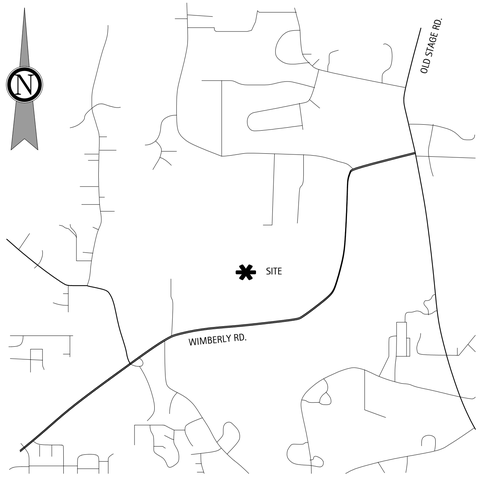
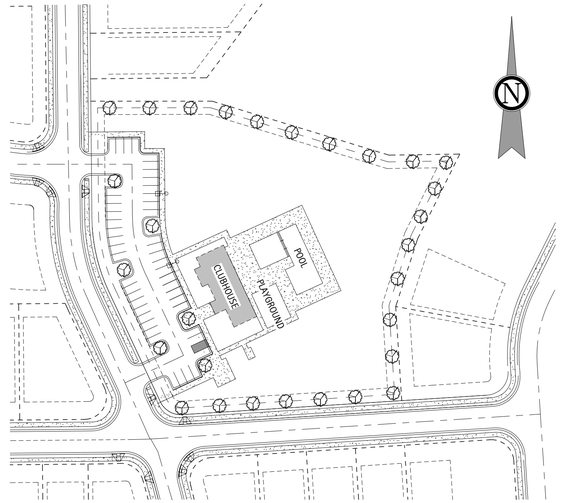
WIMBERLY AMENITY

ANGIER, NC 27501



VICINITY MAP



SITE MAP

PulteGroup

DRAWING INDEX

SHEET NUMBER	SHEET NAME	REV 01	REV 02	REV 03	REV 04	REV 05
0-GENERAL						
G0.1	COVER SHEET	09/30/25				
G0.2	BUILDING CODE SUMMARY					
G0.3	LIFE SAFETY PLAN					
G0.4	GENERAL NOTES					
1-ARCHITECTURAL						
A1.0	FOUNDATION PLAN					
A1.1	MAIN LEVEL PLAN					
A1.2	REFLECTED CEILING PLAN					
A1.3	ROOF PLAN					
A2.0	EXTERIOR ELEVATIONS					
A2.1	EXTERIOR ELEVATIONS					
A3.0	BUILDING SECTIONS					
A3.1	BUILDING & WALL SECTIONS					
A4.0	ENLARGED PLANS & DETAILS	09/30/25				
A5.0	GENERAL BUILDING DETAILS					
A6.0	SCHEDULES & DETAILS					
A7.0	POOL FURNITURE PLAN					
10-STRUCTURAL PLANS						
S1	SLAB AND FOUNDATION PLAN					
S2	CEILING FRAMING PLAN					
S3	ROOF FRAMING PLAN					
S4	STRUCTURAL NOTES & DETAILS					
13-PLUMBING PLANS						
P1	PLUMBING NOTES & SCHEDULES					
P2	PLUMBING PLANS & RISERS					
15-MECHANICAL						
M1	MECHANICAL PLAN					
16-ELECTRICAL						
E1	ELECTRICAL NOTES & SCHEDULES					
E2	LIGHTING PLAN					
E3	POWER PLAN					
E4	POWER RISER & PANEL SCHEDULE					
17-POOL						
SP1.0	DIMENSION AND CONTROL JOINT PLAN	09/29/25				
SP2.0	OVERALL POOL LAYOUT	09/29/25				
SP3.0	PIPING & ELECTRICAL PLAN	09/29/25				
SP4.0	SECTIONS & DETAILS					
SP4.1	SECTIONS & DETAILS					
SP5.0	SPECIFICATIONS	09/29/25				
SP5.1	SPECIFICATIONS					
SP5.2	SPECIFICATIONS					

Kilian Engineering, Inc.
115 YOUNG STREET - HENDERSON, NC 27536
P: 252.438.8778
KILIANENGINEERING.COM

ROSS LINDEN ENGINEERS PC
709 W. JONES STREET - RALEIGH, NC 27603
TEL 919.832.5680 FAX 919.832.5675
INFO@ROSSLINDEN.COM

D.CLUGSTON
2506 RELIANCE AVE. APEX, NC 27539
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Perry Cox architect, p.a.
207 Hudson Avenue, Apex, NC 27502
P: 919.363.5411
www.pcoxdesign.com

D.CLUGSTON

PERRY GLENN COX — LICENSED ARCHITECT — 8058 — NORTH CAROLINA — APEX, N.C. — 09/29/25

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE
1	HEALTH COM.	09/29/25

PROJECT #: 2023048
DATE ISSUED: 02/17/2025
DRAWING BY: LBG
CHECKED BY: PGC/JGM
100% I.F.P.

COVER SHEET

G0.1

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APPENDIX B BUILDING CODE SUMMARY

FOR ALL COMMERCIAL PROJECTS

Name of Project: Wimberly Amenity
Address: Angier, NC Zip Code: 27501
Owner or Authorized Agent: John Moxley Phone #: 919-691-1170
Email: john@dclugston.com Fax #:
Owned By: ■ Privately ☐ City/County ☐ State
Code Enforcement Jurisdiction: ☐ City ☐ County ■ City/County
Name of Jurisdiction: City of Angier / Harnett County

PROJECT SUMMARY: A-3 New Building

Building Description: A-3, Bathhouse with sesonal dusk to dawn pool, and pool equipment rooms

Scope of Work: New Building full scope of architectural, structural, plumbing, mechanical,electrical, and pool plans

Lead Design Professional/Project Coordinator: John Moxley 919-691-1170

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #
Architectural:	Perry Cox Architect, PA	Perry Cox, AIA	9630	919-393-5411
Civil:				
Electrical:	Kilian Engineering	Jacob L. Hamilton	048012	252-438-8778
Fire Alarm:				
Plumbing:	Kilian Engineering	Jacob L. Hamilton	048012	252-438-8778
Mechanical:	Kilian Engineering	Jacob L. Hamilton	048012	252-438-8778
Sprinkler-Standpipe				
Structural:	Ross Linden Engineers	Brian Ross, PE	25539	919-832-5680
Precast:				
Trusses:	Truss Builders	Eric A Gilbert, PE	036322	919-467-9988
Retaining Walls >5' High				
Other: Pool:	Kilian Engineering	Jacob L. Hamilton	048012	252-438-8778
Note:				

Building Code: ■ 2018 North Carolina State Building Code (NCSBC) ☐ 2009 North Carolina State Building Code ☐ 2009 NC Rehab ☐ 2006 NC Rehab ☐ 2006 North Carolina Building Code ☐ 2009 Chapter 34 ☐ 2006 Chaper 34 ☐ 1995 Existing Building Code

New Building: ■ New Building ☐ Addition ☐ Shell Building ☐ Alteration to Shell ☐ First Time Interior Completion

Existing Building: ☐ Renovation ☐ Reconstruction ☐ Change of Use Tenant ☐ Interior Completion ☐ Repair ☐ Change of Occupancy ☐ Tenant Alteration ☐ Alteration to Shell

Note: Zoning Review May Be Required for Change of Use or Occupancy

Original Occupancy:
Proposed Occupancy: (A-3) Assembly

OCCUPANCY INFORMATION

Primary Occupancies:

Assembly: ☐ A-1 ☐ A-2 ■ A-3 ☐ A-4 ☐ A-5
Hazardous: ☐ H-1 ☐ H-2 ☐ H-3 ☐ H-4 ☐ H-5
Institutional: ☐ I-1 Condition ☐ 1 ☐ 2 ☐ I-2 Condition ☐ 1 ☐ 2 ☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ I-4
Business: ☐
Educational: ☐
Factory: ☐ F-1 ☐ F-2
Mercantile: ☐
Residential: ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage: ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled ☐ Parking Garage: ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Special Occupancies: ☐ 402 ☐ 403 ☐ 404 ☐ 405 ☐ 406 ☐ 407 ☐ 408 ☐ 409 ☐ 410 ☐ 411 ☐ 412 ☐ 413 ☐ 414 ☐ 415 ☐ 416 ☐ 417 ☐ 418 ☐ 419 ☐ 420 ☐ 421

Mixed Occupancy: ■ No ☐ Yes Separation: ___Hr. Exception:___

☐ Non-Separated Mixed Occupancy (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 Mixed Occupancy (508.3.3) - 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.

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

_____ + _____ +... = _____< 1

ALLOWABLE AREA AND HEIGHT CALCULATIONS

THIS SECTION FOR NEW, ADDITION, CHANGE OF USE, AND INTERIOR COMPLETIONS

Exterior Wall	Actual Length		Open Length		lic Way or	Open Space 30'	
North							
South							
East							
West							
Total		**P**		**F**			**W**

NO INCREASE REQUIRED

INCREASE FRONTAGE _____%
SPRINKLERS _____%
FRONTAGE INCREASE FORMULA ALLOWABLE AREA FORMULA

$I_f = 100(\frac{F}{P} - 0.25)\frac{W}{30}$

BOTH BUILDING AND TENANT MUST BE INDICATED ON CHART BELOW

Story No.	DISCRIP. & USE	BLDG AREA PER STORY (ACTUAL SF)	TABLE 506.2 ALLOWABLE AREA (SF)	AREA FOR INCREASE FRONTAGE	SPRINKLER INCREASE	ALLOWABLE FLOOR AREA	RATE OF ACTUAL/ ALLOWABLE	MAXIMUM BUILDING AREA	SEPARATION RATING REQUIRED
Main Level	A-3	2,918	6000	N/A	N/A	N/A	0.486	6000 SF	N/A

1. Frontage area increases from Section 506.3 are computed thus:
   a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
   b. Total Building Perimeter = _____ (P)
   c. Ratio (F/P) = _____ (F/P)
   d. W = Minimum width of public way = _____ (W)
   e. Percent of frontage increase I = 100 [F/P - 0.25] x W/30 = _____ (%)
2. Unlimited area applicable under conditions of Section 507.
3. Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2)
4. The maximum area of open parking garages must comply with Table 406.5.4
5. Frontage increase is based on the unsprinklered area value in Table 506.2

ALLOWABLE HEIGHT

MOST RESTRICTIVE (GROUP)	ALLOWABLE BUILDING HEIGHT (TABLE 504.3)	INCREASE FOR SPRINKLERS	ACTUAL BUILDING HEIGHT AS SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type VB	Type VB	Type VB	403.3.1
Building Height in Feet	H= 40'-0"	N/A	H= 32'-8"	403.3.1
Building Height in Stories	S= 1	N/A	S= 1	403.3.1

BUILDING DATA

THIS SECTION REQUIRED FOR ALL PROJECTS

Construction Type: ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV-HT ☐ V-A ■ V-B
Mixed construction: ☐ Yes ■ No Types _____
Sprinklers: ☐ Yes ■ No ☐ NFPA 13 ☐ NFPA 13R ☐ Partially Sprinklered ☐ Special Suppression
Standpipes: ☐ Yes ■ No Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ Yes ■ No (Appendix D) ☐ Floor Hazard
Building Height: 32.6 Feet 1 Story
Basement: ☐ Yes ■ No
Mezzanine: ☐ Yes ■ No
High Rise: ☐ Yes ■ No Life Safety Plan Sheet # (if provided): G0.3
Gross Building Area:

FLOOR	EXISTING (SQFT)	NEW (SQFT)	SUB-TOTAL
First Floor	0	2,918	2,918

Area of Project Tenant/Alteration/Renovation: _____
Area of Construction: _____

FIRE PROTECTION REQUIREMENTS

THIS SECTION REQUIRED FOR ALL PROJECTS

Life Safety Plan Sheet #, if Provided G0.3

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D*	RATING PROVIDED (W/ * REDUCTION)	DETAIL # & SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Bearing Walls Exterior							
North		0	0				
East		0	0				
West		0	0				
South		0	0				
Interior Bering walls		0	0				
Nonbearing Walls Exterior							
North		0	0				
East		0	0				
West		0	0				
South		0	0				
Interior Bering walls		0	0				
Structural Frame, including columns, girders, trusses							
Floor construction, including supporting beams and joists. List construction type.		0	0				
Floor Ceiling Assembly		0	0				
Columns Supporting Floors		0	0				
Roof construction, including supporting beams and joists**							
Roof Ceiling Assembly		0	0				
Columns Supporting Roof							
Shafts- Exit Enclosures		N/A	N/A				
Shafts- Other (describe)		N/A	N/A				
Corridor Separation		N/A	N/A				
Occupancy Separation		N/A	N/A				
Party/ Fire Wall Separation		N/A	N/A				
Incidental Use Separation		N/A	N/A				
Dwelling/ sleeping unit Separation		N/A	N/A				
Smoke Barrier Separation Tenant Separation		N/A	N/A				

* Indicate section number permitting reduction
** Indicated if using Table 601 Note C exception

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
N/A			

WALL LEGENDS

THIS SECTION REQUIRED FOR ALL PROJECTS

CHECK IF THE FOLLOWING ARE PRESENT AND INDICATE BY A **WALL LEGEND** ON ALL PLANS

☐ Fire Partitions 708 ☐ Fire Walls 705 ☐ Fire Barriers 706 ☐ Smoke Partitions 710
☐ Smoke Barriers 709 ☐ Shaft Enclosure 707

LIFE SAFETY SYSTEMS REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

Emergency Lighting: ■ Yes ☐ No
Exit Signs: ☐ Yes ☐ No
Fire Alarm: ☐ Yes ■ No
Smoke Detection Systems: ☐ Yes ■ No
Panic Hardware: ■ Yes ☐ No

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet # G0.3

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

EXIT REQUIREMENTS

NUMBER AND ARRANGEMENT OF EXITS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

1. Corridor dead ends (Section 1017.3)
2. Single exits (Section 1015.1; Section 1019.2)
3. Common Path of Egress Travel (Section 1014.3)

FLOOR, ROOM AND/OR SPACE DESIGNATION	MINIMUM NUMBER OF EXITS REQUIRED	MINIMUM NUMBER OF EXITS SHOWN ON PLANS	TRAVEL DISTANCE ALLOWABLE TRAVEL DISTANCE (TABLE 1016.1)	TRAVEL DISTANCE ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	ARRANGEMENT MEANS OF EGRESS REQUIRED DISTANCE BETWEEN EXIT DOORS	ARRANGEMENT MEANS OF EGRESS ACTUAL DISTANCE SHOWN ON PLANS
POOL	2	2	200'-0"	134'-8"	68'-3"	107'-2"
FITNESS ROOM	1	1	75'-0"	69'-0"	N/A	N/A

OCCUPANT LOAD AND EXIT WIDTH

Room Name	Area	Occupancy Load Factor	Occupancy Load Count	Egress Width per Occupant(1005.3) Level	Egress Width per Occupant(1005.3) Stair	Required Width Level	Required Width Stair	Actual Width Shown Level	Actual Width Shown Stair
WOMENS	201 SF	0 SF		0.2					
FAMILY	55 SF	0 SF		0.2					
VESTIBULE	32 SF	0 SF		0.2					
PUMP ROOM	218 SF	300 SF	1	0.2		0.2			
CHEM.	26 SF	300 SF	1	0.2		0.2			
COVERED PORCH	920 SF	15 SF	62	0.2		12.4			
ENTRY	163 SF	0 SF		0.2					
MENS	228 SF	0 SF		0.2					
FITNESS	819 SF	50 SF	17	0.2		3.4		34	
POOL DECK	3386 SF	15 SF	226	0.2		45.2		114	
POOL DECK CLEAR AREA	2435 SF	15 SF	163	0.2		32.6			
POOL	2900 SF	50 SF	58	0.2		11.6			
VESTIBULE	117 SF								
Grand total	11,682 SF		526	2.4		105.6		148	0

1. See Table 1004.1.1 to determine whether net or gross area is applicable
2. Minimum stairway width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1.1)
3. Minimum width of exit passageway (Section 1021.2)
4. The loss of 1 means of egress shall not reduce the available capacity to less than 50% of the total required (Section 1005.1)
5. Assembly occupancies (Section 1025)

ASSEMBLY OCCUPANCY INFORMATION

Name	Type	Occupancy Area	Occupancy Load Factor	Occupancy Load Count	Exit Width (inches)	Exit Quantity
COVERED PORCH	Assembly - Unconcentrated (tables and chairs)	920 SF	15 SF	62	12.4	
FITNESS	Exercise Rooms with Equipment	819 SF	50 SF	17	3.4	
POOL DECK	Swiming Pool Deck	3386 SF	15 SF	226	45.2	
POOL DECK CLEAR AREA	Swiming Pool Deck	2435 SF	15 SF	163	32.6	
POOL	Swimming Pool water surface	2900 SF	50 SF	58	11.6	
Grand total				526	105.2	

PLUMBING FIXTURE REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

USE		WATERCLOSETS Male	WATERCLOSETS Female	WATERCLOSETS Unisex	URINALS	LAVATORIES Male	LAVATORIES Female	LAVATORIES Unisex	RINSE SHOWERS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G										
	NEW	2	3	1	1	2	2	1	1	2	2
Total Required		**3**	**3**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**1**
Total Provided		2	3	1	1	2	2	1	1	2	2

528 PERSONS / 2 = 264 M / 264 F
WATERCLOSETS: 264 MALE / 125 = 3 WC = 2 WC & 1 URINAL
264 FEMALE /65 = 4 WC = 3 WC + 1 UNISEX
LAVATORY: 264 MALE / 200 = 2 LAV. = 2 LAV
264 FEMALE / 200 = 2 LAV. = 2 LAV

STRUCTURAL DESIGN LOADS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

DESIGN LOADS:
Importance Factors: Snow (I_s) _____ Seismic (I_e) _____
Live Loads: Roof _____ psf; Mezzanine _____ psf; Floor _____ psf
Ground Snow Load: _____ psf
Wind Load: Ultimate Wind Speed _____ mph (A
Exposure Category _____

SEISMIC DESIGN CATEGORY: A B
Provide the following Seismic Design Parameters:
Risk Category (Table1604.5)
Spectral Response Accele _____ %g
Site Classification A B
Basic S
Analysis Procedure:
Architectural, Mechanical, Components anchored?

3 4
S_1 _____%g
C D
Field Test Presumptive Historical Data
Bearing Wall Dual w/ Special Moment Frame
Building Frame Dual w/ Intermidiate R/C or Special Steel
Moment Frame Inverted Pendulum
Simplified Equivalent Lateral Force Dynamic
Yes No

LATERAL DESIGN CONTROL: Earthquake Wind

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing Capacity _____ psf
Pile size, type, and capacity _____

SEE STRUCTURAL PLANS

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

THIS SECTION FOR NEW, ADDITION, CHANGE OF USE, AND INTERIOR COMPLETION

Thermal Zone:
Winter Dry Bulb: _____
Summer Dry Bulb: _____

Interior Design Conditions:
Winter Dry Bulb: _____
Summer Dry Bulb: _____
Relative Humidity: _____

Building Heating Load:
Unitary
Description of Unit: _____
Heating Efficiency: _____
Cooling Efficiency: _____
Size Category of Unit: _____
Boiler
Size Category. If oversized, state reason: _____
Chiller
Size Category. If oversized, state reason: _____

List equipment efficiencies: _____

SEE MECHANICAL PLANS

ACCESSIBLE PARKING

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

SEE CIVIL PLANS

ELECTRICAL SUMMARY

THIS SECTION FOR NEW, ADDITION, CHANGE OF USE, AND INTERIOR COMPLETION

SEE ELECTRICAL PLANS

ENERGY SUMMARY

THIS SECTION FOR NEW, ADDITION, CHANGE OF USE, AND INTERIOR COMPLETION

SEE COM-CHECK

SPECIAL APPROVALS

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

TOWN OF ANGIER, HARNETT COUNTY HEALTH DEPARTMENT

COMcheck Software Version 4.1.5.3

Envelope Compliance Certificate

Project Information

Energy Code:	90.1 (2013) Standard
Project Title:	Wimberly Amenity
Location:	Fuquay-Varina, North Carolina
Climate Zone:	4a
Project Type:	New Construction
Vertical Glazing / Wall Area:	18%
Performance Sim. Specs:	EnergyPlus 8.1.0.009 (EPW: USA_NC_Raleigh-Durham.Intl.AP.723060_TMY3.epw)

Construction Site:
Wimberly Road
Angier, NC 27501

Owner/Agent:
Pulte Homes
1005 Merrrion Ave.
Morrisville, NC 27560

Designer/Contractor:
Perry Cox
124 Salem Towne Court
Apex, NC 27502

Building Area	Floor Area
1-Gymnasium : Nonresidential	834

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor$_{alt}$
Floor 1: Slab-On-Grade:Unheated, [Bldg. Use 1 - Gymnasium] (c)	122	---	---	0.730	0.520
Roof 1: Attic Roof with Wood Joists, [Bldg. Use 1 - Gymnasium]	834	42.0	0.0	0.024	0.021
NORTHEAST					
Exterior Wall 4: Wood-Framed, 16" o.c., [Bldg. Use 1 - Gymnasium]	316	15.0	0.5	0.079	0.064
Door 1: Glass (> 50% glazing):Nonmetal Frame, Entrance Door, Perf. Specs.: Product ID PEL-N-00522-00001, SHGC 0.25, PF 1.00, VT 0.46, [Bldg. Use 1 - Gymnasium] (b)	21	---	---	0.290	0.350
SOUTHEAST					
Exterior Wall 3: Wood-Framed, 16" o.c., [Bldg. Use 1 - Gymnasium]	318	15.0	0.5	0.079	0.064
Window 2: Vinyl/Fiberglass Frame:Fixed, Perf. Specs.: Product ID PEL-N-00522-00001, SHGC 0.25, PF 0.16, VT 0.46, [Bldg. Use 1 - Gymnasium] (b)	64	---	---	0.290	0.350
Door 1 copy 1: Insulated Metal, Swinging, [Bldg. Use 1 - Gymnasium]	42	---	---	0.600	0.500
SOUTHWEST					
Exterior Wall 2: Wood-Framed, 16" o.c., [Bldg. Use 1 - Gymnasium]	167	15.0	0.5	0.079	0.064
Semi-Exterior Wall 1: Wood-Framed, 16" o.c., [Bldg. Use 1 - Gymnasium]	250	15.0	0.0	0.081	0.089
NORTHWEST					
Exterior Wall 1: Wood-Framed, 16" o.c., [Bldg. Use 1 - Gymnasium]	345	15.0	0.5	0.079	0.064
Window 1: Vinyl/Fiberglass Frame:Fixed, Perf. Specs.: Product ID PEL-N-00522-00001, SHGC 0.25, PF 0.16, VT 0.46, [Bldg. Use 1 - Gymnasium] (b)	82	---	---	0.290	0.350

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Project Title: Wimberly Amenity Report date: 12/30/24
Data filename: Y:\PULTE GROUP\#2023048 - Pulte - Wimberly Amenity - Angier\00.0 - Revit & CAD Files\COMcheck\ComCheck.cck Page 1 of 10

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2013) Standard requirements in COM*check* Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

D.CLUGSTON

PERRY GLENN COX NORTH CAROLINA REG. 30174 CAROLINA APEX, N.C. 03.04.25

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE

PROJECT #: 2023048
DATE ISSUED: 02/17/2025
DRAWING BY: LBG
CHECKED BY: PGC/JGM
100% I.F.P.

BUILDING CODE SUMMARY

G0.2

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OCCUPANCY SCHEDULE CLUBHOUSE					
Room Number	Room Name	Type	Occupancy		
			Area	Load Factor	Load Count
100	ENTRY	N/A	163 SF	0 SF	
101	COVERED PORCH	Assembly - Unconcentrated (tables and chairs)	920 SF	15 SF	62
102	VESTIBULE	(none)	117 SF		
103	MENS	N/A	228 SF	0 SF	
104	WOMENS	N/A	201 SF	0 SF	
105	FITNESS	Exercise Rooms with Equipment	819 SF	50 SF	17
106	VESTIBULE	N/A	32 SF	0 SF	
107	FAMILY	N/A	55 SF	0 SF	
108	PUMP ROOM	Accessory Storage Areas, Mechanical Equipment Room	218 SF	300 SF	1
109	CHEM.	Accessory Storage Areas, Mechanical Equipment Room	26 SF	300 SF	1
Grand total			2778 SF		81

OCCUPANCY SCHEDULE POOL					
Room Number	Room Name	Type	Occupancy		
			Area	Load Factor	Load Count
PL100	POOL	Swimming Pool water surface	2900 SF	50 SF	58
PL101	POOL DECK CLEAR AREA	Swiming Pool Deck	2435 SF	15 SF	163
PL102	POOL DECK	Swiming Pool Deck	3386 SF	15 SF	226
Grand total			8721 SF		447

POOL DECK NON-ACCESSIBLE AREA
3,386 SQ FT / 15 SQ FT PER PERSON:
226 PEOPLE

8' CLEAR DECK AREA
2,435 SQ FT / 15 SQ FT PER PERSON:
163 PEOPLE

POOL AREA
2,900 SQ FT / 50 SQ FT PER PERSON:
58 PEOPLE

TOTAL A-3 OCCUPANT (INSIDE FENCE) LOAD:
447 PEOPLE

LIFE SAFETY SYMBOL LEGEND	
	EMERGENCY EXIT
FEX	SEMI-RECESSED 'ABC' TYPE FIRE EXTINGUISHER TO MEET NFPA-10 STANDARDS. MOUNT @ 15" MIN. - 48" MAX A.F.F.
FEX-C	BRACKET MOUNTED WATER TYPE FIRE EXTINGUISHER TO MEET NFPA-10 STANDARDS. MOUNT @ 15" MIN. - 48" MAX A.F.F.
-->	INDICATES TRAVEL DIRECTION

GENERAL BUILDING LIFE SAFETY NOTES:

USE: A-3 (ASSEMBLY)
PRIMARY LOAD FACTOR: UNCONCENTRATED TABLES & CHAIRS (15 SF)
OCCUPANT LOAD: 17 PPL
CONSTRUCTION TYPE: V-B
SPRINKLERS: NO

REQUIRED EXITS: 1
PROVIDED EXITS: 1

DIAGONAL DISTANCE: N/A
REQUIRED EXIT SEPARATION: N/A - ONE EXIT REQUIRED
PROVIDED EXIT SEPARATION: N/A

REQUIRED EGRESS WIDTH: 3.4"
PROVIDED EGRESS WIDTH: 34"

MAXIMUM COMMON PATH OF TRAVEL: 75'-0"
MAXIMUM ALLOWABLE TRAVEL DISTANCE: 75'-0"
ACTUAL MAX TRAVEL DISTANCE: 69'-0"

GENERAL POOL LIFE SAFETY NOTES:

USE: A-3 (ASSEMBLY)
PRIMARY LOAD FACTOR: UNCONCENTRATED TABLES & CHAIRS (15 SF)
OCCUPANT LOAD: 447 PPL
CONSTRUCTION TYPE: V-B
SPRINKLERS: NO

REQUIRED EXITS: 2
PROVIDED EXITS: 2

DIAGONAL DISTANCE: 136'-6"
REQUIRED EXIT SEPARATION: 136'-6"/2 = 68' -3"
PROVIDED EXIT SEPARATION: 107'-2"

REQUIRED EGRESS WIDTH: 89.4"
PROVIDED EGRESS WIDTH: 138"

MAXIMUM COMMON PATH OF TRAVEL: 75'-0"
MAXIMUM ALLOWABLE TRAVEL DISTANCE: 200'-0"
ACTUAL MAX TRAVEL DISTANCE: 134'-8"

GENERAL PLUMBING NOTES:

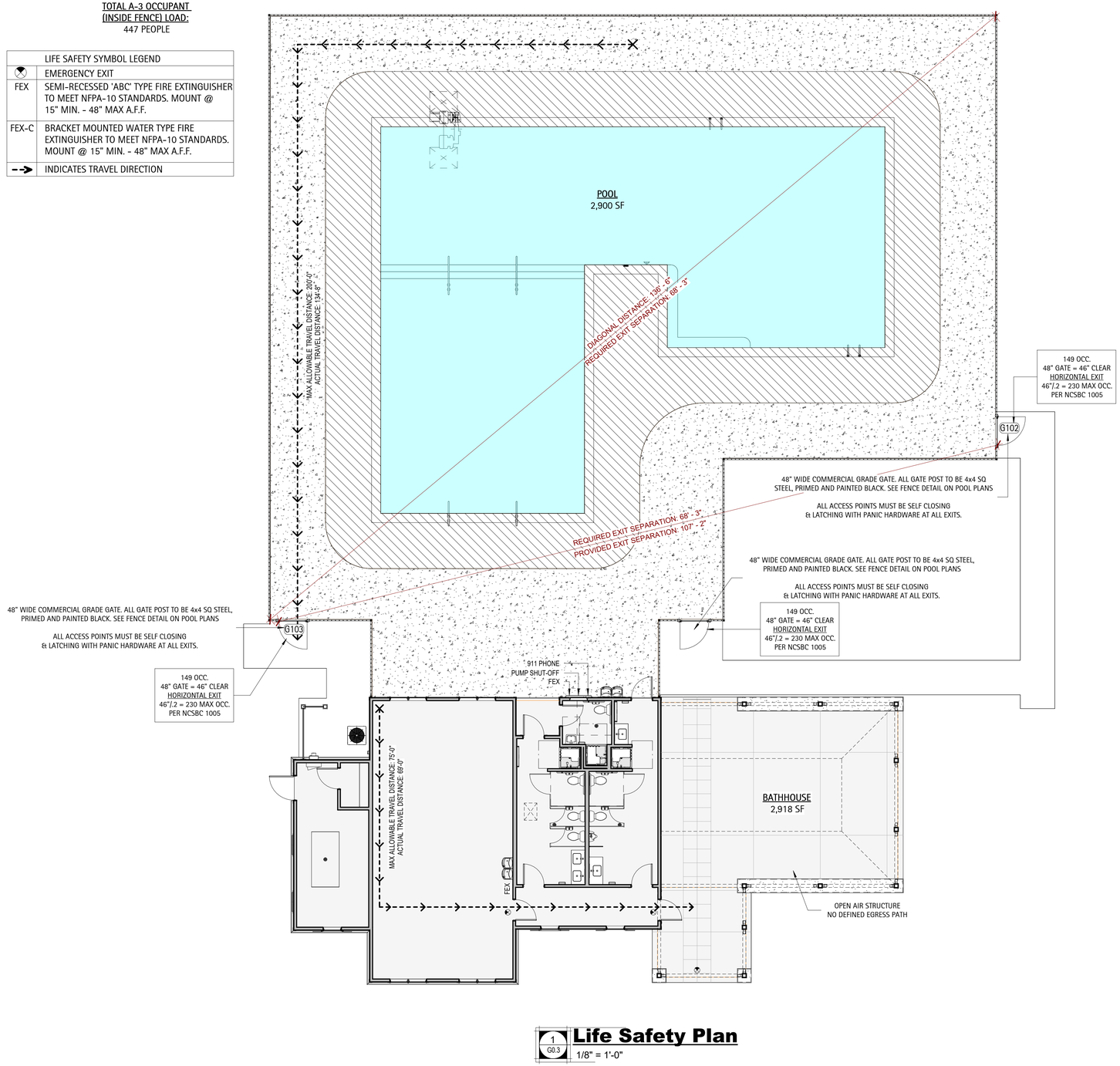
USE: A-3 (ASSEMBLY)
OCCUPANT LOAD: 528 PPL / 2 = 264 PPL

REQUIRED MALE WATER CLOSETS: 3 (1 PER 125 PPL)
REQUIRED FEMALE WATER CLOSETS: 4 (1 PER 65 PPL)
REQUIRED UNISEX WATER CLOSETS: 1 (NCSBC 1109.2.1)
PROVIDED MALE WATER CLOSETS: 2 WC & 1 URINAL
PROVIDED FEMALE WATER CLOSETS: 3 (SUB 1 UNISEX FOR 4TH FEMALE)
PROVIDED UNISEX WATER CLOSETS: 1 (NCSBC 1109.2.1)

REQUIRED MALE LAVATORIES: 2 (1 PER 200)
REQUIRED FEMALE LAVATORIES: 2 (1 PER 200)
REQUIRED UNISEX LAVATORIES: 1
PROVIDED MALE LAVATORIES: 2
PROVIDED FEMALE LAVATORIES: 2
REQUIRED UNISEX LAVATORIES: 1

REQUIRED WATERCOOLERS: 2 (1 PER 500)
PROVIDED WATERCOOLERS: 4

REQUIRED SERVICE SINKS: 1
PROVIDED SERVICE SINKS: 1(HOSE BIB & FLOOR DRAIN)



1 G0.3 **Life Safety Plan**
1/8" = 1'-0"

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02/17/25

WIMBERLY AMENITY
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DATE
REVISION
NO.

PROJECT #: 2023048
DATE ISSUED: 02/17/2025
DRAWING BY: LBG
CHECKED BY: PGC/JGM
100% I.F.P.

LIFE SAFETY PLAN

G0.3

GENERAL NOTES

1 The General Contractor shall be both licensed and bonded in North Carolina and shall provide documents upon the Architect's request.

2 The Work shall be done in accordance with all rules and regulations of the North Carolina State Building Code 2018 along with city, county, and state regulations. The General Contractor is responsible for securing and paying for all permits required for the Work and for the scheduling of all required inspections during the course of the Work.

3 General Contractor shall be responsible for the provisions for job safety. These drawoings do not contain provisions for job safety.

4 Dimensions are to to face of framing unless otherwise noted.

5 Do not scale drawings. Stated & written dimensions govern. The General Contractor shall verify all dimensions in the field and shall be responsible for their accuracy. No extra charge or compensation shall be allowed because of difference between actual dimensions and those indicated on the drawings, unless they contribute to a change in the scope of the Work. Any difference which may be found shall be submitted to the Architect for decision prior to ordering, manufacturing, or proceeding with the Work. Horizontal dimensions indicated are to/from face of finish, unless noted otherwise. Vertical dimensions are from top of floor slab except where noted to be above finished floor (AFF). Dimensions are not adjustable without approval of Architect unless noted +/-.

6 General Contractor shall be responsible for comparing all dimensions in the construction documents and existing conditions in the field.

7 Framing Subcontractor shall coordinated framing with locations of HVAC vents, plumbing and light fixtures so as to avoid conflict.

8 The General Contractor shall provide protection and be responsible for any existing finishes to remain and shall repair or replace any damaged areas as a result of the work. All existing finishes to remain shall be cleaned at the completion of construction.

9 All materials and systems shall be installed as per manufacturer's specifications and all construction shall be of industry standard or better. The Architect shall be ultimate judge of quality.

10 Only new items of recent manufacture, of standard quality, free from defects, will be permitted in the Work, unless otherwise noted. Rejected items shall be removed immediately form the Work and replaced with items of the quality specified. Failure to remove rejected materials and equipment shall not relieve the General Contractor from the responsibility for quality of items used nor from any other obligation imposed on him by the Contract.

11 General Contractor shall be responsible for notifying the Architect immeditely of construction deviating from depicted or implied information here-in. In the event of conflict between data shown on drawings and data shown in the specification, the specification shall govern. Detail drawings take precedent over drawings of larger scope. Should the General Contractor at any time discover an error in a drawing or specification, or any discrepancy, or variation between dimensions on the drawings and measurements at site, or lack of dimensions or other information, the Contractor shall not proceed with the work affected until clarification has been made by the Architect. In case of an inconsistency between Drawings and Specifications or within either Document, not clarified by addendum, the more specific provision will take precedence over less specific; more specific will take precedence over less stringent; more expensive item will take precedence over less expensive. Better quality or greater quantity of Work shall be provided in accordance with Architect's interpretation. On Drawings, figures take precedence over scaled dimensions. Scaling of dimensions, if done, is done at the Contractor's own risk.

12 General Contractor shall verify that no conflicts exist in locations of any and all mechanical, telephone, electrical, plumbing and sprinkler equipment (to include all piping, duct work, sprinklers structural members and conduit) and that clearances for installation and maintenance of above equipment is provided. Elements in conflict shall be determined and reviewed with the Architect prior to work proceeding. Contractor to coordinate new work with existing conditions.

13 The General Contractor shall provide shop drawings for the Architect's review and approval for the following: All shop fabricated millwork, carpet layout, flooring, light fixtures, doors, misc. steel, metal fabrication, glass/glazing, sprinkler layouts, hardware. Shop drawings shall be submitted in the form of 3 sets of prints. Shop drawings shall not be reproductions of Contract Documents. Material Submittals (3 samples) shall be provided for wood, fasteners, acrylic, carpet, tile, base, paint, laminate and any other materials indicated in the shop drawing.

14 The General Contractor shall provide the Architect with manufacturer's cut sheets and specifications for all equipment including but not limited to: light fixtures, plumbing equipment, electrical equipment, fans, supplementary heating and cooling elements, all hardware and security equipment. General contractor shall be responsible for verifying all field dimensions prior to ordering equipment and/or casework.

15 The General Contractor shall not proceed with work for which he expects additional compensation beyond the contract amount with out written authorization from the Architect and Owner. Failure to obtain such authorization shall invalidate a claim for extra compensation. The Contractor shall not proceed with work which, if completed in strict conformance with the Construction Documents, will result in additional work beyond the scope of the Contract without written authorization from the Architect and Owner. Any field conditions that significantly vary from the Contract Documents or will result in additional work, shall be brought to the attention of the Architect prior to proceeding with work.

16 Contractor shall include all x-ray and core drill costs. All core drilling of the slab shall be approved by the Landlord's Structural Engineer prior to proceeding with the Work. Contractor shall submit proposed locations to Architect and Structural Engineer for review prior to proceeding with the work.

17 Patch, repair and install all fireproofing as required by code. Fireproof any new penetrations required by the work.

18 General Contractor to coordinate and review size and location of all slab penetrations. All required penetrations shall be made in accordance with the Owner's standard approval procedures and methods. All penetrations shall be properly sealed according to the Architect and the Owner's requirements and applicable codes.

19 The General Contractor shall continuously check architectural and structural clearances for accessibility of equipment and mechanical and electrical systems. No allowances of any kind will be made for the General Contractor's negligence to foresee means of installing equipment into position.

21 The finished work shall be firm, well-anchored, in true alignment, plumb, level, with smooth, clean, uniform, appearance without waves, distortions, holes, marks cracks, stains, or discoloration. Jointing shall be close fitting, neat and well scribed. The finished work shall have no exposed unsightly anchors or fasteners and shall not present hazardous, unsafe corners. All work shall have the provision for expansion, contraction and shrinkage as necessary to prevent cracks, buckling, and warping due to temperature and humidity conditions.

22 Attachments, connections or fasteners of any nature are to properly and permanently be secured in conformance with best practice and the General Contractor is responsible for improving them accordingly. The drawings highlight special conditions only and by no means illustrate every connection. The Contractor is responsible for improving connection accordingly.

23 General Contractor shall waive "Common Practice" and "Common Usage" as construction criteria wherever details and Contract Documents of governing codes, ordinances, etc. require quantity or better quality than common practice or common usage would require.

GENERAL NOTES

24 The General Contractor shall submit shop drawings and submittals order and schedule delivery of materials in ample time to avoid delays in construction. If an item is found to be unavailable or to have a long lead time, the General Contractor shall notify Architect immediately with a proposed alternative.

25 The General Contractor shall notify the Owner, the Landlord, and the Architect in writing of any deficiencies, errors, conflicts or omissions found in the construction documents and/or specifications prior to the commencement of the work in this area. Any unreported deficiencies will become the responsibility of the General Contractor to correct.

26 The General Contractor shall exercise extreme care and precaution during the construction of the Work, and schedule work, to minimize disturbances to adjacent spaces and /or structures and their occupants, property, public thoroughfares, etc. The General Contractor shall take precautions and be responsible for the safety of all building occupants from construction procedures. The General Contractor shall be responsible for any overtime costs incurred thereby.

27 All debris shall be removed from the site on a daily basis when possible. Upon completion of the work, remove all debris from the building created by the work provided under this Contract and leave all areas clean. Trash is not permitted to be burned on site.

28 All abandoned miscellaneous nails, hangers, staples, wires, conduits and debris shall be removed from the walls and areas of exposed ceilings. Remove all abandoned pipe sleeves in floor slabs. Patch existing slab as req. to maintain UL fire rating of floor slab where pipes and conduits have been removed.

29 Slab penetrations less than 2" around new and existing piping, conduit, ductwork, etc. shall be filled with acoustic foam and/or sealant to ensure acoustical separation between floor slabs. Slab penetrations greater than 2" around new and exiting piping, conduit, ductwork, etc. shall be filled with concrete. All piping, conduit, ductwork, etc. shall be wrapped with expansion material prior to filling with concrete. Expansion material shall be approved by the MEP Engineer.

