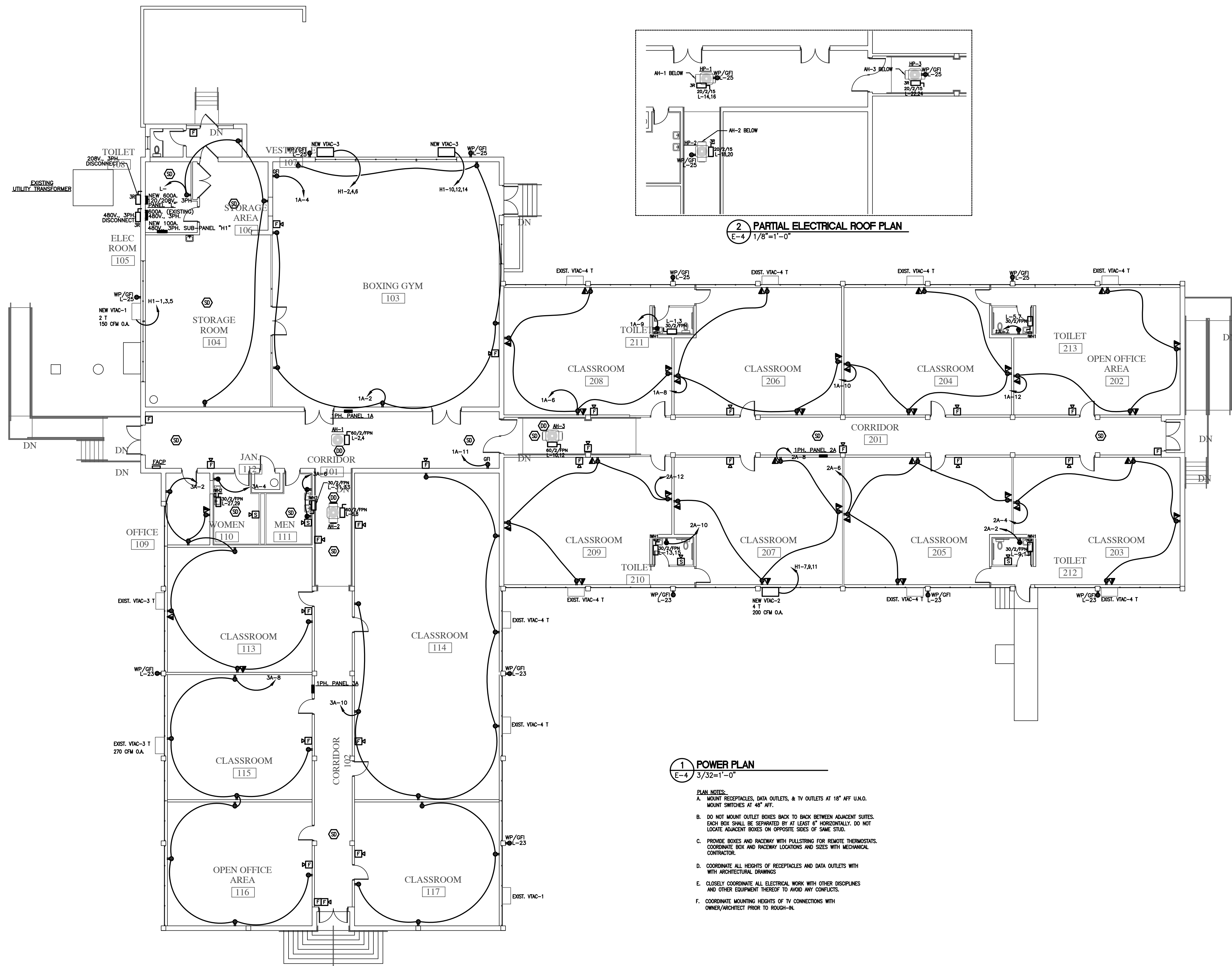
- KEYED NOTES:**
- 1 EXISTING LIGHTS SHALL REMAIN THIS AREA. CLEAN, RE-LAMP AND INSPECT LIGHTS FOR FULLY FUNCTIONAL OPERATIONAL. INSTALL NEW EMERGENCY WALL PACKS AS REQUIRED IN EACH SPACE.

REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
HARNETT COUNTY
695 SHAWTOWN ROAD
LILLINGTON, NORTH CAROLINA

Project No:
2018-009
Scale:
Date Drawn: 1/29/19
Sheet Title

LIGHTING PLAN



2 PARTIAL ELECTRICAL ROOF PLAN
E-4 1/8"=1'-0"

1 POWER PLAN
E-4 3/32"=1'-0"

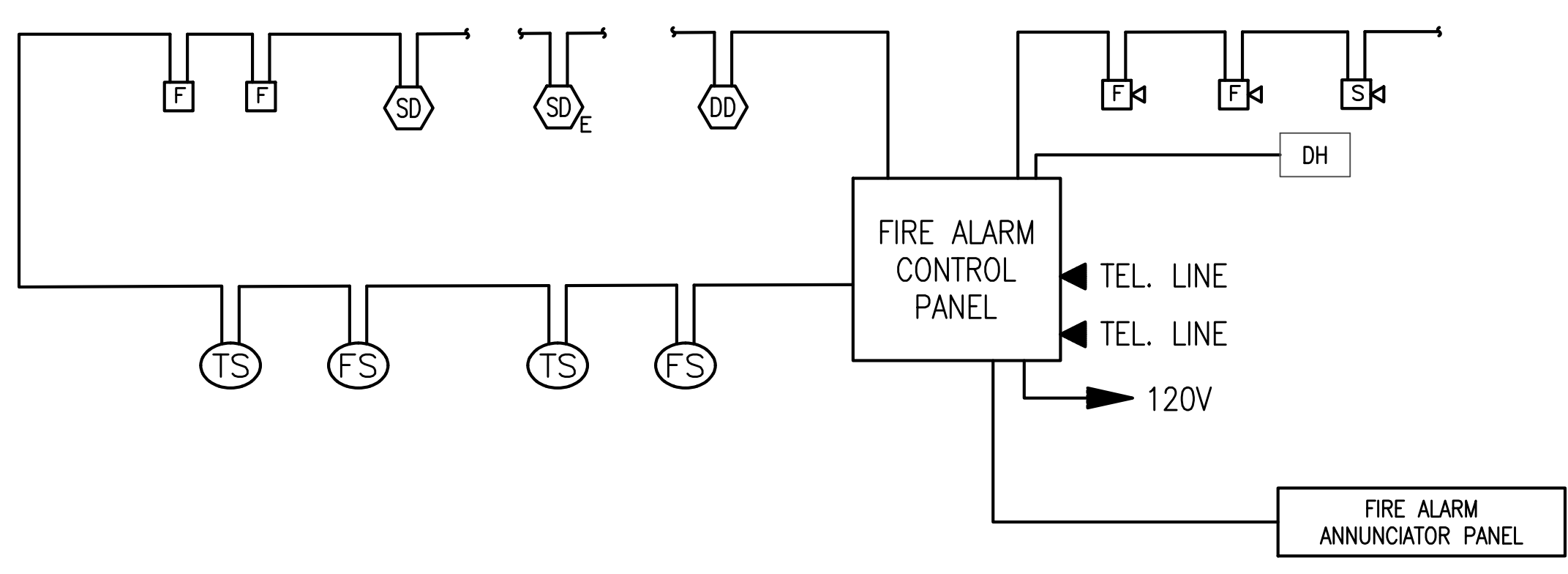