30 Contractor shall provide the Team with a construction schedule showing the proposed phasing. Any long lead items that will affect the Substantial Completion date shall be brought to the Architect's attention immediately.

31 Provide protection for existing finishes to remain, including restrooms, lobbies and corridors and repair damages as a result of construction. Document any existing conditions or damages prior to the start of construction

32 General Contractor shall be responsible for providing exhaust for dryers, bathrooms, and ranges to exterior with proper terminus (not to be located on street side elevation). Verify terminus type and laction with owner prior to installation.

33 The Architect shall not be responsible for constructed variations from the information contained here-in unless reviewed and approved by Architect.

34 Do not scale drawings, but rather inquire of Architect. Reproduction of these drawings is prohibited unless written permission is obtained from the Architect.

35 All Trades to caulk with Manicapality Approved "Fire Caulk" at all top plate penitrations.

FLOOR FINISH NOTES

1. Refer to Finish Plan & Schedule for extent and type of all floor finishes.
2. GC to flashpatch floor to provide a level surface that shall not exceed 1/4± over 10 feet cumulative. At floor finish transitions flash patch to smooth transition of finished material to maintain level finished floor surface.
3. All floors to slope to floor drains - 1/4" per 1'-0" U.N.O
4. All exterior floor slabs to recieve a light broom concrete finish. U.N.O.
5. SEE STRUCTURAL DRAWINGS FOR ALL FOUNDATION SPECIFICATIONS.

INTERIOR FINISH NOTES

1. Refer to Finish Schedule and Finish Plan for extent and type. All wall surfaces, metal frames, and trim shall be painted, UON. All surfaces to be painted shall be prepared for priming in accordance with the manufacturer's specifications.
2. All painted surfaces shall receive 1 prime and 2 finish coats as follows:
   GWB surfaces - Interior eggshell latex paint
   GWB ceiling surfaces - Interior flat latex paint
   Hollow Metal/Wood - Odorless interior semi-gloss alkyd latex
3. Paint is to be applied by a roller or brush on all surfaces. Only the prime coat may be spray applied. Provide a 12"x12" GWB sample for each color for Owner's approval prior to the start of the Work.
4. Toilet and bathing room floors shall have a smooth, hard, non-absorbant surface that extends upward onto the walls at least 6"
5. Walls within 2' of urinals and waterclosets shall have a smooth, hard, non-absorbant surface to the hieght of 4' above the finish floor. Verify material with room schedule and/or Architect

WALL SECTION NOTES

1 Bituminous Damp Proofing shall be applied to exterior foundations of all habitable spaces.

2 All treated lumber shall bear the designation AWPA C22. Pressure treated lumber shall be used in the following locations:
   a. Wood in contact with concrete or masonry;
   b.Siding within 6" of the ground;
   c. Wood exposed to weather.

4 Install 5/8" Densglass sheathing behind all tub and shower walls, use water-resistant GWB for all bathroom ceilings UNO.

TILE NOTES

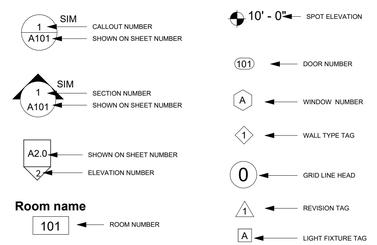
1. Tile shall be installed by a qualified installer with experience in commercial applications. The General Contractor shall submit dimensioned shop drawings showing layout and 3 samples of each type and color of tile and grout selected for review by Architect and in accordance with the Construction Documents. Mount tiles on plywood backing and grout to demonstrate tile patterns.
2. It is the responsibility of the General Contractor to obtain accurate field measurements and to verify dimensions. Any dimensions or field conditions which vary from the design intent of the drawings shall be brought to the attention of the Architect by the General Contractor for review prior to proceeding with work. It is the responsibility of the General contractor to provide all necessary blocking.
3. Tile shall be manufactured in compliance with Standard Grade Requirements of ANSI A137.1. Installation of tile shall be in compliance with requirements set forth in Handbook for Ceramic Tile Installation produced by the Tile Council of America. Provide all necessary caps, stops, returns, trimmers, and other shapes to complete installation (color and finish to match adjacent tile). Provide a quantity equal to 2% of each type and color of tile from same production run as installed material for attic stock.
   a. Floors: Thin set, TCA F122
   b. Walls: Organic adhesive, TCA W242
   c. Expansion Joints: TCA EJ171
   d. Epoxy Adhesive: TCA F116

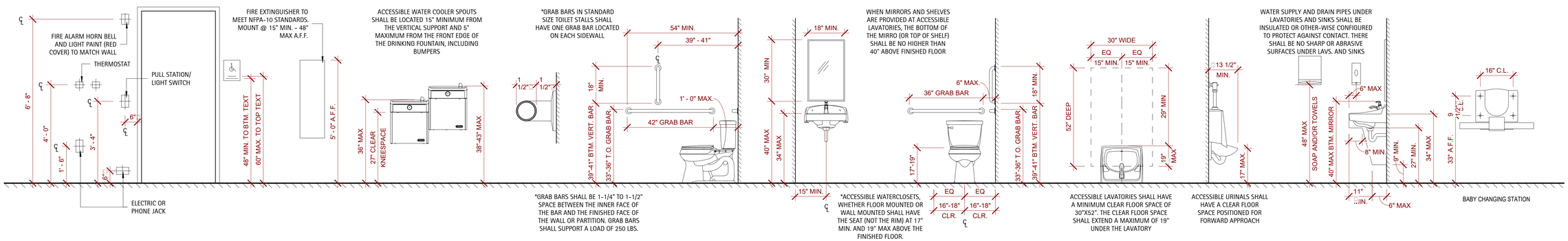
   Ceramic Tile: ANSI A137.1
   Selections: Refer to Schedule of Finishes
   Floor Tile: Unglazed, Wall Tile: Glazed
   Trim Tiles: Furnish type, size, and color, to match field.
   Wainscot Cap: Bullnose
   Base: Cove bottom/Straight top with matching wall tile above
   Inside Corners: Square, Outside Corners: Bullnose
   Jambs: Bullnose where tiles project from jamb.
4. For tile exhibiting color variations, blend tile in factory and package accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. Where factory-mounted tile is required, provide back-face or edge-mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.
5. Natural Stone Tile Marble to meet requirements of ASTM C503 Granite; ASTM C615. Abrasive Resistance: ASTM C241; 12 Ha minimum. Marble Threshold, ASTM C503 to be White Georgia, Imperial Black or Antique Silver and Honed. Refer to Schedule of Finishes for size, finish and thickness.
6. Thin Set Mortar: ANSI A118.1, Commercially prepared dry mixture of Portland cement, inert fillers, and chemical additive. Do not use water-based adhesive setting methods with green-colored stone. General Contractor to obtain setting instructions from supplier. Organic Adhesive: ANSI A136.1; Type 1, High performance, multi-purpose floor and wall adhesive. Epoxy Adhesive: factory prepared, 100% epoxy resin and hardener with sand or mineral filler material to complying with ANSI A118.3 for thin-set applications for chemical resistant, water cleanable quarry tile installations. Grout: Latex portland cement; ANSI A118.6, Commercially prepared dry mixture of portland cement, sand, mineral fillers, and chemical additives.
   Color: Refer to Schedule of Finishes
7. Mix materials and prepare surface in accordance with manufacturer's recommendations. Grind or fill concrete substrates as needed to comply with TCA allowable variations. Areas scheduled to receive tile flooring shall receive membrane application. Crack Isolation Membrane to be one-part elastomeric seamless membrane, 30 mil (cured thickness), and no water permeability as manufactured by Custom or Mapei.
8. Comply with manufacturer's instructions for installation of each material needed as well as ANSI and TCA requirements. Extend tile work into recesses and under or behind equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments. Layout tile work and center tile fields in both directions in each space or on each wall area. Avoid tiles less than one half size. Align joints when adjoining tiles on floor, base, walls and trim that are the same size. Provide uniform joint widths at ceramic tile to be not less than 1/16" or greater than 1/8". Natural Stone Tile to be butt jointed. Where stone tile abuts dismilar flooring materials, provide terrazzo divider strips or other similar metal angle device to help prevent edge chipping caused by impact: Terrazzo Divider Strip or Schluter Trims #E100.
9. Thin Set Application shall be per ANSI A108.5. Organic Adhesive Application shall be per ANSI A108.4. Use Latex portland cement grout conforming to ANSI A108.10. Tile shall be firmly set before grouting, allow a minimum of 48 hours. Remove mortar or adhesive from face and edges of tile.
10. Provide expansion joints as follows: Natural Stone Tile same as grout joint; but not less than 1/4". Ceramic Tile not less than 1/8". Install expansion joints at 24' max. in each direction, where tile work abuts restraining surfaces such as perimeter walls, dissimilar floors, curbs, columns, and pipes, where changes occur in backing materials, at expansion, control, construction, cold and seismic joints in structure. Expansion joints shall be constructed during installation of tile. Do not cut joints after tile installation.
11. Use clean water in initial cleaning. Remove surface laitance with a dry polishing cloth. Do not use acid in final cleaning of tile. Provide a non-yellowing, penetrating sealer on floor ceramic tile which does not leave a film or visible coating. Keep floor areas free from general traffic for at least 72 hours following installation. Protect walls from impact, vibrations and heavy hammering on adjacent and opposite walls.

REFERENCED BUILIDNG CODES

BUILDING:	2018 NORTH CAROLINA STATE BULDING CODE
ENERGY:	2018 NORTH CAROLINA ENERGY CONSERVATION CODE
FIRE:	2018 NORTH CAROLINA FIRE PREVENTION CODE
PLUMBING:	2018 NORTH CAROLINA STATE PLUMBING CODE
MECHANICAL:	2018 NORTH CAROLINA STATE MECHANICAL CODE
ELECTRICAL:	2020 NATIONAL ELECTRICAL CODE
ACCESSIBILITY:	2009 ANSI A117.1
POOL:	2015 INTERNATIONAL SWIMMING POOL AND SPA CODE NCDENR - 15A NCAC 18A.2500

SYMBOLS





TYPICAL MOUNTING HEIGHTS

*PROVIDE REQD' BLOCKING FOR GRAB BARS, WALL HUNG TOILETS, AND ACCESORIES DURING FRAMING

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2/17/25

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	2023048
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GENERAL NOTES

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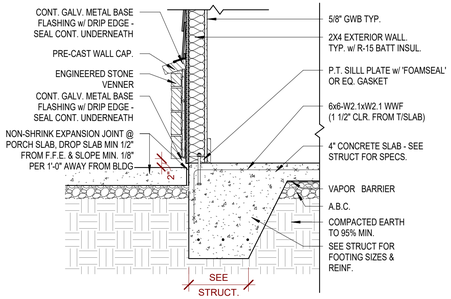
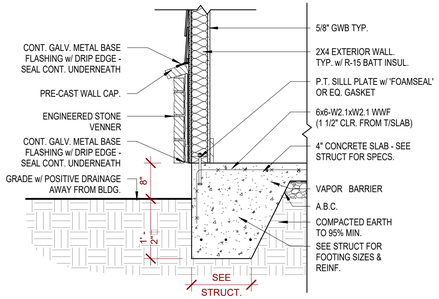


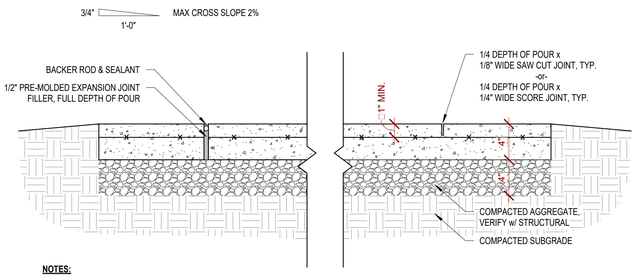
7 A1.0 Detail - Stone Veneer @ Hardscapes

3/4" = 1'-0"



4 A1.0 Detail - Stone Veneer @ Grade

3/4" = 1'-0"

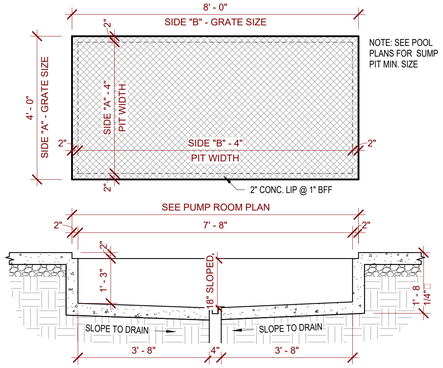


NOTES:

1. ALL JOINTS TO BE CUT w/ WET WALK BEHIND SAW TO ENSURE ALL CUTS ARE PERPENDICULAR W/ FACE OF CONCRETE
2. MAXIMUM CONTROL JOINT SPACING SHALL BE 10 FT. IN EACH DIRECTION UNLESS SHOWN OTHERWISE ON PLAN. SEE STRUCT.
3. PROVIDE EXPANSION JOINT WHERE SLABS ARE POURED AGAINST VERTICAL SURFACES AND/OR DIFFERENT PAVING MATERIALS AND AS SPECIFIED ON PLANS OR 25'-0" MAX O.C.

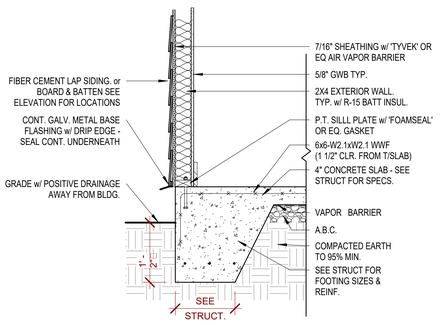
3 A1.0 Detail - Typ. Concrete Joints

1 1/2" = 1'-0"



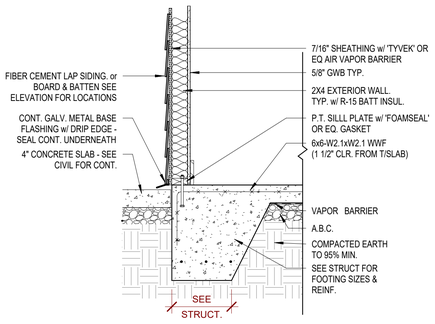
2 A1.0 Detail - Sump Pit

1/2" = 1'-0"



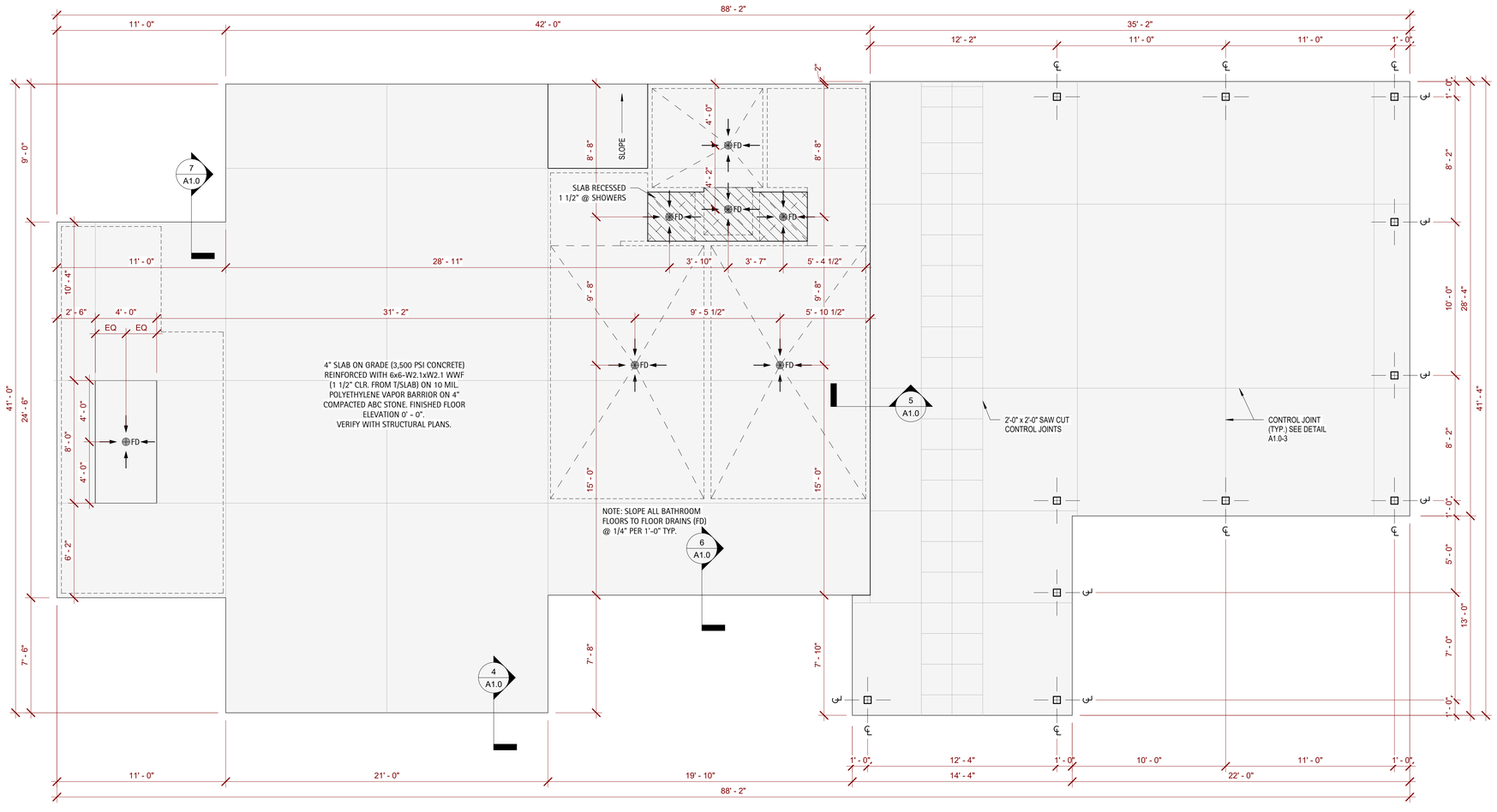
6 A1.0 Detail - Siding @ Grade

3/4" = 1'-0"



5 A1.0 Detail - Siding @ Hardscapes

3/4" = 1'-0"



1 A1.0 Foundation Plan

1/4" = 1'-0"

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PERRY GLENN FOX REGISTERED LANDSCAPE ARCHITECT NORTH CAROLINA APEX, N.C. 2/14/25

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

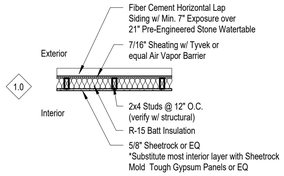
PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	LBG
CHECKED BY:	PGC/JGM

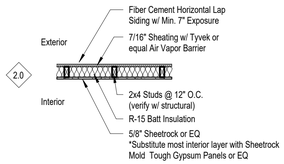
100% I.F.P.

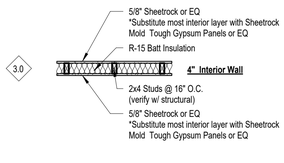
FOUNDATION PLAN

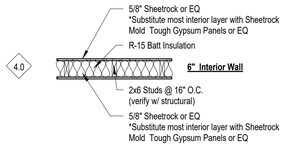
A1.0

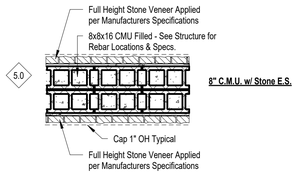
WALL TYPE DETAILS





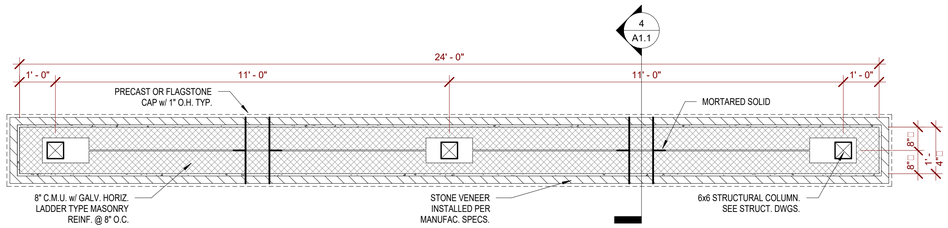


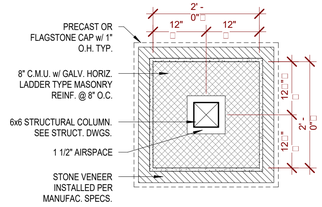




KEYNOTES

TAG	DISCRIPTION	PROVIDED BY
A	HIGH / LOW WATER COOLER. PROVIDE BOTTLE FILL @ FITNESS ROOM SEE PLUMBING PLANS FOR SELECTIONS. SEE TYPICAL MOUNTING HEIGHT DETAILS.	C.P.C.I
B	BACK TO BACK ELECTRICAL METER BASE & PANEL. ELEC. CONTRACTOR TO VERIFY LOCATION w/ GC PRIOR TO PLACEMENT.	C.P.C.I
C	(2) 1'-4" X 5'-2" FAUX BATTEN SHUTTERS APPLIED TO SMOOTH SIDING PANELS w/ MIRATEC OR EQ. TRIMBOARDS @ WINDOWS. 5/4" X 3 1/2" TRIM @ SIDES & BOTTOM, 5/4" X 5 1/2" TRIM @ TOP w/ CROWN PEDIMENT	C.P.C.I
D	MECHANICAL CONTRACTOR TO VERIFY THAT CONSENSATE LINES DO NOT DISCHARGE OVER HARDSCAPES, IF REQUIRED MC TO TIE DISCHARGE LINES INTO SANITARY.	C.P.C.I
E	RECESSED HIGH SECURITY KEY LOCK BOX EQUAL TO "KNOXBOX" 3200. VERIFY FINAL LOCATION w/ LOCAL FIRE MARSHAL	C.P.C.I
F	FITNESS ROOM EQUIPMENT. FINAL LAYOUT AND SELECTIONS TO BE DETERMINED BY OWNER. VERIFY ALL SELECTIONS PRIOR TO PURCHASE.	O.P.O.I
G	ATTIC ACCESS HATCH IN CEILING. MIN. 22"X30" OPENING OR MIN. DIMENSIONS REQUIRED FOR H.V.A.C. EQUIPMENT. SEE MECH. PLANS	C.P.C.I



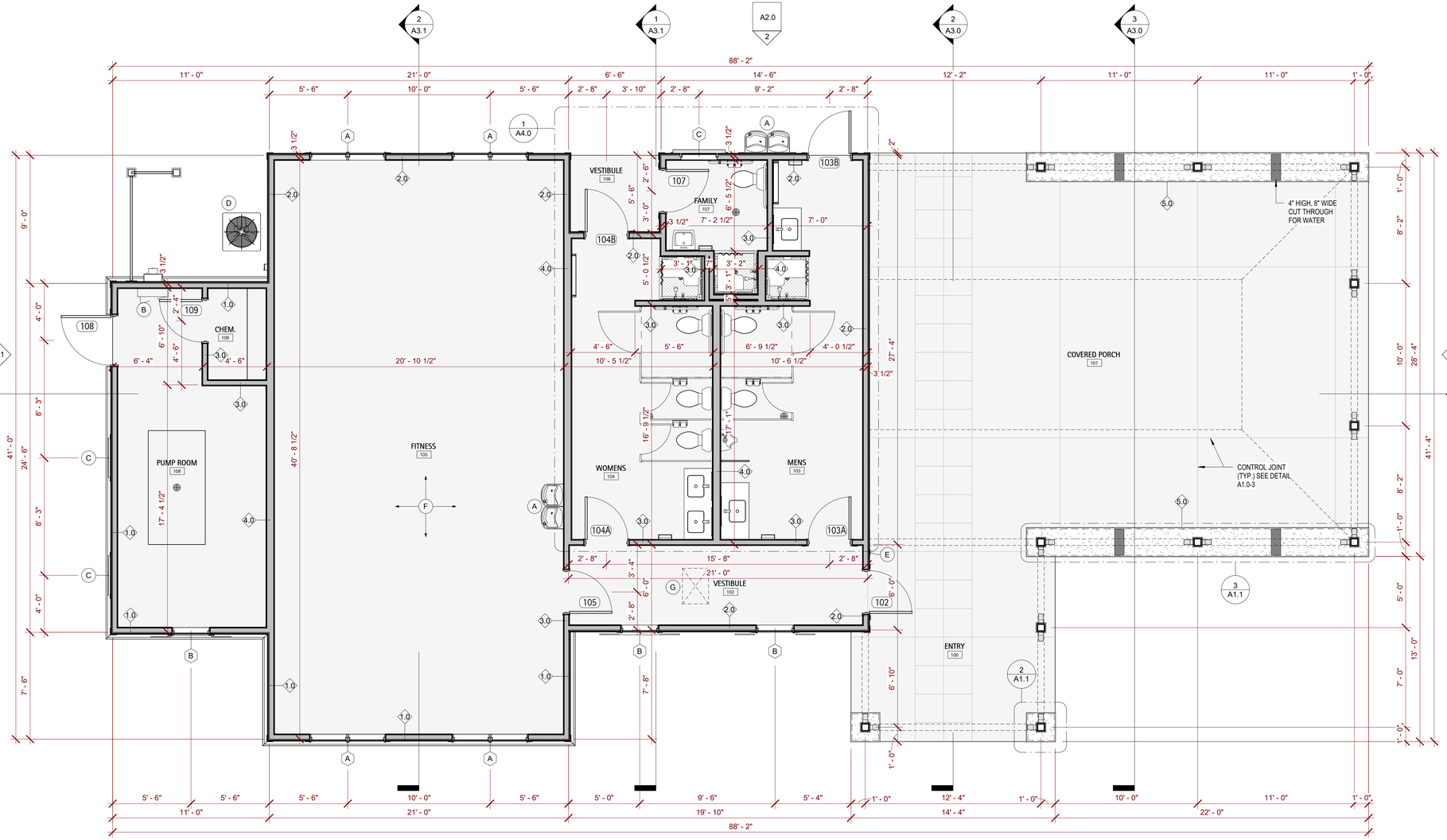


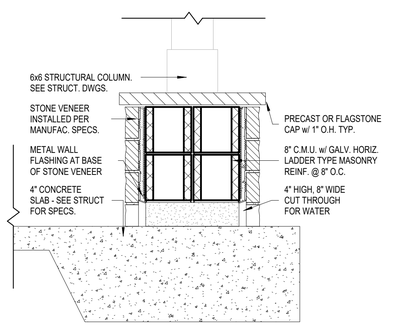
3 A1.1 Detail - Typ. Seat Wall

1/2" = 1'-0"

2 A1.1 Detail - Typ. Column Pedestal

3/4" = 1'-0"





4 A1.1 Detail - Scupper @ Seating Wall

1" = 1'-0"

1 A1.1 First Floor Plan

1/4" = 1'-0"

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PERRY GLENN FOX REGISTERED ARCHITECT NORTH CAROLINA APEX, N.C. 2/14/25

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

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MAIN LEVEL PLAN

A1.1

REFLECTIVE CEILING NOTES

1. 5/8" GWB typical - U.N.O - Mold tough in Wet areas
2. Height of ceilings shall be measured from top of slab to finish face of GWB or face of ceiling grid as indicated on the Reflected Ceiling Plan, UON.
3. All light fixtures are to be installed according to the Electrical Plans.
4. Light fixture types, quantities and locations only are noted on Architectural Reflected Ceiling Plans. Specifications, switching, exit lights, emergency lighting, life safety equipment, and circuiting are noted on Engineering documents.
5. Dimensioned light fixtures are from finished face of partitions to centerline of fixture and from centerline of fixture to centerline of fixture. All fixtures shall be installed in center of ceiling tile unless noted otherwise. Any discrepancies with light fixtures, switches, thermostats, or diffusers as to location between architectural and engineering drawings or between the drawings and existing field conditions shall be clarified with the Architect before proceeding with installation.

CEILING LEGEND

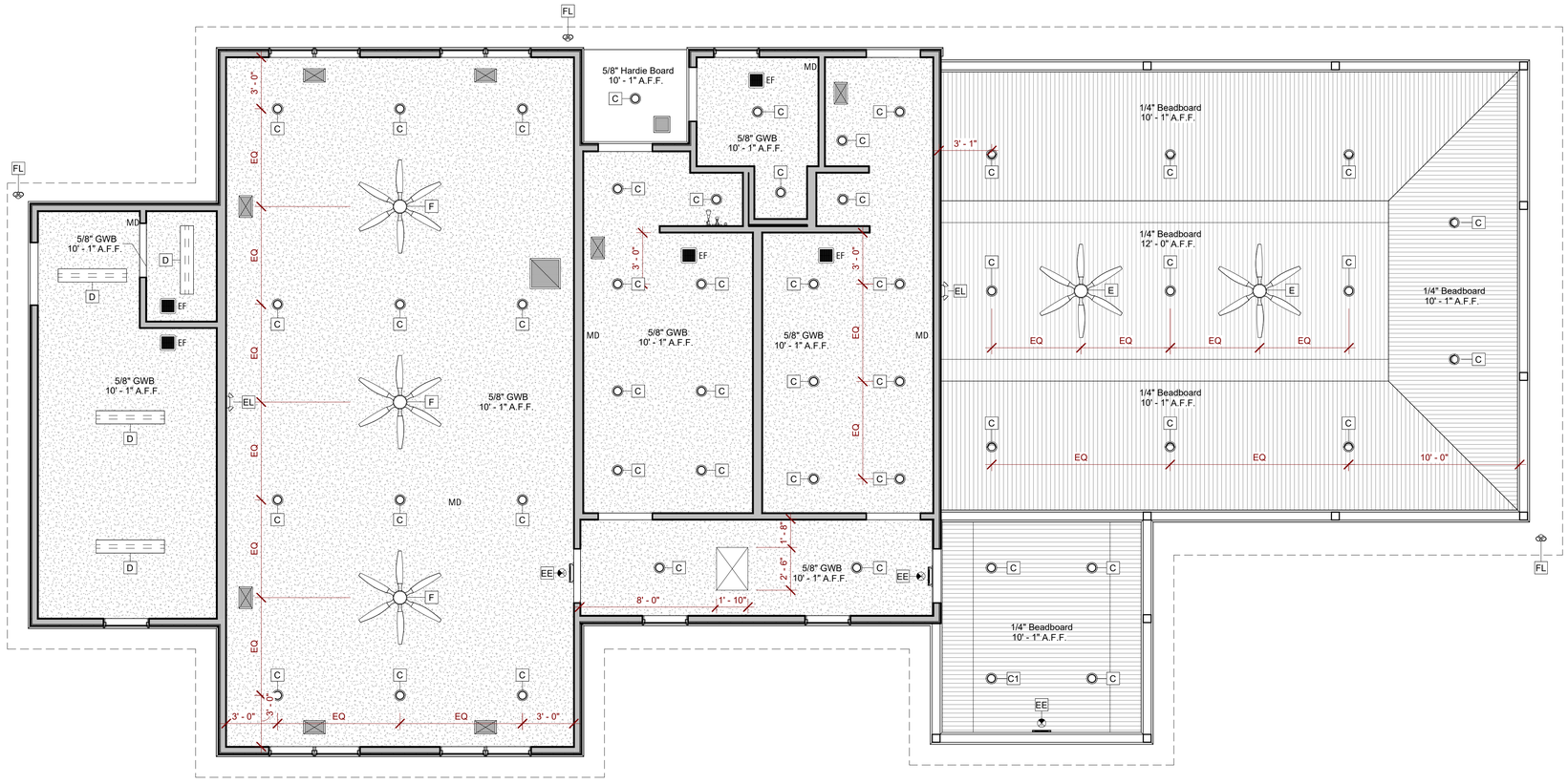
MD - MOTION DETECTOR
LOCATE IN CEILING
FL - EXTERIOR FLOOD LIGHT
EE - EMERGENCY EXIT SIGN w/ SPOTLIGHTS
EL - EMERGENCY LIGHT w/ BATTERY BACKUP
EF - EXHAUST FAN
A - NOT USED
B - NOT USED
C - 6" I..E.D. CAN LIGHT
C1 - 6" L.E.D. CAN LIGHT w/ BATTERY BACKUP
D - 1'x4' TROFFER LIGHT
E - EXTERIOR 72" DIA. FAN w/o LIGHT KIT
F - FAN w/o LIGHT KIT

* VERIFY ALL SELECTIONS
WITH OWNER / GC PRIOR TO ORDER

*VERIFY ATTIC ACCESS LOCATIONS WITH
APPROVED TRUSS LAYOUTS AND PROFILES

CEILING MOUNTED SUPPLY REGISTER, SEE MECH. PLANS FOR SIZING

CEILING MOUNTED RETURN REGISTER, SEE MECH. PLANS FOR SIZING



1 A1.2 Reflected Ceiling Plan

1/4" = 1'-0"

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PERRY GLENN COX
LICENSED ARCHITECT
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APEX, N.C.
2.14.25

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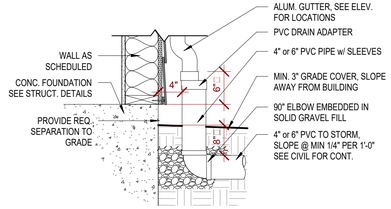
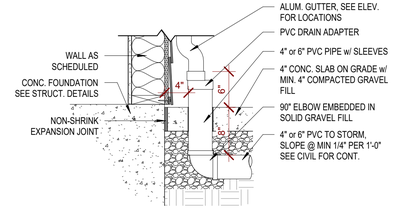
REFLECTED CEILING PLAN

A1.2



CONNECTION @ GRADE



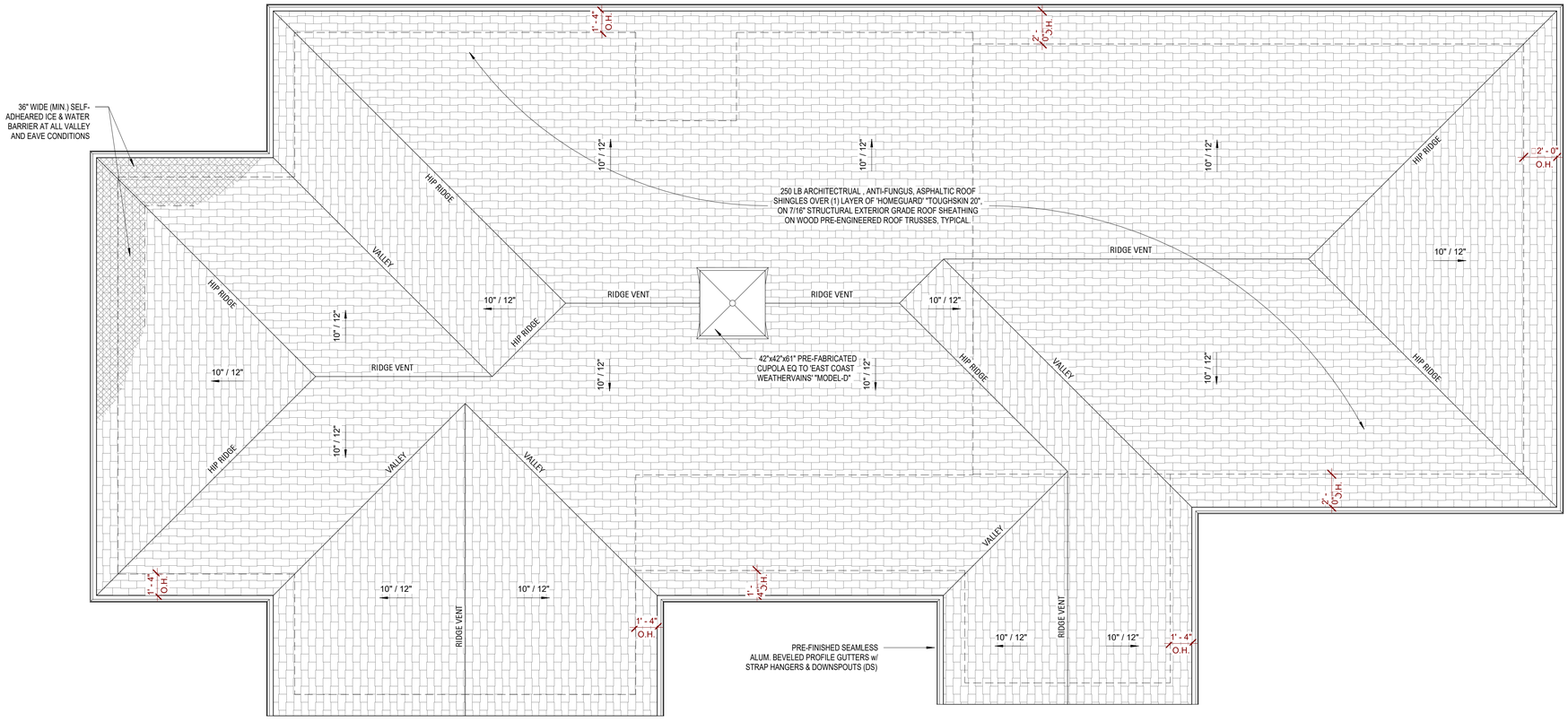
CONNECTION @ SLABS

2 A1.3 Detail - Downspout to Storm

1" = 1'-0"

ROOF NOTES

1. Roof decks shall be covered with approved roof coverings secured to the building or structure in accordance with the NCSBC. Roof coverings shall be designed and installed in accordance with the building code and the approved manufacturer's instructions.
2. Crickets or saddles shall be installed on the ridge side of any chimney or penetration greater than 30 inches wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.
3. Asphalt shingles shall only be used on roof slopes of 2:12 or greater.
4. Roof slopes from 2:12 to 4:12, underlayment shall be two layers applied in the following manner. Apply a minimum 19' wide strip of underlayment felt parallel with and starting at the eaves, fastened sufficiently to hold in place. Starting at the eave, apply 36-inch-wide sheets of underlayment overlapping successive sheets 19 inches minimum and fasten in place.
5. Roof slopes from 4:12 or greater, underlayment shall be a minimum of one layer.
6. Flashing shall be installed at the wall and roof intersections, at gutters, and wherever there is a change in roof slope or direction and around roof openings. Where flashing is of metal, the metal shall be corrosion resistant with a thickness of not less than 0.019in (No. 26 galvanized sheet)
7. Areas prone to ice formation along eaves causing a backup of water shall have an ice barrier that consists of at least (2) two layers of underlayment cemented together or of a self-adhering polymer-modified bitumen sheet. Extend ice barrier min. 18" each side of valleys and other ice prone areas. .
8. Overhangs: Truss manufacturer to provide shorter gable end trusses where overhangs exceed 1'-0" to allow for outriggers to be framed over the top cord of the end truss and attached to the top cord of the secondary truss towards the interior of the gable. GC to verify prior to manufacturing of trusses.
9. Light Location: Truss manufacturere to cooridinate truss layout with reflected ceiling plans, electrical plans, and mechical plans to avoid conflicts



1 A1.3 Roof Plan

1/4" = 1'-0"

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2/17/25

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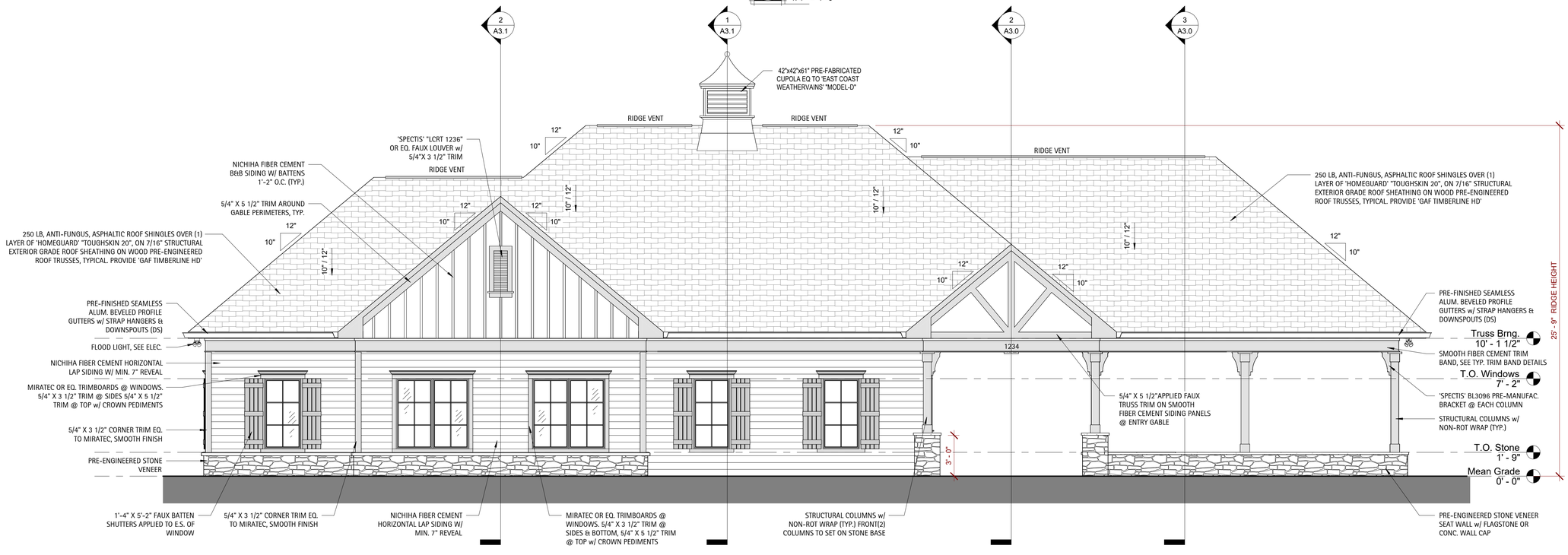
ROOF PLAN