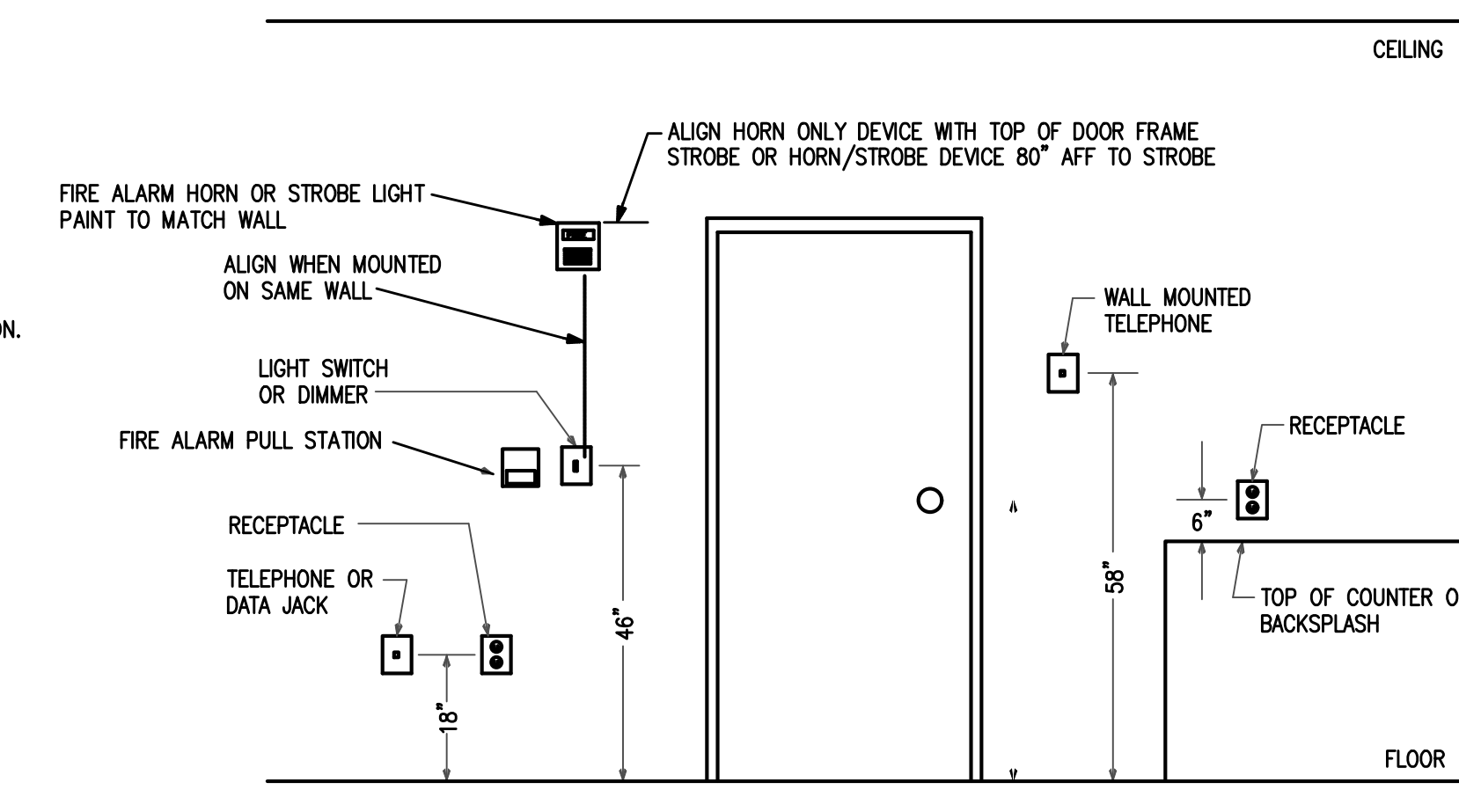
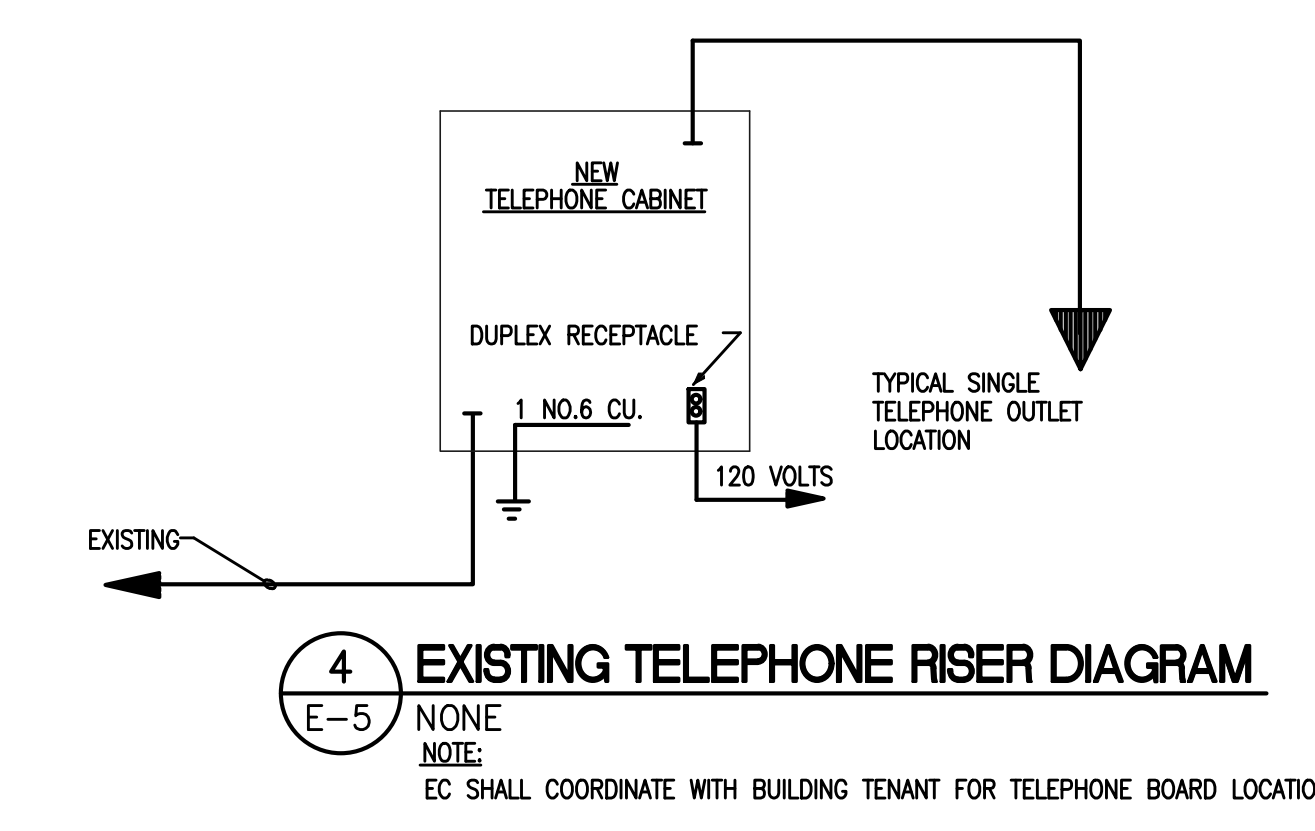
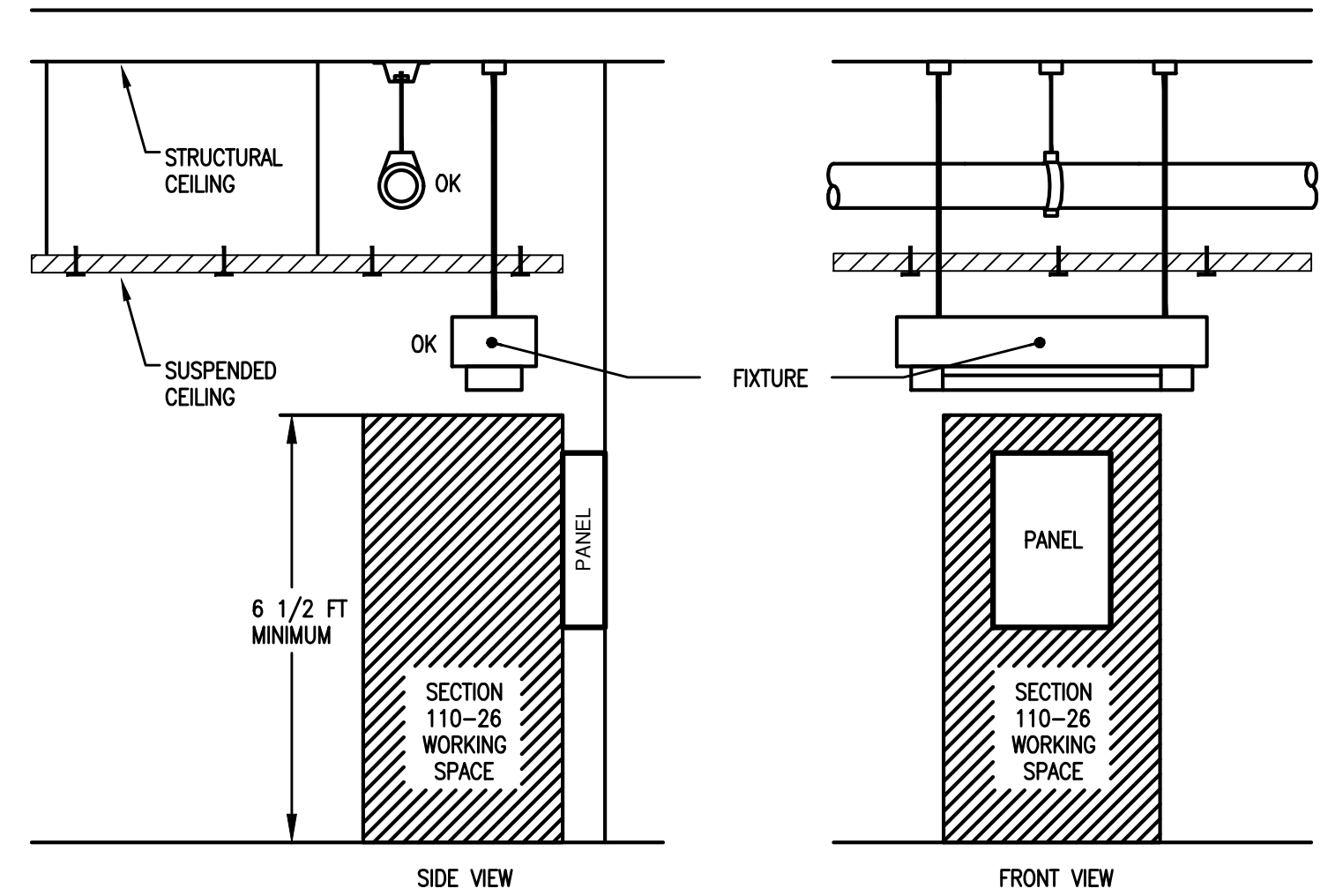
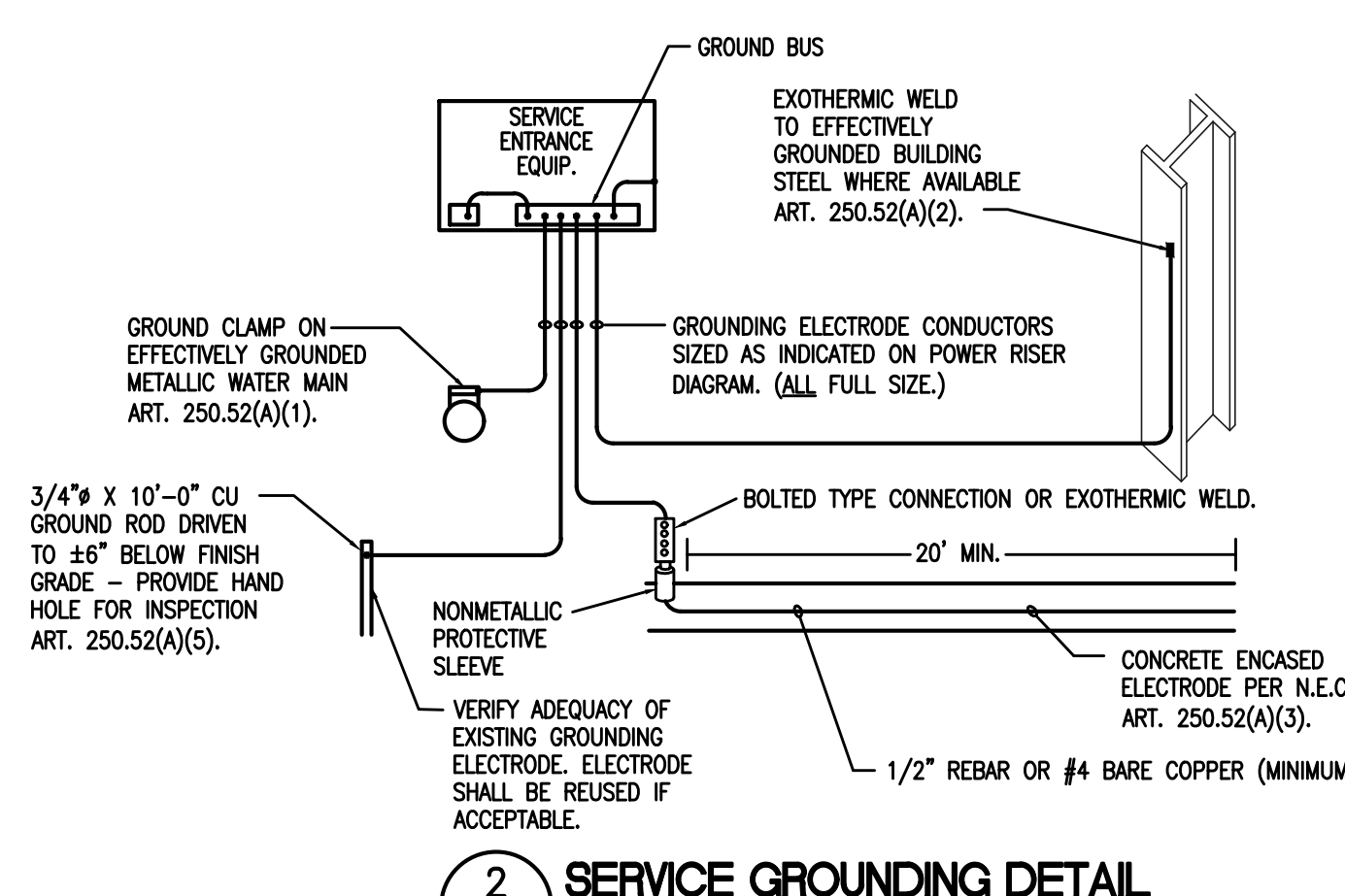
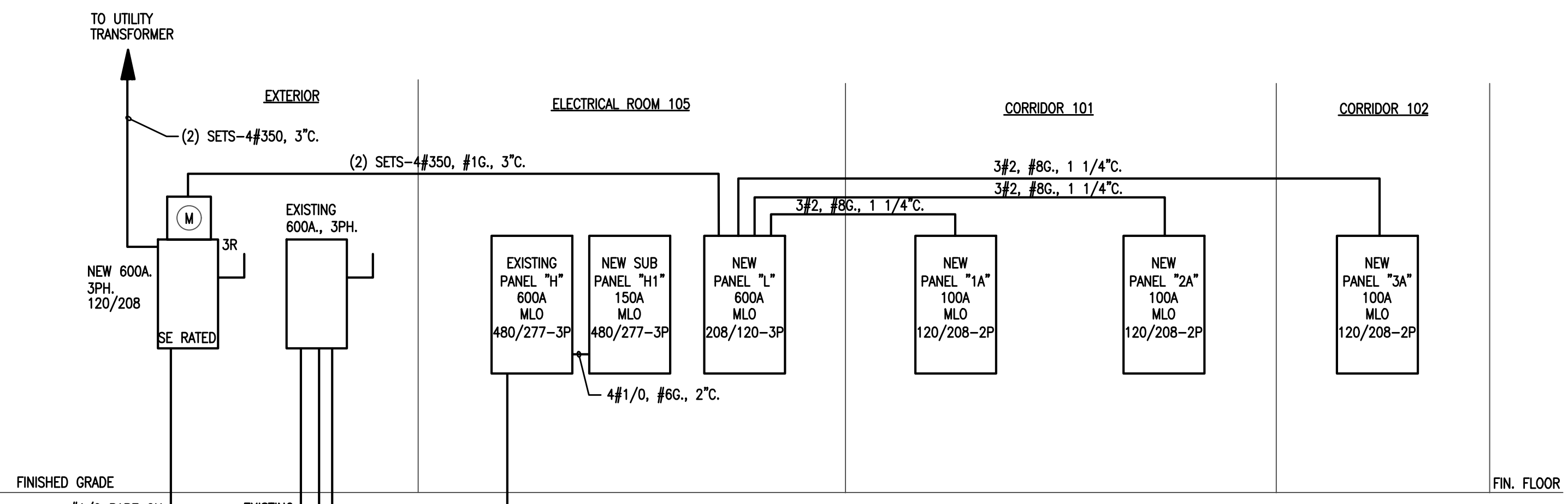
- PLAN NOTES:
- MOUNT RECEPTACLES, DATA OUTLETS, & TV OUTLETS AT 18" AFF UNL.O. MOUNT SWITCHES AT 48" AFF.
 - DO NOT MOUNT OUTLET BOXES BACK TO BACK BETWEEN ADJACENT SUITES. EACH BOX SHALL BE SEPARATED BY AT LEAST 6" HORIZONTALLY. DO NOT LOCATE ADJACENT BOXES ON OPPOSITE SIDES OF SAME STUD.
 - PROVIDE BOXES AND RACEWAY WITH PULLSTRING FOR REMOTE THERMOSTATS. COORDINATE BOX AND RACEWAY LOCATIONS AND SIZES WITH MECHANICAL CONTRACTOR.
 - COORDINATE ALL HEIGHTS OF RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL DRAWINGS.
 - CLOSELY COORDINATE ALL ELECTRICAL WORK WITH OTHER DISCIPLINES AND OTHER EQUIPMENT THEREOF TO AVOID ANY CONFLICTS.
 - COORDINATE MOUNTING HEIGHTS OF TV CONNECTIONS WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.