A1.3

2 A2.0 Elevation - Rear

1/4" = 1'-0"



1 A2.0 Elevation - Front

1/4" = 1'-0"

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LICENSED ARCHITECT
NORTH CAROLINA
APEX, N.C.
25JUN25

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ANGIER, NC

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PROJECT #:	2023048
DATE ISSUED:	02/17/2025
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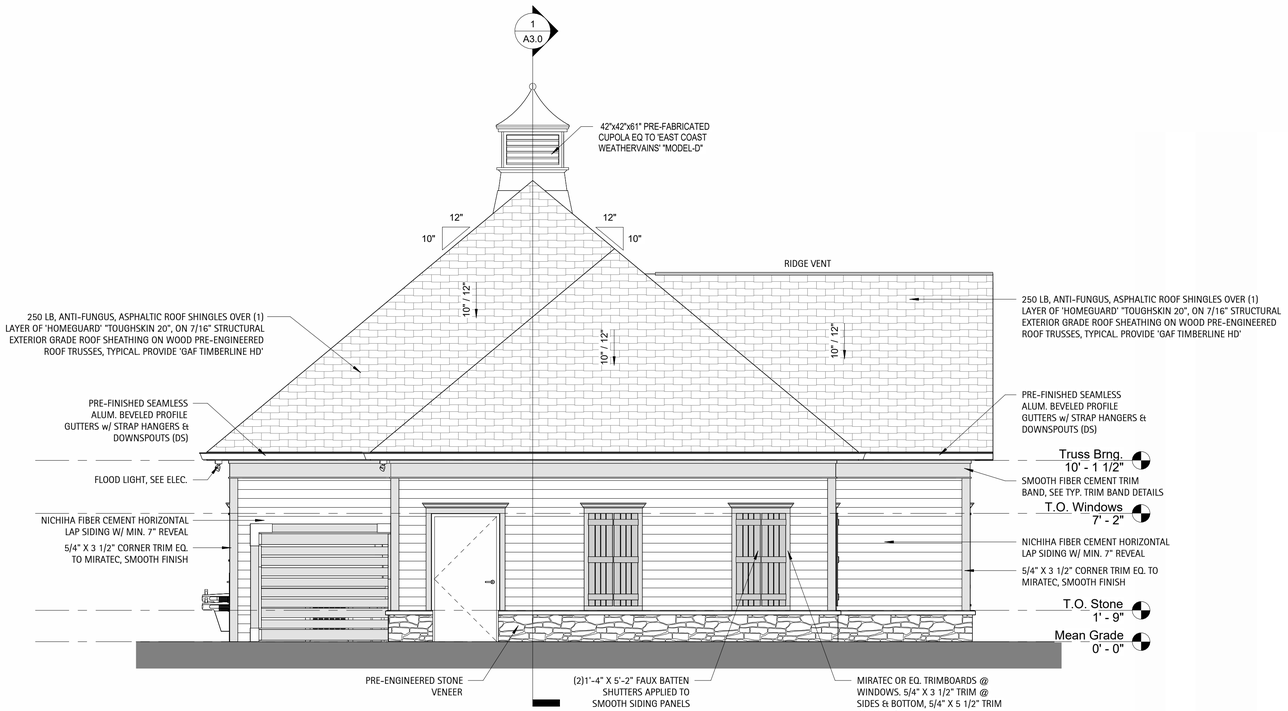
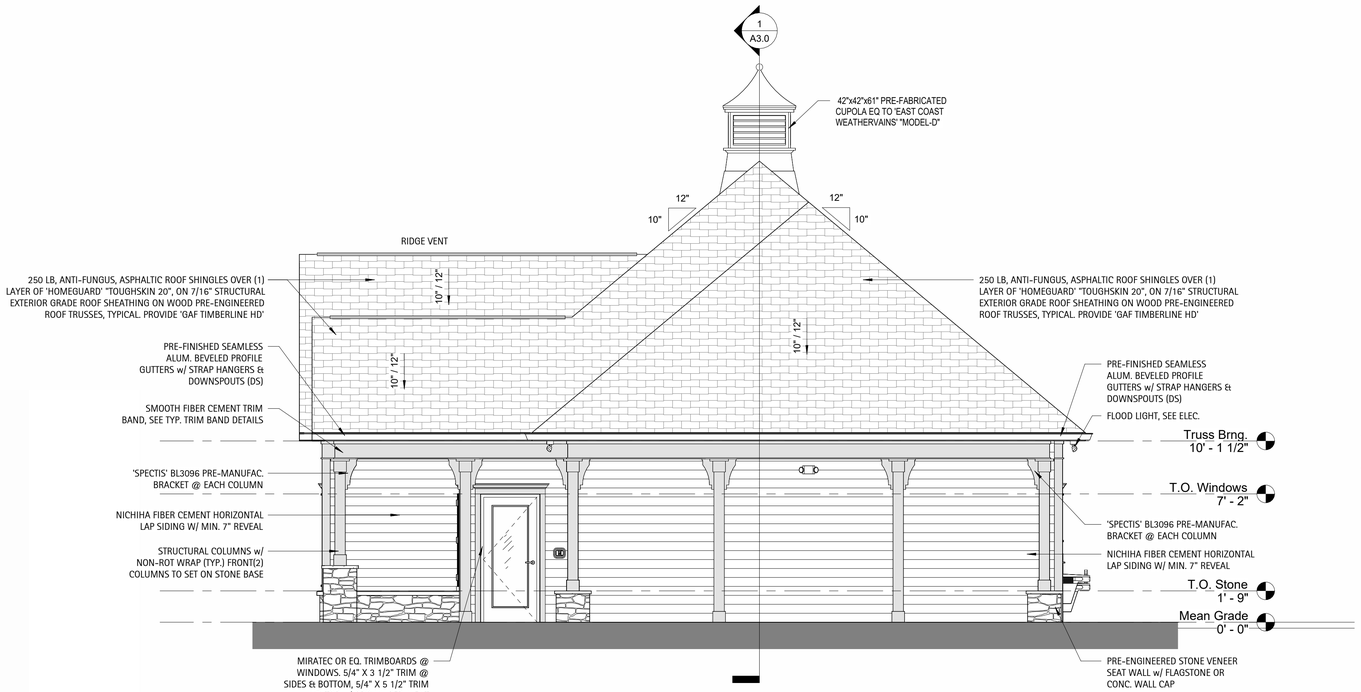
EXTERIOR ELEVATIONS

A2.0



2 A2.1 **Elevation - Left**

1/4" = 1'-0"



1 A2.1 **Elevation - Right**

1/4" = 1'-0"

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LICENSED ARCHITECT
SEAL
038774
NORTH CAROLINA
APEX, N.C.
02.14.25

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EXTERIOR ELEVATIONS

A2.1

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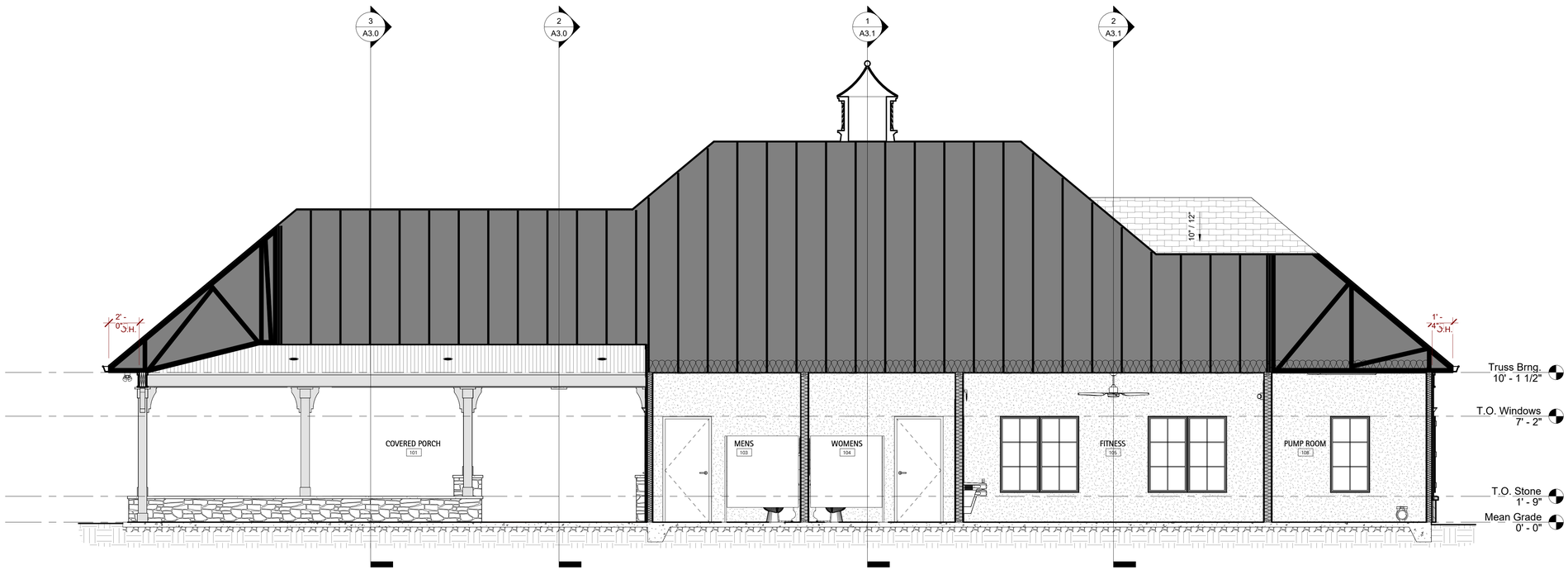
3 A3.0 Section - Through Porch

1/4" = 1'-0"

2 A3.0 Section - Through Entry Gable

1/4" = 1'-0"



1 A3.0 Section - Through Main Ridge

1/4" = 1'-0"

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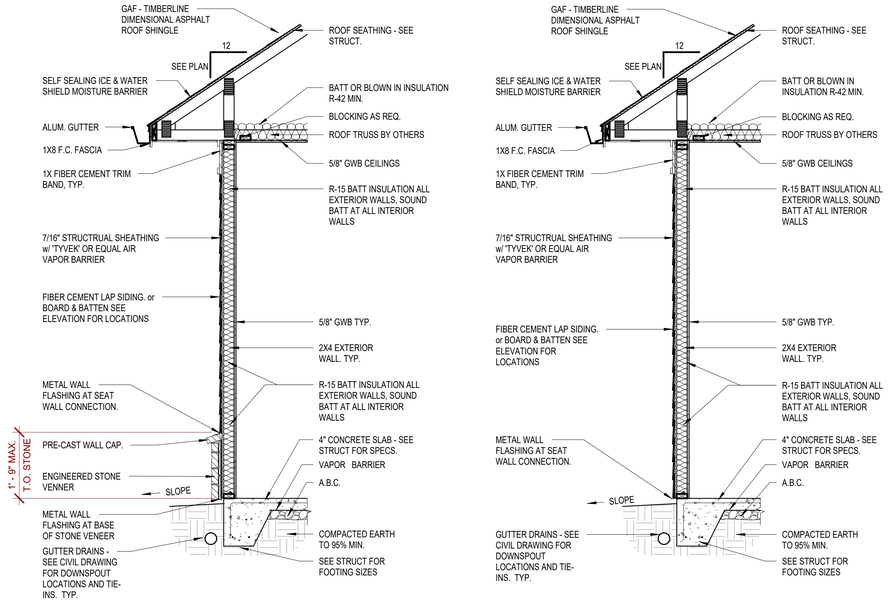
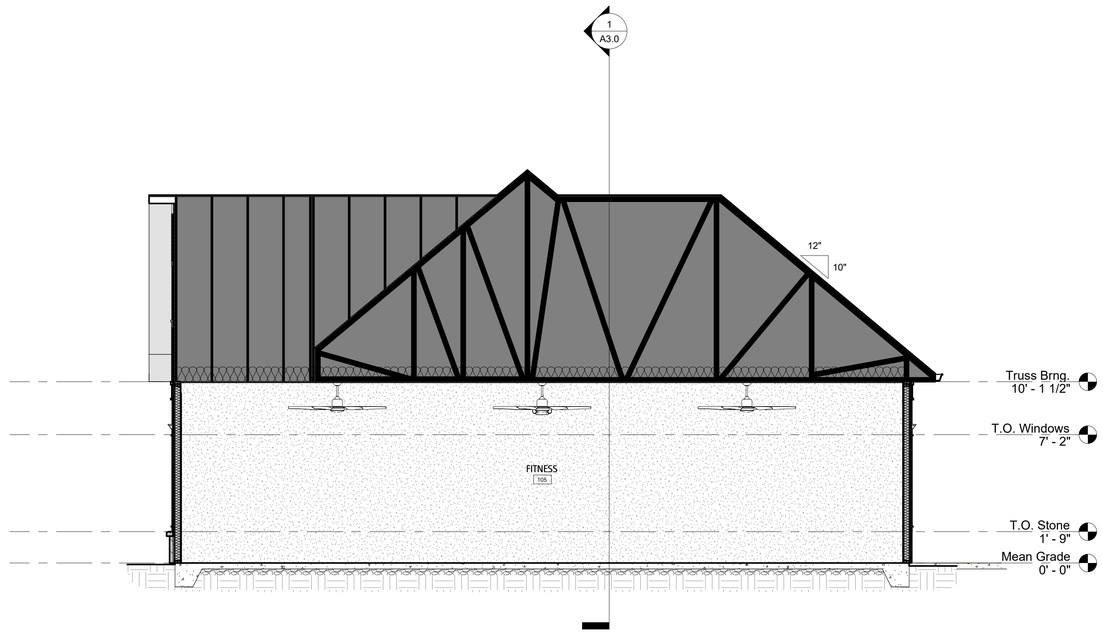
BUILDING SECTIONS

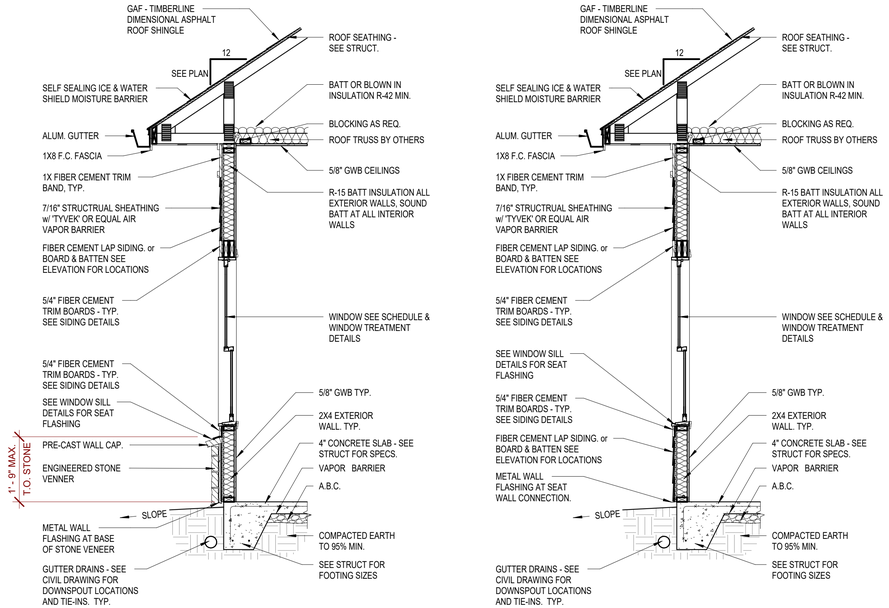
A3.0





2 A3.1 **Section - Through Fitness**

1/4" = 1'-0"



3 A3.1 **Detail - Typ. Wall Sections**

1/2" = 1'-0"

1 A3.1 **Section - Through Restrooms**

1/4" = 1'-0"

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REGISTERED LANDSCAPE ARCHITECT
NORTH CAROLINA
APEX, N.C.
02.14.25

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BUILDING & WALL SECTIONS

A3.1

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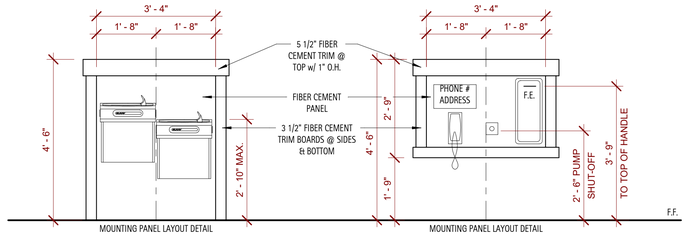
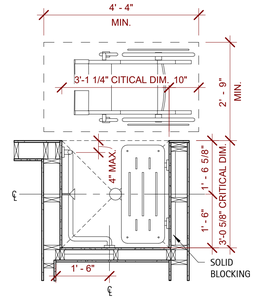


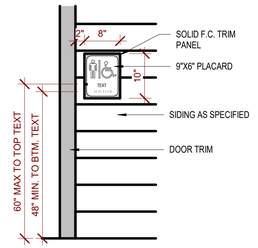
8 A4.0 Detail - Water Cooler & Emergency

1/2" = 1'-0"



5 A4.0 Detail - ADA Transfer Shower

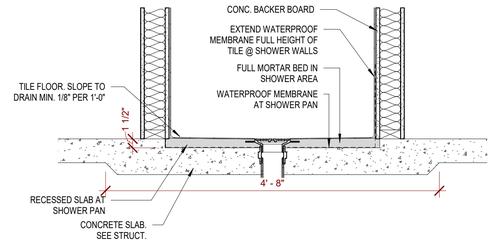
1 : 1



2 A4.0 Detail - Exterior Sign Trim

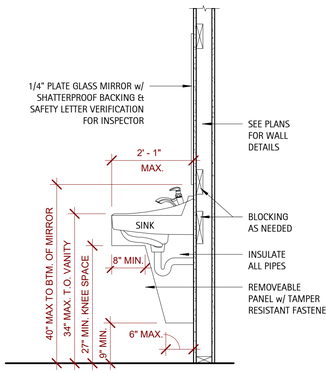
3/4" = 1'-0"

TOILET ACCESSORIES			
MARK	ITEM	MANUFACTURER	MODEL NUMBER
TTD	SURFACE MOUNTED DUAL ROLL TOILET TISSUE HOLDER	AMERICAN SPECIALTIES, INC	0715
GB	GRAB BAR - 1 1/2" DIA., S/S, PREENED GRIP, SNAP FLANGE 36", 42" & 18"	AMERICAN SPECIALTIES, INC	3800 TYPE-01
MIR	INTERLOK S.S. FRAMED MIRROR W/ SHATTER RESISTANT GLASS	BY OTHERS	N/A
CH	SURFACE MOUNTED COAT HOOK	AMERICAN SPECIALTIES, INC	0714
PTD	SURFACE MOUNTED PAPER TOWEL DISPENSER	AMERICAN SPECIALTIES, INC	0210
CS	SURFACE MOUNTED BABY CHANGING STATION	AMERICAN SPECIALTIES, INC	9012
ST	FOLDING SHOWER SEAT, RECTANGULAR SOLID PHENOLIC SEAT	AMERICAN SPECIALTIES, INC	8203-33
TP	TOILET PARTITION - FLOOR SUPPORTED W/ HEADRAIL, POWDER COATED STEEL FINISH	GENERAL PARTITIONS	SERIES 40-5



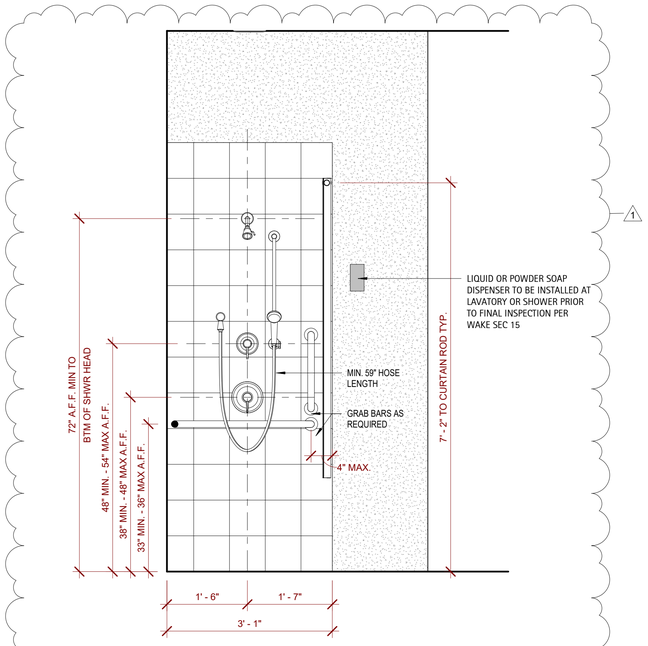
7 A4.0 Recessed Slab @ Showers

1" = 1'-0"



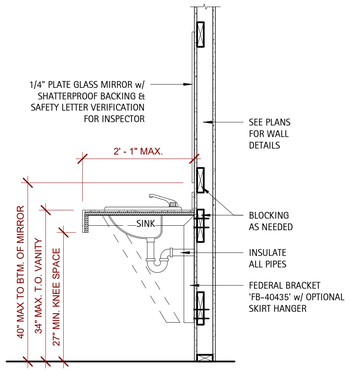
4 A4.0 Detail - Typical Wall Hung Sink

3/4" = 1'-0"



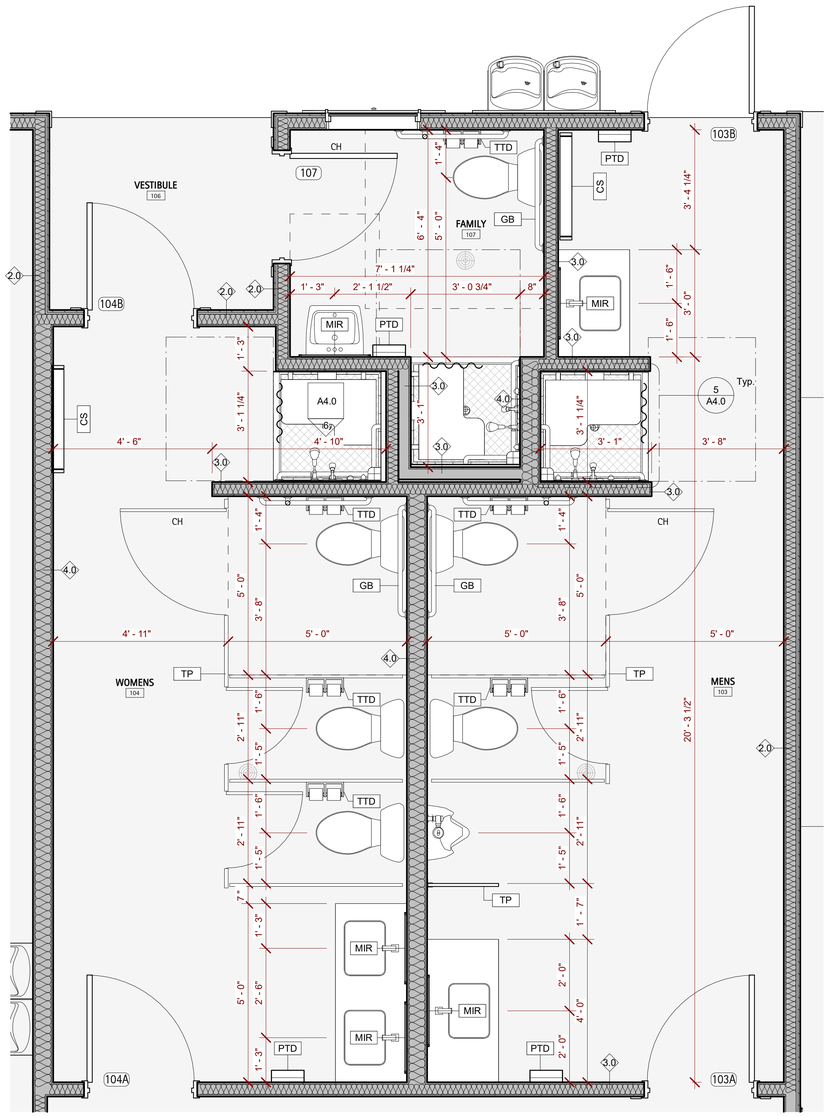
6 A4.0 Detail - Shower Control Wall

3/4" = 1'-0"



3 A4.0 Detail - Typical Vanity Section

3/4" = 1'-0"



1 A4.0 Enlarged Restroom Plan

1/2" = 1'-0"

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE
1	HEALTH COM.	09/29/25

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	LBG
CHECKED BY:	PGC/JGM

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ENLARGED PLANS & DETAILS

A4.0

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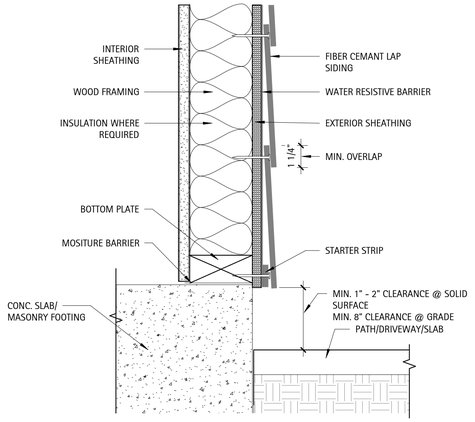
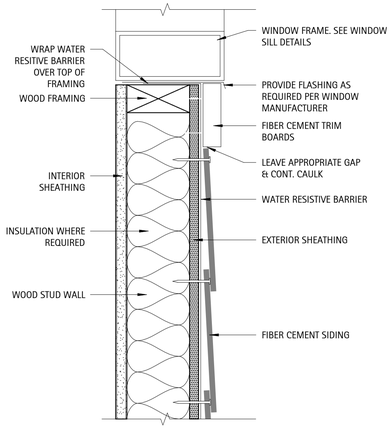
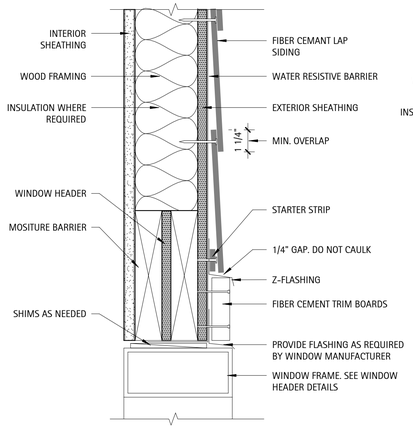


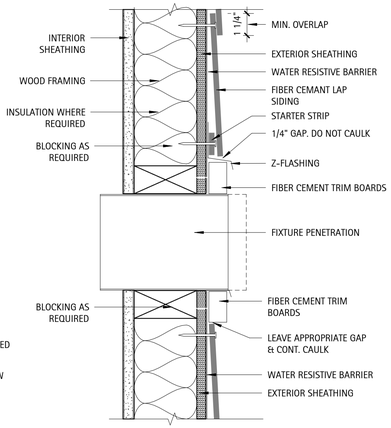
SIDING @ FOUNDATION



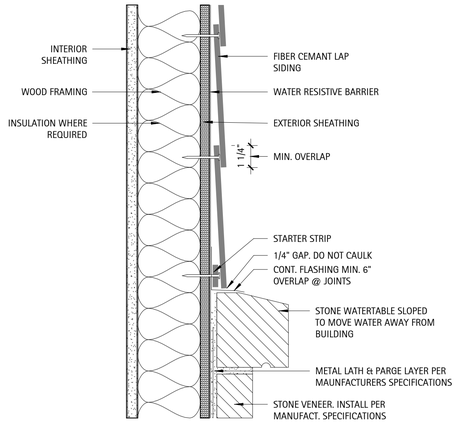
TYPICAL WINDOW SILL TRIM



TYPICAL WINDOW HEADER TRIM



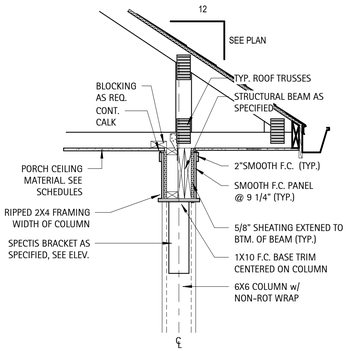
TYPICAL FIXTURE TRIM



SIDING @ STONE VENEER

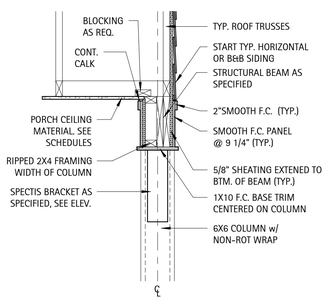
5 A5.0 Detail - Fiber Cement Siding

3" = 1'-0"



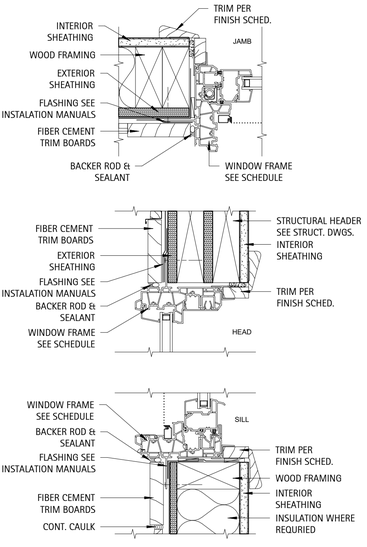
4 A5.0 Detail - Typ. Trim Band @ Soffits

3/4" = 1'-0"

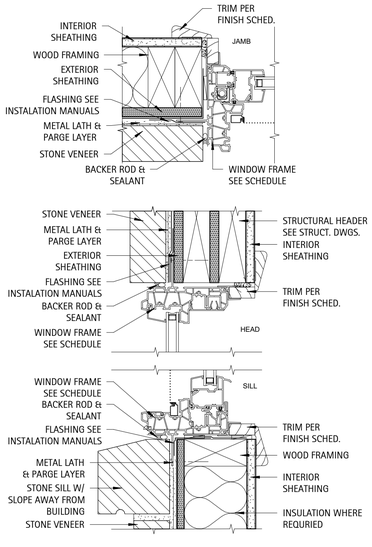


3 A5.0 Detail - Typ. Trim Band @ Gables

3/4" = 1'-0"



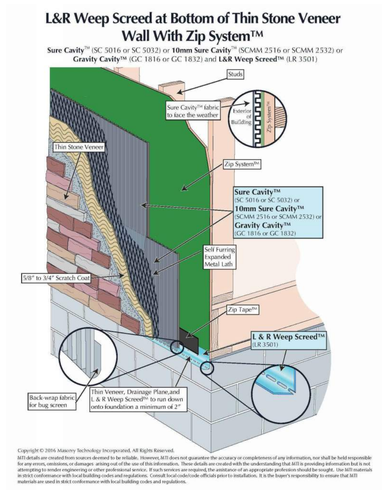
WINDOW TREATMENT @ SIDING

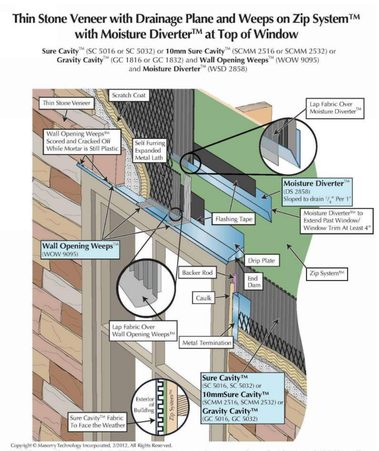


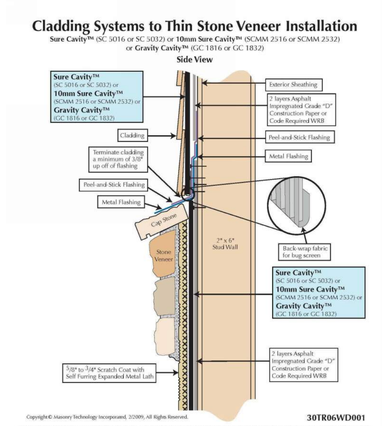
WINDOW TREATMENT @ STONE

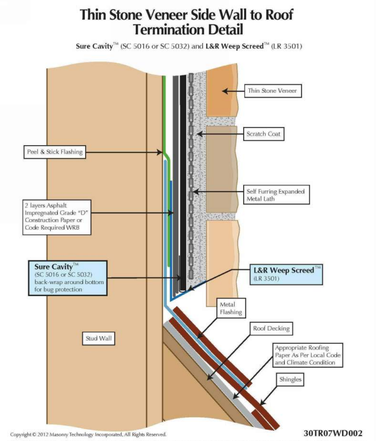
2 A5.0 Detail - Window Treatments

3" = 1'-0"









1 A5.0 Detail - Stone Veneer

12" = 1'-0"

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PERRY GLENN COX
LICENSED ARCHITECT
NORTH CAROLINA
APEX, N.C.
25JAN25

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	LBG
CHECKED BY:	PGC/JGM
	100% I.F.P.

GENERAL BUILDING DETAILS

A5.0

CLUBHOUSE ROOM SCHEDULE

Room Number	Room Name	Floor Finish	North Wall				South Wall				East Wall				West Wall				Ceiling Finish	Ceiling Height	Comments
			Wall Finish	Crown	Base	Comments	Wall Finish	Crown	Base	Comments	Wall Finish	Crown	Base	Comments	Wall Finish	Crown	Base	Comments			
100	ENTRY	Conc.	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		Bead Board	10'-1"	Slope Floor away from building walls min 1/8" per 1'-0"
101	COVERED PORCH	Conc.	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		Bead Board	Varies	Slope Floor away from building walls min 1/8" per 1'-0"
102	VESTIBULE	Conc.	GWB - Painted	C-1	B-1		GWB - Painted	C-1	B-1		GWB - Painted	C-1	B-1		GWB - Painted	C-1	B-1		GWB - Painted	10'-1"	
103	MENS	Tile -TBD	MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		M.R. GWB	10'-1"	Slope floor to drain
104	WOMENS	Tile -TBD	MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		M.R. GWB	10'-1"	Slope floor to drain
105	FITNESS	Rubber Matt	GWB - Painted	C-1	B-1		GWB - Painted	C-1	B-1		GWB - Painted	C-1	B-1		GWB - Painted	C-1	B-1		GWB - Painted	10'-1"	
106	VESTIBULE	Conc.	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		Fiber Cement	10'-1"	Slope Floor away from building walls min 1/8" per 1'-0"
107	FAMILY	Tile -TBD	MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		MR GWB - Painted	C-1	B-1		M.R. GWB	10'-1"	Slope floor to drain
108	PUMP ROOM	Conc.	MR GWB - Painted	N/A	B-1		MR GWB - Painted	N/A	B-1		MR GWB - Painted	N/A	B-1		MR GWB - Painted	N/A	B-1		M.R. GWB	10'-1"	Slope floor to drain
109	CHEM.	Conc.	MR GWB - Painted	N/A	B-1		MR GWB - Painted	N/A	B-1		MR GWB - Painted	N/A	B-1		MR GWB - Painted	N/A	B-1		M.R. GWB	10'-1"	Provide non-rot chemical shelf @ 16" A.F.F. min.

DOORS, FRAMES, HARDWARE NOTES

1 Refer to Door and Hardware Schedule for extent, type and additional notes. Acceptable wood door manufacturers to be Weyerhaeuser, Eggers, Mohawk or Architect approved equal. General Contractor shall provide a hardware schedule and catalogue cuts for all finish hardware for approval by the Architect indicating location of hardware set, cross-referenced to indications on Drawings, manufacturer's name and product number, finish, and other similar information describing hardware to be provided. Items of hardware not definitely specified, but needed for satisfactory installation of hardware shall be provided. Such items shall be of type and quality suitable for service needed and comparable to adjacent hardware.

2 All doors shall be set 6" off adjacent perpendicular wall, UON. Doors shall not be undercut, UON. All levers, pulls, and locks are to be provided per the schedule. All hinges and other miscellaneous exposed hardware shall be in similar and compatible finishes as indicated on Hardware Schedule.

3 General Contractor shall coordinate keying system with Owner (Building Management), Landlord, and Architect. General Contractor shall coordinate security system with system vendor and scheduled hardware and the submittal of all security hardware specifications and cut sheets to the proper authorities for review and approval during building permit process

4 Provide hardware, door pulls, hinges, closers, electromagnetic devices, etc. needed to provide a full and complete installation. Provide silencers at metal frame doors. Provide floor mounted door stops unless existing conditions require wall mounted. Ensure adequate blocking for wall mounted stops. Submit to Architect for approval.

5 Provide 4 1/2 x 4 1/2, full mortise, template, 5-knuckle, heavy duty, button tip hinges with non-rising loose pins and anti-friction, ball type bearing. Doors with locksets shall be furnished with non-removable pins hinges. Provide 1-1/2" pair hinges for doors up to 90" in height. Add 1 hinge for every additional 30" in height.

6 Heavy duty cylindrical locksets and latchsets shall conform to ANSI A156.2, Series 4000, Grade 1. Functions as listed in schedule. Heavy duty mortise locksets and latchsets, levers shall conform to ANSI A156.13 Series, 1000, Grade 1. Overhead Closers shall be surface mounted or concealed overhead as noted in the hardware schedule and shall be heavy duty, fully hydraulic, rack and pinion action and sized to be in compliance with requirements for accessibility for handicapped and recommendations of manufacturer. Furnish complete with all necessary hardware. Furnish 2 keys per lock with a maximum of 8 keys per keyed alike set. Before final completion, adjust hardware so that doors operate in perfect order. Test and adjust hardware for quiet, smooth operation and adjust closers for proper operation. At final completion, properly tag and identify keys and deliver to Owner.

7 All Hardware shall be medium grade commercial if not otherwise noted or specified. See allowance per door.

8 All interior egress doors and a minimum of one exterior egress door shall be readible openalbe from the egress side without use of a key or special knowledge.

9 All Glazing within 24" of either side of a door in a closed position, and on the same wall plane shall be tempered. Tempered glass shall be installed by code in the following locations:
- a. Door Glazing;
- b. Glazingfor bathroom fixture enclosures(showers, etc)
- c. Glazing less than 60" above tub and shower drains;
- d. Glazing within24" of an adjacent door w/ sill less than 60 degrees;
- e. Individual panels of Glazing greater than 9 sqft and sill less than 18" above floor and top edge greater than 36".

10 Provide an interior door signage allowance of $25.00 per door.

11 Fire Extinusisher cabinets shall be similar to JL Industries Mod. Clear VU 1525F26 with a clear bubble and A#10 S/S Finish. ADA approved and mounted. Place where shown on plans (FX)

12 Door closers shall be LCN series 4040 or equivalent

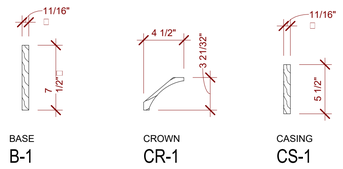
BATHHOUSE DOOR SCHEDULE

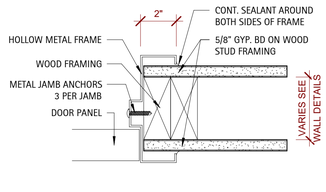
Door Number	Style	Door			Rough Width	Rough Height	Door		Frame		Fire Rating	Hardware												Comments
		Width	Height	Thickness			Material	Finish	Material	Frame Finish		Push / Pull	Passage Set	Privacy Set	Office Set	Storage Set	Deadbolt	Panic Hardware	Closer	Weather strip	Threshold	FOB Access	Time Lock	
102	Type C	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM/Glass	Paint	Metal	Paint	N/A	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
103A	Type A	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	Yes	No	No	No	Yes	No	Yes	No	No	No	No	
103B	Type A	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	No	
104A	Type A	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	Yes	No	No	No	Yes	No	Yes	No	No	No	No	
104B	Type A	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	No	
105	Type C	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM/Glass	Paint	Metal	Paint	N/A	No	Yes	No	No	No	No	No	Yes	No	No	Yes	Yes	
107	Type A	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	No	Yes	No	No	No	No	Yes	Yes	Yes	No	No	
108	Type B	3' - 6"	7' - 0"	0' - 2"	3' - 8"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	No	No	No	Yes	No	No	Yes	Yes	Yes	No	No	See Mech plans for vent req. w/ placard per NFPA 704
109	Type B	3' - 0"	7' - 0"	0' - 2"	3' - 2"	7' - 1"	HM	Paint	Metal	Paint	N/A	No	Yes	No	No	No	No	No	No	No	No	No	No	See Mech plans for vent req. w/ placard per NFPA 704
G101	Type D	6' - 0"	6' - 0"				Alum.	Paint	Alum.	Paint	N/A	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	
G102	Type D	6' - 0"	6' - 0"				Alum.	Paint	Alum.	Paint	N/A	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	
G103	Type D	6' - 0"	6' - 0"				Alum.	Paint	Alum.	Paint	N/A	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	

Grand total: 12

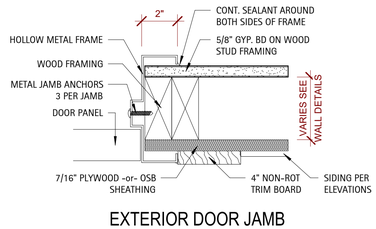
BATHHOUSE WINDOW SCHEDULE

Mark	Count	Size		Type	Finish	Head Height	Comments
		Width	Height				
A	4	2' - 8"	5' - 2"	Fixed Twin		7'-2"	
B	3	2' - 8"	5' - 2"	Fixed		7'-2"	
C	1	2' - 8"	2' - 8"	Fixed		7'-2"	

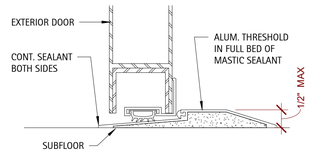




INTERIOR DOOR JAMB



EXTERIOR DOOR JAMB

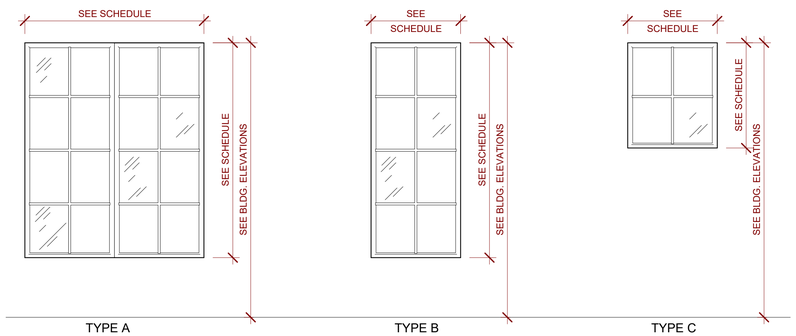


EXTERIOR DOORS THRESHOLD

5 Detail - Trim
A6.0 — 1 1/2" = 1'-0"

4 Detail - Typ. Door Jambs
A6.0 — 3" = 1'-0"

3 Detail - Typ. Threshold
A6.0 — 6" = 1'-0"

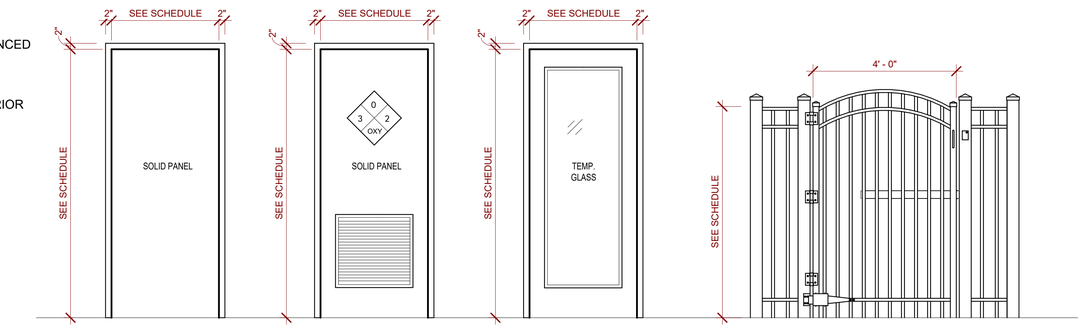


NOTE: SEE EXTERIOR ELEVATIONS FOR EXTERIOR TRIM STYLES.

NOTE: EXTERIOR GLAZING TO BE 'ADVANCED LOW-E" GLAZING

NOTE: EXTERIOR GLASS DOORS TO HAVE 'ADVANCED LOW-E" GLAZING

NOTE: SEE EXTERIOR ELEVATIONS FOR EXTERIOR TRIM STYLES.



2 Detail - Window Types
A6.0 — 1/2" = 1'-0"

1 Detail - Door Frames
A6.0 — 1/2" = 1'-0"

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D CLUGSTON

PERRY GLENN COX — LICENSED ARCHITECT — 30TH CAROLINA — APEX, N.C. — 2.14.25

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
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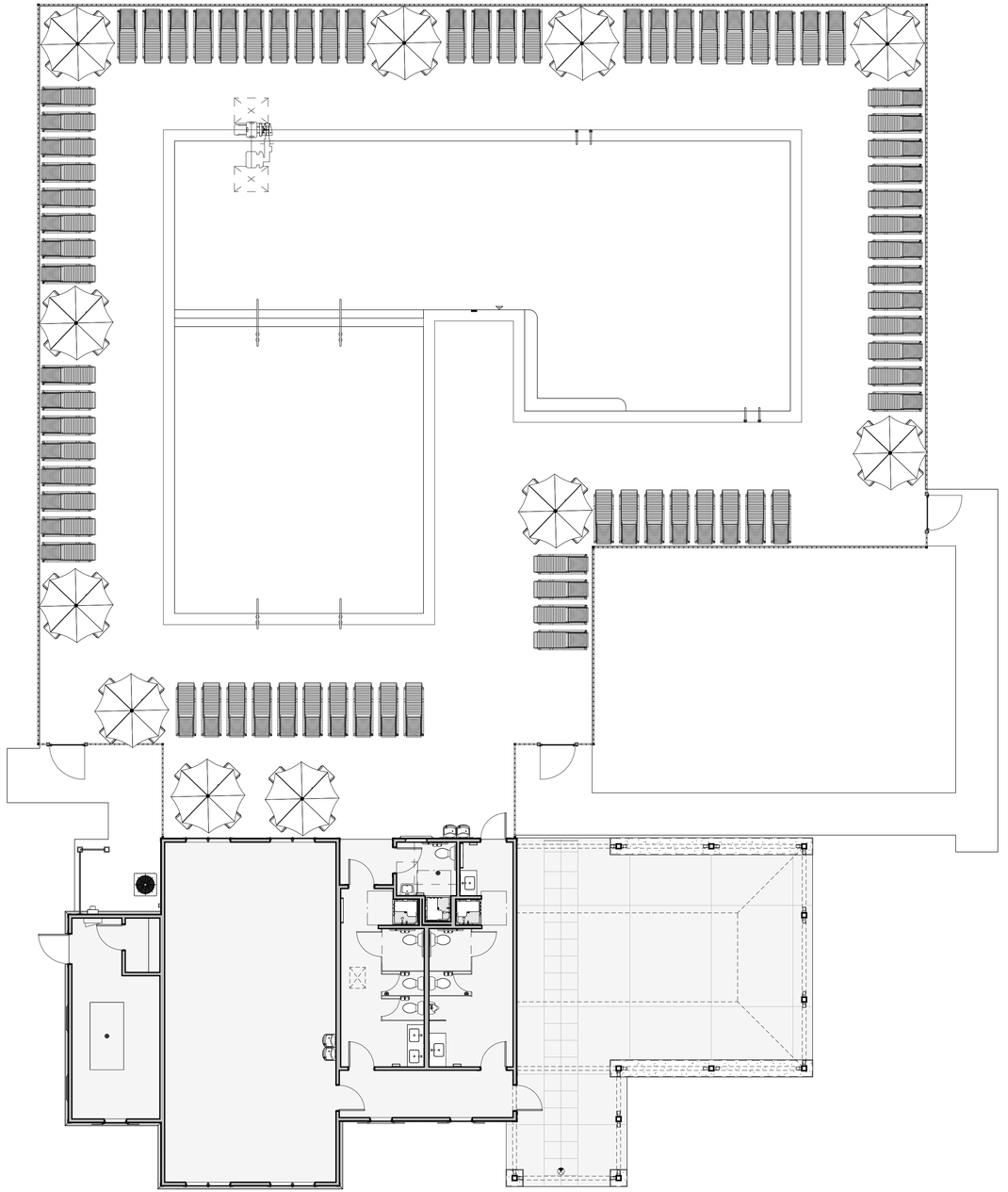
SCHEDULES & DETAILS

A6.0



1 A7.0 **Furniture Plan**
1/8" = 1'-0"

D.CLUGSTON

PERRY GLENN FOX
LICENSED LANDSCAPE ARCHITECT
NORTH CAROLINA
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2/14/25

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

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PROJECT #:	2023048
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POOL FURNITURE PLAN

A7.0

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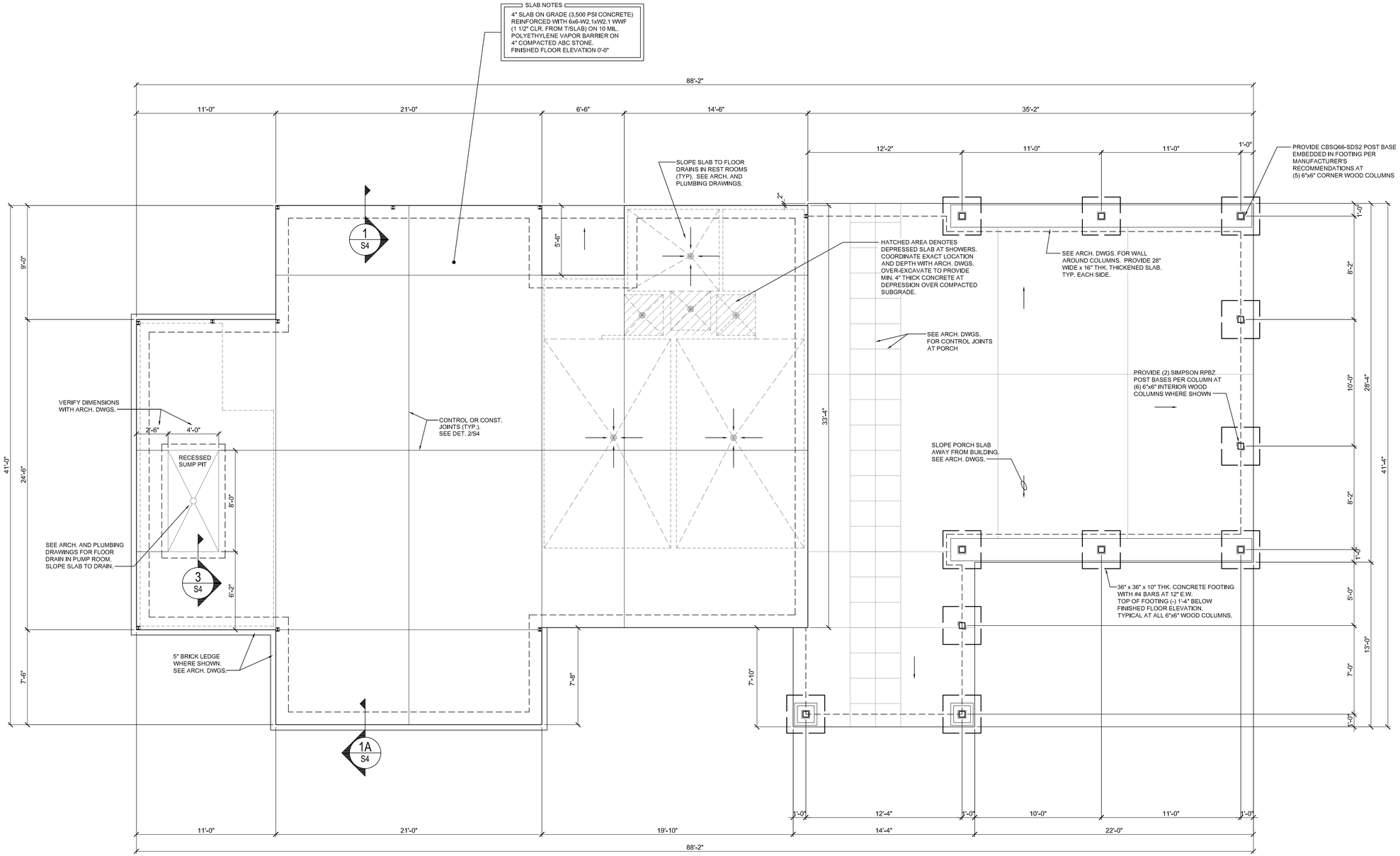

1 SLAB AND FOUNDATION PLAN

S1 — 1/4" = 1'-0"

D.CLUGSTON

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ENGINEERS PC
709 W. JONES STREET RALEIGH, NC 27603
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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
12/23/2024
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PULTE GROUP
ANGIER, NC

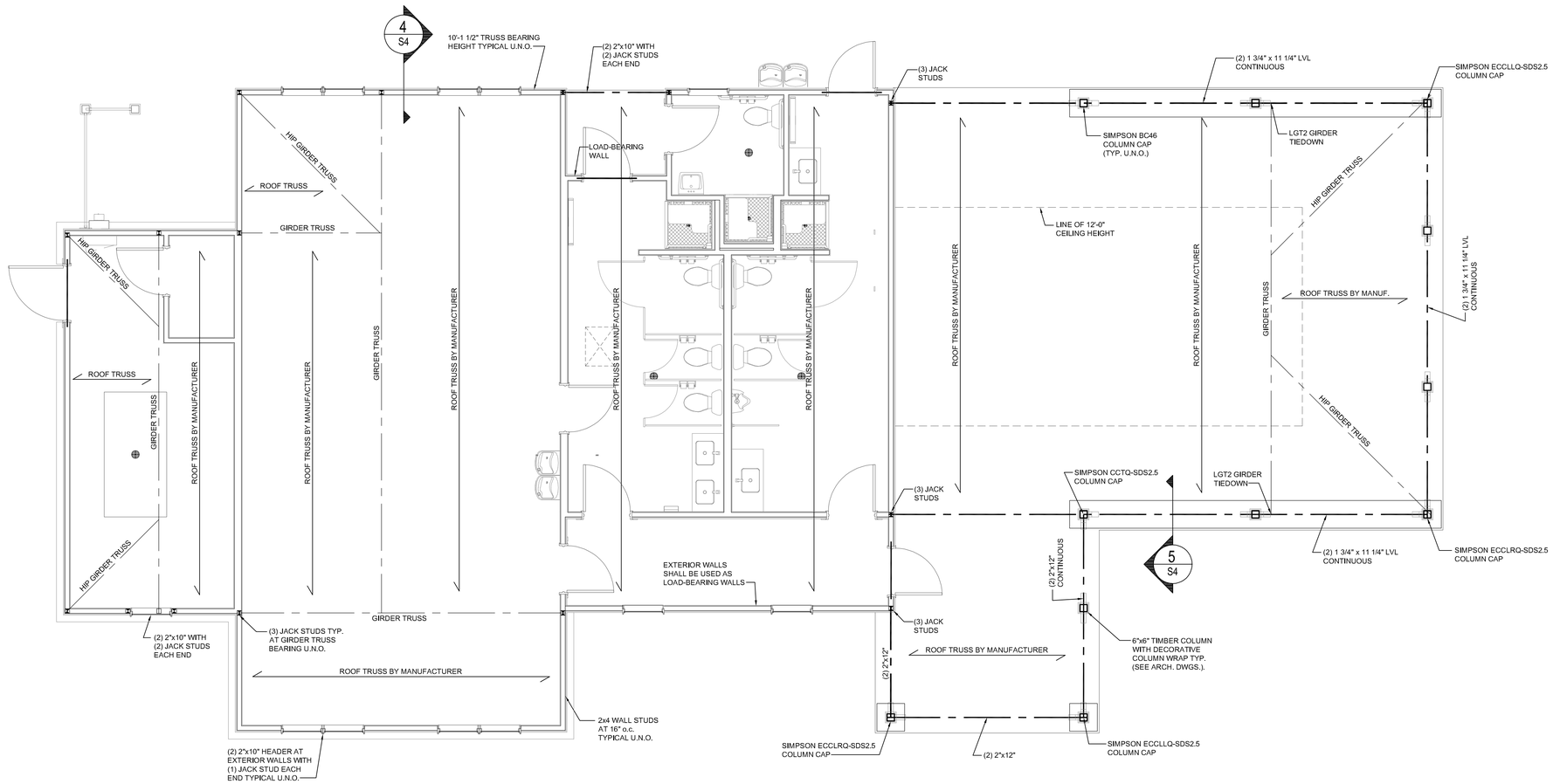
NO.	REVISION	DATE

PROJECT #:	C241106
DATE ISSUED:	12/23/2024
DRAWING BY:	BR
CHECKED BY:	BR/JM

100% Review

Slab and Foundation Plan

S1



1 S2 WALL AND CEILING FRAMING PLAN

1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
12/23/2024
SEAL NOT VALID UNLESS SIGNED AND DATED

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WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	C241106
DATE ISSUED:	12/23/2024
DRAWING BY:	BR
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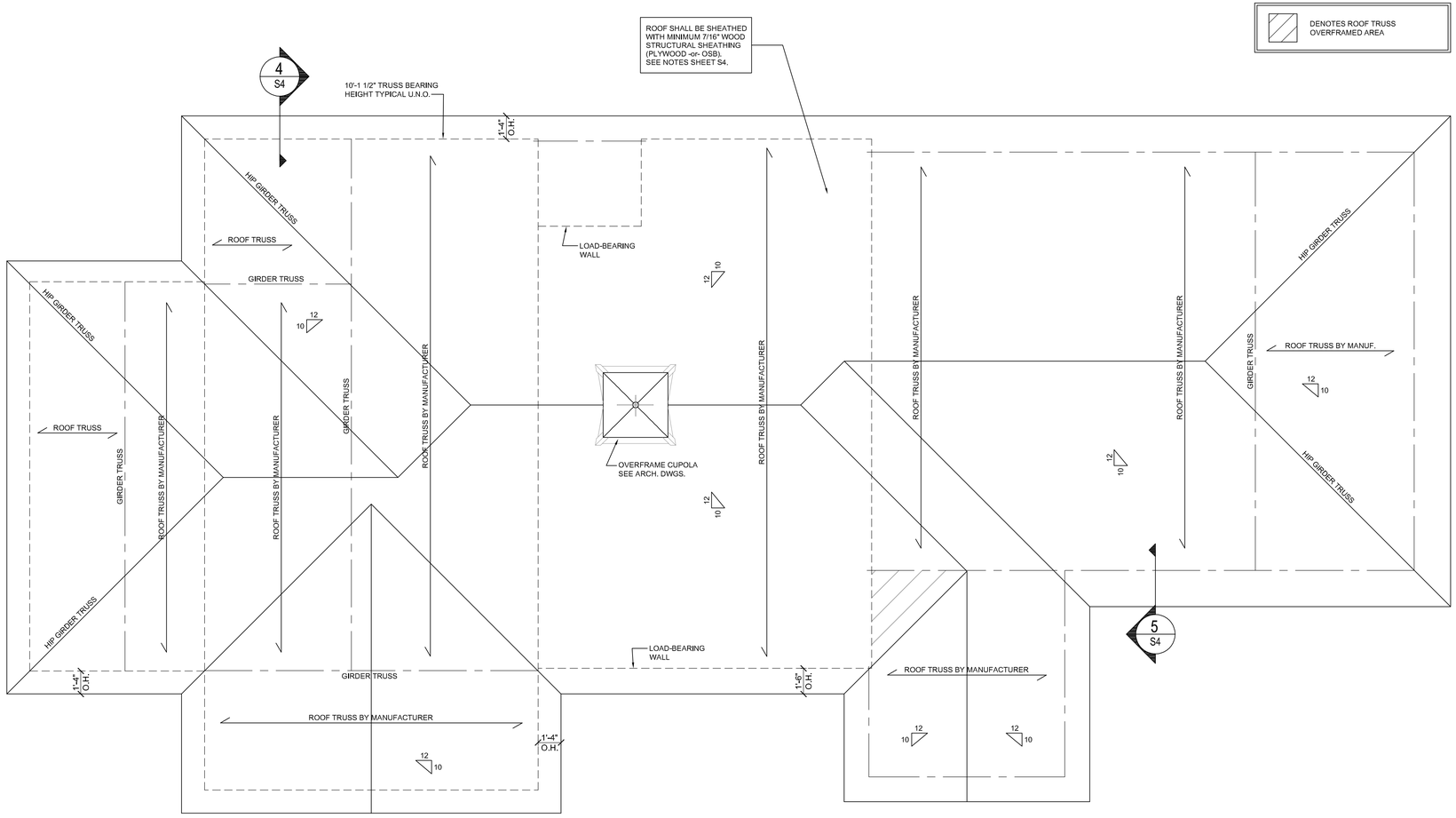
Ceiling Framing Plan

S2

ROOF TRUSS SYSTEM
TRUSS LAYOUT AND PLACEMENT BY MANUFACTURER TO COINCIDE WITH THE SUPPORT LOCATIONS SHOWN. TRUSS PROFILES SHALL BE ENGINEERED AND SEALED BY THE TRUSS MANUFACTURER. TRUSS PLANS SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

DENOTES ROOF TRUSS OVERFRAMED AREA



1 S3 ROOF FRAMING PLAN
1/4" = 1'-0"

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Roof Framing Plan

S3

STRUCTURAL NOTES

I. GENERAL

1. DESIGN CODES

NORTH CAROLINA BUILDING CODE, 2018 EDITION
(AMENDED 2015 INTERNATIONAL BUILDING CODE)

ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
(ACI 318-14)

AISC MANUAL OF STEEL CONSTRUCTION - ALLOWABLE STRESS DESIGN
NINTH EDITION

ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

2. DESIGN LOADS

LIVE LOADS: FLOOR: 100 PSF
ROOF: 20 PSF

ULTIMATE DESIGN WIND SPEED: 116 MPH

GROUND SNOW LOAD 15 PSF

SEISMIC DESIGN CATEGORY B
SITE CLASS D
Ss = 0.172
S1 = 0.083

3. ALL ELEVATIONS ARE REFERENCED FROM FINISHED FLOOR ELEVATION OF 0'-0". SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

4. DETAILED SHOP DRAWINGS SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

5. ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY.

6. ROSS LINDEN ENGINEERS PC ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE DRAWINGS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THESE DRAWINGS.

II. CONCRETE

1. UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL HAVE THE FOLLOWING STRENGTH AND SLUMP REQUIREMENTS:
3,500 PSI 28-DAY COMPRESSIVE STRENGTH, MAX. 5" SLUMP.

2. ALL CONCRETE SHALL BE MOIST CURED PER ACI 301 OR CURED WITH AN APPROVED CURING COMPOUND. CONTRACTOR SHALL VERIFY THAT THE CURING COMPOUND IS COMPATIBLE WITH FLOOR COVERING ADHESIVES, COATINGS, OR TOPPINGS TO BE USED. CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS.

3. UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL, CONFORMING TO ASTM A-615, GRADE 60, DEFORMED.

4. UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION, AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. (ACI 315)

5. ALL BAR SPLICES SHALL BE CLASS "B" TENSION SPLICES PER ACI 318-14, UNLESS OTHERWISE SHOWN.

6. ANCHOR BOLTS TO BE ASTM A36 OR A307.

7. CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR EMBEDDED ITEMS AND RECESSES NOT SHOWN ON THE STRUCTURAL DRAWINGS.

8. ALL SPREAD FOOTINGS BEARING ON NATIVE SOIL OR STRUCTURAL FILL ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF. A GEOTECHNICAL REPRESENTATIVE SHALL INSPECT ALL FOOTING EXCAVATIONS TO CONFIRM ALLOWABLE BEARING PRESSURES.

9. PROVIDE TWO (2) #5 x 4'-0" LONG DIAGONAL BARS IN TOP FACE OF ALL SLABS (1" CLEAR) AT ALL RE-ENTRANT CORNERS. SEE PLAN FOR LOCATIONS.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, PROTECTING, AND RELOCATING AS REQUIRED ALL SERVICE AND UTILITY LINES IN VICINITY OF THE WORK SITE.

11. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL MECHANICAL AND ELECTRICAL OPENINGS AND EQUIPMENT PADS WITH THE MECHANICAL AND ELECTRICAL DETAILS AND SHOP DRAWINGS BY OTHERS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL OPENINGS AND SLEEVES FOR PROPER DISTRIBUTION FOR ALL UTILITIES THROUGHOUT THE BUILDING.

12. ALL DOWELS WHICH ARE TO BE DRILLED AND GROUTED INTO EXISTING CONCRETE SHALL BE DONE WITH AN EPOXY GROUT. DRILL HOLE WITH DIAMETER 1/8" LARGER THAN DOWEL OR AS RECOMMENDED BY GROUT SUPPLIER. USE HIT-RE 500 V3 BY HILTI OR APPROVED EQUAL.

III. WOOD

1. FRAMING LUMBER SHALL BE #2 SOUTHERN YELLOW PINE (SYP) WITH THE FOLLOWING DESIGN PROPERTIES:
Fb = 800 PSI Fv = 175 PSI E = 1.4E6 PSI

2. FRAMING LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE #2 SOUTHERN YELLOW PINE (SYP) TREATED IN ACCORDANCE WITH AWPA C22 WITH THE FOLLOWING DESIGN PROPERTIES:
Fb = 800 PSI Fv = 175 PSI E = 1.4E6 PSI

3. ENGINEERED WOOD BEAMS SHALL BE LAMINATED VENEER LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL) WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:
Fb = 2600 PSI Fv = 285 PSI E = 1.9E6 PSI

4. ENGINEERED WOOD BEAMS SHALL BE INSTALLED WITH ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.

5. SOLID BLOCKING SHALL BE PROVIDED AT ALL POINT LOADS TO TRANSFER LOADS THROUGH FLOOR LEVELS. COLUMNS SHALL BE CONTINUOUS TO THE FOUNDATION OR TO OTHER STRUCTURAL ELEMENTS.

6. WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2" DIAMETER ANCHOR BOLTS SPACED A MAXIMUM OF 2'-8" o.c. AND WITHIN 12" FROM THE ENDS OF EACH PLATE SECTION. PROVIDE 1/2" DIAMETER HILTI HIT-RE 500 V3 INJECTION ADHESIVE ANCHORS WITH MINIMUM 4 1/2" EMBEDMENT INTO THE FOUNDATION AT ALL EXTERIOR, LOAD-BEARING, AND SHEAR WALLS AS SHOWN ON THE PLAN.

7. ALL EXTERIOR WALLS SHALL BE SHEATHED WITH MINIMUM 7/16" WOOD STRUCTURAL SHEATHING (PLYWOOD -or- OSB) WITH BLOCKING AT ALL JOINTS. FASTEN ALL PANELS WITH 8d NAILS AT 3" o.c. AT ALL EDGES AND AT 6" o.c. AT INTERMEDIATE FRAMING. AT DOUBLE TOP PLATE, FASTEN PANELS WITH A DOUBLE ROW OF 8d NAILS STAGGERED AT 3" o.c. ALL FASTENERS SHALL HAVE 1 3/8" PENETRATION INTO THE FRAMING MEMBERS.

8. PROVIDE MINIMUM 1/2" GYPSUM BOARD ON BOTH SIDES OF FULL-HEIGHT INTERIOR WALLS WITH INTERMEDIATE SUPPORT AT ALL JOINTS. FASTEN ALL PANELS WITH 1 1/4" SCREWS AT 7" o.c. AT TOP AND BOTTOM PLATES AND ALL STUDS. GYPSUM SHALL BE APPLIED PERPENDICULAR TO FRAMING.

9. SEE TYPICAL WALL SECTION FOR ADDITIONAL INFORMATION.

IV. WOOD TRUSSES

1. ENGINEERED ROOF TRUSS SYSTEMS SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ROOF TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER AND REVIEWED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

2. ALL TRUSSES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH BCSI 1-03 "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES."

3. THE TOP CHORD OF ALL ROOF TRUSSES SHALL BE SHEATHED WITH MINIMUM 7/16" WOOD STRUCTURAL SHEATHING (PLYWOOD -or- OSB). PROVIDE PLYWOOD EDGE CLIPS BETWEEN PANELS.

4. PROVIDE PERMANENT BOTTOM CHORD TRUSS BRACING AND WEB MEMBER PLANE BRACING IN ACCORDANCE WITH BCSI-B2 "TRUSS INSTALLATION AND TEMPORARY BRACING" AND BCSI-B3 "WEB MEMBER PERMANENT BRACING/WEB REINFORCEMENT."

ABBREVIATIONS

CONC	CONCRETE
CONT	CONTINUOUS
DBL	DOUBLE
DJ	DOUBLE JOIST
DSP	DOUBLE STUD POCKET
EA	EACH
FL PT	FLAT PLATE
FTG	FOOTING
HGR	HANGER
LVL	LAMINATED VENEER LUMBER
NTS	NOT TO SCALE
OC	ON CENTER
PT	PRESSURE TREATED
RS	RAFTER SUPPORT
SC	STUD COLUMN
SP	STUD POCKET
TJ	TRIPLE JOIST
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
XJ	EXTRA JOIST

STRUCTURAL DESIGN

DESIGN LOADS:
Occupancy Category II

Importance Factors: Wind (IW) 1.0
Snow (IS) 1.0
Seismic (IE) 1.0

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor 100 psf

Ground Snow Load: 15 psf

Wind Load: Ultimate Wind Speed 116 mph (ASCE 7-10)
Exposure Category B
Wind Base Shears (for MWFRS) Vx = 9.9K Vy = 12.8K

SEISMIC DESIGN CATEGORY ☐A ☒B ☐C ☐D

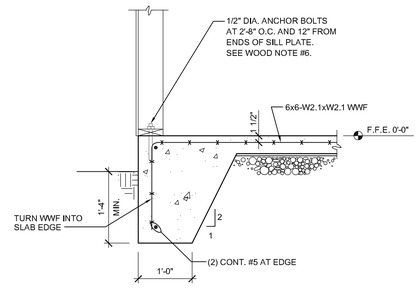
Provide the following Seismic Design Parameters:

Spectral Response Acceleration SS 0.172 %g S1 0.083 %g
Site Classification D ☐Field Test ☒Presumptive ☐Historical Data

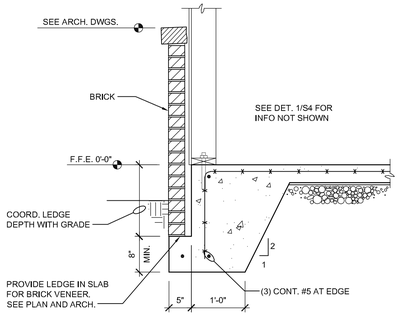
Basic structural system (check one)
X Bearing Wall ____ Dual w/Special Moment Frame
____ Building Frame ____ Dual w/Intermediate R/C or Special Steel
____ Moment Frame ____ Inverted Pendulum
Seismic base shear VX = 2.4K VY = 2.4K
Analysis Procedure ____ Simplified X Equivalent Lateral Force ____ Modal
Architectural, Mechanical, Components anchored? _____

Lateral design Control: Earthquake _____ Wind X

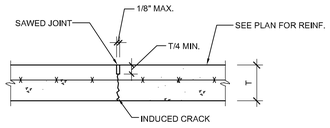
Soil Bearing Capacities:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity 2500 psf
Pile size, type, and capacity _____



1 S4 DETAIL - TYP. SLAB EDGE
3/4" = 1'-0"

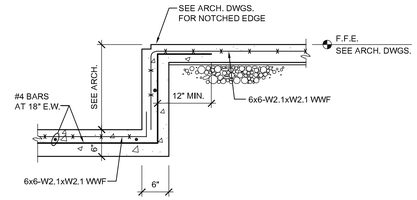


1A S4 SLAB EDGE - BRICK VENEER
3/4" = 1'-0"

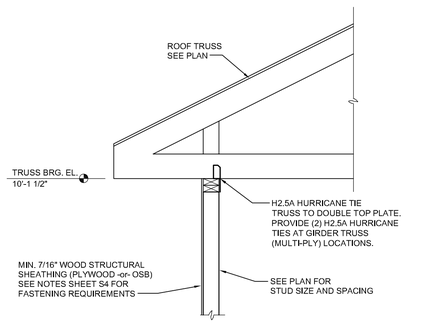


NOTES:
1. SAW JOINTS AS SOON AS CONCRETE WILL NOT RAVEL UNDER SAW BLADE.
2. ADD 20" LONG SMOOTH DOWELS WITH INSERTS AT ALL CONSTRUCTION JOINTS (IF USED).
3. CONTRACTOR'S OPTION TO CUT ALTERNATING WIRES AT JOINTS FOR ADDITIONAL CRACK CONTROL.

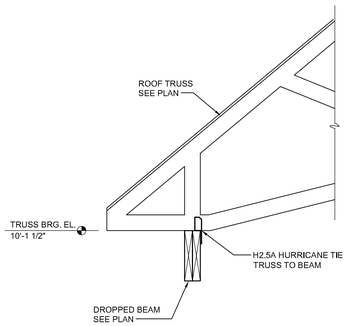
2 S4 DETAIL - TYP. SLAB CONTROL JOINT
1" = 1'-0"



3 S4 SECTION AT SUMP
3/4" = 1'-0"



5 S4 TYPICAL WALL SECTION
3/4" = 1'-0"



6 S4 FRAMING SECTION
3/4" = 1'-0"

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Structural Notes & Details

S4

GENERAL PLUMBING NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR.
3. THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BEAR APPROVAL FROM UL OR AN APPROVED THIRD PARTY AGENCY, WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
6. THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA PLUMBING CODE AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
7. THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
8. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
9. THESE PLANS ARE DIAGRAMMATIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION. ALL UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING.
10. TRENCHING, COMPACTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE NC PLUMBING CODE. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
11. THE PC SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS OF RATED FLOOR/CEILING ASSEMBLIES AND RATED WALL ASSEMBLIES TO PRESERVE OR RESTORE THE FIRE RESISTANCE RATING. SEAL ALL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THE PROJECT.
12. SYSTEM TESTING SHALL BE PERFORMED BY PLUMBING CONTRACTOR IN ACCORDANCE WITH NORTH CAROLINA PLUMBING CODE, SECTIONS 312.2, 312.3, AND 312.5.
13. PC SHALL DISINFECT THE ENTIRE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
14. AT THE COMPLETION OF WORK AND PRIOR TO ACCEPTANCE BY OWNER, THE PC SHALL CLEAN ALL EXPOSED FIXTURES, MATERIALS, AND EQUIPMENT UNDER THIS CONTRACT.
15. PC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

MATERIALS:

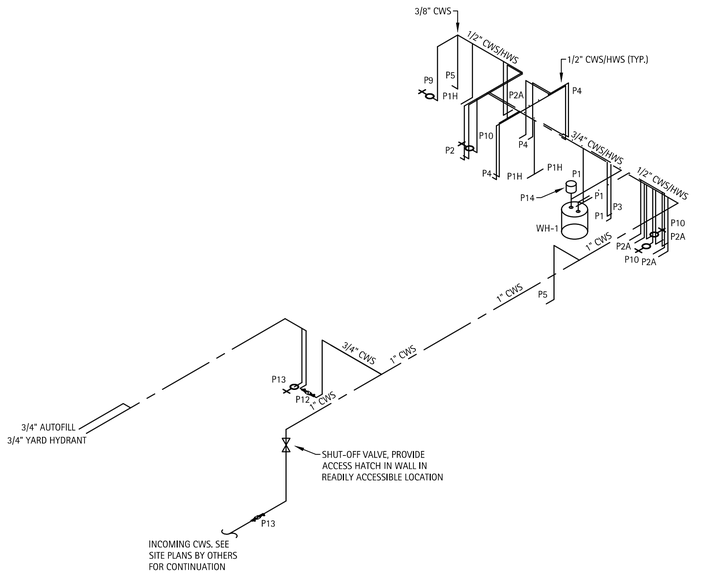
1. ALL OVERHEAD DOMESTIC WATER PIPING SHALL HAVE 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. *** PC MAY USE PEX (ASTM F 877) WITH APPROVED FITTINGS (ASTM F 1807) WITH OWNER'S APPROVAL. ** CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD PARTY CERTIFIED AS CONFORMING TO NSF 14. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF .25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
2. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
3. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER, ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
4. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
5. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT HAND SIDE OF THE FIXTURE FITTING.
6. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.13 OF THE NC PLUMBING CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR AWWA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP FITTINGS WITH ASME A112.1.3. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR AWWA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
7. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2 INCH SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTE WATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
8. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE NC PLUMBING CODE. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR. PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT PROVIDED.
10. ALL PUMPS SHALL BE RATED FOR TRANSPORT OF POTABLE WATER. PUMPS IN AN INDIVIDUAL WATER SUPPLY SYSTEM SHALL BE CONSTRUCTED AND INSTALLED SO AS TO PREVENT CONTAMINATION FROM ENTERING THE WATER SUPPLY SYSTEM.

METHODS:

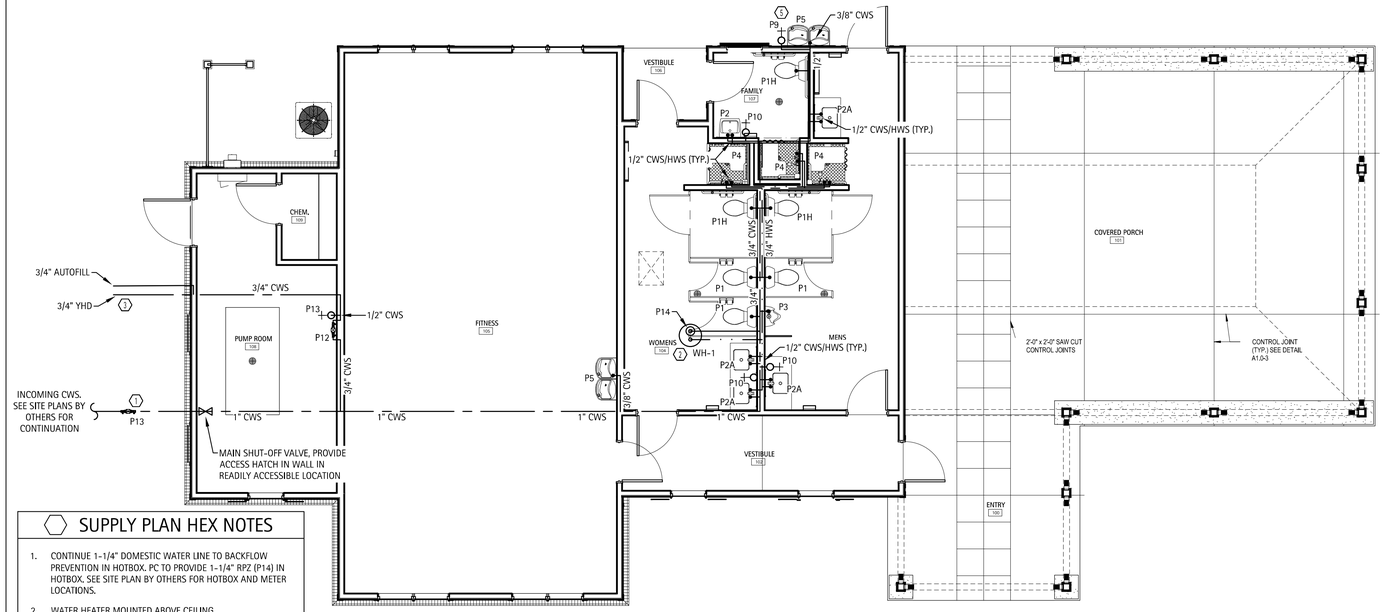
1. EXTEND DOMESTIC WATER PIPE FROM FIVE (5) FEET OUTSIDE THE BUILDING INTO THE BUILDING AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER-PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE-AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE NC PLUMBING CODE. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE.
4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR-EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS-AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION-BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
8. POTABLE WATER OUTLETS SHALL BE PROTECTED FROM BACKFLOW IN ACCORDANCE WITH 608.15. PRESSURE TYPE VACUUM BREAKERS SHALL CONFORM TO ASSE 1020 AND SPILPROOF VACUUM BREAKERS SHALL COMPLY WITH ASSE 1056. HOSE-CONNECTION VACUUM BREAKERS SHALL CONFORM TO ASSE 1011, ASSE 1019, ASSE 1035, OR ASSE 1052. CONNECTIONS TO BEVERAGE DISPENSERS, COFFEE MACHINES, AND NON-CARBONATED BEVERAGE DISPENSERS SHALL BE PROTECTED BY A BACKFLOW PREVENTER IN ACCORDANCE WITH ASSE 1022.
9. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
10. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED.
11. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
12. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER PIPING TO 5 FEET OUTSIDE THE BUILDING AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
13. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.4.1. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
14. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH PER FOOT MINIMUM.
15. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
16. FOR PLASTIC PIPE SIZES GREATER THAN 6 INCHES, AND OTHER PIPE SIZES GREATER THAN 4 INCHES, RESTRAINTS SHALL BE PROVIDED FOR DRAIN PIPES AT ALL CHANGES IN DIRECTION AND AT ALL CHANGES IN DIAMETER GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING, BACKFILL AND OTHER SUITABLE METHODS AS SPECIFIED BY THE COUPLING MANUFACTURER SHALL BE UTILIZED.
17. BASES OF STACKS SHALL BE SUPPORTED BY THE BUILDING STRUCTURE, VIRGIN OR COMPACTED EARTH, OR OTHER SUITABLE MATERIAL TO SUPPORT THE WEIGHT OF THE PIPING.
18. HORIZONTAL DRAIN PIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.10. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
19. DRAINAGE PIPING FOR FUTURE FIXTURES SHALL TERMINATE WITH AN APPROVED CAP OR PLUG.
20. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE NC PLUMBING CODE. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
21. INDIRECT WASTE PIPING THAT EXCEEDS 2 FEET IN DEVELOPED LENGTH MEASURED HORIZONTALLY, OR 4 FEET IN TOTAL DEVELOPED LENGTH, SHALL BE TRAPPED. THE AIR GAP BETWEEN THE INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL BE A MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
22. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING EQUIPMENT. UNIONS SHALL BE GROUND-JOINT WITH BRASS SEAT. PROVIDE INSULATING UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
23. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSETS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
24. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES SHALL BE MADE WATER TIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
25. INSTALL FULL OPEN VALVES PER NC PLUMBING CODE 606.1 ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL CUT OFF VALVES PER NC PC
26.