REVISIONS	
NO.	DATE

A RENOVATION FOR:
SHAWTOWN SCHOOL
 HARNETT COUNTY
 695 SHAWTOWN ROAD
 LILLINGTON, NORTH CAROLINA

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POWER PLAN

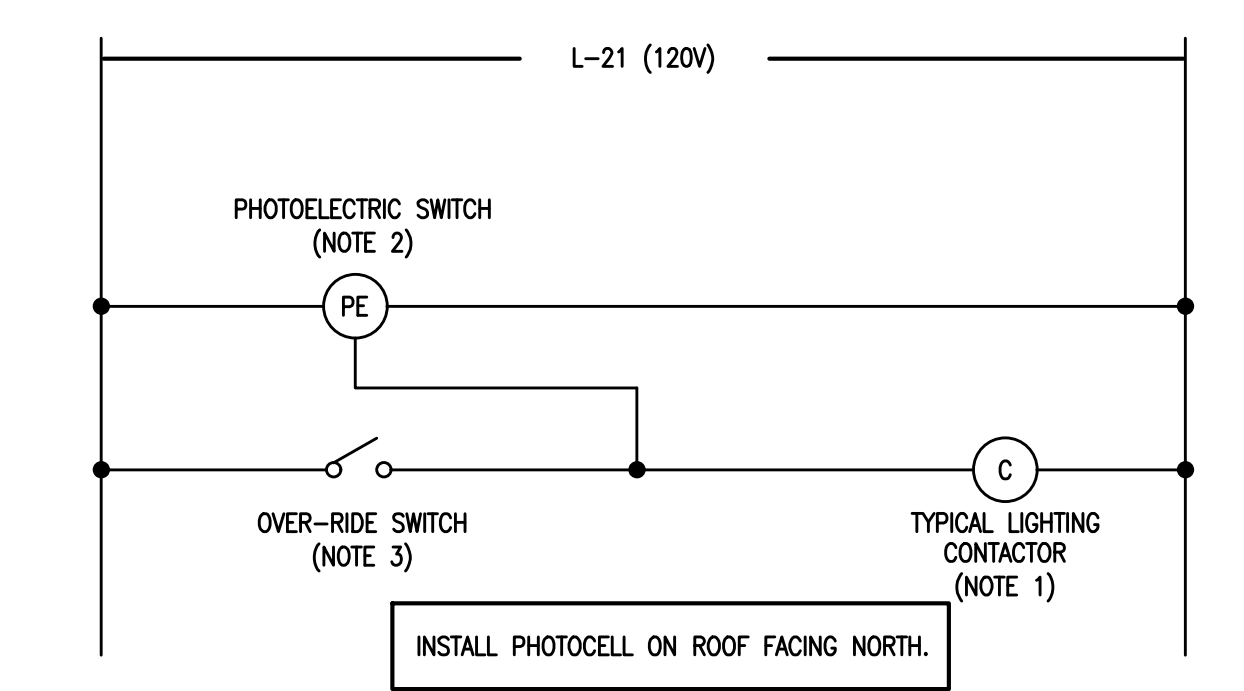


- GENERAL NOTES**
- FIRE ALARM SYSTEM SHALL BE ADDRESSABLE, 24V DC, POWER LIMITED, FULLY SUPERVISED, WITH 24 HOUR STANDBY BATTERY. PANEL TO BE SURFACE MOUNTED. SYSTEM SHALL HAVE MINIMUM 25% SPARE CAPACITY.
 - FIRE ALARM DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH NFPA 72 AND 'ADA'.
 - ALL FIRE ALARM WIRING SHALL BE PLENUM RATED WHERE REQUIRED.
 - ELECTRICAL CONTRACTOR SHALL PROVIDE A FIRE ALARM LAYOUT PLAN AT THE FACP AND THE ANNUNCIATOR PANEL IN THE LOBBY.
 - ELECTRICAL CONTRACTOR TO PROVIDE AUTHORITY HAVING JURISDICTION WITH FIRE ALARM SYSTEM INSTALLATION PLANS FOR FINAL APPROVAL, PRIOR TO INSTALLATION.
 - PERFORM BATTERY CALCULATIONS AND SUBMIT CALCULATIONS.
 - ALL STROBES SHALL BE SYNCHRONIZED.
 - AS PER 2006 NCBC 907.9.1.3 THE FIRE ALARM SYSTEM SHALL HAVE THE CAPABILITY TO BE ACTIVATED BY MANUAL ALARM PULL, THE MAIN FIRE ALARM PANEL, OR BY ANY SMOKE DETECTOR WITHIN A SLEEPING AREA.
 - NOTIFICATION APPLIANCE CIRCUIT TO PROVIDE SYNCHRONIZATION OF STROBES AT A RATE OF 1Hz AND OPERATES HORNS WITH A PULSE 3 TEMPORAL CODE PATTERN. THE CAPABILITY TO SYNCHRONIZE MULTIPLE NOTIFICATION APPLIANCE CIRCUITS SHALL BE PROVIDED.

BRANCH CIRCUIT SUPPLYING FACP SHALL MEET THE NEC 760.41(B): BRANCH CIRCUIT SUPPLYING THE FIRE ALARM EQUIPMENT SHALL SUPPLY NO OTHER LOADS. THE LOCATION OF THE BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT. THE CIRCUIT DISCONNECTING MEANS SHALL HAVE RED IDENTIFICATION, SHALL BE ACCESSIBLE ONLY TO QUALIFIED PERSONNEL, AND SHALL BE IDENTIFIED AS 'FIRE ALARM CIRCUIT.' THE RED IDENTIFICATION SHALL NOT DAMAGE THE OVERCURRENT PROTECTIVE DEVICES OR OBSCURE THE MANUFACTURER'S MARKINGS.

FIRE ALARM SYSTEM SCHEDULE	
DEVICE TYPE AND LOCATION	ACTION
1ST FLOOR PULL STATIONS	1
1ST FLOOR SMOKE DETECTORS	1
DUCT SMOKE DETECTORS	1,2
TROUBLE SIGNAL FROM ANY DEVICE	6

- ACTION NOTES**
- ALARM INPUTS FROM MANUAL PULL STATIONS, SMOKE DETECTORS, OR DUCT DETECTORS SHALL ACTIVATE AUDIBLE/VISUAL SIGNALS IN THE BUILDING, AND CAUSE APPROPRIATE RESPONSE OF CONTROLLED FUNCTIONS(DOOR HOLDERS/FIRE DOORS, ETC.). FACP SHALL USE DIGITAL DIALER TO REPORT TO ULL LISTED CENTRAL MONITORING STATION. MONITORING STATION REQUIREMENTS SHALL BE COORDINATED WITH OWNER AS REQUIRED.
 - ALARM INPUT SHALL CAUSE COMMON AREA AIR HANDLERS TO SHUT DOWN.
 - ELEVATOR SHALL BE RETURNED TO 1ST FLOOR.
 - ELEVATOR SHALL BE RETURNED TO 2ND FLOOR.
 - ELEVATOR BREAKER SHUNT TRIP DEVICE SHALL BE ACTIVATED UPON CONFIRMATION FROM ELEVATOR CONTROLLER THAT ELEVATOR IS STOPPED AT EXIT FLOOR AND DOORS HAVE OPENED.
 - BUZZER SHALL SOUND AT FACP ONLY AND CENTRAL MONITORING STATION SHALL BE ALERTED TO TROUBLE.