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	TWO PIECE TANK TYPE WATER CLOSET	KOHLER 4369 OR EQUAL BY AMERICAN STANDARD OR TOTO	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, KOHLER K-5309 ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. ASME 112.19.2 COMPLIANCE.	-	1/2"	3"
P1H	TWO PIECE TANK TYPE ADA WATER CLOSET	KOHLER 4369 OR EQUAL BY AMERICAN STANDARD OR TOTO	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, KOHLER K-5309 ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. ASME 112.19.2 COMPLIANCE. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA. LEVER MOUNTED ON WIDE SIDE FOR ADA	-	1/2"	3"
P2	WALL MOUNT LAVATORY	KOHLER K-2005 OR EQUAL BY AMERICAN STANDARD OR TOTO	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112.19.2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE A METERING TYPE FAUCET SIMILAR TO CHICAGO 3300-E280SAE (VERIFY EXACT FAUCET WITH OWNER).	1/2"	1/2"	2"
P2A	UNDER MOUNT LAVATORY	KOHLER K-20000 OR EQUAL BY AMERICAN STANDARD OR TOTO	VITREOUS CHINA SELF-RIMMING LAVATORY COMPLYING WITH ASME 112.19.2. MOUNT SO RIM IS 34 INCHES AFF AND 2 INCHES FROM FRONT EDGE FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS SUPPLY AND DRAIN LINES. USE A KOHLER K-1037,77-SANL FAUCET (COORDINATE WITH EC FOR FAUCET POWER).	1/2"	1/2"	2"
P3	URINAL	KOHLER K-4991-ET OR EQUAL BY AMERICAN STANDARD OR TOTO	VITREOUS CHINA, WALL-MOUNTED, ADA COMPLIANT, LOW CONSUMPTION WASHOUT URINAL COMPLYING WITH ASME 112.19.2. 1 GPF. KOHLER K-76319 FLUSHOMETER VALVE OR EQUAL BY ZURN OR TOTO. TOP OF RIM SHALL BE 17 INCHES AFF FOR ADA.	-	3/4"	2"
P4	HAND SHOWER	AMERICAN STANDARD 1660.766 OR EQUAL	1.5 GPM 3-FUNCTION SHOWER W/ PAUSE FEATURE MEETING ADA AND ANSI 117.1, 90° WALL SUPPLY (AMERICAN STANDARD 8888.068), METERED SHOWER VALVE (SYMMONS 4-420), WALL SHOWER HEAD & DIVERTER (ZURN Z70000-12)(Z7000-DV-2P), AND ADJUSTABLE VERTICAL VALVE ROD. COORDINATE FINISH WITH OWNERS.	1/2"	1/2"	-
P5	DRINKING FOUNTAIN	ELKAY VRCTLFRDDSC	ADA COMPLIANT FOR ADULT AND CHILD. 8.0 GPH OF 50°F WATER AT 90°F AMBIENT. PROVIDE ACCESSORY APRON FOR ADA COMPLIANCE AS NECESSARY. VANDAL AND FROST RESISTANT.	-	⅜"	2"
P6	FLOOR DRAIN	WATTS FD-200-A OR EQUAL BY ZURN OR JR SMITH	ON GRADE EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, WEEP HOLES, ADJUSTABLE ROUND NICKEL BRONZE STRAINER, AND NO HUB OUTLET. PROVIDE WITH A RUBBER GASKET. PROVIDE TRAP PRIMER CONNECTION OPTION IF NOTED.	-	-	3"
P7	SUMP PIT FLOOR DRAIN	ZURN FD1 OR EQUAL BY WATTS OR JR SMITH	ON GRADE ADJUSTABLE FLOOR DRAIN, ABS OR CAST IRON BODY, AND HUB OUTLET, PROVIDE WUTH A RUBBER GASKET. PROVIDE TRAP PRIMER CONNECTION OPTION IF NOTED.	-	-	SEE PLAN
P8	FLOOR DRAIN TRAP SEAL	JAY R. SMITH OR EQUAL	RUBBER TRAP SEAL INSTALLED PRIOR TO P-TRAP, CAN BE INTEGRAL TO FLOOR DRAIN.	-	-	MATCH DRAIN
P9	FREEZEPROOF HOSE BIBB	ZURN Z1346 OR EQUAL BY WOODFORD OR MIFAB	EXPOSED NON-FREEZE ANTI-SIPHON AUTOMATIC DRAINING WALL FAUCET COMPLETE WITH EXTERIOR CHROME FINISH, BRASS CASING, ALL BRONZE INTERIOR PARTS, Z1399-VB ANTI-SIPHON INTEGRAL VACUUM BREAKER, OPERATING ROD WITH FREE FLOATING COMPRESSION CLOSURE VALVE, REPLACEABLE SEAT WASHER,COMBINATION 1/2 FEMALE SOLDER INLET AND 1/2 MALE IP INLET CONNECTION STANDARD, AND 3/4 MALE HOSE CONNECTION.	-	1/2	-
P10



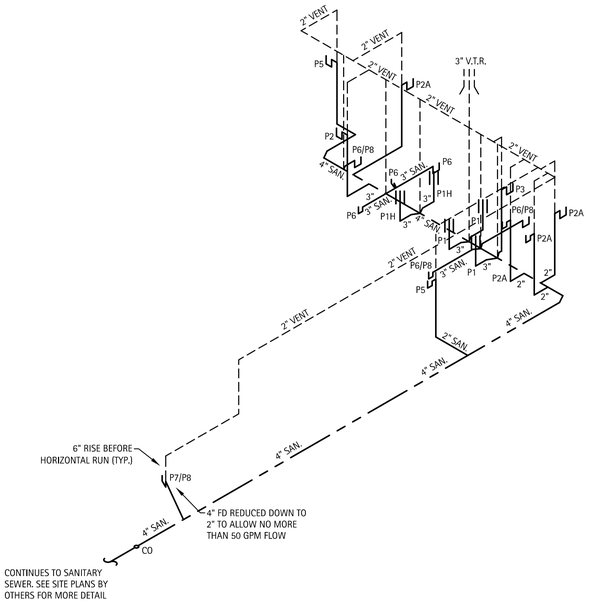
DOMESTIC WATER SUPPLY RISER - NO SCALE | 1



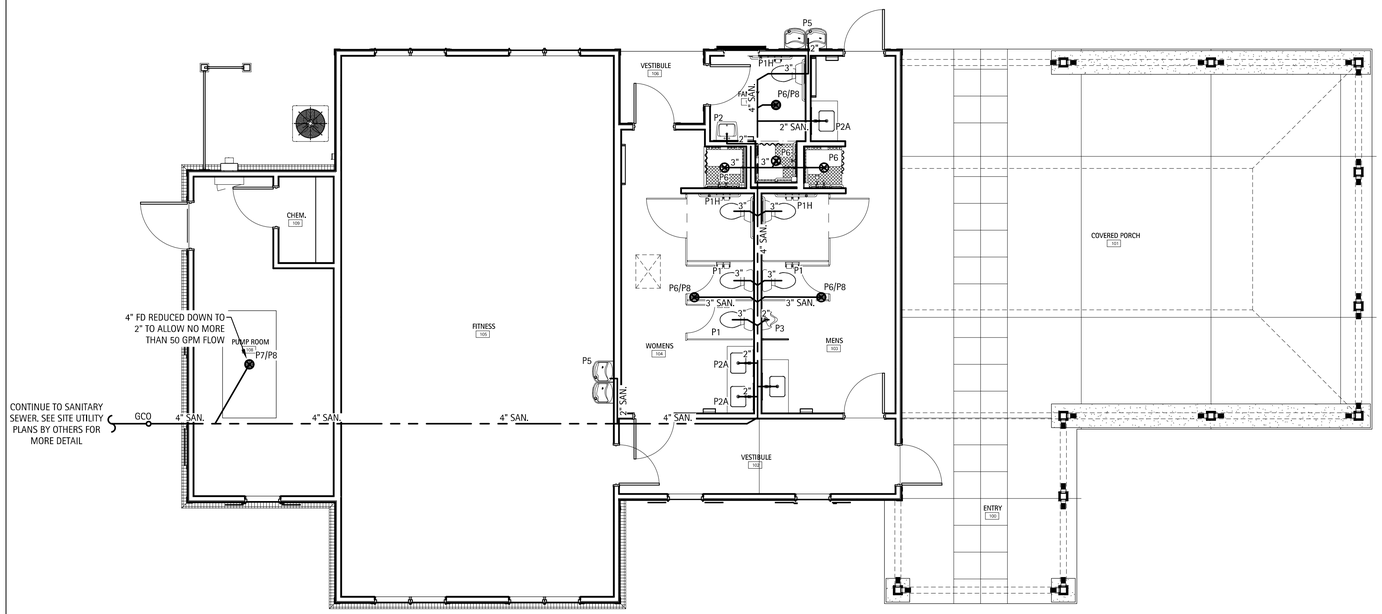
SUPPLY PLAN HEX NOTES

1. CONTINUE 1-1/4" DOMESTIC WATER LINE TO BACKFLOW PREVENTION IN HOTBOX. PC TO PROVIDE 1-1/4" RPZ (P14) IN HOTBOX. SEE SITE PLAN BY OTHERS FOR HOTBOX AND METER LOCATIONS.
2. WATER HEATER MOUNTED ABOVE CEILING.
3. VERIFY EXACT LOCATION OF YARD HYDRANT WITH ARCHITECT/GC.
4. ATTIC ACCESS. SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
5. PC TO COORDINATE WITH EC TO PROVIDE HEAT TRACE FOR FIXTURES WITH THIS NOTE.

DOMESTIC WATER SUPPLY PLAN - SCALE: 3/16" = 1'-0" | 2



SANITARY WASTE RISER - NO SCALE | 3



SANITARY WASTE PLAN - SCALE: 3/16" = 1'-0" | 4

D.CLUGSTON

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	240816
DATE ISSUED:	2025 01 21
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CHECKED BY:	JLH

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PLUMBING PLANS & RISERS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JAMES L. HAMILTON 01.21.2025

KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA

P2

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GENERAL MECHANICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR, AHJ - AUTHORITY HAVING JURISDICTION.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL, MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.
3. THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE MC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE MC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE 2018 NORTH CAROLINA MECHANICAL AND BUILDING CODES AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MC SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
6. THE MC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS--REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE MC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
9. ALL MECHANICAL MATERIALS SHALL BE NEW AND FREE OF DEFECT AND LISTED AND LABELED BY UL OR AN APPROVED THIRD PARTY AGENCY. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED BY THE MC WITHOUT ADDITIONAL COST TO THE OWNER. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, THE CITED EXAMPLE IS INTENDED TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER, SUCH EXAMPLES ARE USED TO CONVEY A GENERAL STYLE, TYPE, CHARACTER, AND QUALITY OF THE PRODUCT DESIRED; PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
10. THESE PLANS ARE DIAGRAMMATIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, ETC. TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
11. THE MC SHALL VERIFY THE FUNCTIONALITY AND OPERATION OF ALL EXISTING MECHANICAL EQUIPMENT IN THE AREA OF WORK. REPLACE FILTERS, LEAK TEST AND RECHARGE REFRIGERANT LINES, REPLACE OR LUBRICATE BEARINGS, CHECK LINKAGES AND ACTUATORS, AND PERFORM OTHER MAINTENANCE SERVICE AS NECESSARY TO GET THE EQUIPMENT IN PROPER ORDER.
12. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
13. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE SIZES AND SHAPES THAT FIT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS.
14. MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED.
15. MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM OF 10 FEET FROM ROOF EDGE.
16. MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
17. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
18. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
19. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
20. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLENUM AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
21. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

MATERIALS:

1. THE MC SHALL PROVIDE ALL DX UNITARY HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. AIR-COOLED SPLIT SYSTEM HEAT PUMPS AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. AIR-COOLED ROOFTOP PACKAGE HEAT PUMPS, GAS-ELECTRIC UNITS, AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. GAS FURNACES SHALL BE BY TRANE, CARRIER, OR YORK. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
2. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED. FANS SHALL BE BY GREENHECK, LOREN COOK, TWIN CITY, OR PENNBARRY.
3. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.
4. EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGIBLY PRINTED OR IDENTIFIED AT INTERVALS NOT GREATER THAN 36 INCHES WITH THE NAME OF THE MANUFACTURER, THE THERMAL RESISTANCE R-VALUE AT THE SPECIFIED INSTALLED THICKNESS AND THE FLAME SPREAD AND SMOKE-DEVELOPED INDEXES OF THE COMPOSITE MATERIALS. ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY, EXCLUDING AIR FILMS, VAPOR RETARDERS OR OTHER DUCT COMPONENTS, AND SHALL BE BASED ON TESTED C-VALUES AT 75°F MEAN TEMPERATURE AT THE INSTALLED THICKNESS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PROCEDURES. THE INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUES SHALL BE DETERMINED AS FOLLOWS:
   4.1. FOR DUCT BOARD, DUCT LINER AND FACTORY-MADE RIGID DUCTS NOT NORMALLY SUBJECTED TO COMPRESSION, THE NOMINAL INSULATION THICKNESS SHALL BE USED.
   4.2. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
   4.3. FOR FACTORY-MADE FLEXIBLE AIR DUCTS, THE INSTALLED THICKNESS SHALL BE DETERMINED BY DIVIDING THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.
5. DUCT LINER MAY BE SUBSTITUTED FOR EXTERIOR DUCT WRAP. DUCT LINER INSULATION MATERIALS SHALL MEET THE REQUIREMENTS OF ASTM C 1071, AND ASTM G 21. EXTERIOR DUCT R-VALUE SHALL BE R-8 AND INTERIOR R-VALUE SHALL BE R-6 IN ACCORDANCE WITH THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE. NOMINAL DUCT SIZES SHALL BE ADJUSTED AS NECESSARY SO THAT FREE AREA DIMENSIONS ARE PRESERVED AS SHOWN ON THE PLANS. FABRICATION AND INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND TO THE REQUIREMENTS OF THE LATEST EDITION OF THE NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION FIBROUS GLASS DUCT LINER STANDARDS AND/OR SMACNA HVAC DUCT CONSTRUCTION STANDARDS. DUCT LINER SHALL HAVE A BLACK PIGMENTED MAT ON THE AIRSTREAM SIDE TO RESIST DAMAGE DURING INSTALLATION AND SERVICE. EDGES SHALL BE FACTORY COATED WITH BLACK PIGMENTED COATING TO COMPLY WITH SMACNA DCS REQUIREMENTS. ALL PORTIONS OF DUCT DESIGNATED TO RECEIVE DUCT LINER SHALL BE COMPLETELY COVERED WITH DUCT LINER. TRANSVERSE JOINTS SHALL BE NEATLY BUTTED AND THERE SHALL BE NO INTERRUPTIONS OR GAPS. THE BLACK PIGMENTED OR MAT FACED SURFACES SHALL FACE THE AIRSTREAM. DUCT LINER SHALL BE ADHERED TO THE SHEET METAL WITH 90 PERCENT COVERAGE OF ADHESIVE COMPLYING WITH REQUIREMENTS OF ASTM C 916. ALL EXPOSED LEADING EDGES AND TRANSVERSE JOINTS SHALL BE FACTORY COATED OR COATED WITH ADHESIVE DURING FABRICATION. DUCT LINER SHALL BE ADDITIONALLY SECURED WITH MECHANICAL FASTENERS, EITHER WELD-SECURED OR IMPACT DRIVEN, WHICH SHALL COMPRESS THE DUCT LINER SUFFICIENTLY TO HOLD IT FIRMLY IN PLACE. ADHESIVE BONDED PINS ARE NOT PERMITTED DUE TO LONG-TERM ADHESIVE AGING CHARACTERISTICS. LININGS SHALL BE INTERRUPTED AT THE AREA OF OPERATION OF A FIRE DAMPER AND AT A MINIMUM OF 6 INCHES UPSTREAM AND 6 INCHES DOWNSTREAM OF ELECTRIC RESISTANCE AND FUEL-BURNING HEATERS IN A DUCT SYSTEM. METAL NOSINGS OR SLEEVES SHALL BE INSTALLED OVER EXPOSED DUCT LINER THAT FACE OPPOSITE THE DIRECTION OF AIRFLOW. UPON COMPLETION OF INSTALLATION OF DUCT LINER AND BEFORE OPERATION IS TO COMMENCE, VISUALLY INSPECT SYSTEM AND VERIFY THAT THE DUCT LINER IS PROPERLY INSTALLED. OPEN ALL SYSTEM DAMPERS AND TURN ON FANS TO BLOW ALL SCRAPS AND OTHER LOOSE PIECES OF MATERIAL OUT OF THE DUCT SYSTEM. ALLOW FOR A MEANS OF REMOVAL OF SUCH MATERIAL.
6. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
7. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A-95 OR UL 181B-98. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
8. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.
9. FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181-96.
10. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
11. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY-IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE BY HART & COOLEY, PRICE, METAL-AIRE, NAILOR, OR CARNES.
12. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.
13. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIR TIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SLUGGING AT THE COMPRESSOR AND INSURE PROPER LUBRICATION. MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLIES IN ACCORDANCE WITH A SYSTEM LISTED IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.

METHODS:

1. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP. INSTALLED R-VALUE SHALL BE A MINIMUM R-8. COVERINGS AND LININGS, INCLUDING ADHESIVES WHEN USED, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E-84. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECE OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE SEAMS APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES. SEAL SEAMS WITH PRESSURE SENSITIVE TAPE MATCHING THE FACING. FOR RECTANGULAR DUCTS 24 INCHES IN WIDTH OR GREATER, SECURE DUCT WRAP TO THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS SPACED 18 INCHES ON CENTER TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF DUCT WRAP SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. ALL TEARS, PUNCTURES, ETC. OF THE DUCT WRAP INSULATION SHALL BE SEALED WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM. INSULATION SHALL BE BY KNAUF INSULATION, OWENS CORNING CORP, OR CERTAINTEED CORPORATION.
2. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS. VERIFY THAT DUCT SURFACES ARE CLEAN, DRY AND FREE OF FOREIGN MATERIAL PRIOR TO INSULATING. DUCT COVERINGS SHALL NOT PENETRATE A WALL OR FLOOR REQUIRED TO HAVE A FIRE-RESISTANCE RATING OR REQUIRED TO BE FIRE BLOCKED.
3. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLANK-OUT PANELS SEALING LOUVER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE. SEAL TO LOUVER FRAME AND DUCT.
4. DUCTS CONNECTING TO A FURNACE SHALL HAVE A CLEARANCE TO COMBUSTIBLES IN ACCORDANCE WITH THE FURNACE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. FOR STRUCTURES IN FLOOD HAZARD AREAS, DUCTS SHALL BE LOCATED ABOVE THE DESIGN FLOOD ELEVATION. DUCT SHALL NOT BE INSTALLED IN OR WITHIN 4 INCHES OF THE EARTH.
6. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND SMOKE DAMPERS.
7. CONSTRUCT TI, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
8. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
9. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND LOCAL STANDARD. COMMERCIALLY ACCEPTED HANGERS AND SUSPENSION EQUIPMENT. ALL HVAC EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT OR PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING.
10. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT EXCEEDING 10 FEET. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
11. CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
12. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
13. MC SHALL INSTALL FIRE DAMPERS AT EACH PENETRATION OF A RATED WALL AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. FIRE DAMPERS SHALL BE UL LABELED (UL 555), CURTAIN TYPE, WITH INTEGRAL FACTORY SLEEVE AND BLADES LOCATED OUTSIDE THE AIR STREAM. INSTALLATION OF ALL FIRE DAMPERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SECTION 607 OF THE 2018 NC MECHANICAL CODE. PROVIDE ACCESS PANELS FOR TESTING AND SERVICE AS NECESSARY. MC SHALL PROVIDE RADIATION DAMPERS AND THERMAL BLANKETS FOR ALL PENETRATIONS OF RATED CEILING ASSEMBLIES. RADIATION DAMPERS SHALL BE UL LABELED (UL 555C) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND CEILING RADIATION DAMPERS SHALL BE BY RUSKIN, NAILOR, OR LLOYD INDUSTRIES.
14. MC SHALL INSTALL A SMOKE DETECTOR-UL LISTED FOR DUCT INSTALLATION (UL 268A) IN EACH UNIT'S RETURN UPSTREAM OF ANY FILTERS, OUTSIDE AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72. DUCT SMOKE DETECTOR SUPERVISION SHALL COMPLY WITH 606.4.1 OF THE 2018 NC MECHANICAL CODE. IF THE BUILDING IS ITO BE EQUIPPED WITH A FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM CONTRACTOR SHALL FURNISH AND WIRE ALL DUCT SMOKE DETECTORS. IF THE BUILDING IS NOT PROVIDED WITH A FIRE ALARM SYSTEM, THE MC SHALL FURNISH AND WIRE THE DUCT SMOKE DETECTORS AND A/V DEVICE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO INSTALL ALL SMOKE DUCT DETECTORS PER NFPA AND MFG'S INSTALLATION INSTRUCTIONS REGARDLESS OF WHO FURNISHES THE DEVICES.
15. MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS OF SECTION C403.2.4 OF THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.
16. FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
17. UNITS PROVIDED WITH ECONOMIZERS SHALL ALSO BE PROVIDED WITH POWERED EXHAUST AND COMPARATIVE ENTHALPY CONTROLS.
18. MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
19. P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLENUMS; OTHERWISE, THEY SHALL BE TYPE M COPPER. CONDENSATE SHALL BE ROUTED TO DAYLIGHT OR STORM DRAIN.
20. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER NORTH CAROLINA ENERGY CONSERVATION CODE C402.5.5

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	ZONE 4A
EXTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	23.1°F
COOLING DESIGN DRY BULB	91.7°F
COOLING DESIGN WET BULB	75.6°F
INTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	70°F
COOLING DESIGN DRY BULB	75°F
COOLING RELATIVE HUMIDITY	50%
FITNESS ROOM + RESTROOMS HEATING LOAD:	25,234 BTU/H
SENSIBLE COOLING LOAD:	18,423 BTU/H
LATENT COOLING LOAD:	8,891 BTU/H
PUMP ROOM (DESIGNED AT 50°F HEATING DRY BULB) HEATING LOAD:	15,967 BTU/H
FAMILY (DESIGNED AT 50°F HEATING DRY BULB) HEATING LOAD:	4,705 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	AIR COOLED DX
DESCRIPTION OF UNIT(S)	UNIT HEATERS
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):	SEE SCHEDULES

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR THIS BUILDING COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE AND 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.

/entilation Calculation

Room Name(s)	Zone Type	Area (sq.ft.)	Rp	Ra	Default Occupancy	Pz	Ez	Airflow to Zone (cfm)	Required Exhaust (cfm)
FITNESS	Health/Weight Rooms	778.5	20	0.06	10	7.79	0.8	900	0
BATHROOMS	N/A	535	0	0	0	0.00	0.8	250	0
CORRIDOR	Corridors	116	0	0.06	0	0.00	0.8	50	0
	N/A		0	0	0	0.00	0.8		0
	N/A		0	0	0	0.00	0.8		0

K-12 School? No

Uncorrected Intake 154 cfm
Outdoor Air Intake *192 cfm*
Percent of Unit Air 16%

Maximum Zp: 0.281125
Ev: 0.8
Actual System Population: 5

ELECTRIC UNIT HEATER SCHEDULE

MARK	MFG / MODEL #	HEATER	VOLT/PH	HEAT	MOCP	NOTES
		KW		KW	AMPS	
UH-1	MARKEL/ H11HUH05003	5.0	240/1	5.0	25.0	1,2,5
UH-2	MARKEL/ E3313T2SRPW	1.5	120/1	1.5	20.0	1-4

1. BUILT-IN THERMOSTAT.
2. BUILT-IN DISCONNECT SWITCH.
3. PROVIDE WITH SURFACE MOUNTING SLEEVE KIT (BATHROOMS ONLY)
4. BUILT IN SUMMER FAN SWITCH (BATHROOMS ONLY)
5. CORROSION RESISTANT

SPLIT SYSTEM HEAT PUMP SCHEDULE

MARK	MFG / MODEL #	NOMINAL CAPACITY	REF LINES		MOTORS		EFFICIENCIES			ELECTRICAL			WEIGHT	REMARKS
			GAS	LIQ	COMPRESSOR	COND. FAN	SEER	COP @ 17°	HSPF	V/PH	MCA	MOCP		
		TONS			NO.	NO.	EER						LBS	
HP-1	YORK YH2E36TB21S	3	3/4	3/8	1	1	14.3/11	4.1	8.2	240/1	20.3	35	183	1,3-8

SPLIT SYSTEM AIR HANDLER SCHEDULE

MARK	MFG / MODEL #	NOMINAL CAPACITY	AIR FLOW		FAN MOTORS		HEATING CAPACITY			COOLING CAPACITY			ELECTRICAL			WEIGHT	REMARKS
			SUPPLY	MIN. OA	SUPPLY	ESP	OUTPUT	AUX ELEC HEAT		EAT WB/DB	TOTAL	SENSIBLE	V/PH	MCA	MOCP		
		TONS	CFM	CFM	NO.	in wg	MBH	kW	STAGES	°F	MBH	MBH				LBS	
AHU-1	YORK JJHETB36DBCS2N1	3	1200	SEE TABLE	1	0.60	36.4	4.4	1	67/80	34.4	26.6	240/1	28.7	30	100	2-4,6-8

1. PROVIDE CONCRETE PAD FOR UNIT TO SIT ON
2. REPLACE ALL FILTERS AT PROJECT'S COMPLETION
3. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH NIGHT-TIME SET BACK
4. CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT
5. PROVIDE HARD START KIT.
6. OR EQUAL BY CARRIER, LENNOX, OR TRANE
7. ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI)
8. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

VENTILATION CALCS

CHEMICAL STORAGE:

26 SQFT X 10' HIGH CEILING = 260 CU.

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR, AHJ - AUTHORITY HAVING JURISDICTION.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE ELECTRICAL CONTRACTOR SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERRABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE ELECTRICAL CONTRACTOR AT AN APPROVED LOCATION. THE ELECTRICAL CONTRACTOR SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE ELECTRICAL CONTRACTOR UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
6. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS--REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
9. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
10. GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250, THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS, FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.54 AS NECESSARY.
11. THE ELECTRICAL CONTRACTOR SHALL ALSO COORDINATE WITH THE GENERAL CONTRACTOR REGARDING THE BONDING OF THE FOOTING REBAR, SO THAT IT WILL BE IN PLACE AND READY AT TIME OF FOOTING INSPECTION.
12. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
13. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
14. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
15. ALL WORK SHALL CONFORM TO 2020 NATIONAL ELECTRIC CODE, 2018 STATE BUILDING CODE, AND ALL APPLICABLE LOCAL CODES.

MATERIALS:

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC, UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS, PRIOR TO ORDERING EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL OBTAIN THE AVAILABLE FAULT CURRENT OR TRANSFORMER SIZE AND IMPEDANCE FROM THE UTILITY AND CONTACT THE ENGINEER IF THE VALUE EXCEEDS THE EQUIPMENT SPECIFIED. PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER-HAMMER, SIEMENS, OR GE. BUSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METER BASES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. ELECTRICIAN SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
3. ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D, EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN, LITTELFUSE, OR MERSEN.
4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL
5. CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
6. ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THHN/THWN OR XHHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC, INDUSTRIAL WIRE & CABLE, INC, ENCORE WIRE CORPORATION, OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR TYCO "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS, WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
9. ALL LUMINARIES SHALL BE LISTED. LUMINARIES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLETON, RACO, OR O-Z/GEDNEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED
11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSC), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
12. METAL CONDUIT SHALL BE BY ALLIED TUBING & CONDUIT, BECK MANUFACTURING, INC, OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC, ELECTRI-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.

METHODS:

1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
2. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
3. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK AND RED FOR PHASES A AND B RESPECTIVELY ON 120/240 VOLT SINGLE-PHASE SYSTEMS AND WHITE FOR THE NEUTRAL. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
4. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(E).
5. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI-GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
6. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE-STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE-RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
8. LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
9. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. *** TYPE NM CABLE MAY BE USED FOR INTERIOR BRANCH CIRCUITS IN NORMALLY DRY LOCATIONS SUBJECT TO THE RESTRICTIONS OF NEC 334.10 AND 334.12. TYPE NM CABLE CONDUCTORS SHALL BE DERATED PER NEC 334.80. *** FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6-8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.7(A), AND 300.5(D) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL-CORRUGATED, SHEET DECKING-TYPE ROOF. SEE NEC 300.4(E).
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 714.3.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED RRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.
12. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE NORTH CAROLINA GENERAL CONSTRUCTION BUILDING CODE.
13. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.10(G).
14. ISOLATED-GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH 250.146(D). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
15. TRANSFER EQUIPMENT SHALL BE LISTED FOR THE PARTICULAR USE (IE., "EMERGENCY" OR "STANDBY") AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
16. PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
17. INSTALL ONE (1) 3/4 in FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD, GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC 800.
18. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2-1/8 in DEEP BOX WITH 3/4 in KNOCK-OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
19. ELECTRICAL CONTRACTOR SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
20. ELECTRICAL CONTRACTOR SHALL FIELD-IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC, TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
21. ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE. WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
22. IN ACCORDANCE WITH SECTION F510 OF THE NC FIRE PREVENTION CODE, TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY RRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION. IF UNACCEPTABLE SIGNAL DEGRADATION IS PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT TIME.

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	LOUVER/LENS	LAMPS		VOLTAGE	MAX INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	CCT						
A	4' 2 LAMP VAPOR PROOF STRIP LIGHT	-	LED	-	120	64	SURFACE	2	EPCO	G-4-LED-FX-S-41-34
B	6" CAN LIGHT	-	LED	-	120	12	RECESSED	2,3,4	JUNO	IC22LED-G4-09LM-35K-90CRI-MVOLT
B2	6" CAN LIGHT W/ BATTERY BACKUP	-	LED	-	120	12	RECESSED	1,2,3,4	JUNO	IC22LED-G4-09LM-35K-90CRI-MVOLT
C	CEILING FAN W/O LIGHT KIT	-	LED	-	120	67	SURFACE	2,4	KICHLER	310275SBK
D	1X4 STRIP LIGHT	-	LED	3500K	120	35	SURFACE	2	LITHONIA	CSS-L48-4000LM-MVOLT-35K-80CRI
FL	FLOOD LIGHT	-	LED	-	120	17	SURFACE	2,4	COOPER	MSS-15-3T-18
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	120	2	VARIES	1,2	LITHONIA	ELM2-LED-SD
EX	EXIT SIGN	ACRYLIC	LED	N/A	120	5	VARIES	1,2	EXIT LIGHT COMPANY	ELSM-RM-R-A-BB-ST-S
EXH	LED EXIT/COMBO W/ BATTERY BACKUP	ACRYLIC	LED	N/A	120	4	VARIES	1,2	EMERGI-LITE	LSNX42NGC
OE	EXTERIOR OVAL LED EMERGENCY LIGHT	POLYCARBONATE	LED	-	120	17	SURFACE	1,2	NICOR	EOF1MV35

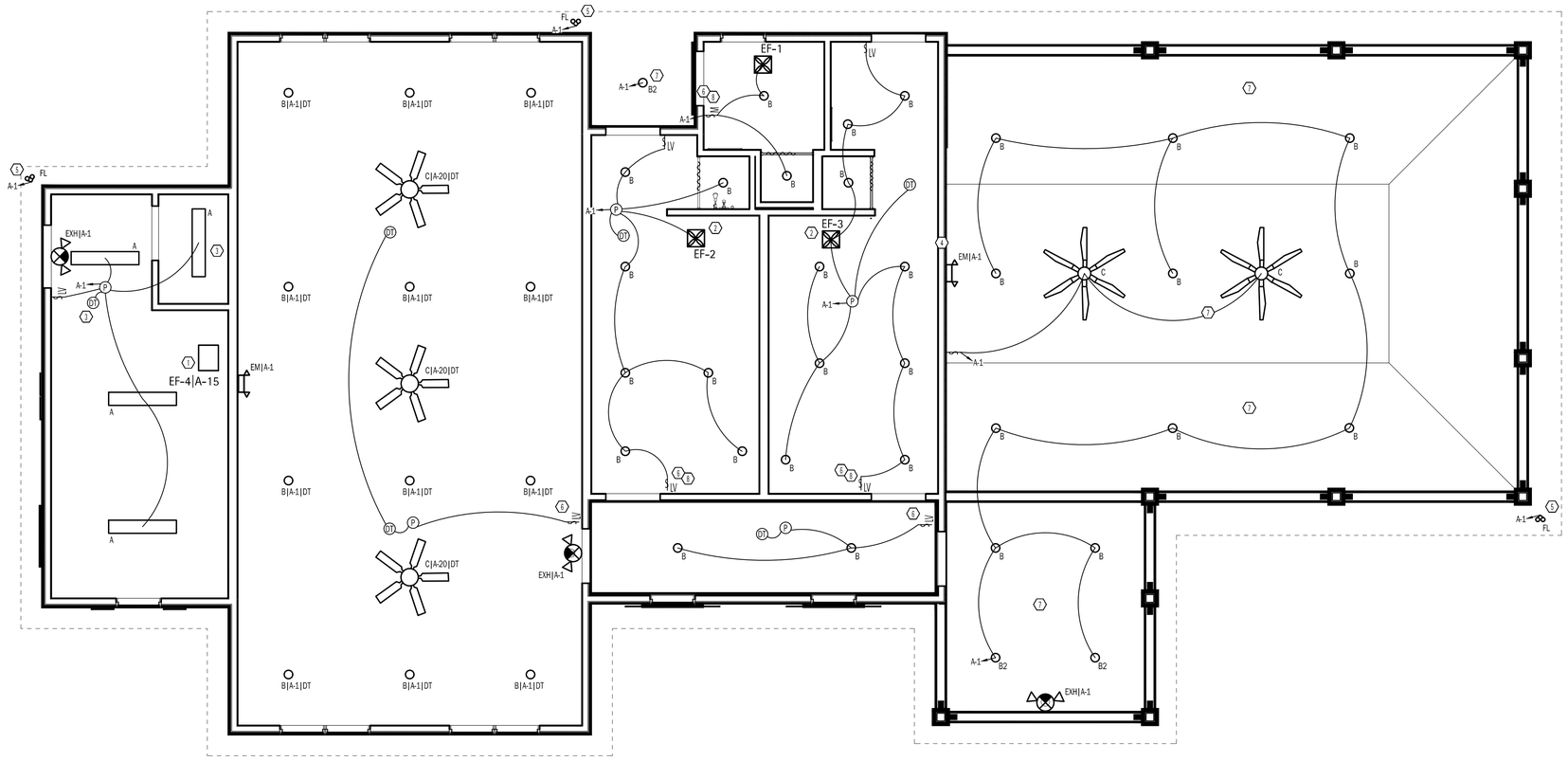
1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, PHILIPS, DAY-BRITE LIGHTING, GE, LITHONIA, OR OWNER APPROVED SELECTION
3. PROVIDE SLOPED CEILING ADAPTERS AS NEEDED
4. SUBSTITUTIONS TO BE EXTERIOR RATED

LIGHTING DEVICE LEGEND

SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$D	DIMMER SWITCH	COMMERCIAL GRADE, 120V, 1500W
$OC	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DW-100 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$LV	LOW VOLTAGE SWITCH	WATTSOPPER LVS-1 LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
(CT)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, DT-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
(CS)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, WT-2255 LOW VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC, 90 LINEAR FT COVERAGE.
(SP)	SWITCHING PHOTOSENSOR	WATTSTOPPER, LS-102, CONSULT OWNER FOR FOOT-CANDLE SET POINT

LIGHTING PLAN HEX NOTES

1. EXHAUST FAN SUSPENDED IN ATTIC TO BE WIRED FOR CONTINUOUS OPERATION. COORDINATE WITH M.C. PROVIDE LOCKABLE BREAKER AT PANEL.
2. EC TO TIE EXHAUST FAN AND LIGHTING FIXTURES TO SAME MOTION SENSOR.
3. PUMP ROOM AND CHEM. ROOM LIGHTS TO BE TIED TO SAME MOTION SENSOR.
4. PROVIDE 60 MINUTE SWITCH FOR FAN. PROVIDE IN WEATHERPROOF ENCLOSURE.
5. FLOOD LIGHT HAS BUILT IN MOTION DETECTION. AIM TOWARD POOL DECK.
6. MOTION SENSOR TO BE SET ON 20 MINUTE TIMER.
7. LIGHTING CIRCUIT CONTROLLED VIA PHOTOCELL LOCATED ON NORTH FACE OF BUILDING.
8. BATHROOM SWITCHES TO BE KEYED



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WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	240816
DATE ISSUED:	2025 01 21
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CHECKED BY:	JLH

00% I.F.B.

LIGHTING PLAN

E2

NORTH CAROLINA PROFESSIONAL SEAL 048012 ENGINEER JOSHUA L. HAMLIN
01.21.2025

KILIAN ENGINEERING CORPORATE SEAL INC. NORTH CAROLINA

LIGHTING PLAN - SCALE: 1/4" = 1'-0" | 1

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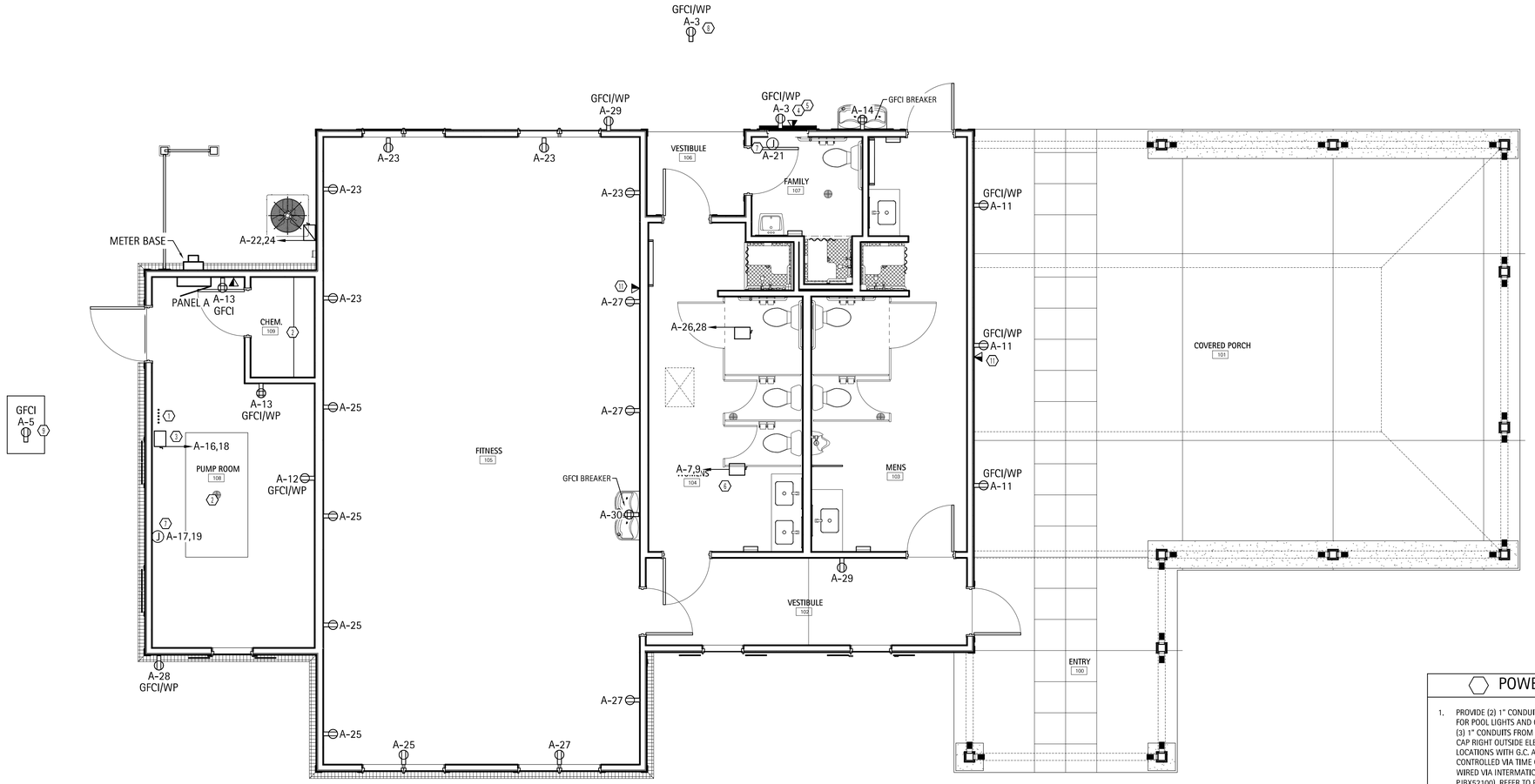

POWER PLAN HEX NOTES

1. PROVIDE (2) 1" CONDUITS WITH CIRCUITS AS SHOWN TO POOL FOR POOL LIGHTS AND OTHER POOLSIDE EQUIPMENT. PROVIDE (3) 1" CONDUITS FROM SPARE POOL CIRCUITS AS SHOWN AND CAP RIGHT OUTSIDE ELECTRICAL ROOM. COORDINATE EXACT LOCATIONS WITH G.C. AND POOL CONTRACTOR. CIRCUIT TO BE CONTROLLED VIA TIME CLOCK AT PANEL. POOL LIGHTS TO BE WIRED VIA INTERMATIC JUNCTION BOX TRANSFORMER (MODEL PJBX52100). REFER TO PANEL SCHEDULE FOR CIRCUIT DESIGNATIONS.
2. AREA IS CORROSIVE ENVIRONMENT PER NEC 680.14.
3. PROVIDE POWER TO SHUNT TRIP BREAKER FOR DISCONNECTING MEANS FOR POOL AND FEATURE PUMPS. PUMPS MUST HAVE GFCI PROTECTION. PROVIDE GFCI BREAKER IN PANEL. BREAKER MUST HAVE NEMA 4X RATED ENCLOSURE. COORDINATE EXACT LOCATION AND SPEC WITH G.C AND POOL CONTRACTOR BEFORE BEGINNING WORK. VERIFY EXACT FLA AND MOCP WITH EXACT PUMP MODEL. FINAL CONNECTIONS BY E.C.
4. PROVIDE POWER TO EMERGENCY PHONE RECEPTACLE. FIELD VERIFY LOCATION WITH LOCAL AHJ.
5. PROVIDE EMERGENCY "PUSH IN" POWER OFF SWITCH FOR POOL PUMPS. VERIFY LOCATION WITH LOCAL AHJ. WIRE TO SHUNT TRIP BREAKER IN PUMP ROOM (HEX 3).
6. WATER HEATER DISCONNECT LOCATED ABOVE CEILING.
7. FLUSH MOUNT JUNCTION BOX FOR UNIT HEATER.
8. E.C TO COORDINATE WITH POOL CONTRACTOR TO ENSURE A GFCI/WEATHER PROOF RECEPTACLE IS WITHIN 20' OF EDGE OF POOL (BUT NO CLOSER THAN 6') AS REQUIRE BY NEC 680.22(A)(1). PROVIDE ON CIRCUIT 3 IN PANEL A.
9. RECEPTACLE IN HOTBOX FOR FREEZE PROTECTION. VERIFY EXACT LOCATION OF HOTBOX WITH UTILITY PLANS BY OTHERS.
10. EC TO COORDINATE WITH PC FOR HEAT TRACE ON COLD WATER SUPPLY LINES. USE FREE CIRCUITS IN PANEL A.
11. TV RECEPTACLE MOUNTED @ 72" A.F.F. VERIFY EXACT LOCATION/MOUNTING HEIGHT WITH OWNER/ARCHITECT.

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

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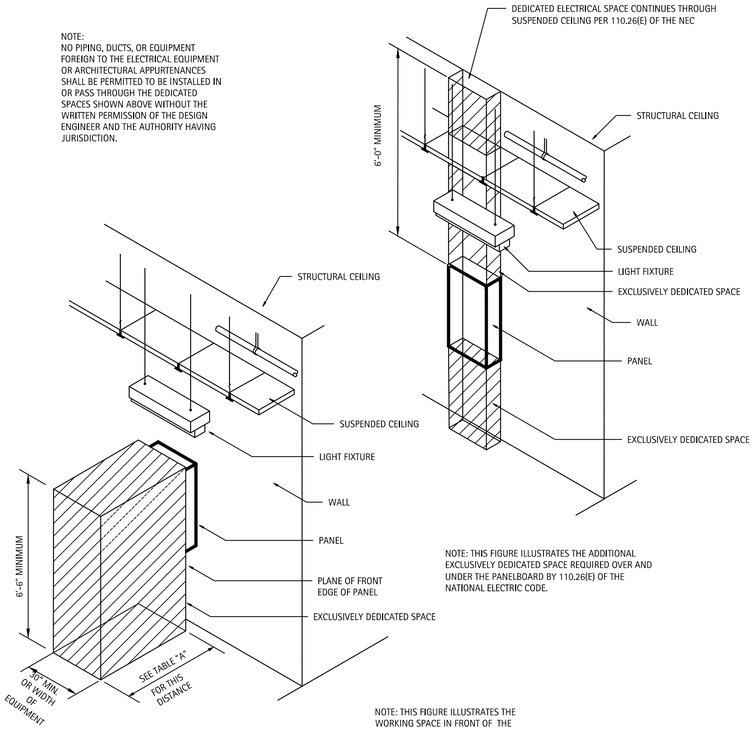
NORTH CAROLINA PROFESSIONAL SEAL 048012 ENGINEER ROBERT L. HAMLIN
01.21.2025

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

POWER PLAN

E3

NOTE:
NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER AND THE AUTHORITY HAVING JURISDICTION.



NOTE: THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE PANELBOARD BY 110.26(E) OF THE NATIONAL ELECTRIC CODE.

NOTE: THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE PANELBOARD REQUIRED BY 110.26 OF THE NATIONAL ELECTRIC CODE.

NOTE: WHERE THE CONDITIONS ARE AS FOLLOWS:

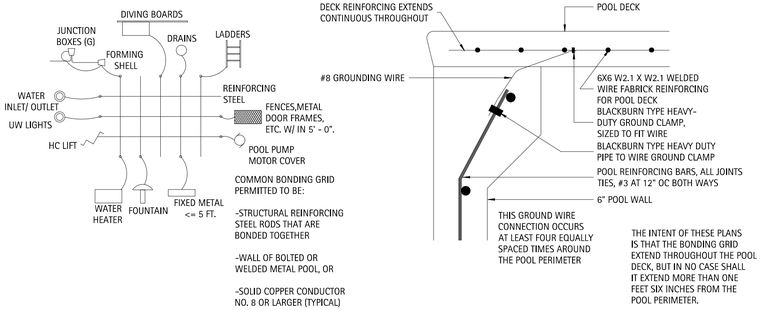
CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE
AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.

CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.

CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.

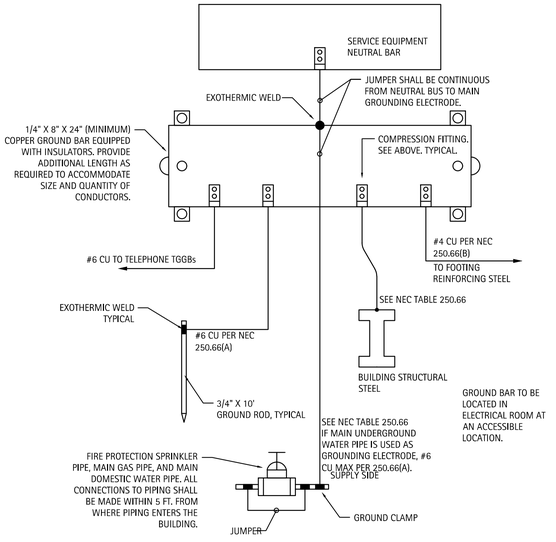
TABLE 110.26(A)(1) WORKING SPACE			
VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITON 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4

REQUIRED CLEARANCES - NO SCALE



SWIMMING BONDING RISER DETAIL - NO SCALE

EQUIPOTENTIAL BONDING GRID DETAIL - NO SCALE



GROUNDING DETAIL - NO SCALE

PANEL A							
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	LIGHTING	20/1	1.00	A	1.20	20/1	POOL LIGHTS & ACCESSORIES	(2)
3	EM PHONE/POOL DECK RECEPT.	20/1	0.36	B	1.20	20/1	POOL LIGHTS & ACCESSORIES	(4)
5	HOTBOX RECEPT.	20/1	0.18	A	0.00	20/1	POOL SPARE	(6)
7	WH-1	30/2	2.25	B	0.00	20/1	POOL SPARE	(8)
9			2.25	A	0.00	20/1	POOL SPARE	(10)
11	EXTERIOR RECEPTACLES	20/1	0.54	B	1.20	20/1	SALT CHLORINATOR	(12)
13	PUMP RM/ELEC. RM RECEP.	20/1	0.72	A	0.48	20/1	DRINKING FOUNTAIN	(14)
15	PUMP ROOM EXHAUST FAN	20/1	0.59	B	3.36	60/2	POOL PUMP	(16)
17	UNIT HEATER 1	30/2	2.50	A	3.36			(18)
19			2.50	B	0.34	20/1	FANS	20
21	UNIT HEATER 2	20/1	1.50	A	3.15	50/2	HP-1	22
23	FITNESS RECEPTS	20/1	0.90	B	3.15			24
25	FITNESS RECEPTS	20/1	0.90	A	3.92	35/2	AHU-1	26
27	FITNESS RECEPTS	20/1	0.72	B	3.92			28
29	EXTERIOR RECEPTACLES	20/1	0.36	A	0.48	20/1	DRINKING FOUNTAIN	(30)
31	SPACE	--	0.00	B	0.00	--	SPACE	32
33	SPACE	--	0.00	A	0.00	--	SPACE	34
35	SPACE	--	0.00	B	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	A	0.00	--	SPACE	42
			kVA	PH	AMPS			
			22.0	A	183			
			21.0	B	175			

VOLTAGE/PHASE		120/240,1P,3W
BUS RATING		200A
MAIN CIRCUIT BREAKER RATING		200A MAIN BREAKER
AIC RATING		22K - EC TO VERIFY
SERVICE ENTRANCE RATED		YES
ENCLOSURE		NEMA 1
MOUNTING		SURFACE

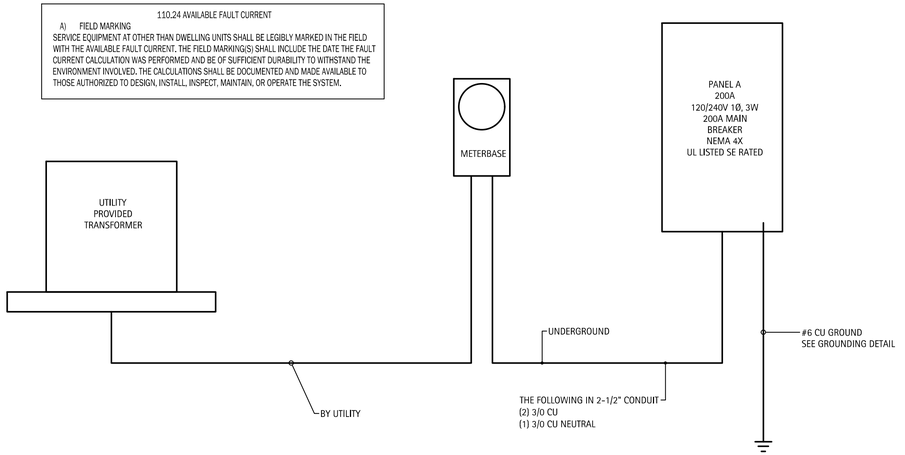
◯ DENOTES GFCI BREAKER

NEC ELECTRIC DEMAND SUMMARY 120/240V,1P,3W						
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	125%	0.92	0.92	1.84	220.12	1313.5 SF X 1.4 VA/SF
RECEPTACLES < 10 kVA	100%	3.10	2.90	6.00	220.44	
HVAC	100%	11.07	10.16	21.23	--	BASED ON MCA
WATER HEATER	125%	2.25	2.25	4.50	422.13	STORAGE TANK <120 GAL @ 125%
POOL EQUIPMENT	100%	4.56	5.76	10.32	430.24	LARGEST MOTOR @ 125%
DEMAND kVA PER PHASE		21.90	21.99			
DEMAND AMPS PER PHASE		182	183			

THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

110.24 AVAILABLE FAULT CURRENT

A) FIELD MARKING
SERVICE EQUIPMENT AT OTHER THAN DWELLING UNITS SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE AVAILABLE FAULT CURRENT. THE FIELD MARKING(S) SHALL INCLUDE THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. THE CALCULATIONS SHALL BE DOCUMENTED AND MADE AVAILABLE TO THOSE AUTHORIZED TO DESIGN, INSTALL, INSPECT, MAINTAIN, OR OPERATE THE SYSTEM.



POWER RISER - NO SCALE

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WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

REVISION	DATE

PROJECT #:	240816
DATE ISSUED:	2025 01 21
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POWER RISER & PANEL SCHEDULE

01.21.2025

E4

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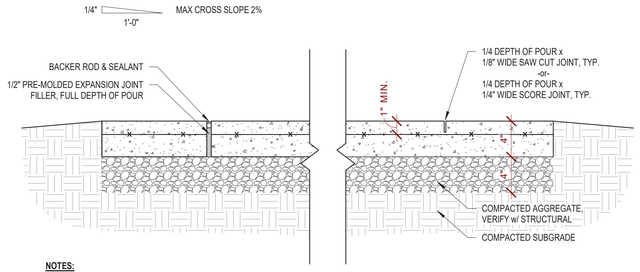
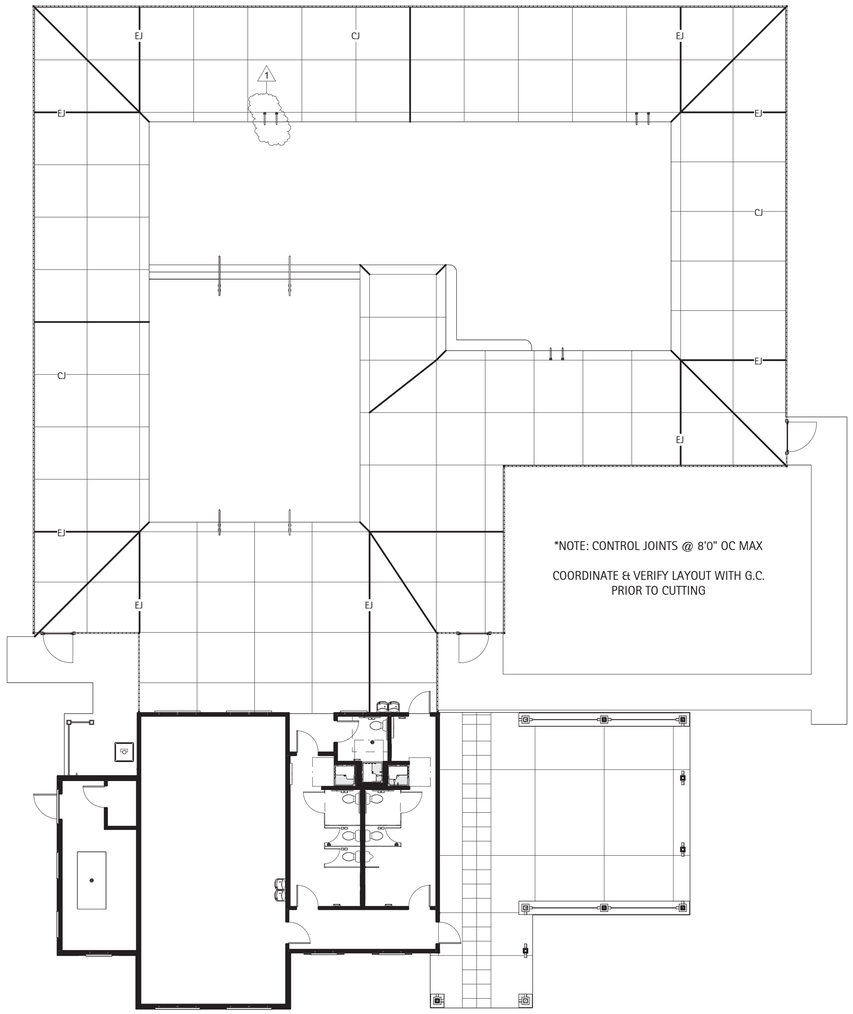


NOTES:

1. ALL JOINTS TO BE CUT w/ WET WALK BEHIND SAW TO ENSURE ALL CUTS ARE PERPENDICULAR W/ FACE OF CONCRETE
2. MAXIMUM CONTROL JOINT SPACING SHALL BE 10 FT. IN EACH DIRECTION UNLESS SHOWN OTHERWISE ON PLAN, SEE STRUCT.
3. PROVIDE EXPANSION JOINT WHERE SLABS ARE POURED AGAINST VERTICAL SURFACES AND/OR DIFFERENT PAVING MATERIALS AND AS SPECIFIED ON PLANS OR 25'-0" MAX O.C.

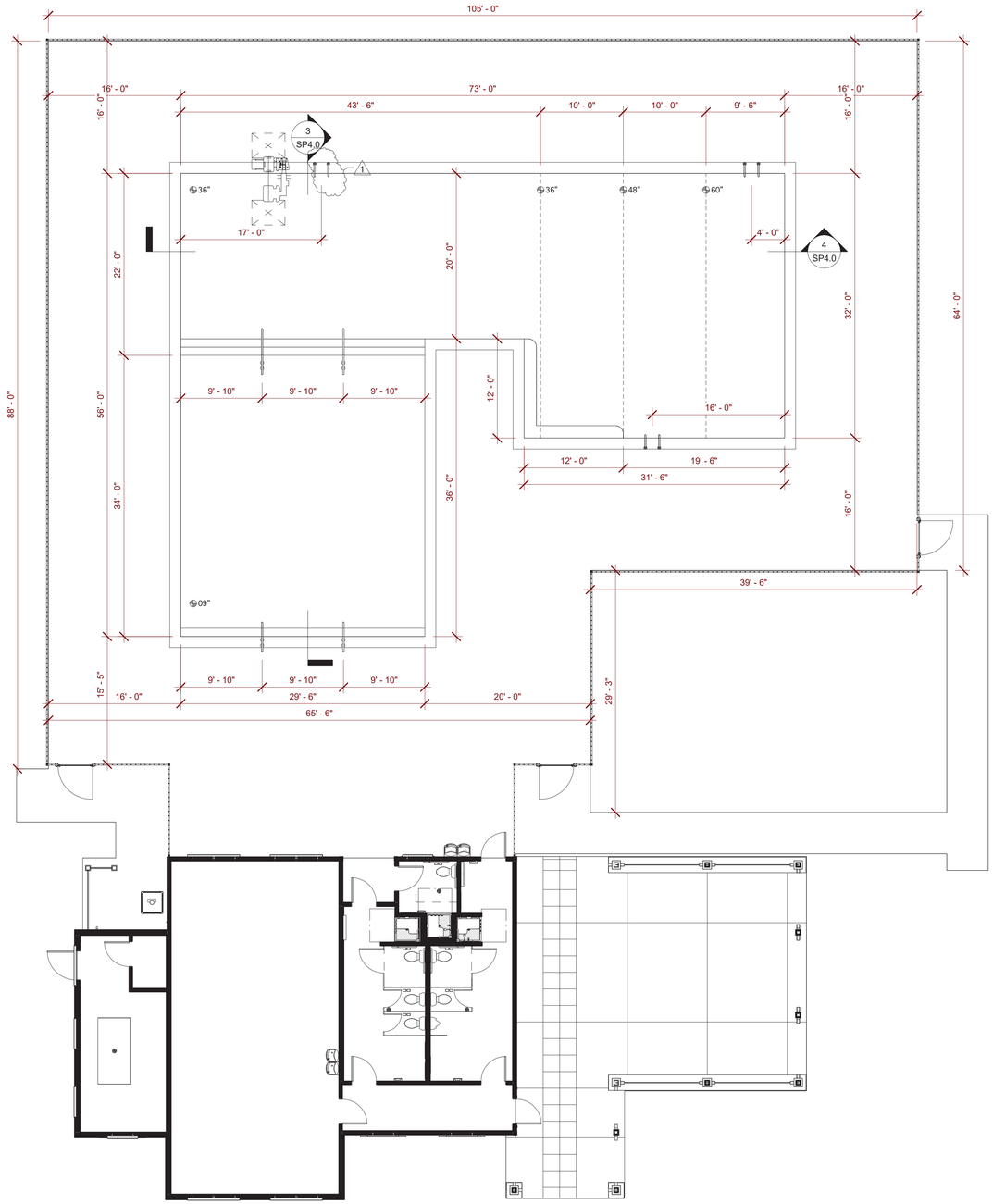
3 SP1.0 Detail - Typ. Concrete Control Joint

1 1/2" = 1'-0"



2 SP1.0 Pool Control Joint Plan

1" = 10'-0"



1 SP1.0 Pool Dimension Plan

1/8" = 1'-0"

D.CLUGSTON

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JACOB L. HAMILTON

NORTH CAROLINA KILIAN ENGINEERING, INC. No. C-2277 CERTIFICATE OF AUTHORIZATION

Jacob Hamilton

Digitally signed by Jacob Hamilton
DN: CN=Jacob Hamilton, O=Kilian Engineering, C=US
Reason: I am the author of this document
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WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE
1	HEALTH COM.	09/29/25

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	JVD
CHECKED BY:	JLH

100% I.F.P.

DIMENSION AND CONTROL JOINT PLAN

SP1.0

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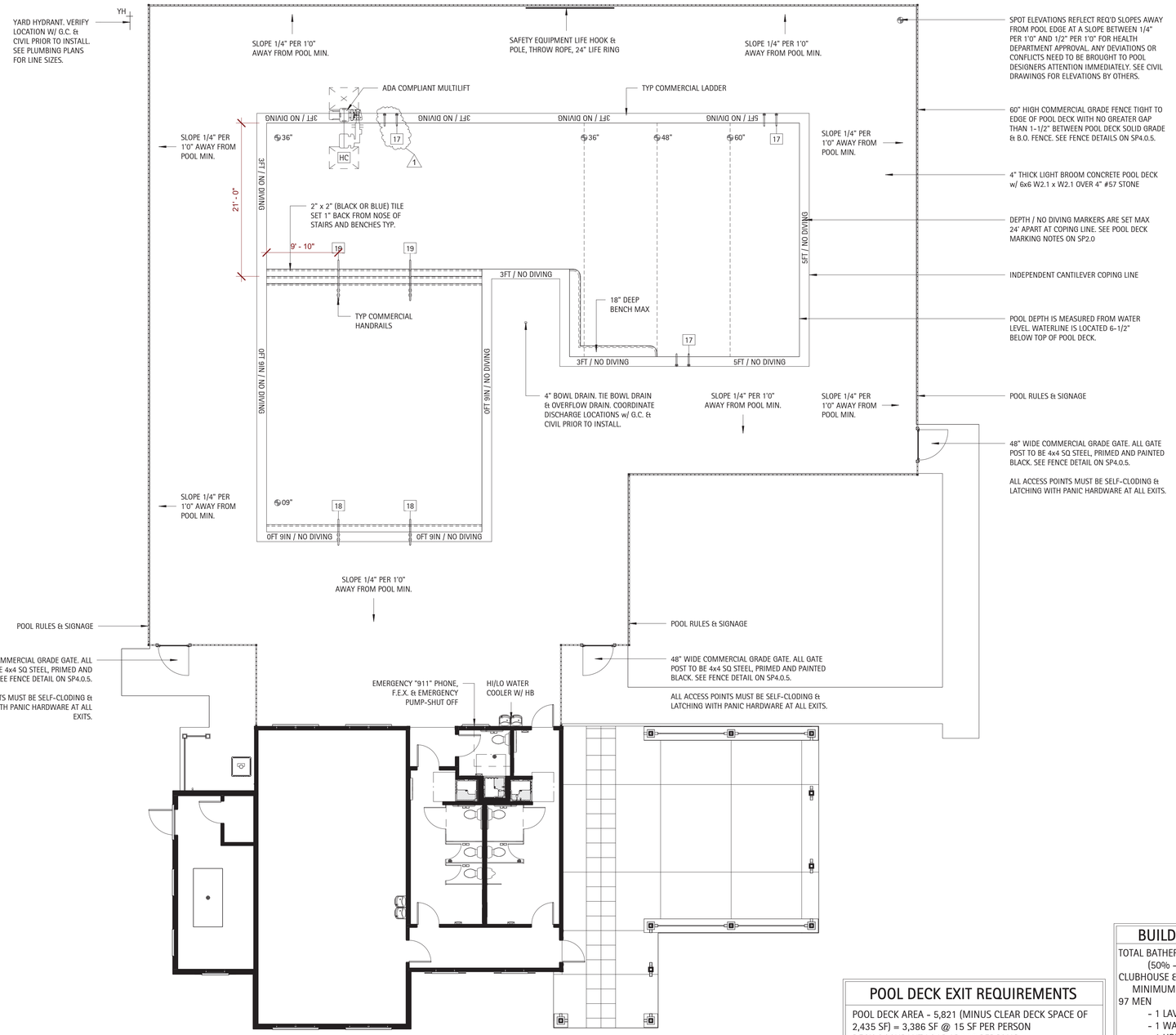

1 SP2.0 **Overall Pool Layout Plan**
1/8" = 1'-0"

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	1	PENTAIR	WHISPERFLOXF VS (22035)	5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA BASKET
2	2	PENTAIR	P/N 263080 - 140316	FULLFLOXF 3" HIGH RATE PUSH PULL BACKWASH VALVE
3	2	PENTAIR	TR-140C	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
4A	1	PENTAIR	HC-3315 W/ R172082	HIGH CAPACITY CHLORINE FEEDER
4B	1	PENTAIR	COMSYS-16	COMMERCIAL INTELLICHLOR SALT CHLORINE GENERATOR
5	1	FLO VIS	FV-3-40	3" INLINE COMMERCIAL FLOW METER
6	2	AQUASTAR	WAV12WR101 W/ FBS-50-812-4	12" x 12" VGB SUCTION OUTLET COVER W/ A.S.A. MFG SUMP
7	1	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC RELIEF VALVE
8	8	AQUASTAR	SKR101	WHITE COMMERCIAL GRADE SKIMMER
9	1	AQUASTAR	ES1022SI2001 W/ VLK15T01	VACUUM LINE FITTING W/ LOCK CAP
10	1	AQUASTAR	GDD101	COMMERCIAL OVERFLOW DRAIN.
11	11	AQUASTAR	ES1022SI2001 W/ 8101	DIRECTIONAL WALL RETURN INLET
12	2	AQUASTAR	ES1022SI2001 W/ BP101	FLOOR RETURN INLET W/ BUBBLER PLATE
13	1	AQUASTAR	AFB101	FILLSTAR - AUTOFILL LINE - WHITE
14	2	PENTAIR	602131	MICROBRITE 2 LIGHT WHITE LED LIGHT COMBO KIT
15	3	PENTAIR	602141	500W EQUIVALENCY INTELLIBRITE WHITE LED LIGHTS
16	3	INTERMATIC	PJB4175	4 LIGHT CONNECTION POOL & SPA JUNCTION BOX
17	3	SR SMITH	10056-MG	MARINE GRADE DECK MOUNTED COMMERCIAL LADDER
18	2	SR SMITH	DMS-101B-MG	MARINE GRADE DECK MOUNTED HANDRAIL - SHORT
19	2	SR SMITH	DMS-102B - MG	MARINE GRADE DECK MOUNTED HANDRAIL STANDARD
HC	1	SR SMITH	MULTI-LIFT	ADA COMPLIANT MULTI-LIFT

POOL CONSTRUCTION NOTES

1. SUBMISSION OF GROUNDING AND BONDING REPORT BY CONTRACTOR TO ENGINEER OF RECORD FOR REVIEW IS REQUIRED.
2. SUBSTITUTIONS MUST BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO INSTALLATION.
3. ANY COSTS INCURRED DUE TO DEVIATIONS FROM THE PLANS NECESSITATING DRAWING REVISIONS SHALL BE BORNE BY THE CONTRACTOR/OWNER.
4. THE CONTRACTOR IS REQUIRED TO COMPREHENSIVELY DOCUMENT THE POOL CNSTRUCTION PROCESS, ENSURING THAT PICTURES ACCURATELY DEPICT THE LOCATION ON THE SITE BY INCLUDING IDENTIFIABLE BACKGROUND FEATURES. THIS DOCUMENTATIONINCLUDES, BUT IS NOT LIMITED TO, PHOTOGRAPHING THE GROUNDING/BONDING OF ALL EQUIPMENT BEFORE THE SHOTCRETE IS POURED, RETAINING CUT SHEETS FOR ALL EQUIPMENT, AND COMPLETING ALL INSPECTION REPORTS, AMONG OTHER TASKS.
5. PRIOR TO THE CONSTRUCTION OF THE POOL, THE CONTRACTOR IS REQUIRED TO CONSULT WITH THE ENGINEER OF RECORD OR A DESIGNATED ENGINEER TO COORDINATE THE NECESSARY SITE INSPECTIONS IN COMPLIANCE WITH NC 15A NCAC 18A .2500.
6. SHOULD THE CONTRACTOR OR ANY SUBCONTRACTOR DEVIATE FROM THE APPROVED DESIGN PLANS, THEY SHALL INDEMNIFY AND HOLD HARMLESS THE ARCHITECT, ENGINEER OF RECORD AND DESIGNER TO THE FULLEST EXTENT PERMITTED BY LAW.

POOL SAFETY REQUIREMENTS

PROVIDE SAFETY PROVISIONS PER SECTION .2530. THE MINIMUM BEING:

A. 12' LONG (MINIMUM) METAL POLE WITH A BODY HOOK SECURELY ATTACHED. THE POLE SHALL BE NON-TELESCOPING, NON-ADJUSTABLE & NON-COLLAPSIBLE.
B. MINIMUM 1/4" DIA THROWING ROPE AS LONG AS 1-1/2 TIMES THE MAX WIDTH OF THE POOL OR 50', WHICHEVER IS LESS, ATTACHED TO A U.S. COAST GUARD APPROVED RING BUOY.
C. TWO UNITS OF LIFESAVING EQUIPMENT MUST BE PROVIDED FOR ANY POOL THAT EXCEEDS 3,000 SQ FT (186 SQ M) OF TOTAL SURFACE AREA.

EMERGENCY TELEPHONE SERVICE:

A. TELEPHONE WITH INSTRUCTIONS TO REACH EMERGENCY SERVICES SHALL BE PROVIDED AND ACCESSIBLE TO ALL POOL USERS.
B. THE TELEPHONE SHALL BE PERMANENTLY AFFIXED TO A LOCATION INSIDE THE POOL ENCLOSURE OR OUTSIDE THE ENCLOSURE WITHIN 75' OF THE BATHER ENTRANCE.
C. THE TELEPHONE SHALL BE VISIBLE FROM WITH THE POOL ENCLOSURE OR A VISIBLE SIGN SHALL BE POSTED INDICATING THE LOCATION OF THE EMERGENCY PHONE.
D. AT THE TELEPHONE - PROVIDE A SIGN WITH LEGIBLE LETTERS PROVIDING THE FOLLOWING INFORMATION.
   a. - DIALING INSTRUCTIONS
   b. - ADDRESS OF THE POOL LOCATION
   c. - TELEPHONE NUMBER OF THE POOL LOCATION.

SEE POOL HOUSE PLANS BY OTHERS FOR EXACT LOCATION OF THE TELEPHONE SERVICE.

POOL DECK MARKINGS

DEPTH MARKINGS: IN LOCATIONS AS SHOWN ON THE DRAWINGS AND ADHERING TO THE FOLLOWING:
1. LOCATED ON TOP OF POOL DECK AND AT OR ABOVE THE WATER SURFACE ON THE VERTICAL WALL.
2. SHALL BE IN ARABIC NUMERALS AT LEAST 4" HIGH AND OF A COLOR CONTRASTING W/ THE BACKGROUND.
3. MARKINGS SHALL INDICATE THE DEPTH OF THE POOL IN FEET AND SHALL INCLUDE THE WORD "FEET" OR THE SYMBOL "FT" TO INDICATE THE UNIT OF MEASUREMENT.
4. MARKINGS IN POOL DECK SHALL PROVIDE A SLIP RESISTANT WALKING SURFACE.
5. NOT TO EXCEED 25'-0" IN SPACING ALONG THE PERIMETER OF THE POOL.

"NO DIVING" MARKINGS: IN LOCATIONS AS SHOWN ON THE DRAWINGS AND ADHERING TO THE FOLLOWING:
1. NOT TO EXCEED 25'-0" IN SPACING. ALONG COPING EDGE.
2. DENOTED IN ONE OF THE FOLLOWING MANNERS:
   A. CONSISTING OF THE WORDS "NO DIVING" IN LETTERS AT LEAST 4" HIGH AND OF A COLOR CONTRASTING WITH THE BACKGROUND.
   B. AT LEAST A 6"x6" IN SIZE INTERNATIONAL SYMBOL FOR NO DIVING IN RED AND BLACK ON A WHITE BACKGROUND. (VERIFY WITH MANICIPALITY)

POOL DESIGN NOTES

A. SEE PLANS BY OTHERS FOR CONSTRUCTION OF BATHHOUSE, PUMP & CHEMICAL STORAGE ROOMS, SITE WORK, ETC.
B. POOL IS DESIGNED FOR DAWN TO DUSK SWIMMING ONLY.
C. ALL PIPING IS DIAGRAMMATIC. VERIFY LAYOUT WITH POOL G.C. PRIOR TO INSTALLATION.
D. ALL DECK DRAINAGE MUST BE TO WASTE AND NOT FILTERED AND RETURNED TO POOL. DRAIN MUST BE INSTALLED WHERE NECCESARY TO PREVENT STANDING WATER. THE DECK DRAIN GRATES SHALL BE REMOVABLE.
E. ALL DOORS LEADING TO THE POOL DECK SHALL BE SELF-CLOSING & HAVE POSITIVE SELF-LATCHING MECHANISMS. ALL WINDOWS FACING THE POOL DECK SHALL BE PROTECTED WITH MEANS OF AN AUDIBLE ALARM AND/OR CHILD PROTECTIVE LOCKS.
F. ALL DECKS SHALL BE CONTINUOUS WITH TOP OF THE POOL WALL OR GUTTER AND SHALL NOT BE MORE THAN NINE INCHES ABOVE THE STANDARD OPERATING WATER LEVEL.

POOL DECK EXIT REQUIREMENTS

POOL DECK AREA - 5,821 (MINUS CLEAR DECK SPACE OF 2,435 SF) = 3,386 SF @ 15 SF PER PERSON
DECK OCCUPANT LOAD IS 226 PERSONS.

POOL AREA IS 2,900 SF @ 50 SF PER PERSON,
POOL OCCUPANT LOAD IS 58 PERSONS.

TOTAL POOL & POOL DECK OCCUPANT LOAD IS 284 PERSONS. SEE LIFE SAFETY PLAN BY OTHERS FOR EXIT WIDTH REQUIREMENTS.

BUILDING FIXTURE DATA

TOTAL BATHER LOAD = 2,900/15 = 194
(50% - 50% SPLIT) = 97
CLUBHOUSE & PUMP HOUSE REQUIREMENTS:
MINIMUM FIXTURE REQUIRMENTS ARE:
97 MEN
- 1 LAVATORIES
- 1 WATER CLOSET(S)
- 1 URINAL(S)

97 WOMEN
- 2 LAVATORIES
- 2 WATER CLOSET(S)

1 SHOWER IS REQUIRED

SEE ARCHITECTURAL PLANS BY OTHERS FOR RESTROOM LOCATION & LAYOUTS

POOL DECK SIGNAGE REQUIREMENTS

POOL SIGNAGE TO BE POSTED IN THE MAIN POOL AREA:

SIGN "A" - 4" TALL LETTERS | WARNING - NO LIFEGUARD ON DUTY

SIGN "B" - 1" TALL LETTERS - A MIN. OF (2) THIS PROJECT

POOL SAFETY RULES

1. CHILDREN SHOULD NOT USE THE SWIMMING POOL WITHOUT ADULT SUPERVISION.
2. ADULTS SHOULD NOT SWIM ALONE.
3. ALL ANIMALS AND PETS ARE PROHIBITED IN THE POOL ENCLOSURE.
4. GLASS CONTAINERS ARE PROHIBITED IN THE POOL AREA.
5. NO DIVING IS ALLOWED IN POOL AREA

SIGN "C" - PROVIDE A SIGN VISIBLE UPON ENTERING THE POOL ENCLOSURE DIRECTING POOL USERS TO SHOWER BEFORE ENTERING THE POOL.

SIGN "D" - PROVIDE A SIGN STATING "POOL CLOSED" FOR EVERY POOL ENTRANCE. VERIFY WITH FINAL POOL ENCLOSURE DESIGN FOR FINAL NUMBER OF ENTRANCES.

MAIN POOL DATA

POOL DIMENSIONS:	56'-0" X 73'-0" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	09" SHELF w/ 3'-5'
POOL VOLUME:	56,762 GALLONS
SURFACE AREA:	2,900 SQFT.
PERIMETER:	283 LF
COPING:	BULLNOSE INDEPENDENT
REQIRED FLOW:	158 GPM @ 65 TDH
DESIGN FLOW:	190 GPM @ 65 TDH
SHELL MATERIAL:	4000 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	194 PERSONS
BACKWASH TO:	SANITARY SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(2) 4" SCH 40 PVC
SKIMMERS:	(8) 4" SCH 40 PVC
VACUUM LINE:	(1) 2" SCH 40 PVC
INLETS:	(13) 3" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	2 @ 7.06 SF (EA) = 14.12
SIZE REQUIRED:	12.67 SF TOTAL
MEDIA CIRC. RATE:	15 GPM/SF
BACKWASH RATE:	15 GPM/SF
TURNOVER RATE:	6 HOURS

D.CLUGSTON

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JACOB L. HAMILTON

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION KILIAN ENGINEERING, INC. No. C-2277

Jacob Hamilton Digitally signed by Jacob Hamilton DN: cn=Jacob Hamilton, o=Kilian Engineering, Inc., ou=Engineering, email=jacob@kilianengineering.com, c=US Date: 2025.09.29 21:09:37 -04'00'

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE
1	HEALTH COM.	09/29/25

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	JVD
CHECKED BY:	JLH

100% I.F.R.

OVERALL POOL LAYOUT

SP2.0

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PUMP FLOW PIPE SIZING

CIRCULATION:
WHISPERFLOXF VS PUMP FLOW AT 65 FT OF WATER IS 190 GPM, WITH SPECIFIED:
4" MAIN DRAIN PIPING VELOCITY IS 4.79 FPS.
4" SKIMMER PIPING VELOCITY IS 4.79 FPS.
3" RETURN PIPING VELOCITY IS 8.25 FPS.