- NOTES:**
- 30A, MULTI-POLE, ELECTRICALLY HELD WITH 120V COIL, 600V LINE CONTACTS AND NEMA 1 ENCLOSURE.
 - PHOTOELECTRIC SWITCH SHALL BE 20A, 120V, SPST. MOUNT OUTDOORS AND SHIELD FROM ARTIFICIAL LIGHT SOURCES.
 - LOCATE OVER-RIDE SWITCH IN THE ELECTRICAL ROOM NEXT TO LIGHTING CONTACTOR. COORDINATE EXACT LOCATION WITH OWNER.
 - THE POOL WATER AND POOL DECK LIGHTS TO BE SWITCHED BY TIME CLOCK

REVISIONS	
NO.	DATE

EXISTING PANELBOARD SCHEDULE												H				
VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF							
277 / 480	3	4	0	600	65K	SURFACE	-	-	-							
TYPE LEGEND												REMARKS				
L	LIGHTING	K		KITCHEN EQ		PROVIDE EQUIPMENT GROUND BUS										
R	RECEPTACLES	E		EXISTING		PROVIDE FEED THRU AND/OR SUB FEED LUGS FOR MULTI-SECTION PANELS										
M	MECH EQUIP	O		OTHER												
CKT. #	ITEM SERVED	TYPE	WIRE	CONDUIT	CKT. BRK	LOAD (VA)	PHASE	LOAD (VA)	CKT. BRK	CONDUIT	WIRE	TYPE	ITEM SERVED	CKT. #		
1	EXISTING SPARE	-	-	-	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 2	2	
3	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	4	
5	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	6	
7	EXISTING UNIT 3	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 4	8	
9	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	10	
11	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	12	
13	EXISTING UNIT 5	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 6	14	
15	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	16	
17	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	18	
19	EXISTING UNIT 1	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 8	20	
21	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	22	
23	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	24	
25	EXISTING UNIT 9	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 10	26	
27	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	28	
29	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	30	
31	EXISTING UNIT 11	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 12	32	
33	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	34	
35	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	36	
37	EXISTING UNIT 13	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 15	38	
39	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	40	
41	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	42	
43	EXISTING UNIT 14	M	#10	3/4"	30A	3	A	7756	3	30A	3/4"	#10	M	EXISTING UNIT 16	44	
45	-	-	-	-	-	-	B	7756	-	-	-	-	-	-	46	
47	-	-	-	-	-	-	C	7756	-	-	-	-	-	-	48	
49	NEW SUB-PANEL "H1"	M	#10	2"	150A	3	A	24858	3	30A	3/4"	#10	M	EXISTING UNIT 17	50	
51	-	-	-	-	-	-	B	28808	B	7756	-	-	-	-	52	
53	-	-	-	-	-	-	C	28808	C	7756	-	-	-	-	54	
CONNECTED LOAD (VA)				A	B	C	TOTAL									
				148954	152904	152904	454762									
TYPE	LOAD (VA)	SUBLOADS (VA)	CONN	SIZING	SIZING	NOTES										
LIGHTING	0	-	-	0	125%	0	* 1ST 10KVA @ 100%, REMAINING @ 50%									
RECEPTACLES	0	-	-	0	*	0	** SIZE FAC. IN ACCORDANCE WITH NEC 220.56									
MECH EQUIP	454762	-	-	454762	100%	454762										
KITCHEN EQ	0	-	-	0	100%	0										
# OF KITCH EQ	0	-	-	0		0										
EXISTING	0	-	-	0	125%	0										
OTHER	0	-	-	0	100%	0										
CONNECTED TOTAL (VA)				454762		SIZING TOTAL (VA)										
CONNECTED AMPACITY (A)				546.99		SIZING AMPACITY (A)										
DEMAND TOTAL (VA)				454762		SIZING AMPACITY (A)										
DEMAND AMPACITY (A)				546.99		SIZING AMPACITY (A)										