UNDERWATER LIGHTING DATA

MAIN POOL AREA: 2,900 SQFT.
2,900 SF x 0.5 WATTS = 1,450 **WATTS**

LIGHTING PROVIDED (12V LED EQ.)
2 MICROBRITE @ 12 WATTS
3 INTELLIBRITE @ 500 WATTS

TOTAL WATTAGE PROVIDED: 1,474 WATTS

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	1	PENTAIR	WHISPERFLOXF VS (22035)	5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA BASKET
2	2	PENTAIR	P/N 263080 - 140316	FULLFLOXF 3" HIGH RATE PUSH PULL BACKWASH VALVE
3	2	PENTAIR	TR-140C	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
4A	1	PENTAIR	HC-3315 W/ R172082	HIGH CAPACITY CHLORINE FEEDER
4B	1	PENTAIR	COMSYS-16	COMMERCIAL INTELLICHLOR SALT CHLORINE GENERATOR
5	1	FLO VIS	FV-3-40	3" INLINE COMMERCIAL FLOW METER
6	2	AQUASTAR	WAV12WR101 W/ FBS-50-812-4	12" x 12" VGB SUCTION OUTLET COVER W/ A.S.A. MFG SUMP
7	1	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC RELIEF VALVE
8	8	AQUASTAR	SKR101	WHITE COMMERCIAL GRADE SKIMMER
9	1	AQUASTAR	ES1022SI2001 W/ VLK15T01	VACUUM LINE FITTING W/ LOCK CAP
10	1	AQUASTAR	GDD101	COMMERCIAL OVERFLOW DRAIN
11	11	AQUASTAR	ES1022SI2001 W/ 8101	DIRECTIONAL WALL RETURN INLET
12	2	AQUASTAR	ES1022SI2001 W/ BP101	FLOOR RETURN INLET W/ BUBBLER PLATE
13	1	AQUASTAR	AFB101	FILLSTAR - AUTOFILL LINE - WHITE
14	2	PENTAIR	602131	MICROBRITE 2 LIGHT WHITE LED LIGHT COMBO KIT
15	3	PENTAIR	602141	500W EQUIVALENCY INTELLIBRITE WHITE LED LIGHTS
16	3	INTERMATIC	PJB4175	4 LIGHT CONNECTION POOL & SPA JUNCTION BOX
17	3	SR SMITH	10056-MG	MARINE GRADE DECK MOUNTED COMMERCIAL LADDER
18	2	SR SMITH	DMS-101B-MG	MARINE GRADE DECK MOUNTED HANDRAIL - SHORT
19	2	SR SMITH	DMS-102B - MG	MARINE GRADE DECK MOUNTED HANDRAIL STANDARD
HC	1	SR SMITH	MULTI-LIFT	ADA COMPLIANT MULTI-LIFT

CHEMICAL STORAGE DATA

CHEMICAL STORAGE REQUIREMENTS FOR A **56,762** GALLON POOL ARE:

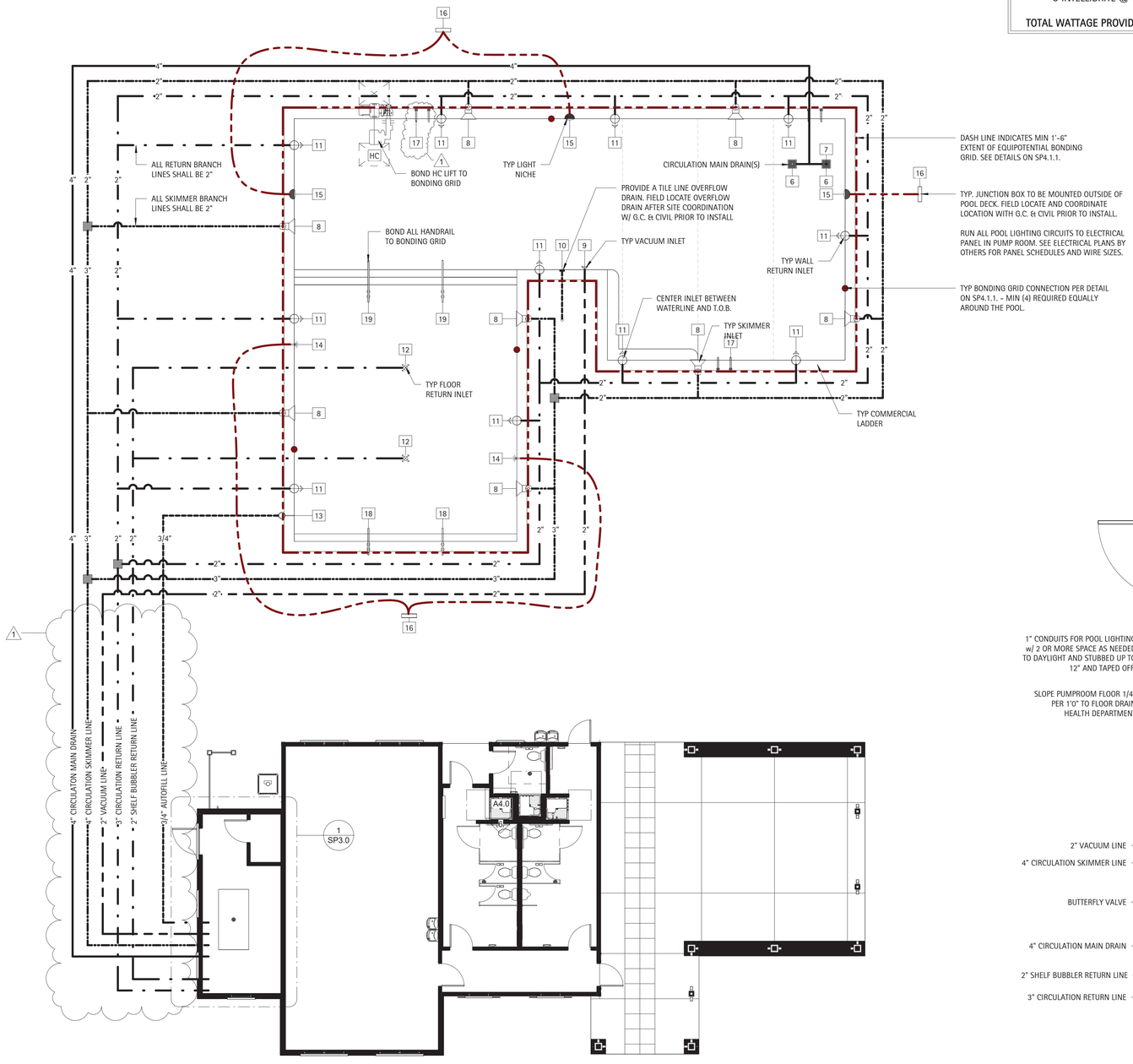
5 SF FOR FIRST 10,000 GALLONS OF POOL +
+1 SF FOR EACH ADDITIONAL 3,000 GALLONS OF POOL UP TO 100 SF OF STORAGE

+16 SF (1 SF PER 3,000)(46,762/3,000 = 15.587 SF)

POOL REQUIRES A MIN OF 21 SF FOR CHEMICAL STORAGE.
-SEE BUILDING PLANS BY OTHERS FOR EXACT LAYOUT.
-SEE DETAIL SP4.0.1. FOR TYP CHEMICAL ROOM SHELVING w/ QUANITIES

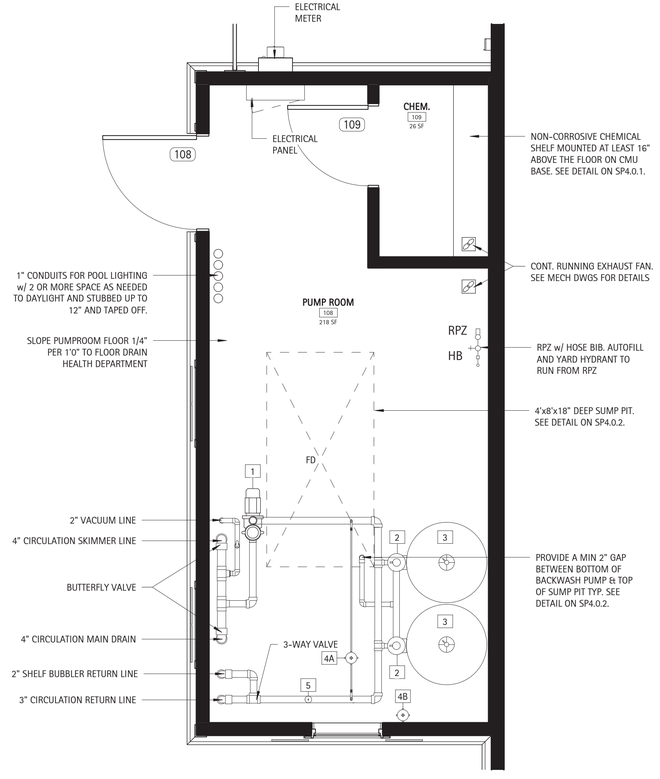
PUMP ROOM & CHEMICAL ROOM NOTES

A. ALL PUMPS, CHEMICAL FEEDING APPARATUS AND OTHER MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ENCLOSED IN A WEATHERPROOF STRUCTURE WITH A MINIMUM CEILING HEIGHT OF SEVEN FEET.
B. THE EQUIPMENT ROOM SHALL BE PROVIDED WITH A DOOR WITH A PERMANENT LOCK THAT MUST BE KEPT LOCKED WHEN NOT IN USE BY THE POOL OPERATOR.
C. VALVES AND CONTROL DEVICES SHALL BE ACCESSIBLE AND VISIBLE TO THE POOL OPERATOR. AT LEAST THREE FEET OF CLEAR WALKWAY SHALL BE PROVIDED TO ALLOW ACCESS TO EQUIPMENT.
D. DRAINAGE IN AND AROUND THE EQUIPMENT ROOM SHALL PRECLUDE THE POSSIBLITY OF WATER ENTERING OR ACCUMULATING ON ANY INTERIOR SURFACE OF THE ENCLOSURE. EQUIPMENT ROOM FLOORS SHALL BE SLOPED NOT LESS THAN 1/4" PER FOOT TOWARD THE DRAINS.
E. NATURAL CROSS DRAFT OR CONTINOUS FORCED VENTILATION IS REQUIRED.
F. A PERMANENT MEANS OF ACCESS SHALL BE PROVIDED TO ALL EQUIPMENT ROOMS.
G. A HOSE BIB WITH AN APPROVED BACKFLOW PREVENTION DEVICE SHALL BE PROVIDED WITHIN 50 FEET OF THE EQUIPMENT ROOM.



2 SP3.0 Pool Electrical & Piping Plan

1/8" = 1'-0"



1 SP3.0 Enlarged Pumproom Plan

3/8" = 1'-0"

POOL SYMBOLS LEGEND

SAND FILTER
MAIN DRAINS
OVERFLOW
PUSH/PULL VALVE
VACUUM INLET
FLOWMETER
FLOOR INLET
CHLORINATOR w/ FLOWMETER
DIRECTIONAL WALL INLET
POOL PUMP
LIGHT NICHE
POOL LADDER
SKIMMER
AUTOFILL

REFER TO POOL PLUMBING SCHEDULE FOR SPECS.

MAIN POOL DATA

POOL DIMENSIONS:	56'-0" X 73'-0" OVERALL IRREGULAR SHAPE.
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TURNOVER RATE:	6 HOURS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JACOB L. HAMILTON

Jacob Hamilton Digitally signed by Jacob Hamilton DN: CN=Jacob Hamilton, O=Kilian Engineering, C=US Date: 2025.09.29 21:05:37 -04'00'

NORTH CAROLINA KILIAN ENGINEERING, INC. No. C-2277 CERTIFICATE OF AUTHORIZATION

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE
1	HEALTH COM.	09/29/25

PROJECT #:	2023048
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CHECKED BY:	JLH

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PIPING & ELECTRICAL PLAN

SP3.0

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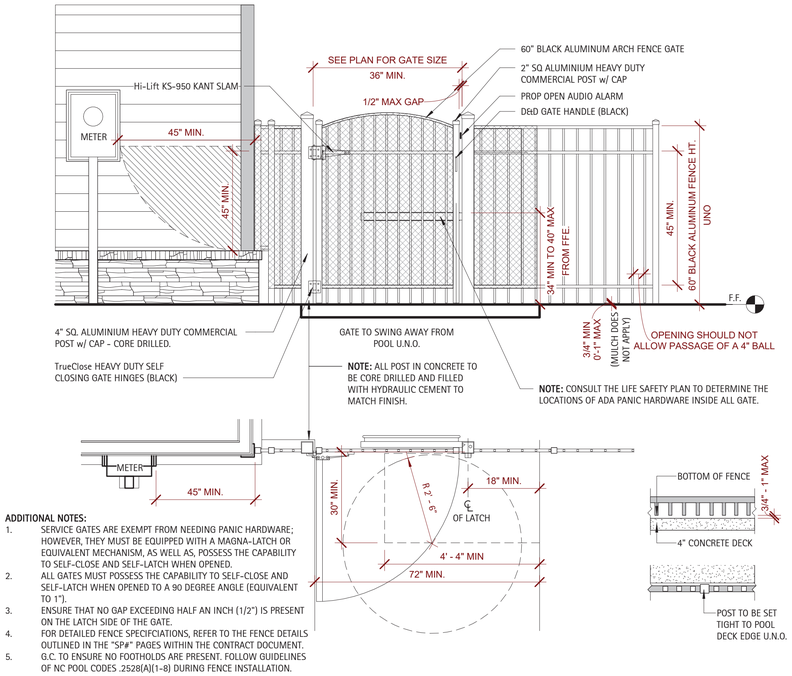
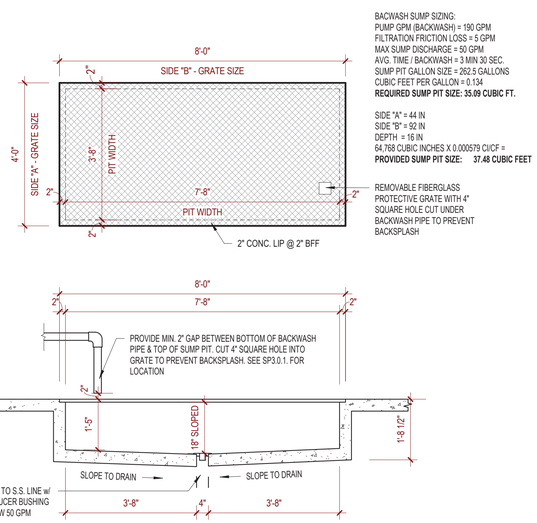


ADDITIONAL NOTES:

1. SERVICE GATES ARE EXEMPT FROM NEEDING PANIC HARDWARE; HOWEVER, THEY MUST BE EQUIPPED WITH A MAGNA-LATCH OR EQUIVALENT MECHANISM, AS WELL AS, POSSESS THE CAPABILITY TO SELF-CLOSE AND SELF-LATCH WHEN OPENED.
2. ALL GATES MUST POSSESS THE CAPABILITY TO SELF-CLOSE AND SELF-LATCH WHEN OPENED TO A 90 DEGREE ANGLE (EQUIVALENT TO 1").
3. ENSURE THAT NO GAP EXCEEDING HALF AN INCH (1/2") IS PRESENT ON THE LATCH SIDE OF THE GATE.
4. FOR DETAILED FENCE SPECIFCIATIONS, REFER TO THE FENCE DETAILS OUTLINED IN THE "SP#" PAGES WITHIN THE CONTRACT DOCUMENT.
5. G.C. TO ENSURE NO FOOTHOLDS ARE PRESENT. FOLLOW GUIDELINES OF NC POOL CODES .2528(A)(1-8) DURING FENCE INSTALLATION.

5 SP4.0 Detail - Fence & Fence Gate

1/2" = 1'-0"

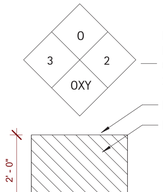


BACKWASH SUMP SIZING:
PUMP GPM (BACKWASH) = 190 GPM
FILTRATION FRICTION LOSS = 5 GPM
MAX SUMP DISCHARGE = 50 GPM
AVG. TIME / BACKWASH = 3 MIN 30 SEC.
SUMP PIT GALLON SIZE = 262.5 GALLONS
CUBIC FEET PER GALLON = 0.134
REQUIRED SUMP PIT SIZE: 35.09 CUBIC FT.

SIDE "A" = 44 IN
SIDE "B" = 92 IN
DEPTH = 16 IN
64.768 CUBIC INCHES X 0.000579 CI/CF =
PROVIDED SUMP PIT SIZE: 37.48 CUBIC FEET

2 SP4.0 Detail - Sump Pit (Sanitary Sewer)

1/2" = 1'-0"



HAZARDOUS MATL. SIGN TO BE POSTED ON EQUIPMENT RM AND CHEM STORAGE RM DOORS PER 2018 NC FIRE PREVENTION CODE

MECH. VENITILATION IN CEILING (CONTINOUS)

NO CHEMICALS

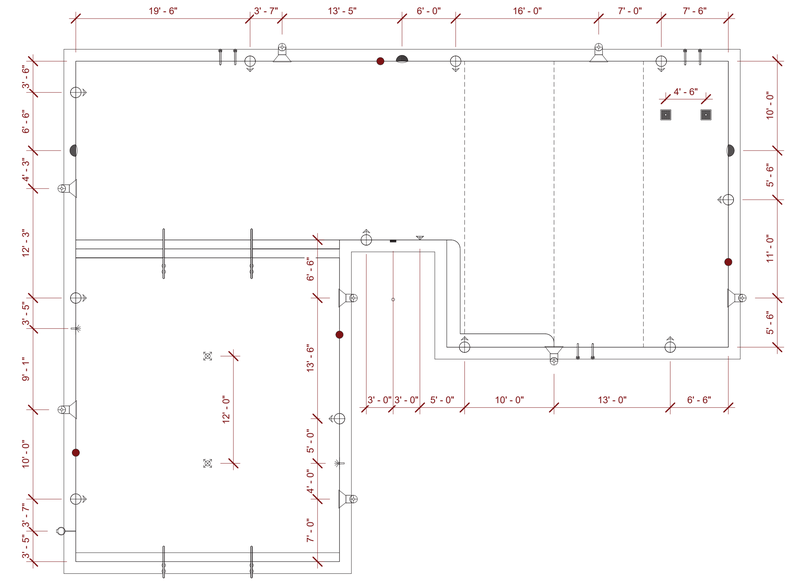
100 LBS CALCIUM CHLORIDE ON ON SECOND OR THIRD SHELF ONLY
100 LBS CYANURIC ACID ON SECOND OR THIRD SHELF ONLY
100 LBS SODIUM CARBONATE ON SECOND OR THIRD SHELF ONLY
50 LBS CALCIUM HYPOCHLORITE ON SECOND OR THIRD SHELF ONLY
100 LBS SODIUM THIOSULFATE ON SECOND OR THIRD SHELF ONLY
100 LBS SODIUM BICARBONATE ON SECOND OR THIRD SHELF ONLY
30 GALS HYDROCHLORIC ACID ON LOWEST SHELF ONLY
SHELF FLOOR ONLY
TYPICAL NON-CORROSIVE SHELF TO START 1'-4" AFF

TYPICAL CHEMICAL ROOM SHELVING w/ QUANITIES

A. Unless otherwise stated, all code references are to the 2018 North Carolina State Building Codes (NCSBC).
B. North Carolina Building Code (NCBC) applicable portions include but are not limited to:
   1. Chapter 3, Section 307 and Tables 307.7(1), 307.1(2)
   2. Chapter 4, Section 414, 415 and Tables 414.2.2, 414.2.5, 415.8.2.1.1
C. North Carolina Fire Code (NCFPC) applicable portions include but are not limited to:
   1. NCFPC, Chapter 18, Tables 1804.2.2.1, 1805.2.2
   2. NCFPC, Chapters 27 through 44.
   3. Appendices E and F

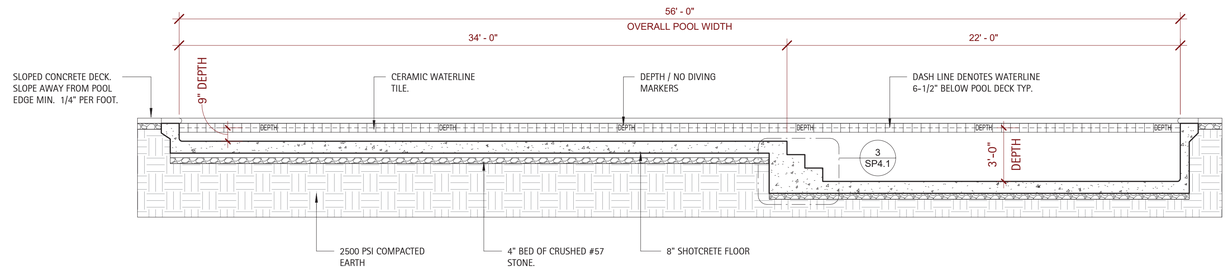
1 SP4.0 Detail - Chemical Storage

1/2" = 1'-0"



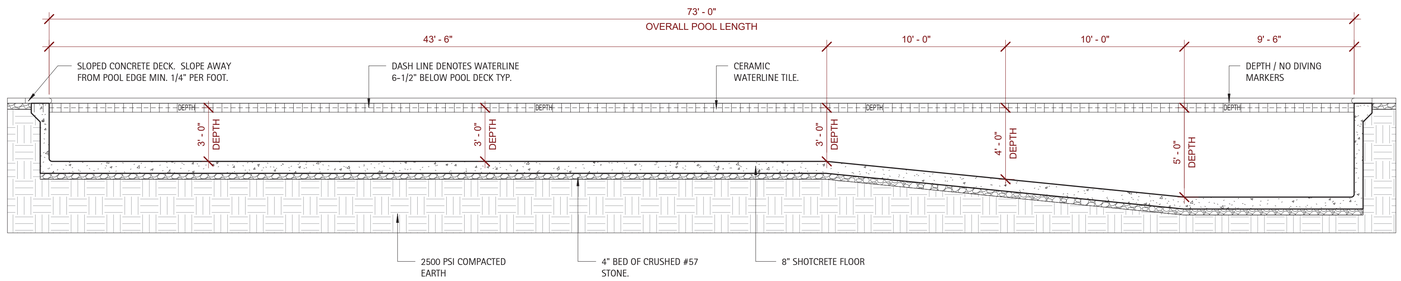
6 SP4.0 Pool Equipment Dimensions

1/8" = 1'-0"



3 SP4.0 Detail - North / South Pool Section

1/4" = 1'-0"



4 SP4.0 Detail - East / West Pool Section

1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JACOB L. HAMILTON
KILIAN ENGINEERING, INC. No. C-2277 CERTIFICATE OF AUTHORIZATION

WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

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CHECKED BY:	JLH
100% I.F.R.	

SECTIONS & DETAILS

SP4.0

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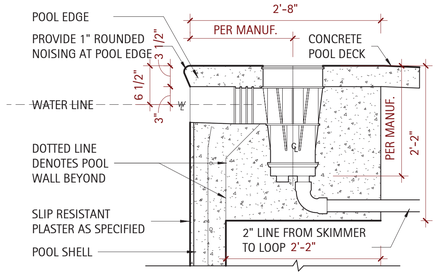
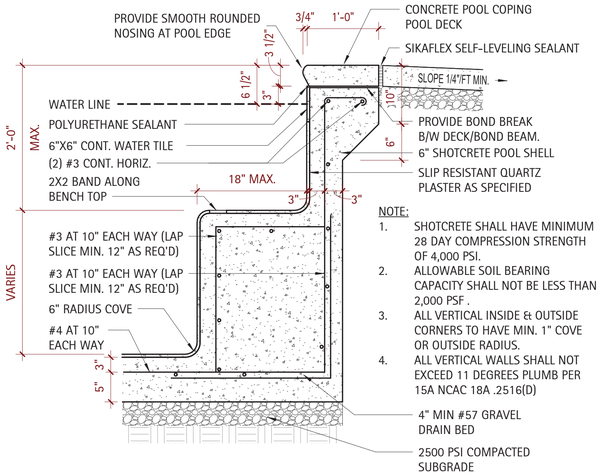


7 SP4.1 Detail - Pool Skimmer

1" = 1'-0"

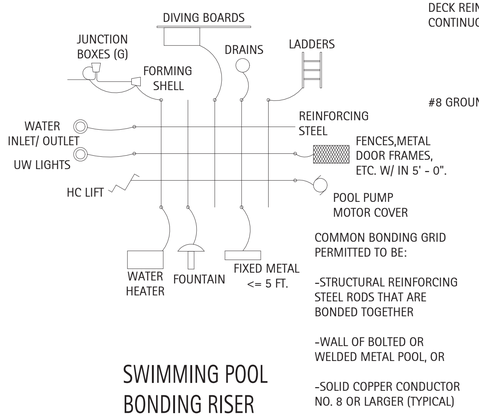


NOTE:

1. SHOTCRETE SHALL HAVE MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI.
2. ALLOWABLE SOIL BEARING CAPACITY SHALL NOT BE LESS THAN 2,000 PSF .
3. ALL VERTICAL INSIDE & OUTSIDE CORNERS TO HAVE MIN. 1" COVE OR OUTSIDE RADIUS.
4. ALL VERTICAL WALLS SHALL NOT EXCEED 11 DEGREES PLUMB PER 15A NCAC 18A .2516(D)

4 SP4.1 Detail - Pool Bench

1" = 1'-0"



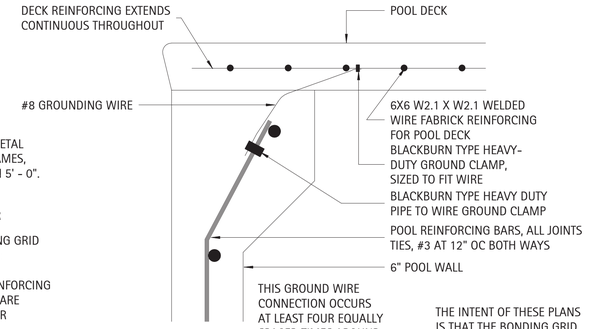
SWIMMING POOL BONDING RISER

COMMON BONDING GRID PERMITTED TO BE:

-STRUCTURAL REINFORCING STEEL RODS THAT ARE BONDED TOGETHER

-WALL OF BOLTED OR WELDED METAL POOL, OR

-SOLID COPPER CONDUCTOR NO. 8 OR LARGER (TYPICAL)

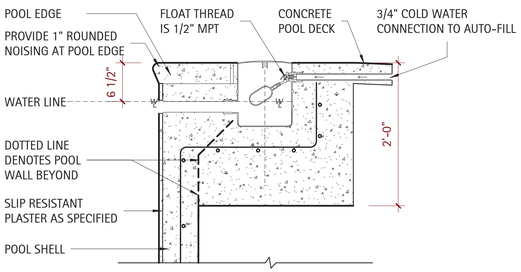


EQUIPOTENTIAL BONDING GRID DETAIL

THE INTENT OF THESE PLANS IS THAT THE BONDING GRID EXTEND THROUGHOUT THE POOL DECK, BUT IN NO CASE SHALL IT EXTEND MORE THAN ONE FEET SIX INCHES FROM THE POOL PERIMETER.

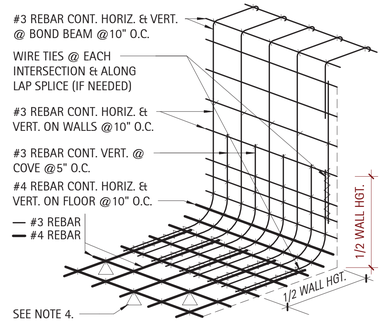
1 SP4.1 Detail - Pool Bonding

1" = 1'-0"



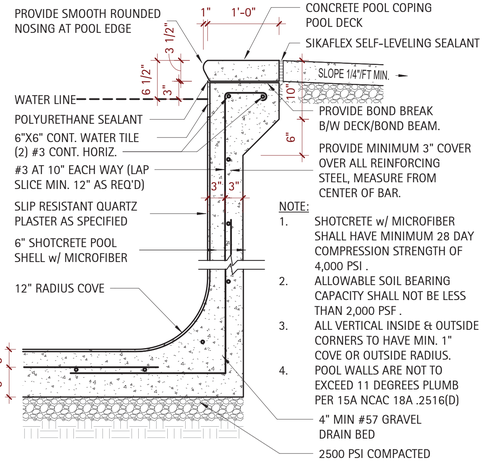
8 SP4.1 Detail - Pool Autofill

1" = 1'-0"



REBAR NOTE:

1. ALL REBAR OVERLAP LENGTHS TO BE 20X DIA OF REBAR.
2. ALL BAR INTERSECTIONS SHALL HAVE WIRES TIES.
3. ALL REINFORCING STEEL SHALL BE GRADE 60.
4. ALL SLAB BOLSTERS - GRIP-RITE 5" X 5FT MANF# SBU5

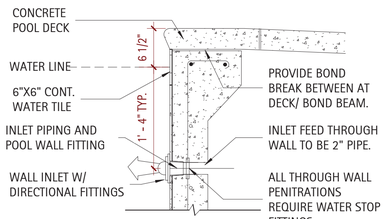


NOTE:

1. SHOTCRETE w/ MICROFIBER SHALL HAVE MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI .
2. ALLOWABLE SOIL BEARING CAPACITY SHALL NOT BE LESS THAN 2,000 PSF .
3. ALL VERTICAL INSIDE & OUTSIDE CORNERS TO HAVE MIN. 1" COVE OR OUTSIDE RADIUS.
4. POOL WALLS ARE NOT TO EXCEED 11 DEGREES PLUMB PER 15A NCAC 18A .2516(D)

2 SP4.1 Detail - Pool Wall

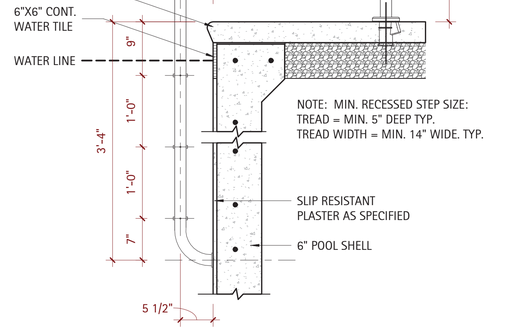
1" = 1'-0"



ALL RETURNS AT BENCHES SHALL CENTER BETWEEN THE WATERLINE TILE AND BENCH TOP

9 SP4.1 Detail - Wall Return Inlet

1" = 1'-0"

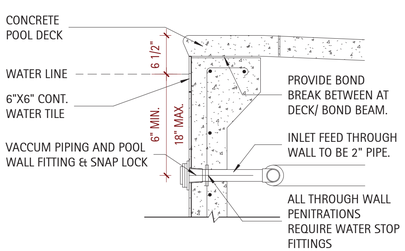


5 SP4.1 Detail - Commercial Ladder

1" = 1'-0"

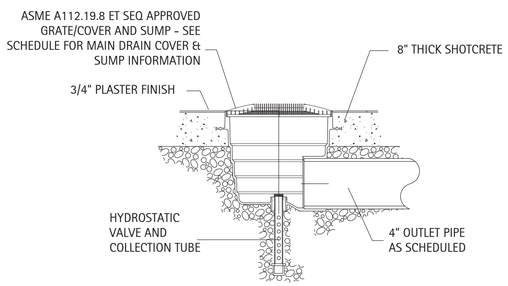
3 SP4.1 Detail - Pool Shelf w/ Step

1" = 1'-0"



10 SP4.1 Detail - Vacuum Inlet

1" = 1'-0"



6 SP4.1 Detail - Main Drain

1" = 1'-0"

D.CLUGSTON

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SECTIONS & DETAILS

SP4.1

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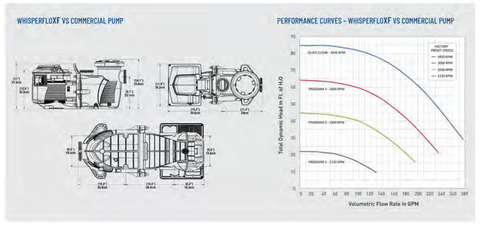


MATERIALS AND DESIGN

Pump Body

Volute type back pull out design for ease of working on impeller, diffuser and seal.

- Port Size
  - Inlet (suction): 2.5" union can be adapted to 3 inches.
  - Outlet (discharge): 2.5" union can be adapted to 3 inches.
- Material
  - 30% glass filled polypropylene materials.
  - 1¼" NPT thermoplastic drain plug of thumbscrew (no tool required) design on the strainer for winterizing.
- Impeller
  - Noryl glass filled PPO resin enclosed design for corrosion prevention and maximum flow efficiency.
  - Threaded brass with stainless steel locking screws.
- Diffuser
  - Glass filled noryl thermoplastic material with bronze impeller wear ring.
  - Hydraulic isolator design for maximum efficiency.
- Seal plate
  - Fiberglass reinforced modified PPE thermoplastic material.
- Mechanical Seal
  - Ceramic and carbon seal.
  - Stainless steel and EPDM materials
- Base
  - Fiberglass reinforced modified PPE thermoplastic with slotted holes for easy mounting.
- Gaskets
  - Buna N rubber compression resistant..
- Bolts, Nuts, and Washers
  - Stainless steel and brass with nickel plating.
- Corrosion Prevention
  - All thermoplastic pump body for maximum hydraulic performance, noise reduction and corrosion prevention.

Hair and Lint Strainer

- Basket
  - HDPE (polyethylene) basket colored white for easy debris removal. Securely positioned below the suction inlet of the trap, with access for inspection and cleaning through the removable lid.
- Lid
  - Clear polycarbonate thermoplastic lid for easy view into the basket area.
- Lid Locking Ring
  - Cam and Ramp™ Lid and Locking Ring allow for quick and easy access to the basket.
  - O-ring seal

Motor

- Frame and Type
  - NEMA Rated 56 Frame totally enclosed fan-cooled construction.
  - Variable speed induction motor.
- Shaft
  - 300 series stainless steel construction.
- Thermal Overload Protection
  - Thermal overload protection provided by the integral motor control.
- Sealed Bearings
  - Lubricated, double sealed, stainless steel, single row ball bearings.

Electrical

- 208-230/277-460V single-phase.
- 208-460V three-phase.
- 50/60Hz.
- WEF 5.0 THP 5.0.
- Single part number to cover all voltage ranges.

Pump Maximum Thermal Limits

- Ambient air temperature: 122˚ F (50˚ C).
- Liquid temperature: 104˚ F (40˚ C).

TAG 1 - CIRCULATION PUMP - WHISPERFLOXF VS - 5 HP SELF-PRIMING PUMP W/ STRAINER BASKET

Valve & Filter Connection Guide

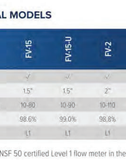
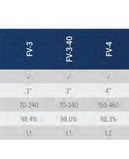
	PENTAIR	STA-RITE	XF FILTERS
Filter Inlet: BOTTOM	P/N 263081	P/N 262508	P/N 262512

Filter P/N	Pentair Filters
180006	FNS Plus FNSP24
180007	FNS Plus FNSP36
180008	FNS Plus FNSP48
180009	FNS Plus FNSP60

Filter P/N	Sta-Rite Filters
S7D75	System 3 DE Filter
S8D110	System 3 DE Filter
S7S50	System 3 Sand Filter
S8S70	System 3 Sand Filter

Filter P/N	XF Filters	Filter P/N	XF Filters
188626	XF Q-60 DE	188618	XF F-36 DE
188627	XF Q-80 DE	188619	XF F-48 DE
188613	XF Q-100 DE	188620	XF F-60 DE
188616	XF Q-120 DE	188621	XF F-72 DE

	PENTAIR	STA-RITE
Filter Inlet - TOP	P/N 263080	P/N 262507

Filter P/N	Pentair Filters
188592	Quad DE 60
188593	Quad DE 80
188594	Quad DE 100
140212	TR 60 Sand
140236	TR 40 Sand
140249	TR 50 Sand

Filter P/N	Pentair Filters
140284	TR 60 Sand
140210	TR 100 Sand
140243	TR 140 Sand
140335	TR 100 HD
140315	TR 100C Sand
140316	TR 140C Sand

Filter P/N	Sta-Rite Filters
PLDE 36	System 2 Mod DE
PLDE48	System 2 Mod DE
S7MD60	System 3 Mod DE
S7MD72	System 3 Mod DE

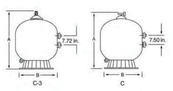
FullFloXF™ Backwash Valve Installation and User's Guide

TAG 2 - BACKWASH KIT - 140316 - FULLFLO XF 3" HIGH RATE PUSH PULL BACKWASH VALVE

TRITON® C SERIES
COMMERCIAL SAND FILTERS

TRITON HD FILTER

The Triton heavy duty (HD) filter is a thirty-inch fiberglass filter that offers a maximum operating pressure of 75 PSI. This filter is specifically designed for special high-pressure commercial applications that require up to 98 gpm, and is ideal for all heavy-duty commercial applications.

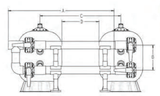


TR100 HD

Triton Commercial Series Sand Filter Specifications

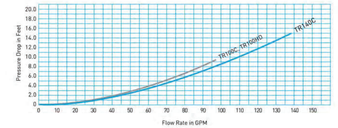
Model Number	Filter Area Sq. Ft.	Flow Rate 15 GPM/sq. ft.*	Turnover Capacity Gallons & Hours	Turnover Capacity Gallons B Hours	Dimension A	Dimension B	Media Required Sand	Media Required Sand/Gravel
TR100C	4.91	74	74,640	35,320	39 ½"	29"	600 lbs.	450 lbs./150 lbs.
TR140C	7.06	106	38,160	50,880	45 ½"	36 ½"	925 lbs.	650 lbs./275 lbs.
TR100C-3	4.91	74	74,640	35,320	39 ½"	30 ½"	600 lbs.	450 lbs./150 lbs.
TR140C-3	7.06	106	38,160	50,880	45 ½"	36 ½"	925 lbs.	650 lbs./275 lbs.

*15 GPM/sq. ft. typical commercial flow rate.



Two Filter System	A	B	C	D	Total Wt.
3" – TR100C	82 ½"	77 ½"	48" Min.	18" Min.	2,200 lbs.
3" – TR140C	88 ½"	77 ½"	54" Min.	18" Min.	3,200 lbs.
4" – TR140C	95 ½"	19 ½"	54" Min.	18" Min.	2,300 lbs.
4" –TR140C	111 ½"	24 ½"	54" Min.	18" Min.	3,550 lbs.

Note: 4" piping needs to be rotated upward as shown at 25° so handle will clear the floor.



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TAG 3 - FILTER - TR-140C - 36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA

RAINBOW™
HIGH CAPACITY CHLORINE/ BROMINE FEEDERS

- Designed for ease of use and simple maintenance
- Drain valve allows easier draining for safer recharging or winterizing
- Standard threaded inlet and outlet fittings included for easy installation

THE PERFORMANCE LEADER IN AUTOMATIC SANITIZATION FOR LARGE RESIDENTIAL AND COMMERCIAL POOLS

The INLET control valve side of the feeder connects to the plumbing on the discharge side of the pump, before the filter. The OUTLET side of the feeder connects to the pool return line after the filter and/or heater, pool cleaner, diverter valves, or any other installed equipment. Installation of a corrosion-resistant check valve such as #R172288 by Pentair between the feeder inlet and outlet and the equipment is strongly recommended to check backflow of chemicals. This helps ensure equipment longevity.

MODELS & SPECIFICATIONS

Model	HC-3315	HC-3330	HC-3340
Part Number	R171215	R171230	R171240
Height	21.5"	39.125"	49.75"
Width	8"	8"	8"
Depth	15"	15"	15"
Maintenance Clearance	22.75"	40.375"	51"
Capacity (lbs.)	15	30	40
@ 100% Setting: Flow rate (GPM)	.34	.34	11.5
@ 100% Setting: Maximum Output Rate, 'Chlorine' (lbs./hr.)-Spa at listed flowrate	2.8	4.6	3.0
@ 100% Setting: Maximum Output Rate, 'Chlorine' (lbs./hr.)-Pool at listed flowrate	4.8	7.9	5.7
@ 100% Setting: Maximum Output Rate, Bromine' (lbs./hr.)-Pool at listed flowrate	0.6	1.1	1.7
@ 50% Setting: Flow rate (GPM)	17.8	17.8	9.2
@ 50% Setting: Output Rate, Chlorine' (lbs./hr.)-Pool at listed flowrate	2.1	3.4	2.6
@ 50% Setting: Output Rate, Chlorine' (lbs./hr.)-Spa at listed flowrate	1.8	3.0	5.4
@ 50% Setting: Output Rate, Bromine (lbs./hr.)-at listed flowrate	0.3	0.6	0.9
Maximum Pool Size @ 34 GPM Chlorine-Gals)	224,000	349,000	498,500
Maximum Pool Size @ 34 GPM Bromine-Gals)	99,200	164,000	292,600

Maximum working pressure – 50 psi
** Results based on use of 1" friction tablets.*

AVAILABLE FROM:

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pumps • filters • heaters • heat pumps • automation • lighting • cleaners • sanitizers • water features • maintenance products

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TAG 4A - CHLORINATOR - HC-3315 - HIGH CAPACITY CHLORINE FEEDER

COMMERCIAL INTELLICHLOR®
SALT CHLORINE GENERATOR

WHY CHOOSE THE COMMERCIAL INTELLICHLOR GENERATOR?

- Cell blades are rated for 10,000 hours of operation, under normal operating conditions.
- Built-in intelligence—primary cell reads salt levels and communicates to all secondary cells.
- Full diagnostic capabilities, including cell life tracking that communicates remaining hours of cell life in real-time. Captures all performance data daily: production settings, hours of operation, chlorine output, cell cleaning cycles, salt readings and water temperature averages.
- Easy-to-view display enables fast checking of salt levels, cell cleanliness, sanitizer output and water flow.
- Automatic shut-off feature helps protect the unit and prolong cell life under low water temperature conditions.
- On-time cycling helps prevent calcium and scale build-up to maximize cell life.
- Designed to produce up to 2 lbs of chlorine in a 24-hour period from a single cell.
- Cells have commercial coating for maximum performance.
- Works with ORP control system to generate chlorine on demand*.
- All power centers are pre-wired for 220 VAC and ORP and conveniently mounted on backboards.
- Manifold CIC 2 lb output cells in combinations that produce from 4 lbs to 16 lbs of chlorine per day.
- One-year limited warranty

Possible Power Center and Manifold Configurations

Output manifold

- 120 GPM minimum per manifold.
- Power Centers are mounted on PVC boards and pre-wired for 220 VAC and ORP.