PANELBOARD SCHEDULE												1A				
VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF							
120 / 208	1	3	0	100	22K	RECESSED	SQUARE D	-	-							
TYPE LEGEND												REMARKS				
L	LIGHTING	K		KITCHEN EQ		PROVIDE EQUIPMENT GROUND BUS										
R	RECEPTACLES	E		EXISTING		PROVIDE FEED THRU AND/OR SUB FEED LUGS FOR MULTI-SECTION PANELS										
M	MECH EQUIP	O		OTHER												
CKT. #	ITEM SERVED	TYPE	WIRE	CONDUIT	CKT. BRK	LOAD (VA)	PHASE	LOAD (VA)	CKT. BRK	CONDUIT	WIRE	TYPE	ITEM SERVED	CKT. #		
1	Lights-Storage 104	L	#12	3/4"	20A	1	636	A	1080	1	20A	3/4"	#12	R	Recepts.-Boxing Gym 103	2
3	Lights-Boxing Gym 103	L	#12	3/4"	20A	1	1484	B	180	1	20A	3/4"	#12	R	Recepts.-Boxing Gym 103	4
5	Lights-Corridor 101L	L	#12	3/4"	20A	1	558	A	720	1	20A	3/4"	#12	R	Recepts.-Office 208	6
7	Recept.-Toilet 213	R	#12	3/4"	20A	1	180	B	720	1	20A	3/4"	#12	R	Recepts.-Office 206	8
9	Recept.-Toilet 211	R	#12	3/4"	20A	1	180	A	720	1	20A	3/4"	#12	R	Recepts.-Office 204	10
11	Spare	-	-	-	20A	1	-	B	720	1	20A	3/4"	#12	R	Recepts.-Office 202	12
13	Spare	-	-	-	20A	1	-	A	1	20A	-	-	-	-	Spare	14
15	Spare	-	-	-	20A	1	-	B	1	20A	-	-	-	-	Spare	16
17	Spare	-	-	-	20A	1	-	A	1	20A	-	-	-	-	Spare	18
19	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-	20
21	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	22
23	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-	24
25	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	26
27	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-	28
29	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	30
CONNECTED LOAD (VA)				A	B	TOTAL										
				3894	6484	10378										
TYPE	LOAD (VA)	SUBLOADS (VA)	CONN	SIZING	SIZING	NOTES										
LIGHTING	2678	-	-	2678	125%	3348	* 1ST 10KVA @ 100%, REMAINING @ 50%									
RECEPTACLES	4500	-	-	4500	*	4500	** SIZE FAC. IN ACCORDANCE WITH NEC 220.56									
MECH EQUIP	0	-	-	0	100%	0										
KITCHEN EQ	0	-	-	0	100%	0										
# OF KITCH EQ	0	-	-	0		0										
EXISTING	0	-	-	0	125%	0										
OTHER	0	-	-	0	100%	0										
CONNECTED TOTAL (VA)				7178		SIZING TOTAL (VA)										
CONNECTED AMPACITY (A)				34.51		SIZING AMPACITY (A)										
DEMAND TOTAL (VA)				7178		SIZING AMPACITY (A)										
DEMAND AMPACITY (A)				34.51		SIZING AMPACITY (A)										

PANELBOARD SCHEDULE												H1					
VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF								
277 / 480	3	4	0	150	65K	SURFACE	-	-	-								
TYPE LEGEND												REMARKS					
L	LIGHTING	K		KITCHEN EQ		PROVIDE EQUIPMENT GROUND BUS											
R	RECEPTACLES	E		EXISTING		PROVIDE FEED THRU AND/OR SUB FEED LUGS FOR MULTI-SECTION PANELS											
M	MECH EQUIP	O		OTHER													
CKT. #	ITEM SERVED	TYPE	WIRE	CONDUIT	CKT. BRK	LOAD (VA)	PHASE	LOAD (VA)	CKT. BRK	CONDUIT	WIRE	TYPE	ITEM SERVED	CKT. #			
1	NEW VTAC-1	M	#12	3/4"	20A	3	A	4986	A	8033	3	30A	3/4"	#10	M	NEW VTAC-3	2
3	-	-	-	-	-	-	B	4986	B	8033	-	-	-	-	-	4	
5	-	-	-	-	-	-	C	4986	C	8033	-	-	-	-	-	6	
7	NEW VTAC-2	M	#10	3/4"	30A	3	A	7756	A	8033	3	30A	3/4"	#10	M	NEW VTAC-3	8
9	-	-	-	-	-	-	B	7756	B	8033	-	-	-	-	-	10	
11	-	-	-	-	-	-	C	7756	C	8033	-	-	-	-	-	12	
13	-	-	-	-	-	-	A	0	A	0	-	-	-	-	-	14	
15	-	-	-	-	-	-	B	0	B	0	-	-	-	-	-	16	
17	-	-	-	-	-	-	C	0	C	0	-	-	-	-	-	18	
19	-	-	-	-	-	-	A	0	A	0	-	-	-	-	-	20	
21	-	-	-	-	-	-	B	0	B	0	-	-	-	-	-	22	
23	-	-	-	-	-	-	C	0	C	0	-	-	-	-	-	24	
25	-	-	-	-	-	-	A	0	A	0	-	-	-	-	-	26	
27	-	-	-	-	-	-	B	0	B	0	-	-	-	-	-	28	
29	-	-	-	-	-	-	C	0	C	0	-	-	-	-	-	30	
CONNECTED LOAD (VA)				A	B	C	TOTAL										
				28808	28808	28808	86424										
TYPE	LOAD (VA)	SUBLOADS (VA)	CONN	SIZING	SIZING	NOTES											
LIGHTING	0	-	-	0	125%	0	* 1ST 10KVA @ 100%, REMAINING @ 50%										
RECEPTACLES	0	-	-	0	*	0	** SIZE FAC. IN ACCORDANCE WITH NEC 220.56										
MECH EQUIP	86424	-	-	86424	100%	86424											
KITCHEN EQ	0	-	-	0	100%	0											
# OF KITCH EQ	0	-	-	0		0											
EXISTING	0	-	-	0	125%	0											
OTHER	0	-	-	0	100%	0											
CONNECTED TOTAL (VA)				86424		SIZING TOTAL (VA)											
CONNECTED AMPACITY (A)				103.95		SIZING AMPACITY (A)											
DEMAND TOTAL (VA)				86424		SIZING AMPACITY (A)											
DEMAND AMPACITY (A)				103.95		SIZING AMPACITY (A)											

PANELBOARD SCHEDULE												2A		
VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF					
120 / 208	1	3	0	100	22K	RECESSED	SQUARE D	-	-					
TYPE LEGEND												REMARKS		
L	LIGHTING	K		KITCHEN EQ		PROVIDE EQUIPMENT GROUND BUS								
R	RECEPTACLES	E		EXISTING		PROVIDE FEED THRU AND/OR SUB FEED LUGS FOR MULTI-SECTION PANELS								
M	MECH EQUIP	O</												