Part Number	Description	Number of Primary (P) and Secondary (S) IC40 cells	Number of Primary Power Centers (520978)	Number of Secondary Power Centers (520556)	Chlorine per day (lbs)†
520930	COMSYS-2	1P,	1	0	2
520971	COMSYS-4	1P, 1S	1	1	4
520972	COMSYS-6	1P, 2S	1	2	6
520973	COMSYS-8	1P, 3S	1	3	8
520974	COMSYS-10	1P, 4S	1	4	10
520975	COMSYS-12	1P, 5S,	1	5	12
520976	COMSYS-14	1P, 6S,	1	6	14
520977	COMSYS-16	1P,7S,	1	7	16

*Compatible with all pH/ORP chemical control systems from Pentair Commercial Aquatics™.
†Codes for commercial pools typically require 2 lbs of chlorine production per every 10,000 gallons. Please consult your local codes for chlorine production requirements.

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TAG 4B - SALT CHLORINATOR - COMSYS-16 - COMMERCIAL INTELLICHLOR SALT CHLORINE GENERATOR

WHEN ACCURACY IS CRITICAL, DON'T JUST TAKE OUR WORD FOR IT!

NSF - 50 CERTIFIED L1

FlowVis® was the first - and is now the most - NSF 50 certified flow meter in the world! Because when accuracy matters, you should put your trust in the experts.

FLOWVIS® MODELS

Feature	FV-1S	FV-1S-U	FV-2	FV-2-U	FV-2S	FV-3	FV-3-40	FV-4	FV-6	FV-8
NSF 50 Certified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pipe Size	1.5"	1.5"	2"	2"	2.5"	3"	3"	4"	6"	8"
Operating Range (GPM)	10-80	10-90	10-110	10-110	10-110	70-240	70-240	150-460	300-1000	600-1800
Average Accuracy	98.7%	98.7%	99.4%	99.0%	99.2%	98.9%	99.2%	99.6%	98.1%	N/A*
NSF 50 Level	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1

*FlowVis® model FV-8 is available only with FlowVis® Digital upgrade included. For accuracy of this model, refer to the FV-S information in the FlowVis Digital table below.

FLOWVIS® DIGITAL MODELS

Feature	FV-1S	FV-1S-U	FV-2	FV-2-U	FV-2S	FV-3	FV-3-40	FV-4	FV-6	FV-8
NSF 50 Certified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pipe Size	1.5"	1.5"	2"	2"	2.5"	3"	3"	4"	6"	8"
Operating Range (GPM)	10-80	10-90	10-110	10-110	10-110	70-240	70-240	150-460	300-1000	600-1800
Average Accuracy	98.6%	99.0%	98.8%	98.5%	98.3%	98.4%	98.0%	98.3%	98.9%	98.9%
NSF 50 Level	L1	L1	L1	L1	L1	L1	L1	L2	L1	L1

NOTE: FlowVis is the only NSF 50 certified Level 1 flow meter in the world today.

Guide for NSF 50 Accuracy Levels

Level 1 (L1): Average of absolute values of all single point deviations must be ≤2%. Single point deviations shall not exceed ±4%.
Level 2 (L2): Average of absolute values of all single point deviations must be ≤5%. Single point deviations shall not exceed ±7.5%.
Level 3 (L3): Average of absolute values of all single point deviations must be ≤10%. Single point deviations shall not exceed ±12.5%.
Level 4 (L4): Average of absolute values of all single point deviations must be ≤12.5%. Single point deviations shall not exceed ±15%.
Level 5 (L5): Average of absolute values of all single point deviations must be ≤15%. Single point deviations shall not exceed ±20%.

TAG 5 - FLOW METER - FV-3-40 - 3" INLINE COMMERCIAL FLOW METER

AQUASTAR pool products

VGBA-2017 PRODUCT SPECIFICATIONS
Suction Outlet Fitting Assembly (SOFA)
VGBA-2017 Flow Ratings, Sump Dimensions, and Sump Flow Path Zone

Certified to NSF/ANSI/CAN 50 ANSI/APSP/ICC 16 - 2017

DIRECTIONS: Read and follow the instructions provided with the product. Never exceed a SOFA Model flow rating when the pool is in use. SOFA Covers shall only be installed over sumps that meet or exceed the minimum flow path zone defined by: minimum pipe size and sump exit orientation, and the minimum pipe depth. Please see page 2 of 2 for help determining the proper flow rating for any pipe size changes within 18 inches of the pool interior finish. AquaStar SOFA covers are authorized for use over any compatible manufactured or field-built sump (§ 3.5.1). Scan the QR code or visit: **www.aquastarpoolproducts.com/flowcode** for the most current version of these specifications, instructions, and product information.

Cover Model Number: WAV12WRxxx

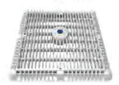

FIGURE 1: SOFA Model Number Key

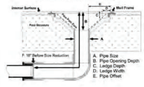

FIGURE 2: Flow Path Zone

SCAN ME!

SOFA Model No.		(A) Pipe Size (Nominal)	(B) Pipe Depth (Minimum)	Orientation (Well / Floor)	Flow Rating (GPM)	Head Loss Curve
WAV12WR-12f_A-1.5b_B3_C0.3_D0.7_E3.5_F16		1.5" (b)	3"	Floor (f)	126	A
WAV12WR-12f_A-2b_B3_C0.3_D0.7_E4.9_F16		2" (b)	3"	Floor (f)	150	B
WAV12WR-12f_A-2.5b_B3_C0.3_D0.7_E4.7_F16		2.5" (b)	3"	Floor (f)	200	C
WAV12WR-12f_A-3b_B3_C0.3_D0.7_E4.5_F16		3" (b)	3"	Floor (f)	230	D
WAV12WR-12f_A-3s_BS.6_C0.3_D0.7_E3_F16	[Sump P/N 12-3SB]	3" (s)	5.6"	Floor (f)	360	E
WAV12WR-12f_A-4b_B3_C0.3_D0.7_E3.75_F16	[Sump P/N 12-4SB]	4" (b)	3"	Floor (f)	300	F
WAV12WR-12f_A-4s_B6_C0.3_D0.7_E3_F16	[Sump P/N 12-3SB]	4" (s)	6"	Floor (f)	450	G
WAV12WR-12f_A-4s_2.5b_B6_C0.3_D0.7_E3_F16	[Sump P/N 12-3SB]	4"(s), 2.5" (b)	6"	Floor (f)	450	H
WAV12WR-12f_A-6b_B3_C0.3_D0.7_E3_F16		6" (b)	3"	Floor (f)	340	I
WAV12WR-12f_A-6b_B10.5_C0.3_D0.7_E2.9_F16	[Sump P/N 12-6SB]	6" (b)	10.5"	Floor (f)	450	J
WAV12WR-12w_A-1.5b_B3_C0.3_D0.7_E3.5_F16		1.5" (b)	3"	Wall (w)	126	K
WAV12WR-12w_A-2b_B3_C0.3_D0.7_E3.5_F16		2" (b)	3"	Wall (w)	150	L
WAV12WR-12w_A-2.5b_B3_C0.3_D0.7_E4.7_F16		2.5" (b)	3"	Wall (w)	200	M
WAV12WR-12w_A-3b_B3_C0.3_D0.7_E4_F16		3" (b)	3"	Wall (w)	230	N
WAV12WR-12w_A-4b_B3_C0.3_D0.7_E3.75_F16	[Sump P/N 12-4SB]	4" (b)	3"	Wall (w)	250	O
WAV12WR-12w_A-6b_B10.5_C0.3_D0.7_E2.9_F16	[Sump P/N 12-6SB]	6" (b)	10.5"	Wall (w)	450	P

Note 1: "SOFA Model No" nomenclature; bottom pipe = (b), side pipe = (s). See Fig 1 for capital letters A through E
Note 2: Head loss in/ig is measured 16 to 24 inches from the finish surface of the pool. Reference Fig 1 dimension F.
Note 3: [Sump P/N 12-xSB] are the part numbers marked inside these manufactured Sump Buckets. Use of these sumps is not required. Installing WAV12WRxxx covers on field-built sumps is permitted. To order WAV12WRxxx product with these sumps, please see the catalog or visit www.aquastarpoolproducts.com.

Revision Date: 04/02/2024 Sump specifications defined in conformance with ANSI/APSP/ICC-16 2017 (§ 3.5.1.1)
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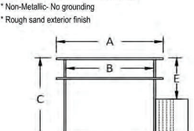
TAG 6 - MAIN DRAIN COVER - WAV12WR101 - 12"x12" VGB SUCTION OUTLET COVER

Fiberglass Field Built Sumps

A.S.A. MFG. INC. FIBERGLASS PRODUCTS

* Premium fiberglass & resin for maximum structural strength
* Durable smooth gelcoat interior
* Exterior perimeter FRP waterstop flange
* Non-Metallic- No grounding
* Rough sand exterior finish
* 2" Bottom fpt.x fpt for hydro relief valve
* Threaded PVC SCH 40 pressure test plug for outlet (up to 8")
* All PVC connections are ASTM 2466 compliant
* Designed to ANSI/APSP/ICC-16 2017 for use only with approved SOFA (Suction Outlet Fitting Assembly) Covers.



COMPONENT

Made in the USA

Size (inches)	ASA Part #	A	B	C	D	E	SCH40 Outlet fpt x soc
9 x 9 x 12	FBS-50-809-3	11"	9"	12"	4.5"	6.5"	3"
12 x 12 x 12	FBS-50-812-4	14"	12"	12"	4.5"	7"	4"
12 x 12 x 18	FBS-50-812-18-4	14"	12"	18"	4.5"	8"	4"
12 x 12 x 18	FBS-50-812-18-6	14"	12"	18"	4.5"	10"	6"
18 x 18 x 20	FBS-50-818-6	20"	18"	20"	4.5"	10"	6"
18 x 18 x 24	FBS-50-818-24-6	20"	18"	24"	4.5"	13"	6"
18 x 18 x 24	FBS-50-818-24-8	20"	18"	24"	4.5"	13.5"	8"
24 x 24 x 30	FBS-50-824-30-10	26"	24"	30"	4.5"	17"	10" soc x soc

SOFA COVER NOTES:
(SOFA = Suction Outlet Fitting Assembly)

1). Please see the Manufacturer's (Aquastar, Hayward, Waterway) SOFA Cover (Grate) Installation Instructions for a Field Fabricated Sump to confirm minimum Sump dimensions and tested outlet sizes before installing.
2). All SOFA Cover Manufacturer's require different minimum Sump depth dimensions, outlet placement (bottom or side), and suction outlet size (diameter in inches). Please confirm the SOFA Cover you are using is designed for this Fiberglass Field Fabricated Sump.
3). Please refer to the SOFA Cover (Grate) specification data sheet for VGBA tested flow rates. Every SOFA Cover has different a open area and flow path. Do not install a SOFA Cover over a Field Fabricated Sump that does not meet the minimum specifications determined by the SOFA Manufacturer.
4). A.S.A. MFG. Inc. Fiberglass Sumps have been fabricated to the original ASME 112.19.8 Standard - Suction Fittings for Pools & Spas (1.5x IFigure 2 rule) since 1992.

1) All Field Built Sumps shall be installed in accordance with the manufacturer's installation instructions.
2) All SOFA covers shall be installed in accordance with the manufacturer's installation instructions.
3) The A.S.A. MFG Inc. Fiberglass Field Built Sump is intended only to be installed in a reinforced concrete pool structure.
4) Any field modifications made to the SOFA and not authorized by the manufacturer's installation instructions shall void the SOFA certification. No modification shall be made to the SOFA structure or flow path unless a new configuration has been certified as a new SOFA
5) Fiberglass Field Built Sump Life = Life of the Aquatic Center. v060923b

A.S.A. MFG Inc. 14879 SW 111th St. Dunnellon, FL 34432 352-465-0236 Fax 352-465-0239 email: info@asamfg.com

TAG 6 - MAIN DRAIN SUMP - FBS-50-812-4 - A.S.A MFG FIBERGLASS SUMP

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE
1	HEALTH COM.	09/29/25

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JACOB L. HAMILTON

Jacob Hamilton

NORTH CAROLINA KILIAN ENGINEERING, INC. No. C-2277 CERTIFICATE OF AUTHORIZATION

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	JVD
CHECKED BY:	JLH

100% I.F.R.

SPECIFICATIONS

SP5.0

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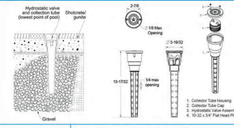
AQUASTAR pool products

Hyrdostatic Relief Valves

Self-Contained Hydrostatic Valve Assembly

Part # HVCxxx



FEATURES

- Self-contained unit has a built-in collector tube
- Installs directly into the pool finish with no additional plumbing connection required
- Helps prevent swimming pool damage due to hydrostatic pressure beneath the pool shell when the pool is drained

12 per case

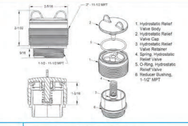
HVC05xxx – Cap and Screws

STANDARD COLORS

- HVC101
- HVC102
- HVC103
- HVC104
- HVC105
- HVC108

2" Hydrostatic Relief Valve

Part # HVxxx



FEATURES

- Equalizes pressure for high water tables
- Fins enable easy twist for installation and removal
- Fits any AquaStar and most other manufacturers' 2" threads
- Manufactured from superior UV-resistant engineered polymers
- Includes 2" x 1½" reducer bushing
- Reducer bushing must be glued into hydrostatic relief valve using ABS glue

25 per case

STANDARD COLORS

- HV101
- HV102
- HV103
- HV104
- HV105
- HV108

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TAG 7 - HYDROSTATIC RELIEF VALVE - HVC101 - SELF-CONTAINED HYDROSTATIC RELIEF VALVE

FLOW STAR® SKIMMER WITH WATER STOP FACE, FLOAT ASSEMBLY, BASKET, LID AND ADJUSTABLE COLLAR

Built in conformance with NSF 50 and SPS 3 standards

FEATURES

Adjustable collar

New weir clip lock secures the clips in the weir door

Self-contained gunite grip, water stop on the faceplate to prevent water leaks

Large self-contained basket with lock-in feature (will not float)

Underwater dampers on the faceplate for noise reduction on weir plate – especially on windy days

Super strong engineered polymer upper housing

Extra heavy duty PVC lower unit (no transitional glue required)

2½" outside slip and 2" inside slip (outside skimmer)

2" threads for pressure testing (inside skimmer)

Built-in overflow or fill line knock out

Upper housing has pre-cut rebar cutouts with pre-drilled holes for tie wire

Skimmer Lid and Collar G154 UV tested

NSF 50 approved for commercial use, 25 GPM min, 55 GPM max – approved for residential use up to 100 GPM

See page 212 for code compliance and sizing

Optional custom name/logo engraved on the lid (requires minimum 500 piece lid order)

See page 157 for Skimmer with Ozone Port

1 per case

Three lid options available (sold separately): round, square or snap-in round/square

Part # SKR1xx

Optional vacuum plate with snap-in lug can be glued in under lid for easy storage p/n SK43101

Optional BFB adapter converts skimmer fittings to 4" or 3" tee for improved hydraulics and code compliance p/n BFB101

For vinyl and fiberglass options, see pages 138-143

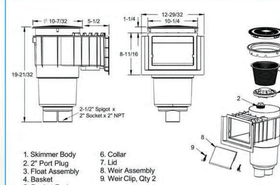
STANDARD COLORS

- SKR101 – White
- SKR102 – Black
- SKR103 – Light Gray
- SKR104 – Blue
- SKR105 – Dark Gray
- SKR108 – Tan

Snap-in Round/Square Lid and Collar (sold separately) p/n SK65xxx

Square Lid and Collar (sold separately) p/n SK64xxx

Available without lid and collar SKR1NL101 (white only)



TAG 8 - SKIMMER - SKR101 - WHITE COMMERCIAL GRADE SKIMMER

Large Wall Fitting (Fits Inside 2" Pipe)

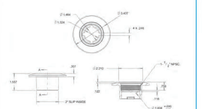
FEATURES

- Fits inside 2" pipe, 1½" FPT in the front face
- Large flange camouflages pipe and surface construction variations
- See also decorative cover p/n DCxxx to make existing 1022s like new with different colors
- Manufactured from engineered polymer UV-resistant ABS material

250 per case

Also available in Clear (p/n ES1022SI2000)

Part # ES1022SI20xx



STANDARD COLORS ☐ 01 ■ 02 ■ 03

39 ProStar # VLK15Txx
REPLACES # W4008WHP

Safety Vacuum Lock Wall Fitting (1½" NPT)
Part # VLK20Txx (2" NPT)
Meets SPS-4-2009 Standard

TAG 9 - VACUUM INLET - ES1022SI2001 W/ VLK15T01 - VACUUM LINE FITTING W/ LOCK CAP

AQUASTAR pool products
A Safe Drain is No Accident™

2" X 4" GUTTER DECK DRAIN (FITS 2" PIPE)

FEATURES

Fits over 2" pipe

1½" threaded FPT inside for pressurizing/winterizing

Manufactured from engineered polymer UV-resistant PVC material (p/n GDD101 is manufactured from engineered polymer UV-resistant ABS material)

1½" reducer bushing available p/n BU101-2x1.5

½" stackable extender available p/n PE20101

Stainless steel screws

Also available as grate only with two screws

CAUTION: Not to be used as a suction outlet under any circumstances

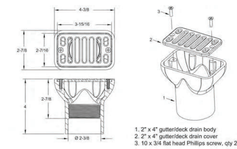
25 per case

Grate only p/n GDDLxxx
25 per case

Part # GDDxxx

STANDARD COLORS

- 101
- 102
- 103
- 104
- 105
- 108



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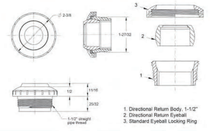
★★ PROUDLY MADE ★★ IN THE USA

TAG 10 - OVERFLOW DRAIN - GDD101 - COMMERCIAL OVERFLOW DRAIN

Three-Piece Directional Eyeball Fitting 1½" MPT

Product Image and Dimensions

Part # 81xx



FEATURES

- Screws into 1½" FPT
- Manufactured from engineered polymer UV-resistant ABS material

250 per case

STANDARD COLORS

- 8101
- 8102
- 8103
- 8104
- 8105
- 8108

Aditional orifice size suffix:
82xx - ¾"
83xx - ½"
84xx - Slotted Down-Jet
(i.e. 8201 = white ¾" orifice)
Also available in Clear (p/n 8100, 8200, 8300, 8400)

AquaStar Specific Eyeball GPM, Velocity and Head Loss Ratings

GPM	81xx (1")		82xx (3/4")		83xx (1/2")		84xx (Down-Jet)	
	Velocity (fps)	Head Loss (ft)	Velocity (fps)	Head Loss (ft)	Velocity (fps)	Head Loss (ft)	Velocity (fps)	Head Loss (ft)
5	2.2	0.1	3.6	0.5	8.2	2.4	10.1	2.1
10	4.4	0.5	7.3	1.8	16.3	8.7	20.2	8.1
15	6.6	1.1	10.9	3.7	24.5	18.6	30.3	20.7
20	8.8	1.9	14.5	6.2	32.4	32.0		
25	11.0	3.0	18.2	9.4				
30	13.2	4.4	21.8	13.1				
35	15.4	6.1	25.4	17.3				
40	17.6	8.0						
45	19.7	10.2						
50	21.9	12.7						

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TAG 11 - RETURN INLET - ES1022SI2001 W/ 8101 - DIRECTIONAL WALL RETURN INLET

AQUASTAR pool products
A Safe Drain is No Accident™

BUBBLER PLATE

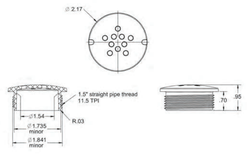
FEATURES

Available in six standard colors
No exposed components
Installs flush with bottom of pool/spa

Part # BPxxx

STANDARD COLORS

- 101
- 102
- 103
- 104
- 105
- 108



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TAG 12 - FLOOR RETURN INLET - ES1022SI2001 W/ BP101 - FLOOR RETURN INLET W/ BUBBLER PLATE FITTING

AQUASTAR pool products
A Safe Drain is No Accident™

FillStar™ Water Level Control System for Pools and Spas

Durable and reliable

FEATURES

Can be installed alone or with drain/vacuum pool or spa at all times

Easy to install

Overflow protection and adjustable presets

Uses the same size lid and collar as AquaStar skimmers

Includes a 2" to 1½" adapter

¾" plug included if overflow is not needed

¾" water supply inlet

Valve is made of high-strength engineered resin

Float is injection-molded; thread is pre-molded

All fittings are made of PVC

No transition glue needed

Float thread is ½" MPT

1 per case

NEW

Part # AFBxxx

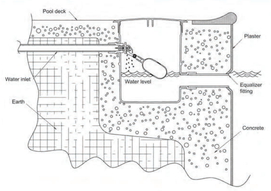
Also available float only part # AFBV

STANDARD COLORS

- AFB101 – White
- AFB102 – Black
- AFB103 – Light Gray
- AFB104 – Blue
- AFB105 – Dark Gray
- AFB108 – Tan

Also available without lid and collar p/n AFBNLxxx

Also available cover only p/n SKRTxxx



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★★ PROUDLY MADE ★★ IN THE USA

TAG 13 - AUTOFILL - AFB101 - FILLSTAR - AUTOFILL LINE - WHITE

Let your imagination take you to brighter places.

Whether you're upgrading an older lighting system or building a new pool or spa, MicroBrite® Color and White LED Lights give you the freedom to add dynamic, energy-efficient, uniform lighting in pool places you never thought possible.

ORDERING INFORMATION

PART NO.	DESCRIPTION	TYPE	NUMBER OF LIGHTS	CABLE LENGTH	VOLTAGE
		MICROBRITE LED LIGHT			
620424	MicroBrite Light	Color LED	One	50'	12V
620425	MicroBrite Light	Color LED	One	100'	12V
620426	MicroBrite Light	Color LED	One	150'	12V
602166	MicroBrite-G Light	Color LED, for installation in Pentair GloBrite Niche or Pentair ColorVision Bubbler	One	150'	12V
620428	MicroBrite Light	White LED	One	50'	12V
620429	MicroBrite Light	White LED	One	100'	12V
620430	MicroBrite Light	White LED	One	150'	12V
602165	MicroBrite-G Light	White LED, for installation in Pentair GloBrite Niche or Pentair ColorVision Bubbler	One	150'	12V
620457	MicroBrite Light	Warm White LED	One	522045	12V
602165	MicroBrite Light	Warm White LED	One	522045	12V
602167	MicroBrite-G Light	Warm White LED, for installation in Pentair GloBrite Niche or Pentair ColorVision Bubbler	One	522045	12V
602167	MicroBrite Light	Turtle Edition*	One	522045	12V
618040	Adapter for MicroBrite to GloBrite	Adapter allows a MicroBrite light to be installed into a Pentair GloBrite Niche or Pentair ColorVision Bubbler			

PART NO.	DESCRIPTION	TYPE	NUMBER OF LIGHTS	CABLE LENGTH	VOLTAGE
		MICROBRITE COMBO KITS EACH MICROBRITE COMBO INCLUDES ONE PENTAIR 300-WATT TRANSFORMER, 120V INPUT, 12V OUTPUT			
602130	MicroBrite 2 Light Combo Kit	Color LED	Two	100'	12V
602131	MicroBrite 2 Light Combo Kit	White LED	Two	100'	12V
602132	MicroBrite 2 Light Combo Kit	Warm White LED	Two	100'	12V
602133	MicroBrite 4 Light Combo Kit	Color LED	Four	100'	12V
602134	MicroBrite 4 Light Combo Kit	White LED	Four	100'	12V
602135	MicroBrite 4 Light Combo Kit	Warm White LED	Four	100'	12V

*620nm red/orange light, for special ocean/front pool applications in certain areas with regulations/intended to protect sea turtles.

TRADEGRADE

The TradeGrade family of products is exclusively made for and sold by the world's most demanding pool professionals.

FOR THE FULL SPECTRUM OF NIGHTTIME POOL POSSIBILITIES, GO TO **PENTAIR.COM/POOLLIGHTS.**

PENTAIR

400 Regency Forest Dr | Cary, NC 27518 | United States | 800.831.7133 | pentair.com

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Appearance of color and white LED light may vary between various models of lights. Appearance and perception of pool lighting may vary depending on a number of factors including, but not limited to, the particular model of light, the location/depth/angle of the light's installation, pool finish/material/age, pool depth/shape/geometry, ambient light sources, subjective factors and more. For best results when using multiple lights, use all the same model and do not mix multiple models of lights within a single installation.

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PS-782 9/2022

TAG 14 - POOL LIGHT - 602131 - 12W EQUIVALENCY MICROBRITE WHITE LED LIGHTS

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Jacob Hamilton

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WIMBERLY AMENITY

PULTE GROUP

ANGIER, NC

NO.	REVISION	DATE

PROJECT #: 2023048
DATE ISSUED: 02/17/2025
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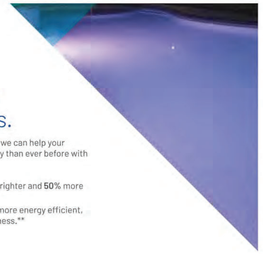
SPECIFICATIONS

SP5.1

INTELLIBRITE®
ARCHITECTURAL
SERIES LIGHTS



Illuminate your customers' nighttime pool experiences.

You're a leading pool pro. We're a pool lighting leader. Together, we can help your customers' pool experiences shine brighter and more beautifully than ever before with our biggest illumination innovation to enter the pool industry.

- IntelliBrite Architectural Series Color Pool Light is now **60%** brighter and **50%** more energy efficient.*
- IntelliBrite Architectural Series White Pool Light is now **80%** more energy efficient, consuming **44%** less power and maintaining the same brightness.**

◂ BEFORE
Unevenly lit pool with dark areas.

AFTER ▸
Evenly lit pool for a more exhilarating nighttime pool experience.

PRODUCT SPECIFICATION

SIZE	MODEL	VOLTAGE	POWER	PART NUMBER BY CORD LENGTH (FEET)				
				32'	50'	100'	150'	250'
Pool	Color	120V	28W	602166	602186	602187	602188	602208
Pond	Color	12V	28W	602153	602152	602154	602154	------
Spa	Color	120V	16W	602201	602202	602203	602204	602205
Spa	Color	12V	16W	602197	602196	602198	602200	------
Pool	White - 300W Equivalent	120V	26W	602181	602182	602183	602184	602207
Pool	White - 300W Equivalent	12V	26W	602143	602144	602145	602146	------
Pool	White - 500W Equivalent	120V	33W	602177	602178	602179	602180	602209
Pool	White - 500W Equivalent	12V	33W	602133	602140	602141	602142	------
Spa	White - 300W Equivalent	120V	16W	602193	602194	602195	602196	602206
Spa	White - 300W Equivalent	12V	16W	640516	640518	640517	640518	------
Pool	Warm White	120V	31W	602159	602160	602161	602162	602221
Pool	Warm White	12V	31W	602147	602148	602149	602150	------
Spa	Warm White	120V	18W	602225	602226	602227	602228	602229
Spa	Warm White	12V	18W	602238	602239	602240	602241	------

Get total control from anywhere with the Pentair Home app to help you move, improve and enjoy all of your home's water.

Go to **pentair.com/home**

MORE OPTIONS AVAILABLE:
Scan the QR code to view the full list

*Compared to Pentair IntelliBrite 5G Color LED Pool Light in white color mode only. The IntelliBrite Architectural Series delivers higher lumen output depending on color mode, ranging from 28% - 140% brighter, while energy efficiency improvements range from 17-58% based on color mode.
**Compared to Pentair IntelliBrite 5G White LED Pool Light. IntelliBrite Architectural Series White Light delivers 2.3% higher lumen output and consumes 44% less power.
Appearance of color and white LED light may vary between various models of lights. Appearance and perception of pool lighting may vary depending on a number of factors including, but not limited to, the particular model of light, the location/depth/angle of the light's installation, pool finish/material, pool depth/shape/geometry, ambient light sources, subjective factors and more. For best results when using multiple lights, use all the same model and do not mix multiple models of lights within a single installation.

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TRADEGRADE

TAG 15 - POOL LIGHT - 602141 - 500W EQUIVALENCY INTELLIBRITE WHITE LED LIGHTS

INTERMATIC

Junction Box - 4 Light Connection Pool & Spa Junction Box

Item PJB4175

PRODUCT DESCRIPTION

These polymeric junction boxes are code compliant and provide safe, reliable connections for low-voltage lights. Specially designed for pools, pool-spa combinations, and landscape applications. Junction boxes are for outdoor use only.

FEATURES

- Accommodates flexible cords and non-metallic conduits from ½" to 1"
- Watertight, multifixture enclosure
- Easy access ground bar
- PA114 Wall/Post Mounting Bracket (sold separately)
- Complies with NEC Code 680.24 requirements for junction boxes
- 1-year warranty

APPLICATIONS

- Landscape Lighting
- Underwater Lighting

TECHNICAL DATA

General	
Model Number	PJB4175
Description	4 Light Connection Pool & Spa Junction Box
UPC Code	078275094048
Brand	Intermatic
Country of Origin (Intermatic)	INDIA
Warranty Period	1-Year limited
Control Specifications	
Number of Light Connections	4
Mechanical Specifications	
Mounting Options	Bracket; Post; Rod; Wall
Dimensions	
Product Dimensions (H x W x D) in	8.75 x 5 x 4.625 in
Non Metallic Conduit Size	1/2"-1"
Material Specifications	
Body Material	Plastic
Electrical Specifications	
Number of Receptacle Knockouts	5
Packaging	
Unit Carton Dimensions (H x W x L) in	5.25 x 5 x 9 in
Standards and Certifications	

Technical specifications and other information are subject to change without notice. Images can vary from original.

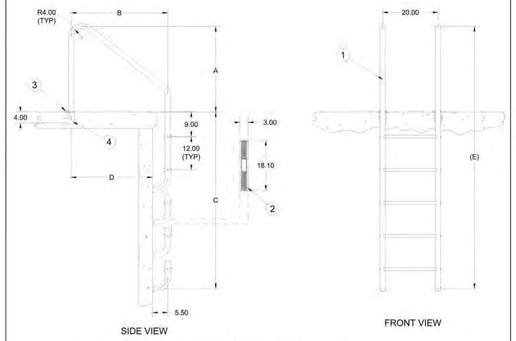
© 12/22/2022

TAG 16 - JUNCTION BOX - PJB4175 - 4 LIGHT CONNECTION POOL & SPA JUNCTION BOX

SRSmith COMMERCIAL

S.R. Smith LLC Commercial Division
Product Specifications - Drawing

Standard Plus Commercial Ladder *(With Stainless Steel Tread)*



MODEL NUMBER	A	B	C	D	(E)
10037 TO 10039	26.00	23.00	28.00	17.50	54.00
10040 TO 10042	26.00	23.00	40.00	17.50	66.00
10043 TO 10045	26.00	23.00	52.00	17.50	78.00
10046 TO 10048	26.00	23.00	64.00	17.50	90.00
10049 TO 10051	26.00	29.00	28.00	23.50	54.00
10052 TO 10054	26.00	29.00	40.00	23.50	66.00
10055 TO 10057	26.00	29.00	52.00	23.50	78.00
10058 TO 10060	26.00	29.00	64.00	23.50	90.00
10061 TO 10063	31.00	35.00	28.00	29.50	59.00
10064 TO 10066	31.00	35.00	40.00	29.50	71.00
10067 TO 10069	31.00	35.00	52.00	29.50	83.00
10070 TO 10072	31.00	35.00	64.00	29.50	95.00

Specification Number:	**SRS-506**
Product Description:	**Standard Plus Commercial Ladder *(With Stainless Steel Tread)***
S.R. Smith Part Number:	**10037 to 10072**
Revision:	A
Written By:	T. Weil
Approved By:	B. Bisceglia
Page 1 of 2	

Date: 06/11/03
Date: 06/13/03

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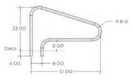
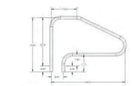
www.srsmith.com

TAG 17 - LADDER - 10056-MG - MARINE GRADE DECK MOUNTED COMMERCIAL LADDER

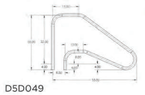
DMS-100



DMS-101



D4D049



D5D049

Deck-Mounted Hand & Stair Rails

- Tubing: 1.90" OD
- Wall Thickness*: .049" or .065"
- Stainless Steel: 304 or 316L Marine Grade** (add –MG to part number)
- Bends: 6" Radius
- Recommended Anchors: AS-100P or AS-100B (order separately)
- Recommended Escutcheon: EP-100F (order separately)
- Sold as a single rail

* Minimum rail thickness is .065 for Commercial
** Minimum requirement for salt pools is 316L Marine Grade

DMS-100

Part No.	Description	Weight	Shipping Length	Width	Height
DMS-100A	51" Center Grab Rail, .049"	18 lbs 8kg	59" 150cm	39" 99cm	2" 5cm
DMS-100V	51" Center Grab Rail, .065"				
D5D049	55" Center Grab Rail, .049"				
DMS-100S	60" Center Grab Rail, .065"				

DMS-101

Part No.	Description	Weight	Shipping Length	Width	Height
DMS-101A	48" Center Grab Rail, .049"	16 lbs 7kg	59" 150cm	39" 99cm	2" 5cm
DMS-101R	48" Center Grab Rail, .065"				

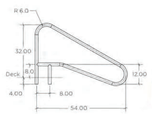
DECK TO DECK MOUNTED

Part No.	Description	Weight	Shipping Length	Width	Height
D4D049	4 Bend Stair Rail, .049"	16 lbs 7kg	57" 145cm	39" 99cm	2" 5cm
D5D049	5 Bend Stair Rail, .049"				

May be available in Powder-Coated finishes. Please reach out to CustomerCare@SRSmith.com to confirm the color and finish availability.

TAG 18 - HANDRAIL - DMS-101-MG - MARINE GRADE DECK MOUNTED HANDRAIL - SHORT

DMS-102



Deck-Mounted Hand & Stair Rails

- Tubing: 1.90" OD
- Wall Thickness*: .049" or .065"
- Stainless Steel: 304 or 316L Marine Grade** (add –MG to part number)
- Bends: 6" Radius
- Recommended Anchors: AS-100P or AS-100B (order separately)
- Recommended Escutcheon: EP-100F (order separately)
- Sold as a single rail

* Minimum rail thickness is .065 for Commercial
** Minimum requirement for salt pools is 316L Marine Grade

DMS-102

Part No.	Description	Weight	Shipping Length	Width	Height
DMS-102A	54" Center Grab Rail, .049"	19 lbs 9kg	59" 150cm	39" 99cm	2" 5cm
DMS-102B	54" Center Grab Rail, .065"	19 lbs 9kg	59" 150cm	39" 99cm	2" 5cm
DMS-102P	54" Center Grab Rail, .049" w/ welded mounting plate	19 lbs 9kg	59" 150cm	39" 99cm	2" 5cm

D4BD049-FL

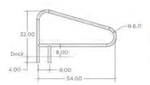
DECK TOP MOUNT

Part No.	Description	Weight	Shipping Length	Width	Height
D4BD049-FL	48" Center Grab Rail, .049" w/ flanges and escutcheons	17 lbs 8kg	59" 150cm	39" 99cm	2" 5cm

DMS-103

DMS-103

Part No.	Description	Weight	Shipping Length	Width	Height
DMS-103A	54" Center Grab Rail, .049"	14 lbs – 18 lbs 6 – 8kg	59" 150cm	39" 99cm	2" 5 cm
DMS-103B	54" Center Grab Rail, .065"	14 lbs – 18 lbs 6 – 8kg	59" 150cm	39" 99cm	2" 5cm



DECK TOP MOUNT

Part No.	Description	Weight	Shipping Length	Width	Height
D3D50049-FL	50" 3-Bend Stair Rail, .049" w/flanges and escutcheons	27 lbs 12kg	61" 155cm	38" 97cm	7" 18cm

May be available in Powder-Coated finishes. Please reach out to CustomerCare@SRSmith.com to confirm the color and finish availability.

TAG 19 - HANDRAIL - DMS-102-MG - MARINE GRADE DECK MOUNTED HANDRAIL - STANDARD

pool access equipment

multiLift™

A flanged pool lift, with left or right side mounting, and optional folding seat version.

- Third-party tested & verified ADA compliant
- Integrated armrests
- State of California compliant
- 350 lb/159kg lifting capacity
- Retrofit anchor jig is standard
- Optional folding seat assembly
- LiftOperator® Intelligent Controller
- Powder-coated stainless steel and aluminum construction

ADA COMPLIANT

Lift Color

GRAY MIST

Due to printing technology actual color may differ.

Model No.	Description: Pool Lift with Armrests	Shipping – (Class 150) Weight	Length	Width	Height
575-0000	multiLift	200 lbs/91kg	50" 127cm	28" 71cm	2" 65cm
575-0000N	multiLift, no anchor				

Note:
• Includes battery, charger, battery console cover, water-resistant hand control, footrest, seat belt assembly, armrests and retrofit anchor jig.

Parts & Accessories

New Construction Jig with Anchors 500-5000A

Wheel-A-Way mobility option provides flexibility to transport the lift if needed

Optional folding seat assembly

- 1001495 Battery
- 500-5200T Cover
- 500-5500 Wheel-A-Way
- 900-1000 Seat Belt
- 300-6700A Anchors, set of 4
- 300-6900 Retrofit Anchor Jig
- 300-6800A Anchor Bolts, set of 4
- 970-5000T Seat Saver Cover
- 900-6000 Stability Strap
- 170-3000A Armrest Replacement (pair)

multiLift with Folding Seat

Model No.	Description	Shipping – (Class 77.5) Weight	Length	Width	Height
575-0100	multiLift with folding seat*	225 lbs/103kg	50" 127cm	24" 61cm	28" 71cm
575-0100N	multiLift with folding seat, no anchor*	225 lbs/103kg			
575-0105	multiLift with armrests and folding seat	230 lbs/104kg			
575-0105N	multiLift with armrests and folding seat, no anchor	230 lbs/104kg			

Note:
• Includes battery, charger, battery console cover, water-resistant hand control, footrest, seat belt assembly and retrofit anchor jig.
* Models without armrests are not compliant with State of California requirements.

Parts & Accessories

- 1001495 Battery
- 500-5100FCT Folding Seat Cover
- 160-6000T Folding Seat
- 900-2000 Stability Vest
- 900-4000 Seat Pad
- 970-0000T Seat Saver Cover
- 170-2320 Armrest Assembly, gray, left & right

New Construction Guidelines

Scenario	Pool Lift	Anchor Jig
Order pool lift and new construction jig at same time	575-3000	500-5000 (no anchors)
Order new construction jig ahead of pool lift	575-3000N	500-5000A (comes with anchors)

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TAG HC - ADA HANDICAP LIFT - MULTILIFT - ADA COMPLIANT MULTILIFT

QPG QUALITY POOLS GROUP

QUALITY POOLS GROUP
3550 Hwy 51 North, Ft. Mill SC, 29715 (704) 441-8773 QualityPoolsGroup.com

L* a* b*, RGB and HLC Values

Reference: RAL 9002
Range: RAL Classic

QPG Kona Coast Quartz Pool Plaster

This sample represents the masstones of the original scan. (All of the colors of the original sample, as one, blended)

L. 74.32
a* -47.09
b* -85.25
H 102
L 85
C 5
sRGB: 196, 235, 242
LRV: Approx. 74
Light Reflectance Value

"QPG Kona Coast"

The L* a* b* (together with the corresponding HLC, RGB and CYMK) values are based on the average of various measurements using various spectrophotometers using D65 light with a standard observer according to CIE 1964 which may be updated or modified by any other relevant available information. They are not necessarily the L* a* b* figures intended by any standard and should therefore only be used as a guide. For more information or details please contact the relevant company, standards authority or organization listed **here** or refer to the color publications available on this site.

The colours depicted are also for guidance only. The displayed colour will depend on your monitor, browser and angle of the screen and pearl or metallic colours cannot be shown adequately. The finished colour, therefore, may **not** be as shown here.

The sRGS conversion system used is IEC 61966:2-1 D50 adapted which may differ from other conversions.

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3550 Highway 51 North, Fort Mill, SC 29715 (704) 441-8773

POOL PLASTER SPECIFICATION

D. CLUGSTON

Jacob Hamilton

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JACOB L. HAMILTON

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION KILIAN ENGINEERING, INC. No. C-2277

Digitally signed by Jacob Hamilton
DN: CN=Jacob Hamilton, O=Kilian Engineering, Inc., C=US
Reason: I am the author of this document
Date: 2025.06.26 21:06:36-04'00'

WIMBERLY AMENITY
PULTE GROUP
ANGIER, NC

NO.	REVISION	DATE

PROJECT #:	2023048
DATE ISSUED:	02/17/2025
DRAWING BY:	JVD
CHECKED BY:	JLH

100% I.F.R.

SPECIFICATIONS

SP5.2

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